

# OpenScape Deployment Service V7

**Administration & Installation Manual**

P31003-S2370-M107-28-76A9

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# 1 Introduction

The document describes the OpenScape OpenScape Deployment Service V7 (DLS) client in version **V7 R2 (HIDLS7.2xx)** and contains information about initial DLS server configuration.

This manual is also available as online help on the DLS client's interface, see Section 5.3, "Opening the Context-Sensitive Help Function".

**NOTE:** For a quick start guide, please read the same-titled Chapter 2.

## 1.1 Target Group

This manual is intended both for administrators who install and configure the DLS server and for users who carry out configuration and deployment tasks on the DLS client. Users must have prior experience of LAN administration and an in-depth knowledge of IP Device configuration.

For more information on the skills that a DLS administrator must have, see Section 4.1.3, "Personnel Requirements".

## 1.2 Conventions Used

The following conventions are used for presenting information in this manual:

Convention	Example
courier	Input and output Example: enter LOCAL as the file name
<i>Italics</i>	Variable Example: <i>Name</i> can be up to eight characters long
<b>Bold</b>	Indicates user interface elements Example: Click <b>OK</b> Select <b>Exit</b> from the <b>File menu</b>
<b>Bold</b>	Special emphasis Example: You are <b>not</b> permitted to delete this name
<b>Element</b>	User Interface elements with supplementary information
<Courier>	Key combinations Example: <CTRL>+<ALT>+<ESC>
>	Menu sequence Example: <b>File</b> > <b>End</b>
<b>NOTE :</b>	Additional information
<b>IMPORTANT :</b>	Warning on critical aspects of a process

Table 1      *Typographic conventions*



## 1.3 Constraint Notes

Some of the settings configurable via DLS are available only for particular end devices resp. particular firmware versions. In such cases, an appropriate note is given.

## 1.4 DLS and file naming schemes

DLS may not be able to handle special characters for filenames under certain circumstances. Furthermore, while some special filenames might be qualified over DLS checks, those files may not be acceptable from the devices side.

Problems may also arise from very long filenames. While the maximum length is Operating System related (and the underlined file system in use, e.g. FAT32, NTFS etc.), an application or device could still have different specifications.

**NOTE:** It is a fact that special characters for filenames must be avoided as a good naming scheme technique. Strange filenames can have many side effects for DLS, especially for deployment of custom data like logos, ringtones etc. and it is advised to be avoided if possible.

Try as much as possible to use the following naming schemes for your files:

- If possible, follow the 8.3 format.  
Where 8 is the max. number of the filename and 3 the max. number for its extension (also called the DOS naming format).
- Use only letters and numbers (abcdefghijklmnopqrstuvwxyz1234567890).  
Non-English letters, like for example German umlauts, are also not allowed in addition to verbal symbols.
- A dash “-” or underscore “\_” may be allowed by some applications but characters such as: ( ) { } @ # \$ % ^ & ! ' / ~ have special meaning and should not be used.
- Avoid also a dot “.” which separates a filename and its extension.  
Use an underscore as a separator where necessary.
- Keep filenames all lowercase, no CAPITAL letters (some applications may allow caps).  
Use lowercase even when it is grammatically incorrect.
- Never use spaces in a filename or its extension. They are extremely troublesome.



## **Introduction**

*DLS and file naming schemes*

## 2 Getting Started

This brief guide should enable administrators to quickly start the OpenScape Deployment Service V7, perform basic configuration, and connect new telephones, without detailed background knowledge.

**NOTE:** In order to keep this chapter as short as possible, we have intentionally left the following information out:

- Various application scenarios

Here only one standard scenario is provided as an example.

- Parameter descriptions

Here we will only explain what you need to do, not why.

- Background information

Only the most important information is summarized here.

Detailed information is provided in the rest of the manual, in particular in the chapters:

- Chapter 3: Concept and feature overview

- Chapter 4: Installation of the DLS and additional software components

- Chapter 5: General information about the user interface

- Chapter 6 to Chapter 14: Information on individual parameters

- Chapter 15 and Chapter 16: Practical examples with process descriptions.

The following processes are described here:

- Section 2.1, "DLS Installation"
- Section 2.2, "Starting the DLS for the First Time (Single Mode)"
- Section 2.4, "Frequently Used Functions"
- Section 2.5, "Using the Mobility Function"
- Section 2.6, "Security"

## 2.1 DLS Installation

### 2.1.1 System Requirements

- **Minimum hardware requirements for the DLS client PC**

- Pentium IV-compatible CPU with 1,4GHz
- 2048 MB RAM (recommended  $\geq$  2048 MB)
- 10Mbit Ethernet card
- JRE 1.7 (Client); Browser: Any browser that supports Java plug-in, e.g. Internet Explorer, Firefox, Chrome, Opera, Safari

**NOTE:** Internet Explorer has to get 512 MB in case of large networks, with an additional 1024 MB for the heap size of JRE.

Please allow adequate RAM available for the Operating System and the remaining applications in use.

1. In the Windows Start menu, open **Start > Settings > Control Panel** & select the **Java** icon.
2. In the **Java Control Panel** window, select the **Java** tab, click on the **View** button. Select your primary (or only) Java environment from the list and double-click in the cell labeled "Runtime Parameters."
3. Enter the initial and maximum heap sizes as necessary, using the parameters used in the first section above. Set a maximum heap size of 1024MB, fill in the box with the following:  
-Xmx1024m
4. Click **OK** to close the runtime environments window, and once again to close the Java control panel.

**NOTE:** It is also recommended that you configure the following in case the cache is full:

1. In the Windows Start menu, open **Start > Settings > Control Panel** & select the **Java** icon.
2. In the **Java Control Panel** window, select the **General** tab, click on the **Settings** button under **Temporary Internet Files**.
3. Disable the **Keep temporary files on my computer** checkbox.

- **Minimum Hardware Requirements for the Single Node DLS Server**

	DLS Standalone
<b>CPU</b>	3.1 GHz CPU (Intel Xeon E3-1220, 4C/4T)
<b>RAM</b>	8 GB
<b>Ethernet</b>	100 MBit (1GBit is recommended)
<b>Disk Space</b>	80 GB

- **Minimum Hardware Requirements for the DLS Server on a Multi-Node Deployment**

	DLS Multi-Node
<b>CPU</b>	Intel Xeon Quad Processor >= 2.9 GHz
<b>RAM</b>	8 GB
<b>Ethernet</b>	100 MBit (1GBit is recommended)
<b>Disk Space</b>	300 GB

- **Minimum Hardware Requirements for the DB Server on a Multi-Node Deployment**

	Database Server
<b>CPU</b>	Intel Xeon Quad Processor >= 2.9 GHz
<b>RAM</b>	8 GB
<b>Ethernet</b>	100 MBit (1GBit is recommended)
<b>Disk Space</b>	80 GB

- **Minimum Hardware Requirements for a Witness Server**

	Witness Server
<b>CPU</b>	Intel Dual Core Processor 3 GHz
<b>RAM</b>	2 GB
<b>Ethernet</b>	100 MBit (1GBit between the servers)
<b>Disk Space</b>	20 GB

- **Database Requirements**

- Microsoft® SQL Server™ 2008 Enterprise Edition can be used, but requires 4 GB. This database must be provided by the customer.



## Getting Started

### *DLS Installation*

- Since V6R1, DLS supports Microsoft® SQL Server™ 2008 R2 Datacenter Edition

**NOTE:** For usage of Microsoft SQL 2008 R2 Enterprise or Datacenter Edition, appropriate Microsoft licences are needed. As a rule CPU licenses should be used, usage of device CAL (Client Access License) is possible as well where one device CAL is needed for each supported device.

The provision of hardware and Microsoft licenses is not part of the DLS order items and need to be considered separately.

- **Operating Systems for all Deployments**

- All servers (DLS, Witness, Mirror) must be installed with Windows 2008 R2 / 2012(64-bit) Standard, Enterprise or Datacenter Edition

- SUSE Linux Enterprise Edition (Only for the Integrated Simplex Deployment)

with the latest service pack & security patches

All operating systems are supported in a 64 bit variant.

A standalone Linux deployment is currently possible only in an OpenScape Voice Deployment.

**NOTE:** Make sure that the free disk space requirements are met prior to any upgrade installations.

**IMPORTANT:** In Multi-Node installations, Network Interface card drivers for the virtual IP address of NLB should support dynamic changes of MAC address, therefore must support **Unicast**.

When you use the Unicast method, all cluster hosts share an identical unicast MAC address. Network Load Balancing overwrites the original MAC address of the cluster adapter with the unicast MAC address that is assigned to all the cluster hosts.

For further information, please refer to Section 4.3, "Configure the Network Load Balancer".

## 2.1.2 System Capacities

In general the maximum number of devices & mobile users that the OpenScope Deployment Service can manage is :

Scenario	Max.number of :	Maximum	Total Number (devices & mobile users)
Generic scenario for the <b>OpenScope Deployment Service</b>	Devices	100,000	200,000
	Mobile Users	100,000	

The following tables show the recommended maximum number of devices that can be controlled by a Single Node DLS :

- If used with Microsoft SQL Server 2008 R2 Express Edition

Scenario	Max.number of :	Maximum
HFA only	HFA Devices	50,000
SIP only	SIP Devices	40,000
DLS Mobility	Mobile Users	20,000
DLS Mobility	Log on /Log off of Mobile Users per hour (30K data)	20,000
DlsAPI	DlsAPI Sessions	100
Element Manager Synchronization	Element Managers	100

- If used with Microsoft SQL Server 2008 R2 Enterprise Edition

Scenario	Max.number of :	Maximum
HFA only	HFA Devices + SIP Devices + Mobile Users	200,000
SIP only		
DLS Mobility		
DLS Mobility	Log on /Log off of Mobile Users per hour (30K data)	20,000
DlsAPI	DlsAPI Sessions	100
Element Manager Synchronization	Element Managers	100

## Getting Started

### DLS Installation

- If used with Microsoft SQL Server 2008 R2 Enterprise or DataCenter Edition in a Multi-Node Deployment with two DLS nodes including synchronous database mirroring and automatic failover (Redundancy Scenario)

Scenario	Number of	Maximum
<b>Number of Nodes : 2</b>		
DLS Mobility	Log on /Log off of Mobile Users per hour (30K data)	20,000
<b>Number of Nodes : 3</b>		
DLS Mobility	Log on /Log off of Mobile Users per hour (30K data)	22,000
<b>Number of Nodes : 4</b>		
DLS Mobility	Log on /Log off of Mobile Users per hour (30K data)	24,000

**NOTE:** Uniform request arrivals within the 1 hour time window is assumed.  
For instance, 20000 /hour is equivalent to 330/min or even 5.5/sec.

**NOTE:** In the case of Multi-Node environments, actual system capacities may differ dependent on the server hardware. Higher figures might be possible with higher hardware performance.

The following table illustrates the Maximum Log-on Request rate for DLS Deployments:

Deployment	Logon requests/sec
Single Node DLS with internal MS SQL Express	5.5
Single Node DLS with remote Microsoft SQL Server 2008 R2 Enterprise or DataCenter	
2 DLS front-end nodes	6
2 Microsoft SQL Server 2008 R2 Enterprise or DataCenter (Synchronous Mirroring)	
4 DLS Front-end nodes	6.5
2 Microsoft SQL Server 2008 R2 Enterprise or DataCenter (Synchronous Mirroring)	

## 2.1.3 Licensing

For configuring base software, basic devices, mobile users, and PKI users, using DLS-Nodes in a cluster, database mirroring, the XML push functionality, or the location service (IP infrastructure), licenses must be purchased. All further DLS functions are free of cost.

You can use HiPath License Management to load the relevant licenses for this onto the license agent. The license agent can be specified when you install the DLS or later under **Administration > Server Licenses**.

The license agent and HiPath License Management are available for download on C-SWS.

Demo licenses are available for test installations and include:

- 1 Base Software License (30 days)
- 500 Basic Device Licenses ( = registered IP Devices) (30 days)
- 10 Mobile User Licenses (30 days)
- 10 PKI User Licenses (30 days)
- 1 Location Service License (30 days)
- 1 Node License (30 days)
- 1 Database Mirroring License (30 days)
- 1 XML Push License (30 days)
- 1 Activation Period License (30 days)

### License Installation on an OpenScape onboard

In the case of Linux DLS in Integrated Simplex where DLS licenses are loaded in the CLA of the OSV (internal) the following instructions should take place :

1. Copy the DLS license file into directory: `/opt/unisphere/srx3000/cla/import` .
2. Wait a few minutes until the license is activated.

**NOTE:** The license file will be copied into: `/opt/unisphere/srx3000/cla/license`.

3. Finally, check if the license file exists in: `/opt/unisphere/srx3000/cla/license`.

## Re-assigning Licenses

In the case of re-assigning licenses to DLS (another DLS or the same DLS on another/previous snapshot) the following instructions should take place :

1. Activate the same (.lic) license file on CLA you own.
2. Restart CLA service (On windows, you can use service manager)
3. On CLM synchronize with CLA
4. Restart DLS to contact CLA and load the available/required licenses (or wait for DLS to contact CLA - which happens approximately every 4 hours).

## 2.1.4 Installing DLS Software

Installation is performed as follows:

1. Download the DLS Software from the SWS-Server and unzip the downloaded file.
2. Click *setup.exe*.
3. Follow the user prompts in the installation shield.

The components required by the DLS, such as the database and web server, are installed if they are not already available on the system.

## 2.2 Starting the DLS for the First Time (Single Mode)

### 1. Starting the program

To start the DLS client, use the following URL syntax :

- **http://<DLS Server IP>:18080/DeploymentService/** (Windows DLS / http)
- **https://<DLS Server IP>:10443/DeploymentService/** (secure Windows DLS / https)
- **https://<DLS Server IP>/DeploymentService/** (Linux / OSV integrated)  
**[Server IP address]:18080/DeploymentService/** or  
**https://[Server IP address]:10443/DeploymentService/** (encrypted connection via Secure HTTP).

**NOTE:** For Integrated Simplex, when generating a Device Management connection, the connection port for Internal DLS is **443** and NOT 10443.

If the client is on the same (Windows) machine as DLS server:

- **http://localhost:18080/DeploymentService/** (default)
- NOTE:** <DLS Server IP> is the IP of the Windows server. For MultiNode configurations this is the virtual IP address in the cluster setup of the MultiNode configuration.

IPv6 requires either brackets, e.g. **http://[2000.1..100]:18080/DeploymentService/**  
 or as it is strongly recommended, the use of Host Names, DNS names, e.g.  
**http://MyDlsServer:18080/DeploymentService/**  
 or  
**http://MyDlsServer.myDomain.com:18080/DeploymentService/**

**NOTE:** DLS Security checklist recommends using secure access methods.

### 2. Logging on

Log on under the "admin" account with the password set during installation.

The default credentials for logging on to DLS are as follows:

Account : **admin**



## Getting Started

### *Starting the DLS for the First Time (Single Mode)*

Password : **Asd123!**.

**NOTE:** Notice the capital 'A' since passwords are case sensitive.

### 3. Modifying passwords/configuring accounts

You must create a separate account in the DLS for each DLS administrator. This is only possible with the default "admin" account. To do this, select **Administration > Account Management** in the menu bar. Click **Search**. If you switch to **Table** view, information is provided on all user IDs in a table overview. You can create a new account with **New**.

### 4. Location configuration

You can use the location criterion to define groups for terminals that share the same range of IP addresses and/or are connected to certain systems. Proceed as follows for basic configuration of the location:

Define the IP address range for the location in **Administration > Server Configuration > Location > "IP Ranges" Tab**.

Enter the IP addresses or host names of the systems (PBX/gateway or SIP server) for the location in **Administration > Server Configuration > Location > "Reg-Addresses" Tab**.

Additional configuration options are provided under **Administration > Server Configuration > Location**.

If you do not define a location, the "Default Location" is assigned for all location-specific parameters.

## 5. FTP configuration

To load IP phone software and other files to the devices, you will need an FTP server that provides the software images. The DLS supports the configuration and use of unlimited numbers of FTP servers. To enter the access data for an FTP server, go to **Administration > Server Configuration > Configure FTP Server**. Click the action button **New** to create a new FTP server.

In the **Server ID** field, enter a name for the FTP server you wish to use to transfer IP phone software.

In the **Hostname** field, enter the network name or the IP address of the FTP server.

In the field **SW Image Path**, the path to the directory containing the software image files is specified. This path is relative to the root directory of the FTP user ID used by the DLS. If the image files are contained directly in the root directory, enter "/" as your path.

In the **User** field, enter the user ID that the DLS should use to log on to the FTP server. In the **Password** field, enter the corresponding password.

You can use **Test** to check if the settings are correct using an FTP connection test. Apply your entries by clicking **Save**.

You can find a description of all fields and additional information in Section 6.3.4, "FTP Server Configuration".

## 6. HTTPS configuration (for OpenStage terminals)

OpenStage phones can alternatively use an HTTPS server for downloading files.

In the **HTTPS Server ID** field, enter a name for the HTTPS server you wish to use to transfer files.


In the **HTTPS Server URL** field, enter the network name or the IP address of the HTTPS server.

You can find a description of all fields and additional information in Section 6.3.5, "HTTPS Server Configuration".

## 7. Plug & Play/Autoconfiguration

DLS provides an option for preconfiguring IP devices to go into operation as soon as they are connected to the network. To do this, the DLS transfers the necessary configuration parameters to the IP device. In the case of IP Devices (IP phones, IP clients, IP Gateways), these parameters include, in particular, phone-number-dependent data for registration at the telephone system. The DLS must receive the system access data before it can incorporate the necessary data from the telephone system in the DLS database. Enter this under **Element Manager > Element Manager Configuration**.

Using profiles, you can create standard configurations for multiple devices. Device profiles are created from templates composed of a collection of settings from individual masks plus information about the devices, gatekeepers, and IP ranges supported by each profile. To perform configuration, select **Profile Management > Device Profile**.

If you want to create individual parameters for a particular device, you can create what is known as a virtual device. To do this, go to **IP Device Management > IP Device Configuration** and click **New**. The virtual device is assigned a placeholder beginning with "@" instead of the device ID and the IP address and E.164 number are set to 0. To assign a physical device, enter either an E.164 number or a real device ID (generally, the MAC address). The  icon beside the **Device Type** field indicates that the IP device is not yet registered at the DLS. Otherwise, configuration is the same as for a connected, registered device.

## Getting Started

### *Required Workpoint Firmware Installation*

**NOTE:** DLS records a device on the basis of the device ID/E.164 number value pair. In all configuration masks, this information is provided in the upper half of the user interface. Make sure that the data displayed here refers to the IP device you wish to configure so that the configuration data can be assigned to the correct IP device.

## 2.3 Required Workpoint Firmware Installation

If a device is connected for the first time when the DLS is running, it is automatically installed with the latest software available. Auto Deployment is used to upgrade devices that have already been connected. This requires a running FTP server and correct FTP configuration in the DLS (see Section 2.2, "FTP configuration"). The firmware image files must be saved in the directory that was specified as the **SW Image Path** during FTP configuration. They can also be divided into subdirectories.

### 2.3.1 Creating Software Images Automatically

Once the images are available on the FTP server, the DLS can register these automatically. The files are then assigned information, such as, the matching device type, the software type (SIP or HFA), and the software version. You can activate automatic registration by going to Software **Deployment > Manage Software Images** and then clicking **Autocreate...** Click **Start** in the ensuing dialog window.

## 2.3.2 Auto Deployment

Software deployment is implemented in accordance with previously defined rules as soon as a new terminal has been registered at the DLS. These rules are defined as follows:

1. Click **New** in the area **Software Deployment > Manage Rules**.
2. Select the device type in the **Device Type** field. Remember, only one rule is permitted per device type.
3. In the field **SW Type**, select the correct software type.
4. If you want the software deployment to be performed using the latest available software, activate **Deploy latest version**.

If you want the software version you have specified to be installed if the previously installed software is older, activate **Deploy software on an upgrade** and select the required firmware image in the field **SW Image**.

If you want the software version you have specified to be installed if the previously installed software is newer, activate **Deploy software on a downgrade** and select the required firmware image in the field **SW Image**.


## 2.3.3 Manual Deployment

1. Go to **Software Deployment > Workpoint Deployment**. In the upper half of the user interface, select the device where you would like to install the software. Click **Deploy**.
2. A window is displayed with a list of all available software. The default setting only allows you to select data that matches the currently-selected device type. Select the required software and click **Deploy**.
3. A dialog opens where you can define when deployment should take place. The check boxes **Enforce deployment if phone is busy** and **Overwrite deployment restrictions** should not be activated. Click **OK** to start deployment.

## 2.4 Frequently Used Functions

### 2.4.1 Scan IP Devices

The DLS records IP Devices data during scanning. The IP Devices do not have to be registered at the DLS for this.

1. Go to **IP Devices > IP Device Interaction > Scan IP Devices**. To activate a scan, you need a scanner object. If one has already been created, you can search for it by clicking **Search**. Otherwise, you must create a scanner object. To do so, click **New**. In the field **IP Scanner** in **"IP Ranges" Tab**, enter a name for the object, for example, **Scanner 1**. Next, enter the IP address range to be scanned. Click the  icon to do this. Enter appropriate values in the fields that are now active (**IP Address from** and **IP address to**). The **Port** field contains the default setting 8085; this is the default port for HTTP with IP phones. If you click **Save** now, the scanner object is ready for use.


**NOTE:** In the default setting, the DSL sends an ICMP ping to each IP address of the area to be scanned. If the network does not support ICMP pings, the check box **Allow ICMP-Pings** under **IP Devices > IP Device Interaction > Scan IP Devices > "Configuration" Tab** must be deactivated.

2. Click **Scan IP Devices** to activate scanning.

For more information on this subject, see Section 7.4.6, "Scan IP Devices".

### 2.4.2 Configuring Parameters: Example Key Layout

Configuring parameters for individual IP Devices is demonstrated below using the key layout. The function and text of a function key are to be configured. The example function in this case is the mobility key, which a user can use to log on to the telephone.


1. Go to **IP Devices > IP Phone Configuration > Keysets/Keylayout**. Click **Search** and then select the device in **Table** view. For more information on the settings in the **Keysets** tab, see Section 7.1.19.1, ""Keysets" Tab".
2. To create a new entry, go to the **Destinations** tab and click the  icon. A new row is displayed in the table.
3. As the key function **Mobility** is on the first level, select **"1st Level "** in the Level column.
4. In the **Key number** column, select the key to which the new function should be assigned. For more information, see Section 7.1.19.2, ""Destinations" Tab".
5. Select **"Mobility"** in the **Key function** column.
6. You can now enter a key label in the final column. This is only displayed with optiPoint 420 telephones that provide automatic key labeling.

Complete the action by pressing **Save**.

## 2.4.3 Jobs

All actions that can be performed on IP Devices using DLS, such as, configuring the key layout, are managed by the DLS as jobs.

Using job control, you can view information on individual jobs, and cancel, delete or reactivate jobs. To do so, go to **Job Coordination > Job Control**.

Essentially jobs can be started either immediately or later at a specific, predefined time. For example, in order to perform the actions described in Section 2.4.2, "Configuring Parameters: Example Key Layout" at a specific time, perform all the steps described except the final **Save** action. Then, in the top right field **Job ID**, enter an arbitrary job ID and click the  icon beside the field **Execution Time** to define when the action should be executed. Once this has been completed, activate the job with **Save**.

For further information on job coordination, see Section 14, "Job Coordination".

## 2.5 Using the Mobility Function

With the Mobility function, call numbers can be assigned to specific persons instead of devices. As well as their call number, users can transfer their personal settings, such as their key layout, from one device to another. To enable this, users must log on to a device that has been activated for this purpose with their call number and a password. As a result of logging on, the call number of the device and all other user data is replaced with the data of the new user. Following logoff, the device is reassigned its original number and user data.

In order to use the mobility function, a mobile user profile must be created. This profile is identified by a call number and password. There are two possibilities here: creation by adding or creation by migrating a basic profile. The second option is described below.

1. A prerequisite for using the mobility function is that the workpoint is activated for mobile user login. To do so, go to **IP Devices > IP Phone Configuration > SIP Mobility**, and in the **"SIP Mobility" Tab**, activate the option "Device available for Mobile User". Activation takes a few seconds and is carried out in the background.
2. Go to **Mobile Users > SIP Mobile User Interaction > SIP Mobile User**. If you now select "Mobility enabled Device" in the **User Type** field and then click **Search**, a list of all devices available for a mobile user is shown in **Table** view.
3. Click on **Migration to Mobile User**. After this, a dialog window appears.
4. Now, in the field **New Basic E.164**, enter a new basic call number for the end device currently selected, whose basic profile is to be migrated. This must exist on the OSV database. A new basic call number is necessary so that the end device remains ready to use. Further on, a virtual device must exist which provides the required Plug&Play data (see Section 15.6.2.2, "Creating Plug&Play Data"). As soon as the migration has succeeded, the previous basic call number is assigned to the mobile user. The call number of a mobile user is also referred to as mobility ID.
5. In the field **Basic Mobile User Profile**, a new profile for the basic user (the basic call number) must be entered. The mobile user adopts the data and the call number of the end device, these data automatically constituting his new individual profile. If you search for the mobile user after this action is completed, the mobile user's call number is displayed with a prefixed "@". This is a placeholder for his individual profile.

## Getting Started

### *Using the Mobility Function*

6. Start the migration via **Start Migration**.
7. Now, enter a new password for the mobile user in the field Mobile User Password (the default password is "000000"). Finally, confirm by clicking **Save**.

## **2.6 Security**

### **2.6.1 Certificates**

Certificates enable secure authentication between servers and clients. They can be implemented for the following server-client scenarios:

- WebServer Certificates for web-based Management (WBM of IP Phones/IP Gateways)
- Certificate for IEEE 802.1x/EAP-TLS authentication (IP Phones only)
- TLS-based Signaling Encryption (all device types)
- additional Server Applications for IP Phones (e.g. LDAPS)

DLS can be used for certificate administration.

For more information, see Section 16.13, "Security: Administering Certificates".



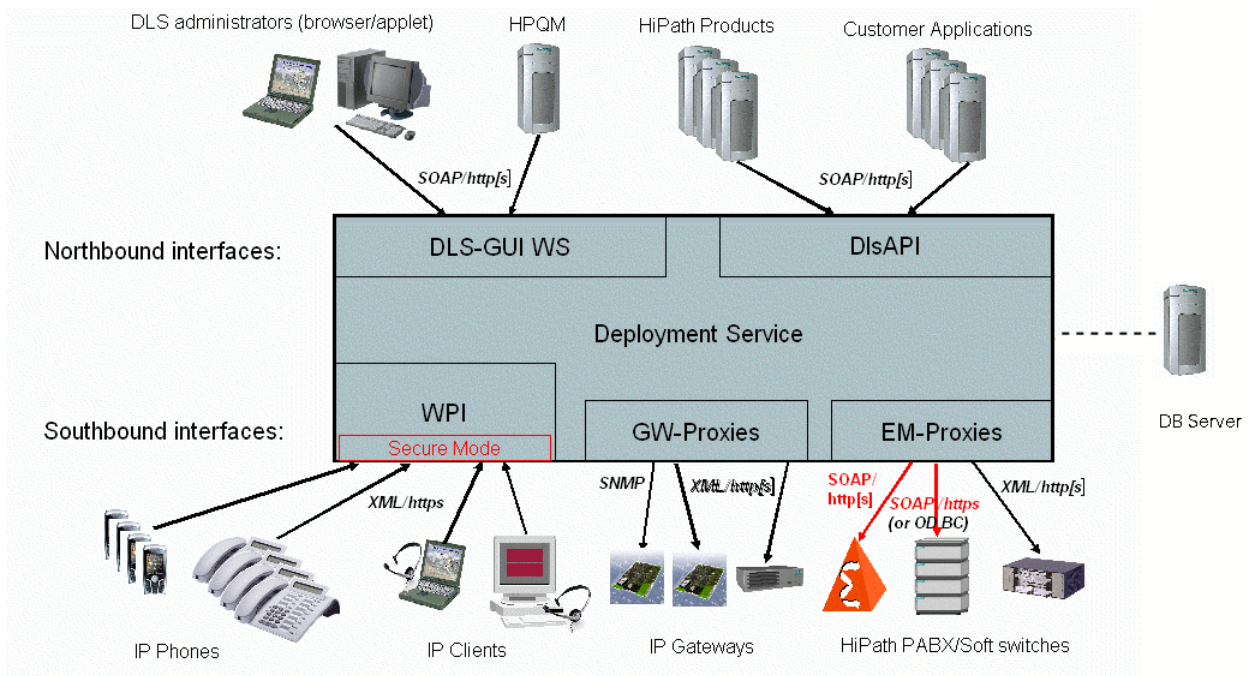


## 3 Concept and Features

### 3.1 Overview

The Deployment Service (DLS) is a HiPath Management application for administering workpoints (IP phones and IP client installations) in both HiPath and non-HiPath networks. The DLS database can be exported to a separate server (optional).

The following overview shows possible components that can work together with the DLS in a network.



**NOTE:** We recommend that you use a DHCP server in the DLS environment to

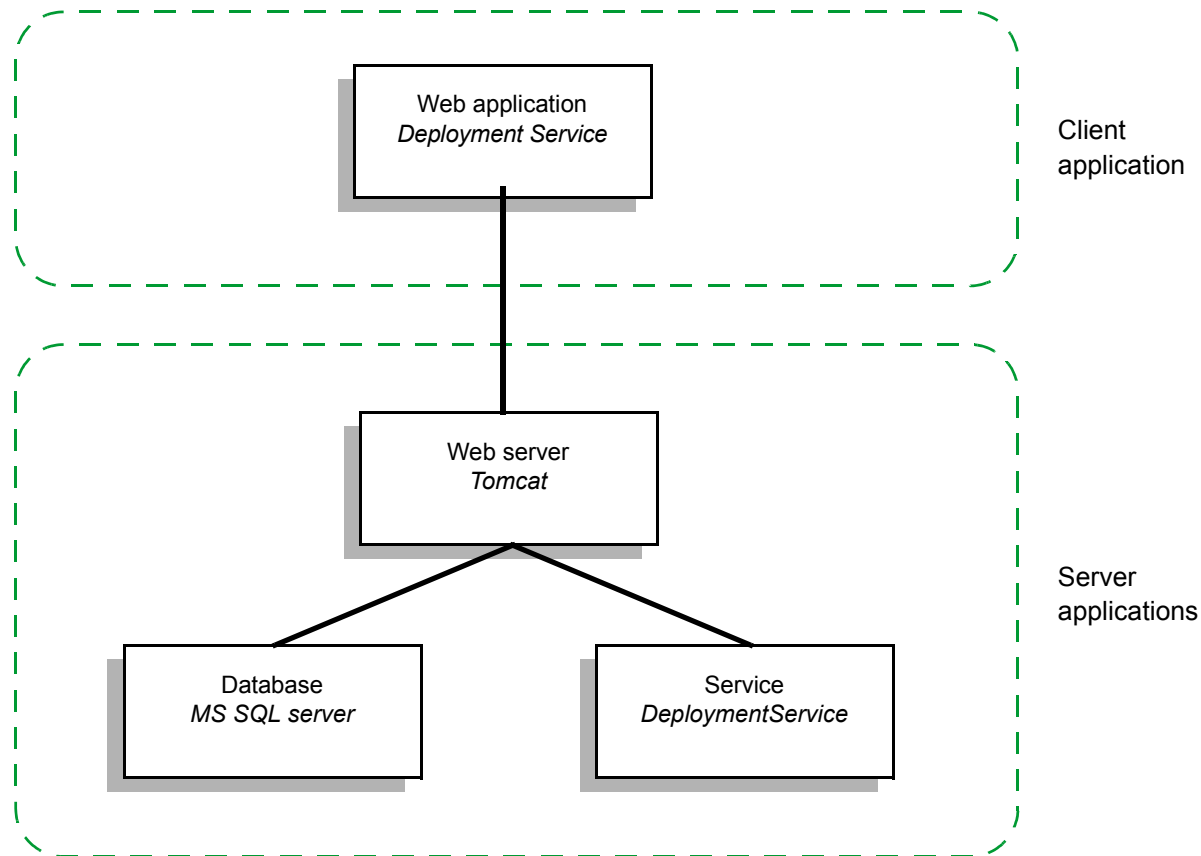
- support Plug&Play and
- ensure the authenticity of the DLS server.

Setting up the DHCP server should be one of the first tasks you perform, if possible, even before you install the workpoints.

Only one DLS server is allowed per DHCP domain at the customer facility.

### 3.2 Deployment Service Components

The following overview shows the components that are involved in operation of the Deployment Service on the server and client sides.



The client applications can be executed both on a client PC that can be reached in the IP network and on the server PC itself.

**NOTE:** When server and client are being used separately, ensure that the operating system times are synchronized.

### **3.3 Operating Fundamentals**

Before you can configure IP Devices with the DLS, you must first collate all IP Device data following initial DLS startup. This means that the IP Device configuration data first has to be incorporated in the DLS server database. The IP Devices do this by registering at the DLS and transmitting this data to the DLS.

The IP Devices data is read out by

- scanning the IP Devices with DLS, see Section 7.4.6, "Scan IP Devices"  
(recommended if there are already a number of IP Devices operating after the initial DLS startup)  
or by
- plugging the LAN connector or power supply into the IP Device  
(recommended if putting separate additional IP Devices into operation).

All actions performed with the DLS, for example, an IP Device software update or a modification of the configuration data, are logged in the DLS.

Job coordination helps you in this process. This allows you to see the status of each action and to determine the cause if there is an error. For more information, see Section 14, "Job Coordination".

## 3.4 Area of Application

**NOTE:** Please refer to the Release Notes or Sales Release for the appropriate version for information on current supports/restrictions.

You can administer the following IP Devices with the DLS:

IP Device	HFA Version	SIP Version
AC-Win 2Q IP	all versions	all versions
AC-Win MQ IP	all versions	all versions
HG1500		
HG3500		
HG3575		
HOOEE (HiPath OpenOffice EntryEdition)	all versions	all versions
HOOME (HiPath OpenOffice MediumEdition)	from V1.0	from V1.0
HP2K V2.0	from V2.0	from V2.0
optiClient 130	from V5.0 onwards	V2.0
Unify OpenScape Desktop Client	all versions	all versions
optiPoint 400 economy	from V5.0 onwards	-
optiPoint 400 standard	from V5.0 onwards	-
optiPoint 410 entry	from V5.0 onwards	from V4.1 onwards
optiPoint 410 economy	from V5.0 onwards	from V4.1 onwards
optiPoint 410 economy plus	from V5.0 onwards	from V4.1 onwards
optiPoint 410 standard	from V5.0 onwards	from V4.1 onwards
optiPoint 410 advance	from V5.0 onwards	from V4.1 onwards
optiPoint 420 economy	from V5.0 onwards	from V4.1 onwards
optiPoint 420 economy plus	from V5.0 onwards	from V4.1 onwards
optiPoint 420 standard	from V5.0 onwards	from V4.1 onwards
optiPoint 420 advance	from V5.0 onwards	from V4.1 onwards
optiPoint 600 office	all versions	-
optiPoint WL2 professional S	-	V1.0 (50/70)
optiPoint WL2 professional	V1.0 (50)	-
OpenStage 5	all versions	all versions
OpenStage 15	all versions	all versions
OpenStage 20E	all versions	all versions
OpenStage 20	all versions	all versions
OpenStage 40	all versions	all versions
OpenStage 60	all versions	all versions

Table 2 IP Devices / versions supported

IP Device	HFA Version	SIP Version
OpenStage 80	all versions	all versions
OpenScape Desk Phone IP 35 G	all versions	V3R3
OpenScape Desk Phone IP 35 G Eco	-	V3R3
Wave Evolution Lo	-	V3R3
OpenScape Desk Phone IP 55 G	all versions	V3R3

Table 2 IP Devices / versions supported

**NOTE:** On the following device types, the mobility function is available in SIP V6.0 or later: optiPoint 410 economy, optiPoint 410 economy plus, optiPoint 410 standard, optiPoint 410 advance, optiPoint 420 economy, optiPoint 420 economy plus, optiPoint 420 standard, optiPoint 420 advance.

On the following device types, the mobility function is available in all versions: OpenStage 20E, OpenStage 20, OpenStage 40, OpenStage 60, OpenStage 80.

## Concept and Features

### Area of Application

Administration is possible for various communication platforms. Both HiPath and non-HiPath platforms are supported:

Platform	P&P connection	Plug&Play	QDC connection	QDC	SRTP connection	SRTP
OpenOffice EE V1.0	standalone	no	no	no	no	no
OpenScape Office MX/LX	standalone	no	no	no	no	no
HiPath 3000/5000 <V5.0	standalone	no	no	no	no	no
HiPath 3000/5000 V5.0	HG1500	yes	HG1500	yes	no	no
HiPath 3000/5000 V6.0	HG1500	yes	HG1500	yes	HG1500	yes
HiPath 3000/5000 V7.0	HG1500	yes	HG1500	yes	HG1500	yes
HiPath 4000 V1.0	Assistant	yes	no	no	no	no
HiPath 4000 V2.0	Assistant	yes	HG3530/50/70/75	yes	no	no
HiPath 4000 V3.0	Assistant	yes	HG3530/50/70/75	yes	HG3530/50	yes
HiPath 4000 V4.0 / V5	Assistant	yes	HG3500/75	yes	HG3500/75	yes
HiPath 4000 V6 <sup>1</sup>	Assistant	yes	HG3500/75	yes	HG3500/75	yes
OpenScape Voice V3.1	SOAP I/F H8000	yes	no	no	no	no
OpenScape Voice V3.1	Assistant	yes	no	no	no	no
OpenScape Voice V4.0	SOAP I/F H8000	yes	no	no	no	no
OpenScape Voice V4.0	Assistant	yes	no	no	no	no
OpenScape Voice V4.1	Assistant	yes	no	no	no	no
HiPath DX V9	DX WebPro	yes	no	no	no	no
HiPath RG2700 V1.0	not relevant	no	RG2700	yes	no	no

Table 3 Communication platforms supported

1 Parameter settings for HiPath 4000 are also valid for HiPath 4000 V6, except as noted otherwise.

**NOTE:** If SIP IP phones are connected to the platforms HiPath 3000 and HiPath 4000, some features are not available. Please deactivate these at the IP Device, so that they are not visible resp. selectable by the user.

For more information on this, see Section 7.1.4.4, ""Availability" Tab".

## 3.5 Overview of Software and File Types

The following table displays how DLS maps file extensions to file types in standard configuration.

**NOTE:** The administrator can define the extensions as desired in the `file_map.xml` file found under

`DeploymentService\Tomcat5\webapps\DeploymentService\WEB-INF\classes.`

To return to the standard configuration copy and rename `default_file_map.xml` to `file_map.xml`.

Object type (name in the DLS)	File extension	Example	Contents
Software objects			
Software image	*.img	opera_bind.img	OpenStage firmware
Software image	*.app	optiPoint410std-V5.0.0.app	DLS-compatible optiPoint firmware ("new format")
Software image (old)	*.app	vxWorks.app	non-compatible optiPoint firmware ("old format")
Software image	*.exe	setup.exe	PC software installation
Firmware (Netboot)	*.fli	vxWorks.fli	Software image for transfer via Netboot server
		netboot308.fli	Netboot firmware
File objects			
LDAP Template	*.ldap	ldap_temp.ldap	LDAP template for optiPoint and OpenStage 40/60/80
	*.txt	ldap_temp.txt	LDAP template for OpenStage 40/60/80
Music on hold <sup>1</sup> <sub>2</sub>	*.moh	opti410.moh	Audio file in proprietary format for optiPoint and OpenStage.
	*.wav	music.wav	Audio file in WAV format for OpenStage. Recommended Specifications: Audio format: PCM Bitrate: 16 kB/sec Sampling rate: 8 kHz Quantization level: 16 bit
	*.mp3	music.mp3	Audio file in mp3 format for OpenStage 60/80.
	*.mid	music.mid	MIDI-Datei for OpenStage.

Table 4 Software and file types supported



## Concept and Features

### Overview of Software and File Types

Screen Saver <sup>2</sup>	*.jpg	screenPic1.jpg	Image file for the OpenStage 60/80 screensaver. Resolution: OpenStage 60: 320x240 OpenStage 80: 640x480
	*.png	screenPic1.png	
INCA Firmware	*.h86	inca.h86	INCA firmware for optiPoint 600 office
JAVA Midlet	*.jad	?	Java application
-	*.jar <sup>3</sup>	?	Java archive
Logo file <sup>2</sup>	?	?	
	*.jpg		Image file for a logo on OpenStage. Recommended specifications for OpenStage 60: Width: 240 px Height: 70 px Resolution: 70,55 dpi Recommended specifications for OpenStage 80: Width: 480 px Height: 148 px Resolution: 124,5 dpi
	*.png		
System and Ringtone <sup>1</sup> -	*.xml	?	System and ringing tones
	*.wav	?	
	*.mp3	?	
	*.mid	?	
	*.app	bootrom.app	Boot loader for the optiPoint 600 office
-	?	?	New/other applications
-	?	?	DSM firmware
-	*.csv	?	For ENB import and export
Dongle Keys	*.key	dongle.key	Dongle Keys for OpenStage Remote Test Tool

**Table 4** Software and file types supported

1 Only for SIP versions.

2 Ringtones and music on hold files must not exceed 1MB in size, while screensavers/logos should not be larger than 300kB.

3 Only in combination with a \*.jad file.

In the case of LDAP, an LDAP template is deployed to the phone in order for the phone to have access to a Corporate Directory. The template file is a simple and short list of attributes in the form of a text file. This file is employed by the phone in order to communicate with an LDAP server (usually located in DNS) and make a directory query (for example search for a company contact and find its telephone number). The template serves as a mapping between the phones and the LDAP servers items. The attributes contained in the template depend on the phone Corporate Directory menu items and the type of the LDAP (e.g. Microsoft 2008 R2 LDAP).

Please refer to the following example template of a Microsoft 2008 R2 LDAP server for OpenStages & DPIP's. It shall provide useful info not to mention the time saving process each time an LDAP Corporate directory is set up for the first time:

```
OpenStage LDAP TEMPLATE (v.1)
SEARCHBASE="CN=Users,DC=opera,DC=local"
ATTRIB01="sn"
ATTRIB02="givenName"
ATTRIB03="telephoneNumber"
ATTRIB04="otherTelephone"
ATTRIB05="mobile"
ATTRIB06="homePhone"
ATTRIB07="company"
ATTRIB08="department"
ATTRIB09="l"
ATTRIB10="title"
ATTRIB11="mail"
EOF
```

**NOTE:** The correct SEARCHBASE should be entered by the admin for each LDAP directory. It can be seen as a tree where the contact will be searched in the directory. The left column of numbered attributes depend on the phone menu. Their equivalents (the right column) depend on the type of the LDAP server.

## 3.6 The Most Important Features

### Security:

DLS provides extensive functions that guarantee a high level of security for VoIP communication. The following is an overview of the most important elements:

- PSS generation and distribution within an SRTP security domain (password identification).
- Import and distribution of individual certificates for secure authentication.  
See Section 16.13, "Security: Administering Certificates".
- Secure mode can be configured for mutual authentication between the workpoint and the DLS.  
Area: **IP Devices > IP Device Management > IP Device Configuration > "DLS Connectivity" Tab.**
- Minimum password length specification for user, administration, and screenlock passwords as well as for the SNMP community string.  
Area: **IP Devices > IP Phone Configuration > Security Settings > "Passwords" Tab.**
- Systematic deactivation of workpoint services (for example, WBM interface).  
Area: **IP Devices > IP Phone Configuration > Security Settings > "Enabled Services (NW Stack)" Tab.**

### Mobility for SIP IP phones:

DLS is a tool that supports the mobility feature on SIP IP phones and permits the configuration and administration of Mobile Users. You can use these options to migrate existing workpoints and implement mobile user standards.

For basic information on mobility in DLS, see Section 3.8, "DLS Mobility - General Information".

### **Software deployment:**

DLS is a user-friendly tool for upgrading software on all workpoints available or on a definable number of workpoints.

For more information, see Section 10, "Software Deployment".

### **Inventory data management:**

The DLS is the central inventory data manager. Inventory data describes the hardware configuration and capacity of the workpoint and includes information on items, such as, add-on devices or adapters available.

Inventory data can be exported over the CSV interface.

### **Plug&Play function:**

The DLS supports Plug&Play. Plug&Play means that the IP phone is ready to work as soon as it is plugged into the network - no user intervention required. Ideally, the workpoint automatically downloads all necessary software and configuration data and can be used after a few minutes.

For more information, see Section 15.6, "Workpoint Autoconfiguration (Plug&Play)".

### **User interface:**

The DLS has a Java-supported, Web-based user interface, and runs on an Internet browser.

### **Configuration Management:**

Configuration Management is the DLS's central tool for displaying and administering workpoint parameters in a HiPath environment. It can be operated either at the customer facility or by Service (via remote administration).

Workpoints can also be restarted with the Reset function.

### **Additional functions:**

The following basic functions are supported:

- **Import/Export:**  
This function is particularly useful during the initial configuration of the DLS, and can also be used in later operation for backing up configuration data.  
The Import/Export function is a user-friendly tool for transmitting a DLS configuration from one DLS installation to another.
- **Access protection:**  
Access to the DLS is password-protected.
- **Error and activity logging and trace function.**
- **Support for the configuration of QDC features for HG3550 V2.0, HG1500, RG2700, and HiPath HG3530/70/75 (over SNMP proxy).**  
The SNMP proxy is installed together with the DLS during startup and start automatically (runs as a local "DeploymentServiceSNMPProxy" service).

### **3.6.1 Capacity Limits and Restrictions**

- You can only use the plug&play functionality in DLS if there is a DHCP/DNS infrastructure in the network and this has been configured for working with the DLS (see Section 15.6, "Workpoint Autoconfiguration (Plug&Play)").
- You can only install one DLS per domain in the network.
- The DLS user interface is available in German and English.

### **3.6.2 Ports Used**

The Security Checklist Planning Guide documentation contains an overview of the ports used by the DLS.

### 3.7 Deployment Service supported deployments

DLS deployments
Single Node Local Database <sup>1</sup>
Single Node Remote DataBase <sup>2</sup>
Multi-Node remote DataBase in Synchronous Mirroring <sup>3</sup>
OpenScape Voice Entry (Integrated Simplex Deployment) <sup>4</sup>

*Table 5 DLS deployments*

- 1 DCMP service can optionally be installed as part of the DLS Server or in a separate server
- 2 DCMP service can optionally be installed as part of the DLS Server or in a separate server
- 3 DCMP service can optionally be installed as part of the DLS Server or in a separate server
- 4 DLS Service included as a component in the OpenScape Voice Entry Server

## 3.8 DLS Mobility - General Information

You can use the mobility feature in DLS to carry out the following functions (for definitions of these terms, see below):

- Create, refresh and delete Mobile Users
- Create user profiles for Mobile Users.
- Modify Mobile Profile parameters
- Migrate Basic Profiles to Mobile Profiles
- Log Mobile User on or off and monitor activities.
- Archive mobile users.

For additional information on operation, refer to Section 16.14, "Configuring and Administrating Mobility".

### 3.8.1 Mobility Definitions

The following terms are frequently used in connection with mobility in this document:

Term	Definition
Mobility Function	This function enables Mobile Users to log on to a Mobility Phone and operate it with their personal settings.
Mobility Phone	A phone that supports the Mobility Function. In other words, Mobile Users can log on to this kind of phone and operate it with their personal settings.
Mobility ID	Phone number of the Mobile User. The Mobility ID and password are used for authentication when logging on to a Mobility Phone.
Basic User	Phone number and user data of a Mobility Phone if there are no mobile users logged on.
Mobile User	A user who can log on to a random Mobility Phone and operate it with his or her personal settings.
User Data Profile	This is a configurable user data (sub)set, depending on the scope of the associated templates. The parameters are not device-specific.
Device Profile	User-independent telephone parameters. These parameters are entirely device-specific (dependent on the telephone used).
Mobile User Archive	Can be created to save mobile user data.

Table 6

*Definition of mobility terms*

### 3.8.2 Using Mobility

Mobility grants appropriately configured users access to their individual settings on all telephones that support the mobility function. Transferable parameters include user-specific configurations (for example, authorizations) and user-defined settings (for example, language settings).

To use this function, just press the "Mobility" function key on a Mobility Phone (or use the corresponding telephone menu), and log on as a Mobile User with your call number (Mobility ID) and user password.


After logging on, Mobile Users can make and receive calls via Mobility Phones and can always be reached at their personal number. Outgoing calls are also made using these numbers.

Mobile Users can log off a phone either locally at the phone or remotely via Web-based Management (WBM) or DLS ("forced logoff").



### 3.8.3 Mobility ID

These two call numbers are displayed as **E.164** and **Basic E.164** in the area **IP Devices > IP Phone Configuration** in the DLS client.

E.164:	3240	
Basic E.164:	5619232109	

**E.164** is the Mobile User's call number (Mobility ID) and **Basic E.164** is the Mobility Phone call number when no Mobile Users are currently logged on.

The smiley to the right of the **E.164** field indicates that a Mobile User is currently logged on.

### 3.8.4 Configuring Mobility

The Mobility Function can only be configured for a phone via DLS. To configure this function, the telephone must be released by activating the Mobility function.

**NOTE:** The "Mobility" function can only be assigned to a key on the actual telephone; keys on connected optiPoint key modules or optiPoint self labeling key modules cannot be used.

A Mobile User can be created in two ways:

- **Creating a Mobile User by adding a number**

A new Mobile User is generated by assigning a new call number together with a password. The remaining parameters are assigned to the Mobile User from a User Data Profile. When the mobile user is logged on, only device-specific parameters are retained in the telephone.

- **Creating a Mobile User by migrating a number**

The telephone's existing call number becomes the Mobility ID and the telephone is assigned a new basic number. The mobile user accepts the telephone's parameters. Use this option, for example, if you want to change an existing workstation into a mobile workstation. You can then continue to use the existing number to contact the user at the mobile workstation, providing he or she is logged on to a Mobility Phone.

For more information on configuring the Mobility Function for SIP IP phones, see Section 16.14, "Configuring and Administrating Mobility".

### 3.8.5 Profile Concept in DLS

The following table illustrates the Profile assignment sequence :

Priority	Profile Data Deployment	Definition
1	Standard Profiles	Profiles generated under Main Menu > Administration > Server Configuration > P&P Settings > "Standard Profile" Tab
2	Parent Location Default	This refers to a Profile that points to a Location that has been configured under Administration > Server Configuration > Location as a Parent one.
3	Child Location Default	This refers to a Profile that points to a Location that has been configured under Administration > Server Configuration > Location to be a Child Location.
4	IP Device Configuration Profile	This refers to an explicit definition of a Profile under IP Devices> IP Device Management >IP Device Configuration > "Profile" Tab.

#### 3.8.5.1 Difference between Device Profile and User Data Profile

The following examples of parameters and the profiles they belong to highlight the difference between Device Profiles and User Data Profiles.

The parameters in the example are displayed in the following DLS client area:

**IP Devices > IP Phone Configuration > Miscellaneous > "Country & Language" Tab**

Parameter	Profile	Definition
<b>IP address</b>	Device Profile	The IP address is connected to a physical phone, regardless of who is logged on to the phone. This makes it part of the Device Profile.
<b>Layout</b>	User Data Profile	The Mobile User should be able to use a telephone's key layout with any Mobility Phone. This makes it part of the User Data Profile.
<b>QoS parameters</b>	Device Profile	QoS parameters are location-specific and therefore part of the Device Profile.
<b>Language</b>	User Data Profile	Once a language is configured on a phone, it should be available to a Mobile User on every Mobility Phone. This makes it part of the User Data Profile.

Table 7                      Sample parameters with profile classification

A User Data Profile can be either a Basic Profile or a Mobile Profile, Section 3.8.5.2, "Parameter Configuration Availability".

#### 3.8.5.2 Parameter Configuration Availability

Device Profile parameters can always be modified in the **IP Phone Configuration** area. Device Profile parameters are not Mobile User data. As a result, they are not available in the **SIP Mobile User Configuration** area.

Different configuration options are available in the DLS client depending on whether the Mobility Function is configured on a phone and, if so, whether a Mobile User is logged on.

This section only deals with the Basic Profile and Mobile Profile, as the Device Profile is always available in the **IP Phone Configuration** area and never in the **SIP Mobile User Configuration** area.

Status	Parameters under: IP Phone Configuration	Parameters under: SIP Mobile User Configuration
No Mobility Phone	All profiles can be modified	Not available
Mobility Phone, Mobile User is not logged on	Basic Profile: can be modified Mobile Profile: not available	Basic Profile: can be modified Mobile Profile: can be modified. Both profiles are visible as two objects in the DLS.
Mobility Phone, Mobile User is logged on	Basic Profile: not available Mobile Profile: read-only.	Basic Profile: can be modified (changes transferred to phone after Mobile User logoff). Mobile Profile: can be modified

Table 8 Parameter availability in DLS

Please note the different parameter displays in the **IP Phone Configuration** and **SIP Mobile User Configuration** areas:

- In the **IP Phone Configuration** area, a *single* object (displayed in **Object** view or as a row in **Table** view) always corresponds to a physical SIP IP phone (mobility-enabled or standard).
- In the **SIP Mobile User Configuration** area, two different object types exist:
  - an object for the Mobility Phone and
  - an object for the Mobile User.

## 3.9 DLS System Monitoring

DLS System Monitoring delivers information on the system, especially alarms and fault messages automatically from the system components as base for maintenance actions.

### 3.9.1 System Monitoring Tools-DLS RapidStat

DLS RapidStat is the Monitoring feature tool that is responsible for running diagnostic checks on a DLS machine. A separate tool, **traceDls**, is responsible for collecting all log files, traces and any other files useful for troubleshooting, as well as archiving and placing them to an easily accessible directory for retrieval.

The **DLS RapidStat** is a diagnostic and information collection tool that helps the DLS administrator both prepare a system for a DLS installation / upgrade and helps him troubleshoot a possible problem. The name of the tool is taken from the OSV equivalent. DLS RapidStat is as similar to the OSV as possible in order to help an OpenScape Voice user familiarize himself with the tool quicker.

**NOTE:** While OSV RapidStat runs only on Linux, **DLS RapidStat** runs on Windows only. In future versions it shall run on both Windows & Linux, depending on the deployment.

RapidStat provides a means to collect system health status information before and after scheduled maintenance activities such as the following:

- Generic software upgrades
- patching
- system maintenance releases
- hardware repair
- log file retrieval for debugging & repair
- other activities as determined by administrators and/or local operating procedures.

This tool eliminates the need to manually perform the system interrogation required to verify system health, which reduces human error and escalations. As a result, maintenance activities are reduced and potential service impacts (outages) can be avoided.

In the case of an existing problem with the DLS service, RapidStat can help in two ways:

- Let the administrator diagnose and fix the problem himself, or
- Provide the support team with valuable information about the system and help identify possible causes

#### **3.9.1.1 RapidStat Functions**

RapidStat operates the following functions :

##### **1. Information Gathering**

RapidStat gathers non-DLS specific information about the target system :

- Hardware Information
  - Machine brand /model
  - CPU type
  - CPU clock speed
  - CPU load (per core)
  - Total Memory
  - Page file size
  - Paged memory
  - Storage
  - Physical disks
  - Total space
  - Used space
  - Network interfaces
- Operating system
- Operating system version
- Operating system bit length
- Date & Time
- .NET framework & version (if on Windows)
- Java version
- Antivirus check

Check for the presence of an Antivirus software. If an Antivirus exists, DLS RapidStat displays the product name of the software.

## **2. DLS specific checks**

DLS RapidStat runs various checks that help the administrator of the system verify that the service is running smoothly without any problems. This can be run periodically in order to identify possible problems either ahead of time or soon after a failure has occurred :

- Installation
- Version
- Deployment type
  - Single-Node
  - Multi-Node
  - Custom Database
- Service Status
  - Service Registration
  - Running / stopped
  - User under which the service is running
  - Check & Report of any services that are not needed or cannot be identified. Report with a warning if unexpected processes are found running
- Process check
  - Check & Report of any processes that are not needed or cannot be identified. Report with a warning if unexpected processes are found running
- Database status
  - Running / stopped
  - Connection to Database
  - User under which the service is running
  - Availability of DlsDB
- If RapidStat runs as part of a DLS upgrade (during installer startup) , check if the upgrade that is about to happen can proceed (upgrade path check) & verify if all migration scripts are available.
- SNMP Proxy
  - Check if 'DeploymentServiceSNMPPProxy' service is running. Report with an error if no access is possible.

## Concept and Features

### DLS System Monitoring

## 3. DLS Server upgrade preparation

In the case that a DLS server must be upgraded, running DLS RapidStat before the upgrade can provide a good indication whether the system is in good health to proceed with the upgrade. This can prevent a failed upgrade. Due to the uncontrolled nature of the underlying operating system (Windows Server) as well as the coexistence of the DLS software with other software on the same machine, the environment can often be modified in an unexpected manner. DLS RapidStat will help ensure that the software environment is as expected.

### 3.9.1.2 Using the DLS RapidStat

DLS RapidStat is a Windows application command-line tool, written in Java & executed either as a stand-alone or through the NSIS Installer. It is installed along with the installation of DLS without any manual actions.

Go to C:<Program Files>\DeploymentService\tools and run DlsRapidStat.exe.

Upon executing, DLS RapidStat performs a series of validation actions & checklists and reports them using the OSV RapidStat format. The beginning of the report will contain various operating system, hardware and software information such as OS type/versions, CPU, memory, storage etc and will then continue with the DLS specific checks, one by one. At the end of the execution it should produce a summary with any found warnings or errors.

The results shall be presented either on the command shell

```
C:\Program Files\DeploymentService\tools\DlsRapidStat.exe
DLS RapidStat U7 R1 Build 314.00
Start Time: Feb 5, 2013 13:02:53

===== System Information =====
Hardware Platform: VMware, Inc. VMware Virtual Platform
CPU: Intel(R) Xeon(R) CPU X5650 @ 2.67GHz
Number of CPUs: 2
Number of CPU cores: 1
CPU Clock Speed: 2666 MHz
System Memory (RAM): 4 GB
Computer Name: DLSU6WIN
Operating System: Microsoft Windows Server 2008 Standard
Service Pack: 2
System Type: 64-bit
Current User: DLSU6WIN\Administrator
Total System Memory: 4094 MB
Free System Memory: 2508 MB
Total Swap Memory: 9364 MB
Used Swap Memory: 1583 MB

===== Logical Disk Drives =====
Drive    Total Size  Used Space  Free Space
-----
C:       40.0 GB   29.2 GB    10.8 GB

===== Network Interfaces =====
Network Interface Name    Speed    Status
-----
Local Area Connection      1000 Mb/s Up

===== .NET Framework =====
.NET Framework Name
-----
.NET Framework 2.0
.NET Framework 3.0
.NET Framework 3.5

===== Antivirus Products =====
Product Name
-----
No antivirus products found.

===== OpenScale Deployment Service (DLS) =====
DLS Installed: Yes
Version: U7 R1 2.0 Build (314.00)
Load Number: 7100-314.00
Deployment Type: Single Node with Local Database
Installation Path: C:\Program Files\DeploymentService
Data Path: C:\Program Files\DeploymentService\Data
Feature SNMP Proxy: Yes
Primary Database Server: localhost
Mirror Database Server: N/A
SQL Server Instance: DLS
Database Name: DLSdb
Java Vendor: IBM Corporation
Java Version: 1.6.0
Java Architecture: 64-bit

===== DLS Validation Checks =====
Check for unverified services running.....: N/A
Check for unverified processes running.....: N/A
Check if "DeploymentService" service is installed.....: PASS
Check if "DeploymentServiceSNMPProxy" service is installed...: PASS
Check if "DeploymentService" service is running.....: PASS
Check if "DeploymentServiceSNMPProxy" service is running....: PASS
Check if current user has SQL Server access.....: PASS
Check if current user has access to "DLSdb" database.....: PASS

Total Warnings: 0
Total Errors: 0
End Time: Feb 5, 2013 13:02:56
Press ENTER to continue...
```

or in a text area window along with two buttons :



- Copy to Clipboard : Copy the text result into the clipboard
- Exit :Close RapidStat & either return to the installer or to the operating system ,depending on how RapidStat was launched

On every run, RapidStat will save a report and an operational log file in the current user's "%LOCALAPPDATA%\DeploymentService\RapidStat" directory. The file name will be unique by containing the date and time of the execution.

For instance :

C:\Users\dlsuser\AppData\Local\DeploymentService\RapidStat\dls.20120919.160910.rapidstat.report.txt

or

C:\Users\dlsuser\AppData\Local\DeploymentService\RapidStat\dls.20120919.160910.rapidstat.log.txt.





## 4 Installation and Initial Configuration

There are multiple variants for DLS installation and operation:

- **Single node operation with local database:** DLS server and DLS database are located on the same machine.
- **Single node operation with remote database:** The DLS database is located on another machine.
- **Multi node operation (cluster):** The DLS server is running in a distributed way on multiple machines. The DLS database is hosted on another machine or on one of the DLS node machines.

In addition, if a remote database is used, database mirroring is possible (mode for enhanced data security / high availability). Mirroring can be carried out in a synchronous manner, that is, main database and mirror database are refreshed simultaneously, or in an asynchronous manner. With asynchronous mirroring, the mirror database is updated after the transaction on the main database has occurred.

The following chapters are arranged in order of their relevance for a particular DLS installation variant.

Variant	Chapter
Single Node with local database	<ul style="list-style-type: none"> <li>• Section 4.5.1, "Single Node Operation with Local Database"</li> </ul>
Single Node with remote database	<ul style="list-style-type: none"> <li>• Section 4.2, "Install MS SQL Server for Remote Database"</li> <li>• Section 4.5.2, "Single / Multi Node Operation with Remote or Custom Specific Database"</li> </ul>
Multi node / cluster	<ul style="list-style-type: none"> <li>• Section 4.1.5, "Infrastructure For Cluster Operation"</li> <li>• Section 4.2, "Install MS SQL Server for Remote Database"</li> <li>• Section 4.3, "Configure the Network Load Balancer"</li> <li>• Section 4.5.3, "Multi Node Operation"</li> </ul>
Enhanced database security / High availability through database mirroring	<ul style="list-style-type: none"> <li>• Section 4.6, "SQL Database Mirroring Setup"</li> </ul>

### 4.1 Requirements

#### 4.1.1 General Server Requirements

For information on the hardware needed, see Section 2.1.1, "System Requirements".

The DLS server runs on the German or English version of one of the following operating systems:

- Windows Server 2008 Enterprise Edition (64bit)
- Windows Server 2008 Standard (64bit)
- Windows Server 2008 R2 Standard & Enterprise Edition (64bit)
- Windows Server 2012 Standard & Enterprise Edition (64bit)

## Installation and Initial Configuration

### Requirements

with the latest service pack & security patches

**NOTE:** For larger-scale installations, particularly for cluster operation, a server operating system is required.

**NOTE:** If you plan to install SQL Express Edition, please ensure that the database directory is not located in a partition with the 'compressed' property.

**NOTE:** In order to avoid high CPU usage issues, proceed with the following :

1. Click on **Control Panel > Power Options> Change Advance Power Settings**.
2. Switch to " **High Performance**".

This is applicable only to 64-bit Operating System variants post Windows 2008.

The DLS client runs as Java applet in a web browser. Required are:

- Java PlugIn
- Any browser that supports Java plug-in, e.g. Internet Explorer, Firefox, Chrome, Opera, Safari

**NOTE:** If a 64-bit browser is installed in the client then a 64-bit JRE should be also installed.

### 4.1.2 General Client PC Requirements

The PC on which the DLS client runs should provide the following hardware features:

- Space on hard disk: no special requirements.
- CPU Pentium IV with at least 1.4 GHz clock speed.
- At least 512 MB RAM.
- Network device with 10 Mbit, 100 Mbit or more, or modem.
- Screen resolution: at least 1024 × 768 pixels with at least 16-bit color depth.

### 4.1.3 Personnel Requirements

#### Remote Service Engineer (RSE):

- Sound knowledge of LAN technology and IP networks.
- Sound knowledge of the IP Devices supported by the DLS (see Section 3.4).
- For multi node (cluster): sound knowledge of Microsoft operating systems and MS SQL Server 2008/2008 R2/2012.

#### Field Service Engineer (FSE)

- Sound knowledge of the IP Devices supported by the DLS (see Section 3.4).
- Basic knowledge of LAN technology, IP networks, and the operating systems supported.
- For multi node (cluster): sound knowledge of Microsoft operating systems and MS SQL Server 2008/2008 R2/2012.

### 4.1.4 DLS Availability

For more information on DLS licensing resp. specific DLS functionalities, see Section 2.1.3, "Licensing".

For service, additional installation options are available:

- For DLS installation at the customer facility (for example, HiPath SPA Server), the software can be acquired from BE1 using RCC.
- Installation in service can take place as follows:
  - In the international market, you can also use the BE1 for installation on the service laptop.

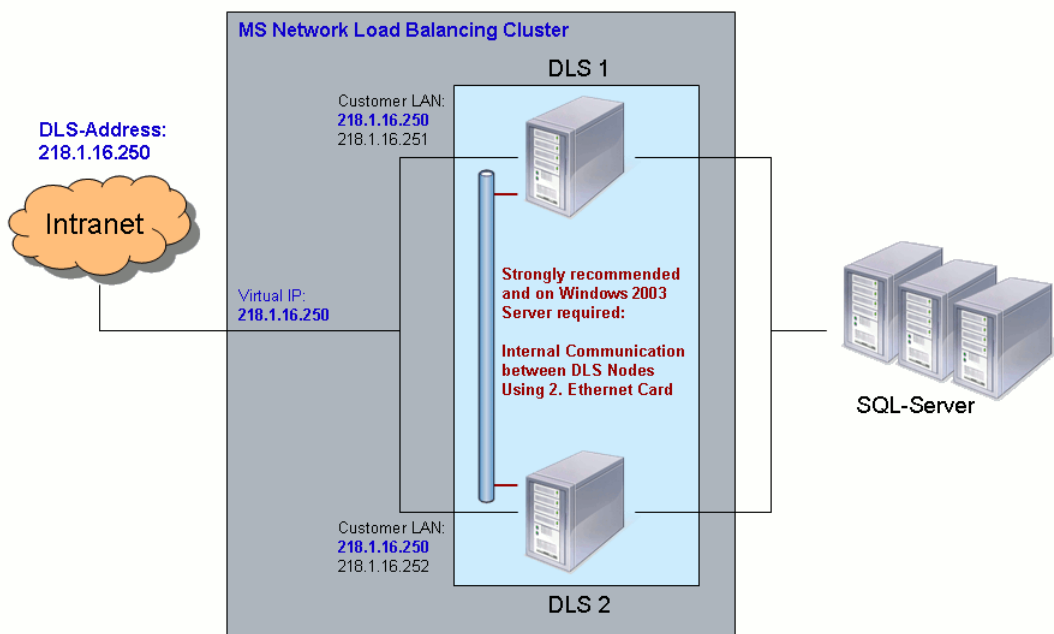
#### 4.1.5 Infrastructure For Cluster Operation

A DLS cluster consists of up to 4 DLS nodes and up to 3 SQL servers. DLS nodes and SQL server may share common hardware, but the use of separate machines is recommended. From the end devices' point of view, the DLS nodes constitute a cluster with one virtual IP address, which is provided by the Windows Network Load Balancing Manager. The Network Load Balancer runs as a service on all DLS nodes and forwards the requests to the DLS nodes. For communication between the individual DLS nodes, all DLS nodes need a secondary IP address, and thus an additional network card.

**NOTE:** The nodes administered by the NLB must not be configured by DHCP.

**NOTE:** The network cards for SQL communication (internal network) at each node should not have a default gateway configured.

The DLS database operates as a remote database on one or more machines, depending on whether database mirroring is desired or not. However, the DLS will connect to only one machine. It is also possible to operate both DLS server and database server on one and the same machine.



## 4.2 Install MS SQL Server for Remote Database

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/How\\_to\\_install\\_Microsoft\\_SQL\\_Server\\_for\\_Remote\\_Database](http://wiki.unify.com/wiki/How_to_install_Microsoft_SQL_Server_for_Remote_Database)

### 4.2.1 How to install Microsoft SQL Server

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/How\\_to\\_install\\_Microsoft\\_SQL\\_Server](http://wiki.unify.com/wiki/How_to_install_Microsoft_SQL_Server)

### 4.2.2 Upgrading SQL Server

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/How\\_to\\_upgrade\\_SQL\\_Server](http://wiki.unify.com/wiki/How_to_upgrade_SQL_Server)

### 4.2.3 SQL Native Client - When a Remote Database is Used

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/How\\_to\\_configure\\_SQL\\_Native\\_Client](http://wiki.unify.com/wiki/How_to_configure_SQL_Native_Client)

#### 4.2.4 Change Service Password

If a password change should be necessary, go to

```
<DLS installation directory>\Tomcat5\webapps\DeploymentService\  
database
```

and execute `dlsSetServicePW.bat <new password>`.

After this, change the password for the service 'DeploymentService' on each DLS node.

#### 4.3 Configure the Network Load Balancer

All relevant info on the Network Load Balancer configuration can be found at the **How to** overview of **Unify Experts Wiki Portal** :

[http://wiki.unify.com/wiki/How\\_to\\_configure\\_the\\_Network\\_Load\\_Balancer](http://wiki.unify.com/wiki/How_to_configure_the_Network_Load_Balancer)

under the **Network Load Balancer (NLB)** tab.

## 4.4 Set Up DCMP

To set up the DCMP (DLS Contact-Me Proxy), proceed with the following steps:

- Install DCMP
- Configure DCMP
- Configure DLS for DCMP
- Configure Phone for DCMP
- Test DCMP

### 4.4.1 Install DCMP

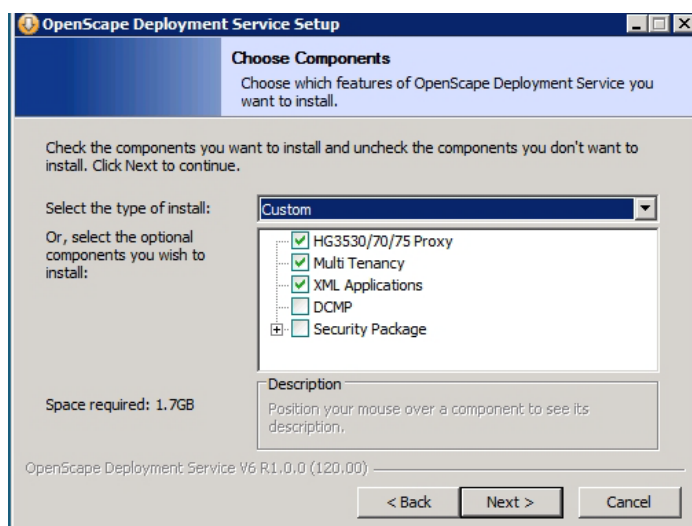
First, ensure that the DCMP is not installed already. For this purpose, navigate to **http://<IP Address>:18080/dcmp** with a web browser. If you receive an error message, you must install the DCMP. The DCMP can be installed on the DLS machine as well as on a different machine.

In the installation medium, navigate to the directory **dcmp** and start the **dcmp-installer** with a double click.

**IMPORTANT:** Do not execute the “**dcmp-installer.exe**” command on a machine already running DLS. The DCMP installer itself also prompts for this restriction and should be avoided.

#### 4.4.1.1 Installation on the DLS Machine

If you wish to install both DCMP and DLS on the same machine, choose the option **DCMP**.



Follow the installation instructions.

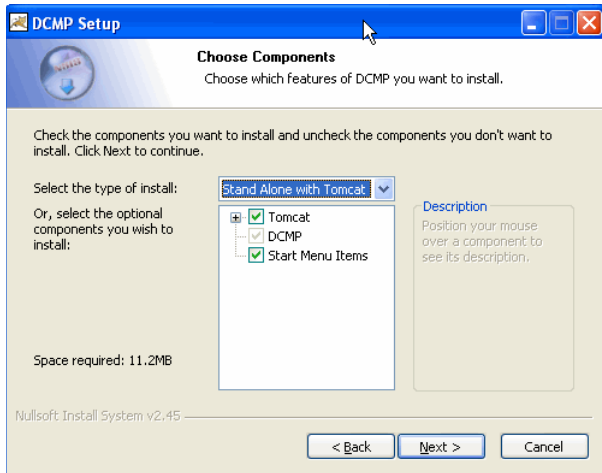


## Installation and Initial Configuration

### Set Up DCMP

#### 4.4.1.2 Installation on a Different Machine

For installation on a different machine, select the option **DCMP** and **Service Startup**.

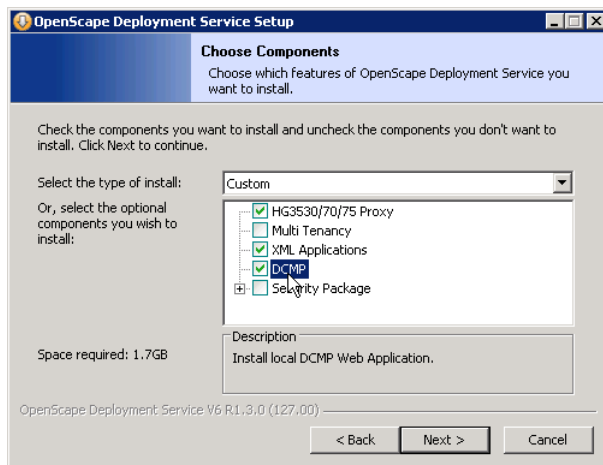


During the installation, you will be asked for the password for the DCMP.

#### 4.4.1.3 Installation on a Multi Node Environment

In the case of a Multi Node environment with 4 nodes ( maximum supported ,see Section 4.1.5, "Infrastructure For Cluster Operation" )and no DCMP in use,proceed with the following steps:

1. Start the DLS installer over Node 1. DCMP can be added as an option. So when offered to install DCMP select it from the list. This will update the installation configuration file. Run a DLS “upgrade” installation to the same DLS load as already installed on a system just so that you can be offered for the additional modules to be installed.



2. Proceed with a "fake" DLS upgrade over Node 2,3 and 4 in order for the updated installation configuration file located over Node 1 gets acknowledged and as such DCMP is transparently installed over the remaining nodes.

**NOTE:** You have to re-run the installer on the second (or further) node(s) for DCMP to be installed, since the installer of the remaining nodes will have to trigger the updated installation configuration file in the common data of the environment (which is resident on the first node), and as such transparently install DCMP over the remaining nodes.

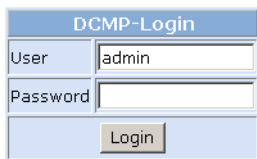
3. Navigate to **http://<IP Address>:18080/dcmp** to login at the DCMP server. Proceed with the DCMP clustering configuration if required (see Section 4.4.2, "Configure DCMP"), and connect to the DCMP via the virtual IP address of the DLS clustering. Proceed with the DCMP clustering configuration if required (and of course within the DLS UI accordingly).

When the DCMP server is ready, DLS can be configured for DCMP operation.

4. In **Administration > Workpoint Interface Configuration > "DCMP" Tab**, click the **Toggle DCMP** button to activate the DCMP. A message is displayed that the DCMP server contact is successful. (see Section 4.4.3, "Configure DLS for DCMP")
5. To verify that the job is running, look in **Job Coordination > Job Control** and click on the **Search** button. Then click on the specific entry and select the "Object" view. In the **"Basic Data" Tab** you can see that the job will be handled via DCMP.
6. Navigate to **IP Devices > IP Device Management > IP Device Configuration > "DCMP" Tab**. The **DCMP active** switch should be checked, and the settings should be as set for this IP address in **Administration > Workpoint Interface Configuration > "DCMP" Tab**.

## 4.4.2 Configure DCMP

1. With a web browser, navigate to **http://<IP Address>:18080/dcmp** to login at the DCMP server. The user name is **admin**. The password is identical with the admin password for the DLS if the DCMP has been installed along with the DLS. If the DCMP has been installed subsequently, the default password is **Asd123!**. This should be changed after installation. If the DCMP has been installed on a dedicated server, enter the password you had defined during installation.



DCMP-Login	
User	admin
Password	
Login	

## Installation and Initial Configuration

### Set Up DCMP

2. After login, the initial configuration screen opens up. If desired, you can change the password with **Change admin password** and **Re-type admin password**.

In the **Allowed remote addresses** field, you enter the addresses of the DLS servers as a comma-separated list, or as a single address, if there is only one DLS server. If the DCMP is installed on the DLS machine, the value is 127.0.0.1.

If **Require DLS to authenticate** is checked, the DLS must authenticate to communicate with the DCMP. For this option, a **DLS password** must be entered; the DLS must present this password to authenticate with the DCMP.

The screenshot shows the DCMP Configuration screen. On the left is a navigation menu with links: Configuration, Cluster Setup, List Entries, and Logout. The main area is titled 'Configuration' and contains several fields: 'Change admin password:' with an empty text box, 'Re-type admin password:' with an empty text box, 'Contact Me Timeout (min.):' with a value of 60, 'Allowed remote addresses:' with a value of 127.0.0.1, 'Use persistent mode:' with a checked checkbox, and 'Require DLS to authenticate:' with a checked checkbox. Below these is a 'DLS password' field with an empty text box. At the bottom are 'Save' and 'Reset' buttons.

3. In the **Cluster Setup** screen, you can check or configure the appropriate addresses and ports for one or more DLS machines. If a DLS cluster is to be used, check **Use cluster mode**.

The **Local Host** field contains the IP address of the DCMP server.

When operating the DLS as a cluster, the IP addresses of each machine in the cluster must be entered in **Host 1 ... 4**.

The screenshot shows the DCMP Cluster Setup screen. On the left is a navigation menu with links: Configuration, Cluster Setup, List Entries, and Logout. The main area is titled 'Cluster Setup' and contains a 'Use cluster mode' checkbox which is unchecked. Below this are fields for 'Local Host' (10.80.16.14) and '34034'. There are four rows for 'Host 1' through 'Host 4', each with an empty IP address field and a '34034' port field. At the bottom are 'Save' and 'Reset' buttons.

In the **List Entries** screen, you can view all Contact-Me messages from the DLS.

### 4.4.3 Configure DLS for DCMP

When the DCMP server is ready, the DLS can be configured for DCMP operation.

1. In **Administration > Workpoint Interface Configuration > "DCMP" Tab**, click the **Toggle DCMP** button to activate the DCMP.
2. If the DCMP is located on the DLS machine, the IP address of the DCMP server will be shown in **DLS-DCMP Host**; otherwise, it must be entered here.
3. If you have activated the **Require DLS to authenticate** option in the DCMP configuration (see Section 4.4.2, "Configure DCMP"), you must enter the **DLS password** previously defined in the DCMP configuration in the **Password** field.
4. To test communications between DLS and DCMP, click on the **Test** button.

For testing purposes, a very short **Poll interval** can be chosen; however, in a live environment, longer intervals are recommended.

5. Define one or more **Device IP Ranges**. Any IP Devices within the IP ranges defined by **IP address from** and **IP address to** will be updated via DCMP. Hence, whenever a change is made to an IP device within an IP range listed here, the DLS will send a message to the DCMP to set the Contact-Me entry for that phone.

IP Address from	IP Address to	Poll interval
10.11.14.3	10.11.14.3	5
10.11.14.8	10.11.14.8	1
10.255.160.10	10.255.160.15	60

#### 4.4.4 Configure Phone for DCMP

1. The phone should be configured to use passive FTP transfers so it can download software and other data even if it is behind a firewall doing NAT. This is done in **IP Devices > IP Phone Configuration > Miscellaneous > "FTP Server" Tab**. As this flag cannot be changed in an already deployed device, it is recommended to create a "DCMP Miscellaneous" template with this flag set and use that template in the profile for DCMP users.

☒ Use Passive Mode FTP

2. Navigate to **Profile Management > Device Profile** and create a device profile using the newly created "DCMP Miscellaneous" template.
3. Navigate to **IP Devices > IP Device Management > IP Device Configuration**. Use the **Search** function, the "Table" view, and the "Object" view to select the subscriber number for the phone to be configured. In the **"Profile" Tab**, select the profile you just created, and assign it to the phone.

Device Profile:	DCMP Test Profile	Assigned:	2010-11-18 13:12:11	Reapply
Basic Profile:		Assigned:		Reapply
<input type="checkbox"/> Apply Basic Profile at IP Device Registration				

##### 4.4.4.1 Configure Home User Devices for DLS / DCMP

DCMP is developed for cases that DLS cannot communicate with devices.

In the case of DLS communication with Home / Office User Devices, DLS can see the IP address of the device but this IP address is actually the public IP address assigned to each user modem/router. Once DLS tries to pass a configuration change to this IP address, this change will never pass to the device behind the modem/router and this is where DHCP is used. Once the DCMP is active and the IP range is included in the DCMP configuration, phones included in this range enter in DCMP mode.

1. DLS requests a change from a phone that is in DCMP mode
2. The above request goes to DCMP instead of the device directly.
3. The device contacts DCMP in the configured interval and receives the request that DLS has changes for this device.
4. The device contacts DLS to request the available changes.

In order to be able to administer home user devices, the machine that will be used for DLS and DCMP shall have 2 network interfaces. One will get the internal IP and the other one the external one. In order to achieve this, two IP addresses have been configured, one as internal for intra network devices (172.x.x.x) and one external where only the required ports were opened in the Firewall.

The ports that were opened in the Firewall were DLS port 18443, which is the default port that devices communicate with DLS and the FTP port 21 for device Firmware upgrades (Communication between the DLS server and DLS client is set up using the port number 18080).

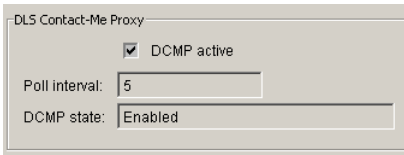
The configuration order is as follows:

- Install DCMP in the same server as DLS
- Completed configuration as described in the DLS documentation (section 4.4, " Configure Phone for DCMP ")
- Configured network firewall for the required ports 18443,18080 and 21.

***IMPORTANT:*** The supported IP clients - ODC (WE/PE/FC) don't support DCMP. Therefore IP Clients are not supported for a DCMP integration.

#### 4.4.5 Test DCMP

1. First, choose a phone that has an IP address within an IP range configured for DCMP operation (see Section 4.4.3, "Configure DLS for DCMP") and perform a factory default on that phone.
2. When the phone has rebooted, give it the subscriber number you just assigned the DCMP Profile to.
3. Navigate to **IP Devices > IP Device Management > IP Device Configuration > "DCMP" Tab**. The **DCMP active** switch should be checked, and the settings should be as set for this IP address in **Administration > Workpoint Interface Configuration > "DCMP" Tab**.



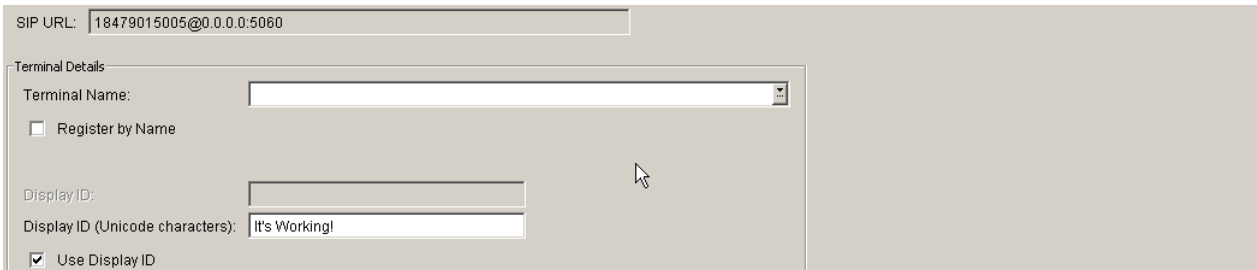
DLS Contact-Me Proxy

☒ DCMP active

Poll interval: 5

DCMP state: Enabled

4. As a test case for a configuration change, modify the display name on the phone. Navigate to **IP Devices > IP Phone Configuration > Gateway/Server > "SIP Terminal Settings" Tab**. Activate **Use Display ID** (or **Use Display ID (Unicode characters)**) and set the **Display ID** to "It's Working!", for instance. Save the change in DLS.



SIP URL: 18479015005@0.0.0.0:5060

Terminal Details

Terminal Name:

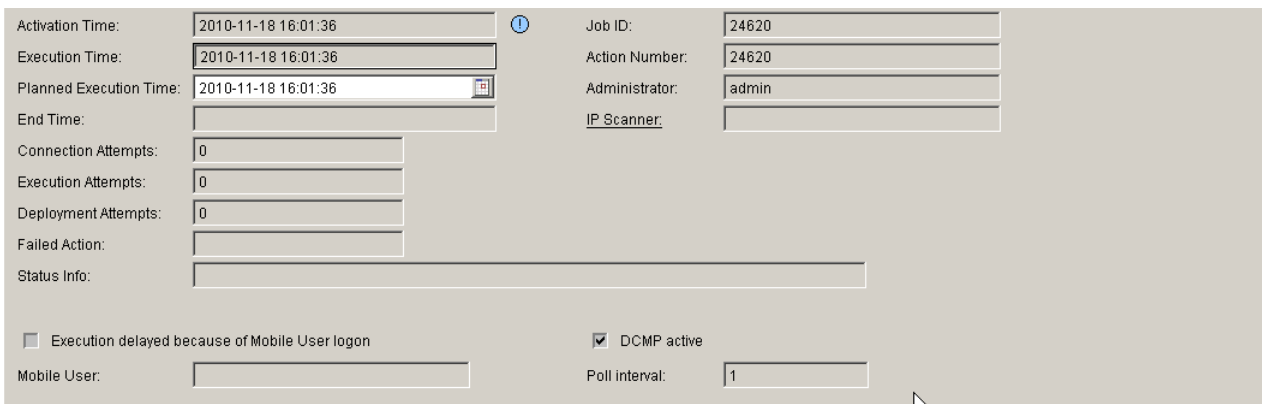
☐ Register by Name

Display ID:

Display ID (Unicode characters): It's Working!

☒ Use Display ID

5. To verify that the job is running, look in **Job Coordination > Job Control** and click on the **Search** button. Then click on the specific entry and select the "Object" view. In the **"Basic Data" Tab** you can see that the job will be handled via DCMP.



Activation Time: 2010-11-18 16:01:36

Execution Time: 2010-11-18 16:01:36

Planned Execution Time: 2010-11-18 16:01:36

End Time:

Connection Attempts: 0

Execution Attempts: 0

Deployment Attempts: 0

Failed Action:

Status Info:

☐ Execution delayed because of Mobile User login

Mobile User:

Job ID: 24620

Action Number: 24620

Administrator: admin

IP Scanner:

☒ DCMP active

Poll interval: 1

6. In the **"Configuration Data" Tab** you can see the specific change that was requested.

Parameter	Index	Old Setting	New Setting	User Data	Finished	Status Info
Display ID (Unicode characters)		Hello!	It's Working!	<input checked="" type="checkbox"/>	yes	

- In the DCMP GUI, click on the **List Entries** menu. You should see the Contact Me setting in the list. The **Device ID** should be the MAC address of the phone.

DCMP			
Configuration	Device ID	Creation Date	Time to Live
Cluster Setup	00:1A:E8:02:06:14	Nov 18, 2010 10:01:36 PM	Nov 18, 2010 11:01:36 PM
List Entries			
Logout			

- In the DLS GUI, in **Job Coordination > Job Control > "Basic Data" Tab**, you will see an "End Time" once the change is made.

Activation Time:	2010-11-18 16:01:36	Job ID:	24620
Execution Time:	2010-11-18 16:01:36	Action Number:	24620
Planned Execution Time:	2010-11-18 16:01:36	Administrator:	admin
End Time:	2010-11-18 16:02:31	IP Scanner:	
Connection Attempts:	1		
Execution Attempts:	0		
Deployment Attempts:	0		
Failed Action:			
Status Info:			
<input type="checkbox"/> Execution delayed because of Mobile User logon		<input checked="" type="checkbox"/> DCMP active	
Mobile User:		Poll interval:	1

- In the DCMP GUI, you will see the Contact Me entry is removed.

DCMP			
Configuration	Device ID	Creation Date	Time to Live
Cluster Setup			
List Entries			
Logout			

0 Records found, displaying 0 records, from 1 to 0. Page 1 / 0

The test is finished.



## 4.5 Installing the DLS

### 4.5.1 Single Node Operation with Local Database

This is the standard DLS installation. Thus, follow the instructions of the installation assistant.

#### 4.5.1.1 Install SQL Server Express Edition

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/How\\_to\\_install\\_SQL\\_Server\\_Express\\_Edition](http://wiki.unify.com/wiki/How_to_install_SQL_Server_Express_Edition)

#### 4.5.1.2 Install Microsoft .NET v3.51 / v4

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/How\\_to\\_Install\\_Microsoft\\_.NET](http://wiki.unify.com/wiki/How_to_Install_Microsoft_.NET)

#### 4.5.1.3 Install DLS

Follow the instructions of the OpenScape Deployment Service Setup Wizard contained in the DLS software package.

**IMPORTANT:** Do NOT install a hotfix directly. Instead first install the base version of the hotfix and then upgrade to the hotfix (e.g. the base version of **V7R2 408.05** is the **V7R2 408.00**).

**NOTE:** Hotfixes deliver the complete DLS package & they're also cumulative, e.g **CV408.03** contains all the fixes delivered in **CV408.01** & **CV408.02**.

## 4.5.2 Single / Multi Node Operation with Remote or Custom Specific Database

Please refer to the **Unify Experts Wiki Portal** under:

<http://wiki.unify.com/wiki/Single / Multi Node Operation with Remote or Custom Specific Database>

## 4.5.3 Multi Node Operation

The following example demonstrates the installation of two DLS nodes with mirrored SQL database.

**NOTE:** The first installation as well as the update installation must not be carried out on more than one nodes at a time, as the nodes access common files. Therefore, install the nodes one after another.

**IMPORTANT:** Microsoft .NET v3.51 must be installed in both Nodes first, in order for RapidStat to operate ( please refer to Section 4.5.1.2, "Install Microsoft .NET v3.51 / v4" )

### 4.5.3.1 First Node

Login to the node by using 'dls' account that was created previously during remote sql installation for DLS access.

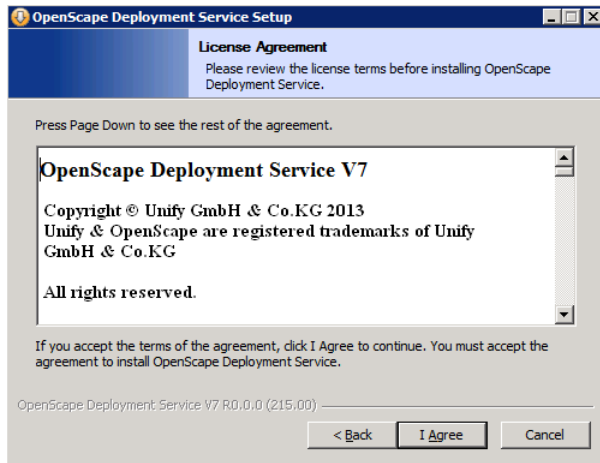
**NOTE:** SQL Native Client should be installed first, manually. It's version should be that of the installed remote SQL server. Backward compatibility is not assumed. It is not installed by DLS automatically. If the native client is not installed, Step 6 will come up with an error message about connectivity to SQL server.

1. Start the setup program. After selecting the language, you see a welcome screen.



Click on **Next**.

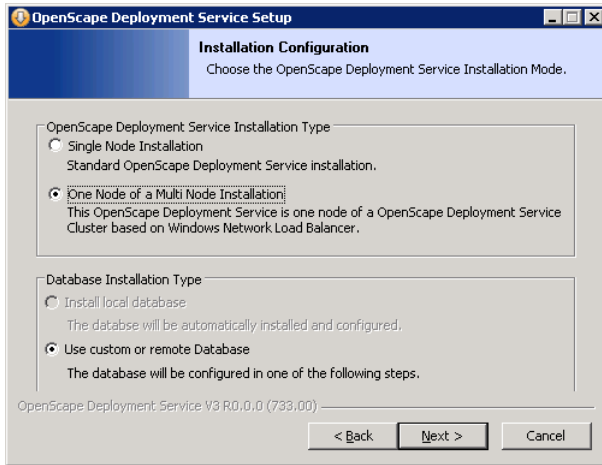
2. Click on **I Agree** to accept the license agreement.



## Installation and Initial Configuration

### Installing the DLS

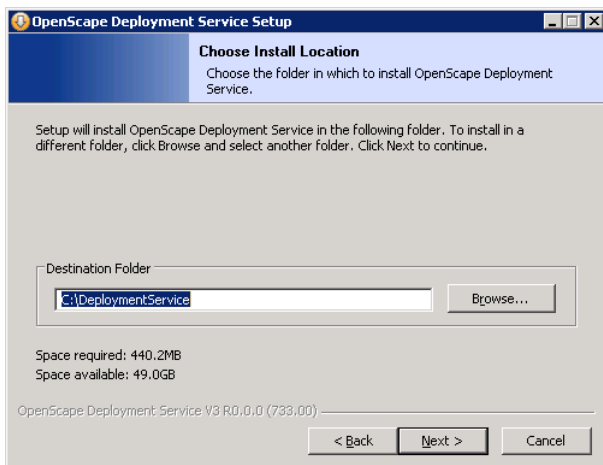
3. In the **Installation Configuration** screen, under **DLS Installation Type**, select the option **One Node of a Multinode Installation**.



Click on **Next**.

4. In the **Choose Install Location** screen, choose the target directory in which the DLS shall be installed.

**NOTE:** The directory path must not contain blanks, as in "Program Files", for instance.



Click on **Next**.

5. In the **Default Data Path** screen, enter the path of a directory, to which all nodes must have access. Here, configuration data common to all DLS nodes are stored. This directory must exist, and writing access for this directory must be granted to the DLS, also for installation purposes. The IP address must be the one of the 1st DLS node (NLB cluster oriented).

**NOTE:** In case a notification window appears here, asking whether another node shall be installed, in addition to existing ones, click on "No". The notification window will appear if the file `common_dls.properties` exists in the specified directory.

**NOTE:** To avoid any kind of problems with backup/restore actions when DLS Node 1 is down/unreachable for any reason, you need to modify the default path for common Openscape Deployment Service Data to be on different server (i.e. File Server), on the same domain like the rest of the Multinode servers i.e.

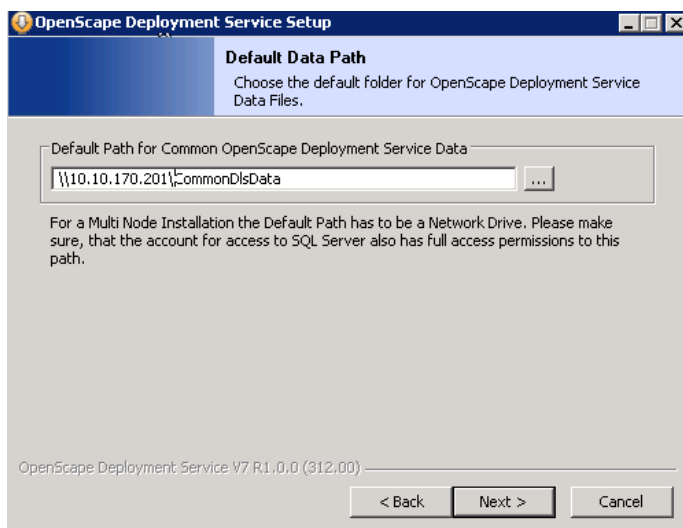
`\\POSTM3-FileServer\MultinodeShare\CommonDlsData`

or

`\\10.10.170.100\MultinodeShare\CommonDlsData`

**NOTE:** CommonDLSData should be in the witness server if one exists (in the case of synchronous mirroring). If a witness doesn't exist then the folder should be located on an external server other than that of CLA. Any other option could obstruct multinode migration scenarios (see Section 16.18, "Migration Scenarios" ) with minimum outage.

**IMPORTANT:** The Common Data Path should not be used to store files outside the scope of DLS's own node clustering purposes and DLS administrative tasks (e.g. csv/archive exports, Profile/Template exports etc).



Click on **Next**.

## Installation and Initial Configuration

### Installing the DLS

6. In the **Database Settings** screen provide the necessary specifications for the database. If you wish to deploy a mirrored database for maximum reliability, select the option **MSSQL + Mirroring** under **Database Type**. Under **Database Server**, in the field **DB Hostname (Principal)**, specify the "Principal" database server, and in the field **Failover Server (Mirror)**, specify the backup database server, which will fill in in case the Principal fails.

Under **MSSQL specific entries**, in the field **Data Directory on Server**, enter the directory on the database server in which the DLS database is located. This directory must exist already. It should have been created before the SQL server installation (see Section 4.2, "Install MS SQL Server for Remote Database", step 2).

**NOTE:** It is recommended to use the same directory path both on the Mirror and on the Principal.

Under **DB Instance**, enter the instance under which the DLS database is to operate (see Section 4.2, "Install MS SQL Server for Remote Database", step 4 resp. Section 4.2.1, "How to install Microsoft SQL Server", step 9).

The screenshot shows the 'OpenScape Deployment Service Setup: Configuration Options' dialog box with the 'Database Settings' tab selected. The tab contains the following fields and options:

- Database Type:** Two radio buttons are present: 'MSSQL' (unselected) and 'MSSQL + Mirroring' (selected).
- Database Server:**
  - DB Hostname (Principal):** A text box containing 'stchristoph.valluga'.
  - DB Port:** An empty text box.
  - Failover Server (Mirror):** A text box containing 'stanton.valluga'.
  - Forced Service:** An unchecked checkbox.
- MSSQL specific entries:**
  - Data Directory on DB Server:** A text box containing 'D:\DBData'.
  - DB Instance:** A text box containing 'DLS'.

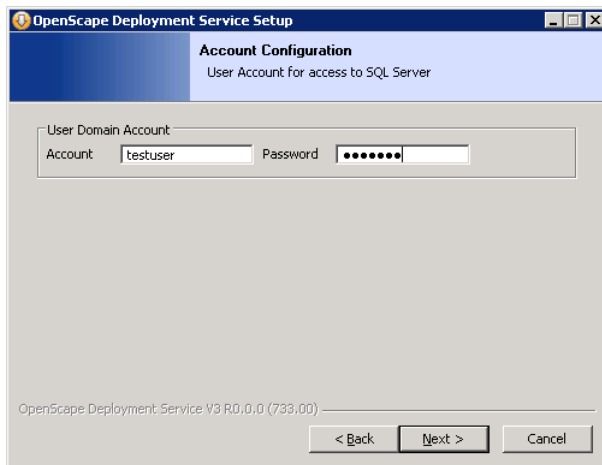
Below the 'MSSQL specific entries' section, there is a note: 'A Failover Server is optional and requires Database Mirroring.' and a warning: 'Directory must already exist!'.

At the bottom of the dialog, there are three buttons: '< Back', 'Next >', and 'Cancel'. The version information 'OpenScape Deployment Service V3 R0.0.0 (733.00)' is displayed above the buttons.

Click on **Next**.

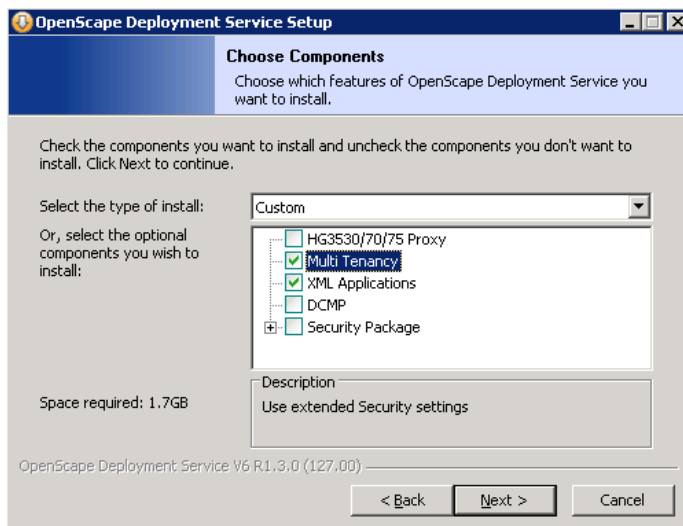
7. In the **Account Configuration** screen, in the fields **Account** and **Password**, enter the access data of the user the DLS shall run under. The user must be a member of the administrator group, and it must exist already.

**NOTE:** In case of a DLS installation in DNS environment you have to enter the full FQDN account i.e., testuser@multinode.local or multimode.local\testuser. If you use plain “testuser” it denotes a local machine (**Workgroup** environment) user and not a domain user.



Click on **Next**.

8. Now, in the **Choose Components** screen, select the desired DLS components.



Click on **Next**.



## Installation and Initial Configuration

### Installing the DLS

9. In the **Cluster Configuration** screen, under **Current Node**, you see the node machine on which you are currently installing the DLS. Under **Other Nodes**, in the **Host Name** fields, enter the names of the corresponding node machines, and in the **Port** fields, enter the port used by the DLS running on the corresponding machine for communication with the other nodes. If you have selected the DCMP in step 8, you must specify the port on which the DLS receives data from the DCMP in the field **DCMP-Port**.

**NOTE:** In case of a workgroup or DNS with no FQDN orientation, an IP address will be added instead.

The screenshot shows the 'OpenScape Deployment Service Setup Cluster Configuration' dialog box. The title bar includes the OpenScape logo and the text 'OpenScape Deployment Service Setup Cluster Configuration'. The dialog has a blue header area with the title 'Cluster Configuration' and a subtitle 'Host names and ports for the communication between OpenScape Deployment Service Nodes and DCMP Servers'. Below the header, there are two main sections: 'Current Node' and 'Other Nodes'. The 'Current Node' section has three input fields: 'Host name' (containing 'dls\_multi\_dls1'), 'Port' (containing '2222'), and 'DCMP Port' (empty). The 'Other Nodes' section contains a table with six rows, each with three input fields: 'Host name', 'Port', and 'DCMP Port'. The first row of the table has 'dls\_multi\_dls2' in the 'Host name' field and '2222' in the 'Port' field. The remaining five rows have empty fields. At the bottom of the dialog, there is a status bar that reads 'OpenScape Deployment Service V6 R1.3.0 (127,00)' and three buttons: '< Back', 'Next >', and 'Cancel'.

Click on **Next**.

10. In the **Licensing Configuration** field, you provide the specifications required for licensing. Under **Customer License Agent - CLA**, in the field **CLA Hostname**, you enter the IP address of the CLA server, and in the field **CLA Port**, you enter the corresponding port. Under **Customer License Manager - CLM**, in the field **CLM Hostname**, enter the IP address of the CLM server, and in the field **CLM Port**, you enter the corresponding port.

**NOTE:** CLA and CommonDLSData folders should be located on different servers. In any other option, Mirroring is not possible and could also obstruct multinode migration scenarios (see Section 16.18, "Migration Scenarios" ) with minimum outage.

**OpenScape Deployment Service Setup - Configuration Options**

**Licensing Configuration**  
Enter the addresses of the Licensing Components.

Customer License Agent - CLA  
 CLA Hostname:  CLA Port:

Customer License Manager - CLM  
 CLM Hostname:  CLM Port:

OpenScape Deployment Service V7 R0.0.0 (217.00)

< Back   Next >   Cancel

Click on **Next**.

11. In the **Administration Account Password** screen, in the fields **Password/Repeat Password**, enter the password for the DLS user "admin".

**OpenScape Deployment Service Setup: Configuration Options**

**Administration Account Password**  
Enter the password for the OpenScape Deployment Service Account 'admin'.

Password for admin user account in the OpenScape Deployment Service GUI

Password:

Repeat Password:

OpenScape Deployment Service V3 R0.0.0 (733.00)

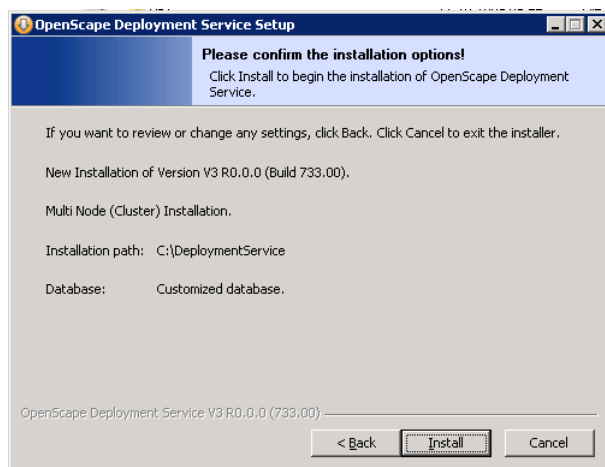
< Back   Next >   Cancel

Click on **Next**.

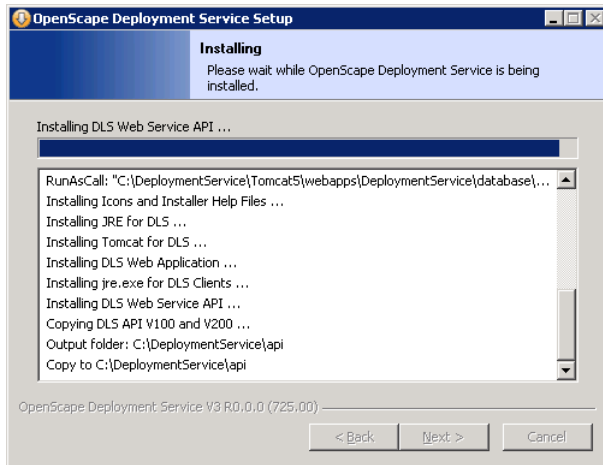
12. In the next screen, you see a brief overview on the installation settings. To start the installation, click on **Install**; to revise settings, click on **Back**.

## Installation and Initial Configuration

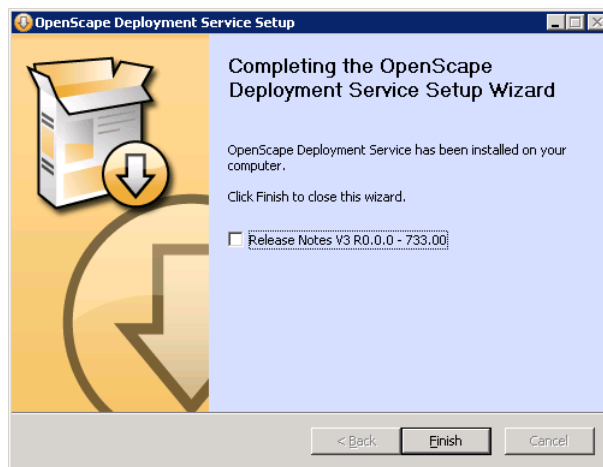
### *Installing the DLS*



13. If you have clicked on **Install** previously, you will be presented with messages about the installation process.



14. The installation is complete.



## Installation and Initial Configuration

### Installing the DLS

#### 4.5.3.2 Second And Further Nodes

1. Start the setup program. After selecting the language, you see a welcome screen.

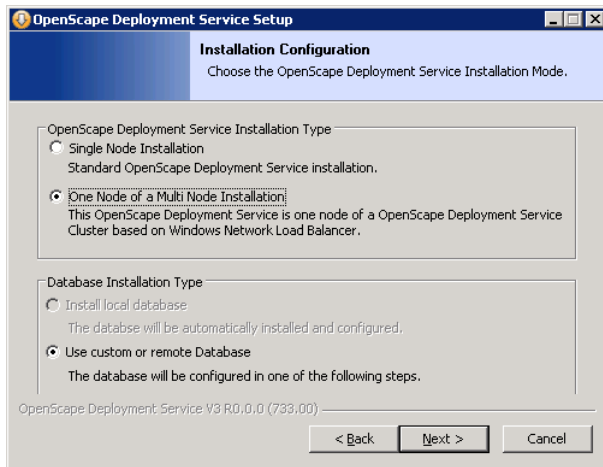


Click on **Next**.

2. Click **I Agree** to accept the license agreement.



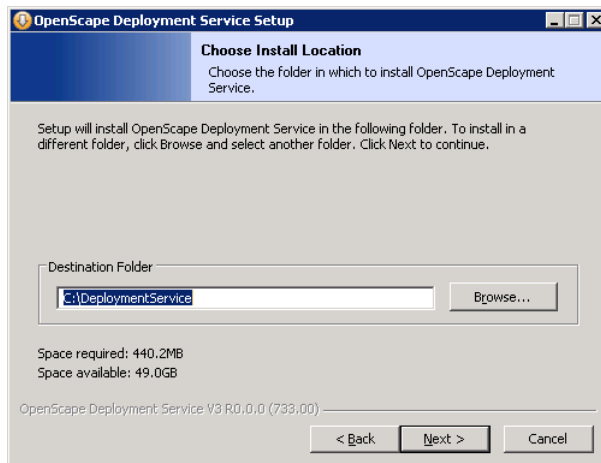
3. In the **Installation Configuration** screen, under **DLS Installation Type**, select the option **One Node of a Multinode Installation**.



Click on **Next**.

4. In the **Choose Install Location** screen, choose the target directory, wherein the DLS is to be installed.

**NOTE:** The directory path must not contain blanks, as in "Program Files", for instance.

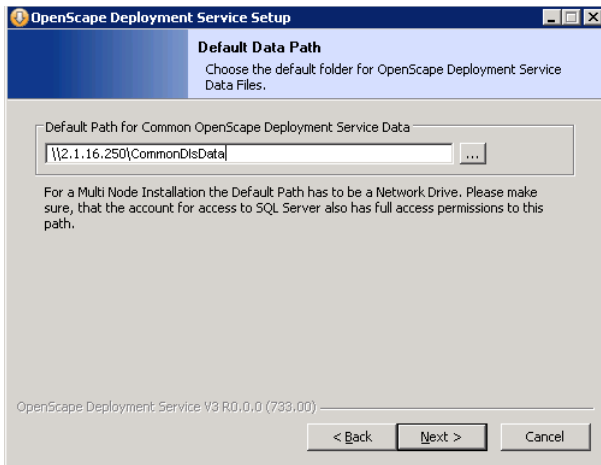


Click on **Next**.

## Installation and Initial Configuration

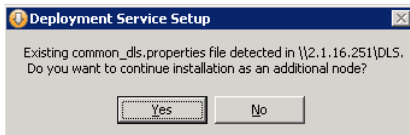
### Installing the DLS

5. In the **Default Data Path** screen, specify the path of the directory for common DLS configuration data. This path has been specified in Section 4.5.3.1, "First Node", step 5.



Click on **Next**.

6. As the first DLS node is already installed and has stored the file `common_dls.properties` in the appropriate directory, you will be presented with a notification:



Click on **Yes**.

7. In the **Database Settings** screen provide the necessary specifications for the database. If you wish to deploy a mirrored database for maximum reliability, select the option **MSSQL + Mirroring** under **Database type**.

Under **MSSQL specific entries**, in the field **Data Directory on Server**, enter the directory on the database server, in which the DLS database resides. This directory must exist already. It should have been created before the SQL Server installation.

**NOTE:** It is recommended to use the same directory path both on the Mirror and on the Principal Server.

Under **DB Instance**, enter the instance under which the DLS database is to operate.

The screenshot shows the 'Database Settings' window. The 'Database Type' section has 'MSSQL + Mirroring' selected. The 'Database Server' section shows 'DB Hostname (Principal): stchristoph.valluga' and 'DB Port' as an empty field. 'Failover Server (Mirror): stanton.valluga' is also entered, with a 'Forced Service' checkbox. A note states: 'A Failover Server is optional and requires Database Mirroring.' The 'MSSQL specific entries' section shows 'Data Directory on DB Server' as 'C:\DBData' and 'DB Instance' as 'DLS'. A message below says 'Directory must already exist!'. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

Click on **Next**.

8. In the **Account Configuration** screen, in the fields **Account** and **Password**, enter the access data of the user the DLS shall run under. The user must be a member of the administrator group, and it must exist already.

**NOTE:** In case of a DLS installation in DNS environment you have to enter the full FQDN account i.e., testuser@multinode.local or multimode.local\testuser. If you use plain "testuser" it denotes a local machine (**Workgroup** environment) user and not a domain user.

The screenshot shows the 'Account Configuration' window. The 'User Domain Account' section has 'Account' as 'testuser' and 'Password' as a masked field (dots). At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

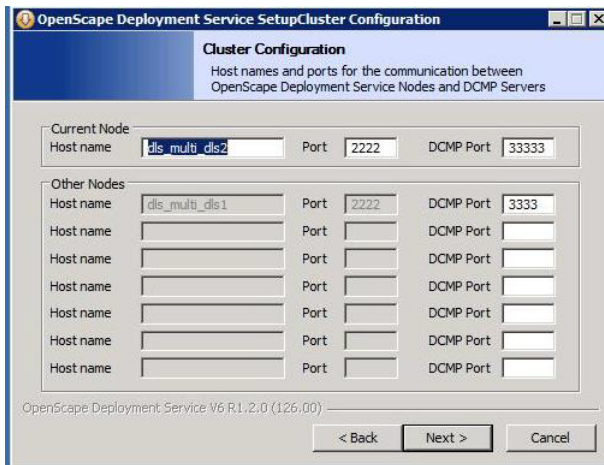
Click on **Next**.



## Installation and Initial Configuration

### Installing the DLS

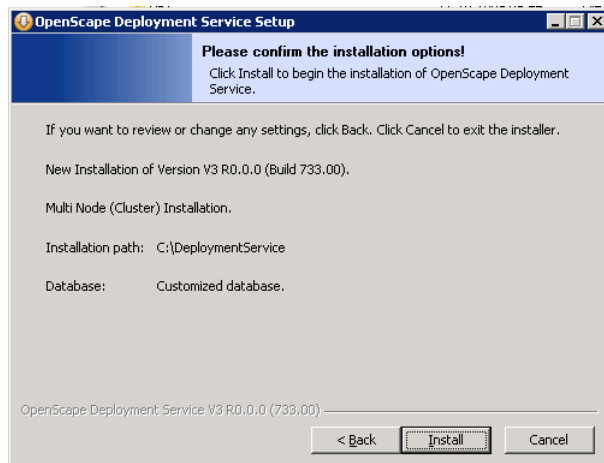
9. In the **Cluster Configuration** screen, under **Current Node**, you see the node machine on which you are currently installing the DLS. Under **Other Nodes**, in the **Host name** fields, enter the names of the corresponding node machines, and in the **Port** fields, enter the port used by the DLS running on the corresponding machine for communication with the other nodes. If you have selected the DCMP in step 8, you must specify the port on which the DLS receives data from the DCMP in the field **DCMP-Port**. If the data have already been input at the first node, they can be checked, modified, or extended once more.



The image shows the 'OpenScale Deployment Service Setup Cluster Configuration' dialog box. It has a title bar with a question mark icon and standard window controls. The main title is 'Cluster Configuration' with a subtitle 'Host names and ports for the communication between OpenScale Deployment Service Nodes and DCMP Servers'. The dialog is divided into two sections: 'Current Node' and 'Other Nodes'. The 'Current Node' section has three input fields: 'Host name' (containing 'dis\_multi\_dis2'), 'Port' (containing '2222'), and 'DCMP Port' (containing '33333'). The 'Other Nodes' section contains a list of five rows, each with 'Host name', 'Port', and 'DCMP Port' fields. The first row is pre-filled with 'dis\_multi\_dis1', '2222', and '3333'. The other four rows are empty. At the bottom, there is a status bar 'OpenScale Deployment Service V6 R1.1.2.0 (1126.00)' and three buttons: '< Back', 'Next >', and 'Cancel'.

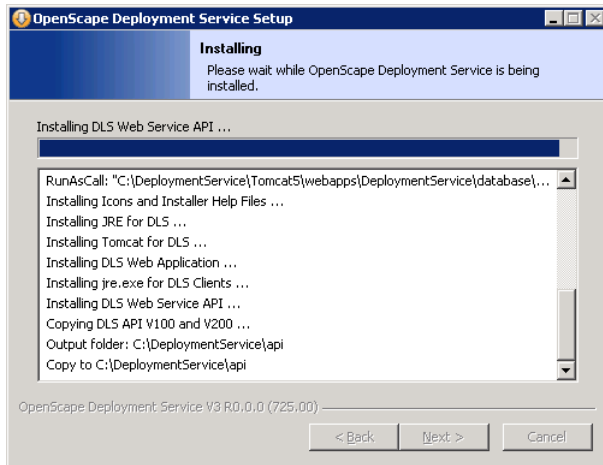
Click on **Next**.

10. In the next screen, you see a brief overview on the installation settings. To start the installation, click on **Install**; to revise settings, click on **Back**.

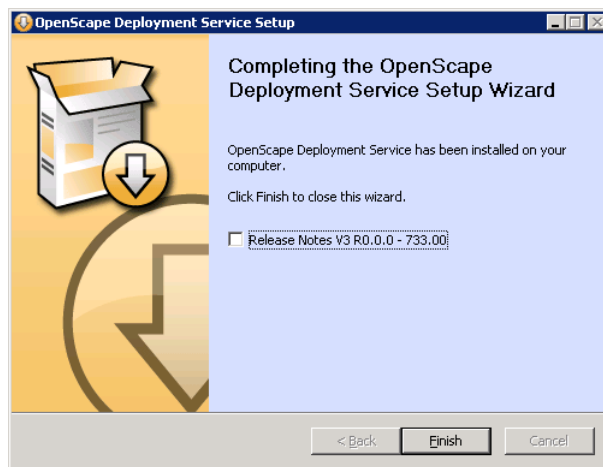


The image shows the 'OpenScale Deployment Service Setup Please confirm the installation options!' dialog box. It has a title bar with a question mark icon and standard window controls. The main title is 'Please confirm the installation options!' with a subtitle 'Click Install to begin the installation of OpenScale Deployment Service.' Below the subtitle, there is a paragraph: 'If you want to review or change any settings, click Back. Click Cancel to exit the installer.' This is followed by three lines of text: 'New Installation of Version V3 R0.0.0 (Build 733.00).', 'Multi Node (Cluster) Installation.', and 'Installation path: C:\DeploymentService'. Below this, there is a line: 'Database: Customized database.' At the bottom, there is a status bar 'OpenScale Deployment Service V3 R0.0.0 (733.00)' and three buttons: '< Back', 'Install', and 'Cancel'.

11. If you have clicked on **Install** previously, you will be presented with messages about the installation process.



12. The installation is complete.



#### **4.5.3.3 Installation of DLS Nodes with existing DLS Database**

If the DLS nodes have to be installed again (no upgrade), but a DLS database still exists on the SQL server,

- stop database mirroring on SQL server Principal by means of "MS SQL Management Studio",
- remove the DLS database on Principal and Mirror,
- remove the Stored Procedures assigned by DLS on Principal and Mirror,
- install first node again and restore last available backup,
- install all additional nodes,
- set up mirroring following the instructions in Section 4.6, "SQL Database Mirroring Setup", except the SQL statements for configuring endpoints.

## 4.6 SQL Database Mirroring Setup

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/How\\_to\\_setup\\_a\\_synchronously\\_Mirrored\\_Database](http://wiki.unify.com/wiki/How_to_setup_a_synchronously_Mirrored_Database)

## 4.7 DLS Database Restore in a Multi-Node environment

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/DLS\\_Database\\_Restore\\_in\\_a\\_Multi-Node\\_environment](http://wiki.unify.com/wiki/DLS_Database_Restore_in_a_Multi-Node_environment)

## 4.8 Upgrading a DLS Multi-Node Environment

Please refer to the **Unify Experts Wiki Portal** under:

[http://wiki.unify.com/wiki/Upgrading\\_a\\_DLS\\_Multi-Node\\_Environment](http://wiki.unify.com/wiki/Upgrading_a_DLS_Multi-Node_Environment)

## 4.9 Start DLS

Before you start the DLS, please ensure that the system time is synchronous on all machines. This will be the case if the DNS server included in Windows 2003 Server is used, as the time is provided here. In case you use a workgroup instead of this DNS server, you must guarantee synchronizity by other means.

1. Start the DLS on each node.
2. Start the cluster by means of the Network Load Balancer Manager.

**NOTE:** If you wish to shut down a DLS node, perhaps for maintenance purposes, first remove the machine using the Network Load Balancer Manager. Thus, it is granted that this DLS instance will not receive requests any more.

## 4.10 Initial Configuration

For initial DLS configuration, we recommend configuring the following areas one after the other:

### 1. Change Password/Configure Account

**Call:** Main Menu > Administration > Account Management > Account Configuration

If necessary, change the admin password that has been set during installation and configure new accounts, if necessary.

You can find a description of the fields in Section 6.1, "Account Management".

### 2. Configure FTP Server

**Call:** Main Menu > Administration > Server Configuration > FTP Server Configuration

Enter the data for the connection to one or more FTP servers.

You must connect to an FTP server in order to download IP phone software.

You can find a description of the fields and additional information in Section 6.3.4, "FTP Server Configuration".

### 3. Configure HTTP Server

**Call:** Main Menu > Administration > Server Configuration > HTTPS Server Configuration

Enter the data for the connection to one or more HTTPS servers.

OpenStage terminals can use an HTTPS server instead of an FTP server for downloading IP phone software.

You can find a description of the fields and additional information in Section 6.3.5, "HTTPS Server Configuration".

### 4. Windows Network Drive Configuration

**Call:** Main Menu > Administration > Server Configuration > Network Drive Configuration

Enter the data for the Windows network drive.

The specifications for the Windows network drive are needed for downloading IP client software.

You can find a description of the fields and additional information in Section 6.3.7, "Network Drive Configuration".

### 5. Settings (Logging)

**Call:** Main Menu > Administration > Display Logging Data > Activity and Error Log OR > P&P Import Protocols

If necessary, change the information on which events should be logged and how long log data should be saved.

You can find a description of the fields and additional information in Section 6.5, "Display Logging Data".

## Installation and Initial Configuration

### *Initial Configuration*

#### 6. Import Templates

**Call:** Main Menu > Profile Management > Template Overview > "Template data" Tab

You have the option to load existing DLS templates stored in ZIP files.

Please refer to Section 15.5, "Editing Templates" for more information on templates.

#### 7. Element Manager

**Call:** Main Menu > Element Manager > Element Manager Configuration

Select the element manager type you want to configure under **Element Manager type**. For configuration options, see Section , "Element Manager".

## 4.11 Starting the DLS Client

### 4.11.1 Starting the Client

Before you start the DLS, you should have completed initial configuration (see Section 4.10, "Initial Configuration").

Start the DLS client as follows:

- On the server computer:
  - Using the Windows Start menu **Start > Programs > Deployment Service > DeploymentService**.
  - Using the **DeploymentService** program shortcut on the desktop.
- On the client computer:
  - By entering one of the following URLs in the Web browser:  
**http://[IP address]:18080/DeploymentService/**  
or  
**https://[IP address]:10443/DeploymentService/** (for an encrypted connection)

You can find information on operating the DLS client from Chapter 5 onwards.



## 4.12 Installing Network Components

Normally, the network components that are described here are already in place. However, if any of the components have to be retrofitted, this chapter provides you with the description that you will need.

It describes the following components:

- FTP Server
- HTTPS Server
- General Information on DHCP
- DHCP Server in a Windows Environment
- DHCP Server in a Linux/Unix Environment
- Configuring the DNS Server for DLS
- DHCP Server with Infoblox Appliance

## 4.12.1 FTP Server

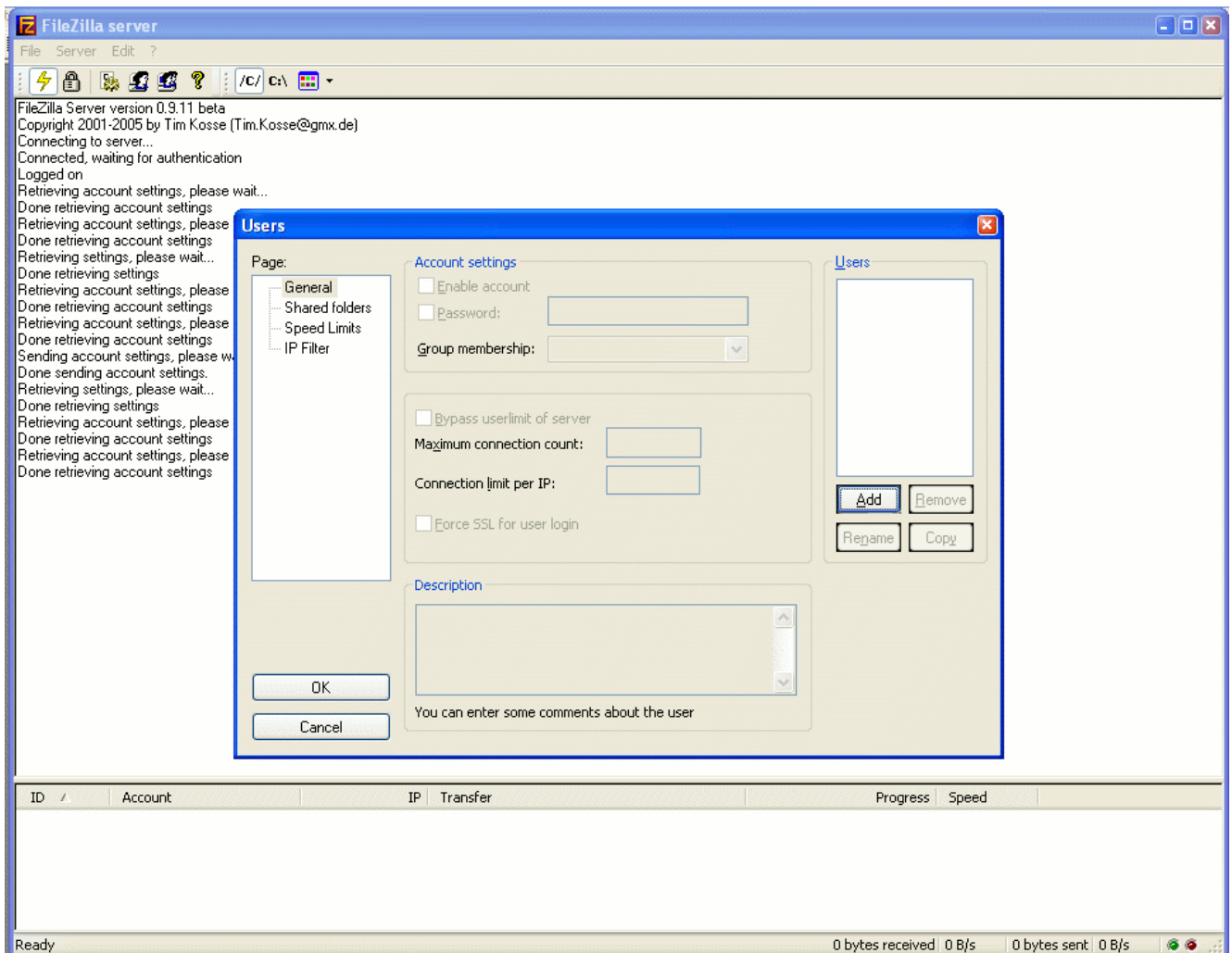
The following example shows how to configure the *FileZilla* server program.

### 4.12.1.1 Installation and Configuration

Install the software (*FileZilla Server* in this example, available at <http://sourceforge.net/projects/filezilla/>).

Start the server program.

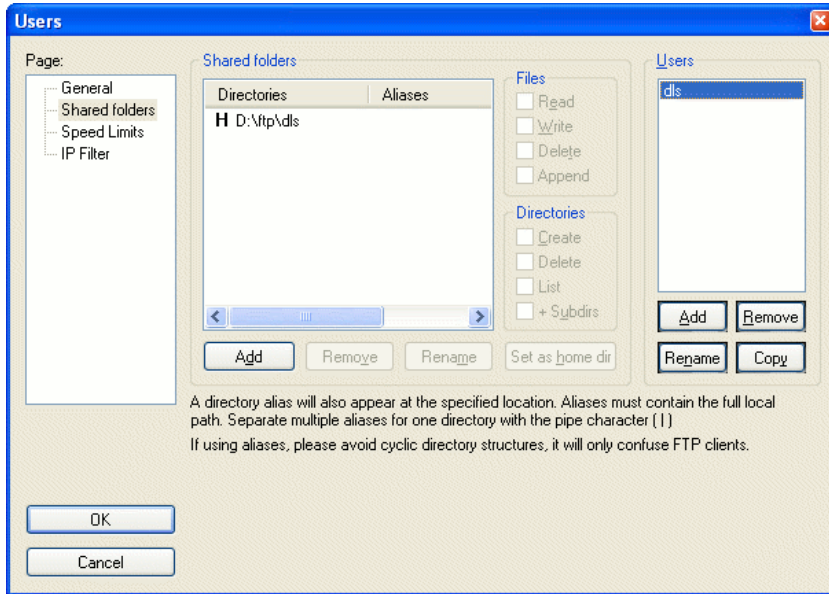
Configure a user. To do this, select **Edit > Users** from the menu. Select **General** from the **Page** area. Click the **Add** button under the left section of the dialog window. An input window is displayed. Enter the user name in this window. Activate the **Enable account** option in the **Account Settings** area. If you want to assign the user a password, activate the **Password** option in the same area and enter a password.



## Installation and Initial Configuration

### Installing Network Components

To assign the new user a directory, select **Shared Folders** in the **Page** area and click **Add**. In the subsequent window, select the directory where you want to store the software subdirectories. To assign read access to the DLS, activate the **Read** option in the **Files** area.



Click **OK**. The FTP server is now available. Current connections are displayed in the server's status window.

## **4.12.2 HTTPS Server**

Terminals in the OpenStage series can download files over HTTPS. To use this option, you must install an HTTPS server. For installation help, consult the instructions supplied with the relevant software.

#### 4.12.3 General Information on DHCP

IP phones feature a DHCP client so that the parameters required for full Plug&Play can be transferred via DHCP.

In addition to the standard parameters (IP address, network mask, and default router), you can configure the following options via DHCP:

- IP routing/route 1 & 2 (option 33)
- IP address of the SNTP server (option 42)
- Time zone adjustment (option 2)
- IP addresses for the primary and secondary DNS servers (option 6)
- DNS domain name for the phone (option 15)
- IP addresses for the SIP server and SIP registrar (option 120))

In Unify IP phones, the DLS IP address and the VLAN ID can be communicated via vendor-specific parameters.

VLAN ID assignment via DHCP works as follows on optiPoint 410/420 phones:

If the "DHCP" VLAN method is set on the phone and QoS is active on layer 2, the VLAN ID is assigned by a DHCP server. This procedure is made up of two steps. The phone starts by issuing a *discovery* message with the "OptiPoint" *vendor class* to try to obtain an IP address for a DHCP server. In the second step, the phone sends a tagged *discovery* message in the VLAN whose ID it received in the first step. This time, the "OptilpPhone" vendor class is used.

If the VLAN method is set to "manual", only a lease with the "OptilpPhone" vendor class is obtained from the phone.

## 4.12.4 DHCP Server in a Windows Environment

For all relevant info please refer to the **How to** overview of **Unify Experts Wiki Portal** :

[http://wiki.unify.com/wiki/DHCP\\_Server\\_in\\_a\\_Windows\\_environment](http://wiki.unify.com/wiki/DHCP_Server_in_a_Windows_environment)

under the **DHCP Server in a Windows Environment** tab.

#### 4.12.5 DHCP Server in a Linux/Unix Environment

This section describes how to configure vendor-specific options under Linux and Unix to enable Plug&Play functionality.

**NOTE:** We recommend that you use a DHCP server in the DLS environment to support full Plug&Play and ensure the authenticity of the DLS server.

The configuration of vendor-specific options may differ from the example shown here depending on the DHCP server used. Refer to the Linux and Unix help pages (man-pages) for more information (for example, dhcp-options and dhcpd.conf).

The options are configured in the /etc/dhcpd.conf file. You can use a text editor to modify this file. Normally, this file contains a sample configuration which you can edit to meet your individual requirements. Please make a backup of the configuration file before making any changes.

The following configuration contains all necessary parameters:

```
21
Line      Contents
1         option domain-name-servers 192.168.3.2;
2         option broadcast-address 192.168.3.255;
3         option routers 192.168.3.2;
4         option subnet-mask 255.255.255.0;
5         option domain-name "DSL SUB3";
6         default-lease-time 864000;
7         max-lease-time 8640000;
8         ddns-update-style ad-hoc;
9
10        class "OptiIpPhone" {
11            option vendor-encapsulated-options
12            01:07:53:69:65:6D:65:6E:73:
13            03:19:73:64:6C:70:3A:2F:2F:31:39:32:2E:31:36:38:2E:33:2E:33:30:3A:31:38:34:34:33;
14            match if substring (option vendor-class-identifier, 0, 11) = "OptiIpPhone";
15        }
16
17        class "VLAN-discovery-OptiPoint" {
18            option vendor-encapsulated-options
19            01:07:53:69:65:6D:65:6E:73:
20            02:04:00:00:00:0A;
21            match if substring (option vendor-class-identifier, 0, 9) = "OptiPoint";
22        }
23        subnet 192.168.3.0 netmask 255.255.255.0 {
24            range 192.168.3.100 192.168.3.254;
25        }
```

The instructions in lines 10 to 15 transfers DLS addresses to workpoints. Lines 12 and 13 contain two hexadecimal values consisting of:

Option - Length - Value.

The first of the two lines contains the value "Siemens". The second line contains "sdlp://192.168.3.6:18443" (DLS address).

Line 10 contains a freely selectable name and line 14 determines the vendor class to which the configuration applies.

Lines 17 to 21 contains the allocation of the VLAN ID. The VLAN ID is handed over in line 20 with the option 2, the length 4 and the value as a hexadecimal number (here 0A = 10). In contrast to the other options, the decimal VLAN ID is converted into a hexadecimal number.

**NOTE:** For information on converting ASCII characters to hexadecimal values, see "ASCII Table (Standard)" and "ASCII Table (Enhanced)" on page 17-2 and on page 17-3.

Restart the DHCP service once you have modified the configuration. Use the `rcdhcpd restart` or alternatively the `etc/init.d/dhcp stop` command and then `/etc/init.d/dhcp start` to do this. To check syntax, enter `rcdhcp check-syntax` via the console.

If the configuration is correct, terminals should register independently on the DLS after a restart. If the configuration is not correct, you can use a "network sniffer", for example, *Ethereal* (V 0.10.11 or higher), to locate any errors.



#### 4.12.6 Configuring the DNS Server for DLS

**NOTE:** The following only describes the settings that are necessary for configuring the DNS server for DLS. For general installation and configuration, please read the documentation on the DNS server.

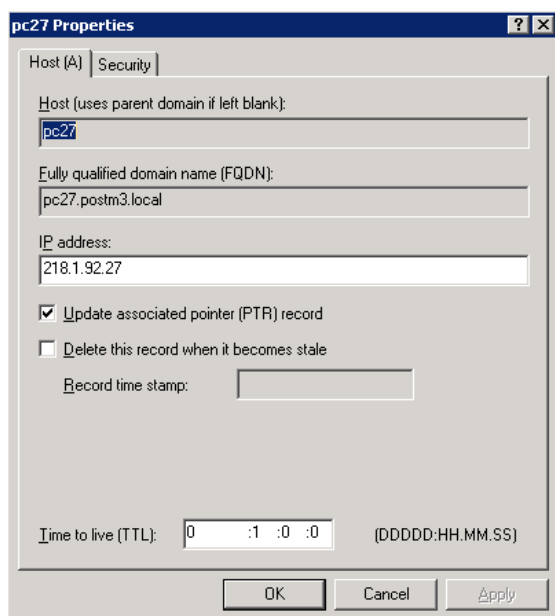
To be able to enter the DLS as a host name, there must be a DNS server with the appropriate configuration.

Example:

DLS IP address: 218.1.92.27

Requested host name: sdlp://pc27.postm3.local:18443

For this example, you must make the following entry in the DNS server:



The screenshot shows a Windows-style dialog box titled "pc27 Properties". It has two tabs: "Host (A)" and "Security". The "Host (A)" tab is active. Inside the dialog, there are several text input fields and checkboxes. The "Host (uses parent domain if left blank):" field contains "pc27". The "Fully qualified domain name (FQDN):" field contains "pc27.postm3.local". The "IP address:" field contains "218.1.92.27". Below these fields are two checkboxes: "Update associated pointer (PTR) record" which is checked, and "Delete this record when it becomes stale" which is unchecked. Below the checkboxes is a "Record time stamp:" field which is empty. At the bottom of the dialog, there is a "Time to live (TTL):" field with a spinner set to "0", followed by ":1 :0 :0" and the text "(DDDDD:HH,MM,SS)". At the very bottom are three buttons: "OK", "Cancel", and "Apply".

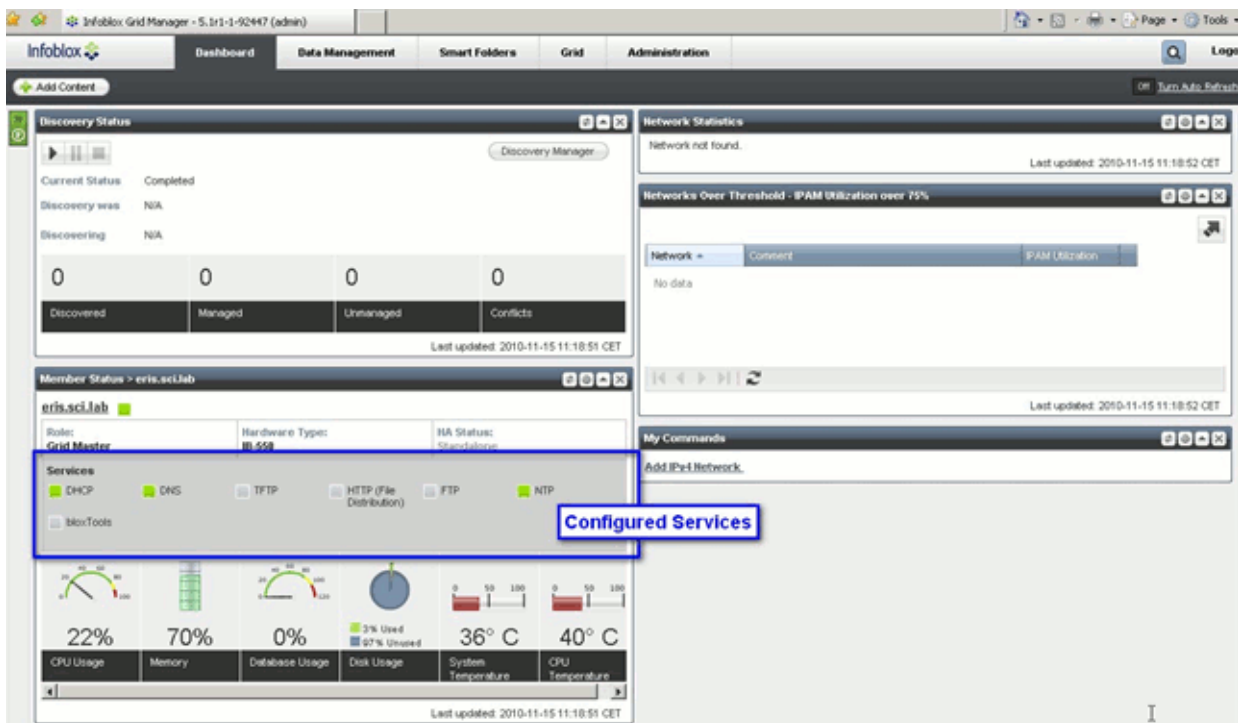
## 4.12.7 DHCP Server with Infoblox Appliance

As an alternative to a conventional DHCP server under Windows or Unix, the DHCP service can be taken over by the Infoblox appliance.

Additionally, the Infoblox appliance can provide the following core network services:

- DNS
- NTP
- FTP
- TFTP

The following screenshot shows the dashboard of an Infoblox 550 appliance, here configured as DHCP, DNS, and NTP server for an OpenScape Voice environment:



## Installation and Initial Configuration

### Installing Network Components

#### 4.12.7.1 Installation

After the Infoblox appliance is cabled to the network (please refer to the installation guide shipped with your appliance) you can access the device remotely across your Ethernet network.

You can administrate and configure the appliance via HTTPS or via command line interface (CLI) using SSH. If you wish to use SSH, you have to login via HTTPS once and enable SSH first.

This manual describes the administration via HTTPS; for detailed information on administration via CLI, please refer to the "Infoblox CLI Guide".

#### Access via HTTPS

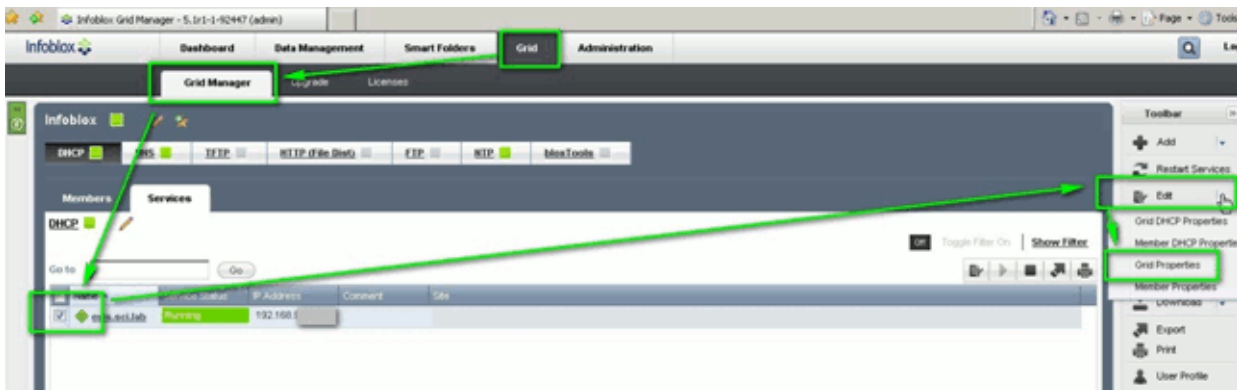
To log in, proceed as follows:

1. Open a web browser and enter  
**https://<IP address or hostname of your Infoblox appliance>**
2. Enter user name and password.  
The default user name is "admin", and the corresponding password is "infoblox". Please change the password after the first login.

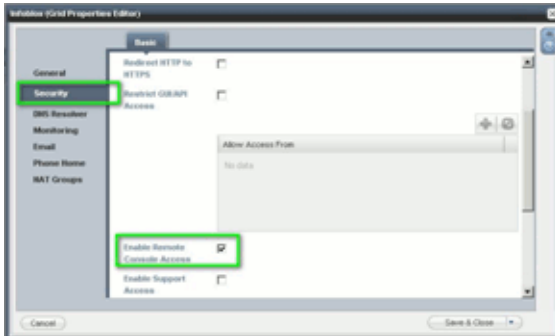
#### Access for CLI via SSH

To enable access for the CLI, you must be logged in via HTTPS (see Access via HTTPS).

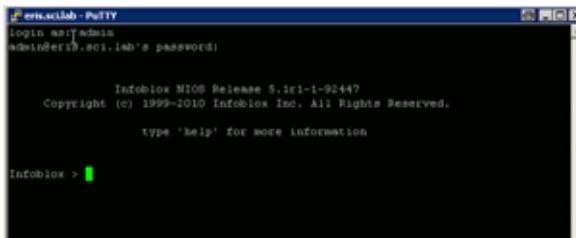
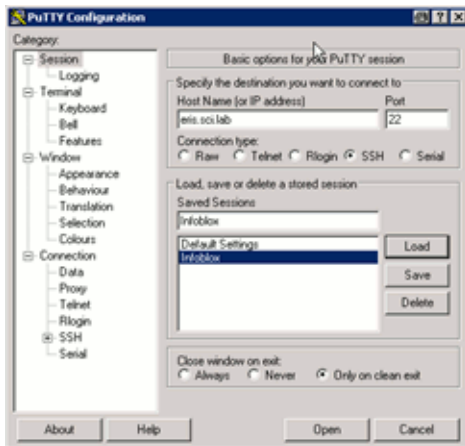
1. Select **Grid > Grid Manager** and expand the toolbar. In the **Edit** menu, select **Grid Properties**.



- The **Grid Properties Editor** opens up. In the **Security** tab, check the **Enable Remote Console Access** field.



- Now you can administrate and configure your Infoblox appliance using the CLI via SSH. For this purpose, every SSH v2 client can be used, for instance, PuTTY for Windows.



## Installation and Initial Configuration

### *Installing Network Components*

#### Basic Configuration

1. Open a web browser and establish an HTTPS connection with the IP address of the LAN1 port. To reach the default address, enter **https://<192.168.1.2>**.

**NOTE:** During the login process, several certificate warnings may appear, but they can be ignored at this stage of configuration. To stop these warning messages, a new self-signed certificate or an import of a third-party certificate is necessary. For more information on how to implement certificates, see the Infoblox Administration Guide.

2. Log in as "admin" with the default password "infoblox".
3. Read the license agreement and accept it.
4. The **Grid Setup Wizard** appears. Select **Configure a Grid Master > Next**.
5. Set the **grid properties**:
  - **Grid Name**  
This name (text string) is used by the grid master and by appliances joining the grid to authenticate each other when establishing a VPN tunnel between them. The default grid name is "Infoblox".
  - **Shared Secret**  
This text string is used as a shared secret by the grid master and by appliances joining the grid to authenticate each other when establishing a VPN tunnel between them.
  - **Show Password**  
Activate the switch to have the password displayed, or deactivate it to have the password hidden.
  - **Hostname**  
Specify a valid DNS host name for the Infoblox appliance.
  - **Is the Grid Master an HA pair?**  
Select **No**.

Afterwards, click **Next**.

6. Configure the network settings.

- **Host Name**  
Specify a valid DNS host name for the Infoblox appliance.
- **IP Address**  
Shows the IP address of the LAN port.
- **Subnet Mask**  
Shows the subnet mask of the LAN port.
- **Gateway**  
Shows the IP address of the gateway resp. router for the subnet in which the LAN port is located.
- **Port Settings**  
Select the appropriate settings for the port from the list.

Afterwards, click **Next**.

7. Enter a new password. The password must be a single hexadecimal string with a minimum length of 4 characters.

Afterwards, click **Next**.

8. Choose a time zone for the grid master and specify whether the grid master should synchronize its time with the NTP server.

When you wish to use NTP, click on the **Add** symbol and enter the IP address of an NTP server. You can also enter multiple NTP servers.

When you do not wish to use NTP, set date and time manually.

Afterwards, click **Next**.

9. In the final screen, you can check all settings you have made with the wizard.

Click **Finish**.

After this, a restart is performed.

## Installation and Initial Configuration

### Installing Network Components

#### 4.12.7.2 Configuration

##### General DHCP Configuration

First, you must specify a network and a range of IP addresses to be leased.

**NOTE:** For enabling active DNS forwarding over DHCP, a working DNS must be present in your network. You can check this by means of the following CLI commands:

- Determine the IP address of the DNS server which has been configured for your network. Under Windows, this is done using the command:

```
ipconfig /all
```

- With a ping, you can check if this DNS server is reachable:

```
ping <IP address of the DNS server>
```

- With nslookup and a random IP address or a random host name, you can determine if the DNS server is working correctly:

```
nslookup 172.21.101.15 or
```

```
nslookup wsname.domain.net
```

##### Adding a Network

1. Select **Data Management > IPAM** and in the toolbar under **Add**, click **Add IPv4 Network**.



2. In the **Add Network** wizard, complement the following specifications:

- **Address:**  
Address of the network. Example: **172.21.101.0**
- **Netmask:**  
By means of the netmask slider, select the netmask **/24 (255.255.255.0)**.

3. Click **Save&Close**.

### Creating a DHCP Range

1. Under **Data Management > DHCP > Networks**, select your network (e.g. 172.21.101.0), click **Add** in the toolbar, and then **DHCP Range**.



2. In the **Add Range** wizard complement the following specifications:
  - **Start:**  
Beginning of the address range. Example: **172.21.101.100**
  - **End:**  
End of the address range. Example: **172.21.101.199**
3. Click **Save&Close**.

**NOTE:** Please note that every DHCP server in your environment should have at least one range which does not overlap with a range of another DHCP server in the same environment.



## Installation and Initial Configuration

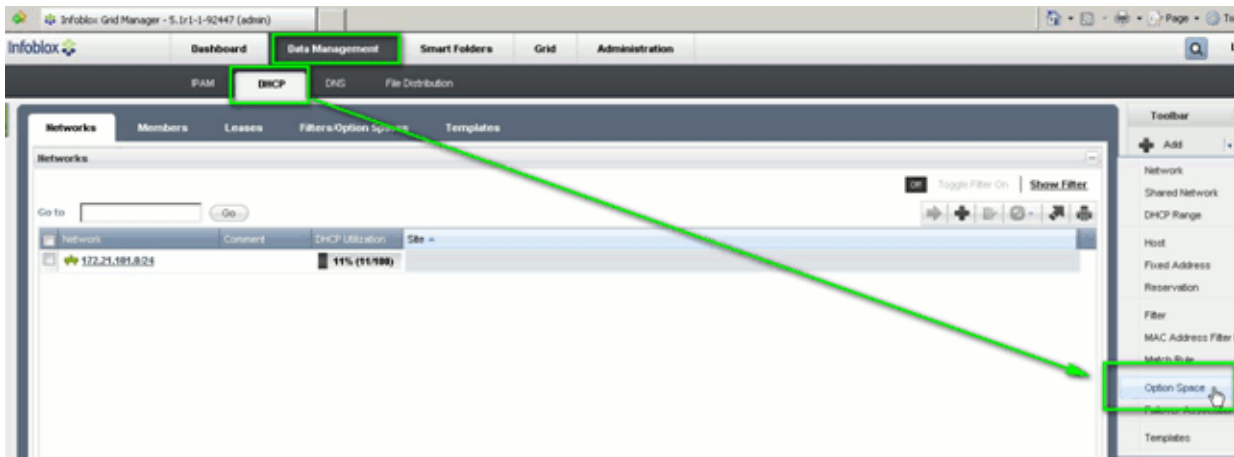
### Installing Network Components

#### Configuring the DHCP Server for DLS

For full Plug&Play, the DHCP server must communicate the IP address and port number of the DLS to the phone during startup. Subsequently, the phone will contact the DLS to receive the required settings.

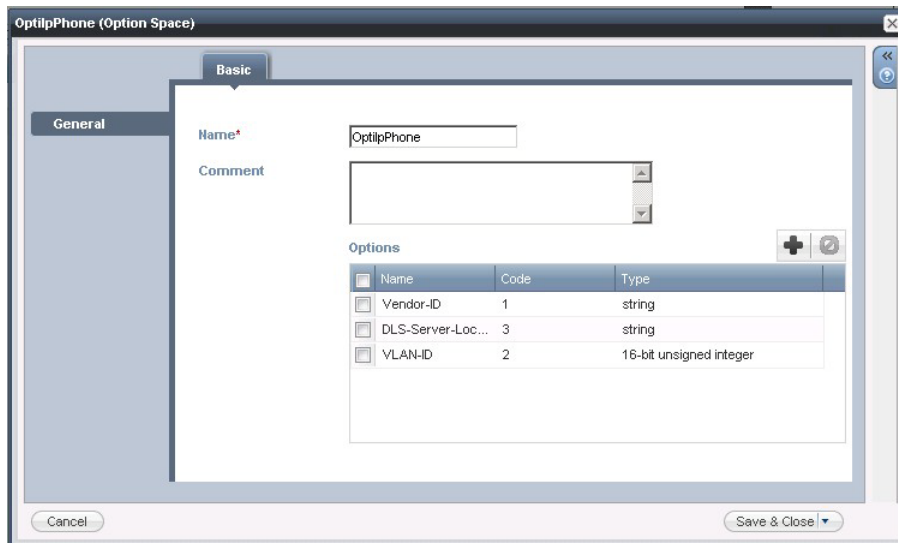
The Infoblox appliance transmits the DLS-relevant information in the form of vendor specific options.

1. Navigate to **Data Management > DHCP > Filters/Option Spaces** and on the right side, select **Add**.



2. Specify the DHCP options as follows:

- In the **Name** field, enter "OptipPhone".
- Add a new option with the properties **Name**="Vendor-ID", **Code**= "1" and **Type**="String".
- Add another option with the properties **Name**="Vendor-ID", **Code**="1" and **Type**="String".
- If a virtual LAN (VLAN) is used: Add another option with the properties **Name**="VLAN-ID", **Code**="2" and **Type**="16-bit unsigned integer".



3. Navigate to **Data Management > DHCP > Networks**, select your network (e.g. 172.21.101.0/24) and in the toolbar, click **Edit**.

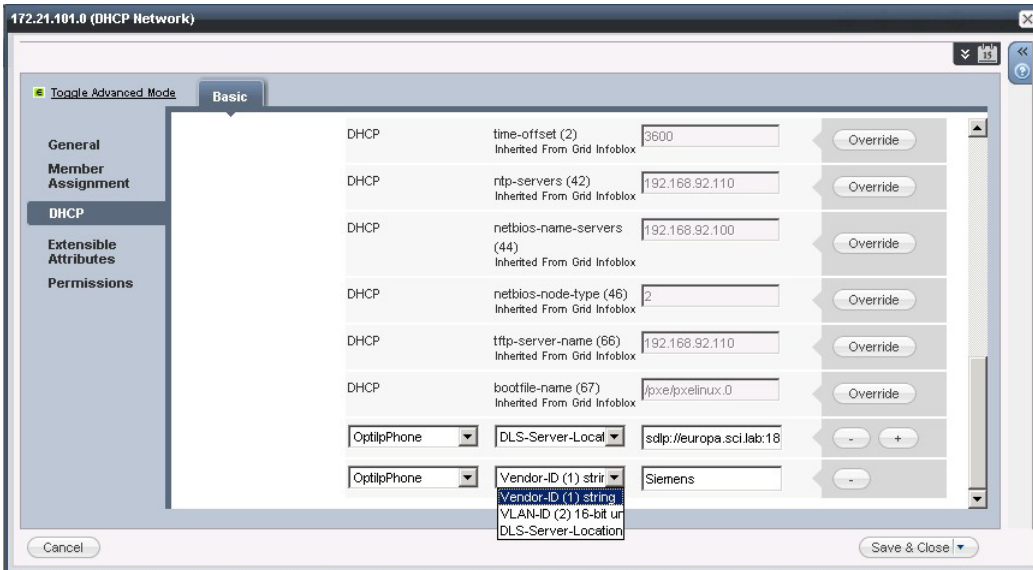


## Installation and Initial Configuration

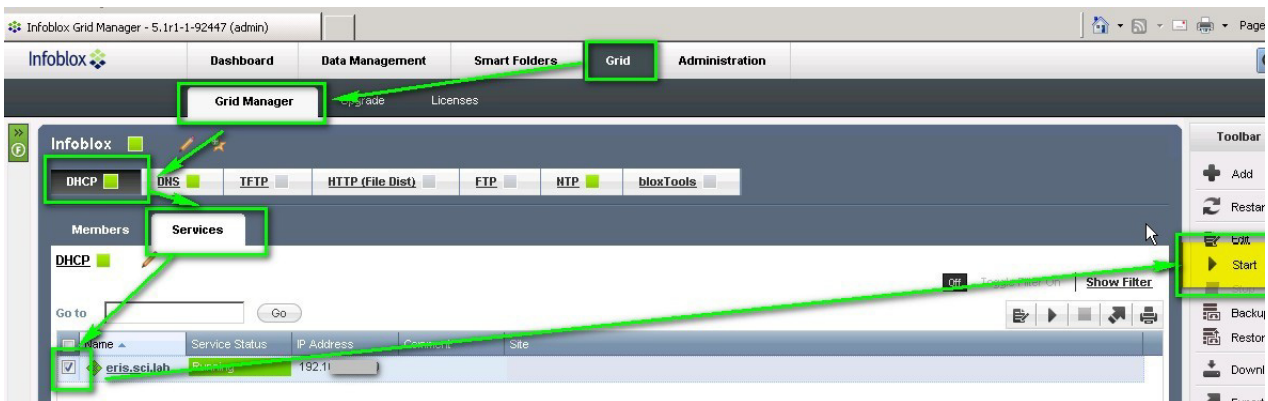
### Installing Network Components

4. Navigate to **Basic > DHCP** and perform the following actions.

- Add a new entry with the properties **space=** „OptilpPhone“, **name=** „DLS-Server-Location“, **value=** „sdlp://<name or hostname of your DLS server>:18443“.
- Add a new entry with the properties **space=** „OptilpPhone“, **name=** „Vendor ID (1) string“, **value=** „Unify“.
- If a virtual LAN (VLAN) is used, the VLAN ID must be specified in a similar way.



5. Navigate to **Grid > Grid Manager > DHCP > Services**. Check your network and click the play button. The DHCP service starts.



## 4.13 Uninstalling the Deployment Service

To completely remove a DLS installation from a computer, you must uninstall two components one after the other.

**IMPORTANT:** An uninstallation also deletes all data in the DLS database. To avoid data loss, create a backup of the database before you carry out the uninstallation (see Section 15.9, "Backup/Restore").

**IMPORTANT:** The Uninstaller removes any rollback related directories except the rollback database backup for remote database deployments since it does not know the user supplied directory for the database backup during an upgrade installation.

**IMPORTANT:** After uninstallation in remote database deployments, the database must be deleted manually by the administrators.

### 4.13.1 Uninstalling the DLS

1. In the Windows Start menu, select **Settings > Control Panel > Add/Remove Programs** and then click the **Deployment Service** entry in the list of installed software.
2. Click **Remove** and follow the rest of the procedure.

When the uninstallation is complete, both the DLS application and the Web server that was installed (*Tomcat*) are removed from the server PC.

**NOTE:** The root directory created during DLS installation, "DeploymentService", is emptied during uninstallation, but must be deleted manually.

### 4.13.2 Uninstalling the SQL Server

If you want to reinstall the DLS, the installation routine will give you an option for uninstalling the existing Microsoft SQL Server 2008 R2 / 2012. Otherwise you can remove it manually:

1. In the Windows Start menu, select **Settings > Control Panel > Add/Remove Programs** and click the **Microsoft SQL Server 2008 R2 / 2012** entry in the list of installed software.
2. Click **Remove** and follow the rest of the procedure.

When the uninstallation is complete, the SQL database application is removed from the server PC.

## **Installation and Initial Configuration**

### *Uninstalling the Deployment Service*

## 5 The DLS User Interface

### 5.1 Starting and Logging On

1. Enter one of the following URLs in the Web browser:

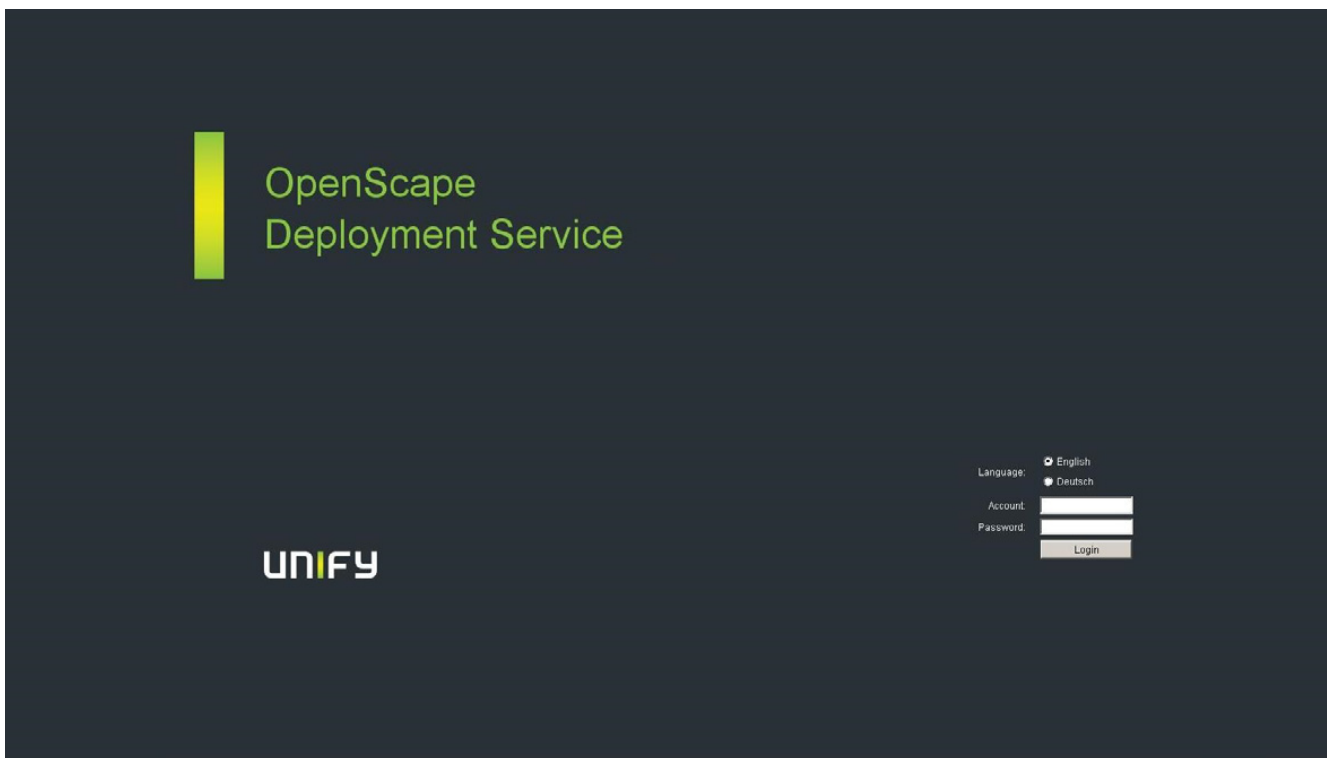
**http://[IP address]:18080/DeploymentService/**

or

**https://[IP address]:10443/DeploymentService/** (for an encrypted connection)

For [IP address], enter the IP address of the computer on which the Deployment Service is running (DLS server).

2. The Login window appears:



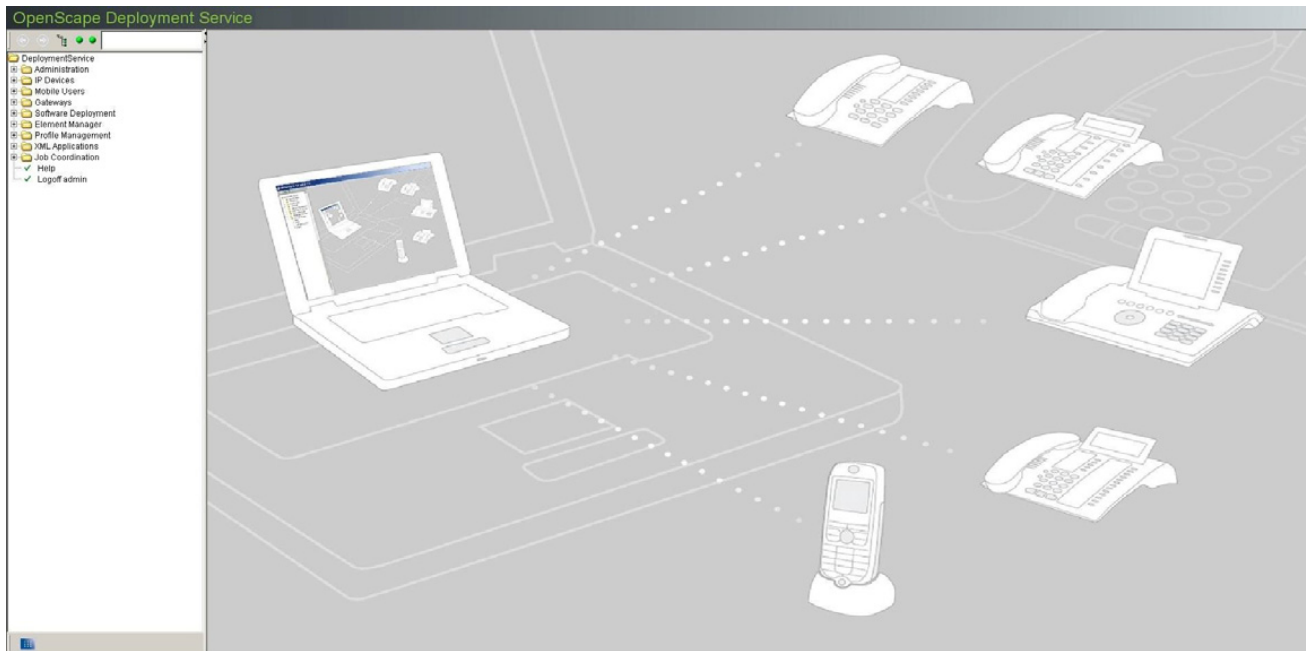
Enter "admin" for **Account** and the password set during installation for **Password**.

If applicable, select your language and confirm with **Login**.

## The DLS User Interface

### Ending

3. The startup screen is displayed:



**NOTE:** Communication between the DLS server and **DLS client** is set up using the port number **18080** or **10443** (secured connection).

Note that communication between the DLS server and **IP device** takes place over port **18443** (default mode) or **18444** (secure mode).

For more information, refer to Section 7.5.4.4, "'DLS Connectivity' Tab".

## 5.2 Ending

1. In the main menu (see Section 5.4.1), select **Logoff <account>**.
2. Confirm the security prompt with **Yes**.  
The login window reappears in readiness for a new account to log on.
3. Close the browser window.

## 5.3 Opening the Context-Sensitive Help Function

This manual can be viewed in online help format for each DLS client interface topic (page in content area, see Section 5.4.2). For help, select the entry **Help Topics** under **Help** in the menu bar.

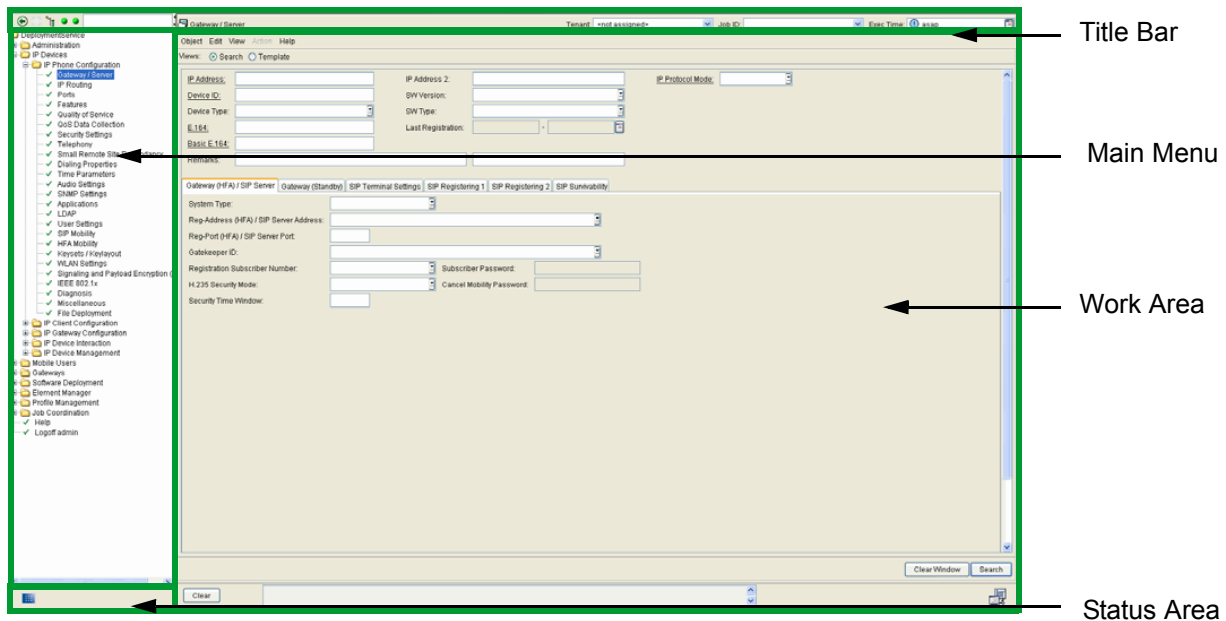
The local version of the DLS (OpenScape Deployment Service local) does not support the context sensitive help function. The general help will be opened.

You can call up help without a special topic by clicking **Help** in the main menu (see Section 5.4.1).

Help is displayed in a new browser window.

## 5.4 Application Interface

The application interface has three parts:



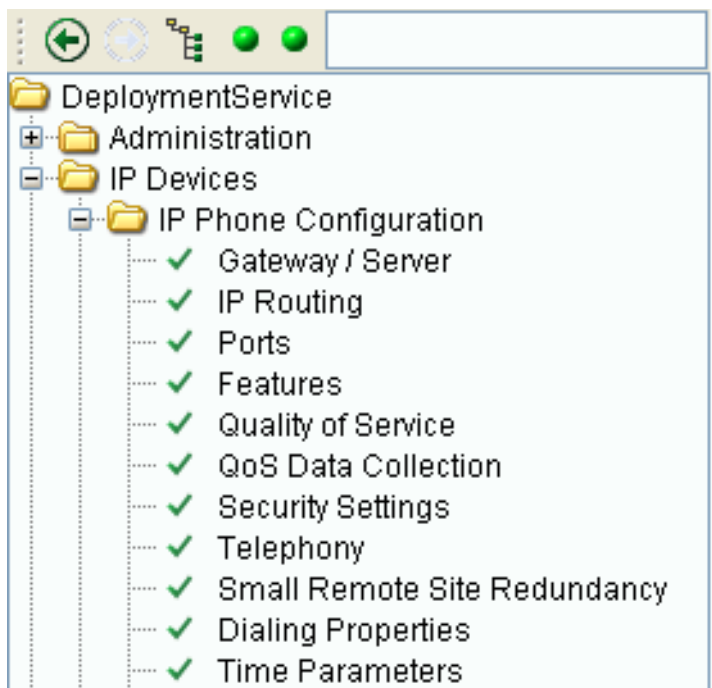
You can change the position of the division between the main menu and the working area by clicking and dragging the separator. Clicking one of the arrow icons in the upper area of the separator moves the division all the way to the right or left, so that the working area or main menu is removed from the display.

**NOTE:** You can also use the operating sequence in Section 15.1, "First Steps: Changing IP Device Parameters" to get to know the interface better.





#### 5.4.1 Main Menu


The structure of this manual from Chapter 6, "Administration" onwards largely reflects the structure of this main menu.




The main menu contains the following buttons:

 With the aid of these buttons, you can navigate between menus that have been opened before. The back button will get active as soon as a menu has been opened. The forward button will get active as soon as the back button has been clicked.

 By clicking on this button, you can open and close all submenus.


 The status display for current jobs is updated with every server access, but it can also be triggered via a popup menu. For this purpose, click on the status display and, in the popup menu, select **Update Status**. If a specific job shall be observed, it is recommended to reset the display by selecting **Reset Status**. Via **Show Jobs**, you can navigate to the **Job Control** menu; there, you can see details on each job. Timer controlled jobs appear in the display not till then when they are started.


The display on the left informs about running jobs. The following states are possible:

 There are no running jobs.

 Job running.

The display on the right informs about finished and failed jobs. The following states are possible:

 Jobs have been executed without errors.

 A job has failed. If the job is cancelled (see Section 14.1, "Job Control"), the display is set to green again.

This field allows the user to filter leaf tree entries matching the search string of the DLS tree menu. Only the filtered leaf tree entries are shown in the tree menu.

You can use the structured main menu to reach all DLS components. Simply click the "+" or "-" in front of a directory symbol (or double-click the directory name) to open or close the directory. Click a contents icon to display the contents in the work area.

The contents icons may look like this:



Directory with further subdirectories or pages.



Page in normal mode (action completed without encountering error or not yet completed).



Page where an action is currently running, for example, when scanning IP Devices.



Page with an action that ended incorrectly.



Page not accessible due to missing account rights.

In addition, the main menu features these special functions:



Help

Opens the online help.



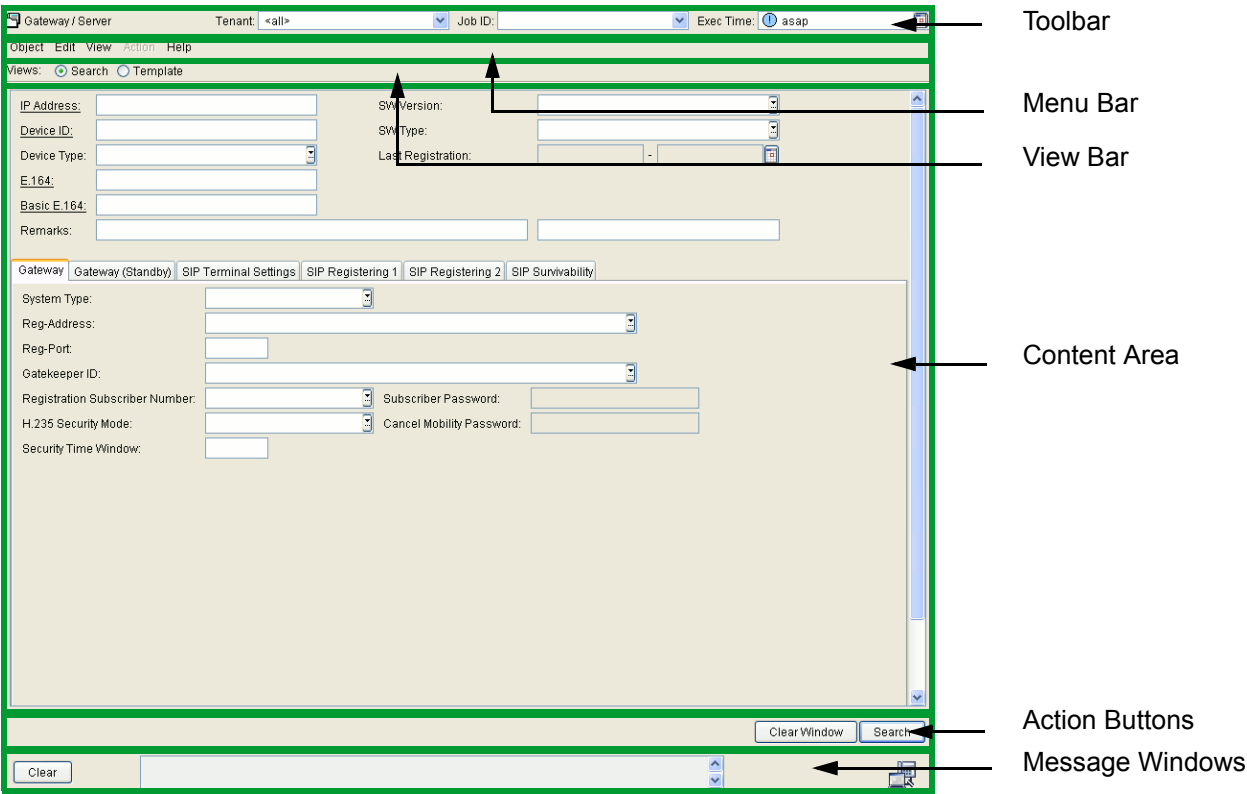
Logoff <account>

Logs off the user indicated in <account>.

For information on other icons, see Section 5.4.2.4, "Icons beside entry fields".

5.4.2 Work Area

To the right of the main menu is the work area which is split up as follows:



### 5.4.2.1 Toolbar



The component currently open in the main menu is displayed on the left.

On the right hand side, elements for

- Tenants
- Job ID
- Exec Time

are displayed.

#### Tenant

All tenants associated with the current account are shown. Additionally, for the 'admin' account,

- <all> = all tenants, and
- <not assigned> = tenants which are not assigned to any account,

are shown.


#### Job ID

A job is a combination of deployment actions that should be executed at a fixed time.

**NOTE:** Switching from daylight saving time to regular time (one hour back) will not lead to a second execution of a job that has been started in the time interval hereby doubled. When switching from regular time to daylight saving time (one hour advance), a job which is scheduled for this skipped time will not be executed.

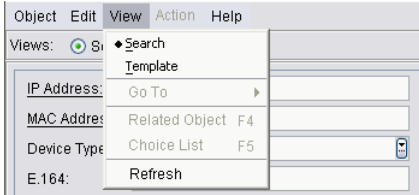
For more information, see the interface description in Chapter 14, "Job Coordination" and sequence descriptions in Section 15.8, "Using Job Coordination".

#### Exec Time

Specify the execution time for the job. The default is „asap“, that is, the job is executed immediately. By clicking on the calendar symbol , you can define a point in time and conditions for job execution with the aid of a separate calendar dialog.

#### 5.4.2.2 Menu Bar

The number of entries shown by the menu bar varies depending on the content area.



**NOTE:** In many cases, different options are available for executing a function.

Sample function: **Search**: this can be performed using the **Object** entry in the menu bar, the button of the same name, or the <F3> function key.

The following lists all entries that can be found in the menu bar:

- **Object**
  - **New** (create new data record)
  - **Save** (save data record, <F3>)
  - **Discard** (discard changes to a data record)
  - **Delete** (delete data record)
  - **Search** (search for data record, <F3>)
  - **Copy** (copy data record)
  - **Paste** (insert copied data record)
- **Edit**
  - **Undo Window** (undo last change in a page of the content area)
  - **Clear Window** (delete all entries in a content area page)
  - **Undo Field** (undo last change in a field)
  - **Cut** (cut out the marked content)
  - **Copy** (copy the marked content)
  - **Paste** (insert marked content)
  - **Clear Selection** (remove marking)
  - **Select All** (mark all objects)

- **View**
  - **Search** (Search view)
  - **Object** (Object view)
  - **Table** (Table view)
  - **New** (view for creating a new object)
  - **Template** (Template view)
  - **Go To**
    - **First Object** (jump to first data record)
    - **Previous Object** (jump to previous data record)
    - **Next Object** (jump to next data record)
    - **Last Object** (jump to last data record)
  - **Related Object** (related objects, <F4>)
  - **Choice List** (show the selection list field, <F5>)
  - **Refresh** (refresh the view)
- **Action**
  - **Discard Job** (cancel the job currently running)
  - **Import File** (import job file)
  - **Export File** (export job file)
  - **Get Template** (load template data)
  - **Save As Template** (save template data)
  - **Rename Template** (change name of saved template)
  - **Delete Template** (delete saved template)
  - **Copy To Template** (copy data to template)
  - **Apply Template** (transfer template data to current view)
  - **Generate All Templates** (templates are generated for all objects or masks associated with the selected IP Device type)
  - **Save Selected Mobile User to Archive** (save mobile user data in a ZIP archive; see Section 16.14.10.2, "Saving Mobile User Data")
  - **Load Mobile User from Archive** (retrieve mobile user data from a ZIP archive; see Section 16.14.10.3, "Loading Mobile User Data")

## The DLS User Interface

### *Application Interface*

- **Copy IP Device** (Copy data of an IP Device, see also Section 16.6, "Replacing an IP Device", Section 16.8, "Replacing HFA with SIP Software and Vice Versa with Identical Device IDs", Section 16.13.7, "Replace IP Phone")
- **Save Selected IP Device to Archive** (Selected IP Devices are written into .zip archive.)
- **Load IP Device from Archive** (Loads data of IP Devices from .zip archive.)
- **Simulate Plug&Play** (Test of location and default profile configuration. Location data are entered and after clicking **Simulate Plug&Play**, the data sent to the phone which might register with the DLS can be checked. )
- **Import Certificate** (Imports a certificate for the selected IP Device (only available in Certificate Management). For more information, see Section 16.13, "Security: Administering Certificates".)
- **Remove Certificate** (Deletes a certificate for the selected IP device (only available in Certificate Management). For more information, see Section 16.13, "Security: Administering Certificates".)
- **Help**
  - **Help Topics** (open context-sensitive help for DLS)
  - **About...** (information on DLS)

### 5.4.2.3 View Bar

There are several views available for some contents.  
You can select a view under the menu bar.

**NOTE:** You can also call up all view bar options using the **View** menu (see Section 5.4.2.2, "Menu Bar").



Views: ☒ Search ☐ Object ☐ Table ☐ New ☐ Template

The following lists all options available for the views:

- **Search**  
Shows a search mask in the content area for filtering individual IP Devices from the total set of registered IP Devices. See Section 5.5, "Search Functionality".
- **Object**  
Shows an individual data record for an IP Device in the content area.
- **Table**  
Shows a list of all available data records in the content area.
- **New**  
Creates a new data record.
- **Template**  
Shows a template in the content area that you can save and then use later for searches.

**NOTE:** If you are in the **Search** view, you can change all elements (for example, by entering values in fields or activating check boxes) in order to define the search criteria or enter data.

In the **Template** and **New** views, only data that can be edited and saved in the DLS database is visible. All other fields are dimmed. General data from the content area cannot be saved as a template.

Frequently, when the search result contains data from existing IP Devices (**Object** or **Table** view), some elements are uneditable and therefore also dimmed.



### 5.4.2.4 Content Area

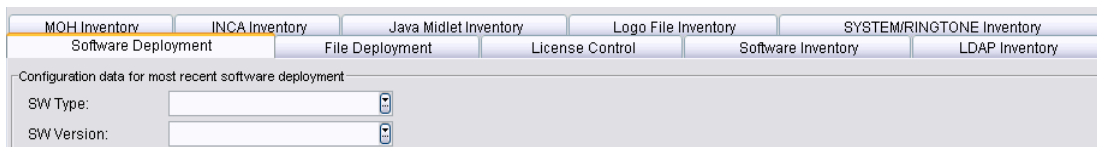
This is where information is shown and where you can enter or select data.

**NOTE:** If necessary, a distinction can be made between the views available (see Section 6, "Administration") when setting element parameters in the content area (starting in Section 5.4.2.3, "View Bar").

These settings dictate whether you can change elements or only view them.

#### Tabs

In the case of large content volumes, it is advisable to split the contents into individual groups. The content groups can then be selected and displayed via tabs in the content area.



Click the tab containing the contents you want to view or edit. Information on the various tab interfaces can be found in Chapter 6, "Administration" to Chapter 14, "Job Coordination".

#### The most important control elements

- **Text field**



For displaying / entering freely selected alphanumeric characters as well as allowing the data reset for text items. The boolean data items already provide this option. At DLS GUI level, when creating DLS templates, the boolean items support the following options:

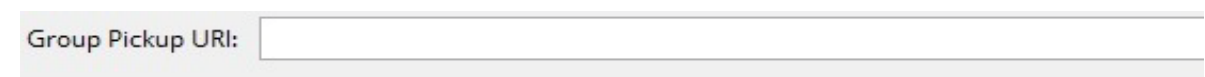
- **Not Included in the template:**



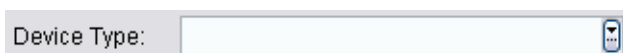
- **Included with specific value:**



- **Included as empty value:**

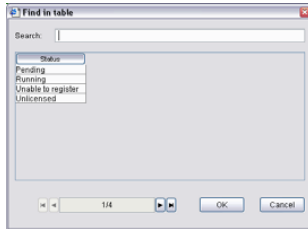


- **Selection list field**

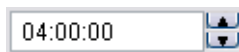


For selecting an item from a list and for entering freely selected text.

If available, the **Find in Table** dialog opens with several entries when you click the list button at the right of the field.



- **Choice field**

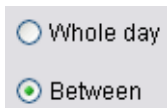


Click a value (for example, 17) and increase or decrease the value by clicking the appropriate arrow.

## The DLS User Interface

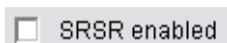
### Application Interface

- **Options**



For selecting one of several possible options.

- **Check box**

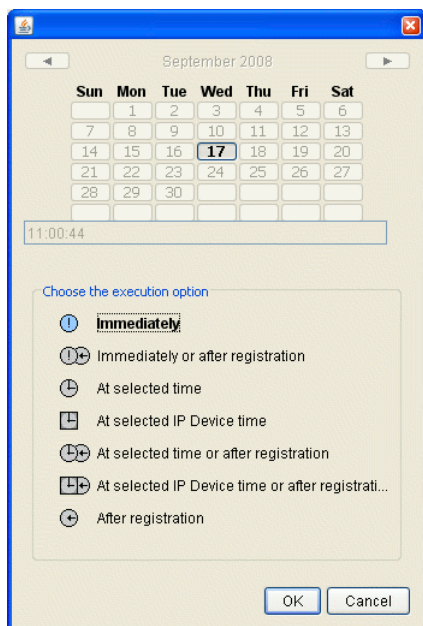


For activating or deactivating a property. There is also a third status for a check box in the **Search** view, which is known as "undefined" (half-tone display).

- **Time field with calendar button**



This button provides you with a separate calendar dialog for selecting a point in time and conditions for job execution.



The following options are available:

- **Immediately:** The job is executed immediately. If the IP Device should be unreachable, the job will be cancelled.
- **Immediately or after registration:** The job is executed immediately. If the IP Device should be unreachable, the job will be started anew when the IP Device is registered.
- **At selected time:** The job is started at the point in time selected in the calendar field.

- **At selected IP Device time:** The job is started at the point in time selected in the calendar field. However, here, not the system time on the DLS server is valid, but the local time in the IP Device. This option is expedient when the DLS server and the IP Devices are in separate time zones.
- **At selected time or after registration:** The job is started at the point in time selected in the calendar field. If the IP Device should be unreachable, the job will be started anew when the IP Device is registered.
- **At selected IP Device time or after registration:** The job is started at the point in time selected in the calendar field. However, here, not the system time on the DLS server is valid, but the local time in the IP Device. This option is expedient when the DLS server and the IP Devices are in separate time zones. If the IP Device should be unreachable, the job will be started anew when the IP Device is registered.
- **After registration:** The job is executed when the IP Device is registered.


**OK** accepts the value in the time field, **Cancel** closes the calendar without accepting the data.

- **Time field with calendar button and Exec Time**

**NOTE:** Please note that no new execution time will be calculated when the IP Device is moved to another timezone meanwhile.


- **Open WBM with a current IP address**

If you click the browser button beside the **IP Address** field, Web-Based Management (WBM) opens for the workpoint in a new browser window with this IP address.

IP Address:	192.168.1.238	
Device ID:	00:01:E3:25:EA:13	

The button is only active if the field contains an IP address. For information on how to operate the WBM, refer to the Workpoint Administration Manual.

- **More icon buttons**

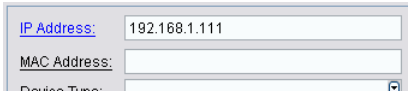
Icon buttons ( for example,  ) appear within an object (for example, for an IP phone) when more than one entry is available or can be inserted for each object (see Section 5.4.2.4, "Multiple objects").

## The DLS User Interface

### Application Interface

- **Search with parameter acceptance (Related Jump)**

User-friendly interface links help you to search for the value entered for different fields, such as, **IP address** and **device ID**) in other interfaces under **IP Devices** .



IP Address: 192.168.1.111  
MAC Address:   
Device Type:

Click the underlined link (shown in bright green when the mouse hovers over it).



A dialog window opens with a list of all additional topics involving **IP Devices**.

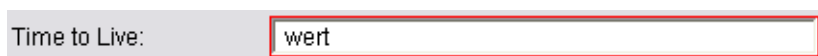
Select an entry from the list and click **OK**. The display then shows the interface that you selected with the value that was transferred, and a search is performed automatically.

### Entry field display

Elements that do not allow direct input are dimmed on the screen). Fields that are not relevant to the current configuration are also dimmed, for example, an SIP parameter in a HFA workpoint.

Mandatory fields are shown with a black frame.

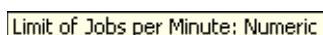
Elements that contain an invalid value are shown with a red frame after you leave the field or when an action is executed.



Time to Live: wert

If this is the case, correct the value and perform the action again.

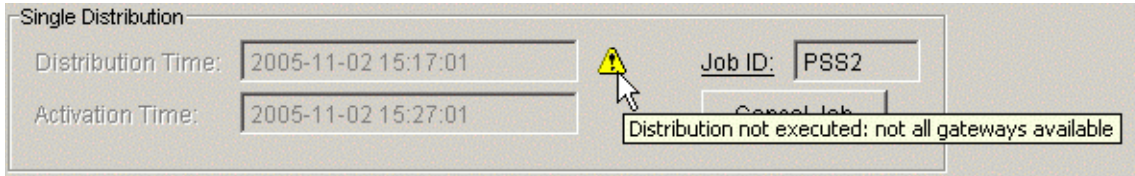
Often when you hover the mouse over elements, information known as "ToolTips" appears at the mouse pointer (example).



Limit of Jobs per Minute: Numeric

## Icons beside entry fields

In certain instances, information or warning icons may appear next to some input fields. An explanation (or ToolTip) appears if you place the cursor over the icon. Example:



Icon	Area	Meaning
	Field	
	IP Phone Configuration IP Client Configuration	Workpoint authentication at the DLS has failed. This may be due to an invalid authentication mode, for example. See Section 7.5.4.4, "DLS Connectivity" Tab".
	Device Type	
	IP Phone Configuration IP Client Configuration	The IP address is assigned to another device (IP address conflict). In many cases, the DHCP server has assigned the same address twice.
	Device ID	
	IP Phone Configuration IP Client Configuration	The device type specified is not supported.
	Device Type	
	Title Bar Pending Alarms	
	IP Phone Configuration	The telephone is set up as a Mobility Phone, but no Mobile User is logged on. For more information on mobility, see Section 3.8, "DLS Mobility - General Information".
	E.164	
	IP Phone Configuration	A Mobile User is logged on to the IP phone. For more information on mobility, see Section 3.8, "DLS Mobility - General Information".
	E.164	
	IP Phone Configuration	The current configured device is not yet attached, that is, it is a virtual device.
	Device Type	
	IP Phone Configuration IP Client Configuration IP Gateway Configuration	The device has been deleted via API interface. If it is to be used again, it can be recovered by initiating <b>Read IP Device Data</b> .
	Device Type	

Table 9 Information and warning icons in the content area

## The DLS User Interface

### Application Interface


Icon	Area	Meaning
	Field	
	<b>IP Phone Configuration</b> <b>IP Client Configuration</b>	<p>The synchronization icon which is displayed after a database restore on all physical devices (and which indicates that the devices need to be registered - again - in DLS) does not disappear on mobility logged on devices until a log-off action is performed because only then the DLS database and the device will be synchronized.</p> <p>This is a functionality by designed.</p> <p>While a mobile user is logged on there is no way to 'Read' the base device data since a Read is executed over the active E164 number. By the negotiation of communication to acknowledge proper states in between logon and logoff actions the Arrow Icon conditions are also reflected over the GUI accordingly.</p>
	<b>Device Type</b>	

Table 9 Information and warning icons in the content area

Some icons are also displayed in a separate column in Table view. This means that workpoints with particular properties (error messages) can be easily sorted and filtered out. Icons are also displayed in the main menu (Section 5.4.1, "Main Menu") and in the message window (Section 5.4.2.6, "Message Windows").

## Multiple selection and data transfer in Table view

If changes were made in the **IP Devices** area, you can transfer these changes to additional devices in the search selection.

**NOTE:** If running a DLS client on Windows XP, check that your color scheme is set to "Default (blue)". The list display may not work properly if your color scheme is set to "Olive Green" or "Silver".

Call: "Display Properties" > "Appearance" > "Color scheme".

Change to **Table** view **before** saving. The entry with the changed parameters is shown in dark blue.

			192.168.1.16							
			192.168.1.24							
2007	2007		192.168.1.7							
3240	5619232109		192.168.1.28							
3250	3250		192.168.1.29							
4711	4711		192.168.1.15	4	722		112	1,2,3,4	49	89
4712	4712		192.168.1.12	4				1,2,3,4		
555666	555666		0.0.0.0							
5618239953	5618239953		192.168.1.5						49	89
654321	654321		192.168.1.17							

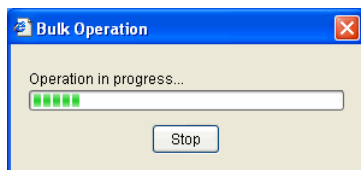
Select additional IP devices to which the changes should also apply:

- Hold the <SHIFT> button down and click the top and bottom rows to mark all the rows in between (including the selected rows).
- Hold the <CTRL> button down and click individual entries to add or remove them from the selection.
- If you select **Edit - Select All** in the menu bar, you can add all selection entries.

All additional entries are shown in light blue.

			192.168.1.16							
			192.168.1.24							
2007	2007		192.168.1.7							
3240	5619232109		192.168.1.28							
3250	3250		192.168.1.29							
4711	4711		192.168.1.15	4	722		112	1,2,3,4	49	89
4712	4712		192.168.1.12	4				1,2,3,4		
555666	555666		0.0.0.0							
5618239953	5618239953		192.168.1.5						49	89
654321	654321		192.168.1.17							

Click Save to apply the data.



If you click **Stop**, the changes to the current workpoint are completed, but no additional data is transferred. To proceed, start the entire procedure anew.

After the data has been successfully transferred, a green check mark appears beside each updated entry. A note icon is displayed for entries where the job is not yet complete.



## The DLS User Interface

### Application Interface

192.168.1.119	Bevorzugt High Quality Sprachübertragung	Auto	G.729
192.168.1.123	Bevorzugt High Quality Sprachübertragung	Auto	G.729
192.168.1.124	Bevorzugt High Quality Sprachübertragung	Auto	G.729
192.168.1.125	Bevorzugt High Quality Sprachübertragung	Auto	G.729
192.168.1.159	Bevorzugt High Quality Sprachübertragung	Auto	G.729
192.168.1.198	Bevorzugt High Quality Sprachübertragung	Auto	G.729
192.168.1.202	Bevorzugt High Quality Sprachübertragung	Auto	G.729

### Individual Layout of Table View

The user can accommodate the table view to his individual needs. These settings are stored user-specific in the DLS database, so that the individual settings are available to the user on each client.

To alter the order of table columns, click on the title of a column with the left mouse key and drag the column to the desired position.

To adjust the width of a column, move the mouse pointer to one of the margins of the column title. As soon as the pointer changes to a double arrow, press the left mouse key and drag the margin to the desired position.

Furthermore, you can determine which columns are to be displayed und which columns shall have a fixed position. For this purpose, click on the column title using the right mouse key. In the context menu which is opening up now, you can define the desired settings.

**NOTE:** It is possible that the individual table view settings are reset on a DLS update, if objects in the database are modified during the update.

### Additional sorting columns

The user has the possibility to select more than one column in the table view for sorting. All selected columns will be combined.

The first selected column will be the main column used for sorting, while the additional selected columns will be used as sub columns.

The main column will be selected by clicking on the column header with the left mouse button. All subsequent sub-columns will be selected by pressing the “Shift” key and simultaneously clicking with the left mouse button on the desired columns. The main column will be marked with a bullet in front of the column name. The sort direction (ascending, descending) is displayed behind the column name by a triangle in up or down direction. The sort direction can be changed by clicking on the column header again.

E.164	● Basic E.164 ▲	M...	IP Address	IP ...	IP Address 2	IP Protocol...	System Type	Reg-Address (HFA) / SIP Server Address	Reg-Port (HFA) / SI...
17			192.168.1.249			IPv4	HiPath 3000 V7.0	192.168.1.2	4060
3333	3333		192.168.1.245			IPv4		192.168.1.240	5060
3334	3334		192.168.1.43			IPv4		192.168.1.240	5060
3335	3335		192.168.1.45			IPv4		192.168.1.240	5060
3336	3336		192.168.1.41					192.168.1.240	5060
3337	3337		192.168.1.241			IPv4		192.168.1.240	5060
3338	3338		192.168.1.252			IPv4		192.168.1.240	5060
3339	3339		192.168.1.235			IPv4		192.168.1.240	5060

Selecting additional sort columns as sub sort columns may be useful if the main sort column contains multiple identical values.





Selecting additional sort columns is available only in the table view of objects. It is not available for embedded tables in the content area. For those tables, only the sort direction can be changed.

## Multiple objects

Certain objects, on the other hand, allow you to create and display several different entries per object (for example, with Profile Management > Device Profile > "Templates" Tab).


Template Name	Default Profile
optiPoint - Applications	<input checked="" type="checkbox"/>
optiPoint - IP Routing	<input checked="" type="checkbox"/>
optiPoint - Ports	<input type="checkbox"/>
optiPoint - Quality of Service	<input checked="" type="checkbox"/>

The buttons have the following meaning:


-  Inserts a new entry.
-  Deletes all selected entries.
-  Cancels the last changes to selected entries and removes a selection.
-  Transfers the content of the selected row (row containing the cursor) to all selected entries.

The selected row is marked in gray in the left column. This column may contain one of the following symbols:

- \* (asterisk): The entry has been changed but the changes have not yet been saved.
- + (Plus): The entry has been added to but the additions have not yet been saved.
- - (Minus): The entry has been deleted but the deletion has not yet been saved.

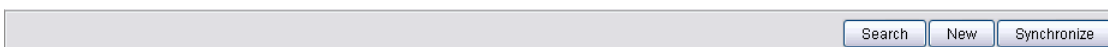
If any of these symbols is displayed, you can undo the change with .

The following applies when transferring data from one row to another:

- Data is moved from the current row (the row with the cursor).
- The data is transferred to all marked rows.
- Hold the <SHIFT> button down and click the top and bottom rows to mark all the rows in between (including the selected rows).
- Hold the <CTRL> button down and click individual rows to add or remove them from the selection.
- Click the  button to transfer the data (all target rows are marked with an \* (asterisk) until you save the changes).

### 5.4.2.5 Action Buttons

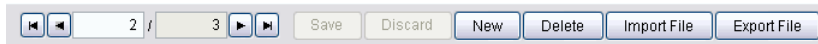
Action buttons vary depending on the content area and can be used to perform various actions.



## The DLS User Interface

### Application Interface

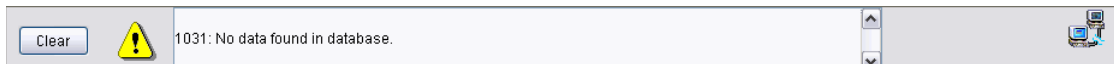
In **Object** and **Table** view, navigation buttons are shown for selecting data records. If one element is selected, the number of the selected data record is shown in the field to the left. In the window to the right, the total number of data records in the table is shown. If several elements are selected, the highest number of the selected data records is shown in the field to the left. In the field to the right, the total number of data records in the table is shown, followed by the number of selected data records in brackets.




For additional information on operating the DLS interface, refer to Section 15.1, "First Steps: Changing IP Device Parameters".


### 5.4.2.6 Message Windows

The message window displays status and error messages after an action is started and shows the progress of the action.



Messages are categorized by icons:

 A warning message is shown, for example, if a search was unsuccessful.

 An error message is shown, for example, if you enter an invalid value.

You can delete all messages that were output at any time with **Clear**.

A progress bar is displayed on the right for certain actions, such as, scanning IP devices.

You can change the size of the message window by clicking and dragging the separator between the message window and the remaining work area.

### 5.4.3 Status Area

This area informs about the load on each node of a DLS cluster. In the appropriate DLS screen, the name of each node and the number of requests on this node during the last hour are displayed. The display is also available on a single node DLS configuration; in this case, it will not change, but the number of requests could be important in case of an overload situation.

**NOTE:** This feature is available for the administrator only.

In the status area, the following symbols are used:



Server is running with full capacity.



Server is running with half capacity. This is the case when

- the number of requests is lesser than 50% of the maximum number, and
- the difference between the maximum and the actual request count is greater than 10.



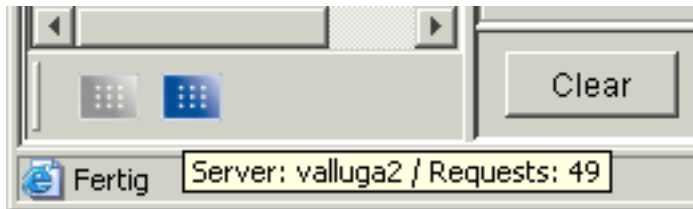
Server is set to inactive.

Two different status views are available:

#### Basic View

The basic view (default) displays the nodes of a DLS Cluster as server symbols in the left lower corner. The names of the DLS nodes and the number of requests during the last hour are displayed as tooltip.

This example shows a node called "valluga2" which is running at full capacity, and has received 49 requests during the last hour:



In this example, the DLS node "valluga3" has been integrated in the cluster, but is currently not active:



#### Extended View

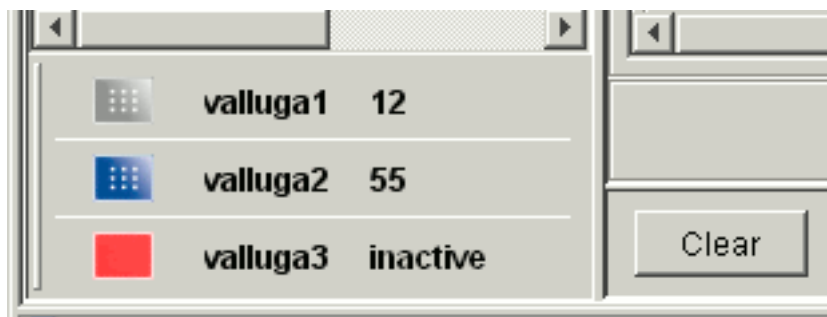
To arrive at the extended view, click on a server symbol with the right mouse key. The DLS cluster menu opens up; select **Switch Layout**.

The extended view displays detailed informations, e.g. the names of DLS nodes and number of requests.

## The DLS User Interface

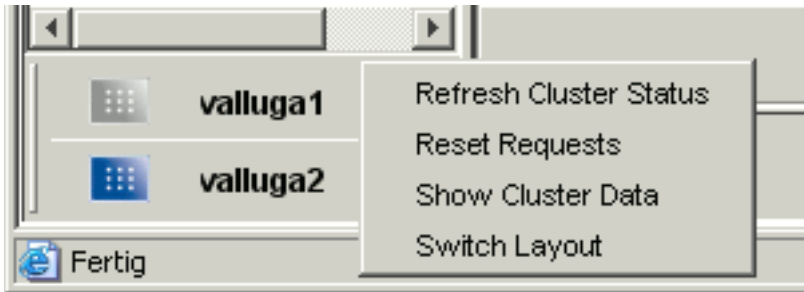
### *Application Interface*

In the following example, one node is running at half capacity, one at full capacity, and one node is set to inactive.



## Cluster Menu

In basic view or extended view, click on a server symbol with the right mouse key to get the DLS cluster menu.



The following functions are available here:

- **Refresh Cluster Status:** Refreshes the data (symbol, request count) for all nodes.
- **Reset Requests:** Sets the request count to 0 for all nodes.
- **Show Cluster Data:** Forwards to **Administration > Cluster Configuration > Deployment Server**.
- **Switch Layout:** Toggles between basic view and extended view.

## 5.5 Search Functionality

You can use the following wildcards or special characters in all text fields in **Search** view. All fields are combined internally using a logical AND. For example, if you specify a device type and an IP address range, only those IP Phones that correspond to the specified device type and that also belong to the specified IP address range are selected. When searching in embedded tables, all objects are found which match at least the search criterion. After the search, these objects are displayed completely.

- \* (asterisk): Stands for any sequence of characters. It may be combined with other wildcards. Partial inputs, such as, 192.168.\*, are consequently possible for an IP address range from 192.168.0.0 to 192.168.255.255.
- ? (Question mark): Stands for exactly one character. It may be combined with other wildcards. For example: ab??c finds all records where the field has 5 chars starting with ab and ending with c
- ^ (Circumflex): Stands for an empty field. It cannot be combined with wildcards. For example: ^ finds records with empty field, a^a finds records with field containing the string "a^a"
- ! (Exclamation mark): As first character of a string, the search string will be inverted. Therefore "!search string" finds all records where the regarding field contains anything else than „search string“. The exclamation mark may be combined with \*,? and |. The '!' must be marked with a leading ',' when itself is the first character of the search string. It may be combined with other wildcards. For example: !a\* finds records with field not starting with a
- < (Lower than): As first character of a string "<search string" all values lower than the "search string" will be found. The '<' must be marked with a leading ',' when itself is the first character of the search string. It cannot be combined with other wildcards. For example: <100 finds all records with field value lower than 100
- > (Greater than): As first character of a string ">search string" all values greater than the "search string" will be found. The '>' must be marked with a leading ',' when itself is the first character of the search string. It cannot be combined with other wildcards. For example: >Munich finds all records with field value greater than Munich, that means Paris, Oslo but not Berlin and Athens
- | (Vertical bar): Different search strings are separated from each other and are used for OR search. All elements containing "search string1|search string2| search string3" are found. The combination with wildcards is not allowed, but the search can be inverted ('!'). Therefore all elements not containing "search string1|search string2| search string3" are found. The '|' must be marked with a leading ',' when itself is to be searched. For example: abc|def|ghi finds all records where the field contains abc, def, OR ghi !abc|def|ghi finds all records where the field contains anything but abc, def, OR ghi.

## 6 Administration

**Call:** Main Menu > Administration

Basic settings for operating the DLS are made in the **Administration** area.

This menu contains the following submenus:

- Account Management
- PKI
- Server Configuration
- Cluster Configuration
- Display Logging Data
- Alarm Configuration
- Backup/Restore
- File Server
- Workpoint Interface Configuration
- Automatic SPE Configuration
- Automatic Certificate Deployment
- Automatic Archiving
- Automatic Upload Diagnosis- and Security Log Files
- Trace Configuration
- Server Licenses



## 6.1 Account Management

This area features the following components:

- Account Configuration
- Policy Settings
- Roles and Rights

For maintenance issues it is helpful to delegate tasks to multiple persons. These may obtain different accounts. For security reasons it is not wanted that each account has access to every area of the DLS. Hence, the several areas can be allowed or disallowed individually.

To each administrative function, an access right is assigned, and only accounts with this access right are allowed to call this function. In some cases, multiple functions are combined in a single right, for instance, the right to create jobs comprehends the right to edit jobs, like, e. g., update the job status or reset the job.

There is no right which disallows an access explicitly.

The DLS offers a role concept. Each role groups bundles a number of rights. It is possible to define as much roles as necessary.

Some important roles are preconfigured and cannot be changed or deleted, only the default description text can be modified. These system roles are primarily used as patterns for self-defined roles. Not each of these roles makes sense when used all by themselves.

To each account, as many roles as needed can be assigned. The resulting right is the sum of all rights of all assigned roles.

After a new installation of the DLS, an 'admin' account exists, which has all rights based on system defined roles. This account remains undeletable and it's name remains unchangeable, and the system roles cannot be removed from it.

When logging with the admin account on DLS user interface via Assistant for the first time after the installation, the default password must be changed for security reasons. The password must be updated in Assistant too.

With an update installation from a DLS without Account Management to a DLS with Account Management, an 'admin' account with all system defined roles is created. Therefore, the admin account has all rights. To all other accounts, the INFO role is assigned. This enables them to open all screens and to search for all data, but all other functions are disabled. All other roles and rights have to be set manually.

With future DLS upgrades, new functions and new masks will be accessible by system roles only. New rights must be added to user defined roles manually. Therefore it is recommended to set rights by combination of system roles and small user defined roles, rather than copying and modifying system roles.

### **Example**

Goal: An account shall receive editing rights (except bulk-change and create-template) for gateways only.

- Variant A: Define a new role completely based on empty rights table.
- Variant B: Define a new role based on EDIT\_ONE and additionally set the 'Search' right in every relevant mask (Gateway Configuration, QoS Data Collection).
- Variant C: Define a new role with 'Search' right for all gateway masks (Gateway Configuration, QoS Data Collection) PLUS system role EDIT\_ONE.

Only in variant C, the account automatically obtains the right to use newly added functions in the three gateway masks.

**NOTE:** Changes on currently used roles will take effect after next login.

## **6.1.1 Account Configuration**

**Call:** Administration > Account Management > Account Configuration

Here you can configure additional accounts, change passwords, and add or remove roles to/ from existing accounts. If multi-tenancy is installed, one or more tenants can be assigned to an account.

Only those accounts which have the account handling right are authorized to edit accounts, i. e. set up new accounts, or change, or delete existing ones.

If multi-tenancy is used, it is recommended to assign the account management role only to those accounts which have editing rights for **all** tenants. If an account does not have permissions for all tenants, it cannot see all tenants that have been set up. Thereby, the user of this account might try to set up a new account with a name that already exists. In such a case, an accordant error message will appear, and the account will not be set up.

This area features the following components:

- General Data
- Possible Action Buttons
- "Roles" Tab
- "Rights" Tab
- "Tenants" Tab
- "Windows Users" Tab

## General Data

Account:	<input type="text"/>	<input checked="" type="checkbox"/> disabled
Password:	<input type="password"/>	
Access Type:	<input type="text"/>	<input checked="" type="checkbox"/> Safety Mode
Remark:	<input type="text"/>	
Last Login:	<input type="text"/> - <input type="text"/>	<input type="button" value="calendar"/>
Last used address:	<input type="text"/>	
Unsuccessful Logins:	<input type="text"/>	<input type="button" value="reset"/>
Current sessions:	<input type="text"/>	

### Account:

Name of the account.

### disabled

This checkbox is activated if this account is disabled.

### Password:

New (modified) password for this account.

The password should contain at least six characters and should be non-trivial. Unsuitable entries include words that can be found in dictionaries and lexica. Ideally, you should choose a combination of numbers, special characters, and letters that do not contain a personal reference.

### Access Type:

Select the allowed interfaces to the DLS server.

Possible options:

- **DLS-GUI**  
Access to the DLS server is exclusively permitted via the DLS user interface.
- **DLS API (Webservice Interface)**  
Access to the DLS server is permitted exclusively via the programming interface.

**NOTE:** For information on using the DLS program interface (DLS API), see Section 16.12, "Operating the DLS via the Program Interface (DisAPI)"

## **Administration**

### *Account Management*

#### **Safety Mode**

If this checkbox is activated, configuration changes which may cause an IP Device malfunction must be acknowledged in an additional dialog window.

#### **Remark:**

Field for general information.

#### **Last Login**

Shows the date and time of the last successful login.

#### **Last used address**

Address from which the last login (both successful and unsuccessful) was initiated.

#### **Unsuccessful Logins**

Number of unsuccessful logins since last successful login.

#### **reset**

Resets the number of unsuccessful logins in order to unlock this account.

#### **Current Sessions**

Shows the number of current sessions.

## **Possible Action Buttons**

### **Search**

Searches for all registered accounts that match the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### **New**

Creates a new account.

### **Save**

Saves the data entered/modified.

### **Discard**

Discards any unsaved changes.

### **Delete**

Deletes one or more accounts (multiple selections possible in Table view) except 'admin' account.

### **Refresh**

Refreshes the content of the relevant page.

**Call:** Administration > Account Management > Account Configuration > "Roles" Tab

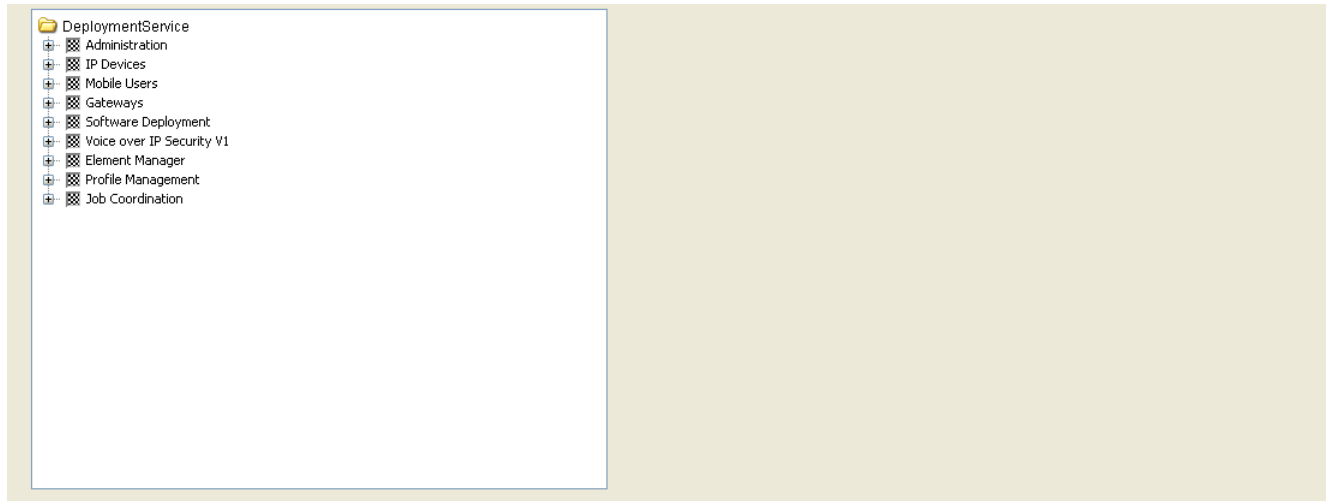
	Role	Description
+		

Name of roles which are assigned to this account. System defined roles cannot be removed from the 'admin' account.

Detailed description of this role.

### 6.1.1.2 "Rights" Tab

**Call:** Administration > Account Management > Account Configuration > "Rights" Tab



Here, the sum of all rights from the different roles is displayed for each account.



6.1.1.3 "Tenants" Tab

**Call:** Administration > Account Management > Account Configuration > "Tenants" Tab

**NOTE:** This tab is available only if the DLS multi tenancy function is installed. See chapter Section 16.17.1, "Install/Deinstall Multi-Tenancy".

Table

Selected entry

1 / 1

Tenant:

Remark:

Tenant

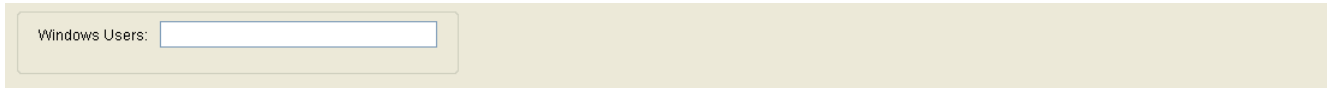
Name of tenants which are assigned to this account.

Remark

Information on the tenant.

#### **6.1.1.4 "Windows Users" Tab**

**Call:** Administration > Account Management > Account Configuration > "Windows Users" Tab

A screenshot of a web interface for the 'Windows Users' tab. It features a light beige background. On the left, the text 'Windows Users:' is followed by a white rectangular text input field with a thin border. The rest of the area is empty.

#### **Windows Users**

Name of Windows Users which are assigned to this DLS account. Different Windows Users can be mapped to the same DLS account, but a certain Windows User cannot be mapped to more than one DLS account.

## **6.1.2 Policy Settings**

**Call:** Administration > Account Management > Policy Settings

In this area, the policy for the DLS users (accounts) is defined, such as length, or special character content.

This area features the following components:

- General Data
- Possible Action Buttons
- "Password Policy" Tab
- "Login Policy" Tab
- "Session Policy" Tab

## General Data

Access Type:

### Access Type:

Shows the interface to the DLS server that is relevant for these policy settings. To switch to another access type, use the navigation in the action button area:



Possible valuse:

- **no access**  
This user account is disabled.
- **DLS-GUI**  
Access to the DLS server is exclusively permitted via the DLS user interface.
- **DLS API (Webservice Interface)**  
Access to the DLS server is permitted exclusively via the programming interface.

**NOTE:** For information on using the DLS program interface (DLS API), see Section 16.12, "Operating the DLS via the Program Interface (DisAPI)"

## Possible Action Buttons

### Discard

Discards any unsaved changes.

### Save

Saves the data entered/modified.

### Refresh

Refreshes the content of this mask from the database.

6.1.2.1 "Password Policy" Tab

**Call:** Administration > Account Management > Policy Settings > "Password Policy" Tab

In this area, the password policy for the DLS user accounts is defined, such as length, or special character content.

Minimum Password Length:	<input type="text" value="1"/>	Maximum Password Length:	<input type="text" value="20"/>
Capital Letter Quorum:	<input type="text" value="0"/>	Lower Letter Quorum:	<input type="text" value="0"/>
Digits Quorum:	<input type="text" value="0"/>	Special Character Quorum:	<input type="text" value="0"/>
Maximum Validity Period:	<input type="text" value="0"/>	Password History Count:	<input type="text" value="0"/>
Identical Characters Count:	<input type="text" value="0"/>	Successive Character Count:	<input type="text" value="0"/>
Minimum changes:	<input type="text" value="0"/>	Notification time:	<input type="text" value="0"/>
Subsequent login time:	<input type="text" value="0"/>	Number of subsequent logins:	<input type="text" value="0"/>
Deny time:	<input type="text" value="0"/>	Minimum activation period:	<input type="text" value="0"/>
<input type="checkbox"/> Account Name in Password not allowed		<input type="checkbox"/> Use Black List	
<input type="checkbox"/> Force Password Change for New Accounts		<input type="checkbox"/> Force Password Change on Policy Change	

Black List

0 / 0

String

Minimum Password Length

Minimum password length.

Value range: 1 - 20

Default: 1

Maximum Password Length

Maximum password length.

Value range: 1 - 20

Default: 20

### **Capital Letter Quorum**

Minimum count of capital letters in the password.

Value range: **0 - 20**

Default: **0** (= no check)

### **Lower Letter Quorum**

Minimum count of lower case letters in the password.

Value range: **0 - 20**

Default: **0** (= no check)

### **Digits Quorum**

Minimum count of numeric characters in the password.

Value range: **0 - 20**

Default: **0** (= no check)

### **Special Character Quorum**

Minimum count of special characters in the password.

Value range: **0 - 20**

Default: **0** (= no check)

### **Maximum Validity Period**

Maximum age of password in days, must be greater than the **Notification Time** value.

Value range: **0 - 180**

Default: **0** (= no check)

### **Password History Count**

Count of stored old passwords which cannot be used again.

Value range: **0 - 10**

## Administration

### *Account Management*

Default: **0** (= no check)

#### Identical Characters Count

Allowed length of a sequence of identical characters.

Value range: **0 - 20**

Default: **0** (= no check)

#### Successive Character Count

Count of ascending or descending characters in a sequence.

Value range: **0 - 20**

Default: **0** (= no check)

#### Minimum changes

Minimum number of characters that must be altered at password change.

Value range: **0 - 20**

#### Notification time

Period before password expiration within which the users are notified of a password change that will become due. Value must be less than the **Maximum Validity Period** value.

Value range: **0 - 30**

#### Subsequent login time

Grace period in days within which the use of an expired password may be continued.

Value range: **0 - 90**

#### Number of subsequent logins

Number of logins at which the use of an expired password may be continued.

Value range: **0 - 3**

### **Deny time**

Interval in days during which a password may not be selected again as a new password by the same account.

Value range: **0 - 180**

Default: **0** (=no check)

### **Minimum activation period**

Minimum time interval in hours that must pass before an existing password can be changed again.

Value range: **0 - 168**

### **Account Name in Password not allowed**

If this check box is set, the DLS will check whether the account name is part of the password, neither in correct nor in reversed sequence. If this is the case, the password will not be accepted. Default: no check.

### **Use Black List**

If this check box is set, the desired password will be checked against the black list (see **String** parameter). Default: no check.

### **Force Password Change for New Accounts**

If this check box is set, the password must be changed with the first logon of a newly registered account.

The concerning GUI user is able to login with the pre-defined password; after this, he will be prompted by a message window to change the password. Before then, all other functions are locked.

A concerning API user will not be able to logon initially. For this purpose, a GUI user with the appropriate account management rights must change the password of the API account. Default: not set (no password change required).

### **Force Password Change on Policy Change**

If this check box is set, a password must be changed with the next logon in case it does not conform to the current password policy.

The concerning GUI account is able to login to DLS GUI with its old password; after this, he will be prompted by a message window to change the password. Before then, all other functions are locked.

A concerning API user will not be able to logon initially. For this purpose, a GUI user with the appropriate account management rights must change the password of the API account. Default: set (password change is required).



## **Administration**

### *Account Management*

#### **Black List**

##### **String**

List of customer defined strings which may not be contained in new defined passwords (Black list). The check will be case insensitive.

### 6.1.2.2 "Login Policy" Tab

**Call:** Administration > Account Management > Policy Settings > "Login Policy" Tab

The screenshot shows the 'Login Policy' configuration interface. It includes several input fields and checkboxes. The 'Allowed failed logins' field is set to 3, 'Account lock' is set to 60, and 'Disabling time' is set to 90. There are three checkboxes: 'Show last login time' (checked), 'Show banner before Login' (checked), and 'Show banner after Login' (checked). There is also an unchecked checkbox for 'Use CaC Authentication Method'. Below these are two tabs: 'Banner before Login' (selected) and 'Banner after Login'. The 'Banner text before Login' field is empty.

**IMPORTANT:** The following policy settings apply to all users except for administrator user "admin". In case of a user with name "admin" (the user that is automatically created from dls and cannot be deleted in any case) the "lock out" policy setting is not taken into consideration.

#### Allowed failed logins

Allowed number of consecutive failed logins. When this number is exceeded, the account is locked for the time specified in **Account lock**.

Value range: **2 - 5**

#### Account lock

When the allowed number of failed logins (**Allowed failed logins**) has been exceeded, the account will be locked for the time span specified here.

Value range: **0 - 300**

#### Disabling time

When an account has not been used for the number of days specified here, it will be disabled.

Value range: **0 - 180**

#### Show last login time

When active, the time of the last login is shown after each successful login in a separate dialog box.

## **Administration**

### *Account Management*

#### **Show banner before Login**

When active, the pre-login banner is shown after the DLS client has been started.

#### **Show banner after Login**

When active, the post-login banner is shown after every login.

#### **Use CaC Authentication Method**

This switch activates the authentication to DLS via Windows Username and CaC PIN. By default, the authentication based on DLS username and password is enabled. Only one authentication method is recommended be active at a time.

#### **Banner before Login**





























Text for the pre-login banner which is shown after DLS client startup. It is recommended to provide a bilingual text.

#### **Banner after Login**

Text for the post-login banner which is shown after every login. It is recommended to provide a bilingual text.

### 6.1.2.3 "Session Policy" Tab

**Call:** Administration > Account Management > Policy Settings > "Session Policy" Tab

Session Timeout:	<input type="text" value="5"/>
Session count:	<input type="text" value="0"/>
allowed session times:	
Monday from:	<input type="text" value="00:00:00"/>   to: <input type="text" value="23:59:59"/>  
Tuesday from:	<input type="text" value="00:00:00"/>   to: <input type="text" value="23:59:59"/>  
Wednesday from:	<input type="text" value="00:00:00"/>   to: <input type="text" value="23:59:59"/>  
Thursday from:	<input type="text" value="00:00:00"/>   to: <input type="text" value="23:59:59"/>  
Friday from:	<input type="text" value="00:00:00"/>   to: <input type="text" value="23:59:59"/>  
Saturday from:	<input type="text" value="00:00:00"/>   to: <input type="text" value="23:59:59"/>  
Sunday from:	<input type="text" value="00:00:00"/>   to: <input type="text" value="23:59:59"/>  

#### Session Timeout

In case of inactivity, sessions will be closed after the time span specified here (in minutes).

This time interval is not configurable. It is greyed out & set to 5.

#### Session Count

Allowed number of sessions for an account at the same time.

(0 = no limit)

#### Allowed session times

Outside of these periods, no account is allowed to login, except the admin account.

#### Monday ... Sunday from... to

Defines start time and end time of the allowed session time periods for each day.

## 6.1.3 Roles and Rights

**Call:** Administration > Account Management > Roles and Rights

Here you can define new roles with the appropriate rights or modify existing ones. System defined roles cannot be modified or deleted.

There are some system defined default roles which cannot be modified or deleted:

Role	Rights	Weight
ACCOUNT_MGM	All existing rights for the <b>Account Configuration</b> area.	90
EDIT_BULK	All editing rights (new, delete, and edit) for all masks, except: <ul style="list-style-type: none"> <li>• Roles and Rights</li> <li>• Account Configuration</li> <li>• all template activities</li> </ul> This role is appropriate for the standard administrator. As a rule, this role is not usable in a self-contained way, but must be combined with another role, or serves as a base for defining a new role.	60
EDIT_GENERAL_ONE	All editing rights for non system related screens without the bulk change possibility. As a rule, this role is not usable in a self-contained way, but must be combined with another role, or serves as a base for defining a new role.	20
EDIT_ONE	Like EDIT_BULK, yet without the possibility for multiple selection.	40
EDIT_PKI	All editing rights for PKI related screens. As a rule, this role is not usable in a self-contained way, but must be combined with another role, or serves as a base for defining a new role.	98
EDIT_SYSTEM	All editing rights for system related screens (like Backup/Restore) except: <ul style="list-style-type: none"> <li>• <b>Roles and Rights</b></li> <li>• <b>Account Configuration</b></li> </ul> As a rule, this role is not usable in a self-contained way, but must be combined with another role, or serves as a base for defining a new role.	30
INFO	Right to view and search data in all available masks, no editing right.	10
INFO_GENERAL	Right to view and search all non-system related screens (like Backup/Restore), no editing rights.	0
INFO_PKI	Right to view and search PKI related screens, no editing rights.	15
INFO_SYSTEM	Right to view and search all system related screens (like Backup/Restore), no editing rights.	5
ROLE_MGM	All existing rights for the <b>Roles and Rights</b> area.	99

Role	Rights	Weight
SECURITY_MGM	Right to handle security settings separately. During installation, all security-relevant functions are assigned to this system role; this cannot be changed. This role is assigned to the master admin account. Each account having the both roles ACCOUNT_MGM and SECURITY_MGM can assign the SECURITY_MGM to other accounts. Accounts having only one of the mentioned roles cannot assign SECURITY_MGM to other accounts. Each account having the both roles ROLE_MGM and SECURITY_MGM can assign security relevant functions to non-system roles. Accounts having only one of the mentioned roles cannot do this. Only accounts having the right to execute security relevant functions are able to see these functions in the DLS GUI.	100
TEMPLATE_MGM	Right to edit templates. Valid in all areas in which templates are available. As a rule, this role is not usable in a self-contained way, but must be combined with another role, or serves as a base for defining a new role.	50

To be able to create roles, you need an account that contains the role ROLE\_MGM. You can assign a user defined name and a random combination of rights to any new role.

As soon as a role is displayed in the **Roles and Rights** mask, you can copy it by clicking **New**, providing a new name under **Role name** and subsequently clicking on **Save**.

To add roles to accounts or remove roles from accounts, you need an account which contains the role ACCOUNT\_MGM.

This area features the following components:

- General Data
- Possible Action Buttons
- "Rights" Tab
- "Policy Settings" Tab

## Administration

### Account Management

#### General Data

##### Role name:

Name of role, to which rights will be assigned.

##### System defined role

Shows whether this is a system defined role. Such roles cannot be edited or deleted.

##### Description:

Detailed description of the role.

Displayed in object view only.

##### Role Weight

If at least one of the roles assigned to the account has password policy settings of its own, the settings of the role with the highest weight are valid and overwrite the equivalent global policy settings for that account. For weight values of system defined roles see the Roles-Weight-Rights table above. These values cannot be changed.

All weights of customer defined roles can be changed by those accounts which have the ROLE\_MGM role. The default weight for customer defined roles is **0**.

Displayed in table view only.

Value range: **0 - 100**

##### Use System Policy

If activated, all specific policy settings for this role are ignored.

Displayed in table view only.

#### Possible Action Buttons

##### Search

Searches for all rights that match the search criteria.

When searching for rights, the checkboxes may have following meanings:



Search for active rights.



Search for inactive right.



Right will not be considered when searching.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### **New**

Creates a new account.

### **Save**

Saves the data entered/modified.

### **Discard**

Discards any unsaved changes.

### **Delete**

Deletes one or more rights (multiple selections possible in Table view).

### **Refresh**

Refreshes the content of the relevant page.

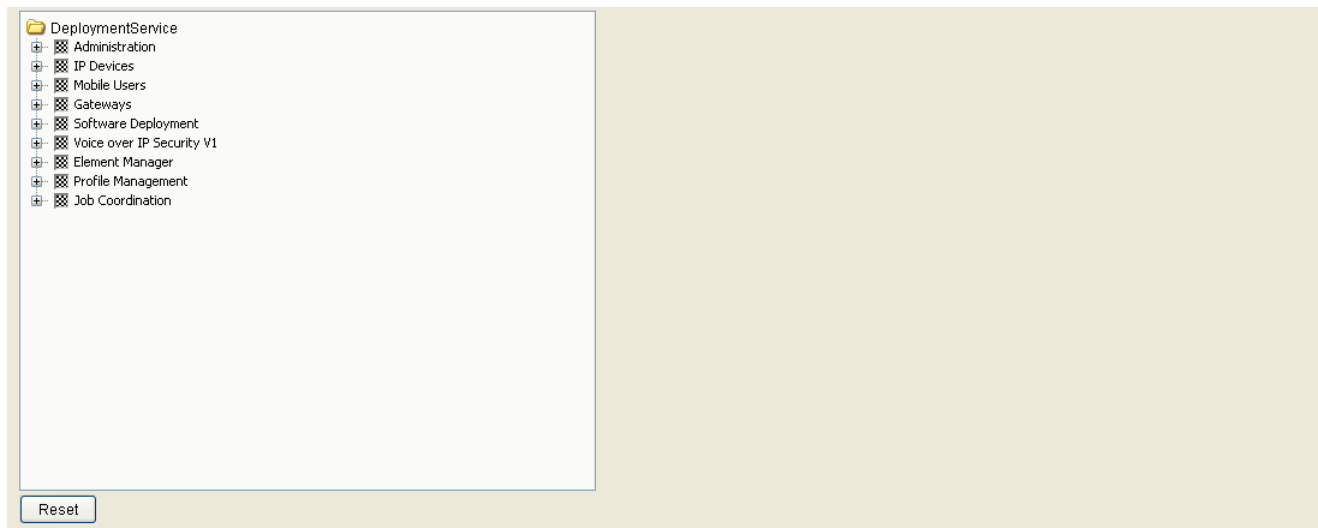


## Administration

### Account Management

#### 6.1.3.1 "Rights" Tab

**Call:** Administration > Account Management > Roles and Rights > "Rights" Tab



#### Rights:

The rights will be defined on function level.

Possible options:

- ☒ Area: Right is active for this area. Submenu: Rights is active in all areas of this submenu.
- ☐ Area: Right is not active for this area. Submenu: Right is not active in any area of this submenu.
- ☒ Submenu: Right is active in at least one area of this submenu.
- ☒ Right is undefined.

#### Reset

Clicking this button resets all fields to inactive.

### 6.1.3.2 "Policy Settings" Tab

**Call:** Administration > Account Management > Roles and Rights > "Policy Settings" Tab

Role Weight:  ☒ Use System Policy

**Password Policy**

Minimum Password Length:  Maximum Password Length:

Capital Letter Quorum:  Lower Letter Quorum:

Digits Quorum:  Special Character Quorum:

Maximum Validity Period:

**Session Policy**

Session Timeout:

#### Role Weight

The extensive the rights of a role are, the higher its weight should be. Role dependent settings will be passed on to accounts.

Value range: **1 - 100**

#### Use System Policy

If activated, the global system policy settings will be used instead of the role specific settings.

#### Password Policy

##### Minimum Password Length

Minimum length of a valid password.

Value range: **1 - 20**

Default: **1**

##### Maximum Password Length

Maximum length of a valid password.

Value range: **1 - 20**

Default: **20**

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### *Account Management*

#### **Capital Letter Quorum**

Number of capital letters the password must contain.

Value range: **0 - 20**

Default: **0** (= no check)

#### **Lower Letter Quorum**

Number of lower letters the password must contain.

Value range: **0 - 20**

Default: **0** (= no check)

#### **Digits Quorum**

Number of digits the password must contain.

Value range: **0 - 20**

Default: **0** (= no check)

#### **Special Character Quorum**

Number of special characters the password must contain.

Value range: **0 - 20**

Default: **0** (= no check)

#### **Maximum Validity Period**

Maximum validity period of a password in days.

Value range: **0 - 180**

Default: **0** (= no check)

## **Session Policy**

#### **Session Timeout**

When there has been no activity for the period (in minutes) specified here, the session will be closed. If the value is 0, there will be no check.

Value range: **5 - 999999**

Default: **1440**

## **6.2 PKI**

This menu item consists of the following areas:

- Plug-In Configuration
- Connector Configuration
- Internal CA
- Renewal

## **6.2.1 Plug-In Configuration**

**Call:** Administration > PKI > Plug-In Configuration

This area features the following components:

- General Data
- Possible Action Buttons
- "General Features" Tab
- "Issuing CAs" Tab
- "Plug-In Properties" Tab

## Administration

### PKI

#### General Data

PKI Connector Plug-In:	<input type="text"/>
Description:	<input type="text"/>
Plug-In Type:	<input type="text"/>
<input checked="" type="checkbox"/> enable Plug-In	

#### PKI Connector Plug-In

Name of the PKI connector plug-in configuration.

#### Description

Description of the PKI connector plug-in configuration

#### Plug-In Type

The plug-in module used for this configuration

Possible values:

- **DLS Internal Plug-In**
- **DLS Storage Plug-In 1.0**
- **MSCA Connector Plug-In 1.0**

#### enable Plug-In

Enables this plug-in configuration. A PKI connector license may be required to be able to use an external PKI.

Before plug-in configuration can be enabled, a synchronization with the PKI must be executed via the **Synchronize** Button.

#### Possible Action Buttons

#### Synchronize

Synchronization with the PKI must be executed before the plug-in can be enabled. The result of the synchronization will be displayed in the status bar. During synchronization, the data on **"General Features" Tab** and **"Issuing CAs" Tab** will be read out from PKI and written to the DLS database.

**Search**

Searches the database for PKI plug-in configurations that match the search criteria.

**Clear Window**

Deletes the contents of all fields in this view. Thus, existing entries can be deleted in the **Search** view before new search criteria are entered.

**New**

Creates a new data record for PKI plug-in configuration.

**Save**

Saves the field contents to the database.

**Discard**

Discards any changes entered.

**Refresh**

Updates the window using the database.



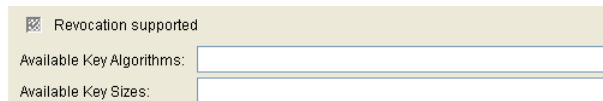
## Administration

### PKI

#### 6.2.1.1 "General Features" Tab

**Call:** Administration > PKI > Plug-In Configuration > "General Features" Tab

The data displayed here have been read out from the PKI and written to the DLS database via the **Synchronize** function. These data cannot be changed.



☒ Revocation supported

Available Key Algorithms:

Available Key Sizes:

#### Revocation supported

Indicates if this plug-in configuration supports revocation requests.

#### Available Key Algorithms

Available Key Algorithms.

#### Available Key Sizes

Available Key Sizes.

### 6.2.1.2 "Issuing CAs" Tab

**Call:** Administration > PKI > Plug-In Configuration > "Issuing CAs" Tab

The data displayed here have been read out from the PKI and written to the DLS database via the **Synchronize** function. These data cannot be changed.

Serial Number:	<input type="text"/>	
Owner:	<input type="text"/>	
Issuer:	<input type="text"/>	
Valid from:	<input type="text"/>	- <input type="text"/>
Valid to:	<input type="text"/>	- <input type="text"/>
Key Algorithm:	<input type="text"/>	
Key Size:	<input type="text"/>	
Fingerprint (SHA-1):	<input type="text"/>	
Expires in ... [days]:	<input type="text"/>	

#### Serial Number

Serial number of the certificate (display only).

#### Owner

Owner of the certificate (display only).

#### Issuer:

Issuer of the certificate (display only).

#### Valid from:

Start of validity for the certificate (display only).

#### Valid to:

End of validity for the certificate (display only).

#### Key Algorithm:

Key Algorithm for certificate (display only).

## Administration

*PKI*

### Key Size:

Key Size for certificate (display only).

### Fingerprint (SHA-1):

Test algorithm SHA1 (160 bits/20 characters) for certificate (display only)

### Expires in ... [days]:

Certificate will expire in ... days (display only).

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### 6.2.1.3 "Plug-In Properties" Tab

**Call:** Administration > PKI > Plug-In Configuration > "Plug-In Properties" Tab

Property Name:	<input type="text"/>
Value:	<input type="text"/>

#### Property Name

Property Name.

#### Value

Value.

## **6.2.2 Connector Configuration**

**Call:** Administration > PKI > Connector Configuration

A connector configuration is used to

- define the plug-in configuration used to access the external PKI,
- choose an issuing CA to request certificates from and to be able to verify relationship with the configured trust anchor,
- define high level parameters used in the certificate request sent to the CA,
- define and import the trust anchor to be deployed to devices when using this configuration.

A connector configuration can be dedicated to a certificate type (e.g. SPE, 802.1x, WBM ...) or can be used as a global configuration for all / some types of certificates to be deployed.

This area features the following components:

- General Data
- Possible Action Buttons
- "Request Parameter" Tab
- "Certificate Renewal" Tab
- "Trust Anchor" Tab
- "User Certificates" Tab

## General Data

Configuration Name:	<input type="text"/>
Description:	<input type="text"/>
Plug-In Configuration:	<input type="text"/>
Issuing CA Name:	<input type="text"/>
<input checked="" type="checkbox"/> enable Connector	

### Configuration Name

Configuration Name.

### Description

Description.

### Plug-In Configuration

Corresponding plug-in configuration.

### Issuing CA Name

Issuing CA Name.

### enable Connector

Before enabling the plug-in configuration, synchronization with the PKI must be executed.

## Possible Action Buttons

### Search

Searches the database for configured PKI connector configurations that match the search criteria.

### Clear Window

Deletes the contents of all fields in this view. Thus, existing entries can be deleted in the **Search** view before new search criteria are entered.

## Administration

### PKI

#### New

Creates a new data record for PKI connector configuration.

#### Save

Saves the field contents to the database.

#### Discard

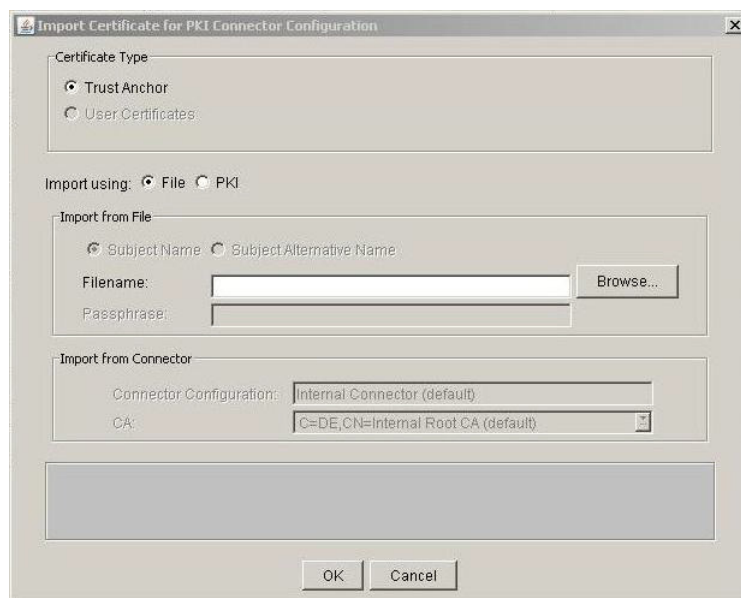
Discards any changes entered.

#### Refresh

Updates the window using the database.

#### Import Certificate

Import trust anchor or user certificate into DLS. A dialog window will ask for the current settings.



The Trust Anchor certificate is used when a Server CA certificate is requested from this connector.

At the time user certificates are imported to the connector, the following data are stored in the DLS database:

- The PKI Connector ID

- The Certificate ID. This is the Subject or the Subject Alternative Name of the certificate. The combination of the PKI Connector ID and the Certificate must be unique. Its up to the administrator to select at the time of the import whether the Subject or the subject Alternative Name must be used for Certificate ID
- The Issuer Name
- The Certificate

**IMPORTANT:** HiPath 4000 oriented Certificates can only be imported for Trust Anchor through a file and not PKI.

For further information on CA certificates please refer to Section 16.5, "Configuring Certificates in DLS".



## Administration

### PKI

#### 6.2.2.1 "Request Parameter" Tab

**Call:** Administration > PKI > Connector Configuration > "Request Parameter" Tab

Common Name:	<input type="text"/>	<input type="button" value="Test"/>
Subject Alternative Name:	<input type="text"/>	
Key Algorithm:	<input type="text"/>	
Key Size:	<input type="text"/>	
Validity Offset (days):	<input type="text"/>	
Validity Period (days):	<input type="text"/>	

#### Common Name

Common Name.

Possible values:

- **MAC Address**
- **DNS Name**
- **IP Address**

**NOTE:** Default & only available **Common Name** value for OpenScape 4000.

#### Subject Alternative Name

Subject Alternative Name.

Possible values:

- **None**
- **MAC Address**
- **DNS Name**
- **IP Address**

#### Key Algorithm

Key Algorithm.

Possible values:

- **DSA**
- **RSA**

### **Key Size**

Key Size.

Possible values:

- **512**
- **1024**
- **2048**

### **Validity Offset (days)**

Validity Offset (days).

### **Validity Period (days)**

Validity Period (days).

### **Test**

Test the PKI Connector Configuration.

#### 6.2.2.2 "Certificate Renewal" Tab

**Call:** Administration > PKI > Connector Configuration > "Certificate Renewal" Tab

This tab allows settings for renewal of this connector configuration.

If a certificate which has been requested using this configuration, is soon running out, an automatic renewal can be configured.

**NOTE:** Renewal of certificates will always result in requesting a new certificate. Extending the validity of an already deployed certificate is not supported. .

It is expected that the connector configuration which is used for requesting and deploying the old certificate, is still available for this device. If not, there is no association between a certificate ( which will expire soon) and configurations required to request and provide a new certificate.

In such occasions, an alarm will be issued and the certificate deployment must be handled manually if there is no global renewal configuration available.

This configuration may also be used by the global renewal configuration ( See also Section 6.2.4, "Renewal" ).



☒ Automatic certificate renewal

Renew handling time:  days before expiration

#### Automatic Certificate Renewal

Enables automatic renewal for this configuration. If automatic renewal requires another issuer (CA with longer lifetime) or even another PKI, this configuration can be changed accordingly ( this may also require a new trust anchor in some situations).

**NOTE:** A new configuration, identified by its name, will have no association to already deployed certificates and cannot be used for their renewal. In this case, a global renewal configuration is required (see also Section 6.2.4, "Renewal").

#### Renew Handling Time

The time interval ( in days ) at which a renewal will be scheduled before a certificate ( issued using this configuration ) runs out.

### 6.2.2.3 "Trust Anchor" Tab

**Call:** Administration > PKI > Connector Configuration > "Trust Anchor" Tab

For each configuration, a trust anchor must be configured. In most scenarios, this will be the Root CA itself, but can be a subordinate CA as well. If a trust anchor is not available, the configuration cannot be saved!

Serial Number:	<input type="text"/>	
Owner:	<input type="text"/>	
Issuer:	<input type="text"/>	
Valid from:	<input type="text"/>	- <input type="text"/>
Valid to:	<input type="text"/>	- <input type="text"/>
Key Algorithm:	<input type="text"/>	
Key Size:	<input type="text"/>	
Fingerprint (SHA-1):	<input type="text"/>	
Expires in ... [days]:	<input type="text"/>	

#### Serial Number

Serial number of the certificate (display only).

#### Owner

Owner of the certificate (display only).

#### Issuer:

Issuer of the certificate (display only).

#### Valid from:

Start of validity for the certificate (display only).

#### Valid to:

End of validity for the certificate (display only).

#### Key Algorithm:

Key Algorithm for certificate (display only).

Key Size:

Key Size for certificate (display only).

Fingerprint (SHA-1):

Test algorithm SHA1 (160 bits/20 characters) for certificate (display only)

Expires in ... [days]:

Certificate will expire in ... days.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

6.2.2.4 "User Certificates" Tab

**Call:** Administration > PKI > Connector Configuration > "User Certificates" Tab

For each configuration, User Certificates must be configured.

Serial Number:

Owner:

Issuer:

Valid from:

Valid to:

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

Delete

Flush

Serial Number

Serial number of the certificate (display only).

**Owner**

Owner of the certificate (display only).

**Issuer:**

Issuer of the certificate (display only).

**Valid from:**

Start of validity for the certificate (display only).

**Valid to:**

End of validity for the certificate (display only).

**Key Algorithm:**

Key Algorithm for certificate (display only).

**Key Size:**

Key Size for active certificate (display only).

**Fingerprint (SHA-1):**

Test algorithm SHA1 (160 bits/20 characters) for certificate (display only)

**Expires in ... [days]:**

Certificate will expire in ... days.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

## Administration

*PKI*

### Alarm Status

Alarm Status of the certificate

Possible values:

- **valid**
- **soon running out**
- **expired**

### Delete

By clicking this button the certificate will be deleted.

### Flush

By clicking this button the certificate will be send.

### **6.2.3 Internal CA**

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab



## Administration

### PKI

#### General Data

CA Name:	<input type="text"/>
Description:	<input type="text"/>
<input checked="" type="checkbox"/> enable Internal CA	

#### CA Name

Name of CA.

#### Description

Description of CA.

#### enable Internal CA

Switch to enable the internal CA. For this purpose, a CA must have been created, either via **Import CA** or **Create CA**.

#### Possible Action Buttons

##### Search

Searches the database for configured PKI connector configurations that match the search criteria.

##### Clear Window

Deletes the contents of all fields in this view. Thus, existing entries can be deleted in the **Search** view before new search criteria are entered.

##### New

Creates a new data record for PKI connector configuration.

##### Save

Saves the field contents to the database.

**Discard**

Discards any changes entered.

**Refresh**

Updates the window using the database.

**Import CA**

Import CA from .zip file.

**Export CA**

Export CA to a .zip file.

**Create CA**

Create CA from a DLS data record.

6.2.3.1 "Info" Tab

**Call:** Administration > PKI > Internal CA > "Info" Tab

Serial Number:	<input type="text"/>		
Owner:	<input type="text"/>		
Issuer:	<input type="text"/>		
Valid from:	<input type="text"/>	-	<input type="text"/>
Valid to:	<input type="text"/>	-	<input type="text"/>
Key Algorithm:	<input type="text"/>		
Key Size:	<input type="text"/>		
Fingerprint (SHA-1):	<input type="text"/>		
Expires in ... [days]:	<input type="text"/>		

Serial Number

Serial number of the certificate (display only).

Owner

Owner of the certificate (display only).

Issuer:

Issuer of the certificate (display only).

Valid from:

Start of validity for the certificate (display only).

Valid to:

End of validity for the certificate (display only).

Key Algorithm:

Key Algorithm for certificate (display only).

**Key Size:**

Key Size for certificate (display only).

**Fingerprint (SHA-1):**

Test algorithm SHA1 (160 bits/20 characters) for certificate (display only)

**Expires in ... [days]:**

Certificate will expire in ... days.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

## 6.2.4 Renewal

**Call:** Administration > PKI > Renewal

With this function, general renewal settings for all certificates of a type can be made.

The screenshot shows a web-based configuration interface for PKI renewal settings. It features a light beige background. At the top, there are two text input fields labeled 'Name:' and 'Description:'. Below these is a checkbox labeled 'enable' which is checked. A section titled 'Certificate' in blue text contains two dropdown menus: 'Issuer:' and 'Type of Certificate:'. At the bottom, there is a dropdown menu labeled 'Connector Configuration:'.

### Name

Name of renewal configuration.

### Description

Description for renewal configuration.

### enable

Activates configuration. Enable (disable) all global certificate renewal settings.

### Certificate

#### Issuer:

Issuer of the certificate, required to match.

#### Type of Certificate

Type of certificate.

Possible values:

- **ALL**
- **Phone Certificate**

- **WBM Server Certificate**
- **SPE Certificate**

In case of ALL the certificate type is not used for matching.

### Connector Configuration

The connector configuration to be used if issuer and type of certificate matches.

When certificates are reaching their end of lifetime period, a renewal may be initiated automatically. As there may be various connector configurations and external PKIs available to send renewal requests to, it has to be determined which configuration (thus which plug-in and which external PKI) must be used. There are also situations where the origin configuration used to create the present certificate has been lost or cannot be determined.

For such occasions, a global configuration is required to link a certificate by its issuer to a connector configuration used to request a new certificate and replace the old one.

The process uses a predefined order for searching a connector configuration:

1. lookup a connector configuration matching the issuer and the type of certificate using the global certificate renewal configuration, otherwise
2. find and use the original configuration used to request the present certificate, otherwise
3. rise an alarm because no renewal configuration can be found using global alarm settings

The process checking the remaining certificate validity period runs in the interval specified in Alarm ConfigurationSettings Tab (see also Section 6.6.7 "Settings" Tab) .

**NOTE:** This process is required to run once per day

**NOTE:** Renewal of certificates will always result in requesting a new certificate. Extending the validity of an already deployed certificate is not supported.

## **6.3 Server Configuration**

This menu item consists of the following areas:

- Tenants
- Location
- P&P Settings
- FTP Server Configuration
- HTTPS Server Configuration
- HTTPS Client Configuration
- Network Drive Configuration
- Infrastructure Policy
- API Notifications
- XML Applications
- Options
- TLS Connector Configuration

## **6.3.1 Tenants**

**Call:** Main Menu > Administration > Server Configuration > Tenants

**NOTE:** This screen is visible only if multi tenancy is installed (see also Section 16.17.1, "Install/Deinstall Multi-Tenancy").

This area features the following components:

- General Data
- Possible Action Buttons
- "Locations" Tab



General Data

Tenant name:	<input type="text"/>
Remark:	<input type="text"/>
<b>Basic Device Licenses</b>	
Max. Basic Devices:	<input type="text"/> Used (%): <input type="text"/>
Number of Basic Devices:	<input type="text"/> Alarm threshold (%): <input type="text"/>
<b>PKI User Licenses</b>	
Max. PKI User:	<input type="text"/> Used (%): <input type="text"/>
Number of PKI Users:	<input type="text"/> Alarm threshold (%): <input type="text"/>
<b>Mobile User Licenses</b>	
Max. Mobile User:	<input type="text"/> Used (%): <input type="text"/>
Number of Mobile Users:	<input type="text"/> Alarm threshold (%): <input type="text"/>
<b>Location Service Licenses</b>	
Max. Location Service Devices:	<input type="text"/> Used (%): <input type="text"/>
Number of Location Service Devices:	<input type="text"/> Alarm threshold (%): <input type="text"/>

Tenant Name

Unique name of the tenant.

Remark

Information on the tenant.

Basic Devices Licenses

Max. Basic Devices

Allowed maximum number of basic devices for this tenant.

Number of Basic Devices

Number of registered IP Devices for this tenant

Used (%)

Indicates how many percent of existant basic device licenses are used currently.

Alarm threshold

When this threshold is exceeded, a license alarm will be generated

## **Mobile User Licenses**

### **Max. Mobile User**

Allowed maximum number of Mobile Users for this tenant.

### **Number of Mobile Users**

Number of registered Mobile Users for this tenant.

### **Used (%)**

Indicates how many percent of existant Mobile User licenses are used currently.

### **Alarm threshold**

Specify the percentage of used mobile user licenses that should generate a license alarm.

## **PKI User Licenses**

### **Max. PKI User**

Allowed maximum number of devices for this tenant which are supplied via PKI.

### **Number of PKI Users**

Number configured PKI users.

### **Used (%)**

Percentage of PKI user licenses used.

### **Alarm threshold (%)**

When expiring this threshold, a license alarm will be generated.

## Administration

### Server Configuration

#### Location Service Licenses

##### Max. Location Service Devices

Allowed maximum number of location service devices for this tenant.

##### Number of Location Service Devices

Number of IP Devices supplied with IP Infrastructure data by means of Location Service.

##### Used (%)

Indicates how many percent of existant location service licenses are used currently.

##### Alarm threshold (%)

Specify the percentage of used location service licenses that should generate a license alarm.

#### Possible Action Buttons

##### Search

Searches the database for configured tenants that match the search criteria.

##### Clear Window

Deletes the contents of all fields in this view. Thus, existing entries can be deleted in the **Search** view before new search criteria are entered.

##### New

Creates a new data record for a tenant.

##### Save

Saves the field contents to the database.

**Discard**

Discards any changes entered.

**Refresh**

Updates the window using the database.

**Call:** Main Menu > Administration > Server Configuration > Tenants > "Locations" Tab

Table

Selected entry

1 / 1

Location:

Remark:

## Name of the location.

## Description of the location.

## 6.3.2 Location

In this area, you can define locations to group end devices that share common properties, for example, range of IP addresses, registrar addresses, or E.164 number pattern.

IP address ranges are configured via **Administration > Server Configuration > Location > "IP Ranges" Tab**.

IP addresses or host names of systems (PBX/gateway or SIP server) for a location can be specified under **Administration > Server Configuration > Location > "Reg-Addresses" Tab**.

You can find further configuration possibilities under **Administration > Server Configuration > Location**.

If no location is defined, all location specific parameters are specified in the **Default location**.

To enable the reuse of existing templates or device profiles when client networks are to be divided up into affiliates, hierarchical location definitions are available. For instance, the parent location can be defined by business groups, and divided up into child locations by E.164 patterns. Those standard profiles which are defined for child locations extend or overwrite the data of the parent location's standard profiles.

To check a location or profile configuration, the administrator has the possibility to simulate Plug&Play with location specific data for a device. The determined parameter values are stored temporarily and can be displayed under **IP Devices > IP Device Management > IP Device Configuration**.

To prevent overlapping locations, the following restrictions have been devised:

- The property which defines a child location must be different from the property that defines a parent location. Therefore, if a parent location has been defined by a E.164 pattern, the child location must be defined by a different property.
- Per level, only one certain property is allowed for defining a location. Example: All parent locations are defined by registration addresses. The child locations of one certain parent location are defined by business groups, while the child locations of another parent locations are defined by E.164 pattern.
- Overlapping definitions of locations are not allowed.

To establish a child location, create a new location and assign an already existing location as parent location to it. This location may not function as child location by itself.

The properties of the parent location are visible in the child locations; only subsets of the parent location's properties can be configured. However, the restrictions for software and certificate deployment ("**SW Deployment Restrictions" Tab** and "**Certificate Deployment Restrictions" Tab**) in a child location are independent of the settings of the parent location.

Automatic jobs which are started for a parent location affect all end devices residing in this location resp. in a child location of this location. In detail, the following applies:

- With automatic software deployment, rules in child locations take priority over rules in the corresponding parent locations.
- With automatic certificate deployment, the requested certificates are distributed to all IP Devices, both those in the parent locations and those in all child locations.
- With automatic archiving, all IP Devices are archived, both those in parent locations and those in child locations.

## Administration

### *Server Configuration*

- Automatic Mobile User Logoff: Mobile Users belonging to the parent location including all its sub locations are logged off.
- With Plug&Play, virtual devices within a number pool are assigned to a location appropriate to their E.164 number.
- With Plug&Play and multi tenancy, virtual devices within a number pool are assigned to a tenant appropriate to their E.164 number.

For a location, the following items can be defined: FTP server, temporal software deployment restrictions, and an infrastructure policy.

This area features the following components:

- General Data
- Possible Action Buttons
- "IP Ranges" Tab
- "Reg-Addresses" Tab
- "E.164 Patterns" Tab
- "Business Groups" Tab
- "Infrastructure Policies" Tab
- "P&P Number Pool" Tab
- "SW Deployment Restrictions" Tab
- "Certificate Deployment Restrictions" Tab
- "Tenants" Tab

## General Data

Name:	<input type="text"/>	<input checked="" type="checkbox"/> PKI Connector enabled
Parent Location:	<input type="text"/>	Timezone: <input type="text"/>
FTP Server:	<input type="text"/>	Info 1: <input type="text"/>
HTTPS Server:	<input type="text"/>	Info 2: <input type="text"/>
Network Drive:	<input type="text"/>	Info 3: <input type="text"/>
<input checked="" type="checkbox"/> Use OSBranch for Software Deployment		
OSBranch path:	<input type="text"/>	OSBranch port: <input type="text"/>
Remark:	<input type="text"/>	
<div><input type="checkbox"/> Use Location's Default Profile Settings</div> <div><div>Location's Default Profile Settings</div><div><input type="checkbox"/> Apply Default Profiles at IP Device Registration</div></div>		

### Name:

Location name.

### Parent Location

Shows the parent location, if existant.

### FTP Server:

FTP server for the location.

### HTTPS Server:

HTTPS server for the location.

### Network Drive:

Network drive for the location.

### Use OSBranch for Software Deployment:

If this checkbox is active, OSBranch is used for Software Deployment.



## Administration

### Server Configuration

#### OSBranch path:

The path to the directory containing the phone software images provided by the OSBranch.

#### OSBranch port:

Port number for software deployment communication (phone software images) with the OSBranch.

#### Remark:

Remark.

#### Timezone:

Defines timezone for location. For possible values, please consult the choice list.

#### Info 1:

Additional optional Information of location, e.g. address information.

#### Info 2:

Additional optional Information of location, e.g. address information.

#### Info 3:

Additional optional Information of location, e.g. address information.

### Location's Default Profile Settings

#### Use Location's Default Profile Settings:

If this checkbox is activated, the configuration of the "Apply Default Profiles at IP Device Registration" at Location level is enabled.

The **Location's Default Profile Settings** apply to all devices of the specific location.

This checkbox is disabled by default.

### **Apply Default Profiles at IP Device Registration**

If this checkbox is activated, the default profile defined in **Profile Management > Device Profile** for a particular location is identified and used for each registration.

This checkbox is not applicable (N/A) by default.

**NOTE:** If the “Use Location’s Default Profile Settings” checkbox is not activated, the “Apply Default Profiles at IP Device Registration” is not applicable and shall be grayed out.

If it is activated, the “Apply Default Profiles at IP Device Registration” shall be offered for configuration.

### **Remark:**

Remark

### **FTP Server:**

FTP server for the location.

### **HTTPS Server:**

HTTPS server for the location.

### **Network Drive:**

Network drive for the location.

### **Possible Action Buttons**

#### **Search**

Searches the database for configured locations that match the search criteria.

#### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

## **Administration**

### *Server Configuration*

#### **New**

Creates a new data record for a location.

#### **Save**

Saves the field contents to the database.

#### **Discard**

Discards any changes entered.

#### **Refresh**

Updates the window using the database.

#### **Export Location**

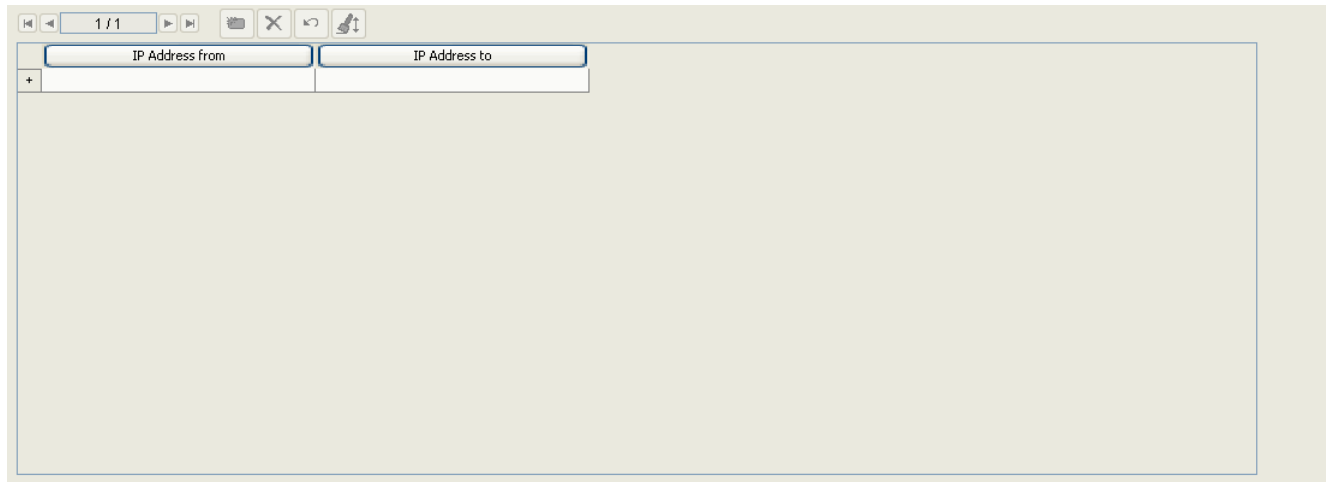
Export the selected locations to a file in .zip format.

#### **Import Location**

Import locations from a file in .zip format.

### 6.3.2.1 "IP Ranges" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "IP Ranges" Tab



#### **IP Address from**

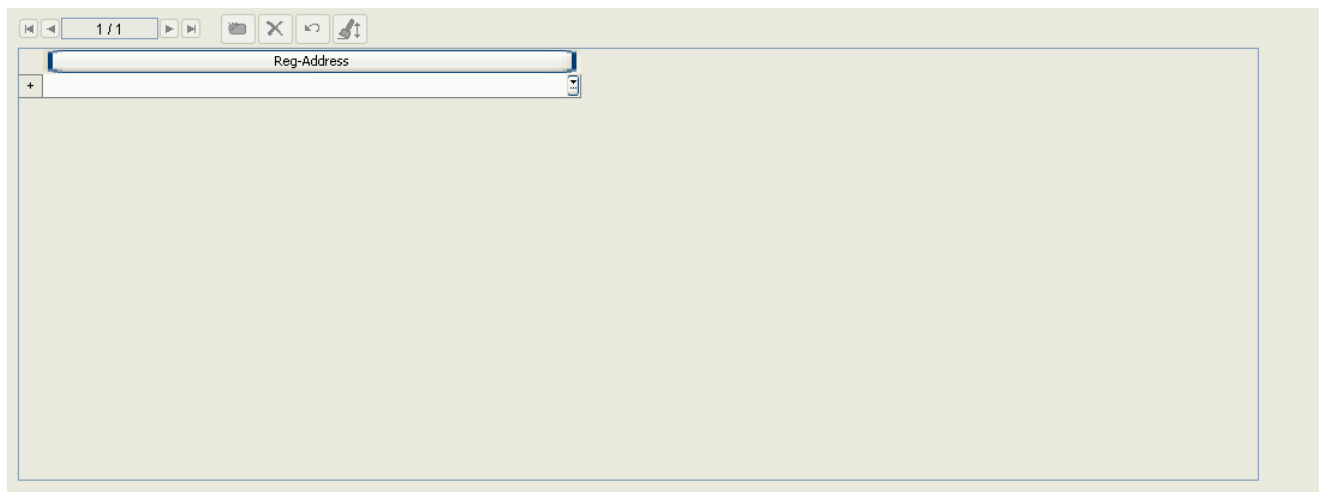
Lowest value for the IP range associated with this location.

#### **IP Address to**

Highest value for the IP range associated with this location.

### **6.3.2.2 "Reg-Addresses" Tab**

**Call:** Main Menu > Administration > Server Configuration > Location > "Reg-Addresses" Tab

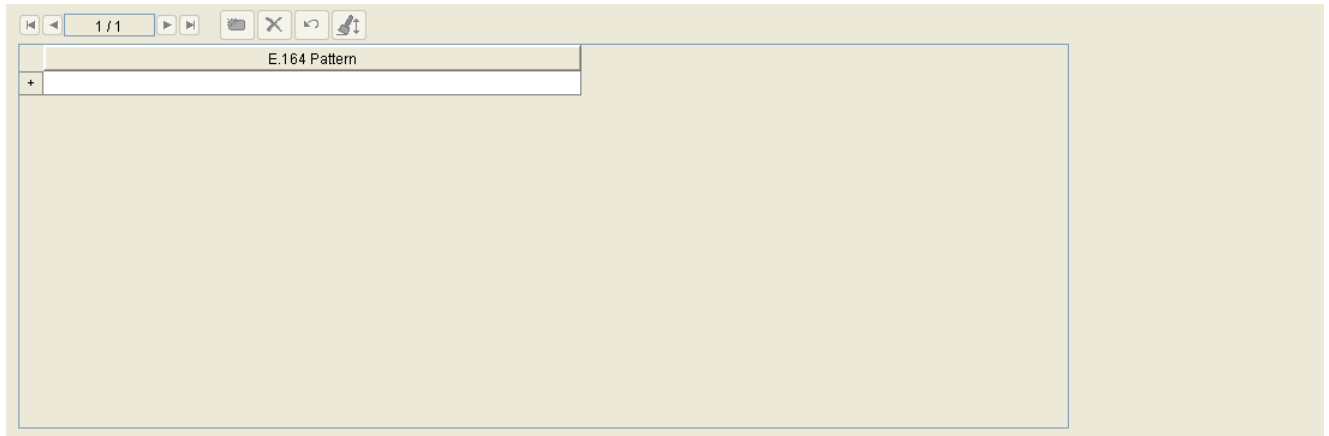


#### **Reg-Address**

IP addresses or host names of the PBX, gateway, or SIP server associated with this location.

### 6.3.2.3 "E.164 Patterns" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "E.164 Patterns" Tab



#### E.164 Pattern

E.164 number pattern corresponding to this location. Regular expressions with the symbol \* can be used.

Example: **4989722\***.

6.3.2.4 "Business Groups" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "Business Groups" Tab

Switch	BG Name
<div>+ <input type="text"/></div>	<div><input type="text"/></div>

Switch

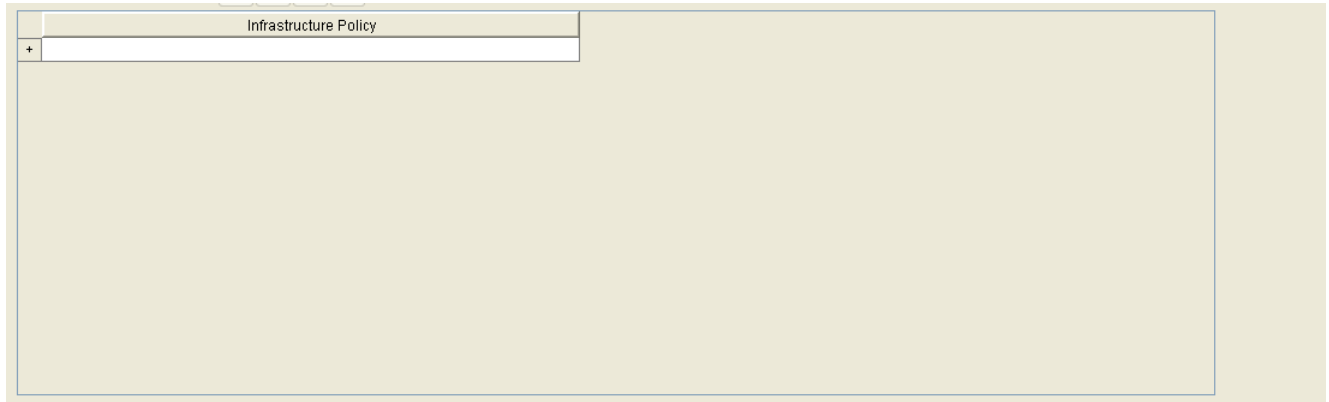
Name of the switch at which the business group is configured.

BG Name

Name of the business group.

### 6.3.2.5 "Infrastructure Policies" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "Infrastructure Policies" Tab



#### **Infrastructure Policy**

Location will be considered on infrastructure policy change for a device via DLSAPI or by means of the XML application "Location Services".



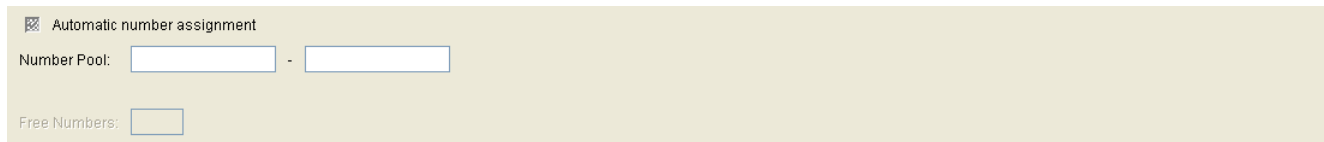
### 6.3.2.6 "P&P Number Pool" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "P&P Number Pool" Tab

In this area, you can configure automatic E.164 number assignment from a number pool to IP Phones during Plug&Play.

If a location specific number pool is required, it must be defined during location configuration. The number pool of the "Default Location" has to be inactive in that case. For automatic number assignment, a location has to be defined via IP range, and it has to be a parent location. This is necessary because otherwise, no location can be assigned to IP Phones which register without E.164 number.

For further information, please see Section 15.6.2, "Setting Up Plug&Play Registration".



☒ Automatic number assignment

Number Pool:  -

Free Numbers:

#### Automatic number assignment

If activated, Plug&Play automatically assigns an E.164 call number from the number pool to the IP device.

#### Number Pool

Band of successive fully qualified E.164 numbers, which is defined by entering the first and last number.

#### Free Numbers

Number of E.164 call numbers from the pool which have not been assigned yet.

### 6.3.2.7 "SW Deployment Restrictions" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "SW Deployment Restrictions" Tab

<input checked="" type="checkbox"/> Monday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	<input checked="" type="checkbox"/> Friday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>
<input checked="" type="checkbox"/> Tuesday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	<input checked="" type="checkbox"/> Saturday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>
<input checked="" type="checkbox"/> Wednesday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	<input checked="" type="checkbox"/> Sunday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>
<input checked="" type="checkbox"/> Thursday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	

#### Monday ... Sunday

Check box for specifying the weekdays on which no or only limited software deployment should be performed.

#### Whole day

Check box for activating the option to prevent software distribution on the specific day.

#### Between ... and ...

Check box for activating the option to prevent software distribution during a particular period of time on the specific day. The start and end of the time segment can be defined.

6.3.2.8 "Certificate Deployment Restrictions" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "Certificate Deployment Restrictions" Tab

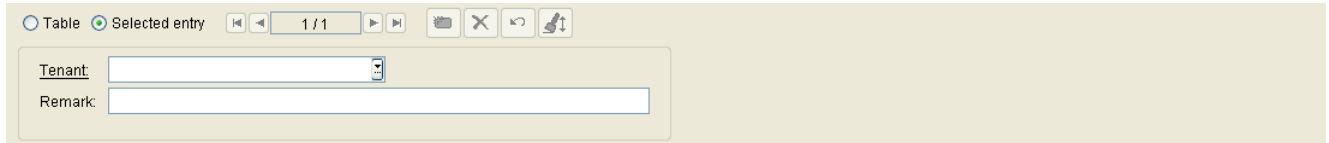
<input checked="" type="checkbox"/> Monday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	<input checked="" type="checkbox"/> Friday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>
<input checked="" type="checkbox"/> Tuesday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	<input checked="" type="checkbox"/> Saturday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>
<input checked="" type="checkbox"/> Wednesday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	<input checked="" type="checkbox"/> Sunday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>
<input checked="" type="checkbox"/> Thursday <input type="radio"/> Whole day <input type="radio"/> Between <input type="text"/> and <input type="text"/>	

For parameter descriptions, see Section 6.3.2.7, ""SW Deployment Restrictions" Tab".

### 6.3.2.9 "Tenants" Tab

**Call:** Main Menu > Administration > Server Configuration > Location > "Tenants" Tab

**NOTE:** This tab is available only if the multi-tenancy function of the DLS is installed. See also Section 16.17.1, "Install/Deinstall Multi-Tenancy".



The screenshot shows a web interface for the "Tenants" tab. At the top, there is a navigation bar with a "Table" tab selected and a "Selected entry" tab. Below the navigation bar, there is a table with one entry, "1 / 1". To the right of the table, there are several icons: a magnifying glass, a close button, a refresh button, and a print button. Below the table, there is a form with two fields: "Tenant" and "Remark". The "Tenant" field is a text input with a dropdown arrow, and the "Remark" field is a text input.

#### Tenant

Name of the tenant.

#### Remark

Information on the tenant.

### **6.3.3 P&P Settings**

**Call:** Main Menu > Administration > Server Configuration > P&P Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "Standard Profile" Tab
- "IP Client Mapping Configuration" Tab

## General Data

- ☒ Plug&Play enabled
- ☒ Full E.164 number expected

### Plug&Play enabled

When activated, Plug&Play is enabled for all devices.

### Full E.164 Nummer expected

If this switch is activated, the DLS expects the full E.164 call number of an IP Device for Plug&Play resp. autoconfiguration, in order to find the corresponding virtual device.

## Possible Action Buttons

### Discard

Discards any unsaved changes.

### Save

Saves the changes.

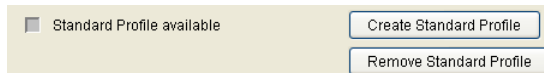
### Refresh

Refreshes the screen contents from the database.

#### 6.3.3.1 "Standard Profile" Tab

**Call:** Main Menu > Administration > Server Configuration > P&P Settings > "Standard Profile" Tab

Determine how the E.164 number shall be used for autoconfiguration.



##### Standard Profile available

This check box is active when the standard profile exists.

##### Create Standard Profile

Creates a standard profile for IP Phones und IP Clients. This profile contains pre-defined templates.

**NOTE:** When assigning templates to P&P profiles,all P&P profiles **MUST** have a SW version assigned in order to have the respective masks available.

**NOTE:** For instance,under **IP Devices > IP Phone Configuration > IP Routing> -"IPv6 Settings" Tab** the "IPv4 / IPv6 Protocol Mode" can only be available in case the Device Type is OpenStage and the SW version is V3 onward (please refer to Section 7.1.2.2, ""IPv6 Settings" Tab")

**NOTE:** This also applies to all masks that are filtered by SW Version..

##### Remove Standard Profile

Removes the standard profile.

### 6.3.3.2 "IP Client Mapping Configuration" Tab

**Call:** Main Menu > Administration > Server Configuration > P&P Settings > "IP Client Mapping Configuration" Tab

Windows Account	E164
-----------------	------

Import and export mapping data

Import Export

Windows account names are mapped to E.164 numbers to allow windows account / telephony number association. DLS configuration of this mapping should be implemented through manual DLS UI configuration as well as import & export of mapping data through .csv files in order to trigger DLS Plug & Play accordingly.

#### Import and export mapping data

##### Import

Mapping data are imported through a .csv formatted file.

##### Export

Mapping data are exported into a .csv formatted file.



## **6.3.4 FTP Server Configuration**

This area features the following components:

- General Data
- Possible Action Buttons
- "Tenants" Tab

## General Data

**Call:** Main Menu > Administration > Server Configuration > FTP Server Configuration.

In this area, you can configure access data for one or more FTP servers. All FTP servers detected by the **Search** routine are listed in **Table** view. Moreover, you can read all files which are existant on the FTP server and relevant for IP devices into the DLS database. After this, the data are available for deployment.

For each file on the FTP server, one object per possible usage is created. For instance, a WAV file may be used as ringtone or as hold music. If there is, for instance, a file named "notify.wav", the objects "notify.wav (OpenStage,RINGTONE)" and "notify.wav (OpenStage,MOH)" would be created.

**NOTE:** The entries depend on the configuration of the FTP server in use at the time.  
For more information on configuring FTP servers, see Section 4.12.1, "FTP Server".

An FTP server is necessary to load files to a device - phone software images or on-hold music, for example. You must also configure at least one FTP server for the DLS to register the available phone software images.

**NOTE:** In contrast to IP phone software and files (which must be present on an FTP server), software and files for IP clients are provided on a network drive and configured as described in **Network Drive Configuration**.

The screenshot displays the 'FTP Server Configuration' web interface. It features a form with the following fields: 'FTP Server ID', 'Hostname', 'Internal Hostname', 'IP Protocol Mode', 'SW Image Path', 'Port', 'User', and 'Password'. Below these is a section titled 'Parallel access to Software Repository' containing 'To this server at maximum' and 'Delay time (sec)' fields. A checkbox labeled 'Skip Software Check on Deployment' is checked. A 'Status' field is followed by 'Start Scan' and 'Stop Scan' buttons. The bottom section, 'Images on the Server', includes a view selector (Table/Selected entry), pagination (1/1), and a list of fields: 'SW Name', 'SW Path', 'Object Type', 'Device Type', 'SW Type', 'SW Version', and 'Status', each with a corresponding input field and a search icon.

### FTP Server ID:

Unique name used to manage and address each FTP server configured.

## Administration

### Server Configuration

#### Hostname:

Host name or IP address of the FTP server (accessible by IP Devices).

#### Internal Hostname

If specified, this host name or IP address will be used for scan and SW check by the DLS.

Find the configuration files in which IP addresses and workgroup names are assigned to each other in:

`C:\Windows\system32\drivers\etc\hosts`

and add the IP address as well as the Internal Hostname of FTP Server to file (Host).

**NOTE:** Apply in all nodes of a Multi Node environment.

#### IP Protocol Mode

The FTP server is supporting this IP protocol version.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

#### SW Image Path:

Path to the software image relative to the directory root of the FTP server. If the data is located directly in the directory root, enter / (slash).

#### Port:

The default port number for FTP is 21 and cannot be changed.

#### User:

User name for read-only access to the FTP server. Read-only access is used by the IP Device to access the software.

**Password:**

Password for read-only access to the FTP server. This entry is optional.

**Parallel access to Software Repository**

**To this server at maximum:**

Maximum number of simultaneous accesses to the server. This value corresponds to the number of simultaneous software distribution actions (software deployment jobs) to the devices. The value must be less than the maximum number of simultaneous connections for which the FTP server is configured.

Value range: **1 - 500**.

Default: **10**.

**Delay time (sec):**

Time between two distribution jobs. The value set should only be increased if the LAN infrastructure is slow (or exceptionally, in the case of a moderately fast connection to the FTP server).

Value range: **1 - 3000** seconds.

Default: **10**.

**Skip Software Check on Deployment**

When the DLS is scanning the FTP server for files, it examines all phone software files. This includes a header and footer check. If the switch is deactivated, the check will be repeated just before a software file is deployed to a phone. If it is activated, this check will be skipped.

**Status:**

Status of s server action.

Possible values:

- **Scanning...**
- **Finished**
- **Stopped**

## Administration

### Server Configuration

#### Start Scan

Start a search for software and data files on the FTP server. Entries concerning files which are not available on the server will be deleted in the DLS database.

#### Stop Scan

Stop scanning the FTP Server for software and data files.

#### Images on the Server

If a scan has been executed, information on all software and data files found during the scan is displayed here.

#### SW Name:

Name of the file.

#### SW Path:

Directory path and file name.

#### Object Type:

Type of file.

Examples: **Software Image, Logo File, Screen Saver.**

#### Device Type:

Device type, for which the file is appropriate.

Examples: **optiPoint 410, OpenStage Hi, OpenStage Lo, Wave Evolution Lo.**

**NOTE:** OpenStage15 & OpenStage 40 devices are tagged commonly as 'OpenStage Lo'.  
OpenStage 15 devices use the 'LO' device software category and have common firmware for OS15, OS20 and OS40 devices.

**NOTE:** OpenScape Desk Phone IP 35G Eco devices are tagged commonly as 'Wave Evolution Lo'.

**NOTE:** During automatic Software (SW) deployment, DLS finds the matching firmware based on family (HI or LO) and desired SW version. DLS will scan through the FTP list for the first available firmware that meets the criteria and a valid match gets deployed. DLS deploys the correct firmware (as far as OS15 and OS40 belong in the same family and have the same firmware data) but the shown used filename for the SW update may be misleading.

At manual SW deployment you get prompted to explicitly choose the firmware file to be deployed.

**SW Type:**

Type of the phone software.

Examples: **Unify HFA**, **Unify SIP**.

**SW Version:**

Version of the phone software.

**Status:**

Status of the phone software.

Example: **version info missing**.

**Valid**

Activated if the file is valid.

## **Administration**

### *Server Configuration*

#### **Possible Action Buttons**

##### **Search**

Searches the database for FTP servers already installed.

##### **Clear Window**

Deletes the data entered in the window.

##### **Save**

Saves the data entered/modified.

##### **Discard**

Discards any changes made.

##### **New**

Creates a new FTP server.

##### **Delete**

Deletes the FTP server currently listed in Object view.

##### **Test FTP Parameters**

Tests the connection to the current FTP server configured. The result is displayed in the status window.

##### **Refresh**

Updates the field content using the database.

### **Scan all**

All assigned FTP servers will be scanned. A progress bar shows the status of the current server scan. This scan can be cancelled like a single scan by clicking the button **Stop Scan**.



6.3.4.1 "Tenants" Tab

**Call:** Main Menu > Administration > Server Configuration > FTP Server Configuration > "Tenants" Tab

**NOTE:** This tab is available only if the multi-tenancy function of the DLS is installed. See also Section 16.17.1, "Install/Deinstall Multi-Tenancy".

Tenant	Remark
+	

Tenant

Name of the tenant.

Remark

Information on the tenant.

### **6.3.5 HTTPS Server Configuration**

This area features the following components:

- General Data
- Possible Action Buttons
- "Images on the Server" Tab
- "HTTPS Server CA Certificates" Tab
- "Trust Anchor" Tab
- "Tenants" Tab

## General Data

**Call:** Main Menu > Administration > Server Configuration > HTTPS Server Configuration.

HTTPS Server ID:

HTTPS Server URL:

Internal URL:

IP Protocol Mode:

Parallel access to Software Repository

To this server at maximum:

Delay time (sec):

☒ Skip Software Check on Deployment

Status:

Start Scan Stop Scan

**NOTE:** HTTPS servers can only be used for OpenStage devices.

In this area, you can configure access data for one or more HTTPS servers. All HTTPS servers detected by the search routine are listed in **Table** view.

An HTTPS server can be used instead of an FTP server to load data, such as, on-hold music or phone software images onto an OpenStage device. You must also configure at least one HTTPS server for the DLS to register the available phone software images.

**NOTE:** The entries depend on the configuration of the HTTPS server in use at a time.

**NOTE:** In contrast to the IP phone software that must be loaded on an HTTPS server, the software for IP clients is provided on a network drive as described under Windows Network Drive Configuration.

### HTTPS Server ID

Unique name used to address each HTTPS server configured.

### HTTPS Server URL

URL of the HTTPS server (accessible by IP Devices).

### Internal Hostname

If specified, this host name or IP address will be used for scan and SW check by the DLS.

Find the configuration files in which IP addresses and workgroup names are assigned to each other in:

C:\Windows\system32\drivers\etc\hosts

and add the IP address as well as the Internal Hostname of FTP Server to file (Host).

**NOTE:** Apply in all nodes of a Multi Node environment.

### **IP Protocol Mode**

The HTTPS server is supporting this IP protocol version.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

### **Parallel access to Software Repository**

#### **To this server at maximum:**

Maximum number of simultaneous accesses to the server. This value corresponds to the number of simultaneous software distribution actions (software deployment jobs) to the devices. The value must be less than the maximum number of simultaneous connections for which the HTTPS server is configured.

Value range: **1 - 500**.

Default: **10**.

#### **Delay time (in seconds):**

Time between two distribution jobs. The value set should only be increased if the LAN infrastructure is slow (or exceptionally, in the case of a moderately fast connection to the HTTPS server).

Value range: **1 - 3000** seconds.

Default: **10**.

### **Skip Software Check on Deployment**

When the DLS is scanning the HTTPS server for files, it examines all phone software files. This includes a header and footer check. If the switch is deactivated, the check will be repeated just before a software file is deployed to a phone. If it is activated, this check will be skipped.

## **Administration**

### *Server Configuration*

#### **Status:**

Status of s server action.

Possible values:

- **Scanning...**
- **Finished**
- **Stopped**

#### **Start Scan**

Start a search for software and data files on the HTTPS server. Entries concerning files which are not available on the server will be deleted in the DLS database.

#### **Stop Scan**

Stops scanning the HTTPS Server for software and data files.

#### **Possible Action Buttons**

The range of action buttons available depends on the DLS status.

#### **Search**

Searches the database for HTTPS servers already configured.

#### **Clear Window**

Deletes the data entered in the window.

#### **New**

Creates a new HTTPS server.

#### **Save**

Saves any unsaved changes.

### **Discard**

Discards any unsaved changes.

### **Test**

Tests the connection to the current HTTPS server configured. The result is displayed in the status window.

### **Scan all**

All assigned HTTP servers will be scanned. A progress bar shows the status of the current server scan. This scan can be cancelled like a single scan by clicking the button **Stop Scan**.

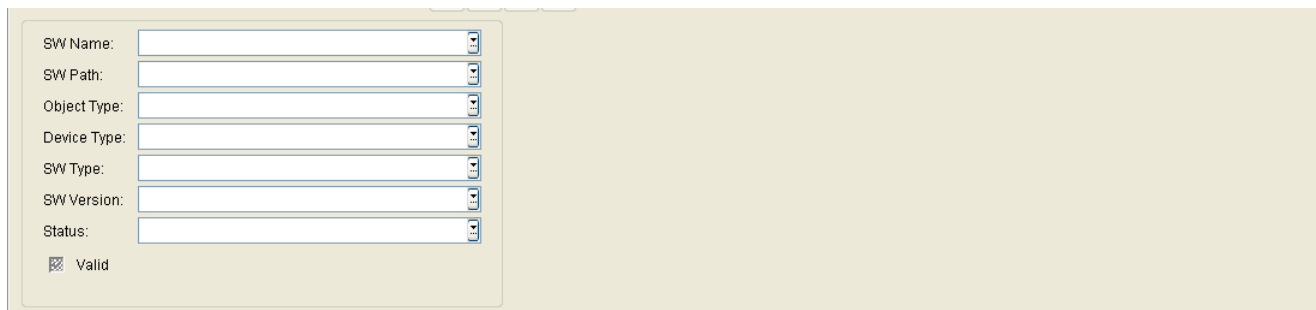
## Administration

### Server Configuration

#### 6.3.5.1 "Images on the Server" Tab

**Call:** Main Menu > Administration > Server Configuration > HTTPS Server Configuration > "Images on the Server" Tab

If a scan has been executed, information on all software and data files found during the scan is displayed here.

The screenshot shows a web-based configuration interface for the 'Images on the Server' tab. It features a light beige background. On the left side, there is a vertical list of seven input fields, each with a label and a text box followed by a small 'Go' button. The labels are: 'SW Name:', 'SW Path:', 'Object Type:', 'Device Type:', 'SW Type:', 'SW Version:', and 'Status:'. Below these fields is a checkbox labeled 'Valid' which is currently checked. The right side of the interface is a large, empty rectangular area, likely intended for displaying scan results.

#### SW Name:

Name of the file.

#### SW Path:

Directory path and file name.

#### Object Type:

Type of file.

Examples: **Software Image**, **Logo File**, **Screen Saver**.

#### Device Type:

Device type, for which the file is appropriate.

Examples: **optiPoint 410**, **OpenStage Hi**.

#### SW Type:

Type of the phone software.

Examples: **Unify HFA**, **Unify SIP**.

**SW Version:**

Version of the phone software.

**Status:**

Status of the phone software.

Example: **version info missing**.

**Valid**

Activated if the file is valid.



### 6.3.5.2 "HTTPS Server CA Certificates" Tab

**Call:** Main Menu > Administration > Server Configuration > HTTPS Server Configuration > "HTTPS Server CA Certificates" Tab

#### Certificate Check Policy

Determines if and how the certificate is checked.

Possible values:

- **None**

No authentication of server. Invalid certificates, which are received before by server or has been loaded by IP Phone, will be ignored. HTTPS connections to server are setup without authentications allways.

- **Trusted**

Certificates are checked for "expired", "not valid", "signed by trusted CA", and "revoked". Therefore one or two list of "trusted CAs" are required. The same list will be used for "trusted" and "full". As "trusted CAs" may be used RootCAs, temporary created CAs, or even the server-certificate itself. Additional values, such as owner or issuer are not checked. HTTPS connections to server are setup even if some values of the certificate are incorrect.

- **Full**

Certificates are checked for "expired", "not valid", "signed by trusted CA", "revoked", matching owner and so on. Therefore one or two list of "trusted CAs" are required. The same list will be used for "trusted" and "full". As "trusted CAs" may be used RootCAs, temporary created CAs, or even the server-certificate itself. HTTPS connections to server are setup only, if valid and correct certificates are available.

#### Index

Index of certificate.

**Serial Number:**

Serial number of the certificate (display only).

**Owner:**

Owner of the certificate (display only).

**Issuer:**

Issuer of the certificate (display only).

**Valid from:**

Start of validity for the certificate (display only).

**Valid to:**

End of validity for the certificate (display only).

**Key Algorithm**

Key Algorithm of the certificate (display only).

**Key Size**

Key Size of the certificate (display only).

**Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) of the certificate (display only).

**Expires in ... [days]:**

Certificate will expire in ... days.

## Administration

### Server Configuration

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### Alarm Status

Current alarm status of the certificate (display only).

Possible values:

- **valid**
- **soon running out**
- **expired**

### 6.3.5.3 "Trust Anchor" Tab

**Call:** Administration > Server Configuration> HTTPS Server Configuration > "Trust Anchor" Tab

For each configuration, a trust anchor must be configured. In most scenarios, this will be the Root CA itself, but can be a subordinate CA as well. If a trust anchor is not available, the configuration cannot be saved!

Serial Number:	<input type="text"/>
Owner:	<input type="text"/>
Issuer:	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>
Key Size:	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>
Expires in ... [days]:	<input type="text"/>

#### Serial Number

Serial number of the certificate (display only).

#### Owner

Owner of the certificate (display only).

#### Issuer:

Issuer of the certificate (display only).

#### Valid from:

Start of validity for the certificate (display only).

#### Valid to:

End of validity for the certificate (display only).

#### Key Algorithm:

Key Algorithm for certificate (display only).

## Administration

### Server Configuration

#### Key Size:

Key Size for certificate (display only).

#### Fingerprint (SHA-1):

Test algorithm SHA1 (160 bits/20 characters) for certificate (display only)

#### Expires in ... [days]:

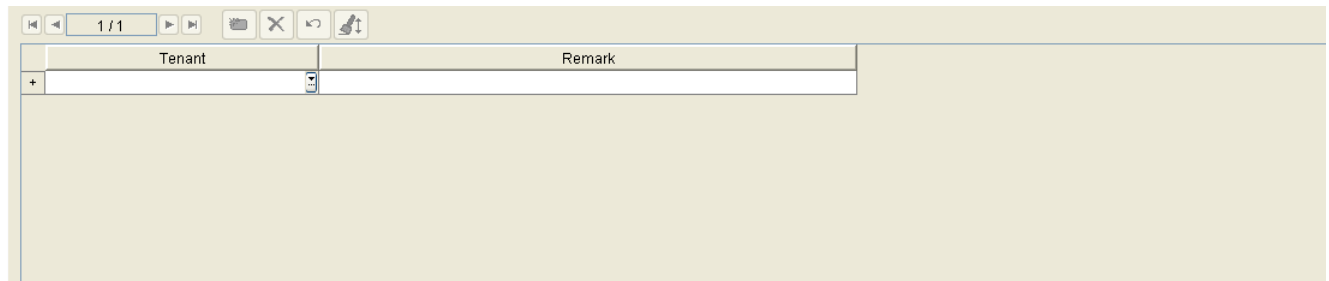
Certificate will expire in ... days.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### 6.3.5.4 "Tenants" Tab

**Call:** Main Menu > Administration > Server Configuration > HTTPS Server Configuration > "Tenants" Tab

**NOTE:** This tab is available only if the multi-tenancy function of the DLS is installed. See also Section 16.17.1, "Install/Deinstall Multi-Tenancy".



Tenant	Remark
+	

#### Tenant

Name of the tenant.

#### Remark

Information on the tenant.

## **6.3.6 HTTPS Client Configuration**

This area features the following components:

- General Data
- Possible Action Buttons

## General Data

**Call:** Main Menu > Administration > Server Configuration > HTTPS Client Configuration.

This item allows to import and display certificates of the HTTPS Client Configuration.

Serial Number:	<input type="text"/>
Owner:	<input type="text"/>
Issuer:	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>
Key Size:	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>
Expires in ... [days]:	<input type="text"/>
Alarm Status:	<input type="text"/>

### Serial Number:

Serial number of the certificate (display only).

### Owner:

Owner of the certificate (display only).

### Issuer:

Issuer of the certificate (display only).

### Valid from:

Start of validity for the certificate (display only).

### Valid to:

End of validity for the certificate (display only).

### Key Algorithm

Key Algorithm of the certificate (display only).



## Administration

### Server Configuration

#### Key Size

Key Size of the certificate (display only).

#### Fingerprint (SHA-1):

Test algorithm SHA-1 (160 bits/20 characters) of the certificate (display only).

#### Expires in ... [days]:

Certificate will expire in ... days of the certificate (display only).

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### Alarm Status

Current alarm status of the certificate (display only).

Possible values:

- **valid**
- **soon running out**
- **expired**

#### Possible Action Buttons

The range of action buttons available depends on the DLS status.

#### Search

Searches the database for HTTPS servers already configured.

#### Clear Window

Deletes the data entered in the window.

### **Import Certificate**

Starts the import of HTTPS Client Certificate.

### **Synchronize Keystore**

Starts synchronization of keystore.

## **6.3.7 Network Drive Configuration**

**Call:** Main Menu > Administration > Server Configuration > Network Drive Configuration.

This area features the following components:

- General Data
- Possible Action Buttons
- "Tenants" Tab

## General Data

In this area, you can configure one or more network drives.

**NOTE:** Deployment via a network drive is not available in the onboard variants of DLS on OpenScape Voice systems.

**NOTE:** The information here is only necessary for the distribution of IP client software. Access to the software for IP phones is via FTP/HTTPS. The server is configured in the **FTP Server Configuration** or **HTTPS Server Configuration** area.

Authorizations for accessing the network release must be set on the *[DLS server name]\system* to guarantee access for the DLS Web server running by default as the service.

If these authorizations cannot be extended or if the authorizations for access to the network releases are limited to a user group, then you must ensure that the DLS runs in the user context that is also included in this user group or that can access this network release.

The user context can be modified as follows (Windows XP, for example):

**Start > Settings > Control Panel > Administrative Tools > Services > DeploymentService > [right-click] Properties > Log On tab.**

Enter the data necessary for the Windows network drive.

The screenshot displays a web-based configuration interface. At the top, there are three input fields: 'Network Drive ID:', 'Network Drive Path:', and 'Internal Path:', each with a dropdown arrow. Below these is a 'Status:' field and two buttons: 'Start Scan' and 'Stop Scan'. The main section is titled 'Images on the Server' and contains a table view. The table has a single entry selected, showing fields for 'SW Name:', 'SW Path:', 'Object Type:', 'Device Type:', 'SW Type:', 'SW Version:', and 'Status:'. A 'Valid' checkbox is also present.

### Network Drive ID:

Unique name for addressing the network drive configured.

## **Administration**

### *Server Configuration*

#### **Network Drive Path:**

Computer name or IP address where the drive is released and the path of the released directory. The directory must be accessible by IP Clients.

#### **Internal Path**

If specified, this path will be used for scan by the DLS.

#### **Status:**

Status of s server action.

Possible values:

- **Scanning...**
- **Finished**
- **Stopped**

#### **Start Scan**

Start a search for software and data files on the network drive. Entries concerning files which are not available on the server will be deleted in the DLS database.

#### **Stop Scan**

Stops scanning the network drive for software and data files.

#### **Images on the Server**

If a scan has been executed, information on all software and data files found during the scan is displayed here.

#### **SW Name:**

Name of the file.

#### **SW Path:**

Directory path and file name.

**Object Type:**

Type of file.

Examples: **Software Image, Logo File, Screen Saver.**

**Device Type:**

Device type, for which the file is appropriate.

Examples: **optiPoint 410, OpenStage Hi.**

**SW Type:**

Type of the phone software.

Examples: **Unify HFA, Unify SIP.**

**SW Version:**

Version of the phone software.

**Status:**

Status of the phone software.

Example: **version info missing.**

**Valid**

Activated if the file is valid.

**Possible Action Buttons**

**Save**

Saves the data entered/modified.

**Discard**

Discards any changes made.

## Administration

### *Server Configuration*

#### New

Creates a new network drive.

#### Delete

Deletes the network path currently listed in Object view.

#### Refresh

Updates the field content using the database.

#### Scan all

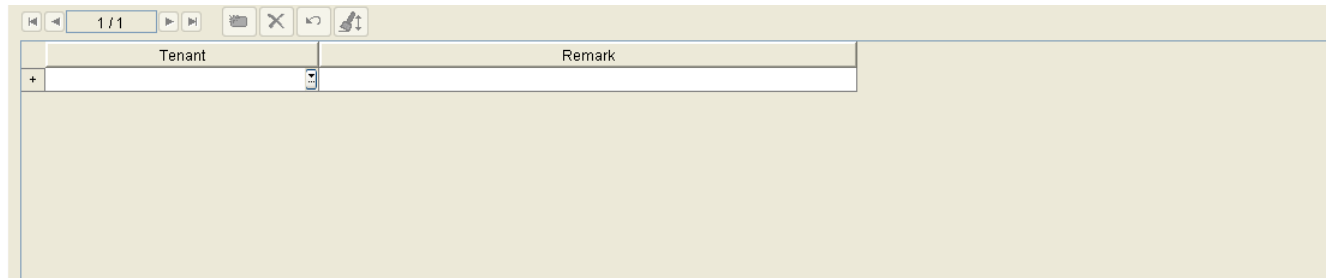
All assigned network drives will be scanned. A progress bar shows the status of the current scan.

This scan can be cancelled like a single scan by clicking the button **Stop Scan**.

### 6.3.7.1 "Tenants" Tab

**Call:** Main Menu > Administration > Server Configuration > Network Drive Configuration > "Tenants" Tab

**NOTE:** This tab is available only if the multi-tenancy function of the DLS is installed. See also Section 16.17.1, "Install/Deinstall Multi-Tenancy".



The screenshot shows a web-based interface for managing tenants. At the top, there is a navigation bar with a '1 / 1' indicator and several icons. Below this is a table with two columns: 'Tenant' and 'Remark'. The 'Tenant' column contains a single entry with a '+' icon to its left. The 'Remark' column is empty. The table is set against a light beige background.

#### Tenant

Name of the tenant.

#### Remark

Information on the tenant.



## **6.3.8 Infrastructure Policy**

**Call:** Main Menu > Administration > Server Configuration > Infrastructure Policy

This mask supports the mapping to an infrastructure policy according to the switch IP address, the switch port and the network policy. The mapping follows the order of the entries, i. e. the first matching entry will define the resulting infrastructure policy.

It is possible to enter regular expressions for the attributes mapped to the infrastructure policy. An empty mapping attribute means that it is not relevant for the mapping.

To trigger automatic adaptation, the infrastructure policy must be used as criterion for a location (see **Administration > Server Configuration > Location > "Infrastructure Policies" Tab**).

This menu item consists of the following areas:

- General Data
- Possible Action Buttons
- "Infrastructure Policies" Tab
- "Infrastructure Policy Table" Tab

## General Data

Infrastructure Policy:	<input type="text"/>
Description:	<input type="text"/>

### Infrastructure Policy:

Name of the infrastructure policy.

### Description:

Description of the infrastructure policy.

## Possible Action Buttons

Depending on the status of the DLS, various action buttons are available.

### Search

Searches the database for configured IP infrastructure policies.

### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the Search view before new search criteria are entered.

### New

Creates a new data record for IP infrastructure policies.

### Save

Saves the field contents to the database.

### Discard

Discards any changes entered.

## **Administration**

### *Server Configuration*

#### **Refresh**

Updates the window using the database.

#### **Apply**

Applies IP infrastructure table to already existing IP Devices.

### 6.3.8.1 "Infrastructure Policy Table" Tab

**Call:** Main Menu > Administration > Server Configuration > Infrastructure Policy > "Infrastructure Policy Table" Tab

Priority:	<input type="text" value="1"/>
Switch IP Address:	<input type="text"/>
Switch Port:	<input type="text"/>
Network Policy:	<input type="text"/>

#### **Priority:**

The matching policy will be assigned according to the priority entered here.

#### **Switch IP address:**

IP address of the switch where the IP Phone is plugged in.

Regular Expressions may be used.

#### **Switch Port:**

Port number of the switch where the IP Phone is plugged in.

Regular Expressions may be used.

#### **Network Policy:**

Network Policy assigned to IP Phone.

Regular Expressions may be used.

6.3.9 API Notifications


**Call:** Main Menu > Administration > Server Configuration > API Notifications

This screen offers an overview on the current subscribers to API notifications. The administrator can restrict the maximum number of subscriptions and also delete entries.

Maximum Subscriber Number:

☒ Table ☐ Selected entry

◀◀ 0 / 0 ▶▶

Notification Type	Address	Port	Protocol
-------------------	---------	------	----------

Maximum Subscriber Number:

If this number is reached, the attempt to subscribe to notifications will fail.

Notification Type

Type of notification.

Possible values:

- inventoryInfo**  
New IP Phones and E.164 changes will be notified.
- serverStart**  
Notification on DLS server start.

Address

Target IP address for notification.

### **Port**

Target port for notification.

### **Protocol**

Protocol used for notification: UDP.

## **6.3.10 XML Applications**


**Call:** Main Menu > Administration > Server Configuration > XML Applications

XML applications are configured here.

This menu item consists of the following areas:

- General Data
- Possible Action Buttons
- "Deployment Service" Tab
- "Location Service" Tab
- "News Service" Tab
- "MakeCall" Tab

## General Data

XML Application Password:	<input type="password" value="••••••"/>	
DLS Address:	<input type="text" value="192.168.1.150"/>	
Trace Level:	<input type="text" value="ERROR"/>	

### XML Applications Password

Common password of all password protected XML applications.

### DLS Address

IP address of the DLS, or, in a Multinode installation, the IP address of the DLS cluster.

### Trace Level

Trace Level for XML Applications which are running as self-contained web applications. The trace data are stored under

<Installation directory>\Tomcat5\webapps\XMLApplications\log\  
dlsXMLAppsLog.txt

Possible Options:

- **ERROR**
- **INFO**
- **DEBUG**

### Possible Action Buttons

#### Discard

Discards any changes entered.

#### Save

Saves the field contents to the database.

#### Refresh

Updates the window using the database.





### 6.3.10.1 "Deployment Service" Tab

**Call:** Main Menu > Administration > Server Configuration > XML Applications > "Deployment Service" Tab

Pattern for Ringtone Files:	<input data-bbox="387 373 930 405" type="text" value="%"/>
Pattern for Screensaver Files:	<input data-bbox="387 405 930 432" type="text" value="%"/>

#### Pattern for Ringtone Files

Pattern for the partially qualified selection of ringtone files available from the FTP or HTTPS Server.

Example: **\*Unify\*New\*Devices\***

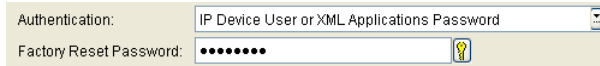
#### Pattern for Screensaver Files

Pattern for the partially qualified selection of screensaver files available from the FTP or HTTPS Server.

Example: **\*Unify\*New\*Devices\***

### 6.3.10.2 "Location Service" Tab

**Call:** Main Menu > Administration > Server Configuration > XML Applications > "Location Service" Tab



The screenshot shows a web interface with two input fields. The first field is labeled 'Authentication:' and contains the text 'IP Device User or XML Applications Password' with a dropdown arrow. The second field is labeled 'Factory Reset Password:' and contains seven dots, with a yellow lightbulb icon to its right.

#### Authentication

Select a password to execute this XML application.

Possible options:

- **IP Device User Password**

**NOTE:** If the call number of the OpenStage end device is to be changed, this is the password of that virtual device to which the new call number is assigned.

- **XML Applications Password**
- **IP Device User Password or XML Applikations Password**

#### Factory Reset Password

Password to execute a factory reset on OpenStage end devices. At this, the factory setting are restored.

### 6.3.10.3 "News Service" Tab

**Call:** Main Menu > Administration > Server Configuration > XML Applications > "News Service" Tab

<input checked="" type="checkbox"/>	Deploy XML Application 'NewsService' before push
Display Name:	<input type="text" value="NewsService"/>
Delay of NewsService Jobs (sec):	<input type="text" value="1"/>
Number saved News:	<input type="text" value="10"/>

#### Deploy XML Application 'News Service' before push

When activated, the XML application 'NewsService' will be deployed before first execution, if it is not yet configured at the end device.

#### Display Name:

This name is shown on the end device display for the XML application 'NewsService' if it has been automatically deployed.

#### Delay of News Service Jobs (sec):

Delay of jobs in seconds after bulk change operations. This is the minimal time interval between the sending of the same message to two different end devices. Notifications are not delayed.

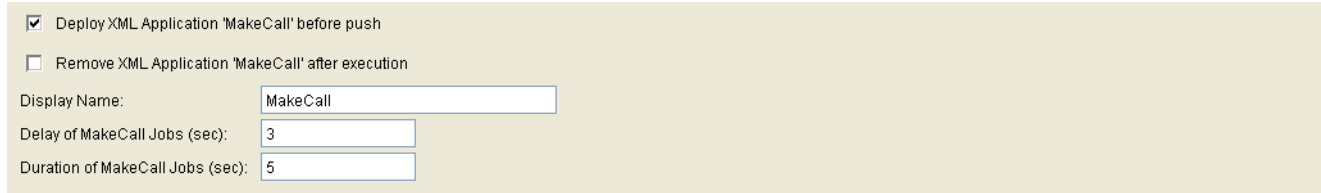
Value range: **1 - 300**

#### Number saved News:

Number of news which have already been sent via the XML application 'NewsService', and which have been saved. As soon as the number is exceeded, the oldest news message is deleted.

#### 6.3.10.4 "MakeCall" Tab

**Call:** Main Menu > Administration > Server Configuration > XML Applications > "MakeCall" Tab



The screenshot shows a configuration interface for the 'MakeCall' XML application. It includes two checkboxes: 'Deploy XML Application 'MakeCall' before push' (checked) and 'Remove XML Application 'MakeCall' after execution' (unchecked). Below these are three input fields: 'Display Name:' with the value 'MakeCall', 'Delay of MakeCall Jobs (sec):' with the value '3', and 'Duration of MakeCall Jobs (sec):' with the value '5'.

#### Deploy XML Application 'MakeCall' before push

Switch to activate the first deployment of the News Service application.

When activated, the XML application 'MakeCall' is deployed before the first execution, if it is not yet configured at the end device.

#### Remove XML Application 'MakeCall' after execution

When activated, the XML application 'MakeCall' is removed from the end device after it has been executed.

#### Display Name:

This name is shown on the end device display for the XML application 'MakeCall' if it has been automatically deployed.

#### Delay of MakeCall Jobs (sec):

Minimal time interval in seconds between the initiating of a call from two different end devices; is needed for bulk changes.

Value range: 1 ... 500

#### Duration of MakeCall jobs (sec):

This duration is equivalent to the sum from the time needed for initiating the call and the time needed for the call proper.

## 6.3.11 Options

**Call:** Main Menu > Administration > Server Configuration > Options

**Search**

Limit of Search Results: 10000

Limit of Search Results in Integrated Tables: 1000

**IP Device Trash**

Delete IP Devices from Trash after Days: 31

Delete not responding IP Devices from Trash after Days: 90

**Mobile User Password Compliance**

☒ Mobile User Password Compliance in Mixed Networks (default option)

### Search

#### Limit of Search Results

Maximum number of records displayed when a search is done.

**NOTE:** Changed values first will be used not until the DLS Client has been restarted.

#### Limit of Search Results in Integrated Tables

Maximum number of records displayed in integrated tables when a search is done.

**NOTE:** Changed values first will be used not until the DLS Client has been restarted.

### IP Device Trash

#### Delete IP Devices from Trash after Days

Number of days after which IP Devices marked to be deleted will be deleted completely from the DLS database.

Default value : 31 days

Value range: 1 ... 365

**NOTE:** If you set it to zero (" 0" ), it changes the value to default as soon as you hit the save button or mark another field.

## Administration

### Server Configuration

#### Delete not responding IP Devices from Trash after Days

Number of days after which not responding IP Devices marked to be deleted will be deleted completely from the DLS database.

Default value : 31 days

Possible options: 1 ... 365

**NOTE:** If you set it to zero (" 0" ), it changes the value to default as soon as you hit the save button or mark another field.

## Mobile User Password Compliance

### Mobile User Password Compliance in Mixed Networks (default option)

If this option is selected and a Mobile User password is changed on an OpenStage V3.0 Phone or higher, the Mobile User also will be able to use it on older phone types or software versions. If not selected, the Mobile User password on older phones or software versions is eventually replaced by the standard password '000000'.

Only available for SIP phones.

**IMPORTANT:** This option is used as a default value for devices connected to DLS for the first time. Please refer to Section 7.1.7.1, ""Passwords" Tab" for enabling this option for specific IP phones (IP Phone Configuration).

**NOTE:** In OpenStage v3 onward, the password for mobile users is send using hash values. Therefore the DLS is not able to display anything in the password field when the Refresh button is used. The password is not lost, is just not visible in the DLS graphic user interface.

## Possible Action Buttons

### Discard

Discards any unsaved changes.

### Save

Saves the changes.

**Refresh**

Refreshes the screen contents from the database.



## **6.3.12 TLS Connector Configuration**

**Call:** Main Menu > Administration > Server Configuration > TLS Connector Configuration

This area features the following components:

- Possible Action Buttons
- "DLS Client GUI" Tab
- "Truststore DLS Client GUI" Tab
- "DLS API" Tab
- "Truststore DLS API" Tab

## **Possible Action Buttons**

### **Import and activate Certificate**

Imports and activates certificate. When clicking the button, a window pops up to select certificate type and import source.

### **Remove Certificate**

Removes certificate. When clicking the button, a window pops up to select certificate type.

### **Refresh**

Updates the window using the database.

6.3.12.1 "DLS Client GUI" Tab

**Call:** Main Menu > Administration > Server Configuration > TLS Connector Configuration > "DLS Client GUI" Tab

PKI Configuration:	
Serial Number:	7E
Owner:	CN=OpenScape Deployment Service V3, O=Siemens Enterprise Communications GmbH & Co. KG, L=Munich, C=DE
Issuer:	iemens.com, CN=Siemens Com ESY HD Security Office, OU=Com Enterprise Systems, O=Siemens AG, L=Munich, C=DE
Valid from:	2009-10-29 20:10:15
Valid to:	2024-10-28 20:10:15
Key Algorithm:	RSA
Key Size:	1024
Fingerprint (SHA-1):	A76E88D84ECE704D6F93A88A4BA6867BB194C1D0
Expires in ... [days]:	5031
Alarm Status:	valid

Serial Number:

Serial number of the certificate (display only).

Owner:

Owner of the certificate (display only).

Issuer:

Issuer of the certificate (display only).

Valid from:

Start of validity for the certificate (display only).

Valid to:

End of validity for the certificate (display only).

Key Algorithm

Key Algorithm.

### **Key Size**

Key Size.

### **Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate.

### **Expires in ... [days]:**

Certificate will expire in ... days.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### **Alarm Status**

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

6.3.12.2 "Truststore DLS Client GUI" Tab

**Call:** Main Menu > Administration > Server Configuration > TLS Connector Configuration > "Truststore DLS Client GUI" Tab

Index:	<input type="text"/>
PKI Configuration:	<input type="text"/>
Serial Number:	<input type="text"/>
Owner:	<input type="text"/>
Issuer:	<input type="text"/>
Valid from:	<input type="text"/>
Valid to:	<input type="text"/>
Key Algorithm:	<input type="text"/>
Key Size:	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>
Expires in ... [days]:	<input type="text"/>
Alarm Status:	<input type="text"/>

Index

Index of the TLS connector.

For further parameter description, see chapter Section 6.3.12.1, ""DLS Client GUI" Tab".

### 6.3.12.3 "DLS API" Tab

**Call:** Main Menu > Administration > Server Configuration > TLS Connector Configuration > "DLS API" Tab

<a href="#">PKI Configuration:</a>	
Serial Number:	7E
Owner:	CN=OpenScape Deployment Service V3, O=Siemens Enterprise Communications GmbH & Co. KG, L=Munich, C=DE
Issuer:	iemens.com, CN=Siemens Com ESY HD Security Office, OU=Com Enterprise Systems, O=Siemens AG, L=Munich, C=DE
Valid from:	2009-10-29 20:10:15
Valid to:	2024-10-28 20:10:15
Key Algorithm:	RSA
Key Size:	1024
Fingerprint (SHA-1):	A76E88D84ECE704D6F93A88A4BA6867BB194C1D0
Expires in ... [days]:	5031
Alarm Status:	valid

For further parameter description, see chapter Section 6.3.12.1, ""DLS Client GUI" Tab".

6.3.12.4 "Truststore DLS API" Tab

**Call:** Main Menu > Administration > Server Configuration > TLS Connector Configuration > "Truststore DLS API" Tab

Index:	<input type="text"/>
PKI Configuration:	<input type="text"/>
Serial Number:	<input type="text"/>
Owner:	<input type="text"/>
Issuer:	<input type="text"/>
Valid from:	<input type="text"/>
Valid to:	<input type="text"/>
Key Algorithm:	<input type="text"/>
Key Size:	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>
Expires in ... [days]:	<input type="text"/>
Alarm Status:	<input type="text"/>

Index

Index of TLS Connector.

For further parameter description, see chapter Section 6.3.12.1, ""DLS Client GUI" Tab".

## **6.4 Cluster Configuration**

**Call:** Main Menu > Administration > Cluster Configuration

This menu item consists of the following areas:

- Deployment Server
- Cluster Settings



## 6.4.1 Deployment Server

**Call:** Main Menu > Administration > Cluster Configuration > Deployment Server

This area is used for monitoring and controlling the DLS server installed in the cluster. You can also stop, start or restart the deployment service running on the individual servers here. The requirement for this is that they are registered as cluster nodes in the DLS database. Active nodes log back on at five-minute intervals.

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab

## General Data

Hostname:	<input type="text"/>	Port:	<input type="text"/>
Address:	<input type="text"/>	DCMP-Port:	<input type="text"/>
Remark:	<input type="text"/>		

### Hostname:

Name of the node within the cluster.

### Address:

IP address, domain, or host name of the DLS.

### Remark:

Field for general information.

### Port:

Port of the DLS.

### DCMP-Port:

Port of the DCMP (DLS Communication Management Proxy).

## Possible Action Buttons

### Search

Searches the database for configured servers that match the search criteria.

### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

## **Administration**

### *Cluster Configuration*

#### **Save**

Saves the field contents to the database.

#### **Discard**

Discards any changes entered.

#### **Refresh**

Updates the window using the database.

#### **New**

Creates a new cluster node.

#### **Delete**

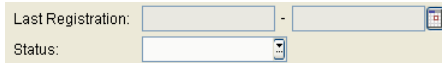
Deletes one or more nodes (multiple selections possible in Table view).

#### **Deployment Service**

Opens a dialog window to start, stop or restart the Deployment Service at the selected node.

### 6.4.1.1 "Info" Tab

**Call:** Main Menu > Administration > Cluster Configuration > Deployment Server > "Info" Tab



The screenshot shows a light beige background with two rows of form fields. The first row is labeled 'Last Registration:' and contains two empty text boxes separated by a hyphen, with a small calendar icon to the right. The second row is labeled 'Status:' and contains a single empty dropdown menu with a small arrow icon to its right.

#### **Last Registration**

Last time the node registered at the cluster.

#### **Status**

Status of the node within the cluster.

Possible values:

- **Active**  
The node is active.
- **Inactive**  
The node has either logged itself on as inactive or was recognized as inactive by other nodes in the cluster.

## 6.4.2 Cluster Settings

**Call:** Main Menu > Administration > Cluster Configuration > Cluster Settings



☐ Use Database Mirroring

Failover Partner:

### Use Database Mirroring

Switch on database mirroring. This is helpful only if MS SQL database mirroring has been configured for the DLS database.

### Failover Partner

IP address of the mirroring instance for the DLS database.

## **6.5 Display Logging Data**

**Call:** Main Menu > Administration > Display Logging Data

This menu item consists of the following areas:

- Activity and Error Log
- Audit and Security Log
- P&P Import Protocols
- Alarm Protocol
- Alarm List

## **6.5.1 Activity and Error Log**

**Call:** Main Menu > Administration > Server Configuration > Display Logging Data > Activity and Error Log

Specify which events should be logged and how long events should be saved.

You can select filters to view a specific range of logged data. The filtered data is displayed in a separate browser window.

This area features the following components:

- Possible Action Buttons
- "Configuration" Tab
- "Protocol" Tab

### **Possible Action Buttons**

#### **Save**

Saves all settings made.

#### **Discard**

Discards any changes entered.

#### **Refresh**

Updates the window using the database.

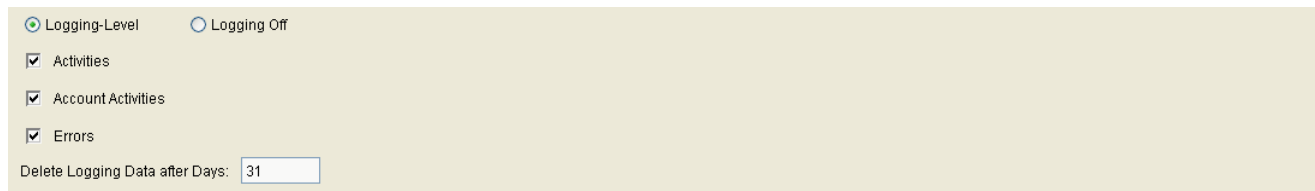


## Administration

### Display Logging Data

#### 6.5.1.1 "Configuration" Tab

**Call:** Main Menu > Administration > Display Logging Data > Activity and Error Log > "Configuration" Tab



☒ Logging-Level    ☐ Logging Off

☒ Activities

☒ Account Activities

☒ Errors

Delete Logging Data after Days:

#### Logging-Level

Check box for activating logging.

#### Logging off

Check box for deactivating logging.

#### Activities

All DLS activities must be logged in the Activities log.

#### Account Activities

All account activities must be logged in the Account Activities log.

#### Errors

The Errors log only records failed actions and internal errors, such as, license violations or SQL database errors.

#### Delete Logging Data after Days:

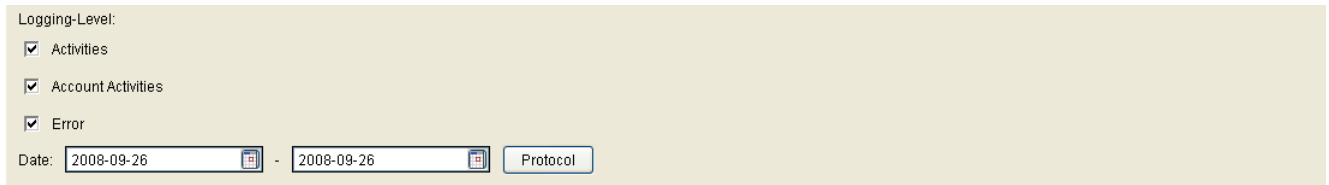
Number of days the logged events should remain saved before they are automatically deleted.

Value range: 1 ... 365 days.

Default: 31

### 6.5.1.2 "Protocol" Tab

**Call:** Main Menu > Administration > Display Logging Data > Activity and Error Log > "Protocol" Tab



Logging-Level:

- ☒ Activities
- ☒ Account Activities
- ☒ Error

Date:  -

#### Logging-Level

##### Activities

All DLS activities must be logged in the Activities log.

##### Account Activities

All account activities must be logged in the Account Activities log.

##### Error

The Errors log only records failed actions and internal errors, such as, license violations or SQL database errors.

##### Date:

Period of time during which the log data should be displayed (for a calendar, see Section 5.4.2.4, "Time field with calendar button").

##### Protocol

Starts outputting logging data. The filtered data is displayed in a separate browser window.

## **6.5.2 Audit and Security Log**

This functionality is available on the GUI depending on the roles and rights of the account.

**Call:** Main Menu > Administration > Display Logging Data > Audit and Security Log

This area features the following components:

- Possible Action Buttons
- "Configuration" Tab
- "Protocol" Tab

### **Possible Action Buttons**

#### **Discard**

Discards any changes entered. Not applicable for the "Protocol" Tab.

#### **Save**

Saves all settings made. Not applicable for the "Protocol" Tab.

#### **Refresh**

Updates the window using the database.

## Administration

### Display Logging Data

#### 6.5.2.1 "Configuration" Tab

**Call:** Main Menu > Administration > Display Logging Data > Audit and Security Log > "Configuration" Tab

<input type="checkbox"/> DLS Audit Log	Clean up Audit Logging Data after Days: <input type="text" value="10"/>
	<input checked="" type="checkbox"/> Transfer Audit Logging Data to File
<input type="checkbox"/> DLS Security Log	Transfer Security Logging Data after Days: <input type="text" value="31"/>

#### DLS Audit Log

When active, all DLS activities invoked by an account are logged.

#### Clean up Audit Logging Data after Days

Number of days until the audit related log data is deleted or transferred to a file.

Value range: 1 ... 365

#### Transfer Audit Logging Data to File

When active, the audit related logging data will be transferred to a file after the time configured in **Clean up Audit Logging Data after Days**.

#### DLS Security Log

When active, all security relevant activities are logged.


#### Transfer Security Logging Data after Days

Number of days until the security related log data is transferred to a file.

Value range: 1 ... 365

### 6.5.2.2 "Protocol" Tab

**Call:** Main Menu > Administration > Display Logging Data > Audit and Security Log > "Protocol" Tab

The screenshot shows a light beige header bar. On the left, it says 'Date:'. To its right are two date input fields, both containing '2010-07-29'. Each field has a small calendar icon to its right. Between the two fields is a hyphen. To the right of the date fields are two buttons: 'Audit Log' and 'Security Log', both with a light blue border and a small icon to their right.

#### Date

Log data that has been created in the time period specified here will be displayed.

#### Audit Log

Button to start the display of DLS audit log data.

#### Security Log

Button to start the display of DLS security log data.

### 6.5.3 P&P Import Protocols

**Call:** Main Menu > Administration > Display Logging Data > P&P Import Protocols

Maximum number of Protocols:

☒ Table ☐ Selected entry

0 / 0

Date	Protocol
------	----------

For information on general interface operation, see Section 5.4.2, "Work Area".

**NOTE:** The **Object** view is only available per tennant. Therefore the **ALL** option shall not bring any results.

**Maximum number of Protocols:**

The maximum number of protocols created when importing Plug&Play data.  
Value range: 1 ... 40.

**Date**

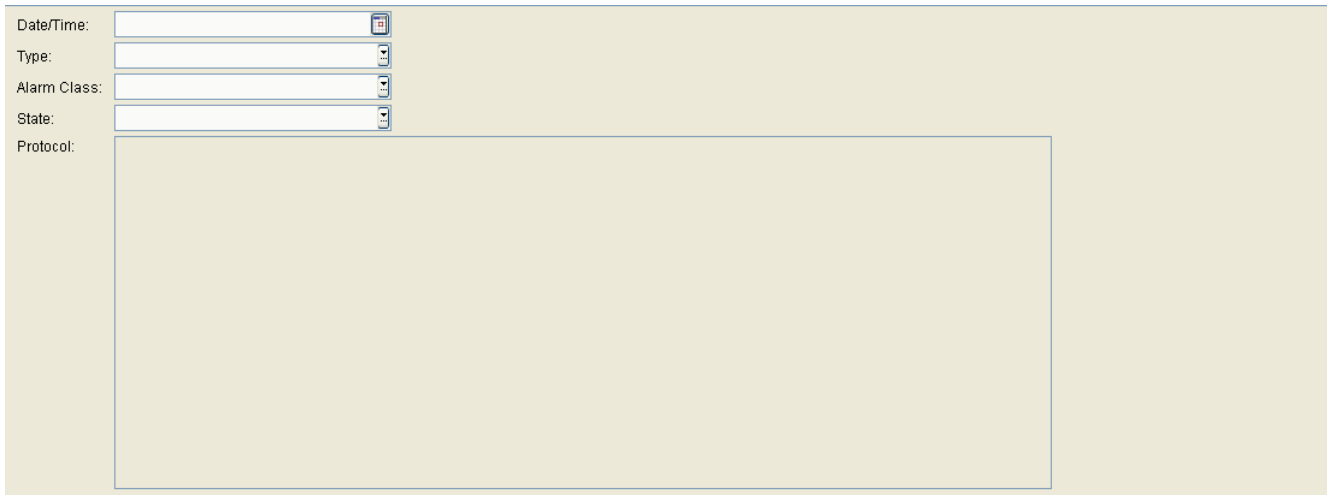
Protocol creation date.

**Protocol**

Plug&Play import protocol.

## 6.5.4 Alarm Protocol

**Call:** Main Menu > Administration > Display Logging Data > Alarm Protocol

The screenshot shows a web-based form for 'Alarm Protocol'. On the left side, there are five labels: 'Date/Time:', 'Type:', 'Alarm Class:', 'State:', and 'Protocol:'. Each of these labels is followed by a corresponding input field. The 'Date/Time' field has a small calendar icon on its right. The 'Type', 'Alarm Class', and 'State' fields have a small dropdown arrow on their right. The 'Protocol' field is followed by a large, empty rectangular box for text entry. The entire form is set against a light beige background.

### **Date/Time**

Date/Time at which the action has started.

### **Alarm Class**

Alarm class of the alarm.

### **Type**

Type of alarm.

### **State**

State of the action.

Possible Options:

- **running**
- **pending**
- **finished**
- **failed**
- **timeout**



## **Administration**

*Display Logging Data*

## **Protocol**

Protocol of the execution.

### **Possible Action Buttons**

The range of action buttons available depends on the DLS status.

#### **Save**

Saves any unsaved changes.

#### **Discard**

Discards any unsaved changes.

#### **Refresh**

Refreshes the content of the relevant page.

## 6.5.5 Alarm List

**Call:** Main Menu > Administration > Display Logging Data > Alarm List

The screenshot shows a web interface for displaying alarm logs. On the left side, there are four filter fields: 'Date/Time:' with a date range selector, 'Alarm Class:' with a dropdown menu, 'State:' with a dropdown menu, and 'Protocol:' with a text input field. To the right of these filters is a large, empty rectangular area representing the table of alarm entries.

DLS shall display a list with the DLS alarms that are stored in DLS Database. When an alarm condition occurs (log event), a new entry shall be added in the Database.

### Date/Time

Date/Time at which the action has started.

### Alarm Class

Alarm class of the alarm.

### State

State of the action.

Possible Options:

- **active**  
The state is active when the alarm condition exists.
- **cleared**  
The state is cleared when the alarm condition is disappeared.

### Protocol

Protocol of the execution.

### **Possible Action Buttons**

The range of action buttons available depends on the DLS status.

#### **Delete**

Offers the capability to remove an alarm from the list. DLS shall clear the alarm and then shall remove it from the Database.

#### **Clear Alarm**

Offers the capability to change the status of an alarm from "active" to "cleared".

DLS shall update the alarm status in the Database and also send clear trap for this alarm in the configured SNMP destinations.

If an alarm is raised (and displayed) more than once and you press the Clear Alarm option then the Alarm Status should go from "active" to "cleared" in all rows.

#### **Refresh**

Refreshes the content of the alarm list.

## **6.6 Alarm Configuration**

**Call:** Main Menu > Administration > Alarm Configuration

This area features the following components:

- General Data
- Possible Action Buttons
- "Alarm Classes" Tab
- "Notification" Tab
- "SNMP" Tab
- "Batch File" Tab
- "Email" Tab
- „Syslog“ Tab
- "Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

## General Data

- ☐ Notification to DLS Users
- ☐ SNMP Trap
- ☐ Batch File Execution
- ☐ Email
- ☐ Syslog

### Notification to DLS Users

When active, logged on DLS users will be notified of an alarm, depending on the individual settings in the "Alarm Classes" Tab. For this purpose, the DLS users must be selected for notification by means of the "Notification" Tab. The alarm notification is displayed in the title bar of the DLS window.

### SNMP Trap

When active, an SMNP trap is sent to the server determined in the "SNMP" Tab, depending on the individual settings in the "Alarm Classes" Tab.

### Batch File Execution:

When active, the batch file specified in the "Batch File" Tab is executed, depending on the individual settings in the "Alarm Classes" Tab.

### Email:

When active, an Email is sent using data specified in the "Email" Tab, depending on the individual settings in the "Alarm Classes" Tab.

### Syslog:

When active, the alarm will be added to systemlog file, depending on the individual settings in the "Alarm Classes" Tab.

## Possible Action Buttons

### Save

Saves any unsaved changes.

## **Administration**

### *Alarm Configuration*

#### **Discard**

Discards any unsaved changes.

#### **Refresh**

Refreshes the content of the relevant page.

## 6.6.1 "Alarm Classes" Tab

**Call:** Main Menu > Administration > Alarm Configuration > "Alarm Classes" Tab

Here, the actions for specific alarm classes are selected. The composition of this list depends on the startup settings of the DLS and cannot be modified. The possible actions are user notification, SNMP Trap, execution of a batch file, and the sending of an Email. However, whether the actions are actually executed depends on the check boxes under **General Data**. So, for instance, if **Email** is deactivated under **General Data**, the individual setting in the alarm class table is no longer considered.

Notification	SNMP Trap	Batch File	Email	Alarm Class
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	License Alarm
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SIP Mobility
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Certificate Expiration
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IP Device Communication
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IP Device File Upload
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IP Device Fault Report
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PKI

### Index

Index for the alarm action to be triggered (notification, batch file, SNMP trap, or Email).

### Notification

If this check box and the **Notification to DLS Users** check box in the **General Data** area are activated, the DLS users listed in the "Notification" Tab are notified according to this alarm class.

### SNMP Trap

If this check box as well as the check box **SNMP Trap** under **General Data** is active, the SNMP trap will be sent to the receiver configured for this alarm class.

### Batch File

If this check box and the **Batch file execution** check box in the **General Data** area are activated, the configured command file for this alarm class is executed.



## Administration

### Alarm Configuration

#### Email

If this check box and the **Email** check box in the **General Data** area are activated, the configured e-mail for this alarm class is executed.

#### Alarm Class

Functional area within which an alarm shall be triggered in case of an error. The list cannot be modified; it depends on the startup settings of the DLS.

Possible values:

- **DLS Service**
- **DLS Cluster**
- **DLS Communication Error**  
An alarm is triggered when a connectivity failure occurs under Contact Me Notify functionality.
- **License Alarm**
- **SIP Mobility**
- **Element Manager Synchronization**  
An alarm is triggered when an error occurs at some point through registration data transfer from Element Manager to DLS db.
- **Certificate Expiration**
- **Policy Alarm**  
An alarm is triggered when an error occurs in policy settings, please refer to **Section 6.1.2, "Policy Settings"**.
- **Resource Alarm**  
Corresponds with the threshold **Minimum free space** under **Administration > File Server**.
- **DCMP**  
i.e, dcmp configuration error, DLS or phone wise.
- **DLS Cluster**
- **Resource Alarm**  
Corresponds with the threshold **Minimum free space** under **Administration > File Server**.
- **IP Device Communication**  
An alarm is triggered when an error occurs in IP Device interaction / management
- **IP Device File Upload**  
i.e, an error alarm is triggered when a timeout occurred while executing the deployment job because the time entered for Job Configuration was exceeded (for example, by an IP Device that was unavailable for an extended period of time).
- **IP Device Fault Report**

- **PKI**  
i.e,PKI configuration error.

## Administration

### Alarm Configuration

## 6.6.2 "Notification" Tab

**Call:** Main Menu > Administration > Alarm Configuration > "Notification" Tab

Language ☒ German ☐ English

☒ Table ☐ Selected entry 1 / 2 [Icons]

Account
harald
admin

Test

### Language

The language of the text in the notification alarm.

Possible options:

- **German**
- **English**

### Account

The DLS user accounts which shall be notified by the alarms selected in the "Alarm Classes" Tab are entered here.

### Test

Tests the notification. The result of the test can be checked under **Administration > Display Logging Data > Alarm Protocol**.

### 6.6.3 "SNMP" Tab

**Call:** Main Menu > Administration > Alarm Configuration > "SNMP" Tab

In case of alarm, a SNMP trap is sent. Not every protocol data unit is supported, especially not GET/SET requests. However, the SNMP partial tree created by the DLS can be read and processed by a trap receiver.

The DLS uses the following part of the MIB to generate traps:

```
hiPathApplicationStatusChange NOTIFICATION-TYPE OBJECTS { hostname, appName,  
appState, evtHistory-Date, evtHistoryDescr, hiPathTrapSeverity} STATUS current  
DESCRIPTION "A hiPathApplicationStatusChange trap a status change of a HiPath enabled  
application. This trap is sent, if a process which is not of service type, causes  
trouble. If the error state disappears there shall be a hiPathApplicationStatusChange  
trap too." ::= { hiPathTrapGroup 6 }
```

The parameters have the following meanings resp. values:

hostname: Host name of the DLS server.

appName: "DLS"

appState: 3 (= warning)

evtHistory-Date: Date of trap occurrence.

evtHistory-Descr: Description text (as passed by `createHiPathApplicationStatusChange()`).

hiPathTrapSeverity: 3 (= warning)

SNMP Host	Port	Community
-----------	------	-----------

#### Language

Language of the description text for the SNMP trap.

Possible Options:

## Administration

### *Alarm Configuration*

- **German**
- **English**

## Test

Sends a test SNMP trap. The result of the test can be checked under **Administration > Display Logging Data > Alarm Protocol**.

## SNMP Host

Name of the SNMP Server (manager).

## Port

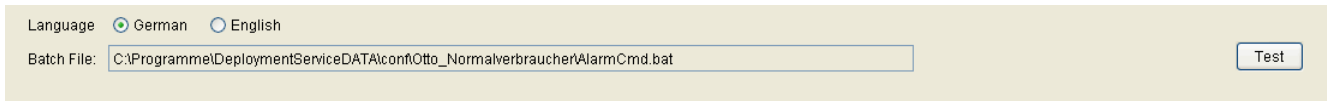
Port of the SNMP server (manager).  
Default: **162**

## Community

Community / password for the SNMP server (manager).

## 6.6.4 "Batch File" Tab

**Call:** Main Menu > Administration > Alarm Configuration > "Batch File" Tab



The screenshot shows a web interface for the 'Batch File' tab. At the top, there is a 'Language' section with two radio buttons: 'German' (selected) and 'English'. Below this is a 'Batch File:' label followed by a text input field containing the path 'C:\Programme\DeploymentServiceDATA\conf\Otto\_Normalverbraucher\AlarmCmd.bat'. To the right of the input field is a 'Test' button.

### Language

The language of the alarm message text.

Possible options:

- **German**
- **English**

### Batch File:

Path and name of the batch file which is executed when an alarm is triggered. After DLS installation, the path and file name reference a sample file which also contains rules for creating a command.

### Test

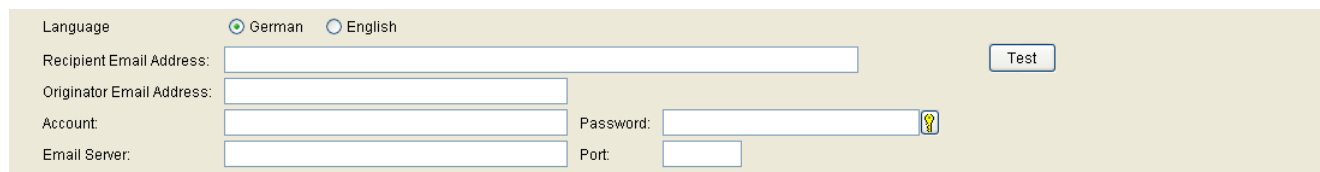
Tests the execution of the batch file. The result of the test can be checked under **Administration > Display Logging Data > Alarm Protocol**.

## Administration

### Alarm Configuration

## 6.6.5 "Email" Tab

**Call:** Main Menu > Administration > Alarm Configuration > "Email" Tab



The screenshot shows the 'Email' configuration tab. At the top, there is a 'Language' section with two radio buttons: 'German' (selected) and 'English'. Below this are five input fields: 'Recipient Email Address:', 'Originator Email Address:', 'Account:', 'Password:', and 'Email Server:'. The 'Password:' field has a yellow warning icon to its right. To the right of the 'Recipient Email Address:' field is a 'Test' button. Below the 'Account:' and 'Password:' fields is a 'Port:' field.

### Language

The language of the alarm message text.

Possible options:

- **German**
- **English**

### Recipient Email Address:

Email address of the alarm mail recipient.

### Test

Tests the Email send operation using the account data entered. The result of the test can be checked under **Administration > Display Logging Data > Alarm Protocol**.

### Originator Email Address:

Email address(es) that appear as the originator address when the mail is sent. One or more addresses can be entered, up to a maximum of 255 characters, separated by ";", " " or " " (space).

### Account:

Name of the Email account.

### Password:

Password for this Email account.

**Email Server:**

Name of the SMTP server that is to be used for alarm Emails.

**Port:**

Port number of the SMTP server. If no value is entered, port 25 is used by default.



## Administration

### Alarm Configuration

## 6.6.6 „Syslog“ Tab

**Call:** Main Menu > Administration > Alarm Configuration > „Syslog“ Tab



### Syslog Server Configuration

#### Server Address

Address of Syslog Server

#### Port

Portnumber of Syslog Server

#### Facility

Possible options:

- **local0**
- **local1**
- **local2**
- **local3**
- **local4**
- **local5**
- **local6**
- **local7**

#### Severity

Setting of Trace Level

Possible options:

- **emerg**
- **alert**
- **crit**
- **error**
- **warning**
- **notice**
- **info**
- **debug**
- **none**

## 6.6.7 "Settings" Tab

**Call:** Main Menu > Administration > Alarm Configuration > "Settings" Tab

Alarm Configuration for expiring Certificates

Minimum validity period:  [days]

Interval:  [hours]

Alarm Configuration for Short of Resources

Interval:  [hours]

Alarm Protocol Settings

Maximum number of Protocols:

Notification Settings

Alarm Icon:

☐ Notify first new alarm with Popup Window

☐ Notify every new alarm with Popup Window

### Alarm Configuration for Expiring Certificates

#### Minimum validity period: [days]

An alarm is issued if a certificate expires during this time period.

Value range: **1 - 60**.

#### Interval: [hours]

The remaining certificate validity period is checked in the interval specified here.

Value range: **1 - 60**.

Default value: **6**

### Alarm Configuration for Short of Resources

#### Interval [hours]

The supply of resources is checked in the interval specified here.

Value range: **1 - 48**

## **Alarm Protocol Settings**

### **Maximum number of Protocols:**

Maximum number of lines in the protocol.

Value range: **1 - 100000**

## **Notification Settings**

### **Alarm Icon:**

Choice list of icons for notifying the DLS user of alarms which are not closed yet. The icon is displayed in the title bar of the DLS window.

### **Notify first new alarm with Popup Window**

When active, the first new alarm is signaled by means of a popup window, if all prior alarms have been closed before.

### **Notify every new alarm with Popup Window**

When active, every new alarm is signaled by means of a popup window, if no popup window is not already open.

## **6.7 Backup/Restore**

**Call:** Main Menu > Administration > Backup/Restore

**NOTE:** This function is not available in the onboard variants of DLS on OpenScape Voice systems. In this case, the DLS file is backed up using the comprehensive OpenScape Voice Backup/Restore function.

This area features the following components:

- General Data
- Possible Action Buttons
- "Backup" Tab
- "Restore" Tab
- "Protocol" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

Refer to Section 15.9.1, "Automatic Data Backups" for more information on Backup/Restore.

## General Data

Backup Path:	<input type="text"/>	<input type="button" value="Browse..."/>	<input type="button" value="Test"/>
Max. Number of Backups:	<input type="text" value="10"/>		
<input type="button" value="Start Backup Now"/>			

### Backup Path:

File path where the backup is saved on the DLS server. If the DLS uses a remote database for its data, a directory path on the database server must be entered. It must be reachable by the DLS server. The format must also be usable locally on the database server, e. g.

\\<IP-Address DB Server>\C\$\<Backup Pfad on DB Server on drive C>

### Browse...

Click this button to open a dialog window that you can use to select an existing backup directory. To navigate to the subdirectories of a directory, double click on the directory name. To navigate up to the next higher directory level, double click on "..\". In order to select a directory, highlight it with a single click and, afterwards, click **Open**.

### Test

Click Test to verify that the path is valid (accessible).

### Max. Number of Backups:

Number of backup files managed. When you create a new backup file, the oldest one is deleted.

Value range: **1 ... 99**.

### Start Backup Now

If you click this button, a backup is executed immediately, independently of the automatic, periodic backup setting. This does not use the backup path stored in the database, but the current backup path as it appears in the mask (which may have changed and not yet been saved). This allows you to save an individual backup at a location different from the location where the periodic backups are stored.

**NOTE:** Everytime that you press the backup button, the size of the backup file is different. The reason behind this size fluctuation is the .trn files.

**NOTE:** The .trn files are the backup transaction log files, useful when the recovery transaction model of the database is either full or bulk-logged. The backup of the transaction logs is different than the backup of the database. Transaction logs not only contain all the transaction SQL command requests issued to the database but also differences in data (i.e. tables, indexes).

**NOTE:** Since the transaction logs contain data changes, it is reasonable to see big differences in the transaction log backup file sizes, even in small time frames. Also, when a transaction log is backed up the backed up transaction log entries are deleted. That is why, if after a transaction log backup you attempt another one, the backup file size will be very small compared to the first one.

### **Possible Action Buttons**

The range of action buttons available depends on the DLS status.

#### **Save**

Saves any unsaved changes.

#### **Discard**

Discards any unsaved changes.

#### **Refresh**

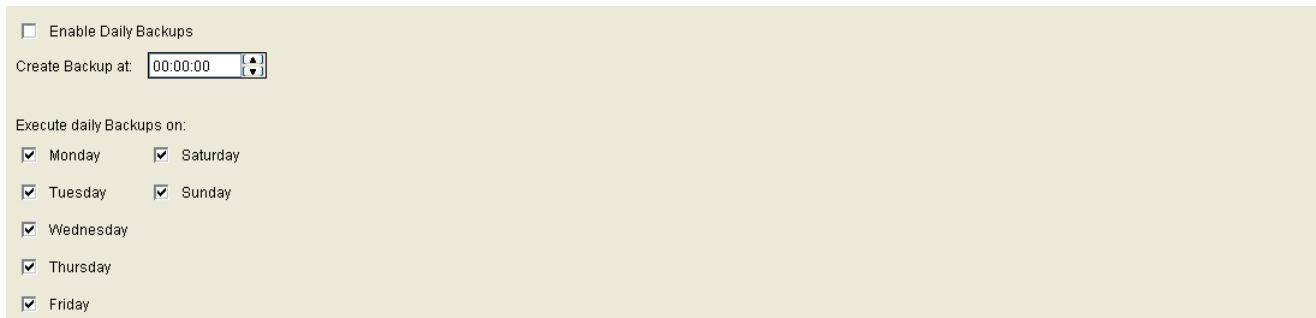
Refreshes the content of the relevant page.



## 6.7.1 "Backup" Tab

**Call:** Main Menu > Administration > Backup/Restore > "Backup" Tab

For more information, see Section 15.9.1.1, "Configuring Automatic Backups".



☐ Enable Daily Backups

Create Backup at: 00:00:00

Execute daily Backups on:

☒ Monday ☒ Saturday

☒ Tuesday ☒ Sunday

☒ Wednesday

☒ Thursday

☒ Friday

### Enable Daily Backups

Select to activate a daily backup.

### Next Backups on:

Time (date and time) of the next scheduled backup (for information on the calendar, see Section 5.4.2.4, "Time field with calendar button").

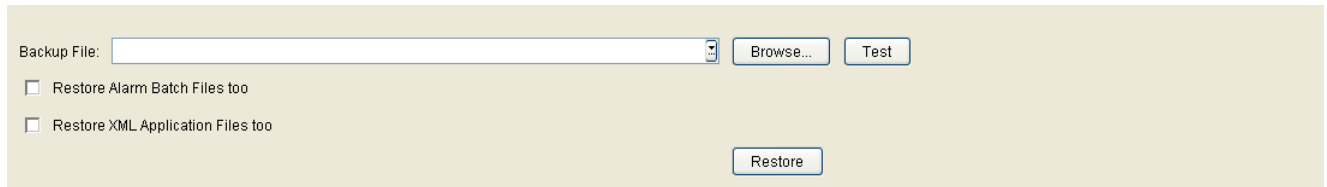
### Execute daily Backups on:

If the **Enable Daily Backups** check box is active, use these check boxes to restrict backup to specific days of the week.

## 6.7.2 "Restore" Tab

**Call:** Main Menu > Administration > Backup/Restore > "Restore" Tab

For more information, see Section 15.9.1.2, "Restoring Backups".



Backup File:

☐ Restore Alarm Batch Files too

☐ Restore XML Application Files too

### Backup File:

Path and file name for restoring a backup on the DLS server. If backups have already been successfully restored, you can enter them using the choice list.

### Restore Alarm Batch Files too:

If switch is activated, the stored alarm batch files will be restored.

### Restore XML Application Files too:

If switch is activated, the customer specific XML application files will be restored to the directory <Installation directory>/XMLApplications/data/custom

If switch is not activated, the customer specific XML Application Files will be copied to the directory <Installation directory>/XMLApplications/data/custom\_old

See also Section 16.16, "Data Structures for DLS-hosted XML applications"

### Browse...

Click this button to open a window where you can select an existing backup file. The path and file name are entered in **Backup File**.

**NOTE:** In a Multi Node environment, if you press this button and browse for a backup path that is situated locally in Node 1 or Node 2 then the selected path is connected to the IP address of the 1st Ethernet Interface of the DLS server.

If the 1st interface happens to be that of the external (or frontend network), the DB restore will fail as DLS cannot contact SQL server through that interface.

## Administration

### Backup/Restore

**NOTE:** DLS can contact SQL server only through the internal (backend) network interface and this cannot be stated explicitly if the path is chosen by the '**Browse...**' button.

### Test

Click this button to verify that the backup file is valid (accessible).

### Restore

When you click this button, a restore is executed. A dialog window will ask whether Plug&Play is to be switched off after restore or not. If Plug&Play has been switched off, it is possible to switch it on again via **Administration > Server Configuration > P&P Settings > Plug&Play enabled**. Beforehand, it must be ensured that all IP devices are registered in the DLS database.

This does not use the backup file stored in the database, but the current backup file as it appears in the mask (which may have changed and not yet been saved).

**NOTE:** When database mirroring (see Section 4.6, "SQL Database Mirroring Setup") is active, no restore of backups is possible.

**NOTE:** There are some basic server configuration data which will never be restored as e.g.

- the base configuration
- the license settings

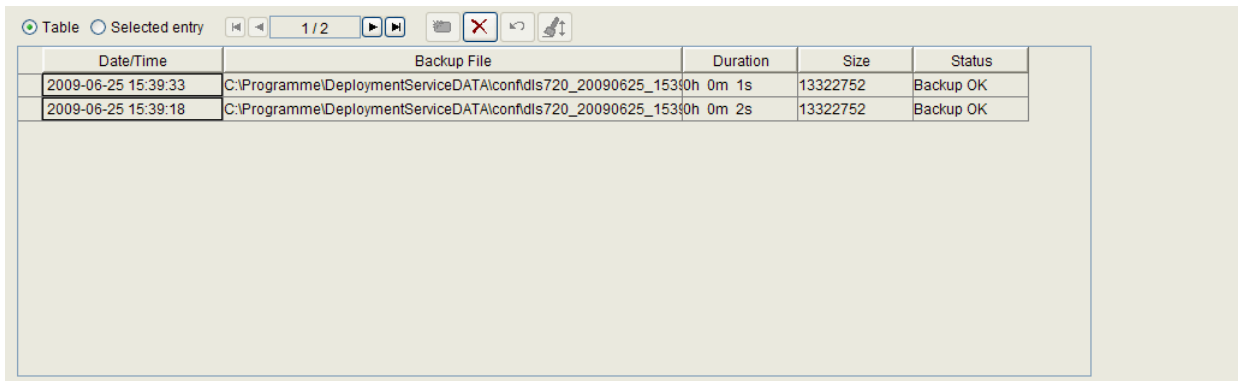
in order to guarantee a proper operation after any restore.

**NOTE:** During a restore, **all** users are momentarily disconnected from the DLS database as the restore process requires exclusive access to the database. These users must log on again.

## 6.7.3 "Protocol" Tab

**Call:** Main Menu > Administration > Backup/Restore > "Protocol" Tab

For more information, see Section 15.9.1.3, "Monitoring Backups".



Date/Time	Backup File	Duration	Size	Status
2009-06-25 15:39:33	C:\Programme\DeploymentService\DATA\conf\ds720_20090625_153933	0h 0m 1s	13322752	Backup OK
2009-06-25 15:39:18	C:\Programme\DeploymentService\DATA\conf\ds720_20090625_153918	0h 0m 2s	13322752	Backup OK

### Date/Time

Backup time.

### Backup File

Backup file name.

### Duration

Duration of the backup process in hours, minutes, and seconds.

### Size

Size of the backup file in bytes.

### Status

Status of the backup/restore.

Possible values:

- **Backup OK**
- **Backup failed**

## **Administration**

### *Backup/Restore*

- **deleted**
- **Restore OK**
- **Restore failed**

## 6.8 File Server

**Call:** Main Menu > Administration > File Server

You can use this menu item to set the default network drives or local folders for saving DLS data.

File Server Type	Network Path	Remark	Memory ...	Free Sp...	Minimu...
Common Data Directory	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	500
IP Devices	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	0
Mobile Users	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	0
Profile Management	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	0
Backup/Restore	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	0
General Protocol Files	C:\Programme\DeploymentService\DATA\log		58 GB	9503 MB	0
Audit Protocol Files	C:\Programme\DeploymentService\DATA\log\aud		58 GB	9503 MB	0
Security Protocol Files	C:\Programme\DeploymentService\DATA\log\sec		58 GB	9503 MB	0
Credentials	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	0
Mobility Statistics	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	0
Static Web Pages	C:\Programme\DeploymentService\DATA\html		58 GB	9503 MB	0
XML Applications	C:\Programme\DeploymentService\DATA\		58 GB	9503 MB	0
OpenStage Diagnosis Files	C:\DLS-logdata		58 GB	9503 MB	500
OpenStage Security Log Files	C:\DLS-logdata		58 GB	9503 MB	500
Database File	C:\Programme\DeploymentService\DB\Data			9503 MB	500
Database Log File	C:\Programme\DeploymentService\DB\Data			9503 MB	500
HD 01 / Mount 01	C:\		58 GB	9503 MB	500
HD 02 / Mount 02	D:\		127 GB	60689 MB	500

### File Server Type

Defines which DLS data should be saved on this file server.

Possible values:

- **IP Devices**
- **Mobile Users**
- **Profile Management**
- **Backup/Restore**
- **Protocol Files**
- **Credentials**
- **Mobility Statistics**
- **Static web pages**
- **XML Applications**
- **Common Data Directory**  
This network path has been entered during installation of the DLS and cannot be changed by means of this mask.
- **OpenStage Diagnosis Files**
- **OpenStage Security Log Files**

## Administration

### File Server

- **Database File**  
Shows the path where the DLS database is stored. The network name is relative to the SQL server and cannot be changed by means of this mask. Available only on systems with Microsoft SQL Server as database.
- **Database Log File**  
Shows the path where the transaction log of the DLS database is stored. The network name is relative to the SQL server and cannot be changed by means of this mask. Available only on systems with database type Microsoft SQL Server.
- **DLS Audit Log Files**
- **DLS Security Log Files**
- **HD 01 / Mount 01**  
Shows either necessary devices with system data (on Linux based systems) or all available or mounted devices (on Windows based systems). The network path cannot be changed by means of this mask.
- ...
- **HD 20 / Mount 20**  
Shows either necessary devices with system data (on Linux based systems) or all available or mounted devices (on Windows based systems). The network path cannot be changed by means of this mask.

### Network Path

Network path or local folder for saving DLS data.

Example: \\MyFileServer\DlsFiles\Protocols

### Remark

Field for general information.

### Memory Capacity

Displays the overall memory capacity of this network drive in gigabytes.

### Free Space

Displays the available space on this network drive in megabyte. If this value is lower than the **Minimum Free Space**, this field is marked with a yellow border.

### Minimum Free Space

Enter the minimum free space that must remain, in megabytes. If the value of **Free Space** falls below this value, an alarm will be triggered corresponding to the alarm configuration (see Section 6.6, "Alarm Configuration").

Value range: **0 ... 15000**

**0** = no check

### Acquisition Time

Date and time of acquisition of the additional information about **Memory Capacity [GB]** and **Free Space [MB]**. These values are stored once a week; the entries cannot be deleted.

Only available in object view, cannot be changed or deleted.

### Memory Capacity [GB]

Shows the memory capacity at **Acquisition Time**.

Only available in object view, cannot be changed or deleted. The value is stored once a week.

### Free Space [MB]

Shows the free space at **Acquisition Time**.

Only available in object view, cannot be changed or deleted. The value is stored once a week.



## **6.9 Workpoint Interface Configuration**

**Call:** Main Menu > Administration > Workpoint Interface Configuration

This area features the following components:

- Possible Action Buttons
- "Secure mode" Tab
- "DCMP" Tab
- "HTTP-Proxy" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

### **Possible Action Buttons**

The range of action buttons available depends on the DLS status.

#### **Save**

Saves any unsaved changes.

#### **Discard**

Discards any unsaved changes.

#### **Refresh**

Refreshes the content of the relevant page.

6.9.1 "Secure mode" Tab

**Call:** Main Menu > Administration > Workpoint Interface Configuration > "Secure mode" Tab

**NOTE:** For smooth secure mode operation, please ensure that the time and date on the OpenStage phone conforms with that on the DLS.

**NOTE:** Factory Reset with Plug&Play data stored is not possible in Secure Mode. The according IP Devices must be revert to Default Mode first.

PIN

Default PIN:  ☐ Generate PIN

Retries for PIN submission:

TAN Verification:

Certificate Check Policy

Certificate Check Policy:

Additional credentials transmission settings

Time interval (min):

Number of devices to update per interval:

Server credentials

PKI Configuration:

Number of devices: In Security state SECURE:

That have received ACTIVE server credential:

That have received ADDITIONAL server credential:

☒ Table ☐ Selected entry

1 / 2

Active	PKI Configuration	Valid From	Valid To	Serial Number	Owner	Issuer
<input checked="" type="checkbox"/>	Internal Connector (default)	2012-10-17 11:06:31	2013-10-17 11:06:31	521E8AB084E1724	C=DE,CN=dis	C=DE,CN=Internal Root CA (default)

Create

Deploy

Activate

Delete

Client credentials

PKI Configuration:

Number of devices: Using ACTIVE client credential:

Using REJECTED client credential:

Using OLD client credential:

Using UNKNOWN client credential:

☒ Table ☐ Selected entry

1 / 1

Active	PKI Configuration	Valid From	Valid To	Serial Number	Owner	Issuer
--------	-------------------	------------	----------	---------------	-------	--------

Create

Delete

Import and export credentials

Import

Export

PIN

Default PIN:

PIN created automatically by DLS to allow encrypted transfer of server credentials to the IP Device. This PIN is used by IP Devices with the "Default PIN" mode.

Generate PIN

If this check box is activated and you click **Save**, DLS creates a new default PIN. This PIN or, optionally, an individual PIN must be entered at the IP Device to decrypt the server credentials delivered by DLS. The PIN is used by IP Devices with **Insecure** security status.

#### **Retries for PIN submission:**

Specifies the number of failed attempts permitted when entering the PIN at the IP Device.

#### **TAN Verification:**

TAN (Target's Authentication Number) is the last 3 characters of PIN to be used by provisioning service to authenticate the target device in Secure Mode.

Possible Options:

- **False**
- **True**

TAN Verification can only be performed if TAN is required. If the IP Device has sent a TAN, but the current configuration does not require one, then the TAN cannot be verified.

#### **Certificate Check Policy**

##### **Certificate Check Policy**

The settings are used only for devices in secure mode.

Possible Options:

- **Trusted**
- **Full**

#### **Additional credentials transmission settings**

##### **Time interval (min)**

Time interval (in minutes) where new WPI credentials are sent.

##### **Number of devices to update per interval**

Number of devices to which WPI credentials are sent during the time interval.

#### **Server Credentials**

##### **PKI Configuration**

Selects the PKI Configuration for the server credentials to be activated. See also Section 6.2, "PKI".

## Administration

### *Workpoint Interface Configuration*

**NOTE:** WPI credentials cannot be created if PKI connector defines "Common Name or "Subject Alternative Name" with MAC. This is not supported.

Number of devices:

#### **In Security state SECURE:**

Number of devices in the SECURE security status.

#### **That have received ACTIVE server credential:**

Number of devices that have received the active server credential.

#### **That have received ADDITIONAL server credential:**

Number of devices that have received the ADDITIONAL security credential.

## **Active**

Displays whether a server credential is active or inactive. The DLS always authenticates itself on a device in secure mode using the active server credential.

A maximum of one additional server credential can be created in preparation for exchanging the active server credential.

## **PKI Configuration**

Shows name of the active PKI configuration.

## **Valid From**

Credential start of validity.

## **Valid To**

Credential end of validity.

### **Serial Number**

Corresponding CA certificate serial number.

### **Owner**

Credential's owner.

### **Issuer**

Credential's issuer.

### **Fingerprint (SHA-1)**

This fingerprint (hash value) uniquely identifies the credential (also in different DLS entities).

The fingerprint is part of the name of the export file (see also the **Export** field).

### **Key Algorithm**

Credential's key algorithm.

### **Key Size**

Credential's key size.

### **Create**

Creates an additional (inactive) server credential. Only one additional server credential may be created.

A PKI configuration has to be enabled and selected (an internal connector is by default enabled). If an MS PKI connector shall be used, then an activation of PKI Configuration is needed). After selecting PKI configuration to be used, a new trust anchor is imported from the trust anchor configuration. The DLS will also request a new server certificate for its own TLS connector used for WPI communication.

### **Deploy**

Deploys the additional server credential to all devices already in secure state.

## **Administration**

### *Workpoint Interface Configuration*

The new trust anchor used by WPI clients to authenticate the DLS, will be deployed to them. One job for each device in secure state will be initiated.

#### **Activate**

Activates the additional (inactive) server credential in the DLS (thus the TLS connector may perform a restart using the new additional credential). When activation is complete, DLS queries are denied by all devices to which trust anchor relative to this credential has not yet been sent.

#### **Delete**

Deletes the additional (inactive) server credential.

### **Client credentials**

#### **PKI Configuration**

Shows the PKI configuration of client credentials.

Number of devices:

#### **Using ACTIVE client credential:**

Number of (secure) devices that identify themselves using the active client credential.

#### **Using OLD client credential:**

Number of (secure) devices that identify themselves using an outdated client credential.

#### **Using REJECTED client credential:**

Number of (secure) devices whose client credential was denied. Credentials not found in the list are denied.

#### **Using UNKNOWN client credential:**

Number of (secure) devices in which the client credential used for identification is not known.

### **Active**

Displays whether a client credential is active or outdated.

There is always exactly one active client credential. DLS also accepts devices that authenticate themselves using an outdated client credential. In this case, the device is automatically sent the current active client credential. The next time, it authenticates itself using the active client credential.

### **PKI Configuration**

Shows name of the active PKI configuration.

### **Valid From**

Credential start of validity.

### **Valid To**

Credential end of validity.

### **Serial Number**

Corresponding CA certificate serial number.

### **Owner**

Credential's owner.

### **Issuer**

Credential's issuer.

### **Fingerprint (SHA-1)**

This fingerprint (hash value) uniquely identifies the credential (also in different DLS entities).

The fingerprint is part of the name of the export file (see also the **Export** field).



## Administration

### Workpoint Interface Configuration

#### Key Algorithm

Credential's key algorithm.

#### Key Size

Credential's key size.

#### Create

Creates a new client credential. This new client credential is automatically activated and the client credential previously active is deactivated and becomes outdated. When a new client credential is created, it is sent to all devices.

**NOTE:** The " **Create** " button does not trigger a deployment to all devices. Devices in secure state will get new client credentials, as soon as they contact DLS.

**IMPORTANT:** In the case where the phone is unplugged from the network, then if the re-plugging is done quick enough, the job finishes successfully. If the time gap exceeds the job expiration frame (default value is 300 sec), the job for sending the credentials expires. In any case, the phone is deployed with new wpi certificates (as indicated in Section 7.5.4, "IP Device Configuration") Even if the job is manually cancelled, the phone will still get the certificate if it gets to contact DLS for other reason (e.g. reboot).

#### Delete

Deletes all inactive (outdated) client credentials. When the outdated client credentials have been deleted, DLS no longer accepts devices that identify themselves using an outdated client credential.

### Import and export credentials

#### Import

Imports client and server credentials from a password-protected file. This import replaces existing credentials.

**NOTE:** Bootstrapping isn't possible with imported credentials

## **Export**

Exports client and server credentials to a password-protected file.

**NOTE:** The password is not intended for the zip archive format file but for the files contained in the zip file( WPI credentials).

**NOTE:** Import & Export functionality on WPI shall be used only in order to contact phones already in secure mode

**IMPORTANT:** in the case of an upgrade of a past DLS version that did not have the present PKI implementation in place (for credentials older than v6.0 version) the fields are empty. That occurs since these files were not existing and as a result stay empty. This display information was not provided in older versions. PKI Configuration is not an applicable field for older credentials. Some of the display info is not applicable.

**Call:** Main Menu > Administration > Workpoint Interface Configuration > "DCMP" Tab

DLS Contact-Me Proxy

☐ DCMIP active

Toggle DCMIP

DLS-DCMP connection

DLS-DCMP Host: localhost
DLS-DCMP Http-Port: 18080
Password: 

ⓘ

Test

Device-DCMP connection

Device-DCMP Host: 192.168.1.150
Device-DCMP Http-Port: 18080

Device IP Ranges

☒ Table
☐ Selected entry

0 / 0

ⓘ

✕

↶

↷

IP Address from	IP Address to	Poll interval
-----------------	---------------	---------------

**DCMP active**

Activates DCMP globally. When DCMP is globally deactivated, no devices can be reached via DCMP.

## Toggle DCMP

Switches DCMF activation and creates jobs for affected devices.

## DLS-DCMP connection

**DLS-DCMP Host:**

Host name or IP address of the DCMP server. The DCMP server host must be reachable for DLS.

**DLS-DCMP HTTP-Port:**

DCMP server's HTTP port for connecting DLS and DCMP.

**Password:**

Password for DLS access to the DCMP server.

**Test**

Tests the connection between DLS and the DCMP server using the current values stored for host, port, and password. When you change these values, you must save the changes before testing the DLS connection.

**Device-DCMP connection**

**Device-DCMP Host:**

Host name or IP address of the DCMP server. The DCMP server host must be reachable for devices activated by DCMP. In contrast to the DCMP-DLS connection, do not use "localhost" or "127.0.0.1" as the DCMP server host when both are running on the same host.

**Device-DCMP HTTP-Port**

DCMP server's HTTP port for connecting telephones and DCMP.

**Device IP Ranges**

**IP Address from:**

Lower limit of IP addresses that are administered by DCMP.

**IP Address to:**

Upper limit of IP addresses that are administered by DCMP

**Poll Interval:**

The time between two consecutive polls at DCMP (in minutes).

The entered value must be lower than the value for Section 7.4.6.2, "Timeout (sec)"

## **Administration**

### *Workpoint Interface Configuration*

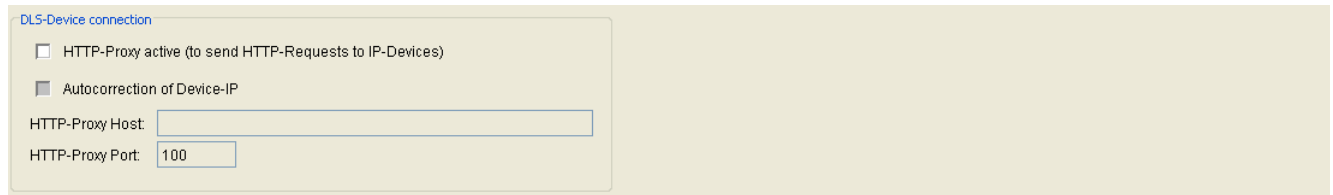
Possible options:

0 - 1440, default: 60 minutes

## 6.9.3 "HTTP-Proxy" Tab

**Call:** Main Menu > Administration > Workpoint Interface Configuration > "HTTP-Proxy" Tab

The settings made in this tab are necessary if the end devices can be reached by the DLS only via an HTTP proxy.



### DLS-Device Connection

#### HTTP-Proxy active (to send HTTP-Requests to IP Devices)

If this checkbox is active, an HTTP proxy is used to send HTTP requests from the DLS to IP Devices.

#### Autocorrection of Device-IP

Automatic correction of the devices' IP address with the request address (only if HTTP-Proxy is enabled). In case an HTTP proxy is used, this option is deactivated at first in order to avoid that the IP address of the devices is replaced with the IP address of the HTTP proxy. It is recommended not to activate this switch.

#### HTTP-Proxy Host

IP address or DNS name of the HTTP proxy to be used for sending HTTP requests from the DLS to the IP Devices.

#### HTTP-Proxy Port

Port of the HTTP proxy used to send HTTP requests from the DLS to IP Devices.

6.9.4 "Contact Me Notify" Tab

**Call:** Main Menu > Administration > Workpoint Interface Configuration > "Contact Me Notify" Tab

The settings made in this tab are necessary if the end devices can be reached by the DLS only via a Contact Me Notify mechanism. Contact Me Notify replaces the DLS Contact Me Proxy (DCMP) solution for the devices that are registered to an OpenScope Voice server. OSV provides the Contact Me Notify mechanism and serves as the intermediate node between the DLS and the device.

**NOTE:** It is highly recommended to deploy the V3R1 SW version (or higher) to all the devices before enabling the Contact Me Notify functionality.

DLS Client Certificate for TLS connections with Contact Me Notify Servers

Table

Selected entry

1 / 2

Serial number	Owner	Issuer	Valid
AD90D96461334267	C=US,ST=Florida,L=Lake Mary,O=Siemens ICN,CN=Open	C=US,ST=Florida,L=Lake Mary,O=Siemens ICN,CN=Root	2012-12-05
AD90D96461334267	C=US,ST=Florida,L=Lake Mary,O=Siemens ICN,CN=Open	C=US,ST=Florida,L=Lake Mary,O=Siemens ICN,CN=Root	2012-12-05

Create Certificate  
Import Certificate  
Export Certificate

Contact Me Notify servers

Table

Selected entry

1 / 1

Name	Address of node 1	Address of node 2	Transport Type	Port	Serial number	Owner
testd	10.7.202.10		TCP	8767		C=US,ST=Florida,L=Lake Mary

Test Connection  
Import Certificate  
Remove Certificate

Device IP Ranges

Table

Selected entry

0 / 0

IP Address from	IP Address to	Contact Me Notify Server Name
-----------------	---------------	-------------------------------

DLS Client Certificate for TLS connections with Contact Me Notify Servers

Serial Number

Serial number of the certificate (display only).

Owner

Owner of the certificate (display only).

### **Issuer**

Issuer of the certificate (display only).

### **Create Certificate**

Create automatically a client certificate using the internal root CA of DLS.

### **Import Certificate**

Import a PKCS #12 file that will be used by DLS as client certificate.

### **Export Certificate**

Export the public certificate of the installed client certificate that has to be configured as trusted in OSV.

### **Contact Me Notify servers**

#### **Name**

Name of the Contact Me Notify server (32 characters).

The name must be unique..

#### **Address of node 1**

IP address or FQDN of the admin interface of the first node.

The IP address must be unique.

#### **Address of node 2**

IP address or FQDN of the admin interface of the first node.

The IP address must be unique.

### **Transport Type**

Specify the transport type.

Possible values:



## Administration

### *Workpoint Interface Configuration*

- **TCP**
- **TLS**

#### **Port**

Specify the SOAP server port.

Possible values (Transport Type :**TCP**)

- **8767**
- **8768**
- **8769** (default)
- **8770**

Possible values (Transport Type :**TLS**)

- **8757**
- **8758**
- **8759** (default)
- **8760**

#### **Serial Number**

Serial number of the certificate.

#### **Owner**

Owner of the certificate.

#### **Issuer**

Issuer of the certificate.

#### **Valid from:**

Start of the validity for the certificate.

**Valid to:**

End of validity for the certificate.

**Fingerprint**

Test algorithm SHA-1 (160 bits/20 characters) of the certificate.

**Key algorithm**

Key algorithm of the certificate.

**Key size**

key size of the certificate.

**Expires in...[days]**

Certificate will expire in ... days of the certificate.

**Alarm Status**

Current alarm status of the certificate.

Possible values:

- **Valid**
- **Soon running out**
- **Expired**

**Test Connection**

Test the connection between DLS and the configured OSV servers.

A Test Connection dialog shall appear via which you will be allowed to select one Contact Me Notify server to test the connection. A simple *GetVersion* request will be sent as a connection test.

## Administration

### Workpoint Interface Configuration

#### Import Certificate

Import a server certificate that will be used by DLS for the server authentication of the OSV during TLS handshake.

**NOTE:** When DLS receives the server certificate from OSV, DLS must validate the server certificate that has been received against the server certificate that has been imported into DLS database as trusted.

#### Remove Certificate

Remove an installed certificate from a configured Contact Me Notify server. Note that if there is not installed certificate, this operation will fail because there is no installed certificate to remove.

**NOTE:** If there is no installed certificate, the operation will fail.

#### Device IP Ranges

##### IP Address from:

Lowest value for the IP range (IPV4 or IPV6) associated with this location.

##### IP Address to:

Highest value for the IP range (IPV4 or IPV6) associated with this location.

**NOTE:** Any IP devices within the IP ranges defined by **IP Address from** and **IP Address to** will be updated via the associated Contact Me Notify SIP server. The device IP ranges must not overlap with the other device IP ranges that are defined to use the Contact Me Notify mechanism or DCMP.

#### Contact Me Notify Server Name

The mnemonic name of a configured Contact me Notify server that will be used as intermediate node whenever a changed is made to an IP device within the configured IP range.

## **6.10 Automatic SPE Configuration**

This area enables the automatical configuration of PKI based Signaling and Payload Encryption (SPE). This is especially useful when there is no client PKI.

The DLS supports the generation and deployment of CA Certificates (CA= Certificate Authority) for administered IP Devices (Gateways and end devices). When activating this CA Certificate for each administered gateway, a SPE certificate will be generated and deployed.

Via export and import, it is possible to migrate CA certificates from one DLS to another.

This area features the following components:

- General Data
- Possible Action Buttons
- "CA Administration" Tab
- "Issuer Administration" Tab
- "Settings" Tab

## Administration

### Automatic SPE Configuration

#### General Data

PKI Configuration:

#### PKI Configuration

Select PKI configuration.

Possible Options:

- **Internal Connector (default)**
- **Internal Root CA (default) SHA1**

Internal Root CA (default) SHA1 s being generated with SHA-1 signature algorithm which is acceptable by HFA phones. The suffix SHA1 occurs in order to differentiate with the default CA with signature algorithm of SHA256.

**NOTE:** Please refer to Section 16.5.6, "SHA1 Configuration for AutoSPE" for further information on PKI configuration for use by HFA & Automatic SPE.

## 6.10.1 "CA Administration" Tab

**Call:** Main Menu > Administration > Automatic SPE Configuration > "CA Administration" Tab

The screenshot shows the 'CA Administration' tab interface. It is divided into three main sections:

- autoSPE Jobs:** Contains two input fields for 'Job ID (Deploy CA):' and 'Job ID (Activate):', each followed by a 'Cancel Job' button.
- autoSPE Credentials:** Features a table with columns: Status, PKI Configuration, Valid From, Valid To, Serial Number, and Owner. Above the table are navigation controls (back, forward, search, etc.) and a 'Table' radio button.
- autoSPE Info:** A section titled 'Gateways and number of enddevices that use/accept new/phase-out credential'. It contains a table with columns: Device ID, GW uses ACT, GW accepts NEW, GW accepts OLD, Devices accept NEW, and Devices accept OLD. Similar navigation controls are present above this table.
- Import and export credentials:** Contains 'Import' and 'Export' buttons.

### autoSPE Jobs

#### Job ID (Deploy CA)

For the deployment of CAs, a job is started. A unique job ID is assigned to this job in order to identify it. Via this field, it is possible to jump to the job control (see Section 14.1, "Job Control") to control the status of the job.

#### Job ID (Activate)

For the activation of CAs, a job is started. A unique job ID is assigned to this job in order to identify it. Via this field, it is possible to jump to the job control (see Section 14.1, "Job Control") to control the status of the job.

#### Cancel Job

With this button, the particular job can be canceled.

## **Administration**

### *Automatic SPE Configuration*

#### **autoSPE Credentials**

##### **Status**

Displays the status of the credential.

Possible values:

- **created**
- **deployed**
- **activated**
- **phase-out**

##### **PKI Configuration**

PKI configuration.

##### **Valid from**

Start date of credential validity.

##### **Valid to**

Expiry date for new autoSPE credentials (possible maximum duration until 12/31/2037).

##### **Serial number**

Serial number for the CA certificate.

##### **Owner**

Owner of the credential.

##### **Issuer**

Issuer of the credential.

### Key Algorithm

Key Algorithm.

### Key Size

Key Size.

### Fingerprint (SHA-1)

The fingerprint of CA certificate is unique and identifies the credential, also over disparate DLS instances. The fingerprint is also used as a part of the file name for export (see the **Export** button).

### Create CA

Creates a new credential for SPE, i. e. first, a new CA certificate, and then, a certificate with this CA signature is created. the status of the new credential is "created".

### Deploy CA

Deploys a new credential for SPE, that is, the CA certificate is distributed to the corresponding IP devices. The table is updated, and the status for the credential is changed to "deployed".

### Activate

Activates a new credential for SPE, that is, the Ca certificate is distributed to the gateways. The table is update, and the status for the new credential is changed to "acitvated", while the status of the previously active credential is changed to "phase-out".

### Delete

Deletes a credential that is no longer necessary, i. e. a credential in "created" or "deployed" status, or or the activated credential (in case only one credential exists) or the phase-out credential (in case more than one credential exist). After this, the table is updated.



## Administration

### *Automatic SPE Configuration*

#### **autoSPE Info: Gateways and number of enddevices that use/accept new/phase-out credential**

##### **Device ID**

Displays the device ID of the gateway.

##### **GW uses ACT**

Indicates whether the gateway uses the active credential.

Possible values:

- **yes**
- **no**

##### **GW accepts NEW**

Indicates whether the gateway accepts the new credential.

Possible values:

- **yes**
- **no**

##### **GW accepts OLD**

Indicates whether the gateway accepts the phased-out credential.

Possible values:

- **yes**
- **no**

##### **Devices accept NEW**

Shows the number of devices which accept the new credential, as well as the total number of devices connected to the gateway. Furthermore, the coverage in percent is displayed.

Example: 3/5 (=60%) implies that three of five devices connected to the gateway accept the new credential, which is commensurate with 60%.

### **Devices accept OLD**

Shows the number of devices which accept the phased-out credential, as well as the total number of devices connected to the gateway. Furthermore, the coverage in percent is displayed.

Example: 3/5 (=60%) implies that three of five devices connected to the gateway accept the phase-out credential, which is commensurate with 60%.

## **Import und Export der Credentials**

### **Import**

Reads the autoSPE credentials and the autoSPE configuration from a file and replaces the complete present autoSPE configuration including the deployment to the gateways and devices.

### **Export**

Writes the current autoSPE configuration to a file. This can be used for backup purposes and for a migration to a different DLS.

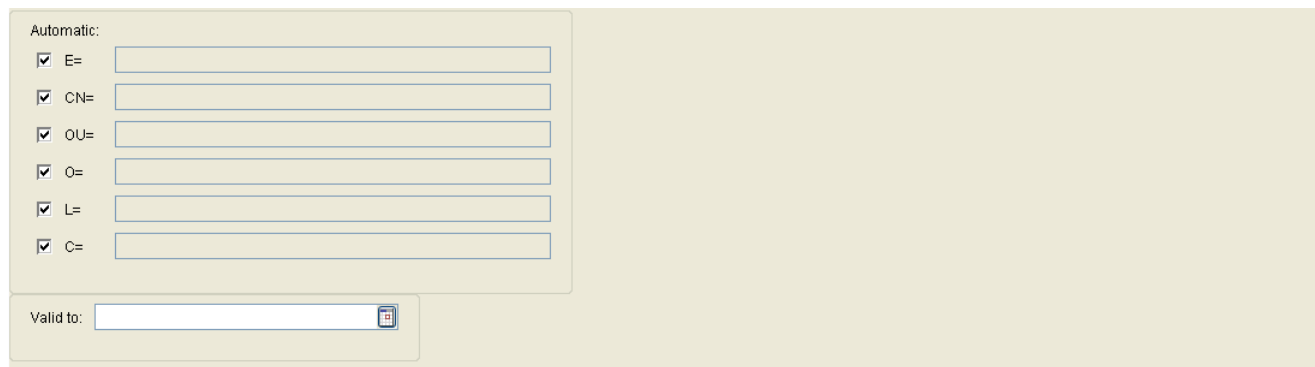
**NOTE:** The password is not intended for the zip archive format file but for the files contained inside the zip file( WPI credentials).

## Administration

### Automatic SPE Configuration

## 6.10.2 "Issuer Administration" Tab

**Call:** Main Menu > Administration > Automatic SPE Configuration > "Issuer Administration" Tab



The data of the certificate issuer are displayed here.

**NOTE:** It is not possible to change the data of the certificate under "Automatic SPE Configuration" - Issuer Administration.

The user can only apply the default settings pre-defined in the DLS.

### Automatic

#### E=

E-Mail address of the issuer.

Example: **hipath\_security\_office@unify.com**

#### CN=

Common Name of the issuer.

Example: **Unify Security Office.**

#### OU=

Organizational Unit of the issuer.

Example: **Unify Systems.**

#### O=

Organization of the issuer.

Example: **Unify GmbH & Co. KG.**

**L=**

Location of the issuer.

Example: **München.**

**C=**

Country of the issuer.

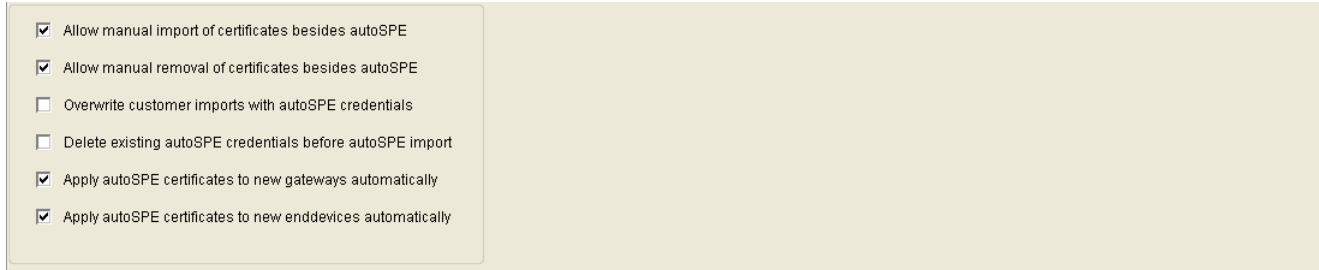
Example: **DE.**

**Valid to**

Maximum validity for new autoSPE credentials.

## 6.10.3 "Settings" Tab

**Call:** Main Menu > Administration > Automatic SPE Configuration > "Settings" Tab



<input checked="" type="checkbox"/>	Allow manual import of certificates besides autoSPE
<input checked="" type="checkbox"/>	Allow manual removal of certificates besides autoSPE
<input type="checkbox"/>	Overwrite customer imports with autoSPE credentials
<input type="checkbox"/>	Delete existing autoSPE credentials before autoSPE import
<input checked="" type="checkbox"/>	Apply autoSPE certificates to new gateways automatically
<input checked="" type="checkbox"/>	Apply autoSPE certificates to new enddevices automatically

### Allow manual import of certificates besides autoSPE

If the check box is active, a certificate can be imported manually, f. e. if the deployment via autoSPE has failed.

### Allow manual removal of certificates besides autoSPE

If the check box is active, a certificate can be removed manually.

**NOTE:** Certificates that have been removed manually can only be re-imported manually.

### Overwrite customer imports with auto SPE credentials

autoSPE handles up to 2 server-side CA certificates (index 0 and 1). However, up to 16 server-side CA certificates (index 0 to 15) can be imported by the user. If autoSPE is activated, it overwrites the indices 0 and 1 with its own CA certificates.

If the check box is active, the indices 2 to 15 are removed during this process. Otherwise, only the indices 0 and 1 are overwritten with autoSPE certificates, while the remaining indices are left untouched.

### Delete existing autoSPE credentials during autoSPE import

All existing credentials will be deleted before an import.

### Apply autoSPE certificates to new gateways automatically

If activated, new gateways will be provided automatically with existing autoSPE Certificates. Otherwise, gateways will be supported with certificates via **IP Devices > IP Gateway Configuration > Signaling and Payload Encryption (SPE) > Import Certificate**.

**Apply autoSPE certificates to new enddevices automatically**

If activated, new enddevices will be provided automatically with existing autoSPE certificates. Otherwise, enddevices will be supported with certificates via **IP Devices > IP Gateway Configuration > Signaling and Payload Encryption (SPE) > Import Certificate**.

## 6.11 Automatic Certificate Deployment

**Call:** Main Menu > Administration > Automatic Certificate Deployment

This area provides the possibility to set up a certificate deployment schedule by assigning certificates to existing locations, i.e. a set of IP phones, and run scheduled jobs to deploy these certificates automatically.

It is possible to prevent autodeployment for an IP phone by enabling the **Automatic Certificate Deployment disabled** checkbox in **IP Devices > IP Device Management > IP Device Configuration**.

**NOTE:** To remove the certificates from all IP phones of a location, deploy an empty certificate.

### Activate certificate / PKI Configuration

The certificate will be activated for automatic certificate deployment. After activation, the Jobs corresponding to the devices will be generated. Activated entries cannot be changed.

A certificate deployment task will be stopped/deactivated by unsetting this check box. The jobs already generated but not executed (state: active or running) will not be cancelled. To cancel all jobs belonging to a task, press the **Cancel Job** button. The certificate relating to this task will no longer be deployed to newly registered IP Devices.

### Job ID:

For the activation of certificates, a job is started. A unique job ID is assigned to this job in order to identify it. Via this field, it is possible to jump to the job control (see Section 14.1, "Job Control") to control the status of the job.

### **Cancel Job**

With this button, all jobs belonging to this certificate deployment task with active or running status will be cancelled.

### **Location:**

Location where the certificate deployment will be executed. Locations can be assigned as described under Section 6.3.2, "Location".

### **Certificate Type:**

Type of certificate.

Possible options:

- **RADIUS Server CA Certificate 1**
- **RADIUS Server CA Certificate 2**
- **Phone Certificate**
- **WBM Server Certificate (IP Phone)**
- **WBM Server Certificate (IP Gateway: Index 0)**

### **Deploy Date:**

Date when certificate deployment will be started.

### **Remark:**

Remark (free text).

### **Certificate:**

The following certificate parameters are displayed only.

### **PKI Configuration**

PKI configuration.



## **Administration**

### *Automatic Certificate Deployment*

#### **Serial Number:**

Serial number of the certificate.

#### **Owner:**

Owner of the certificate.

#### **Issuer:**

Issuer of the certificate.

#### **Valid from:**

The certificate will be valid from this point in time.

#### **Valid to:**

The certificate will be valid until this point in time.

#### **Key Algorithm**

Key algorithm.

#### **Key Size**

Key size.

#### **Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate.

#### **Expires in [days]:**

The certificate expires in ... days.

**Alarm Status:**

Current alarm status of imported certificate.

Possible values:

- **valid**
- **soon running out**
- **expired**

## Administration

### *Automatic Certificate Deployment*

#### Possible Action Buttons

##### Discard

Discards any unsaved changes.

##### Save

Saves the data entered/modified.

##### New

Creates a new entry, i.e. a new certificate deployment task.

##### Delete

Deletes an entry.

##### Import Certificate

Import either a specific certificate to be automatically deployed to devices or a PKI configuration that will be used to automatically request certificates for all devices.

**NOTE:** If you don't proceed with the Import Certificate button, then an empty certificate shall be deployed thus all respective certificates shall be removed

##### Refresh

Refreshes the content of the relevant page.

## 6.12 Automatic Archiving

**Call:** Main Menu > Administration > Automatic Archiving

This feature enables the user to archive the data of selected IP devices in a time-controlled manner. The archived data will be stored in a .zip-file. If the file is not present, it will be created during the 1st archiving of data; if it is already present, the archive data will be added to this existing .zip-archive. For each IP Device that is to be archived, a proper file will be allocated within the .zip archive.

Each new archive entry overwrites an already existing entry for the same IP Device without notification. History data (backups of an already existing file of the .zip archive) will be kept where the maximum number of kept history data can be specified by setting **Maximum Number of Backup Archive Files** within the "Settings" Tab.

The archived data can be retrieved via the screen **Administration > Automatic Archiving > Action 'Load IP Device from Archive'**.

This area features the following components:

- General Data
- Possible Action Buttons
- "Settings" Tab
- "IP Devices to archive" Tab
- "Mobile Users to archive" Tab
- "Protocol" Tab

## Administration

### Automatic Archiving

#### General Data

Archive Task:	<input type="text"/>	
Archive File:	<input type="text"/>	<input type="button" value="Browse..."/> <input type="button" value="Test"/>
Mobile User Archive File:	<input type="text"/>	
Remark:	<input type="text"/>	

#### Archive Task

Name of the archive task.

#### Archive File

Filename and directory path for the archive file on the DLS Server. If the file is not present, it will be created during the first archiving of data; if it is already present, the archive data will be added to the existing .zip-archive.

#### Mobile User Archive file

Filename and directory path for the archive file on the DLS Server. The file name will be derived from **Archive File** and cannot be changed.

#### Remark

Remark on archive task.

#### Browse...

Select existing archive path. Path name and filename will be written to the archive file. Only directories can be searched, not particular files.

#### Test

Test if the file is accessible.

### **Possible Action Buttons**

The range of action buttons available depends on the DLS status.

#### **Search**

Searches for all registered workpoints that match the search criteria.

#### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the Search view before new search criteria are entered.

#### **Save**

Starts a job for distributing the configuration changes. For more information, see Section 15.1, "First Steps: Changing IP Device Parameters".

#### **Discard**

The modifications carried out in the mask are discarded.

#### **Export File**

The inventory data are exported into a csv formatted file.

#### **Refresh**

Refreshes the window contents from the database.

## 6.12.1 "Settings" Tab

**Call:** Main Menu > Administration > Automatic Archiving > "Settings" Tab

**General Settings**

Maximum Number of Backup Archive Files:

**Time Settings**

☒ Enable Daily Archiving

Daily Execution Time:

Execute Daily Archiving on:

☒ Monday ☒ Saturday

☒ Tuesday ☒ Sunday

☒ Wednesday

☒ Thursday

☒ Friday

### General Settings

#### Maximum Number of Backup Archive Files

Contains the number of backup files to be created for file history, if the original archive file is overwritten.

### Time Settings

#### Enable daily Archiving

Activates daily archiving of IP Devices .

#### Daily Execution Time

Time of day at which the archiving is started.

**NOTE:** Switching from daylight saving time to regular time (one hour back) will not lead to a second execution of a job that has been started in the time interval hereby doubled. When switching from regular time to daylight saving time (one hour advance), a job which is scheduled for this skipped time will not be executed.

#### Execute Daily Archiving on:

Restricts Archiving to specific days of the week.

**Archive now**

Starts archiving immediately without any regards to settings for automatic archive. The archive will be saved to the **Archive File** currently displayed.



## 6.12.2 "IP Devices to archive" Tab

**Call:** Main Menu > Administration > Automatic Archiving > "IP Devices to archive" Tab

IP Device Selection ☐ E.164 based ☐ Location based

**E.164**

☐ Table ☒ Selected entry 1 / 1

E.164 / E.164 Pattern:

**Location**

☐ Table ☒ Selected entry 1 / 1

Location:

### IP Device Selection

#### E.164 based

Selection of IP Devices to be archived by E.164 number.

#### Location based

Selection of IP Devices to archive by location.

### E.164

#### E.164 /E.164 Pattern

Entire E.164 number or a range of E.164 numbers partly qualified with '\*', e.g. 31\* (= all E.164 numbers, starting with 31... ).

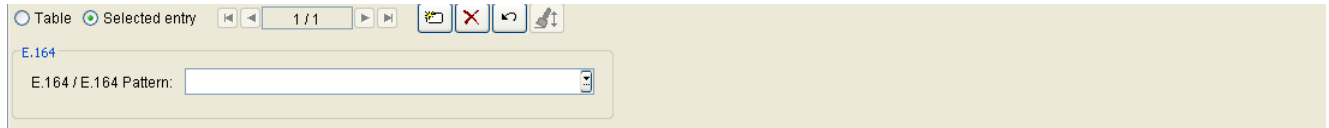
### Location

#### Location

Select a defined location. 'Default Location' cannot be selected.

### 6.12.3 "Mobile Users to archive" Tab

**Call:** Main Menu > Administration > Automatic Archiving > "Mobile Users to archive" Tab



The screenshot shows a web interface for configuring automatic archiving. At the top, there are tabs for 'Table' and 'Selected entry', with 'Selected entry' being active. Below the tabs is a table with one row containing the text 'E.164'. To the right of the table are several icons for actions like delete, save, and refresh. Below the table is a text input field with the label 'E.164 / E.164 Pattern:'.

#### E.164

##### E.164 / E.164 Pattern:

A complete E.164 number or a range of numbers partly qualified with '\*' can be entered here.

Example: **31\*** = all E.164 numbers that begin with 31.

**NOTE:** In the case of mobile users, Auto-archiving is enabled and achieved, regardless of their logon/logoff status.

## 6.12.4 "Protocol" Tab

**Call:** Main Menu > Administration > Automatic Archiving > "Protocol" Tab

The screenshot shows the 'Protocol' tab configuration interface. At the top, there is a label 'Maximum Number of Protocols:' followed by a text input field. Below this is a tab bar with 'Table' and 'Selected entry' (the active tab). To the right of the tabs are navigation icons: back, forward, first, last, search, and a refresh icon. The main area contains a form with the following fields: 'Start Time:', 'End Time:', 'Created:', 'Status:', 'Number of archived IP Devices:', 'Used Archive File:', and 'Saved Archive File:'. Each field has a corresponding text input box.

### Protocol

#### Maximum Number of Protocols:

Each protocol entry can be deleted manually or will be deleted automatically according to the number entered here.

#### Start Time

Start Time of archiving.

#### End Time

End Time of archiving.

#### Created

Displays whether it is an automatic or a manual archive task.

- **Manual**
- **Timer triggered**

#### Status

Status of archiving.

Possible values:

- **Archive Task successful**
- **Archive Task failed**
- **Old Protocol entries automatically deleted**

#### **Number of archived IP Devices**

Number of archived IP Devices.

#### **Used Archive File**

Filename of the currently used archive file.

#### **Saved Archive File**

Filename of the latest saving of the archive file.

## **6.13 Automatic Upload Diagnosis- and Security Log Files**

**Call:** Main Menu > Administration > Automatic Upload Diagnosis- and Security Log Files

This area enables the user to upload scheduled diagnosis- and security log files of selected IP Devices. The uploaded file will be stored on a network drive. The path is defined in **Main Menu > Administration > File Server > OpenStage Diagnosis Files** or **OpenStage Security Log Files**.

This area features the following components:

- General Data
- Possible Action Buttons
- "Protocol" Tab

## General Data

The screenshot shows a configuration panel with a light beige background. On the left, there is a white box containing two sections. The first section has a checked checkbox labeled 'Activate Upload of Diagnosis Files' followed by a text label 'Upload Interval for Diagnosis Files (min):' and a dropdown menu showing '60'. The second section has an unchecked checkbox labeled 'Activate Upload of Security Log Files' followed by a text label 'Upload Interval for Security Log Files (min):' and a dropdown menu showing '60'. The right side of the panel is a solid light beige area.

### Activate Upload of Diagnosis Files

When active, diagnosis files of selected IP Devices are uploaded.

### Upload Interval for Diagnosis Files (min)

Determines the time between two upload jobs (in minutes).

Indicative Options (not restrictive):

- 10
- 20
- 30
- 40
- 50
- 60
- 90
- 120
- 240

Default value: 60

### Activate Upload of Security Log Files

When active, security log files of selected IP Devices are uploaded.

### Upload Interval for Security Log Files (min)

Determines the time interval between two upload jobs (in minutes).

## Administration

### *Automatic Upload Diagnosis- and Security Log Files*

Indicative Options (not restrictive):

- 10
- 20
- 30
- 40
- 50
- 60
- 90
- 120
- 240

Default value: **60**

### **Possible Action Buttons**

Depending on the selected view and DLS state, various possible action buttons are available.

#### **Save**

Saves all settings made.

#### **Discard**

Discards any changes entered.

#### **Refresh**

Updates the window using the database.

## 6.13.1 "Protocol" Tab

**Call:** Main Menu > Administration > Automatic Upload Diagnosis- and Security Log Files > "Protocol" Tab

Maximum Number of Protocols:

☒ Table 
 ☐ Selected entry 
 1 / 8

Start of Upload	Number of Devices	Remark
2010-03-25 12:39:59	0	Start Upload of Diagnosis Files
2010-03-25 11:39:58	0	Start Upload of Diagnosis Files
2010-03-25 10:39:59	0	Start Upload of Diagnosis Files
2010-03-25 09:39:59	0	Start Upload of Diagnosis Files
2010-03-25 08:39:59	0	Start Upload of Diagnosis Files
2010-03-24 15:39:58	0	Start Upload of Diagnosis Files
2010-03-24 14:39:58	0	Start Upload of Diagnosis Files
2010-03-24 14:38:57		Activation of Diagnosis File Upload

### Maximum Number of Protocols:

Each protocol entry can be deleted manually or will be deleted automatically according to the number entered here.

### Start of Upload

Displays the upload's starting time.

### Number of Devices

Displays the number of handled IP Devices.

### Remark

Remark on the upload.



## **6.14 Trace Configuration**

This area features the following components:

- General Data
- Possible Action Buttons
- "Additional Settings and Actions" Tab
- "Repeat filter" Tab
- "Message Filter" Tab
- "Filter test" Tab
- "OSVTM Configuration" Tab
- "Thread Monitoring" Tab

## General Data

**Call:** Main Menu > Administration > Trace Configuration

The screenshot shows the 'Trace Configuration' window with the following settings:

- Trace Mode: DLS-Communication (dropdown)
- Trace Directory: C:\Programme\DeploymentService\Tomcat5\webapps\DeploymentService\log
- Trace Template: 01.all.debug.template
- CLC Trace Level: ERROR (dropdown)
- ☐ Common Trace Files on a central Trace Server
- Trace Server: team16
- Socket Appender Port: 18881
- Level for local Trace: DEBUG (dropdown)
- Level for central Trace: ERROR

You can use this menu item to configure trace operations. The settings are stored in the DLS database. A timer monitors if there are any new entries in the database. If so, the trace is modified accordingly; where applicable, changes are also transferred to the other servers in a cluster.

**NOTE:** The changes take effect after approximately two minutes.

**NOTE:** Individual settings can restrict the options available in the menu **Administration > Display Logging Data**.

For information on general interface operation, see Section 5.4.2, "Work Area".

## Trace Mode

Option for selecting the trace mode.

Possible values:

- **Off**  
No special traces are performed. All error messages will be written to a default tracefile. This is the default setting after installation.
- **DLS Server**  
The trace is performed in the DLS server with the assigned **Level for local Trace**.
- **DLS Communication**  
Communication between IP devices and DLS server is traced with the assigned **Level for local Trace**. Additionally all error messages will be written to the default tracefile.
- **Log4j Template**  
The trace is performed with the predefined trace template selected under **Trace Template**.

## Trace Directory

Directory in which the trace files are stored.

#### Trace Template

Option for selecting predefined trace settings. The trace templates are stored in the file directory

```
<drive>:\Program Files\DeploymentService\Tomcat5\webapps\  
DeploymentService\log\templates.
```

The settings in the templates are only effective if the **Trace Mode** "Log4j Template" is set.

Possible values:

- **01.all.debug.template**

Log all DLS activities with DEBUG logging level.

**NOTE:** In the case where a SOAP based element manager (H8K, H8K Ass, H4K(WebService)) or a dlsAPI client (H8K Assistant, OSILA) needs to send the payload encryption, they just have to activate the '01.all.debug.template'

- **02.all.info.template**

Log all DLS activities with INFO logging level.

- **03.default.template**

Default setting. Log all DLS activities with ERROR logging level.

- **04.gateway.template**

Log all gateway activities with DEBUG logging level.

- **05.gateway.wpcomm.details.template**

Log all gateway activities including communication between workpoint and DLS with DEBUG logging level.

- **06.gateway.wpcomm.info.template**

Log all gateway activities including communication between workpoint and DLS with DEBUG logging level.

- **07.keyexchange.template**

Log all gateway and key distribution activities with DEBUG logging level.

- **08.keyexchange.wpcomm.details.template**

Log all gateway and key distribution activities including communication between workpoint and DLS with DEBUG logging level.

- **09.keyexchange.wpcomm.info.template**

Log all gateway and key distribution activities including communication between workpoint with DEBUG logging level.

- **10.wpcomm.details.template**

Log communication between workpoint and DLS with DEBUG logging level.

- **11.wpcomm.short.template**

Log communication between workpoint and DLS with INFO logging level.

- **12.wpscan.wpcomm.details.template**  
Log all workpoint-based scan activities including communication between workpoint and DLS with DEBUG logging level.
- **13.wpscan.wpcomm.short.template**  
Log all workpoint-based scan activities including communication between workpoint and DLS with INFO logging level.
- **14.dlsapi.template**  
Log all DLS API methods with DEBUG logging level.
- **15.auth.debug.template**  
Log all authentication activities including communication between workpoint and DLS with DEBUG logging level.
- **16.nodb.debug.template**  
Log all DLS activities with the exception of database activities including communication between workpoint and DLS with DEBUG logging level.
- **17.pp.em.debug.template**  
Log all Plug&Play and element manager related activities with DEBUG logging level.
- **18.pki.details.template**  
Log all PKI activities with DEBUG logging level.

### **CLC Trace Level**

Trace level for the communication with the Central License Agent (CLA).

Possible values:

- **DEBUG**  
Comprehensive trace of processes.
- **INFO**  
Selected process information.
- **WARN**  
Displays potential problems.
- **ERROR**  
Displays problems that do not cause the deployment service to fail.

### **Common Trace Files on a central Trace Server**

Traces of all nodes in a cluster are written to a file on a central server. The files `dlswpcommunication.*.txt`, `dlslog.*.txt`, and `dlerror.*.txt` are created.

## Administration

### Trace Configuration

#### Trace Server

Server where the common trace files are stored.

#### Socket Appender Port

Number of ports used for sending the common trace data to a node within the cluster.

Default value: **18881**.

#### Level for local Trace

Trace level setting for local traces in the DLS server. The hierarchy of trace levels is DEBUG < INFO < WARN < ERROR < FATAL, that is, if DEBUG is set, all other levels are also logged. If the diagnostic settings are controlled with a template, the value set there for this parameter has precedence.

Possible values:

- **DEBUG**  
Comprehensive trace of processes.
- **INFO**  
Selected process information.
- **WARN**  
Displays potential problems.
- **ERROR**  
Displays problems that do not cause the deployment service to fail.
- **FATAL**  
Displays problems that cause the deployment service to fail.

#### Level for central Trace

Trace level for common traces on a trace server within the cluster. If the diagnostic settings are controlled with a template, the value set there for this parameter has precedence.

Possible values:

- **INFO**  
Selected process information.
- **WARN**  
Displays potential problems.
- **ERROR**  
Displays problems that do not cause the deployment service to fail.

- **FATAL**  
Displays problems that cause the deployment service to fail.

### **Possible Action Buttons**

The range of action buttons available depends on the DLS status.

#### **Save**

Saves any unsaved changes.

#### **Discard**

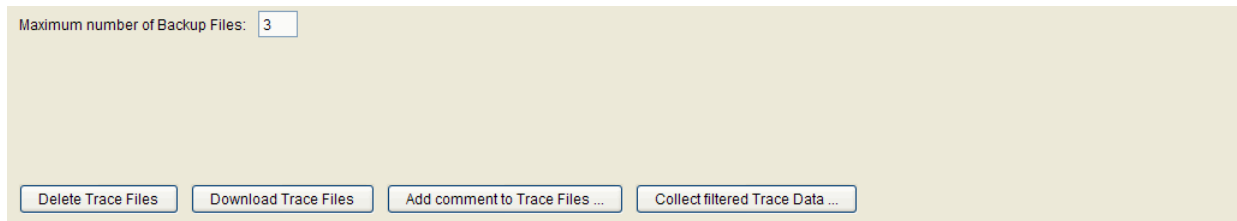
Discards any unsaved changes.

#### **Refresh**

Refreshes the content of the relevant page.

## 6.14.1 "Additional Settings and Actions" Tab

**Call:** Main Menu > Administration > Trace Configuration > "Additional Settings and Actions" Tab



Maximum number of Backup Files:

### Maximum Number of Backup Files

Maximum number of backups per trace files.

Value range: **1 - 999**

### Delete Trace Files

Delete all trace files.

### Download Trace Files

Download all trace files in a .zip-file to a local path.

**NOTE:** If you use Microsoft Internet Explorer, **Automatic prompting for file downloads** has to be enabled. To achieve this, go to **Tools > Internet Options...** > **TabSheet "Security"**. Here, select the web content zone the DLS server address belongs to and press **Custom Level**. In the **Security Settings** popup window, under **Downloads**, you can find the option mentioned above.

### Add comment to Trace Files ...

Insert a comment in all trace files.

### Collect filtered Trace Data ...

This function filters trace files already generated trace files (`dlslog.txt` and `dlsWpCommunication.txt`) according to certain filter criteria: E.164 numbers, IP addresses, or device IDs. A combination of criteria is not possible. These filter criteria are requested in a popup window. Data records which match a filter criterion are stored in an particular trace file. By clicking **Download Trace Files**, the files created are displayed. The generated files receive the following names: `<filter criterion>_FILTERED_dlslog.txt` and `<filter criterion>_FILTERED_dlsWpCommunication.txt`. With **Delete Trace Files**, these files can be deleted.





## 6.14.2 "Repeat filter" Tab

**NOTE:** By applying this function, messages which are required for analysis might possibly be lost. Therefore, it should be used with care, preferably only by request of the DLS support team.

**Call:** Main Menu > Administration > Trace Configuration > "Repeat filter" Tab

The screenshot displays the 'Repeat filter' configuration interface. It consists of three vertically stacked sections, each for a different type of trace: 'error trace', 'standard trace', and 'communication trace'. Each section contains a checkbox labeled 'activate repeat filter' and a text input field labeled 'number of messages to check:'. In all three sections, the checkbox is unchecked and the input field contains the value '1'.

### Error trace

#### Activate repeat filter

When activated, repetitions of messages in the error trace are filtered out. The context range, within which repetitions are searched, is specified in the **Number of messages to check** parameter.

#### Number of messages to check

Size of a block of sequenced messages in the error trace, within which repetitions shall be filtered out.

### Standard trace

#### Activate repeat filter

When activated, repetitions of messages in the standard trace are filtered out. The context range, within which repetitions are searched, is specified in the **Number of messages to check** parameter.

#### Number of messages to check

Size of a block of sequenced messages in the standard trace, within which repetitions shall be filtered out.

## **Communication trace**

### **Activate repeat filter**

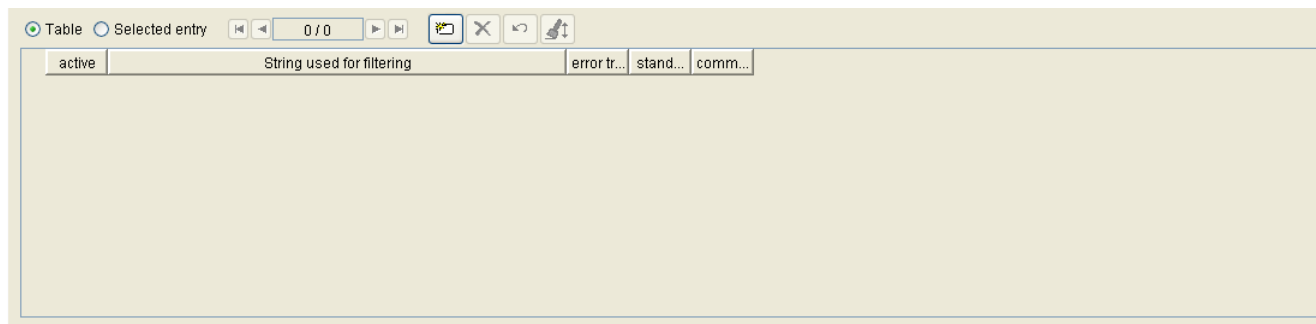
When activated, repetitions of messages in the communication trace are filtered out. The context range, within which repetitions are searched, is specified in the **Number of messages to check** parameter.

### **Number of messages to check**

Size of a block of sequenced messages in the communication trace, within which repetitions shall be filtered out.

## 6.14.3 "Message Filter" Tab

**Call:** Main Menu > Administration > Trace Configuration > "Message Filter" Tab



active	String used for filtering	error tr...	stand...	comm...
--------	---------------------------	-------------	----------	---------

### active

Filter is switch off and on.

### String used for filtering

Filter according to entered string.

### Error trace

If active, this string is valid for error trace filtering.

### Standard trace

If active, this string is valid for standard trace filtering.

### Communication trace

If active, this string is valid for communication trace filtering.

## 6.14.4 "Filter test" Tab

**Call:** Main Menu > Administration > Trace Configuration > "Filter test" Tab

first message text:	<input type="text"/>
2nd message text (optional):	<input type="text"/>
3rd message text (optional):	<input type="text"/>
4th message text (optional):	<input type="text"/>
5th message text (optional):	<input type="text"/>
number of generated message sequences:	<input type="text" value="1"/>
<input type="button" value="start test"/>	

### 1st message text

String as test message for testing the configured filters.

### 2nd message text (optional)

Additional string for testing the configured filters; appears as a separate message.

### 3rd message text (optional)

Additional string for testing the configured filters; appears as a separate message.

### 4th message text (optional)

Additional string for testing the configured filters; appears as a separate message.

### 5th message text (optional)

Additional string for testing the configured filters; appears as a separate message.

### Number of generated message sequences

Defines how often the defined test messages shall be generated.

### Start Test

The test messages are generated and filtered. The results appear in the traces.

## 6.14.5 "OSVTM Configuration" Tab

**Call:** Main Menu > Administration > Trace Configuration > "OSVTM Configuration" Tab

OSVTM IP address:	<input type="text"/>
UserID:	<input type="text"/>
Password:	<input type="password"/> 
Trace file directory:	<input type="text"/>
Connection Retries:	<input type="text" value="6"/>
Retry Delay Timer (min):	<input type="text" value="10"/>

### OSVTM IP address

Specification of the OSVTM IP address.

### User ID

User ID for OSVTM file transfer.

### Password

Password for OSVTM file transfer.

### Trace file directory

Trace file directory on OSVTM to send trace files.

### Connection Retries

If the file transfer fails, the DLS stored trace file is kept for at least a number of Connection Retries.

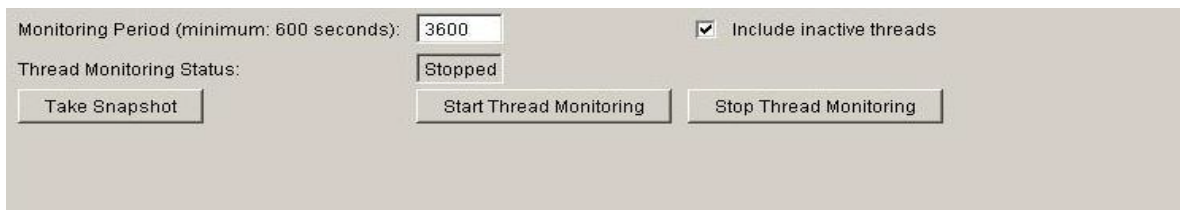
Default value is set to 6.

### Retry Delay Timer (min)

Periodical attempts to resend the file. Default value is set to 10 ( The file is resent every 10 minutes).

## 6.14.6 "Thread Monitoring" Tab

**Call:** Main Menu > Administration > Trace Configuration > "Thread Monitoring" Tab



Monitoring Period (minimum: 600 seconds):  ☒ Include inactive threads

Thread Monitoring Status: Stopped

**NOTE:** In order to enable Thread Monitoring, you must first set **Trace Mode** to **Log4j Template**. Please refer to Section 6.14, "Trace Configuration".

### Monitoring Period (minimum: 600 seconds)

The time period interval in which thread monitoring takes place.

Default value is set to 3600 sec.

### Thread Monitoring Status

### Include Inactive Threads

Checkbox is active if inactive threads are included.

### Take Snapshot

### Start Thread Monitoring

### Stop Thread Monitoring

## **6.15 Server Licenses**

This area features the following components:

- General Data
- Possible Action Buttons
- "License state" Tab
- "Multiple DLS Servers" Tab

## General Data

**Call:** Main Menu > Administration > Server Licenses

Licenseagent:	<input type="text" value="127.0.0.1"/>	Port:	<input type="text" value="61740"/>
<input type="button" value="License Management"/>	<input type="text" value="http://127.0.0.1:8819"/>		

### Licenseagent

IP address or host name of license agent (CLA).

### Port

Port number for access to the license server.

### License Management

URL of the license server. Press the adjacent **License Management** action button to open the License Management Web interface in a separate window.

## Possible Action Buttons

### Save

Saves the field contents to the database.

### Discard

Discards any changes entered.

### Refresh

Updates the window using the database.

### Read Licenses

Requests available licenses from license agent.



## Administration

### Server Licenses

**NOTE:** Once you install a valid DLS license file at **LinuxCLM** tool, the licenses are not found straightaway from LinuxDLS after you set the corresponding License Agent IP,since DLS :

- (a) periodically checks for license changes (every 4 hours)
- (b) checks license changes when the DLS service starts ( you may restart the Deployment Support service manually from CMP via Dashboard menu)

## 6.15.1 "License state" Tab

**Call:** Main Menu > Administration > Server Licenses > "License state" Tab

The current status of various licenses is displayed here.

OpenScope Deployment Service V7

Server Licenses

Object Edit View Action Help

Views: Object

Licenseagent: 127.0.0.1 Port: 61740

License Management http://127.0.0.1:8819

License state

Last License Check: 2012-04-09 08:09:02 Status: License file available available for another (days):

DLS V7 Base SW License

☒ License available Expiration date: 2012-08-31

☐ Activation Period

DLS V7 Basic Device License

Number of licenses: 1000 Expiration date: 2012-08-31

Number of basic devices: 4

Used (%): 0 Alarm threshold (%): 90

☐ Reduced functionality

DLS V7 Mobile User License

Number of licenses: 1000 Expiration date: 2012-08-31

Number of mobile users: 0

Used (%): 0 Alarm threshold (%): 90

☐ Reduced functionality

### Last License Check

Date and time of the last license scan at the license agent are displayed.

### Status:

Status of the connection to the CLA.

Possible Options:

- **License file available**
- **Activation Period - no license file available**
- **Failover Period - CLA not reachable**

**available for another (days)**

Number of days the DLS is to be used when CLA is not reachable.

**DLS V7 Base SW License**

**License available**

Checkbox is active if a Base SW License is part of the License file.

**Expiration date**

Date of license expiration. After this date no further DLS logon will be possible. Please contact your license administrator.

**Activation Period**

If checkbox is active, V7 Base SW and V7 Basic Device Licenses are granted, although they are not part of your V7 licenses. Please, order an upgrade for your license file.

**DLS V7 Basic Device License**

**NOTE:** In case multi tenancy is installed, configuration of the number of available V7 Basic Device Licenses per tenant has to be done in the tenants screen, as described in Section 6.3.1, "Tenants".

**Number of licenses:**

Indicates the number of basic devices that can be configured with the current license.

**Expiration date**

An expiration date is displayed when working with a demo license. A license awarded by the CLA is not limited in time.

Registration of IP Devices is not possible any more after this date. Please contact your license administrator.

**Number of basic devices:**

Indicates the number of basic devices licenses already in use for mobile users.

**Used (%)**

Indicates the percentage of licenses already in use.

**Alarm threshold (%)**

Specify the percentage of used licenses that should generate a license alarm.

**Reduced functionality**

This check box is automatically selected if the number of licenses has been exceeded. The expiration date is set, and after exceeding the registration of IP Devices is blocked until the surplus IP Devices have been deleted by the administrator.

Please contact your license administrator.

**DLS V6 Mobile User License**

**Number of licenses**

Indicates the number of mobile users that can be configured with the current license.

**Expiration date**

An expiration date is displayed when working with a demo license (activation period). A license awarded by the CLA (license agent) is not limited in time.

No more DLS administration is possible after this date. Please contact your license administrator.

**Number of mobile users**

Indicates the number of mobile user licenses already in use for mobile users.

**Used (%)**

Indicates the percentage of licenses already in use.

**Alarm threshold (%)**

Specify the used-license percentage that should generate a license alarm.

### Reduced functionality

This check box is automatically selected if the number of licenses has been exceeded. In this case, the only option available is to delete mobile users.

Please contact your license administrator.

### DLS V7 PKI User License

**NOTE:** In case multi tenancy is installed, configuration of the number of available V7 Basic Device Licenses per tenant has to be done in the tenants screen, as described in Section 6.3.1, "Tenants".

### Number of licenses:

Indicates the number of IP Devices supplied by PKI service that can be configured with the current license.

### Expiration date

An expiration date is displayed when working with a demo license. A license awarded by the CLA (license agent) is not limited in time.

After this date, PKI support is not possible any more. Please contact your license administrator.

### Number of devices

Indicates the number of IP Devices supplied by PKI service licenses already in use for IP Devices.

### Used (%)

Indicates the number of licenses already in use as a percentage.

### Alarm threshold (%)

Specify the used-license percentage that should generate a license alarm.

### **Reduced functionality**

This check box is automatically selected when the number of licenses has been exceeded. After activation period expiry, the PKI service for IP Devices is blocked. Please contact your license administrator.

### **DLS V7 Location Service License**

**NOTE:** This license is necessary to use the function 'Open Communications Solution for Location and Identity Assurance' (OCS LIA).

### **Number of Licenses**

Indicates number of licenses for the Location Service (IP Infrastructure).

### **Number of devices**

Number of IP Devices, supplied with IP Infrastructure data by means of Location Service.

### **Used (%)**

Percentage of used Location Service Licenses.

### **Alarm threshold (%)**

Specifies at which percentage of used licenses an alarm shall be generated.

### **Expiration date**

An expiration date is displayed when working with a demo license (activation period). This is the case, for example, when the CLA (license agent) is not or no longer available. A license awarded by the CLA is not limited in time.

After this date IP Devices will not be supplied with IP Infrastructure data, except emergency Call, by means of Location Service. Please contact you license administrator.

### **Activation Period**

Checked if the CLA is unreachable. The licenses determined last are then used. If the CLA has not yet been reached, 1 DLS node license will be available for the activation period. The DLS tries to contact the CLA every 45 minutes. When the term specified in the Expiration date field expires, the IP Devices will not be supplied with IP Infrastructure data, except Emergency Call, by means of Location Service. Please contact your license administrator.

### Reduced functionality

This check box is automatically selected if the number of licenses has exceeded. In this case, the only option available is to delete IP Devices.

Please contact your license administrator

### DLS V7 Node License

#### Number of licenses

Indicates the number of DLS V7 Node licenses available in License Agent.

**NOTE:** These licenses are those available in CLA (loaded and activated) not these that DLS requires and uses.

#### Number of DLS nodes

Indicates the number of additional active DLS Nodes in a cluster. With Single-Node mode, 0 is displayed here. This number indicates the node licenses required.

For a n-node multinode DLS, n-1 node licenses are required.

#### Expiration date

An expiration date is displayed when working with a demo license (activation period). A license awarded by the CLA (license agent) is not limited in time.

After this date, DLS operation in cluster mode will no longer be possible. Please contact your license administrator.

### DLS V7 Database Mirroring License

#### License available

License for Database Mirroring available

#### Expiration date

An expiration date is displayed when working with a demo license (activation period). A license awarded by the CLA (license agent) is not limited in time.

After this date, database mirroring will no longer take place. Please contact your license administrator.

### **Reduced functionality**

This check box is automatically selected if the number of licenses has been exceeded. In this case, no database mirroring will be performed.

Please contact your license administrator

### **DLS V7 XML Push License**

#### **License available**

XML Push can only be used with a valid license.

#### **Expiration date**

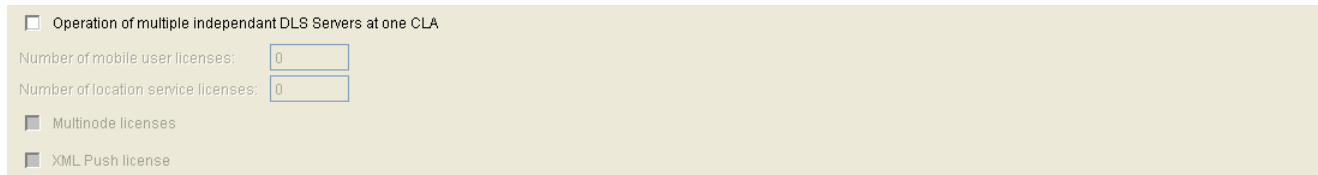
An expiration date is displayed when working with a demo license (activation period). A license awarded by the CLA (license agent) is not limited in time.

After this date, XML Push will no longer be available. Please contact you license administrator.



## 6.15.2 "Multiple DLS Servers" Tab

**Call:** Main Menu > Administration > Server Licenses > "Multiple DLS Servers" Tab



The screenshot shows a configuration window with a light beige background. At the top, there is a checkbox labeled "Operation of multiple independant DLS Servers at one CLA". Below this, there are two input fields: "Number of mobile user licenses:" and "Number of location service licenses:", both containing the value "0". At the bottom, there are two unchecked checkboxes: "Multinode licenses" and "XML Push license".

### Operation of multiple independent DLS Servers at one CLA

If activated, the basic device and mobile user licenses associated with multiple independent DLS servers can be managed at a central license agent (CLA).

#### Number of mobile user licenses

Maximum number of mobile user licenses to be requested by this DLS at the central license agent (CLA).

#### Number of location service licenses

Maximum number of location service licenses to be requested by this DLS at the central license agent (CLA).

#### Multinode licenses

If activated, DLS requests licenses for DLS Nodes and DB Mirroring from the CLA.

#### XML Push licenses

If activated, the DLS requests licenses for XML Push from the CLA.

## 7 IP Devices

**Call:** Main Menu > IP Devices

This menu item consists of the following areas:

- IP Phone Configuration
- IP Client Configuration
- IP Gateway Configuration
- IP Device Interaction
- IP Device Management

Use this area to display and change the configuration data of IP devices.

**NOTE:** If changes are made in data records that have been generated using templates, these changes are not automatically applied to the templates. These changes must be manually saved to the template (Section 15.5, "Editing Templates").

**NOTE:** You can enter parameters for both SIP and HFA for every IP client in the **IP Client Configuration** area.

**NOTE:** An IP device can only be configured at the DLS after its successful registration. For registration, the IP device must be familiar with the relevant DLS address. Registration at the DLS is achieved by:

- reading out IP device data via the DLS, see Section 7.4.6, "Scan IP Devices" and by
- plugging the LAN connector or power supply into the IP device.

## 7.1 IP Phone Configuration


**Call:** Main Menu > IP Devices > IP Phone Configuration

This menu consists of the following submenus:

- Gateway/Server
- IP Routing
- Ports
- Features
- Quality of Service
- QoS Data Collection
- Security Settings
- Telephony
- Small Remote Site Redundancy
- Dialing Properties
- Time Parameters
- Audio Settings
- SNMP Settings
- Applications
- LDAP
- User Settings
- SIP Mobility
- HFA Mobility
- Keysets/Keylayout
- WLAN Settings
- Signaling and Payload Encryption (SPE)
- IEEE 802.1x
- Diagnosis
- Miscellaneous
- File Deployment

## General Data

This part of the contents area is used for entering parameters in **Search** view to find a specific group of IP phones. The base data associated with the IP phones found is displayed in **Object** view (no changes possible except under **Remarks**).

IP Address:	<input type="text"/>		IP Address 2:	<input type="text"/>	IP Protocol Mode:	<input type="text"/>
Device ID:	<input type="text"/>		SW Version:	<input type="text"/>	Location:	<input type="text"/>
Device Type:	<input type="text"/>		SW Type:	<input type="text"/>		
E.164:	<input type="text"/>		Last Registration:	<input type="text"/> - <input type="text"/>		
Basic E.164:	<input type="text"/>					
Remarks:	<input type="text"/>					

**NOTE:** The **Search** view fetches only the attributes of the specific mask that is currently displayed for the selected device(s) and not the attributes of all the masks under **IP Phone Configuration** for that device(s) as in previous DLS/phone versions.

For further information on the **Search** view, please refer to Section 5.5, "Search Functionality".

### IP Address:

IP address of the IP phone. For OpenStage, an IPv4 or IPv6 address is displayed here. See also the description of the **IP Protocol Mode** parameter.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

### Device ID:

ID for unique identification of the IP device. In IP phones, this is generally the MAC address.

Example: **00:0E:A6:85:71:80**

### Device Type:

IP phone device type. The icon  indicates whether this is a virtual device.

All IP phone types supported by DLS can be found in Section 3.4, "Area of Application".

Example: **optiPoint 410 standard, OpenScape Desk Phone IP 35G, OpenScape Desk Phone IP 35G Eco**

### E.164:

Complete E.164 subscriber number (Basic Profile or Mobile Profile).

Example: **498972212345**

## IP Devices

### *IP Phone Configuration*

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

#### **Basic E.164:**

Complete E.164 phone number (Mobility Phone).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

#### **IP Address 2:**

Second IP address of the IP phone, if it has an IPv6 address.

Available for OpenStage only.

#### **SW Version:**

Software version of the IP phone.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

#### **SW Type:**

IP phone software type.

Examples: **Unify HFA**, **Unify SIP**.

#### **Reg-Address**

IP address or DNS name of the HFA or SIP server at which the device is registered.

#### **Last Registration:**

Time of last IP phone registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Content Area".

**Remarks:**

Fields for general information.

**IP Protocol Mode**

Indicates which IP version is used by the phone. If both versions are used, **IP Address** contains the IPv4 address, and **IP Address 2** contains the IPv6 address.

Only available for openStage.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

**Location**

Current location of the IP Device. The value is set during registration and is displayed only herein. (For meaning and configuration of the location, see Section 6.3.2, "Location".)

## IP Devices

### *IP Phone Configuration*

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### Search

Searches for all registered IP phones that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Get

Loads a template that has already been saved. For more information, see Section 15.5, "Editing Templates".

#### Save

Saves configuration entries as a template. For more information, see Section 15.5, "Editing Templates".

#### Discard

Discards any changes made and new entries.

#### Read

The parameters displayed on the new mask are read in again by the IP device.

#### Rename

Changes the name of a saved template. For more information, see Section 15.5, "Editing Templates".

#### Delete

Deletes a saved template. For more information, see Section 15.5, "Editing Templates".

### **Import Certificate**

Imports a certificate for the selected IP device (only available in Certificate Management). For more information, see Section 16.13, "Security: Administering Certificates".

### **Remove Certificate**

Deletes a certificate for the selected IP device (only available in Certificate Management). For more information, see Section 16.13, "Security: Administering Certificates".



## **7.1.1 Gateway/Server**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Gateway/Server

This area features the following components:

- General Data
- Possible Action Buttons
- "Gateway (HFA) / SIP Server" Tab
- "Gateway (Standby)" Tab
- "SIP Terminal Settings" Tab
- "SIP Registering 1" Tab
- "SIP Registering 2" Tab
- "SIP Survivability" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## General Data

This part of the contents area is used for entering parameters in **Search** view to find a specific group of IP phones. The base data associated with the IP phones found is displayed in **Object** view (no changes possible except under **Remarks**).

IP Address:	<input type="text"/>	IP Address 2:	<input type="text"/>	IP Protocol Mode:	<input type="text"/>
Device ID:	<input type="text"/>	SW Version:	<input type="text"/>	Location:	<input type="text"/>
Device Type:	<input type="text"/>	SW Type:	<input type="text"/>		
E.164:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>		
Basic E.164:	<input type="text"/>				
Remarks:	<input type="text"/>				

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

### IP Address:

IP address of the IP phone. For OpenStage, an IPv4 or IPv6 address is displayed here. See also the description of the **IP Protocol Mode** parameter.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

### Device ID:

ID for unique identification of the IP device. In IP phones, this is generally the MAC address.

Example: **00:0E:A6:85:71:80**

### Device Type:

IP phone device type.

All IP phone types supported by DLS can be found in Section 3.4, "Area of Application".

Example: **optiPoint 410 standard**

### E.164:

Complete E.164 subscriber number (Basic Profile or Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

## IP Devices

### *IP Phone Configuration*

#### Basic E.164:

Complete E.164 phone number (Mobility Phone).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

#### IP Address 2:

Second IP address of the IP phone, if it has an IPv6 address.

Available for OpenStage only.

#### SW Version:

Software version of the IP phone.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

#### SW Type:

IP phone software type.

Examples: **Unify HFA, Unify SIP.**

#### Last Registration:

Time of last IP phone registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Content Area".

#### Remarks:

Fields for general information.

#### IP Protocol Mode

Indicates which IP version is used by the phone. If both versions are used, IP address contains the IPv4 address, and IP address 2 contains the IPv6 address.

Only available for openStage.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

### **Location**

Current location of the IP Device. The value is set during registration and is displayed only herein. (For meaning and configuration of the location, see Section 6.3.2, "Location".)

## IP Devices

### IP Phone Configuration

#### 7.1.1.1 "Gateway (HFA) / SIP Server" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Gateway/Server > "Gateway (HFA) / SIP Server" Tab

System Type:	<input type="text"/>		
Reg-Address (HFA) / SIP Server Address:	<input type="text"/>		
Reg-Port (HFA) / SIP Server Port:	<input type="text"/>		
Gatekeeper ID:	<input type="text"/>		
Registration Subscriber Number:	<input type="text"/>	Subscriber Password:	<input type="text"/>
H.235 Security Mode:	<input type="text"/>	Cancel Mobility Password:	<input type="text"/>
Security Time Window:	<input type="text"/>		

#### System Type:

Type and version of the communication platform at which the workpoint is operated.

Possible options:

- **Unknown**
- **OpenScape Business V1**
- **OpenScape Business V2**
- **OpenScape Business V3**
- **OpenScape Business V4**
- **HiPath 3000 generic**
- **HiPath 3000 V4.0**
- **HiPath 3000 V5.0**
- **HiPath 3000 V6.0**
- **HiPath 3000 V7.0**
- **HiPath 3000 V8.0**
- **HiPath 3000 V9.0**
- **HiPath 4000 generic**
- **HiPath 4000 V1.0**
- **HiPath 4000 V2.0**
- **HiPath 4000 V3.0**
- **HiPath 4000 V4.0**
- **HiPath 4000 V5.0**
- **HiPath 4000 V6.0**

- **HiPath 4000 V7.0**
- **HiPath 4000 V8.0**
- **HiPath 4000 V9.0**
- **HiPath 4000 V10.0**

Only available in HFA workpoints.

**Reg-Address (HFA) / SIP Server Address:**

IP address or host name of the PBX or gateway used for operating the workpoint.

**Reg-Port (HFA) / SIP Server Port:**

Port number of the PBX, gateway or SIP server used for operating the workpoint.

**Gatekeeper ID:**

ID of the PBX, gateway or gatekeeper used for operating the workpoint.

**NOTE:** This ID corresponds to the "Globid" parameter in AMO HFAB for the HiPath 4000 resp. the H.323 ID with the HiPath 3000.

**Registration Subscriber Number:**

Phone number of the subscriber at the PBX.

Example: **12345**

Only available in HFA workpoints.

**H.235 Security Mode:**

Possible options:

- **None**  
No voice encryption.
- **Reduced**  
One-way voice encryption (gatekeeper data not sent in encrypted form).
- **Full**  
Voice encryption both ways (workpoint and gatekeeper data both sent in encrypted form).

## **IP Devices**

### *IP Phone Configuration*

Only available in HFA workpoints.

#### **Security Time Window:**

Indicates the maximum time difference permitted between the individual devices that should all run synchronously in H.235.

Only available in HFA workpoints.

#### **Subscriber Password:**

Password of the workpoint at the PBX.

Only available in HFA workpoints.

#### **Cancel Mobility Password:**

Password to disable the mobility function at the home workpoint.

Only available in HFA workpoints.

### 7.1.1.2 "Gateway (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Gateway/Server > "Gateway (Standby)" Tab

**NOTE:** This "standby" data is used when the "home" data for the "Gateway (HFA) / SIP Server" Tab is not available. The SRSR functionality must be configured for this, see Section 7.1.9, "Small Remote Site Redundancy".

System Type:	<input type="text"/>		
Reg-Address:	<input type="text"/>		
Reg-Port:	<input type="text"/>		
Gatekeeper ID:	<input type="text"/>		
Registration Subscriber Number:	<input type="text"/>	Subscriber Password:	<input type="text"/>
H.235 Security Mode:	<input type="text"/>		
Security Time Window:	<input type="text"/>		

#### System Type:

Type and version of the communication platform at which the workpoint is operated.

Possible options:

- **Unknown**
- **OpenScape Business V1**
- **OpenScape Business V2**
- **OpenScape Business V3**
- **OpenScape Business V4**
- **HiPath 3000 generic**
- **HiPath 3000 V4.0**
- **HiPath 3000 V5.0**
- **HiPath 3000 V6.0**
- **HiPath 3000 V7.0**
- **HiPath 3000 V8.0**
- **HiPath 3000 V9.0**
- **HiPath 4000 generic**
- **HiPath 4000 V1.0**
- **HiPath 4000 V2.0**
- **HiPath 4000 V3.0**
- **HiPath 4000 V4.0**



## IP Devices

### *IP Phone Configuration*

- **HiPath 4000 V5.0**
- **HiPath 4000 V6.0**
- **HiPath 4000 V7.0**
- **HiPath 4000 V8.0**
- **HiPath 4000 V9.0**
- **HiPath 4000 V10.0**

Only available in HFA workpoints.

#### **Reg-Address:**

IP address or host name of the PBX or gateway provided as standby for the workpoint.

#### **Reg-Port:**

Port number of the PBX or gateway provided as standby for the workpoint.

#### **Gatekeeper ID:**

ID of the PBX, gateway or gatekeeper provided as standby for the workpoint.

**NOTE:** This ID corresponds to the "Globid" parameter in AMO HFAB for the HiPath 4000 resp. the H.323 ID with the HiPath 3000.

#### **Registration Subscriber Number:**

Phone number of the subscriber at the PBX.

Example: **12345**

Only available in HFA workpoints.

#### **H.235 Security Mode:**

Possible options:

- **None**  
No voice encryption.

- **Reduced**  
One-way voice encryption (gatekeeper data not sent in encrypted form).
- **Full**  
Voice encryption both ways (workpoint and gatekeeper data both sent in encrypted form).

Only available in HFA workpoints.

**Security Time Window:**

Indicates the maximum time difference permitted between the individual devices that should all run synchronously in H.235.

Only available in HFA workpoints.

**Subscriber Password:**

Password of the workpoint at the standby PBX.

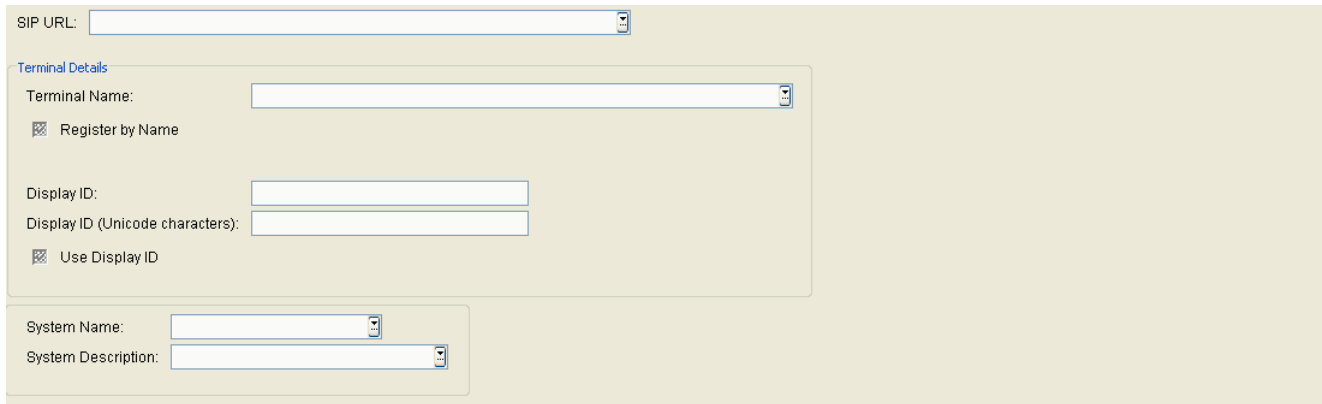
Only available in HFA workpoints.

## IP Devices

### IP Phone Configuration

#### 7.1.1.3 "SIP Terminal Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Gateway/Server > "SIP Terminal Settings" Tab



#### SIP URL:

SIP address of the IP phone.

Format: <SIP user ID>@<Domain>.

#### Terminal Details

##### Terminal Name:

Name of the IP phone used as a synonym for the phone number during registration.

Only necessary if the **Register by Name** checkbox is selected and the registrar server is appropriately configured.

##### Register by Name

If this checkbox is activated, the phone logs on using the **Terminal Name**.

##### Display ID:

Name of the IP phone, as displayed on the telephone.

Value range: max. 24 alphanumeric characters.

##### Display ID (Unicode characters):

Name of the IP phone, as displayed on the telephone, in unicode characters.

**NOTE:** Unicode is only available in the OpenStage family of telephones.

Value range: max. 24 alphanumeric characters.

### **Use Display ID**

If this checkbox is activated, the display ID is displayed on the device's status bar.

### **System Name:**

Random name that appears in the lower right-hand corner of the IP phone's display (in two-line display).

Example: **HiPath**

Value range: max. 10 alphanumeric characters.

### **System Description:**

Used to display a system description at the workpoint (for three- or four-line display).

## IP Devices

### IP Phone Configuration

#### 7.1.1.4 "SIP Registering 1" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Gateway/Server > "SIP Registering 1" Tab

SIP Routing:

SIP Gateway Addr:  SIP Gateway Port:

SIP Registrar Addr:  SIP Registrar Port:

SIP Phone Port:

RTP Base Port:

#### SIP Routing:

Possible options:

- **Direct**  
For test purposes only.
- **Gateway**  
If a gateway is used.
- **Server**  
If an SIP proxy is used.

If Direct or Gateway is selected, no registration messages are sent during registration. Registration messages are sent to the registrar server for the **Server** routing mode.

#### SIP Gateway Addr:

IP address of the SIP gateway if the routing mode **Gateway** is used.

#### SIP Gateway Port:

Port number of the SIP gateway if the routing mode **Gateway** is used.

#### SIP Registrar Addr:

IP address of the SIP registrar.

#### SIP Registrar Port:

Port number of the SIP registrar.

**SIP Phone Port:**

Port number of the IP phone.

**RTP Base Port:**

Base port number for RTP transport.

## IP Devices

### IP Phone Configuration

#### 7.1.1.5 "SIP Registering 2" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Gateway/Server > "SIP Registering 2" Tab

The screenshot shows the 'SIP Registering 2' configuration tab. It contains several sections of settings:

- SIP Session Timer:** A checkbox is checked. Below it are two input fields: 'SIP Session Duration (sec):' and 'SIP Registration Timer (sec):'.
- Outbound Proxy:** A checkbox is checked. Below it is a dropdown menu for 'SIP Default OBP Domain:'.
- Keep Alive Method:** A dropdown menu.
- SIP Realm:** An input field.
- SIP User ID:** An input field.
- SIP Password:** An input field.
- MLPP Settings:** A section with three input fields: 'MLPP Base:', 'MLPP Domain Type:', and 'MLPP Domain Namespace:'.
- SIP Server Type:** A dropdown menu.
- Separate Registrar Server:** A checkbox is checked.
- Authentication Required:** A checkbox is checked.
- Transaction Timer (ms):** An input field.
- Non-Call Transaction Timer (ms):** An input field.
- Registration Backoff Timer (sec):** An input field.

#### SIP Session Timer

Checkbox for activating the SIP session timer. The timer is used to monitor the duration of an SIP session.

#### SIP Session Duration:

Highest duration in seconds for an SIP session.

Value range: **0** ... **3600** seconds.

#### SIP Registration Timer (sec):

Time until re-registration at the SIP server. Re-registration ensures that the SIP telephone remains logged on to the SIP server. It can also detect server connectivity problems.

Value range: **0** ... **4320** seconds.

Default: **0**

### Separate Outbound Proxy

If this option is activated, a separate outbound proxy is used. This parameter is used with optiPoint WL2 phones to indicate an outbound proxy which is not identical with the SIP proxy.

### Outbound Proxy

Checkbox for activating an SIP proxy for outbound calls.

Together with **SIP Default OBP Domain**, this checkbox controls outbound call routing on the basis of the number dialed or the user ID.

For more information, see Chapter 17, "Outbound Proxy".

### SIP Default OBP Domain:

Together with **Outbound Proxy** this entry controls outbound call routing on the basis of the number dialed or the user ID.

For more information, see Chapter 17, "Outbound Proxy".

### Keep Alive Method:

Selects the keep alive method used between comms and the switch.

Possible options:

- **Sequence**
- **CRLF**

### SIP Realm:

Naming range where the user ID and password are valid. This SIP realm must be entered in the system and on the SIP server.

### SIP User ID:

The user ID is the first part of the SIP URL. Required, together with the password, to access the SIP server.



## IP Devices

### *IP Phone Configuration*

#### **SIP Password:**

Password associated with the user ID, required to access the SIP server.

#### **MLPP Settings**

##### **MLPP Base**

Possible options:

- **Local**
- **Server**

##### **MLPP Domain Type**

Specifies which resource priority namespace will be accepted from a fixed list.

Possible options:

- **dsn**  
dsn-000000
- **uc**  
uc-000000
- **dsn+uc**
- **Other domain**

##### **MLPP Domain Namespace**

Specifies an ASCII string for a single resource priority namespace which will be accepted.

Alphanumeric characters and the following special characters are allowed: -!%\*\_+`"~

A "." is not allowed.

#### **SIP Server Type:**

Selects the appropriate SIP server type for the IP phone.

Possible options:

- **Broadsoft**
- **OpenScape Voice**

- **Sylantro**
- **Other**
- **HiQ 8000**
- **Genesys**

### **Separate Registrar Server**

If you log on to a WLAN, you can be contacted at your personal number. A registrar assigns the SIP URI or IP address you are currently logged on under to your personal number. Your SIP provider may offer a separate registrar server.

Activate this checkbox to log on to a separate registrar proxy server. You can enter the server address and port number of the registrar proxy server in the entry fields that then appear.

Only applies to WLAN phones.

### **Authentication Required**

Activate this checkbox if you have to enter your **SIP user ID** in addition to the standard access data to log on to the SIP provider.

Only applies to WLAN phones.

### **Transaction Timer (ms)**

Time in milliseconds that a device will wait for a requested SIP message before the server is categorized as unavailable.

### **Non-Call Transaction Timer (ms)**

Time in milliseconds allowed for non-INVITE (nonCall) based transaction (F timer).

### **Registration Backoff Timer (sec)**

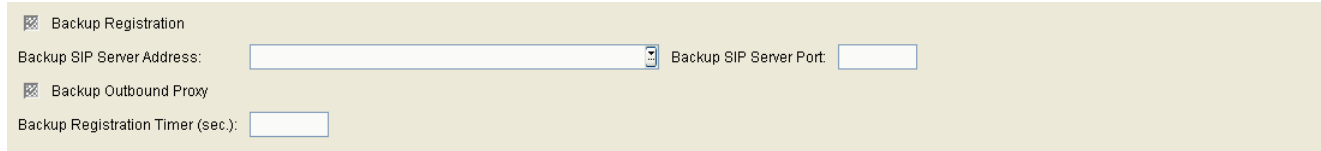
Time in seconds allowed between attempts to reREGISTER after a registration failure.

## IP Devices

### IP Phone Configuration

#### 7.1.1.6 "SIP Survivability" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Gateway/Server > "SIP Survivability" Tab



☒ Backup Registration

Backup SIP Server Address:  Backup SIP Server Port:

☒ Backup Outbound Proxy

Backup Registration Timer (sec.):

#### Backup Registration

Checkbox for activating the backup registration.

#### Backup SIP Server Address:

IP address or host name of the backup SIP server.

#### Backup SIP Server Port:

Port number for communication with the backup SIP server.

#### Backup Outbound Proxy

Checkbox for activating the SIP Proxy backup for outgoing calls.

For more information, see Chapter 17, "Outbound Proxy".

#### Backup Registration Time:

Time period before re-registration at the backup SIP server. Re-registration ensures that the SIP telephone remains logged on to the backup SIP server. It can also detect server connectivity problems.

Requirement: An SIP server backup must be used.

Value range: **0** ... **4320** seconds.

Default: **0**.

## 7.1.2 IP Routing

**Call:** Main Menu > IP Devices > IP Phone Configuration > IP Routing

This area features the following components:

- General Data
- Possible Action Buttons
- "IP Routing" Tab
- "IPv6 Settings" Tab
- "ANAT Settings" Tab
- "DNS Server" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Phone Configuration

#### 7.1.2.1 "IP Routing" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IP Routing > "IP Routing" Tab

The screenshot displays the "IP Routing" configuration tab. At the top, there is a text field for "IP Address:". Below it is a dropdown menu for "IPv4 / IPv6 Protocol Mode:". The main configuration area is titled "IP Configuration:" and contains several sections. On the left, there are three checked checkboxes: "DHCP IP Assign", "DHCP Address reuse", and "DHCP Broadcast". To the right of these is a "VLAN" section with fields for "VLAN ID:" and "VLAN Method:". Further right is an "LLDP-MED" section with a checked checkbox for "LLDP-MED enabled" and a dropdown for "LLDP-MED Time to Live:". Below these sections are fields for "Terminal Mask:", "Default Route:", "Route 1:", "Route 2:", "Gateway 1:", "Gateway 2:", "Mask 1:", and "Mask 2:". At the bottom, there is a "LAN Port settings" section with dropdowns for "LAN Port 1 Mode (Phone)", "LAN Port 2 Mode (attached PC)", and "LAN Port 2 Operating Mode:". Below these are three checked checkboxes: "LAN Port 2 enabled", "LAN Port 2 Auto MDIX enabled", and "Port mirroring enabled".

#### IP Address

IP address of the IP phone.

#### IPv4 / IPv6 Protocol Mode

Selects the internet protocol to be used by the IP phone.

Possible Options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

## IP Configuration

Determines how the IP settings are to be configured; valid from OpenStage version 1.5. With versions < 1.5, this field is greyed out, like the remaining LLDP-MED parameters.

**NOTE:** Please note that the writing and reading procedures for this parameter differ from one another. When the DLS user select a particular option (e.g. "LLDP-MED with DHCP Configuration"), the IP configuration parameters are set and sent to the end device. When reading from the device, however, "Please select an option for IP Configuration" is displayed in any case. This is due to the possibility that the parameter may not have been detected unambiguously; for instance, the value of the **VLAN method** parameter can depend on whether the VLAN ID has been determined over DHCP or over LLDP-MED.

The field is predefined with 'Please select an option for IP Configuration'.

Possible Values:

- **LLDP-MED with DHCP Configuration**
- **Use DHCP**
- **Manual VLAN with DHCP Configuration**
- **Manual Settings**

## DHCP IP Assign

This checkbox can be activated if a DHCP server is present. The workpoint then obtains the IP address data dynamically from the DHCP server.

This checkbox must not be activated if there is no DHCP server available. Instead, the IP address data (**IP Address**, **Terminal Mask** and **Default Route**) must be manually set for this workpoint.

## DHCP lease reuse

This checkbox can be activated if a DHCP server is present. If the switch is activated, the DHCP lease will be reused.

## DHCP Broadcast

This checkbox can be activated if a DHCP server is present. With this entry the user can change the DHCP protocol element "flags". If the broadcast flag is enabled, the DHCP server will broadcast its responses to the phone's requests; otherwise unicast responses will be used.

## IP Devices

### *IP Phone Configuration*

## VLAN

### VLAN ID:

VLAN ID when using virtual LANs. Can only be changed if QoS layer 2 is active. The value is read-only if it has been dynamically assigned with DHCP.

Value range: **0 ... 4095**.

### VLAN Method:

Determines how the VLAN ID is assigned to the end device. Can only be changed when QoS layer 2 has been activated.

Possible options:

- **Manually**  
The VLAN ID is entered manually.
- **DHCP**  
The VLAN ID supplied by the DHCP server is used.
- **None**  
(For WLAN only)
- **LLDP-MED**  
The VLAN ID supplied by LLDP-MED (Link Layer Discovery Protocol - Media Endpoint Discovery) is used. Available for OpenStage from V1R5 onwards.

## LLDP-MED

### LLDP-MED enabled:

Enables sending and receiving LLDP data.

### LLDP-MED Time-to-Live

Possible Values:

- **40**
- **60**
- **80**
- **100**
- **110**

- 120
- 140
- 180
- 240
- 320
- 400

**Terminal Mask:**

Subnet mask for the IP address.

The value is read-only if it was dynamically assigned with DHCP.

**Default Route:**

IP address or host name of the default router/gateway.

The value is read-only if it was assigned with DHCP.

**Route 1:**

IP address or host name of the first static route (optional).

**Gateway 1:**

IP address or host name of the router/gateway of the first static route (optional).

**Mask 1:**

Subnet mask of the first static route (optional).

**Route 2:**

IP address or host name of the second static route (optional).



## IP Devices

### *IP Phone Configuration*

#### Gateway 2:

IP address or host name of the router/gateway of the second static route (optional).

#### Mask 2:

Subnet mask of the second static route (optional).

## LAN Port settings

### LAN Port 1 Mode (Phone):

Data rate mode for the first Ethernet port on the IP phone. The first port is connected to the LAN. The data rate value depends on the switch or router bandwidth that is supported in the network.

Possible options:

- **10 Mbps half-duplex**
- **10 Mbps full-duplex**
- **100 Mbps half-duplex**
- **100 Mbps full-duplex**
- **Auto**

Default: **Auto**

### LAN Port 2 Mode (attached PC):

Data rate mode for the second LAN port on the IP phone. The value depends on the switch or router bandwidth that is supported in the network.

Possible options:

- **10 Mbps half-duplex**
- **10 Mbps full-duplex**
- **100 Mbps half-duplex**
- **100 Mbps full-duplex**
- **Auto**

Default: **Auto**

### LAN Port 2 Operating Mode

Choice between three modes of operation for the PC port.

Possible options:

- **Disabled**  
The LAN port is inactive.
- **Enabled**  
The LAN port is active.
- **Mirror**  
All data traffic on LAN port 1 is mirrored to port 2.

### LAN Port 2 enabled

Checkbox for enabling LAN port 2.

### LAN Port 2 Auto MDIX enabled

Checkbox for enabling LAN Port 2 Auto MDIX. If Auto MDIX is enabled, the LAN port automatically switches between normal MDI and MDI-X (crossover circuit).

### Port mirroring enabled

When this checkbox is activated, all data traffic on LAN port 1 can be mirrored to port 2: The operation type for **LAN Port 2 Operating Mode** must be set to **Mirror**.

## IP Devices

### IP Phone Configuration

#### 7.1.2.2 "IPv6 Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IP Routing > "IPv6 Settings" Tab

IPv6 Address:

☒ IPv6 DHCP

☒ IPv6 DHCP Address reuse

IPv6 Route 1 Gateway:

IPv6 Route 1 Destination:

IPv6 Route 1 Prefix Length:

IPv6 Route 2 Gateway:

IPv6 Route 2 Destination:

IPv6 Route 2 Prefix Length:

IPv6 IP Address local Link:

IPv6 IP Address global Gateway:

IPv6 IP Address global Prefix Length:

#### IPv6 Address

IPv6 address of the IP phone.

#### IPv6 DHCP

IPv6 DHCP

#### IPv6 DHCP Address reuse

When activated, the address provided by the IPv6 DHCP server is reused.

#### IPv6 Route 1 Gateway

IPv6 address of the router/gateway for the first static route.

#### IPv6 Route 1 Destination

Destination address for the first static route.

**IPv6 Route 1 Prefix Length**

Prefix length for the first static route.

**IPv6 Route 2 Gateway**

IPv6 address of the router/gateway for the second static route.

**IPv6 Route 2 Destination**

Destination for the second static route.

**IPv6 Route 2 Prefix Length**

Prefix length for the second static route.

**IPv6 IP Address local Link**

Local link address of the IP phone.

**IPv6 IP Address global Gateway**

IPv6 address of the global router/gateway .

**IPv6 IP Address global Prefix Length**

Length of the global prefix.

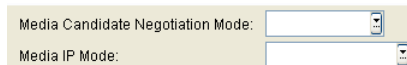
## IP Devices

### IP Phone Configuration

#### 7.1.2.3 "ANAT Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IP Routing > "ANAT Settings" Tab

Alternative Network Address Type (ANAT) provides a mechanism of IPv4/IPv6 media negotiation on a media stream basis.



Media Candidate Negotiation Mode:

Media IP Mode:

#### Media Candidate Negotiation Mode

Selects the Media Candidate Negotiation Mode.

Possible options:

- **Single IP**
- **ANAT**

#### Media IP Mode

Selects the media IP mode.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 / IPv6**
- **IPv6 / IPv4**

### 7.1.2.4 "DNS Server" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IP Routing > "DNS Server" Tab

DNS Server Address:

DNS Server Address 2:

DNS Server Address 3:

**Hostname**

Terminal Hostname / WEB Name:

☒ Use dynamic hostname concept

Automatic Hostname Type:

DNS Domain Name:

#### DNS Server Address:

IP address or host name of the DNS server.

The value is read-only if it was dynamically assigned with DHCP.

#### DNS Server Address 2:

IP address or host name of the second DNS server (optional).

The value is read-only if it was dynamically assigned with DHCP.

Not available in optiPoint 400.

#### DNS Server Address 3:

IP address or host name of the third DNS server (optional).

The value is read-only if it was dynamically assigned with DHCP.

Not available in optiPoint 400.

#### Hostname

##### Terminal Hostname / WEB Name:

Host name of the terminal.

Permitted characters: letters, digits, hyphens, underscores, and periods; case-sensitive; maximum length: 63 characters.

## IP Devices

### *IP Phone Configuration*

The value is read-only if it was dynamically assigned with DHCP.

#### Use dynamic hostname concept

If this checkbox is activated, the E.164 number is used as the DNS host name for IP phones.

#### Automatic Hostname Type:

Type of automatically generated hostname.

Possible Values:

- **No DDNS Hostname**
- **Only WEB Name**
- **Only Number**
- **Prefix Number**
- **MAC based**

#### DNS Domain Name:

Domain name of the DNS server.

The value is read-only if it was dynamically assigned with DHCP.

### **7.1.3 Ports**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Ports

This area features the following components:

- General Data
- Possible Action Buttons
- "Ports" Tab
- "Ports (Standby)" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").



## IP Devices

### IP Phone Configuration

#### 7.1.3.1 "Ports" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Ports > "Ports" Tab

H.225.0 RAS:	<input type="text"/>	Service Agent Request:	<input type="text"/>
H.225.0 Call Signaling:	<input type="text"/>	Java Gateway:	<input type="text"/>
H.245 TCP Channel:	<input type="text"/>	Gateway CorNet-TLS:	<input type="text"/>
RTP Port Base:	<input type="text"/>	Gateway H.225.0 TLS:	<input type="text"/>
HTTP - Hypertext Transport Protocol:	<input type="text"/>		
HTTPS - Secure Hypertext Transport Protocol:	<input type="text"/>		
Comms Channel Extender UDP:	<input type="text"/>		
Comms Channel Extender TCP:	<input type="text"/>		

#### H.225.0 RAS:

Port number for H.225 RAS.

Purpose: Registration and approval in the case of VoIP.

For communication with the following clients: Netmeeting, AP1120.

Port used: **1719**

#### H.225.0 Call Signaling:

Port number for H.225 call signaling.

Purpose: Connection control in the case of VoIP.

For communication with the following clients: HG1500, IP phones, Netmeeting, AP1120.

Port used: **1720**

#### H.245 TCP Channel

Port number for the H.245 TCP channel.

#### RTP Port Base:

Port number for RTP.

Purpose: Transporting voice packets in the case of VoIP.

For communication with the following clients: HG1500, IP phones, Netmeeting, AP11xx.

Port range used: **29100 ... 29131**

**HTTP - Hypertext Transport Protocol:**

Port number for HTTP.

Purpose: Web-based Management.

For communication with the following clients: the workpoint's WBM.

Port used: **8085**

**HTTPS - Secure Hypertext Transport Protocol:**

Port number for HTTPS.

Purpose: Web-Based Management.

For communication with the following clients: the workpoint's WBM.

Only available in SIP workpoints.

Port used: **443**

**Comms Channel Extender UDP Port:**

Port range used: **0 ... 65535**

Default: **65530**

**Comms Channel Extender TCP Port:**

Port range used: **0 ... 65535**

Default: **65531**

**Service Agent Request:**

Port range used: **0 ... 65535**

**JAVA Gateway:**

Port number for gateways used by Java applications.

## IP Devices

### *IP Phone Configuration*

#### Gateway CorNet-TC TLS

Port used by the HFA gateway for secure communication with the workpoint.

Port range used: **0 ... 65535**

Default: **4061**

Only available in HFA workpoints.

#### Gateway H.225.0 TLS

Port used for secure signalling with H.255.

Port range used: **0 ... 65535**

Default: **1300**

Only available in HFA workpoints.

### 7.1.3.2 "Ports (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Ports > "Ports (Standby)" Tab

**NOTE:** This "standby" data is used when the "home" data for the "Ports" Tab is not available. The SRSR functionality must be configured for this, see Section 7.1.9, "Small Remote Site Redundancy".

H.225.0 RAS:	<input type="text"/>	Service Agent Request:	<input type="text"/>
H.225.0 Call Signaling:	<input type="text"/>	Java Gateway:	<input type="text"/>
H.245 TCP Channel:	<input type="text"/>		
RTP Port Base:	<input type="text"/>		
HTTP - Hypertext Transport Protocol:	<input type="text"/>		
HTTPS - Secure Hypertext Transport Protocol:	<input type="text"/>		

#### H.225.0 RAS:

Port number for H.225 RAS.

Purpose: Registration and approval in the case of VoIP.

For communication with the following clients: Netmeeting, AP1120.

Port used: **1719**

#### H.225.0 Call Signaling:

Port number for H.225 call signaling.

Purpose: Connection control in the case of VoIP.

For communication with the following clients: HG1500, IP phones, Netmeeting, AP1120.

Port used: **1720**

#### H.245 TCP Channel

Port number for the H.245 TCP channel.

For communication with the following clients:

#### RTP Port Base:

Port number for RTP.

Purpose: Transporting voice packets in the case of VoIP.

For communication with the following clients: HG1500, IP phones, Netmeeting, AP11xx, MEB.

## IP Devices

### *IP Phone Configuration*

Port range used: **29100 ... 29131**

#### **HTTP - Hypertext Transport Protocol:**

Port number for HTTP.

Purpose: Web-based Management.

For communication with the following clients: the workpoint's WBM.

Port used: **8085**

#### **HTTPS - Secure Hypertext Transport Protocol:**

Port number for HTTPS (HTTP with SSL encryption).

Purpose: Web-based Management.

For communication with the following clients: the workpoint's WBM.

Only available in SIP workpoints.

Port used: **443**

#### **Service Agent Request:**

Port number for service agent request.

#### **JAVA Gateway:**

Port number for the Java gatekeeper.

#### **Gateway CorNet-TLS**

Port used by the standby HFA gateway for secure communication with the workpoint.

Port range used: **0 ... 65535**

Default: **4061**

Only available in HFA workpoints.

### **Gateway H.225.0 TLS**

Port used for secure signalling with H.225 when the workpoint has switched to the standby gateway.

Only available in HFA workpoints.

## **7.1.4 Features**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features

This area features the following components:

- General Data
- Possible Action Buttons
- "Feature Settings 1" Tab
- "Feature Settings 2" Tab
- "Call related User Settings" Tab
- "Availability" Tab
- "Server based features" Tab
- "Dialplan" Tab
- "Ringer Melody / Tone" Tab
- "Call Forwarding" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.4.1 "Feature Settings 1" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Feature Settings 1" Tab

The screenshot displays the 'Feature Settings 1' configuration page with the following sections and fields:

- Group pickup:** A single text input field labeled 'Group Pickup URI:'.
- Station-controlled Conference:** Three stacked text input fields labeled 'Conference Factory URI:', 'Call Park Server URI:', and 'Call Pickup Server URI:'.
- Callback:** Four stacked text input fields labeled 'Callback-busy URI:', 'Cancel callbacks URI:', 'Callback-no reply URI:', and 'Callback FAC:'.
- Forwarding:** Two stacked text input fields labeled 'Deflect Destination:' and 'Forward Dest. on Phone lock:'.
- BLF:** A single text input field labeled 'BLF Pickup Code:'.

#### Group pickup

##### Group Pickup URI:

URI of the group pickup.

Only available in SIP workpoints.

#### Station-controlled Conference

##### Conference Factory URI:

URI for setting up conference calls.

Only available in SIP workpoints.

##### Call Park Server URI:

URI of the server for parking calls.

Only available in SIP workpoints.



## **IP Devices**

### *IP Phone Configuration*

#### **Call Pickup Server URI:**

URI of the server for group pickup.

Only available in SIP workpoints.

## **Callback**

#### **Callback-busy URI:**

URI of the server that controls the "Callback-busy" feature.

Only available for optiPoint and OpenStage V1 and V2.

#### **Cancel callbacks URI:**

URI that prompts the server to delete callback requests.

#### **Callback-no reply URI**

URI of the server that controls the "Callback-no reply" feature.

Only available for optiPoint and OpenStage V1 and V2.

#### **Callback FAC**

URI to be used for stimulus callback call requests.

Only available for OpenStage V3.0 onwards.

## **Deflection**

#### **Deflect Destination**

Destination number for call forwarding.

#### **Forward Dest. on Phone lock:**

Destination number for forwarding in the case of a call to a locked workpoint.

## **BLF**

### **BLF Pickup Code:**

Feature code for BLF Pickup Code with Asterisk.

Only available in SIP workpoints.

## IP Devices

### *IP Phone Configuration*

#### 7.1.4.2 "Feature Settings 2" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Feature Settings 2" Tab

**NOTE:** When operating SIP IP phones on HiPath 3000 and HiPath 4000 platforms, the following features are not available and should be deactivated so that users cannot see or select them:

- Auto answer
- Callback-busy
- Auto reconnect
- Callback-no reply

See also "Availability" Tab..

Hotline / Warmline

Phone Type:  Default Dial string:

Warmline delay:

Initial Digit Timer:  s

Open Listening:

Call Recorder

☒ Call recording

Call Recorder Address:

Recording Mode:

Audible Notification:

Call handling options

☒ Allow refuse ☒ Transfer on Hangup ☒ uaCSTA allowed ☒ Idle missed calls

☒ Bridging enabled ☒ Phonebook lookup

Callback

☒ Callback: Busy ☒ Callback: No reply ☒ Callback: Cancel ☒ Callback

FPK Program Timer:

Call Completion Supplementary Services

☒ Functional CCSS enabled

Max. Callbacks:

Allow after call (s):

Callback Ringer:

Call Logging

☒ Enable Call Log

Missed:

Delete entry:

## Hot Line/Warm Line

### Phone Type:

Set device property.

Possible options:

- **Ordinary**

## IP Devices

### *IP Phone Configuration*

- **Hotline**
- **Warmline**

Only available in SIP workpoints.

#### **Default Dial String:**

Destination number for the functions "Hotline" and "Warmline".

Only available in SIP workpoints.

#### **Warm Line delay:**

Dialing delay in seconds for the warm line function.

For "Hotline" (emergency call) the value 0 should be entered as the time.

Only available in SIP workpoints.

#### **Initial Digit Timer:**

Waiting time in seconds for a dialed digit after the dial tone starts.

Only available in SIP workpoints.

#### **Open Listening**

Configures switching to Open Listening mode.

Possible options:

- **Standard Mode**  
To switch to Open Listening mode, the user must press and hold the Open Listening key while returning the handset to the cradle.
- **US Mode**  
To switch to Open Listening mode, the user must press the Open Listening key and then return the handset to the cradle.

#### **Call Recorder**

The central voice recorder records the entire voice flow of two or more participants.

### **Call recording**

Switch on/off call recording.

### **Call Recorder Address:**

Address of the call recorder.

The format is similar to an e-mail address: "username@hostname". Therefore, it can accept numbers, symbols and letters.

### **Recording Mode**

Determines the behaviour of the call recording.

Possible options:

- **Manual**
- **Auto Start**
- **All Calls**
- **Disabled**  
(Display only)

### **Audible Notification**

Select the tone for audible notification.

Possible options:

- **Off**
- **On / Single Shot**
- **Repeated**

### **Call handling options**

#### **Allow refuse**

Checkbox for activating the function for rejecting calls.

Only available in SIP workpoints.

## **IP Devices**

### *IP Phone Configuration*

#### **Transfer on Ring**

Checkbox for activating the "Transfer on Ring" feature

If this option is activated, you can activate call transfer by replacing the handset even before the called party answers.

Only available in SIP workpoints.

#### **Transfer on Hangup**

Checkbox for activating the "Transfer on Hangup" feature.

Only available in SIP workpoints.

#### **Bridging enabled**

When active, call bridging is enabled.

Only available in SIP workpoints.

#### **uaCSTA allowed**

Checkbox to activate the "uaCSTA" feature.

Only available in SIP workpoints.

#### **Phonebook lookup**

Checkbox for activating the "Phonebook lookup" feature.

#### **Idle missed calls**

If set, an indication for missed calls will be shown on the display.

#### **Callback**

The user can request a callback if the station called is busy or if nobody answers. The user receives a callback when the other party's line becomes free.

#### **Callback: Busy**

Checkbox for activating the "Callback-busy" feature.

Only available in SIP workpoints.

#### **Callback: No reply**

Checkbox for activating the "Callback-no reply" feature.

Only available in SIP workpoints.

#### **Callback: Cancel**

When active, the user can cancel callback requests.

#### **Callback**

Activates Callback.

Only available for OpenStage V3 onwards.

#### **FPK Program Timer**

When "Off" is selected, the free programmable keys (FPKs) will not change to programming mode on long press.

Possible options:

- **On**
- **Off**

#### **Call Completion Supplementary Service**

##### **Functional CCSS enabled**

If switch is active, functional mechanisms are used to control & monitor CCSS (Call Completion Supplementary Services). If the switch is inactive, stimulus mechanisms (i.e. FAC) are used to trigger CCSS.

#### **Max. Callbacks**

Maximum number of callback requests allowed to be pending at the same time.

Possible values: **1 ... 10**



## IP Devices

### *IP Phone Configuration*

#### **Allow after call (sec)**

Time to retain server provided information required to request a callback after the callback request has failed.

Possible values:

- **unlimited**
- **1**
- **2**
- **3**
- **4**
- **5**
- **10**
- **15**
- **20**
- **30**
- **40**
- **50**
- **60**
- **90**
- **120**

#### **Callback Ringer**

Sets the ringtone to be used to announce the availability of a callback call.

#### **Call Logging**

##### **Enable Call Log**

Checkbox that indicates whether Call logging is enabled.

##### **Missed Logging**

Indicates whether calls completed elsewhere will be logged on phone.

Possible options:

- **Include answered elsewhere**

Calls completed elsewhere will be logged on phone.

- **Exclude answered elsewhere**

Calls completed elsewhere will not be logged on phone.

### **Delete Entry**

Indicates whether calls log entries are deleted in case there is a call to an entry in Missed calls list.

Possible options:

- **Delete manually** (default option)

Outgoing calls that are made to entries in Missed calls tab of call log and that are connected will not be deleted from call log.

- **Delete when called**

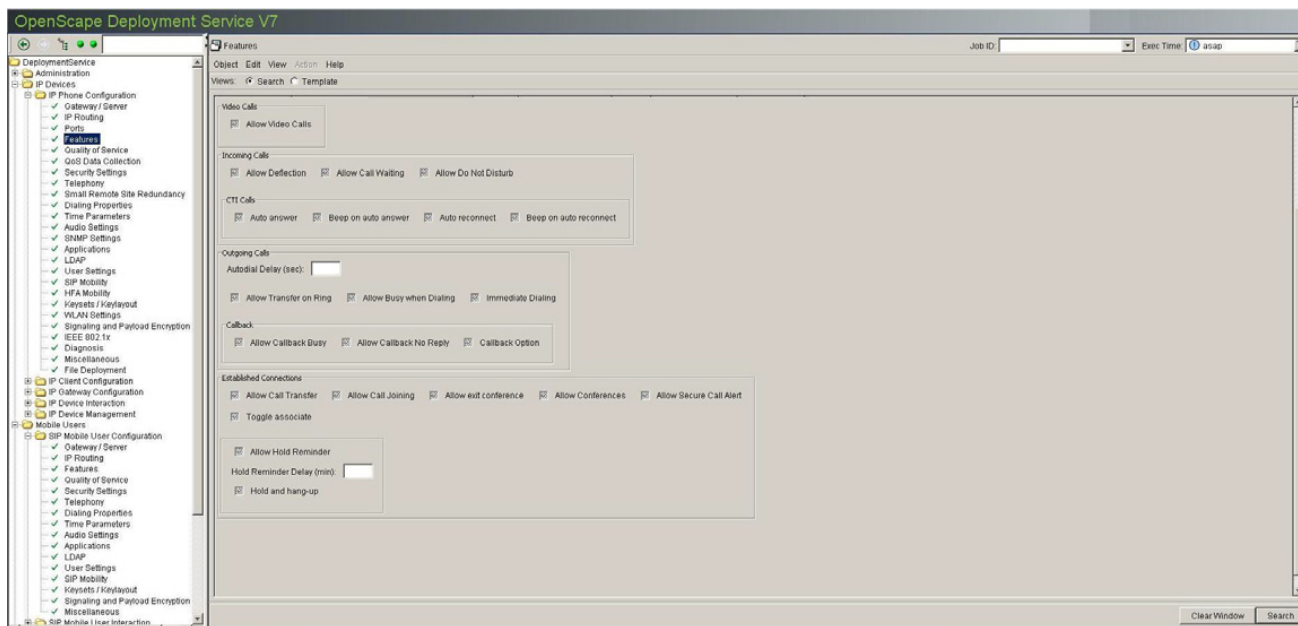
Outgoing calls that are made to entries in Missed calls tab of call log and that are connected will be deleted from call log.

## IP Devices

### IP Phone Configuration

#### 7.1.4.3 "Call related User Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Call related User Settings" Tab



### Video Calls

#### Allow Video Calls

Checkbox for activating Video Calls.

If the Allow Video Calls checkbox is activated ,then video calls will be allowed.

### Incoming Calls

#### Allow Deflection

Checkbox for activating Call Deflection.

If the user wants to deflect an incoming call, he is prompted to enter a destination phone number if there is none stored.

#### Allow Call Waiting

Checkbox for activating Call Waiting.

The user can accept a second incoming call in the course of an ongoing call. The caller hears the on-hook signal while the user hears a call-waiting signal tone. The user can reject or accept the second call. Before he accepts the second call, he can end the first call or place it on hold for subsequent retrieval.

### **Allow Do Not Disturb**

Checkbox for activating Do Not Disturb.

If "Do not disturb" is activated, the telephone will not ring. The caller hears the busy signal.

## **CTI Calls**

### **Auto answer**

Checkbox for activating Auto Answer.

Speakerphone mode activates automatically on the phone if a CTI application (such as Outlook) is used to dial a number when Auto Answer is active. If Auto Answer is not active, the phone rings first and the user must press the loudspeaker key or lift the handset to set up the call. This setting also defines whether or not incoming calls are automatically accepted. If the function is active, an alert beep sounds when a call is automatically accepted.

Only available in SIP workpoints.

### **Beep on auto answer**

Checkbox for activating a confirmation beep on Auto Answer.

If the function is active, an alert beep sounds when a call is automatically accepted.

Only available in SIP workpoints.

### **Auto reconnect**

Checkbox for activating automatic reconnection of a parked call.

Only available in SIP workpoints (optiPoint).

### **Beep on auto reconnect**

Checkbox for activating a confirmation beep on reconnection of a parked call.

The user can reconnect a held call both via the CTI application and via the phone. When the function is active, a beep sounds when the user toggles between an active call and a held call.

Only available in SIP workpoints.

## **IP Devices**

### *IP Phone Configuration*

#### **Outgoing calls**

##### **Autodial delay (sec):**

Delay for Automatic Dialing in seconds.

A number is automatically dialed after a set delay starting from the entry of the number's last digit.

##### **Allow Transfer on Ring**

Checkbox for activating Transfer on Ring.

If this option is allowed, the user can activate call transfer by replacing the handset even before the called party answers.

##### **Allow Busy when Dialing**

Checkbox for activating Busy when Dialing.

If this function is activated, an incoming call received while the user is dialing is rejected. The caller then hears the busy signal.

##### **Immediate Dialing**

If this check box is active, immediate dialing is executed as soon as the entered string matches a dial plan entry.

Only available in SIP workpoints.

#### **Callback**

The user can request a callback if the station called is busy or if nobody answers. He will receive a callback when the other party's line becomes free.

##### **Allow Callback Busy**

Checkbox for activating Callback on Busy.

Only available for OpenStage V1 and V2.

##### **Allow Callback No Reply**

Checkbox for activating Callback on No Reply.

Only available for OpenStage V1 and V2.

### **Callback Option**

Callback Option.

Only available for OpenStage starting with V3.

### **Established Connections**

#### **Allow Call Transfer**

Checkbox for activating Call Transfer.

#### **Allow Call Joining**

Checkbox for activating Call Joining.

The user can join the first party with the party he consulted, clearing down his own connection to both parties in the process.

#### **Allow exit conference**

Checkbox for activating Exit Conference.

The user is disconnected from the conference call and the other call partners remain connected.

#### **Allow Conferences**

Checkbox for activating Conferences.

#### **Allow Secure Call Alert**

If the handling of secure calls is enabled on the phone and this check box is activated, a popup window and an alert tone will notify the user when an insecure (unencrypted) call comes in.

## **IP Devices**

### *IP Phone Configuration*

#### **Toggle associate**

When this feature is activated, the following procedure will ensue: The user has accepted a second call, whereby the first call is put to hold. As soon as the user has alternated back to the first call, and then again to the second call, he/she can connect both calling parties by going on-hook.

#### **Allow Hold Reminder**

Checkbox for activating the Hold Reminder.

With "Hold reminder", the user specifies when he wants to receive an automatic reminder about a held call.

#### **Hold Reminder Delay (min):**

Delay for the Hold Reminder in minutes.

The minimum time value is 1, that is, the reminder is output after one minute. The maximum value is 15 minutes.

#### **Hold and Hangup**

Checkbox for activating the " Hold and Hangup " feature on non-keyset OpenStage phones.

This feature enables the user to temporarily hold and hang up a line without disconnecting your caller. This function is disabled by default.

#### 7.1.4.4 "Availability" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Availability" Tab

**NOTE:** When operating SIP IP phones on HiPath 3000 and HiPath 4000 platforms, the following features are not available and should be deactivated so that users cannot see or select them:

- Auto answer
- Call deflection
- Call forwarding
- Auto answer
- Call waiting
- Log forwarded calls
- Music on hold
- Call park
- Call transfer
- Local conference
- Message waiting
- Video Call
- 
- See also "Feature Settings 2" Tab.

Feature Settings 1	Feature Settings 2	Call related User Settings	Availability	Server based Features	Dialplan	Ringer Melody / Tone	Call Forwarding
This page allows you to control which features are available to the User on this phone.							
<input checked="" type="checkbox"/> Only DLS controls the feature availability							
<input checked="" type="checkbox"/> Call hold	<input checked="" type="checkbox"/> Call display by name	<input checked="" type="checkbox"/> WAP browser on APM / DSM	<input checked="" type="checkbox"/> Blind Transfer	<input checked="" type="checkbox"/> Enable Video Calls			
<input checked="" type="checkbox"/> Call deflection	<input checked="" type="checkbox"/> Call display by number	<input checked="" type="checkbox"/> LDAP on APM / DSM	<input checked="" type="checkbox"/> Repertory Dial	<input checked="" type="checkbox"/> ExtInt Forwarding			
<input checked="" type="checkbox"/> Call forwarding	<input checked="" type="checkbox"/> Music on hold	<input checked="" type="checkbox"/> Telephony on APM / DSM	<input checked="" type="checkbox"/> Busy Lamp Field (BLF)				
<input checked="" type="checkbox"/> Log forwarded calls	<input checked="" type="checkbox"/> Do not disturb	<input checked="" type="checkbox"/> Voice recognition on APM / DSM	<input checked="" type="checkbox"/> Direct Station Select (DSS)				
<input checked="" type="checkbox"/> Call duration	<input checked="" type="checkbox"/> Message waiting	<input checked="" type="checkbox"/> Speed dial on APM / DSM	<input checked="" type="checkbox"/> CTI				
<input checked="" type="checkbox"/> Call waiting	<input checked="" type="checkbox"/> Local conference	<input checked="" type="checkbox"/> ENB on APM / DSM	<input checked="" type="checkbox"/> Line Overview				
<input checked="" type="checkbox"/> Call transfer	<input checked="" type="checkbox"/> Auto answer	<input checked="" type="checkbox"/> Call park	<input checked="" type="checkbox"/> Feature Toggle				
<input checked="" type="checkbox"/> Call pickup	<input checked="" type="checkbox"/> Phone Lock	<input checked="" type="checkbox"/> Call join	<input checked="" type="checkbox"/> Third Call Leg				
<input checked="" type="checkbox"/> Auto reconnect	<input checked="" type="checkbox"/> PC Interface	<input checked="" type="checkbox"/> Group Pickup Beep	<input checked="" type="checkbox"/> Group Pickup				

#### Only DLS controls feature availability

If this checkbox is activated, the availability of features is controlled exclusively by the DLS. The data entered in the "Feature Availability" tab is used. If this checkbox is not activated, the availability can also be controlled on the IP Device.

Only available in SIP workpoints.



## **IP Devices**

### *IP Phone Configuration*

#### **Call hold**

Checkbox for activating the function for placing calls on hold.

Only available in SIP workpoints.

#### **Call deflection**

Checkbox for activating manual forwarding for incoming calls (CD).

Only available in SIP workpoints.

#### **Call forwarding**

Checkbox for activating automatic call forwarding (CF).

Only available in SIP workpoints.

#### **Log forwarded calls**

Checkbox for activating logging for forwarded calls.

Only available in SIP workpoints.

#### **Call duration**

Checkbox for activating the function for displaying the call duration.

Only available in SIP workpoints.

#### **Call waiting**

Checkbox for activating visual and/or acoustic alerting for waiting calls (CW).

Only available in SIP workpoints.

#### **Call transfer**

Checkbox for activating the function for transferring calls (ECT).

Only available in SIP workpoints.

### **Call pickup**

Checkbox for activating the function for picking up parked calls.

Only available in SIP workpoints.

### **Auto reconnect**

Checkbox for activating the auto reconnect feature.

Only available in SIP workpoints.

### **Call display by number**

Switch for activating call number display at the workpoint.

Only available in SIP workpoints.

### **Call display by name**

Switch for activating caller name display at the workpoint.

Only available in SIP workpoints.

### **Music on hold**

Checkbox for activating music on hold for held and parked calls.

Only available in SIP workpoints.

### **Do not disturb**

Checkbox for activating the do-not-disturb function (optical alerting and ring only).

Only available in SIP workpoints.

### **Message waiting**

Checkbox for activating alerting for waiting messages (MWI).

Only available in SIP workpoints.

## IP Devices

### *IP Phone Configuration*

#### Local conference

Checkbox for activating the function for setting up a local conference.

Only available in SIP workpoints.

#### Auto answer

Checkbox for activating auto answer.

Only available in SIP workpoints.

#### Phone Lock

Checkbox for activating phone lock function.

Only available in SIP workpoints.

**NOTE:** The default setting of this function on the OpenStage phone is set to true.

For SW Version < V3, the phone lock function is not available (nor visible), as opposed to versions V3 onwards, where it is possible to control the feature's availability (can also be controlled by WBM).

If the phone lock option is unchecked in the phone's Web Based Management (WBM) it's impossible to lock the phone.

**NOTE:** Please refer to Phone lock function at Section 7.1.16.3, "Locked Local Functions" Tab". Keep in mind the following options:

- If the Phone lock function is enabled at both tabs, the phone lock is not possible and the option is grayed out.
- If both checkboxes are unchecked, the phone lock is not possible nor visible in the menu.
- If the function is enabled for the Mobile user but unchecked at the "Availability" tab, the phone lock is not possible nor visible in the menu.
- Finally, the phone lock is possible only if the function is checked solely at the "Availability tab".

#### PC Interface

Checkbox for enabling the interface between the PC and the device.

#### WAP browser on APM/DSM

Checkbox for activating the WAP browser on the optiPoint application module/display module.

Only available in SIP workpoints.

### **LDAP on APM/DSM**

Checkbox for activating the LDAP function on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Telephony on APM/DSM**

Checkbox for activating the telephony function on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Voice recognition on APM/DSM**

Checkbox for activating the voice recognition function (voice dialing) on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Speed dial on APM/DSM**

Checkbox for activating the speed-dialing function on the optiPoint application module/display module with a Java midlet.

Only available in SIP workpoints.

### **ENB on APM/DSM**

Checkbox for activating the electronic notebook on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Call park**

Checkbox for activating the function for parking calls.

Only available in SIP workpoints.

## **IP Devices**

### *IP Phone Configuration*

#### **Call join**

Checkbox for activating the function for joining calls.

The user can join the first party with the party he consulted, clearing down his own connection to both parties in the process.

Only available in SIP workpoints.

#### **Group Pickup Beep**

If this checkbox is activated, you will hear a beep when a call is waiting for a pickup group.

#### **Blind Transfer**

Checkbox for activating the feature "Blind Transfer".

The user can transfer the current call to another party without consultation.

#### **Repertory Dial**

Checkbox for activating the feature "Repertory Dial".

The user can select and insert special characters in the dialing sequence for to disconnect the call or activate a consultation hold or insert a pause.

#### **Busy Lamp Flag (BLF)**

Checkbox for activating the Busy Lamp Field (BLF).

For displaying the state of other internal phones, the BLF key can be configured. Each BLF key is assigned to the internal phone number of another phone. By means of the LED state, the user can determine whether the other phone is idle, ringing, or busy.

#### **Direct Station Select (DSS)**

Checkbox for activating Direct Station Select (DSS).

Apart from line keys, the user can also configure direct station selection (DSS) keys. A DSS key can be used to call an internal station directly, pick up calls for this station or forward calls directly to it.

## **CTI**

Checkbox for activating the CTI interface.

Speakerphone mode activates automatically on the phone if the a CTI application (such as Outlook) is used to dial a number when Auto Answer is active. If Auto Answer is not active, the phone rings first and the user must press the loudspeaker key or lift the handset to set up the call. This setting also defines whether or not incoming calls are automatically accepted.

## **Line Overview**

Checkbox for activating the line Overview.

To view the status of the lines, the user must change from the "My phone" tab to the "Overview" tab on the phone screen.

## **Feature Toggle**

Checkbox for activating the feature "Feature Toggle".

The user can pick a programmable sensor key and program it as a feature toggle key for activating the "make line busy" and "stop hunt" functions. He can then use the programmable key to activate or deactivate the relevant OpenScape Voice function on the server for this phone.

## **Third Call Leg**

Checkbox for activating the feature "Third Call Leg".

For Consultation call from second call: If the second call is the active call, the user can initiate a consultation call from it. During a consultation in the second call, the first call is parked and can only be unparked when the consultation or second call ends or these calls were connected.

## **Group Pickup**

Checkbox for activating the feature "Group Pickup".

## **Enable Video Calls**

Checkbox for enabling the feature "Video Call ".

## **IP Devices**

### *IP Phone Configuration*

#### **Ext/Int Forwarding**

Checkbox for enabling / disabling the External/Internal Forwarding.

#### **7.1.4.5 "Server based features" Tab**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Server based features" Tab

☒ Support of Server based Features

#### **Support of Server based Features**

If this checkbox is activated, server-based features on the device are enabled for the user.



## IP Devices

### IP Phone Configuration

#### 7.1.4.6 "Dialplan" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Dialplan" Tab

☒ Dialplan    Dialplan ID:     Dialplan Error:

☐ Table    ☒ Selected entry    1 / 1    [Icons]

Digit String:   
Action:   
Min Length:   
Max Length:   
Timer:   
Terminating Character:     ☒ Terminator sent  
Special Indication:   
Comment:

Import File...  
Export File...

#### Dialplan

Checkbox for activating the dial plan. The entries in this tab are interpreted if this checkbox is active.

Only available in SIP workpoints.

#### Dialplan ID

Name of the dial plan - must begin with a "!".

Value range: max. 14 alphanumeric characters.

Only available in SIP workpoints.

#### Dialplan Error

Specifies the dial plan entry that is faulty in the event of an error.

Value range: **1 ... 48**

Only available in SIP workpoints.

#### Digit String

Digit String Digit string for executing this action.

Only available in SIP workpoints.

### **Action**

Action executed for this digit string.

Possible options:

- **-C- Action for digits**
- **-S- Send digits**

Only available in SIP workpoints.

### **Min Length**

Minimum digit string length for digit string interpretation.

Only available in SIP workpoints.

### **Max Length**

Maximum digit string length for digit string interpretation.

Only available in SIP workpoints.

### **Timer**

Delay before the action is performed.

Value range: **1** ... **9** seconds.

Only available in SIP workpoints.

### **Terminating Character**

Character that ends the digit string entered.

Possible options:

- **#**
- **\***

Only available in SIP workpoints.

## IP Devices

### *IP Phone Configuration*

#### Special Indication

Possible options:

- **-E- emergency call**
- **-b- bypass**

Only available in SIP workpoints.

#### Comment

Field for general information.

Only available in SIP workpoints.

#### Terminator sent

Displays whether the terminating character is included in the digit string.

#### Import File

Imports a dialplan from a file in CSV format.

#### Export File

Exports a dialplan from a file in CSV format.

### 7.1.4.7 "Ringer Melody / Tone" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Ringer Melody / Tone" Tab

MLPP Ringer File:

Special Ringers

Internal call:  Special 1:

External call:  Special 2:

Recall:  Special 3:

Emergency:

Table Selected entry 1 / 1

Index:

Alert Info:

Melody:

Tone:

Tone Duration (sec):

Ringer File:

**NOTE:** A template for **Ringer Melody / Tone** can be created by searching for an IP Device with entries in **Ringer Melody / Tone** (empty entries are allowed as well). Use the action **Copy to Template** to create a template. There must be 15 entries, which may be empty. This template can be modified, saved, and applied.

#### MLPP Ringer File

Ringtone file to be used for priority calls.

#### Special Ringers

##### Internal call

Default value : Bellcore-dr1

##### External call

Default value : Bellcore-dr2

##### Recall

Default value : Bellcore-dr3

##### Emergency

## IP Devices

### *IP Phone Configuration*

Default value : alert-emergency

#### Special 1

#### Special 2

#### Special 3

#### Index

Automatically generated index for the particular distinctive ringtones.

#### Alert Info

If the string specified here is identical with a special string which is sent to the phone in the SIP alert info header, the corresponding ringtone is used.

Only available in SIP workpoints.

#### Melody

Type of ring melody.

Possible options: **Melody 1 ... Melody 8, Melody off**

Only available in SIP workpoints.

#### Tone

Ringtone sequence.

Possible options:

- **1**  
= 1 sec ON, 4 sec OFF
- **2**  
= 1 sec ON , 2 sec OFF
- **3**  
= 0,7 sec ON, 0,7 sec OFF , 0,7 sec ON, 3 sec OFF

Only available in SIP workpoints.

### Tone Duration

Duration of the ringtone.

Value range: **1** ... **300** seconds.

Default: **60** seconds.

Only available in SIP workpoints.

### Ringer File

Name of the audio file containing the ringtone.

**IMPORTANT:** In order for a special ringer to be configured, then :

1. it's alert info (e.g. Bellcore-dr1) and
2. it's respective Ringer file (e.g. Harmonize.mp3) should be configured first.

These two configurations (special ringers & ringer melody table) cannot be performed in a single step. A new Alert Info and Special Ringer cannot be added at the same time in the Special Ringers table & the Distinctive Ringers table. Before a Special Ringer is configured, make sure it's Alert Info is already configured,

i.e. first configure Bellcore-dr1 in lower table, press **Save** and then configure this Alert Info in Special Ringers Internal Call & press **Save** again.

## IP Devices

### IP Phone Configuration

#### 7.1.4.8 "Call Forwarding" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Features > "Call Forwarding" Tab

Call Forwarding Unconditional

☒ Forward Any Call      Destination:

☒ Forward External Calls      Destination:

☒ Forward Internal Calls      Destination:

Call Forwarding on Busy

☒ Forward Any Call      Destination:

☒ Forward External Calls      Destination:

☒ Forward Internal Calls      Destination:

Call Forwarding on No Reply

☒ Forward Any Call      Destination:

☒ Forward External Calls      Destination:

☒ Forward Internal Calls      Destination:

Delay (sec):

Alert on Call Forwarding

☒ Audible

☒ Visual

Forwarding Party:

Favorites

Forwarding 1:       Forwarding 2:       Forwarding 3:

Forwarding 4:       Forwarding 5:

**NOTE:** The additional Call Forwarding settings (for external/internal) shall be available if the option **"Support of Server Based Features"** is enabled under **IP Devices>IP Phone Configuration > Features> "Server based features" Tab**.

If that option is enabled, the CFNR delay timer is not configurable (greyed out).

#### Call Forwarding Unconditional

##### Forward Any Call

Checkbox for activating unconditional Call Forwarding.

##### Destination:

Call number of the Call Forwarding destination.

### **Forward External Calls**

Checkbox for activating External Call Forwarding.

#### **Destination:**

Call number of the External Call Forwarding destination.

### **Forward Internal Calls**

Checkbox for activating Internal Call Forwarding.

#### **Destination:**

Call number of the Internal Call Forwarding destination.

### **Call Forwarding on Busy**

### **Forward Any Call**

Checkbox for activating unconditional Call Forwarding.

#### **Destination:**

Call number of the Call Forwarding destination.

### **Forward External Calls**

Checkbox for activating External Call Forwarding.

#### **Destination:**

Call number of the External Call Forwarding destination.

### **Forward Internal Calls**

Checkbox for activating Internal Call Forwarding.



## **IP Devices**

### *IP Phone Configuration*

#### **Destination:**

Call number of the Internal Call Forwarding destination.

#### **Call Forwarding on No Reply**

#### **Forward Any Call**

Checkbox for activating Unconditional Call Forwarding.

#### **Destination:**

Call number of the Call Forwarding destination.

#### **Forward External Calls**

Checkbox for activating Unconditional Call Forwarding.

#### **Destination:**

Call number of the Call Forwarding destination.

#### **Forward Internal Calls**

Checkbox for activating Unconditional Call Forwarding.

#### **Destination:**

Call number of the Call Forwarding destination.

#### **Delay (sec):**

As soon as this time span has expired without the call being accepted, the call is forwarded.

#### **Alert on Call Forwarding**

#### **Audible**

Checkbox for activating an audible alert on the forwarding phone.

## **Visual**

Checkbox for activating a visible alert on the forwarding phone.

## **Forwarding Party:**

Select which forwarding party will be displayed when multiple forwarding is active.

Possible options:

- **Display first**
- **Display last**

## **Favorites**

### **Forwarding 1:**

### **Forwarding 2:**

### **Forwarding 3:**

### **Forwarding 4:**

### **Forwarding 5:**

## **7.1.5 Quality of Service**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Quality of Service

This area features the following components:

- General Data
- Possible Action Buttons
- "QoS Parameter" Tab
- "QoS Parameter (Standby)" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.5.1 "QoS Parameter" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Quality of Service > "QoS Parameter" Tab

☒ Layer 3 Select

Layer 3 Signaling:

Layer 3 Voice:

Layer 3 Video:

☒ Layer 2 Select

Layer 2 Signaling:

Layer 2 Voice:

Layer 2 Default:

Layer 2 Video:

Priority Calls

Layer 3 Voice Priority 2:

Layer 3 Voice Priority 4:

Layer 3 Voice Priority 6:

Layer 3 Voice Priority 8:

#### Layer 3 Select

Checkbox for activating the QoS layer 3 configuration.

#### Layer 3 Signaling:

Layer 3 value for call signaling.

Value range for optiPoint HFA workpoints (lower than optiPoint HFA V5R5) and optiPoint SIP workpoints in SIP5 or lower: **0 .... 63**

Possible values for optiPoint SIP6 or higher and optiPoint HFA V5R5 or higher:

- **10 - AF11**
- **12 - AF12**
- **14 - AF13**
- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**
- **30 - AF33**

## **IP Devices**

### *IP Phone Configuration*

- **34 - AF41**
- **36 - AF42**
- **38 - AF43**
- **46 - EF**

Possible values for OpenStage SIP/HFA:

- **10 - AF11**
- **12 - AF12**
- **14 - AF13**
- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**
- **30 - AF33**
- **34 - AF41**
- **36 - AF42**
- **38 - AF43**
- **46 - EF**
- **0 - BE**
- **56 - CS7**

Possible values for WLAN HFA/SIP:

- **0 - BE**
- **10 - AF11**
- **12 - AF12**
- **14 - AF13**
- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**

- 30 - AF33
- 34 - AF41
- 36 - AF42
- 38 - AF43
- 46 - EF

### Layer 3 Voice:

Layer 3 value for voice transmission.

**NOTE:** QoS Layer 3 voice transmission can also be set via LLDP-MED (Link Layer Discovery Protocol). If so, the value can not be changed via DLS.

Value range for optiPoint HFA workpoints (except optiPoint HFA V5R5 and higher) and optiPoint SIP workpoints with SIP5 or lower: **0 .... 63**

Possible values for optiPoint HFA from V5R5 and optiPoint SIP6 or higher:

- 10 - AF11
- 12 - AF12
- 14 - AF13
- 18 - AF21
- 20 - AF22
- 22 - AF23
- 26 - AF31
- 28 - AF32
- 30 - AF33
- 34 - AF41
- 36 - AF42
- 38 - AF43
- 46 - EF

Possible values for OpenStage SIP/HFA:

- 10 - AF11
- 12 - AF12
- 14 - AF13

## **IP Devices**

### *IP Phone Configuration*

- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**
- **30 - AF33**
- **34 - AF41**
- **36 - AF42**
- **38 - AF43**
- **46 - EF**
- **0 - BE**
- **56 - CS7**

Values for WLAN HFA/SIP:

- **0 - BE**
- **10 - AF11**
- **12 - AF12**
- **14 - AF13**
- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**
- **30 - AF33**
- **34 - AF41**
- **36 - AF42**
- **38 - AF43**
- **46 - EF**

### **Layer 3 Video:**

Layer 3 value for video.

Possible values

- **0=BE**
- **10=AF11**
- **12=AF12**
- **14=AF13**
- **18=AF21**
- **20=AF22**
- **22=AF23**
- **26=AF31**
- **28=AF32**
- **30=AF33**
- **34=AF41 (Default value)**
- **36=AF42**
- **38=AF43**
- **46=EF**
- **56=CS7**
- **24=CS3**
- **32=CS4**
- **40=CS5**

### **Layer 2 Select**

Checkbox for activating the QoS layer 2 configuration.

### **Layer 2 Signaling:**

Layer 2 value for call signaling.

Value range: **0 ... 7**



## IP Devices

### *IP Phone Configuration*

#### Layer 2 Voice:

**NOTE:** QoS Layer 2 voice transmission can also be set via LLDP-MED (Link Layer Discovery Protocol). If so, the value can not be changed via DLS.

Layer 2 value for voice transmission.

Value range: **0 ... 7**

#### Layer 2 Default:

Default for the layer 2 value.

Value range: **0 ... 7**

#### Layer 2 video:

Default for the layer 2 value.

Value range: **0 ... 7**

## Priority Calls

#### Layer 3 Voice Priority 2

Layer 3 value for voice at priority calls.

Value range: **DSCP00 ... DSCP63**

#### Layer 3 Voice Priority 4

Layer 3 value for voice at priority calls.

Value range: **DSCP00 ... DSCP63**

#### Layer 3 Voice Priority 6

Layer 3 value for voice at priority calls.

Value range: **DSCP00 ... DSCP63**

### **Layer 3 Voice Priority 8**

Layer 3 value for voice at priority calls.

Value range: **DSCP00 ... DSCP63**

## IP Devices

### IP Phone Configuration

#### 7.1.5.2 "QoS Parameter (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Quality of Service > "QoS Parameter (Standby)" Tab

**NOTE:** This "standby" data is used when the "home" data for the "QoS Parameter" Tab is not available. The SRSR functionality must be configured for this, see Section 7.1.9, "Small Remote Site Redundancy".

<input checked="" type="checkbox"/> Layer 3 Select (Standby)	<input checked="" type="checkbox"/> Layer 2 Select (Standby)
Layer 3 Signaling: <input type="text"/>	Layer 2 Signaling: <input type="text"/>
Layer 3 Voice: <input type="text"/>	Layer 2 Voice: <input type="text"/>
	Layer 2 Default: <input type="text"/>

#### Layer 3 Select (Standby)

Checkbox for activating the QoS layer 3 configuration.

#### Layer 3 Signaling:

Layer 3 value for call signaling.

Value range for optiPoint HFA workpoints (lower than optiPoint HFA V5R5) and optiPoint SIP workpoints in SIP5 or lower: **0 .... 63**

Possible values for optiPoint SIP6 or higher and optiPoint HFA V5R5 or higher:

- **10 - AF11**
- **12 - AF12**
- **14 - AF13**
- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**
- **30 - AF33**
- **34 - AF41**
- **36 - AF42**
- **38 - AF43**
- **46 - EF**

### **Layer 3 Voice:**

**NOTE:** QoS Layer 3 voice transmission can also be set via LLDP-MED (Link Layer Discovery Protocol). If so, the value can not be changed via DLS.

Layer 3 value for voice transmission.

Value range for HFA workpoints and SIP workpoints in SIP5 or lower: **0 .... 63**

Possible values for optiPoint SIP6 or higher and optiPoint HFA V5R5 or higher:

- **10 - AF11**
- **12 - AF12**
- **14 - AF13**
- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**
- **30 - AF33**
- **34 - AF41**
- **36 - AF42**
- **38 - AF43**
- **46 - EF**

Possible values for WLAN HFA/SIP:

- **0 - BE**
- **10 - AF11**
- **12 - AF12**
- **14 - AF13**
- **18 - AF21**
- **20 - AF22**
- **22 - AF23**
- **26 - AF31**
- **28 - AF32**

## IP Devices

### *IP Phone Configuration*

- 30 - AF33
- 34 - AF41
- 36 - AF42
- 38 - AF43
- 46 - EF

#### Layer 2 Select (Standby)

Checkbox for activating the QoS layer 2 configuration.

#### Layer 2 Signaling:

Layer 2 value for call signaling.

Value range: 0 ... 7

#### Layer 2 Voice:

**NOTE:** QoS Layer 2 voice transmission can also be set via LLDP-MED (Link Layer Discovery Protocol). If so, the value can not be changed via DLS.

Layer 2 value for voice transmission.

Value range: 0 ... 7

#### Layer 2 Default:

Default for the layer 2 value.

Value range: 0 ... 7

## 7.1.6 QoS Data Collection

**Call:** Main Menu > IP Devices > IP Phone Configuration > QoS Data Collection

**NOTE:** This function is not available in the onboard variants of DLS on OpenScape Voice systems.

This area features the following components:

- General Data
- Possible Action Buttons
- "Server Data" Tab
- "Report Settings" Tab
- "Threshold Values" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Phone Configuration

#### 7.1.6.1 "Server Data" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > QoS Data Collection > "Server Data" Tab

☒ Send Traps to QCU

QCU Home Address:

QCU Host Port Number:

☒ Send Traps to SNMP Manager

QDC Trap Password:

#### Send Traps to QCU

Checkbox for activating the function that sends errors to the QCU.

#### QCU Home Address:

IP address or host name of the server that collects the QDC data.

#### QCU Host Port Number:

Port number for the server that collects the QDC data.

#### Send Traps to SNMP Manager

Checkbox for activating the function that sends errors to the SNMP Manager.

#### QDC Trap Password

Password of the server collecting the QDC traps.

### 7.1.6.2 "Report Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > QoS Data Collection > "Report Settings" Tab

The screenshot shows a configuration panel for 'Report Settings'. It contains four input fields: 'Report Mode' (a dropdown menu), 'Report Interval' (a text box followed by 's (seconds)'), 'Observation Interval' (a text box followed by 's (seconds)'), and 'Minimum Session Length' (a text box followed by '\* 100 ms'). At the bottom left, there is a checkbox labeled 'Submit & Resend Last Reports'.

#### Report Mode:

Specifies when a report should be generated.

Possible options:

- **EOS Threshold exceeded**  
At the end of the connection that exceeded the threshold.
- **EOR Threshold exceeded**  
At the end of the reporting interval that exceeded the threshold.
- **EOS (End of Session)**  
At the end of the connection.
- **EOR (End or Report Interval)**  
At the end of the reporting interval.

#### Report Interval:

Time interval in which a QoS report is sent.

Value range: **0 ... 3600** seconds.

#### Observation Interval:

Time interval in which threshold violation is checked.

Value range: **0 ... 5000** seconds.

#### Minimum Session Length:

A QoS report is sent if a session (for example, a call) undershoots this minimum.

Value range: **0 ... 5000** (x 100 ms).



## **IP Devices**

### *IP Phone Configuration*

#### **Submit & Resend Last Reports**

When this checkbox is enabled, the workpoint resends the last QoS reports.

### 7.1.6.3 "Threshold Values" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > QoS Data Collection > "Threshold Values" Tab

Maximum Jitter Threshold:	<input type="text"/>	ms
Average Round Trip Delay Threshold:	<input type="text"/>	ms
<b>Non-Compressing Codecs</b>		
Maximum Lost Packets Threshold:	<input type="text"/>	per 1000 packets
Consecutive Lost Packets Threshold:	<input type="text"/>	
Consecutive Good Packets Threshold:	<input type="text"/>	
<b>Compressing Codecs</b>		
Maximum Lost Packets Threshold:	<input type="text"/>	per 1000 packets
Consecutive Lost Packets Threshold:	<input type="text"/>	
Consecutive Good Packets Threshold:	<input type="text"/>	

#### Maximum Jitter Threshold:

Maximum threshold in milliseconds for runtime fluctuations during data transmission to trigger a report.

Value range: **0 ... 255** ms.

Default: **15**

#### Average Round Trip Delay Threshold:

Average response time (in milliseconds) for signal transmission.

Default: **100**

#### Non-Compressing Codecs

##### Maximum Lost Packets Threshold:

Maximum number of total packets lost during uncompressed transmission.

Value range: **0 ... 255**

##### Consecutive Lost Packets Threshold:

Maximum number of consecutive packets lost during uncompressed transmission.

Value range: **0 ... 255**

##### Consecutive Good Packets Threshold:

Minimum number of consecutive inbound packets lost during uncompressed transmission.

Value range: **0 ... 255**

## IP Devices

### *IP Phone Configuration*

#### Compressing Codecs

##### **Maximum Lost Packets Threshold:**

Maximum number of total packets lost during compressed transmission.

Value range: **0 ... 255**

##### **Consecutive Lost Packets Threshold:**

Maximum number of consecutive packets lost during compressed transmission.

Value range: **0 ... 255**

##### **Consecutive Good Packets Threshold:**

Minimum number of consecutive inbound packets lost during compressed transmission.

Value range: **0 ... 255**

## **7.1.7 Security Settings**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings

This area features the following components:

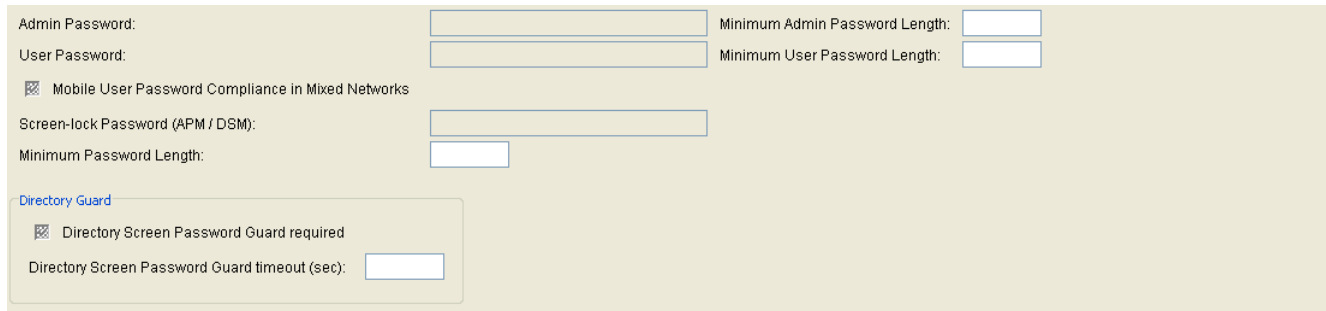
- General Data
- Possible Action Buttons
- "Passwords" Tab
- "Additional Password Policy Settings" Tab
- "Enabled Services (NW Stack)" Tab
- "WBM Server Certificate" Tab
- "HTTPS Server CA Certificates" Tab
- "OCSR 1 Server CA Certificate" Tab
- "OCSR 2 Server CA Certificate" Tab
- "OCSR 1 Signature CA Certificate" Tab
- "OCSR 2 Signature CA Certificate" Tab
- "Authentication Policy" Tab
- "HTTPS Client Certificates" Tab
- "DLS Connectivity" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.7.1 "Passwords" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "Passwords" Tab



Admin Password:  Minimum Admin Password Length:

User Password:  Minimum User Password Length:

☒ Mobile User Password Compliance in Mixed Networks

Screen-lock Password (APM / DSM):

Minimum Password Length:

Directory Guard

☒ Directory Screen Password Guard required

Directory Screen Password Guard timeout (sec):

#### Admin Password:

Password for access to the workpoint's administration area.

The admin password cannot be read from a device.

**NOTE:** UI does not intend to indicate the existence of the password but only to set it up.  
.When you set it to the device, the device sets it in its database but DLS cannot know that since an error message is displayed when you try to read it for confirmation.  
You can set the admin password but you cannot be aware of the admin password that the device has.

#### User Password:

Password for access to the workpoint's user area.

The user password for an OpenStage V3.0 or higher, can be forced to be changed by the phone user on its next use.

The user password cannot be read from a device.

**NOTE:** Although it can be managed by DLS there is no possibility to know the user password value or acknowledge password changes realized over WBM pages or directly over the physical device itself.

#### Mobile User Password Compliance in Mixed Networks

If this option is selected and a mobile user password is changed on an OpenStage V3.0 phone or higher, the password will also be available on older phone types or software versions. If not selected, the mobile user password on prior phones or software versions may be replaced by the standard password "000000".

Only available for SIP phones.

**Screen-lock Password (DSM/APM):**

Password for canceling the display lock on the optiPoint 410 Application Module/Display Module.

Only applicable if an Application Module/Display Module is used.

**Minimum Password Length:**

Minimum number of characters that an administration or user password must contain. Only available if the current object is a HFA telephone (old version) because in this case both passwords are the same length.

**Minimum Admin Password Length:**

Minimum number of characters that an administration password must contain. Only available if the current object is an SIP telephone.

**Minimum User Password Length:**

Minimum number of characters that a user password must contain. Only available if the current object is an SIP telephone.

**Directory Guard**

**Directory Screen Password Guard required**

This checkbox activates password protection for the directory screen. To use the screen, you must enter the standard user password.

**Directory Screen Password Guard timeout (sec)**

Password protection is activated when the length of time specified here expires. After this time, you must enter the password to continue using the screen.

### 7.1.7.2 "Additional Password Policy Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "Additional Password Policy Settings" Tab

The screenshot shows the 'Additional Password Policy Settings' tab. It contains several sections: 'Password Policy' with a checkbox for 'Password change required at next Login'; 'Password Setup' with fields for 'Minimum Number of Characters present in a Password' (Upper, Lower, Digits, Special), 'Bar repeat length', 'Minimum Char difference', 'No change for (hours)', 'Suspended for (min)', 'Expires after (days)', and 'Warn before (days)'; 'Password Status' with dropdowns for 'Status Admin Password' and 'Status User Password'; 'Password History' with fields for 'Admin Password History Count', 'User Password History Count', and 'History valid for (days)'; 'Allowed failed logins'; and 'Password will expire at' with fields for 'Admin Password' and 'User Password'.

#### Password Policy

##### Password change required at next Login

When activated, the user will be required to change the password on its next use in order to access the user menu (including web pages) or to disengage phone lock. The setting will remain as active until the phone user changes the password or the change password request is cancelled.

#### Password Setup

##### Minimum Number of Characters present in a password

##### Uppercase Chars required

Number of capital letters the password must contain.

Value range: 0 ... 24

0 = no check

### Lowercase Chars required

Number of lower case letters the password must contain.

Value range: **0 ... 24**

**0** = no check

### Digits required

Number of digits the password must contain.

Value range: **0 ... 24**

**0** = no check

### Special Chars required

Number of special characters ( ` - = [ ] ; ' # \ , . / " £ \$ % ^ & \* ( ) \_ + { } : @ ~ | < > ? ) the password must contain.

Value range: **0 ... 24**

**0** = no check

### Bar repeat length

Maximum number of identical characters the password may contain.

Value range: **0, 2 ... 24**

**0** = no check

### Minimum Char difference

The number of characters that must change when the password is changed.

Value range: **0 ... 24**

**0** = no check

### No change for (hours):

Minimum waiting period before an existing password can be updated, in hours.



## IP Devices

### *IP Phone Configuration*

#### **Suspended for (min):**

When the maximum number of retries has been exceeded, the password is suspended for the period specified here, in minutes.

#### **Expires after (days)**

Maximum validity period of a password.

Value range: **0 ... 999**

**0** = no check.

#### **Warn before (days)**

When the password will expire within the number of days specified here, the user is notified.

Value range: **0 ... 999**

**0** = no check

## **Password Status**

### **Status Admin Password**

Status of the admin password.

Possible Options:

- **Active**
- **Suspended**
- **Disabled**

### **Status User Password**

Status of the user password.

Possible Options:

- **Active**
- **Suspended**
- **Disabled**

## **Password History**

### **Admin Password History Count:**

Minimum number of admin passwords to store in the history file. New passwords must not match any password in the history file.

Value range: **0 ... 99**

### **User Password History Count:**

Minimum number of user passwords to store in the history file. New passwords must not match any password in the history file.

Value range: **0 ... 99**

### **History valid for (days):**

Time interval during which a password may not be selected again as a new password by the phone, as it remains in the password history for this time.

### **Allowed failed logins**

Number of attempts a user is given to enter the password before access will be suspended.

Value range: **2 ... 5**

Default value: **3**

## **Password will expire at**

### **Admin Password**

Time and date of admin password expiry.

### **User Password**

Time and date of user password expiry.

## IP Devices

### IP Phone Configuration

#### 7.1.7.3 "Enabled Services (NW Stack)" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "Enabled Services (NW Stack)" Tab

<input checked="" type="checkbox"/> Service Agent	<input checked="" type="checkbox"/> Debug Interface	<input checked="" type="checkbox"/> Factory Reset by Digit Key Combination
<input checked="" type="checkbox"/> Probe Interface	<input checked="" type="checkbox"/> WBM Interface	<input checked="" type="checkbox"/> FIPS
<input checked="" type="checkbox"/> Test Interface	<input checked="" type="checkbox"/> SNMP Interface	
<input checked="" type="checkbox"/> CTI Interface	<input checked="" type="checkbox"/> Resource Sharing	
<input checked="" type="checkbox"/> Bluetooth Interface	<input checked="" type="checkbox"/> PC Interface	
<input checked="" type="checkbox"/> Phone Manager	<input checked="" type="checkbox"/> FTP	
<input checked="" type="checkbox"/> USB Interface	<input checked="" type="checkbox"/> USB Backup/Restore	

CCE Ports:

Serial Port Mode:

#### Service Agent

Checkbox for activating and deactivating the service agent.

#### Probe Interface

Checkbox for activating and deactivating the probe interface.

#### Test Interface

Checkbox for activating and deactivating the test interface.

#### CTI Interface

Checkbox for activating and deactivating the CTI interface.

#### Bluetooth Interface

This checkbox is activated if you want to activate the Bluetooth interface on OpenStage telephones.

### **Phone Manager**

This checkbox is activated if you want to enable the interface between OpenStage telephones and Phone Manager.

Phone Manager is a PC application for managing particular phone data.

### **USB Interface**

If this checkbox is activated, the USB interface on the IP device can be accessed (OpenStage 60 and OpenStage 80 only).

### **Debug Interface**

Checkbox for activating and deactivating the debug interface.

### **WBM Interface**

Checkbox for activating and deactivating the WBM interface.

**NOTE:** Please note that if you deactivate the WBM interface, you can only reactivate it via DLS as the WBM is no longer available for this.

### **SNMP Interface**

Checkbox for activating and deactivating the SNMP interface (network management function).

### **Resource Sharing**

Checkbox for activating and deactivating resource sharing (shared use of mouse and keyboard).

### **PC Interface**

This checkbox is activated if you want to use the PC interface.

### **FTP**

This checkbox is activated if you want to enable the FTP interface on the OpenStage telephone.

## IP Devices

### *IP Phone Configuration*

#### USB Backup/Restore

If this checkbox is activated, IP device data (such as, the screensaver) can be backed up/restored over the USB interface. Codec's Backup/Restore feature must be called directly on the relevant IP device (OpenStage 60 and OpenStage 80 only).

#### Factory Reset by Digit Key Combination

When activated, the factory reset by means of a digit key combination is enabled.

#### FIPS

Checkbox for enabling / disabling workpoint-booting in FIPS mode.

Checkbox is disabled by default.

**NOTE:** A phone restart is required.

#### CEE Ports

Enable or disable the Comms Channel Extender (CCE) ports for both TCP (port 65531) and UDP (port 65530) access.

Possible Options:

- **Disable all**
- **Enable all**
- **TCP only**
- **UDP only**

#### Serial Port Mode

Shows password protection mode for the serial port.

Possible Options

- **Password required**
- **No Password**
- **Unavailable**

#### 7.1.7.4 "WBM Server Certificate" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "WBM Server Certificate" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Status Active/Import:	<input type="text"/>	<input checked="" type="checkbox"/> Activate Certificate
Active Certificate:	Imported Certificate:	
<u>PKI Configuration:</u>		
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... [days]:	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

This tab allows to import or remove the Web Based Management (WBM) SSL Server Certificate. This certificate is used for the device WBM interface (e.g. for device administration via a web browser). When no certificate is present, the factory default WBM SSL Certificate is used.

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

## IP Devices

### *IP Phone Configuration*

#### **Active Certificate/Imported Certificate:**

##### **PKI Configuration**

Shows PKI configuration of imported certificate.

##### **Serial Number:**

Serial number of the active or imported certificate (display only).

##### **Owner:**

Owner of the active or imported certificate (display only).

##### **Issuer:**

Issuer of the active or imported certificate (display only).

##### **Valid from:**

Start of validity for the active or imported certificate (display only).

##### **Valid to:**

End of validity for the active or imported certificate (display only).

##### **Key Algorithm**

Key algorithm for the active or imported certificate (display only).

##### **Key Size**

Key size for the active or imported certificate (display only).

##### **Fingerprint (SHA-1):**

Test algorithm **SHA-1** (160 bits/20 characters) for the active or imported certificate (display only).

### Expires in ... [days]

The certificate validity will expire in the number of days specified (display only).

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### Alarm Status:

Current alarm status for the active or imported certificate (display only).

Possible values:

- **valid**
- **soon running out**
- **expired**



### 7.1.7.5 "HTTPS Server CA Certificates" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "HTTPS Server CA Certificates" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

This tab allows to import or remove server CA (Certificate Authority) Certificates to authenticate the HTTPS server used for file transfer. Up to two certificates can be imported to the device. See Section 6.3.5, "HTTPS Server Configuration". For further configuration, see Section 7.1.7.10, "'Authentication Policy' Tab".

#### Index

Index of the certificate.

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

### **Activate certificate**

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

#### **Active Certificate/Imported Certificate:**

##### **Serial Number:**

Serial number of the active or imported certificate (display only).

##### **Owner:**

Owner of the active or imported certificate (display only).

##### **Issuer:**

Issuer of the active or imported certificate (display only).

##### **Valid from:**

Start of validity for the active or imported certificate (display only).

##### **Valid to:**

End of validity for the active or imported certificate (display only).

##### **Key Algorithm**

Key algorithm .

##### **Key Size**

Key size.

##### **Fingerprint (SHA-1):**

Test algorithm **SHA-1** (160 bits/20 characters) for the security certificate.

#### Expires in ... [days]

The certificate validity will expire in the number of days specified.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### Alarm Status:

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

### 7.1.7.6 "OCSR 1 Server CA Certificate" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "OCSR 1 Server CA Certificate" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Index:	<input type="text"/>	
Status Active/Import:	<input type="text"/>	
	<input checked="" type="checkbox"/> Activate Certificate	
	Active Certificate:	Imported Certificate:
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... (days):	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

For parameter descriptions, please see Section 7.1.7.5, ""HTTPS Server CA Certificates" Tab".

7.1.7.7 "OCSR 2 Server CA Certificate" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "OCSR 2 Server CA Certificate" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Index:	<div></div>	
Status Active/Import:	<div></div>	
	<input checked="" type="checkbox"/> Activate Certificate	
Serial Number:	<div></div>	<div></div>
Owner:	<div></div>	<div></div>
Issuer:	<div></div>	<div></div>
Valid from:	<div>-</div> <div></div> <div></div>	<div></div> <div>-</div> <div></div> <div></div>
Valid to:	<div></div> <div>-</div> <div></div> <div></div>	<div></div> <div>-</div> <div></div> <div></div>
Key Algorithm:	<div></div>	<div></div>
Key Size:	<div></div>	<div></div>
Fingerprint (SHA-1):	<div></div>	<div></div>
Expires in ... [days]:	<div></div>	<div></div>
Alarm Status:	<div></div>	<div></div>

For parameter descriptions, please see Section 7.1.7.5, ""HTTPS Server CA Certificates" Tab".

### 7.1.7.8 "OCSR 1 Signature CA Certificate" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "OCSR 1 Signature CA Certificate" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Index:	<input type="text"/>	
Status Active/Import:	<input type="text"/>	<input checked="" type="checkbox"/> Activate Certificate
	Active Certificate:	Imported Certificate:
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... [days]:	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

For parameter descriptions, please see Section 7.1.7.5, "'HTTPS Server CA Certificates" Tab"

7.1.7.9 "OCSR 2 Signature CA Certificate" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "OCSR 2 Signature CA Certificate" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Index:	<div></div>	
Status Active/Import:	<div></div>	
	<input checked="" type="checkbox"/> Activate Certificate	
	Active Certificate:	Imported Certificate:
Serial Number:	<div></div>	<div></div>
Owner:	<div></div>	<div></div>
Issuer:	<div></div>	<div></div>
Valid from:	<div>-</div> <div></div> <div></div>	<div></div> <div>-</div> <div></div> <div></div>
Valid to:	<div></div> <div>-</div> <div></div> <div></div>	<div></div> <div>-</div> <div></div> <div></div>
Key Algorithm:	<div></div>	<div></div>
Key Size:	<div></div>	<div></div>
Fingerprint (SHA-1):	<div></div>	<div></div>
Expires in ... [days]:	<div></div>	<div></div>
Alarm Status:	<div></div>	<div></div>

For parameter descriptions, please see Section 7.1.7.5, ""HTTPS Server CA Certificates" Tab"

### 7.1.7.10 "Authentication Policy" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "Authentication Policy" Tab

Send URL Authentication Policy:

HTTPS/FTP Authentication Policy:

XML Applications Authentication Policy:

SIP Server Authentication Policy:

802.1x Authentication Policy:

WPI Authentication Policy:

Online Certificate Status Protocol Responder

☒ Use Online Status Checking

1st Server Address:

2nd Server Address:

OCSP Responder Precedence:

Software Bind Authentication Policy

☒ Verify SW Upgrade

This tab allows to define how secure connections are authenticated by the device.

#### Send URL Authentication Policy:

Authentication of the Send URL HTTPS Server is defined here, please see Section 7.1.19.3, ""Send URL Server CA Certificate" Tab".

Possible values:

- **None**
- **Trusted**
- **Full**

#### HTTPS/FTP Authentication Policy

Authentication of the HTTPS Server for file transfer is defined here, please see Section 6.3.5, "HTTPS Server Configuration" and Section 7.1.7.5, ""HTTPS Server CA Certificates" Tab".

Possible values:

- **None**
- **Trusted**
- **Full**



## IP Devices

### *IP Phone Configuration*

#### XML Applications Authentication Policy:

Authentication of the XML Application Server is defined here, please see Section 7.1.14.5, ""CA Certificates" Tab".

Possible values:

- **None**
- **Trusted**
- **Full**

#### SIP Server Authentication Policy

Authentication of the SIP Server (for TLS transport only) is defined here, please see Section 7.1.21, "Signaling and Payload Encryption (SPE)".

Possible values:

- **None**
- **Trusted**
- **Full**

Valid only for OpenStage V3.0 onwards.

#### 802.1x Authentication Policy

Authentication of the 802.1x Server is defined here, please see Section 7.1.22, "IEEE 802.1x".

Possible values:

- **None**
- **Trusted**
- **Full**

Valid for OpenStage V3.0 onwards.

#### WPI Authentication Policy

Authentication of the DLS Work Point Interface (WPI) is defined here, please see Section 6.9.1, ""Secure mode" Tab".

Possible values:

- **Trusted**
- **Full**

Valid for OpenStage V3.0 onwards.

## **Online Certificate Status Protocol Responder**

### **Use Online Status Checking**

Checkbox to activate online status checking.

### **1st Server Address**

Address of the first server for the certificate status protocol.

Example: "http://1.2.3.4" or "http://4.3.2.1:2560" or "http://host.example.org".

### **2nd Server Address**

Address of the secondary server for the certificate status protocol.

### **OCSP Responder Precedence**

Possible values:

- **True**
- **False**

## **Software Bind Authentication Policy**

### **Verify SW Upgrade**

Checkbox to enable/disable the SW authentication check. This checkbox is enabled by default.

When activated, an authentication check will be done prior to the new bind being burnt to flash and the upgrade being completed.

If not activated, an authentication check will not take place. Regardless of the correct signature, new software can be loaded to the phone. (e.g. downgrade scenarios)

7.1.7.11 "HTTPS Client Certificates" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "HTTPS Client Certificates" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Status Active/Import:

☒ Activate Certificate

Active Certificate:

Imported Certificate:

PKI Configuration:

Serial Number:

Owner:

Issuer:

Valid from:

Valid to:

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

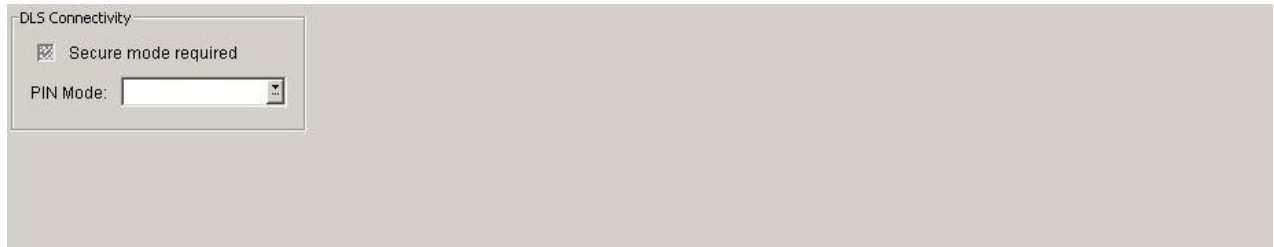
Alarm Status:

This tab allows to import or remove one client certificate for authentication of the device against the HTTPS server used for file transfer. This is required if the HTTPS server is configured for mutual authentication.

For parameter descriptions, please see Section 7.1.7.4, ""WBM Server Certificate" Tab"

### 7.1.7.12 "DLS Connectivity" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Security Settings > "DLS Connectivity" Tab



#### Secure mode required

If this checkbox is activated, mutual authentication is enabled for the DLS and the IP Device. The authentication process (bootstrap) begins the next time the IP Device registers at the DLS or is scanned.

This checkbox is disabled by default.

#### PIN Mode:

Possible options:

- **No PIN**  
Access data is sent unencrypted to the IP Device.
- **Default PIN**  
A standard PIN is used for several IP Devices. This is generated automatically by the DLS (see Section 6.9.1, ""Secure mode" Tab").
- **Individual PIN**  
An individual PIN is created for the selected IP Device.

## **7.1.8 Telephony**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Telephony

This area features the following components:

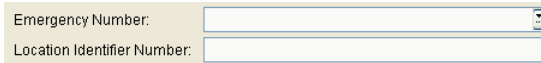
- General Data
- Possible Action Buttons
- "Telephony" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.8.1 "Telephony" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Telephony > "Telephony" Tab



The screenshot shows a configuration form with two input fields. The first field is labeled 'Emergency Number:' and has a small dropdown arrow on its right side. The second field is labeled 'Location Identifier Number:' and is a standard text input box. Both fields are empty.

#### Emergency Number:

Contains the phone number that can be dialed in an emergency.

#### Location Identifier Number:

Contains an identification number for unique location identification. This number can be used, for example, to pinpoint the **origin** of an emergency call.

## **7.1.9 Small Remote Site Redundancy**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Small Remote Site Redundancy

This area features the following components:

- General Data
- Possible Action Buttons
- "SRSR Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.9.1 "SRSR Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Small Remote Site Redundancy > "SRSR Settings" Tab

☒ SRSR enabled

☒ Automated Switchback

Switch to Home Retry Count:

Switch to Home Expiry Timeout:

Switch to Standby Retry Count:

Switch to Standby Expiry Timeout:

TC\_TEST

TC\_TEST Retry Count:

TC\_TEST Expiry Timeout:

#### SRSR enabled:

Checkbox for activating small remote site redundancy.

Only available in HFA workpoints.

#### Automated Switchback:

Checkbox for activating the option for automatic switchback to the main system.

Only available in HFA workpoints.

#### Switch to Home Retry Count:

Specifies the number of attempts permitted when switching back to the main system.

Value range: 1 ... 255

Only available in HFA workpoints.

#### Switch to Home Expiry Timeout:

Timeout for switchover to the main system.

Value range: 1 ... 255 seconds.

Only available in HFA workpoints.

#### Switch to Standby Retry Count:

Specifies the number of attempts permitted when switching back to the standby system.



## IP Devices

### *IP Phone Configuration*

Value range: **1 ... 255**

Only available in HFA workpoints.

#### **Switch to Standby Expiry Timeout:**

Timeout for switchover to the standby system.

Value range: **1 ... 255** seconds.

Only available in HFA workpoints.

## **TC\_Test**

#### **TC\_TEST Retry Count:**

Specifies the number of positive attempts permitted when switching back to the main system.

Value range: **1 ... 255**

Only available in HFA workpoints.

#### **TC\_TEST Expiry Timeout:**

Time for a renewed attempt to switch back to the main system.

Value range: **1 ... 255** seconds.

Only available in HFA workpoints.

## **7.1.10 Dialing Properties**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Dialing Properties

This area features the following components:

- General Data
- Possible Action Buttons
- "Dialing Properties" Tab
- "Canonical Dial Lookup" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Phone Configuration

#### 7.1.10.1 "Dialing Properties" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Dialing Properties > "Dialing Properties" Tab

The dialing properties are required for the correct resolution of phone numbers in canonical format (see Chapter 17, "Canonical format").

Local Country Code:	<input type="text"/>	International Dial Prefix:	<input type="text"/>
Local Area Code:	<input type="text"/>	National Dial Prefix:	<input type="text"/>
Local District Code:	<input type="text"/>	External Access Code:	<input type="text"/>
Min. local number length:	<input type="text"/>	Local Enterprise Code:	<input type="text"/>
Operator Code(s):	<input type="text"/>	Emergency number(s):	<input type="text"/>
Initial digit(s) for extensions:	<input type="text"/>		
Internal Numbers Dial Form:	<input type="text"/>		
External Numbers Dial Form:	<input type="text"/>		
Dial needs Access Code:	<input type="text"/>		
Dial needs International Gateway Code:	<input type="text"/>		

#### Local Country Code:

Format: No leading zeros, up to four digits.

Example: **49** for Germany.

#### Local Area Code:

Format: No leading zeros, up to 21 digits.

Example: **89** for Munich.

#### Local District Code:

Phone number of the company network.

Format: No leading zeros and no extension numbers, up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

Only available for devices in the optiPoint family.

#### Min. local number length

Minimum length for a local phone number, that is, within a prefix area.

Example: In Munich (prefix area 089), the minimum length is **6**.

Only available for devices in the OpenStage family.

### **Operator Code(s):**

Number/code for connection to the operator.

Only available for devices in the OpenStage family.

### **Initial digit(s) for extensions**

List of initial digits of all possible extensions in the local enterprise network. When a call number could not be matched as a public network number, the phone checks if it is part of the local enterprise network. This is done by comparing the first digit of the call number to the value(s) given here. If it matches, the call number is recognized as a local enterprise number and processed accordingly.

Example: If, the extensions 3000-5999 are configured in the OpenScape Voice, each number will start with 3, 4, or 5. Therefore, the digits to be entered are **3, 4, 5**.

### **International Dial Prefix:**

National prefix.

Format: Up to four digits.

Example: **00** in Germany.

### **National Dial Prefix:**

International prefix.

Format: Up to five digits.

Example: **0** in Germany.

### **External Access Code:**

Number for trunk seizure for an outgoing external call.

Format: Up to five digits.

Examples: **0, 74, 9** (USA).

## IP Devices

### *IP Phone Configuration*

#### Local Enterprise Node:

Call number of the company network.

Example: **7007** for Unify Munich Hofmannstraße.

Only available for devices in the OpenStage family.

#### Emergency number(s):

One or more emergency numbers can be entered here.

Only available for devices in the OpenStage family.

#### Internal Numbers Dial Form:

Possible options:

- **Local Company Format**
- **Always Add Node**
- **Use External Number**

#### External Numbers Dial Form:

Possible options:

- **Local Public Format**
- **National Public Format**
- **International Public Format**

#### Dial needs Access Code:

Possible options:

- **Not used**
- **For External Number**

#### Dial needs International Gateway Code

Possible options:

- **Use National Code**
- **Unchanged**

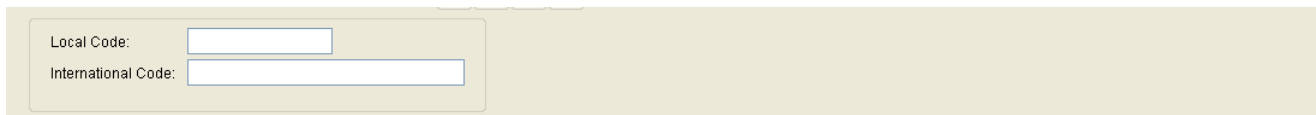
## IP Devices

### IP Phone Configuration

#### 7.1.10.2 "Canonical Dial Lookup" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Dialing Properties > "Canonical Dial Lookup" Tab

This function transforms the entries in the first field ("Local Area Code") on the basis of a particular digit string as specified in the second field ("International Dial Code"). This digit string can be a national or international dial prefix, for example. This allows you to dial frequently used prefixes by entering just one digit.



The screenshot shows a configuration window with a light beige background. Inside, there is a rounded rectangle containing two input fields. The first field is labeled "Local Code:" and is a small, empty text box. The second field is labeled "International Code:" and is a longer, empty text box.

#### Local Code

Digit or short digit string for dialing a particular prefix, for example.

#### International Code

Digit string, such as, a prefix, that is dialed at the beginning of the dialing operation using a particular digit.

### **7.1.11 Time Parameters**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Time Parameters

This area features the following components:

- General Data
- Possible Action Buttons
- "Time" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").



## IP Devices

### IP Phone Configuration

#### 7.1.11.1 "Time" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Time Parameters > "Time" Tab

The screenshot shows the 'Time' configuration tab with the following sections:

- Date / Time:** Two input fields for date and time, separated by a hyphen, with a calendar icon for the date field.
- Format Settings:** Two dropdown menus for 'Date Format' and 'Time Format'.
- Timezone Offset:** An input field for 'Timezone Offset' followed by '(min)'.
- Daylight Saving Settings:** A section containing two checkboxes: 'Daylight Saving' and 'Automatic Daylight Saving Time changeover'. Below these are two input fields: 'Daylight Saving Delay' (with '(min)' label) and 'Daylight Saving Zone' (with a dropdown arrow).
- NTP Settings:** A section containing three input fields: 'Time Source' (with a dropdown arrow), 'NTP Server Address' (with a dropdown arrow), and 'NTP Password'.

#### Date / Time:

Enter current date and time. Manual entry is only necessary if this information is not automatically transmitted (for example, PBX or DHCP server).

#### Format Settings

##### Date Format:

Format for date entry. Manual entry is only necessary if this information is not automatically transmitted by the communications system (for example, OpenScape Voice).

Possible options:

- **DD.MM.YY**  
Example: 05.10.06 for 5.10.2006
- **YY-MM-DD**  
Example: 04-10-06 for 5.10.2006
- **MM/DD/YY**  
Example: 10/05/06 for 5.10.2006

##### Time Format:

Time format.

Possible options:

- **24 hours**
- **12 hours**

### Timezone Offset

#### Timezone Offset:

Time offset from UTC (Coordinated Universal Time) in minutes.

Value range: **-720 ... 720**

Examples: **60** (phone residing in Munich); **-480** (phone residing in Los Angeles, USA).

### Daylight Saving Settings

#### Daylight Saving

Checkbox for activating the Daylight Saving function.

**NOTE:** If **Automatic Daylight Saving Time changeover** is deactivated or no SNTP server is in use, you must manually switch between daylight saving and winter time. You must therefore change the status of the **Daylight Saving** checkbox twice a year. Pay particular attention to this when using this parameter in template data.

#### Daylight Saving Delay:

Difference in minutes to normal or winter time.

Value range: **0 ... 60**

#### Automatic Daylight Saving Time changeover:

If the checkbox is activated, the daylight saving time is toggled automatically according to the rule of the selected daylight saving zone. Start date and end date of daylight saving time are defined hereby.

**NOTE:** With OpenStage phones, the **Daylight Saving** switch must be activated to enable automatic daylight saving time changeover.

#### Daylight Saving Zone:

Possible options:

- **Not set**

## IP Devices

### *IP Phone Configuration*

- **Australia 2007 (ACT, South Australia, Tasmania, Victoria)**
- **Australien 2007 (New South Wales)**
- **Australien (Western Australia)**
- **Australien 2008+ (ACT, New South Wales, South Australia, Tasmania, Victoria)**
- **Brasilia**
- **Canada**
- **Canada (Newfoundland)**
- **Europe (PT, UK)**
- **Europe (AT, BE, HR, DK, FR, DE, HU, IT, LU, NL, NO, PL, SK, ES, SE, CH)**
- **Europe (FI)**
- **Mexico**
- **United States**

## NTP Settings

### Time Source:

Source from where time information is adopted.

Possible options:

- **System**  
The time information is obtained from the communication platform.
- **SNTP**  
The time information comes from the SNTP server (if available).

### NTP Server Address:

IP address or host name of the SNTP server if an SNTP server is available.

### NTP Password:

If required, a password is entered here for the SNTP server. This parameter is only available for OpenStage telephones.

## **7.1.12 Audio Settings**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Audio Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "Codecs / Compressing" Tab
- "Codecs / Compressing (Standby)" Tab
- "Audio Settings" Tab
- "Audio Settings (Standby)" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

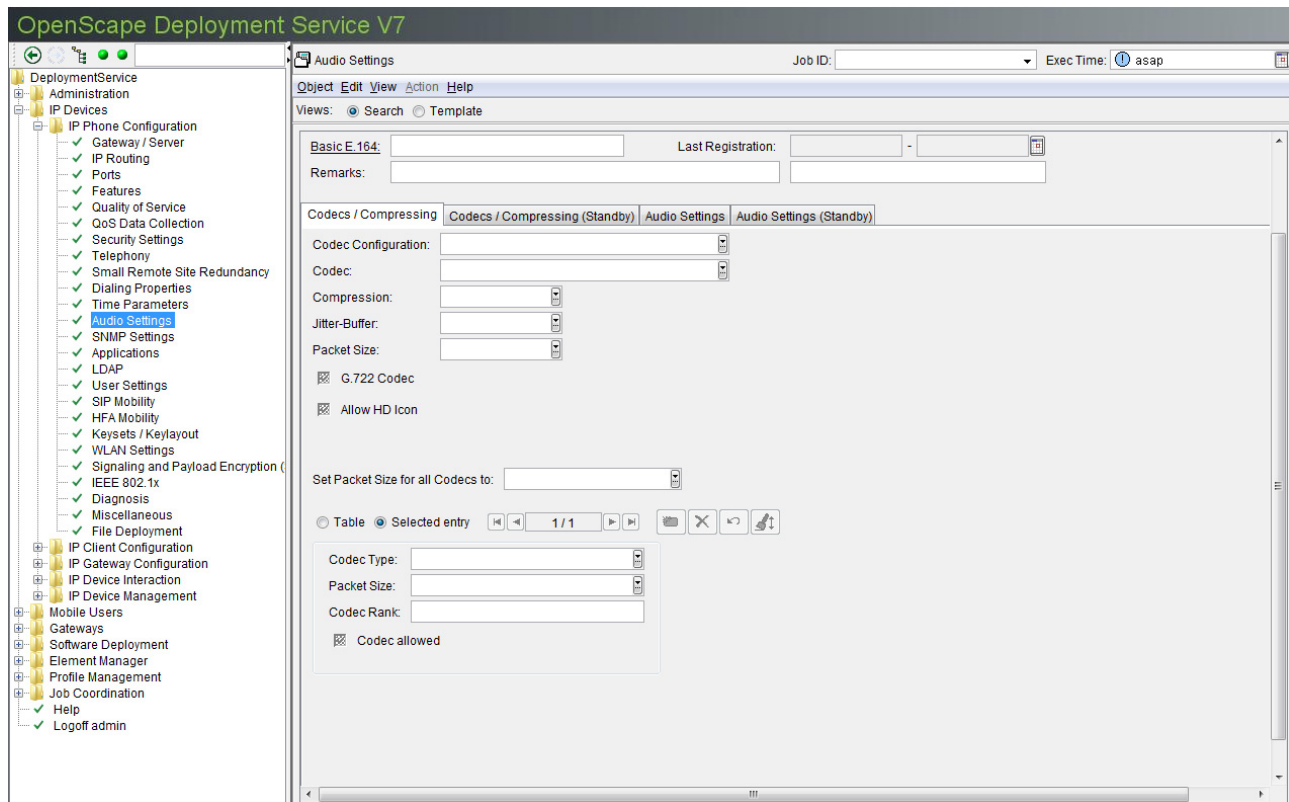
If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Phone Configuration

#### 7.1.12.1 "Codecs / Compressing" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Audio Settings > "Codecs / Compressing" Tab



The settings in the table are made for devices in the OpenStage family because the specification of multiple alternative codecs in these telephones is performed via a list of individual codecs.

#### Codec Configuration:

Set Codec for WLAN-Phones.

Possible options:

- **G.711 preferred (normal quality)**
- **G.722 preferred (high quality)**
- **G.723 preferred (low bandwidth)**
- **G.729 A/B preferred (low bandwidth)**
- **G.723 only (low bandwidth)**
- **G.729 A/B only (low bandwidth)**

**Codec:**

Audio transmission principle (codec) used.

Possible options:

- **Low bandwidth only**  
For the optiPoint 410/420/600 families.
- **High quality preferred**  
For the optiPoint 410/420/600 families.
- **Low bandwidth preferred**  
For the optiPoint 410/420/600 families.
- **G.711 Preferred**  
For the optiPoint 400 family.
- **G.723 Preferred**  
For the optiPoint 400 family.
- **G.723 Always**  
For the optiPoint 400 family.

**Compression:**

Compression procedure when the "LoBand" codec is selected.

Possible options:

- **G.723**
- **G.729**

**Jitter Buffer:**

Buffering duration (number of data packets).

Possible options:

- **Short**  
two packets
- **Long**  
six packets
- **Normal**  
four packets

## IP Devices

### *IP Phone Configuration*

#### Packet Size:

Possible options:

- **10mS**
- **20mS**
- **30mS**
- **Automatic**

#### G.722 Codec:

Checkbox for activating the G.722 codec.

#### Allow HD Icon:

Checkbox for activating the HD Audio icon via DLS.

This feature controls the showing of the HD Wideband Audio Icon. This function is enabled by default.

#### Set Packet Size for all Codecs to:

Set the Packet Size of all codecs to a common value.

Possible options:

- **10 mS**
- **20 mS**
- **30 mS**
- **Automatic**

#### Codec Type

Audio transmission principle (codec) used.

Possible options:

- **G.711**
- **G.722**
- **G.729**

### **Packet Size**

Size of the packet used to send the audio data packages. The entry is in milliseconds.

- **Automatic**
- **10 ms**
- **20 ms**
- **30 ms**

### **Codec Rank**

Each available codec is assigned a priority. This is used when negotiating codecs between two devices. Value range: A number between 1 and the number of available codecs.

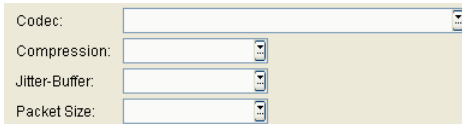
### **Codec allowed**

Codec usage can be explicitly allowed or denied.



#### 7.1.12.2 "Codecs / Compressing (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Audio Settings > "Codecs / Compressing (Standby)" Tab



##### Codec:

Audio transmission principle (codec) used.

Possible options:

- **Low bandwidth only**  
For the optiPoint 410/420/600 families.
- **High quality preferred**  
For the optiPoint 410/420/600 families.
- **Low bandwidth preferred**  
For the optiPoint 410/420/600 families.
- **G.711 Preferred**  
For the optiPoint 400 family.
- **G.723 Preferred**  
For the optiPoint 400 family.
- **G.723 Always**  
For the optiPoint 400 family.

##### Compression:

Compression procedure when the "LoBand" codec is selected.

Possible options:

- **G.723**
- **G.729**

##### Jitter Buffer:

Buffering duration (number of data packets).

Possible options:

- **Short**  
two packets
- **Long**  
six packets
- **Normal**  
four packets

**Packet Size:**

Possible options:

- **10mS**
- **20mS**
- **30mS**

### 7.1.12.3 "Audio Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Audio Settings > "Audio Settings" Tab

Codecs / Compressing	Codecs / Compressing (Standby)	Audio Settings	Audio Settings (Standby)
----------------------	--------------------------------	----------------	--------------------------

☒ Silence Suppression    ☒ Special Dial Tone on Voice Message    ☒ Music on Hold    ☒ Lower IL alert notification

☒ Microphone disable    ☒ Loudspeech enable    ☒ Play DTMF (RFC 2833)

Group Pickup Settings

☒ Group Pickup Tone allowed

☒ Use Ringer Tone for Group Pickup

Alert Type for Group Pickup:

Ringer Settings (SIP)

Ringer Melody:

Ringer Sequence:

Ringer Audio File:

Lower IL Ringer:

Ringer Settings (HFA)

Ringer Mode:

☒ Allow User to change Ringer

#### Silence Suppression

Checkbox for activating silence suppression.

#### Microphone disable

Checkbox for deactivating the microphone.

#### Special Dial Tone on Voice Message

If this checkbox is activated, a special dial tone is applied when you lift the handset to inform you that you have a new voice message.

#### Loudspeech enable

Checkbox for activating the speakerphone function.

#### Music on Hold

Checkbox to activate Music on Hold.

### **Play DTMF (RFC 2833)**

Checkbox for activating DTMF (RFC 2833) playback. For optiPoint SIP V7 phones only.

### **Lower IL alert notification**

Checkbox for activating an inhibit notification popup / tone when level changes during call (connected or alerting) or when it connects without ringing. This feature is enabled by default.

## **Group Pickup Settings**

### **Group Pickup Tone allowed**

Activates or deactivates the generation of an acoustic signal for incoming pickup group calls.

### **Use Ringer Tone for Group Pickup**

If this is checked, a pickup group call will be signaled by a short standard ringtone. If unchecked, a pickup group call will be signaled by an alert tone.

### **Alert type for Group Pickup:**

Defines the user action required to accept a pickup call.

Possible Options:

- **Prompt**  
An incoming pickup call is signaled by an alert on the phone GUI. As soon as the user goes off-hook or presses the speaker key, the pickup call is accepted. Alternatively, the user can press the corresponding function key, if configured.
- **Notify**  
An incoming pickup call is signaled by an alert on the phone GUI. To accept the call, the user must confirm the alert or press the corresponding function key, if configured.
- **FPK only**  
An incoming pickup call is signaled at the corresponding function key only. To accept the call, the user must press the function key.

## **Ringer Settings (SIP)**

### **Ringer Melody:**

Possible Options:

## IP Devices

### IP Phone Configuration

No.	SIP	HFA	Frequencies (Hz)			Note Length (ms)		
			f1	f2	f3	c1	c2	c3
1	Yes	Yes	457	571	615	45	45	45
2	Yes	Yes	696	762	1067	30	30	30
3	Yes	Yes	400	444	500	35	35	35
4	Yes	Yes	1067	889	696	50	50	50
5	Yes	Yes	762	800	889	30	30	30
6	Yes	Yes	1000	1143	1333	40	40	40
7	Yes	Yes	400	457	593	50	50	50
8	Yes	Yes	533	0	667	90	150	60

### Ringer Sequence:

Possible Options:

- **1 sec ON, 4 sec OFF**
- **1 sec ON, 2 sec OFF**
- **0.7 sec ON, 0.7 sec OFF, 0.7 sec OFF, 3 sec OFF**

### Ringer Audio File

Name of the file that contains the ringtone.

### Lower IL Ringer

Name of the file that contains the distinctive ringtone to be used in place of the normal ringer for calls from a Lower Impact level.

### Ringer Settings (HFA)

### Ringer Mode

Possible Values:

- **HiPath**
- **Local Ringer**

### **Allow User to change Ringer**

If switch is active, the user is allowed to change the ringtone.

## **BLF**

### **BLF Alerting**

Optical alerting by key.

Possible Values:

- **Beep**
- **Ring**

## **Headset**

### **Headset Mode**

Connection mode of headset.

Possible Values:

- **Wired Headset**
- **Cordless Headset**
- **Conference Unit**

## **Key klick**

### **Volume**

Defines the volume of key clicks.

Possible Values:

- **Off**
- **Low**
- **Medium**
- **High**

### **Keys**

Defines which keys shall have audible clicks.

## **IP Devices**

### *IP Phone Configuration*


Possible Values:

- **Keypad only**
- **All keys**

#### 7.1.12.4 "Audio Settings (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Audio Settings > "Audio Settings (Standby)" Tab

**NOTE:** This "standby" data is used when the "home" data for the "Audio Settings" Tab is not available. The SRSR functionality must be configured for this, see Section 7.1.9, "Small Remote Site Redundancy".

 Silence Suppression (Standby)

#### Silence Suppression (Standby)

Checkbox for activating silence suppression.



## **7.1.13 SNMP Settings**

**Call:** Main Menu > IP Devices > IP Phone Configuration > SNMP Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "SNMP" Tab
- "Certificate Trap Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.13.1 "SNMP" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > SNMP Settings > "SNMP" Tab

The screenshot shows the 'SNMP' configuration tab. It includes a section for general SNMP settings with checkboxes for 'SNMP Active', 'SNMP Queries allowed', and 'Send traps to SNMP Manager'. Below these are text input fields for 'Trap Server Address', 'Trap Server Port', 'Query Password / SNMP Community', and 'Trap Community'. A 'Diagnostic Traps' section is also present, containing checkboxes for 'Diagnostic Traps active' and 'Send Diagnostic Traps to Trap-Server', along with text input fields for 'SNMP Diagnostic Trap Server', 'SNMP Diagnostic Trap Port', and 'Diagnostic Trap Community String'.

#### SNMP Active

Checkbox for activating the SNMP function.

#### Trap Listener Address:

IP address or host name of the SNMP trap server.

#### Trap Listener Port:

Port number of the SNMP trap server.

#### Query Password / SNMP Community:

Community string used for authorization on the SNMP server.

#### Trap Community:

SNMP community string for the SNMP manager receiving trap messages.

## **IP Devices**

### *IP Phone Configuration*

#### **SNMP Queries allowed**

Checkbox for activating authorization to query QDC data via SNMP.

#### **Send Traps to SNMP Manager**

Checkbox for activating the function that also sends QDC data to an SNMP manager.

#### **Diagnostic Traps**

##### **Diagnostic Traps active**

If this checkbox is active, diagnostic traps are sent.

##### **Send Diagnostic Traps to Trap Server**

If this checkbox is active, the diagnostic traps are sent to the trap server configured.

##### **SNMP Diagnostic Trap Server:**

Host name or IP address of the SNMP server that receives diagnostic traps.

##### **SNMP Diagnostic Trap Port:**

Port used by the SNMP server to receive diagnostic traps.

##### **Diagnostic Trap Community String:**

Community string for authentication on the SNMP server that receives diagnostic traps.

### 7.1.13.2 "Certificate Trap Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > SNMP Settings > "Certificate Trap Settings" Tab

<input checked="" type="checkbox"/> Send SNMP traps prior to certificate expiry
Initial alarm period (days): <input type="text"/>
Alarm frequency (days): <input type="text"/>

#### Send SNMP traps prior to certificate expiry

If this checkbox is activated, SNMP traps are sent for expired certificates to the address entered under the SNMP settings (see "SNMP" Tab).

#### Initial alarm period (days):

Number of days before certificate expiry when the SNMP trap is sent.

#### Alarm frequency (days)

Number of days before an SNMP trap for an expired certificate is resent.

## **7.1.14 Applications**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Applications

This area features the following components:

- General Data
- Possible Action Buttons
- "WAP" Tab
- "Java" Tab
- "XML Applications" Tab
- "CA Certificates" Tab
- "Application List" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.14.1 "WAP" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Applications > "WAP" Tab

Gateway Address:	<input type="text"/>		
Port Number:	<input type="text"/>		
Connection type:	<input type="text"/>		
Homepage:	<input type="text"/>		
Username:	<input type="text"/>	Password:	<input type="password"/>

**Gateway Address:**

IP address or host name of the WAP server.

**Port Number:**

Port number of the WAP server.

**Connection type:**

Protocol type for connection to the WAP server.

Possible options:

- **HTTP**
- **WSP**

**Homepage:**

URL of the splash screen where the WAP home page is located.

**Username**

User ID for identification at the WAP server

**Password:**

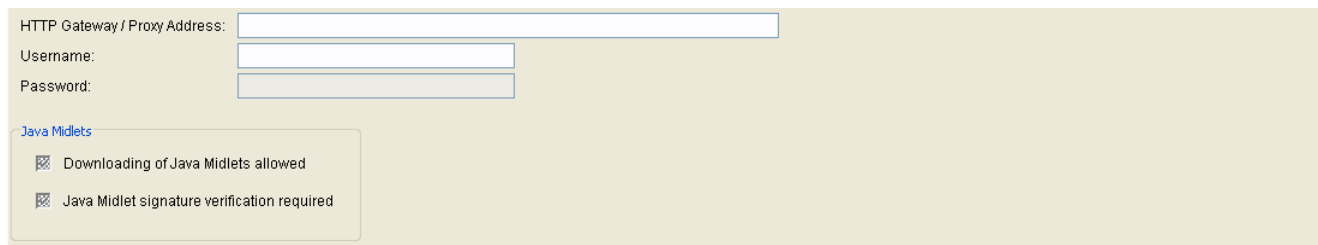
Password for the user ID.

## IP Devices

### IP Phone Configuration

#### 7.1.14.2 "Java" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Applications > "Java" Tab



HTTP Gateway / Proxy Address:

Username:

Password:

Java Midlets

- ☒ Downloading of Java Midlets allowed
- ☒ Java Midlet signature verification required

#### HTTP Gateway/Proxy Address:

IP address or host name of the HTTP server.

#### Username:

User ID for identification at the HTTP gateway.

#### Password:

Password for the user ID.

#### Java Midlets

##### Downloading of Java Midlets allowed

If this checkbox is activated, you can download Java midlets to the workpoint.

##### Java Midlet signature verification required

If this checkbox is activated, the Java midlet must be verified using a signature.

### 7.1.14.3 "Java (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Applications > "Java" Tab

HTTP Gateway / Proxy Address:

#### **HTTP Gateway/Proxy Address:**

IP address or host name of the HTTP server.



## IP Devices

### IP Phone Configuration

#### 7.1.14.4 "XML Applications" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Applications > "XML Applications" Tab

XML Applications

Table Selected entry 1 / 1

Application Name (Server):  
Display Name:  
Program Name:  
Restrict Program to Version:  
Server Address: Server Port:  
Transport:  
Instance Type:  
Icon URL:  
Debug Program Name:  
Mode Key:

Number of Tabs: 3  
Tab 1 Display Name: Tab 1 Application Name:  
Tab 2 Display Name: Tab 2 Application Name:  
Tab 3 Display Name: Tab 3 Application Name:  
☒ Start all Tabs

☒ Allow routing via the Java Proxy ☒ Enable Application ☒ Autostart  
☒ Call Handling enabled ☒ Allow Push Popups ☒ Allow Priority Popups  
☒ Remote Debug Mode ☒ Restart Application

These are server-side applications which communicate with the phone software via a specially defined XML interface. The Unified Messaging system HiPath Xpressions also uses this interface. The interface enables the workpoint to send user entries, to display data in textual and graphic form, and to control calls.

To set up an XML application on the workpoint, the following specifications are required: a freely selectable user name, communication protocol to be used; server port to be used; start address of the server-side program.

XML applications are only available in OpenStage 60/80.

### XML Applications

#### Application Name (Server):

This is the name of the HTTP servlet, and it is used internally by the workpoint software to identify the application.

For DLS XML applications, the names must be entered unchangend.

Possible values:

- **DeploymentService**
- **LocationService**
- **NewsService**

- **MakeCall**

**Display Name:**

This name is used for listing the application on the workpoint menu.

**Program Name:**

Path of the start file of the server-side program, in relation to the server address. For DLS XML applications, enter the WEB application name, followed by the HTTP servlet name.

**Restrict Program to Version:**

Select a distinct version the application is working with.

**Server Address:**

IP address of the server on which the program is running. For DLS XML Applications enter the IP address of the DLS Server; for Multinode installation, enter the IP address of the cluster.

Example: **192.168.1.150**

**Server Port:**

Port used by the server-side program for receiving data from the workpoint.  
For DLS XML Applications use port 18080, as only HTTP is supported.  
For OSV Assistant XML applications use 7789.

Examples: **80** (Apache default port); **8080** (Tomcat default port).

**Transport:**

Transport protocol used for transmitting XML data.

Possible options:

- **HTTP**
- **HTTPS**

## IP Devices

### *IP Phone Configuration*

#### Instance Type:

Selection of the type of instance.

Possible options:

- **Normal**
- **Xpressions**
- **Phonebook**

#### Icon URL:

URL of the application icon (not yet implemented).

#### Debug Program Name:

Name and, where applicable, directory path of the program on the server that receives error messages from the terminal's \*.XML application platform.

#### Mode Key:

Select a mode key to start the application.

Possible options:

- **No Mode Key**
- **Phonebook Mode Key**
- **CallLog Mode Key**
- **Messages Mode Key**
- **Help Mode Key**

#### Number of Tabs:

The number of embedded tabs within the XML application to be shown on phone display.

Value range: **0 ... 3**

**NOTE:** For an XML-application with a number of Tabs > 0, one of the entries between **Tab 1 Application Name** and **Tab 3 Application Name** must be set to the same value as the **Application Name (Server)** that it is associated with. When the XML application is started, the tab which has the same name as the XML application is the tab that initially gets focus.

**Tab 1 Display Name:**

Labeling displayed on the 1st tab header.

**Tab 2 Display Name:**

Labeling displayed on the 2nd tab header.

**Tab 3 Display Name:**

Labeling displayed on the 3rd tab header.

**Tab 1 Application Name:**

The name used by the XML application to identify the application running under the 1st tab. The name must be unique over all XML-applications.

**Tab 2 Application Name:**

The name used by the XML application to identify the application running under the 2nd tab. The name must be unique over all XML-applications.

**Tab 3 Application Name:**

The name used by the XML application to identify the application running under the 3rd tab. The name must be unique over all XML-applications.

**Start all Tabs**

On application start, all tabs will be opened.

**Allow routing via the Java Proxy**

Switch to allow routing via the Java Proxy.

## **IP Devices**

### *IP Phone Configuration*

#### **Enable Application**

Switch to enable application.

#### **Autostart**

Switch to enable autostart of application.

#### **Call Handling enabled**

Switch to enable call handling.

#### **Allow Push Popups**

Switch to enable pushing of popups.

#### **Allow Priority Popups**

Switch to enable priority popups.

#### **Remote Debug Mode**

Switch to enable setting of remote debug mode.

#### **Restart Application**

Switch to enable restart of application, if it is already running.

### 7.1.14.5 "CA Certificates" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Applications > "CA Certificates" Tab

The parameters described below are available once for the currently active certificate and once for the imported certificate.

#### Index:

Serial number of the CA certificate.

#### Status Active/Import:

Specifies whether a certificate is registered as imported and/or active on the phone. The five statuses listed below are possible.

Possible values:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Serial Number:

Serial number of the certificate (display only).

## IP Devices

### *IP Phone Configuration*

#### Owner:

Owner of the certificate (display only).

#### Issuer:

Issuer of the certificate (display only).

#### Valid from:

Start of validity for the certificate (display only).

#### Valid to:

End of validity for the certificate (display only).

#### Key Algorithm

Key algorithm.

#### Key Size

Key size.

#### Fingerprint (SHA-1):

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate.

#### Expires in ... [days]:

Number of days before the certificate expires.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### **Alarm Status:**

Displays the duration of validity for certificates when searching for certificates due to expire.

Possible values:

- **valid**
- **soon running out**
- **expired**

### **Activate certificate**

Checkbox for activating the certificate. The active certificate is used to encrypt calls. The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.



### **7.1.14.6 "Application List" Tab**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Applications > "Application List" Tab

List of Applications for Function Keys:

#### **List of Applications for Function Keys**

Comma-separated list of names for applications which can be started by means of Function Keys.

## **7.1.15 LDAP**

**Call:** Main Menu > IP Devices > IP Phone Configuration > LDAP

This area features the following components:

- General Data
- Possible Action Buttons
- "LDAP Settings" Tab
- "CA Certificates" Tab

## IP Devices

### IP Phone Configuration

#### 7.1.15.1 "LDAP Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > LDAP > "LDAP Settings" Tab

The screenshot shows the 'LDAP Settings' configuration tab. It contains the following fields and controls:

- LDAP Server Address:** A text input field with a small icon on the right.
- LDAP Server Port:** A text input field.
- LDAP Transport:** A dropdown menu.
- LDAP Authentication:** A dropdown menu.
- LDAP User:** A text input field.
- LDAP Password:** A text input field.
- LDAP Digest:** A text input field.
- Max. Query Responses:** A text input field.
- Search Trigger Timeout (sec):** A dropdown menu.

**NOTE:** LDAP Server Settings are also applicable for OpenStage 15/20 (SIP only), OpenStage 40 HFA & OpenScape Desk Phone IP 35 G /IP 35 G Eco / 55 G HFA phones.

#### LDAP Server Address:

IP address or host name of the LDAP server.

#### LDAP Server Port:

Port number of the LDAP server.

#### LDAP Transport:

Transport protocol used to transmit LDAP data.

Possible options:

- **TCP**
- **TLS**

#### LDAP Authentication:

Option for selecting the LDAP access.

Possible options:

- **Anonymous**
- **Simple**

**LDAP User:**

User name for authenticated LDAP access.

**LDAP Password:**

Password for authenticated LDAP access.

**LDAP Digest:**

Enter LDAP digest.

This item is grayed out.

**Max. Query Responses:**

Maximum number of results in an LDAP search.

This item is grayed out.

**Search Trigger Timeout (sec):**

Search Trigger Timeout for LDAP simple search.

Possible options:

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 60

#### 7.1.15.2 "CA Certificates" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > LDAP > "CA Certificates" Tab

Index:	<input type="text"/>	
Status Active/Import:	<input type="text"/>	<input checked="" type="checkbox"/> Activate certificate
	Active Certificate:	Imported Certificate:
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... [days]:	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

#### Index

Certificate index number.

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

**Active Certificate/Imported Certificate:**

**Serial Number:**

Serial number of the active or imported certificate (display only).

**Owner:**

Owner of the active or imported certificate (display only).

**Issuer:**

Issuer of the active or imported certificate (display only).

**Valid from:**

Start of validity for the active or imported certificate (display only).

**Valid to:**

End of validity for the active or imported certificate (display only).

**Key Algorithm**

Key algorithm.

**Key Size**

Key size.

**Fingerprint (SHA-1):**

Test algorithm **SHA-1** (160 bits/20 characters) for the security certificate.

**Expires in ... [days]:**

The certificate validity will expire in the number of days specified.

## IP Devices

### *IP Phone Configuration*

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### **Alarm Status:**

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

## **7.1.16 User Settings**

**Call:** Main Menu > IP Devices > IP Phone Configuration > User Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "Locks" Tab
- "Locked Configuration Menus" Tab
- "Locked Local Functions" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

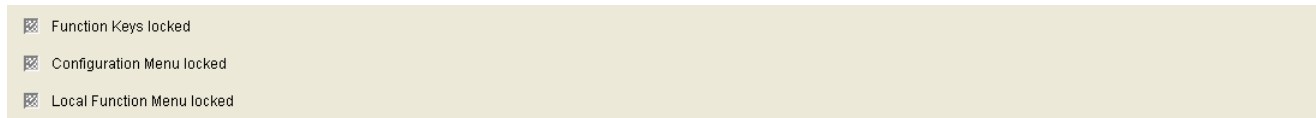


## IP Devices

### *IP Phone Configuration*

#### 7.1.16.1 "Locks" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > User Settings > "Locks" Tab



#### Function Keys locked

Checkbox for locking function keys on the IP Device.

#### Configuration Menus locked

Checkbox for locking configuration menus on the IP Device.

#### Local Function Menus locked

Checkbox for locking local function menus on the IP Device.

## 7.1.16.2 "Locked Configuration Menus" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > User Settings > "Locked Configuration Menus" Tab.

<input type="checkbox"/> Country options	<input type="checkbox"/> Daylight Saving	<input type="checkbox"/> Auto reconnect beep	<input type="checkbox"/> Idle missed calls	<input type="checkbox"/> Screen Saver	<input type="checkbox"/> Backlight Timeout Energy Saving Display
<input type="checkbox"/> Language	<input type="checkbox"/> Auto Dial Timer	<input type="checkbox"/> Idle display static	<input type="checkbox"/> Busy when dialing	<input type="checkbox"/> Call context menu	<input type="checkbox"/> Special Ringer Internal Calls
<input type="checkbox"/> Date / Time	<input type="checkbox"/> CFNR Timer	<input type="checkbox"/> Inactivity timeout	<input type="checkbox"/> Transfer on Ring	<input type="checkbox"/> BLF	<input type="checkbox"/> Special Ringer External Calls
<input type="checkbox"/> Call deflection	<input type="checkbox"/> Hold Ringback Timer	<input type="checkbox"/> APM / DSM Call View	<input type="checkbox"/> Mobility LED flash	<input type="checkbox"/> Toggle associate	<input type="checkbox"/> Special Ringer Recall
<input type="checkbox"/> Call forwarding	<input type="checkbox"/> Music on hold	<input type="checkbox"/> USB keyboard type	<input type="checkbox"/> Call Recording	<input type="checkbox"/> Forwarding party display	<input type="checkbox"/> Special Ringer Emergency
<input type="checkbox"/> Log forwarded calls	<input type="checkbox"/> Do Not Disturb	<input type="checkbox"/> Deflect address	<input type="checkbox"/> Secure Call Indication	<input type="checkbox"/> Headset	<input type="checkbox"/> Special Ringer Special 1
<input type="checkbox"/> Call duration	<input type="checkbox"/> Message Waiting	<input type="checkbox"/> Line settings	<input type="checkbox"/> Transfer on Hangup	<input type="checkbox"/> Key click	<input type="checkbox"/> Special Ringer Special 2
<input type="checkbox"/> Call waiting	<input type="checkbox"/> Hold Ring Back	<input type="checkbox"/> Call view icons	<input type="checkbox"/> Audio Settings	<input type="checkbox"/> Enable Call Log	<input type="checkbox"/> Special Ringer Special 3
<input type="checkbox"/> Call transfer	<input type="checkbox"/> Conferencing	<input type="checkbox"/> Call park	<input type="checkbox"/> Loudspeaker	<input type="checkbox"/> Hold and Hangup	<input type="checkbox"/> Delete Entry
<input type="checkbox"/> Call join	<input type="checkbox"/> Local Conferencing	<input type="checkbox"/> Call pickup	<input type="checkbox"/> Forwarding Alert	<input type="checkbox"/> Lower IL alert notification	
<input type="checkbox"/> Contrast	<input type="checkbox"/> Auto answer	<input type="checkbox"/> Immediate dialing	<input type="checkbox"/> Join in Conference	<input type="checkbox"/> Video on	
<input type="checkbox"/> Dialing mode	<input type="checkbox"/> Auto answer beep	<input type="checkbox"/> Callback / Callback busy	<input type="checkbox"/> Bluetooth	<input type="checkbox"/> Missed Logging	
<input type="checkbox"/> Call display	<input type="checkbox"/> Auto reconnect	<input type="checkbox"/> Call back on ring/no reply	<input type="checkbox"/> Display Skin	<input type="checkbox"/> Display Brightness	

**NOTE:** By clicking on a feature function, the feature shall be grayed out in the phone's WBM menu.

The following functions can be locked in the configuration menus by activating the relevant checkbox:

### 1-Country options

The user can select a country from a list to adapt the phone to country specific conditions.

### 2-Language

The user can set the language for the user menu.

### 3-Date / Time

The user can set the local time, the current date, and the daylight saving time.

### 4-Call deflection

The user can activate or deactivate call deflection.

### 5-Call forwarding

The user can activate or deactivate call forwarding.

#### **6-Log forwarded calls**

The user can activate or deactivate the logging of forwarded calls.

#### **7-Call duration**

The user can determine whether the call duration is indicated on the display.

Only available in optiPoint workpoints.

#### **8-Call waiting**

The user can determine whether a second call is allowed during a connected call. If not, the caller hears the busy tone.

#### **9-Call transfer**

The user can allow call transfer.

#### **10-Transfer call**

The user can enable or disable the possibility to interlink an active and a held call.

#### **11-Contrast**

The user can set the contrast for the display.

#### **12-Dialing mode**

The user can determine whether a number only or, alternatively, a name can be used for dialing.

Only available in optiPoint workpoints.

#### **13-Call display**

The user defines which information about the caller is displayed on an incoming call.

Only available in optiPoint workpoints.

#### **14-Daylight Saving**

The user can set the daylight saving time.

#### **15-Auto dial timer**

The delay time between the entry of the last call number digit and the start of the dialing process can be set by the user.

#### **16-CFNR timer**

The user can set the delay time that passes before a call is forwarded, if Call Forwarding on No Reply is activated.

**NOTE:** if the option "Support of Server Based Features" is enabled (under **IP Devices>IP Phone Configuration > Features> "Server based features" Tab** ) the CFNR delay timer is not configurable (greyed out).

#### **17-Hold ringback timer**

The user can set the time delay, after which the workpoints indicates that there us a held call.

#### **18-Music on hold**

The user can determine whether the music on hold stored in the phone is used. If music on hold is activated, it is played as soon as the phone is put to hold.

#### **19-Do not disturb**

The user can determine whether Do Not Disturb is available on the phone. If Do Not Disturb is active, the phone will not ring on an incoming call, and the caller will hear the busy tone.

#### **20-Message waiting**

The user can determine whether new messaes in the mailbox are signaled by a LED.

Only available in optiPoint workpoints.

## **IP Devices**

### *IP Phone Configuration*

#### **21-Hold ring back**

If this function is active and a participant has been put to hold, a signal sounds after a configurable time to remind that a call is on hold. The user can allow this function and set the delay time for the acoustic signal.

#### **22-Conference**

The user can allow system based conferences.

Only available in optPoint workpoints.

#### **23-Local conference**

The user can allow local 3-party conferences.

#### **32-Auto answer**

The user can determine whether incoming calls are accepted automatically by the CTI application which is connected to the phone.

#### **33-Auto answer beep**

The user can determine whether a signal will sound when a call that is accepted automatically by the CTI application connected to the phone.

#### **34-Auto reconnect**

The user can determine whether a held call can be reconnected automatically by the CTI application.

#### **35-Auto reconnect beep**

The user can determine whether a signal will sound when a held call is reconnected by the CTI application.

#### **36-Idle display static**

The user can configure the indication of system messages in idle state.

Only available in optiPoint workpoints.

### **38-Inactivity timeout**

The user can set the delay time between the last entry and the return to the idle state.

### **39-APM / DSM Call View**

The user can activate or deactivate the call view on the optiPoint application module.

### **40-USB keyboard type**

The user can modify the language of the USB keyboard connected to an optiPoint phone.

Only available in optiPoint workpoints.

### **43-Deflect address**

The user can enter resp. modify the target number for call deflection.

### **44-Line settings**

The user can modify the settings of a line key.

### **45-Call view icons**

The user can determine whether messages on the optiPoint display module, like, for instance, the list of missed calls, are displayed as text or symbols.

### **46-Call park**

The user can allow call parking.

### **47-Call pickup**

The user can allow pickup of a parked call.

### **48-Immediate dialing**

The user can allow immediate dialing.

#### 49-Callback / Callback busy

The user can activate the transmission of a callback request to the system. With OpenStage V3 onwards, the callback request can be transmitted in every case; with other end devices, this is only possible in busy case.

#### 50-Call back on ring/no reply

The user can activate the transmission of a callback request to the system in case a call is not replied.

Only available in OpenStage workpoints.

#### 51-Idle missed calls

The user can activate missed calls notifications on the display.

Only available on optiPoint workpoints.

#### 52-Busy when dialing

The user can determine whether incoming calls are refused while a call number is entered.

#### 53-Transfer on Ring

The user can determine whether a call is transferred as soon as the third participant's phone rings, even if the transferring participant has not hung up.

#### 54-Mobility LED flash

The user can determine whether the mobility key LED flashes during data exchange between phone and DLS, like, for instance, while mobility logon and logoff.

Only available in optiPoint workpoints.

#### 55-Call Recording

The user can activate call recording.

Only available in optiPoint workpoints.

### **56-Secure Call Indication**

The user can determine whether an alert tone shall indicate an insecure speech connection.

### **57-Transfer on Hangup**

The user can determine whether, when one call is active and another call is on hold, the user can connect these calls by hanging up.

### **60-Audio Settings**

The user can modify settings like ringtones and room character.

Only available in OpenStage workpoints.

### **61-Loudspeaker**

The user can activate or deactivate handsfree talking.

Only available in OpenStage workpoints.

### **62-Forwarding Alert**

The user can allow forwarding alert.

### **63-Join in Conference**

The user can determine whether visual or acoustical warning notifications indicate an incoming call while call forwarding is active.

Only available in OpenStage workpoints.

### **64-Bluetooth**

The user can activate or deactivate bluetooth connectivity.

### **65-Display Skin**

The user can choose the display theme.



## **IP Devices**

### *IP Phone Configuration*

Only available in OpenStage 60/80 workpoints.

#### **66-Screensaver**

The user can activate the phones's screensaver and set the delay time for starting the screensaver.

Only available in OpenStage 60/80 workpoints.

#### **67-Call context menu**

The user can define the displayed menu.

Only available in OpenStage 60/80 workpoints.

#### **68-BLF**

The user can define how an incoming call for the phone supervised by the BLF key shall be displayed.

#### **69-Toggle associate**

The user can enable or disable the connecting of a first call and a second call by going on-hook. When "Toggle associate" is activated, the following procedure will ensue: The user has accepted a second call, whereby the first call is put to hold. As soon as the user has alternated back to the first call, and then again to the second call, he/she can connect both calling parties by going on-hook.

Available in all OpenStage workpoints.

#### **70- Forwarding party display**

For multiple forwarding, the user can determine whether the first forwarding party or the last forwarding party is displayed.

Available in all OpenStage SIP workpoints.

#### **71- Headset**

The user can define the type of headset connected to the phone.

Available for OpenStage 40/60/80 SIP/HFA.

## **72- Key klick**

The user can define the mode of key klick on the phone.

Available for OpenStage 40/60/80 SIP/HFA.

## **73- Enable Call Log**

The user can activate a list of missed,dialed,received or forwarded calls. The call log can be cleared via the WPI.

Available for OpenStage 15/20/20E/40/60/80 SIP.

## **74- Hold and Hangup**

The user can temporarily hold and hang up a line without disconnecting your caller. This function is disabled by default.

Available for OpenStage 40/60/80 SIP/HFA.

## **75- Lower IL alert notification**

The user is informed when an incoming call originated from a lower security zone, or when an outgoing call terminates in a lower security zone.

Available for OpenStage 40/60/80 SIP/HFA.

## **76- Video On**

The user can activate video calls.

Available for OpenStage 60/80 SIP/HFA.

## **77- Missed Logging**

The user can configure whether the calls completed elsewhere will be logged on phone.

Available for OpenStage 15/20/20E/40/60/80 SIP.

## **78- Display Brightness**

#### 79- Backlight Timeout Energy Saving Display

#### 80- Special Ringer Internal Calls

The user can configure special ringers for Internal Calls at device level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G / 35 G Eco / 55 G (SIP only).

#### 81- Special Ringer External Calls

The user can configure special ringers for External Calls at device level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### 82- Special Ringer Recall

The user can configure special ringers for Recalls at device level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### 83- Special Ringer Emergency

The user can configure special ringers for Emergency at device level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### 84- Special Ringer Special 1

The user can configure his own special ringers (up to 3) at device level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### 85- Special Ringer Special 2

The user can configure his special ringers (up to 3) at device level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### 86- Special Ringer Special 3

The user can configure his own special ringers (up to 3) at device level.

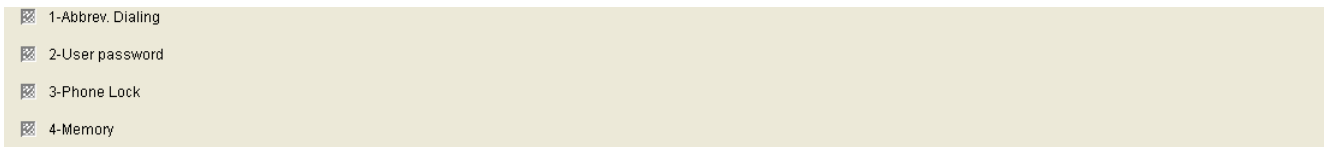
Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### **87- Delete Entry**

The user can configure whether to delete calls log entries in case there is a call to an entry in Missed calls list.

#### 7.1.16.3 "Locked Local Functions" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > User Settings > "Locked Local Functions" Tab



The following functions can be locked in the configuration menus by activating the relevant checkbox:

##### 1-Abbreviated dialing

The user can set up abbreviated dialing numbers.

Only available in optiPoint workpoints.

##### 2-User password

The user can change his password.

##### 3-Phone lock

The user can lock the phone. If the phone is locked, no unauthorized person can call from this phone in a regular manner or modify any settings. Only emergency numbers and pre-defined numbers from the dial plan can be dialed.

**NOTE:** Phone Lock function can only be configured via DLS (not via Web Based Management (WBM) nor locally).

If the function is locked, the menu is still visible, yet grayed out.

##### 4-Memory

The user can delete all abbreviated dialing numbers and restore the factory settings.

Only available in optiPoint workpoints.

## **7.1.17 SIP Mobility**

**Call:** Main Menu > IP Devices > IP Phone Configuration > SIP Mobility

This area features the following components:

- General Data
- Possible Action Buttons
- "SIP Mobility" Tab
- "SIP Mobility Logon/Logoff" Tab
- "SIP Mobility Data" Tab

## IP Devices

### *IP Phone Configuration*

#### 7.1.17.1 "SIP Mobility" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > SIP Mobility > "SIP Mobility" Tab

☒ Device available for Mobile User

#### Device available for Mobile User

If the checkbox is active, the device is available for Mobile User log on.

## 7.1.17.2 "SIP Mobility Logon/Logoff" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > SIP Mobility > "SIP Mobility Logon/Logoff" Tab

<input checked="" type="checkbox"/> SNMP Trap on Remote Logoff	Delay SNMP Trap: <input type="text"/> s (seconds)
<input checked="" type="checkbox"/> Mobile User Logoff with Password	

### SNMP Trap on Remote Logoff

If the checkbox is active, a message is sent to the SNMP server each time an unauthorized remote logoff is attempted. For information on entering SNMP server data, see Section 7.1.13.1, ""SNMP" Tab".

### Mobile User Logoff with Password

If the checkbox is active, Mobile User logoff is only possible when the password of the currently logged-on Mobile User is entered.

### Delay SNMP Trap

Time in seconds until the SNMP trap is sent. For information on entering SNMP server data, see Section 7.1.13.1, ""SNMP" Tab".



## IP Devices

### IP Phone Configuration

#### 7.1.17.3 "SIP Mobility Data" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > SIP Mobility > "SIP Mobility Data" Tab

Number of changes for Medium Priority Data :	<input type="text"/>	
Time before Medium Priority Data:	<input type="text"/>	s (seconds)
Time before High Priority Data:	<input type="text"/>	s (seconds)
<input checked="" type="checkbox"/> International Mobility ID		

#### Number of changes for Medium Priority Data:

Defines how many changes to medium priority data may take place in the workpoint before this data is sent to the DLS.

#### Time before Medium Priority Data:

Defines the interval after which medium priority data that has been changed in the workpoint is sent to the DLS.

#### Time before High Priority Data:

Defines the interval after which high priority data that has been changed in the workpoint is sent to the DLS.

#### International Mobility ID

If this checkbox is activated, the device automatically adds the local country code to the extension, in addition to the trunk number and local area code when a mobile user logs on. The international code is configured under **IP Devices > IP Phone Configuration > Dialing Properties > "Dialing Properties" Tab -> International Dial Prefix**.

Example: The user logs on to the device using the extension/mobility ID "31434". If the checkbox is activated, the device sends the number "498972231434". Otherwise, the device sends the number "8972231434".

## **7.1.18 HFA Mobility**

**Call:** Main Menu > IP Devices > IP Phone Configuration > HFA Mobility

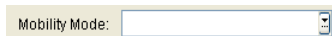
This area features the following components:

- General Data
- Possible Action Buttons
- "HFA Mobility" Tab

#### 7.1.18.1 "HFA Mobility" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > HFA Mobility > "HFA Mobility" Tab

**NOTE:** If the DLS is to store user data like call lists and the phonebook including picture clips, the field **IP Devices > IP Phone Configuration > HFA Mobility > "HFA Mobility" Tab > Mobility Mode** must be set to **Data Mobility**. With the values **Data Privacy** and **Basic**, the end device is registered with the DLS, but no further actions are executed in the DLS.

A screenshot of a web interface showing a dropdown menu for 'Mobility Mode'. The dropdown is open, showing a list of options. The background is a light beige color.

#### Mobility Mode:

Determines how user data is managed with HFA Mobility. User data falls into two categories :

- a) Common User Data (Screensavers, ring tones, volumes, room character, skin)
- b) Private Data (Phone Book & associated pictures, Call Log & the user password)

Phones can be configured to support Basic, Data Privacy or Data Mobility modes of operation.

**NOTE:** **Mobility Mode** configuration is an administrators only option.

Possible options:

- **Basic**

Default operation where user data is accessible to all users. Users are allowed to log on at any phone.

- **Data Privacy**

Data Privacy forms an enhancement to the Basic HFA Mobility Mode in such way that Private Data for a previous visitor or the owner of the phone are deleted or hidden whilst a visitor is logged on to a phone.

**NOTE:** Administrators are able to set the Mobility Mode from Basic to Data Privacy & vice versa.

- **Data Mobility**

Data Mobility forms an enhancement to the Data Privacy Mode by supporting the transfer of a limited set of additional user data items between phones that have been used by a user.

Private Data are made available to users wherever they are logged on, and are securely stored whilst they are logged off. In addition the User Password is transferred along with the user as they move between phones.

**NOTE:** If an error is encountered when saving Mobility data, the user is warned & subsequently informed when the problem is cleared.

## **7.1.19 Keysets/Keylayout**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Keysets/Keylayout

This area features the following components:

- General Data
- Possible Action Buttons
- "Keysets" Tab
- "Destinations" Tab
- "Send URL Server CA Certificate" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Phone Configuration

#### 7.1.19.1 "Keysets" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Keysets/Keylayout > "Keysets" Tab

☒ LED on Registration

Rollover Ring:

Rollover Ring Volume:

Line Action Mode:

Reservation Timer (sec):

Shift Key Timeout (sec):

☒ Forwarding indicated

Line Button Mode:

Line Preselection Timer (sec):

Bridging Priority:

☒ Show Focus

Originating Line Preference:

Terminating Line Preference:

**DSS Key Settings**

Call Pickup Detect Timer (sec):

☒ Deflect Alerting Call

☒ Allow Pickup to be refused

☒ Forwarding Indication

**Line Key Preview**

☒ Preview Mode locked

Preview Timer (sec):

#### LED on Registration

If the checkbox is activated, the successful workpoint registration after a phone restart will be indicated.

Only available in SIP workpoints.

#### Rollover Ring:

Type of alerting to be used in the case that, during an active call, an incoming call arrives on a different line.

Possible options:

- **No ring**
- **Alert Ring**
- **Standard**
- **Alerting**

Only available in SIP workpoints.

#### Rollover Ring Volume:

Volume of alerting when busy.

Only available in SIP workpoints.

### Line Action Mode:

Defines what should happen to a line (call) when a connection is established over another line.

Possible options:

- **Call hold**  
The original call is put on hold.
- **Release**  
The connection to the original call is cleared down (the call is ended).

Only available in SIP workpoints.

### Reservation Timer (sec):

Time in seconds indicating how long a line reservation can be maintained.

Default: **60** s.

Only available in SIP workpoints.

### Shift Key Timeout (sec):

Time in seconds indicating how long the Shift key remains active before the keys recover their original level-1 functions.

### Forwarding indicated

Checkbox for activating alerting on a line key when call forwarding is active for its destination.

Only available in SIP workpoints.

### Line Button Mode

Possible options:

- **Single button**  
The action associated with the line key is executed as soon as the button is pressed, regardless of whether or not the handset is in the cradle.
- **Preselection**  
Press the line key to preselect a line. This line is used the next time you seize a line (by lifting the handset, for example).

## IP Devices

### *IP Phone Configuration*

#### Line Preselection Timer (sec):

Specifies the duration of line key preselection.

#### Bridging Priority:

Possible options:

- **Bridging overrides preview**
- **Preview overrides bridging**

#### Show Focus

Checkbox for activating the display showing which line is currently active (line has the focus).

Only available in SIP workpoints.

#### Originating Line Preference:

Defines the preferred line to be used for outbound calls.

Possible options:

- **Idle line preference**
- **Primary line preference**
- **Last line preference**
- **No preference**

Only available in SIP workpoints.

#### Terminating Line Preference:

Defines the preferred line to be used for incoming calls.

Possible options:

- **Ringling line preference**
- **Calling line preference with prime line preferred**
- **Ringling line preference**

- **Ringing line preference with prime line preferred**
- **No preference**

Only available in SIP workpoints.

## **DSS Key Settings**

### **Call Pickup Detect Timer (sec)**

Specifies how long group pickup is signaled by the key.

### **Deflect Alerting Call**

If this checkbox is activated, alert tones can be forwarded by pressing a key.

### **Allow Pickup to be refused**

If this checkbox is activated, you can reject group pickup by pressing a key.

### **Forwarding Indication**

If this checkbox is activated and station forwarding is active for this line, the LED of the line key blinks.

## **Line Key Preview**

### **Preview Mode locked:**

Switch to lock preview mode.

### **Line Key Preview Duration (sec)**

Duration of preview mode in seconds.

Possible options:

- **2**
- **3**
- **4**
- **6**



## **IP Devices**

### *IP Phone Configuration*

- **8**
- **10**
- **15**
- **20**
- **30**
- **40**
- **50**
- **60**

## 7.1.19.2 "Destinations" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Keysets/Keylayout > "Destinations" Tab

Destinations

Table Selected entry 1 / 1

Index:

☒ Lock Key

Device:

Level:

Key number:

Key function:

Key:

Key label:

Key label (Unicode):

Destination / Feature Code:

Forwarding Type:

DTMF Sequence:

Toggle text:

Toggle Text (Unicode):

State Key Description:

State Key Description (Unicode):

Feature URI / LED Controller URI:

☒ BLF audible Alert

☒ BLF PopUp Alert

Application Name:

Protocol:

Web Server Address:

Port:

Path:

Parameters:

HTTP Method:

Web Server User ID:

Web Server Password:

Symbolic Name:

☒ Push Support

Key Functionality:

Line Key / DSS Key specific Parameters

☒ Primary Line

Address of record:

Realm:

UserID:

Password:

Hunt ranking:

Shared type:

☒ Ring

☒ Intrusion allowed

☒ Hotline

Line Hotline Dial String:

HotWarm Line Type:

☒ Show in Overview

Position in Overview:

Short Description:

Line Type:

Line Action:

Ringing Delay:

### Index

Name of the key layout function.

### Lock Key

Checkbox for locking the function key.

## IP Devices

### *IP Phone Configuration*

#### Device

Specifies the device to which the relevant layout applies.

Possible options:

- **Base device**
- **1st Key module**
- **2nd Key module**
- **1st Self Labeling Key module**
- **2nd Self Labeling Key module**
- **OpenStage 15 Key module**

Only available in SIP workpoints.

#### Level

Key level for the Shift functionality.

Possible options:

- **1. Level**
- **2. Level**
- **3. Level**
- **4. Level**
- **Fixed Keys**  
Fixed Keys are assigned to a fixed key number. They cannot be deleted or created on the IP Device.

Only available in SIP workpoints.

#### Key number

Number of the key assigned the relevant function.

Only available in SIP workpoints.

#### Key function:

The following key functions are supported:

- **Key unused**

- **Selected dialing**
- **Abbreviated dialing**
- **Repeat dialing**
- **Missed calls**
- **Voice messages**
- **Forwarding**
- **Loudspeaker**
- **Mute**
- **Ringer off**
- **Hold**
- **Alternate**
- **Blind Transfer**
- **Transfer call (OpenStage) / Join (optiPoint)**
- **Deflect**
- **Setup menu**
- **Room echoing**
- **Room muffled**
- **Shift**
- **Notebook**
- **Settings**
- **Phone lock**
- **Conference**
- **Local Conference**
- **Headset**
- **Do not disturb**
- **Group pickup**
- **Repertory dial**
- **Line**
- **Feature Toggle**
- **Show Phone Screen**

## IP Devices

### *IP Phone Configuration*

- **Swap screen**
- **Mobility**
- **Call park**
- **Call pickup**
- **Cancel/Release**
- **Ok Confirm**
- **Callback Request**
- **Cancel Callback**
- **Consultation (OpenStage) / Consult/Transfer (optiPoint)**
- **DSS**
- **State Key**
- **Call waiting**
- **Immediate Ring**
- **Preview Key**
- **Call Recording**
- **AICS Zip**
- **Server Feature**  
Available for free programmable keys as well as for 'Fixed Keys'.
- **BLF**
- **Start Application**  
Available for free programmable keys as well as for 'Fixed Keys'.
- **Send URL**  
Sends a configurable HTTP or HTTPS request to a remote server. Assigned to & available for free programmable keys as well as for 'Fixed Keys'.  
The request string contains the **Web server user ID**, **Web server password**, **Parameters**, the phone's IP address & call number and the **Symbolic Name**  
e.g  
`userid=jdoe&password=00secret&mode=remote&action=start&ipaddress=192.168.1.244&phonenumber=3338&symbn=key4`
- **Built-in Forwarding**  
Only available for 'Fixed Keys'.
- **Built-in Release**  
Only available for 'Fixed Keys'.

- **Built-in Voice Dial**  
Only available for 'Fixed Keys'.
- **Built-in Redial**  
Only available for 'Fixed Keys'.
- **Personal Directory/Start Phonebook**

**NOTE:** The Personal Directory/Start PhoneBook function can also be set to the un-shifted /shifted FPK's of OpenStage 15/20/40/60/80 & OpenScape Desk Phone IP 35G / 55 G Eco phones as well as to key modules.

The key label "Start Phonebook" shall be used for the phone version prior to V3R3 and the key label "Personal" for higher phone version.

- **2nd Alert**
- **Corporate Directory**

**NOTE:** The Corporate Directory function is configured to the V3R3 WP\_HI & WP\_LO phones.

#### **Key:**

Indicates whether this key is a 'Fixed Key' or a freely programmable key.

#### **Key label**

A key label can be entered here for every key in the case of Self labeling Keys workpoints (for example, optiPoint 420 standard).

Only available in SIP workpoints.

**NOTE:** For fixed keys, the key label remains unchanged when the Administration sets a different key function to the default one.

#### **Key label (Unicode)**

You can enter the key label in unicode characters for devices in the OpenStage family.

#### **Destination / Feature Code**

Destination data to be dialed. This can be a digit string or a URL. Feature codes that need to be sent to external servers (not the SIP server at which the phone is registered) have the following format:

## IP Devices

### *IP Phone Configuration*

<feature code>@<IP address>

Example: **123@10.2.54.2**

If the destination has been entered for the "Repertory dial" key function, extra control characters can be entered in a digit string:

- **\$Q** = clear (CL)
- **\$R** = consult (CS)
- **\$S** = OK
- **\$T** = Pause (PA)

Only available in SIP workpoints.

### Forwarding Type

Possible options:

- **on busy**
- **on busy external**
- **on busy internal**
- **on no reply**
- **on no reply external**
- **on no reply internal**
- **unconditionally**
- **unconditionally external**
- **unconditionally internal**

Only available in SIP workpoints.

### DTMF Sequence

DTMF Sequence for this target.

### Toggle text

Label for the "Feature Toggle" key function.

Only available in SIP workpoints.

### **Toggle Text (Unicode)**

Label for the "Feature Toggle" key function in unicode.

Only available on devices in the OpenStage family (SIP version).

### **State Key Description**

Description text for the state key.

### **State Key Description (Unicode)**

Description text for the state key in unicode. Only available on devices in the OpenStage family (SIP version).

### **Feature URI / LED Controller URI**

URI used to control this feature on the server.

### **BLF audible Alert**

Audible Alert additional to busy lamp field.

### **BLF PopUp Alert**

Additional to busy lamp field a message pops up in display.

### **Application Name:**

Name of the XML application to be started with the function key.

### **Protocol**

Protocol of Web Server.

Possible options:

- **HTTP**
- **HTTPS**



## IP Devices

### *IP Phone Configuration*

#### Web Server Address

Host name, domain name, or IP address of web server.

#### Port

Port number of web server: If the port is null, the fully qualified URL will not include the port element.

#### Path

Directory path and name of the program or web page.

Examples: **servlet/lppGenericServlet** or **webpage/checkin.xml**

The path should have a slash at the beginning and no slash at the end. If the slash at the beginning is missing, a slash will be automatically inserted. If there is an additional slash at the end, it will be automatically removed. The slashes in the path should be forward slashes ('/'). If backslashes ('\') are used instead, the web server may not find the appropriate program or web page.

#### Parameters

Null, one, or more parameter-value pairs in the format "<parameter>=<value>", with each pair separated by an ampersand ("&"), e. g. **parameter1=value1&parameter2=value2**. A comma (",") is not used as a separator because it could be part of the key or value. If the key or value contains an ampersand, it must be replaced by "&amp;".

The question mark will be automatically added between the path and the parameters. If there is a question mark at the beginning of the parameters, it will be automatically stripped off.

#### HTTP Method

HTTP method to be used.

Possible options:

- **Get**
- **Post**

#### Web Server User ID

User identity known by the server. This information is used for phone authentication by the server.

### **Web Server Password**

Password known by the server. It is used for phone authentication by the server.

### **Symbolic Name**

Symbolic name known by the server. It is used for phone authentication by the server.

### **Push Support**

Enables or disables push support.

### **Key Functionality**

Possible options:

- **Toggle Call Forwarding**
- **Unspecified Call**
- **Unspecified**

### **Line Key / DSS Key specific Parameters**

#### **Primary Line**

Specifies whether the line operates as a primary line.

Only available in SIP workpoints.

#### **Address of record**

Line's phone number and address of record.

Only available in SIP workpoints.

#### **Realm**

SIP realm for the line's address of record.

Only available in SIP workpoints.

## **IP Devices**

### *IP Phone Configuration*

#### **UserID**

Only available in SIP workpoints.

#### **Password**

Only available in SIP workpoints.

#### **Ring**

Only available in SIP workpoints.

#### **Hunt ranking**

Only available in SIP workpoints.

#### **Shared type**

Possible options:

- **Private**
- **Shared**
- **Unknown**

Only available in SIP workpoints.

#### **Intrusion allowed**

Checkbox for enabling line intrusion.

Only available in SIP workpoints.

#### **Line Hotline Dest. active**

Checkbox for activating a line hotline.

Only available in SIP workpoints.

### **Line Hotline Dial String:**

Subscriber number that is used as a destination for the line hotline.

Only available in SIP workpoints.

### **Hot/Warm Line Type:**

Set device property.

- **Ordinary**
- **Hot Line**
- **Warm Line**

Only available in SIP workpoints.

### **Show in Overview**

Checkbox for activating the line display in the line overview.

Only available in SIP workpoints.

### **Position in Overview**

Position of key in Line Overview.

Only available in SIP workpoints.

### **Short Description**

Description of relevant line.

Only available in SIP workpoints.

### **Line Type**

Possible options:

- **Normal**
- **Direct**

## IP Devices

### *IP Phone Configuration*

#### Line Action

Possible options:

- **Consultation**
- **Transfer**
- **No Action**

#### Ringing Delay

Time before ringing starts for an alerting call.

### 7.1.19.3 "Send URL Server CA Certificate" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Keysets/Keylayout > "Send URL Server CA Certificate" Tab

Index:	<input type="text"/>	
Status Active/Import:	<input type="text"/>	<input checked="" type="checkbox"/> Activate certificate
	Active Certificate:	Imported Certificate:
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... [days]:	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

For a parameter description, please refer to **IP Devices > IP Phone Configuration > LDAP > "CA Certificates" Tab**.

## **7.1.20 WLAN Settings**

**Call:** Main Menu > IP Devices > IP Phone Configuration > WLAN Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "General Data" Tab
- "Security Encryption" Tab
- "Location Server" Tab
- "Advanced Settings" Tab
- "Debug Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.20.1 "General Data" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > WLAN Settings > "General Data" Tab

**IMPORTANT:** WLAN phone contact may be disrupted if inconsistent data changes are made.

ATTENTION: CRITICAL DATA! On inconsistent change of data maybe the WLAN Phone cannot be reached anymore!

Network Name (SSID):

Transfer Mode:

Transmission Rate:

Channel:  Channel Range:

Scan Channels

☒ 1 ☒ 2 ☒ 3 ☒ 4 ☒ 5 ☒ 6 ☒ 7 ☒ 8 ☒ 9 ☒ 10 ☒ 11 ☒ 12 ☒ 13

Output Power (%):

Threshold Values

Roaming Threshold (%):  Fragmentation Threshold (Bytes):  RTS / CTS Threshold (Bytes):

Battery charge level (%):  (at last Registration)

Preamble Type ☐ Long ☐ Short

#### Network Name (SSID)

The SSID is the network name used to identify the WLAN phone. The SSID is defined in the access point (WLAN router).

#### Transfer Mode:

You can choose the standards IEEE 802.11b (**802.11b only**), or IEEE 802.11b and IEEE 802.11g (**mixed mode**) for data transfer.

The main difference between these standards is the transmission rate. IEEE 802.11g is almost five times faster than the others. If devices in the WLAN use different standards, you must keep the default value (Mixed Mode).

If IEEE 802.11g is entered as a fixed value for transfer mode in the access point or WLAN router, select **Mixed Mode** in this tab.

Possible options:

- **only 802.11b**
- **Mixed Mode**

#### Transmission Rate:

The transmission rate is the speed in Mbps at which data is transmitted in the WLAN. The transmission rate depends on the transfer mode selected.



## IP Devices

### *IP Phone Configuration*

Possible options:

- **1.0 Mbps**
- **2.0 Mbps**
- **5.6 Mbps**
- **6.0 Mbps**
- **9.0 Mbps**
- **11.0 Mbps**
- **12.0 Mbps**
- **18.0 Mbps**
- **24.0 Mbps**
- **36.0 Mbps**
- **48.0 Mbps**
- **54.0 Mbps**

### **Channel:**

WLAN radio channel. The channel is configured in the access point or the WLAN router.

### **Channel Range:**

The available channel range in each case can be selected. The restriction is required in some countries due to the fact that the use of channel 12 and 13 is not permitted. Possible values: channel 1-11: for example USA, channel 1-13: for example Germany, channel 1-14: for example Japan.

### **Scan Channels:**

Scan channel selection.

### **Output Power (%)**

Output power that the handset uses to transmit to the access point. Up to 100 mW or 20 dBm (100%) output power is permitted.

Possible options:

- **5 %**

- 10 %
- 20 %
- 40 %
- 100 %

## Threshold Values

### Roaming Threshold (%):

Minimum reception strength expressed as a percentage. If the reception strength of the access point currently connected falls below this value, the handset searches for and connects to another access point with better connectivity.

### Fragmentation Threshold

Size at which voice packets are fragmented. Fragmenting data packets into smaller packets improves data throughput in a WLAN when the network is running at high capacity.

Value range: **256** ... **2346** bytes.

Default value: **2346** bytes (no fragmenting).

### RTS/CTS Threshold:

Minimum packet size in bytes required for transmitting an RTS (Request To Send). Smaller packets are transmitted directly to the access point without an RTS.

Value range: **1** ... **2347** bytes.

Default value: **2347** bytes (RTS/CTS mechanism deactivated).

**NOTE:** Activating this mechanism may reduce data throughput.

### Battery charge level (%): (at last Registration)

Battery charge level in percent of the WLAN phone at the last logon.

### Preamble Type

A preamble is set before each data packet is transmitted in a WLAN. It enables the receiver to synchronize with the transmission timing.

## **IP Devices**

### *IP Phone Configuration*

A long preamble ensures more stable synchronization. A short preamble enables higher data throughput.

Not all WLAN devices support both preamble types.

Possible options:

- **Long**
- **Short**

### 7.1.20.2 "Security Encryption" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > WLAN Settings > "Security Encryption" Tab

**IMPORTANT:** WLAN phone contact may be disrupted if inconsistent data changes are made.

ATTENTION: CRITICAL DATA! On inconsistent change of data maybe the WLAN Phone cannot be reached anymore!

Encryption:

**Encryption WPA-PSK**

WPA-PSK Encryption Type:

Pre-Shared Key:

☒ WPA-PSK Password Hex

**Encryption WEP**

WEP Mode: ☐ 128 Bit ☐ 64 Bit

WEP Key:

WEP Authentication Mode:

☒ WEP Password Hex

**Encryption WPA**

WPA Encryption Type:

**Encryption WPA2-PSK**

Pre-Shared Key:

**Encryption WPA2**

☒ OKC

**NOTE:** Encryption protects data exchange in the WLAN. It does not protect data exchange with Ethernet networks or the Internet.

#### Encryption:

This field enables you to select the encryption procedure.

Possible options:

- **None**  
Data is not encrypted for transmission in the WLAN.
- **WPA**  
WPA encryption.
- **WPA-PSK**  
WPA-PSK encryption.
- **WEP**  
WEP encryption.
- **WPA2**  
WPA2 encryption
- **WPA2-PSK (AES)**  
WPA2-PSK encryption

## IP Devices

### *IP Phone Configuration*

## Encryption WPA-PSK

### WPA-PSK Encryption Type:

Possible options:

- **TKIP**  
Encryption using the TKIP protocol. Designed for use with WPA-PSK.

### Pre-Shared Key:

Entry field for PSK encryption key.

### WPA-PSK Password Hex

Checkbox for activating the WPA-PSK password hex.

## Encryption WPA2-PSK

### Pre-Shared Key:

Entry field for WPA2-PSK encryption key.

## Encryption WPA2

### OKC:

Checkbox for activating the Opportunistic Key Caching (OKC).

## Encryption WEP

### WEP Mode

Information on the WEP key length. For 128 bits, the key must consist of 13 ASCII characters or 26 hexadecimal characters. For 64 bits, it must consist of five ASCII characters or 10 hexadecimal characters.

### WEP Key:

Entry field for WEP encryption key.

### **WEP Authentication Mode:**

Possible options:

- **Open System**  
The WEP key is only used for data encryption, not for authentication.
- **Shared Key**  
The WEP key is also used for authentication in the WLAN. In other words, the handset can only log on to the WLAN if it transmits the correct key.

### **WEP Password Hex**

Checkbox for activating the WEP password hex.

### **Encryption WPA**

#### **WPA Encryption Type:**

Possible options:

- **TKIP**

Encryption using the TKIP protocol. Designed for use with WPA.

### **Encryption WPA2-PSK**

#### **Pre-Shared Key**

Entry field for PSK encryption key.

### **Encryption WPA2**

#### **OKC**

Switch to activate Opportunistic Key Caching (OKC).

## IP Devices

### *IP Phone Configuration*

#### 7.1.20.3 "Location Server" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > WLAN Settings > "Location Server" Tab



☒ Location Server

Location Server Address:

Location Server Port:

#### Location Server

If this checkbox has been enabled, the data for an existing location server is used.

#### Location Server Address:

IP address or host name of the location server.

#### Location Server Port:

Port number of the location server.

## 7.1.20.4 "Advanced Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > WLAN Settings > "Advanced Settings" Tab

U-APSD Support

☒ U-APSD

Max. Service Period Length (packets):

Roaming Scan Settings

Max. Number of AP Frames:

Min. Channel Duration:

Max. Channel Duration:

Number of Probe Requests:

Timeout:

### U-APSD Support

#### U-APSD

Activate U-APSD.

#### Max. Service Period Length (packets)

Maximum length of the service period, expressed as a number of packets.

Possible Options:

- **unlimited max. 15**
- **2**
- **4**
- **6**

### Roaming Scan Settings

#### Max. Number of AP Frames

Maximum number of AP frames.

#### Min. Channel Duration

Minimum channel duration.



## **IP Devices**

### *IP Phone Configuration*

#### **Max. Channel Duration**

Maximum channel duration.

#### **Number of Probe Requests**

Number of probe requests.

#### **Timeout**

Timeout after seconds.

### 7.1.20.5 "Debug Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > WLAN Settings > "Debug Settings" Tab

☒ Enable Debug Messages

#### **Enable Debug Messages**

If switch is active, debug messages will be recorded.

## **7.1.21 Signaling and Payload Encryption (SPE)**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Signaling and Payload Encryption (SPE)

This area features the following components:

- General Data
- Possible Action Buttons
- "SPE CA Certificates" Tab
- "SIP Settings" Tab
- "HFA Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

### **7.1.21.1 "SPE Certificate" Tab**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Signaling and Payload Encryption (SPE) > "SPE Certificate" Tab

#### **Status Active/Import:**

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible values:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### **Activate certificate**

The imported certificate is automatically activated.

#### **PKI Configuration**

Shows PKI configuration of imported certificate.

#### **Serial Number:**

Serial number of the active or imported certificate (display only).

#### **Owner:**

Owner of the active or imported certificate (display only).

#### **Issuer:**

Issuer of the active or imported certificate (display only).

## IP Devices

### *IP Phone Configuration*

#### Valid from:

Start of validity for the active or imported certificate (display only).

#### Valid to:

End of validity for the active or imported certificate (display only).

#### Key Algorithm

Key algorithm.

#### Key Size

Key size.

#### Fingerprint (SHA-1):

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate.

#### Expires in ... [days]:

Number of days before the certificate expires.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### Alarm Status:

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

### 7.1.21.2 "SPE CA Certificates" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Signaling and Payload Encryption (SPE) > "SPE CA Certificates" Tab

Index:

Status Active/Import:

☒ Activate certificate

**Active Certificate:**

**PKI Configuration:**

Serial Number:

Owner:

Issuer:

Valid from:  -

Valid to:  -

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

**Imported Certificate:**

-

-

The parameters described below are available once for the currently active certificate and once for the imported certificate.

#### Index:

Serial number of the CA certificate.

#### Status Active/Import:

Specifies whether a certificate is registered as imported and/or active on the phone. The five statuses listed below are possible.

Possible values:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### PKI Configuration

Name of PKI configuration.

## **IP Devices**

### *IP Phone Configuration*

#### **Serial Number:**

Serial number of the active or imported certificate (display only).

#### **Owner:**

Owner of the active or imported certificate (display only).

#### **Issuer:**

Issuer of the active or imported certificate (display only).

#### **Valid from:**

Start of validity for the active or imported certificate (display only).

#### **Valid to:**

End of validity for the active or imported certificate (display only).

#### **Key Algorithm**

Key algorithm.

#### **Key Size**

Key size.

#### **Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate.

#### **Expires in ... [days]:**

Number of days before the certificate expires.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### **Alarm Status:**

Displays the duration of validity for certificates when searching for certificates due to expire.

Possible values:

- **valid**
- **soon running out**
- **expired**

#### **Activate certificate**

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.



## IP Devices

### IP Phone Configuration

#### 7.1.21.3 "SIP Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Signaling and Payload Encryption (SPE) > "SIP Settings" Tab

SIP Transport Protocol:

SIP Backup Transport Protocol:

☒ TLS Renegotiation

☒ Payload security allowed

Connectivity check interval (s):

NAT Keep Alive Interval (s):

☒ TLS server validation

☒ TLS backup server validation

SDES Status:

SDES-SDP Negotiation:

☒ SRTCP Encryption allowed

SRTP Encryption

☐ Table ☒ Selected entry   1 / 1

SRTP Encryption Method:

SRTP Encryption Rank:

☒ SRTP Encryption allowed

#### SIP Transport Protocol:

Protocol for SIP signaling.

Possible options:

- **UDP**
- **TCP**
- **TLS**

#### SIP Backup Transport Protocol:

Possible options:

- **UDP**
- **TCP**

### **TLS Renegotiation**

When activated, access is allowed to TLS Servers that don't support secure TLS renegotiation (through RFC 5746).

When disabled, access to servers without secure TLS Renegotiation (according to rfc) is denied.

This checkbox is disabled by default.

### **Payload security allowed**

When activated, payload security is allowed.

### **Connectivity check interval**

Connectivity check interval in seconds.

### **NAT Keep Alive Interval (sec):**

Timer interval that controls the transfer rate of keep-alive packets. If the value equals **0**, the NAT keep-alive mechanism is switched off.

### **TLS server validation**

When activated, the TLS connection to the SIP server is validated.

For OpenStage < 3.0 only.

### **TLS backup server validation**

If this checkbox is activated, the TLS connection to the backup SIP server is validated.

### **SDES Status**

Select the SDES status.

Possible options:

- **disabled** (MIKEY automatically added as SRTP type)
- **enabled** (SDES added as SRTP type)

## **IP Devices**

### *IP Phone Configuration*

#### **SDP Negotiation**

Select the SDP negotiation.

Possible options:

- **SRTP and RTP**
- **SRTP only**
- **Fallback to RTP**

#### **SRCTP Encryption allowed**

When activated, SRCTP encryption will be applied.

#### **SRTP Encryption**

##### **SRTP Encryption Method**

Selects the SRTP encryption method to be used.

Possible options:

- **SHA1-32**
- **SHA1-80**

##### **SRTP Encryption Rank**

Selects the SRTP Encryption Rank.

Possible options:

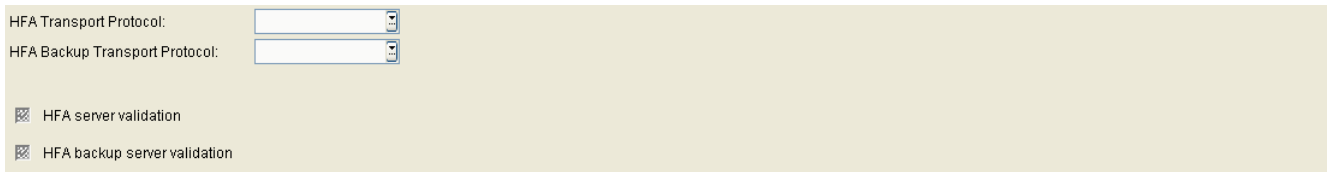
- **Choice 1**
- **Choice 2**

##### **SRTP Encryption allowed**

When activated, SRTP will be encrypted.

#### 7.1.21.4 "HFA Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Signaling and Payload Encryption (SPE) > "HFA Settings" Tab



The screenshot shows a configuration interface for HFA settings. It includes two dropdown menus: 'HFA Transport Protocol:' and 'HFA Backup Transport Protocol:'. Below these are two checkboxes, both of which are checked: 'HFA server validation' and 'HFA backup server validation'.

##### **HFA Transport Protocol:**

Protocol for HFA alerting.

Possible options:

- **UDP**
- **TCP**
- **TLS**

##### **HFA Backup Transport Protocol:**

Protocol for HFA alerting.

Possible options:

- **UDP**
- **TCP**
- **TLS**

##### **HFA server validation**

If this checkbox is activated, the connection to the HFA server is verified.

##### **HFA backup server validation**

If this checkbox is activated, the connection to the HFA backup server is verified.

## **7.1.22 IEEE 802.1x**

**Call:** Main Menu > IP Devices > IP Phone Configuration > IEEE 802.1x

**NOTE:** For detailed information on configuring IEEE 802.1x, see the "IEEE 802.1x Configuration Management" Administration Manual available online at

[http://wiki.unify.com/wiki/VoIP\\_Security#IEEE\\_802.1X](http://wiki.unify.com/wiki/VoIP_Security#IEEE_802.1X)

and

[http://wiki.unify.com/images/2/23/IEEE\\_802.1X\\_Configuration\\_Management.pdf](http://wiki.unify.com/images/2/23/IEEE_802.1X_Configuration_Management.pdf)

This area features the following components:

- General Data
- Possible Action Buttons
- "802.1x Settings" Tab
- "Phone Certificate" Tab
- "RADIUS Server CA Certificate 1" Tab
- "RADIUS Server CA Certificate 2" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.22.1 "802.1x Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IEEE 802.1x > "802.1x Settings" Tab

Authentication Type:

**EAP-TLS**

☒ Validate Server Certificate    Login Name:   
Password:

**EAP-TTLS or PEAP**

MSCHAP Identity:     EAP-TTLS Digest:   
MSCHAP Password:     EAP-TTLS One Time Password:

**EAP-FAST**

EAP-FAST Secret:

**LEAP**

Login Name:   
Password:

#### Authentication Type

Possible values:

- none
- EAP-TLS
- LEAP
- PEAP

#### EAP-TLS

##### Validate Server Certificate

If this checkbox is activated, the telephone checks the validity of the server certificate sent by the access point.

**IMPORTANT:** In the case of OpenStage V3R0 phones (or later) the Server Certificate flag is controlled by **802.1x Authentication Policy** under IP Devices > IP Phone Configuration > Security Settings > "Authentication Policy" Tab. Therefore, whatever the value of Authentication Type, this checkbox is greyed out, thus not editable  
Please refer to Section 7.1.7.10, ""Authentication Policy" Tab".

##### Login Name:

Login name for identification.

## IP Devices

### *IP Phone Configuration*

#### Password:

Password for identification.

#### EAP-TTLS or PEAP

Provide support for IEEE 802.1x [802.1x] which is a standard for port-based network access control. 802.1x provides an authentication framework where a user (or device) is authenticated by a central authority (in RADIUS model) and where the user (or device) also authenticates the central authority. With this selection EAP-TTLS or PEAP protocol does the extensible authentication.

#### MSCHAP Identity:

Device name for MSCHAP-V2 in PEAP or EAP-TTLS.

**NOTE:** If the new value “PEAP” is selected, the attribute “MSCHAP Identity” (Item: mschap-identity) is enabled.

#### MSCHAP Password:

Password for MSCHAP-V2 in PEAP or EAP-TTLS.  
The value is write-only.

**NOTE:** If the new value “PEAP” is selected, the attribute “MSCHAP Password” (Item: mschap-pw) is enabled.

#### EAP-TTLS Digest

Challenge digest for MD challenge with EAP-TTLS.  
The value is write-only.

#### EAP-TTLS One Time Password

One time password for use with EAP-TTLS.  
The value is write-only.

## **EAP-FAST**

### **EAP-FAST Secret:**

Secret for EAP-FAST.  
The value is write-only.

## **LEAP**

### **Login Name:**

Login name for identification on the access point/WLAN router.

### **Password:**

Password for identification on the access point/WLAN router.



### 7.1.22.2 "Phone Certificate" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IEEE 802.1x > "Phone Certificate" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Status Active/Import:	<input type="text"/>	<input checked="" type="checkbox"/> Activate certificate (Phone)
Active Certificate:		Imported Certificate:
<u>PKI Configuration:</u>		
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... [days]:	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- no certificate
- different
- equal
- no active certificate
- no imported certificate

#### Activate certificate (Phone)

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

#### PKI Configuration

PKI configuration of the imported certificate.

**Serial Number:**

Serial number of the active or imported certificate (display only).

**Owner:**

Owner of the active or imported certificate (display only).

**Issuer:**

Issuer of the active or imported certificate (display only).

**Valid from:**

Start of validity for the active or imported certificate (display only).

**Valid to:**

End of validity for the active or imported certificate (display only).

**Key Algorithm**

Key algorithm.

**Key Size**

Key size.

**Fingerprint (SHA-1):**

Test algorithm **SHA-1** (160 bits/20 characters) for the security certificate.

**Expires in ... [days]:**

Certificate will expire in ... days.

## IP Devices

### *IP Phone Configuration*

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### Alarm Status

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

### 7.1.22.3 "RADIUS Server CA Certificate 1" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IEEE 802.1x > "RADIUS Server CA Certificate 1" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Status Active/Import:	<input type="text"/>	<input checked="" type="checkbox"/> Activate certificate (RADIUS 1)
Active Certificate:	Imported Certificate:	
<a href="#">PKI Configuration:</a>		
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... [days]:	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate (RADIUS 1)

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

#### PKI Configuration

PKI configuration of the imported certificate.

## IP Devices

### *IP Phone Configuration*

#### **Serial Number:**

Serial number of the active or imported certificate (display only).

#### **Owner:**

Owner of the active or imported certificate (display only).

#### **Issuer:**

Issuer of the active or imported certificate (display only).

#### **Valid from:**

Start of validity for the active or imported certificate (display only).

#### **Valid to:**

End of validity for the active or imported certificate (display only).

#### **Key Algorithm**

Key algorithm.

#### **Key Size**

Key size.

#### **Fingerprint (SHA-1):**

Test algorithm **SHA-1** (160 bits/20 characters) for the security certificate.

#### **Expires in ... [days]:**

Certificate will expire in ... days.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### **Alarm Status**

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

#### 7.1.22.4 "RADIUS Server CA Certificate 2" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > IEEE 802.1x > "RADIUS Server CA Certificate 2" Tab

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

Status Active/Import:

☒ Activate certificate (RADIUS 2)

Active Certificate:

Imported Certificate:

PKI Configuration:

Serial Number:

Owner:

Issuer:

Valid from:  -

Valid to:  -

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- no certificate
- different
- equal
- no active certificate
- no imported certificate

#### Activate certificate (RADIUS 2)

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

#### PKI Configuration

PKI configuration of the imported certificate.

**Serial Number:**

Serial number of the active or imported certificate (display only).

**Owner:**

Owner of the active or imported certificate (display only).

**Issuer:**

Issuer of the active or imported certificate (display only).

**Valid from:**

Start of validity for the active or imported certificate (display only).

**Valid to:**

End of validity for the active or imported certificate (display only).

**Key Algorithm**

Key algorithm.

**Key Size**

Key size.

**Fingerprint (SHA-1):**

Test algorithm **SHA-1** (160 bits/20 characters) for the security certificate.

**Expires in ... [days]:**

Certificate will expire in ... days.



## IP Devices

### *IP Phone Configuration*

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### Alarm Status

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

## **7.1.23 Diagnosis**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis

This area features the following components:

- General Data
- Possible Action Buttons
- "Diagnostic Settings" Tab
- "File Settings" Tab
- "Secure Shell (SSH) access" Tab
- "Remote Trace Settings" Tab
- "Diagnosis and Security Log Files" Tab
- "Periodical File Upload" Tab
- "Secure Trace Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

## IP Devices

### IP Phone Configuration

#### 7.1.23.1 "Diagnostic Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis > "Diagnostic Settings" Tab

Error tracing is defined here for the individual telephone components. The trace files are uploaded from the telephone to a server via FTP or HTTPS.

**NOTE:** These settings are also available for OpenStage 15/20 (SIP only) & OpenScape Desk Phone IP 35 G / 35 G Eco phones.

Easy Trace

Set all Trace Levels to:  Set Trace Level for following problem:

Trace Level

Admin phonelet:	<input type="text"/>	Call log phonelet:	<input type="text"/>	Call View phonelet:	<input type="text"/>	HTTP service:	<input type="text"/>
Phonebook phonelet:	<input type="text"/>	Help phonelet:	<input type="text"/>	Application Menu phonelet:	<input type="text"/>	Video Engine service:	<input type="text"/>
Certificate Management service:	<input type="text"/>	Communications service:	<input type="text"/>	Component Registrar service:	<input type="text"/>		
CSTA service:	<input type="text"/>	Data Access service:	<input type="text"/>	Digit Analysis service:	<input type="text"/>		
Directory service:	<input type="text"/>	DLS Client Management service:	<input type="text"/>	Health service:	<input type="text"/>		
Instrumentation service:	<input type="text"/>	Journal service:	<input type="text"/>	Media Control service:	<input type="text"/>		
Media Processing service:	<input type="text"/>	Mobility service:	<input type="text"/>	OBEX service:	<input type="text"/>		
OpenStage Client Management service:	<input type="text"/>	POT service:	<input type="text"/>	Password Management service:	<input type="text"/>		
Physical Interface service:	<input type="text"/>	Sidecar service:	<input type="text"/>	Team service:	<input type="text"/>		
Tone Generation service:	<input type="text"/>	Transport service:	<input type="text"/>	Voice Engine service:	<input type="text"/>		
Web Server service:	<input type="text"/>	SIP Signalling:	<input type="text"/>	SIP Call Control:	<input type="text"/>		
SIP Messages:	<input type="text"/>	Application Framework:	<input type="text"/>	Desktop phonelet:	<input type="text"/>		
AGP/Java phonelet:	<input type="text"/>	Service Framework:	<input type="text"/>	Service Registry:	<input type="text"/>		
Bluetooth service:	<input type="text"/>	HFA Service Agent:	<input type="text"/>	VCARD Parser service:	<input type="text"/>		
Voice Mail phonelet:	<input type="text"/>	USB Backup service:	<input type="text"/>	802.1x service:	<input type="text"/>		
Voice recognition phonelet:	<input type="text"/>	H.323 Messages:	<input type="text"/>	H.323 Security:	<input type="text"/>		
Clock service:	<input type="text"/>	Security Log service:	<input type="text"/>	Media Recording service:	<input type="text"/>		

#### Easy Trace

Pre-defined profiles facilitate the controlling of trace parameters. Common trace levels for all components can be configured, as well as groups of parameters which belong to a specific functional area of the phone.

#### Set all Trace Levels to:

Activates all trace points in code from OpenStage phones. A different value may be set for each trace level.

Possible Options:

- **Off**
- **Fatal**
- **Error**
- **Warning**
- **Trace**
- **Debug**

**Set Trace Level for following problem:**

Select a functional area in the phone for which the Easy Trace profile is to be set.

Possible Options:

- **Bluetooth headset profile**
- **Bluetooth handsfree profile**
- **Call connection**
- **Call log problems**
- **DAS connection**
- **DLS data errors**
- **Help application problems**
- **Key input problems**
- **LAN connectivity problems**
- **Messaging application problems**
- **Mobility problems**
- **OpenStage manager problems**
- **Phone administration problems**
- **Phonebook (LDAP) problems**
- **Phonebook (local) problems**
- **Server based application problems**
- **Sidecar problems**
- **Speech problems**
- **Tone problems**
- **USB audio features**
- **USB backup/restore**
- **Voice recognition problems**
- **Web based management**
- **802.1x problems**

## **IP Devices**

### *IP Phone Configuration*

#### **Trace Level**

Activates particular trace points in code from the OpenStage phones and locates errors. A different value may be set for each trace level.

#### **Admin phonelet:**

Possible options:

- **Off**
- **Fatal**
- **Error**
- **Warning**
- **Trace**
- **Debug**

#### **Call log phonelet:**

Same options as for Admin phonelet:

#### **Phonebook phonelet:**

Same options as for Admin phonelet:

#### **Certificate Management service:**

Same options as for Admin phonelet:

#### **CSTA service:**

Same options as for Admin phonelet:

#### **Directory service:**

Same options as for Admin phonelet:

#### **Instrumentation service:**

Same options as for Admin phonelet:

**Media Processing service:**

Same options as for Admin phonelet:

**OpenStage Client Management service:**

Same options as for Admin phonelet:

**Physical Interface service:**

Same options as for Admin phonelet:

**Tone generation service:**

Same options as for Admin phonelet:

**Web Server service:**

Same options as for Admin phonelet:

**SIP Messages:**

Same options as for Admin phonelet:

**AGP/Java phonelet:**

Same options as for Admin phonelet:

**Bluetooth service:**

Same options as for Admin phonelet:

**Voice Mail phonelet:**

Same options as for Admin phonelet:

## **IP Devices**

### *IP Phone Configuration*

#### **Voice recognition phonelet:**

Same options as for Admin phonelet:

#### **Call Log phonelet:**

Same options as for Admin phonelet:

#### **Help phonelet:**

Same options as for Admin phonelet:

#### **Communications service:**

Same options as for Admin phonelet:

#### **Data Access service:**

Same options as for Admin phonelet:

#### **DLS Client Management service:**

Same options as for Admin phonelet:

#### **Journal service:**

Same options as for Admin phonelet:

#### **Mobility service:**

Same options as for Admin phonelet:

#### **Pot service:**

Same options as for Admin phonelet:

**Sidecar service:**

Same options as for Admin phonelet:

**Transport service:**

Same options as for Admin phonelet:

**SIP Signalling:**

Same options as for Admin phonelet:

**Application Framework:**

Same options as for Admin phonelet:

**Service Framework:**

Same options as for Admin phonelet:

**HFA Service Agent:**

Same options as for Admin phonelet:

**USB Backup service:**

Same options as for Admin phonelet:

**H.323 Messages:**

Same options as for Admin phonelet:

**Security Log service:**

Same options as for Admin phonelet:



## **IP Devices**

### *IP Phone Configuration*

#### **Call View phonelet:**

Same options as for Admin phonelet:

#### **Application Menu phonelet:**

Same options as for Admin phonelet:

#### **Component Registrar service:**

Same options as for Admin phonelet:

#### **Digit Analysis service:**

Same options as for Admin phonelet:

#### **Health service:**

Same options as for Admin phonelet:

#### **Media Control service:**

Same options as for Admin phonelet:

#### **OBEX service:**

Same options as for Admin phonelet:

#### **Password Management service:**

Same options as for Admin phonelet:

#### **Team service:**

Same options as for Admin phonelet:

**Voice engine service:**

Same options as for Admin phonelet:

**SIP Call Control:**

Same options as for Admin phonelet:

**Desktop phonelet:**

Same options as for Admin phonelet:

**Service Registry:**

Same options as for Admin phonelet:

**VCARD Parser service:**

Same options as for Admin phonelet:

**802.1x service:**

Same options as for Admin phonelet:

**H.323 Security:**

Same options as for Admin phonelet:

**Media Recording service:**

Same options as for Admin phonelet:

**HTTP service:**

Same options as for Admin phonelet:

## **IP Devices**

### *IP Phone Configuration*

#### **Video Engine service:**

Same options as for Admin phonelet:

### 7.1.23.2 "File Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis > "File Settings" Tab

**Trace File Settings**

Trace file size (bytes):  ☒ Auto. clear before start

Trace timeout (min):

**Core Dump Settings**

☒ Core dump enabled

☒ Unlimited Core dump file size

Core dump file size (MB):

#### Trace File Settings

##### Trace file size (bytes)

Specifies the maximum size of the trace file.

Value range: **65536 ... 4194304** (64KB ... 4MB).

##### Trace Timeout (min):

Defines the number of minutes after which a timeout for tracing should be activated.

##### Auto. clear before start

Defines whether the trace memory should be emptied before a new trace is executed.

#### Core Dump Settings

##### Core dump enabled

Checkbox for activating the core dump.

##### Unlimited Core dump file size

If this checkbox is activated, the size of a core dump file is not limited.

##### Core dump file size (MB)

Specifies the maximum size of the trace file.

## **IP Devices**

### *IP Phone Configuration*

Value range: **0 ... 1023**

Default value: **1000**

### 7.1.23.3 "Secure Shell (SSH) access" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis > "Secure Shell (SSH) access" Tab

☒ Secure Shell (SSH) access allowed

#### **Secure Shell (SSH) access allowed**

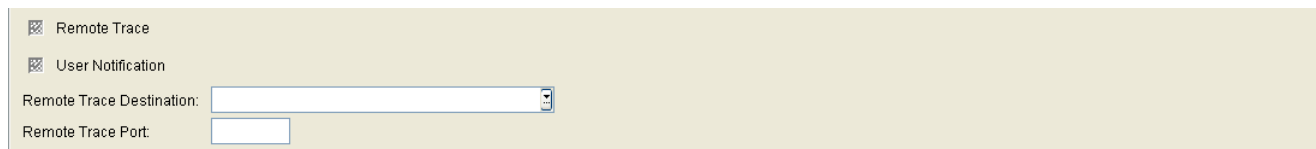
If this checkbox is active, the phone can be accessed via SSH.

## IP Devices

### IP Phone Configuration

#### 7.1.23.4 "Remote Trace Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis > "Remote Trace Settings" Tab



☒ Remote Trace

☒ User Notification

Remote Trace Destination:

Remote Trace Port:

#### Remote Trace

If this checkbox is active, the phones send its trace data directly to the destination entered in **Remote Trace Destination**.

#### User Notification

If activated, the phone user will be notified when a trace is performed on the phone.

#### Remote Trace Destination

IP address or hostname of the server to which the trace data are sent.

#### Remote Trace Port

Number of the port at which the server receives the trace data.

### 7.1.23.5 "Diagnosis and Security Log Files" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis > "Diagnosis and Security Log Files" Tab

Upload and Download of Diagnosis and Security Log Files

Upload Diagnosis and Security Log Files (from Phone to DLS Server)

Upload Files ...

Uploaded Diagnosis Files stored at: [text field]

Uploaded Security Log Files stored at: [text field]

Download of all uploaded Diagnosis and Security Log Files (from DLS Server to the Client PC)

Download Files ...

Settings for Security Log File

☒ Store Security Log File to DLS

Max. Number of Lines in Security Log File: [text field] Store Security Log File on Percentage: [text field] Security Log File stored last at: [text field]

☒ Allow User Access to Diagnostic Data

Diagnostic Call Prefix: [text field]

#### Upload and Download of Diagnosis and Security Log Files

##### Upload Diagnosis and Security Log Files (from Phone to DLS Server)

##### Upload Files ...

Starts a single upload of diagnosis- and security log files, independent of the settings for periodical uploads. The files to be uploaded can be selected in a popup window.

##### Uploaded Diagnosis Files stored at:

Storage path for the diagnosis files that have been uploaded for this device. The path can be set via **Main Menu > Administration > File Server > OpenStage Diagnosis Files.**

##### Uploaded Security Log Files stored at:

Storage path for the security log files that have been uploaded for this device. The path can be set via **Main Menu > Administration > File Server > OpenStage Security Log Files.**



## IP Devices

### *IP Phone Configuration*

#### Download of all Diagnosis and Security Log Files (from DLS Server to Client PC)

##### [Download Files ...](#)

Starts downloading all diagnosis and security log files from phone to DLS Server as a .zip-file.

#### Settings for Security Log File

##### [Store Security Log File to DLS](#)

When active, the security log file of this IP Device is stored by the DLS.

##### [Max. Number of Lines in Security Log File:](#)

Sets the maximum number of entries that may be contained in the security log file.

Value range: **100 ... 1000**

##### [Store Security Log File on Percentage](#)

Determines the percentage of unstored entries. The percentage depends on the value of **Max. Number of Lines in Security Log File**. When the percentage is exceeded, the security log file is sent to the DLS for storing.

Possible Options:

- **save immediately**
- **10%**
- **20%**
- **30%**
- **35%**
- **40%**
- **45%**
- **50%**
- **55%**
- **60%**
- **65%**
- **70%**
- **80%**

- **90%**

### **Security Log File stored last at**

Date at which the security log file has been stored lastly.

### **Allow User Access to Diagnostic Data**

If switch is active, the OpenStage phone user is allowed to access diagnostic data on the phone.

Only available for OpenStage V3R0.

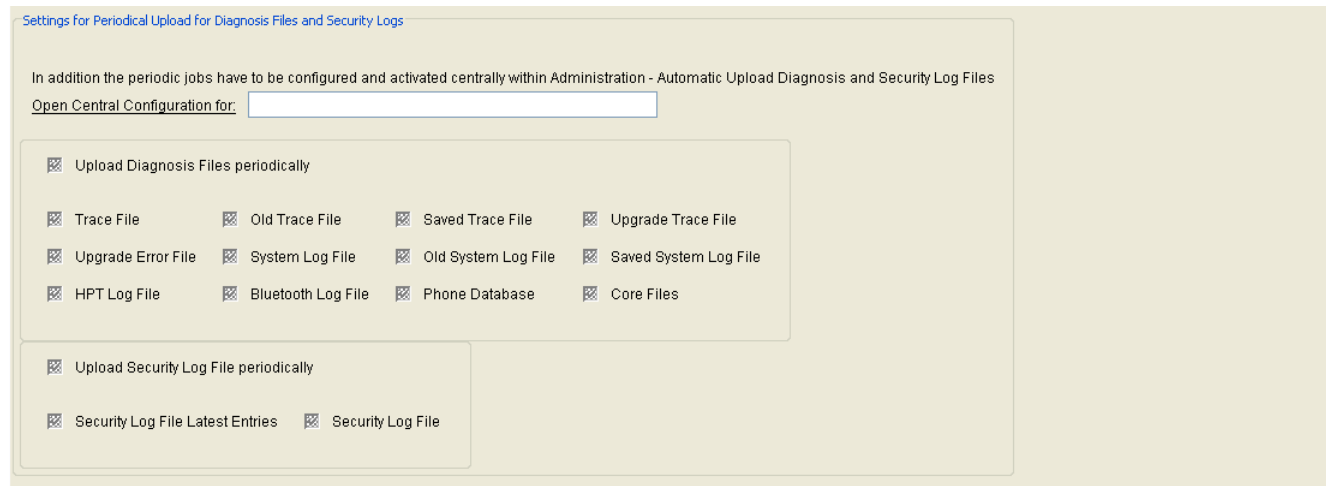
### **Diagnostic Call Prefix**

A diagnostics call can be initiated by dialing the diagnostics call prefix followed by the called party number. The prefix consists of \*(0-9)(0-9)(0-9)# .

Maximum length : 5 digits ( including \* and # )

### 7.1.23.6 "Periodical File Upload" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis > "Periodical File Upload" Tab



#### Settings for Periodical Upload for Diagnosis Files and Security Logs

##### Open Central Configuration for:

By clicking on the string, the central configuration in **Administration > Automatic Upload Diagnosis- and Security Log Files** is opened. The name of the destination mask is displayed in the text field.

##### Upload Diagnosis Files periodically

When active, diagnosis files of the IP Device are uploaded periodically.

##### Trace File

When active, the trace file of the IP Device is uploaded periodically.

##### Old Trace File

If checkbox is active, the old trace file of the IP Device is uploaded periodically.

##### Saved Trace File

When active, the saved trace file is uploaded periodically.

### **Upgrade Trace File**

When active, the upgrade trace file of the IP Device is uploaded periodically.

### **Upgrade Error File**

When active, the upgrade error file of the IP Device is uploaded periodically.

### **System Log File**

When active, the system log file of the IP Device is uploaded periodically.

### **Old System Log File**

When active, the old system log file is uploaded periodically.

### **Saved System Log File**

When active, the saved system log file is uploaded periodically.

### **HPT Log File**

When active, the HPT log file of the IP Device is uploaded periodically.

### **Bluetooth Log File**

When active, the Bluetooth log file of the IP Device is uploaded periodically.

### **Phone Database**

When active, the phone database file is uploaded periodically.

### **Core Files**

When active, the core files of the IP Device are uploaded periodically.

## **IP Devices**

### *IP Phone Configuration*

#### **Upload Security Log File periodically**

When active, the security log files of the IP Device are uploaded periodically.

#### **Security Log File Last Entries**

When active, entries in the security log file of the IP Device that have been added since the last storage are uploaded periodically.

#### **Security Log File**

When active, the complete security log file of the IP Device is uploaded periodically.

### 7.1.23.7 "Secure Trace Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Diagnosis > "Secure Trace Settings" Tab

#### Enable Secure Trace

Enable Secure Trace at the phone.

#### Secure Trace Time Limit (min)

Defines the time period within which trace data shall be collected.

Maximum value: **43200** (= 30 days)

#### Certificate

##### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate (Secure Trace)

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

#### Serial Number:

Serial number of the active or imported certificate (display only).

#### Owner:

Owner of the active or imported certificate (display only).

#### Issuer:

Issuer of the active or imported certificate (display only).

#### Valid from:

Start of validity for the active or imported certificate (display only).

#### Valid to:

End of validity for the active or imported certificate (display only).

#### Fingerprint (SHA-1):

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate.

#### Expires in ... [days]:

Certificate will expire in ... days.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

### **Alarm Status**

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**



## 7.1.24 Miscellaneous

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous

This area features the following components:

- General Data
- Possible Action Buttons
- "Country & Language" Tab
- "Messaging Services" Tab
- "SIP Error Notification" Tab
- "Display / Phone Settings" Tab
- "Help Internet URL" Tab
- "FTP Server" Tab
- "Call Log" Tab
- "Phone Lock" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.1.24.1 "Country & Language" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "Country & Language" Tab

Country:	<input type="text"/>
Language:	<input type="text"/>
USB Keyboard Country:	<input type="text"/>

#### Country:

Country where the workpoint is operated. This parameter corresponds to the country setting on the device.

Possible options:

- **AR - Argentina**
- **AT - Austria**
- **AU - Australia**
- **BE - Belgium**
- **BR - Brazil**
- **CA- Canada**
- **CH- Switzerland**
- **CL - Chile**
- **CN - China**
- **CZ - Czech Republic**
- **DE - Germany**
- **DK - Denmark**
- **EE - Estonia**
- **ES - Spain**
- **FI - Finland**
- **FR - France**
- **GB - United Kingdom**
- **HR - Croatia**
- **HU - Hungary**
- **IE - Ireland**
- **IN - India**

## **IP Devices**

### *IP Phone Configuration*

- **IT - Italy**
- **JP - Japan**
- **LT - Lithuania**
- **LU - Luxembourg**
- **LV - Latvia**
- **MX - Mexico**
- **NL - Netherlands**
- **NO - Norway**
- **NZ - New Zealand**
- **PL - Poland**
- **PT - Portugal**
- **RU - Russian Federation**
- **SE - Sweden**
- **SG - Singapore**
- **SK - Slovakia**
- **TH - Thailand**
- **TR- Turkey**
- **US - United States**
- **VN - Vietnam**
- **ZA - South Africa**
- **CY - Wales**

### **Language:**

Language to be used for local applications.

Possible options:

- **bg - bulgarian**
- **ca - catalan**
- **cs - czech**
- **da - danish**

- **de - german**
- **el - greek**
- **en - english**
- **en - english (US)**
- **es - spanish**
- **et - estonian**
- **fi - finnish**
- **fr - french**
- **hr - croatian**
- **hu - hungarian**
- **id - indonesian**
- **it - italian**
- **ja - japanese**
- **lt - lithuanian**
- **lv - latvian**
- **mk - macedonian**
- **ms - malayan**
- **nl - dutch**
- **no - norwegian**
- **pl - polish**
- **pt - portuguese**
- **pt-Br - brazilian**
- **ro - romanian**
- **ru - russian**
- **sk - slovak**
- **sl - slovenian**
- **sr - serbian (Cyrillic)**
- **sr - serbian (Latin)**
- **sv - swedish**
- **sr - serbian**

## **IP Devices**

### *IP Phone Configuration*

- **tr - turkish**
- **zh - chinese**
- **cy- welsh**

### **USB Keyboard Country:**

Language-specific keyboard layout when using an external USB keyboard.

Possible options:

- **English**
- **German**
- **French**
- **Spanish**
- **American**
- **Italian**

## 7.1.24.2 "Messaging Services" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "Messaging Services" Tab

Country & Language	Messaging Services	SIP Error Notification	Display / Phone Settings	Internet Help URL	FTP Server	Call Log	Phone Lock
MWI Server Address:	<input type="text"/>						
Voice Mail Number:	<input type="text"/>						
Missed call LED:	<input type="text"/>						
Additional MWI settings:							
MWI LED:	<input type="text"/>						
Alternative Label new Items:	<input type="text"/>						<input checked="" type="checkbox"/> Show new Items
Alternative Label new urgent Items:	<input type="text"/>						<input checked="" type="checkbox"/> Show new urgent Items
Alternative Label old Items:	<input type="text"/>						<input checked="" type="checkbox"/> Show old Items
Alternative Label old urgent Items:	<input type="text"/>						<input checked="" type="checkbox"/> Show old urgent Items

### MWI Server Address:

IP address or host name of the MWI server.

### Voice Mail Number:

Phone number of the voicemail system (message server).

### Missed call LED:

### Additional MWI settings

#### Show new Items

Shows the count of new messages.

#### Show new urgent Items

Shows the count of new urgent messages.

## **IP Devices**

### *IP Phone Configuration*

#### **Show old urgent Items**

Shows the count of old messages.

#### **Show old urgent Items**

Shows the count of old urgent messages.

#### **Alternative Label new Items**

Label for the count of new messages.

#### **Alternative Label new urgent Items**

Label for the count of new urgent messages.

#### **Alternative Label old Items**


Label for the count of old messages.

#### **Alternative Label old urgent Items**

Label for the count of old urgent messages.

### **7.1.24.3 "SIP Error Notification" Tab**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "SIP Error Notification" Tab

 Beep on Error

#### **Beep on Error**

Checkbox for activating acoustic error signaling during communication with Microsoft RTC.

Only available in SIP workpoints.



## IP Devices

### IP Phone Configuration

#### 7.1.24.4 "Display / Phone Settings" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "Display / Phone Settings" Tab

The screenshot shows the 'Display / Phone Settings' configuration page. It is divided into several sections: 'Handset Name' with a text input field; 'Display Settings' with fields for 'Display Theme', 'Inactivity Timeout (min)', 'Display Brightness', 'Backlight Timeout (h)', and 'Backlight Timeout Energy Saving Display'; 'Screensaver' with a checkbox for 'Enable Screensaver' and a 'Screensaver transition Timeout (sec)' field; 'Phone Settings' with a 'Not used Timeout (min)' field; 'Call Menu (HFA)' with a checkbox for 'Call Menu auto hide' and a 'Call Menu auto hide Timer (sec)' field; and 'Context Menu (SIP)' with a checkbox for 'Context Menu auto show' and a 'Context Menu auto hide Timer (sec)' field. All fields are currently empty or have default values.

#### Handset Name

##### Handset Name:

Name of the WLAN handset shown on the handset's display.

Value range: max. 16 alphanumeric characters.

#### Display Settings

##### Display Theme

Defines the layout of the graphical user interface on OpenStage phones.

Possible options:

- **Silver Blue**
- **Anthracite Orange**

##### Inactivity Timeout (min)

Time of inactivity in minutes when the screen will be dimmed.

- **0** (no timeout)
- **5**
- **10**

- 20
- 30
- 60
- 120

### Display Brightness

Sets the display brightness.

Possible Optionen:

- -3
- -2
- -1
- Default
- +1
- +2
- +3

### Backlight Timeout (h):

When the phone has been in idle state for a timespan longer than this value, the backlight is switched off.

**NOTE:** Valid only for IP Devices with **Display Backlight Type = Standard**, see Section 7.5.1, "Inventory Data".

Possible options:

- 2
- 3
- 4
- 5
- 6
- 7
- 8

## IP Devices

### *IP Phone Configuration*

#### Backlight Timeout Energy Saving Display

When a phone with energy saving display has been in idle state for a timespan longer than this value, the backlight is switched off.

**NOTE:** Valid only for IP Devices with **Display Backlight Type = CCFL** or **Display Backlight Type = LED**, see Section 7.5.1, "Inventory Data".

Possible Options:

- **1 min**
- **5 min**
- **30 min**
- **60 min**
- **2 hours**
- **3 hours**
- **4 hours**
- **5 hours**
- **6 hours**
- **7 hours**
- **8 hours**

#### Not used Timeout (min):

Time in minutes before the screen is dimmed, if no activities have taken place on the screen until now.

Possible Options:

- **0 (no timeout)**
- **5**
- **10**
- **20**
- **30**
- **60**
- **120**

## **Screensaver**

### **Enable Screensaver**

This checkbox enables the screensaver.

### **Screensaver transition Timeout (sec)**

Time interval in seconds for changing the images.

Possible Options:

- **5**
- **10**
- **20**
- **30**
- **60**

## **Phone Settings:**

### **Not used Timeout (min):**

Defines how long (in minutes) the telephone will remain inactive before its ends a particular status.

Example: Exit the configuration menu after a specified time.

## **Call Menu (HFA)**

### **Call Menu auto hide**

If the checkbox is checked, the call menu will be hidden after an adjustable timeout.

### **Call Menu auto hide Timer (sec)**

Defines the timeout in seconds, after which the hiding of the call menu starts.

Possible Values:

- **0**
- **5**
- **10**

## IP Devices

### *IP Phone Configuration*

- 20
- 30
- 60
- 120

## Context Menu (SIP)

### Context Menu auto show

When active, the context menu will be shown automatically.

### Context Menu auto hide Timer (sec)

The context menu will be hidden after the timeout specified here, in seconds.

Possible Values:

- **No auto hide**
- 5
- 10
- 20
- 30
- 60
- 120

### **7.1.24.5 "Help Internet URL" Tab**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "Help Internet URL" Tab

Help Internet URL:

#### **Help Internet URL:**

URL of the Web help page on the Internet containing information on the telephone.

### **7.1.24.6 "FTP Server" Tab**

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "FTP Server" Tab

☒ Use Passive Mode FTP

#### **Use Passive Mode FTP**

This checkbox activates the passive mode for connections between the telephone and FTP server. Passive mode is used when the FTP server is unable to set up a connection to the client, for example, because of a firewall.

### 7.1.24.7 "Call Log" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "Call Log" Tab

☐ Clear Call Log

#### **Clear Call Log**

Deletes the content of the call log.




## IP Devices

### *IP Phone Configuration*

#### 7.1.24.8 "Phone Lock" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > Miscellaneous > "Phone Lock" Tab

 Lock Phone

#### Lock Phone

Locks the phone.

## **7.1.25 File Deployment**

**Call:** Main Menu > IP Devices > IP Phone Configuration > File Deployment

Files which have been read in the DLS database via scan (see Section 6.3.4, "FTP Server Configuration") can be transferred to an IP device. It is possible to transfer multiple files at once. For an overview of all software types supported by the DLS, see Section 3.5, "Overview of Software and File Types".

This area features the following components:

- General Data
- Possible Action Buttons
- "Files" Tab

## IP Devices

### IP Phone Configuration

#### 7.1.25.1 "Files" Tab

**Call:** Main Menu > IP Devices > IP Phone Configuration > File Deployment > "Files" Tab

**NOTE:** LDAP Templates are also deployable to OpenStage 15/20 (SIP only) & OpenScape Desk Phone IP 35 G / 35 G Eco phones.

#### File Deployment

##### SW Image Name:

Name of the Software Image.

##### File Name:

Name of the file.

##### File Type:

Usage of the file.

**NOTE:** For many file types on the FTP server can be used for multiple purposes. In such cases, there is a table entry for each usage. For instance, a WAV file can be used as a ringtone and as music on hold. Ringtone and music on hold files must not exceed 1MB in size, while screensaver and logo files should not be larger than 300kB.

Example: **LOGO** (OpenStage 40/60/80) , **SCREENSAVER** (OpenStage 40/60/80).

##### Server Type:

Protocol used by the server which provides the file.

Possible values:

- **FTP**
- **HTTPS**

**HTTPS URL:**

URL of the software image, if a HTTPS server is used.

**FTP Server:**

ID of the FTP server that provides the file. This is necessary if a FTP server is used.

**FTP File Path:**

Path of the file, if a FTP server is used.

**Action:**

Indicates what is to be done with the file.

Possible values:

- **delete**
- **deploy**

**Deployment Status:**

Status of the deployment action.

**Status info:**

Information about the status.

**Deployment Date:**

Date of the latest file deployment.

## **IP Devices**

### *IP Phone Configuration*

#### **Deployment Time:**

Time of the latest file deployment.

#### **Deployment Initiator:**

Interface over which the deployment has been initiated.

Possible values:

- **DLS**
- **WBM**
- **Local**

## **7.2 IP Client Configuration**

**Call:** Main Menu > IP Devices > IP Client Configuration

This menu consists of the following submenus:

- CTI Configuration
- Gateway/Server
- Ports
- Quality of Service
- Telephony
- Small Remote Site Redundancy
- Dialing Properties
- Audio/Video Settings
- Directories/Address Books
- Miscellaneous
- Keysets/Keylayout
- Signaling and Payload Encryption (SPE)
- Dialup Site
- OpenScape

## IP Devices

### IP Client Configuration

#### General Data

This part of the contents area is used for entering parameters in **Search** view to find a specific group of IP clients. The base data associated with the IP clients found is displayed in **Object** view (no changes possible except under **Remarks**).

IP Address:	<input type="text"/>	SW Version:	<input type="text"/>	Location:	<input type="text"/>
Device ID:	<input type="text"/>	Reg-Address:	<input type="text"/>		
Device Type:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>		
E.164:	<input type="text"/>				
Remarks:	<input type="text"/>				

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

#### IP Address:

IP address of the IP client.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

#### Device ID:

ID for unique identification of the IP device.

#### Device Type:

Device type of the IP client.

All IP client types supported by DLS can be found in Section 3.4, "Area of Application".

Example: **optiClient 130**

#### E.164:

Complete E.164 phone number of the IP client.

Example: **498972212345** (or no input).

For more information, see Chapter 17, "E.164".

**SW Version:**

Software version of the IP phone.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

**Reg-Address:**

IP address of the gateway or the gatekeeper where the workpoint must register. In HiPath 3000, this is the IP address of the HG 1500, in HiPath 4000 it is the HG 3530 or the STMI board.

**Last Registration:**

Time of the last IP client registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Content Area".

**Remarks:**

Fields for general information.

**Location**

Current location of the IP Device. The value is set during registration and is displayed only herein. (For meaning and configuration of the location, see Section 6.3.2, "Location".)



## IP Devices

### *IP Client Configuration*

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### Search

Searches for all registered IP clients that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Deploy

Starts a job for distributing the configuration changes. For more information, see Section 15.1, "First Steps: Changing IP Device Parameters".

#### Get

Loads a template that has already been saved. For more information, see Section 15.5, "Editing Templates".

#### Save

Saves configuration entries as a template. For more information, see Section 15.5, "Editing Templates".

#### Rename

Changes the name of a saved template. For more information, see Section 15.5, "Editing Templates".

#### Delete

Deletes a saved template. For more information, see Section 15.5, "Editing Templates".

## **7.2.1 CTI Configuration**

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration

This menu consists of the following submenus:

- General Data
- Possible Action Buttons
- CTI HFA Provider
- CSTA Service Provider

## **IP Devices**

### *IP Client Configuration*

#### **7.2.1.1 CTI HFA Provider**

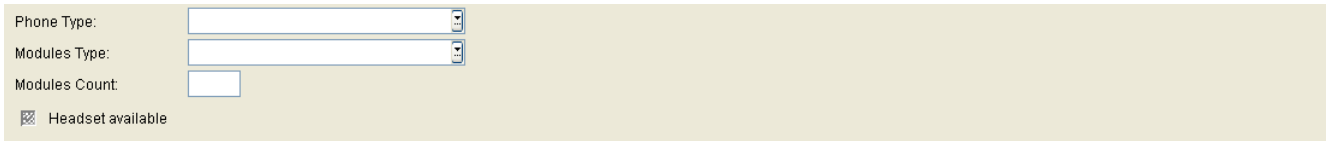
**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CTI HFA Provider

This menu consists of the following submenus:

- General Data
- Possible Action Buttons
- "Device" Tab
- "Connection" Tab
- "Dialup" Tab
- "License" Tab

## "Device" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CTI HFA Provider > "Device" Tab

The screenshot shows a configuration form for a device. It has a light beige background. On the left side, there are three labels: 'Phone Type:', 'Modules Type:', and 'Modules Count:'. Each label is followed by a text input field. The 'Phone Type' and 'Modules Type' fields have a small dropdown arrow on the right. Below these fields, there is a checkbox labeled 'Headset available' which is checked. The rest of the form area is empty.

### Phone Type:

Type of the phone which is to be controlled by the CTI provider.

Possible Options:

- **optiSet E advance China**
- **optiPoint 410 standard (DA Mode)**
- **optiPoint 410 standard**
- **optiPoint 410 advance**
- **optiPoint 420 standard**
- **optiPoint 420 advance**
- **optiSet E comfort**
- **optiSet E advance**

### Modules Type:

Type of the connected module, if present.

Possible Options:

- **optiPoint Key Module**
- **optiPoint Self Labeling Keys Module**
- **optiSet E Key Module**

### Modules Count:

Number of existing modules.

## **IP Devices**

### *IP Client Configuration*

#### **Headset available**

Checkbox to determinate whether a headset is connected.

## "Connection" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CTI HFA Provider > "Connection" Tab

PBX Type:	<input type="text"/>
Connection Port:	<input type="text"/>
Device Address:	<input type="text"/>
User ID:	<input type="text"/>
Password:	<input type="password"/>
ACD Number:	<input type="text"/>
Emergency Number:	<input type="text"/>

### PBX Type:

Possible Options:

- **HiPath 3000**  
Includes HiPath, OpenScape MX/LX, and OpenOffice EE, too.
- **HiPath 4000**

### Connection Port:

Hardware port used for CTI communication with the device. If USB is used, a special driver is necessary, which emulates a COM port. For further information, see the administrator documentation for optiClient.

Possible Options:

- **LAN**
- **COM1**
- **COM2**
- **COM3**
- **COM4**
- **COM5**
- **COM6**
- **COM7**
- **COM8**
- **COM9**

## **IP Devices**

### *IP Client Configuration*

#### **Device Address:**

IP address of the PBX.

#### **User ID:**

User address (extension) for the phone.

#### **Password:**

Password corresponding to the user ID.

#### **ACD Number:**

Needed if the user is working as ACD (Automatic Call Distribution) agent.

#### **Emergency Number:**

Emergency number configured in the device.

## "Dialup" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CTI HFA Provider > "Dialup" Tab

Local Country Code:	<input type="text"/>
Local Area Code:	<input type="text"/>
System Identification Number:	<input type="text"/>
Extension Area:	<input type="text"/>
Trunk code:	<input type="text"/>
Prefix Local Call:	<input type="text"/>
Prefix Long Distance:	<input type="text"/>
Prefix International:	<input type="text"/>
Code for local calls:	<input type="text"/>
Code for National Dial:	<input type="text"/>
Code for International Dial:	<input type="text"/>

### Local Country Code:

E.164 Country code, without leading zero. Maximum length: 4 digits.

Examples: **49** for Germany, **44** for United Kingdom.

### Local Area Code:

Local area code / city code, without leading zero. Maximum length: 21 digits.

Examples: **89** for Munich, **20** for London.

### System Identification Number:

Number of the company PBX to which the phone is connected. Maximum length: 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

### Extension area:

This parameter defines a pattern which enables to discern internal extensions. From a workpoint's point of view, extensions are internal if they are assigned to the same PBX. The extension area can be given as a regular expression.

Example: Let 1xxx, 2xxx, 3xxx, 4xxx, 5xxx be (internal) extensions, and let 6xxx, 7xxx, 8xxx, 9xxx be external call numbers. The regular expression `^[12345]` defines that call numbers beginning with a digit from 1 to 5 are internal extensions. If, for instance, the system identification number is 667, the call numbers from 6671xxx to 6675xxx are treated as internal extensions.



## IP Devices

### *IP Client Configuration*

#### Trunk Code:

Access code used for dialing out from a PBX to a PSTN. If multiple trunk codes are configured at the communication system connected, enter them in this field using "|" as a separator (0 and 88 in the example). The first value entered is always used to supplement the call number when dialing. Maximum length: 5 digits.

Examples: **0, 74, 9** (USA).

#### Prefix Local Call:

Prefix for a local call. This data is determined by the network operator, and thus independent of the configuration for the PBX. Maximum length: 21 digits.

Example: **01081**

#### Prefix Long Distance:

Prefix for a long distance call. This data is determined by the network operator, and thus independent of the configuration for the PBX. Maximum length: 21 digits.

Example: **01081**

#### Prefix International:

Prefix for an international call. This data is determined by the network operator, and thus independent of the configuration for the PBX. Maximum length: 21 digits.

Example: **01081**

#### Code for local calls:

This number is designated as call-by-call prefix for local calls. The data is not dependant on the configuration of the provider connected. Maximum length: 21 digits.

Example: **01019**

#### Code for National Dial:

This number is designated as call-by-call prefix for national calls. The data is not dependant on the configuration of the provider connected. Maximum length: 5 digits.

Example: **01015**

**Code for International Dial:**

This number is designated as call-by-call prefix for international calls. The data is not dependant on the configuration of the provider connected. Maximum length: 5 digits.

Example: **01015**

## IP Devices

### *IP Client Configuration*

#### "License" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CTI HFA Provider > "License" Tab

Server:	<input type="text"/>	Port:	<input type="text"/>
Password:	<input type="password"/>		
Retries:	<input type="text"/>		
Timeout (ms):	<input type="text"/>		

#### Server:

IP address of the server that provides the licenses.

#### Password:

Password for access to the license.

#### Retries:

Number of retries to establish a connection to the license server.

#### Timeout (ms):

Timeout for tries to establish a connection to the license server.

#### Port:

Number of the port used by the license server for delivering licenses.

### **7.2.1.2 CSTA Service Provider**

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CSTA Service Provider

This menu consists of the following submenus:

- General Data
- Possible Action Buttons
- "Connection" Tab
- "Dialup" Tab
- "License" Tab

## IP Devices

### IP Client Configuration

#### "Connection" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CSTA Service Provider > "Connection" Tab

Subscriber ID:	<input type="text"/>
Subscriber Name:	<input type="text"/>
DNS Name:	<input type="text"/>
IP Address:	<input type="text"/>
Password:	<input type="password"/>

☒ Normalize E164

#### Subscriber ID:

Subscriber ID resp. extension which is controlled by the CSTA service provider.

#### Subscriber Name:

Logical name for the extension which is controlled by the CSTA service provider.

#### DNS Name:

DNS name of the CSTA service provider.

#### IP Address:

IP address of the CSTA service provider.

#### Password:

Password required for starting the CSTA service provider.

#### Normalize E.164:

Activates the normalization of call numbers to E.164 format.

**"Dialup" Tab**

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CSTA Service Provider > "Dialup" Tab

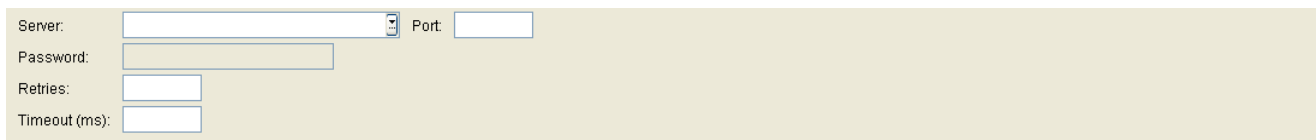
See Section 7.2.7.1, ""HFA Dialing Properties" Tab".

## IP Devices

### IP Client Configuration

#### "License" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > CTI Configuration > CSTA Service Provider > "License" Tab



The screenshot shows a configuration interface with a light beige background. On the left, there are five labels: 'Server:', 'Password:', 'Retries:', and 'Timeout (ms):'. Each label is followed by a text input field. To the right of the 'Server' field, there is a 'Port:' label followed by a text input field. The 'Server' field has a small icon on its right side. The 'Password' field is slightly wider than the others. The 'Retries' and 'Timeout (ms)' fields are narrower. The 'Port' field is also narrow.

#### Server:

IP address of the server that provides the licenses.

#### Password:

Passwort zum Lizenzserver.

#### Retries:

Number of retries to establish a connection to the license server.

#### Timeout (ms):

Timeout for triesto establish a connection to the license server.

#### Port:

Number of the port used by the license server for delivering licenses.

## **7.2.2 Gateway/Server**

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server

This area features the following components:

- General Data
- Possible Action Buttons
- "Gateway" Tab
- "Gateway (Standby)" Tab
- "SW Deployment" Tab
- "HFA Settings" Tab
- "SIP Connection" Tab
- "SIP Registrar" Tab
- "SIP Proxy" Tab
- "SIP Gateway" Tab
- "System Services" Tab
- "SIP Survivability" Tab
- "Licenses" Tab
- "VPN Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").



## IP Devices

### IP Client Configuration

#### General Data

This part of the contents area is used for entering parameters in **Search** view to find a specific group of IP clients. The base data associated with the IP clients found is displayed in **Object** view (no changes possible except under **Remarks**).

IP Address:	<input type="text"/>	SW Version:	<input type="text"/>
Device ID:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>
Device Type:	<input type="text"/>		
E.164:	<input type="text"/>		
Remarks:	<input type="text"/>		

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

#### IP Address:

IP address of the IP client.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

#### Device ID:

ID for unique identification of the IP device.

#### Device Type:

Device type of the IP client.

All IP client types supported by DLS can be found in Section 3.4, "Area of Application".

Example: **optiClient 130**

#### E.164:

Complete E.164 phone number of the IP client.

Example: **498972212345** (or no input).

For more information, see Chapter 17, "E.164".

#### SW Version:

Software version of the IP phone.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

**Reg-Address:**

IP address of the gateway or the gatekeeper where the workpoint must register. In HiPath 3000, this is the IP address of the HG 1500, in HiPath 4000 it is the HG 3530 or the STMI board.

**Last Registration:**

Time of the last IP client registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Content Area".

**Remarks:**

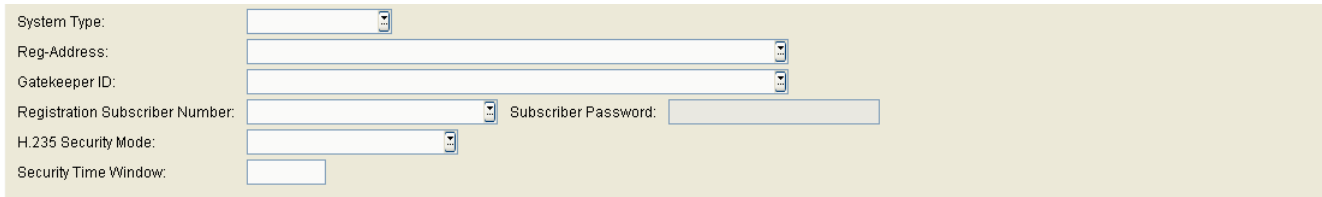
Fields for general information.

## IP Devices

### IP Client Configuration

#### 7.2.2.1 "Gateway" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "Gateway" Tab

A screenshot of a web-based configuration interface for IP devices. The form is titled 'Gateway' and contains several fields for configuration. The fields are: 'System Type' (a dropdown menu), 'Reg-Address' (a text input field), 'Gatekeeper ID' (a dropdown menu), 'Registration Subscriber Number' (a text input field), 'Subscriber Password' (a text input field), 'H.235 Security Mode' (a dropdown menu), and 'Security Time Window' (a text input field). The form is set against a light beige background.

#### System Type:

Type and version of the communication platform at which the workpoint is operated.

Possible options:

- **HiPath 3000**  
Includes HiPath, OpenScape Office MX/LX, and OpenOffice EE, too.
- **HiPath 4000**

Only applies to the HFA configuration of the IP client.

#### Reg-Address:

IP address or host name of the PBX used to operate the workpoint.

Only applies to the HFA configuration of the IP client.

#### Gatekeeper ID:

Only applies to the HFA configuration of the IP client.

#### Registration Subscriber Number:

Phone number of the IP client on the PBX.

Only applies to the HFA configuration of the IP client.

#### Subscriber Password:

Password of the IP client on the PBX.

Only applies to the HFA configuration of the IP client.

### **H.235 Security Mode:**

Possible options:

- **None**  
No voice encryption.
- **Reduced**  
One-way voice encryption (gatekeeper data not sent in encrypted form).
- **Full**  
Voice encryption both ways (workpoint and gatekeeper data both sent in encrypted form).

Only applies to the HFA configuration of the IP client.

### **Security Time Window:**

The gateway only accepts messages that arrive during the time window specified here.

Only applies to the HFA configuration of the IP client.

## IP Devices

### IP Client Configuration

#### 7.2.2.2 "Gateway (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "Gateway (Standby)" Tab

**NOTE:** This "standby" data is used when the "home" data for the "Gateway" Tab is not available. The SRSR functionality must be configured for this, see Section 7.2.6, "Small Remote Site Redundancy".

System Type:	<input type="text"/>		
Reg-Address (Standby):	<input type="text"/>		
Gatekeeper ID:	<input type="text"/>		
Registration Subscriber Number:	<input type="text"/>	Subscriber Password:	<input type="password"/>
H.235 Security Mode:	<input type="text"/>		
Security Time Window:	<input type="text"/>		

#### System Type:

Type and version of the communication platform at which the workpoint is operated.

Possible options:

- **HiPath 3000**  
Includes HiPath, OpenScape Office MX/LX, and OpenOffice EE, too.
- **HiPath 4000**
- **No standby system**

Only applies to the HFA configuration of the IP client.

#### Reg-Address (Standby):

IP address or host name of the standby PBX used to operate the workpoint.

Only applies to the HFA configuration of the IP client.

#### Gatekeeper ID:

Only applies to the HFA configuration of the IP client.

#### Registration Subscriber Number:

Phone number of the IP client on the (standby) PBX.

Only applies to the HFA configuration of the IP client.

**Subscriber Password:**

Password of the IP client on the (standby) PBX.

Only applies to the HFA configuration of the IP client.

**H.235 Security Mode:**

Possible options:

- **None**  
No voice encryption.
- **Reduced**  
One-way voice encryption (gatekeeper data not sent in encrypted form).
- **Full**  
Voice encryption both ways (workpoint and gatekeeper data both sent in encrypted form).

Only available on HFA IP clients.

**Security Time Window:**

The gateway only accepts messages that arrive during the time window specified here.

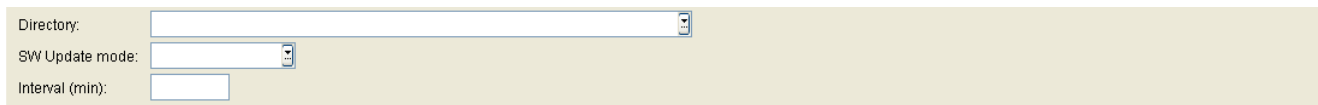
Only applies to the HFA configuration of the IP client.

## IP Devices

### IP Client Configuration

#### 7.2.2.3 "SW Deployment" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "SW Deployment" Tab



The screenshot shows a configuration form with three fields: 'Directory:' with a text input field, 'SW Update mode:' with a dropdown menu, and 'Interval (min):' with a text input field. The form is set against a light beige background.

#### Directory:

Complete path of the directory where the IP client should search for software updates.

#### SW Update mode

Possible values:

- **None**  
No check.
- **Start**  
Check at program start.
- **Interval**  
Ongoing checks in intervals.

#### Interval (min):

Interval in minutes for ongoing checks for software updates.

#### 7.2.2.4 "HFA Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "HFA Settings" Tab

The representation of the optiClient 130 telephone is based on the layout of various device phone types.

To display the optiClient 130 telephone and the extended key field, you can choose from a number of different device phone types for telephone and key module.

The telephone and key module type set for optiClient 130 corresponds in terms of display and layout with the relevant desktop devices. Key modules are displayed as columns in optiClient 130's extended key field.



Device Phontype:

Device Modules Type:

Device Modules Count:

##### Device Phontype:

The telephone type defines:

- How many display lines are displayed in optiClient 130's free telephone (always two lines in the main bar in integrated telephones).
- If self labeling keys are available for the optiClients 130 devices
- How many programmable function keys ...
  - are available in optiClient 130.
  - are available in the first column of the extended key field in optiClient 130.

Possible options:

- **optiPoint 420 standard**
- **optiPoint 410 standard (DA Mode)**
- **optiPoint 410 standard**
- **optiPoint 420 advance**
- **optiSet E advance**
- **optiPoint 410 advance**
- **optiSet E comfort**
- **optiSet E advance China**

##### Device Modules Type:

Possible options:



## IP Devices

### *IP Client Configuration*

- **optiPoint Key Module**
- **optiPoint Self Labeling Key Module**
- **optiSet E Key Module**

#### **Device Modules Count:**

Specifies how many key modules are assigned to the IP client.

Value range: **0 ... 4**

### 7.2.2.5 "SIP Connection" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "SIP Connection" Tab

The screenshot shows the 'SIP Connection' configuration tab. It includes the following fields and sections:

- Terminal Name:** A text input field.
- Own IP Address:** A text input field.
- Server Type:** A dropdown menu.
- Time to Live:** A text input field.
- Address Conversion:** A section containing four checked checkboxes:
  - ☒ E.164 Normalizing
  - ☒ Handle SIP-Addresses as Phone Numbers
  - ☒ Remove Domain Names within displayed Texts
  - ☒ Input and Selection Options of SIP-Addresses
- Remove same Domain within Address:** A checked checkbox.
- Hot Line:** A section containing:
  - Address:** A text input field.
  - Delay Time (sec.):** A text input field.
- SIP Session:** A section containing:
  - ☒ SIP Session Timer
  - SIP Session Duration:** A text input field.

#### Terminal Name

#### Own IP Address

You can enter the optiClient IP address here. If this field is left empty, the optiClient defines its IP address automatically.

#### Server Type

Possible options:

- **Standard**
- **OpenScape Voice**
- **hiQ4200**

#### Time to Live

This value is three times the time taken by the workpoint to register at the gatekeeper to sustain the registration validity. If the value for Time to Live is set to 3 minutes, for example, the workpoint registers every minute.

Value range: **0 ... 4320** minutes.

## **IP Devices**

### *IP Client Configuration*

#### **Address Conversion**

##### **E.164 Normalizing**

Checkbox for activating phone number normalizing.

##### **Remove Domain Names within displayed Texts**

Checkbox for removing the domain name from display texts.

##### **Remove same Domain within Address**

Checkbox for removing the domain name from display texts if the called party is located in the same domain.

##### **Handle SIP-Addresses as Phone Numbers**

#### **Input and Selection Options of SIP-Addresses**

#### **Hot Line**

##### **Address:**

The address specified here is dialed once the delay time defined for line seizure (for example, on lifting the handset) has elapsed.

##### **Delay Time (sec)**

Delay time in seconds for immediate dialing. If the value is 0 the hot line is established without delay.

#### **SIP Session**

##### **SIP Session Timer**

Checkbox for activating the SIP session timer. The timer is used to monitor the duration of an SIP session.

**SIP Session Duration:**

Highest duration in seconds for an SIP session.

Value range: **0 ... 3600** seconds.

## IP Devices

### IP Client Configuration

#### 7.2.2.6 "SIP Registrar" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "SIP Registrar" Tab

The screenshot shows the 'SIP Registrar' configuration tab. It contains several input fields and a group of checkboxes. At the top, there are four fields: 'Registrar Address' (with a dropdown arrow), 'UserID', 'Password', and 'Realm' (with a dropdown arrow). Below these is a section titled 'Main Line' which contains a 'Tooltip Text' field and a group of checkboxes: 'Primary Line', 'Ring', 'Delayed Ring', 'Outgoing', 'Incoming', and 'Private'. At the bottom is a section titled 'Connection Settings' which contains a 'Connection' dropdown field and a 'Registrar Port' field.

#### Registrar Address:

IP address or host name of the SIP registrar.

This setting only applies to the SIP configuration of the IP client.

#### UserID:

The user ID is the first part of the SIP URL.

#### Password:

Password required for accessing the SIP server.

#### Realm:

SIP range in which the workpoint is operated. SIP realm is used to identify the telephone at the SIP server.

#### Main Line

#### Tooltip Text:

Defines the display text for the main line.

### **Primary Line:**

Checkbox for marking the main line as a primary line.

### **Ring**

Checkbox for activating the call.

### **Delayed Ring**

Checkbox for activating a delayed call.

### **Outgoing**

### **Incoming**

### **Private**

## **Connection Settings**

### **Connection**

Possible options:

- **Use DNS SRV**
- **Use Standard Port**
- **Use Individual Port**

### **Registrar Port**

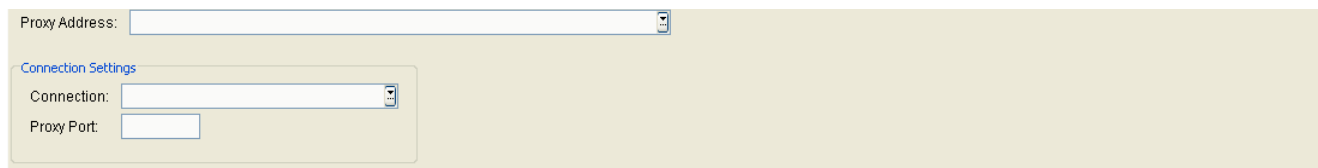
Port number of the registrar server.

## IP Devices

### IP Client Configuration

#### 7.2.2.7 "SIP Proxy" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "SIP Proxy" Tab



The screenshot shows the 'SIP Proxy' configuration tab. It features a 'Proxy Address' field with a dropdown arrow. Below it is a 'Connection Settings' section, which contains a 'Connection' dropdown menu and a 'Proxy Port' text input field.

#### Proxy Address

IP address or host name of the SIP proxy.

This setting only applies to the SIP configuration of the IP client.

#### Connection Settings

##### Connection

Possible options:

- **Use DNS SRV**
- **Use Standard Port**
- **Use Individual Port**

#### Proxy Port

Port number of the proxy server.

### 7.2.2.8 "SIP Gateway" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "SIP Gateway" Tab

The screenshot shows the 'SIP Gateway' configuration tab. It features a 'Gateway Address' field at the top. Below it is a 'Connection Settings' section containing a 'Connection' dropdown menu, a 'Gateway Port' field, and a checked checkbox labeled 'Remove Port Data from INVITE-Header'. At the bottom is an 'Outbound Domain' section with a checked checkbox labeled 'Outbound Domain' and an 'Outbound Domain' field.

#### Gateway Address:

IP address or host name of the gateway.

This setting only applies to the SIP configuration of the IP client.

#### Connection Settings

##### Connection:

Possible options:

- **Use Standard Port**
- **Use Individual Port**

##### Gateway Port:

Port number of the gateway.

##### Remove Port Data from INVITE-Header

If this checkbox has been enabled, the port numbers are removed from the INVITE headers.

#### Outbound Domain

##### Outbound Domain

Checkbox for activating the outbound domain.



## **IP Devices**

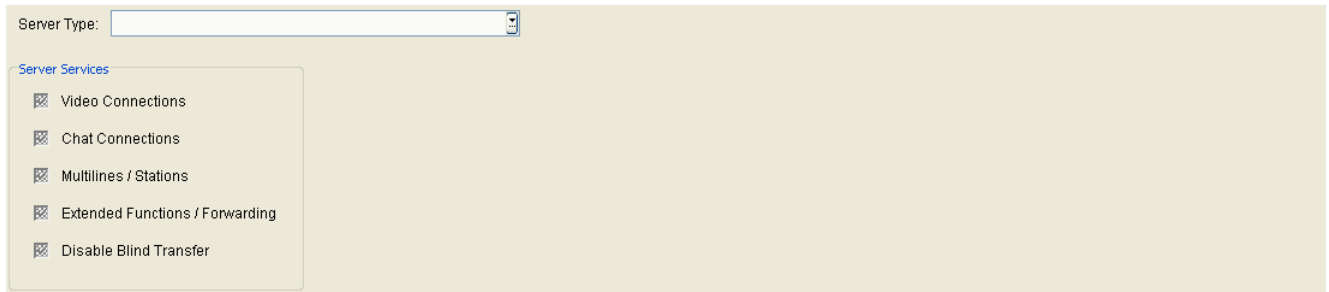
### *IP Client Configuration*

#### **Outbound Domain:**

Name of the outbound domain.

### 7.2.2.9 "System Services" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "System Services" Tab



Server Type:

Server Services

- ☒ Video Connections
- ☒ Chat Connections
- ☒ Multilines / Stations
- ☒ Extended Functions / Forwarding
- ☒ Disable Blind Transfer

#### Server Type:

Possible options:

- **OpenScape Voice/HQ4200 Chat**
- **OpenScape Voice/HQ4200 Keypad**
- **HiPath 3000/4000/5000 and OpenOffice EE**
- **Standard without Video/Chat**
- **Individual**
- **OpenScape Voice/hiQ4200**
- **OpenScape Voice/hiQ4200 without Video**
- **HiPath 3000 >= V8**
- **HiPath 4000 >= V6**

#### Server Services

##### Video Connections

Checkbox for activating video connections.

##### Chat Connections

Checkbox for activating instant messaging connections.

## **IP Devices**

### *IP Client Configuration*

#### **Multilines / Stations**

Checkbox for activating additional lines/stations.

#### **Extended Functions / Forwarding**

Checkbox for activating enhanced call functions/call forwarding.

#### **Disable Blind Transfer**

Switch to disable Blind Transfer

### 7.2.2.10 "SIP Survivability" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "SIP Survivability" Tab

Backup Server Address:

Time to Live:

Connection Settings

Connection:

Backup Server Port:

Outbound-Domain

☒ Use Outbound Domain

#### Backup Server Address:

IP address or host name of the backup server.

#### Time to Live:

This value is three times the time taken by the workpoint to register at the gatekeeper to sustain the registration validity. If the value for Time to Live is set to 3 minutes, for example, the workpoint registers every minute.

Value range: 0 ... 4320 minutes.

#### Connection Settings

##### Connection:

Possible options:

- **Use Standard Port**
- **Use Individual Port**

#### Backup Server Port:

Port number of the backup server.

#### Outbound Domain

##### Use Outbound Domain

Checkbox for activating use of the outbound domain.

## IP Devices

### IP Client Configuration

#### 7.2.2.11 "Licenses" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "Licenses" Tab

The screenshot displays the 'Licenses' tab configuration interface. It is divided into two main sections: 'OpenScape Client License / optiClient 130 HFA License' and 'SIP License'. Each section contains the following fields:

- Server:** A text input field with a dropdown arrow on the right.
- Port:** A text input field.
- Password:** A text input field.
- Retries:** A text input field.
- Timeout (ms):** A text input field.

#### OpenScape Client License / optiClient 130 HFA License

##### Server:

IP address or host name of the license server.

##### Port:

Port number for access to the license server.

Default: **61740**

##### Password:

Password for access to the license server.

##### Retries:

Maximum number of connection attempts.

##### Timeout (ms):

The maximum time (in milliseconds) for the attempt to set up a connection to the license server.

#### SIP License

**Server:**

IP address or host name of the license server.

**Port:**

Port number for access to the license server.

Default: **61740**

**Password:**

Password for access to the license server.

**Retries:**

Maximum number of connection attempts.

**Timeout (ms):**

The maximum time (in milliseconds) for the attempt to set up a connection to the license server.

#### 7.2.2.12 "VPN Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Gateway/Server > "VPN Settings" Tab

A screenshot of the "VPN Settings" tab in a web interface. It features two input fields: "VPN Mode:" with a dropdown arrow and "VPN IP:" with a text input field and a dropdown arrow. The background is a light beige color.

#### VPN Mode:

Possible options:

- **None**  
VPN (Virtual Private Network) is not used.
- **Automatic**  
VPN is used with an automatically determined IP address.
- **Manual**  
VPN is used with the IP address specified in the case of **VPN IP**.

#### VPN IP:

IP address for the VPN (Virtual Private Network).

## **7.2.3 Ports**

**Call:** Main Menu > IP Devices > IP Client Configuration > Ports

This area features the following components:

- General Data
- Possible Action Buttons
- "Ports" Tab
- "SIP Ports" Tab


For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").



### 7.2.3.1 "Ports" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Ports > "Ports" Tab



H.245 Port Range from:  to:   
RTP Port Range from:  to:   
☒ Use CorNet TC Port Range  
CorNet TC Port Range from:  to:   
☒ Use H.225.0 RAS Port  
H.225.0 RAS Port:   
Gateway CorNet-TC TLS:  Gateway CorNet-TC TLS (Standby):   
Gateway H.225.0 TLS:  Gateway H.225.0 TLS (Standby):

**H.245 Port Range from: ... to:**

Port range for H.245.

**RTP Port Range from: ... to:**

Port range for RTP.

**Use Cornet TC Port Range**

Checkbox for activating Cornet TC.

**Cornet TC Port Range from: ... to:**

Port range for Cornet TC.

**Use H.225.0 RAS Port**

Checkbox for activating Cornet TC.

**H.225.0 RAS Port:**

For using NetMeeting at the same time as optiClient 130.

**Gateway CorNet-TC TLS**

**Gateway H.225.0 TLS**

**Gateway CorNet-TC TLS (Standby)**

**Gateway H.225.0 TLS (Standby)**

## IP Devices

### *IP Client Configuration*

#### 7.2.3.2 "SIP Ports" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Ports > "SIP Ports" Tab

RTP Port Range from:  to:

SIP Signaling Port:

#### **RTP Port Range from: ... to:**

Port range for RTP.

Only applies to the SIP configuration of the IP client.

#### **SIP Signaling Port:**

Only applies to the SIP configuration of the IP client.

## **7.2.4 Quality of Service**

**Call:** Main Menu > IP Devices > IP Client Configuration > Quality of Service

This area features the following components:

- General Data
- Possible Action Buttons
- "Settings" Tabs
- "Alternate Settings (SIP)" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Client Configuration

#### 7.2.4.1 "Settings" Tabs

**Call:** Main Menu > IP Devices > IP Client Configuration > Quality of Service > "Settings" Tabs

<input checked="" type="checkbox"/> Layer 3 Select	<input checked="" type="checkbox"/> Layer 2 Select
Layer 3 Signaling: <input type="text"/>	Layer 2 Signaling: <input type="text"/>
Layer 3 Voice: <input type="text"/>	Layer 2 Voice: <input type="text"/>

#### Layer 3 Select

Checkbox for activating layer 3 (network layer).

#### Layer 3 Signaling:

Priority for layer 3 signaling.

Can only be defined if **Layer 3 Select** is active.

Possible options:

- **Default**
- **AF11**
- **AF12**
- **AF13**
- **AF21**
- **AF22**
- **AF23**
- **AF31**
- **AF32**
- **AF33**
- **AF41**
- **AF42**
- **AF43**
- **EF**
- **CST**

**Layer 3 Voice:**

Priority for layer 3 voice.

Can only be defined if **Layer 3 Select** is active.

Same options as for **Layer 3 Signaling**.

**Layer 2 Select**

Checkbox for activating layer 2 (data link layer).

**Layer 2 Signaling:**

Priority for layer 2 signaling.

Can only be defined if **Layer 2 Select** is active.

Value range: 0 ... 7.

**Layer 2 Voice:**

Priority for layer 2 voice.

Can only be defined if **Layer 2 Select** is active.

Same options as for **Layer 2 Signaling**.

## IP Devices

### IP Client Configuration

#### 7.2.4.2 "Alternate Settings (SIP)" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Quality of Service > "Alternate Settings (SIP)" Tab

<input checked="" type="checkbox"/> Layer 3 Select (SIP)	<input checked="" type="checkbox"/> Layer 2 Select (SIP)
Layer 3 Signaling: <input type="text"/>	Layer 2 Signaling: <input type="text"/>
Layer 3 Voice: <input type="text"/>	Layer 2 Voice: <input type="text"/>

#### Layer 2 Select (SIP)

Checkbox for activating layer 2 (data link layer).

#### Layer 2 Signaling:

Priority for layer 2 signaling.

Can only be defined if **Layer 2 Select** is active.

Value range: **0 ... 7**

#### Layer 2 Voice:

Priority for layer 2 voice.

Can only be defined if Layer 2 Select is active.

Same options as for Layer 2 Signaling.

#### Layer 3 Select (SIP)

Checkbox for activating layer 3 (network layer).

#### Layer 3 Signaling

Can only be defined if **Layer 3 Select (SIP)** is active.

Possible options:

- **Default**
- **AF11**
- **AF12**
- **AF13**

- **AF21**
- **AF22**
- **AF23**
- **AF31**
- **AF32**
- **AF33**
- **AF41**
- **AF42**
- **AF43**
- **EF**
- **CST**

**Layer 3 Voice:**

Priority for layer 3 voice.

Can only be defined if **Layer 3 Select (SIP)** is active.

Possible options:

- **Default**
- **AF11**
- **AF12**
- **AF13**
- **AF21**
- **AF22**
- **AF23**
- **AF31**
- **AF32**
- **AF33**
- **AF41**
- **AF42**
- **AF43**



## **IP Devices**

### *IP Client Configuration*

- **EF**
- **CST**

## **7.2.5 Telephony**

**Call:** Main Menu > IP Devices > IP Client Configuration > Telephony

This area features the following components:

- General Data
- Possible Action Buttons
- "Telephony" Tab
- "Telephony (Standby)" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

#### 7.2.5.1 "Telephony" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Telephony > "Telephony" Tab



The screenshot shows a configuration form with three input fields, each with a small dropdown arrow on the right side. The fields are labeled as follows:

- Emergency Number: [input field]
- ACD Number: [input field]
- Location Identifier Number: [input field]

##### Emergency Number:

Contains the phone number that can be dialed in an emergency.

##### ACD Number:

ACD agent number if you are working as an ACD agent.

##### Location Identifier Number

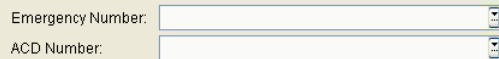
Contains an identification number for unique location identification. This number can be used, for example, to pinpoint the **origin** of an emergency call.

Available for optiClient 130 V4.0 only.

### 7.2.5.2 "Telephony (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Telephony > "Telephony (Standby)" Tab

**NOTE:** This "standby" data is used when the "home" data for the "Telephony" Tab is not available. The SRSR functionality must be configured for this, see Section 7.2.6, "Small Remote Site Redundancy".



The screenshot shows a configuration interface with a light beige background. It contains two rows of input fields. The first row is labeled 'Emergency Number:' followed by a text input field and a small dropdown arrow icon. The second row is labeled 'ACD Number:' followed by a text input field and a small dropdown arrow icon.

#### Emergency Number:

Contains the phone number that can be dialed in an emergency.

#### ACD Number:

ACD agent number if you are working as an ACD agent.

## **7.2.6 Small Remote Site Redundancy**

**Call:** Main Menu > IP Devices > IP Client Configuration > Small Remote Site Redundancy

This area features the following components:

- General Data
- Possible Action Buttons
- "SRSR Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.2.6.1 "SRSR Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Small Remote Site Redundancy > "SRSR Settings" Tab

Reconnect Timeout:	<input type="text"/>
Retry Threshold:	<input type="text"/>
<input checked="" type="checkbox"/> Automated Switchback	

#### Reconnect Timeout:

Timeout for switchover to the main system.

Value range: **1 ... 255** seconds.

#### Retry Threshold:

Specifies the number of attempts permitted when switching back to the standby system.

Value range: **1 ... 255**

#### Automated Switchback

Checkbox for activating the option for automatic switchback to the main system.

## **7.2.7 Dialing Properties**

**Call:** Main Menu > IP Devices > IP Client Configuration > Dialing Properties

This area features the following components:

- General Data
- Possible Action Buttons
- "HFA Dialing Properties" Tab
- "HFA Dialing Properties (Standby)" Tab
- "SIP Dialing Properties" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.2.7.1 "HFA Dialing Properties" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Dialing Properties > "HFA Dialing Properties" Tab

The dialing properties are required for the correct resolution of phone numbers in canonical format (see Chapter 17, "Canonical format").

Local Country Code:	<input type="text"/>
Local Area Code:	<input type="text"/>
System Identification Number:	<input type="text"/>
Extension Area:	<input type="text"/>
Trunk code:	<input type="text"/>
Prefix Local Call:	<input type="text"/>
Prefix Long Distance:	<input type="text"/>
Prefix International:	<input type="text"/>
Code for local calls:	<input type="text"/>
Code for National Dial:	<input type="text"/>
Code for International Dial:	<input type="text"/>

#### Local Country Code:

Format: No leading zeros, up to four digits.

Example: **49** for Germany.

#### Local Area Code:

Format: No leading zeros, up to 21 digits.

Example: **89** for Munich.

#### System Identification number:

Phone number of the system.

Format: Up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

#### Extension Area:

This parameter defines a pattern for detecting internal extension numbers. From the workpoint's perspective, extension numbers are internal if they are assigned to the same system. The extension area can be specified as a regular expression.



## IP Devices

### *IP Client Configuration*

Example: 1xxx, 2xxx, 3xxx, 4xxx, 5xxx are extensions and 6xxx, 7xxx, 8xxx, 9xxx are external phone numbers. The regular expression `^[12345]` indicates that phone numbers starting with the digits 1 to 5 are internal extension numbers. If for example the system identification number is 667, all numbers from 6671xxxx to 6675xxx will be used as internal extensions.

#### Trunk code:

Number for trunk seizure for an outbound external call.

Format: Up to five digits.

Examples: **0**, **74**, **9** (USA).

#### Prefix Local Call:

Format: Up to 21 digits.

Example: **01081**

#### Prefix Long Distance:

Number for an outbound long distance call.

Format: Up to 21 digits.

Example: **01081**

#### Prefix International:

Number for an outbound international call.

Format: Up to 21 digits.

Example: **01081**

#### Code for local calls:

Phone number, for example, of your company.

Format: No leading zeros and no extension numbers, up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

**Code for National Dial:**

National prefix.

Format: Up to five digits.

Example: **0** in Germany.

**Code for International Dial:**

International prefix.

Format: Up to four digits.

Example: **00** in Germany.

#### 7.2.7.2 "HFA Dialing Properties (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Dialing Properties > "HFA Dialing Properties (Standby)" Tab

The dialing properties are required for the correct resolution of phone numbers in canonical format (see Chapter 17, "Canonical format").

**NOTE:** This "standby" data is used when the "home" data for the "HFA Dialing Properties" Tab is not available. The SRSR functionality must be configured for this, see Section 7.2.6, "Small Remote Site Redundancy".

Local Country Code:	<input type="text"/>
Local Area Code:	<input type="text"/>
System Identification Number:	<input type="text"/>
Extension Area:	<input type="text"/>
Trunk code:	<input type="text"/>
Prefix Local Call:	<input type="text"/>
Prefix Long Distance:	<input type="text"/>
Prefix International:	<input type="text"/>
Code for local calls:	<input type="text"/>
Code for National Dial:	<input type="text"/>
Code for International Dial:	<input type="text"/>

#### Local Country Code:

Format: No leading zeros, up to four digits.

Example: **49** for Germany.

#### Local Area Code:

Format: No leading zeros, up to 21 digits.

Example: **89** for Munich.

#### System Identification number:

Phone number of the system.

Format: Up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

### **Extension Area:**

This parameter defines a pattern for detecting internal extension numbers. From the workpoint's perspective, extension numbers are internal if they are assigned to the same system. The extension area can be specified as a regular expression.

Example: 1xxx, 2xxx, 3xxx, 4xxx, 5xxx are extensions and 6xxx, 7xxx, 8xxx, 9xxx are external phone numbers. The regular expression `^[12345]` indicates that phone numbers starting with the digits 1 to 5 are internal extension numbers. If for example the system identification number is 667, all numbers from 6671xxxx to 6675xxx will be used as internal extensions.

### **Trunk code:**

Number for trunk seizure for an outbound external call.

Format: Up to five digits.

Examples: **0**, **74**, **9** (USA).

### **Prefix Local Call:**

Format: Up to 21 digits.

Example: **01081**

### **Prefix Long Distance:**

Number for an outbound long distance call.

Format: Up to 21 digits.

Example: **01081**

### **Prefix International:**

Number for an outbound international call.

Format: Up to 21 digits.

Example: **01081**

### **Code for local calls:**

Phone number, for example, of your company.

## IP Devices

### *IP Client Configuration*

Format: No leading zeros and no extension numbers, up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

#### **Code for National Dial:**

National prefix.

Format: Up to five digits.

Example: **0** in Germany.

#### **Code for International Dial:**

International prefix.

Format: Up to four digits.

Example: **00** in Germany.

### 7.2.7.3 "SIP Dialing Properties" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Dialing Properties > "SIP Dialing Properties" Tab

The dialing properties are required for the correct resolution of phone numbers in canonical format (see Chapter 17, "Canonical format").

Local Country Code:	<input type="text"/>
Local Area Code:	<input type="text"/>
System Identification Number:	<input type="text"/>
Extension Area:	<input type="text"/>
Trunk code:	<input type="text"/>
Prefix Local Call:	<input type="text"/>
Prefix Long Distance:	<input type="text"/>
Prefix International:	<input type="text"/>
Code for local calls:	<input type="text"/>
Code for National Dial:	<input type="text"/>
Code for International Dial:	<input type="text"/>

#### Local Country Code:

Format: No leading zeros, up to four digits.

Example: **49** for Germany.

#### Local Area Code:

Format: No leading zeros, up to 21 digits.

Example: **89** for Munich.

#### System Identification number:

Phone number of the system.

Format: Up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

#### Extension Area:

This parameter defines a pattern for detecting internal extension numbers. From the workpoint's perspective, extension numbers are internal if they are assigned to the same system. The extension area can be specified as a regular expression.

## IP Devices

### *IP Client Configuration*

Example: 1xxx, 2xxx, 3xxx, 4xxx, 5xxx are extensions and 6xxx, 7xxx, 8xxx, 9xxx are external phone numbers. The regular expression `^[12345]` indicates that phone numbers starting with the digits 1 to 5 are internal extension numbers. If for example the system identification number is 667, all numbers from 6671xxxx to 6675xxx will be used as internal extensions.

#### Trunk code:

Number for trunk seizure for an outbound external call.

Format: Up to five digits.

Examples: **0**, **74**, **9** (USA).

#### Prefix Local Call:

Format: Up to 21 digits.

Example: **01081**

#### Prefix Long Distance:

Number for an outbound long distance call.

Format: Up to 21 digits.

Example: **01081**

#### Prefix International:

Number for an outbound international call.

Format: Up to 21 digits.

Example: **01081**

#### Code for local calls:

Phone number, for example, of your company.

Format: No leading zeros and no extension numbers, up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

**Code for National Dial:**

National prefix.

Format: Up to five digits.

Example: **0** in Germany.

**Code for International Dial:**

International prefix.

Format: Up to four digits.

Example: **00** in Germany.



## **7.2.8 Audio/Video Settings**

**Call:** Main Menu > IP Devices > IP Client Configuration > Audio/Video Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "HFA Codec Settings" Tab
- "SIP Codec Settings" Tab
- "Audio Schemes" Tab
- "Available Audio Devices" Tab
- "Video Settings" Tab
- "Available Video Devices"

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.2.8.1 "HFA Codec Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Audio/Video Settings > "HFA Codec Settings" Tab

Codec Sequence:

G.711 Packetlength:

G.723 Packetlength:

G.729 Packetlength:

Jitter-Buffer (ms):

☒ Bandwidth Homeworker

☒ Bandwidth no Polling

☒ DMC activated

#### Codec Sequence:

Possible options:

- not compressing Codecs preferred, besides G.723 preferred
- not compressing Codecs preferred, besides G.729 preferred
- compressing Codecs preferred, G.723 preferred
- compressing Codecs preferred, G.729 preferred
- only compressing Codecs, G.723 preferred
- only compressing Codecs, G.729 preferred

#### G.711 Packetlength:

Possible options:

- 10
- 20
- 30
- 40
- 50
- 60

#### G.723 Packetlength:

Possible options:

- 30

## IP Devices

### *IP Client Configuration*

- 60

#### **G.729 Packetlength:**

Possible options:

- 10
- 20
- 30
- 40
- 50
- 60

#### **Jitter-Buffer (ms):**

Caching duration:

Possible options (in ms):

Value range: **20** ... **190** milliseconds.

#### **Bandwidth Homeworker**

Checkbox for activating the bandwidth for homeworker data transmission.

#### **Bandwidth no polling**

Checkbox for activating the bandwidth with no polling.

#### **DMC activated**

Checkbox for activating DMC bandwidth.

### 7.2.8.2 "SIP Codec Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Audio/Video Settings > "SIP Codec Settings" Tab

1st Codec:	<input type="text"/>
2nd Codec:	<input type="text"/>
Codec Packetlength:	<input type="text"/>
Bandwidth Download (bps):	<input type="text"/>
Bandwidth Upload (bps):	<input type="text"/>
1st Video Codec:	<input type="text"/>
2nd Video Codec:	<input type="text"/>
Jitter-Buffer (ms):	<input type="text"/>

#### 1st Codec:

First compression job.

Possible options:

- **G.711**
- **G.722**
- **G.729**

#### 2nd Codec:

Second compression job.

Possible options:

- **G.711**
- **G.722**
- **G.729**
- **None**

#### 3rd Codec:

Third compression job.

Possible options:

- **G.711**
- **G.722**
- **G.729**

## IP Devices

### *IP Client Configuration*

- **None**

### Codec Packetlength:

Possible options:

- **Automatic**
- **10**
- **20**

### Bandwidth Download (bps)

Possible options:

- **56**
- **64**
- **128**
- **256**
- **512**
- **1024**
- **2048**
- **3072**
- **6144**
- **10000**
- **12288**
- **24576**
- **100000**
- **1000000**

### Bandwidth Upload (bps)

Possible options:

- **56**
- **64**

- **128**
- **256**
- **512**
- **1024**
- **2048**
- **3072**
- **6144**
- **10000**
- **12288**
- **24576**
- **100000**
- **1000000**

#### **1st Video Codec**

Possible options:

- **H.263**
- **H.264**

#### **2nd Video Codec**

Possible options:

- **H.263**
- **H.264**
- **None**

#### **Jitter-Buffer (ms)**

Possible options:

- **20**
- **30**
- **40**

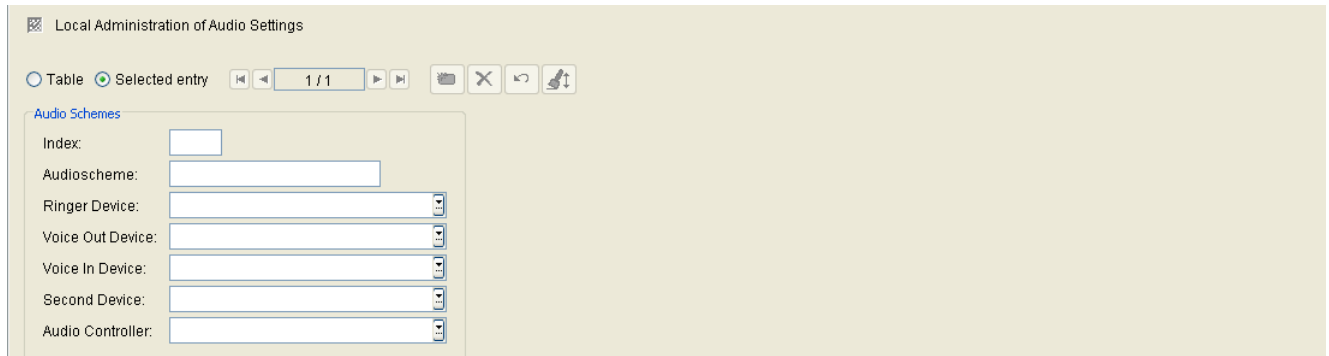
## **IP Devices**

### *IP Client Configuration*

- 50
- 60
- 70
- 80
- 90
- 100
- 110
- 120
- 130
- 140
- 150
- 160
- 170
- 180
- 190

### 7.2.8.3 "Audio Schemes" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Audio/Video Settings > "Audio Schemes" Tab



These tabs let you define hardware settings for the voice output or ringer devices, for example.

#### Local Administration of Audio Settings

If this checkbox is activated, the audio settings can be changed only on the optiClient, but not by the DLS. In this case, the fields under **Audio Schemes** are only for display.

If this checkbox is inactive, the audio settings can be changed only by the DLS.

#### Index

Number of the setting.

#### Audioscheme

Name of the audioscheme.

#### Ringer Device

Audio hardware for the ringer device.

#### Voice Out Device

Audio hardware for the voice out device.



## **IP Devices**

### *IP Client Configuration*

#### **Voice In Device**

Audio hardware for the voice in device.

#### **Second Device**

Audio hardware representing a second device. If a second device is selected here and this audioscheme is active, an additional icon appears in the main menu for controlling the second device.

#### **Audio Controller**

Additional function for controlling hardware functions.

### 7.2.8.4 "Available Audio Devices" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Audio/Video Settings > "Available Audio Devices" Tab

The screenshot shows two configuration tabs in a web interface. The top tab is titled "Available Audio Devices" and contains a table with one entry. The table has columns for Index, Device, Driver Version, Channel Count, Wave-In Device ID, and Wave-Out Device ID. The bottom tab is titled "Available Audio Controller" and contains a table with one entry. The table has columns for Index and Controller. Both tabs have a "Table" button and a "Selected entry" button. The "Selected entry" button is highlighted in both tabs. The "Available Audio Devices" tab also has a "1 / 1" indicator and navigation buttons. The "Available Audio Controller" tab also has a "1 / 1" indicator and navigation buttons.

#### Available Devices:

##### Index

Serial number of the audio device.

##### Device

Name of the audio device for alerting and voice.

##### Driver Version

Driver version for the audio device.

##### Channel Count

Number of available audio channels.

##### Wave-In Device ID

## **IP Devices**

*IP Client Configuration*

### **Wave-Out Device ID**

**Available Audio Controller:**

### **Index**

Number of the setting

### **Controller**

### 7.2.8.5 "Video Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Audio/Video Settings > "Video Settings" Tab

The screenshot shows the 'Video Settings' tab in a web-based configuration interface. At the top, there is a navigation bar with 'Table' and 'Selected entry' tabs, and a '1 / 1' indicator. Below this, the 'Video Settings' section contains three input fields: 'Index:', 'Video Scheme:', and 'Video Device:'. At the bottom, there is a 'Video Connection:' dropdown menu and an 'Optimization Preference' section with a slider between 'Best Resolution' and 'Best Motion'.

#### Index

Number of the setting.

#### Video Scheme

Name of the video scheme.

#### Video Device

Camera for transmitting the picture in video connections.

#### Video Connection

optiClient 130 allows parties to connect their video pictures providing both parties have an operational video system.

Possible options:

- **Locked**
- **Optional**

## **IP Devices**

### *IP Client Configuration*

#### **Optimization Preference**

##### **Best Resolution**

Optimization to the highest possible resolution.

##### **Best Motion**

Optimization to the best possible reproduction of movement.

### 7.2.8.6 "Available Video Devices"

**Call:** Main Menu > IP Devices > IP Client Configuration > Audio/Video Settings > "Available Video Devices"



#### Index

Number of the setting.

#### Device

All cameras installed on the workstation are listed. Select the camera you wish to use. If no cameras are listed here, your PC is not equipped with a video camera.

## **7.2.9 Directories/Address Books**

**Call:** Main Menu > IP Devices > IP Client Configuration > Directories/Address Books

This area features the following components:

- General Data
- Possible Action Buttons
- "LDAP" Tab
- "Directory Service" Tab
- "Internet Pages" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.2.9.1 "LDAP" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Directories/Address Books > "LDAP" Tab

Table: LDAP

☐ Table ☒ Selected entry 1 / 1

**LDAP Server Data**

Server:   
ID:   
Port:   
Searchbase:   
Account:   
Password:   
Server Description:   
LDAP Server Dial Prefix:

**LDAP Data**

Display Name:	<input type="text"/>	Surname:	<input type="text"/>	Given Name:	<input type="text"/>
First Name:	<input type="text"/>	Title:	<input type="text"/>	City:	<input type="text"/>
Postal Code:	<input type="text"/>	Postal Address:	<input type="text"/>	Country:	<input type="text"/>
State:	<input type="text"/>	Company:	<input type="text"/>	Department:	<input type="text"/>
Comment:	<input type="text"/>	Mail:	<input type="text"/>	Mail 2:	<input type="text"/>
Mail 3:	<input type="text"/>	Assistant:	<input type="text"/>	Business:	<input type="text"/>
Business 2:	<input type="text"/>	Callback:	<input type="text"/>	Car Phone:	<input type="text"/>
Company Phone:	<input type="text"/>	Private Phone:	<input type="text"/>	Private Phone 2:	<input type="text"/>
Mobile:	<input type="text"/>	Other Phone:	<input type="text"/>	Pager:	<input type="text"/>
Primary:	<input type="text"/>	Radio:	<input type="text"/>	Fax:	<input type="text"/>
Private Fax:	<input type="text"/>	ISDN:	<input type="text"/>	Other Fax:	<input type="text"/>
Telex:	<input type="text"/>	Room:	<input type="text"/>	Cost Location:	<input type="text"/>
URL:	<input type="text"/>	Org Location:	<input type="text"/>	Data Source:	<input type="text"/>

You can configure access to any LDAP directories in the network.

#### Server

IP address or host name of the LDAP server.

#### ID

Name of the LDAP server.

#### Port

Port number of the LDAP server.



## IP Devices

### *IP Client Configuration*

#### Account

LDAP server account.

#### Password

Password for accessing the LDAP server.

#### Server Description

Descriptive text for the LDAP server.

#### Searchbase

During LDAP server configuration, this function allows you to specify a base level which is used as a starting point for searching or displaying optiClient 130 entries in this LDAP directory.

You can use two different formats to define a base level:

```
<level 3>=<name>, <level 2>=<name>, <level 1>=<name> or  
<level 1>=<name>/<level 2>=<name>/<level 3>=<name>
```

Example of an LDAP directory with the following elements:

- Level 1: c (for example for "country"), name, for example: US
- Level 2: o (for example, for "organization"), name, for example, Unify
- Level 3: ou (for example for "organization unit"), name, for example, COM

To specify this level as a searchbase, enter the following information in **Searchbase**:

ou=COM, o=Unify, c=US or c=US/o=Unify/ou=COM.

If you do not restrict the searchbase, the entire LDAP directory is used as the searchbase.

#### LDAP Server Dial Prefix

If LDAP directory services are generally available in the network and configured in the user settings, these are available under the configured name (for example, "Unify Corporate Directory"). This means you can configure and use several LDAP directories.

### **Display Name**

Activates display name display and the entry of a label for the display name.

### **Surname**

Activates name display and the entry of a label for the name.

### **Given Name**

Activates second name display and the entry of a label for the second name.

### **First Name**

Activates first name display and the entry of a label for the first name.

### **Title**

Activates title display and the entry of a label for the title.

### **City**

Activates city display and the entry of a label for the city.

### **Postal Code**

Activates postal code display and the entry of a label for the postal code.

### **Postal Address**

Activates postal address display and the entry of a label for the postal address.

### **Country**

Activates country display and the entry of a label for the country.

## **IP Devices**

### *IP Client Configuration*

#### **State**

Activates state display and the entry of a label for the state.

#### **Company**

Activates company display and the entry of a label for the company.

#### **Department**

Activates department display and the entry of a label for the department.

#### **Comment**

Activates comment display and the entry of a label for the comment.

#### **Mail**

Activates mailbox display and the entry of a label for the mailbox.

#### **Mail 2**

Activates second mailbox display and the entry of a label for the second mailbox.

#### **Mail 3**

Activates third mailbox display and the entry of a label for the third mailbox.

#### **Assistant**

Activates assistant display and the entry of a label for the assistant.

#### **Business**

Activates business display and the entry of a label for the business area.

## **Business 2**

Activates second business display and the entry of a label for the second business area.

## **Callback**

Activates callback number display and the entry of a label for the callback number.

## **Car Phone**

Activates car phone number display and the entry of a label for the car phone number.

## **Company Phone**

Activates company phone number display and the entry of a label for the company phone number.

## **Private Phone**

Activates private phone number display and the entry of a label for the private phone number.

## **Private Phone 2**

Activates second private phone number display and the entry of a label for the second private phone number.

## **Mobile**

Activates mobile phone number display and the entry of a label for the mobile phone number.

## **Other Phone**

Activates another phone number display and the entry of a label for the other phone number.

## **Pager**

Activates pager number display and the entry of a label for the pager number.

## **IP Devices**

### *IP Client Configuration*

#### **Primary**

#### **Radio**

#### **Fax**

Activates fax number display and the entry of a label for the fax number.

#### **Private Fax**

Activates private fax number display and the entry of a label for the private fax number.

#### **ISDN**

Activates ISDN number display and the entry of a label for the ISDN number.

#### **Other Fax**

Activates another fax number display and the entry of a label for the other fax number.

#### **Telex**

Activates telex number display and the entry of a label for the telex number.

#### **Room**

Activates room number display and the entry of a label for the room number.

#### **Cost Location**

Activates cost location display and the entry of a label for the cost location.

### **URL**

Activates URL display and the entry of a label for the URL.

### **Location**

Activates location display and the entry of a label for the location.

### **Data Source**

Activates data source display and the entry of a label for the data source.

#### 7.2.9.2 "Directory Service" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Directories/Address Books > "Directory Service" Tab

The screenshot shows the 'Directory Service' configuration tab. It has a light beige background. There are three main sections, each with a checkbox and input fields. The first section is 'Outlook Contacts' with a checked checkbox and an 'Outlook Dial Prefix' dropdown menu. The second section is 'Exchange Server' with a checked checkbox and an 'Exchange Server Address' text field. The third section is 'Lotus Notes Contacts' with a checked checkbox, a 'Lotus Notes Password' text field, and a 'Lotus Notes Dial Prefix' dropdown menu.

You can configure different settings for accessing central and local directories. This access enables you to work with directories and address books in optiClient 130.

##### Outlook Contacts

This directory contains all entries from the Contacts folder in a local Microsoft Outlook installation. If Outlook is not installed or this directory is not configured for your users, then this directory is not available.

This checkbox creates a directory containing Outlook contact information in the optiClient 130.

##### Outlook Dial Prefix:

This directory contains all entries from the Contacts folder in a local Microsoft Outlook installation. If Outlook is not installed or this directory is not configured for your users, then this directory is not available.

##### Exchange Server

This directory contains all entries from the Microsoft Exchange Server Global Address Book (if installed).

This checkbox creates a directory containing Microsoft Exchange Server Information in the optiClient 130.

##### Exchange Server Address:

IP address or host name of the Microsoft Exchange Server.

##### Lotus Notes Contacts

This directory contains all entries from the Contacts folder in your local Lotus Notes installation (if installed).

This checkbox creates a directory containing Lotus Notes contact information in the optiClient 130.

**Lotus Notes Password:**

Password for accessing Lotus Notes.

**Lotus Notes Dial Prefix:**

This directory contains contact entries from your local Lotus Notes installation. If Lotus Notes is not installed or this directory is not configured for your users, then this directory is not available.



## IP Devices

### IP Client Configuration

#### 7.2.9.3 "Internet Pages" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Directories/Address Books > "Internet Pages" Tab



Internet Pages

☐ Table ☒ Selected entry

1 / 1

Internet Pages

Name Internet Page:

Address Internet Page:

#### Name Internet Page:

Random name of the Internet page.

#### Address Internet Page:

URL of the Internet page.

## **7.2.10 Miscellaneous**

**Call:** Main Menu > IP Devices > IP Client Configuration > Miscellaneous

This area features the following components:

- General Data
- Possible Action Buttons
- "HiPath SQL DB" Tab
- "System Functions" Tab
- "SIP Features" Tab
- "SIP Features 2" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

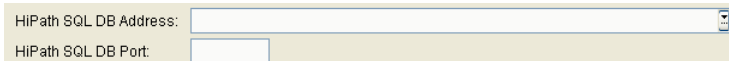
If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### *IP Client Configuration*

#### 7.2.10.1 "HiPath SQL DB" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Miscellaneous > "HiPath SQL DB" Tab



The screenshot shows a configuration interface with a light beige background. It contains two labels with corresponding input fields: "HiPath SQL DB Address:" followed by a long text box, and "HiPath SQL DB Port:" followed by a shorter text box. Both text boxes are empty.

#### **HiPath SQL DB Address:**

IP address or host name of the HiPath SQL DB.

#### **HiPath SQL DB Port:**

Port number for the HiPath SQL DB.

## 7.2.10.2 "System Functions" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Miscellaneous > "System Functions" Tab

The screenshot displays the 'System Functions' configuration page. It features four main sections: 1. 'Message Waiting Indicator (MWI)' with input fields for 'MWI Server Address' and 'MWI Voicemail ID'. 2. 'Server controlled Audio Conference' with an input field for 'Audio Conference Server Address'. 3. 'Automatic Acceptance of Calls' with a checked checkbox for 'Beep on auto answer'. 4. 'Voice Recording' with a checked checkbox for 'Disable Voice Recording'.

### Message Waiting Indicator (MWI)

#### MWI Server Address:

IP address or host name of the MWI server.

#### MWI Voicemail ID:

Identification number for accessing the MWI server.

### Server Controlled Audio Conference

#### Audio Conference Server Address:

IP address or host name for the audio conference server.

OSV default Large Conference PAC :1234567890

### Automatic Acceptance of Calls

#### Beep on auto answer

Activates beep on auto answer.

### Voice Recording

#### Disable Voice Recording

Activates or deactivates voice recording.

## IP Devices

### IP Client Configuration

#### 7.2.10.3 "SIP Features" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Miscellaneous > "SIP Features" Tab

The screenshot shows a web-based configuration interface for SIP features. It is divided into three main sections: 'Callback', 'Call Pickup', and 'Huntgroup'. The 'Callback' section contains three input fields for activating codes in case of no answer, busy, and clearing all callbacks. The 'Call Pickup' section contains a dropdown for 'Group Pickup Server type' and a text field for 'Group Pickup URI'. The 'Huntgroup' section contains two input fields for function codes for temporary logout and busy signaling.

Section	Field Name	Field Type
Callback	Activating Code in case of no answer :	Text Input
	Activating Code in case of busy:	Text Input
	Activating Code Clear all Callbacks:	Text Input
Call Pickup	Group Pickup Server type:	Dropdown
	Group Pickup URI:	Text Input
Huntgroup	Function code for temporary logout from a hunt group:	Text Input
	Huntgroup Code for busy signalling:	Text Input

#### Callback

##### Activating Code in case of no answer:

Code for controlling the "Callback-no reply" function on the server.

##### Activating Code in case of busy

Code for controlling the "Callback-busy" function on the server.

##### Activating Code Clear all Callbacks

Code that deletes all callback jobs on the server.

#### Call Pickup

##### Group Pickup Server type:

Possible options:

- Other
- OpenScape Voice
- Broadsoft
- Sylantro
- HiQ8000
- Genesys

**Group Pickup URI:**

IP address or host name of the server for providing the call pickup feature.

**Huntgroup**

**Function Code for temporary logout from a hunt group**

Huntgroup Code for "temporary logout".

OSV PAC default service name : Make Busy Toggle \*\*13

**Huntgroup Code for busy signaling**

Function code for "busy signaling in a hunt group".

OSV PAC default service name : Stop Hunt Toggle \*\*14

## IP Devices

### IP Client Configuration

#### 7.2.10.4 "SIP Features 2" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Miscellaneous > "SIP Features 2" Tab

The screenshot displays the 'SIP Features 2' configuration tab with the following sections:

- Call Forwarding:** A text input field for 'Time period for Call Forward:'.
- DTMF tone dialing:** A dropdown menu for 'DTMF Mode:'.
- Attendant function:** A checkbox labeled 'Join after hang up' which is checked.
- Sounds:** A dropdown menu for 'Country spec. Tones:', and two checked checkboxes: 'Reminder Tone during Hold' and 'Music on Hold'.

#### Call Forwarding

##### Time period for Call Forward

Enter the time after which unanswered calls are forwarded when call forwarding is active.

#### DTMF tone dialing

##### DTMF Mode:

Possible options:

- **Automatic**
- **Inband**

#### Attendant Function

##### Join after hang up:

Activate this checkbox when you have two active connections (for example, during consultation hold) and then hang up. If the checkbox is active, the two connected parties are connected to each another; if the checkbox is not active, both connections are ended.

#### Sounds

##### Country spec. Tones:

Possible options:

- **Brazil**
- **China**
- **Germany**
- **France**
- **Great Britain**
- **International**
- **Italy**
- **Netherlands**
- **Portugal**
- **Spain**
- **USA**

**Reminder Tone during Hold:**

Activate this checkbox if you want a reminder tone to signal held calls.

**Music on Hold:**

Activate this checkbox if you want music on hold to be played in certain situations (for example, call forwarding, call hold, consultation).



## **7.2.11 Keysets/Keylayout**

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout

This area features the following components:

- General Data
- Possible Action Buttons
- "HFA Layout" Tab
- "HFA Layout (Standby)" Tab
- "SIP Keysets" Tab
- "SIP Line Keys" Tab
- "SIP Station Keys (DSS)" Tab
- "SIP Call Forwarding" Tab
- "SIP Keypad" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 7.2.11.1 "HFA Layout" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout > "HFA Layout" Tab

The screenshot shows a web interface for configuring IP devices. At the top, there are tabs for 'Table' and 'Selected entry', with 'Selected entry' being active. Below the tabs, there is a navigation bar with '1 / 1' and several icons. The main content area is titled 'HFA Layout' and contains a form with the following fields:

- Index: (text input)
- Device: (dropdown menu)
- Level: (dropdown menu)
- Key number: (dropdown menu)
- Label: (text input)

#### Index

Name of the key layout function.

#### Device

Device selection for the programmed key.

Possible options:

- **1st Sidecar**
- **2nd Sidecar**
- **3rd Sidecar**
- **4th Sidecar**
- **Base Device**

#### Level

Level number of the programmed key.

#### Key number

Key number of the programmed key.

#### Label

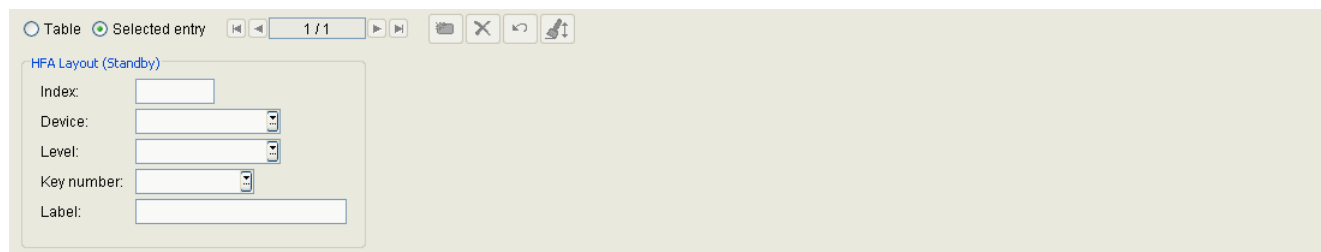
Label displayed for the programmed key.

## IP Devices

### IP Client Configuration

#### 7.2.11.2 "HFA Layout (Standby)" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout > "HFA Layout (Standby)" Tab



The screenshot shows a web-based configuration interface for 'HFA Layout (Standby)'. At the top, there is a navigation bar with 'Table' and 'Selected entry' tabs, and a pagination control showing '1 / 1'. Below the navigation bar, the main content area contains a form with the following fields:

- Index:
- Device:
- Level:
- Key number:
- Label:

#### Index

Name of the key layout function.

#### Device

Device selection of the programmed key.

Possible options:

- **1st Sidecar**
- **2nd Sidecar**
- **3rd Sidecar**
- **4th Sidecar**
- **Base Device**

#### Level

Level number of the programmed key.

#### Key number

Key number of the programmed key.

#### Label

Label displayed for the programmed key.

### 7.2.11.3 "SIP Keysets" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout > "SIP Keysets" Tab

The screenshot shows a configuration interface for SIP Keysets. It features four dropdown menus for selection: 'Terminating Line Preference', 'Originating Line Preference', 'Rollover Type', and 'Line Key Operating Mode'. Below these is a section titled 'Hotline' which contains two input fields: 'Address' and 'Delay Time (sec)'.

#### Terminating Line Preference:

Possible options:

- **Idle line preference**
- **Ringing line preference**

#### Originating Line Preference:

Possible options:

- **Idle line preference**
- **Primary line preference**

#### Rollover Type:

Type of alerting to be used in the case that, during an active call, an incoming call arrives on a different line.

Possible options:

- **No tone**
- **Normal beep**
- **Special beep**

#### Line Key Operating Mode:

Defines what should happen to a line (call) when a connection is established over another line.

Possible options:

- **Hold first call**

## **IP Devices**

### *IP Client Configuration*

- **Clear first call**

## **Hot Line**

### **Address**

Address resp. call number which is dialed after the line has been activated (e. g. by going off-hook) and the delay time has expired.

### **Delay Time (sec)**

Dialing delay in seconds. If delay time = 0, the connection is established immediately.

#### 7.2.11.4 "SIP Line Keys" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout > "SIP Line Keys" Tab

The screenshot shows a web interface for configuring SIP Line Keys. At the top, there's a navigation bar with 'Table' and 'Selected entry' tabs. Below this, the 'SIP Line Keys' tab is active, displaying a table with one entry selected. The entry details are shown on the left side of the tab, including fields for Index, Address of record, Realm, UserID, Password, Description, Tooltip Text, Hotline Dial String, and Delay Time (sec).

**Index:**

Line key number

**Address of record:**

Phone number for the line belonging to this line key.

**Realm:**

SIP realm for the line's address of record

**UserID:**

SIP user name of the line's address of record

**Password:**

Password for the SIP user name.

**Description:**

Description of the line.

## **IP Devices**

### *IP Client Configuration*

#### **Tooltip Text:**

Text that appears in the ToolTip for the line.

#### **Hotline Dial String:**

Number called if the line is configured as the hotline.

#### **Delay Time (sec):**

Delay between line seizure (for example, by lifting the handset) and hotline number dialing.

### 7.2.11.5 "SIP Station Keys (DSS)" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout > "SIP Station Keys (DSS)" Tab

The screenshot shows a web-based configuration interface for SIP Station Keys (DSS). At the top, there is a navigation bar with 'Table' and 'Selected entry' tabs, and a '1 / 1' indicator. Below this, the 'SIP Station Keys (DSS)' section is visible, containing a form with the following fields:

- Index:
- DSS Address:
- Realm:
- UserID:
- Password:
- Description:
- Tooltip Text:

#### Index

Index number of the key function.

#### DSS Address

Phone number of the DSS (Direct Station Select) line.

#### Realm

SIP realm of the DSS line.

#### UserID

SIP user name of the DSS line's address of record.

#### Password

Password for the SIP user name.

#### Description

Description of the DSS line.



## **IP Devices**

### *IP Client Configuration*

#### **Tooltip Text**

Text entry that appears in the ToolTip for the DSS line key.

## 7.2.11.6 "SIP Call Forwarding" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout > "SIP Call Forwarding" Tab

The screenshot shows the 'SIP Call Forwarding' configuration tab. At the top, there is a table with one entry selected. The entry details are as follows:

Index	Type	Destination	Optional Text

### Index

Index number of the call forwarding key.

### Type

Selection of conditions, under which call forwarding is executed.

- **All calls**
- **External calls (HiPath 3000)**
- **Internal calls (HiPath 3000)**
- **on busy (SIP, HiPath 4000)**
- **on no answer (SIP, HiPath 4000)**
- **on busy / no answer (HiPath 4000)**
- **on logout (HiPath 3000, HiPath 4000)**

### Destination

Destination of SIP call forwarding.

### Optional Text

Description of the type of SIP call forwarding configured here.

## IP Devices

### *IP Client Configuration*

#### 7.2.11.7 "SIP Keypad" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Keysets/Keylayout > "SIP Keypad" Tab

The screenshot shows a web interface for configuring SIP Keypads. At the top, there is a navigation bar with a 'Table' button and a 'Selected entry' button. Below this, there is a 'SIP Keypad' tab. The main area contains a form with the following fields:

- Index:
- Type:
- ID:
- Value:
- User Text:

#### **Index**

Index number of the key function.

#### **Type**

Type of SIP keypad.

#### **ID**

SIP keypad ID.

#### **Value**

Value of the key.

#### **User Text**

Descriptive label for the SIP keypad.

## **7.2.12 Signaling and Payload Encryption (SPE)**

**Call:** Main Menu > IP Devices > IP Client Configuration > Signaling and Payload Encryption (SPE)

This area features the following components:

- General Data
- Possible Action Buttons
- "SPE CA Certificates" Tab
- "SIP Settings" Tab
- "HFA Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Client Configuration

#### 7.2.12.1 "SPE CA Certificates" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Signaling and Payload Encryption (SPE) > "SPE CA Certificates" Tab

Index:

Status Active/Import:

☒ Activate certificate

Active Certificate:

Imported Certificate:

PKI Configuration:

Serial Number:

Owner:

Issuer:

Valid from:  -

Valid to:  -

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

The parameters described below are available once for the currently active certificate and once for the imported certificate.

#### Index

Index number for the certificate.

#### Status Active/Import:

Specifies whether a certificate is registered as imported and/or active on the phone. The five statuses listed below are possible.

Possible values:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### PKI Configuration

Name of PKI configuration.

**Serial Number:**

Serial number of the active or imported certificate (display only).

**Owner:**

Owner of the active or imported certificate (display only).

**Issuer:**

Issuer of the active or imported certificate (display only).

**Valid from:**

Start of validity for the active or imported certificate (display only).

**Valid to:**

End of validity for the active or imported certificate (display only).

**Key Algorithm**

Key Algorithm.

**Key Size**

Key Size.

**Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate.

**Expires in ... [days]:**

Number of days before the certificate expires.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### **Alarm Status:**

Displays the duration of validity for certificates when searching for certificates due to expire.

Possible values:

- **valid**
- **soon running out**
- **expired**

#### **Activate certificate**

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted. The active certificate is used to encrypt calls.

**IMPORTANT:** In the case of OpenScape Desktop Clients, there is no impact when changing the TLS certificates .

### 7.2.12.2 "SIP Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Signaling and Payload Encryption (SPE) > "SIP Settings" Tab

SIP Transport Protocol:

Backup Transport Protocol:

☒ Payload security allowed

☒ SIP server validation

☒ SIP backup server validation

**TLS Connectivity Check**

☒ Enable check

Interval (60 - 600 sec):

#### SIP Transport Protocol:

Transport protocol used for SIP signaling.

Possible options:

- **UDP**
- **TCP**
- **TLS**

#### Backup Transport Protocol:

Transport protocol used for SIP signaling when the backup SIP server is in use.

Possible options:

- **UDP**
- **TCP**

#### Payload security allowed

If this checkbox is activated, encryption of voice messages is enabled.

#### SIP server validation

If this checkbox is activated, the connection to the SIP server is verified.



## IP Devices

### *IP Client Configuration*

#### SIP backup server validation

If this checkbox is activated, the connection to the backup SIP server is verified.

#### TLS Connectivity Check

##### Enable check

If checkbox is activated, the TLS connectivity check will be enabled.

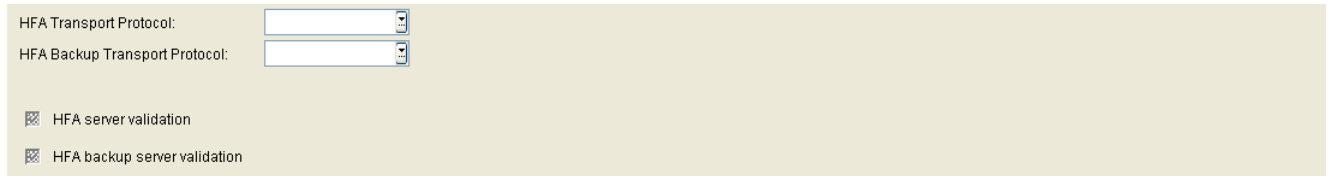
##### Interval

Time interval in seconds in which the TLS connectivity is checked periodically.

Possible options: **60 - 600**

### 7.2.12.3 "HFA Settings" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Signaling and Payload Encryption (SPE) > "HFA Settings" Tab

The screenshot shows a configuration panel with a light beige background. It contains two dropdown menus for selecting transport protocols, followed by two checked checkboxes for server validation. The labels for the dropdowns are 'HFA Transport Protocol:' and 'HFA Backup Transport Protocol:'. The checkboxes are labeled 'HFA server validation' and 'HFA backup server validation'.

#### HFA Transport Protocol:

Transport protocol used for HFA signaling.

Possible options:

- **UDP**
- **TCP**
- **TLS**

#### HFA Backup Transport Protocol:

Transport protocol used for HFA signaling when the backup HFA server is in use.

Possible options:

- **UDP**
- **TCP**
- **TLS**

#### HFA server validation

If this checkbox is activated, the connection to the HFA server is verified.

#### HFA backup server validation

If this checkbox is activated, the connection to the HFA backup server is verified.

## **7.2.13 Dialup Site**

**Call:** Main Menu > IP Devices > IP Client Configuration > Dialup Site

This area features the following components:

- General Data
- Possible Action Buttons
- "Dialup Site Parameters" Tab

### 7.2.13.1 "Dialup Site Parameters" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > Dialup Site > "Dialup Site Parameters" Tab

Dialup Site:

**Quality of Service**

☒ Layer 3 Select ☒ Layer 2 Select

Layer 3 Signaling:  Layer 2 Signaling:

Layer 3 Voice:  Layer 2 Voice:

**Codec Settings**

**Codec Settings (SIP)**

1st Codec:

2nd Codec:

3rd Codec:

Codec Packetlength:

Jitter-Buffer:

**Codec Settings (HFA)**

Codec Sequence:

G.711 Packetlength:

G.723 Packetlength:

G.729 Packetlength:

Jitter-Buffer:

☒ DMC activated

#### Dialup Site

The name of the User Profile of IP Client. It is initially created through the Login Dialog of the IP Client.

#### Quality of Service

##### Layer 3 Select

Checkbox for activating the QoS configuration on layer 3.

##### Layer 3 Signaling:

Class of service value for call signaling on layer 3.

Possible options:

- **AF11**
- **AF12**
- **AF13**

## IP Devices

### *IP Client Configuration*

- AF21
- AF22
- AF23
- AF31
- AF32
- AF33
- AF41
- AF42
- AF43
- EF
- CS7
- Default

### Layer 3 Voice:

Class of service value for voice on layer 3.

Possible options:

- AF11
- AF12
- AF13
- AF21
- AF22
- AF23
- AF31
- AF32
- AF33
- AF41
- AF42
- AF43
- EF

- **CS7**
- **Default**

### **Layer 2 Select**

Checkbox for activating the QoS layer 2 configuration.

### **Layer 2 Signaling:**

Class of Service value for call signaling on layer 2.

Value range: **0 ... 7**

### **Layer 2 Voice:**

Class of Service value for voice on layer 2.

Value range: **0 ... 7**

## **Codec Settings**

### **Codec Settings (SIP)**

#### **1st Codec:**

First compression method.

Possible options:

- **G.711**
- **G.722**
- **G.729**

#### **2nd Codec:**

Second compression method.

Possible options:

- **G.711**
- **G.722**

## IP Devices

### *IP Client Configuration*

- **G.729**
- **None**

#### **3rd Codec:**

Third compression method.

Possible options:

- **G.711**
- **G.722**
- **G.729**
- **None**

#### **Codec Packetlength:**

Possible options:

- **Automatic**
- **10**
- **20**

#### **Jitter-Buffer (ms):**

Caching duration:

Possible options (in ms):

Value range: **20** ... **190** milliseconds.

#### **Codec Settings (HFA)**

##### **Codec Sequence:**

Possible options:

- **not compressing Codecs preferred, besides G.723 preferred**
- **not compressing Codecs preferred, besides G.729 preferred**
- **compressing Codecs preferred, G.723 preferred**
- **compressing Codecs preferred, G.729 preferred**

- only compressing Codecs, G.723 preferred
- only compressing Codecs, G.729 preferred

**G.711 Packetlength:**

Possible options:

- 10
- 20
- 30
- 40
- 50
- 60

**G.723 Packetlength:**

Possible options:

- 30
- 60

**G.729 Packetlength:**

Possible options:

- 10
- 20
- 30
- 40
- 50
- 60

**Jitter-Buffer (ms):**

Cache size.

Possible options (in ms):



## **IP Devices**

### *IP Client Configuration*

Value range: **20** ... **190** milliseconds.

### **DMC activated**

Checkbox for activating DMC bandwidth.

## **7.2.14 OpenScape**

**Call:** Main Menu > IP Devices > IP Client Configuration > OpenScape

This menu item consists of the following areas:

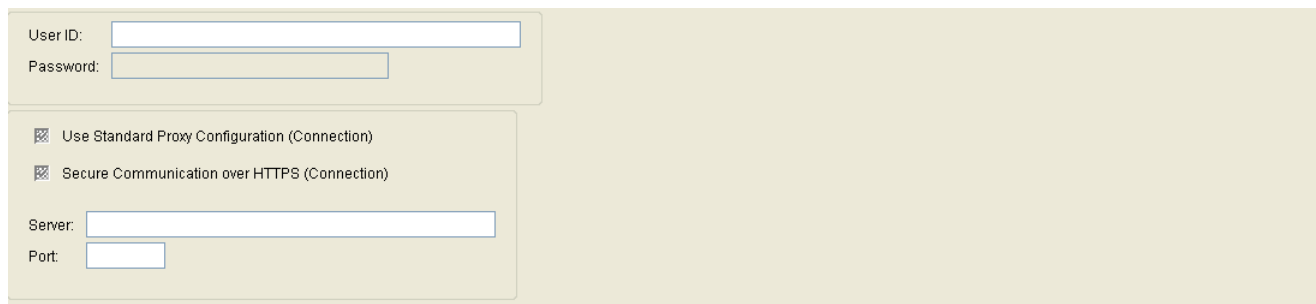
- General Data
- Possible Action Buttons
- "Connection" Tab
- "Instant Messaging (XMP)" Tab
- "WEB Access" Tab

## IP Devices

### IP Client Configuration

#### 7.2.14.1 "Connection" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > OpenScape > "Connection" Tab



The screenshot shows a configuration form for the 'Connection' tab. It includes fields for 'User ID' and 'Password', two checked checkboxes for 'Use Standard Proxy Configuration (Connection)' and 'Secure Communication over HTTPS (Connection)', and fields for 'Server' and 'Port'.

User ID:   
Password:   
☒ Use Standard Proxy Configuration (Connection)  
☒ Secure Communication over HTTPS (Connection)  
Server:   
Port:

#### User ID:

User ID for accessing the OpenScape Connection Server.

#### Password:

Password for accessing the OpenScape Connection Server.

#### Use Standard Proxy Configuration:

If this checkbox is activated, the standard proxy is used.

#### Secure Communication over HTTPS:

If this checkbox is activated, HTTPS is used for secure communication.

#### Server:

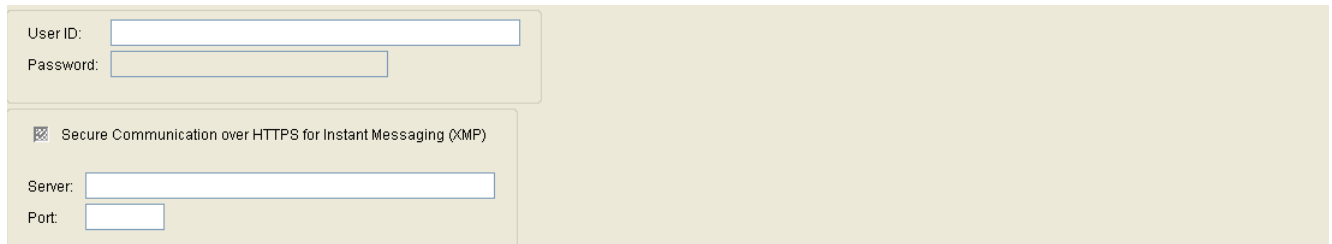
Address of the OpenScape Connection Server.

#### Port:

Port number of the OpenScape Connection Server.

### 7.2.14.2 "Instant Messaging (XMP)" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > OpenScape > "Instant Messaging (XMP)" Tab



The screenshot shows a configuration interface for Instant Messaging (XMP). It includes a 'User ID' field, a 'Password' field, a checkbox labeled 'Secure Communication over HTTPS for Instant Messaging (XMP)', a 'Server' field, and a 'Port' field.

**User ID:**

User ID for access to the OpenScape Instant Messaging (XMP) server.

**Password:**

Password for access to the OpenScape Instant Messaging (XMP) server.

**Secure Communication over HTTPS for Instant Messaging (XMP)**

Checkbox for activating secure communication over HTTPS.

**Server:**

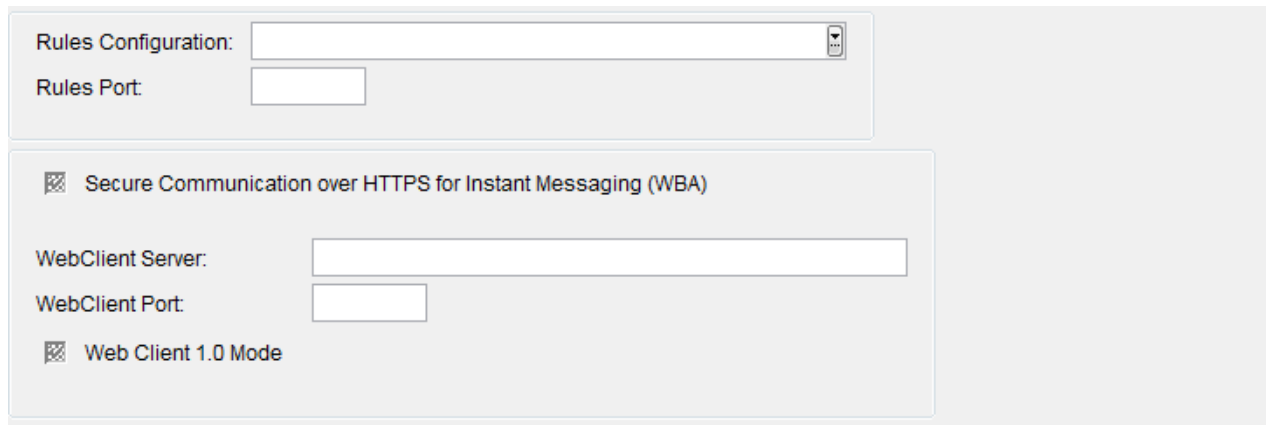
Address of the server for OpenScape Instant Messaging (XMP).

**Port:**

Port number of the server for OpenScape Instant Messaging (XMP).

### 7.2.14.3 "WEB Access" Tab

**Call:** Main Menu > IP Devices > IP Client Configuration > OpenScape > "WEB Access" Tab



**Rules Configuration:**

Rules Configuration for access to WEB server.

**Rules Port:**

Port number for access to the WEB server.

**Secure Communication over HTTPS for Instant Messaging (WBA):**

Checkbox for activating secure communication over HTTPS.

**WebClient Server:**

Address of the server for access to WebClient.

**WebClient Port:**

Port number of the server for access to WebClient.

**WebClient 1.0 Mode:**

Checkbox for enabling / disabling the use of existing WebClient interface.

Checkbox is disabled by default, thus implying use of the new WebClient interface.

## **7.3 IP Gateway Configuration**

This menu item consists of the following areas:

- QoS Data Collection
- Security Settings
- Signaling and Payload Encryption (SPE)
- IPSec/VPN

### **7.3.1 QoS Data Collection**

This area features the following components:

- General Data
- Possible Action Buttons
- "Server Data" Tab
- "Report Settings" Tab
- "Threshold Values" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".



## IP Devices

### IP Gateway Configuration

#### General Data

**Call:** Main Menu > IP Devices > IP Gateway Configuration > QoS Data Collection > General Data

IP Address:	<input type="text"/>	SW Version:	<input type="text"/>
Device ID:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>
Device Type:	<input type="text"/>		
PEN:	<input type="text"/>		
Remarks:	<input type="text"/>		

This part of the contents area is identical for all interfaces associated with this menu. It is used for entering parameters in **Search** view to find a specific group of IP gateways. The base data associated with the IP gateways found is displayed in **Object** view.

The value displayed in the **Remarks** fields can be changed (all other fields are read-only).

#### IP Address:

IP address of the IP gateway.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

#### Device ID

ID that uniquely identifies this IP gateway.

#### Device Type:

IP gateway device type.

You can view all IP devices supported by the DLS in Section 3.4, "Area of Application".

Example: **HG3500**

#### PEN:

Position of the gateway assembly group (plug-in position).

#### SW Version:

Software version of the IP gateway.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

**Last Registration:**

Last time the IP gateway logged on to the DLS.

**Remarks:**

Fields for general information.

## IP Devices

### *IP Gateway Configuration*

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### Search

Searches for all registered IP gateways that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Get

Loads a template that has already been saved. For more information, see Section 15.5, "Editing Templates".

#### Save

Saves configuration entries as a template. For more information, see Section 15.5, "Editing Templates".

#### Discard

Discards any changes made and new entries.

#### Read

The parameters displayed on the new mask are read in again by the IP device.

#### Rename

Changes the name of a saved template. For more information, see Section 15.5, "Editing Templates".

#### Delete

Deletes a saved template. For more information, see Section 15.5, "Editing Templates".

**Import Certificate**

Imports a certificate for the selected IP device (only available in Certificate Management). For more information, see Section 16.13, "Security: Administering Certificates".

**Remove Certificate**

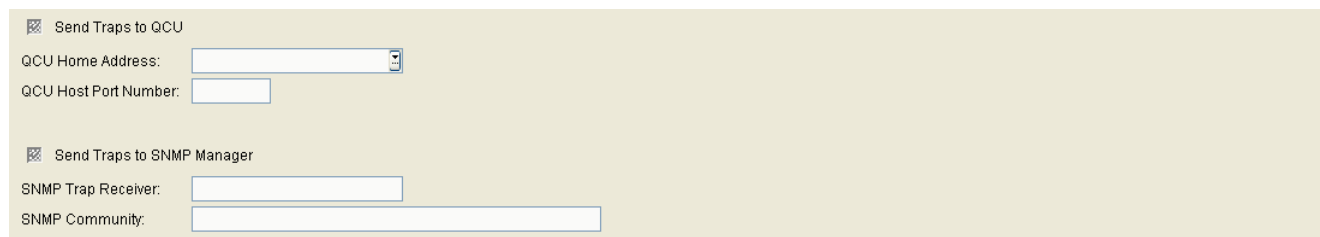
Deletes a certificate for the selected IP device (only available in Certificate Management). For more information, see Section 16.13, "Security: Administering Certificates".

## IP Devices

### IP Gateway Configuration

#### 7.3.1.1 "Server Data" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > QoS Data Collection > "Server Data" Tab



☒ Send Traps to QCU

QCU Home Address:

QCU Host Port Number:

☒ Send Traps to SNMP Manager

SNMP Trap Receiver:

SNMP Community:

#### Send Traps to QCU

If this checkbox is activated, messages are sent to QCU in the event of errors.

#### QCU Home Address:

IP address or host name of the server that collects the QDC data.

#### QCU Host Port Number:

Port number for the server that collects the QDC data.

#### Send Traps to SNMP Manager

If this checkbox is activated, messages are sent to SNMP Manager in the event of errors.

#### SNMP Community:

Community string used for authorization on the SNMP server.

#### SNMP Trap Receiver:

IP address of SNMP Manager.

### 7.3.1.2 "Report Settings" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > QoS Data Collection > "Report Settings" Tab

Report Mode:	<input type="text"/>
Report Interval:	<input type="text"/> s (seconds)
Observation Interval:	<input type="text"/> s (seconds)
Minimum Session Length:	<input type="text"/> * 100 ms

#### Report Mode:

Specifies when a report should be generated.

Possible options:

- **EOS Threshold exceeded**  
At the end of the connection that exceeded the threshold.
- **EOR Threshold exceeded**  
At the end of the reporting interval that exceeded the threshold.
- **EOS (End of Session)**  
At the end of the connection.
- **EOR (End or Report Interval)**  
At the end of the reporting interval.

#### Report Interval:

Time interval in which a QoS report is sent.

Value range: **0 ... 3600** seconds.

#### Observation Interval:

Time interval in which threshold violation is checked.

Value range: **0 ... 5000** seconds.

#### Minimum Session Length:

A QoS report is not sent if a session (for example, a call) undershoots this minimum.

Value range: **0 ... 5000** (x 100 ms).

## IP Devices

### IP Gateway Configuration

#### 7.3.1.3 "Threshold Values" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > QoS Data Collection > "Threshold Values" Tab

The threshold values that produce a QoS report if exceeded are entered here.

Maximum Jitter Threshold:	<input type="text"/>	ms
Average Round Trip Delay Threshold:	<input type="text"/>	ms
<b>Non-Compressing Codecs</b>		
Maximum Lost Packets Threshold:	<input type="text"/>	per 1000 packets
Consecutive Lost Packets Threshold:	<input type="text"/>	
Consecutive Good Packets Threshold:	<input type="text"/>	
<b>Compressing Codecs</b>		
Maximum Lost Packets Threshold:	<input type="text"/>	per 1000 packets
Consecutive Lost Packets Threshold:	<input type="text"/>	
Consecutive Good Packets Threshold:	<input type="text"/>	

#### Maximum Jitter Threshold:

Maximum threshold in milliseconds for runtime fluctuations during data transmission.

Value range: **0 ... 255**

Default: **15**

#### Average Round Trip Delay Threshold:

Average response time in milliseconds for signal transmission. A report is issued if this is exceeded.

Default: **100**

#### Non-Compressing Codecs

#### Maximum Lost Packets Threshold:

Maximum number of total packets lost during uncompressed transmission. The number is specified in 1000-packet increments.

Value range: **0 ... 255**

#### Consecutive Lost Packets Threshold:

Maximum number of consecutive packets lost during uncompressed transmission.

Value range: **0 ... 255**

#### Consecutive Good Packets Threshold:

Minimum number of consecutive inbound packets lost during uncompressed transmission.

Value range: **0 ... 255**

### **Compressing Codecs**

#### **Maximum Lost Packets Threshold:**

Maximum number of total packets lost during compressed transmission.

Value range: **0 ... 255**

#### **Consecutive Lost Packets Threshold:**

Maximum number of consecutive packets lost during compressed transmission.

Value range: **0 ... 255**

#### **Consecutive Good Packets Threshold:**

Minimum number of consecutive inbound packets lost during compressed transmission.

Value range: **0 ... 255**



## **7.3.2 Security Settings**

This area features the following components:

- General Data
- Possible Action Buttons
- "Settings" Tab
- "WBM Server Certificates" Tab

### 7.3.2.1 "Settings" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > Security Settings > "Settings" Tab

No additional data are required for IPSec/VPN Settings

No additional security settings are currently required.

#### 7.3.2.2 "WBM Server Certificates" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > Security Settings > "WBM Server Certificates" Tab

Index:

Status Active/Import:

☒ Activate certificate

Active Certificate:

Imported Certificate:

PKI Configuration:

Serial Number:

Owner:

Issuer:

Valid from:  -

Valid to:  -

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

#### Index

Indec number for the certificate.

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate

The imported certificate is automatically activated.

## **PKI Configuration**

Shows PKI configuration of imported certificate.

### **Serial Number:**

Serial number of the active or imported certificate (display only).

### **Owner:**

Owner of the active or imported certificate (display only).

### **Issuer:**

Issuer of the active or imported certificate (display only).

### **Valid from:**

Start of validity for the active or imported certificate (display only).

### **Valid to:**

End of validity for the active or imported certificate (display only).

### **Key Algorithm**

Key Algorithm.

### **Key Size**

Key Size.

### **Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate

#### Expires in ... [days]:

The certificate validity will expire in the number of days specified.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### Alarm Status:

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

### **7.3.3 Signaling and Payload Encryption (SPE)**

This area features the following components:

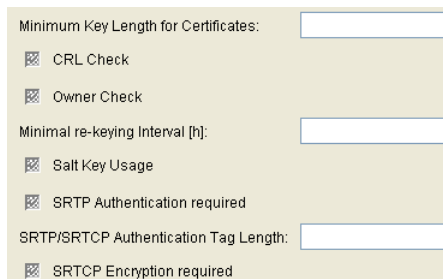
- General Data
- Possible Action Buttons
- "Settings" Tab
- "SPE Certificate" Tab
- "SPE CA Certificates" Tab
- "CRL Distribution Points" Tab

## IP Devices

### IP Gateway Configuration

#### 7.3.3.1 "Settings" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > Signaling and Payload Encryption (SPE) > "Settings" Tab



Minimum Key Length for Certificates:

☒ CRL Check

☒ Owner Check

Minimal re-keying Interval [h]:

☒ Salt Key Usage

☒ SRTP Authentication required

SRTP/SRTCP Authentication Tag Length:

☒ SRTCP Encryption required

#### Minimum Key Length for Certificates

Minimum key length for certificates.

#### CRL Check

If this checkbox is activated, the Certificate Revocation List (CRL) in which invalid certificates can be entered is verified.

#### Owner Check

If this checkbox is activated, the owner's name is verified (Subjectname check).

#### Maximum re-keying Interval

Maximum re-keying interval in hours.

#### Salt Key Usage

If this checkbox is activated, salt key usage is necessary.

#### SRTP Authentication required

If this checkbox is activated, secure RTP authentication is necessary.

**S RTP/S RTP Authentication Tag Length**

Length of the authentication key.

**S RTP Encryption required**

If this checkbox is activated, S RTP encryption is necessary.



#### 7.3.3.2 "SPE Certificate" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > Signaling and Payload Encryption (SPE) > "SPE Certificate" Tab

Status Active/Import:	<input type="text"/>	<input checked="" type="checkbox"/> Activate certificate
Active Certificate:		Imported Certificate:
<u>PKI Configuration:</u>		
Serial Number:	<input type="text"/>	<input type="text"/>
Owner:	<input type="text"/>	<input type="text"/>
Issuer:	<input type="text"/>	<input type="text"/>
Valid from:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Valid to:	<input type="text"/> - <input type="text"/>	<input type="text"/> - <input type="text"/>
Key Algorithm:	<input type="text"/>	<input type="text"/>
Key Size:	<input type="text"/>	<input type="text"/>
Fingerprint (SHA-1):	<input type="text"/>	<input type="text"/>
Expires in ... [days]:	<input type="text"/>	<input type="text"/>
Alarm Status:	<input type="text"/>	<input type="text"/>

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate

The imported certificate is automatically activated.

#### PKI Configuration

Shows PKI configuration of imported certificate.

#### Serial Number:

Serial number of the active or imported certificate (display only).

**Owner:**

Owner of the active or imported certificate (display only).

**Issuer:**

Issuer of the active or imported certificate (display only).

**Valid from:**

Start of validity for the active or imported certificate (display only).

**Valid to:**

End of validity for the active or imported certificate (display only).

**Key Algorithm**

Key algorithm.

**Key Size**

Key size.

**Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate

**Expires in ... [days]:**

The certificate validity will expire in the number of days specified.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

## IP Devices

### *IP Gateway Configuration*

#### **Alarm Status:**

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

### 7.3.3.3 "SPE CA Certificates" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > Signaling and Payload Encryption (SPE) > "SPE CA Certificates" Tab

Index:

Status Active/Import:

☒ Activate certificate

Active Certificate:

Imported Certificate:

PKI Configuration:

Serial Number:

Owner:

Issuer:

Valid from:  -

Valid to:  -

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

#### Index

Index for identifying the SPE CA certificates.

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate

The imported certificate is automatically activated.

## **IP Devices**

### *IP Gateway Configuration*

#### **PKI Configuration**

Shows PKI configuration of imported certificate.

##### **Serial Number:**

Serial number of the active or imported certificate (display only).

##### **Owner:**

Owner of the active or imported certificate (display only).

##### **Issuer:**

Issuer of the active or imported certificate (display only).

##### **Valid from:**

Start of validity for the active or imported certificate (display only).

##### **Valid to:**

End of validity for the active or imported certificate (display only).

##### **Key Algorithm**

Key algorithm.

##### **Key Size**

Key size.

##### **Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate

#### Expires in ... [days]:

The certificate validity will expire in the number of days specified.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### Alarm Status:

Current alarm status.

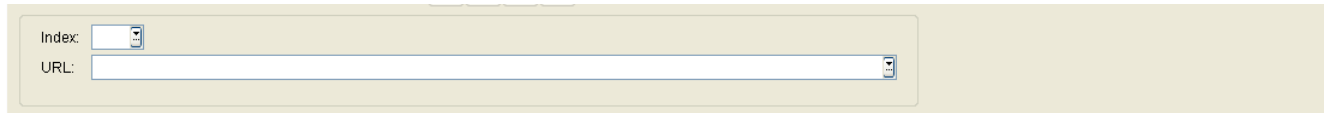
Possible values:

- **valid**
- **soon running out**
- **expired**

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

### **7.3.3.4 "CRL Distribution Points" Tab**

**Call:** Main Menu > IP Devices > IP Gateway Configuration > Signaling and Payload Encryption (SPE) > "CRL Distribution Points" Tab

A screenshot of a web-based configuration interface. It features a light beige background. On the left, there is a white rectangular box with a thin border. Inside this box, the label 'Index:' is followed by a small dropdown menu, and the label 'URL:' is followed by a long text input field. Both the dropdown and the text field have a small icon on their right side, likely for clearing or selecting a default value.

#### **Index**

Index for identifying the CRL distribution points.

#### **URL**

URL of the CRL distribution point, for example, http://.... or ldap://...

### 7.3.4 IPSec/VPN

This area features the following components:

- General Data
- Possible Action Buttons
- "Settings" Tab
- "Peer Credentials" Tab
- "CA Certificates" Tab
- "CRL Files" Tab



### **7.3.4.1 "Settings" Tab**

**Call:** Main Menu > IP Devices > IP Gateway Configuration > IPSec/VPN > "Settings" Tab

No additional data are required for IPSec/VPN Settings

No additional IPSec/VPN settings are currently required.

### 7.3.4.2 "Peer Credentials" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > IPSec/VPN > "Peer Credentials" Tab

Index:

Status Active/Import:  ☒ Activate certificate

Active Certificate: Imported Certificate:

Serial Number:

Owner:

Issuer:

Valid from:  -   -

Valid to:  -   -

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

#### Index

Index number for the certificate.

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate

The imported certificate is automatically activated.

#### Serial Number:

Serial number of the active or imported certificate (display only).

## IP Devices

### *IP Gateway Configuration*

#### Owner:

Owner of the active or imported certificate (display only).

#### Issuer:

Issuer of the active or imported certificate (display only).

#### Valid from:

Start of validity for the active or imported certificate (display only).

#### Valid to:

End of validity for the active or imported certificate (display only).

#### Key Algorithm

Key algorithm.

#### Key Size

Key size.

#### Fingerprint (SHA-1):

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate

#### Expires in ... [days]:

The certificate validity will expire in the number of days specified.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

**Alarm Status:**

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

### 7.3.4.3 "CA Certificates" Tab

**Call:** Main Menu > IP Devices > IP Gateway Configuration > IPSec/VPN > "CA Certificates" Tab

Index:

Status Active/Import:  ☒ Activate certificate

Active Certificate: Imported Certificate:

Serial Number:

Owner:

Issuer:

Valid from:  -

Valid to:  -

Key Algorithm:

Key Size:

Fingerprint (SHA-1):

Expires in ... [days]:

Alarm Status:

#### Index

Index for identifying the CA certificates.

#### Status Active/Import:

Content is automatically specified after import depending on whether active and/or imported certificates exist and whether these are different or identical.

Possible options:

- **no certificate**
- **different**
- **equal**
- **no active certificate**
- **no imported certificate**

#### Activate certificate

The imported certificate is automatically activated.

#### Serial Number:

Serial number of the active or imported certificate (display only).

**Owner:**

Owner of the active or imported certificate (display only).

**Issuer:**

Issuer of the active or imported certificate (display only).

**Valid from:**

Start of validity for the active or imported certificate (display only).

**Valid to:**

End of validity for the active or imported certificate (display only).

**Key Algorithm**

Key algorithm.

**Key Size**

Key size.

**Fingerprint (SHA-1):**

Test algorithm SHA-1 (160 bits/20 characters) for the security certificate

**Expires in ... [days]:**

The certificate validity will expire in the number of days specified.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

## IP Devices

### *IP Gateway Configuration*

#### Alarm Status:

Current alarm status.

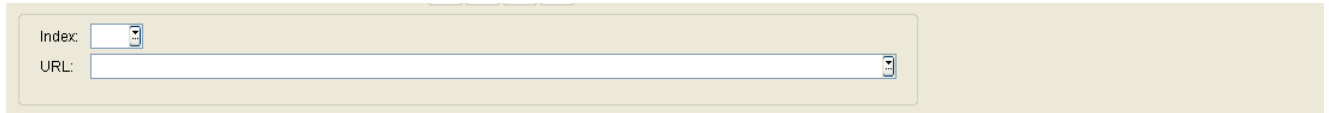
Possible values:

- **valid**
- **soon running out**
- **expired**

**NOTE:** For further information on importing and activating certificates, see Section 16.13, "Security: Administering Certificates".

#### **7.3.4.4 "CRL Files" Tab**

**Call:** Main Menu > IP Devices > IP Gateway Configuration > IPSec/VPN > "CRL Files" Tab

A screenshot of a web-based configuration interface for IP Gateway Configuration. It features a light beige background. On the left, there is a white rectangular box containing two labels: 'Index:' and 'URL:'. The 'Index:' label is positioned above a small dropdown menu. The 'URL:' label is positioned above a long, empty text input field. To the right of this box, the background is a solid light beige color.

##### **Index**

Index for identifying the CRL files.

##### **CRL Files**

Directory path for CRL files.



## 7.4 IP Device Interaction

You can use the **IP Device Interaction** area to transfer data from the IP Device to the DLS and to activate a restart at the IP Devices.

**Call:** Main Menu > IP Devices > IP Device Interaction

This menu consists of the following submenus:

- Read IP Device Data
- Reset IP Devices
- IP Device Revoke Certificates
- IP Device Response Test
- Ping IP Devices
- Scan IP Devices

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## **7.4.1 Read IP Device Data**

**Call:** Main Menu > IP Devices > IP Device Interaction > Read IP Device Data

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab

You can use this function to read out information from the IP Device. Only registered IP Devices will be considered.

In this case, the data is synchronized between the IP Device and DLS database. The data is read without IP Devices being reset (see Section 7.4.2, "Reset IP Devices"). In other words, no further actions or interventions are performed at the workpoint.

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## IP Devices

### IP Device Interaction

#### General Data

This part of the contents area is identical for the **Read IP Device Data** and **Reset IP Devices** interfaces associated with this menu. It is used for entering parameters in **Search** view to find a specific group of IP Devices. The base data associated with the IP Devices found is displayed in the **Object** view (no changes possible).

IP Address:	<input type="text"/>	IP Address 2:	<input type="text"/>	IP Protocol Mode:	<input type="text"/>
Device ID:	<input type="text"/>	SW Version:	<input type="text"/>		
Device Type:	<input type="text"/>	SW Type:	<input type="text"/>		
E.164:	<input type="text"/>	Reg-Address:	<input type="text"/>		
Basic E.164:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>		
Remarks:	<input type="text"/>				

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

#### IP Address:

IP address of the IP Device. For OpenStage, in IPv4 or IPv6 address is displayed here. See also the description of the **IP Protocol Mode** parameter.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

#### Device ID:

ID for unique identification of the IP device. In IP phones, this is generally the MAC address.

Example: **00:0E:A6:85:71:80**

#### Device Type:

Workpoint device type.

All workpoint device types supported by DLS can be found in Section 3.4, "Area of Application".

Examples: **optiPoint 410 standard**, **optiClient 130**

#### E.164:

Complete E.164 subscriber number (Basic Profile or Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

**Basic E.164:**

Complete E.164 phone number (Mobility Phone).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

**IP Address 2:**

Second IP address of the IP phone, if it has an IPv6 address.

Available for OpenStage only.

**SW Version:**

Software version used by the IP Device.

Example for IP phones and IP clients: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

**SW Type:**

Software type used by the IP Device.

Examples: **Unify HFA, Unify SIP.**

**Reg-Address:**

IP address of the gateway or the gatekeeper where the IP Device must register. In HiPath 3000, this is the IP address of the HG 1500, in HiPath 4000 it is the HG 3530 or the STMI board.

**Remarks:**

Fields for general informations.

**IP Protocol Mode**

Indicates which IP version is used by the phone. If both versions are used, IP address contains the IPv4 address, and IP address 2 contains the IPv6 address.

## **IP Devices**

### *IP Device Interaction*

Only available for openStage.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

## **Possible Action Buttons**

The range of action buttons available depends on the selected view and DLS status.

### **Search**

Searches for all registered IP Device that match the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### **Reset IP Device**

Restarts/resets the device.

### **Restore Factory Setting**

Restarts/resets the device and restores factory settings. When you press this button, you will be asked to enter the reset password.

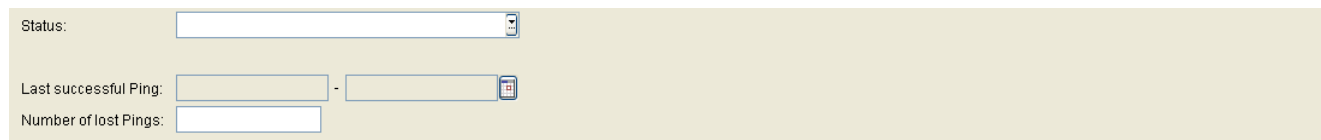
Available for OpenStage, optiPoint410, and optiPoint420.

## IP Devices

### IP Device Interaction

#### 7.4.1.1 "Info" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > Read IP Device Data > "Info" Tab



Status:

Last successful Ping:  -

Number of lost Pings:

#### Status:

Possible options:

- **in Service**  
IP phone that is currently in service.
- **license expired**  
IP phone with an expired license.
- **invalid license token**  
Unlicensed IP phone.
- **invalid SW signature**  
IP phone with an invalid software signature.

#### Last successful Ping

Displays the last successful PING.

The value is read-only.

See also Section 7.4.5, "Ping IP Devices".

#### Number of lost Pings

Total number of unsuccessful PINGS.

The value is read-only.

See also Section 7.4.5, "Ping IP Devices".

## **7.4.2 Reset IP Devices**

**Call:** Main Menu > IP Devices > IP Device Interaction > Reset IP Devices

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab

You can perform a reboot, a factory reset, and revoke all PSE-certificates used by this IP Device. No CA certificates will be revoked.

For information on general interface operation, see Section 5.4.2, "Work Area".



## IP Devices

### *IP Device Interaction*

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### IP Device Revoke Certificates

When clicking the button, a window pops up to select the certificates to revoke.

#### Search

Searches for all registered workpoints that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Reset IP Device

Restarts/resets the device.

#### Restore Factory Setting

Restarts/resets the device and restores factory settings. When you press this button, a window pops up where you will be asked to:

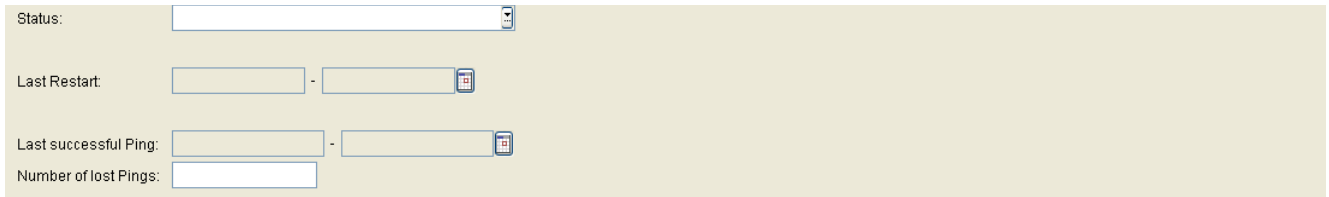
- enter the reset password.
- select the option **Revoke all Certificates** or not.

**IMPORTANT:** No CA certificates will be revoked.

Available for OpenStage, optiPoint410, and optiPoint420.

### 7.4.2.1 "Info" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > Reset IP Devices > "Info" Tab



Status:

Last Restart:  -

Last successful Ping:  -

Number of lost Pings:

#### Status:

IP phone status.

Possible options:

- **in Service**  
IP phone that is currently in service.
- **license expired**  
IP phone with an expired license.
- **invalid license token**  
Unlicensed IP phone.
- **invalid SW signature**  
IP phone with an invalid software signature.

#### Last Restart:

Displays date/time of last restart.

#### Last successful Ping

Displays the last successful PING.

The value is read-only.

See also Section 7.4.5, "Ping IP Devices".

#### Number of lost Pings

Total number of unsuccessful PINGS.

The value is read-only.

See also Section 7.4.5, "Ping IP Devices".



### **7.4.3 IP Device Revoke Certificates**

**Call:** Main Menu > IP Devices > IP Device Interaction > IP Device Revoke Certificates

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab

## IP Devices

### *IP Device Interaction*

#### Possible Action Buttons

##### IP Device Revoke Certificates

When clicking the button, a window pops up to select the certificates to revoke.

##### Search

Searches for all registered workpoints that match the search criteria.

##### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

##### Save

Starts a job for distributing the configuration changes. For more information, Section 15.1, "First Steps: Changing IP Device Parameters".

##### Discard

The modifications carried out in the mask are discarded.

##### Refresh

Updates the window using the database.

### 7.4.3.1 "Info" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > IP Device Revoke Certificates > "Info" Tab

Status:

#### State

Shows the state of the certificate.

Possible Options:

- **in Service**
- **license expired**
- **invalid license token**
- **invalid SW signature**

#### 7.4.4 IP Device Response Test

**Call:** Main Menu > IP Devices > IP Device Interaction > IP Device Response Test

With this function, not responding IP Devices can be moved to trash automatically. Not responding IP Devices are determined by the ping mechanism. When the count defined in **Maximum Number of lost Pings** is exceeded, the IP Device will be moved to trash. IP Devices in trash will not be pinged any more. They can be either recovered, or deleted manually or automatically.

When an IP Device residing in trash registers again, it will be recovered automatically

This function is available for IP Phones (optiPoint, OpenStage, WLAN phones), but not for IP Clients and IP Gateways.

For further information, please see chapter Section 7.5.2, "Trash".

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab

## **Possible Action Buttons**

### **Search**

Searches for all registered workpoints that match the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### **Save**

Starts a job for distributing the configuration changes. For more information, Section 15.1, "First Steps: Changing IP Device Parameters".

### **Discard**

The modifications carried out in the mask are discarded.

### **Refresh**

Updates the window using the database.

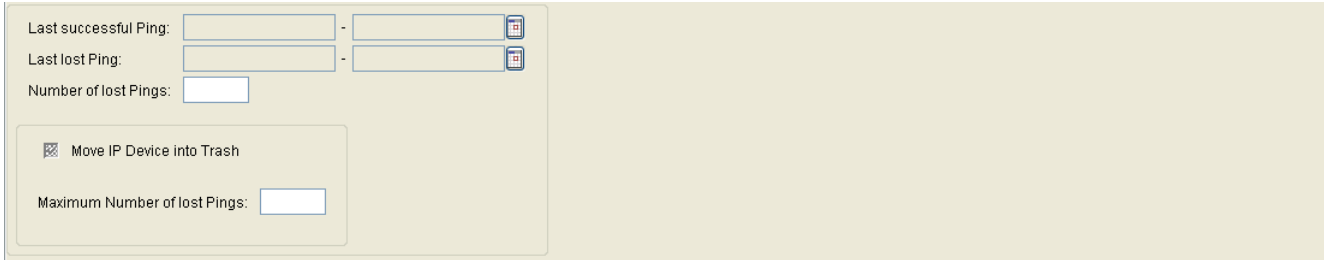



## IP Devices


### IP Device Interaction

#### 7.4.4.1 "Info" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > IP Device Response Test > "Info" Tab



Last successful Ping:  -  

Last lost Ping:  -  

Number of lost Pings:

☒ Move IP Device into Trash

Maximum Number of lost Pings:

#### Last successful Ping

Shows date and time of the last successful ping.

#### Last lost Ping

Shows date and time of the last lost ping.

#### Number of lost Pings

Shows the total number of lost pings.

#### Move IP Device into Trash

If checked, the IP Device will be moved into trash when exceeding the **Maximum Number of lost Pings**.

**NOTE:** The **Move IP Device into Trash** checkbox is grayed out in the case of DCMP-enabled devices.

#### Maximum Number of lost Pings

When exceeding this count, the IP Device will be moved into the trash. These IP Devices will not be pinged any more. They can be either recovered or deleted.

For further information, see chapter Section 7.5.2, "Trash".

**NOTE:** The **Maximum Number of lost Pings** checkbox is grayed out in the case of DCMP-enabled devices.

## **7.4.5 Ping IP Devices**

**Call:** Main Menu > IP Devices > IP Device Interaction > Ping IP Devices

This area features the following components:

- General Data
- Possible Action Buttons
- "IP Phones" Tab
- "IP Clients" Tab
- "IP Gateways" Tab

This function enables you to use PINGs to check IP Device response, in other words , to check if they are still contactable.

The following DLS areas contain information on successful or unsuccessful pings:

- IP Devices > IP Device Management > Inventory Data > "Pings" Tab
- IP Device Interaction > Read IP Device Data > "Info" Tab
- IP Device Interaction > Reset IP Devices > "Info" Tab

## IP Devices

### *IP Device Interaction*

#### General Data

☒ Enable IP Device Pings

#### Enable IP Device Pings

Checkbox for activating IP device PING settings.

### **Possible Action Buttons**

#### **Save**

Saves any unsaved changes.

#### **Discard**

Discards any unsaved changes.

#### **Refresh**

Refreshes the content of the relevant page.

7.4.5.1 "IP Phones" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > Ping IP Devices > "IP Phones" Tab

You can define the chronological order of PING requests for IP phones in this tab.

☐ periodic Pings

Time Period in hours:

☐ daily Pings

Execution Time:

Execute daily Pings on:

☐ Monday

☐ Saturday

☐ Tuesday

☐ Sunday

☐ Wednesday

☐ Thursday

☐ Friday

Protocol for moving not responding phones into trash

Max. Number of Protocol Entries:

Table

Selected entry

0 / 0

Date/Time	Device ID	E.164	Remark
-----------	-----------	-------	--------

periodic Pings

Checkbox for activating periodic PINGS.

Time Period in hours

Time between two periodic pings. Only applies if "periodically Pings" is active.

Value range: 1 ... 23 hours.

daily Pings

Checkbox for activating daily pings.

Execution Time:

Time for daily pings (for a calendar, see Section 5.4.2.4, "Content Area").

Only applies if "daily Pings" is active.

**Execute daily Pings on:**

This function enables you to restrict pings to individual weekdays.

Options available (several options possible):

- **Monday**
- **Tuesday**
- **Wednesday**
- **Thursday**
- **Friday**
- **Saturday**
- **Sunday**

Only applies if "daily Pings" is active.

**Protocol of moving not responding phones into trash**

**Max. Number of Protocol Entries**

Maximum number of protocol entries.

**Date/Time**

Date/Time at which the action has started.

**Device ID**

Device ID of the IP Device.

**E.164**

E.164 number of the IP Device.

**Remark**

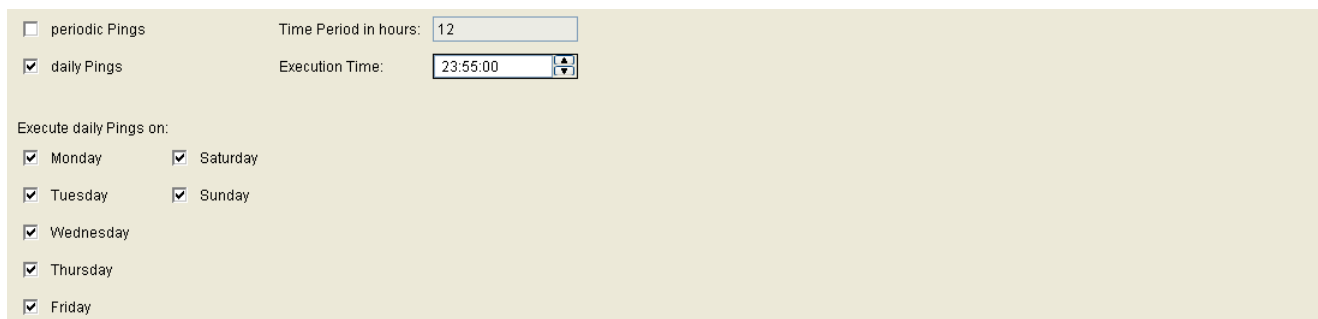
Remark on the IP Device.

## IP Devices

### IP Device Interaction

#### 7.4.5.2 "IP Clients" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > Ping IP Devices > "IP Clients" Tab



The screenshot shows a configuration interface for IP clients. It includes a section for 'periodic Pings' with a checkbox and a 'Time Period in hours' field set to 12. Below this is a 'daily Pings' section with a checked checkbox and an 'Execution Time' field set to 23:55:00. A section titled 'Execute daily Pings on:' lists the days of the week, each with a checked checkbox: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday.

<input type="checkbox"/> periodic Pings	Time Period in hours: 12
<input checked="" type="checkbox"/> daily Pings	Execution Time: 23:55:00
Execute daily Pings on:	
<input checked="" type="checkbox"/> Monday	<input checked="" type="checkbox"/> Saturday
<input checked="" type="checkbox"/> Tuesday	<input checked="" type="checkbox"/> Sunday
<input checked="" type="checkbox"/> Wednesday	
<input checked="" type="checkbox"/> Thursday	
<input checked="" type="checkbox"/> Friday	

You can define the chronological order of PING requests for IP clients in this tab.

For a description of the interface, see Section 7.4.5.1, ""IP Phones" Tab".

### 7.4.5.3 "IP Gateways" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > Ping IP Devices > "IP Gateways" Tab

The screenshot shows a configuration interface for IP Gateways. It includes a section for periodic pings with a checkbox for 'periodic Pings' and a text field for 'Time Period in hours' set to 12. Below this is a section for daily pings with a checked checkbox for 'daily Pings' and a time selection field for 'Execution Time' set to 23:55:00. A section titled 'Execute daily Pings on:' lists the days of the week, each with a checked checkbox: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday.

You can define the chronological order of PING requests for IP clients in this tab.

For a description of the interface, see Section 7.4.5.1, ""IP Phones" Tab".



## 7.4.6 Scan IP Devices

**Call:** Main Menu > IP Devices > IP Device Interaction > Scan IP Devices

This area features the following components:

- General Data
- Possible Action Buttons
- "IP Ranges" Tab
- "Configuration" Tab
- "Scan Results" Tab

This function lets a DLS user with an TAP, for example, create a DLS database of all IP Devices in the network for processing purposes.

During a scan, the DLS sends a ContactMe request consisting of a short HTML message to every IP address in the specified range. The DLS then waits to see if the relevant device sends a callback. If the ICMP ping is activated for the scan (see "Configuration" Tab), an ICMP ping is sent before a ContactMe request to find out if the IP address is assigned to a device.

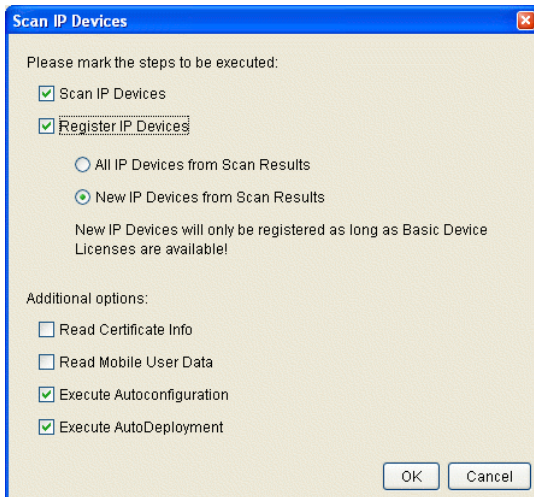
### Configuring an IP scanner

If you have not done so already, you must now create an IP scanner, that is, a configuration that indicates the IP areas to be scanned and how the scan should proceed. To do this, proceed as follows:

1. Create a new IP scanner by clicking **New**.
2. Enter a name and a description for the IP scanner in the General Data area.
3. Enter the address range that should be scanned and the port where the devices can be reached for the DLS in the **"IP Ranges" Tab** area.
4. If necessary, specify additional parameters in **"Configuration" Tab**.

### Start scanning

A selection window is displayed when you click **Scan IP Devices**:



The administrator can decide whether the workpoint scan should take place first or at the same time as registration:

- **Scan IP Devices**  
The IP devices are scanned.
- **Register IP Devices**  
The IP devices are registered.

Registration is necessary to record the workpoints in the inventory database.

The whole procedure can also take place in two steps, with scanning as the first step and registration as the second. Registration differentiates between the registration of all scanned IP devices and the registration of only those IP devices that are not yet contained in the inventory database:

- **All IP devices from Scan Results**  
This registers all IP Devices contained in the scan results, including those already registered.
- **New IP Devices from Scan Results**  
Only unregistered IP devices are registered.

If the administrator does not wish to allow all IP devices recognized by the scan to be registered, he or she must delete the corresponding entries from the scan results.

**NOTE:** If you are using TAP to scan IP devices for the first time at a customer facility, (for example, to record the inventory), ensure that **Perform AutoDeployment** is deactivated using deployment rules. This prevents unwanted deployment in the customer network during operating hours.

If individual devices are not found during the scan, increase the timeout (see **Timeout (sec)**) and run a new scan. If some of the workpoints are still not reached during scanning, a second scan operation is started for the affected IP devices. This takes **at least five minutes**. During this time, the progress bar indicates 99%; the IP devices identified during the first run can now be administered.

An entry is stored in the activity log for every IP device that was not reached during the second scan (see Section 14.1, "Job Control").

## IP Devices

### *IP Device Interaction*

**NOTE:** When scanning IP devices, a valid DLS server address is transferred to the scanned IP device so that the device can contact the DLS server independently later. This does not happen, however, if the IP device already received a DLS server address from a DHCP server. In this case, the DLS address delivered by the DHCP server is maintained.

For information on general interface operation, see Section 5.4.2, "Work Area".

## General Data

IP Scanner:	<input type="text"/>
Remarks:	<input type="text"/>

### IP Scanner:

Name of the IP scanner.

### Remarks:

Fields for general information.

## Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

### Search

Searches for all scanners that correspond to the search criteria.

### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### Save

Saves any unsaved changes.

### Discard

Discards any unsaved changes.

### New

Creates a new IP scanner.

## IP Devices

### *IP Device Interaction*

#### Delete

Deletes one or more IP scanners (multiple selections possible in table view).

#### Scan Workpoints



Starts the IP scanner displayed in **Object** view.

#### Refresh

Refreshes the content of the relevant page.

### 7.4.6.1 "IP Ranges" Tab

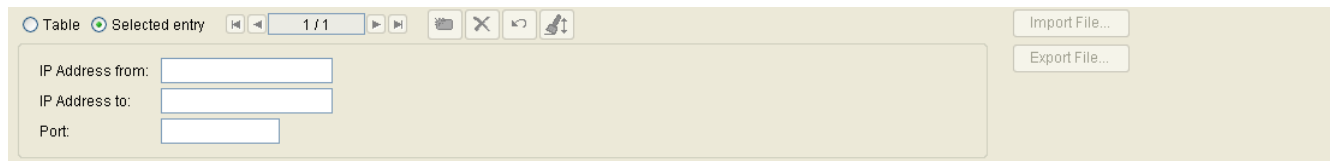
**Call:** Main Menu > IP Devices > IP Device Interaction > Scan IP Devices > "IP Ranges" Tab

Use this tab to specify an IP address range/port number combination for the IP Devices to be scanned. You can add another combination in the **New** and **Object** view with the  button and delete it with the  button.

In addition, you can import a CSV file containing IP/port combinations and export this data in CSV format.

**NOTE:** To avoid heavy network load, the IP address range should be selected so that where possible only one workpoint is scanned.

If the IP range specified contains other IP clients (not workpoints), malfunctions can sometimes occur at the devices.



#### IP Address from

IP address for the lower limit of the IP range to be scanned.

Format: **000.000.000.000**, 000 = value between 000 and 255.

#### IP Address to

IP address for the upper limit of the IP range to be scanned.

Format: **000.000.000.000**, 000 = value between 000 and 255.

**NOTE:** The **IP Address from** and **IP Address to** appropriate value pair has to be identical. Administrators are able to configure not only IP addresses, but DNS names as well.

#### Port

Port number for the IP addresses to be scanned.

The following default ports are used by the various workpoint types and should be entered here:

- IP phone: **8085**
- IP Gateways: **8084**
- IP client: **8082**

## IP Devices

### *IP Device Interaction*

- WLAN phone: **80**

Format: Up to five digits.

### **Import File...**

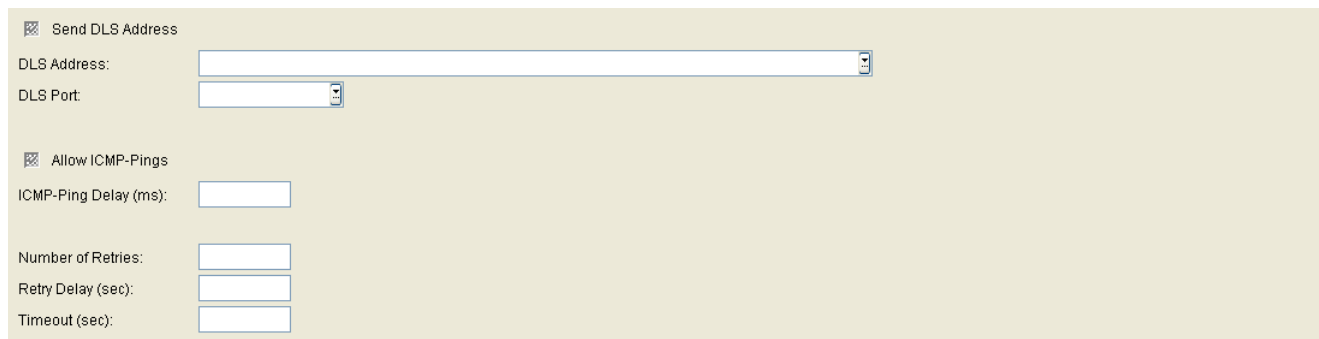
Loads a file in CSV format with existing IP ranges and port numbers into the IP range table.

### **Export File...**

Saves the IP ranges and port numbers from the IP range table to a file in CSV format.

### 7.4.6.2 "Configuration" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > Scan IP Devices > "Configuration" Tab



#### Send DLS Address

Use the DLS on an TAP to activate the **Send DLS Address** checkbox and identify the DLS address and the DLS port number on the EWS. During scanning, the workpoints are informed of the address data of the DLS that serves them.

**NOTE:** The Send DLS Address option must not be used if there is a permanent DLS server in the network.

#### DLS Address:S

IP address of the DLS server on the EWS.

Format: **000.000.000.000** (000 = value between 000 and 255).

#### DLS Port:

Port number of the DLS server on the EWS.

Value range: Up to five digits.

#### Allow ICMP-Pings:

If the checkbox is activated, ICMP pings are used when scanning. This speeds up IP device scans because ContactMe requests are only sent to IP addresses where the ICMP ping was successful.

**NOTE:** This checkbox must be deactivated if the network does not support ICMP pings as otherwise the IP device scan is unable to deliver a result.



## IP Devices

### *IP Device Interaction*

#### ICMP-Delay (ms):

Interval between ICMP pings to ensure that the ICMP pings are not blocked by the operating system.

#### Number of Retries:

Maximum number of retries for a scan. The value is evaluated for each IP address.

Default: **1**

#### Retry Delay (sec):

Time in seconds that should elapse between two automatic job retries. The value is evaluated for each IP address.

Default: **10**

#### Timeout (sec)

The maximum amount of time that may elapse between a Contact-Me request from the DLS and registration of the IP Devices involved.

The entered value must be greater than the value Section 6.9.2, ""DCMP" Tab"

Possible Options:

0 - 3600, default: **60** seconds

### 7.4.6.3 "Scan Results" Tab

**Call:** Main Menu > IP Devices > IP Device Interaction > Scan IP Devices > "Scan Results" Tab

This table will not be updated during the scan job. Please press the refresh button to get the latest detailed scan result.

**Scan Results**

☐ Table 
 ☒ Selected entry 
 1 / 1 
 [Refresh] [Close] [Back] [Forward]

☒ New  
 Status:   
 Device ID:   
 IP Address:   
 Port:   
 Protocol:

E.164:   
 Basic E.164:   
 Device Type:   
 SW Type:   
 SW Version:   
 Last Scan:  -

Status:   
 Action Number:

**IP Addresses**  
 To be scanned:   
 Already scanned:

**IP Devices**  
 Detected:   
 Thereof new:

#### New

An IP Device that is reregistered during a scan is indicated by a checkmark.

#### Status

Displays the status of the scan for each individual IP Device.

Possible values:

- **running**
- **confirmed**
- **finished**
- **failed**

#### Device ID

Displays the device ID of the scanned IP Device. This is used for unique identification of the IP device. In IP phones, this is generally identical to the MAC address.

## IP Devices

### *IP Device Interaction*

#### IP Address

Displays the IP address of the scanned IP Device.

#### Port

Displays the port that the scanned IP Device uses to communicate with the DLS.

#### Protocol

Displays the protocol that the scanned IP Device uses to communicate with the DLS.

#### E.164

Displays the E.164 number of the scanned IP Device.

#### Basic E.164

Displays the basic E.164 number of the scanned IP Device.

#### Device Type

Displays the phone type of the scanned IP Device.

Example: **optiPoint 410 advance**

#### Software Type:

Displays the software type of the scanned IP Device.

Example: **Unify HFA, Unify SIP.**

#### SW Version

Displays the software version installed on the scanned IP Device.

Example: **6.0.53**

**Last Scan**

Displays the data and time of the last scan.

**Status:**

Displays the current scan status.

Example: **running, finished**

**Action Number:**

Displays the action number for the current scan.

**IP Addresses**

**To be scanned:**

Displays how many IP addressed within the IP range are yet to be scanned.

**Already scanned:**

Displays how many IP addressed within the IP range are already scanned.

**Workpoints**

**Detected:**

Displays how many workpoints have been found by the scan.

**Thereof new:**

Displays how many of the workpoints found by the scan are not yet registered.

## **7.5 IP Device Management**

**Call:** Main Menu > IP Devices > IP Device Management

This menu item consists of the following areas:

- Inventory Data
- Trash
- IP Infrastructure
- IP Device Configuration

## **7.5.1 Inventory Data**

**Call:** Main Menu > IP Devices > IP Device Management > Inventory Data

This area features the following components:

- General Data
- Possible Action Buttons
- "Inventory Data" Tab
- "Information" Tab
- "Accounting" Tab
- "Pings" Tab

## IP Devices

### IP Device Management

#### General Data

This part of the content area is used for entering parameters in **Search** view to find a specific group of workpoints. The base data associated with the workpoints found is displayed in the **Object** view (no changes possible except under **Remarks**).

IP Address:	<input type="text"/>	IP Address 2:	<input type="text"/>	IP Protocol Mode:	<input type="text"/>
Device ID:	<input type="text"/>	SW Version:	<input type="text"/>	PEN:	<input type="text"/>
Device Type:	<input type="text"/>	SW Type:	<input type="text"/>		
E.164:	<input type="text"/>	Reg-Address:	<input type="text"/>		
Basic E.164:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>		
Remarks:	<input type="text"/>				

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

#### IP Address:

IP address of the workpoint. For OpenStage, in IPv4 or IPv6 address is displayed here. See also the description of the **IP Protocol Mode** parameter

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

#### Device ID:

ID for unique identification of the IP device. In IP phones, this is generally the MAC address.

Example: **00:0E:A6:85:71:80**

#### Device Type:

Workpoint device type.

All workpoint types supported by DLS can be found in Section 3.4, "Area of Application".

Example: **optiPoint 410 standard**

#### E.164:

Complete E.164 subscriber number (Basic Profile or Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

**Basic E.164:**

Complete E.164 phone number (Mobility Phone).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

**IP Address 2:**

Second IP address of the IP phone, if it has an IPv6 address.

Available for OpenStage only.

**SW Version:**

Software version used by the workpoint.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

**SW Type:**

Software type used by the workpoint.

Examples: **Unify HFA, Unify SIP.**

**PEN:**

Position of the gateway assembly group (plug-in position).

**Reg-Address:**

IP address of the gateway or the gatekeeper where the workpoint must register. In HiPath 3000, this is the IP address of the HG 1500, in HiPath 4000 it is the HG 3530 or the STMI board.

**Last Registration:**

Time of the last workpoint registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Content Area".



## IP Devices

### *IP Device Management*

#### Remarks:

Fields for general information.

#### IP Protocol Mode

Indicates which IP version is used by the phone. If both versions are used, IP address contains the IPv4 address, and IP address 2 contains the IPv6 address.

Only available for openStage.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### Search

Searches for all registered workpoints that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Save

Starts a job for distributing the configuration changes. For more information, see Section 15.1, "First Steps: Changing IP Device Parameters".

#### Discard

The modifications carried out in the mask are discarded.

### **Export File**

The inventory data are exported into a csv formatted file.

### **Refresh**

Refreshes the window contents from the database.

### **Clear Trash**

Deletes completely all IP Devices marked to be deleted from the DLS.

### **Restore IP Device**

Moves IP Device out of trash. Afterwards the IP Phone can be administered by DLS.

7.5.1.1 "Inventory Data" Tab

**Call:** Main Menu > IP Devices > IP Device Management > Inventory Data > "Inventory Data" Tab

Part Number:	<input type="text"/>		
Language Package:	<input type="text"/>		
Key Module:	<input type="text"/>	Busy Lamp Field Module (BLF):	<input type="text"/>
Key Module (Self Labeling Keys):	<input type="text"/>	OpenStage 15 Key Module:	<input type="text"/>
Key Module (Self Labeling Keys) 1 FW Version:	<input type="text"/>	Key Module (Self Labeling Keys) 1 HW Version:	<input type="text"/>
Key Module (Self Labeling Keys) 2 FW Version:	<input type="text"/>	Key Module (Self Labeling Keys) 2 HW Version:	<input type="text"/>
Application Module FW Version:	<input type="text"/>	Application Module HW Version:	<input type="text"/>
Application Module Bootloader Version:	<input type="text"/>	SIP Stack Version:	<input type="text"/>
Application Module Asset ID:	<input type="text"/>	Application Module Keyboard Type:	<input type="text"/>
Netboot Version:	<input type="text"/>	Bluetooth Device Address:	<input type="text"/>
Display Backlight Type:	<input type="text"/>		
<input checked="" type="checkbox"/> Signature Module			
<input checked="" type="checkbox"/> Recorder Adapter			
<input checked="" type="checkbox"/> Acoustic Adapter			
<input checked="" type="checkbox"/> Gigabit Ethernet			

Part Number:

Part number of the workpoint; this number identifies the relevant hardware.  
The value is read-only.

Language Package:

Name of installed Language Package.  
The value is read-only.

Key Module:

Number of Self Labeling Keys Modules connected.  
The value is read-only.

Key Module (Self Labeling Keys):

Number of Self Labeling Keys Modules connected.  
The value is read-only.

#### Key Module (Self Labeling Keys) 1 FW Version:

Firmware version of the first Self Labeling Keys Module.

The value is read-only.

#### Key Module (Self Labeling Keys) 2 FW Version:

Firmware version of the second Self Labeling Keys Module.

The value is read-only.

#### Application Module FW Version:

Firmware version of the optiPoint Application Module.

The value is read-only.

#### Application Module Bootloader Version:

Bootloader version of the optiPoint Application Module.

The value is read-only.

#### Application Module Asset ID:

You can use the asset ID for the unique identification of an optiPoint Application Module.

Coding:

Byte 1	Byte 2	Byte 3	Byte 4
yyyywww	wwddlll	aassssss	ssssttt

Definition:

Section	Length	Meaning	Example
yyyy	4 bits	Last digit of the year	0001 = 2001
w...w	6 bits	Calendar week	000001 = Week 1
ddd	3 bits	Day	001 = Monday, 111 = Sunday
lll	3 bits	Design Line	000 = Unify, else : reserved
aa	2 bits	Tester Group	0 - 3, factory setting
s...s	11 bits	Serial Number	0 ... 2047
ttt	3 bits	Tester Number	0.1 ... 6.7

## **IP Devices**

### *IP Device Management*

The value is read-only.

#### **Netboot Version:**

Version of Netboot.

The value is read-only.

#### **Display Backlight Type**

Shows the backlight type of display.

Possible options:

- **None**
- **CCFL**
- **LED**

#### **Signature module**

Active when an optiPoint signature module is connected.

The value is read-only.

#### **Recorder Adapter**

Active when an optiPoint recorder module is connected.

The value is read-only.

#### **Acoustic Adapter**

Active when an optiPoint acoustic module is connected.

The value is read-only.

#### **Gigabit Ethernet**

Indicates whether the device has a gigabit LAN interface.

**Busy Lamp Field Module (BLF):**

Display showing the BLFs connected.

The value is read-only.

**OpenStage 15 Key Module:**

Hardware version of the OpenStage 15 Key Module.

**Key Module 1 HW Version:**

Hardware version of the first Self Labeling Key module.

The value is read-only.

**Key Module 2 HW Version:**

Hardware version of the second Self Labeling Key module.

The value is read-only.

**Application Module HW Version:**

Hardware version of the optiPoint Application Module.

The value is read-only.

**SIP Stack Version:**

Version of the SIP stack.

The value is read-only.

**Application Module Keyboard Type:**

Keyboard layout of the optiPoint application module connected.

Possible options:

- **QWERTZ**  
(German layout)

## **IP Devices**

### *IP Device Management*

- **QWERTY**  
(American layout)

The value is read-only.

### **Bluetooth Device Address**

Bluetooth address of the device.

### 7.5.1.2 "Information" Tab

**Call:** Main Menu > IP Devices > IP Device Management > Inventory Data > "Information" Tab

Info 1:	<input type="text"/>
Info 2:	<input type="text"/>
Info 3:	<input type="text"/>
Info 4:	<input type="text"/>
Info 5:	<input type="text"/>
Info 6:	<input type="text"/>
Info 7:	<input type="text"/>
Info 8:	<input type="text"/>
Info 9:	<input type="text"/>
Info 10:	<input type="text"/>

#### **Info 1 ... Info 10:**

Additional information on the workpoint, such as, billing data, etc., can be saved in these fields. This information is only stored in the DLS database. Administration is not performed at the workpoint.



7.5.1.3 "Accounting" Tab

**Call:** Main Menu > IP Devices > IP Device Management > Inventory Data > "Accounting" Tab

Department:	<input type="text"/>
Accounting ID:	<input type="text"/>
Retailer ID:	<input type="text"/>
Billing ID:	<input type="text"/>

Department:

Defined department of the associated Business Group subscriber.

Accounting ID:

Accounting ID of the subscriber.

Account ID is by default subscriber (Subscriber ID).

Retailer ID:

Retailer ID of the subscriber.

Retailer ID is by default subscriber (Subscriber ID).


Billing ID:

Billing ID of the subscriber.

Billing ID is by default subscriber (Subscriber ID).

#### 7.5.1.4 "Pings" Tab

**Call:** Main Menu > IP Devices > IP Device Management > Inventory Data > "Pings" Tab

Last successful Ping:	<input type="text"/>	-	<input type="text"/>	
Number of lost Pings:	<input type="text"/>			

For information on PING, see Section 7.4.5, "Ping IP Devices".

##### **Last successful Ping**

Displays the last successful PING.

The value is read-only.

##### **Number of lost Pings**

Total number of unsuccessful PINGS.

The value is read-only.

## **7.5.2 Trash**

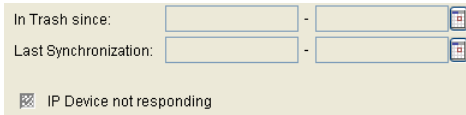
**Call:** Main Menu > IP Devices > IP Device Management > Trash


This area features the following components:


- General Data
- Possible Action Buttons
- "Information" Tab

### 7.5.2.1 "Information" Tab

**Call:** Main Menu > IP Devices > IP Device Management > Trash > "Information" Tab



In Trash since:  -  

Last Synchronization:  -  

☒ IP Device not responding

#### **In Trash since:**

Date at which the IP Device has been put into trash.

#### **Last Synchronization:**

Date of last element manager synchronization for this E.164 number.

#### **IP Device not responding**

Switch is set if IP Device is in trash because of not responding PING requests.

### 7.5.3 IP Infrastructure

**Call:** Main Menu > IP Devices > IP Device Management > IP Infrastructure

In this screen, the administrator can view the IP infrastructure data sent by an application to the DLS. The infrastructure policy is used for automatic adaptation: A default device profile is searched to which that location is assigned for which this infrastructure policy is defined. This profile will be applied to the IP Phone.

The infrastructure policy is not part of the API interface, though it will be mapped from the switch IP address, the switch port and the Network Policy. The mapping has to be configured by the administrator in the screen

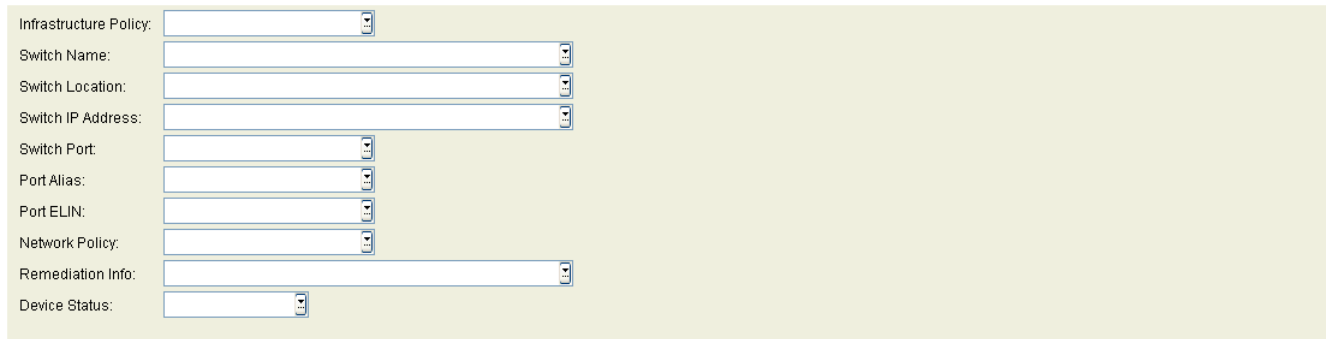
**Administration > Server Configuration > Infrastructure Policy.**

This area features the following components:

- General Data
- Possible Action Buttons
- "IP Switch Data" Tab

### 7.5.3.1 "IP Switch Data" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Infrastructure > "IP Switch Data" Tab



The screenshot displays the 'IP Switch Data' configuration tab. It features a list of fields on the left side, each with a corresponding input field on the right. The fields are: Infrastructure Policy, Switch Name, Switch Location, Switch IP Address, Switch Port, Port Alias, Port ELIN, Network Policy, Remediation Info, and Device Status. Each input field has a small dropdown arrow on its right side, indicating that they are likely dropdown menus or have a search function. The background of the form is a light beige color.

#### Infrastructure Policy:

Currently enabled policy, mapped from **Switch IP Address**, **Switch Port** and **Network Policy**.

#### Switch Name

Name of the edge switch device is currently plugged in.

#### Switch Location

Location of the edge switch device is currently plugged in.

#### Switch IP Address

IP address of the edge switch device is currently plugged in

#### Switch Port

Port of the edge switch device is currently plugged in.

#### Port Alias

Port Alias

## **IP Devices**

### *IP Device Management*

#### **Port ELIN**

Port ELIN

#### **Network Policy**

Currently enabled network policy for this device.

#### **Remediation Info**

Long description of Network Policy.

#### **Device Status**

Connection status of device

Possible options:

- **plugged in**
- **plugged off**
- **unknown**

## **7.5.4 IP Device Configuration**

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration

This area features the following components:

- General Data
- Possible Action Buttons
- "General" Tab
- "EM Synchronization" Tab
- "Profile" Tab
- "DLS Connectivity" Tab
- "Security State Protocol" Tab
- "DCMP" Tab
- "Autoconfig. IP Phone" Tab
- "Autoconfig. IP Client" Tab
- "Autoconfig. IP Gateway" Tab
- "Archives Data" Tab



## IP Devices

### IP Device Management

#### General Data

This part of the content area is used for entering parameters in **Search** view to find a specific group of IP Devices. The base data associated with the IP Devices found is displayed in the **Object** view (no changes possible except under **Remarks**).

The screenshot shows the 'OpenScope Deployment Service V7' interface. On the left is a tree view with categories like 'Administration', 'IP Devices', and 'Mobile Users'. The 'IP Device Configuration' option is highlighted. The main window is titled 'IP Device Configuration' and shows a 'Job ID' and 'Exec Time' at the top. Below this is a 'Views' section with 'Object' selected. The configuration details are displayed in a form with fields for 'IP Address', 'Device ID', 'Device Type', 'E.164', 'Basic E.164', 'IP Address 2', 'SW Version', 'SW Type', 'Reg-Address', 'Last Registration', 'IP Protocol Mode', 'Device Family', 'Windows Account', and 'Cloud Pin'. Below these fields are several checkboxes for 'Administration disabled', 'Autodeployment disabled', 'Automatic Certificate Deployment disabled', 'Preconfigured IP Device', and 'PKI License Used'. There is also a section for 'Autoconfiguration' with checkboxes for 'Activate Plug&Play', 'Delete after Plug&Play', 'Use for HFA Mobility with HiPath 3000', 'Apply Default Profiles at IP Device Registration', and 'Override Location's Default Profiles Settings'. A 'Location' dropdown is set to 'Default Location'. At the bottom of the window are buttons for 'Discard', 'Save', 'New', 'Delete', 'Export File', and 'Refresh'.

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

#### IP Address:

IP address of the IP Device.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

#### Device ID:

ID for unique identification of the IP device. In IP phones, this is generally the MAC address.

Example: **00:0E:A6:85:71:80**

**Device Type:**

IP Device type.

All IP Device types supported by DLS can be found in Section 3.4, "Area of Application".

Example: **optiPoint 410 standard**

**E.164:**

Complete E.164 subscriber number (Basic Profile or Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

**Basic E.164:**

Complete E.164 phone number (Mobility Phone).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

**IP Address 2:**

Second IP address of the IP phone, if it has an IPv6 address.

Available for OpenStage only.

**SW Version:**

Software version used by the IP Device.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

**SW Type:**

Software type used by the IP Devices.

## **IP Devices**

### *IP Device Management*

Examples: **Unify HFA**, **Unify SIP**.

#### **Reg-Address:**

IP address of the gateway or the gatekeeper where the IP Device must register. In HiPath 3000, this is the IP address of the HG 1500, in HiPath 4000 it is the HG 3530 or the STMI board.

#### **Last Registration:**

Time of the last IP Device registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Content Area".

#### **IP Protocol Mode**

Indicates which IP version is used by the phone. If both versions are used, IP address contains the IPv4 address, and IP address 2 contains the IPv6 address.

Only available for openStage.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

#### **Device Family:**

Type of device.

Possible options:

- **IP Phone**
- **IP Client**
- **IP Gateway**

#### **Windows Account :**

The respective domain \ Windows Account of the client. If the device is a client the field contains a value, else it is void.

### Cloud Pin:

The cloud pin string consists only of numeric digits. A redirect code is extracted from the pin entered by the phone user, as part of the cloud deployment process.

The cloud pin is added as a new optional item in all workpoint messages initiating a connection with DLS and is used by DLS for device identification with precedence over the E.164 number. The cloud-pin-value is sent by the phone in SHA-256 hashed format.

**NOTE:** If DLS is unable to configure the phone based on the mac-addr inventory item alone, the DLS will look at cloud-pin-value. If DLS is able to match the client-pin-value unambiguously, it will configure the phone accordingly. This includes writing a new value for the e164 item (if a corresponding e.164-phone number could be determined by DLS). If the cloud-pin value is not included in the inventory items or is empty, the DLS will look at the E.164 inventory item for device identification.

**NOTE:** The value that should be entered in 'Cloud Pin' textbox is the same string assigned to the phone after its factory reset. Cloud Pin contains the redirect code, hence the longer string.

### Remarks:

Fields for general information.

## IP Devices

### *IP Device Management*

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### Search

Searches for all registered IP Devices that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Save

Starts a job for distributing the configuration changes. For more information, see Section 15.1, "First Steps: Changing IP Device Parameters".

#### Discard

The modifications carried out in the mask are discarded.

#### Refresh

Refreshes the window contents from the database.

#### New

Creates a new configuration.

#### Delete

Deletes the record of the current selected IP Device from DLS database.

#### Export File

The configuration data are exported into a csv formatted file.

### **Import File**

The configuration data are imported from a csv formatted file. Section 15.12, "Importing and Exporting Plug&Play Data" describes the format.

### **Copy IP Device**

Copy data of an IP Device, see also chapter Section 16.6, "Replacing an IP Device", Section 16.8, "Replacing HFA with SIP Software and Vice Versa with Identical Device IDs", Section 16.13.7, "Replace IP Phone".

### **Save Selected IP Device to Archive**

Selected IP Devices are written into .zip archive.

### **Load IP Device from Archive**

Loads data of IP Devices from .zip archive.

### **Generate all Templates**

Templates are generated for all objects or masks associated with the selected IP Device type.

### **Simulate Plug&Play**

Test of location and default profile configuration. Location data are entered and after clicking "Simulate Plug&Play", the data sent to the phone which might register with the DLS, can be checked.

## IP Devices

### IP Device Management

#### 7.5.4.1 "General" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "General" Tab

☐ Administration disabled

☐ Autodeployment disabled

☐ Automatic Certificate Deployment disabled

☒ Preconfigured IP Device

☒ PKI License Used

IP Device Update:

Autoconfiguration

☒ Activate Plug&Play Plug&Play Pool Status:

☒ Delete after Plug&Play

☒ Use for HFA Mobility with HiPath 3000

☐ Apply Default Profiles at IP Device Registration

☐ Override Location's Default Profiles Settings

Location:

#### Administration disabled

If this checkbox is activated, IP Device administration via DLS is disabled. This temporary block prevents accidental changes on the IP Device.

#### Autodeployment disabled

If this checkbox is activated, autodeployment (see Section 15.7.2, "Automatic Deployment") is disabled for the IP Device.

#### Automatic Certificate Deployment disabled

If this checkbox is activated, automatic deployment of certificates (see Section 6.11, "Automatic Certificate Deployment") is disabled for this IP Device.

#### Preconfigured IP Device

If this checkbox is automatically activated, the IP device is preconfigured.

### **PKI License Used**

If this checkbox is activated, a PKI license is used by the IP device and a new certificate is issued by a PKI connector which is based on the MS PKI plugin.

If not, the IP device is not in secure mode or the PKI connector used for secure mode is not based on the MS PKI plugin, and also no device interfaces remain associated with a PKI connector based on the MS PKI plugin.

This checkbox facilitates the counting of PKI licenses on an IP device basis.

### **IP Device Update:**

Specifies when the last IP Device update was performed.

### **Autoconfiguration**

#### **Activate Plug&Play**

If this checkbox is activated, all data in this data record is assigned to the IP Device at the next registration.

#### **Delete after Plug&Play**

If this checkbox is activated, the virtual device changes to the real, registered device. The virtual device no longer exists after plug&play. Otherwise, the data record is copied and the virtual device remains.

**NOTE:** Regardless of the case where the virtual device shall be used for the creation of a mobile user, this virtual device will be deleted if this checkbox is activated.

#### **Use for HFA Mobility with HiPath 3000**

If active, this data record will be used in order to provide gateway registration data for HFA mobility with HiPath 3000.

#### **Apply Default Profiles at IP Device Registration**

If this checkbox is activated, the default profile defined in **Profile Management > Device Profile** for a particular location is identified and used for each registration. (For meaning and configuration of the location, see Section 6.3.2, "Location".)

**NOTE:** The case where the checkbox is activated and an 802.1x certificate is part of a Profile's Template, could lead to a phone reboot loop. It is highly recommended to use the Automatic Certificate Deployment functionality of DLS instead.



## IP Devices

### *IP Device Management*

#### Override Location's Default Profiles Settings

If this checkbox is activated, the “Apply Default Profiles at IP Device Registration” is not applicable and shall be grayed out.

This checkbox is disabled by default.

**NOTE:** In order to override the location settings for a specific device this checkbox must be checked.

#### Location

Current location of the IP Device. The value is set during registration and is displayed only herein. (For meaning and configuration of the location, see Section 6.3.2, "Location".)

#### Plug&Play Pool Status

Indicates whether this dataset is used for automatic number assignment with Plug&Play.

Possible options:

- **none**
- **free**
- **in use**
- **multiple use**

### 7.5.4.2 "EM Synchronization" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "EM Synchronization" Tab

Element Manager ID:	<input type="text"/>	Referenced Element Manager:	<input type="text"/>
System Type:	<input type="text"/>		
Switch:	<input type="text"/>		
Business Group :	<input type="text"/>		
Last Synchronization:	<input type="text"/>	-	<input type="text"/>
Last Update:	<input type="text"/>	-	<input type="text"/>

#### Element Manager ID:

ID of the Element Manager assigned to the IP Device.

#### System Type:

Type of Element Manager assigned to the IP Device.

Possible values:

- **HiPath 4000**
- **HiPath DXWeb Pro**
- **HiPath 3000/5000**
- **Other**
- **OpenScape Voice**
- **Imported**
- **OpenOffice EE**
- **OpenScape Business**
- **OpenScape Office MX/LX**

#### Switch:

Switch Name (For OpenScape Voice Assistant with Multiple Switch Support only).

#### Business Group:

Business Group Name (For OpenScape Voice Assistant).

## **IP Devices**

### *IP Device Management*

#### **Referenced Element Manager**

If an Element Manager is entered here, the data record is only changed at EM synchronization if the data comes from the Element Manager specified here. For more information, see Section 15.2, "Changing the Element Manager Configuration and Creating Jobs".

#### **Last Synchronization:**

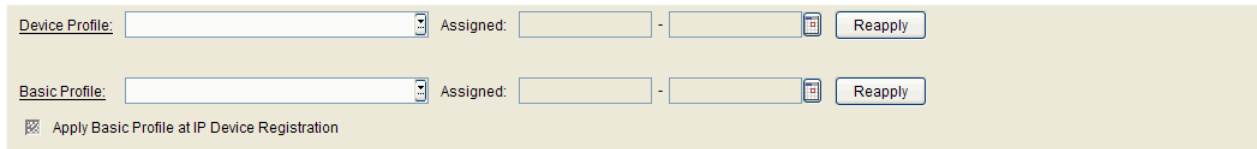
Time of the last synchronization with the system.

#### **Last Update:**

Time of the last change to these settings.

### 7.5.4.3 "Profile" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "Profile" Tab



Device Profile: [dropdown] Assigned: [date/time] - [date/time] [Reapply]

Basic Profile: [dropdown] Assigned: [date/time] - [date/time] [Reapply]

☒ Apply Basic Profile at IP Device Registration

**NOTE:** "Profile" Tab includes the info of the last deployed Profile. It does not specify nor bounds that subscriber record to the Profile assigned since the profile parameters are a one-time only propagation of data. As such, if an administrator modifies the name (or contents) of a Profile that won't be reflected back in this UI section. Name will still depict the last Profile deployed and not the newly adjustable profile name.

**NOTE:** Since there is no direct linkage after the initial Profile deployment has taken place, if those fields are used as a search criteria by administrators, it should be first manually validated for any changes in the configuration since new adaptations might not reflect properly anymore. Profile Management of DLS will exclusively notify on the UI if Profile contained data have been altered and those Profiles are already assigned on subscribers that changes won't take immediate effect unless a Profile gets re-applied first.

#### Device Profile:

Selection of standard device configurations defined in **Profile Management > Device Profile** to be sent to the IP Device. This sets all existing parameters in the profile and any values previously set are overwritten. The parameters that are not replaced by the profile retain their values.

**NOTE:** When assigning a profile over a Virtual Device under **IP Device Configuration**, the list of offered Profiles is filtered and matched to that of the "Supported Devices of IP Device" Tab for profiles.

#### Assigned:

Time and date when the device profile was last assigned to the IP Device.

#### Reapply:

Apply the **Device Profile** to the IP Device again.

## IP Devices

### *IP Device Management*

#### Basic Profile:

Selection of a standard user configuration defined in **Profile Management > User Data Profile** to be sent to the IP Device. This resets all parameters. The parameters that are not set by the profile are assigned default values.

#### Assigned:

Time when the **Basic Profile** was last assigned to the IP Device.

#### Reapply:

Apply the **Basic Profile** to the IP Device again.

#### Apply Basic Profile at IP Device Registration

If this checkbox is active, the IP Device is assigned the selected **Basic Profile** at registration.

### 7.5.4.4 "DLS Connectivity" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "DLS Connectivity" Tab

**DLS Connectivity**

DLS Server Address:

DLS Port:

Contact-me URI:

**Security settings**

☒ Secure mode required

Security State:

PIN Mode:  PIN:

**Credentials**

Client credential:

Server credential 1:

Server credential 2:

#### DLS Connectivity

##### DLS Server Address:

IP address or host name of the DLS server. This value is automatically entered in the IP Device if a DHCP server is available and appropriately configured ( refer tot he **Unify Experts Wiki Portal** under [http://wiki.unify.com/wiki/Configuring\\_the\\_DHCP\\_Server\\_for\\_DLS](http://wiki.unify.com/wiki/Configuring_the_DHCP_Server_for_DLS)

##### DLS Port:

Port number of the DLS server. This value is automatically entered in the IP Device if a DHCP server is available and appropriately configured (refer to the **Unify Experts Wiki Portal** under [http://wiki.unify.com/wiki/Configuring\\_the\\_DHCP\\_Server\\_for\\_DLS](http://wiki.unify.com/wiki/Configuring_the_DHCP_Server_for_DLS)

Default: **18443**

##### Contact-me URI:

This field is for display purposes and contains the complete URL used by the IP Device to set up a connection to the DLS.

#### Security Settings

##### Secure mode required

If this checkbox is activated, mutual authentication is enabled for the DLS and the IP Device. The authentication process (bootstrap) begins the next time the IP Device registers at the DLS or is scanned.

#### Security Status:

Display the security mode for communication between the DLS and the IP Device.

Possible options:

- **Standard**  
In this mode, the DLS is authenticated using a standard certificate which is the same for all DLS installations.
- **Insecure**  
The previous "Default" mode is considered unsecure once the checkbox "Secure mode required" is activated.
- **Secure**  
This status is displayed once mutual authentication has been carried out between the DLS and the IP Device.
- **Pending**  
The credentials have been transferred to the device, the device has responded but a secure connection between the DLS and the device is not yet complete.
- **Credential transmitted**  
The credentials have been transferred to the device but the device has not yet responded.
- **Credential refused**  
The device rejects secure authentication (for example, because it is not technically ready).
- **Tan failed**  
In standard or individual PIN mode, both the device and the DLS must verify part of the PIN. If the number of failed verification attempts on the DLS side exceeds the threshold set, the security status is set to "Tan failed".
- **Blocked**  
This security status is not currently in use.
- **Go to Default**  
This security state is displayed when the security mode has been changed, but the IP Device does not respond.

#### PIN Mode:

Possible options:

- **No PIN**  
Access data is sent unencrypted to the IP Device.
- **Default PIN**  
A standard PIN is used for several IP Devices. This is generated automatically by the DLS (see Section 6.9.1, ""Secure mode" Tab").
- **Individual PIN**  
An individual PIN is created for the selected IP Device.

- **Unknown**

This PIN mode is only available when the DLS interface is in **Search** mode. When moving the DLS to another server, the PIN mode cannot be retrieved. Therefore, the PIN mode is set to "unknown". This has no influence on the functionality.

### **Reset**

If this checkbox is activated, the security mode can be reset to "Insecure" by clicking **Save**. The DLS must then send a new security configuration to the IP Device, that is, the bootstrap operation must be repeated (see also **Secure mode required**).

### **PIN:**

This is entered locally at the IP Device and used to encrypt access data that was sent by the DLS and is required for the transfer to secure mode. The device generally prompts you to enter the PIN. Alternatively, the PIN may be preconfigured in the local administration menu.

### **Scan**

Starts the scan for IP Devices (only with Device Family - IP Gateway). In the process of scanning, the Bootstrapping process is executed. Bootstrapping is the process used to raise the interface security between an IP Device and DLS from Default Mode to Secure Mode.

**NOTE:** If you select "Scan" for a device other than IP Gateway (ie. IP Phone or IP Client) the action is finished with error : "1355: Server is not able to create a job: Device is not a IP Gateway".

## **Credentials**

### **Client Credential**

The device uses these credentials to authenticate itself at the DLS.

Possible options:

- **Active**  
The device last authenticated itself using the active client credentials.
- **Old**  
The device last authenticated itself using old client credentials.
- **Unknown**  
In the DLS, it is currently unknown whether the device possesses active, old or invalid client credentials (for example, when new client credentials have been created or client credentials have been imported).



## IP Devices

### *IP Device Management*

- **Rejected**

The device last attempted to authenticate itself using invalid client credentials.

#### **Server Credential 1**

Fingerprint of trust anchor relative to credential 1, deployed to IP Device and used to authenticate the DLS.

#### **Server Credential 2**

Fingerprint of trust anchor relative to credential 2, deployed to IP Device and used to authenticate the DLS.

**NOTE:** Any DLS that presents either credential 1 or credential 2 is accepted by the IP Device.

### 7.5.4.5 "Security State Protocol" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "Security State Protocol" Tab

Changes to the security mode are logged here for the selected IP Devices.

The screenshot displays two side-by-side panels within a web interface. The left panel is titled 'Security State' and the right panel is titled 'Erroneous contact tries'. Both panels have a 'Maximum number of entries' input field at the top. Below this, there is a table with a header row and a data row. The left table has columns 'Security State' and 'Date/Time'. The right table has columns 'Date/Time' and 'Error reason'. Both tables have a '+' icon in the first row, indicating expandable content. The interface includes navigation buttons like back, forward, and search.

#### Security State

##### Maximum number of entries:

Maximum number of security log entries to be displayed.

##### Security State

Shows the security state of the IP Device at a given time.

##### Date/Time

Displays the time at which the IP Device had a particular security state.

#### Erroneous contact tries

##### Maximum number of entries:

Maximum number of security log entries to be displayed.

Value range: **0 - 100** for devices in default mode, **1 - 100** for devices in secure mode.

## IP Devices

### IP Device Management

#### Date/Time

Displays the time of the contact try.

#### Error reason

Error message.

Possible messages:

Error Message	Description
DLS internal authentication failure (no transition)	During the bootstrapping process, the DLS recognized an unknown sequence of messages (e. g. an unexpected message, deviating from the expected one) and cancelled the contact attempt for security reasons.
Workpoint with given id could not be found.	The IP device is not known to the DLS. Possibly an internal DLS error (database or configuration problem).
Encountered invalid PIN	The bootstrapping PIN contains illegal characters or exceeds the defined length.
TAN Verification can only be performed if TAN is required.	The IP Device has sent a TAN, but the current configuration does not require one, thus the TAN cannot be verified.
Verification of DlsObjWorkpointBase failed.	Internal DLS error.
Error while updating DlsObjWorkpointBase.	Internal DLS error.
Invalid security state.	The message traffic does not conform to the current DLS security state (e. g. wrong sequence of messages, modified configuration or error).
Invalid security transition.	The message traffic does not conform to the current DLS security state (e. g. wrong sequence of messages, modified configuration or error).
Error while generating new client certificate.	Internal DLS error during the creation and distribution of a new client certificate.
Fatal server error. See log file for additional information.	Fatal internal DLS error. <b>Troubleshooting:</b> For further information, see .. \DeploymentService \Tomcat5\webapps\ DeploymentService\log\dlslog.txt
An active dls server ca could not be found.	Internal DLS error because of a missing CA certificate.
Active server ca is corrupt.	Internal DLS error because of a wrong or corrupt CA certificate.
An additional dls server ca could not be found.	Internal DLS error because of a missing second CA certificate.
An additional dls server ca already exists.	Internal DLS configuration error.
Additional server ca is corrupt.	Internal DLS error because of a wrong or corrupt second CA certificate.

<b>Error Message</b>	<b>Description</b>
An item with name mac-addr is missing in item list.	IP Device message contains no device ID (attribute name: mac-addr).
AES encoding failed due to an internal error.	Evaluation of the message by AES failed due to a DLS internal error.
Client must provide a certificate.	The IP Device must provide a client certificate.
Client certificate with invalid signature.	The IP Device has sent an invalid or corrupt certificate.
Client certificate invalid.	The IP Device certificate is invalid due to unknown causes (e. g. expired etc.).
Client ca not found or corrupt.	Internal DLS error because of a missing or corrupt client CA certificate.
DLS internal authentication failure.	Internal DLS error due to problems with the authentication (e. g. invalid or corrupt certificate key, internal certificate problems).
Export of CAs could not be performed.	Internal DLS configuration error: export of the CA certificate could not be executed.
Import of CAs could not be performed.	Internal DLS configuration error: import of the CA certificate could not be executed.
Client cert state is invalid.	Internal DLS configuration error: client certificate status is invalid.
String is not a X509 PEM.	Internal DLS configuration error: characters do not comply to the X509 rules.
DCMP URI is not valid.	Internal DLS configuration error: DCMP URI is invalid.
Invalid dcmp state.	Internal DLS configuration error: DCMP state is invalid.
Invalid dcmp transition.	Internal DLS configuration error: DCMP transition is invalid.
client certificate not accepted by device	The IP Device has not accepted the new client certificate sent by the DLS.
device is blocked	Any communication with this IP Device is blocked for security reasons.
device must use secure port	The IP Device must use the secure port (e. g. 18444) instead of the standard port (e. g. 18443).
wrong TAN from device	A TAN has been requested from the IP Device once or multiple times, but even after a defined number of repetitions no valid TAN has been sent. For security reasons, the IP Device is blocked.
No DLS license	No DLS license exists.
licenses exceeded	The number of DLS licenses is exceeded.
unexpected solicited message from workpoint	An (accidental) request message has been sent from the IP Device to the DLS, but was not expected there (no preceding contact-me from the DLS).
empty items list but items expected	The message list is empty, though the DLS expects multiple items.
timeout during read items	Timeout during reading data from a IP Device.
synchronisation exception	Internal DLS synchronisation error.

## IP Devices

### *IP Device Management*

Error Message	Description
missing e164	The E.164 has been expected by the DLS, but the IP Device has not sent it.
missing items	The expected items are not contained in the message list.
try later	HFA mobility logoff.
mobility save disabled	HFA mobility.

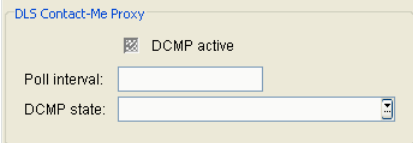
#### 7.5.4.6 "DCMP" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "DCMP" Tab

The DLS Contact-Me Proxy (DCMP) can communicate with the DLS over a firewall or NAT (Network Address Translation) and, if necessary, can perform routing between devices and a DLS in front of the firewall. The devices poll the DCMP regularly. If there are messages on the DLS, the DCMP creates a connection between the device and the DLS.

A DCMP proxy can be assigned as specific location and, therefore, a specific IP address range; see Section 6.9.2, ""DCMP" Tab".

The values in this mask are for display only and cannot be modified.



#### DLS Contact-Me Proxy

##### DCMP active

If this checkbox is activated, the device uses the DCMP to communicate with the DLS and polls it regularly. This requires global DCMP activation, see **Administration > Workpoint Interface Configuration > "DCMP" Tab**.

##### Poll Interval:

Specifies the intervals at which the device polls the DCMP.

##### DCMP state:

Provides information about the communication between the device and the DCMP.

Possible values:

- **Enabled**  
The device is in DCMP mode, that is, the DLS contacts the device via the DCMP server.
- **Disabled**  
The device is not in DCMP mode, that is, the DLS contacts the device directly.
- **Refused**  
The device denies DCMP mode (for example, when it is technically unable to operate in DCMP mode).
- **Outdated**  
DCMP data on the DLS has changed and must be communicated to the device.

## **IP Devices**

### *IP Device Management*

- **Disable in progress**

DCMP for this device is deactivated in the DLS and the modified configuration must be communicated to the device.

#### 7.5.4.7 "Autoconfig. IP Phone" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "Autoconfig. IP Phone" Tab

This displays the attributes that must be sent to the IP Device for autoconfiguration (Plug&Play) on devices not yet connected (= virtual devices). The individual checkmarks are automatically set once an attribute is configured and/or a profile is entered. But also possible the administrator can check individual checkmarks; if so, default values for the checked parameters are sent to the IP Device.



#### Reset

Resets all fields to inactive.



## IP Devices

### IP Device Management

#### 7.5.4.8 "Autoconfig. IP Client" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "Autoconfig. IP Client" Tab

This displays the attributes that must be sent to the IP Device for autoconfiguration (Plug&Play) on IP clients not yet connected (= virtual devices). The individual checkmarks are automatically set once an attribute is configured and/or a profile is entered. But also possible the administrator can check individual checkmarks; if so, default values for the checked parameters are sent to the IP Device.



#### Reset

Resets all fields to inactive.

#### 7.5.4.9 "Autoconfig. IP Gateway" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "Autoconfig. IP Gateway" Tab

This displays the attributes that must be sent to the IP device for autoconfiguration (Plug&Play) on IP gateways not yet connected (= virtual devices). The individual checkmarks are automatically set once an attribute is configured and/or a profile is entered. But also possible the administrator can check individual checkmarks; if so, default values for the checked parameters are sent to the IP Device.



#### Reset

Resets all fields to inactive.

#### 7.5.4.10 "Archives Data" Tab

**Call:** Main Menu > IP Devices > IP Device Management > IP Device Configuration > "Archives Data" Tab

Archive:	<input type="text"/>		
Archived by:	<input type="text"/>		
Archived at:	<input type="text"/>	-	<input type="text"/>
Restored at:	<input type="text"/>	-	<input type="text"/>

##### Archive:

Path for the ZIP archive file on the DLS system.

##### Archived by

Name of the DLS user who created the archive.

##### Archived at

Date and time of the archive.

##### Restored at

Date and time of the archive restore.

## 8 Mobile Users

**Call:** Main Menu > Mobile Users

This menu item consists of the following areas:

- SIP Mobile User Configuration
- SIP Mobile User Interaction
- User Data Administration
- Mobility Statistics
- Mobility Statistics Configuration

The **Mobile Users** area is for displaying and modifying Mobile User parameters. For an introduction to mobility, see Section 3.8, "DLS Mobility - General Information".

**IMPORTANT:** Changes to data in workpoint configuration masks created with templates are not automatically applied to these templates.

These changes must be manually saved to the template (Section 15.5, "Editing Templates").

**NOTE:** A workpoint can only be configured after successful registration at the DLS. The workpoint must be aware of the corresponding DLS IP address for registration. Registration at the DLS is achieved by:

- reading out workpoint data via the DLS, see Section 7.4.6, "Scan IP Devices" and by
- plugging the LAN connector or power supply into the workpoint.

## **8.1 SIP Mobile User Configuration**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration

This menu consists of the following submenus:

- Gateway/Server
- IP Routing
- Features
- Quality of Service
- Security Settings
- Telephony
- Dialing Properties
- Time Parameters
- Audio Settings
- Applications
- LDAP
- User Settings
- SIP Mobility
- Keysets/Keylayout
- Signaling and Payload Encryption (SPE)
- Miscellaneous

## General Data

This part of the contents area is identical for all interfaces associated with this menu. It is used for entering parameters in **Search** view to find a specific group of IP phones. The base data associated with the IP phones found is displayed in **Object** view (no changes possible except under **Remarks**).

E.164: <input style="width: 90%;" type="text"/>	IP Address: <input style="width: 90%;" type="text"/>	IP Address 2: <input style="width: 90%;" type="text"/>
User Type: <input style="width: 90%;" type="text"/>	Device ID: <input style="width: 90%;" type="text"/>	
Status: <input style="width: 90%;" type="text"/>	Device Type: <input style="width: 90%;" type="text"/>	
Remarks: <input style="width: 100%;" type="text"/>		

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

### E.164:

Complete E.164 phone number (Mobility ID or basic user phone number).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

**IMPORTANT:** While attempting the related jump, you shall be redirected to the SIP Mobile User Configuration menu options available.

### User Type:

Displays the type of data used.

Possible options:

- **Mobility enabled Device**  
Mobility Phone data.
- **Mobile User**  
Mobile User data.

For more information on mobility, see Section 3.8, "DLS Mobility - General Information".

### Status:

Displays mobility status.

Possible options:

- **Mobile User logged on**  
Mobile User data: a Mobile User is logged on.

## Mobile Users

### *SIP Mobile User Configuration*

- **Mobile User logged off**  
Mobile User data: no Mobile User is logged on.
- **Device available for Mobile User**  
data: no Mobility Phone Mobile User is logged on to the Mobility Phone.
- **Device used by Mobile User**  
data: a Mobility Phone Mobile User is logged on to the Mobility Phone.

For more information on mobility, see Section 3.8, "DLS Mobility - General Information".

#### IP Address:

IP address of the IP phone.

Example: **192.117.1.193**

The value is read-only at this location.

**IMPORTANT:** While attempting the related jump, you shall be redirected to the IP Phone Configuration menu options available.

#### Device ID:

Physical MAC address of the IP phone.

Example: **00:0E:A6:85:71:80**

**IMPORTANT:** While attempting the related jump, you shall be redirected to the IP Phone Configuration menu options available.

#### Device Type:

Device type of the IP phone.

You can view all IP phone types supported by the DLS in Section 3.4, "IP Devices / versions supported".

Example: **optiPoint 410 standard**

#### IP Address 2:

Second IP address of the IP phone, if it has an IPv6 address.

This is a read only value.

**Remarks:**

Fields for general information.



## Mobile Users

### *SIP Mobile User Configuration*

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### Search

Searches for all registered IP phones that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Save

Starts a job for transmitting configuration changes to the selected object. For more information, see Section 15.1, "First Steps: Changing IP Device Parameters". In Templates view, parameters are saved in the selected templates. For more information, see Section 15.5, "Editing Templates".

#### Discard

The modifications made are not transmitted to the selected object and are deleted from the input mask.

#### Refresh

The parameters are reloaded from the database.

#### Get

Loads a template that has already been saved. For more information, see Section 15.5, "Editing Templates".

#### Rename

Changes the name of a saved template. For more information, see Section 15.5, "Editing Templates".

#### Delete

Deletes a saved template. For more information, see Section 15.5, "Editing Templates".

## **8.1.1 Gateway/Server**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Gateway/Server

This area features the following components:

- General Data
- Possible Action Buttons
- "Gateway (HFA) / SIP Server" Tab
- "SIP Terminal Settings" Tab
- "SIP Registering 1" Tab
- "SIP Registering 2" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## Mobile Users

### *SIP Mobile User Configuration*

#### 8.1.1.1 "Gateway (HFA) / SIP Server" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Gateway/Server > "Gateway (HFA) / SIP Server" Tab

Reg-Address (HFA) / SIP Server Address:	<input type="text"/>
Reg-Port (HFA) / SIP Server Port:	<input type="text"/>

#### **Reg-Address (HFA) / SIP Server Address:**

IP address or host name of the PBX, gateway or SIP server used for operating the workpoint.

#### **Reg-Port (HFA) / SIP Server Port:**

Port number of the PBX, gateway or SIP server used for operating the workpoint.

### 8.1.1.2 "SIP Terminal Settings" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Gateway/Server > "SIP Terminal Settings" Tab

SIP URL:

**Terminal Details**

Terminal Name:

☒ Register by Name

Display ID:

Display ID (Unicode characters):

☒ Use Display ID

#### SIP URL:

SIP address of the IP phone.

Format: <SIP user ID>@<Domain>.

#### Terminal Details

##### Terminal Name:

Name of the IP phone used as a synonym for the phone number during registration.

Only necessary if the **Register by Name** check box is selected and the registrar server is appropriately configured.

##### Register by Name

Check box for activating the function that sends the contents of the **Terminal Name** field as part of registration.

If the check box is not active, the contents of the **E.164 number** field are also sent in the course of registration.

##### Display ID:

Name of the IP phone as shown on the workpoint display.

Value range: max. 24 alphanumeric characters.

**NOTE:** Please refer to Section 15.13.1, "Macro Command Syntax" in case you need to use macro commands, otherwise the DLS will not save the proper Display ID.

## Mobile Users

### *SIP Mobile User Configuration*

#### **Display ID (Unicode characters):**

Name of the IP phone in unicode characters as shown on the workpoint display.

This option is only supported by OpenStage devices.

#### **Use Display ID**

If this check box is activated, the Display ID is shown on the workpoint.

### 8.1.1.3 "SIP Registering 1" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Gateway/Server > "SIP Registering 1" Tab

The screenshot shows a configuration interface with a light beige background. At the top, there is a dropdown menu labeled 'SIP Routing:'. Below this, there is a group box containing four input fields: 'SIP Gateway Addr:', 'SIP Gateway Port:', 'SIP Registrar Addr:', and 'SIP Registrar Port:'. Below the group box, there are two more input fields: 'SIP Phone Port:' and 'RTP Base Port:'.

#### SIP Routing:

Possible options:

- **Gateway**  
A gateway is used for SIP routing.
- **Server**  
An SIP proxy is used for SIP routing.
- **Direct**

If **Direct** or **Gateway** is selected, no registration messages are sent. Registration messages are sent to the registrar server for the **Server** routing mode.

#### SIP Gateway Addr.

IP address of the gateway. This parameter is used when the **Gateway** mode is selected for SIP routing.

#### SIP Gateway Port:

Port number of the gateway. This parameter is used when the **Gateway** mode is selected for SIP routing.

#### SIP Registrar Addr:

IP address of the SIP registrar.

#### SIP Registrar Port:

Port number of the SIP Registrar.

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **SIP Phone Port:**

Port number of the IP phone.

#### **RTP Base Port:**

Base port number for RTP transport.

### 8.1.1.4 "SIP Registering 2" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Gateway/Server > "SIP Registering 2" Tab

☒ SIP Session Timer  
SIP Session Duration (sec):   
SIP Registration Timer (sec):

☒ Outbound Proxy  
SIP Default OBP Domain:

Keep Alive Method:

SIP Realm:   
SIP User ID:   
SIP Password:

**MLPP Settings**  
MLPP Base:   
MLPP Domain Type:   
MLPP Domain Namespace:

SIP Server Type:

#### SIP Session Timer

Check box for activating the SIP session timer. The timer is used to monitor the duration of an SIP session.

#### SIP Session Duration:

Highest duration in seconds for an SIP session.

Value range: **0 ... 3600** seconds.

#### SIP Registration Timer:

Time period for re-registration at the SIP server. Re-registration ensures that the SIP telephone remains logged on to the SIP server. It can also detect server connectivity problems.

Value range: **0 ... 4320** seconds.

Default: **0**

#### Outbound Proxy

Check box for activating an SIP proxy for outbound calls.



## Mobile Users

### *SIP Mobile User Configuration*

Together with **SIP Default OBP Domain** this check box controls outbound call routing on the basis of the number dialed or the user ID.

For more information, see Chapter 17, "Outbound Proxy".

#### **SIP Default OBP Domain:**

Together with **Outbound Proxy** this entry controls outbound call routing on the basis of the number dialed or the user ID.

For more information, see Chapter 17, "Outbound Proxy".

#### **Keep Alive Method:**

Possible options:

- **Sequence**
- **CRLF**

#### **SIP Realm:**

SIP range in which the workpoint is operated. SIP realm is used to identify the telephone at the SIP server.

#### **SIP User ID:**

The user ID is the first part of the SIP URL.

#### **SIP Password:**

Password required for accessing the SIP server.

## **MLPP Settings**

### **MLPP Base**

Possible options:

- **Local**
- **Server**

### **MLPP Domain Type**

Specifies which resource priority namespace will be accepted from a fixed list.

Possible options:

- **dsn**  
dsn-000000
- **uc**  
uc-000000
- **dsn+uc**
- **Other domain**

### **MLPP Domain Namespace**

Specifies an ASCII string for a single resource priority namespace which will be accepted.

Alphanumeric characters and the following special characters are allowed: -!%\*\_+`"~

A "." is not allowed.

### **SIP Server Type:**

Possible options:

- **Broadsoft**
- **OpenScape Voice**
- **Sylantro**
- **other**
- **HiQ8000**
- **Genesys**

## **8.1.2 IP Routing**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > IP Routing

This area features the following components:

- General Data
- Possible Action Buttons
- "DNS Server" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 8.1.2.1 "DNS Server" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > IP Routing > "DNS Server" Tab

Terminal Hostname:

#### **Terminal Hostname:**

Host name of the terminal.

Permitted characters: letters, digits, hyphens, underscores, and periods; case-sensitive; maximum length: 63 characters.

The value is read-only if it was dynamically assigned with DHCP.

### **8.1.3 Features**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features

This area features the following components:

- General Data
- Possible Action Buttons
- "Feature Settings 1" Tab
- "Feature Settings 2" Tab
- "Call related User Settings" Tab
- "Availability" Tab
- "Server based Features" Tab
- "Dialplan" Tab
- "Ringer Melody / Tone" Tab
- "Call Forwarding" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 8.1.3.1 "Feature Settings 1" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Feature Settings 1" Tab

The screenshot displays the 'Feature Settings 1' configuration tab with the following sections and fields:

- Group pickup**
  - Group Pickup URI:
- Station-controlled Conference**
  - Conference Factory URI:
  - Call Park Server URI:
  - Call Pickup Server URI:
- Callback**
  - Callback-busy URI:
  - Cancel callbacks URI:
  - Callback-no reply URI:
  - Callback FAC:
- Forwarding**
  - Deflect Destination:
  - Forward Dest. on Phone lock:
- BLF**
  - BLF Pickup Code:

#### **Group pick-up**

##### **Group Pickup URI:**

URI of the group pickup.

Only available in SIP workpoints.

#### **Station-controlled Conference**

##### **Conference Factory URI:**

URI for setting up conference calls.

Only available in SIP workpoints.

##### **Call Park Server URI:**

URI of the server for parking calls.

Only available in SIP workpoints.

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **Call Pickup Server URI:**

URI of the server for group pickup.

Only available in SIP workpoints.

## **Callback**

#### **Callback-busy**

URI of the server that controls the "Callback-busy" feature.

Only available for optiPoint and OpenStage up to V2.

#### **Cancel callbacks URI:**

URI of the server that controls the "Cancel callbacks" feature.

#### **Callback-no reply URI**

URI of the server that controls the "Callback-no reply" feature.

Only available for optiPoint and OpenStage up to V2.

#### **Callback FAC**

URI to be used for stimulus callback call requests.

Only available for OpenStage V3.0 onwards.

## **Deflection**

#### **Deflect Destination:**

Destination number for call forwarding.

Only available in SIP workpoints.

#### **Forward Dest. on Phone lock:**

Destination number for forwarding in the case of a call to a locked workpoint.

## **BLF**

### **BLF Pickup Code:**

BLF Pickup Code.



## Mobile Users

### SIP Mobile User Configuration

#### 8.1.3.2 "Feature Settings 2" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Feature Settings 2" Tab

Hotline / Warmline

Phone Type:  Default Dial string:

Initial Digit Timer:  s

Open Listening:

Call Recorder

☒ Call Recording

Call Recorder Number:

Recording Mode:  ☒ Automatic Start ☒ All Calls

Audible Notification:  ☒ Audible Indication ☒ Continuous Audible Indication

Call handling options

☒ Allow refuse ☒ Transfer on Hangup ☒ uaCSTA allowed ☒ Idle missed calls

☒ Bridging enabled ☒ Phonebook lookup

Callback

☒ Callback: Busy ☒ Callback: No reply ☒ Callback: Cancel ☒ Callback

FPK Program Timer:

Call Logging

☒ Enable Call Log

Missed:

Delete entry:

#### Hot Line/Warm Line

##### Phone Type:

Time delay for the functions "Hotline" and "Warmline"

Possible options:

- **Ordinary**
- **Hot Line**
- **Warm Line**

Only available in SIP workpoints.

#### **Default Dial String:**

Destination number for the functions "Hotline" and "Warmline".

Only available in SIP workpoints.

#### **Initial Digit Timer:**

Waiting time in seconds for a dialed digit after the dial tone starts.

Only available in SIP workpoints.

#### **Open Listening**

Open Listening settings.

Possible options:

- **Standard Mode**  
To switch to Open Listening mode, the user must press and hold the Open Listening key while returning the handset to the cradle.
- **US Mode**  
To switch to Open Listening mode, the user must first press the Open Listening key and then return the handset to the cradle.

#### **Call Recorder**

##### **Call recording**

Check box for activating call recording.

##### **Call Recorder Number**

Phone number of the call recorder.

##### **Recording Mode**

Determines the behaviour of the call recording.

Possible options:

## Mobile Users

### *SIP Mobile User Configuration*

- **Manual**
- **Auto Start**
- **All Calls**
- **Disabled**  
(Display only)

### **Audible Notification**

Select the tone for audible notification.

Possible options:

- **Off**
- **On / Single Shot**
- **Repeated**

### **Automatic Start**

When activated, call recording is started automatically, with incoming calls and outgoing calls. The user can switch the recording on or off during a conversation.

The checkbox is effective only if voice recording is activated on the phone.

### **All Calls**

When activated, call recording is started automatically, with incoming calls and outgoing calls. The user can not control the recording.

The checkbox is effective only if voice recording is activated on the phone.

### **Audible Indication**

A beep signals to the called party that the phone call is being recorded.

### **Continuous Audible Indication**

A continuous audible indication signals to the called party that the phone call is being recorded.

The checkbox is effective only when **Audible Indication** is activated.

## **Call handling options**

### **Allow refuse**

Checkbox for activating the function for rejecting calls.

Only available in SIP workpoints.

### **Transfer on Ring**

Checkbox for activating the "Transfer on Ring" feature

Only available in SIP workpoints.

### **Transfer on Hangup**

Checkbox for activating the "Transfer on Hangup" feature.

Only available in SIP workpoints.

### **Bridging enabled**

When active, call bridging is enabled.

Only available in SIP workpoints.

### **uaCSTA allowed**

Checkbox to activate the "uaCSTA" feature.

Only available in SIP workpoints.

### **Phonebook lookup**

Checkbox for activating the "Phonebook lookup" feature.

### **Idle missed calls**

If set, an indication for missed calls will be shown on the display.

## Mobile Users

### *SIP Mobile User Configuration*

#### Callback

##### Callback: Busy

Checkbox for activating the "Callback-busy" feature.

Only available in SIP workpoints.

##### Callback: No reply

Checkbox for activating the "Callback-no reply" feature.

Only available in SIP workpoints.

##### Callback: Cancel

When active, the user can cancel callback requests.

#### Callback

Activates Callback.

Only available for OpenStage V3 onwards.

#### FPK Program Timer

When "Off" is selected, the free programmable keys (FPKs) will not change to programming mode on long press.

Possible options:

- On
- Off

#### Call Logging

##### Enable Call Log

Checkbox that indicates whether Call logging is enabled.

##### Missed Logging

Indicates whether calls completed elsewhere will be logged on phone.

Possible options:

- **Include answered elsewhere**  
Calls completed elsewhere will be logged on phone.
- **Exclude answered elsewhere**  
Calls completed elsewhere will not be logged on phone.

### **Delete Entry**

Indicates whether calls log entries are deleted in case there is a call to an entry in Missed calls list.

Possible options:

- **Delete manually** (default option)

Outgoing calls that are made to entries in Missed calls tab of call log and that are connected will not be deleted from call log.

- **Delete when called**

Outgoing calls that are made to entries in Missed calls tab of call log and that are connected will be deleted from call log.

## Mobile Users

### SIP Mobile User Configuration

#### 8.1.3.3 "Call related User Settings" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Call related User Settings" Tab

The screenshot shows the 'Call related User Settings' configuration tab. It includes the following sections and options:

- Video Calls:** ☒ Allow Video Calls
- Incoming Calls:** ☒ Allow Deflection, ☒ Allow Call Waiting, ☒ Allow Do Not Disturb
- CTI Calls:** ☒ Auto answer, ☒ Beep on auto answer, ☒ Auto reconnect, ☒ Beep on auto reconnect
- Outgoing Calls:** Autodial Delay (sec): ; ☒ Allow Transfer on Ring, ☒ Allow Busy when Dialing, ☒ Immediate Dialing
- Callback:** ☒ Allow Callback Busy, ☒ Allow Callback No Reply, ☒ Callback Option
- Established Connections:** ☒ Allow Call Transfer, ☒ Allow Call Joining, ☒ Allow exit conference, ☒ Allow Conferences, ☒ Allow Secure Call Alert, ☒ Toggle associate
- Hold:** ☒ Allow Hold Reminder, Hold Reminder Delay (min): , ☒ Hold and hang-up

#### Video Calls

##### Allow Video Calls

Checkbox for activating Video Calls.

If the Allow Video Calls checkbox is activated , then video calls will be allowed.

#### Incoming Calls

##### Allow Deflection

Check box for activating Call Deflection.

##### Allow Call Waiting

Check box for activating Call Waiting.

##### Allow Do Not Disturb

Check box for activating Do Not Disturb.

## **CTI Calls**

### **Auto answer**

Check box for activating Auto Answer.

Only available in SIP workpoints.

### **Beep on auto answer**

Check box for activating a confirmation beep on Auto Answer.

Only available in SIP workpoints.

### **Auto reconnect**

Check box for activating automatic reconnection of a parked call.

Only available in SIP workpoints.

### **Beep on auto reconnect**

Check box for activating a confirmation beep on reconnection of a parked call.

Only available in SIP workpoints.

### **Immediate Dialing**

If this check box is active, immediate dialing is executed as soon as the entered string matches a dial plan entry.

Only available in SIP workpoints.

## **Outgoing calls**

### **Autodialing delay (sec):**

Delay for Automatic Dialing in seconds.

### **Allow Transfer on Ring**

Check box for activating Transfer on Ring.



## **Mobile Users**

### *SIP Mobile User Configuration*

#### **Allow Busy when Dialing**

Check box for activating Busy when Dialing.

#### **Allow Immediate Dialing**

Check box for activating the **Hot Keypad Dialing** feature.

## **Callback**

#### **Allow Callback Busy**

Checkbox for activating Callback on Busy.

Only available for OpenStage V1 and V2.

#### **Allow Callback No Reply**

Checkbox for activating Callback on No Reply.

Only available for OpenStage V1 and V2.

#### **Callback Option**

Callback Option.

Only available for OpenStage starting with V3.

## **Established Connections**

#### **Allow Call Transfer**

Check box for activating Call Transfer.

#### **Allow Call Joining**

Check box for activating Call Joining.

#### **Allow exit conference**

Check box for activating Exit Conference.

### **Allow Conferences**

Check box for activating Conferences.

### **Allow Secure Call Alert**

If the handling of secure calls is enabled on the phone and this check box is activated, a popup window and an alert tone will notify the user when an insecure (unencrypted) call comes in.

### **Toggle associate**

Checkbox for activating associated toggle.

### **Allow Hold Reminder**

Check box for activating the Hold Reminder.

### **Hold Reminder Delay (min):**

Delay for the Hold Reminder in minutes.

### **Hold and Hangup**

Checkbox for activating the " Hold and Hangup " feature on non-keyset OpenStage phones.

This feature enables the user to temporarily hold and hang up a line without disconnecting your caller. This function is disabled by default.

### 8.1.3.4 "Availability" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Availability" Tab

Feature Settings 1	Feature Settings 2	Call related User Settings	Availability	Server based features	Dialplan	Ringer Melody / Tone	Call Forwarding
This page allows you to control which features are available to the User on this phone.							
<input checked="" type="checkbox"/> Call hold	<input checked="" type="checkbox"/> Call display by name	<input checked="" type="checkbox"/> WAP browser on APM / DSM	<input checked="" type="checkbox"/> Blind Transfer	<input checked="" type="checkbox"/> Video Call			
<input checked="" type="checkbox"/> Call deflection	<input checked="" type="checkbox"/> Call display by number	<input checked="" type="checkbox"/> LDAP on APM / DSM	<input checked="" type="checkbox"/> Repertory Dial	<input checked="" type="checkbox"/> Ext/Int Forwarding			
<input checked="" type="checkbox"/> Call forwarding	<input checked="" type="checkbox"/> Music on hold	<input checked="" type="checkbox"/> Telephony on APM / DSM	<input checked="" type="checkbox"/> Busy Lamp Field (BLF)				
<input checked="" type="checkbox"/> Log forwarded calls	<input checked="" type="checkbox"/> Do not disturb	<input checked="" type="checkbox"/> Voice recognition on APM / DSM	<input checked="" type="checkbox"/> Direct Station Select (DSS)				
<input checked="" type="checkbox"/> Call duration	<input checked="" type="checkbox"/> Message waiting	<input checked="" type="checkbox"/> Speed dial on APM / DSM	<input checked="" type="checkbox"/> CTI				
<input checked="" type="checkbox"/> Call waiting	<input checked="" type="checkbox"/> Local conference	<input checked="" type="checkbox"/> ENB on APM / DSM	<input checked="" type="checkbox"/> Line Overview				
<input checked="" type="checkbox"/> Call transfer	<input checked="" type="checkbox"/> Auto answer	<input checked="" type="checkbox"/> Call park	<input checked="" type="checkbox"/> Feature Toggle				
<input checked="" type="checkbox"/> Call pickup	<input checked="" type="checkbox"/> Phone Lock	<input checked="" type="checkbox"/> Call join	<input checked="" type="checkbox"/> Third Call Leg				
<input checked="" type="checkbox"/> Auto reconnect	<input checked="" type="checkbox"/> PC Interface	<input checked="" type="checkbox"/> Group Pickup Beep	<input checked="" type="checkbox"/> Group Pickup				

#### Call Hold

Check box for activating the function for placing calls on hold.

Area of validity: Only applies to SIP workpoints.

#### Call deflection

Check box for activating manual forwarding for incoming calls (CD).

Only available in SIP workpoints.

#### Call forwarding

Check box for activating automatic call forwarding (CF).

Only available in SIP workpoints.

#### Log forwarded calls

Check box for activating logging for forwarded calls.

Only available in SIP workpoints.

### **Call duration**

Check box for activating the function for displaying the call duration.

Only available in SIP workpoints.

### **Call waiting**

Check box for activating visual and/or acoustic alerting for waiting calls (CW).

Only available in SIP workpoints.

### **Call transfer**

Check box for activating the function for transferring calls (ECT).

Only available in SIP workpoints.

### **Call pickup**

Check box for activating the function for picking up parked calls.

Only available in SIP workpoints.

### **Auto reconnect**

Check box for activating the auto reconnect feature.

Only available in SIP workpoints.

### **Call display by number**

Switch for activating call number display at the workpoint.

Only available in SIP workpoints.

### **Call display by name**

Switch for activating caller name display at the workpoint.

Only available in SIP workpoints.

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **Music on hold**

Check box for activating music on hold for held and parked calls.

Only available in SIP workpoints.

#### **Do not disturb**

Check box for activating the do-not-disturb function (optical alerting and ring only).

Only available in SIP workpoints.

#### **Message waiting**

Check box for activating alerting for waiting messages (MWI).

Only available in SIP workpoints.

#### **Local conference**

Check box for activating the function for setting up a local conference.

Only available in SIP workpoints.

#### **Auto answer**

Check box for activating auto answer.

Only available in SIP workpoints.

#### **PC Interface**

Check box for activating the PC interface.

#### **WAP browser on APM/DSM**

Check box for activating the WAP browser on the optiPoint application module/display module.

Only available in SIP workpoints.

### **LDAP on APM/DSM**

Check box for activating the LDAP function on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Telephony on APM/DSM**

Check box for activating the telephony function on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Voice recognition on APM/DSM**

Check box for activating the voice recognition function (voice dialing) on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Speed dial on APM/DSM**

Check box for activating the speed-dialing function on the optiPoint application module/display module with a Java midlet.

Only available in SIP workpoints.

### **ENB on APM/DSM**

Check box for activating the electronic notebook on the optiPoint application module/display module.

Only available in SIP workpoints.

### **Call park**

Check box for activating the function for parking calls.

Only available in SIP workpoints.

### **Call join**

Check box for activating the function for joining calls.

Only available in SIP workpoints.

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **Group Pickup Beep**

Check box for activating the "Group Pickup Beep" feature.

#### **Blind Transfer**

Checkbox for activating the feature "Blind Transfer".

#### **Repertory Dial**

Checkbox for activating the feature "Repertory Dial".

#### **Busy Lamp Flag (BLF)**

Checkbox for activating the Busy Lamp Field (BLF).

#### **Direct Station Select (DSS)**

Checkbox for activating Direct Station Select (DSS).

#### **CTI**

Checkbox for activating CTI.

#### **Line Overview**

Checkbox for activating the "Line Overview"

#### **Feature Toggle**

Checkbox for activating the feature "Feature Toggle".

#### **Third Call Leg**

Checkbox for activating the feature "Third Call Leg".

### **Group Pickup**

Checkbox for activating the feature "Group Pickup".

### **Video Call**

Checkbox for enabling the feature " Video Call ".

### **Ext/Int Forwarding**

Checkbox for enabling / disabling the External/Internal Forwarding.



## Mobile Users

### *SIP Mobile User Configuration*

#### 8.1.3.5 "Server based Features" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Server based Features" Tab

☒ Support of Server based Features

#### Support of Server based Features

If this check box is activated, server-based features on the device are enabled for the user.

### 8.1.3.6 "Dialplan" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Dialplan" Tab

The screenshot shows the 'Dialplan' configuration tab. At the top, there is a navigation bar with 'Table' and 'Selected entry' tabs, and a table view showing '1 / 1' entries. Below this is a form with the following fields:

- Digit String:
- Action:
- Min Length:
- Max Length:
- Timer:
- Terminating Character:  ☒ Terminator sent
- Special Indication:
- Comment:

At the bottom of the form, there is a checkbox for 'Dialplan' which is checked, and a 'Dialplan ID' field with a dropdown menu. To the right of the form, there are two buttons: 'Import File...' and 'Export File...'.

#### Digit String

Digit String Digit string for executing this action.

Only available in SIP workpoints.

#### Action

Action executed for this digit string.

Possible options:

- **-C- Action for digits**
- **-CD1- Action for digits, dial tone**
- **-D1- Dial tone**
- **-S- Send digits**
- **SD1- Send digits, dial tone**

Only available in SIP workpoints.

## Mobile Users

### *SIP Mobile User Configuration*

#### Min Length

Minimum digit string length for digit string interpretation.

Only available in SIP workpoints.

#### Max Length

Maximum digit string length for digit string interpretation.

Only available in SIP workpoints.

#### Timer

Delay before the action is performed.

Value range: 1 ... 9 seconds.

Only available in SIP workpoints.

#### Terminating Character

Character that ends the digit string entered.

Possible options:

- #
- \*

Only available in SIP workpoints.

#### Special Indication

Possible options:

- -E- emergency call
- -b- bypass

Only available in SIP workpoints.

#### Terminator sent

Displays whether the terminating character is included in the digit string.

### **Dial Plan**

Check box for activating the dial plan. The entries in the "Dialplan" Tab are interpreted if this check box is active.  
Only available in SIP workpoints.

### **Dial Plan ID:**

Name of the dial plan - must begin with a "!".  
Value range: max. 14 alphanumeric characters.  
Only available in SIP workpoints.

### **Dial Plan Error:**

Specifies the dial plan entry that is faulty in the event of an error.  
Value range: **1 ... 48**  
Only available in SIP workpoints.

8.1.3.7 "Ringer Melody / Tone" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Ringer Melody / Tone" Tab

MLPP Ringer File:

Special Ringers

Internal call:  Special 1:

External call:  Special 2:

Recall:  Special 3:

Emergency:

Table Selected entry 1 / 1

Index:

Alert Info:

Melody:

Tone:

Tone Duration (sec):

Ringer File:

**NOTE:** A template for **Ringer Melody / Tone** can be created by searching for an IP Device with entries in **Ringer Melody / Tone** (empty entries are allowed as well). Use the action **Copy to Template** to create a template. There must be 15 entries, which may be empty. This template can be modified, saved, and applied.

MLPP Ringer File

Precedence ringer for priority calls.

Special Ringers

Internal call

Default value : Bellcore-dr1

External call

Default value : Bellcore-dr2

Recall

Default value : Bellcore-dr3

Emergency

Default value : alert-emergency

### **Special 1**

### **Special 2**

### **Special 3**

### **Index**

Specifies the sequence of the signaling entries.

This is automatically set. The field is provided for display only.

### **Alert Info**

If the string specified here is identical with a special string which is sent to the phone in the SIP alert info header, the corresponding ringtone is used

Only available in SIP workpoints.

### **Melody**

Type of ring melody.

Possible options: **Melody 1 ... 8, Melody off.**

Only available in SIP workpoints.

### **Tone**

Ringtone sequence.

Possible options:

- **1**  
= 1 sec ON, 4 sec OFF
- **2**  
= 1 sec ON, 2 sec OFF

## Mobile Users

### *SIP Mobile User Configuration*

- **3**  
= 0,7 sec ON, 0,7 sec OFF, 0,7 sec ON, 3 sec OFF

Only available in SIP workpoints.

### **Tone Duration**

Duration of the ringtone.

Value range: **1** ... **300** seconds.

Default: **60** seconds.

Only available in SIP workpoints.

### **Ringer File**

Name of the audio file containing the ringtone.

**IMPORTANT:** In order for a special ringer to be configured, then :

1. it's alert info (e.g. Bellcore-dr1) and
2. it's respective Ringer file (e.g. Harmonize.mp3) should be configured first.

These two configurations (special ringers & ringer melody table) cannot be performed in a single step. A new Alert Info and Special Ringer cannot be added at the same time in the Special Ringers table & the Distinctive Ringers table. Before a Special Ringer is configured, make sure it's Alert Info is already configured,

i.e. first configure Bellcore-dr1 in lower table, press **Save** and then configure this Alert Info in Special Ringers Internal Call & press **Save** again.

### 8.1.3.8 "Call Forwarding" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Features > "Call Forwarding" Tab

The screenshot shows the 'Call Forwarding' configuration tab. It includes sections for unconditional, busy, and no-reply forwarding, each with checkboxes for different call types and destination fields. There is also an alert section and a favorites section at the bottom.

**NOTE:** The additional Call Forwarding settings (for external/internal) shall be available if the option **"Support of Server Based Features"** is enabled under **Mobile Users> SIP Mobile User Configuration> Features> "Server based Features" Tab.**

#### Call Forwarding Unconditional

##### Forward Any Call

Checkbox for activating unconditional Call Forwarding.

##### Destination:

Call number of the Call Forwarding destination.



## **Mobile Users**

### *SIP Mobile User Configuration*

#### **Forward External Calls**

Checkbox for activating External Call Forwarding.

#### **Destination:**

Call number of the External Call Forwarding destination.

#### **Forward Internal Calls**

Checkbox for activating Internal Call Forwarding.

#### **Destination:**

Call number of the Internal Call Forwarding destination.

#### **Call Forwarding on Busy**

#### **Call Forwarding on Busy**

#### **Forward Any Call**

Checkbox for activating unconditional Call Forwarding.

#### **Destination:**

Call number of the Call Forwarding destination.

#### **Forward External Calls**

Checkbox for activating External Call Forwarding.

#### **Destination:**

Call number of the External Call Forwarding destination.

### **Forward Internal Calls**

Checkbox for activating Internal Call Forwarding.

#### **Destination:**

Call number of the Internal Call Forwarding destination.

### **Call Forwarding on No Reply**

### **Forward Any Call**

Checkbox for activating unconditional Call Forwarding.

#### **Destination:**

Call number of the Call Forwarding destination.

### **Forward External Calls**

Checkbox for activating External Call Forwarding.

#### **Destination:**

Call number of the External Call Forwarding destination.

### **Forward Internal Calls**

Checkbox for activating Internal Call Forwarding.

#### **Destination:**

Call number of the Internal Call Forwarding destination.

## Mobile Users

### *SIP Mobile User Configuration*

#### Delay (sec):

As soon as this time span has expired without the call being accepted, the call is forwarded.

#### Alert on Call Forwarding

##### Audible

Check box for activating an audible alert on the forwarding phone.

##### Visual

Check box for activating a visible alert on the forwarding phone.

#### Forwarding Party:

Select which forwarding party will be displayed when multiple forwarding is active.

Possible options:

- **Display first**
- **Display last**

#### Favorites

#### Forwarding 1:

#### Forwarding 2:

#### Forwarding 3:

#### Forwarding 4:

**Forwarding 5:**

## **8.1.4 Quality of Service**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Quality of Service

This area features the following components:

- General Data
- Possible Action Buttons
- "QoS Parameter" Tab

### 8.1.4.1 "QoS Parameter" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Quality of Service > "QoS Parameter" Tab

Layer 3 Voice Priority 2:	<input type="text"/>
Layer 3 Voice Priority 4:	<input type="text"/>
Layer 3 Voice Priority 6:	<input type="text"/>
Layer 3 Voice Priority 8:	<input type="text"/>

#### Layer 3 Voice Priority 2

Layer 3 value for voice priority calls.

Value range: **DSCP00 ... DSCP63**

#### Layer 3 Voice Priority 4

Layer 3 value for voice priority calls.

Value range: **DSCP00 ... DSCP63**

#### Layer 3 Voice Priority 6

Layer 3 value for voice priority calls.

Value range: **DSCP00 ... DSCP63**

#### Layer 3 Voice Priority 8

Layer 3 value for voice priority calls.

Value range: **DSCP00 ... DSCP63**

## **8.1.5 Security Settings**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Security Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "Passwords" Tab
- "Enabled Services (NW Stack)" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 8.1.5.1 "Passwords" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Security Settings > "Passwords" Tab

The screenshot shows the 'Passwords' configuration tab. It includes a 'User Password' field, a 'Minimum User Password Length' field, a checked checkbox for 'Password change required at next Login', a 'User Password History Count' field, a 'Status User Password' dropdown menu, and a 'User Password will expire at' field. Below these is a 'Directory Guard' section with a checked checkbox for 'Directory Screen Password Guard required' and a 'Directory Screen Password Guard timeout (sec)' field.

#### User Password:

Password for access to the workpoint's user area.

**NOTE:** When a mobile user is logged on, User Password stands as Mobility Password (as described in Section 8.2.1.1, ""Mobile / Basic User" Tab").

When the mobile user logs off, the User Password reverts back to the password of the basic user.

#### Minimum User Password Length:

Minimum number of characters that a password must contain.

#### Password change required at next Login

If this checkbox is activated, the user will be prompted to change the password.

#### User Password History Count:

Shows the count of password changes.

#### Status User Password:

Status of the user password.

Possible Options:

- Active



## Mobile Users

### *SIP Mobile User Configuration*

- Suspended
- Disabled

#### User Password will expire at:

Time & Date of the User Password expiration

## Directory Guard

#### Directory Screen Password Guard required

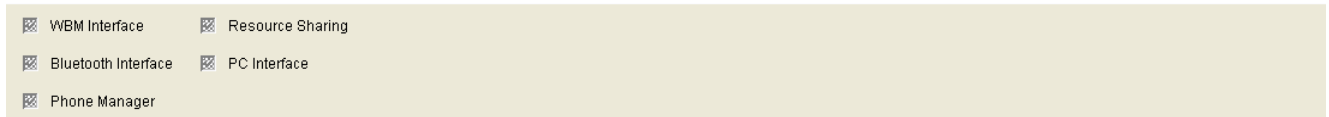
This check box activates password protection on the directory screen. To use the screen, you must enter the standard user password.

#### Directory Screen Password Guard timeout (sec)

Password protection is activated when the length of time specified here expires. After this time, you must enter the password to continue using the directory screen.

### 8.1.5.2 "Enabled Services (NW Stack)" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Security Settings > "Enabled Services (NW Stack)" Tab



#### **WBM Interface**

Check box for activating the WBM interface.

#### **Resource Sharing**

Check box for activating resource sharing (shared use of mouse and keyboard).

#### **Bluetooth Interface**

Check box for activating the Bluetooth interface.

#### **Phone Manager**

Check box for activating the Phone Manager.

#### **PC Interface**

Check box for activating the interface between the PC and the device.

## **8.1.6 Telephony**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Telephony

This area features the following components:

- General Data
- Possible Action Buttons
- "Telephony" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 8.1.6.1 "Telephony" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Telephony > "Telephony" Tab

Emergency Number:

#### **Emergency Number:**

Contains the phone number that can be dialed in an emergency.

## **8.1.7 Dialing Properties**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Dialing Properties

This area features the following components:

- General Data
- Possible Action Buttons
- "Dialing Properties" Tab
- "Canonical Dial Lookup" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

### 8.1.7.1 "Dialing Properties" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Dialing Properties > "Dialing Properties" Tab

The dialing properties are required for the correct resolution of phone numbers in canonical format (see Chapter 17, "Canonical format").

Local Country Code:	<input type="text"/>	International Dial Prefix:	<input type="text"/>
Local Area Code:	<input type="text"/>	National Dial Prefix:	<input type="text"/>
Local District Code:	<input type="text"/>	External Access Code:	<input type="text"/>
Min. local number length:	<input type="text"/>	Local Enterprise Code:	<input type="text"/>
Operator Code(s):	<input type="text"/>	Emergency number(s):	<input type="text"/>
Initial digit(s) for extensions:	<input type="text"/>		
Internal Numbers Dial Form:	<input type="text"/>		
External Numbers Dial Form:	<input type="text"/>		
Dial needs Access Code:	<input type="text"/>		
Dial needs International Gateway Code:	<input type="text"/>		

#### Local Country Code:

Format: No leading zeros, up to four digits.

Example: **49** for Germany.

#### Local Area Code:

Format: No leading zeros, up to 21 digits.

Example: **89** for Munich.

#### Local District Code:

Phone number of the company network.

Format: No leading zeros and no extension numbers, up to 21 digits.

Example: **7007** for Unify Munich Hofmannstraße.

Only available for devices in the optiPoint family.

#### Min. local number length

Minimum length of the local number.

## Mobile Users

### *SIP Mobile User Configuration*

#### Operator Code(s)

The operator number. You may enter multiple numbers separated by commas.

#### Initial digit(s) for extensions

List of initial digits of all possible extensions in the local enterprise network. When a call number could not be matched as a public network number, the phone checks if it is part of the local enterprise network. This is done by comparing the first digit of the call number to the value(s) given here. If it matches, the call number is recognized as a local enterprise number and processed accordingly.

Example: If, the extensions 3000-5999 are configured in OpenScape Voice, each number will start with 3, 4, or 5. Therefore, the digits to be entered are **3, 4, 5**.

#### International Dial Prefix:

National prefix.

Format: Up to four digits.

Example: **00** in Germany.

#### National Dial Prefix:

International prefix.

Format: Up to five digits.

Example: **0** in Germany.

#### External Access Code:

Number for trunk seizure for an outgoing external call.

Format: Up to five digits.

Examples: **0, 74, 9** (USA).

#### Local Enterprise Node:

Call number of the company network.

Example: **7007** for Unify Munich Hofmannstraße.

Only available for devices in the OpenStage family.

### **Emergency number(s)**

You may enter multiple emergency numbers separated by commas.

### **Internal Numbers Dial Form**

Possible options:

- **Local Company Format**
- **Always Add Node**
- **Use External Number**

### **External Numbers Dial Form**

Possible options:

- **Local Public Format**
- **National Public Format**
- **International Public Format**

### **Dial needs Access Code**

Possible options:

- **Not used**
- **For External Number**

### **Dial needs International Gateway Code**

Possible options:

- **Use National Code**
- **Unchanged**



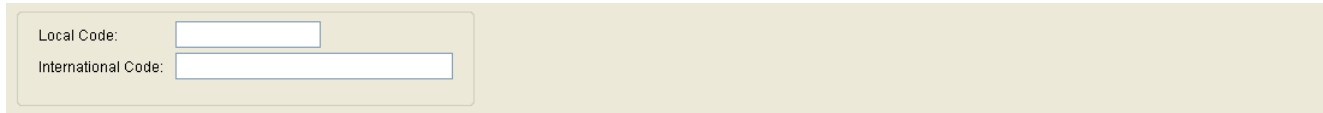
## Mobile Users

### *SIP Mobile User Configuration*

#### 8.1.7.2 "Canonical Dial Lookup" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Dialing Properties > "Canonical Dial Lookup" Tab

This function transforms the entries in the first field ("Local Area Code") on the basis of a particular digit string as specified in the second field ("International Dial Code"). This digit string can be a national or international dial prefix, for example. This allows you to dial frequently used prefixes by entering just one digit.



The screenshot shows a configuration window with a light beige background. Inside, there is a rounded rectangle containing two input fields. The first field is labeled "Local Code:" and is a small rectangular box. The second field is labeled "International Code:" and is a longer rectangular box. Both fields are currently empty.

#### Local Code

Digit or short digit string which can be used for dialing a particular prefix, for example.

#### International Code

Digit string, such as, a prefix, that is dialed at the beginning of the dialing operation using a particular digit.

## 8.1.8 Time Parameters

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Time Parameters

This area features the following components:

- General Data
- Possible Action Buttons
- "Time" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

## Mobile Users

### SIP Mobile User Configuration

#### 8.1.8.1 "Time" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Time Parameters > "Time" Tab



The screenshot shows a configuration interface with two dropdown menus. The first is labeled 'Date Format:' and the second is labeled 'Time Format:'. Both menus have a small arrow icon on the right side, indicating they are expandable.

#### Date format:

Format for date entry. Manual entry is only necessary if this information is not automatically transmitted (for example, PBX or DHCP server).

Possible options:

- **YY-MM-DD**  
Example: 04-10-05 for 5.10.2004
- **MM/DD/YY**  
Example: 10/05/04 for 5.10.2004
- **DD.MM.YY**  
Example: 05.10.04 for 5.10.2004

#### Time Format:

Time format.

Possible options:

- **12 hour**
- **24 hour**

## **8.1.9 Audio Settings**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Audio Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "Audio Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

## Mobile Users

### SIP Mobile User Configuration

#### 8.1.9.1 "Audio Settings" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Audio Settings > "Audio Settings" Tab

☒ Special Dial Tone on Voice Message    ☒ Music on Hold

**Group Pickup Settings**

☒ Group Pickup Tone allowed

☒ Use Ringer Tone for Group Pickup

Alert Type for Group Pickup:

**Ringer Settings**

Ringer Melody:

Ringer Sequence:

Ringer Audio File:

**BLF**

BLF Alerting:

**Key Click**

Volume:

Keys:

#### Special Dial Tone on Voice Message

Check box for activating a special dial tone if a voice message is received.

#### Music on Hold

If this checkbox is activated, the phone will play music to a caller when he is put on hold.

#### Group Pickup Settings

##### Group Pickup Tone allowed

Activates or deactivates the generation of an acoustic signal for incoming pickup group calls.

##### Use Ringer Tone for Group Pickup

If this is checked, a pickup group call will be signaled by a short standard ringtone. If unchecked, a pickup group call will be signaled by an alert tone.

##### Alert type for Group Pickup:

Defines the user action required to accept a pickup call.

Possible Options:

- **Prompt**  
An incoming pickup call is signaled by an alert on the phone GUI. As soon as the user goes off-hook or presses the speaker key, the pickup call is accepted. Alternatively, the user can press the corresponding function key, if configured.
- **Notify**  
An incoming pickup call is signaled by an alert on the phone GUI. To accept the call, the user must confirm the alert or press the corresponding function key, if configured.
- **FPK only**  
An incoming pickup call is signaled at the corresponding function key only. To accept the call, the user must press the function key.

## **Ringer Settings**

### **Ringer Melody:**

Possible Options see Section 7.1.12.3, "Ringer Melody:"

### **Ringer Sequence:**

Possible Options:

- **1 sec ON, 4 sec OFF**
- **1 sec ON, 2 sec OFF**
- **0.7 sec ON, 0.7 sec OFF, 0.7 sec OFF, 3 sec OFF**

### **Ringer Audio File**

Name of the file that contains the ringtone.

## **Key klick**

### **Volume**

Defines the volume of key clicks.

Possible Values:

- **Off**
- **Low**

## **Mobile Users**

### *SIP Mobile User Configuration*

- **Medium**
- **High**

## **Keys**

Defines which keys shall have audible clicks.

Possible Values:

- **Keypad only**
- **All keys**

## **8.1.10 Applications**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Applications

This area features the following components:

- General Data
- Possible Action Buttons
- "WAP" Tab
- "Java" Tab
- "XML Applications" Tab
- "Application List" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

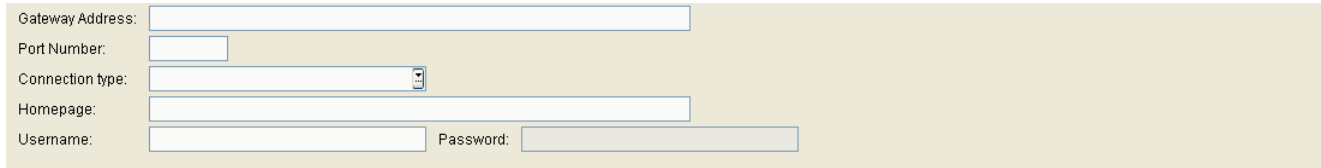


## Mobile Users

### SIP Mobile User Configuration

#### 8.1.10.1 "WAP" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Applications > "WAP" Tab



The screenshot shows a configuration form for the WAP tab. It includes the following fields:

- Gateway Address: A text input field.
- Port Number: A text input field.
- Connection type: A dropdown menu.
- Homepage: A text input field.
- Username: A text input field.
- Password: A text input field.

#### Gateway Address:

IP address or host name of the WAP server.

#### Port Number:

Port number of the WAP server.

#### Connection type:

Protocol type for connection to the WAP server.

Possible options:

- HTTP
- WSP

#### Homepage:

URL of the welcome page where the WAP homepage is located.

#### Username

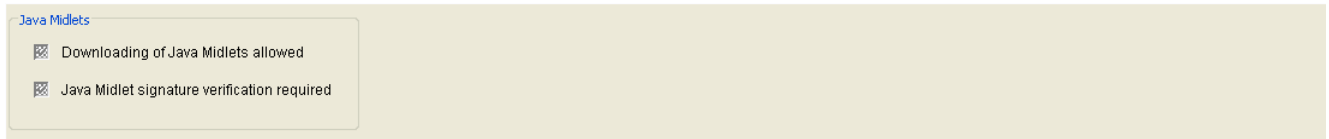
User ID for identification at the WAP server.

#### Password:

Password for the user ID.

### 8.1.10.2 "Java" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Applications > "Java" Tab



#### **Java Midlets**

##### **Downloading of Java Midlets allowed**

If this check box is activated, you can download Java midlets to the workpoint.

##### **Java Midlet signature verification required**

If this check box is activated, Java midlets must be verified using a signature.

### 8.1.10.3 "XML Applications" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Applications > "XML Applications" Tab

Application Name (Server):   
Display Name:   
Program Name:   
Restrict Program to Version:   
Server Address:  Server Port:   
Transport:   
Instance Type:   
Icon URL:   
Debug Program Name:   
Mode Key:   
  
Number of Tabs:   
Tab 1 Display Name :  Tab 1 Application Name :   
Tab 2 Display Name :  Tab 2 Application Name :   
Tab 3 Display Name :  Tab 3 Application Name :   
☒ Start all Tabs  
  
☒ Allow routing via the Java Proxy ☒ Enable Application ☒ Autostart  
☒ Call Handling enabled ☒ Allow Push Popups ☒ Allow Priority Popups  
☒ Remote Debug Mode ☒ Restart Application

For information on XML applications, please refer to Section 7.1.14.4, ""XML Applications" Tab"

#### XML Applications

##### Application Name (Server):

This name is used internally by the workpoint software to identify the application.

##### Display Name:

This name is used for listing the application on the workpoint menu.

##### Program Name:

Path of the start file of the server-side program, relativ to the server address.

##### Restrict Program to Version:

Select a distinct version the application is working with.

**Server Address:**

IP address of the server, on which the program is running.

Example: **192.168.1.150**

**Server Port:**

Port used by the server-side program for receiving data from the workpoint.

Examples: **80** (Apache default port); **8080** (Tomcat default port).

**Transport:**

Transport protocol used for transmitting XML data.

Possible options:

- **HTTP**
- **HTTPS**

**Instance Type:**

Selection of the type of instance.

Possible options:

- **Normal**
- **Xpressions**
- **Phonebook**

**Icon URL:**

URL of the application icon (not yet implemented).

**Debug Program Name:**

Name and, where applicable, directory path of the program on the server that receives error messages from the terminal's \*.XML application platform.

## Mobile Users

### *SIP Mobile User Configuration*

#### Mode Key:

Select a mode key to start the application.

Possible options:

- **No Mode Key**
- **Phonebook Mode Key**
- **CallLog Mode Key**
- **Messages Mode Key**
- **Help Mode Key**

#### Number of Tabs:

The number of embedded tabs within the XML application to be shown on phone display.

Value range: **0 ... 3**

**NOTE:** For an XML-application with a number of Tabs > 0, one of the entries between **Tab 1 Application Name** and **Tab 3 Application Name** must be set to the same value as the **Application Name (Server)** that it is associated with. When the XML application is started, the tab which has the same name as the XML application is the tab that initially gets focus.

#### Tab 1 Display Name:

Labeling displayed on the 1st tab header.

#### Tab 2 Display Name:

Labeling displayed on the 2nd tab header.

#### Tab 3 Display Name:

Labeling displayed on the 3rd tab header.

#### Tab 1 Application Name:

The name used by the XML application to identify the application running under the 1st tab. The name must be unique over all XML-applications.

### **Tab 2 Application Name:**

The name used by the XML application to identify the application running under the 2nd tab. The name must be unique over all XML-applications.

### **Tab 3 Application Name:**

The name used by the XML application to identify the application running under the 3rd tab. The name must be unique over all XML-applications.

### **Start all Tabs**

On application start, all tabs will be opened.

### **Allow routing via the Java Proxy**

Switch to allow routing via the Java Proxy.

### **Enable Application**

Switch to enable application.

### **Autostart**

Switch to enable autostart of application.

### **Call Handling enabled**

Switch to enable call handling.

### **Allow Push Popups**

Switch to enable pushing of popups.

### **Allow Priority Popups**

Switch to enable priority popups.

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **Remote Debug Mode**

Switch to enable setting of remote debug mode.

#### **Restart Application**

Restart Application, if it is already running.

#### **8.1.10.4 "Application List" Tab**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Applications > "Application List" Tab

List of Applications for Function Keys:

#### **List of Applications for Function Keys**

Comma-separated list of names for applications, which can be started by means of Function Keys.



## **8.1.11 LDAP**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > LDAP

This area features the following components:

- General Data
- Possible Action Buttons
- "LDAP Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination")

**IMPORTANT:** In order to employ LDAP data (or any other File Deployment contents, e.g. logo, ringtone, screensaver) the mobile user must be logged on.

### 8.1.11.1 "LDAP Settings" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > LDAP > "LDAP Settings" Tab

LDAP Server Address:	<input type="text"/>
LDAP Server Port:	<input type="text"/>
LDAP Transport:	<input type="text"/>
LDAP Authentication:	<input type="text"/>
LDAP User:	<input type="text"/>
LDAP Password:	<input type="password"/>
LDAP Digest:	<input type="password"/>
Search Trigger Timeout (sec):	<input type="text"/>

#### **LDAP Server Address:**

IP address or host name of the LDAP server.

#### **LDAP Server Port:**

Port number of the LDAP server.

#### **LDAP Transport:**

Transport protocol used to transmit LDAP data.

Possible options:

- **TCP**
- **TLS**

#### **LDAP Authentication:**

Option for selecting the LDAP access.

Possible options:

- **Anonymous**
- **Simple**

#### **LDAP User:**

User name for authenticated LDAP access.

## Mobile Users

### *SIP Mobile User Configuration*

#### **LDAP Password:**

Password for authenticated LDAP access.

#### **LDAP Digest:**

Enter LDAP Digest

#### **Search Trigger Timeout (sec):**

Search Trigger Timeout for LDAP simple search.

Possible options:

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 60

## **8.1.12 User Settings**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > User Settings

This area features the following components:

- General Data
- Possible Action Buttons
- "Locks" Tab
- "Locked Configuration Menus" Tab
- "Locked Local Functions" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## Mobile Users

### *SIP Mobile User Configuration*

#### 8.1.12.1 "Locks" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > User Settings > "Locks" Tab

- ☒ Function Keys locked
- ☒ Configuration Menu locked
- ☒ Local Function Menu locked

#### Function Keys locked

Check box for locking function keys on the Mobility Phone for a Mobile User.

#### Configuration Menus locked

Check box for locking configuration menus on the Mobility Phone for a Mobile User.

#### Local Function Menus locked

Check box for locking local function menus on the Mobility Phone for a Mobile User.

## 8.1.12.2 "Locked Configuration Menus" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > User Settings > "Locked Configuration Menus" Tab

<input type="checkbox"/> Country options	<input type="checkbox"/> Daylight Saving	<input type="checkbox"/> Auto reconnect beep	<input type="checkbox"/> Idle missed calls	<input type="checkbox"/> Screen Saver	<input type="checkbox"/> Backlight Timeout Energy Saving Display
<input type="checkbox"/> Language	<input type="checkbox"/> Auto Dial Timer	<input type="checkbox"/> Idle display static	<input type="checkbox"/> Busy when dialing	<input type="checkbox"/> Call context menu	<input type="checkbox"/> Special Ringer Internal Calls
<input type="checkbox"/> Date / Time	<input type="checkbox"/> CFNR Timer	<input type="checkbox"/> Inactivity timeout	<input type="checkbox"/> Transfer on Ring	<input type="checkbox"/> BLF	<input type="checkbox"/> Special Ringer External Calls
<input type="checkbox"/> Call deflection	<input type="checkbox"/> Hold Ringback Timer	<input type="checkbox"/> APM / DSM Call View	<input type="checkbox"/> Mobility LED flash	<input type="checkbox"/> Toggle associate	<input type="checkbox"/> Special Ringer Recall
<input type="checkbox"/> Call forwarding	<input type="checkbox"/> Music on hold	<input type="checkbox"/> USB keyboard type	<input type="checkbox"/> Call Recording	<input type="checkbox"/> Forwarding party display	<input type="checkbox"/> Special Ringer Emergency
<input type="checkbox"/> Log forwarded calls	<input type="checkbox"/> Do Not Disturb	<input type="checkbox"/> Deflect address	<input type="checkbox"/> Secure Call Indication	<input type="checkbox"/> Headset	<input type="checkbox"/> Special Ringer Special 1
<input type="checkbox"/> Call duration	<input type="checkbox"/> Message Waiting	<input type="checkbox"/> Line settings	<input type="checkbox"/> Transfer on Hangup	<input type="checkbox"/> Key click	<input type="checkbox"/> Special Ringer Special 2
<input type="checkbox"/> Call waiting	<input type="checkbox"/> Hold Ring Back	<input type="checkbox"/> Call view icons	<input type="checkbox"/> Audio Settings	<input type="checkbox"/> Enable Call Log	<input type="checkbox"/> Special Ringer Special 3
<input type="checkbox"/> Call transfer	<input type="checkbox"/> Conferencing	<input type="checkbox"/> Call park	<input type="checkbox"/> Loudspeaker	<input type="checkbox"/> Hold and Hangup	<input type="checkbox"/> Delete Entry
<input type="checkbox"/> Call join	<input type="checkbox"/> Local Conferencing	<input type="checkbox"/> Call pickup	<input type="checkbox"/> Forwarding Alert	<input type="checkbox"/> Lower IL alert notification	
<input type="checkbox"/> Contrast	<input type="checkbox"/> Auto answer	<input type="checkbox"/> Immediate dialing	<input type="checkbox"/> Join in Conference	<input type="checkbox"/> Video on	
<input type="checkbox"/> Dialing mode	<input type="checkbox"/> Auto answer beep	<input type="checkbox"/> Callback / Callback busy	<input type="checkbox"/> Bluetooth	<input type="checkbox"/> Missed Logging	
<input type="checkbox"/> Call display	<input type="checkbox"/> Auto reconnect	<input type="checkbox"/> Call back on ring/no reply	<input type="checkbox"/> Display Skin	<input type="checkbox"/> Display Brightness	

The following functions can be locked for the Mobile User in the configuration menus by activating the relevant check box:

### 1-Country options

The user can select a country from a list to adapt the phone to country specific conditions.

### 2-Language

The user can set the language for the administration and user menu.

### 3-Date / Time

The user can set the local time, the current date, and the daylight saving time.

### 4-Call deflection

The user can activate or deactivate call deflection.

### 5-Call forwarding

The user can activate or deactivate call forwarding.

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **6-Log forwarded calls**

The user can activate or deactivate the logging of forwarded calls.

#### **7-Call duration**

The user can determine whether the call duration is indicated on the display.

Only available in optiPoint workpoints.

#### **8-Call waiting**

The user can determine whether a second call is allowed during a connected call. If not, the caller hears the busy tone.

#### **9-Call transfer**

The user can allow call transfer.

#### **10-Transfer call**

The user can enable or disable the possibility to interlink an active and a held call.

#### **11-Contrast**

The user can set the contrast for the display.

#### **12-Dialing mode**

The user can determine whether a number only or, alternatively, a name can be used for dialing.

Only available in optiPoint workpoints.

#### **13-Call display**

The user defines which information about the caller is displayed on an incoming call.

Only available in optiPoint workpoints.

#### **14-Daylight Saving**

The user can set the daylight saving time.

#### **15-Auto dial timer**

The delay time between the entry of the last call number digit and the start of the dialing process can be set by the user.

#### **16-CFNR timer**

The user can set the delay time that passes before a call is forwarded, if Call Forwarding on No Reply is activated.

#### **17-Hold ringback timer**

The user can set the time delay, after which the workpoints indicates that there us a held call.

#### **18-Music on hold**

The user can determine whether the music on hold stored in the phone is used. If music on hold is activated, it is played as soon as the phone is put to hold.

#### **19-Do not disturb**

The user can determine whether Do Not Disturb is available on the phone. If Do Not Disturb is active, the phone will not ring on an incoming call, and the caller will hear the busy tone.

#### **20-Message waiting**

The user can determine whether new messaes in the mailbox are signaled by a LED.

Only available in optiPoint workpoints.

#### **21-Hold ring back**

If this function is active and a participant has been put to hold, a signal sounds after a configurable time to remind that a call is on hold. The user can allow this function and set the delay time for the acoustic signal.



## **Mobile Users**

### *SIP Mobile User Configuration*

#### **22-Conference**

The user can allow system based conferences.

Only available in optPoint workpoints.

#### **23-Local conference**

The user can allow local 3-party conferences.

#### **32-Auto answer**

The user can determine whether incoming calls are accepted automatically by the CTI application which is connected to the phone.

#### **33-Auto answer beep**

The user can determine whether a signal will sound when a call that is accepted automatically by the CTI application connected to the phone.

#### **34-Auto reconnect**

The user can determine whether a held call can be reconnected automatically by the CTI application.

#### **35-Auto reconnect beep**

The user can determine whether a signal will sound when a held call is reconnected by the CTI application.

#### **36-Idle display static**

The user can configure the indication of system messages in idle state.

Only available in optiPoint workpoints.

#### **38-Inactivity timeout**

The user can set the delay time between the last entry and the return to the idle state.

### **39-APM / DSM Call View**

The user can activate or deactivate the call view on the optiPoint application module.

### **40-USB keyboard type**

The user can modify the language of the USB keyboard connected to an optiPoint phone.

Only available in optiPoint workpoints.

### **43-Deflect address**

The user can enter resp. modify the target number for call deflection.

### **44-Line settings**

The user can modify the settings of a line key.

### **45-Call view icons**

The user can determine whether messages on the optiPoint display module, like, for instance, the list of missed calls, are displayed as text or symbols.

### **46-Call park**

The user can allow call parking.

### **47-Call pickup**

The user can allow pickup of a parked call.

### **48-Immediate dialing**

The user can allow immediate dialing.

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **49-Callback / Callback busy**

The user can activate the transmission of a callback request to the system. With OpenStage V3 onwards, the callback request can be transmitted in every case; with other end devices, this is only possible in busy case.

#### **50-Call back on ring/no reply**

The user can activate the transmission of a callback request to the system in case a call is not replied.

Only available in OpenStage workpoints.

#### **51-Idle missed calls**

The user can activate missed calls notifications on the display.

Only available on optiPoint workpoints.

#### **52-Busy when dialing**

The user can determine whether incoming calls are refused while a call number is entered.

#### **53-Transfer on Ring**

The user can determine whether a call is transferred as soon as the third participant's phone rings, even if the transferring participant has not hung up.

#### **54-Mobility LED flash**

The user can determine whether the mobility key LED flashes during data exchange between phone and DLS, like, for instance, while mobility logon and logoff.

Only available in optiPoint workpoints.

#### **55-Call Recording**

The user can activate call recording.

Only available in optiPoint workpoints.

### **56-Secure Call Indication**

The user can determine whether an alert tone shall indicate an insecure speech connection.

### **57-Transfer on Hangup**

The user can determine whether, when one call is active and another call is on hold, the user can connect these calls by hanging up.

### **60-Audio Settings**

The user can modify settings like ringtones and room character.

Only available in OpenStage workpoints.

### **61-Loudspeaker**

The user can activate or deactivate handsfree talking.

Only available in OpenStage workpoints.

### **62-Forwarding Alert**

The user can allow forwarding alert.

### **63-Join in Conference**

The user can determine whether visual or acoustical warning notifications indicate an incoming call while call forwarding is active.

Only available in OpenStage workpoints.

### **64-Bluetooth**

The user can activate or deactivate bluetooth connectivity.

### **65-Display Skin**

The user can choose the display theme.

## **Mobile Users**

### *SIP Mobile User Configuration*

Only available in OpenStage 60/80 workpoints.

#### **66-Screensaver**

The user can activate the phones's screensaver and set the delay time for starting the screensaver.

Only available in OpenStage 60/80 workpoints.

#### **67-Call context menu**

The user can define the displayed menu.

Only available in OpenStage 60/80 workpoints.

#### **68-BLF**

The user can define how an incoming call for the phone supervised by the BLF key shall be displayed.

#### **69-Toggle associate**

The user can enable or disable the connecting of a first call and a second call by going on-hook. When "Toggle associate" is activated, the following procedure will ensue: The user has accepted a second call, whereby the first call is put to hold. As soon as the user has alternated back to the first call, and then again to the second call, he/she can connect both calling parties by going on-hook.

Available in all OpenStage workpoints.

#### **70- Forwarding party display**

For multiple forwarding, the user can determine whether the first forwarding party or the last forwarding party is displayed.

Available in all OpenStage SIP workpoints.

#### **71- Headset**

The user can define the type of headset connected to the phone.

Available for OpenStage 40/60/80 SIP/HFA.

## **72- Key click**

The user can define the mode of key click on the phone.

Available for OpenStage 40/60/80 SIP/HFA.

## **73- Enable Call Log**

The user can activate a list of missed,dialed,received or forwarded calls. The call log can be cleared via the WPI.  
Available for OpenStage 15/20/20E/40/60/80 SIP/HFA.

## **74- Hold and Hangup**

Checkbox for activating the " Hold and Hangup " feature on non-keyset OpenStage phones.

This feature enables the user to temporarily hold and hang up a line without disconnecting your caller. This function is disabled by default.

## **75- Lower IL alert notification**

The user is informed when an incoming call originated from a lower security zone, or when an outgoing call terminates in a lower security zone.

Available for OpenStage 40/60/80 SIP/HFA.

## **76- Video on**

Checkbox for activating the " Video Call " feature on non-keyset OpenStage phones.

This feature enables the user to make video calls.

Available for OpenStage 60/80 SIP/HFA.

## **77- Missed Logging**

The user can configure whether the calls completed elsewhere will be logged on phone.

Available for OpenStage 15/20/20E/60/80 SIP/HFA.

## **78- Display Brightness**

## **Mobile Users**

### *SIP Mobile User Configuration*

#### **79- Backlight Timeout Energy Saving Display**

#### **80- Special Ringer Internal Calls**

The user can configure special ringers for Internal Calls at mobile user level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### **81- Special Ringer External Calls**

The user can configure special ringers for External Calls at mobile user level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### **82- Special Ringer Recall**

The user can configure special ringers for Recalls at mobile user level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### **83- Special Ringer Emergency**

The user can configure special ringers for Emergency at mobile user level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### **84- Special Ringer Special 1**

The user can configure his own special ringers (up to 3) at mobile user level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### **85- Special Ringer Special 2**

The user can configure his special ringers (up to 3) at mobile user level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

#### **86- Special Ringer Special 3**

The user can configure his own special ringers (up to 3) at mobile user level.

Available for OpenStage 15/20/20E/40/41/60/80 & OpenScape Desk Phones 35 G/ 35 G Eco / 55 G (SIP only).

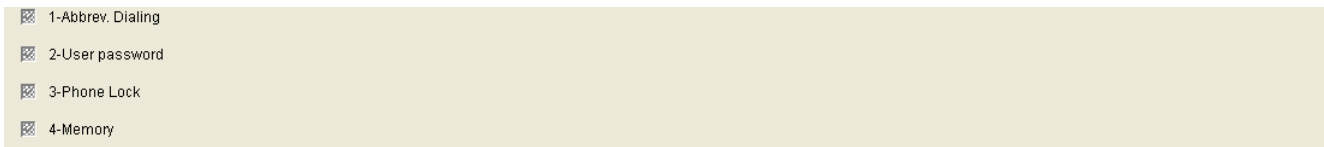
### **87- Delete Entry**

The user can configure whether to delete calls log entries in case there is a call to an entry in Missed calls list.



#### 8.1.12.3 "Locked Local Functions" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > User Settings > "Locked Local Functions" Tab



The following functions can be locked for the Mobile User in the configuration menus by activating the relevant checkbox:

##### 1-Abbreviated dialing

The user can set up abbreviated dialing numbers.

Only available in optiPoint workpoints.

##### 2-User password

The user can change his password.

##### 3-Phone lock

The user can lock the phone. If the phone is locked, no unauthorized person can call from this phone in a regular manner or modify any settings. Only emergency numbers and pre-defined numbers from the dial plan can be dialed.

##### 4-Memory

The user can delete all abbreviated dialing numbers and restore the factory settings.

Only available in optiPoint workpoints.

### **8.1.13 SIP Mobility**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > SIP Mobility

This area features the following components:

- General Data
- Possible Action Buttons
- "Mobility Logon/Logoff" Tab
- "Mobility Data" Tab

## Mobile Users

### SIP Mobile User Configuration

#### 8.1.13.1 "Mobility Logon/Logoff" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > SIP Mobility > "Mobility Logon/Logoff" Tab

The screenshot displays the 'Mobility Logon/Logoff' configuration interface. It features three main sections: 'Settings for Forced Logon', 'Settings for Forced Logoff', and 'Settings for SNMP Trap'. Each section contains a checked checkbox and a text input field for a time value in seconds. Below these sections are three additional checkboxes: 'Logon without SIP Server / Registrar / Gateway Addresses', 'Logon with Forced Logoff', and 'Mobile User Logoff with Password', all of which are also checked.

Section	Option	Value	Unit
Settings for Forced Logon	<input checked="" type="checkbox"/> Forced Logon while call in progress		sec
	Time before Forced Logon:		
Settings for Forced Logoff	<input checked="" type="checkbox"/> Forced Logoff while call in progress		sec
	Time before Forced Logoff:		
Settings for SNMP Trap	<input checked="" type="checkbox"/> SNMP Trap on unauthorised Remote Logoff		sec
	Delay SNMP Trap:		
General Settings	<input checked="" type="checkbox"/> Logon without SIP Server / Registrar / Gateway Addresses		
	<input checked="" type="checkbox"/> Logon with Forced Logoff		
	<input checked="" type="checkbox"/> Mobile User Logoff with Password		

#### Settings for Forced Logon

If the check box is active, the mobile user can be logged on to the device during the call. Logon is performed once the time entered in the field **Time before Forced Logon** has expired. If the check box is not active, attempted logon during the call is not forced even when the call has been completed. Forced logon must then be restarted.

#### Settings for Forced Logoff

If the check box is active, the Mobile User can be logged off from the device during the call. Logoff is performed once the time specified in the field **Time before Forced Logoff** has elapsed. If the check box is not active, attempted logoff during the call is not forced even when the call has been completed. Forced logoff must then be restarted.

#### Settings for SNMP Trap

If the check box is active, a message is sent to the SNMP server each time an unauthorized remote logoff is attempted. For information on entering SNMP server data, see Section 7.1.13.1, "'SNMP' Tab".

#### Logon without SIP Server / Registrar / Gateway Addresses

If this check box is active, the following data is not sent to the device when a mobile user logs on: SIP server address/port, SIP registrar address/port, SIP gateway address/port.

#### Logon with Forced Logoff

If this check box is active, Mobile User logoff is forced as soon as another user logs on to the device.

### **Mobile User Logoff with Password**

If the check box is active, Mobile User logoff is only possible when the password of the currently logged-on Mobile User is entered.

### **Time before Forced Logon**

Time in seconds until forced logon takes place. This information is only relevant if the option **Forced Logon while call in progress** is activated. A value from 0 to 180 can be entered.

### **Time before Forced Logoff**

Time in seconds until forced logoff takes place. This information is only relevant if the option "Forced Logoff while call in progress" is activated. A value from 0 to 180 can be entered.

### **Delay SNMP Trap**

Time in seconds until the SNMP trap is sent. For information on entering SNMP server data, see Section 7.1.13.1, "SNMP" Tab.

## Mobile Users

### SIP Mobile User Configuration

#### 8.1.13.2 "Mobility Data" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > SIP Mobility > "Mobility Data" Tab

Number of changes for Medium Priority Data :	<input type="text"/>	
Time before Medium Priority Data:	<input type="text"/>	s (seconds)
Time before High Priority Data:	<input type="text"/>	s (seconds)
<input checked="" type="checkbox"/> International Mobility ID		

#### Number of changes for Medium Priority Data:

Defines how many changes to medium priority data may take place in the workpoint before this data is sent to the DLS.

#### Time before Medium Priority Data:

Defines the interval after which medium priority data that has been changed in the workpoint is sent to the DLS.

#### Time before High Priority Data:

Defines the interval after which high priority data that has been changed in the workpoint is sent to the DLS.

#### International Mobility ID

If this check box is activated, the device automatically adds the local country code to the extension, in addition to the trunk number and local area code when a mobile user logs on. The international code is configured under **Mobile Users > SIP Mobile User Configuration > Dialing Properties > "Dialing Properties" Tab -> International Dial Prefix**.

Example: The user logs on to the device using the extension/mobility ID "31434". If the check box is activated, the device sends the number "498972231434". Otherwise, the device sends the number "8972231434".

## **8.1.14 Keysets/Keylayout**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Keysets/Keylayout

This area features the following components:

- General Data
- Possible Action Buttons
- "Keysets" Tab
- "Destinations" Tab
- "Send URL Server CA Certificate" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## Mobile Users

### SIP Mobile User Configuration

#### 8.1.14.1 "Keysets" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Keysets/Keylayout > "Keysets" Tab

The screenshot shows the 'Keysets' configuration tab with various settings. On the left, there are checkboxes for 'LED on Registration' and 'Forwarding indicated', both of which are checked. Below these are several input fields: 'Rollover Ring' (a dropdown menu), 'Rollover Ring Volume' (a slider), 'Line Action Mode' (a dropdown menu), 'Reservation Timer' (an input field), 'Shift Key Timeout (sec)' (an input field), 'Line Button Mode' (a dropdown menu), 'Line Preselection Timer (sec)' (an input field), and 'Bridging Priority' (a dropdown menu). On the right, there are checkboxes for 'Show Focus' and 'Preview Mode locked', both checked. Below these are two more input fields: 'Originating Line Preference' and 'Terminating Line Preference' (both dropdown menus). At the bottom left, there is a section titled 'DSS Key Settings' with three checkboxes: 'Deflect Alerting Call', 'Allow Pickup to be refused', and 'Forwarding Indication', all of which are checked. At the bottom right, there is a section titled 'Line Key Preview' with a 'Preview Timer (sec)' input field.

#### LED on Registration

Check box for activating the display when restarting the IP phone indicating whether the workpoint was registered successfully.

Only available in SIP workpoints.

#### Rollover Ring:

Type of alerting when busy.

Possible options:

- **No ring**
- **Alert Ring**
- **Standard**
- **Alerting**

Only available in SIP workpoints.

#### Rollover Ring Volume:

Volume of alerting when busy.

Only available in SIP workpoints.

#### **Line Action Mode:**

Defines what should happen to a line (call) when a connection is established over another line.

Possible options:

- **Call hold**  
The original call is put on hold.
- **Release**  
The connection to the original call is cleared down (the call is ended).

Only available in SIP workpoints.

#### **Reservation Timer:**

Time in seconds indicating how long a line reservation can be maintained.

Default: 60 s.

Only available in SIP workpoints.

#### **Shift Key Timeout (sec)**

Duration of Shift key mode in seconds.

#### **Forwarding indicated**

Check box for activating alerting on a line key when call forwarding is active for its destination.

Only available in SIP workpoints.

#### **Line Button Mode**

Line Button functionality.

Possible options:

- **Single button**  
The action associated with the line key is executed as soon as the button is pressed, regardless of whether or not the handset is in the cradle.



## Mobile Users

### *SIP Mobile User Configuration*

- **Preselection**

Press the line key to preselect a line. This line is used the next time you seize a line (by lifting the handset, for example).

### **Line Preselection Timer (sec)**

Duration of line preselection in seconds.

### **Bridging Priority**

Possible options:

- **Bridging overrides preview**
- **Preview overrides bridging**

### **Show Focus**

Check box for activating the display showing which line is currently active (line has the focus).

Only available in SIP workpoints.

### **Originating Line Preference:**

Defines the preferred line to be used for outgoing calls.

Possible options:

- **Idle line preference**
- **Primary line preference**
- **Last line preference**
- **No preference**

Only available in SIP workpoints.

### **Terminating Line Preference:**

Defines the preferred line to be used for incoming calls.

Possible options:

- **Ringling line preference**

- **Calling line preference with prime line preferred**
- **Ringing line preference**
- **Ringing line preference with prime line preferred**
- **No preference**

Only available in SIP workpoints.

## **DSS Key Settings**

### **Deflect Alerting Call**

Check box for activating the "Deflect Alerting Call" feature.

### **Allow Pickup to be refused**

Check box for activating the "Reject Group Pickup" feature.

### **Forwarding Indication**

Checkbox for activating the forwarding indication.

## **Line Key Preview**

### **Preview Mode locked:**

Switch to lock preview mode

### **Preview Timer (sec)**

Duration of preview mode in seconds.

Possible options:

- **2**
- **3**
- **4**
- **6**
- **8**

## **Mobile Users**

### *SIP Mobile User Configuration*

- 10
- 15
- 20
- 30
- 40
- 50
- 60

### 8.1.14.2 "Destinations" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Keysets/Keylayout > "Destinations" Tab

**NOTE:** When creating a key layout, make sure that the key used by a mobile user for the primary line is available on all device types.

If the primary line is assigned to a key that does not exist on the device to which the mobile user is logged on, then there is no primary line key available to the mobile user. This can be avoided by entering the appropriate settings in the **SIP Mobile User Interaction > SIP User Keylayout** mask.

<p>Index: <input style="width: 100px;" type="text"/></p> <p><input checked="" type="checkbox"/> Lock Key</p> <p>Device: <input style="width: 150px;" type="text"/></p> <p>Level: <input style="width: 50px;" type="text"/></p> <p>Key number: <input style="width: 50px;" type="text"/></p> <p>Key function: <input style="width: 150px;" type="text"/></p> <p>Key: <input style="width: 150px;" type="text"/></p> <p>Key label: <input style="width: 150px;" type="text"/></p> <p>Key label (Unicode characters): <input style="width: 150px;" type="text"/></p> <p>Destination / Feature Code: <input style="width: 150px;" type="text"/></p> <p>Forwarding Type: <input style="width: 150px;" type="text"/></p> <p>DTMF Sequence: <input style="width: 150px;" type="text"/></p> <p>Toggle text: <input style="width: 150px;" type="text"/></p> <p>Toggle Text (Unicode characters): <input style="width: 150px;" type="text"/></p> <p>State Key Description: <input style="width: 150px;" type="text"/></p> <p>State Key Description (Unicode characters): <input style="width: 150px;" type="text"/></p> <p>Feature URI / LED Controller URI: <input style="width: 150px;" type="text"/></p> <p><input checked="" type="checkbox"/> BLF audible Alert</p> <p><input checked="" type="checkbox"/> BLF PopUp Alert</p> <p>Application Name: <input style="width: 150px;" type="text"/></p> <p>Protocol: <input style="width: 50px;" type="text"/></p> <p>Web Server Address: <input style="width: 150px;" type="text"/></p> <p>Port: <input style="width: 50px;" type="text"/></p> <p>Path: <input style="width: 150px;" type="text"/></p> <p>Parameters: <input style="width: 150px;" type="text"/></p> <p>HTTP Method: <input style="width: 50px;" type="text"/></p> <p>Web Server User ID: <input style="width: 150px;" type="text"/></p> <p>Web Server Password: <input style="width: 150px;" type="text"/></p> <p>Symbolic Name: <input style="width: 150px;" type="text"/></p> <p><input checked="" type="checkbox"/> Push Support</p> <p>Key Functionality: <input style="width: 150px;" type="text"/></p>	<p><b>Line Key / DSS Key specific Parameters</b></p> <p><input checked="" type="checkbox"/> Primary Line</p> <p>Address of record: <input style="width: 150px;" type="text"/></p> <p>Realm: <input style="width: 150px;" type="text"/></p> <p>UserID: <input style="width: 150px;" type="text"/></p> <p>Password: <input style="width: 150px;" type="text"/></p> <p>Hunt ranking: <input style="width: 50px;" type="text"/></p> <p>Shared type: <input style="width: 50px;" type="text"/></p> <p><input checked="" type="checkbox"/> Ring</p> <p><input checked="" type="checkbox"/> Intrusion allowed</p> <p><input checked="" type="checkbox"/> Hotline</p> <p>Line Hotline Dial String: <input style="width: 150px;" type="text"/></p> <p>Hot/Warm Line Type: <input style="width: 50px;" type="text"/></p> <p><input checked="" type="checkbox"/> Show in Overview</p> <p>Position in Overview: <input style="width: 50px;" type="text"/></p> <p>Short Description: <input style="width: 150px;" type="text"/></p> <p>Line Type: <input style="width: 50px;" type="text"/></p> <p>Line Action: <input style="width: 50px;" type="text"/></p> <p>Ringing Delay: <input style="width: 50px;" type="text"/></p>
--	--

#### Index:

Name of the key layout function.

## Mobile Users

### *SIP Mobile User Configuration*

#### Lock Key

Locks the key for the user.

#### Device:

Specifies the device to which the relevant layout applies.

Possible options:

- **Base device**
- **1st Key module**
- **2nd Key module**
- **1st Self Labeling Key module**
- **2nd Self Labeling Key module**
- **OpenStage 15 Key module**

Only available in SIP workpoints.

#### Level:

Key level for the Shift functionality.

Possible options:

- **1. Level**
- **2. Level**
- **3. Level**
- **4. Level**
- **Fixed Keys**

Fixed Keys are assigned to a fixed key number. They cannot be deleted or created on the IP Device.

Only available in SIP workpoints.

#### Key number:

Number of the key assigned the relevant function.

If **Level** "Fixed Keys" is selected, the following key numbers are fixed:

**1** Fixed Keys - release

**2** Fixed Keys - forwarding

**3** Fixed Keys - voice dial

**9** Fixed Keys - redial

Depending on the selected key number, **Key function** shows a selection of possible values.

Only available in SIP workpoints.

**Key function:**

The following key functions are supported:

- **Key unused**
- **Selected dialing**
- **Abbreviated dialing**
- **Repeat dialing**
- **Missed calls**
- **Voice messages**
- **Forwarding**
- **Loudspeaker**
- **Mute**
- **Ringer off**
- **Hold**
- **Alternate**
- **Blind Transfer**
- **Transfer call (OpenStage) / Join (optiPoint)**
- **Deflect**
- **Setup menu**
- **Room echoing**
- **Room muffled**
- **Shift**
- **Notebook**
- **Settings**

## **Mobile Users**

### *SIP Mobile User Configuration*

- **Phone lock**
- **Conference**
- **Local Conference**
- **Headset**
- **Do not disturb**
- **Group pickup**
- **Repertory dial**
- **Line**
- **Feature Toggle**
- **Show Phone Screen**
- **Swap screen**
- **Mobility**
- **Call park**
- **Call pickup**
- **Cancel/Release**
- **Ok Confirm**
- **Callback Request**
- **Cancel Callback**
- **Consultation (OpenStage) / Consult/Transfer (optiPoint)**
- **DSS**
- **State Key**
- **Call waiting**
- **Immediate Ring**
- **Preview Key**
- **Call Recording**
- **AICS Zip**
- **Server Feature**  
Available for free programmable keys as well as for 'Fixed Keys'.
- **BLF**
- **Start Application**  
Available for free programmable keys as well as for 'Fixed Keys'.

- **Send URL**  
Available for free programmable keys as well as for 'Fixed Keys'.
- **Built-in Forwarding**  
Only available for 'Fixed Keys'.
- **Built-in Release**  
Only available for 'Fixed Keys'.
- **Built-in Voice Dial**  
Only available for 'Fixed Keys'.
- **Built-in Redial**  
Only available for 'Fixed Keys'.
- **Personal Directory/Start Phonebook**

**NOTE:** The Personal Directory/Start PhoneBook function can also be set to the un-shifted /shifted FPK's of OpenStage 15/20/40/60/80 & OpenScape Desk Phone IP 35G / 55 G Eco phones as well as to key modules.

The key label "Start Phonebook" shall be used for the phone version prior to V3R3 and the key label "Personal" for higher phone version.

- **2nd Alert**
- **Corporate Directory**

**NOTE:** The Corporate Directory function is configured to the V3R3 WP\_HI & WP\_LO phones.

**Key:**

Indicates whether this key is a 'Fixed Key' or a freely programmable key.

**Key label:**

A key label can be entered here for every function key in the case of Self labeling Keys workpoints (for example, optiPoint 420 standard).

Only available in SIP workpoints.

**Key label (Unicode characters):**

You can enter the key label in unicode characters for devices in the OpenStage family.



## Mobile Users

### *SIP Mobile User Configuration*

#### Destination / Feature Code:

Destination data to be dialed. This can be a digit string or a URL. Feature codes that need to be sent to external servers (not the SIP server at which the phone is registered) have the following format:

<feature code>@<IP address>

Example: **123@10.2.54.2**

If the destination has been entered for the "Repertory dial" key function, extra control characters can be entered in a digit string:

- **\$Q** = clear (CL)
- **\$R** = consult (CS)
- **\$S** = OK
- **\$T** = Pause (PA)

Only available in SIP workpoints.

#### Forwarding Type:

Selection of situations when forwarding should be enabled.

Possible options:

- **on busy**
- **on busy external**
- **on busy internal**
- **on no reply**
- **on no reply external**
- **on no reply internal**
- **unconditionally**
- **unconditionally external**
- **unconditionally internal**

Only available in SIP workpoints.

#### DTMF Sequence

DTMF Sequence for this target.

**Toggle Text:**

Text describing the server function selected with Feature Toggle.

Only available in SIP workpoints.

**Toggle Text (Unicode characters):**

Text in unicode describing the server function selected with Feature Toggle.

Only available on OpenStage devices.

**State Key Description:**

Description text for the state key.

**State Key Description (Unicode characters):**

Description text for the state key in unicode. Only available on devices in the OpenStage family (SIP version).

**Feature URI / LED Controller URI**

URI used to control this feature on the server.

**BLF audible Alert**

Audible Alert additional to busy lamp field.

**BLF PopUp Alert**

Additional to busy lamp field a message pops up in display.

**Application Name:**

Name of the application to be started with the function key.

## Mobile Users

### *SIP Mobile User Configuration*

#### Protocol

Protocol of Web Server.

Possible options:

- **HTTP**
- **HTTPS**

#### Web Server Address

Host name, domain name, or IP address of web server.

#### Port

Port number of web server: If the port is null, the fully qualified URL will not include the port element.

#### Path

Directory path and name of the program or web page.

Examples: **servlet/lppGenericServlet** or **webpage/checkin.xml**

The path should have a slash at the beginning and no slash at the end. If the slash at the beginning is missing, a slash will be automatically inserted. If there is an additional slash at the end, it will be automatically removed. The slashes in the path should be forward slashes ('/'). If backslashes ('\') are used instead, the web server may not find the appropriate program or web page.

#### Parameters

Null, one, or more parameter-value pairs in the format "<parameter>=<value>", with each pair separated by an ampersand ("&"), e. g. **parameter1=value1&parameter2=value2**. A comma (",") is not used as a separator because it could be part of the key or value. If the key or value contains an ampersand, it must be replaced by "&amp;".

The question mark will be automatically added between the path and the parameters. If there is a question mark at the beginning of the parameters, it will be automatically stripped off.

#### HTTP Method

HTTP method to be used.

Possible options:

- **Get**
- **Post**

### **Web Server User ID**

User identity known by the server. This information is used for phone authentication by the server.

### **Web Server Password**

Password known by the server. It is used for phone authentication by the server.

### **Symbolic Name**

Symbolic name.

### **Push Support**

Enables or disables push support.

### **Key Functionality**

Possible options:

- **Toggle Call Forwarding**
- **Unspecified Call**
- **Unspecified**

### **Line Key / DSS key specific Parameters**

#### **Primary line**

Only available in SIP workpoints.

#### **Address of record:**

Only available in SIP workpoints.

## Mobile Users

### *SIP Mobile User Configuration*

#### Realm:

Entry of the SIP realm.

Only available in SIP workpoints.

#### UserID:

Only available in SIP workpoints.

#### Password:

Only available in SIP workpoints.

#### Hunt ranking:

Only available in SIP workpoints.

#### Shared type:

Possible options:

- **Private**
- **Shared**
- **Unknown**

Only available in SIP workpoints.

#### Ring

Only available in SIP workpoints.

#### Intrusion allowed

Check box for allowing intrusion.

Only available in SIP workpoints.

## **Hotline**

### **Line Hotline Dial String:**

Destination for the line hotline.

Only available in SIP workpoints.

### **Hot/Warm Line Type:**

Possible options:

- **Ordinary**
- **Hot Line**
- **Warm Line**

Only available in SIP workpoints.

### **Show in Overview**

Checkbox for activating the line display in the line overview.

Only available in SIP workpoints.

### **Position in Overview**

Position of key in Line Overview.

Only available in SIP workpoints.

### **Short Description:**

Description of relevant line.

Only available on OpenStage devices.

### **Line Type:**

Possible options:

## Mobile Users

### *SIP Mobile User Configuration*

- **normal**
- **direct**

#### **Line Action:**

Possible options:

- **Consult**
- **Transfer**
- **No Action**

#### **Ringing Delay:**

Time before ringing starts for an alerting call.

### 8.1.14.3 "Send URL Server CA Certificate" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Keysets/Keylayout > "Send URL Server CA Certificate" Tab

Please refer also to **IP Devices > IP Phone Configuration > LDAP > "CA Certificates" Tab**.

#### Activate certificate

The imported certificate will be activated with the next saving. By activating an empty certificate, the certificate at the end device will be deleted.

**IMPORTANT:** This checkbox is an action checkbox and not an indication. This means that it does not show any current state. That is why it is sometimes grayed out or unchecked.

#### Index

Certificate index number.



## Mobile Users

### *SIP Mobile User Configuration*

#### Imported Certificate

##### Serial Number:

Serial number of the active or imported certificate (display only).

##### Owner:

Owner of the active or imported certificate (display only).

##### Issuer:

Issuer of the active or imported certificate (display only).

##### Valid from:

Start of validity for the active or imported certificate (display only).

##### Valid to:

End of validity for the active or imported certificate (display only).

##### Key Algorithm

Key algorithm.

##### Key Size

Key size.

##### Fingerprint (SHA-1):

Test algorithm **SHA-1** (160 bits/20 characters) for the security certificate.

##### Expires in ... [days]:

The certificate validity will expire in the number of days specified.

**NOTE:** The value of the imported certificate is updated periodically dependent on the settings in **Administration > Alarm Configuration > "Settings" Tab > Alarm Configuration for Expiring Certificates > Interval**. Therefore it might be greater than the value of the active certificate until the next update.

#### Alarm Status:

Current alarm status.

Possible values:

- **valid**
- **soon running out**
- **expired**

## **8.1.15 Signaling and Payload Encryption (SPE)**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Signaling and Payload Encryption (SPE)

This area features the following components:

- General Data
- Possible Action Buttons
- "SIP Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

### 8.1.15.1 "SIP Settings" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Signaling and Payload Encryption (SPE) > "SIP Settings" Tab

The screenshot shows the 'SIP Settings' configuration page. It includes the following fields and options:

- SIP Transport Protocol:** A dropdown menu.
- ☒ **Payload Security allowed**
- Connectivity check interval:** A text input field.
- ☒ **SIP server validation**
- SDES Status:** A dropdown menu.
- SDP Negotiation:** A dropdown menu.
- ☒ **SRTP Encryption allowed**

#### **SIP Transport Protocol:**

Protocol for SIP signaling.

Possible options:

- **UDP**
- **TCP**
- **TLS**

#### **Payload security allowed**

When activated, payload security is allowed.

#### **Connectivity check interval**

Connectivity check interval in seconds.

#### **SIP server validation**

When activated, the TLS connection to the SIP server is validated.

#### **SDES Status**

Select the SDES status.

Possible options:

## **Mobile Users**

### *SIP Mobile User Configuration*

- **disabled**
- **enabled**

### **SDP Negotiation**

Select the SDP negotiation.

Possible options:

- **SRTP and RTP**
- **SRTP only**
- **Fallback to RTP**

### **SRCTP Encryption allowed**

When activated, SRCTP encryption will be applied.

## **8.1.16 Miscellaneous**

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Miscellaneous

This area features the following components:

- General Data
- Possible Action Buttons
- "Country & Language" Tab
- "Messaging Services" Tab
- "SIP Error Notification" Tab
- "Display/Phone Settings" Tab
- "Help Internet URL" Tab
- "Phone Lock" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## Mobile Users

### SIP Mobile User Configuration

#### 8.1.16.1 "Country & Language" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Miscellaneous > "Country & Language" Tab

Country:	<input type="text"/>
Language:	<input type="text"/>

#### Country:

Country where the workpoint is operated.

Possible options:

- **AE - United Arab Emirates**
- **AF - Afghanistan**
- **AL - Albania**
- **AM - Armenia**
- **AR - Argentina**
- **AT - Austria**
- **AU - Australia**
- **AZ - Azerbaijan**
- **BA - Bosnia and Herzegovina**
- **BD - Bangladesh**
- **BE - Belgium**
- **BG - Bulgaria**
- **BO - Bolivia**
- **BR - Brazil**
- **BY - Belarus**
- **CH - Switzerland**
- **CI - Ivory Coast**
- **CL - Chile**
- **CM - Cameroon**
- **CN - China**
- **CO - Columbia**
- **CR - Costa Rica**

- **CR - Serbia**
- **CY - Cyprus**
- **CZ - Czech Republic**
- **DE - Germany**
- **DZ - Algeria**
- **DK - Denmark**
- **EC - Ecuador**
- **EE - Estonia**
- **EG - Egypt**
- **ES - Spain**
- **FI - Finland**
- **FR - France**
- **GB - Great Britain**
- **GE - Georgia**
- **GR - Greece**
- **GT - Guatemala**
- **HN - Honduras**
- **HK - Hong Kong**
- **HR - Croatia**
- **HU - Hungary**
- **ID - Indonesia**
- **IE - Ireland**
- **IL - Israel**
- **IN - India**
- **IR - Iran**
- **IT - Italy**
- **JO - Jordan**
- **JP - Japan**
- **KE - Kenya**
- **KG - Kyrgyzstan**



## **Mobile Users**

### *SIP Mobile User Configuration*

- **KR - Korea**
- **KW - Kuwait**
- **KZ - Kazakhstan**
- **LB - Lebanon**
- **LK - Sri Lanka**
- **LT - Lithuania**
- **LU - Luxembourg**
- **LV - Latvia**
- **MA - Morocco**
- **MD - Moldova**
- **MK - Macedonia**
- **MV - Maldives**
- **MX - Mexico**
- **MY - Malaysia**
- **NA - Namibia**
- **NG - Nigeria**
- **NI - Nicaragua**
- **NL - Netherlands**
- **NO - Norway**
- **NP - Nepal**
- **NZ - New Zealand**
- **OM - Oman**
- **PA - Panama**
- **PE - Peru**
- **PH - Philippines**
- **PK - Pakistan**
- **PL - Poland**
- **PT - Portugal**
- **PY - Paraguay**
- **RO - Romania**

- **RU - Russia**
- **SA - Saudi Arabia**
- **SE - Sweden**
- **SG - Singapore**
- **SI - Slovenia**
- **SK - Slovakia**
- **SV - El Salvador**
- **TH - Thailand**
- **TJ - Tajikistan**
- **TN - Tunisia**
- **TR- Turkey**
- **TM - Turkmenistan**
- **TZ - Tanzania**
- **UA - Ukraine**
- **US - United States of America**
- **UY - Uruguay**
- **UZ - Uzbekistan**
- **VE - Venezuela**
- **VN - Vietnam**
- **ZA - South Africa**
- **ZW - Zimbabwe**

**Language:**

Language to be used for local applications.

Possible options:

- **bg - bulgarian**
- **ca - catalan**
- **cs - czech**
- **da - danish**

## Mobile Users

### *SIP Mobile User Configuration*

- de - german
- el - greek
- en\_GB - english (GB)
- en\_US - english (US)
- en - english
- es - spanish
- et - estonian
- fi - finnish
- fr - french
- hr - croatian
- hu - hungarian
- it - italian
- ja - japanese
- lv - latvian
- mk - macedonian
- ms - malayan
- nl - dutch
- no - norwegian
- pl - polish
- pt - portuguese
- pt\_Br - brazilian
- ro - romanian
- ru - russian
- sk - slovak
- sl - slovanian
- sr - serbian (cyrillic)
- sr\_Latn - serbian (Latin)
- sv - swedish
- tr - turkish
- zh - chinese



## Mobile Users

### SIP Mobile User Configuration

#### 8.1.16.2 "Messaging Services" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Miscellaneous > "Messaging Services" Tab

The screenshot shows a web-based configuration interface for SIP Mobile User Configuration. It features a light beige background. At the top, there are two input fields: 'MWI Server Address:' and 'Voice Mail Number:', each with a small dropdown arrow on the right. Below these is a section titled 'Additional MWI settings' in blue text. This section contains four rows of configuration options. Each row has a text input field on the left and a checkbox with a label on the right. The rows are: 'Alternative Label new Items:' with an empty input field and a checked checkbox labeled 'Show new urgent Items'; 'Alternative Label new urgent Items:' with an empty input field and a checked checkbox labeled 'Show old Items'; 'Alternative Label old Items:' with an empty input field and a checked checkbox labeled 'Show old urgent Items'; and 'Alternative Label old urgent Items:' with an empty input field and a checked checkbox labeled 'Show old urgent Items'.

#### MWI Server Address:

IP address or host name of the MWI server.

#### Voice Mail Number:

Phone number of the voicemail system (message server).

#### Additional MWI settings

##### Show new urgent Items

Shows the count of new urgent messages.

##### Show old Items

Shows the count of old messages.

##### Show old urgent Items

Shows the count of old urgent messages.

##### Alternative Label new Items

Label for the count of new messages.

**Alternative Label new urgent Items**

Label for the count of new urgent messages.

**Alternative Label old Items**

Label for the count of old messages.

**Alternative Label old urgent Items**

Label for the count of old urgent messages.

## Mobile Users

### *SIP Mobile User Configuration*

#### 8.1.16.3 "SIP Error Notification" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Miscellaneous > "SIP Error Notification" Tab

☒ Beep on Error

#### Beep on Error

Check box for activating acoustic error signaling during communication with Microsoft RTC.

Only available in SIP workpoints.

### 8.1.16.4 "Display/Phone Settings" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Miscellaneous > "Display/Phone Settings" Tab

The screenshot shows the 'Display/Phone Settings' configuration interface. It is divided into three main sections: 'Display Settings', 'Screensaver', and 'Context Menu (SIP)'. The 'Display Settings' section includes 'Display Theme' (a dropdown menu), 'Inactivity Timeout (min)' (a dropdown menu), and 'Backlight Timeout Energy Saving Display' (a dropdown menu). The 'Screensaver' section includes a checked checkbox for 'Enable Screensaver' and 'Screensaver transition Timeout (sec)' (a dropdown menu). The 'Context Menu (SIP)' section includes a checked checkbox for 'Context Menu auto show' and 'Context Menu auto hide Timer (sec)' (a dropdown menu).

#### Display Settings

##### Display Theme

Defines the layout of the graphical user interface on OpenStage phones.

Possible options:

- **Silver Blue**
- **Anthracite Orange**

##### Not used Timeout (min):

Time in minutes before the screen is dimmed, if no activities have taken place on the screen until now.

Possible Options:

- **0 (no timeout)**
- **5**
- **10**
- **20**
- **30**
- **60**
- **120**

##### Backlight Timeout Energy Saving Display

When a phone with energy saving display has been in idle state for a timespan longer than this value, the backlight is switched off.



## Mobile Users

### *SIP Mobile User Configuration*

**NOTE:** Valid only for IP Devices with **Display Backlight Type = CCFL** or **Display Backlight Type = LED**, see Section 7.5.1, "Inventory Data".

Possible Options:

- **1 min**
- **5 min**
- **30 min**
- **60 min**
- **2 hours**
- **3 hours**
- **4 hours**
- **5 hours**
- **6 hours**
- **7 hours**
- **8 hours**

## Screensaver

### Enable Screensaver

This check box enables the screensaver.

### Screensaver transition Timeout (sec)

Time interval in seconds for changing the images.

Possible Options:

- **5**
- **10**
- **20**
- **30**
- **60**

## **Context Menu (SIP)**

### **Context Menu auto show**

When active, the context menu will be shown automatically.

### **Context Menu auto hide Timer (sec)**

The context menu will be hidden after the timeout specified here, in seconds.

Possible Values:

- **No auto hide**
- **5**
- **10**
- **20**
- **30**
- **60**
- **120**

## Mobile Users

### *SIP Mobile User Configuration*

#### 8.1.16.5 "Help Internet URL" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Miscellaneous > "Help Internet URL" Tab

Help Internet URL:

#### Help Internet URL:

URL of the Web help page on the Internet containing information on the telephone.

### 8.1.16.6 "Phone Lock" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > Miscellaneous > "Phone Lock" Tab

 Lock Phone

#### **Lock Phone**

Locks the phone.

## 8.1.17 File Deployment

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > File Deployment

This area features the following components:

- General Data
- Possible Action Buttons
- "Files" Tab

DLS supports the deployment of files such as LDAP Template, logos, ringtones and screensavers to mobile users automatically at the time of logon.

For each file deployment configuration the data stored includes all the information needed by DLS in order to make a file deployment request to a device (such as the file server address, the file name etc) as well as DLS specific data such as the result of file deployment request (initially empty).

After a mobile user logs on, DLS looks up into the new table in the DB - based on the E164 number of the mobile user - to see if there is any file deployment configured for this mobile user which has not been successfully completed already. If there is a pending file deployment (i.e. not already successfully completed in previous logons), DLS starts a new job to deploy the files and updates the result when file deployment finished in order to avoid deploying the same file again at the next logon.

**NOTE:** When a mobile user is deleted, all the configured file deployment data and history data are deleted as well.

### 8.1.17.1 "Files" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Configuration > File Deployment > "Files" Tab

File Deployment

☐ Table ☒ Selected entry 1 / 1

SW Image Name:  Action:

File Name:  Deployment Status:

File Type:  Status info:

Server Type:  Deployment Date:

HTTPS URL:  Deployment Time:

FTP Server:  Deployment Initiator:

FTP File Path:

**NOTE:** LDAP Templates are also deployable to OpenStage 15/20 (SIP only) & OpenScape Desk Phone IP 35 G / 35 G Eco phones.

#### File Deployment

##### SW Image Name:

Name of the Software Image.

##### File Name:

Name of the file.

##### File Type:

Usage of the file.

**NOTE:** For many file types on the FTP server can be used for multiple purposes. In such cases, there is a table entry for each usage. For instance, a WAV file can be used as a ringtone and as music on hold. Ringtone and music on hold files must not exceed 1MB in size, while screensaver and logo files should not be larger than 300kB.

Example: **LOGO** (OpenStage 40/60/80) , **SCREENSAVER** (OpenStage 40/60/80).

##### Server Type:

Protocol used by the server which provides the file.

## Mobile Users

### *SIP Mobile User Configuration*

Possible values:

- **FTP**
- **HTTPS**

#### **HTTPS URL:**

URL of the software image, if a HTTPS server is used.

#### **FTP Server:**

ID of the FTP server that provides the file. This is necessary if a FTP server is used.

#### **FTP File Path:**

Path of the file, if a FTP server is used.

#### **Action:**

Indicates what is to be done with the file.

Possible values:

- **delete**
- **deploy**

#### **Deployment Status:**

Status of the deployment action.

#### **Status info:**

Information about the status.

#### **Deployment Date:**

Date of the latest file deployment.

**Deployment Time:**

Time of the latest file deployment.

**Deployment Initiator:**

Interface over which the deployment has been initiated.

Possible values:

- **DLS**
- **WBM**
- **Local**

**NOTE:** The data for file deployment (but not the files themselves) are saved in the DLS DB as part of the mobile user data and deployed to the device with the first 'start-up' after logon.

If the deployment is successful, DLS marks the file(s) as 'successfully deployed' in order not to deploy the same file again at the next logon. DLS shall support a history of up to 20 deployed files per mobile user including the date/time of deployment. Once a new file beyond the 20th is deployed, the oldest deployed file is removed from the list. If file deployment is unsuccessful, another attempt is made at the next user logon.



## **8.2 SIP Mobile User Interaction**

In this area, you can configure, modify or delete mobile users. You can also log off mobile users, obtain information about logons and logoffs, create user data profiles, and define defaults for key layouts.

**NOTE:** DLS also enables you to delete mobile users that are left in a forgotten log-on state (on a mobility enabled device) as well as logoff mobility enabled devices for which the mobile user has been deleted.

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction

This menu consists of the following submenus:

- SIP Mobile User
- Logon/Logoff
- Automatic Logoff
- SIP User Keylayout
- Mobile User Response Test Settings

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## General Data

This part of the contents area is identical for the **SIP Mobile User** and **Logon/Logoff** interfaces associated with this menu. It is used for entering parameters in **Search** view to find a specific group of workpoints. The base data associated with the workpoints found is displayed in the **Object** view (no changes possible).

E.164:	<input type="text"/>	Basic E.164:	<input type="text"/>
User Type:	<input type="text"/>	IP Address:	<input type="text"/>
Status:	<input type="text"/>	Device ID:	<input type="text"/>
		Device Type:	<input type="text"/>
Remarks:	<input type="text"/>		

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

### E.164:

Complete E.164 phone number (Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

### User Type:

Displays which type of data the remainder of the fields contain.

Possible options:

- **Mobility enabled Device**  
Mobility Phone data.
- **Mobile User**  
Mobile User data.

For more information on mobility, see Section 3.8, "DLS Mobility - General Information".

### Status:

Displays mobility status.

Possible options:

- **Mobile User logged on**  
Mobile User data: a Mobile User is logged on.
- **Mobile User logged off**  
Mobile User data: no Mobile User is logged on.

## Mobile Users

### *SIP Mobile User Interaction*

- **Mobility enabled Device**  
Mobility Phone data: no Mobile User is logged on to the Mobility Phone.
- **Device used by Mobile User**  
Mobility Phone data: a Mobile User is logged on to the Mobility Phone.

For more information on mobility, see Section 3.8, "DLS Mobility - General Information".

### Basic E.164:

E.164-Rufnummer des Mobility -Telefons.

Beispiel: **498972212345**

### IP Address:

IP address of the workpoint.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

### Device ID:

Physical MAC address of the workpoint.

Example: **00:0E:A6:85:71:80**

### Device Type:

Workpoint device type.

All workpoint types supported by DLS can be found in Section 3.4, "IP Devices / versions supported".

### Remarks:

Fields for general information.

## **Possible Action Buttons**

The range of action buttons available depends on the selected view and DLS status.

### **Search**

Searches for an entry in the database.

### **Clear Window**

Deletes the contents of all fields in the **Search** view. This deletes all previous search criteria so you can enter new criteria.

### **Save**

Saves the changes.

### **Discard**

Discards any changes made.

### **Logon Mobile User**

Logs a mobile user on to a mobility terminal.

If you click this button, a dialog window appears. The terminal's E.164 phone number must be specified if a mobile user is selected in the general part of the mask. The mobile user's mobility ID is entered if a terminal is specified in the general part.

### **Logoff Mobile User**

Logs a mobile user off a terminal.

If a mobile user is selected in the general part of the mask, it will be logged off the terminal. If a terminal is selected, the mobile user logged on to it is logged off.

### **Reset Mobile User**

To be used in case the end device cannot be reached by the DLS. The mobile user and the phone he is currently logged onto are set to "logged off" in the DLS database.

## **Mobile Users**

### *SIP Mobile User Interaction*

#### **New**

Creates a new Mobile User or a default Mobile User.

#### **Migration to Mobile User**

Migrate a Basic User to a Mobile User. See also Section 16.14.4.2, "Creating Mobile Users via Migration".

#### **Migration to Device**

Migrate a logged on Mobile User to a Basic User.

#### **Refresh**

Refreshes the window contents from the database.

#### **Delete**

Delete an object.

## **8.2.1 SIP Mobile User**

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > SIP Mobile User

This area features the following components:

- General Data
- Possible Action Buttons
- "Mobile / Basic User" Tab
- "Archives Data" Tab
- "Response Test Settings" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

## Mobile Users

### SIP Mobile User Interaction

#### 8.2.1.1 "Mobile / Basic User" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > SIP Mobile User > "Mobile / Basic User" Tab

**NOTE:** For an introduction to mobility, see Section 3.8, "DLS Mobility - General Information".


For information on mobility administration, see Section 16.14, "Configuring and Administrating Mobility".

The screenshot shows the 'Mobile / Basic User' configuration tab. It includes the following fields and options:

- New Mobile User IDs:** A text input field.
- Mobile User Profile:** A dropdown menu with a 'Reapply' button next to it.
- Mobile User Password:** A text input field.
- Mobile User Home Phone:** A section containing:
  - ☒ Allow automatic Logon at Home Phone
  - ☒ Allow Logon at Home Phone for all Mobile Users
  - Home Phone:** A dropdown menu.
  - Home Phone Status:** A dropdown menu.
- ☒ Get SIP Registration Data from Virtual Devices
- ☒ Get Keypad Data from Virtual Devices
- Tenant:** A text input field.

#### New Mobile User IDs:

E.164 call numbers of all Mobility phones for which a Mobile User is to be created. If there is more than one Mobility phone, the E.164 call numbers are entered comma-separated.

On clicking the button , a list of all available call numbers is displayed. From this table, you can select the desired numbers, similar to the multile selection in table view (see Section 5.4.2.4).

#### Mobile User Profile:

Selection of a Mobile User Configuration defined in **Profile Management > User Data Profile**.

**NOTE:** In the case where a device is contacting DLS with a user logged in already AND the user does not exist at the time the device contacts DLS, DLS creates the user automatically.

In that case an @##### profile name is assigned to the user (the mobile user call number is automatically entered with the prefix "@").

### **Reapply:**

Apply the Mobile User profile to the Mobile User again. On starting this function, the DLS user will be asked whether this should be done as a merge of the data or by replacing all user data by profile/default data. If the merge option is chosen (click on "Yes"), those user parameters which are also configured in the profile are overwritten by the profile data. That user data which is not contained in the profile will not be touched. If, for instance, the profile contains additional keys, they will be added to the keys currently configured on the mobile user's phone; but in case of concurrent key definitions, the key definitions of the profile will overwrite those currently set on the phone.

If the replace option (click on "No") is chosen instead of the merge option, those user parameters which are also configured in the profile are overwritten by the profile data. That user data which is not contained in the profile will be overwritten with default values.

### **Mobile User Password:**

With this password, the user can log on to the phone, both at the device itself and via the WBM (Web Based Manager).

### **Mobile User Home Phone**

#### **Allow automatic Logon at Home Phone**

If this check box is activated, the Mobile User is logged on automatically to that Home Phone whose E.164 call number has been entered under **Home Phone**.

#### **Allow Logon at Home Phone for all Mobile Users**

If activated, all Mobile Users are allowed to log on at that home phone whose E.164 number has been entered under **Home Phone**.

### **Home Phone**

E.164 number of the Home Phone assigned to this Mobile User.

### **Home Phone Status**

Displays the current status of the Mobile User at the Home Phone.

Possible values:

- **Mobile User logged on at Home Phone**
- **Mobile User logged off from Home Phone**



## Mobile Users

### *SIP Mobile User Interaction*

#### Get SIP Registration Data from Virtual Devices

If this check box is activated, data for SIP access is taken from the corresponding plug&play configuration, that is, from the virtual device which has the same E.164 number as the newly created mobile user. The access data for the SIP server is located at **IP Phone Configuration > Gateway/Server**.

#### Get Keypad Data from Virtual Devices

This checkbox determines whether Keypad configuration of the respective virtual device will be inherited by the mobile user or not. If this check box is activated, data for Keypad attributes is taken from the corresponding plug&play configuration, that is, from the virtual device which has the same E.164 number as the newly created mobile user.

#### Tenant

Name of the tenant the Mobile User belongs to.

### 8.2.1.2 "Archives Data" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > SIP Mobile User > "Archives Data" Tab

**NOTE:** For an introduction to mobility, see Section 3.8, "DLS Mobility - General Information".

For information on mobility administration, see Section 16.14, "Configuring and Administrating Mobility".

Archive:	<input type="text"/>		
Archived by:	<input type="text"/>		
Archived at:	<input type="text"/>	-	<input type="text"/>
Restored at:	<input type="text"/>	-	<input type="text"/>

**Archive:**

Path for the ZIP archive file from the DLS system.

**Archived by:**

Name of the DLS user who created the archive.

**Archived at:**

Indicates the date and time of the archive.

**Restored at:**

Displays the date and time of the archive restore.

## Mobile Users

### SIP Mobile User Interaction

#### 8.2.1.3 "Response Test Settings" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > SIP Mobile User > "Response Test Settings" Tab

This functions checks if an IP Phone or IP Client to which a Mobile User is logged on is reachable by the DLS.

If the IP Phone or IP Client is unreachable according to the settings (see Section 8.2.5, "Mobile User Response Test Settings") and a Home Phone is assigned to the Mobile User, the Mobile User will be logged off from the current IP Phone or IP Client and logged on to the assigned Home Phone. This prevents the Mobile User from becoming unreachable.

A failed attempt means that within 10 minutes no contact has been established. The Response Test failed, if the number of 'Failed contact attempt IP Phone' or 'Failed contact attempt IP Client' is higher then the number of 'Response Test Retries' on mask 'Mobile User Response Test Settings'.

A contact attempt is considered to be failed when no contact could be established within 10 seconds. The respond test has failed when the counter **Failed contact attempts IP Phone** or **Failed contact attempts IP Client** is greater than the value of **Response Test Retries** in the mask **Mobile Users > SIP Mobile User Interaction > Mobile User Response Test Settings**.

Response Test Execution Method ☒ Ping ☐ Workpoint Interface (WPI)

☒ Activate Response Test  
☒ Current Response Test failed

**Logon Scenario**  
☒ For Mobile User on foreign IP Phone  
☒ For Mobile User on IP Client

**IP Phone**  
Last successful Response Test IP Phone: [ ] - [ ]  
Date Response Error IP Phone: [ ] - [ ]  
Failed contact attempts IP Phone: [ ]  
Failed IP Phone: [ ]

**IP Client**  
Last successful Resonse Test IP Client: [ ] - [ ]  
Date Response Error IP Client: [ ] - [ ]  
Failed contact attempts IP Client: [ ]  
Failed IP Client: [ ]

#### Response Test Execution Method

- **Ping**  
The DLS tries to reach the IP Phone or IP Client via ping.
- **Workpoint Interface (WPI)**  
The DLS tries to reach the IP Phone or the IP Client via its workpoint interface by means of a ContactMe request. If the IP Phone or the IP Client sends a corresponding message, in which with the "ReasonForContact" parameter has the value "solicited", the test was successful. Otherwise, the test is considered failed.

#### Activate Response Test

Activates or deactivates the response test for this mobile user.

### **Current Response Test failed**

If no contact could be established after 10 seconds, the error counter is incremented.

### **Logon Scenario**

#### **For Mobile User on foreign IP Phone**

If activated, response tests are executed for a Mobile User at a foreign IP Phone, that is, at a phone which is not the Home Phone of this Mobile User.

#### **For Mobile User on IP Client**

If activated, response tests are executed for a Mobile User at an IP Client, that is, at an IP Client which is not the Home Phone of this Mobile User.

### **IP Phone**

#### **Last successful Response Test IP Phone**

Date of the last successful response test for this IP Phone.

#### **Time Response Test Error IP Phone**

Date of the last failed response test for this IP Phone.

#### **Failed contact attempts IP Phone**

Number of failed contact attempts for this IP Phone.

#### **Failed IP Phone**

IP Address of the IP Phone that could not be reached.

### **IP Client**

#### **Last successful Response Test IP Client**

Date of the last successful response test for this IP Client.

## **Mobile Users**

### *SIP Mobile User Interaction*

#### **Time Response Test Error IP Client**

Date of the last failed response test for this IP Client.

#### **Failed contact attempts IP Client**

Number of failed contact attempts for this IP Client.

#### **Failed IP Client**

IP address of the IP Client that could not be reached.

## **8.2.2 Logon/Logoff**

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > Logon/Logoff

This area features the following components:

- General Data
- Possible Action Buttons
- "History" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

## Mobile Users

### SIP Mobile User Interaction

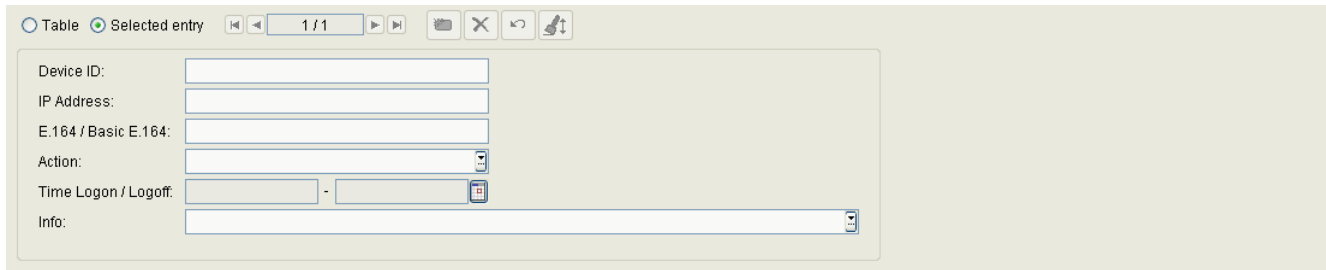
#### 8.2.2.1 "History" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > Logon/Logoff > "History" Tab

All successful or failed actions concerning mobile users are logged here.

**NOTE:** For an introduction to mobility, see Section 3.8, "DLS Mobility - General Information".

For information on mobility administration, see Section 16.14, "Configuring and Adminstrating Mobility".



The screenshot shows a web interface for the 'History' tab. At the top, there are navigation buttons and a 'Selected entry' indicator. Below this, a form displays the details of a selected entry. The fields are:

- Device ID: [Text input field]
- IP Address: [Text input field]
- E.164 / Basic E.164: [Text input field]
- Action: [Dropdown menu]
- Time Logon / Logoff: [Time range selector with a minus sign]
- Info: [Text input field]

#### Device ID

Device ID of the Mobility Phone with which the action logged here has proceeded (display only).

#### IP Address

IP address of the Mobility Phone with which the action logged here has proceeded (display only).

#### E.164 / Basic E.164

E.164 and Basic E.164 of the Mobility Phone with which the action logged here has proceeded (display only).

#### Action

Type of action that took place (display only).

Possible entries:

- **Logon**
- **Logoff**

### **Time Logon/Logoff**

Time of the logon, logoff or the failed attempt (display only).

### **Info**

Additional information on the logon, logoff or the failed attempt (display only).

Possible entries:

- **Password or E.164 invalid**
- **Internal Error**
- **User logged in on another phone**
- **Second logon not permitted**
- **Forced logoff**
- **Forced logoff failed**
- **Forced logoff because of second logon**
- **Successful Logon**
- **Successful Logoff**
- **Forced logoff refused (phone busy)**



## 8.2.3 Automatic Logoff

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > Automatic Logoff

This function enables the user to schedule a daily automatic logoff of all SIP mobile users for selected locations. This ensures e.g. that all devices are logged at start of work, and thus are available for SIP mobile users.

**NOTE:** Automatic Logoff is not allowed for Mobile Users logged on at their Home Phones. Only when a mobile user is logged on at another device (besides its home phone) will be able to automatically log it off in order to return back to its home phone and by that ensure it will always be possible to contact.

**NOTE:** For affected Mobile Users considered as part of an Automatic Logoff **Location**, no individual jobs will be generated under **Job Control** while Automatic Logoff is executed. Administrators will need to point under Mobile Users > SIP Mobile User Interaction > Logon/Logoff User Interface to look for the successful logoff completion state and time.

### Logoff at:

Next daily logoff is scheduled on this time. The current time of the timezone defined for this location will be used.

**NOTE:** Switching from daylight saving time to regular time (one hour back) will not lead to a second execution of a job that has been started in the time interval hereby doubled. When switching from regular time to daylight saving time (one hour advance), a job which is scheduled for this skipped time will not be executed.

**Location**

Location where automatic logoff will happen at entered time. Locations are entered as described under Section 6.3.2, "Location".

**Multiple Add**

Add multiple locations to one logoff time.

## Mobile Users

### SIP Mobile User Interaction

## 8.2.4 SIP User Keylayout

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > SIP User Keylayout

**NOTE:** The default key layout defined here can not be overridden instantly by changing a template and reapplying the relevant user data profile while the mobile user is logged on. However, the changes will be made after the mobile user has logged off and on again.

Device Type:

☒ Use following Defaults for Mobile User Logon

Prime Line on Key:  (only for Keysets)

Mobility on Key:

Cancel/Release on Key:

Shift on Key:

### Device Type:

Select the device type for key layout.

Possible options:

- **OpenStage 15**
- **OpenStage 40**
- **OpenStage 60**
- **OpenStage 80**
- **optiPoint 410 advance**
- **optiPoint 410 economy**
- **optiPoint 410 economy plus**
- **optiPoint 410 standard**
- **optiPoint 420 advance**
- **optiPoint 420 economy**
- **optiPoint 420 economy plus**
- **optiPoint 420 standard**
- **OpenScape Desk Phone IP 35 G**
- **OpenScape Desk Phone IP 35 G Eco**
- **OpenScape Desk Phone IP 55 G**

### **Use following Defaults for Mobile User Logon**

Check box for activating the default setting specified below.

#### **Prime Line on Key**

Key number of the primary line key (only for phones on which the mobile user profile already has a primary line key).

Value range: **1 ... 19** or none.

Default: **5**

For OS60, the default key layout defines that position 5 is reserved for Prime Line. So, any change concerning that key will not be sent to the phone. It will be sent to the phone only when logging off and logging on again. Any change to other key or adding a new key on other position it will work successfully.

In order to overcome this issue, change the position of the Prime Line on the default key layout to position null.

#### **Mobility on Key:**

Number of the key where Mobility should be programmed.

Value range: **1 ... 19** or none.

Default: **10**

#### **Release on Key:**

Configure Cancel/Release key on key

Value range: **1 ... 19** or none.

Defaults:

optiPoint 410/420 economy/economy plus/standard: **11**

optiPoint 410 advance: **18**

optiPoint 420 advance: **17**

#### **Shift on Key:**

Number of the key where Shift should be programmed.

## Mobile Users

### *SIP Mobile User Interaction*

Value range: **1** ... **19** or none.

Defaults:

optiPoint 410/420 economy/economy plus/standard: **12**

optiPoint 410 advance: **19**

optiPoint 420 advance: **18**

## **Possible Action Buttons**

### **Search**

Searches for all registered IP phones that match the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### **Save**

Saves any unsaved changes.

### **Discard**

Discards any unsaved changes.

### **Refresh**

Refreshes the content of the relevant page.

## **8.2.5 Mobile User Response Test Settings**

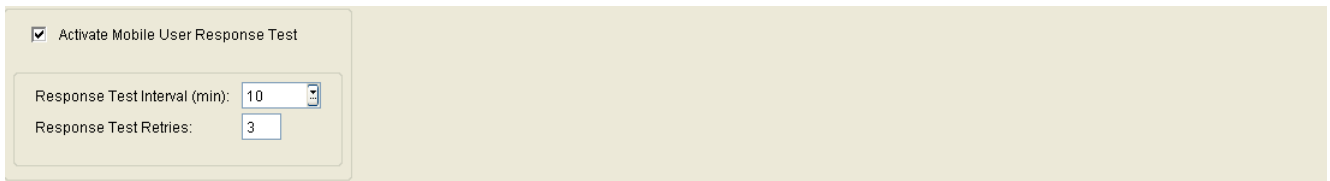
**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > Mobile User Response Test Settings

Here, response tests for logged on Mobile Users can be displayed and managed. (See also Section 8.2.1.3, ""Response Test Settings" Tab")

This area features the following components:

- General Data
- Possible Action Buttons
- "Protocol" Tab

## General Data



☒ Activate Mobile User Response Test

Response Test Interval (min): 10

Response Test Retries: 3

### Activate Mobile User Response Test:

Central switch for activating or deactivating the Mobile User response tests.

### Response Test Interval (min):

Interval in which the response tests will be performed, in minutes.

Possible Options:

- 10
- 20
- 30
- 40
- 50
- 60
- 90
- 120
- 240

Default value: **30**

### Response Test Retries:

Number of response test retries when no connection could be established.

Value range: **0 ... 9**

Default value: **5**



## **Mobile Users**

*SIP Mobile User Interaction*

### **Possible Action Buttons**

#### **Save**

Saves the changes.

#### **Discard**

Discards any changes made.

#### **Refresh**

Refreshes the screen contents from the database.

### 8.2.5.1 "Protocol" Tab

**Call:** Main Menu > Mobile Users > SIP Mobile User Interaction > Mobile User Response Test Settings > "Protocol" Tab

Maximum Number of Protocols:

☒ Table ☐ Selected entry

1 / 100

Start of Response Test	Number of tested I...	Remark
2010-02-02 15:48:01	0	Start Execution of Mobile User Response Test
2010-02-02 15:38:01	0	Start Execution of Mobile User Response Test
2010-02-02 15:28:01	0	Start Execution of Mobile User Response Test
2010-02-02 15:18:01	0	Start Execution of Mobile User Response Test
2010-02-02 15:08:01	0	Start Execution of Mobile User Response Test
2010-02-02 14:58:01	0	Start Execution of Mobile User Response Test
2010-02-02 14:48:01	0	Start Execution of Mobile User Response Test
2010-02-02 14:38:01	0	Start Execution of Mobile User Response Test
2010-02-02 14:28:01	0	Start Execution of Mobile User Response Test
2010-02-02 14:18:01	0	Start Execution of Mobile User Response Test
2010-02-02 14:08:01	0	Start Execution of Mobile User Response Test
2010-02-02 13:58:01	0	Start Execution of Mobile User Response Test

#### Maximum Number of Protocols

At most as many protocol entries as specified here are created.

#### Start of Response Test

Date and time of response test start

#### Number of tested IP Devices

Number of IP Phones or IP Clients that have been tested.

#### Remark

Annotation about the particular protocol entry.

## **8.3 User Data Administration**

In this area, Mobile User data are displayed and managed. These data are not modifiable via DLS, e. g. phonebook entries. The data are sent to the DLS for storage when a Mobile User is logging off; when a Mobile User is logging on, they are sent to the end device by the DLS.

The memory requirements for each Mobile User is displayed, as well as date, device ID, and IP address of the end device. Furthermore, the total amount of used memory can be determined.

The displayed user data can be deleted. This should only be done with deleted Mobile Users.

**NOTE:** Export functionality on Mobility Users is not offered due to security / exposure reasons. Mobility User Data (e.g. call log) are not accesible by the DLS Administrator. They are stored/ encrypted in the DLS Database.

This menu item consists of the following areas:

- General Data
- Possible Action Buttons
- "Statistics" Tab

## General Data

This part of the contents area is identical for all interfaces associated with this menu. It is used for entering parameters in **Search** view to find a specific group of IP phones. The base data associated with the IP phones found is displayed in **Object** view.

E.164:	<input style="width: 95%;" type="text"/>	
Remarks:	<input style="width: 45%;" type="text"/>	<input style="width: 45%;" type="text"/>

### E.164:

Complete E.164 phone number (Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

### Remarks:

Fields for general information.

## Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

### Search

Searches for all registered IP phones that match the search criteria.

### Clear Window

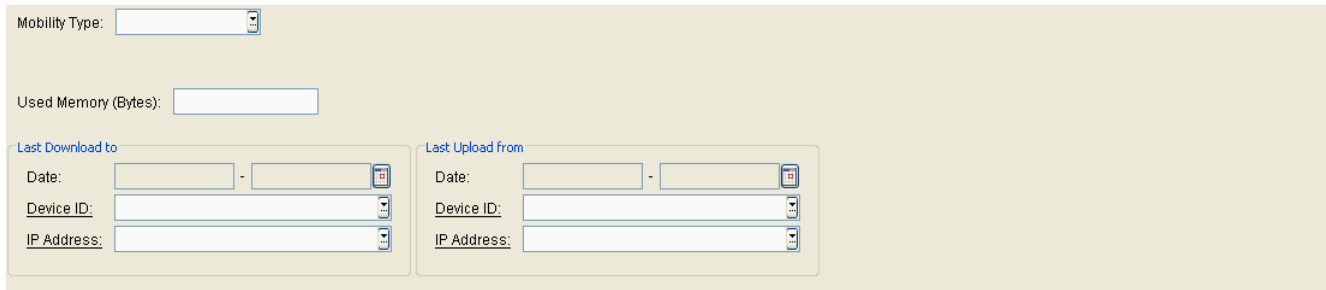
Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### Determine overall Memory usage

By clicking this button, the total memory use of the user data stored in all workpoints can be determined.

### 8.3.1 "Statistics" Tab

**Call:** Main Menu > Mobile Users > User Data Administration > "Statistics" Tab



#### Mobility Type

Shows the mobility type (SIP or HFA Mobility).

#### Used Memory (Bytes):

Memory in bytes used by user data of this IP Device.

#### Last Download to

##### Date:

Date and time of the last sending of user data to the IP Device.

##### Device ID:

ID of the IP Device to which the user data have been sent.

##### IP Address:

IP address of the workpoint to which the user data have been sent.

#### Last Upload from

##### Date:

Date and time of the last saving of user data sent by the IP Device.

**Device ID:**

ID of the IP Device whose user data have been saved.

**IP Address:**

IP address of the IP Device whose user data have been saved.

## 8.4 Mobility Statistics

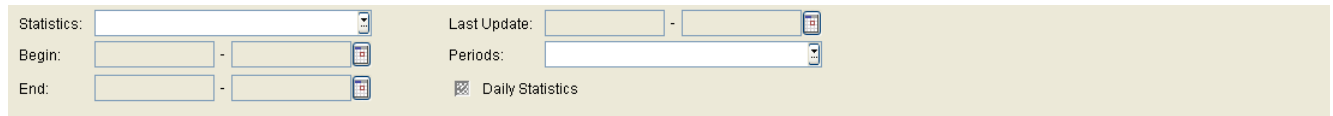
This area displays the mobility statistics. With its help, the administrator can overview all mobile users within a defined space of time. That way, e. g. periods of peak occupancy can be determined. For this purpose, the mobile user logon/logoff history is analyzed (see Main Menu > Mobile Users > SIP Mobile User Interaction > Logon/Logoff).

This menu item consists of the following areas:

- General Data
- Possible Action Buttons
- "SIP Mobility" Tab

## General Data

This part of the contents area is identical for all interfaces associated with this menu. In **Search** view, it is used for entering parameters to find a specific group of statistics. In **Object** view, the base data associated with the statistics found is displayed, or the base data for a new statistics are defined.



The screenshot shows a form with the following fields and controls:

- Statistics:** A text input field with a dropdown arrow icon on the right.
- Last Update:** Two date input fields separated by a hyphen, each with a calendar icon on the right.
- Begin:** A date input field with a calendar icon on the right.
- End:** A date input field with a calendar icon on the right.
- Periods:** A text input field with a dropdown arrow icon on the right.
- Daily Statistics:** A checkbox with the text "Daily Statistics" next to it.

### Statistics:

Name of the statistics.

### Begin:

Begin of the time interval in which actions are observed. If **Daily Statistics** is active, this field is read-only.

### End:

End of the time interval in which actions are observed. If **Daily Statistics** is active, this field is read-only.

### Last Update:

Creation date of the statistics currently displayed.

### Periods:

Sets the period during the observation time interval. After the expiration of each period, an entry in the table is created.

Possible Options:

- **1 min**
- **2 min**
- **3 min**
- **4 min**
- **5 min**
- **10 min**
- **15 min**



## Mobile Users

### *Mobility Statistics*

- 20 min
- 30 min
- 1 h
- 2 h
- 3 h
- 4 h
- 6 h
- 24 h

### Daily Statistics

The checkbox indicates whether the statistics currently displayed is a **Daily Statistics**.

## **Possible Action Buttons**

### **Search**

Searches for all statistics that match the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the Search view before new search criteria are entered.

### **Delete**

Delete the statistics currently displayed.

### **New**

Creates new statistics.

8.4.1 "SIP Mobility" Tab

Call: Main Menu > Mobile Users > Mobility Statistics > "SIP Mobility" Tab

Present Mobile Users

Max. number logged on:

Number Mobile Users:

Mobile Users logged on (%):

Present Mobility SIP Devices

Max. number used:

Number Mobility Devices:

Mobility Devices used (%):

Update Statistics

Display Chart

Export

Table

Selected entry

1 / 1

Date/Time:

Actions:

Logons:

Logoffs:

Failed:

Max. Logon Time (ms):

Avg. Logon Time (ms):

Max. Logoff Time (ms):

Avg. Logoff Time (ms):

Max. Users:

Present Mobile Users

Max. number logged on:

Maximum number of mobile users logged on at the same time within the observation time interval.

Number Mobile Users:

Number of mobile users extant within the observation time interval.

Mobile Users logged on (%)

Indicates the percentage of extant mobile users which have been logged on within the time interval.

Present Mobility SIP Devices

Max. number used:

Maximum number of mobility enabled SIP devices at which mobile users have been logged on within the observation time interval.

### **Number Mobility Devices:**

Number of mobility enabled DIP devices extant at the end of the observation time interval.

### **Mobility Devices used (%):**

Indicates the percentage of mobility enabled devices at which mobile users have been logged on within the observation time interval.

### **Update Statistics**

If the date of **End** (of the observation time interval) is later than the date of **Last Update**, the statistics can be updated using this button. The button is inactive if the date of **Begin** and **End** are in the past.

### **Display Chart**

Via this button, the content of the current statistics is displayed graphically.

### **Export**

Via this button, the content of the current statistics is stored in a file in csv format. The file name will be requested in a dialog window.

### **Date/Time:**

Time stamp with date and time at the beginning of the observation period. if, f. e., the period is set to 5 min, all successive values, actions etc. will be determined and entered in the table. At this, they are provided with the appropriate time stamp.

### **Actions:**

Total number of actions within the period indicated.

### **Logons:**

Number of logons within the period indicated.

## **Mobile Users**

### *Mobility Statistics*

#### **Logoffs:**

Number of logons within the period indicated.

#### **Failed:**

Number of failed actions within the period indicated.

#### **Max. Logon Time (ms):**

Maximum processing time for a logon within the period indicated in milliseconds.

#### **Avg. Logon Time (ms):**

Average processing time for a logon within the period indicated, in milliseconds.

#### **Max. Logoff Time (ms):**

Maximum processing time for a logoff within the period indicated, in milliseconds.

#### **Avg. Logoff Time (ms):**

Average processing time for a logoff within the period indicated, in milliseconds.

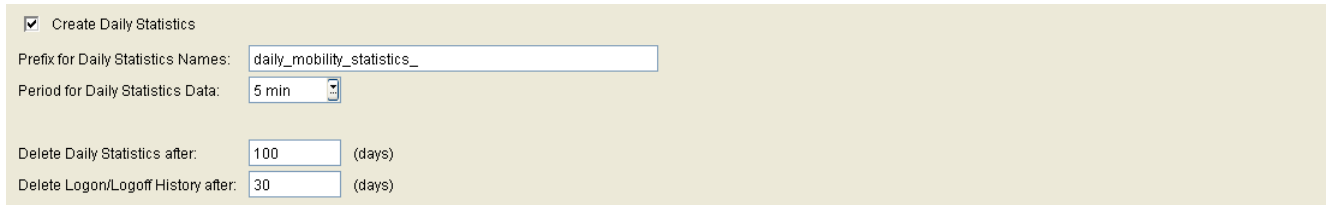
#### **Max. Users:**

Maximum number of mobile users logged on at the same time within the period indicated.

## 8.5 Mobility Statistics Configuration

**Call:** Main Menu > Mobile Users > Mobility Statistics Configuration

With this area, the daily mobility statistics (see Mobility Statistics) can be configured. The daily statistics are usually generated short after midnight. This is the time configuration changes get valid.



The screenshot shows a configuration form with a light beige background. At the top, there is a checked checkbox labeled 'Create Daily Statistics'. Below it, the 'Prefix for Daily Statistics Names:' is set to 'daily\_mobility\_statistics\_'. The 'Period for Daily Statistics Data:' is set to '5 min' with a dropdown arrow. At the bottom, 'Delete Daily Statistics after:' is set to '100 (days)' and 'Delete Logon/Logoff History after:' is set to '30 (days)'.

### Create Daily Statistics

If this checkbox is active, a statistics according to the further parameters is created daily.

### Prefix for Daily Statistics Names:

Name prefix for automatically created statistics.

### Period for Daily Statistics Data:

Sets the period for the daily statistics. For each period, an entry is created in the table.

Possible Options:

- **1 min**
- **2 min**
- **3 min**
- **4 min**
- **5 min**
- **10 min**
- **15 min**
- **20 min**
- **30 min**
- **1 h**
- **2 h**

## Mobile Users

### *Mobility Statistics Configuration*

- 3 h
- 4 h
- 6 h
- 24 h

#### Delete Daily Statistics after:

Delete daily statistics after the number of days entered here. If 0 is entered, there will be no automatic deletion.

#### Delete Logon/Logoff History after:

Delete entries in the logon/logoff history after the number of days entered here. If 0 is entered, there will be no automatic deletion.

## Possible Action Buttons

### Save

Saves the configuration.

### Discard

Discards previously unsaved modifications in the configuration.

### Refresh

Updates the display of the configuration from the database.

## 9 Gateways

**Call:** Main Menu > Gateways

This menu item consists of the following area:

- Gateway Configuration
- QoS Data Collection



## 9.1 Gateway Configuration

**Call:** Main Menu > Gateways > Gateway Configuration

This area features the following components:

- General Data
- Possible Action Buttons
- "Gateway Connection" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## General Data

This part of the contents area only applies to the **Gateway Configuration**. It is used for entering parameters in **Search** view to find a specific group of gateways. The base data associated with the gateways found is displayed in the **Object** view (no changes possible).

Gateway IP Address:	<input type="text"/>	SW Version:	<input type="text"/>
Gateway Type:	<input type="text"/>	Last Update:	<input type="text"/> - <input type="text"/>
PEN:	<input type="text"/>		
<input checked="" type="checkbox"/> Configuration of QDC data enabled			
Remarks:	<input type="text"/>		

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

### Gateway IP Address:

IP address of the gateway.

Example: **192.117.1.193**

### Gateway Type:

Type of the gateway.

Possible options:

- **HG1500**
- **HG3530**
- **HG3540**
- **HG3550**
- **HG3570**
- **HG3575**
- **RG2700**

### PEN:

Position of the gateway board (slot).

Example: **1-17-3**

## **Gateways**

### *Gateway Configuration*

#### **SW Version:**

Gateway software version. This value is read-only in search results.

#### **Last Update:**

Time when the gateway was last updated. This value is read-only in search results.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Time field with calendar button".

#### **Configuration of QDC data enabled**

Check box indicating whether the gateway is capable of processing QDC data. The check box is set while reading the gateway data and can only be read.

#### **Remarks:**

Fields for general information.

### **Possible Action Buttons**

The range of action buttons available depends on the selected view and DLS status.

#### **Search**

Searches for all gateways that correspond to the search criteria.

#### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### **New**

Creates a new gateway.

#### **Save**

Saves the changes made to configuration entries.

#### **Discard**

Discards any unsaved changes.

#### **Delete**

Deletes all selected objects.

#### **Read Gateway Data**

Reads the data for all selected gateways. The gateway is entered in the DLS and can be modified using the DLS. Gateway Data consists of PEN (number that corresponds to a specific slot number of a gateway board), Software Version & MAC Address.

#### **Refresh**

Refreshes the content of the relevant page.

## Gateways

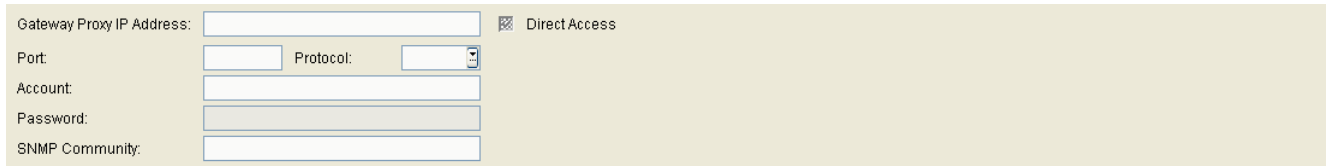
### Gateway Configuration

#### 9.1.1 "Gateway Connection" Tab

**Call:** Main Menu > Gateways > Gateway Configuration > "Gateway Connection" Tab

**NOTE:** Different configuration parameters are assigned default values or deactivated (if not relevant), depending on gateway type.

For information on configuration, see Section 16.4, "Configuring a Gateway in DLS".



Gateway Proxy IP Address:  ☒ Direct Access

Port:  Protocol:

Account:

Password:

SNMP Community:

#### Gateway Proxy IP Address:

Proxy IP address of the gateway.

#### Direct Access

If this check box is activated, the connection between HiPath 4000/HG 3550 and the DLS is via direct access and not via the Assistant.

#### Port:

Proxy port of the gateway.

#### Protocol:

Protocol used for communicating between the DLS and the gateway.

Possible options:

- **http**
- **https**

#### Account

User name for accessing the gateway proxy. The user ID is the first part of the URL.

**Password:**

Password necessary for accessing the gateway proxy.

**SNMP Community:**

Community string used for authentication on the SNMP server.

## 9.2 QoS Data Collection

**Call:** Main Menu > Gateways > QoS Data Collection

This area features the following components:

- General Data
- Possible Action Buttons
- "Server Data" Tab
- "Report Settings" Tab
- "Threshold Values" Tab

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## General Data

This part of the contents area is used for entering parameters in **Search** view to find a specific group of gateways. The base data associated with the gateways found is displayed in the **Object** view (no changes possible except under **Remarks**).

Gateway IP Address:	<input type="text"/>	SW Version:	<input type="text"/>
Gateway Type:	<input type="text"/>	Last Update:	<input type="text"/> - <input type="text"/>
PEN:	<input type="text"/>	<input checked="" type="checkbox"/> Configuration of QDC data enabled	
Remarks:	<input type="text"/>		

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

### Gateway IP Address:

IP address of the gateway.

Example: **192.117.1.193**

### Gateway Type:

Type of the gateway.

Possible options:

- **HG1500**
- **HG3530**
- **HG3540**
- **HG3550**
- **HG3570**
- **HG3575**
- **RG2700**

### PEN:

Position of the gateway board (slot).

Example: **1-17-3**



## Gateways

### *QoS Data Collection*

#### **SW Version:**

Gateway software version. This value is read-only in search results.

#### **Last Update:**

Time when the gateway was last updated. This value is read-only in search results.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Time field with calendar button".

#### **Configuration of QDC data enabled**

Check box indicating whether the gateway is capable of processing QDC data. The check box is set while reading the gateway data and can only be read.

#### **Remarks:**

Fields for general information.

## **Possible Action Buttons**

The range of action buttons available depends on the selected view and DLS status.

### **Search**

Searches for all gateways that correspond to the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### **Get**

Loads a template that has already been saved. For more information, see Section 15.5, "Editing Templates".

### **Save**

Saves configuration entries as a template. For more information, see Section 15.5, "Editing Templates".

### **Rename**

Changes the name of a saved template. For more information, see Section 15.5, "Editing Templates".

### **Delete**

Deletes a saved template. For more information, see Section 15.5, "Editing Templates".

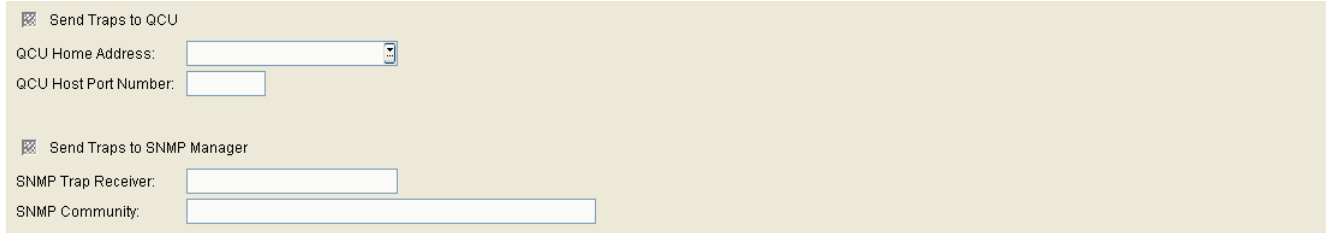
## Gateways

### QoS Data Collection

#### 9.2.1 "Server Data" Tab

**Call:** Main Menu > Gateways > QoS Data Collection > "Server Data" Tab

More information on QDC can be found in the QDC Interface Description (P31003-H1000-X104-\*-7618) and the QDC Service Manual (P31003-H1000-S104-\*-7620).



☒ Send Traps to QCU

QCU Home Address:

QCU Host Port Number:

☒ Send Traps to SNMP Manager

SNMP Trap Receiver:

SNMP Community:

#### Send Traps to QCU

Check box for sending traps to the QCU.

#### QCU Home Address:

IP address or host name of the server that logs the QDC data. Corresponds to the value entered in the gateway under **Explorer - Payload - QDC**.

#### QCU Host Port Number:

Port number for the server that logs the QDC data. Corresponds to the value entered in the gateway under **Explorer - Payload - QDC**.

#### Send Traps to SNMP Manager

Check box for sending traps to the SNMP Manager.

#### SNMP Trap Receiver:

Check box for activating the function that sends errors to the SNMP Manager. Matches the value entered in the gateway under **Maintenance - SNMP - Communities - Trap Communities**.

**SNMP Community:**

Name of the SNMP community. Matches the value entered in the gateway under **Maintenance - SNMP - Communities - Trap Communities**.

Default: **public**

## 9.2.2 "Report Settings" Tab

**Call:** Main Menu > Gateways > QoS Data Collection > "Report Settings" Tab

More information on QDC can be found in the QDC Interface Description (P31003-H1000-X104-\*-7618) and the QDC Service Manual (P31003-H1000-S104-\*-7620).

Report Mode:	<input type="text"/>
Report Interval:	<input type="text"/> s (seconds)
Observation Interval:	<input type="text"/> s (seconds)
Minimum Session Length:	<input type="text"/> * 100 ms

### Report Mode:

Possible options:

- **Off**  
No report.
- **EOS Threshold exceeded**  
Send report at the end of the connection and when the threshold is exceeded.
- **EOR Threshold exceeded**  
Send report at the end of the reporting interval and when the threshold is exceeded.
- **EOS (End of Session)**  
Send report at the end of the connection.
- **EOR (End or Report Interval)**  
Send report at the end of the reporting interval.

### Report Interval:

Value range: **0** ... **3600** seconds.

Default: **60** seconds.

### Observation Interval:

Value range: **0** ... **3600** seconds.

Default: **10** seconds.

### Minimum Session Length:

Value range: **0** ... **5000** (x 100 ms)

Default: **20** (= 2 seconds)

### 9.2.3 "Threshold Values" Tab

**Call:** Main Menu > Gateways > QoS Data Collection > "Threshold Values" Tab

More information on QDC can be found in the QDC Interface Description (P31003-H1000-X104-\*-7618) and the QDC Service Manual (P31003-H1000-S104-\*-7620).

Maximum Jitter Threshold:	<input type="text"/>	ms
Average Round Trip Delay Threshold:	<input type="text"/>	ms
<b>Non-Compressing Codecs</b>		
Maximum Lost Packets Threshold:	<input type="text"/>	per 1000 packets
Consecutive Lost Packets Threshold:	<input type="text"/>	
Consecutive Good Packets Threshold:	<input type="text"/>	
<b>Compressing Codecs</b>		
Maximum Lost Packets Threshold:	<input type="text"/>	per 1000 packets
Consecutive Lost Packets Threshold:	<input type="text"/>	
Consecutive Good Packets Threshold:	<input type="text"/>	

**Maximum Jitter Threshold:**

Maximum threshold in milliseconds for runtime fluctuations during data transmission to trigger a report.

Value range: **0 ... 255** ms.

Default: **15**

**Average Round Trip Delay Threshold:**

Average response time (in milliseconds) for signal transmission.

Default: **100**

**Non-Compressing Codecs**

**Maximum Lost Packets Threshold:**

Maximum number of total packets lost during uncompressed transmission.

Value range: **0 ... 255** (per 1000 packets).

Default: **10**

**Consecutive Lost Packets Threshold:**

Maximum number of consecutive packets lost during uncompressed transmission.

Value range: **0 ... 255**

Default: **2**

**Consecutive Good Packets Threshold:**

Minimum number of consecutive inbound packets lost during uncompressed transmission.

Value range: **0 ... 255**

Default: **8**

**Compressing Codecs**

**Maximum Lost Packets Threshold:**

Maximum number of total packets lost during compressed transmission.

Value range: **0 ... 255** (per 1000 packets).

Default: **10**

**Consecutive Lost Packets Threshold:**

Maximum number of consecutive packets lost during compressed transmission.

Value range: **0 ... 255**

Default: **2**

**Consecutive Good Packets Threshold:**

Minimum number of consecutive inbound packets lost during compressed transmission.

Value range: **0 ... 255**

Default: **8**





## 10 Software Deployment

**Call:** Main Menu > Software Deployment

This menu consists of the following submenus:

- Workpoint Deployment
- Manage Rules

The **Software Deployment** area is used for the user-friendly distribution of software images and other workpoint software.

**NOTE:** Note the difference between **Software Deployment** and **File Deployment** in the DLS interface (see Section 10.1.1 and Section 10.1.2).

**Software deployment** refers to the distribution of workpoint software (IP phones and IP clients). **File deployment**, on the other hand, refers to the distribution of any binary or ASCII files that perform a certain task in the workpoint.

Both functions are combined in the DLS main menu under **Software Deployment**.

For information on general interface operation, see Section 5.4.2, "Work Area".

**NOTE:** When distributing software for optiPoint WL2 professional workpoints, ensure that the workpoints have sufficient battery capacity. If not, it may not be possible to operate the software successfully.

## 10.1 Workpoint Deployment

**Call:** Main Menu > Software Deployment > Workpoint Deployment

The distribution of software (firmware) and other data to individual IP clients and IP phones can be controlled using the DLS.

For this to work, both the files to be distributed and the required workpoints must be registered at the DLS. The FTP server and network drives must also be registered at the DLS as these supply the data to the workpoints (see Section 6.3.4, "FTP Server Configuration" and Section 6.3.7, "Network Drive Configuration").

**NOTE:** Deployment via a network drive is not available in the onboard variants of the DLS on OpenScape Voice.

This area can be split into the following groups:

- General Data
- Possible Action Buttons
- Software and File Deployment consisting of:
  - "Software Deployment" Tab
  - "File Deployment" Tab
- Display of Inventory Data consisting of:
  - "Software Inventory" Tab
  - "LDAP Inventory" Tab
  - "MOH Inventory" Tab
  - "INCA Inventory" Tab
  - "Java Midlet Inventory" Tab
  - "Logo File Inventory" Tab
  - "SYSTEM/RINGTONE Inventory" Tab
  - "APM Inventory" Tab
  - "NETBOOT Inventory" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

If you need this function frequently, you can automate it simply and conveniently with deployment jobs (see Chapter 14, "Job Coordination").

## General Data

This part of the contents area is identical for all interfaces associated with this menu. It is used for entering parameters in **Search** view to find a specific group of workpoints. The base data associated with the workpoints found is displayed in **Object** view (no changes possible except under **Remarks**).

IP Address:	<input type="text"/>	IP Address 2:	<input type="text"/>	IP Protocol Mode:	<input type="text"/>
Device ID:	<input type="text"/>	SW Version:	<input type="text"/>	Location:	<input type="text"/>
Device Type:	<input type="text"/>	SW Type:	<input type="text"/>		
E.164:	<input type="text"/>	Reg-Address:	<input type="text"/>		
Basic E.164:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>		
Remarks:	<input type="text"/>				

Some areas do not contain all of the fields described.

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

### IP Address:

IP address of the workpoint. For OpenStage, an IPv4 or IPv6 address is displayed here. See also the description of the **IP Protocol Mode** parameter.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

### Device ID:

Physical MAC address of the workpoint.

Example: **00:0E:A6:85:71:80**

### Device Type:

Workpoint device type.

All workpoint types supported by DLS can be found in Section 3.4, "IP Devices / versions supported".

Examples: **optiPoint 410 standard**, **optiClient 130**.

### E.164:

Complete E.164 subscriber number (Basic Profile or Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

## Software Deployment

### Workpoint Deployment

#### Basic E.164:

Complete E.164 phone number (Mobility Phone).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

#### IP Address 2:

Second IP address of the IP phone, if it has an IPv6 address.

Available for OpenStage only.

#### SW Version:

Software version used by the workpoint.

Example for IP phones and IP clients: **5.0.12**.

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

#### SW Type:

Software type used by the workpoint.

Examples: **Unify HFA**, **Unify SIP**.

#### Reg-Address:

IP address of the gateway or the gatekeeper where the workpoint must register. In HiPath 3000, this is the IP address of the HG 1500, in HiPath 4000 it is the HG 3530 or the STMI board.

#### Last Registration:

Time of last IP phone registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Time field with calendar button".

**Location:**

Current location of the IP Device.

**Remarks:**

Fields for general information.

**IP Protocol Mode**

Indicates which IP version is used by the phone. If both versions are used, IP address contains the IPv4 address, and IP address 2 contains the IPv6 address.

Only available for openStage.

Possible options:

- **IPv4**
- **IPv6**
- **IPv4 and IPv6**

## Software Deployment

### *Workpoint Deployment*

#### Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

#### Search

A search is performed in the **Search** view for all registered workpoints that match the search criteria.

#### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

#### Deploy

A software or file deployment job is started in the **Object** and **Table** views. For more information, see Section 15.7, "Distribution of Workpoint Software".

## 10.1.1 "Software Deployment" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "Software Deployment" Tab

This tab shows the data entered for the last software deployment job that was performed for workpoints with the DLS.

"Software" is always used to refer to application software for a specific type of workpoint (for example, optiPoint 410 standard). This software is generally provided as a software image (mostly a file with the extension .app) that can be distributed ("deployed") to workpoints.

**NOTE:** All software images provided with and after the introduction of DLS contain a DLS interface for communication with the DLS (new software format). This interface is not available in any existing and previously available software images (old software format).

For an overview of all software types supported by the DLS, see Section 3.5, "Overview of Software and File Types".

### Configuration data for most recent software deployment

#### SW Type:

Software type used by the workpoint.

Example: **Unify HFA**, **Unify SIP**.

#### SW Version:

Software version used by the workpoint.

Example for IP phones and IP clients: **5.0.12**

#### SW Image Path:

Path name of the directories in which the file is saved with the software image.

Examples: **/Directory1/Subdirectory2** for IP phone files, **\Directory1\Subdirectory2** for IP client files.



## Software Deployment

### *Workpoint Deployment*

#### SW Image Name:

File name of the software image.

Examples: **vxworks.app**, **op410std-unify-hfa-V5.0.12-L12345678.app**

#### Deployment Time:

Time when the last software deployment job was started (for a calendar, see Section 5.4.2.4, "Time field with calendar button").

#### Deployment Status:

Result (status) of the last software deployment job.

Possible options:

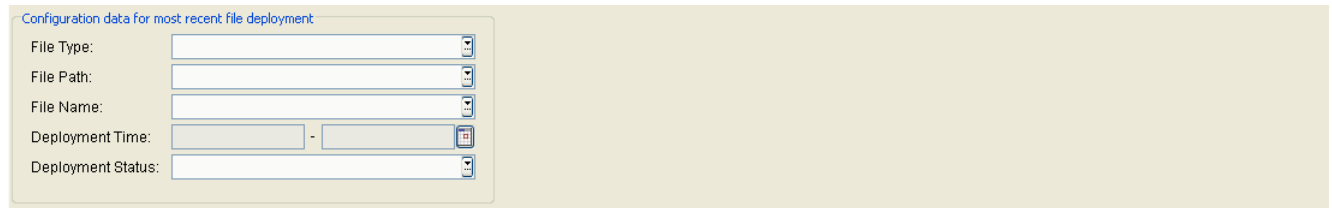
- **Deployment rejected:**  
Deployment could not be started. Possible reason: Configuration settings only permit deployment to be performed when the workpoint is idle; this was not the case.
- **Deployment initiated:**  
Deployment was started but is not yet complete.
- **Deployment finished:**  
Deployment was successfully completed.
- **Deployment failed:**  
An error occurred in the course of deployment.

## 10.1.2 "File Deployment" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "File Deployment" Tab

This tab shows the data (file type) entered for the last file deployment job that was performed for workpoints with the DLS.

For an overview of all file types supported by the DLS, see Section 3.5, "Overview of Software and File Types".

A screenshot of a web form titled "Configuration data for most recent file deployment". The form contains five input fields: "File Type:" (text box), "File Path:" (text box), "File Name:" (text box), "Deployment Time:" (two text boxes separated by a hyphen, with a calendar icon to the right), and "Deployment Status:" (text box). Each field has a small downward arrow icon on its right side, indicating a dropdown menu.

### Configuration data for most recent file deployment

#### File Type:

Type of file (see Section 3.5, "Overview of Software and File Types").

Example: **Java Midlet** when the last action of a Java application was distributed to the IP phone.

#### File Path:

Path name of the directory in which the appropriate file type is saved.

Examples: **/Directory1/Subdirectory2** for IP phone files, **\Directory1\Subdirectory2** for IP client files.

#### File Name:

Name of the distributed file.

#### Deployment Time:

Time when the last software deployment job was started (for a calendar, see Section 5.4.2.4, "Time field with calendar button").

#### Deployment Status:

The result (status) of the last software deployment job is displayed.

Possible status:

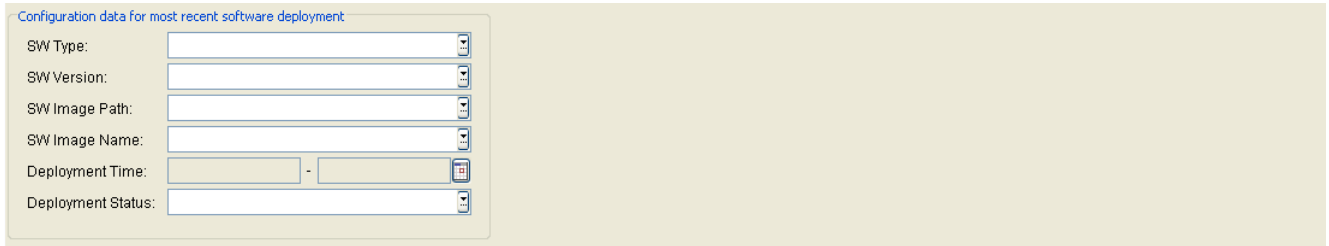
## Software Deployment

### *Workpoint Deployment*

- **Deployment rejected:**  
Deployment could not be started.
- **Deployment initiated:**  
Deployment was started but is not yet complete.
- **Deployment finished:**  
Deployment was successfully completed.
- **Deployment failed:**  
An error occurred in the course of deployment.

### 10.1.3 "Software Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "Software Inventory" Tab



The screenshot shows a configuration form titled "Configuration data for most recent software deployment". It contains several input fields with dropdown arrows on the right: "SW Type:", "SW Version:", "SW Image Path:", "SW Image Name:", "Deployment Time:" (which includes a date picker icon), and "Deployment Status:". The form is set against a light beige background.

#### **Inventory/Status data for software installation**

##### **SW Repository:**

Address of the FTP server (for IP phones) or network computer (for IP clients) from which the software was downloaded. The address can be either an IP address or a host name.

##### **SW Image Name:**

The file name of the software downloaded.

##### **Installation Date:**

Date when the last software was downloaded or installed.

##### **Installation Status:**

The status of software installation is displayed here.





##### **Language Package:**

Shows the installed language package.

## 10.1.4 "LDAP Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "LDAP Inventory" Tab

Inventory/Status data for installation of LDAP template files

LDAP FTP Address:	<input type="text"/>	
LDAP File Name:	<input type="text"/>	
Installation Date:	<input type="text"/> - <input type="text"/>	
Installation Status:	<input type="text"/>	

**NOTE:** The description provided in Section 10.1.3, ""Software Inventory" Tab" applies to all fields in this tab.

## 10.1.5 "MOH Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "MOH Inventory" Tab

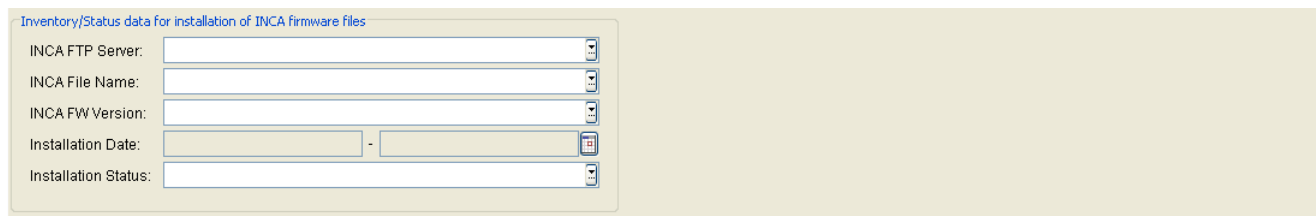
Inventory/Status data for installation of Music on Hold files

MOH Repository:	<input type="text"/>
MOH File Name:	<input type="text"/>
Installation Date:	<input type="text"/> - <input type="text"/>
Installation Status:	<input type="text"/>

**NOTE:** The description provided in Section 10.1.3, ""Software Inventory" Tab" applies to all fields in this tab.

## 10.1.6 "INCA Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "INCA Inventory" Tab



Inventory/Status data for installation of INCA firmware files

INCA FTP Server:	<input type="text"/>
INCA File Name:	<input type="text"/>
INCA FW Version:	<input type="text"/>
Installation Date:	<input type="text"/> - <input type="text"/>
Installation Status:	<input type="text"/>

**NOTE:** The description provided in Section 10.1.3, ""Software Inventory" Tab" applies to all fields in this tab.

### INCA FW Version:

Version of INCA Firmware.

## 10.1.7 "Java Midlet Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "Java Midlet Inventory" Tab

Inventory/Status data for installation of Java Midlet files

Midlet FTP Server:	<input type="text"/>
Midlet File Name:	<input type="text"/>
Installation Date:	<input type="text"/> - <input type="text"/>
Installation Status:	<input type="text"/>




**NOTE:** The description provided in Section 10.1.3, ""Software Inventory" Tab" applies to all fields in this tab.



## 10.1.8 "Logo File Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "Logo File Inventory" Tab

Inventory/Status data for installation of Logo Files

LOGO FTP Server:	<input type="text"/>	
LOGO File Name:	<input type="text"/>	
Installation Date:	<input type="text"/> - <input type="text"/>	
Installation Status:	<input type="text"/>	

**NOTE:** The description provided in Section 10.1.3, ""Software Inventory" Tab" applies to all fields in this tab.

## 10.1.9 "SYSTEM/RINGTONE Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "SYSTEM/RINGTONE Inventory" Tab

Inventory/Status data for installation of System and Ringtones

SYSTEM/RINGTONE Network Server:	<input type="text"/>
SYSTEM/RINGTONE File Path:	<input type="text"/>
SYSTEM/RINGTONE File Name:	<input type="text"/>
Installation Date:	<input type="text"/> - <input type="text"/>
Installation Status:	<input type="text"/>

### SYSTEM/RINGTONE Network Server:

Address of the network computer from which the ringtones were downloaded. The address can be either an IP address or a host name.

### SYSTEM/RINGTONE File Path:

Directory on the network computer from which the ringtones were downloaded, starting from the network path released.

### SYSTEM/RINGTONE File Name:

Name of the file with ringtones that were downloaded.

### Installation Date:

Date on which the last ringtones were downloaded or installed.

### Installation Status:

The status of ringtone installation is displayed here.

# 10.1.10 "APM Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "APM Inventory" Tab

Inventory/Status data for installation of APM firmware files

APM FTP Server:

APM File Name:

APM FW Version:

Installation Date:

-

Installation Status:

**NOTE:** The description provided in Section 10.1.3, ""Software Inventory" Tab" applies to all fields in this tab.

**APM FW Version:**

Version of APM Firmware.

## 10.1.11 "NETBOOT Inventory" Tab

**Call:** Main Menu > Software Deployment > Workpoint Deployment > "NETBOOT Inventory" Tab

Inventory/Status data for installation of NETBOOT files

NETBOOT FTP Server:	<input type="text"/>
NETBOOT Name:	<input type="text"/>
NETBOOT FW Version:	<input type="text"/>
Installation Date:	<input type="text"/> - <input type="text"/>
Installation Status:	<input type="text"/>

**NOTE:** The description provided in Section 10.1.3, ""Software Inventory" Tab" applies to all fields in this tab.

### NETBOOT FW Version:

Version of NETBOOT Firmware.

## 10.2 Manage Rules

**Call:** Main Menu > Software Deployment > Manage Rules

You can use deployment rules to control the distribution of software and limit the resulting transmission traffic.

If automatic software distribution is initiated for a workpoint, this workpoint checks first if there is a rule for the workpoint device type. If there is no rule or if the rule has been deactivated, no software is distributed to this workpoint.

For information on using deployment rules, see Section 15.7.2, "Automatic Deployment".

The screenshot shows a web-based configuration interface for deployment rules. It features several input fields and checkboxes. At the top, there are four fields: 'Device Type:', 'Location:', 'SW Type:', and 'WP SW Version:', each with a dropdown arrow. Below these is a section titled 'Default Software for newly registered workpoints' which contains three checked checkboxes: 'Deploy software on an upgrade', 'Deploy software on a downgrade', and 'Deploy latest version'. To the right of these checkboxes is a 'SW Version:' dropdown field. At the bottom of this section is a checkbox labeled 'Change SW Type'.

### Device Type:

Device type of the workpoints to which the rule should apply.

Examples: **optiPoint 410 standard**, **optiClient 130**.

**NOTE:** In the case where you want to apply a SW to all devices regardless of the current location that they are, create a default location with a device type equal to **ALL**.

However, the devices **MUST** not conform to any other individual manage rule per location.

### SW Type:

Type of software type which is currently installed on the workpoints to which the rule should apply.

Examples: **Unify HFA**, **Unify SIP**.

### WP SW Version:

Version of the software which is currently installed on the workpoints to which the rule should apply.

### Location

Location name (IP range and gatekeeper) to which the deployment rules are assigned.

## Default Software for newly registered workpoints

### Deploy software on an upgrade

Check box for activating the deployment function in the case of an upgrade.

This means that deployment is performed if the software at the workpoint is **older** than the newest software or the software generally selected.

**NOTE:** If you want to deactivate (but not delete) the rule, deactivate this and the following option.

### Deploy software on a downgrade

Check box for activating the deployment function in the case of a downgrade.

This means that deployment is performed if the version number of the software at the workpoint is higher than the version of the software generally selected.

**NOTE:** If you want to deactivate (but not delete) the rule, deactivate this and the previous option.

### Deploy latest version

Check box for activating the deployment function with the latest version of a software type.

This means that during an update (downgrade), the latest software is transmitted to all workpoints that do not yet have this software version.

### SW Version:

Drop down list containing all available software images respective to Device Type and SW Type as those are defined.

**NOTE:** SW Version drop down list returns Software Images located on the FTP server assigned to the location selected. If no FTP server is assigned to location then an error message "**Choice list not available**" will be displayed.

Example for optiPoint and optiClient: **5.0.12**.

### Change SW Type:

When switch is activated, the workpoint's software type is replaced by the one of the selected software image.

## Software Deployment

### *Manage Rules*

#### Possible Action Buttons

##### Search

Searches for configured deployment rules on the basis of the criteria specified.

##### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

##### New

Adds a new deployment rule.

##### Save

Saves the changes. A newly created rule is immediately effective.

##### Discard

Discards any changes made.

##### Delete

Deletes an existing deployment rule.

##### Apply

Starts the automatic software distribution.

## 11 Element Manager

**Call:** Main Menu > Element Manager

Information on the relevant system types are managed here.

This menu consists of the following submenus:

- Element Manager Configuration
- Element Manager Security

To use plug&play functionality, you must adjust a number of configurations here.

For background information on plug&play, see Section 15.6, "Workpoint Autoconfiguration (Plug&Play)".

For information on configuring the DHCP server for full plug&play, see Section 4.12.4, "DHCP Server in a Windows Environment" and Section 4.12.5, "DHCP Server in a Linux/Unix Environment".

For information on general interface operation, see Section 5.4.2, "Work Area".



## **11.1 Element Manager Configuration**

**Call:** Main Menu > Element Manager > Element Manager Configuration.

Information on the different system types is entered in separate tabs in Element Manager.

This area features the following components:

- General Data
- Possible Action Buttons
- "OpenScape Voice" Tab
- "OpenScape Voice Assistant" Tab
- "HiPath 4000 Assistant" Tab
- "HiPath 3000/5000" Tab
- "Protocol" Tab

## General Data

This part of the contents area is used for entering parameters in Search view to find a specific group of Element Managers. The base data associated with the Element Managers found is displayed in the Object view (no changes possible except under Remark).

For more information on modifying the configuration, see Section 15.2, "Changing the Element Manager Configuration and Creating Jobs".

Element Manager ID:	<input type="text"/>	Element Manager Type:	<input type="text"/>
Element Manager Address:	<input type="text"/>	<input checked="" type="checkbox"/> On Synchronization update registered workpoints as soon as possible	
2nd EM Address:	<input type="text"/>	<input checked="" type="checkbox"/> Allow just 1 workpoint per E.164	
Port:	<input type="text"/>	Protocol:	<input type="text"/>
E.164 Prefix:	<input type="text"/>	<input checked="" type="checkbox"/> Add new subscribers as IP Clients	
Account:	<input type="text"/>	<input checked="" type="checkbox"/> Add new subscribers as IP Phones	
Password:	<input type="text"/>	Synchronization interval [min]:	<input type="text"/> (0 = no automatic synchronization):
Remark:	<input type="text"/>		

### Element Manager ID

Freely preset ID (mandatory). Uniquely identifies the Element Manager that supplies data to the workpoints when necessary.

### Element Manager Address

Host name or IP address of the Element Manager.

### 2nd EM Address

Hostname or IP address of the 2nd node.

**NOTE:** This parameter is only relevant for geographically separated OpenScape Voice clusters.

### Port

Port used by the Element Manager for communication with the DLS. The following list specifies the ports used by the individual Element Managers for different protocols:

- OpenOffice EE: **443** (HTTPS)
- HiPath 3000 / 5000: **8085** (HTTP) or **443** (HTTPS)
- HiPath 4000 (Web service): **443** (HTTPS)
- HiPath 4000 (JDBC): **1527**

## Element Manager

### Element Manager Configuration

**NOTE:** This port is locked & cannot be modified / checked as opposed to the rest EM options.

- OpenScape Voice: **8769** (HTTP)
- OpenScape Voice Assistant: **443** (HTTPS)
- OpenScape Office MX/LX: **443** (HTTPS)

## Protocol

Protocol used for exchanging data with the Element Manager.

Possible options:

- **http**
- **https**

## E.164 Prefix

Prefix for the E.164 number. Used for workpoints on OpenScape Voice, HiPath 3000/5000, OpenOffice EE, and HiPath DXWebPro. With Hipath 3000/5000 Version < V7, this is used only for HFA phones. If nothing is entered, the call number of the workpoint must be unique in the net. In other DLS menus, only the call number has to be entered for E.164. This field is not used for HiPath 4000; instead, the corresponding values should be entered in the **Virtual Node IDs (HFA)** table in the "HiPath 4000 Assistant" tab. If nothing is entered here, the phone number of the IP phone or IP client must be unique in the network. In other DLS interfaces, you only have to enter the phone number for E.164 fields.

Example: **4989722** (or no input).

## Account

The access code is needed for HiPath 4000 Assistant and for OpenScape Voice Assistant. The "uas\_read" account is needed for HiPath 4000 JDBC Assistant; this must be activated there.

For example, JDBC ID in HiPath 4000.

## Password

Password required for Element Manager access. The entry is made by clicking the key icon in a dialog window.

For example, JDBC password in HiPath 4000.

### Element Manager type

Select the Element Manager type. You may only enter data in the corresponding tab.

Possible options:

- **HiPath 4000 (JDBC)** (see "**HiPath 4000 Assistant**" Tab)
- **OpenScape Voice Assistant** (see "**OpenScape Voice Assistant**" Tab)

**NOTE:** In that option, OpenScape Voice Tab is disabled.

**IMPORTANT:** In the case of multiple element manager ID's, DLS Element Manager only supports multiple OSV's with non overlapping provisioning.

- **HiPath 3000/5000** (see "**HiPath 3000/5000**" Tab)
- **OpenScape Voice** (see "**OpenScape Voice**" Tab)
- **HiPath 4000 (Webservice)** (see "**HiPath 4000 Assistant**" Tab)
- **OpenScape Business**
- **OpenScape Office MX/LX**

### On Synchronization update registered workpoints as soon as possible

If this check box is activated, jobs are immediately executed during element manager synchronization.

### Allow just 1 workpoint per E.164 number

If this check box is activated, only those workpoints will be updated which have been updated before by the same Element Manager or are assigned to it (**IP Devices > IP Device Management > IP Device Configuration > "EM Synchronization" Tab > Referenced Element Manager**). Thereby, the security risk of sending registration data automatically to IP Devices with manipulated E.164 numbers is avoided, in case multiple workpoints are registered with the same E.164.

### Add new subscribers as IP Clients

If this check box is activated, new IP clients are created for stations (that is, E.164 numbers) transmitted during synchronization with the telephone system but not yet present in the DLS.

## Element Manager

### *Element Manager Configuration*

#### Add new subscribers as IP Phones

If this check box is activated, new IP phones are created for stations (that is, E.164 numbers) transmitted during synchronization with the telephone system but not yet present in the DLS. This check box is activated by default.

#### Synchronization Interval [min]

Defines the intervals for periodic synchronization between the telephone systems configured in the Element Manager and the DLS.

Value range: **60 ... 1440** minutes or **0** for no automatic synchronization.

Default: **0**

**NOTE:** For default value **0**, OpenScape Voice Tab is disabled.

**IMPORTANT:** Do not allow the synchronization interval to be set to lower than **60** min.  
Although **0** is allowed, during upgrade all Element Managers with synchronization interval < **60** min must be updated to the new minimum value of 60 minutes.

#### Remark

Field for general information.

## Possible Action Buttons

### Search

Searches for all Element Managers already entered in the DLS and that correspond to the search criteria.

### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### New

Creates a new Element Manager configuration.

### Save

Saves the Element Manager configuration.

### Discard

Discards any changes made and new entries.

### Delete

Deletes the Element Manager configuration.

### Synchronize

Synchronization transfers registration data from the Element Manager to the DLS database. This operation runs in the background. A protocol file is created after synchronization, which can take a few minutes. Synchronization generates or modifies workpoints; it can also result in job generation. These jobs are generated without consultation.

**NOTE:** An error message is issued if you try to start a synchronization session on the Element Manager where a session is already in progress.

**NOTE:** A new Element Manager synchronization should not be triggered unless the previous one has completed (regardless of being successful or not).

## **Element Manager**

### *Element Manager Configuration*

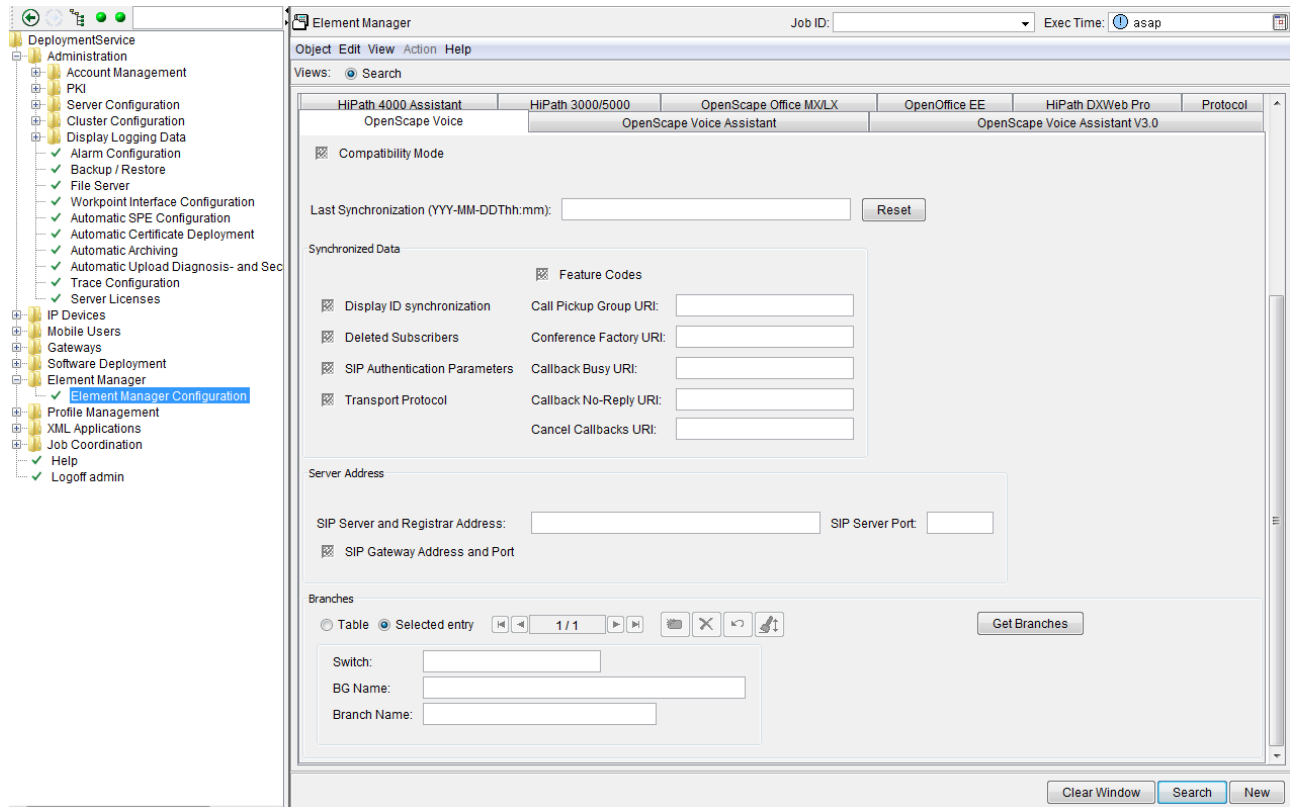
#### **Refresh**

Refreshes the contents of the current mask from the database.

## 11.1.1 "OpenScape Voice" Tab

**Call:** Main Menu > Element Manager > Element Manager Configuration > "OpenScape Voice" Tab.

For more information on modifying the configuration, see Section 15.2, "Changing the Element Manager Configuration and Creating Jobs".



**NOTE:** In order to synchronize with OpenScape Voice, you need to create the necessary appropriate packet filter rule\* to OpenScape Voice for local port 8769 and allow TCP Incoming Connection from the remote Windows DLS server IP.

\* firewall rule via OpenScape Voice Assistant

### Compatibility Mode

Checkbox for configuration of the Compatibility Mode. If checked, then the last synch was in compatibility mode. If unchecked, the last synch was in normal mode.

### Last Synchronization



## **Element Manager**

### *Element Manager Configuration*

Time & date of the last synch. Read only Text with the following format :

YYYY-MM-DDThh:mm

Example: 2011-05-29T19:00

The default value is set to void.

### **Reset**

Clicking this button enables the option to clear/reset the last synchronization field value.

### **Synchronized Data**

#### **Display ID Synchronization**

Checkbox for activating the synchronization of the display ID.

#### **Deleted Subscribers**

Check Box for activating the deletion of OSV Subscribers. If checked, then devices and line/DSS keys with Address of Record that corresponds to non-existing (or deleted) OSV subscribers are deleted permanently from the database.

If unchecked, then devices and line/DSS keys that correspond to non-existing (or deleted) OSV subscribers are kept in DLS DB.

This box is unchecked by default.

#### **SIP Authentication Parameters**

Checkbox for configuration of the SIP Authentication Parameters. If checked, then for all devices and line/DSS keys that are created/updated during synchronization the SIP Realm, Username and Password shall be set the same with the SIP Realm Username and Password of the respective OSV subscriber line.

If unchecked, the OSV subscriber SIP Realm, Username and Password are ignored during synchronization with OSV.

This box is unchecked by default.

#### **Transport Protocol**

Checkbox for configuration of the Transport Protocol. If checked, the Transport Protocol will be set to the same value as the respective OSV subscriber for all devices that are created / updated during synchronization.

If unchecked, the transport protocol is set to the devices in DLS without taking into account the transport protocol of the OSV subscribers although it could be set to the DLS device by CMP after a device modification ( that happens out of the synchronization context ). However it is still taken into account for the proper setting of the SIP gateway port (if enabled).

This box is unchecked by default.

### **Feature Codes**

Checkbox for configuration of Feature Codes. If checked, Feature Access Codes will be set as configured at the respective OSV Element Manager attributes for all Devices that are created/updated via synchronization.

If unchecked, Feature Access Codes will not be set.

This box is unchecked by default.

### **Call Pickup Group URI**

Textbox for configuration of the Call Pickup Group URI.

Maximum of 15 characters (0-9,\*,#) is allowed.

Default value is set to \*7.

### **Conference Factory URI**

Textbox for configuration of the Conference Factory URI.

Maximum of 15 characters (0-9,\*,#) is allowed.

Default value is set to 1234567890.

### **Callback Busy URI**

Textbox for configuration of the Callback Busy URI.

Maximum of 15 characters (0-9,\*,#) is allowed.

Default value is set to \*6.

### **Callback No-Reply URI**

Textbox for configuration of the Callback No-Reply URI.

Maximum of 15 characters (0-9,\*,#) is allowed.

## **Element Manager**

### *Element Manager Configuration*

Default value is set to \*6.

#### **Cancel Callbacks URI**

Textbox for configuration of the Cancel Callbacks URI.

Maximum of 15 characters (0-9,\*,#) is allowed.

Default value is set to #6.

#### **Server Address**

##### **SIP Server and Registrar Address**

IP address of the SIP server and the SIP registrar. This value is not supplied by OpenScape Voice, it must be configured manually.

##### **SIP Server Port**

Port number of the SIP server. This value is not supplied by OpenScape Voice, it must be configured manually.

##### **SIP Gateway Address and Port**

Checkbox for configuration of SIP Gateway Address and Port. If checked, the address (IP or FQDN) of the associated endpoint of the subscriber as retrieved from the OSV SOAP request will be set as the Gateway IP address of the devices that are created/updated during synchronization. The Gateway port number is set according to the Transport protocol of the synchronized subscriber to 5060 (for TCP/UCP) or 5061 (for TLS).

If unchecked, the gateway address and port is not set for the devices that are created/updated during synchronization

This box is unchecked by default.

#### **Branches**

##### **Switch**

Name of the switch where the OSBranch is administered.

##### **BG Name**

Name of the Business Group.

### **Branch Name**

Name of the Branch.

### **Get Branches**

Starts update of Branches and the tenants will be synchronized. The refresh is performed in the background; the protocol file is only created at the end. It may take a few minutes to provide this file.

**NOTE:** When the selected Element Manager Type is OpenScape Voice Assistant ,you won't be able to run Get Branches.

## 11.1.2 "OpenScape Voice Assistant" Tab

**Call:** Main Menu > Element Manager > Element Manager Configuration > "OpenScape Voice Assistant" Tab.

The screenshot shows the configuration interface for the OpenScape Voice Assistant. At the top, there are two checkboxes: "Tenants synchronization" and "Display ID synchronization", both of which are checked. Below these is a section titled "Switches" with a table view and a "Selected entry" view. The "Selected entry" view shows fields for "Switch:", "SIP Server Addr.", "SIP Server Port", "SIP Registrar Addr.", and "SIP Registrar Port". Below the "Switches" section is a section titled "Business Groups" with a table view and a "Selected entry" view. The "Selected entry" view shows fields for "Switch:", "Name:", and an "Enabled" checkbox. An "Update Business Groups" button is located to the right of the "Business Groups" section.

**IMPORTANT:** The OSV Element Manager is enhanced to cover all the functionality offered by the OSV Assistant EM (synchronization per BG and secure connection). Therefore the OSV Assistant EM becomes obsolete and given the fact that it does not support Delta synchronization, it is strongly recommended that any configured OSV Assistant EM in DLS should be replaced with OSV EM(s). Please refer to Section 15.3, "How to replace OSV Assistant Manager with OSV Element Manager".

### Tenants synchronization

When activated, the tenants will be synchronized as well when **Update Business Groups** is executed.

### Display ID synchronization

Checkbox for activating the synchronization of the display ID.

### Switches

#### Switch

Switch name of the administrated switch. The entry is optional. When clicking **Update Business Groups**, it will be set by OpenScape Voice Assistant. The switch name is case-sensitive and must match to that one defined inside the OpenScape Voice Assistant.

#### **SIP Server Addr:**

IP address or hostname of the SIP server. This value is not supplied by OpenScape Voice, it must be configured manually.

#### **SIP Server Port:**

Port number of the SIP server. This value is not supplied by OpenScape Voice, hence it must be configured manually.

#### **SIP Registrar Addr:**

IP address or hostname of the SIP registrar. This value is not supplied by OpenScape Voice, hence it must be configured manually.

#### **SIP Registrar Port:**

Port number of the SIP registrar. This value is not supplied by OpenScape Voice, hence it must be configured manually.

### **Business Groups**

#### **Name**

Name of Business Group.

#### **Enabled**

Only enabled Business Groups will be synchronized.

#### **Update Business Groups**

Stations are sorted into business groups. Before you start a synchronization session, you must first find out which business groups are available and then activate the relevant check boxes. If **Tenants synchronization** is activated, the tenants will be synchronized as well. The refresh is performed in the background; the protocol file is only created at the end. It may take a few minutes to provide this file.

## Element Manager

### *Element Manager Configuration*

**NOTE:** Synchronization cannot be started while business groups are being refreshed. If you try, however, an appropriate advisory message appears.

### 11.1.3 "HiPath 4000 Assistant" Tab

**Call:** Main Menu > Element Manager > Element Manager Configuration > "HiPath 4000 Assistant" Tab.

**NOTE:** The synchronization of DLS Element manager data with those of HiPath 4000 Assistant (H4K Assistant) is possible only if the data within the H4K Assistant are synchronized. That is, the upload status found in H4K Assistant under **Configuration Management > Network > System > Basic Data** must be SYNCHRONOUS. Otherwise, the synchronization of the data within the H4K Assistant by means of AMO UPLOA must be started first by the H4K Assistant action "Upload".

**NOTE:** The settings of this tab are also valid for HiPath 4000 V6.

For more information on modifying the configuration, see Section 15.2, "Changing the Element Manager Configuration and Creating Jobs".

The screenshot displays the configuration interface for the HiPath 4000 Assistant. It features two main sections, each with a title bar indicating a warning: "Virtual Node IDs (HFA): E.164 Prefix and Node Access Code are not fetched from Element Manager!" and "Gateways (HFA): Gatekeeper ID, Security Time Window, H.235 Security Mode are not fetched from Element Manager!". Each section has a toolbar with radio buttons for "Table" and "Selected entry", a page indicator "1 / 1", and icons for search, delete, and refresh. The "Virtual Node IDs" section contains three input fields: "Virtual Node ID:", "E.164 Prefix:", and "Node Access Code:". The "Gateways" section contains six input fields: "Reg-Address:", "Gatekeeper ID:", "Security Time Window:", "H.235 Security Mode:", "Update:" (with a range selector), and "Remark:".

**Virtual Node IDs (HFA): E.164 Präfix and Node Access Code are not fetched from Element Manager!**

**IMPORTANT:** After the first synchronization you need to import information on Hi Path 4000 Assistant tab on Virtual Node IDs with valid data exported from HP4K regarding E164 prefix and Node Access code on each mentioned Virtual Node ID entry that came from first synchronization. Then, you need to re-synchronize and check the virtual Device entries that are generated.

#### Virtual Node ID

ID of the virtual node if a HiPath 4000 is distributed across several virtual nodes and different CO accesses are used within the node. With this solution, you can generate unique E.164 numbers for all nodes by creating different subscriber phone number/node number combinations. This value is supplied by HiPath 4000.

If entries are not available for either **Virtual Node ID** or **E.164 Prefix**, no HFA workpoints are transferred. If entries are not available for **Virtual Node ID**, but there is an entry for **E.164 Prefix**, all HFA workpoints as assigned this prefix.



#### E.164 Prefix

Prefix for the E.164 number. This value is not supplied by HiPath 4000 - it must be configured.

If the table is empty or a **virtual node ID** is entered without an **E.164 prefix**, no workpoints are created. If a line is present containing just one **E.164 prefix** and no **virtual node ID**, all HFA workpoints are assigned this prefix (default prefix). If there are other entries, however, with one **virtual node ID** and one **E.164 prefix** each, the corresponding prefix is used for each one. The default prefix is used for lines for which only the **virtual node ID** is set without an assigned **E.164 prefix**.

If the E.164 prefix is modified and there are workpoint entries for it, then all associated E.164 numbers are immediately adapted (the E.164 is composed of the extension and the E.164 prefix). Depending on the number or workpoints, this process can take a few minutes but runs in the background. Synchronization cannot be performed during this time. If you try, however, an appropriate error message appears.

#### Node Access Code

Node Access Code for numbering plan.

**Gateways (HFA): Gatekeeper ID, Security Time Window, H.235 Security Mode are not fetched from Element Manager!**

#### Reg-Address:

Host name or the gateway server address. This value is supplied by HiPath 4000.

#### Gatekeeper ID

Unique gatekeeper ID. This value is not supplied by HiPath 4000, it must be configured manually.

#### Security Time Window:

Indicates the maximum time difference permitted between the individual devices that should run synchronously in H.235. This value is not supplied by HiPath 4000, it must be configured manually.

#### H.235 Security Mode:

Voice encryption setting. This value is not supplied by HiPath 4000, it must be configured manually.

Possible options:

- **None**  
No voice encryption.

- **Reduced**  
One-way voice encryption (gatekeeper data not sent in encrypted form).
- **Full**  
Voice encryption both ways (workpoint and gatekeeper data both sent in encrypted form).

#### **Update**

Time of the last PBX or gateway server update.

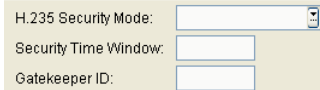
#### **Remark**

Field for general information.

#### 11.1.4 "HiPath 3000/5000" Tab

**Call:** Main Menu > Element Manager > Element Manager Configuration > "HiPath 3000/5000" Tab.

For more information on modifying the configuration, see Section 15.2, "Changing the Element Manager Configuration and Creating Jobs".



The screenshot shows a configuration interface with three fields: "H.235 Security Mode:" with a dropdown menu, "Security Time Window:" with a text input field, and "Gatekeeper ID:" with a text input field. The fields are arranged vertically on a light beige background.

##### H.235 Security Mode:

Voice encryption setting. This value is not supplied by HiPath 3000/5000, it must be configured manually.

Possible options:

- **None**  
No voice encryption.
- **Reduced**  
One-way voice encryption (gatekeeper data not sent in encrypted form).
- **Full**  
Voice encryption both ways (workpoint and gatekeeper data both sent in encrypted form).

##### Security Time Window:

Indicates the maximum time difference permitted between the individual devices that should all run synchronously in H.235. This value is not supplied by HiPath 3000/5000, it must be configured manually.

##### Gatekeeper ID:

Gatekeeper ID. This value is not supplied by HiPath 3000/5000, it must be configured manually.

## 11.1.5 "Protocol" Tab

**Call:** Main Menu > Element Manager > Element Manager Configuration > "Protocol" Tab

Maximum number of Protocols:

☐ Table ☒ Selected entry   1 / 1

Date:  -

Status:

Result:

### Maximum number of Protocols

Maximum number of protocol files.

Value range: 1 ... 20.

### Date

Time of synchronization with the Element Manager identified in the **Element Manager ID** column.

### Status

Identification status. This column may contain one of the following values:

- **OK**
- **Not OK**
- **Cancelled**
- **OK (partially failed)**

## Element Manager

### *Element Manager Configuration*

#### Result

Contents of the protocol file.

#### Possible Action Buttons

#### Logfile

Click this button to view the log file.

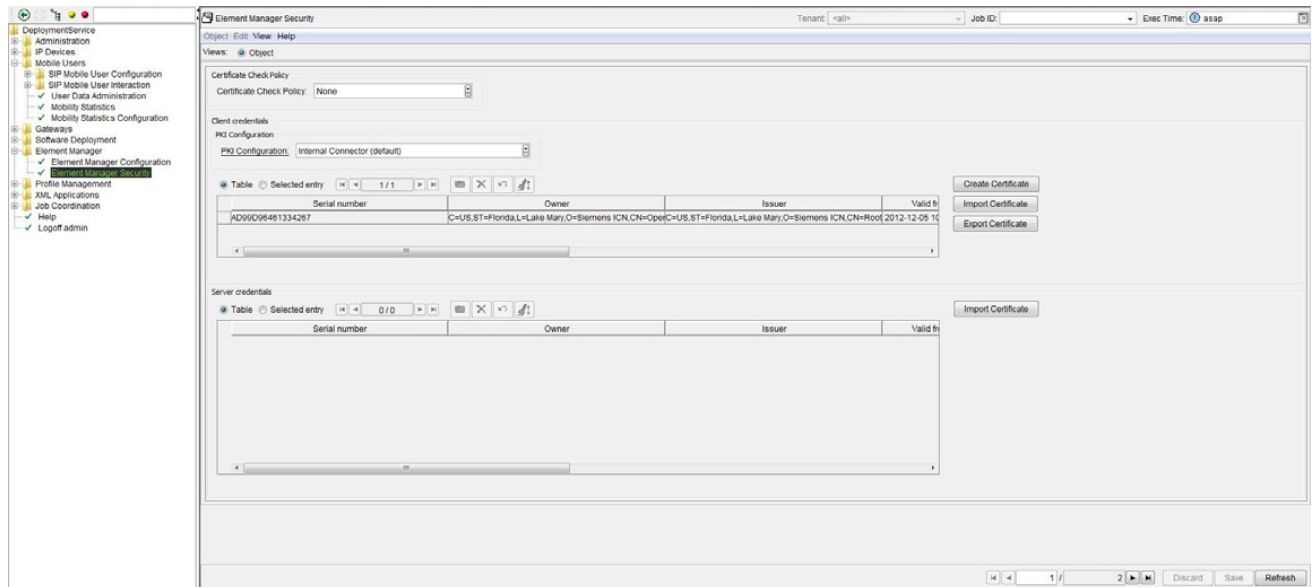
**NOTE:** In the case where no content is shown in the Protocol tab,you should clear the IE cache.  
To achieve this,proceed with the following instructions :

1. In the Windows Start Menu,open **Start > Settings > Control Panel**.
2. Double-click **Internet Options**.
3. Click on the **General Tab**.
4. Click the **Delete** button under the **Browsing History** section.
5. In the **Delete Browsing History** click **Delete** by ensuring that only **Temporary Internet files** and **Cookies** are checked.
6. Click **OK**,then **Close**.
7. Relaunch your browser.

## 11.2 Element Manager Security

**Call:** Main Menu > Element Manager > Element Manager Security.

This area is used to configure the 802.x Certificates that are employed for the Client & Server HTTPS/TLS connections with the Element Manager servers. The administrators are also able to configure the Certificate Check Policy.



### Certificate Check Policy

#### Certificate Check Policy

Possible values :

- **None** (default)- no authentication of the remote entity performed

The remote entity is not checked at all or any potential errors during the check are ignored

This is the default value, since both Trusted and Full require administrative steps anyway by configuring the associated (root) CA certificate(s).

**IMPORTANT:** Even if the Security Check Policy is set to "none", a valid client Certificate generated from the same RootCa should still be uploaded.

- **Partial** - the certificate (including certificate chain) provided by the remote entity is checked.

## Element Manager

### Element Manager Security

- a) the chain of trust for the digital signature provided by the remote entity ends up in one of the (root) CA-certificates, which are preconfigured for that interface on the product
- b) all certificates in the chain are not expired (i.e. current date/time is within the certificate's given validity period)
- c) no certificate in the chain is revoked<sup>1</sup>
- **Full** - the certificate (including certificate chain provided by the remote entity is checked against the same criteria as in Trusted mode, plus :
  - a) for correct end entity identity (according to settings in SubjectAlternativeName (SAN) and/or the common name (CN) in the Subject)
  - b) for correct use of all critical extensions (e.g. Basic constraints, Key Usage, Extended Key Usage). If an extension is marked critical and is not recognized, the certificate must be rejected.
  - c) for correct use of known extensions not marked as critical (e.g. Basic constraints, Key Usage, Extended Key Usage)

### Client Credentials

The Client certificate is the one that is sent to the H8K during SSL handshake. The Client certificate can be issued by the DLS PKI infrastructure or imported to the DLS( by default a SEN ROOT signed client certificate is installed with the installation of DLS.)

The Client Certificate should be trusted by the H8K (this means that H8K's truststore should be configured properly).

---

<sup>1</sup> Revocation checks are done using OCSP (Online Certificate Status Protocol) or based on CRL (Certificate Revocation Lists); Revocation checks are controlled via independent configuration items and apply to both Full and Trusted mode. See more details in the section below.

## 12 Profile Management

**Call:** Main Menu > Profile Management

This menu consists of the following submenus:

- Device Profile
- User Data Profile
- Template Overview



## **12.1 Device Profile**

**Call:** Main Menu > Profile Management > Device Profile

This area features the following components:

- General Data
- Possible Action Buttons
- "Templates" Tab
- "Supported Devices of IP Device" Tab
- "Tenants" Tab
- "Parent Profiles" Tab

## General Data

This part of the contents area is used for entering parameters in Search view to find a specific group of profiles, and for entering parameters which are valid for all tabs. The base data associated with the profiles found is displayed in the Object view.

The screenshot shows a form with the following fields and controls:

- Name:** A text input field.
- Description:** A text input field.
- ☒ **Default Profile**
- ☒ **Apply Profile to all Devices**
- Location:** A dropdown menu.
- Parent Location:** A dropdown menu.
- Device family:** A dropdown menu.

### Name:

Profile name.

### Description:

Brief description of the profile.

### Default Profile

If this check box is activated, the profile is also used during Plug & Play registration on new that have not entered this profile under **IP Devices > IP Device Management > IP Device Configuration > "Profile" Tab > Device Profile**. In order to use the default profile during Plug & Play, the following checkbox must be enabled :

- **Default Profile** checkbox under **Profile Management > Device Profile**

The profile can only be used if the location and device type for the profile and the IP device match - unless the switch **Apply Profile to all Devices** is active. This profile is also used when registering a IP device for which the **Apply Default Profiles at IP Device Registration** check box is activated (**IP Devices > IP Device Management > IP Device Configuration > "General" Tab**).

**IMPORTANT:** As of **CV323** onwards, devices/subscribers that do not belong to the Default Location (as seen under IP Device Configuration > "General" Tab > field: Location), will not be deployed by a Default Profile belonging to the Default Location.

Only devices that have not met the criteria of other specific Locations and can be considered as left-out from exclusive Location conditions will get the Default Location assignment. Only then and only for those "left-out" devices (in the context of Location definition) can receive a Default Profile that has been configured to point to a Default Location.

This negates to the old behavior (**CV322** backwards), where a Default Profile pointing to the Default Location was intended to be deployable to all devices irrespectively of the exclusive Location those devices could have been assigned.

## Profile Management

### *Device Profile*

To use Location Service IP Infrastructure, a default device profile has to be defined and assigned to the IP Infrastructure location.

### Apply Profile to all Devices

If this check box is activated, the current default is assigned to all devices that are not entered in the **Supported Devices** list.

### Location

Location where the selected profile should apply as the default profile.

### Parent Location

If available, also the templates of the parent location's default profiles are displayed.

### Device Family

The profile is valid for the device family specified here.

Possible options:

- **IP Phone**
- **IP Client**
- **IP Gateway**

### Possible Action Buttons

### Search

Searches for Device Profiles that meet the search criteria.

### Clear Window

Deletes the content of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

**New**

Creates a new Device Profile.

**Save**

Saves any unsaved changes.

**Discard**

Discards any unsaved changes.

**Export Profile**

Export the selected Device Profiles to a file in zip format.

**Import Profile**

Import a Device Profile from a file in zip format.

## Profile Management

### Device Profile

#### 12.1.1 "Templates" Tab

**Call:** Main Menu > Profile Management > Device Profile > "Templates" Tab



You can define an appropriate template here. You can add another template in the **New** and **Object** view with the  button and delete it with the  button.



Table Selected entry 1 / 1 Multiple Add

Template Name:

#### Template Name



Name of the selected template.

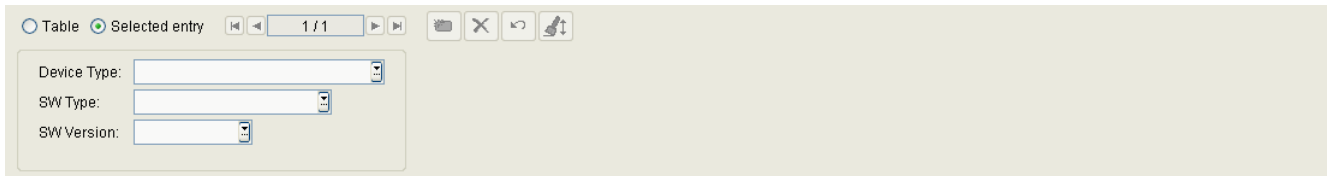
#### Multiple Add

Adds multiple templates to one Device Profile.

## 12.1.2 "Supported Devices of IP Device" Tab

**Call:** Main Menu > Profile Management > Device Profile > "Supported Devices of IP Device" Tab

You can define the IP Devices that should be supported by the profile here. You can add another device in the **New** and **Object** view with the  button and delete it with the  button.



### Device Type

IP Device type.

All IP Devices supported by DLS can be found in Section 3.4, "Area of Application".

Examples: **optiPoint 410 standard**, **optiClient 130**.

### SW Type:

Type of software for the device.

Examples: **Unify HFA**, **Unify SIP**.

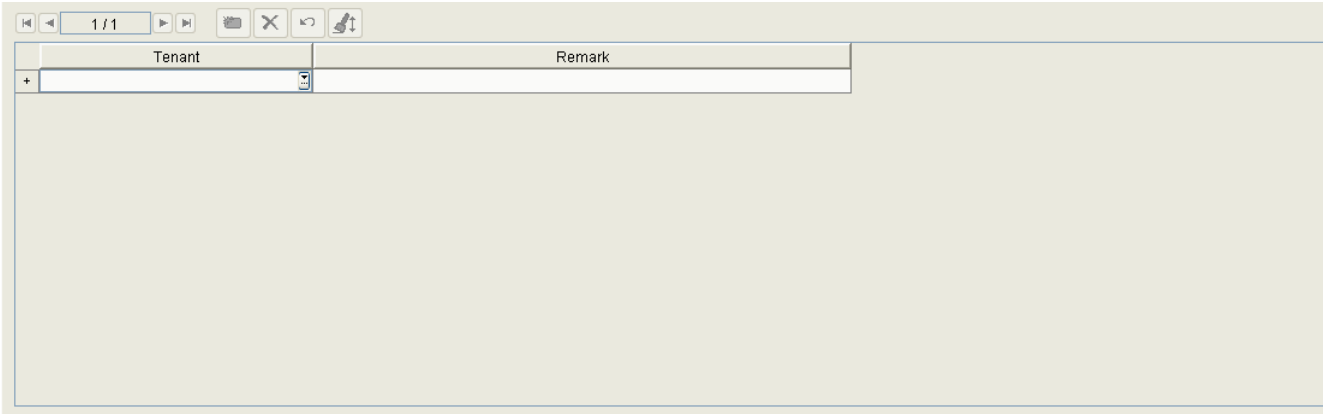
### SW Version

Example for optiPoint and optiClient: **5.0.12**.

### 12.1.3 "Tenants" Tab

**Call:** Main Menu > Profile Management > Device Profile > "Tenants" Tab

**NOTE:** This tab is available only if the Multi-Tenancy function of the DLS is installed. See also Section 16.17.1, "Install/Deinstall Multi-Tenancy".



Tenant	Remark

**Tenant**

Name of the tenant.

**Remark**

Information on the tenant.

## 12.1.4 "Parent Profiles" Tab

**Call:** Main Menu > Profile Management > Device Profile > "Parent Profiles" Tab

### Parent Profiles

Name of parent location's profiles.

### Multiple Add

Add multiple templates to one profile.



## **12.2 User Data Profile**

**Call:** Main Menu > Profile Management > User Data Profile

This area features the following components:

- General Data
- Possible Action Buttons
- "Templates" Tab
- "Tenants" Tab

## General Data

This part of the contents area is used for entering parameters in Search view to find a specific group of profiles, and for entering a description. The base data associated with the profiles found is displayed in the Object view.

Name:	<input type="text"/>
Description:	<input type="text"/>

### Name:

Profile name. The defined profiles may be either used as Mobile User Profile in **Mobile Users > SIP Mobile User Interaction > SIP Mobile User > „Mobile / Basic User" Tab** or as Basic Profile in **IP Devices > IP Device Management > IP Device Configuration > "Profile" Tab**.

### Description:

Brief description of the profile.

## Possible Action Buttons

The range of action buttons available depends on the selected view and DLS status.

### Search

Searches for all User Data Profiles that correspond to the search criteria.

### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### New

Creates a new User Data Profile.

### Save

Saves any unsaved changes.

## **Profile Management**

### *User Data Profile*

#### **Discard**

Discards any unsaved changes.

#### **Export Profile**

Export selected User Data Profiles into a zip file.

#### **Import Profile**

Import User Data Profiles from a zip file.

## 12.2.1 "Templates" Tab

**Call:** Main Menu > Profile Management > User Data Profile > "Templates" Tab



You can define one or more templates for the user data profile here. You can add another template in the **New** and **Object** view with the  button and delete it with the  button.



Table Selected entry 1 / 1 Multiple Add

Template Name:

### Template Name

Name of the template.

### Multiple Add

Adds multiple templates to one User Data Profile.

## 12.2.2 "Tenants" Tab

**Call:** Main Menu > Profile Management > User Data Profile > "Tenants" Tab

**NOTE:** This tab is available only if the DLS multi tenancy function is installed. See chapter Section 16.17.1, "Install/Deinstall Multi-Tenancy".



Tenant	Remark

**Tenant**

Name of the tenant.

**Remark**

Information on the tenant.

## 12.3 Template Overview

**Call:** Main Menu > Profile Management > Template Overview

Use this area to

- search for existing templates,
- change the name and the description of templates,
- delete templates, and
- export all templates in XML format into a .zip file or import them from a .zip file. Single templates can be imported from a .zip file as well.

Changes to template attributes and attribute values are not possible here. For more information, see Section 15.5, "Editing Templates".

**IMPORTANT:** If data changes are made in configuration forms that have been generated using templates, these changes are not automatically applied to the templates.

These changes must be manually saved to the template (Section 15.5, "Editing Templates").

This area features the following components:

- General Data
- Possible Action Buttons
- "Template data" Tab
- "Profiles" Tab
- "Tenants" Tab

For information on general interface operation, see Section 5.4.2, "Work Area".

## Profile Management

### Template Overview

#### General Data

This part of the content area is used for entering parameters in **Search** view to find a specific group of templates, and for importing and exporting template data. The base data associated with the templates found is displayed in the **Object** view (no changes possible).

Name:	<input type="text"/>
Description:	<input type="text"/>
Object:	<input type="text"/>
Type:	<input type="text"/>

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

#### Name:

Name of the template.

#### Description:

Description of the template.

#### Object:

Template object type.

Example: **IP Phone SNMP Settings**

#### Type:

Specifies the type of parameters stored in the template.

Possible entries:

- **IP client**
- **IP phone**
- **User Data**

## **Possible Action Buttons**

The range of action buttons available depends on the selected view and DLS status.

### **Search**

Searches for all template that correspond to the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### **Save**

Saves any unsaved changes.

### **Discard**

Discards any unsaved changes.

### **Delete**

Deletes one or more templates (multiple selections possible in table view).

### **Refresh**

Refreshes the content of the relevant page.

### **Import Template**

Import templates in XML format from a zip file. Single templates can be imported from a .zip file as well. They are selected by name in a popup window.

**NOTE:** Existing templates with the same name are overwritten during an import.



## Profile Management

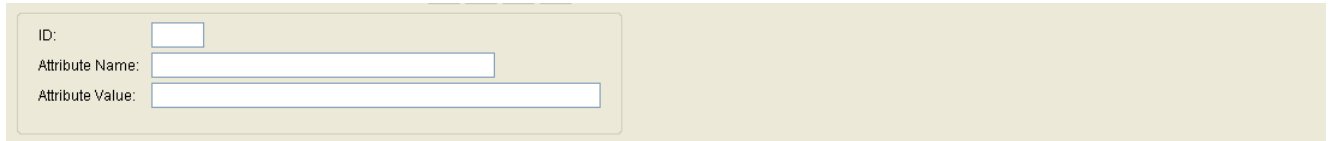
### *Template Overview*

#### Export Template

Export the selected templates in XML format to a .zip file. Multiple template selection is possible in table view. A pop-up window prompts you to enter the file path.

## 12.3.1 "Template data" Tab

**Call:** Main Menu > Profile Management > Template Overview > "Template data" Tab



The screenshot shows a light beige background with a rounded rectangular box on the left containing three input fields. The first field is labeled 'ID:' and is a small square. The second field is labeled 'Attribute Name:' and is a medium-length rectangle. The third field is labeled 'Attribute Value:' and is a long rectangle. The rest of the background is a solid light beige color.

### ID

ID for improved sorting (for example, for key assignments).

### Attribute Name

Name of the attribute defined in the template.

### Attribute Value

Value of the relevant attribute name.

12.3.2 "Profiles" Tab

Call: Main Menu > Profile Management > Template Overview > "Profiles" Tab

Device Profiles

Table

Selected entry

1 / 1

Profile:

Description:

Location:

User Profiles

Table

Selected entry

1 / 1

Profile:

Description:

Device Profiles

Profile

Name of Device Profile.

Description

Description of Device Profile.

Location

Location of Device Profile.

User Data Profiles

Profile

Name of User Data Profile.

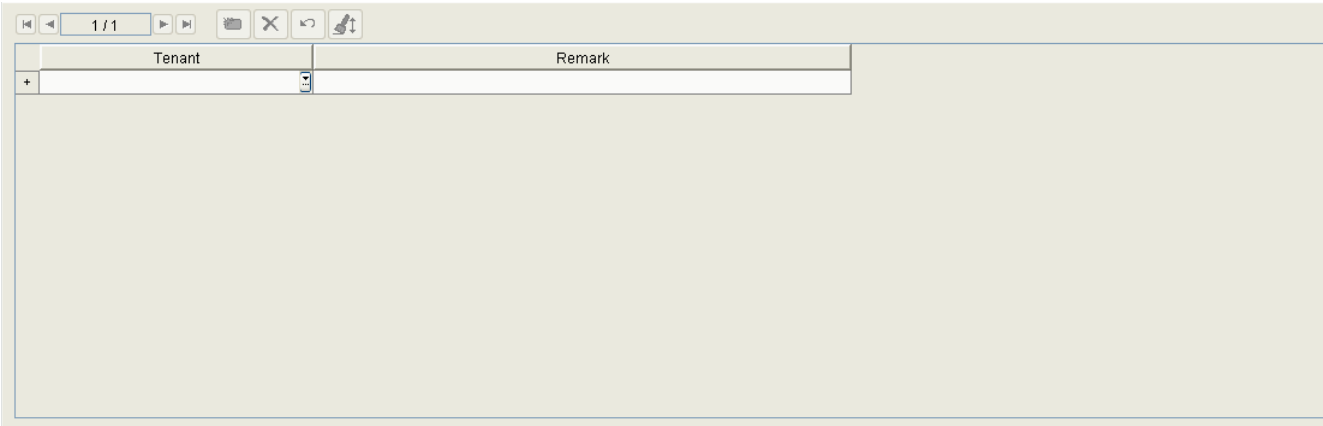
**Description**

Description of User Data Profile.

### 12.3.3 "Tenants" Tab

**Call:** Main Menu > Profile Management > Template Overview > "Tenants" Tab

**NOTE:** This tab is available only if the Multi-Tenancy function of the DLS is installed. See also Section 16.17.1, "Install/Deinstall Multi-Tenancy".



Tenant	Remark
+	

**Tenant**

Name of the tenant.

**Remark**

Information on the tenant.

## 13 XML Applications

**Call:** Main Menu > XML Applications

The DLS can be used not only for installing and configuring XML applications, but also as application server itself.

**NOTE:** XML applications are available only for OpenStage 60 and OpenStage80 with firmware versions SIP V1, SIP V2, and HFA V2.

This menu item consists of the following areas:

- MakeCall
- NewsService
- NewsService Archive

General Data

This part of the contents area is identical for the applications **MakeCall** and **NewsService**. It is used for entering parameters in **Search** view to find a specific group of IP phones for configuring and executing XML applications. If **Object** view is selected, the base data associated with the IP phones found is displayed.

IP Address:	<input type="text"/>	SW Version:	<input type="text"/>
Device ID:	<input type="text"/>	SW Type:	<input type="text"/>
Device Type:	<input type="text"/>	Reg-Address:	<input type="text"/>
E.164:	<input type="text"/>	Last Registration:	<input type="text"/> - <input type="text"/>
Basic E.164:	<input type="text"/>		
Remarks:	<input type="text"/>		

IP Address:

IP address of the IP phone. For OpenStage, an IPv4 or IPv6 address is displayed here.

Example: **192.117.1.193**

The value is read-only if it was dynamically assigned with DHCP.

Device ID:

ID for unique identification of the IP device. In IP phones, this is generally the MAC address.

Example: **00:0E:A6:85:71:80**

Device Type:

IP phone device type. The icon  indicates whether this is a virtual device.

All IP phone types supported by DLS can be found in Section 3.4, "IP Devices / versions supported".

Example: **OpenStage 60**

E.164:

Complete E.164 subscriber number (Basic Profile or Mobile Profile).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

Basic E.164:

Complete E.164 phone number (Mobility Phone).

Example: **498972212345**

For information on the meaning of the E.164 station number in relation to mobility, see Section 3.8.3, "Mobility ID".

#### SW Version:

Software version of the IP phone.

Example: **5.0.12**

Information on the difference between the software and license version can be found in Section 15.7, "Distribution of Workpoint Software".

#### SW Type:

IP phone software type.

Examples: **Unify HFA**, **Unify SIP**.

#### Reg-Address

IP address or DNS name of the HFA or SIP server at which the device is registered.

#### Last Registration:

Time of last IP phone registration.

For information on selecting a time segment for a search, see Section 5.4.2.4, "Time field with calendar button".

#### Remarks:

Fields for general information.



## 13.1 MakeCall

**Call:** Main Menu > XML Applications > MakeCall

This mask enables the start (=push) of the XML application 'MakeCall'. This application initiates calls from selected end devices to a target end device. After this, it is possible to check in the call log whether all calls have been executed. This check makes sense after a software update, for instance. The application can only be started from the DLS only, not from the end devices.

To start the function, press the **MakeCall** action button. Then, a dialog window will request the target call number.

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab

## Possible Action Buttons

The range of action buttons available depends on the selected view, the selected XML application, and the DLS status.

### Search

Searches for all registered workpoints that match the search criteria.

### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### MakeCall

Pushes the XML application 'MakeCall'. A subsequent dialog window asks the **MakeCall Destinationnumber**.

### Send Info Alert

Pushes the XML Application 'NewsService'. A subsequent dialog window asks for the **Header** and **Text** of the message.

### Send Text-/Picture-File

Pushes the XML Application 'NewsService'. A subsequent dialog window asks for the name of the **Text-/Picture-File**.

### Delete

Deletes the saved news.

### Refresh

Refreshes the window contents from the database.

## XML Applications

### *MakeCall*

#### 13.1.1 "Info" Tab

**Call:** Main Menu > XML Applications > MakeCall > "Info" Tab

MakeCall Destinationnumber:

#### **MakeCall Destinationnumber**

Displays the destination number for the last automatic call initiated by the XML Application 'MakeCall'.

## 13.2 NewsService

**Call:** Main Menu > XML Applications > NewsService

This screen enables the start (=push) of the XML application 'NewsService'. This application sends messages to selected end devices. These can be text or picture files. There is a distinction between an info alert message and a file message. On an info alert, the message is displayed on the end device along with an 'INFO' symbol, until it is confirmed by a button press. File messages are displayed on the end device within the application tab 'NewsService'.

The messages are created and sent by means of the DLS. Stored messages can be read again at the end device. To send a message, press **Send Info Alert** or **Send Text-/Picture File**. Then, a dialog window will ask for the **Header** and **Text** of the message, or for the name of the **Text-/Picture-File**.

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab

## 13.2.1 "Info" Tab

**Call:** Main Menu > XML Applications > NewsService > "Info" Tab



Info Alert Header:

Info Alert Text:

Text-/Picture-File:

### Info Alert Header

Header of the last Info Alert sent to IP Device by means of XML Application 'NewsService'.

### Info Alert Text

Text of the last Info Alert sent to IP Device by means of XML Application 'NewsService'.

### Text-/Picture File

Name of last Text- (.txt) or Picture-File (.jpg, .bmp, .gif, .png) sent to IP Device by means of XML Application 'NewsService'.

## **13.3 NewsService Archive**

**Call:** Main Menu > XML Applications > NewsService Archive

This area features the following components:

- General Data
- Possible Action Buttons
- "Info" Tab
- "IP Devices" Tab

## General Data

NewsService ID:	<input type="text"/>
NewsService Type:	<input type="text"/>
Account:	<input type="text"/>
Execution Time:	<input type="text"/> - <input type="text"/>

### NewsService ID

Continuous numbering

### NewsServiceType

Type of message.

Possible Values:

- **Info Alert**
- **Picture File**
- **Text File**

### Account

Account name of the user who issued the message.

### Execution Time

Execution time of the message sending job.

### 13.3.1 "Info" Tab

**Call:** Main Menu > XML Applications > NewsService Archive > "Info" Tab

Info Alert Header:	<input type="text"/>
Info Alert Text:	<input type="text"/>
Text-File:	<input type="text"/>
Picture-File:	<input type="text"/>

#### Info Alert Header

Header of info alert sent to IP Device.

#### Info Alert Text

Text of info alert sent to IP Device.

#### Text File

Name of text file sent to IP Device.

#### Picture File

Name of picture file sent to IP Device.



### 13.3.2 "IP Devices" Tab

**Call:** Main Menu > XML Applications > NewsService Archive > "IP Devices" Tab

Table

Selected entry

1 / 1

IP Address:

E.164:

**IP Address**

IP Address of IP Device the news is sent to.

**E.164**

Complete E.164 subscriber number of IP Device the news is sent to.

## 14 Job Coordination

**Call:** Main Menu > Job Coordination

This menu consists of the following submenus:

- Job Control
- Daily Status
- Job Configuration

More complex deployment tasks are performed in the **Job Coordination** area. This area is used for configuring, performing, and logging deployment jobs (see also the operating sequence in Section 15.8).

## **14.1 Job Control**

**Call:** Main Menu > Job Coordination > Job Control

This area features the following components:

- General Data
- Possible Action Buttons
- "Basic Data" Tab
- "Deployment Data" Tab
- "Configuration Data" Tab
- "XML Application Data" Tab

This function lets you view a large volume of information on the individual jobs and discard, delete, or reactivate existing jobs. New jobs are not created here but rather by defining the activities to be performed in the job (for an example, see Section 15.8, "Using Job Coordination").

For information on general interface operation, see Section 5.4.2, "Work Area".

## General Data

This part of the contents area is used for entering parameters in Search view to find a specific group of jobs. The base data associated with the jobs found is displayed in the Object view.

IP Address:	<input type="text"/>	SW Version:	<input type="text"/>
Device ID:	<input type="text"/>	SW Type:	<input type="text"/>
Device Type:	<input type="text"/>	Action Type:	<input type="text"/>
E.164:	<input type="text"/>	Action Status:	<input type="text"/>
Reg-Address:	<input type="text"/>	Location:	<input type="text"/>
Remarks:	<input type="text"/>		

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

### IP Address:

IP address of a IP Device or an address range.

In the case of jobs for IP ranges, **000.000.000.000** is displayed here in the **Search** view.

Format: **000.000.000.000**, 000 = value between 000 and 255.

### Device ID:

Device ID of an IP Device or address range.

In the case of jobs for device ID areas, **00:00:00:00:00:00** is displayed here in the **Search** view.

Format: **XX:XX:XX:XX:XX:XX**, XX = Hex value between 00 and FF.

### Device Type:

IP Device type.

In the case of jobs for different device types, nothing is displayed here in the **Search** view.

Format: Up to 30 characters.

All IP Devices supported by DLS can be found in Section 3.4, "IP Devices / versions supported".

Example: **optiPoint 410 standard**, **optiClient 130**

### E.164:

Complete phone number of an IP Device.

In the case of jobs for different phone numbers, nothing is displayed here in the **Search** view.

## Job Coordination

### *Job Control*

Format: Up to 15 characters.

See also Section 17.1, "E.164".

### Reg-Address

IP address or host name of the registry server where the IP Device is registered.

### SW Version:

Software version of an IP device.

In the case of jobs for different version numbers, nothing is displayed here in the **Search** view.

Example for optiPoint and optiClient: **5.0.12**.

### SW Type:

Type of Software to be downloaded.

In the case of jobs for different software types, nothing is displayed here in the **Search** view.

Examples: **Unify HFA**, **Unify SIP**.

### Action Type:

Possible options:

- **IP Device Configuration**
- **IP Device Notification**
- **Mobile User Configuration**
- **Mobile User Migration**
- **Software Deployment**
- **Music on Hold File Deployment**
- **LDAP Template File Deployment**
- **INCA Firmware Deployment**
- **Java Midlet Deployment**
- **Logo File Deployment**
- **Application and Systemtone Deployment**

- **System and Ringtone Deployment**
- **APM Firmware Deployment**
- **Netboot Deployment**
- **IP Device Notification**
- **Screensaver Deployment**
- **File Deployment**
- **Scan IP Devices**
- **Read IP Device Data**
- **Read specific IP Device Data**
- **Reset IP Device**
- **Restore Factory Setting**
- **Gateway Configuration**
- **Read Gateway Data**
- **Gateway Probe**
- **Mobile User Logon**
- **Mobile User Logoff**
- **Push XML Application**
- **File Upload**

#### Action Status:

Possible action status:

- **expired**  
A timeout occurred when executing the deployment job because the time entered for **Job Configuration** was exceeded, for example, by an IP Device that was unavailable for an extended period of time. The job can be cancelled and deleted with the result that no more actions are performed for the job.
- **cancelled**  
The deployment job was cancelled. In the case of cancelled jobs, only the time of execution is modified (to re-start the job at a future time). The job can be deleted.
- **active**  
The deployment job was entered in the job table but has not started running because the execution time, for example, has not yet been reached. The job can be cancelled and deleted with the result that no more actions are performed for the job.

## Job Coordination

### Job Control




- **confirmed**  
The deployment job was accepted by the IP Device and waits until the status of the IP Device permits processing. The job can be cancelled and deleted with the result that the job execution is no longer interrupted.
- **failed**  
The deployment job was started but could not be executed. The job can be cancelled and deleted.
- **finished**  
The deployment job was executed correctly. The job can be cancelled and deleted.
- **running**  
The deployment job is currently being executed. The job can be cancelled and deleted with the result that the job execution is no longer interrupted.
- **waiting**  
The deployment job is queued, it was entered in the job table but has not started running because the IP Device is busy. The job status can turn to **active** if the amount of time that the job has been in **waiting** status exceeds a configurable upper limit.

**NOTE:** The **waiting** status option is only supported in Openstage V3R3 phones.



### Status Indicator for Jobs

The status indicator for a job can be reset over a pop-up menu by clicking **Reset Status** (see Section 5.4.1, "Main Menu").

Left hand indicator ball:

-  Job is not running.
-  Job is waiting.
-  Job is running.

Right hand indicator ball:

-  Job has been executed without errors.
-  Job has been cancelled with errors.

### Location:

Current location of the IP Device.

### Remarks:

Fields for general information, remarks (e.g. comments) for each job.

These fields are editable for all job types and all job statuses.

**NOTE:** Editable fields under Job Control that reflect values carried over from an initial action (e.g. a Remark note over a subscriber), are considered editable only in the context of Job parameters and will not reflect back the changes to the initial record from which the job itself has been originated.



## Job Coordination

### *Job Control*

## Possible Action Buttons

### Search

Searches for all deployment jobs that correspond to the search criteria.

### Clear Window

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

### Save

Saves changes to the existing deployment job. The Save option is only available after a change to an interrupted job.

### Discard

Discards changes to the existing deployment job. The Discard option is only available after a change to an interrupted job.

### Delete

Deletes the deployment job displayed in the **Object** view.

### Cancel Job

Interrupts the deployment job displayed in the **Object** view.

## 14.1.1 "Basic Data" Tab

**Call:** Main Menu > Job Coordination > Job Control > "Basic Data" Tab

Activation Time:	<input type="text"/> - <input type="text"/>	Job ID:	<input type="text"/>
Execution Time:	<input type="text"/> - <input type="text"/>	Action Number:	<input type="text"/>
Planned Execution Time:	<input type="text"/> - <input type="text"/>	Administrator:	<input type="text"/>
End Time:	<input type="text"/> - <input type="text"/>	IP Scanner:	<input type="text"/>
Connection Attempts:	<input type="text"/>		
Execution Attempts:	<input type="text"/>	Current Waiting time(min):	<input type="text"/>
Deployment Attempts:	<input type="text"/>	Waiting Status since:	<input type="text"/> - <input type="text"/>
Failed Action:	<input type="text"/>		
Status Info:	<input type="text"/>		

<input checked="" type="checkbox"/> Execution delayed because of Mobile User logon	<input checked="" type="checkbox"/> DCMP active	<input checked="" type="checkbox"/> Contact Me Notify active
Mobile User:	Poll interval:	Contact Me Notify Server Name:
<input type="text"/>	<input type="text"/>	<input type="text"/>

### Activation Time:

Time for the activation of the deployment job (see Section 5.4.2.4, "Time field with calendar button").

### Execution Time:

Time for the execution of the deployment job (see Section 5.4.2.4, "Time field with calendar button").

**NOTE:** Interrupted deployment jobs can be reactivated by entering a future point in time.  
For all other job statuses, the time displayed here indicates the time of execution, irrespective of whether it is in the past or the future.

### Planned Execution Time:

Time when the deployment job will be started.

**NOTE:** For devices running in different timezones, device local time +/- timeshift related to the timezone is displayed.

### End Time:

Time for ending the deployment job (see Section 5.4.2.4, "Time field with calendar button").

**NOTE:** For deployment jobs that were already executed, the time at which these job were ended is displayed here.

## Job Coordination

### Job Control

#### Connection Attempts:

Number of retries needed to perform the job (**0** means not yet executed).

#### Execution Attempts:

Number of execution retries needed to perform the job (**0** means not yet executed).

#### Deploy Attempts:

Number of deployment retries needed to perform the job (**0** means not yet executed, only for deployment jobs).

#### Failed Action:

In the job table, this is the number of the action that could not be successfully completed and caused DLS to automatically generate and execute a **Read IP Device Data**.

The field only contains one value for jobs of the type **Read IP Device Data** generated by the DLS. The administrator is shown as **@DLS** for these jobs.

#### Status Info:

Messages can indicate the successful completion of a deployment job as well as to a fault. The following status messages are output (sorted in alphabetical order based on the **Status Info**):

Status Info	Description	Trigger
action type not implemented <sup>1</sup>	-	neutral
equal item names	Identical entry names.	IP phone
failed	Failed.	IP phone
file-not-found	Error, for example, when opening stored templates or when opening the deployment file.	IP client
ignored - dial plan error	Error in the numbering plan.	IP phone
image path not contactable	Removed image path is not available.	IP client
initiated	The job was initiated but not yet finished.	neutral
internal ERROR <sup>1</sup>	-	neutral
invalid data	Invalid data.	IP phone
invalid format	Invalid format.	IP phone
invalid function key	Invalid function key.	IP phone
invalid Index	Invalid Index.	IP phone
invalid item name	Invalid item name.	IP phone

Status Info	Description	Trigger
local deployment path not specified	Item "dls-deployment-local-path" is not set.	IP client
local deployment path not writable	Local deployment path not writable.	IP client
missing item content	Missing item content.	IP phone
missing item name	Missing item name.	IP phone
nonce not valid <sup>1</sup>	-	neutral
not a Feature Toggle key	Not a Feature Toggle key.	IP phone
not a line key	Not a line key.	IP phone
not a repertory dialing key	Not a Repertory Dialing key.	IP phone
not a selected dialing key	Not a selected dialing key.	IP phone
not implemented	Not implemented.	IP phone
not readable	Not readable.	IP phone
not supported	Not supported.	IP phone
OK	Deployment was successful.	neutral
read only	Read-only.	IP phone
server-not-contactable	The remote server is not available.	IP client
Self Labeling Key Sidecar not available	The optiPoint Self Labeling Key Module is not available.	IP phone
unknown item	Unknown item.	IP phone
not a DSS key	Not a DSS key.	IP phone

<sup>1</sup> For internal debugging only; Not relevant for the DLS user.

### Job ID:

ID of the jobs. The Job ID is the name that was entered when the job was created (see Section 5.4.2.1, "Toolbar"). If a name was not entered, the action number is used for the job ID.

The job ID for jobs that distribute and activate a PSS (Pre-Shared Secret) are prefixed with PSS.

### Action Number:

Action number of the job. This sequential number is automatically generated for every action in every deployment job (one for each IP address edited).

### Administrator:

User names for this job. The name corresponds to the user who defined the action. Enter **@DLS** as the name for automatically generated actions.

## Job Coordination

### *Job Control*

**NOTE:** This field corresponds to which DLS account has performed an action for which a job has been created inside DLS's Job Control list.

**NOTE:** The Administration user **@DBUpdateVirtualDevices** is an alias for the admin user used for the Element Manager related scheduled tasks.

### IP Scanner:

IP scanner for this job. The name is set when the IP scanner is configured, see Section 7.4.6, "Scan IP Devices".

### Execution delayed because of Mobile User logon

The job is delayed because of Mobile User logon.

### Mobile User:

Mobile User currently logged on.

### DCMP active

If this check box is activated, the device periodically checks for DLS jobs on the DCMP (DLS Contact-Me Proxy).

### Poll Interval

Interval (in minutes) between two polls from the device to the DCMP.

### Contact Me Notify active

If this check box is enabled, the Contact Me Notify functionality is activated.

### Contact Me Notify Server Name

The name of the unique Contact Me Notify Server (32 characters).

## 14.1.2 "Deployment Data" Tab

**Call:** Main Menu > Job Coordination > Job Control > "Deployment Data" Tab

The software deployment data is displayed here for jobs with the following action types.

- **INCA Firmware Deployment**
- **Java Midlet Deployment**
- **LDAP Template File Deployment**
- **Logo File Deployment**
- **System and Ringtone Deployment**
- **Software Deployment**
- **Music on Hold File Deployment**

Data for a job may be available in either the "Deployment Data" Tab or the "Configuration Data" Tab.

Repository:	<input type="text"/>		
File Path:	<input type="text"/>		
File Name:	<input type="text"/>		
File Type:	<input type="text"/>	Port:	<input type="text"/>
Username:	<input type="text"/>	SW Type:	<input type="text"/>
Account:	<input type="text"/>	SW Version:	<input type="text"/>
Password:	<input type="text"/>	License Feature ID:	<input type="text"/>
Priority:	<input type="text"/>	License Version:	<input type="text"/>

### Repository:

IP address or host name of the FTP server (for IP phones) or network computer (for IP clients) from which the software is downloaded.

### File Path:

Directory on the FTP server (for IP phones) or on the network computer (for IP clients) from which the software is downloaded. In the case of IP phone software, the path begins with the configured "virtual" root directory. For IP client software, it begins with the shared network path.

### File Name:

The file name of the software downloaded.

## Job Coordination

### *Job Control*

#### File Type:

Deployment type of the file downloaded.

Examples:

**INCA** (INCA firmware deployment)

**MIDLET** (Java midlet deployment)

**LDAP** (LDAP template file deployment)

**LOGO** (Logo file deployment)

**RINGTONE** (System and ringtone deployment)

**APP** (Software deployment)

**MOH** (Hold music file deployment)

#### Username:

Username ("login") of the FTP access to the server from which the software is downloaded.

#### Account

Not currently used in DLS.

#### Password:

Password of the FTP access to the server from which the software is downloaded.

#### Priority:

Signals whether deployment should pause when a IP Device is busy and wait until it frees up (**normal**) or if deployment should be performed at the set time irrespective of the IP Device status (**high**).

#### Port:

Port used for the FTP server from which the software is downloaded. Permanently set to port 21.

#### SW Type:

Software type of the software that is downloaded (for software deployment).

Examples: **Unify HFA**, **Unify SIP**.

**SW Version:**

Software version of the IP Device.

Example for optiPoint: **5.0.12**.

**License Feature ID:**

If the downloaded software requires a license, then this field contains the product ID (HLM terminology) used for registering the software in HiPath License Management (for software deployment).

Example for optiPoint 410 standard HFA: **OPTI410STDHFA**.

**License Version:**

If the downloaded software requires a license, then this field contains the product version (HLM terminology) used for registering the software in HiPath License Management (for software deployment).

Example for optiPoint only: **6.0.0**



### 14.1.3 "Configuration Data" Tab

**Call:** Main Menu > Job Coordination > Job Control > "Configuration Data" Tab

Configuration data for jobs with the **IP Device Configuration** action type is displayed here.

All configuration data for this job is displayed in tabular form.

Data for a job may be available in either the "Deployment Data" Tab or the "Configuration Data" Tab.

The screenshot shows a web interface for the "Configuration Data" tab. At the top, there are navigation buttons: "Table" (unselected) and "Selected entry" (selected). Below these are navigation icons and a "1 / 1" indicator. The main content area is a light beige box containing a form for the selected entry. The form has the following fields: "Parameter:" with a text input; "Index:" with a text input; "Old Setting:" with a text input; "New Setting:" with a text input; a checked checkbox labeled "User Data"; "Finished:" with a text input; and "Status Info:" with a text input.

#### Parameter

Name of the parameter used to perform modifications in this job.

#### Index

Index within the parameter you want to change (if available).  
If a IP Device parameter can accept more values (value list), an index is created for each value. The field remains empty if there is only one value.

#### Old Setting

Value of the parameter before the change. Only wildcards are displayed here if the parameter is a password.

#### New Setting

Value of the parameter after the change. Only wildcards are displayed here if the parameter is a password.

#### User Data

If this check box is active, user-specific data was sent to the IP device instead of device-specific data (display only).

**Finished**

Indicates if the parameter has already been changed.

**Status Info**

Information on the job status.

## 14.1.4 "XML Application Data" Tab

**Call:** Main Menu > Job Coordination > Job Control > "XML Application Data" Tab

XML Application Type:	<input type="text"/>
MakeCall Destinationnumber:	<input type="text"/>
NewsService Info Alert Header:	<input type="text"/>
NewsService Info Alert Text:	<input type="text"/>
NewsService Text-/Picture-File:	<input type="text"/>

### XML Application Type:

Type of XML application that has been started with this job.

Possible Options:

- **MakeCall**
- **NewsService File Display**
- **NewsService Info Alert**

### MakeCall Destinationnumber:

Dialing number of the end device to which an automatic call has been initiated by the XML application 'MakeCall'.

### NewsService Info Alert Header:

Header of the latest info alert message that has been sent to the end device by means of the XML application 'NewsService'.

### NewsService Info Alert Text:

Text of the latest info alert message that has been sent to the end device by means of the XML application 'NewsService'.

### NewsService Text-/Picture File:

File name of the latest text (.txt) or picture file (.jpg, .bmp, .gif, .png) that has been sent to the end device by means of the XML application 'NewService'.

## 14.2 Daily Status

**Call:** Main Menu > Job Coordination > Daily Status

This area features the following components:

- General Data
- Possible Action Buttons
- "Status Information" Tab

This function gives you a clear display of all jobs in a table. Additionally, you may search for Job Status or Job ID. In addition to the job found according to the requested Job Status, all jobs belonging to the same day will be displayed. In object view, you can switch between entire table view or individual table entries. The table can be sorted by Job ID, Job Status, Activation Time, or End Time.



For information on general interface operation, see Section 5.4.2, "Work Area".

## Job Coordination

### Daily Status

#### General Data

This part of the contents area is used for entering parameters in Search view to find a specific group of jobs. The data associated with the jobs found is displayed in the Object view.

Activation Date:	<input type="text"/>	-	<input type="text"/>	
Last Update:	<input type="text"/>	-	<input type="text"/>	
Status:	<input type="text"/>			

Update Status Information

#### Activation Date:

Time for the activation of the deployment job (see Section 5.4.2.4, "Time field with calendar button").

#### Last Update

Date of the last status information update.

#### Status:

Possible action status:

- **active**  
The deployment job was entered in the job table but has not started running because the execution time, for example, has not yet been reached.
- **failed**  
The deployment job was started but could not be executed.
- **finished**  
The deployment job was executed correctly.
- **running**  
The deployment job is currently being executed.

#### Update Status Information

Set status information to the current state, including all jobs that have been created on the current day.

**NOTE:** When pressing this button, the database is updated accordingly.

By pressing the **Refresh** button, the updated info is displayed on the **Status Information Tab**. Please refer to Section 14.2.1, ""Status Information" Tab"

## **Possible Action Buttons**

### **Search**

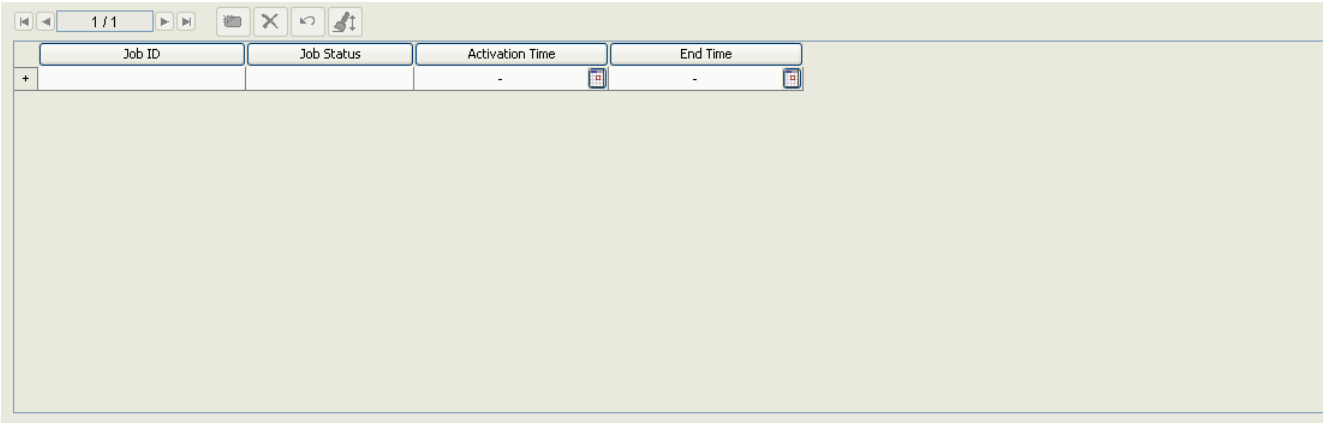
Searches for all statistical data that corresponds to the search criteria.

### **Clear Window**

Deletes the contents of all fields in this view. Existing entries can therefore be deleted in the **Search** view before new search criteria are entered.

## 14.2.1 "Status Information" Tab

**Call:** Main Menu > Job Coordination > Daily Status > "Status Information" Tab



Job ID	Job Status	Activation Time	End Time
+		-	-

**Job ID**

Job ID (or the action number) of the deployment job.

**Job Status**

Status of the deployment job.

**Activation Time**

Time of activation for the deployment job.

**End Time**

For jobs with the status **finished**: time of end of execution.

## **14.3 Job Configuration**

**Call:** Main Menu > Job Coordination > Job Configuration

This area features the following components:

- General Data
- Possible Action Buttons
- "IP Phones" Tab
- "IP Clients" Tab
- "IP Gateways" Tab
- "Gateways" Tab

This function can be used to influence the behavior of a job. Some configuration data can be entered differently for IP phones and IP clients.

For information on general interface operation, see Section 5.4.2, "Work Area".



**General Data**

This part of the contents area is used for entering parameters which are valid for all tabs.

IP Address:	<input type="text"/>	SW Version:	<input type="text"/>
Device ID:	<input type="text"/>	SW Type:	<input type="text"/>
Device Type:	<input type="text"/>	Action Type:	<input type="text"/>
E.164:	<input type="text"/>	Action Status:	<input type="text"/>
Reg-Address:	<input type="text"/>	Location:	<input type="text"/>
Remarks:	<input type="text"/>		

**Limit of concurrent Jobs:**

Maximum number of deployment jobs that can be performed simultaneously. If the number of jobs to be started according to the execution time is greater than number of jobs entered, retries would automatically be started for all jobs involved.

Default: 100.

**Delete Finished Jobs after Days:**

Number of days after which ended jobs should be deleted. Jobs with other statuses are not affected by this.

Default: 10.

**Delete Cancelled Jobs after Days:**

Number of days after which interrupted jobs should be deleted. Jobs with other statuses are not affected by this.

Default: 10.

**Delete Expired Jobs after Days:**

Number of days after which expired jobs should be deleted. Jobs with other statuses are not affected by this.

Default: 10.

**Delete Failed Jobs after Days:**

Number of days after which interrupted jobs should be deleted. Jobs with other statuses are not affected by this.

Default: 99999 (failed jobs are not deleted).

### **Default Job Execution Option:**

Default value for the time of job execution.

Possible options:

- **Immediately**  
The job is started immediately.
- **Immediately or after registration**  
The job is started immediately. If it should fail, another attempt will be made on registration of the device.
- **After registration**  
The job is started on registration of the device.

### **Save Finished Jobs**

Check box for activating the option that allows jobs to be left in the job table and displayed in the job statistics.

Default: **activated**

## **Job Coordination**

### *Job Configuration*

#### **Possible Action Buttons**

##### **Save**

Saves the changes you made under **Job Configuration**.

##### **Discard**

Discards the changes you made under **Job Configuration**.

##### **Refresh**

Refreshes the content of the relevant page.

## 14.3.1 "IP Phones" Tab

**Call:** Main Menu > Job Coordination > Job Configuration > "IP Phones" Tab

The screenshot displays the 'IP Phones' configuration tab with three distinct sections, each containing input fields for configuration parameters:

- Connection Request:**
  - Number of Retries: 10
  - Retry Delay (s): 10
  - Timeout (s): 60
- Job Execution:**
  - Number of Retries: 10
  - Retry Delay (s): 600
  - Timeout (s): 300
  - Maximum Waiting time (min): 240
- Software Deployment:**
  - Number of Retries: 10
  - Retry Delay (s): 600

### Connection Request

#### Number of Retries:

Number of retries permitted before the execution of a job for IP phones should be cancelled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 100**

Default: **10**

#### Retry Delay (sec):

Time in seconds that should elapse between two automatic job retries for IP phones.

Default: **10** Value range: **1 - 3600**

#### Timeout (sec):

Time in seconds that the DLS waits for an IP phone answer for each attempt if a job is performed.

Value range: **1 - 3600**

Default: **60**

## Job Coordination

### *Job Configuration*

## Job Execution

### Number of Retries:

Number of retries permitted before the execution of a job for IP phones should be cancelled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 100**

Default: **10**

### Retry Delay (sec):

Time in seconds that should elapse between two automatic job retries for IP phones.

Value range: **1 - 3600**

Default: **600**

### Timeout (sec):

Time limit for complete job execution, including all retries.

Value range: **30 - 3600**

Default: **300**

### Maximum Waiting time (min):

Total amount of time in minutes that a job can remain in **Waiting** status.

Value range: **30- 720**

Default: **240**

**NOTE:** Waiting time is increased every time a job enters the 'Waiting' state and reset on each new job execution attempt.

**NOTE:** Waiting time does not count in the job execution timer.

## **Software Deployment**

### **Number of Retries:**

Number of retries permitted before the software deployment for IP phones should be cancelled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 100**

Default: **10**

### **Retry Delay (sec):**

Time in seconds that should elapse between two software deployment retries for IP phones.

Value range: **1 - 3600**

Default: **600**

## 14.3.2 "IP Clients" Tab

**Call:** Main Menu > Job Coordination > Job Configuration > "IP Clients" Tab

The screenshot shows a web interface for configuring IP clients. It contains two sections: 'Connection Request' and 'Job Execution'. Each section has three input fields for 'Number of Retries', 'Retry Delay (sec)', and 'Timeout (sec)'. The 'Connection Request' section has values 10, 10, and 60 respectively. The 'Job Execution' section has values 10, 600, and 300 respectively.

Section	Number of Retries	Retry Delay (sec)	Timeout (sec)
Connection Request	10	10	60
Job Execution	10	600	300

### Connection Request

#### Number of Retries:

Number of retries permitted before the execution of a job for IP phones should be canceled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 100**

Default: **10**

#### Retry Delay (sec):

Time in seconds that should elapse between two automatic job retries for IP phones.

Value range: **1 - 3600**

Default: **10**

#### Timeout (sec):

Time in seconds that the DLS waits for an IP phone answer for each attempt if a job is performed.

Value range: **1 - 3600**

Default: **60**

### Job Execution

#### Number of Retries:

Number of retries permitted before the execution of a job for IP phones should be canceled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 100**

Default: **10**

**Retry Delay (sec):**

Time in seconds that should elapse between two automatic job retries for IP phones.

Value range: **1 - 3600**

Default: **600**

**Timeout (sec):**

Time limit for complete job execution, including all retries.

Value range: **30 - 3600**

Default: **300**



### 14.3.3 "IP Gateways" Tab

**Call:** Main Menu > Job Coordination > Job Configuration > "IP Gateways" Tab

The screenshot displays the 'IP Gateways' configuration tab with two sections: 'Connection Request' and 'Job Execution'. Each section contains three input fields for 'Number of Retries', 'Retry Delay (sec)', and 'Timeout (sec)'. The 'Connection Request' section has values of 10, 10, and 60 respectively. The 'Job Execution' section has values of 10, 600, and 300 respectively.

Section	Number of Retries	Retry Delay (sec)	Timeout (sec)
Connection Request	10	10	60
Job Execution	10	600	300

#### Connection Request

##### Number of Retries:

Number of retries permitted before the execution of a job for IP gateways should be canceled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 100**

Default: **10**

##### Retry Delay (sec):

Time in seconds that should elapse between two automatic job retries for IP gateways.

Value range: **1 - 3600**

Default: **10**

##### Timeout (sec):

Time in seconds that the DLS waits for an IP gateway answer for each attempt if a job is performed.

Value range: **1 - 3600**

Default: **60**

#### Job Execution

##### Number of Retries:

Number of retries permitted before the execution of a job for IP gateways should be canceled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 100**

Default: **10**

**Retry Delay (sec):**

Time in seconds that should elapse between two automatic job retries for IP gateways.

Value range: **1 - 3600**

Default: **600**

**Timeout (sec):**

Time limit for complete job execution, including all retries.

Value range: **30 - 3600**

Default: **300**

## 14.3.4 "Gateways" Tab

**Call:** Main Menu > Job Coordination > Job Configuration > "Gateways" Tab

The screenshot shows a web-based configuration interface for the 'Gateways' tab. It is divided into two main sections: 'Connection Request' and 'Job Execution'. The 'Connection Request' section contains three input fields: 'Number of Retries' with a value of 20, 'Retry Delay (s)' with a value of 60, and 'Timeout (s)' with a value of 60. The 'Job Execution' section contains two fields: 'Communication between DLS and Gateways' with a dropdown menu set to 'synchronous', and 'Timeout (s)' with a value of 300.

### Connection Request

#### Number of Retries:

Number of retries permitted before the execution of a job for gateways should be canceled after a set number of automatic retries with the status **cancelled**.

Value range: **1 - 200**

Default: **20**

#### Retry Delay (sec):

Time in seconds that should elapse between two automatic job retries for gateways.

Value range: **10 - 3600**

Default: **60**

#### Timeout (sec):

Time in seconds that the DLS waits for a gateway answer for each attempt if a job is performed.

Value range: **1 - 3600**

Default: **60**

### Job Execution

#### Communication between DLS and Gateways:

Possible options:

- **synchronous**  
The jobs are executed synchronously. The display on the DLS stops responding (the hourglass appears) until these actions are fully complete. Clicking **Refresh** always results in the current data record.
- **asynchronous**  
The jobs are executed in the background allowing you to continue working in parallel. To see the result, you must wait a little and then click **Refresh**. If you refresh too soon, the old data record is returned as a result.

**Timeout (sec):**

Time limit for complete job execution, including all retries.

Value range: **1 - 3600**

Default: **300**



## 15 Operating Sequences

This chapter contains the following practical sequences:

- First Steps: Changing IP Device Parameters

**NOTE:** This section provides fundamental operating information - also helpful for performing other functions.

- Changing the Element Manager Configuration and Creating Jobs
- Registering Workpoint Software and Files
- Editing Templates
- Workpoint Autoconfiguration (Plug&Play)
- Distribution of Workpoint Software
- Using Job Coordination
- Backup/Restore
- Automatic Restore on Upgrade Failure
- Importing and Exporting Plug&Play Data
- Copy Macro for P&P and Templates

For information on general interface operation, see Section 5.4.2, "Work Area".

**NOTE:** The sequence descriptions provided here are intended as examples. The actual sequence may vary from the description, depending on the particular DLS configuration, the servers or IP Devices used, and the ongoing development of the DLS.

## 15.1 First Steps: Changing IP Device Parameters

In many areas of the DLS (for example, **IP Devices**), you can use the database running in the DLS to select all or a subset of the total number of IP Devices available for subsequent administration.

This takes place in the working area using **Search** view (see Section 5.4.2.3).

Requirements for this example: the DLS, the servers and IP Devices are operational.

1. In the main menu, select an area where you would like to change something under **IP Devices**.
2. Select **Search** view (see Section 5.4.2.3) if it is not yet shown.
3. Indicate the IP Devices you want to select.  
Do this by choosing an entry in the selection list field, for example, beside **Device Type** (see Section 5.4.2.4) or enter an IP address range.

**NOTE:** For further information about the **Search** view, please see Section 5.5, "Search Functionality".

If you want to search through all available IP Devices, do not enter any information in the fields in Search view.

4. Click **Search** (see Section 5.4.2).
5. If no matching data was found, a message appears in the message window (see Section 5.4.2.6).

If the search was successful, the display changes to **Object** view, which always shows the data for a single IP Device. You can use the navigation buttons (see Section 5.4.2.5) to scroll through all IP Device data that corresponds to the search filter.

6. Click **Table** in the view bar to change to List view. Click a column header to sort the entire table according to the value specified in the header (alternating between ascending and descending).

Click between two column headers and drag the mouse right or left to change the width of the left-hand column.

Click a column header and drag the mouse right or left to change the order of the columns.

7. Now you can change any fields that have not been dimmed. This is possible in both **Object** view and **Table** view.
8. To transmit the changes to a single IP Device, click **Save**. This sends the data directly to the IP Device.

**NOTE:** If you would like to transmit the changes to multiple IP Devices simultaneously, change to **Table** view before you save the changes and mark additional IP Device entries in the list (see Section 5.4.2.4, "Multiple selection and data transfer in Table view" for information on how to do this).

Click **Save**. This sends the data directly to the selected IP Devices.



## 15.2 Changing the Element Manager Configuration and Creating Jobs

Changes made in the Element Manager configuration under **Element Manager > Element Manager Configuration** (for example, E.164 prefix, gatekeeper ID, SIP server address, etc.) are forwarded to the relevant workpoints. The ID of this Element Manager is entered in the **Element Manager ID** field on these workpoints under **IP Devices > IP Device Management > IP Device Configuration > "EM Synchronization" Tab**. However, if a different Element Manager (or Element Manager ID) is entered under Referenced Element Manager, this one is valid.<sup>1</sup> A modification (of the E.164 prefix, for example) can take several minutes, depending on the number of workpoints.

Jobs are created for registered workpoints in the Element Manager configuration during modification. A dialog appears before the modifications are implemented, displaying the number of jobs and requesting confirmation of the action. You can save the configuration changes here without immediately creating jobs. The jobs are then automatically created (no confirmation required) during the next automatic or manual synchronization.

A synchronization that has been started but is not yet finished prevents the initiation of other synchronization operations for this Element Manager or Element Manager ID. A corresponding message appears in the window. The same message appears if you try to modify the Element Manager configuration while an (automatic) synchronization is running.

---

<sup>1</sup> This parameter is used when preparing to relocate a station to another system. Two data records exist during this operation with the same E.164 number and different device IDs. One of the data records is assigned to system A, the other to system B. The parameter defined here ensures that during synchronization between both systems, only the data record belonging to a particular system is updated.

## 15.3 How to replace OSV Assistant Manager with OSV Element Manager

The OSV Element Manager is enhanced to cover all the functionality offered by the OSV Assistant EM (synchronization per BG and secure connection). Therefore the OSV Assistant EM becomes obsolete and given the fact that it does not support Delta synchronization, it is strongly recommended that any configured OSV Assistant EM in DLS should be replaced with OSV EM(s).

Please refer to the following detailed steps for this procedure:

1. Go to Main Menu > Element Manager > Element Manager Configuration and search for any OSV Assistant EM entries:

Element Manager Configuration window showing details for an OpenScape Voice Assistant.

Fields:

- Element Manager ID: grt08c\_Assistant
- Element Manager Address: 10.9.102.65
- 2nd EM Address:
- Port: 443
- Protocol: https
- Account: administrator@system
- Password:
- E.164 Prefix:
- Remark:
- Element Manager Type: OpenScape Voice Assistant
- On Synchronization update registered workpoints as soon as possible: ☒
- Allow just 1 workpoint per E.164: ☐
- Add new subscribers as IP Clients: ☐
- Add new subscribers as IP Phones: ☒
- Synchronization interval [min]: 0 (0 = no automatic synchronization)

Switches table:

Switch	SIP Server Address	SIP Server Port	SIP Registrar address	SIP Registrar port
GRT08C				
GRTSEP6L3				

2. Get the Element Manager Address (**10.9.102.65** according to the example) and connect to the CMP portal. Under Configuration > OpenScape Voice > Switches, all the configured OSV switches are displayed:

UNIFY Common Management Platform - Switches configuration page.

Table of configured switches:

Name	Switch Type	CMP - OpenScape Voice Compatibility	IP Node1	IP Node2	Version	Connectivity
GRT08C	Duplex	CMP fully compatible with OSV	10.9.102.65	10.0.82.20	V8 R0.23.1	Reachable
GRTSEP6L3	Geographically Separated Duplex	CMP fully compatible with OSV	10.10.192.10	10.10.212.20	V7 R1.36.2	Reachable

## Operating Sequences

### How to replace OSV Assistant Manager with OSV Element Manager

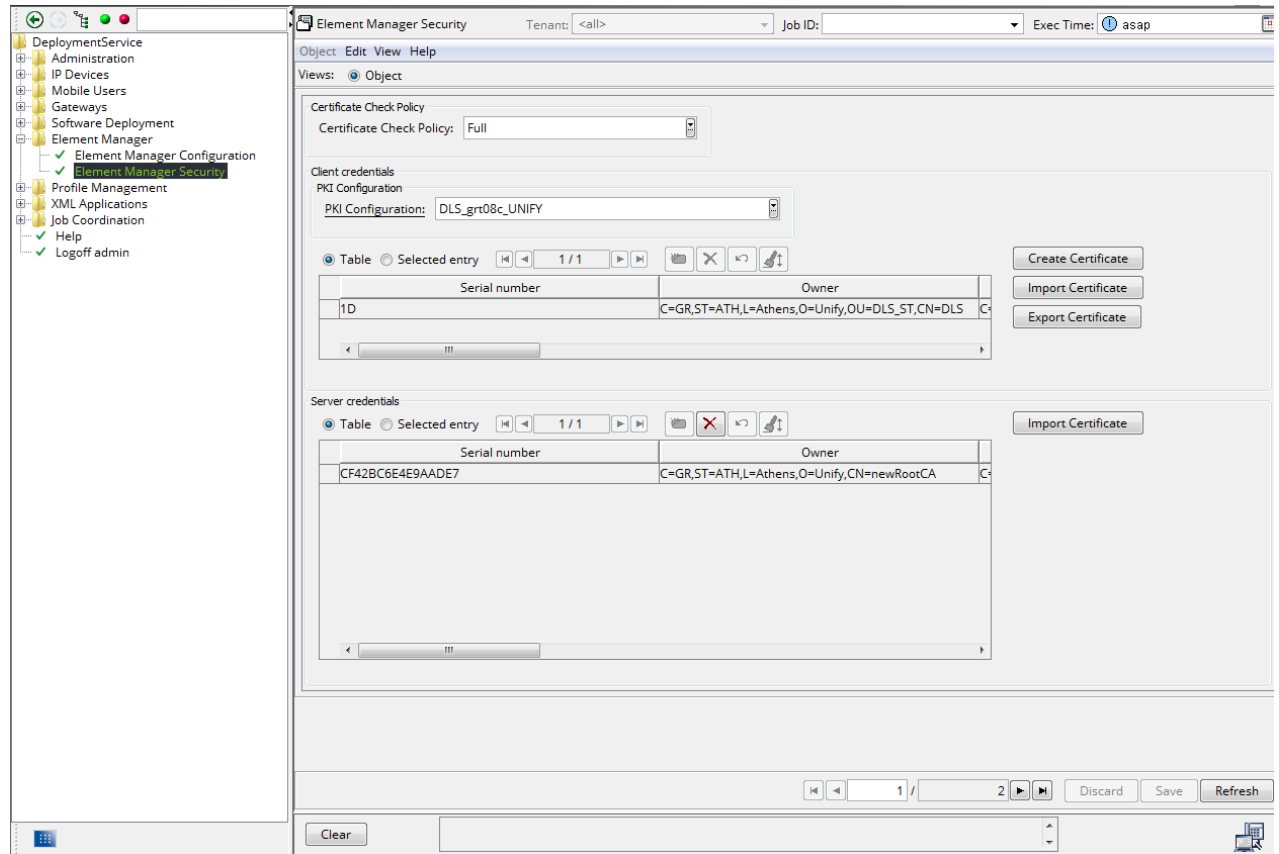
3. For every OSV switch listed above, create a new Element Manager in DLS as shown below:

The screenshot shows the 'Element Manager' configuration window in the DLS (Deployment Service) interface. The window is titled 'Element Manager' and has a 'Tenant' dropdown set to '<all>' and a 'Job ID' dropdown. The 'Exec Time' is set to 'asap'. The 'Views' section has 'Object' selected. The main configuration area includes the following fields and options:

- Element Manager ID:** grt08c (highlighted with a red box)
- Element Manager Address:** 10.0.82.10 (highlighted with a red box)
- 2nd EM Address:** (empty)
- Port:** 8757 (highlighted with a red box)
- Protocol:** https (highlighted with a red box)
- Account:** (empty)
- Password:** (empty)
- E.164 Prefix:** (empty)
- Remark:** (empty)
- Element Manager Type:** OpenScope Voice (highlighted with a red box)
- On Synchronization update registered workpoints as soon as possible:** ☒
- Allow just 1 workpoint per E.164:** ☐
- Add new subscribers as IP Clients:** ☐
- Add new subscribers as IP Phones:** ☒
- Synchronization interval [min]:** 0 (0 = no automatic synchronization)

Below the main configuration area, there are tabs for 'OpenScope Voice', 'OpenScope Voice Assistant', 'HiPath 4000 Assistant', 'HiPath 3000/5000', and 'Protocol'. The 'OpenScope Voice' tab is selected. Under this tab, there is a 'Compatibility Mode' section with a 'Last Synchronization (YYY-MM-DDThh:mm)' field and a 'Reset' button. Below that is a 'Synchronized Data' section with checkboxes for 'Display ID synchronization', 'Deleted Subscribers', 'SIP Authentication Parameters', and 'Transport Protocol'. There are also checkboxes for 'Feature Codes' and 'Call Pickup Group URI', 'Conference Factory URI', 'Callback Busy URI', and 'Callback No-Reply URI'.

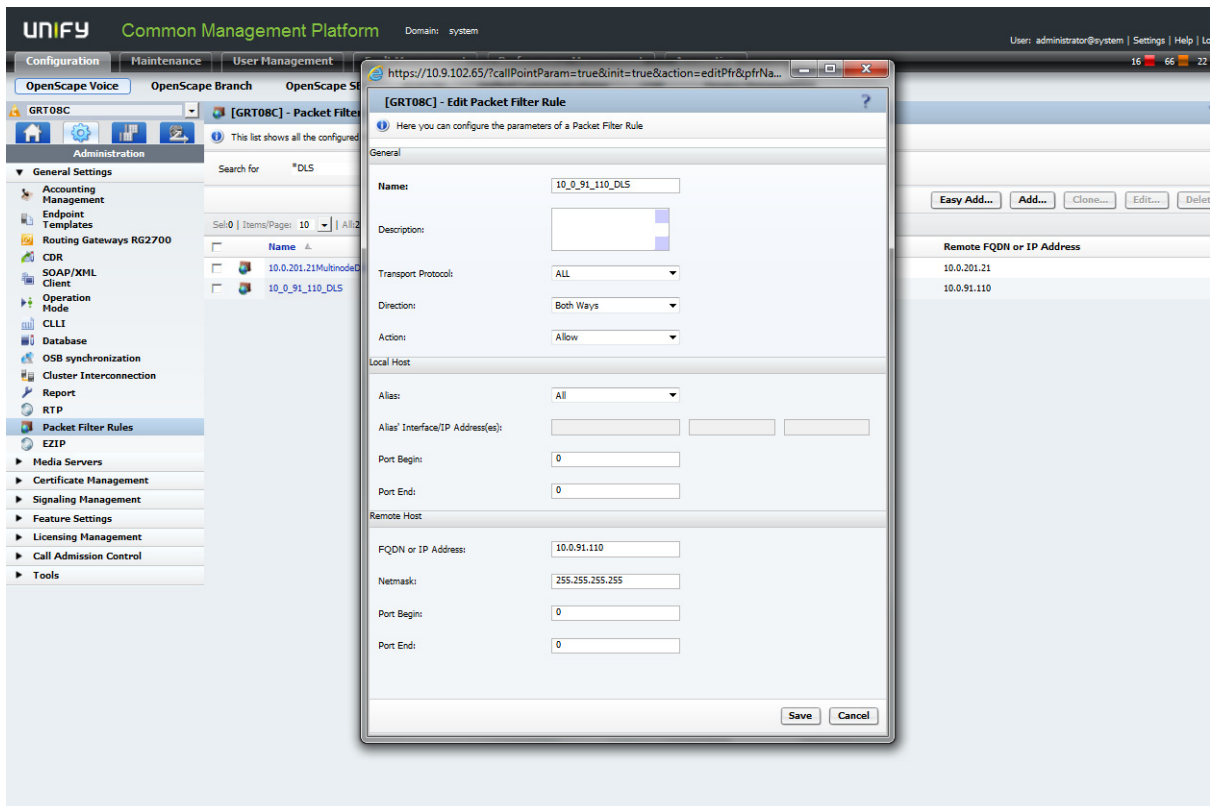
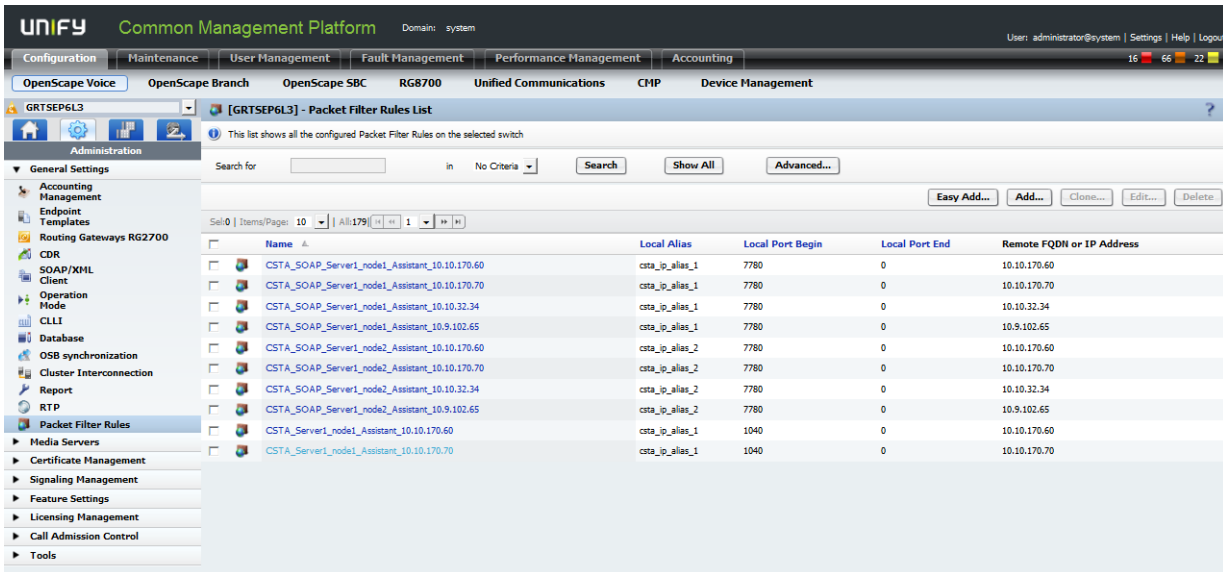
By default the protocol is set to "http", but it is recommended to be set to "https". For the secure mode to work, the correct information (certificates) should be set in the Element Manager Security mask (see below and also refer to DLS Admin manual for more information):



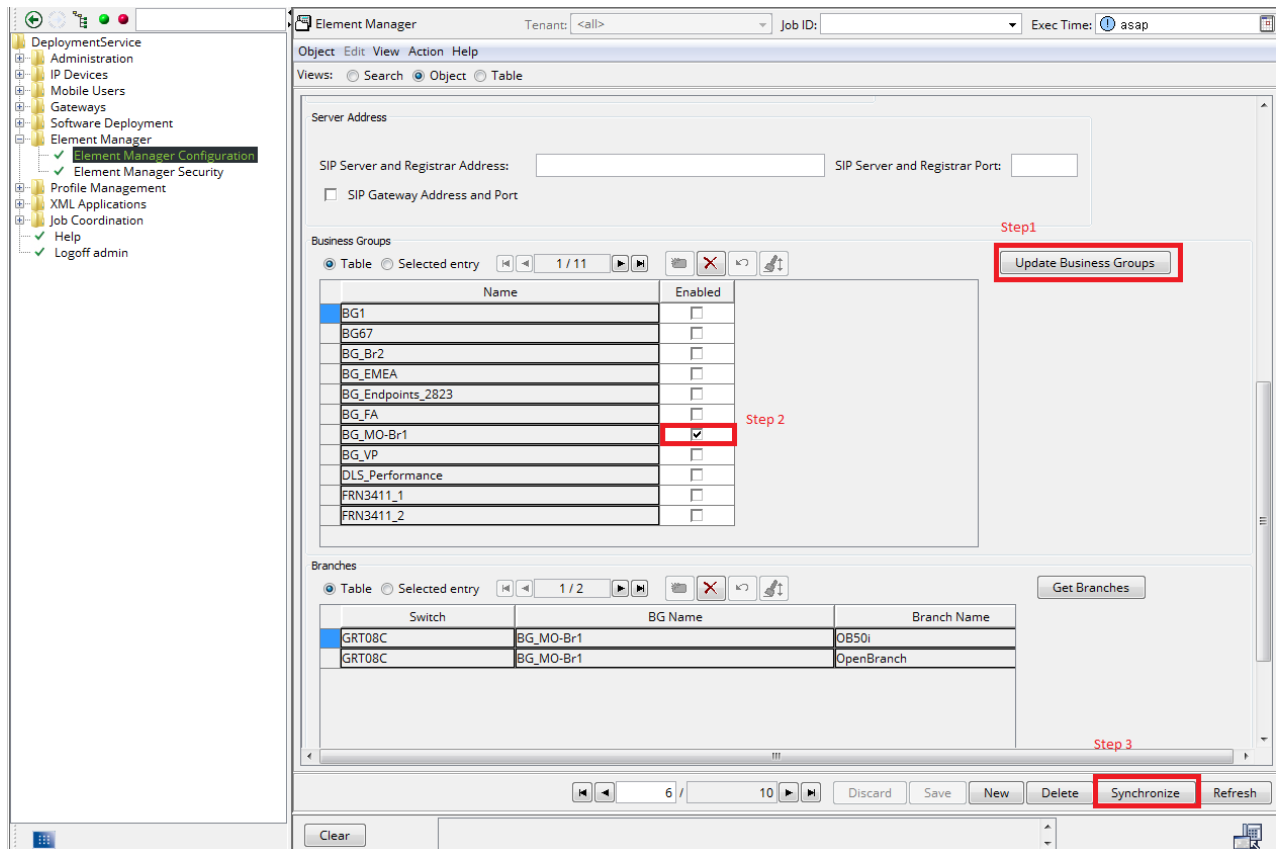
## Operating Sequences

### How to replace OSV Assistant Manager with OSV Element Manager

- Before performing any synchronization between DLS and the OSV, the corresponding PFR (packet filter rules) should be set by the OSV administrator, so that DLS access is granted by OSV (see below):



5. Go back to Main Menu > Element Manager > Element Manager Configuration, fetch the OSV EM that has just created above and (see also the example below):
  - a) Press the **Update Business Groups** button. This will bring all the available BG's of the corresponding OSV.
  - b) Select any BG (that needs to be synchronized). This step is optional. If no BG is selected DLS will synchronize all the subscribers of the switch.
  - c) Press the **Synchronize** button, in order to bring the subscribers / devices to DLS. Check the **Protocol** tab to verify that the synchronization is successful.



## 15.4 Registering Workpoint Software and Files

This section explains how you can register software and files in the DLS so that the DLS can use them for the deployment.

The functions can be found under **Main Menu > Administration > Server Configuration > FTP Server Configuration, ..> HTTPS Server Configuration, ... > Network Drive Configuration.**

**NOTE:** The file that is to be registered is examined during registration.

The following checks are made:

- Whether the file exists at the source storage location.
- If so and if this file contains software, whether the SPA is unknown, old, or new.
- Any additional data available in the new format, such as, the **SW type** (HFA or SIP), **SW version**, etc. is read out.

This process can take some time, depending on the network.

For an overview of all object types supported by the DLS, see Section 3.5, "Overview of Software and File Types".

For an overview of all IP Devices and platforms supported by the DLS, see Section 3.4, "Area of Application".

**NOTE:** You must also register IP client software installations in the DLS, but no license check is performed for IP client software in the DLS because this is done while it is running (at software startup).

### Requirements

- A configured FTP server for IP phone software images or a configured Windows network drive for IP client software (see Section 6.3.4 or Section 6.3.7).
- The suitable files are available in the source storage location.

## 15.4.1 Automatic Registration

The only difference between the automatic registration of IP phone software and IP client installations involves the type of source storage location.

1. To register software and data on an FTP server, select an FTP server from the choice list under **Administration > Server Configuration > FTP Server Configuration** by means of the **Search** button. Then, click on **Start scan** to start the registration.

To register an installation for IP Clients, use **Administration > Server Configuration > Network Drive Configuration > Scan Server**.

To register software and data on an HTTPS server, use **Administration > Server Configuration > Network Drive Configuration > Scan Server**.

To configure FTP servers and network drives, see Section 6.3.4 or Section 6.3.7.

2. Click **Start**. Automatic registration starts and updates the status, and information is entered in the dialog window.

**NOTE:** You can go ahead and close the dialog window during this process. Automatic registration runs in the background without being affected.



## 15.4.2 Understanding License Information for IP Phone Software

**NOTE:** Licensed IP phone software is not yet available. This means that as far as licensing is concerned, only data entered here for unlicensed software applies to IP phones.

When you register IP phone software, information is also read out of the software image's "license trailer".

The license trailer information consists of the following possible values:

- Device type (contains the device type designation)
- Software version (contains the software version number)
- Software type (contains the software type designation)
- License feature ID (contains the identification of the license feature)
- Licensed SW version (contains the software license version number)
- Expiry Date (contains the software expiration date)

## 15.5 Editing Templates

The DLS can create templates for all parameters in the **IP Devices** area. This provides a quick and easy option for reusing configurations that are frequently deployed.

You can also combine existing templates in profiles, which greatly simplifies the use of extensive workpoint configurations.

You can create a template for each interface in the contents area (see Section 5.4.2, "Work Area") and save it to use later. You can use buttons in addition to export and import all stored templates into an ZIP file (see Section 12.3, "Template Overview").

**IMPORTANT:** If data changes are made in configuration forms that have been generated using templates, these changes are not automatically applied to the templates. In order to be applied, the changes must be saved manually in the template; see below.

### 15.5.1 Creating a Template Manually

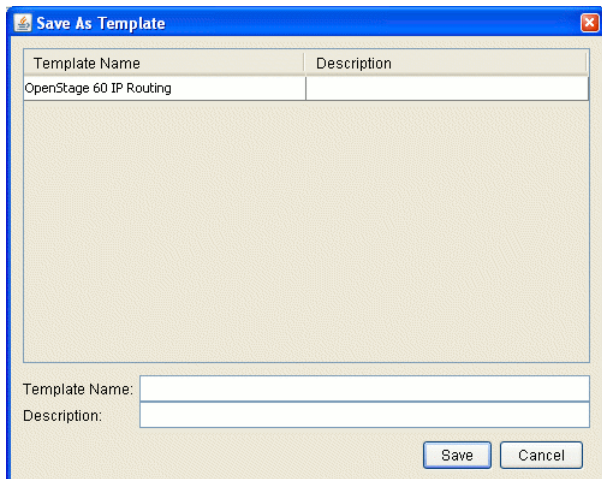
1. Select an area for which you want to create the template in the main menu under **IP Devices > IP Phone Configuration** or **IP Client Configuration**.
2. Select **Template** view (see Section 5.4.2.3, "View Bar").
3. Enter all the required data.

A template always includes the contents of an interface under **IP Devices**, with all available tabs.

**NOTE:** In many cases, it is useful to select the scope of a template so that it is not too large. For example, it may be advisable to create two separate templates instead of one for WAP and LDAP so that you can assign them more flexibly, that is, separately from one another, to different profiles.

4. Click **Save**.

5. The dialog window for saving the template appears.



Enter a meaningful name under **Template Name**, such as, "QoS Configuration 1". Under **Description**, enter a text that explains this template.

6. Click **Save**.

The name of the current template now appears after **Template** in the view bar.

You can also save multiple different templates for an area by using different template names.

You can export templates that you have saved (see Section 12.3, "Template Overview").

## 15.5.2 Creating a Template From an Existing Configuration

You can take configuration data that already exists in **Object** view and include it in a template.

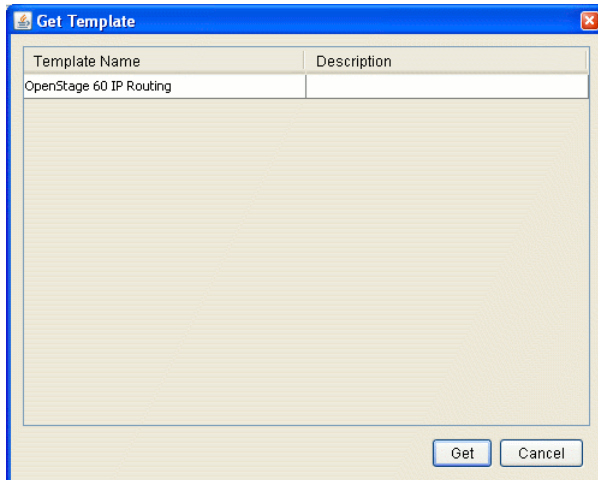
1. In the main menu under **IP Devices**, select an area in **Object** view from which you want to copy the data into a template.
2. In the menu bar, select **Copy to template** under **Action. Template** view appears with the data that you copied.

Save the template for later use as described above (see "Creating a Template From an Existing Configuration", starting with step 4).

### 15.5.3 Loading the Template

To change a template that has already been saved or to use such a template manually, you first have to load it into **Template** view.

1. Select the **Template** view for which you want to load a template that has already been saved in the area and click **Get**.
2. If there is at least one template for this area, the dialog for loading a template appears.



3. Select a template from the list and click **Get**.
4. The template contents are displayed in **Template** view and the template name appears in the view bar.  
To use the data for configuration or as a search criterion, select the appropriate view (**Object** or **Search**) and select the **Use template** entry under **Action** in the menu bar.

**NOTE:** When you use a template, only the contents defined in the template are applied. Empty or grayed out fields or check boxes do not overwrite or delete any current values in the configuration.

Use **Profile Management > Template Overview** to check which individual attributes are currently configured.

### 15.5.4 Additional Functions

By clicking **Rename Template** in **Template** view, you can rename a template that has already been saved and change the description of the template. With **Delete Template**, you can delete one or more saved templates.

## 15.6 Workpoint Autoconfiguration (Plug&Play)

The goal of Plug&Play in DLS is to automatically provide the workpoints supported with the parameters needed for registering at a gatekeeper or SIP server. This should always be done as soon as a workpoint is switched on or connected.

There are different types of Plug&Play:

- **Full Plug&Play**

- Provision of the workpoint with IP base data and DLS address data using the DHCP server.

- **Limited Plug&Play**

- Manual entry of IP base data and DLS address data at the workpoint.

**NOTE:** We recommend that you use a DHCP server in the DLS environment to :

- support full plug&play and
- ensure the authenticity of the DLS server

For more information on how to configure a DHCP server, refer to refer to the **Unify Experts Wiki portal** under [http://wiki.unify.com/wiki/DHCP\\_Server\\_in\\_a\\_Windows\\_environment](http://wiki.unify.com/wiki/DHCP_Server_in_a_Windows_environment) or Section 4.12.5, "DHCP Server in a Linux/Unix Environment".

**NOTE:** Factory Reset with Plug&Play data stored is not possible in Secure Mode. The according IP Devices must be revert to Default Mode first.

### 15.6.1 Requirements

#### Requirements for full Plug&Play

- Functional DHCP infrastructure. Depending on the network topology, this consists of at least one DHCP server and, where applicable, multiple DHCP relay agents.

The IP base data and the DLS address data is entered on the DHCP server so that it can be distributed automatically to the terminals. For information on configuring the DHCP server, refer to the **Unify Experts Wiki portal** under [http://wiki.unify.com/wiki/Configuring\\_the\\_DHCP\\_Server\\_for\\_DLS](http://wiki.unify.com/wiki/Configuring_the_DHCP_Server_for_DLS) ( Windows ) or Section 4.12.5 (Linux/Unix).

This ensures that an IP phone with factory settings receives its initial IP configuration when it is booted.

### **Requirements for limited Plug&Play**

- Manual storage of the complete IP base data (IP address, subnet mask, default IP gatekeeper, DNS server, DNS domain suffix, etc.) and DLS address data on the IP phone.

This guarantees Plug&Play operation, albeit in a restricted form, in networks without DHCP infrastructure.

**NOTE:** For IP clients, full plug&play looks a little bit different.

As IP clients usually run on a host with proper IP configuration, the IP client can be provided with missing DLS address data either using a "DHCP Inform" or with a "DNS Text Resource Request".

Both ways are considered full plug&play because in contrast to the exclusive use of a DNS with IP phones, manual configuration is not necessary.

## **15.6.2 Setting Up Plug&Play Registration**

### **15.6.2.1 Assignment Procedure**

There are three different procedures for Plug&Play registration. These differ in terms of the manner in which a workpoint's Plug&Play data is assigned to a physical workpoint.

- **Assignment using Device ID**

A specific device ID is entered here for an existing data record, that is, a virtual device (see Section 15.6.2.2, "Creating Plug&Play Data"). The DLS uses the device ID to identify which Plug&Play data it should send to the workpoint.

- **Assignment using E.164**

Alternatively, the data record can be assigned to an E.164 number which must be entered manually at the workpoint. The DLS then checks all familiar Plug&Play data sources based on phone numbers one after the other (for example, configured HiPath 4000 Assistant databases or HiPath 3000/5000) to see whether the phone number can be uniquely assigned to a system.

If the workpoint responds during DLS installation, the DLS can use the E.164 number to identify which Plug&Play data it should send to the workpoint.

- **Assignment using number pool**

If a number pool is configured and enabled, each IP phone registering at the DLS without an E.164 receives a dummy E.164 number from the pool. A prerequisite is that at least one free number must exist in the pool. The virtual device associated with the particular E.164 number is assigned to the IP phone by changing its device ID to "@ <IP Phone's MAC address>" and by setting its status to "in use". After this, Plug&Play will be executed using this virtual device. Before Plug&Play, a software upgrade is possibly executed.

The E.164 number assigned to the IP phone is not available by the number pool until the IP phone has received its final number, either by the administrator, an application using the DIsAPI or the user via WBM or locally at the IP phone, or the IP phone is deleted from the DLS.

## Operating Sequences

### *Workpoint Autoconfiguration (Plug&Play)*

As soon as the E.164 is considered free again, the virtual device gets a new **Device ID**, the **Plug&Play active** flag is enabled again and its Plug&Play pool status reset to "free". Now the virtual device is available again in the number pool again. See also chapter Section 6.3.2.6, "'P&P Number Pool" Tab".

### 15.6.2.2 Creating Plug&Play Data

There are a number of different procedures for creating Plug&Play data:

- **Creation by synchronization with an Element Manager**  
Synchronizing DLS with an Element Manager creates a new data record for each station that is stored in the Element Manager but not yet in the DLS. For more information about connecting the Element Manager and the DLS, see **Element Manager > Element Manager Configuration**.
- **Plug&Play data import**  
You can import Plug&Play data from a file via **IP Devices > IP Device Management > IP Device Configuration**.
- **Manual configuration of a station in the DLS**  
You can use the **IP Devices > IP Device Management > IP Device Configuration** area to create a new station data record in the DLS as a virtual device.
- **Configuration via a provisioning tool using the DLS API**

### 15.6.3 Registration

1. Connect the workpoint(s) (see the workpoint installation or administration manuals). If all requirements for full Plug&Play are met, the workpoint will receive the DLS address data from DHCP.

The workpoint registers at the DLS with this data.

2. If the DLS can identify the unique Plug&Play data required by the workpoint performing registration, it automatically sends it to the workpoint.

The DLS basically has three ways to determine Plug&Play data. For more information, see Section 15.6.2.1, "Assignment Procedure".

- **Assignment using Device ID**  
In the first alternative, the DLS checks whether it can determine a set of Plug&Play data records from the device ID presented by the workpoint. However, this option currently requires that the device ID and Plug&Play data be linked manually.
  - **Assignment using E.164**  
Using the E.164 number that is manually entered at the workpoint, the DLS checks whether it can determine a corresponding data record.  
Example of a complete E.164 number: **498972212345**.
  - **Assignment using number pool**  
If a number pool is configured and enabled, each IP phone registering at the DLS without an E.164 receives a dummy E.164 number from the pool. A prerequisite is that at least one free number must exist in the pool.
3. If configuration templates have been defined (see Section 15.5) and grouped as the standard template, data from the templates is transferred to the workpoint.



## Operating Sequences

### *Workpoint Autoconfiguration (Plug&Play)*

4. The Plug&Play sequence is completed when all assigned data has been sent successfully.

## 15.7 Distribution of Workpoint Software

This section explains how to perform manual software or file deployment and which configurations are necessary for automatic deployment.

**NOTE:** Note the difference between **Software Deployment** and **File Deployment** in the DLS interface (see Section 10.1.1 and Section 10.1.2).

**Software deployment** refers to the distribution of workpoint software (IP phones and IP clients). In contrast, **file deployment** means the distribution of any binary or ASCII files that perform a certain task in the workpoint.

Both functions are combined in the DLS main menu under **Software Deployment**.

For automatic deployment, see Section 15.7.2, "Automatic Deployment".

**NOTE:** A single software deployment operation can take place for each workpoint at the same time as a file deployment operation, but it is not possible for multiple software deployment operations or multiple file deployment operations to take place simultaneously.

If you want to update workpoint software using a netboot server, and the update is not possible with a crosslink cable (crossed LAN cable), the workpoint must be connected to the Netboot server via a hub.

**NOTE:** When distributing software for optiPoint WL2 professional workpoints, ensure that the workpoints have sufficient battery capacity. If not, it may not be possible to operate the software successfully.

### Software image properties

A distinction between software images can be made on the basis of the following properties:

- Type of hardware supported (device type, such as optiPoint 410 Standard).
- Software type (such as, Unify HFA).
- Software version (such as, CLA, DHCP, DNS, and FTP servers).5.1.3).
- Integrated DLS interface  
(yes = new, no = old SPA).
- Requiring a license (yes or no).

**NOTE:** Licensed IP phone software is not yet available. The IP phone software that is currently on offer does not require a license.

## 15.7.1 Manual Deployment

In principle, you can define the following parameters during manual deployment:

- Which workpoints should be provided with the software.
- Which software should be used for the distribution.
- When the distribution should occur.

### Requirements

- A working DLS infrastructure (such as
- The workpoints to be supplied have automatically registered at the DLS or were found by the DLS during a manual scan (see Section 7.4.6, "Scan IP Devices").
- The software to be distributed was either automatically or manually registered at the DLS (see Section 15.4, "Registering Workpoint Software and Files").

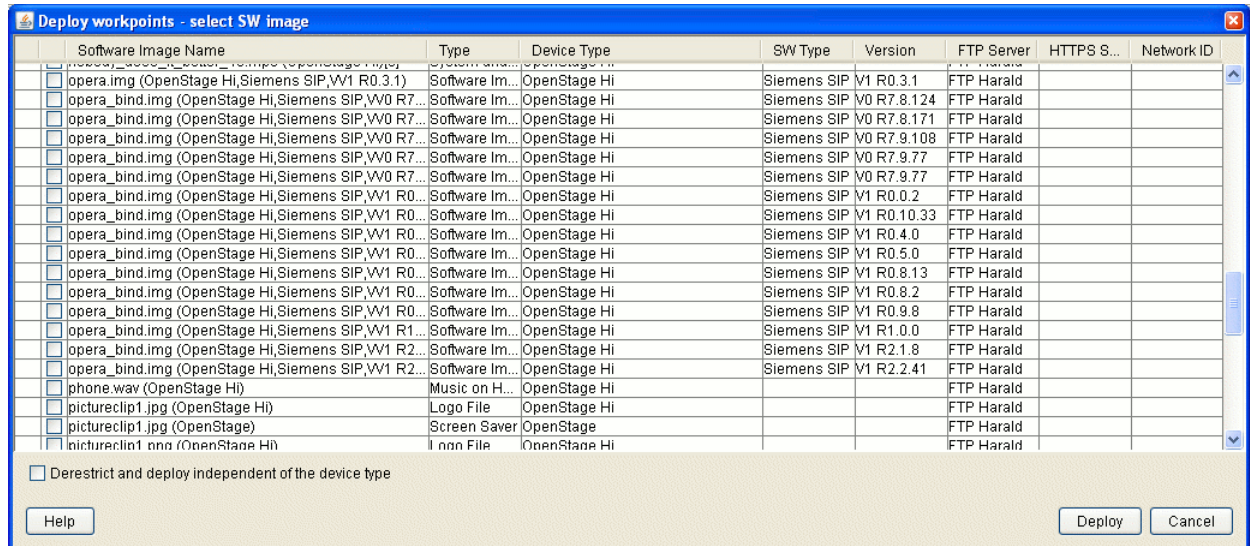
### Performing distribution

1. First decide which workpoints you want to provide with the software.  
Do this by choosing the **Software Deployment > Deploy Workpoints** area and, if necessary, enter search criteria in **Search** view. Click **Search** to start the search.
2. If one or more workpoints were found, the first entry is shown in **Object** view.  
To select multiple workpoints, change to **Table** view and hold down the <CTRL> key to select a number of individual workpoints or hold down the <SHIFT> key to select workpoint ranges.
3. Click **Deploy**.

**NOTE:** When you click **Deploy**, the system checks whether suitable software is available, that is, registered, for the selected workpoints.

If this is not the case, an appropriate message is displayed. This is also true if you have selected both IP clients and different IP phones (optiPoint, OpenStage) in a multiple selection.

If suitable software was found, the following dialog appears (example):




If a software image is not suitable for this workpoint type, the entry is displayed with a yellow triangle and dimmed. If you hover the mouse pointer over this icon, a ToolTip appears with the reason for this. For example, the ToolTip "Software not applicable for this device type" states that a specific registered HFA software package cannot be distributed on Unify HFA workpoints.

**IMPORTANT:** You can use the check box **Derestrict and deploy independent of the device type** to perform software deployment even for a workpoint that does not match the other workpoints because of the software license information (see Section 15.4.2, "Understanding License Information for IP Phone Software").

In general, this is only necessary if you want to perform deployment for a new device type unknown to the DLS.

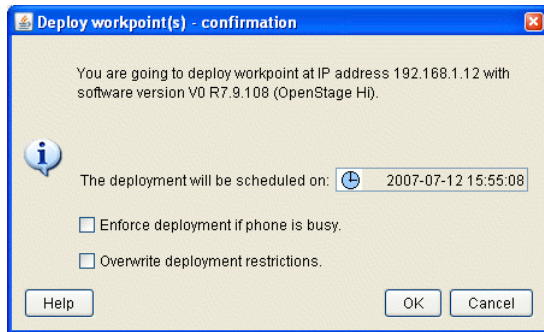
The result can involve the loss of the entire workpoint functionality.

If this check box is selected, all entries in the list (including ones that were previously dimmed) are available for selection.

4. Select an **Execution Time** in the toolbar. To do this, click the calendar symbol  and select one of the time options and the conditions for the deployment. For more information on the calendar button, see Section 5.4.2.4, "Time field with calendar button".
5. Choose the entry that you want and click **Deploy** to stipulate the performance time.
6. A dialog window where you can start software distribution appears. By default, the software is set on the basis of the configured restrictions (see Section 6.3.2.7, ""SW Deployment Restrictions" Tab"). If you activate **Overwrite deployment restrictions**, these restrictions are ignored.

## Operating Sequences

### *Distribution of Workpoint Software*



7. Activating **Force deployment if device is busy** forces the deployment procedure to be carried out without delay even if a workpoint is busy (active call). You should only use this option in exceptional cases because it interrupts a telephone connection on the workpoint.
8. Activating **Overwrite deployment restrictions** forces deployment regardless of any restrictions that may be configured.
9. Click **OK**. If the license check was successful, individual jobs are generated for distribution to the selected workpoints and carried out at the specified time. A progress bar shows job generation progress (see Section 5.4.2.6, "Message Windows").

For more information on job coordination, see Section 15.8, "Using Job Coordination".

## 15.7.2 Automatic Deployment

As the name suggests, in addition to manual distribution (see Section 15.7.1, "Manual Deployment"), you can also distribute workpoint software automatically, that is, without user intervention.

If a workpoint is registered at the DLS, either during a manual scan (see Section 7.4.6, "Scan IP Devices") or as a result of first-time registration of a workpoint with software in the new format (with DLS interface), a deployment procedure will be initiated on the DLS that complies with the deployment rules.

The following describes how to configure the rules that control this procedure.

### Requirements

- A working DLS infrastructure (such as CLA, DHCP, DNS and FTP servers).
- The workpoints to be supplied have automatically registered at the DLS or were found by the DLS during a manual scan (see Section 7.4.6, "Scan IP Devices").
- The software to be distributed was registered at the DLS (see Section 15.4, "Registering Workpoint Software and Files").

### Reconfiguring deployment rules

1. Select the **Software Deployment > Manage Rules** area and click **New**.
2. In the **Device Type** field, select the workpoint type to which the rule should apply.

**NOTE:** You can only configure one rule per combination of location, device type, software type, and software version.

3. In the **Location** field, select the location to which the rule should apply.
4. In the **Software Type** field, select the type of software type which is currently installed on the workpoints to which the rule should apply.
5. In the **WP SW Version** field, select the version of the software which is currently installed on the workpoints to which the rule should apply.
6. If applicable, activate **Deploy Newest SW Version** if only you want software deployment to be performed when there is a version available for distribution that is newer than the version installed at the time.  
Example: Version 5.1.9 is distributed to workpoints with version 5.1.1, while version 5.2.0 is left on the workpoint.
7. To distribute a very specific software version, you must deactivate **Deploy Newest SW Version**. You must make this setting to force a change in the workpoint software type.  
In this case, go to the **SW Image** and **Software Version** fields and select the required software image in the available software version from the lists or enter the image and version.
8. Click **Save** to save the new rule.
9. Click **Apply** to obtain a listing of all workpoints to which the rule applies. A dialog window opens up in which you can select the workpoints to which the rule shall apply effectively. After this, confirm by pressing **Apply** in the dialog window.

## Operating Sequences

### *Distribution of Workpoint Software*

Repeat the procedure for each rule that you want to set up.

#### **Automatic distribution sequence**

Automatic software distribution is always initiated at the workpoint.

When registering a workpoint, the DLS first checks if there is a rule for the workpoint device type. If there is no rule or if the rule has been deactivated by deselecting **Deploy Default Software**, no further processing takes place.

If the distribution of the newest software is activated across the board, the newest software (software with the highest software version number) is distributed to all workpoints with the same software type. Workpoints with other software types do not receive new software.

If **Deploy newest version** is deactivated, each workpoint receives the software entered, without taking the software type into consideration.

## 15.8 Using Job Coordination

In the DLS, all tasks are planned, processed, and logged with the help of jobs. Individual jobs can consist of a number of actions.

You can set up jobs in the following areas:

- Location
- Workpoint Interface Configuration
- Automatic SPE Configuration
- IP Phone Configuration
- IP Client Configuration
- IP Gateway Configuration
- IP Device Interaction
- SIP Mobile User Configuration
- SIP Mobile User Interaction
- Gateways
- Software Deployment

You can assign specific configuration, deployment, and interaction tasks to particular jobs in these areas by entering a name with **Job ID** and stipulating the execution time and execution option in the toolbar (see Section 5.4.2.4, "Time field with calendar button").



If a name was defined before the object was saved, this then appears later in **Job Control** in addition to the action number. You can group individual actions into jobs to achieve greater clarity by manually entering a **Job ID**.

**NOTE:** Switching from daylight saving time to regular time (one hour back) will not lead to a second execution of a job that has been started in the time interval hereby doubled. When switching from regular time to daylight saving time (one hour advance), a job which is scheduled for this skipped time will not be executed.

You can configure properties for executing and logging jobs (see Section 14.3, "Job Configuration").

### 15.8.1 Defining a Job

A job is defined by entering a **Job ID** in the tool bar. You can enter a time in the future to the right of **Job ID**. In this case, the required action (such as, changes to IP Device parameters) is performed at the specified time instead of immediately.

To avoid assigning further actions to the specified job, simply select the empty entry from the selection list under **Job ID**. You can remove a defined time in the calendar dialog by clicking **Delete**.



## 15.8.2 Viewing Job Properties and Status

There are two tools available for checking and logging jobs.

### Job Control

This function lets you view a large volume of information on the individual jobs and discard, delete, or reactivate existing jobs.

1. Click the **Job Coordination > Job Control** area.
2. If necessary, enter filter criteria to narrow the search to only jobs with certain properties. For example, this lets you search for jobs that are currently active, that is, they have not been processed yet.
3. Click **Search** to start the search.

The search result shows all relevant data on each job or action that was found (see Section 14.1, "Job Control").

4. You can delete (completely remove) selected jobs or actions in **Object** and **Table** views. You can do this either before or after the job has executed.

You can use **Discard job** to prevent a job from executing. This job remains in the list of all jobs, however, and is also still shown under **Daily Status**.

**NOTE:** You can discard any job regardless of its status. If the job's status is **done**, you can discard it and enter a new execution time. This allows you to reactivate jobs, that is, you can execute them again.

### Daily Status

This function gives you a clear display of all jobs in a table and lets you filter them according to time frame and job status. You can also delete the jobs that are displayed here.

1. Click the area **Job Coordination > Daily Status**.
2. If necessary, restrict the statistics by entering an activation date and job status so that the search includes only jobs with these properties.
3. Click **Search** to start the search.

The search results shows a table containing the job ID, job status, activation time and end time (see Section 14.2, "Daily Status").

If several actions have been combined into one job ID and if at least one action has the status **time exceeded**, **discarded**, or **failed**, this status is shown for the entire job.

4. Click **Delete** to remove the job completely. If several actions have been combined into one job ID, all of these actions are deleted.

## 15.9 Backup/Restore

The DLS client interface provides enhanced options for automatically saving DLS data and restoring backups.

### 15.9.1 Automatic Data Backups

You can create and restore automatic backups of the entire DLS database. You can also view backup logs.

#### 15.9.1.1 Configuring Automatic Backups

1. Click the **Administration > Backup/Restore > "Backup" Tab** area.
2. If you have not already done so, enter the path for saving the backup (without the file name) under **Backup Path** or select a suitable path by clicking **Browse**. Click **Test** once to check the availability of this path.
3. If necessary, change the maximum number of backup file types that should be backed up under **Max. Number of Backups**. The oldest backup file is deleted once this value is exceeded.
4. You can perform the following types of backups:
  - A single backup performed immediately.  
Click **Start Backup Now**.
  - A single backup performed at a specific time in the future.
    1. Enter a time in **Start Backups at** (for a calendar, see Section 5.4.2.4, "Time field with calendar button").
    2. Click **Save**.
  - A backup performed periodically on one, multiple or all weekdays.
    1. Enter a time in **Start Backups at** (for a calendar, see Section 5.4.2.4, "Time field with calendar button").
    2. Activate **Enable Daily Backups**.
    3. Activate or deactivate **Execute daily Backups on**, depending on your requirements.
    4. Click **Save**.

The backup file is created with the name `DLS_YYYYMMDD_HHMMSS.bak` in the directory you selected.

#### 15.9.1.2 Restoring Backups

**NOTE:** A DLS database restore assumes that a database backup already exists, see Section 15.9.1.1, "Configuring Automatic Backups".

If the database to be restored is older (modified database definition), please perform a migration instead of a restore (see Section 15.9.2.3, "Migrating DLS Database Data"). A migration should also be performed if you are not sure if the database backup is still compatible.

There are some basic server configuration data which will never be restored as e.g.

- the account the Deployment Service is running with
- the license settings

in order to guarantee a proper working after any restore.

1. Click the **Administration > Backup/Restore > "Restore" Tab** area.
2. Enter the name of the backup you want to restore under **Backup File** or select a suitable file by clicking **Browse**. Click **Test** to check the availability of this file.
3. Click **Restore** to start backup recovery.
4. A dialog window asks if Plug&Play shall be disabled after restore. When Plug&Play has been disabled, it can be enabled again via **Administration > Server Configuration > P&P Settings > Plug&Play enabled**. For this, it must be ensured that all IP Devices are registered in the DLS database.

#### 15.9.1.3 Monitoring Backups

1. Click the **Administration > Backup/Restore > "Protocol" Tab** area.
2. Click **Refresh** to display the backup log. The log provides information on the time the backups and recoveries were created and their statuses, as well as the backup files used.  
Possible values for the backup/recovery status: **Backup OK**, **Backup failed**, **Deleted**, **Restore OK**, **Restore failed**.

## 15.9.2 Manual Database Manipulation

This section explains how you can manually manipulate data in the DLS SQL database. The data is stored on the PC on which the deployment service is also running (the DLS server).

**NOTE:** We strongly urge you to use the automatic DLS Backup/Restore function as this is a simpler and more secure procedure (see Section 15.9.1, "Automatic Data Backups").

You can:

- perform a backup of all data, see Section 15.9.2.1,
- restore saved data, see Section 15.9.2.2,
- migrate a database backup with a current database definition (combine), see Section 15.9.2.3,
- reset the database (delete all database data), see Section 15.9.2.4.

### 15.9.2.1 Backing Up DLS Database Data

To back up the DLS server SQL database, proceed as follows:

1. Close all browser windows connected to the DLS.
2. End *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Stop Service** in the Windows Start menu.
3. Save the directory `[installation path]\DeploymentService\DB\` with all subdirectories by executing the following command:  

```
[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\dbexport.bat <filename>.zip
```
4. Start *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Start Service** in the Windows Start menu.

### 15.9.2.2 Restoring DLS Database Data

**NOTE:** A DLS database restore assumes that a database backup already exists, see Section 15.9.2.1, "Backing Up DLS Database Data".

If the database to be restored is older (modified database definition), please perform a migration instead of a restore (see Section 15.9.2.3, "Migrating DLS Database Data"). A migration should also be performed if you are not sure if the database backup is still compatible.

**NOTE:** There are some basic server configuration data which will never be restored as e.g.

- the account the Deployment Service is running with
  - the license settings
- in order to guarantee a proper working after any restore.

The procedure for restoring a saved database is similar to the one already described for a backup.

1. Close all browser windows connected to the DLS.
2. End *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Stop Service** in the Windows Start menu.
3. Restore the the DLS data by executing the following command:  

```
[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\dbimport.bat <filename>.zip
```
4. Start *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Start Service** in the Windows Start menu.

#### 15.9.2.3 Migrating DLS Database Data

"Migration" here means that you can restore a saved database even if the database definition has been changed in the meanwhile. The database definition can change over time, for example, if IP Device configuration parameters are added .

1. Close all browser windows connected to the DLS.
2. End *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Stop Service** in the Windows Start menu.
3. To migrate the DLS data, execute the following command:  

```
[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\migrate.bat <exportfilename>.zip
```

The file <exportfilename> must be created by a backup of DLS data (see Section 15.9.2.1, "Backing Up DLS Database Data").
4. Start *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Start Service** in the Windows Start menu.

#### 15.9.2.4 Resetting the DLS Database

You can reset the DLS database, which means that you can delete all data. As far as the data in the database is concerned, this produces the same result as the uninstallation (Section 4.13, "Uninstalling the Deployment Service") and renewed installation of the complete DLS application.

**IMPORTANT:** A reset deletes all data in the DLS database.

To avoid data loss, create a backup of the database before you carry out the reset (see Section 15.9.2.1, "Backing Up DLS Database Data").

1. Close all browser windows connected to the DLS.
2. End *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Stop Service** in the Windows Start menu.
3. Delete the database by executing the following commands:
  - `cd[Installation path]\DeploymentService\Tomcat5\webapps\DeploymentService\database`
  - `dbinstall.bat delete`
4. Create a new database by executing the following commands:
  - `cd[Installation path]\DeploymentService\Tomcat5\webapps\DeploymentService\database`
  - `dbinstall.bat create <password>`  
`<password>` defines the password for the user "admin".
5. Start *DeploymentService* on the DLS server. Do this by clicking **Programs > Deployment Service > Start Service** in the Windows Start menu.

#### 15.9.2.5 Troubleshooting: License agent is unreachable

If the DLS cannot be called due to a deficient connection to the license agent, a different license agent can be entered in the DLS database. This is accomplished by the following steps:

1. Close all browser windows that are connected to the DLS.
2. On the DLS server, terminate the service "Deployment service" by clicking on **Programs > Deployment Service > Stop Service** in the Windows start menu.
3. Execute the command that is appropriate for the desired action:

- to change the license agent:  
`[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\dbinstall.bat setcla <hostname> <port>`
- to change the license manager:  
`[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\dbinstall.bat setclm <hostname> <port>`
- if multiple DLS share one license agent:  
`[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\dbinstall.bat setmaxbasicdevices <Number of  
Devices>  
[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\dbinstall.bat setmaxmobileusers  
<Number of Mobile Users>`
- to setup CLA/CLM values:  
`[Installation path]\DeploymentService\Tomcat5\webapps\  
DeploymentService\database\dlslicense.bat setclm <IP of CLM> <CLM port>  
setcla <IP of CLA> <CLM port>  
e.g.  
dlslicense.bat setclm 10.6.25.11 8819 setcla 10.6.25.15 61740`

**NOTE:** In case that CLM/CLA setup via the above command is not working, please reapply the same command for CLA and CLM separately i.e.,

```
-dlslicense.bat setclm 10.6.25.11 8819  
-dlslicense.bat setcla 10.6.25.15 61740
```

4. Start the service "Deployment service" on the DLS server by clicking on **Programs > Deployment Service > Start Service** in the Windows start menu.

### 15.9.3 DLS Restore Point

Whenever you want to keep the DLS software and database state and have the ability later to revert back to that state, you can do so by creating a DLS Restore Point. The functionality of DLS Restore Point includes only one (1) restore point and the process includes software, database and registry backup & restore when needed.

How to create a DLS Restore Point :

1. Go to `C:<Program Files>\DeploymentService\tools` and run `DlsSync.bat`. This command will backup the current state of both DLS software and database. For remote database deployments you need also to provide a database backup directory (usually a network share) as the first parameter before running `DlsSync.bat`.

How to revert back to a DLS Restore Point :

1. Go to `C:<Program Files>\DeploymentService\tools` and run `DlsRestore.bat`. This command will restore the DLS software and database to the state taken from a previously created restore point. For remote database deployments you need also to provide the database backup directory (usually a network share) as the first parameter before running `DlsSync.bat`.

**NOTE:** You can have only one (1) DLS restore point. If you try to create a DLS restore point and an old restore point already exists ,the old restore point will be deleted and the new will be created.

**NOTE:** When you initiate a DLS upgrade the installer will automatically create a DLS Restore Point, thus, deleting any previously taken restore point.

**NOTE:** In order to improve upgrade speed and lower data duplication, administrators should clear the DLS trace (or move/maintain outside the DLS path if a copy is required), and also from within `<DLS installation path>\Tomcat5\bin` to copy outside any possibly generated heapdump-related files (heapdump.<data>.<id>.phd, javacore.<data>.<id>.txt, Snap.<data>.<id>.trc).

**NOTE:** Due to Microsoft SQL Server restrictions,in the case of deployments with active database mirroring, no restore procedures can be performed.

In such cases,when an upgrade is performed in deployments with remote database ,a popup window will be displayed at the beginning of the upgrade requesting to either remove the mirroring and retry (**retry**), abort (**abort**) or continue (**ignore**) without the rollback feature.

At this point if the mirroring is active then the restore procedure cannot be executed.

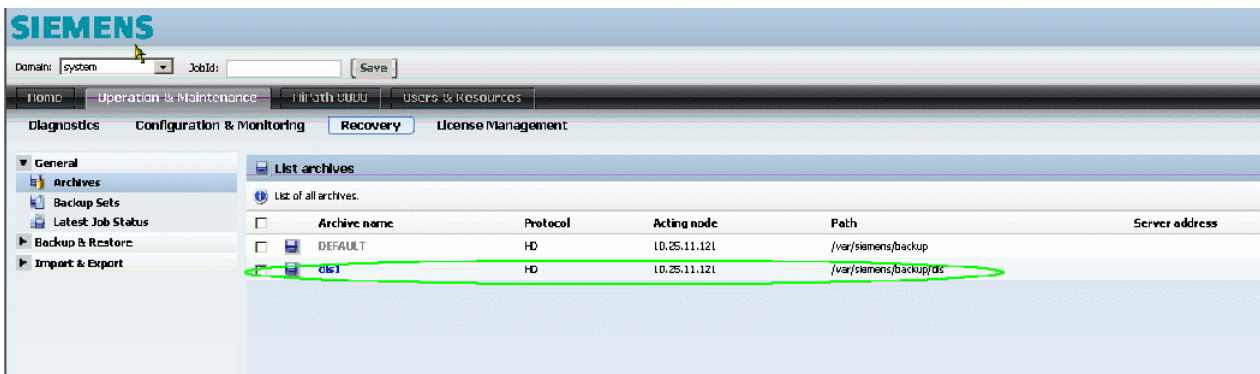


## 15.10 Backup & Restore On OpenScape Voice Integrated and Linux Standalone Installations

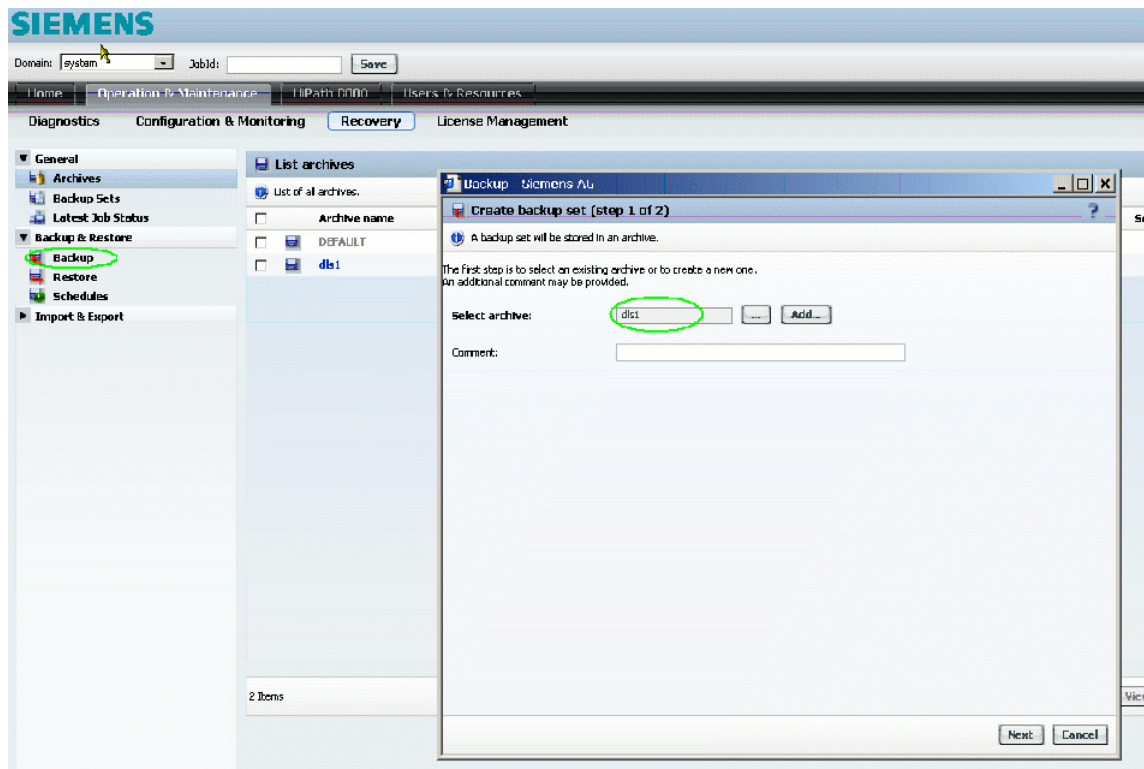
This chapter describes DSL database backup and recovery for the OpenScape Voice onboard version and the Linux Standalone version.

### 15.10.1 Backup

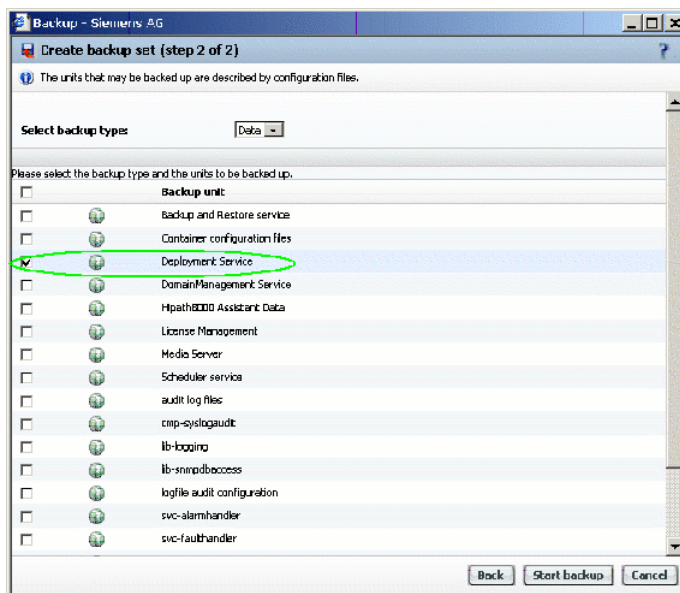
1. Log on at the **Common Management Platform**. The management platform is reached under `https://<IP of server>`
2. Navigate to **Operation & Maintenance > "Recovery" Tab**. Create an archive for DLS backups, e. g. in `/var/siemens/backup/dls`.



- To create a backup, firstly open the folder **Backup & Restore** and click **Backup**. In the **Backup** window, in the **Select archive** field, select the newly created archive.



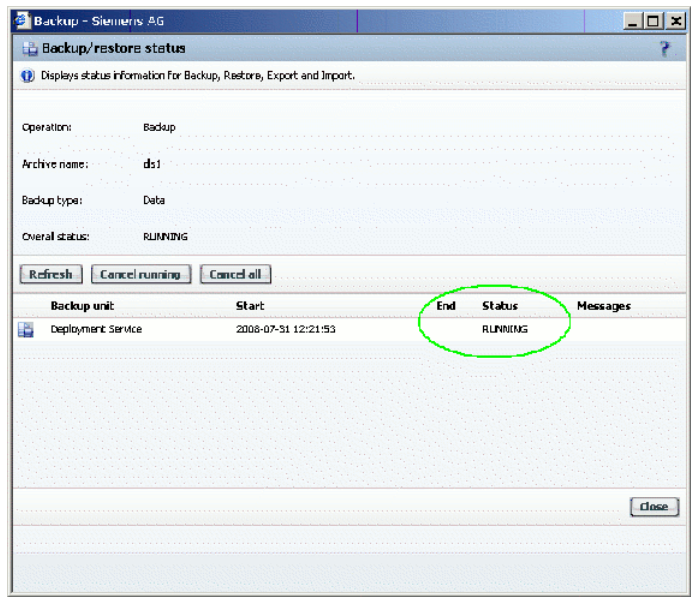
- As **Backup unit**, select **Deployment Service**. Afterwards, click **Start backup**.



Operating Sequences

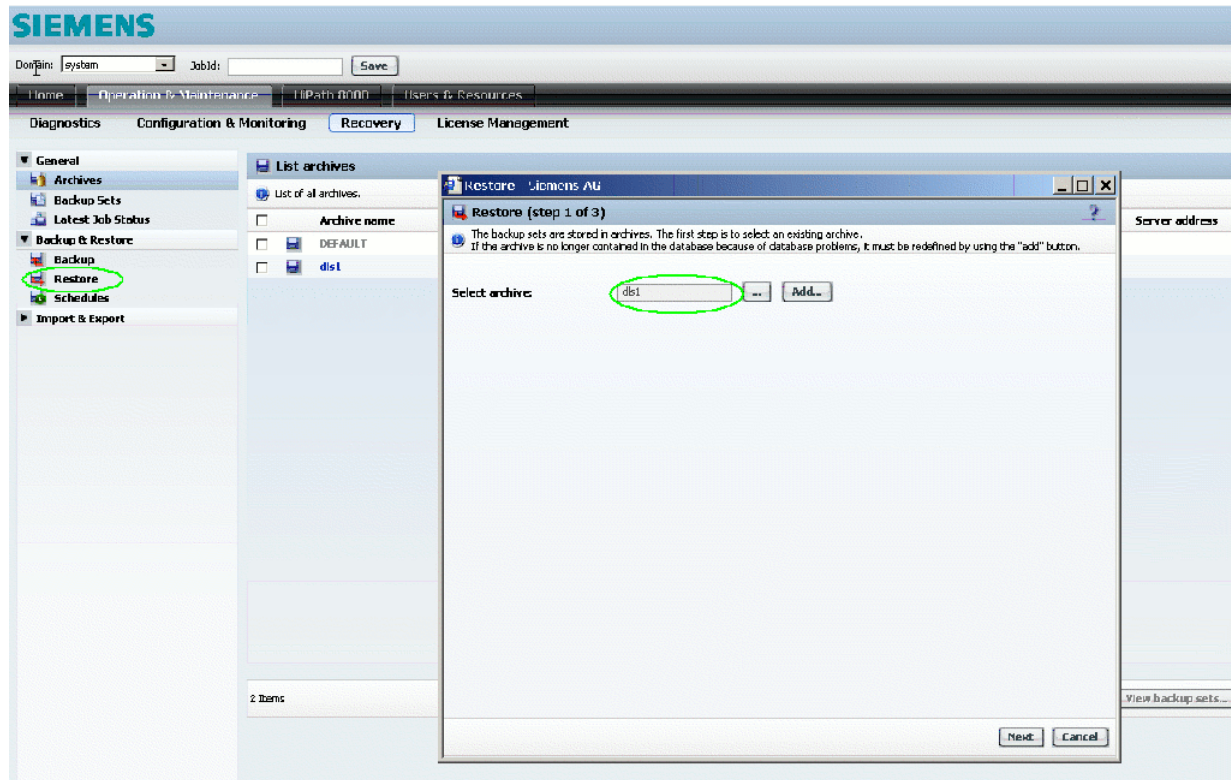
Backup & Restore On OpenScape Voice Integrated and Linux Standalone Installations

- 5. Wait until **Status** changes from **RUNNING** to **OK** (this screen refreshes automatically).



## 15.10.2 Restore

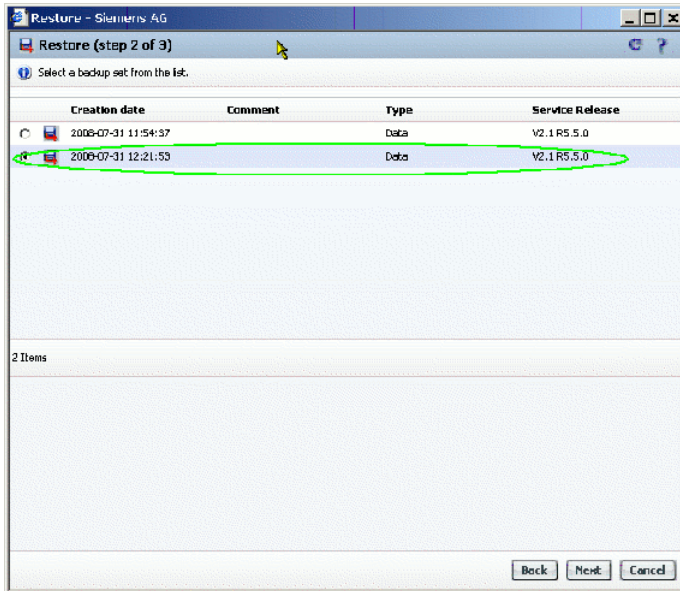
1. To restore a database, firstly open the folder **Backup & Restore** and click **Restore**. In the **Restore** window, in the **Select archive** field, select the archive containing the desired backup, and click **Next**.



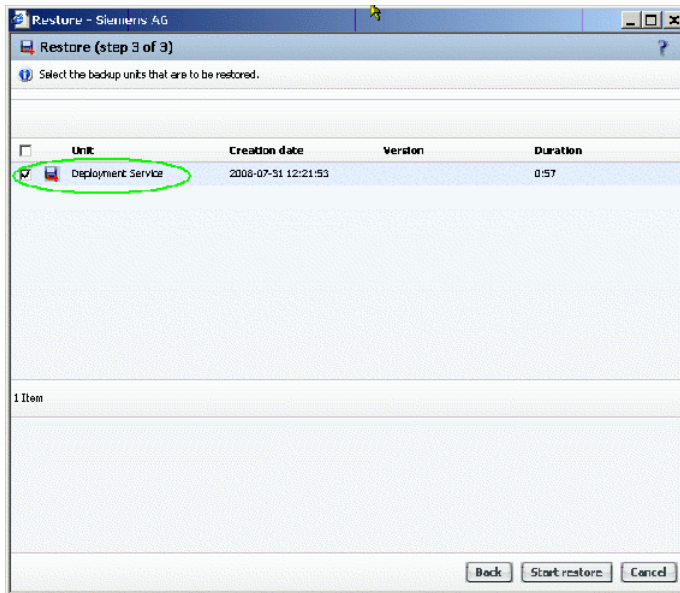
## Operating Sequences

### Backup & Restore On OpenScape Voice Integrated and Linux Standalone Installations

2. Select the desired backup from the list. The backups are identified by a time stamp or optional comment. Click **Next**.

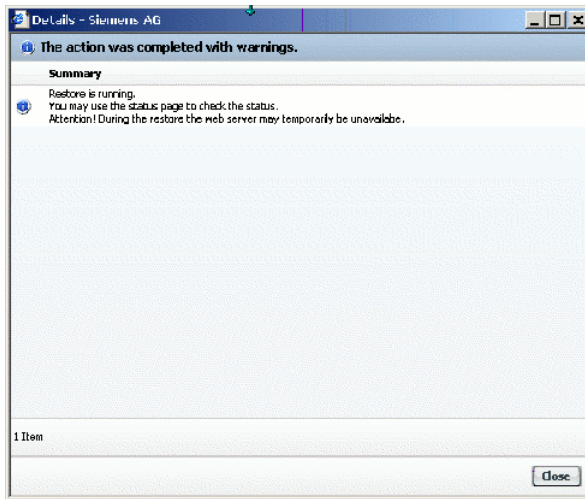


3. As backup **Unit**, select **Deployment Service**, and click **Start restore**.

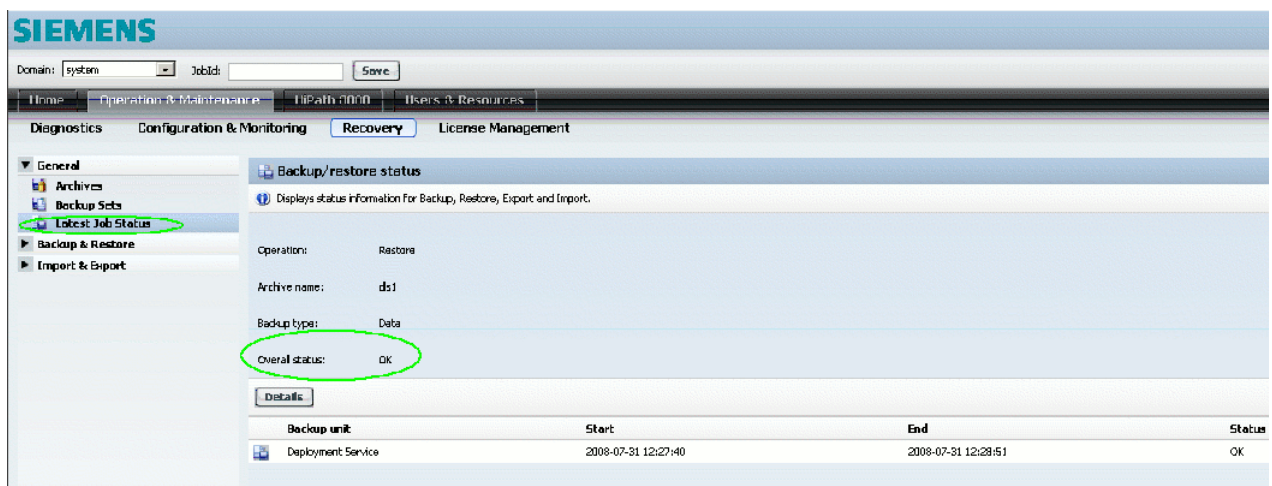




4. You will be presented with a confirmation window. As this window will not refresh automatically, you can close it any time.



5. To check the state of the restore process, use the **Latest Job Status** screen.



## 15.10.3 Post-Restore Procedures

After the database has been restored successfully, the following manual steps must be performed, using shell commands on the server.

1. Log in as root at the Linux server or OpenScape Voice (for OpenScape Voice cluster: at both nodes).

2. Stop DeploymentService:

```
sh /etc/init.d/symphoniad stop TomcatServletContainer
```

On OpenScape Voice Cluster: Perform this step at both nodes.

3. Adopt the DLS database to the current layout. The command paths vary according to the platform.

On Linux Standalone:

```
cd /opt/siemens/share/tomcat/webapps/DeploymentService/database  
sh dbinstall.sh update
```

On OpenScape Voice:

```
cd /enterprise/share/tomcat/webapps/DeploymentService/database  
sh dbinstall.sh update
```

On a OpenScape Voice cluster, you need to perform this step only on that node where the PRIMARY database is located. You can check the result with the following command:

```
su - srx -c "RtpSolid -l"
```

4. Start DeploymentService:

```
sh /etc/init.d/symphoniad start TomcatServletContainer
```

On OpenScape Voice cluster, perform this step on both nodes.

## 15.11 Automatic Restore on Upgrade Failure

Due to the nature of DLS and the number of different deployment scenarios as well as the freedom of the customer to modify the underlying operating system, the upgrade of the software is a high-risk administrative task. Until recently, in case of a failed upgrade, the customer was left with a dysfunctional system and in order to revert back to an operational state, manual intervention was required having to re-install DLS as well as to restore the database from a previous backup.

Now the DLS installer can automatically revert back to the operational system state prior to upgrading in case of an upgrade failure. This functionality is available only for Microsoft Windows DLS deployments. For Linux, DLS deployment is not available due to the dependency on the Symphonia framework and the DVD delivery mechanism.

**NOTE:** In case the restore process fails, the installer will notify the user and it will exit. The system will be in an undefined state and you will have to contact support in order to resolve the issue.

**NOTE:** After a successful restore, the software and database backup are not deleted so as the customer to have the ability to revert back in case there is a need for that (please refer to Section 15.9.3, "DLS Restore Point").

**IMPORTANT:** Manual downgrade is not supported.



## 15.12 Importing and Exporting Plug&Play Data

The following section describes how to import and export workpoint Plug&Play data as files in CSV format.

### 15.12.1 Exporting Plug&Play Data

The following steps explain how to store Plug&Play data from a particular workpoint as a CSV file on the DLS server.

**NOTE:** A file that already exists with the name you enter will be overwritten.

1. Click the **IP Devices > IP Device Management > IP Device Configuration** area.
2. Locate and select the workpoints from which you want to export Plug&Play data and click **Export File**.
3. In the subsequent dialog, enter the name of the export file on the server and click **Save**.
4. A window appears confirming that the export was successful or displaying an error message.

### 15.12.2 Importing Plug&Play Data


The following steps explain how to import Plug&Play data from a CSV file on the DLS server. Detailed import results documenting which workpoints were newly created, which were modified and on which errors occurred, for instance, can be found in the log file. It is displayed under **Administration > Display Logging Data > P&P Import Protocols**.

1. Click the **IP Devices > IP Device Management > IP Device Configuration** area.
2. Click **Import File** in Search view.
3. Enter the name of the CSV file you wish to import in the next dialog. In this dialog, you can also specify whether workpoints created during the import should be created as IP phones and/or IP clients. Confirm the next dialog by clicking **Open**.
4. A window appears on the client confirming that import was executed and giving the location of the log file containing the import results.

### 15.12.3 Plug&Play Data over OpenScope Desktop Clients

OpenScope Desktop Clients must be setup in relation to DLS Virtual Device records in order to make use of the DLS IP address in order to be able to establish a connection to DLS.

The following steps describe how to promote Plug & Play Data by the DLS when the OpenScope Client is running.

1. Go to **Administration > Server Configuration > P&P Settings > "IP Client Mapping Configuration" Tab**
2. Prepare a .csv file by clicking the **Add Entry**  icon.

Plug&Play enabled

Full E.164 number expected


Standard Profile IP Client Mapping Configuration


Table Selected entry 2 / 2

	Windows Account	E164
+		
+		

Import and export mapping data

Import Export

**NOTE:** Click the  icon to delete the entry at your will.

**NOTE:** Click the  icon to add entries one-by-one.

3. Use the **Selected Entry** view to import mapping data for a Windows PE / WE client.
4. In the Windows Account textbox enter the respective domain / Windows Account of the client.
5. In the 'E.164' textbox enter the number for this client.
6. In the **Import and Export mapping data** field press **Import**. Select the previously edited .csv file.
7. Press **Save**.
8. In **Table** view verify that the import was successful.
9. Login to the PE ( OpenScope Desktop Client Personal Edition) / WE (Web Embedded) client with the Windows Account given by the previous mapping.

**NOTE:** The subscriber should acquire the specified 'E.164'.

## 15.12.4 Syntax of the .csv Files

The .csv file used for import and export has following format:

- 1<sup>st</sup> row: Description of content of columns
- 2<sup>nd</sup> and following rows: command and parameters

Empty lines and lines starting with a '#' will be ignored.

If a virtual ID is used (no MAC address), a second trial is ignored, and will be documented in the protocol file. As long as different MAC addresses are in use, it is possible to create multiple devices with a common E.164 number.

**NOTE:** Prior to changing keys or keysets, a device must be created.

**NOTE:** This format is supported by DLS version V2R2 onwards. Older formats are supported further on; in such cases, all devices are imported als IP phones. If IP clients are to be imported, a conversion to the previously described format is necessary.

You can find a list of parameters under Section 15.12.4.10, "Parameter Description for Create SIP/HFA Phone, Create SIP/HFA Client, Create IP Gateway".

### 15.12.4.1 Create a SIP Phone (CreateSIPPhone)

Command syntax for creating a SIP phone:

```
CreateSIPPhone;<DeviceID>;<e164 number>;<IP Phone Type>;<Software Type>;<Software Version>;<Device Profile>;<Remark>;<Basic Profile>;<Restore Basic Profile after Workpoint Reset>;<Remark2>;<Terminal Name>;<Display ID>;<SIP User ID>;<SIP Password>;<SIP Realm>;<SIP Server Addr.>;<SIP Server Port>;<SIP Registrar Addr.>;<SIP Registrar Port>;<SIP Routing>;<SIP Gateway Addr.>;<SIP Gateway Port>;<Cloud Pin>;<Secure Mode Required>;<PIN Mode>;<Remark2>
```

You can find a parameter list under section Section 15.12.4.10, "Parameter Description for Create SIP/HFA Phone, Create SIP/HFA Client, Create IP Gateway".

Example:

```
CreateSIPPhone;00:1A:E8:34:4F:BE;302109998062;OpenStage 80;Unify SIP;V3 R0.61.0;;;false;302109998062;302109998062;;;10.11.221.54;5060;10.11.221.54;5060;0;;5060;;true; Individual PIN;
```

### 15.12.4.2 Create an HFA Phone (CreateHFAPhone)

Command syntax for creating a HFA phone:

```
CreateHFAPhone; <DeviceID>;<e164 number>;<IP Phone Type>;<Software Type>;<Software Version>;<Device Profile>;<Remark>;<Basic Profile>;<Restore Basic Profile after Workpoint Reset>;<Subscriber Number>;<Gatekeeper>;<Gatekeeper Password>;<Subscriber Number (Standby)>;<Gatekeeper (Standby)>;<Gatekeeper Password (Standby)>;<Remark2>
```

You can find a parameter list under section Section 15.12.4.10, "Parameter Description for Create SIP/HFA Phone, Create SIP/HFA Client, Create IP Gateway".

Example:

```
CreateHFAPhone;00:01:E3:25:E2:19;498972221456;OpenStage 80;Unify HFA;V1 R0.0.93;;;false;21456;218.1.16.211;;;;;
```

### 15.12.4.3 Create a SIP Client (CreateSIPClient)

Command syntax for creating a SIP phone:

```
CreateSIPClient;<DeviceID>;<e164 number>;<IP Client Type>;<Software Type>;<Software Version>;<Device Profile>;<Remark>;<Basic Profile>;<Restore Basic Profile after Workpoint Reset>;<Terminal Name>;<SIP User ID>;<SIP Password>;<SIP Realm>;<SIP Server Addr.>;<SIP Registrar Addr.>;<SIP Registrar Port>;<SIP Gateway Addr.>;<SIP Gateway Port>;
```

You can find a parameter list under section Section 15.12.4.10, "Parameter Description for Create SIP/HFA Phone, Create SIP/HFA Client, Create IP Gateway".

Example:

```
CreateSIPClient;00:19:99:03:5B:0E;498972221458;Unify OpenScope Desktop Client;Unify oC-Bundle;5.1.182.0000;;;;;;;;;;218.1.16.211;218.1.16.211;5060;;5060;;
```

### 15.12.4.4 Create an HFA Client (CreateHFAClient)

Command syntax for creating an HFA Client:

```
CreateHFAClient; <DeviceID>;<e164 number>;<IP Client Type>;<Software Type>;<Software Version>;<Device Profile>;<Remark>;<Basic Profile>;<Restore Basic Profile after Workpoint Reset>;<Subscriber Number>;<Gatekeeper>;<Gatekeeper Password>;<Subscriber Number (Standby)>;<Gatekeeper (Standby)>;<Gatekeeper Password (Standby)>
```

You can find a parameter list under section Section 15.12.4.10, "Parameter Description for Create SIP/HFA Phone, Create SIP/HFA Client, Create IP Gateway".

Example:

## Operating Sequences

### Importing and Exporting Plug&Play Data

```
CreateHFAClient;00:19:99:03:5B:0E;498972221458;Unify OpenScape Desktop Client;  
Unify oC-Bundle;5.1.182.0000;;;;;21458;;;;;
```

#### 15.12.4.5 Create an IP Gateway (CreatelpGateway)

Command syntax for creating an IP Gateway:

```
CreateIpGateway;<DeviceID>;<IP Gateway Type>;<Software Type>;  
<Software Version>;<Device Profile>;<Remark>
```

You can find a parameter list under section Section 15.12.4.10, "Parameter Description for Create SIP/HFA Phone, Create SIP/HFA Client, Create IP Gateway".

Example:

```
CreateIpGateway;139.21.93.205;HG1500;Unify CGW;HXG_V7_R0.215.4;;;;
```

#### 15.12.4.6 Modify Key

This command enables enables to create or change the configuration of a particular device key. You can set any device key, depending on the type, software and version of the IP phone. With the reset parameter, all key functions can be deleted before setting them newly. If this field is empty, the existing keys remain unchanged.

Syntax:

```
ModifyKey;<reset>;<e164 number>|deviceId=<deviceId>;  
<key function>;<level>;<module>;<key-number>[;<name>=<value>]+
```

**NOTE:** The default value is e164. If a device ID is to be used, deviceId=<deviceId> must be written.

You can find a list of parameters under Section 15.12.4.11, "Parameter Description for ModifyKey, ModifyKeyset".

#### Examples

1. An OptiPoint 410 advance shall be equipped with a control key for a headset:

```
ModifyKey;false;218116231;024;001;0;1;locked-function-keys=false;
```

As an alternative, the UI term "headset" can be used for defining the key function, instead of the function number (here: 024).

2. For setting up a direct station select (DSS) key, 2 steps are required:
  1. Set up a primary line  
`ModifyKey;false;218116230;line;000;0;1;`  
`line-sip-uri=49897223500;line-primary=true;`
  2. Set up the direct station select key  
`ModifyKey;false;218116230;dss;000;0;3;line-sip-uri=498972233439`
3. To delete a function key, set the key function to "Key Unused". In this example, key #3 is deleted:  
`ModifyKey;false;218116232;Key Unused;0;0;3`

#### 15.12.4.7 Modify Keyset

The values of a keyset can be modified. With the reset parameter, all key functions can be deleted before setting them newly. If the field is empty, the existing keyset values remain unchanged.

Syntax:

```
ModifyKeyset;<reset>;<e164 number>|deviceId=<deviceId>[;<attribute-name>=  
<attribute-value>]+
```

**NOTE:** The default value is e164. If a device ID is to be used, `deviceId=<deviceId>` must be written.

You can find a parameter list in Section 15.12.4.11, "Parameter Description for ModifyKey, ModifyKeyset".

#### Example

In the following example, multiple parameters are set:

1. Rollover volume is set to 2 (line-rollover-volume).
2. Show focus is reset (keyset-use-focus => 0; true/false can also be used for activating/deactivating).
3. LED on registration is set (line-registration-leds, 0/1 can be used as well).

```
ModifyKeyset;false;218116230;line-rollover-volume=2;  
keyset-use-focus=0;line-registration-leds=true;
```

#### 15.12.4.8 Modify Device Attributes (ModifyDevice)

This command enables to create or change device attributes, dependent on type, software and version of the IP phone. The allowed device attributes are described under:

```
...\DeploymentService\api\doc\v200\dlsapi\  
device\index_Device_EN.html
```

```
...\DeploymentService\api\doc\v200\dlsapi\  
device\index_SIPRegistration_EN.html
```

```
...\DeploymentService\api\doc\v200\dlsapi\  
device\index_HFARegistration_EN.html
```

##### Syntax:

```
ModifyDevice;<e164>|deviceId=<deviceId>[;<attribute-name>=<attribute-value>]+
```

**NOTE:** The default value is e164. If a device ID is to be used, deviceId=<deviceId> must be written.

You can find a parameter list under Section 15.12.4.12, "Parameter Description for ModifyDevice".

##### Example:

```
ModifyDevice;218116230;remark=Testdeviceconfiguration;  
display-id=6230;display-id-unicode=6230;
```

### 15.12.4.9 Modify OpenScape Data (ModifyOpenScape)

This command enables modification of OpenScape Data.

The allowed attributes and their values are described under:

```
... \DeploymentService\api\doc\v200\dlsapi\
device\index_OpenScapeParam_EN.html
```

Syntax:

```
ModifyOpenScape;<reset>;<e164 number>|<deviceId=anyDeviceId>
[;<attribute-name>=<attribute-value>]+
```

**NOTE:** The default value is e164. If a device ID is to be used, deviceId=<deviceId> must be written.

Example:

```
ModifyOpenScape;false;498972231234;osc-connection-userid=31234;
osc-connection-port=4709;osc-connection-use-standardproxy=true;
osc-connection-use-https=true;osc-xmp-port=5222;
osc-xmp-use-https=false;osc-rules-port=8443;
```

### 15.12.4.10 Parameter Description for Create SIP/HFA Phone, Create SIP/HFA Client, Create IP Gateway

Unless otherwise stated, it is about parameters in the menu IP Devices> IP Phone Configuration > Gateway/Server.

Parameter	optional/required	DLS Parameter	Description
Device ID	optional	Device ID	MAC address. If not specified, a virtual ID is created by the DLS.
e164 number	required	E.164	Unique E.164 number, max. 24 characters.
IP Phone Type, IP Client Type, IP Gateway Type	optional	Device Type	Device type or virtual device. Alphanumeric, max. 50 characters. Possible values: IP Phone Type: "Possible Values for IP PhoneType". IP Client Type: Possible Values for IP Client Type: IP Gateway: Possible Values for IP Gateway Type:
Software Type	optional	SW Type	Alphanumeric, max. 30 characters.

Table 10



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Parameter	optional/required	DLS Parameter	Description
Software Version	optional	SW Version	Alphanumeric, max. 30 characters.
Device Profile	optional	Device Profile	Alphanumeric, max. 30 characters.
Remark	optional	Remark	Alphanumeric, max. 256 characters.
Basic Profile	optional	IP Devices > IP Device Management > IP Device Configuration > "Profile" Tab > Basic Profile	Alphanumeric, max. 40 characters.
Restore Basic Profil after Workpoint Reset	optional	Apply Basic Profile at IP Device Registration	Possible values: true / false or 1/ 0
Terminal Name	optional	Terminal Name	Alphanumeric, max. 255 characters.
Display ID	optional	Display ID	Alphanumeric, max. 24 characters
SIP User ID	optional	UserID	1 <sup>st</sup> part of SIP URL, alphanumeric, max. 20 characters
SIP Password	optional	Password	Password, max. 25 characters
SIP Realm	optional	SIP Realm	Alphanumeric, max. 93 characters.
SIP Server Addr	optional	Reg-Adr	IP Address, max. 25 characters
SIP Server Port	optional	Reg-Port	Port number, numeric, max. 5 Zeichen, default: 5060.
SIP Registrar Addr	optional	SIP Registrar Adr	IP Address, alphanumeric, max. 255 characters
SIP Registrar Port	optional	SIP Registrar Port	Portnumber, numeric, max. 5 characters
SIP Routing	optional	SIP Routing	Poss. Values: Server, Gateway, Direct
SIP Gateway Addr	optional	SIP Gateway Addr	IP Address, alphanumeric, max. 255 characters
SIP Gateway Port	optional	SIP Gateway Port	Portnumber, numeric, max. 5 characters, default: 5060
Subscriber Number	optional	Registration Subscriber Number	HFA parameter, E.164 number, max. 24 characters
Gatekeeper	optional	Gatekeeper ID	HFA parameter, domain-ID, max. 255 characters

Table 10

<b>Parameter</b>	<b>optional/required</b>	<b>DLS Parameter</b>	<b>Description</b>
Gatekeeper Password	optional	Subscriber Password	HFA parameter, password, max. 24 characters
Subscriber Number (Standby)	optional	Registration Subscriber Number (Standby)	HFA parameter, E.164 number, max. 24 characters
Gatekeeper (Standby)	optional	Gatekeeper ID (Standby)	HFA parameter, domain ID, max. 255 characters
Gatekeeper Password (Standby)	optional	Subscriber Password (Standby)	HFA parameter, password, max. 24 characters

*Table 10*

#### 15.12.4.11 Parameter Description for ModifyKey, ModifyKeyset

Parameter	optional/required	DLS Parameter	Description
Device ID	optional	Device ID	MAC address. If not specified, a virtual ID is created by the DLS.
e164 number	required	E.164	Unique E.164 number, max. 24 characters.
key function	optional	IP Devices > IP Phone Configuration > Keysets/Keylayout > "Destinations" Tab > Key function	For possible values, see table "Possible Values for Key Function".
level	optional	IP Devices > IP Phone Configuration > Keysets/Keylayout > "Destinations" Tab > Level	Poss. Values: 0 = 1st Level, 1 = 2nd Level, 2 = 3rd Level, 3 = 4th Level
module	optional	Module	Poss. Values: 0 ... 4
key-number	optional	IP Devices > IP Phone Configuration > Keysets/Keylayout > "Destinations" Tab > Key number	Numeric. For possible values, please see table "Possible Values of name for ModifyKey".
attribute-name	optional	----	For possible values, please see table "Possible Values of name for ModifyKey".
name	optional	----	For possible values, please see table "Possible Values of name for ModifyKey".
reset	optional	No DLS parameter	Poss. values: true/false, 1/ 0

### 15.12.4.12 Parameter Description for ModifyDevice

Parameter	optional/required	DLS Parameter	Description
Device ID	optional	Device ID	MAC address. If not specified, a virtual ID is created by the DLS.
e164 number	required	E.164	Unique E.164 number, max. 24 characters.
attribute-name	optional	----	For possible values, see the table "Possible Values for attribute-name in ModifyDevice".

#### Possible Values for attribute-name in ModifyDevice

- ... \DeploymentService\api\doc\v200\dlsapi\device\index\_Device\_EN.html
- ... \DeploymentService\api\doc\v200\dlsapi\device\index\_SIPRegistration\_EN.html
- ... \DeploymentService\api\doc\v200\dlsapi\device\index\_HFARegistration\_EN.html

#### Possible Values for IP PhoneType

- Mobile User SIP60
- OpenStage 5
- OpenStage 15
- OpenStage 20
- OpenStage 20E
- OpenStage 40
- OpenStage 60
- OpenStage 80
- optiPoint 410 advance
- optiPoint 410 economy
- optiPoint 410 economy plus
- optiPoint 410 entry
- optiPoint 420 economy
- optiPoint 420 economy plus

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- optiPoint 420 standard
- optiPoint 420 advance

### Possible Values for IP Client Type

- optiPoint 130
- Unify OpenScape Desktop Client
- AC-Win 2Q IP
- AC-Win MQ IP

### Possible Values for IP Gateway Type

- HG1500
- HG3500
- HG3575
- HOOEE
- HOOME V1
- HP2K V2.0

### Possible Values for Key Function

Function	Code
Key Unused	000
Selected Dialing	001
Abbreviated Dialing	002
Repeat Dialing	003
Missed Calls	004
Voice Messages	005
Forwarding	006
Loudspeaker	007
Mute	008
Ringer Off	009
Hold	010
Alternate	011
Blind Transfer	012
Join (optiPoint)	013
Transfer Call (OpenStage)	013
Deflect	014

Table 11

<b>Function</b>	<b>Code</b>
Setup Menu	015
Room Echoing	016
Room Muffled	017
Shift	018
Notebook	019
Settings	020
Phone Lock	021
Conference	022
Local Conference	023
Headset	024
Do Not Disturb	025
Group Pickup	029
Repertory Dial	030
Line	031
Feature Toggle	032
Show Phone Screen	033
Swap Screen	041
Mobility	042
Call Park	044
Call Pickup	045
Cancel/Release	046
Ok Confirm	047
Callback Request	048
Cancel Callback	049
consultation transfer	050
DSS	051
State Key	052
Call Waiting Toggle	053
Immediate Ring	054
Preview Key	055
Call Recording	056
AICS Zip	057
Server Feature Key	058
BLF	059
start application	060
send url	063
built-in forwarding	064

*Table 11*

## Operating Sequences

### Importing and Exporting Plug&Play Data

Function	Code
built-in release	065
built-in voice dial	066
built-in redial	067
start phonebook	068
2nd alert	069

Table 11

### Possible Values of name for ModifyKey

Name	DLS Parameter	DLS description	Type
key-destination	Destination	Destination data to be dialed. This can be a digit string or a URL.	Alphanumeric, max. 255 characters
state-key-uri	Feature-URI	URI used to control this feature on the server.	Alphanumeric, max. 48 chars
line-primary	Primary Line	Specifies whether the line operates as a primary line.	Poss. values: true/false
line-sip-uri	Address of record	Line's phone number and address of record.	E.164 number
line-sip-realm	Realm	SIP realm for the line's address of record.	Alphanumeric, max. 48 characters
line-sip-user-id	UserID	User ID	Alphanumeric, max. 48 characters
line-sip-pwd	Password	Password	Alphanumeric, max. 48 characters
line-ring	Ring	Ring	Poss. values: true/false
line-hunt-sequence	Hunt Ranking	Hunt Ranking	0 ... 10
line-shared-type	Shared type	Shared type	Poss. Values: <ul style="list-style-type: none"><li>• Private</li><li>• Shared</li><li>• Unknown</li></ul>
feature-toggle-description	Toggle text	Label for the "Feature Toggle" key function.	Alphanumeric, max. 24 characters
feature-toggle-code-description-unicode	Toggle text (Unicode)	Label for the "Feature Toggle" key function in unicode.	Alphanumeric, max. 24 characters
state-key-description-text	State Key Description	Description text for the state key.	Alphanumeric, max. 22 characters
state-key-description-text-unicode	State Key Description (Unicode)	Description text for the state key in unicode.	Alphanumeric, max. 22 characters

Table 12

<b>Name</b>	<b>DLS Parameter</b>	<b>DLS description</b>	<b>Type</b>
key-label	Key Label	A key label can be entered here for every key in the case of Self labeling Keys workpoints (for example, optiPoint 420 standard).	Alphanumeric, max. 24 characters
key-label-unicode	Key label (Unicode)	You can enter the key label in unicode characters for devices in the OpenStage family.	Alphanumeric, max. 24 characters
line-hidden	Show on APM/DSM	Check box for activating the line display on the optiPoint Application Module/Display Module	Poss. values: true/false
line-int-allow	Line intrusion allowed	Check box for enabling line intrusion	Poss. values: true/false
line-hld-active	Line Hotline Dest. active	Check box for activating a line hotline.	Poss. values: true/false
line-hld	Line Hotline Destination	Subscriber number that is used as a destination for the line hotline.	Alphanumeric, max. 60 characters
line-mlo-pos	Overview Position on APM/ DSM	Overview Position on APM / DSM	Number, length 2
line-short-desc	Line Description	Description of Line	Alphanumeric, max. 10 characters
line-hot-line-warm-line	Hot/Warm Line Type		Poss. Values: <ul style="list-style-type: none"> <li>• Normal</li> <li>• Hot Line</li> <li>• Warm Line</li> </ul>
line-ring-delay	Ringing Delay	Time before ringing starts for an alerting call.	Number, length: 5
forwarding-type	Forwarding Type	Forwarding Type	Poss. Values: <ul style="list-style-type: none"> <li>• on busy</li> <li>• on no reply</li> <li>• unconditionally</li> </ul>
locked-function-keys	Lock Key	Check box for locking the function key	Poss. values: true/false
dss-sip-line-type	Line Type	Line Type	Poss. values: <ul style="list-style-type: none"> <li>• normal</li> <li>• direct</li> </ul>

Table 12



## Operating Sequences

### Importing and Exporting Plug&Play Data

Name	DLS Parameter	DLS description	Type
dss-sip-line-action	Line Action	Line Action	Poss. Values: <ul style="list-style-type: none"><li>• Consultation</li><li>• Transfer</li><li>• No Action</li></ul>

Table 12

### Possible Values of name for ModifyKeyset

Internal name	DLS display label	DLS description	Type
dss-sip-deflect	Deflect Alerting Call	active: Deflect Alerting Call by pressing key	Poss. values: true/false
dss-sip-detect-timer	Call Pickup Detect Timer (sec)	Specifies how long group pickup is signaled by the key	Number
dss-sip-refuse	Allow Pickup to be refused	active: Allow Pickup to be refused by pressing key	Poss. values: true/false
line-key-operating-mode	Line Key Operating Mode	Defines what should happen to a line (call) when a connection is established over another line. Call hold: The original call is put on hold. Release: The connection to the original call is cleared	Poss. Values: <ul style="list-style-type: none"><li>• Call hold</li><li>• Release</li></ul>
originating-line-preference	Originating Line Preference	Defines the preferred line to be used for outgoing calls	Poss. Values: <ul style="list-style-type: none"><li>• Idle line preference</li><li>• Primary line preference</li><li>• Last line preference</li><li>• No preference</li></ul>
line-registration-leds	Registration LEDs	Activates display when restarting the IP phone indicating whether the IP Device was registered successfully	Poss. values: true/false
keyset-remote-forward-ind	Remote Forward Indication	Activates alerting on a line key when call forwarding is active for its destination	Poss. values: true/false
keyset-reservation-timer	Reservation Timer	Time in seconds indicating how long a line reservation can be maintained	Number

Table 13

Internal name	DLS display label	DLS description	Type
line-rollover-type	Rollover Type	Type of alerting when busy	Poss. Values: <ul style="list-style-type: none"> <li>No ring</li> <li>Alert Ring</li> <li>Standard</li> <li>Alerting</li> </ul>
line-rollover-volume	Rollover Ring Volume	Volume of alerting when busy	Number
terminating-line-preference	Terminating Line Preference	Defines the preferred line to be used for incoming calls	Poss. Values: <ul style="list-style-type: none"> <li>Ringing line preference</li> <li>Calling line preference with prime line preferred</li> <li>Ringing line preference</li> <li>Ringing line preference with prime line preferred</li> <li>No preference</li> </ul>
keyset-use-focus	Show Focus	Activates display showing which line is currently active (line has the focus)	Poss. values: true/false
line-button-mode	Line Button Mode	Mode of line button	Poss. Values: <ul style="list-style-type: none"> <li>Single button</li> <li>Preselection</li> </ul>
line-preselection-timer	Line Preselection Timer (sec)	Time in seconds before Line Preselection is cancelled	Number
line-preview-period	Line Key Preview Period	Time in seconds before preview mode is cancelled	Number
shift-key-timeout	Shift Key Timeout	Time in seconds before shift mode is cancelled	Number
stimulus-dtmf-sequence	DTMF Sequence	DTMF Sequence	Alphanumeric, max. 255 chars
blf-audible	BLF audible alert	BLF audible alert	Poss. values: true/false
blf-popup	BLF popup alert	BLF popup alert	Poss. values: true/false
fpk-app-name	Application name	Application name	Alphanumeric, max. 48 chars
send-url-address	Web server address	Host name, domain name, or IP address of web server	Alphanumeric, max. 255 chars

Table 13

## Operating Sequences

### Importing and Exporting Plug&Play Data

Internal name	DLS display label	DLS description	Type
send-url-protocol	Protocol	Protocol	Poss. values: 0: HTTP 1: HTTPS
send-url-port	Port	Port number of web server	Number
send-url-path	Path	Directory path and name of the program or web page. Examples: "servlet/lppGenericServlet" or "webpage/checkin.html"	Alphanumeric, max. 255 chars
send-url-query	Parameters	Parameters (e.g.: parameter1=value1&parameter2=value2)	Alphanumeric, max. 255 chars
send-url-method	HTTP method	HTTP method	Poss. values: 0: Get 1: Post
send-url-user-id	Web server user ID	User identity known by web server	Alphanumeric, max. 48 chars
send-url-passwd	Web server password	Password known by web server	Alphanumeric, max. 48 chars
key-functionality	Key functionality	Key functionality	Poss. Values: 0: Toggle call forwarding 1: Unspecified call forwarding 2: Unspecified

Table 13

## 15.13 Copy Macro for P&P and Templates

This function enables copying field values to another field automatically. For example, copy registration data for HFA phones to standby configuration by means of a macro command.

To copy a value or parts of it from one field to another, provides a template containing the macro command.

As an example, you can define a template to use the registration subscriber number of the main gateway to be copied to the registration subscriber number (standby): In order to do this, enter the following string in the **Standby Reg** field: %reg-number%

When the template is applied, the macro command will be executed and the result will be written to the field and sent to the device.

It is also possible to enter a macro command for a virtual device directly. It will be executed when P&P is applied. For an already registered device, the macro command will be executed immediately via a job.

### 15.13.1 Macro Command Syntax

The syntax of the macro command

`%<item name >[begin index, end index]%`

consists of the following parts:

- % marks the begin and the end of the macro command.
- `item name` names the field whose values are to be copied.
- `begin index to end index` (optional): only parts of the value are copied. \$ represents the last index.

Example: Macro command %e164% copies the whole E.164 number; %e164[1, 5]% copies the first 5 digits of the E.164; %e164[\$-4, \$]% copies the last 5 digits of the E.164.

### 15.13.2 Available <item name>s

The feature is available for dedicated fields only. The source item <item name> has to be part of the same screen as the destination item.

The following fields are supported:

Screen	Field	Item name
IP Devices > IP Phone Configuration > Gateway / Server	E.164	e164
	Reg address	reg-addr
	Registration Subscriber Number	reg-number
	Gatekeeper ID	reg-id
	H.235 Security Mode	h235securitymode
IP Devices > IP Client Configuration > Gateway / Server	System Type	hfa-pbx-type
	E.164	e164
	Reg address	reg-addr
	Registration Subscriber Number	registration-phone-no
	Gatekeeper ID	gatekeeper-id
	H.235 Security Mode	h235securitymode

Table 14

### 15.13.3 Available Destination fields

Screen	Field
IP Devices > IP Phone Configuration > Gateway / Server	E.164
IP Devices > IP Phone Configuration > Gateway / Server > Gateway (HFA) / SIP Server Tab	Registration Subscriber Number
IP Devices > IP Phone Configuration > Gateway / Server > Gateway (Standby) Tab	Reg address
	Registration Subscriber Number
	Gatekeeper ID
	H.235 Security Mode
IP Devices > IP Phone Configuration > Gateway / Server > SIP Terminal Settings Tab	Display ID
	Display ID (Unicode characters)
	Terminal Name
IP Devices > IP Phone Configuration > Miscellaneous > Display/Phone Settings Tab	Handset Name
IP Devices > IP Phone Configuration > IP Routing > DNS Server Tab	Terminal Hostname
IP Devices > IP Client Configuration > Gateway / Server	E.164

Table 15

Screen	Field
IP Devices > IP Client Configuration > Gateway / Server > Gateway (HFA) / SIP Server Tab	Registration Subscriber Number
IP Devices > IP Client Configuration > Gateway / Server > Gateway (Standby) Tab	System Type
	Reg address
	Registration Subscriber Number
	Gatekeeper ID
	H.235 Security Mode
IP Devices > IP Client Configuration > Gateway / Server > SIP Connection Tab	Terminal Name
IP Devices > IP Phone Configuration > Keypad / Keypad Layout > "Destinations" Tab	Address of record
	UserID
	Key label
	Key label (Unicode)
Mobile Users > SIP Mobile User Configuration > Keypad / Keypad Layout > "Destinations" Tab	Address of record
	UserID
	Key label
	Key label (Unicode)

Table 15

## **Operating Sequences**

*Copy Macro for P&P and Templates*

## 16 Administration Scenarios

This chapter contains the following administration scenarios:

- Overload Protection with HiPath 4000
- Workpoint Reinstallation with HiPath 4000
- Workpoint Reinstallation with HiPath 3000
- Configuring a Gateway in DLS
- Replacing an IP Device
- Replacing an Old Workpoint (TDM) with a New One (IP)
- Replacing HFA with SIP Software and Vice Versa with Identical Device IDs
- Configuring an IP Client 130 in the DLS
- Changing the IP Address and/or Port Number of the DLS
- Using an EWS with DLS in a Customer Network Without Permanent DLS
- Operating the DLS via the Program Interface (DIsAPI)
- Security: Administering Certificates
- Configuring and Administrating Mobility
- HFA Mobility with HiPath 3000
- Data Structures for DLS-hosted XML applications
- Use Multi-Tenancy
- Migration Scenarios

**NOTE:** The sequence descriptions provided here are intended as examples. The actual sequence may vary from the description, depending on the particular DLS configuration, the servers or IP Devices used, and the ongoing development of the DLS.



## 16.1 Overload Protection with HiPath 4000

Certain actions should be followed in order to enable the new DLS overload protection.

**NOTE:** This overload protection mechanism is only meant to support high load situations caused by HFA devices. The minimum load for HFA devices to work with this mechanism is **V2.R0.97**.

Proceed with the following steps :

1. Stop DLS Service.
2. Open [InstallationPath]\DeploymentService\Tomcat\conf\server.xml
3. Edit the file as follows:

```
<!-- DLS - Workpoint Interface, default (bootstrapping) port -->

    <Connector port="18443" maxThreads="100" backlog="50000" maxQueueSize="50000"
acceptCount="20000" enableLookups="false" connectionTimeout="150000" maxPostSize="1048576"

    redirectPort="-1" scheme="https" SSLEnabled="true" sslProtocol="TLS"
ciphers="TLS_RSA_WITH_AES_128_CBC_SHA, TLS_RSA_WITH_AES_256_CBC_SHA,
SSL_RSA_WITH_3DES_EDE_CBC_SHA, TLS_DHE_RSA_WITH_AES_128_CBC_SHA,
TLS_DHE_RSA_WITH_AES_256_CBC_SHA, SSL_DHE_RSA_WITH_3DES_EDE_CBC_SHA"
clientAuth="false" algorithm="IbmX509"

    keystoreType="PKCS12" truststoreType="PKCS12" protocols="TLSv1"

SSLImplementation="de.siemens.icn.hipath.dls.connector.jsse.bsaf.BSAFEJSSE_WPI_Implementation"
/>

<!-- DLS - Workpoint Interface, secure port -->

    <Connector port="18444" maxThreads="100" backlog="50000" maxQueueSize="50000"
acceptCount="20000" enableLookups="false" connectionTimeout="150000" maxPostSize="1048576"

    redirectPort="-1" scheme="https" SSLEnabled="true" sslProtocol="TLS"
ciphers="TLS_RSA_WITH_AES_128_CBC_SHA, TLS_RSA_WITH_AES_256_CBC_SHA,
SSL_RSA_WITH_3DES_EDE_CBC_SHA, TLS_DHE_RSA_WITH_AES_128_CBC_SHA,
TLS_DHE_RSA_WITH_AES_256_CBC_SHA, SSL_DHE_RSA_WITH_3DES_EDE_CBC_SHA"
clientAuth="want" algorithm="IbmX509"

    keystoreType="PKCS12" truststoreType="PKCS12" protocols="TLSv1"

SSLImplementation="de.siemens.icn.hipath.dls.connector.jsse.bsaf.BSAFEJSSE_WPI_Secure_Implement
ation"
/>
```

4. Open [InstallationPath]\DeploymentService\Tomcat\webapps\DeploymentService\WEB-INF\filterContext.xml

5. Edit the file as follows :

```
<bean id="WPIFilter" class="de.siemens.icn.hipath.dls.wpi.v2.servlet.WPIServletFilter">
  <property name="enabled" value="true"/>
  <property name="maximumThreads" value="600"/>
  <property name="wpiEngine">
    <ref bean="wpi-engine"/>
  </property>
</bean>
```

6. Start DLS Service.

## 16.2 Workpoint Reinstallation with HiPath 4000

### Requirements

- A working DLS infrastructure (such as, DHCP and DNS server).
- A HiPath 4000 Assistant with deactivated access block<sup>1</sup> configured in the DLS (see Section 11.1.3).

### Performing reinstallation

1. Configure the stations in the system, for example, with the help of HiPath 4000 Manager or AMOs. For more information refer to the relevant documentation.
2. Select the **Element Manager > Element Manager Configuration > "HiPath 4000 Assistant" Tab** area.
3. Click **Synchronize**. This transmits all data for the stations configured in the system to the DLS.
4. Click the area **IP Device Management > IP Device Configuration**.  
Click **Search** to find all configured workpoints. The first of the workpoints found is displayed in **Object** view.
5. Change to **Table** view and sort the table by **E.164**.
6. Select the desired, pre-configured virtual device from the table. The **device ID** generated by the DLS for a virtual device is prefixed by "@".
7. Enter the **Device ID** of the workpoint.
8. Click **Save**.
9. Connect the workpoint.

This completes reinstallation.

---

<sup>1</sup> To deactivate the access block, select **Access Management > Password Management > System Password Management > Password uas\_read** in the HiPath 4000 Assistant and deactivate the option **Block password**. Enter the password and save your changes.

## 16.3 Workpoint Reinstallation with HiPath 3000

### Requirements

- A working DLS infrastructure (such as DHCP- and DNS server).
- A HiPath 3000/5000 configured in the DLS (see Section 11.1.4).

### Performing reinstallation

1. Configure the stations in the system. For more information refer to the relevant documentation.
2. Select the **IP Devices > IP Device Management > IP Device Configuration** area to create an station, that is, a virtual device, in the DLS. Instead of a device ID, the virtual device receives a placeholder generated by the DLS beginning with "@".
3. Enter the **E.164** of the new station.
4. Click the **Element Manager > Element Manager Configuration > "HiPath 3000/5000" Tab** area.
5. Click **Synchronize**. If the E.164 already exists in one of the configured HiPath 3000/5000 DB Feature Servers, the relevant gatekeeper address is added to the data record.
6. Enter the device ID of the workpoint in **IP Devices > IP Device Management > IP Device Configuration**.
7. Click **Save**.
8. Connect the workpoint.

This completes reinstallation.

## 16.4 Configuring a Gateway in DLS

### Requirements

- A working DLS infrastructure.
- A configured gateway (HG1500, HG3530, HG3550, HG3570, HG3575 or RG2700).

### 16.4.1 Adding Gateways

1. Click the **Gateways > Gateway Configuration** area.
2. Click **New**.
3. Select the gateway you want under Gateway Type. Once you have made this selection, all unnecessary fields are deactivated (dimmed).

**NOTE:** If a gateway of the same category is already configured, you can copy the data from this and modify it to meet your requirements. Find the gateway you want to copy data from and select **New**.

4. If necessary, add a description of this gateway under **Remark**.
5. Enter the necessary data in the "Gateway Connection" Tab. The following is a list of entries required for the various gateway types.
  - **HG1500** (for HiPath 3000/5000, direct connection), **RG2700**  
**Gateway IP Address:** IP address of the gateway.  
**Account:** Gateway access ID (as configured in the gateway, default ID: **31994**).  
**Password:** Password for accessing the gateway (configured on the gateway as described above for the account).
  - **HG3550** (for HiPath 4000, connection via the HiPath 4000 Assistant)  
**Gateway IP Address:** IP address of the gateway.  
**Gateway Proxy IP Address:** IP address of the relevant HiPath 4000 Assistant.  
**Gateway Proxy Port:** 443.  
**Account:** Access ID for HiPath 4000 Assistant (as configured on the Assistant). You must use an ID in the HiPath 4000 Assistant that contains user rights for HG3550Mgr.  
For information on creating IDs and assigning rights with this tool, refer to "Access Management" in the HiPath 4000 Assistant online help.  
**Password:** Password for accessing HiPath 4000 Assistant (configured on HiPath 4000 Assistant as described above for the account).
  - **HG3530, HG3570, HG3575** (for HiPath 4000, connection via SNMP proxy - an integral part of the DLS server)  
**Gateway IP Address:** IP address of the gateway.

**SNMP Community:** Community string (for authenticating SNMP communication to the gateway). Default community string: **nbcs**.

The community string must be set to the same value as the relevant gateway in HiPath 4000 (AMO HFAB: TYP=SNMP, parameter: CS2).

**NOTE:** During DLS installation, the SNMP proxy is also installed at the same time and automatically started as a local service on the DLS server PC. You can stop and start the SNMP proxy manually on this PC.

To access this service, select: Start > Settings > Control Panel > Administrative Tools  
> Services > DeploymentServiceSNMPProxy

6. Click **Save** to apply the entries.

## **16.4.2 Release Information (QDC and VoIP Security)**

### **QoS Data Collection**

- HG1500: V5.0
- HG3550: V2.0
- HG3530: V2.0
- HG3570: V2.0
- HG3575: V2.0
- RG2700: V1.0

### **VoIP Security**

- HG1500: V6.0
- HG3550: V3.0 (may still "officially" be V2.0)
- HG3530: V3.0 (may still "officially" be V2.0)
- HG3570: No VoIP security
- HG3575: No VoIP security
- RG2700: No VoIP security

## 16.5 Configuring Certificates in DLS

In order to support distribution of mass certificates to phones and clients the OpenScape Deployment Service (DLS) supports its own internal public key infrastructure (PKI). The purpose is to secure communication between

- DLS and phones / clients
- DLS and OpenScape Voice Assistant, and the
- DLS and web browsers.

This internal PKI operates like most other PKI's. It can create its own CA, create certificates signed by this CA, and even automatically distribute these certificates. On top of this it can also maintain more than one internal PKI to allow for certificate management of different functions within the phone.

**NOTE:** Certificate format: PKCS#12 formatted keystore or use of the Deployment Service's internal PKI infrastructure.

Figures 1 and 2 illustrate examples of certificate and PKI hierarchies.

In figure 1 the Deployment Service's public facing interfaces employ a certificate from the customers CA while the phones' certificates are managed by the Deployment Service's internal PKI. The Deployment Service can maintain more than one PKI to manage different phones functions requiring certificates. A single internal PKI can also be used.

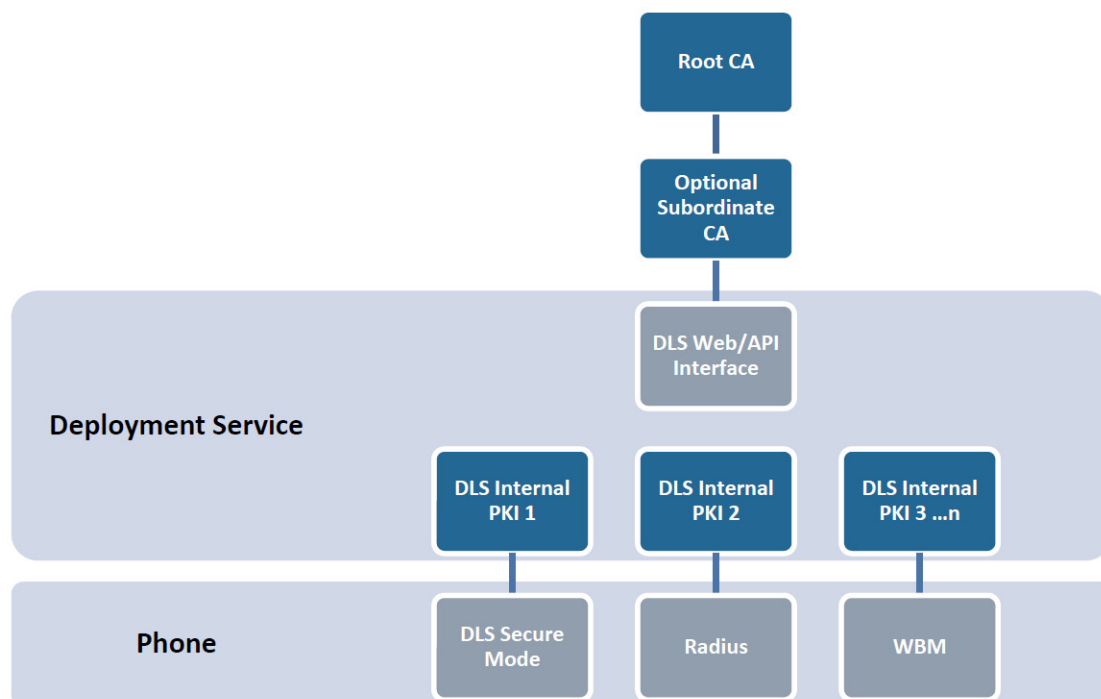


Figure 1 Deployment Service Certificate hierarchy example

The OpenScope Deployment Service also supports integration with an external Microsoft certificate authority. In this case the Deployment Service PKI depends on the Microsoft CA to manage and create certificates while the DLS handles the distribution aspect. Use of the Microsoft CA is not discussed in this document. Instead please refer to the OpenScope Deployment Service PKI Basic Configuration guide.

Figure 2 shows an example certificate hierarchy using a Microsoft certificate authority. The Deployment Service uses a single internal PKI to manage both public facing Deployment Service interfaces and all phone functions requiring certificates.

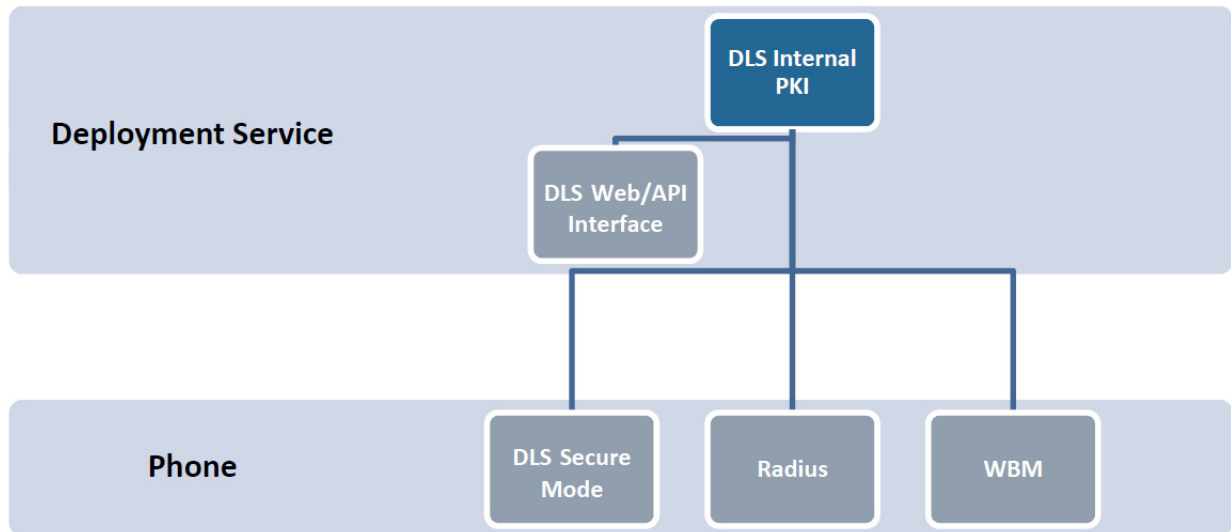


Figure 2 *Deployment Service Certificate hierarchy example 2*



## 16.5.1 Creating a New PKI

It is possible to create more than one PKI. Different PKI's can be used for different purposes. For instance, one PKI could manage all WBM Certificates while another could manage RADIUS server certificate distribution. Or, one PKI could manage all certificates.

Creation of a new PKI follows three (3) basic steps. Together they create a new PKI.

Proceed with the following steps :

1. Create a new Internal CA
2. Create a new Plug-in Configuration
3. Create a new Connector Configuration

### 16.5.1.1 Create a new Internal CA

1. Log into the Deployment Service and navigate to **Administration > PKI > Internal CA**.
2. Click on **New** and enter a **CA Name** and **CA Description**. Click on **Save**.
3. Click **Create CA**. Enter **Subject/Issuer DN** information. This step defines the identity information of the CA and will also be seen in any certificate created by this CA.

Certificates should at least include country, state or province, organization, organizational unit, and common name information.

Example: C=US,ST=FL,L=Boca Raton,O=Unify,OU=Sales,CN=MyNewCA

4. Alternate to step 3). It is also possible to create a new internal CA using a predefined CA. This CA certificate can be imported into the Internal CA. Click on **Import CA.Browse** for the CA keystore. The keystore must be in a PKCS#12 format. Enter the keystore **Passphrase** and click on **OK**.
5. Set **Key Algorithm** to RSA. Set **Key Size** to 2048. 1024 and 4096 are also possible.
6. Set **Valid from** and **Valid to** dates. Default lifetime is 1 year time. Set this to a more acceptable lifetime for a CA, such as 10 years.
7. Click **OK**. The new CA is created and this information can now be seen.
8. Finally, check **Enable Internal CA** and then **Save**.

### 16.5.1.2 Create a new Plug-In Configuration

1. Create a new Internal CA as mentioned in Section 16.5.1.1, "Create a new Internal CA".
2. Navigate to **Administration >PKI >Plug-In Configuration**.
3. Click on New and provide a name and description in the **PKI Connector Plug-In** and **Description** fields. Click on **Save**.
4. Navigate to the **Plug-In Properties** tab and select the **Table** view radio button.
5. There are two default certificate values that should be changed, **internal.default.validity.days** and **internal.x509name.template**.
6. Select **internal.default.validity.days**. This field defines the number of days certificates created by the Deployment Service are valid for. A typical length is 3 years. Click on **Save**.
7. Select **internal.x509name.template**. This field defines the subject information for certificates the Deployment Service will create. This field acts as a template. Most information is filled, except for the common name (CN). When issuing a certificate the Deployment Service will automatically input the CN based on the end points IP address or FQDN. This allows for easy point and click or automated certificate deployment. This template should match the issuer name information supplied for the root CA in step 1, except for the CN field. The CN field MUST contain a '?'. Click on **Save**.  
  
Example: C=US,ST=FL,L=Boca Raton,O=Unify,OU=Sales,CN=?
8. Click on the **Issuing CAs** tab. Click **Synchronize**. This will pull in all of the enabled internal CA's. We will only used the internal CA we created in step 1). This will be seen in the next steps.
9. Finally, check **Enable Plug-In** and click on **Save**.

#### 16.5.1.3 Create a new Connector Configuration

1. Create a new Internal CA and Plug-In Configuration as mentioned in Section 16.5.1.1, "Create a new Internal CA" and Section 16.5.1.2, "Create a new Plug-In Configuration".
2. Navigate to **Administration >PKI >Connector Configuration**.
3. Click on **New** and provide a name and description in the **Configuration Name** and **Description** fields. Click **Save**.
4. Select **Plug-In Configuration**. Select the name of the Plug-In Configuration created in Section 16.5.1.2, "Create a new Plug-In Configuration", click on **OK** and then **Save**.
5. Select **Issuing CA Name**. Select the name of Issuing CA created in Section 16.5.1.1, "Create a new Internal CA", click on **OK** and then **Save**.
6. Select the **Trust-Authority** tab click on **Import Certificate**. Select the **PKI** radio button and under **Import from Connector** select the name of the issuing CA created in Section 16.5.1.1, "Create a new Internal CA". Click **OK** and **OK** again. The CA defined in Section 16.5.1.1, "Create a new Internal CA" is now the trust anchor (root CA) for this PKI. The trust anchor fields should now show this.
7. Navigate to the **Request Parameter** tab. The default settings should be acceptable. Click on **Test**. The Deployment Service will internally create and sign a new certificate to ensure proper operation. A success message should be returned.  
  
Example: C=US,ST=FL,L=Boca Raton,O=Unify,OU=Sales,CN=?
8. Finally, check **Enable Connector** and then **Save**. At this point a new internal PKI has been created for the DLS. This new PKI can be used to create and deploy certificates to phones and clients.

## 16.5.2 Deploying the Signaling and Payload Encryption (SPE) Certificate

The signaling and payload encryption (SPE) certificate is simply the CA certificate (or chain of CA certificates) used to sign the OpenScape Voice certificate. When this CA certificate is placed on the phones it allows the phones to identify and verify the OpenScape Voice based on the certificate received from the OpenScape Voice. By default, phones perform no certificate verification. Phones can still connect to the OpenScape voice via TLS and place secure calls.

Before enabling certificate verification for all phones it is advised to manually place the CA certificate on a couple of phones and enable certificate verification. If the test fails the phone will fail to register against the OpenScape Voice. If the test succeeds then automatic certificate deployment can be used to distribute the CA certificate to all phones.

### 16.5.2.1 Manual Deployment

**NOTE:** A PKI does not need to be created in order to execute this section.

1. Navigate to **IP Devices >IP Phone Configuration >Signaling and Payload Encryption (SPE) >"SPE CA Certificates" Tab.**
2. Click on **Import Certificate.**
3. Check **Import certificates to DLS and activate on device (1-step).** Select **Import using:File.** Click on **Browse** and locate the file containing the CA certificates.
4. Finally, click **OK.** The certificate will be imported and a new entry will appear containing the CA certificate information.
5. You can now enable certificate verification. Please refer to Section 16.5.2.2, "How to Enable SPE Certificate Verification".

### 16.5.2.2 How to Enable SPE Certificate Verification

The phones support three levels of certificate verification, none, full, and trusted. Each level performs more stringent checks. If a check fails on either the trusted or full levels the phone will not be able to register against the OpenScape Voice.

- **None:**  
The default option. No checking of the received certificate is performed. The received certificate is only used to provide an encrypted connection.
- **Trusted:**  
The phone checks the expiration date and signature of the received certificate.
- **Full:**  
The phone checks the expiration date, signature, and certificate usage fields of the received certificate.

## Administration Scenarios

### Configuring Certificates in DLS

To enable verification perform the following steps:

**NOTE:** OpenStage phones running firmware version V3 or later will perform step 1). Older firmware versions and OptiPoint phones will perform step 2).

1. Navigate to **IP Devices >IP Phone Configuration >Security Settings >"Authentication Policy" Tab**. Under **SIP Server Authentication Policy** choose a verification level. Click **Save**.
2. Navigate to **IP Devices >IP Phone Configuration >Signaling and Payload Encryption>SIP Settings** tab. Check **TLS server validation**.

## 16.5.3 Deploying new Web Based Management (WBM) certificates to phones

Unify phones are administrable via a secure web based management interface and all phones ship with a default certificate. Certificates for the WBM interface can be deployed manually or automatically by the Deployment Service.

### 16.5.3.1 Manual Deployment

1. Navigate to **IP Devices >IP Phone Configuration >Security Settings>"WBM Server Certificate" Tab**.
2. Click on **Import Certificate**. For **Certificate Type** select **WBM Server Certificate**. Check **Import Certificate to DLS and activate on device (1-step)**. Check **Import Using: PKI**. Under **Import from PKI** select the PKI you wish to use. Finally, click **OK**.
3. The certificate will be generated by the DLS and deployed to the phone automatically. Wait a few seconds then click on **Refresh**. You should now see the Imported and Active Certificate fields contain new certificate information. If only the Imported Certificate fields contains information then its possible the activate on device option was not selected in step 2). In this case check **Activate Certificate** and click on **Save**. This will activate the certificate on the phone.

### 16.5.3.2 Automatic Deployment

1. Navigate to **Administration >Automatic Certificate Deployment**.
2. Click on **New**. Under **Location** select a location. Under **Certificate Type** select **WBM Server Certificate (IP Phone)**. Click **Save**.

**NOTE:** All phones defined by this location will receive new WBM certificates. Locations can be defined under **Administration >Server Configuration >Location**.

3. Click **Import Certificate**. Check **Import using: PKI**. Under **Import from PKI** select your PKI. Click **OK**.
4. Under **Deploy Date** select a date and time to deploy the certificates. Click **Save**.

5. Check the **Activate Certificate / PKI Configuration** checkbox. Click **Save**.

Once you click **Save**, the Deployment Service will automatically create jobs to deploy new WBM certificates to all phones defined by this location. Job completion can be monitored under **Job Coordination > Job Control**. Once the job is complete new certificate information can be viewed by navigating to **IP Devices > IP Phone Configuration > Security Settings > "WBM Server Certificates" Tab**.

A certificate deployed using automatic methods will only be visible under the active certificate field and not the imported certificate field. The imported certificate field is used for manual deployments. If you have deployed certificates in the past using the manual method then an older certificate may still be present. This does not impact the currently active certificate.

## **16.5.4 Phone Secure Mode Operation**

By default, phones communicate with the Deployment Service using a standard TLS connection. However, if greater security is desired, phones can be set to communicate with the Deployment Service in secure mode. In secure mode communication takes place via mutual TLS (MTLS).

MTLS offers the benefit of a mutually authenticated connection, meaning the Deployment Service verifies the phone and the phone verifies the Deployment Service. If either side cannot verify the other then the connection fails. This method provides an extra layer of protection for the phone as it will not allow another Deployment Service to connect it and manage the phone.

### **16.5.4.1 Set the Workpoint Interface Configuration PKI**

This section changes the PKI used for secure mode operation of phones.

1. Create a new PKI or use an existing one, as described in Section 16.5.1, "Creating a New PKI".
2. Navigate to **Administration > Workpoint Interface Configuration**.
3. In the **Secure Mode** tab, under **Server Credentials**, select **PKI Configuration**. Select your PKI, click **OK** and then **Save**.
4. Click **Create**. This creates a new server credential for the Deployment Service based on the PKI chosen in step 1. A new entry will appear in the table. It should be active by default. If it is not, click on it and click **Activate**.
5. Repeat steps 2 and 3 for **Client Credentials**.
6. After the new PKI has been activated you can safely delete the default credentials.

#### 16.5.4.2 Set the Phones to Secure Mode

1. Create the PKI in the Workpoint Interface Configuration as mentioned in section Section 16.5.4.1, "Set the Workpoint Interface Configuration PKI".
2. To place phones in secure mode, navigate to **IP Devices>IP Device Management> IP Device Configuration >"DLS Connectivity" Tab**
3. Under **Security Settings** check **Secure mode required**. For **PIN Mode** you can choose between No PIN, Default PIN, or Individual PIN. A PIN encrypts the phones certificate information as it is being transferred to the phone. The default option is Default PIN. This uses the PIN generated by the DLS. This can be found under the Workpoint Interface Configuration screen. If a PIN is used then the PIN must be entered on the phone before secure mode operation is complete.
4. Click **Save**. The Deployment Service will communicate new certificate information to the phone. If a PIN was used then the PIN must be manually entered on the phone to complete the secure mode setup. On an OpenStage phone login as admin and navigate to **Admin >Network >Update Service (DLS)**. The **Security Status** is in Awaiting PIN state. Enter the PIN in the **Security PIN** field. Once the PIN is entered, press **Save & Exit**. Secure mode setup is now complete.
5. Transition from insecure to secure mode can be monitored under the **Security State Protocol** tab. A phone can be removed from secure mode by un-checking the Secure mode required checkbox.

**NOTE:** If a phone is in secure mode and is unable to communicate with a DLS, it is possible to manually take the phone out of secure mode. On an OpenStage phone login as admin and navigate to **Admin >Network >Update Service (DLS) >Options** and select **Default Security**. This will reset the phone to its default security mode. The phone will now be able to communicate with any Deployment Service. If the phone is to communicate again with the existing Deployment Service then the Deployment Service must also take the phone out of secure mode.

#### 16.5.5 Replacing the DLS Web Interface & API Certificates

The Deployment Service contains a web and API interface. These interfaces are used to communicate with a web browser or the OpenScape Voice Assistant. For this reason it may be desirable to have these interfaces participate in the customer's PKI rather than the Deployment Service's internal PKI.

1. Navigate to **Administration>Server Configuration>TLS Connector Configuration**.
2. Click **Import and Activate Certificate**. Select **DLS Client GUI**. Select **Import using:File** and then **Browse** for the PKCS#12 formatted keystore. Click **OK**. The certificate is imported and activated.
3. Repeat step 2) for the DLS API. Use the same PKCS#12 keystore.

## 16.5.6 SHA1 Configuration for AutoSPE

The Internal Plugin, which is the DLS default internal CA generator, has 2 CA roots :

- **Internal Root CA (default)**
- **Internal Root CA (default) SHA1**

Internal Root CA (default) SHA1 is being generated with SHA-1 signature algorithm which is acceptable by HFA phones. The suffix SHA1 occurs in order to differentiate with the default CA with signature algorithm of SHA256.

Select Administration > PKI > Internal CA

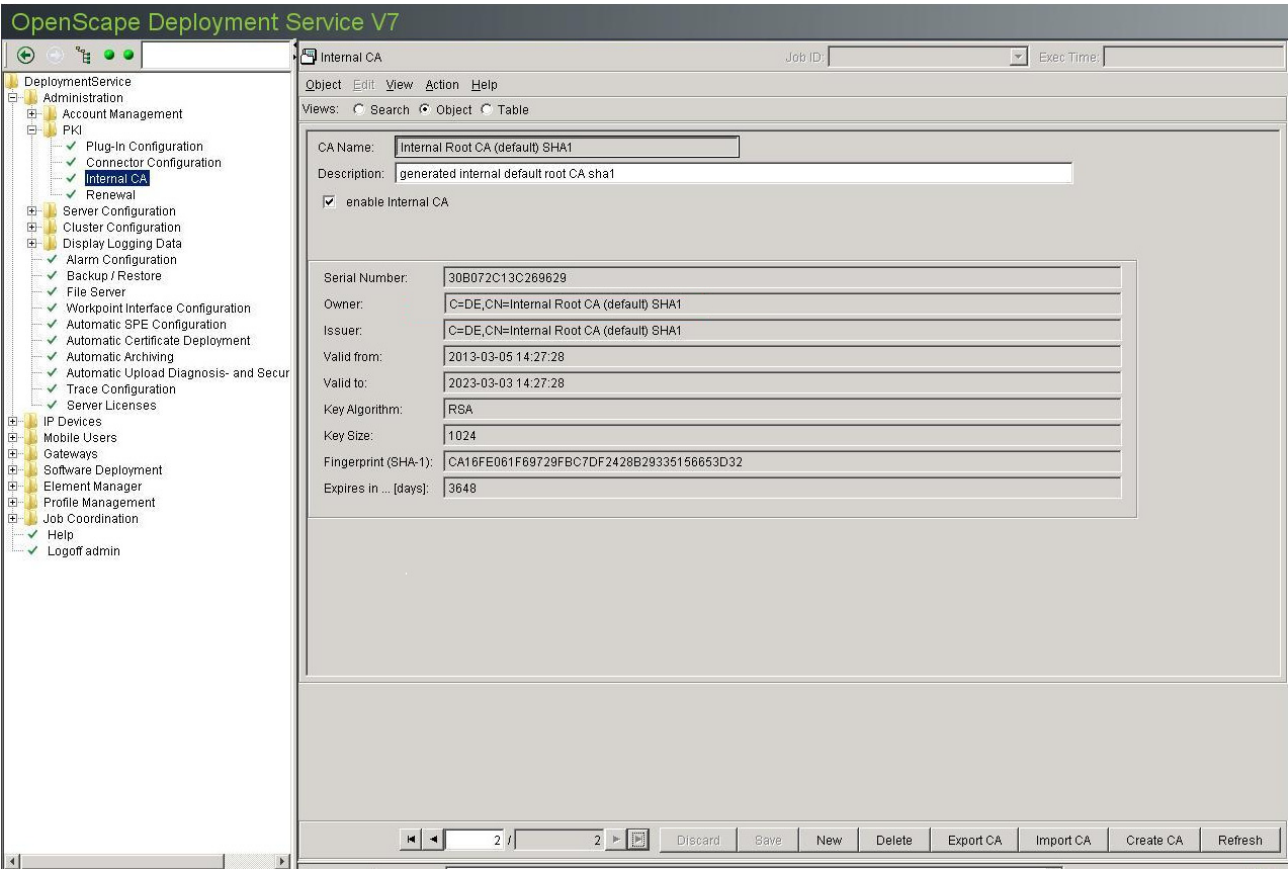
The screenshot shows the 'Internal CA' configuration window in the OpenScope Deployment Service V7. The left sidebar contains a tree view with 'Internal CA' selected under 'PKI'. The main window displays the configuration for the 'Internal Root CA (default)'. The 'CA Name' is 'Internal Root CA (default)' and the 'Description' is 'generated internal default root CA'. The 'enable internal CA' checkbox is checked. The 'Serial Number' is '7A34377D6E33BE54'. The 'Owner' and 'Issuer' are both 'C=DE,CN=Internal Root CA (default)'. The 'Valid from' date is '2013-03-05 14:00:12' and the 'Valid to' date is '2023-03-03 14:00:00'. The 'Key Algorithm' is 'RSA' and the 'Key Size' is '1024'. The 'Fingerprint (SHA-1)' is '1F5CD8EF72D63B924849E41603E6915F5184DBC9'. The 'Expires in ... [days]' is '3649'. At the bottom, there are buttons for 'Discard', 'Save', 'New', 'Delete', 'Export CA', 'Import CA', 'Create CA', and 'Refresh'.

CA Name:	Internal Root CA (default)
Description:	generated internal default root CA
<input checked="" type="checkbox"/> enable internal CA	
Serial Number:	7A34377D6E33BE54
Owner:	C=DE,CN=Internal Root CA (default)
Issuer:	C=DE,CN=Internal Root CA (default)
Valid from:	2013-03-05 14:00:12
Valid to:	2023-03-03 14:00:00 Valid from
Key Algorithm:	RSA
Key Size:	1024
Fingerprint (SHA-1):	1F5CD8EF72D63B924849E41603E6915F5184DBC9
Expires in ... [days]:	3649



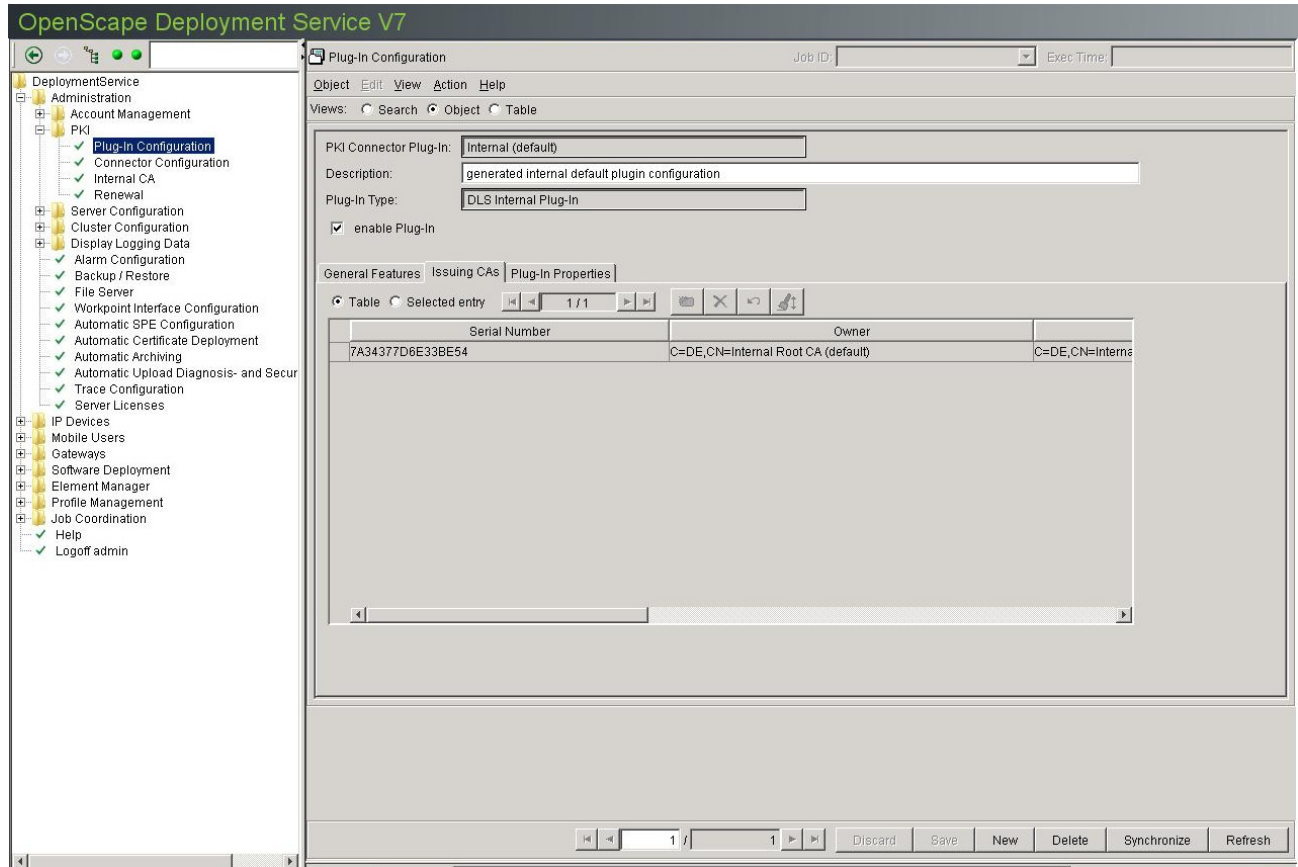
Administration Scenarios

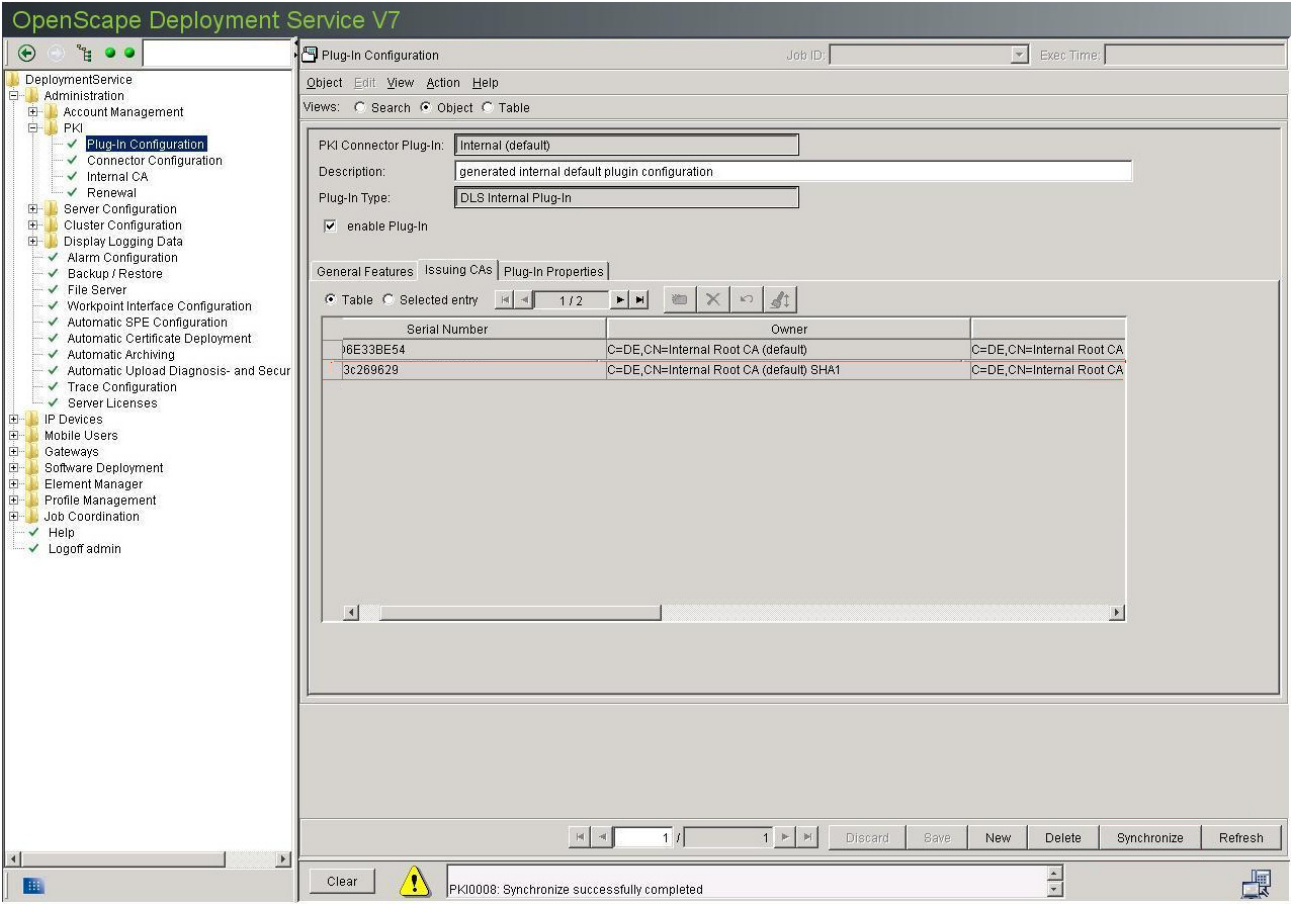
Configuring Certificates in DLS



Under the "Issuing CAs" Tab you shall see one certificate. Press the **Synchronize** button (located and offered under the **Plug-in configuration**) and a second certificate shall appear under CA (SHA-1).

**NOTE:** After an upgrade to the DLS version having this patch (or fresh installation) you should be able to see the two entries under Internal UI mask.



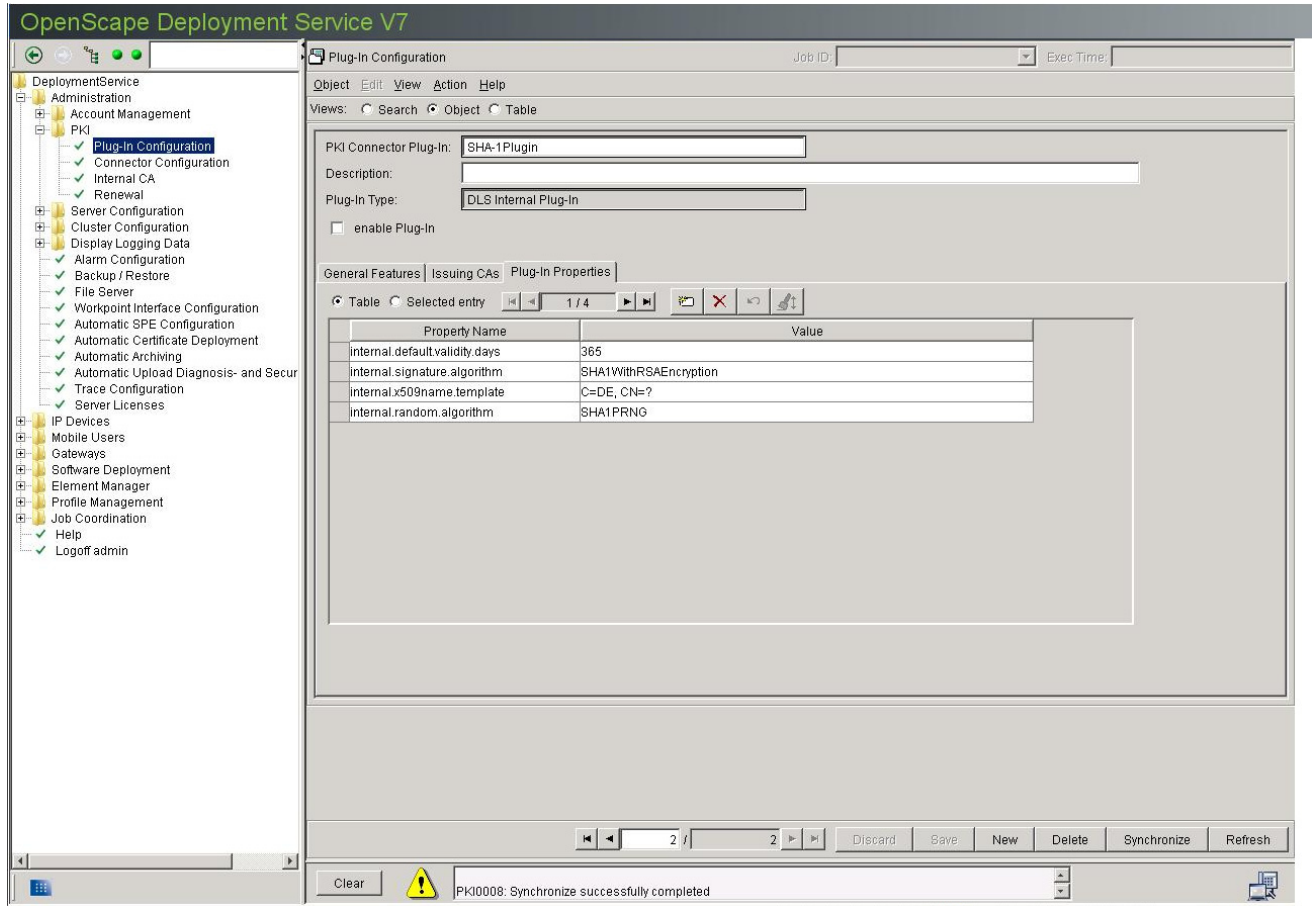


### 16.5.6.1 Create PKI configuration for use by HFA & AutoSPE

In order to configure SHA1 within the CA Certificate for AutoSPE, proceed with the following steps :

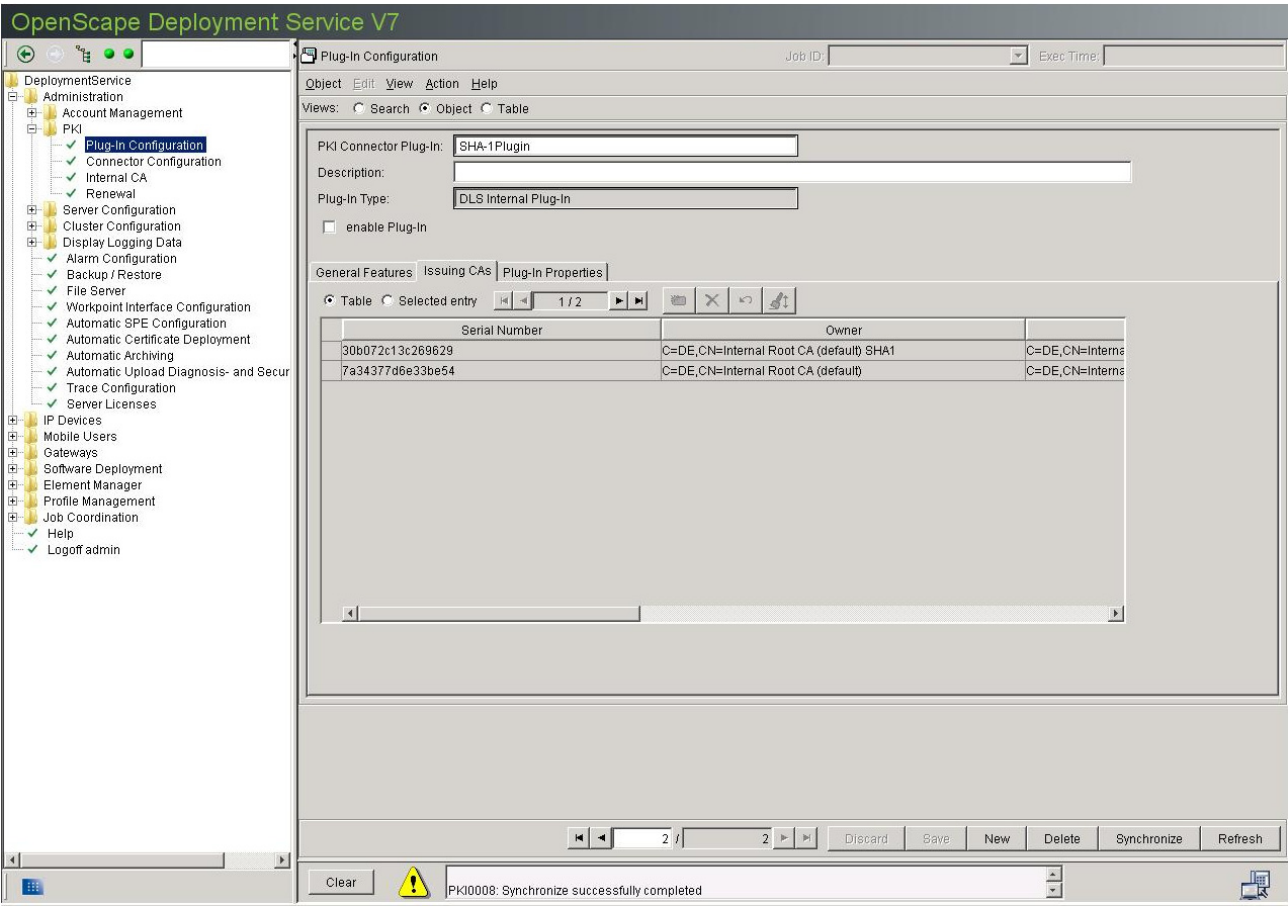
1. Create new Plugin

Create a new Plugin with signature algorithm SHA1 (so that HFA accepts the certificates) as described in Section 6.2.1, "Plug-In Configuration".



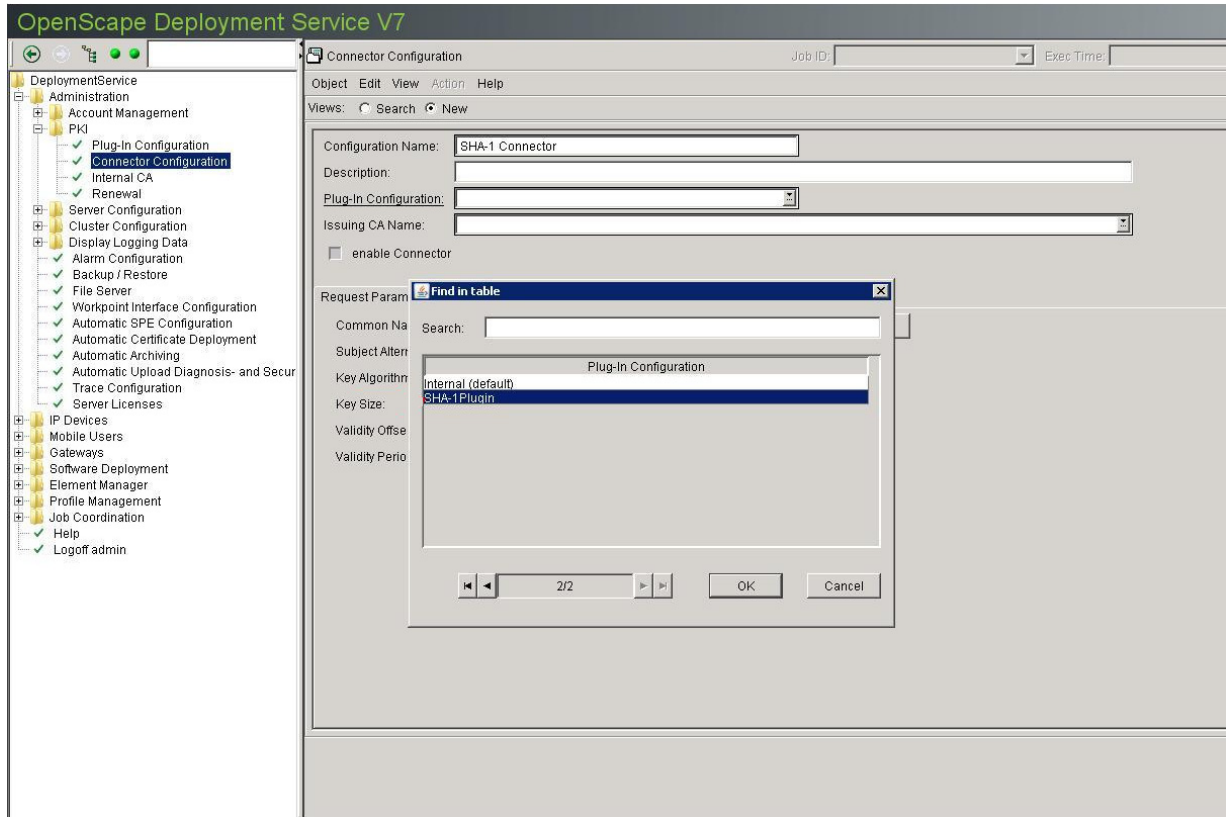
Administration Scenarios

Configuring Certificates in DLS



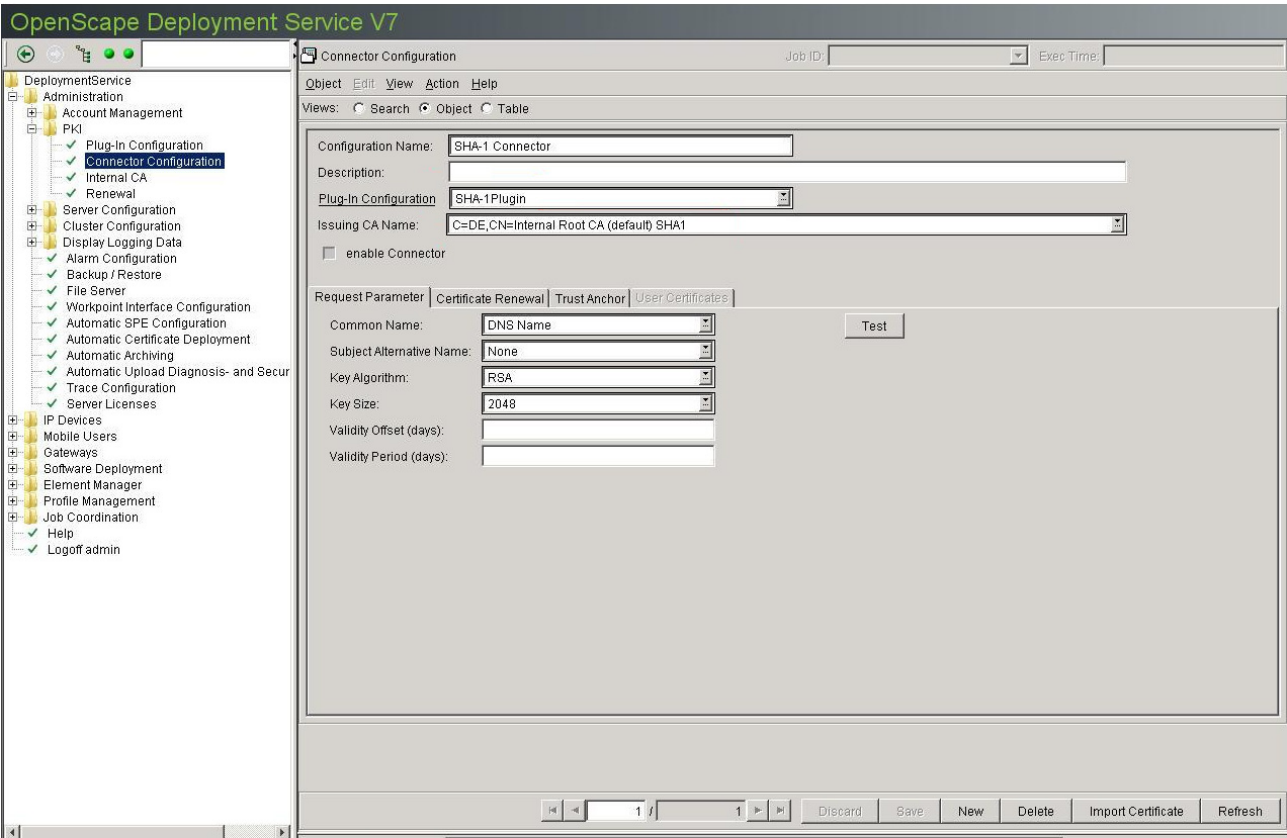
2. Create Connector Configuration for AutoSPE
- Create a new Connector configuration that references the newly created plugin.

**IMPORTANT:** It is crucial to select the correct Issuing CA both as a Trust Anchor and as the connector's configuration Issuing CA which MUST be the SHA1 certificate.



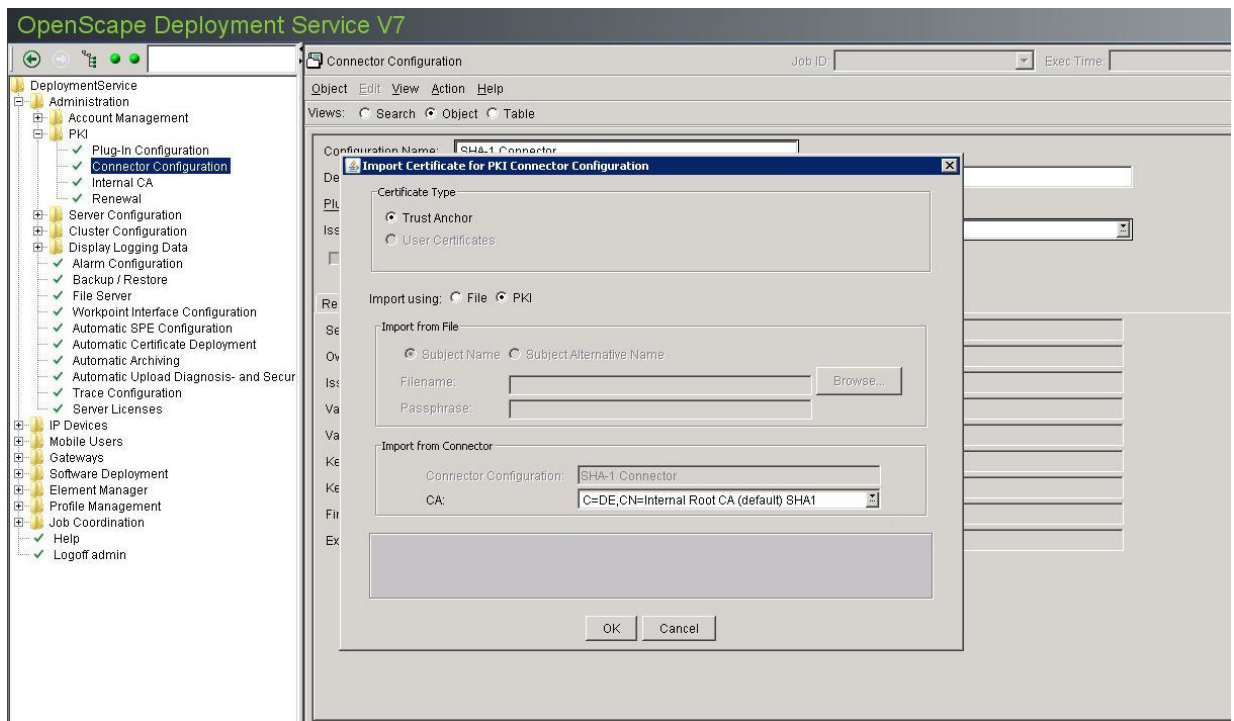
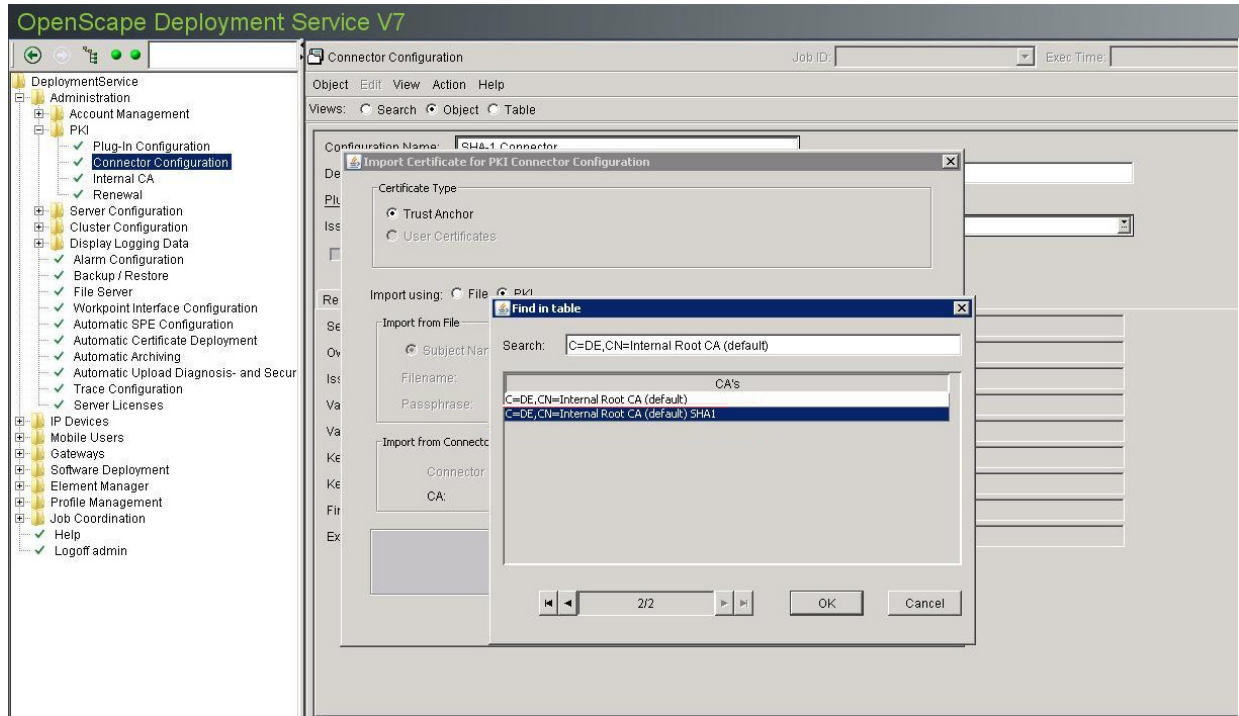
Administration Scenarios

Configuring Certificates in DLS



3. Import the Trust Anchor for this configuration







Administration Scenarios

Configuring Certificates in DLS

OpenScope Deployment Service V7

DeploymentService

Administration

Account Management

PKI

Plug-In Configuration

Connector Configuration

Internal CA

Renewal

Server Configuration

Cluster Configuration

Display Logging Data

Alarm Configuration

Backup / Restore

File Server

Workpoint Interface Configuration

Automatic SPE Configuration

Automatic Certificate Deployment

Automatic Archiving

Automatic Upload Diagnosis- and Secur

Trace Configuration

Server Licenses

IP Devices

Mobile Users

Gateways

Software Deployment

Element Manager

Profile Management

Job Coordination

Help

Logoff admin

Connector Configuration

Job ID:

Exec Time:

Object Edit View Action Help

Views: Search Object Table

Configuration Name: SHA-1 Connector

Description:

Plug-In Configuration: SHA-1Plugin

Issuing CA Name: C=DE,CN=Internal Root CA (default) SHA1

☐ enable Connector

Request Parameter

Certificate Renewal

Trust Anchor

User Certificates

Serial Number: 30B072C13C269629

Owner: C=DE,CN=Internal Root CA (default) SHA1

Issuer: C=DE,CN=Internal Root CA (default) SHA1

Valid from: 2013-03-05 14:27:28

Valid to: 2023-03-03 14:27:28

Key Algorithm: RSA

Key Size: 1024

Fingerprint (SHA-1): CA16FE061F69729FBC7DF2428B29335156653D32

Expires in ... [days]: 3648

2 / 2

Discard

Save


New

Delete


Import Certificate

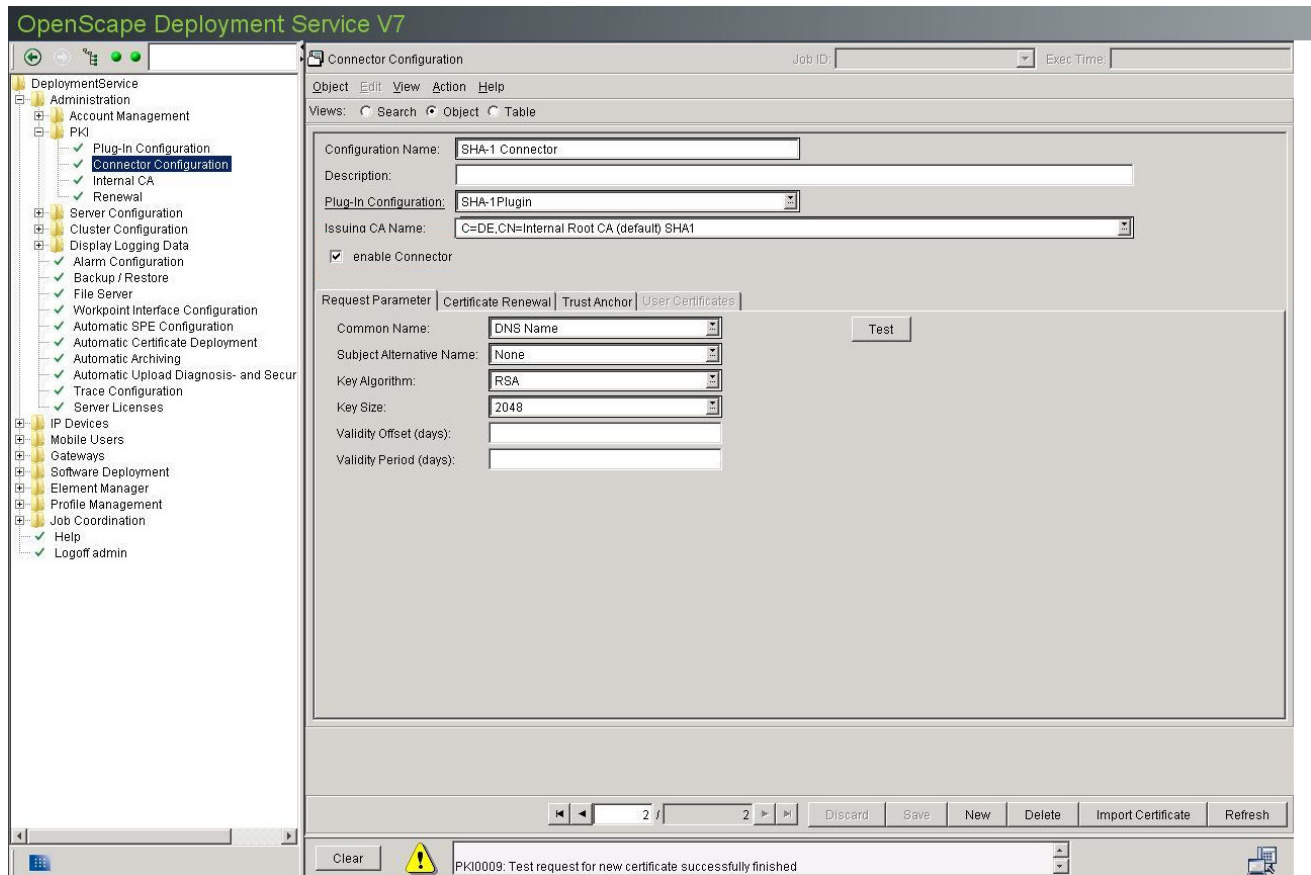
Refresh

Clear



C0007: Trust Anchor successfully imported into DLS database.

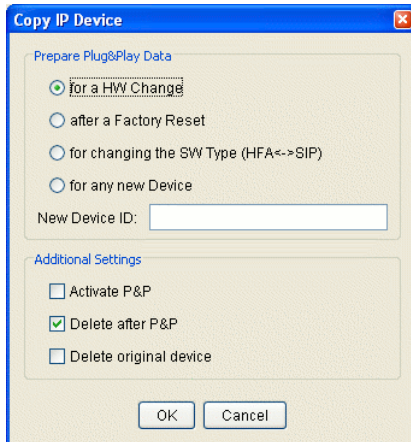




4. The procedure is complete. This connector can now be used for AutoSPE.

## 16.6 Replacing an IP Device

1. Click the **IP Device Management > IP Device Configuration** area. Click **Action** in the menu bar and select **Copy IP Device**.
2. The following dialog window opens:



Select **for a HW Change** under **Prepare Plug&Play Data**.

If you wish to leave configuration data as it is, select **Activate P&P**. The data record is then released for transfer to the workpoint.

3. Disconnect the defective workpoint and connect the replacement workpoint.
4. If full Plug&Play is supported for the workpoint, the replacement workpoint is automatically registered and configured (as in the case of reinstallation, Section 16.2 or Section 16.3).

If Plug&Play is not supported, workpoint registration must be performed manually in the DLS. Registration depends on the presence of a DHCP server:

- If a **DHCP server is not present**:

The following data must be configured on the workpoint in the *Configuration* menu:

1. DHCP must be set to *off*.
2. The IP address of the workpoint must be entered.
3. The network mask of the workpoint subnet must be entered.
4. The IP address of the default router must be entered.
5. The *Fully qualified Subscriber Number* must be entered.

After saving changes and restarting the IP phone, DLS can be used to perform a scan to register the IP phone in the DLS (see Section 7.4.6, "Scan IP Devices"). The DLS address must also be sent when performing scanning.

- If a **DHCP server is present**:

If the DHCP does not send DLS address data to the workpoint, start the workpoint scan. In the scanning dialog box, activate **Register IP Devices** and **New IP Devices from Scan Results** (see Section 7.4.6, "Scan IP Devices") to register the new workpoint in the DLS.

If the DLS address data is sent automatically from the DHCP to the workpoint, registration in the DLS is automatic.

For information on configuring a DHCP server to transfer DLS access data to the workpoints, refer to the **Unify Experts Wiki portal** under [http://wiki.unify.com/wiki/Configuring\\_the\\_DHCP\\_Server\\_for\\_DLS](http://wiki.unify.com/wiki/Configuring_the_DHCP_Server_for_DLS).

**NOTE:** You should not delete the old workpoint data from the DLS database until after the new workpoint is functioning.

This completes replacement.

## 16.7 Replacing an Old Workpoint (TDM) with a New One (IP)

### Requirements

- A working DLS infrastructure (such as CLA, DHCP, DNS and FTP servers).

### Performing the replacement

1. Reconfigure the stations in the system by deleting them and then recreating them, for example, with the help of the HiPath 4000 Manager or AMOs. For more information refer to the relevant documentation.
2. For the remaining procedure, follow the instructions for the reinstallation of a workpoint (see Section 16.2, "Workpoint Reinstallation with HiPath 4000").

This completes replacement.

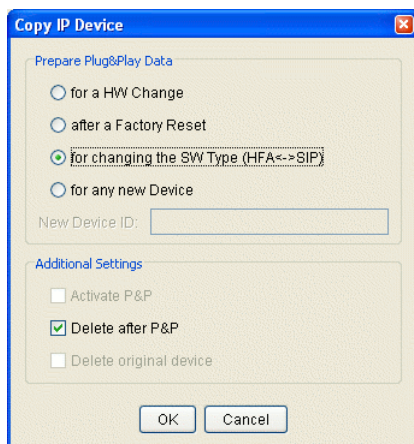
## 16.8 Replacing HFA with SIP Software and Vice Versa with Identical Device IDs

### Requirements

- A working DLS infrastructure (such as CLA, DHCP, DNS and FTP servers).

### 16.8.1 Replacing HFA with SIP Software

1. Prepare the SIP software in the DLS (see Section 15.4, "Registering Workpoint Software and Files").
2. Click **Action** in the menu bar and select **Copy IP Device**.
3. The following dialog window opens:



Select **changing the SW Type (HFA<->SIP)** under **Prepare Plug&Play Data**.

If you wish to leave the configuration data unchanged, select **Activate P&P**. The data record is then released for transfer to the workpoint.

4. Define the required registration data. This configuration is dependant on the SIP server used. In the case of OpenScope Voice, this is for a minimum configuration:

#### IP Devices > IP Phone Configuration > Gateway/Server

- **"Gateway (HFA) / SIP Server" Tab:**  
**Reg-Addr., Reg-Port.**
- **"SIP Registering 1" Tab:**  
**SIP Routing, SIP Registrar Addr., SIP Registrar Port, SIP Phone Port, RTP Base Port.**

We recommend managing configuration data using templates. For more information, see Section 15.5.1, "Creating a Template Manually".

If necessary, you can also transfer registration data via synchronization with the system. For more information, see Section 11.1, "Element Manager Configuration".

5. Start software deployment (see Section 15.7.1, "Manual Deployment").

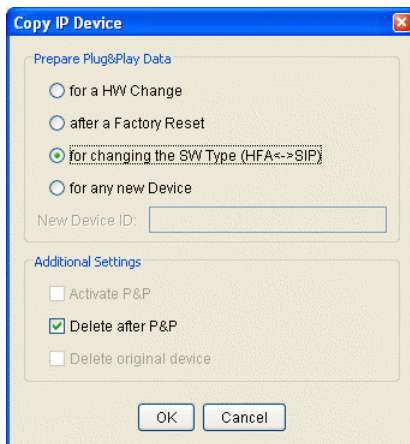
## Administration Scenarios

### Replacing HFA with SIP Software and Vice Versa with Identical Device IDs

The workpoint is restarted once the software is loaded to the phone. This completes the software replacement operation.

## 16.8.2 Replacing SIP with HFA Software

1. Prepare the HFA software in the DLS (see Section 15.4, "Registering Workpoint Software and Files").
2. Click **Action** In the menu bar and select **Copy IP Device**.
3. The following dialog window opens:



Select **changing the SW Type (HFA<->SIP)** under **Prepare Plug&Play Data**.

If you wish to leave the configuration data unchanged, select **Activate P&P**. The data record is then released for transfer to the workpoint.

4. Define the access data for the gateway.

You can also use templates to manage configuration data. For more information, see Section 15.5.1, "Creating a Template Manually".

If necessary, you can also transfer access data via synchronization with the system. For more information, see Section 11.1, "Element Manager Configuration".

5. Start software deployment (see Section 15.7.1, "Manual Deployment").

The workpoint is restarted once the software is loaded to the phone. This completes the software replacement operation.

## 16.9 Configuring an IP Client 130 in the DLS

The following describes how to configure an optiClient 130 V5.0 as a HFA client in a HiPath 4000 environment.

### Requirements

- A live DLS infrastructure (including existing connection to the HiPath 4000).

### Procedure

1. Creating Templates
2. Settings at the optiClient 130

### 16.9.1 Creating Templates

#### Template: Gateway/Server

The data for system type (including standby), program update, telephone type, and licensing are entered in this template.

1. Click the **IP Devices > IP Client Configuration > Gateway/Server > "Gateway" Tab** area.
2. In the view bar (see Section 5.4.2.3, "View Bar"), select **Template**.
3. Select **HiPath 4000** in the **System Type** list.
4. Switch to the **"Gateway (Standby)" Tab**.
5. Select **No standby system** in the **System Type** list.
6. Switch to the **"SW Deployment" Tab**.
7. Select the **DLS Deployment** check box and enter the **Directory** and the **SW Update Mode**.  
The meaning of the entries in **SW Update Mode** are as follows:
  - **Start**: the system checks for a new version when starting optiClient 130.
  - **Interval**: the system checks for a new version every X minutes based on the value set under **Update Mechanism Interval**.
8. Switch to the **"HFA Settings" Tab**.
9. Select the telephone (including add-on devices) used to represent the optiClient 130 from the **Device Phonetype** list. For example: **Device Phonetype**: optiPoint 420 standard, **Device Modules Type**: optiPoint 420 Key Module and **Device Modules Count**: 2.
10. Switch to the **"Licenses" Tab**.
11. Enter the IP address and the port number of the license server under **Server** and **Port** in the **HFA License** tab.
12. Click **Save** and define the name for the template, for example, **oC130 Gateway/DLS HP4000**.
13. Click the **IP Devices > IP Client Configuration > Dialing Properties > "HFA Dialing Properties" Tab** area.




## Administration Scenarios

### Configuring an IP Client 130 in the DLS

14. Select **Template** in the view bar and set the template name.
15. Enter the necessary data here for the main network access, for example, **49** for the local country code.
16. Click **Save** and define the name for the template, for example, **oC130 dialing properties HP4000**.
17. Create more templates as needed, for example, if an LDAP server is available, the relevant data is in the **LDAP** section.

## 16.9.2 Creating a Profile from the Template

1. Click the **Profile Management > Device Profile** area.
2. Click **New** in the view bar to create a new profile.
3. Enter a suitable name for your profile, such as, **oC 130 device** in the **Name** field and enter a brief description in the **Description** field.
4. If you wish the profile to be the default profile for a particular **Location** (see Section 6.3.2, "Location"), activate **Default Profile**.
5. Group the templates that you wish to use to form the profile under **Profile Management > Device Profile > "Templates" Tab**. To do this, click  for each template you wish to add and then select a template from the choice list.
6. Enter the correct **Device Type**, **SW Type**, and **SW Version** under **Profile Management > Device Profile > "Templates" Tab**.
7. Click Save to save the profile.

## 16.9.3 Settings at the optiClient 130

Certain additional data must be entered at the optiClient 130 so that the optiClient 130 can operate with the DLS.

Login (same as for the optiClient 130 extension), Password, and Location:



Under **Settings...** the data for the DLS server:



☐ Use central configuration

DLS Server:

DLS Port:

DLC Port:

**NOTE:** For more information on configuring the optiClient 130, refer to the online help or the optiClient 130 Administration Manual.

#### 16.9.4 OptiClient in Call Centers

In call centers, it is necessary that optiClient users are enabled to work with their own call number. With every first login at a specific PC, P&P is executed. For this purpose, the Activate Plug&Play flag must be set.

1. Configure the optiClient for the first time, using the E.164 relevant to the user (e. g. 497224711), and the corresponding profile.

Please ensure that the DLS address is defined in the optiClient, and that the data is stored in the home drive within the network.

2. Now create a corresponding participant, that is, a virtual device, in the DLS. For this purpose, select **IP Devices > IP Device Management > IP Device Configuration** and click on the action button **New**.
3. Enter the E.164 number.
4. Enter the E.164 number once again, as **Device ID**, and end with a '.' (dot; e. g. '497224711.').
5. Click on **Save**.

## 16.10 Changing the IP Address and/or Port Number of the DLS

If you need to change the address data (IP address and port number) of the DLS while it is running, for example, because you want to move it to an alternative computer, you must perform all changes in a specific sequence.

The current DLS installation is called "old" and the DLS with the modified data is called "new" in the following.

1. First put the new DLS into operation. Do this by installing all necessary components and starting the new DLS.

The new DLS is now already running with a new IP address and port number, but the workpoints are not yet using it.

2. You must change the DLS IP address data in the workpoints so that the workpoints can contact the new DLS. How you change this data depends on how the workpoints are supplied with the DLS IP address and port number.

- With DHCP (full Plug&Play):

Change the data in the DHCP server's "vendor class" (refer to the **Unify Experts Wiki portal** under [http://wiki.unify.com/wiki/Configuring\\_the\\_DHCP\\_Server\\_for\\_DLS](http://wiki.unify.com/wiki/Configuring_the_DHCP_Server_for_DLS)).

- Without DHCP (limited Plug&Play):

- a) In the DLS, select the **IP Devices > IP Device Management > IP Device Configuration > "DLS Connectivity" Tab** area with all available workpoints (see also Section 15.1, "First Steps: Changing IP Device Parameters").
- b) Enter the IP address data of the new DLS under **DLS Server Address** and **DLS Port** and apply it to all workpoints (see Section 5.4.2.4, "Multiple selection and data transfer in Table view").
- c) Send the DLS IP address data to the workpoints by clicking **Save**.

3. Restart all relevant workpoints (**IP Devices > IP Device Interaction > Reset IP Devices**).

**NOTE:** Note that the workpoints will communicate only with the new DLS after a restart. This means that there is no message indicating whether this action was successfully executed for the old DLS.

The workpoints register with the new DLS.

4. Deactivate the old DLS (to uninstall the DLS, see Section 4.13, "Uninstalling the Deployment Service").

## 16.11 Using an EWS with DLS in a Customer Network Without Permanent DLS

### Requirements

- DLS CV45 and higher.
- An FTP server installed on the TAP. For information on installation, see Section 4.12.1, "FTP Server".
- The workpoint software to be deployed must be located on the EWS and registered in the DLS (see Section 6.3.4, "FTP Server Configuration", Section 6.3.5, "HTTPS Server Configuration" or Section 6.3.7, "Network Drive Configuration").
- The EWS must be connected to the customer LAN and assigned a free IP address from the customer LAN. The IP address can be modified using the IP changer.

### Restriction

DHCP can be activated or deactivated at the workpoint (*DHCP=ON* or *DHCP=OFF*). However, no DLS info may be sent from the DHCP to the workpoint. "Vendor Class" must not be configured in the DHCP as described under [http://wiki.unify.com/wiki/Configuring\\_the\\_DHCP\\_Server\\_for\\_DLS](http://wiki.unify.com/wiki/Configuring_the_DHCP_Server_for_DLS).

If the workpoint has already received the DLS info from the DHCP, this value can only be reset with a *Factory Reset*.

### 16.11.1 Installation and Initial Configuration of DLS on the EWS

1. Install Java 2 Runtime Environment 1.6.0\_13
2. Install the current version of DLS.
3. Perform initial configuration on the DLS (see Section 4.10, "Initial Configuration"). You must configure the data for the FTP server(s) here.
4. The IP address range containing the workpoint must be configured before the workpoint can be transferred from the customer network to the DLS (**IP Devices > IP Device Interaction> Scan IP Devices > "IP Ranges" Tab**).

In addition, the current IP address of the EWS must be entered as the **DLS Address** (the current IP address is displayed, for example, by entering *ipconfig/all* in the DOS shell). The **Send DLS Address** option must be activated (**IP Devices > IP Device Interaction> Scan IP Devices > "Configuration" Tab**). This IP address range is then scanned with **Scan Workpoints**.

## 16.11.2 Manipulating the DLS Database for Using the TAP at Different Customer Facilities

The database used by the DLS must be modified to facilitate working with multiple databases on the TAP.

### 16.11.2.1 Configuring a Database at a new Customer Facility

1. If the DLS database already contains data, save it on the EWS. See Section 15.9.1, "Automatic Data Backups".
2. Create a new database on the EWS. See Section 15.9.2.4, "Resetting the DLS Database".

### 16.11.2.2 Database Change Between Customers A and B

1. Save the currently active database associated with **customer A** on the EWS. See Section 15.9.1, "Automatic Data Backups".
2. Restore the saved DLS database associated with **customer B**. See Section 15.9.1, "Automatic Data Backups".

## 16.12 Operating the DLS via the Program Interface (DlsAPI)

In addition to standard GUI-based operation, the DLS can also be operated by external applications over a web service interface. An account with authorization to access the Dls API must first be configured for this (see Section 6.1, "Account Management").

DLS V2 provides both DlsAPI v100 (as released with DLS V1) and new methods as part of DlsAPI v200. While DlsAPI v100 methods support IP Phones only, DlsAPI v200 methods also support IP Clients and IP Gateways.

### 16.12.1 DLS API Web Service Interface

The DLS API is included in the DLS installation and is stored in the following directory:

```
<DLS installation directory>\Programs\DeploymentService\api
```

The following data is included:

1. `dlsapiv100.wsdl`  
Describes the DlsAPI v100 in WSDL (Web Services Description Language).
2. `dlsapiv100.jar`  
Generated by WSDL2JAVA. This JAR file contains Client Stubs and the Service Locator and may be used by JAVA clients as an interface to the DlsAPI v100.
3. `dlsapiv200.wsdl`  
Describes the DlsAPI v200 in WSDL (Web Services Description Language).
4. `dlsapiv200.jar`  
Generated by WSDL2JAVA. This JAR file contains Client Stubs and the Service Locator and may be used by JAVA clients as an interface to the DlsAPI v200.
5. `doc`  
This subdirectory contains a description of the DLS API interface in Javadoc format.

The WSDL descriptions are stored on the DLS server at the following URLs:

```
https://<DLS server>:10444/DeploymentService/services/  
DlsAPIv100?wsdl
```

```
https://<DLS-Server>:10444/DeploymentService/services/  
DlsAPIv200?wsdl
```

Online documentation for the DLS API is stored at the following URL:

```
https://<DLS server>:10443/DeploymentService/dlsapidoc
```

**NOTE:** If the DLS HTTP port is not deactivated, it can be used as an alternative to the HTTPS port.

In this case, the URLs will change:

```
https://<DLS server>:10443/DeploymentService/...
```

A PHP test script is available for the DLS API. Among other things, this enables you to monitor SOAP communication, query particular IP phones in the DLS database, and modify configuration parameters for a selected IP phone. For more information, please refer to the DLS Release Notes.



## 16.13 Security: Administering Certificates

Certificates are used for secure authentication between the server and clients. A certificate is comparable to a digital ID card issued by an authorized body - the Certification Authority (CA).

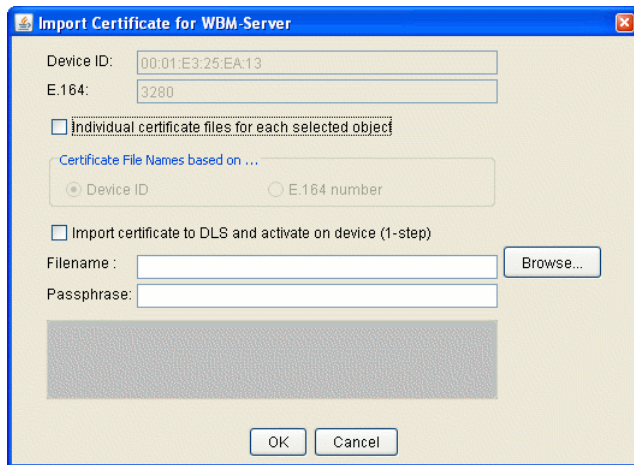
You can administer certificates in the DLS for the following server/client configurations:

- **Server:** WBM server in the IP phone  
**Client:** Web browser for administering IP phones (see Section 16.13.1, "Importing WBM Server Certificates")  
For an interface description, see Section 7.1.7.4, ""WBM Server Certificate" Tab".
- **Server:** RADIUS server  
**Client:** IP phone (see Section 16.13.2, "Importing Phone and RADIUS Certificates")  
For an interface description, see Section 7.1.22.2, ""Phone Certificate" Tab".
- **Server:** RADIUS server  
**Client:** IP phone (see Section 16.13.2, "Importing Phone and RADIUS Certificates")  
For an interface description, see Section 7.1.22.3, ""RADIUS Server CA Certificate 1" Tab" and Section 7.1.22.4, ""RADIUS Server CA Certificate 2" Tab".
- **Server:** SIP server  
**Client:** IP phone (see Section 16.13.3, "Importing SPE CA Certificates for IP Phones")  
For an interface description, see Section 7.1.21.2, ""SPE CA Certificates" Tab".
- **Server:** SIP server  
**Client:** IP client (see Section 16.13.4, "Importing SPE CA Certificates for IP Clients")  
For an interface description, see Section 7.2.12.1, ""SPE CA Certificates" Tab".
- **Server:** SIP Server  
**Client:** IP Gateway (see Section 16.13.5, "Importing SPE Certificates and SPE CA Certificates for IP Gateways")  
For an interface description, see Section 7.3.3.3, ""SPE CA Certificates" Tab".

**NOTE:** Certificates can only be administered via DLS and not via the deployment tool, the WBM or directly at a telephone.

## 16.13.1 Importing WBM Server Certificates

1. Select **IP Devices > IP Phone Configuration > Security Settings > "WBM Server Certificate" Tab**. Search for and select the IP phone that you want to import a certificate for to enable communication with the WBM client (Web browser).
2. Click **Import Certificate**. An import dialog appears:



This dialog contains the device ID of the IP phone you have selected.

3. In the **File name** entry field, enter the entire local path including the name of the certificate or click **Browse** to enter the path via the browser.

The certificate should be in PKCS#12 format.

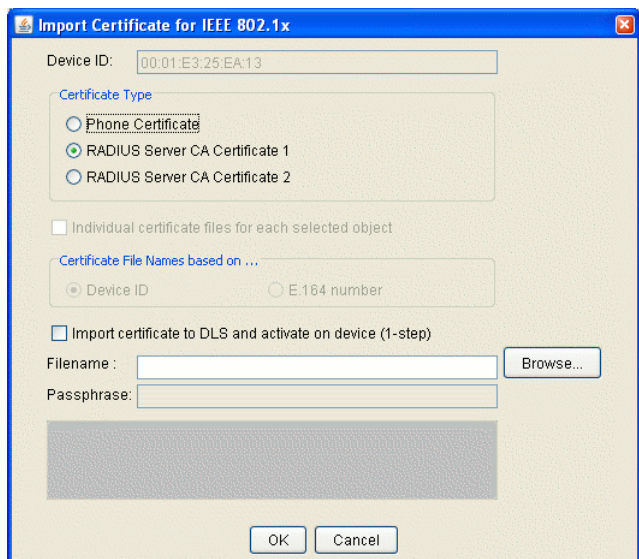
4. Enter the key used to encrypt the PKCS#12 file you want to import in the **Passphrase** field.
5. Activate **Import certificate to DLS and activate on device (1-step)**, if the certificate should be activated immediately.
6. Click **OK** to import the certificate.  
If you have selected several objects (see Section 5.4.2.4), select **Apply to All** to import certificates for all of these objects. The additional question due to security reasons must be answered with **Apply to All**.
7. For activating the imported certificate, click **Activate** certificate and **Save** afterwards, if **Import certificate to DLS and activate on device (1-step)** is not activated.

**NOTE:** Certificates should be deployed to devices when respective template (with PKI Connector saved) is applied through Plug & Play

**NOTE:** Certificates won't be deployed to already registered devices even if a template with PKI Connector saved, is applied.

## 16.13.2 Importing Phone and RADIUS Certificates

1. Click the **IP Devices > IP Phone Configuration > IEEE 802.1x** area.
2. Select the tab for the relevant certificate "**Phone Certificate**" Tab, "**RADIUS Server CA Certificate 1**" Tab or "**RADIUS Server CA Certificate 2**" Tab. Search for and select the IP phone that you want to import the certificate for.
3. Click **Import Certificate**. An import dialog appears:



This dialog contains the device ID of the IP phone you have selected.

4. Select the relevant certificate in the **Certificate Type** field. The option that corresponds to the tab is already selected.
5. Activate the check box **Individual certificate files for each selected object** to import an individual certificate for every IP phone (for more information, see step 6).
6. In the **File Name** entry field (or **Directory** if the check box in step 5 is activated), enter the entire local path including the certificate name (without the name if the check box in step 5 is activated) or click **Browse** to enter the path via the browser.

**NOTE:** If you decided to import individual certificated for each IP phone in step 5, these certificates must already be available as follows:

All certificate file names must be based on:

- The device IDs of the telephones or
- The phones' E.164 numbers

Select the appropriate option in **Certificate File Names based on ....**

Phone certificates should be in PKCS#12 format and RADIUS certificates in .pem format.

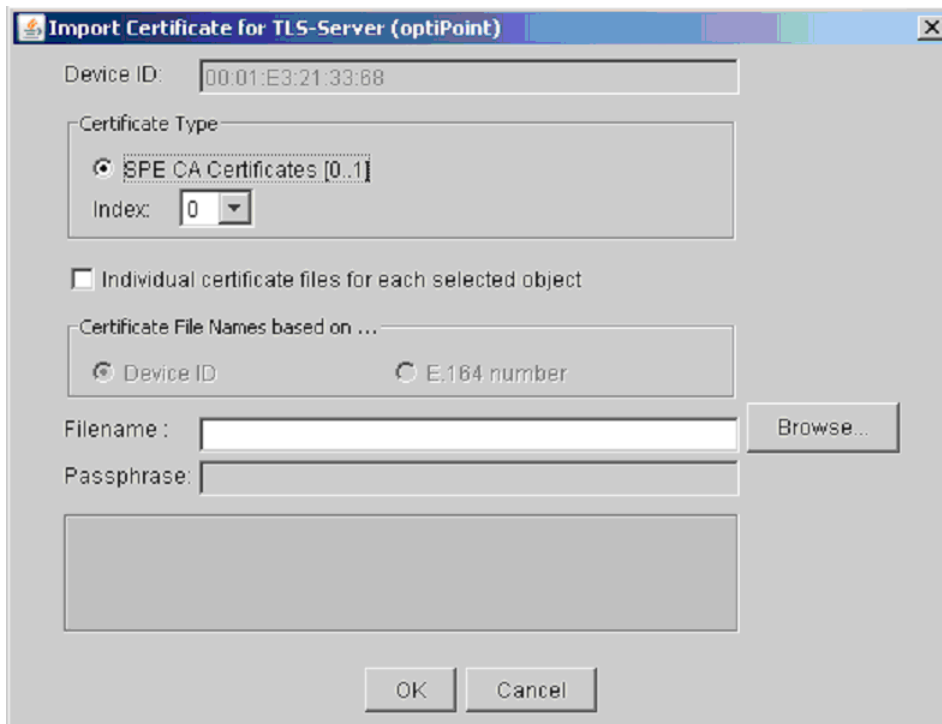
7. For phone certificates only: Enter the key used to encrypt the PKCS#12 file you want to import in the **Passphrase** field (not necessary for RADIUS certificates).
8. Activate **Import certificate to DLS and activate on device (1-step)**, if the certificate should be activated immediately.
9. Click **OK** to import the certificate.  
If you have selected several objects (see Section 5.4.2.4), select **Apply to All** to import certificates for all of these objects. The additional question due to security reasons must be answered with **Apply to All**.
10. For activating the imported certificate, click **Activate certificate** and **Save** afterwards, when **Import certificate to DLS and activate on device (1-step)** is not activated.

**NOTE:** Certificates should be deployed to devices when respective template (with PKI Connector saved) is applied through Plug & Play

**NOTE:** Certificates won't be deployed to already registered devices even if a template with PKI Connector saved, is applied.

### 16.13.3 Importing SPE CA Certificates for IP Phones

1. Select **IP Devices > IP Phone Configuration > Signaling and Payload Encryption (SPE) > "SPE CA Certificates" Tab**. Search for and select the IP phone that you want to import a certificate for to enable communication with the SIP server.
2. Click **Import Certificate**. An import dialog appears:



This dialog contains the device ID of the IP phone you have selected.

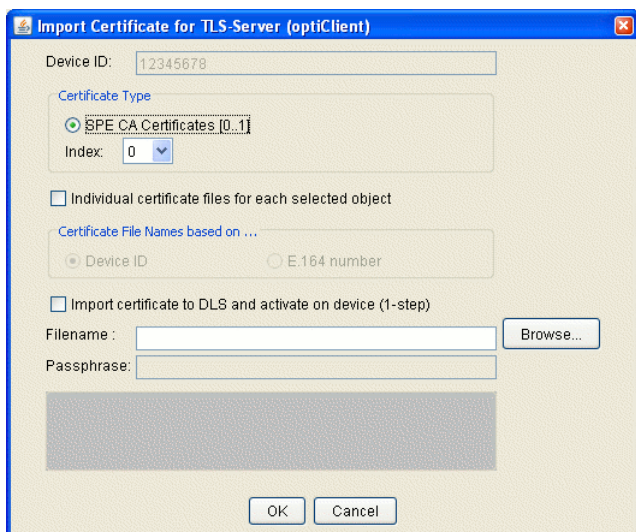
3. You must enter the according **Index**, because the CA certificate is indexed.
4. In the **File name** entry field, enter the entire local path including the name of the certificate or click **Browse** to enter the path via the browser.  
The certificate should be in `.pem` format.
5. Enter the key used to encrypt the PKCS#12 file you want to import in the **Passphrase** field.
6. Click **OK** to import the certificate.  
If you have selected several objects (see Section 5.4.2.4), select **Apply to All** to import certificates for all of these objects. The additional question due to security reasons must be answered with **Apply to All**.
7. For activating the imported certificate. click **Activate certificate** and **Save** afterwards.
8. To import a second certificate, proceed as described for the first certificate.

**NOTE:** Certificates should be deployed to devices when respective template (with PKI Connector saved) is applied through Plug & Play

**NOTE:** Certificates won't be deployed to already registered devices even if a template with PKI Connector saved, is applied.

#### 16.13.4 Importing SPE CA Certificates for IP Clients

1. Select **IP Devices > IP Client Configuration > Signaling and Payload Encryption (SPE) > "SPE CA Certificates" Tab**. Search for and select the IP client that you want to import a certificate for to enable communication with the SIP server.
2. Click **Import Certificate**. An import dialog appears:



This dialog contains the device ID of the IP phone you have selected.

3. In the **File Name** entry field, enter the entire local path including the name of the certificate or click **Browse** to enter the path via the browser.

The certificate should be in `.pem` format.

4. Activate **Import certificate to DLS and activate on device (1-step)**, if the certificate should be activated immediately.
5. Click **OK** to import the certificate.  
If you have selected several objects (see Section 5.4.2.4), select **Apply to All** to import certificates for all of these objects. The additional question due to security reasons must be answered with **Apply to All**.
6. For activating the imported certificate, click **Activate certificate** and **Save** afterwards, if **Import certificate to DLS and activate on device (1-step)** is not activated..
7. To import a second certificate, proceed as described for the first certificate.

**NOTE:** Certificates should be deployed to devices when respective template (with PKI Connector saved) is applied through Plug & Play

**NOTE:** Certificates won't be deployed to already registered devices even if a template with PKI Connector saved, is applied.

## 16.13.5 Importing SPE Certificates and SPE CA Certificates for IP Gateways

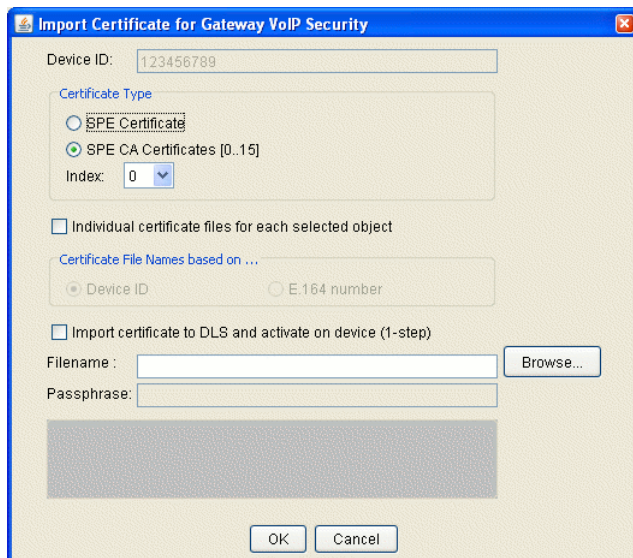
If Signaling and Payload (SPE) certificates are to be used, the IP phones must be connected to an IP gateway. The IP gateway has to be pre-configured as virtual device.

1. Select **IP Devices > IP Device Management > IP Device Configuration**. Enter the IP address of the IP Gateway in the **Device ID** field and select "IP Gateway" in the **Device Family** field.
2. When configuring IP Gateways for the first time, enter the **DLS Server Address** and the **DLS Port** (Default: 18443) in the tab **DLS Connectivity**. If you want to configure further IP Gateways, these values will be used internally by the DLS.
3. **Secure mode required** is activated automatically, because IP Gateways may operate in this mode only. Select **PIN Mode**.

**NOTE:** If **Default PIN** has been chosen, this PIN might be administered by means of **Administration > Workpoint Interface Configuration**.

The PIN must be declared to the IP Gateway board before the registration. This is done by the CLI interface (activate dls pin <pin>)

4. When pressing the **Scan** button, the registration including bootstrapping will be executed.
5. Switch to **IP Devices > IP Gateway Configuration > Signaling and Payload Encryption (SPE) > "SPE Certificate" Tab** and click on **Import Certificate**. An import dialog appears:



**NOTE:** The imported certificates must be created by means of a customer PKI.

It is recommended to deploy an individual certificate for each gateway to which the own IP address is assigned in **Owner field (CN)**. This is absolutely necessary if **Owner check** is activated. If DNS is used, the host name of the gateway may be entered instead of its IP address.



## Administration Scenarios

### Security: Administering Certificates

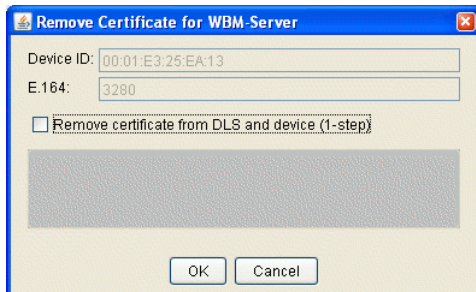
6. Choose whether you want to import a SPE certificate or a SPE CA certificate. For SPE CA certificates, you must enter the according **Index**, because this certificate is indexed.
7. In the **File name** entry field, enter the entire local path including the name of the certificate or click **Browse** to enter the path via the browser.  
The SPE certificate should be in PKCS#12 format, and the SPE CA certificate should be in .pem format.
8. For SPE certificate only: In the **Passphrase** field, enter the key used to encrypt the PKCS#12 file you want to import.
9. Activate **Import certificate to DLS and activate on device (1-step)**, if the certificate should be activated immediately.
10. Click **OK** to import the certificate. If you have selected several objects (see Section 5.4.2.4, "Multiple selection and data transfer in Table view"), select **Apply to All** to import certificates for all of these objects. The additional question due to security reasons must be answered with **Apply to All**.
11. For activating the imported certificate, click **Activate certificate** and **Save** afterwards, if **Import certificate to DLS and activate on device (1-step)** is not activated.
12. SPE Certificate as well as SPE CA certificate for IP Gateway must be imported.
13. Afterwards, the SPE Certificates for IP Phones / IP Clients must be imported as described in chapter Section 16.13.3, "Importing SPE CA Certificates for IP Phones" / Section 16.13.4, "Importing SPE CA Certificates for IP Clients".
14. Switch to **IP Devices > IP Phone Configuration > Signaling and Payload Encryption (SPE) > "SIP Settings" Tab** or **"HFA Settings" Tab** and set "TLS" in the entry fields **SIP Transport Protocol** resp. **HFA Transport Protocol**. For IP Clients the values have to be entered the same way.

**NOTE:** Certificates should be deployed to devices when respective template (with PKI Connector saved) is applied through Plug & Play

**NOTE:** Certificates won't be deployed to already registered devices even if a template with PKI Connector saved, is applied.

### 16.13.6 Remove Certificate (IEEE 802.1x Phone as an example)

1. Select the area you require under **IP Devices > IP Phone Configuration** (see Section 16.13.1 to Section 16.13.5).
2. Search and select the IP phone whose certificate you want to remove or switch to **Template** view to delete a certificate from a template.
3. Click **Remove Certificate**. A dialog appears (see the following example):



4. For IEEE 802.1x certificates, select the certificate to be removed (if applicable). The option that corresponds to the tab is already selected.
5. Activate **Remove certificate from DLS and device (1-step)**, if the certificate should be removed immediately.
6. Click **OK** to remove the certificate.  
If you have selected several objects (see Section 5.4.2.4), select **Apply to All** to remove certificates for all of these objects.
7. Click **Activate certificate** and **Save** to delete the certificate on the phone, if **Remove certificate from DLS and device (1-step)** is not activated.

## **16.13.7 Replace IP Phone**

1. Click the **IP Devices > IP Device Management > IP Device Configuration** area. Click **Action** in the menu bar and select **Copy IP Device** (see Section 16.6, "Replacing an IP Device").
2. Please check if the copy contains all certificates as imported certificates, or the certificates are part of a default profile. If only activated certificates are available, they are not used any more with Plug&Play.

## 16.14 Configuring and Administering Mobility

With the Mobility function, call numbers can be assigned to specific persons instead of devices. In addition to their call numbers, a user's settings, such as, the key layout, can be transferred from one device to another. To enable this, users must log on to the device in question with their call number and a password. Once the user has logged off, the previous device used is reassigned its basic profile, and as a result, a different call number to that of the mobile user.


**NOTE:** For basic information on mobility in DLS, see Section 3.8, "DLS Mobility - General Information".

### 16.14.1 Configuring the Mobility Function on the Device

Select the **Mobility** tab in the area **IP Devices > IP Phone Configuration > SIP Mobility** and activate the option **Device available for Mobile User**.

### 16.14.2 Programming the "Mobility" Button


Configure a template with a key layout that provides a mobility key:

1. Select **Template** view in the area **IP Devices > IP Phone Configuration > Keysets/Keylayout** and click the  icon in the **Destinations** tab. A new line is displayed in the table, in which you can make the required entries.
2. As the key function **Mobility** is on the first level, select "1. Level" in the **Level** column.
3. In the **Key number** column, select the key to which the new function should be assigned. For more information, see Section 7.1.19.2, ""Destinations" Tab".
4. Select "Mobility" in the **Key function** column.
5. You can now enter a key label in the final column. This is only displayed with optiPoint 420 telephones that provide LCD key labeling.
6. If you click **Save**, a dialog window opens where you can enter a name and a description for the template. Save the template by clicking **Save**.

For more information on creating templates, see Section 15.5.1, "Creating a Template Manually".

7. Assign the template to a profile and load this profile to the required workpoint.

## 16.14.3 Creating a Mobile User Profile

1. Create templates containing the required mobile user configurations. Select the **Templates** view in the area to be configured, for example in **Mobile Users > SIP Mobile User Configuration > Miscellaneous**.
2. If you click **Save**, a dialog window opens where you can enter a name and a description for the template. Save the template by clicking **Save**.
3. Click **New** in the area **Profile Management > User Data Profile** to create a new profile. Click the icon . In the choice list that now opens, select the required template.
4. In the **Name** field, enter the name for the new profile. In the **Description** field, enter a short description of the profile if required.
5. Click **Save** to save the profile.


## 16.14.4 Creating Mobile Users

### Requirements

- A working DLS infrastructure.
- The Mobile Users must already be configured in OpenScape Voice.

### 16.14.4.1 Adding New Mobility Users

1. Select the area **Mobile Users > SIP Mobile User Interaction > SIP Mobile User > "Mobile / Basic User" Tab**.
2. Click **New**.

Click the  button to the right of the **New Mobile User IDs** field. A dialog window appears. The list shows all call numbers registered in the telephone system that are still available, i.e. that have not yet been assigned to a workpoint or mobile use. Clicking **OK** applies the data. In addition to the choice list, you also have the option of entering the call number of the mobile user into the field by hand. Multiple numbers must be comma-separated.

3. Under **Mobile User Password**, enter the password for the Mobile User accessing the Mobility Phone.

**NOTE:** In OpenStage v3 onward, the password for mobile users is send using hash values. Therefore the DLS is not able to display anything in the password field when the Refresh button is used. The password is not lost, is just not visible in the DLS graphic user interface.

4. Under **Mobile User Profile**, select the profile (see Section 16.14.3, "Creating a Mobile User Profile") that should be applied for the Mobile User to be created.
5. If necessary, activate the **Get SIP Data from Virtual Devices** to automatically apply the SIP data entered in the device profile (**Profile Management > Device Profile**) for the Mobile User.
6. Click **Save**.

#### **16.14.4.2 Creating Mobile Users via Migration**

1. Go to **Mobile User > Mobile User Interaction > Mobile User**. If you select "Mobility enabled Device" in the **User Type** field and then click **Search**, a list of all devices available for a mobile user is shown in the **Table** view.
2. Click **Migration to Mobile User**. A dialog window opens.
3. Enter a new E.164 for use as the basic E.164 number for the mobility-enabled device. That is, the E.164 number used by the device when no user is logged-on the device.
4. Enter a mobile user profile for use by the mobility enabled device when no user is logged-on the device.
5. Enter the mobile user password for the newly created basic user.
6. Start the migration.

**NOTE:** During migration, the user data of the mobility enabled device are used for the creation of a new mobile user. New E.164 number and new user data are copied to the mobility enabled device for use when no user is logged on the device.

**NOTE:** As soon as migration has been completed, the previous basic user is migrated to mobile user. The default password for new mobile user is "000000" .

#### 16.14.5 Create a Home Phone

A home phone is an end device assigned to a SIP mobile user. The mobile user is logged on to the home phone by default. Setting up of a home phone is optional. However, when a home phone has been set up, the mobile user is automatically logged on to it after having been logged off from another phone, and thus, he is accessible. When the mobile user logs off from the home phone, he is not accessible any more.

1. Navigate to **Mobile Users > SIP Mobile User Interaction > SIP Mobile User**. If you choose "Mobility enabled Device" in the field **User Type** and click on **Search** afterwards, you get a list in **table** view that contains all end devices which are available to a mobile user. For mobile users with status "Mobile User Logged Off", the fields under **Mobile User Home Phone** are available.
2. Activate **Allow automatic Logon at Home Phone**, so that logging on the mobile user at the home phone is activated immediately.
3. For **Home Phone**, choose the call number of the end device from the selection list. The **Home Phone Status** field shows the status of the home phone selected.
4. Finally, confirm by **Save**.

## 16.14.6 Logging On Mobile Users (Forced Logon)

A mobile user can be logged on not only at the device but also via DLS.

1. In the area **Mobile Users > SIP Mobile User Interaction > Logon/Logoff** use **Search > Table** view > **Object** view to find the mobile user you want to log on. Alternatively, you can also select the device where you want to log the mobile user on.
2. Click **Logon Mobile User**.
3. A dialog window opens. If you had already selected a mobile user, enter the Basic E.164 number now for the device where you want to log the mobile user on. If you have selected a device, you must enter the mobile user's mobility ID.

## 16.14.7 Logging Off Mobile Users (Forced Logoff)

Using the DLS, the administrator can implement a forced logoff for a Mobile User that is logged on to a workpoint. This interrupts ongoing calls.

1. In the area **Mobile Users > SIP Mobile User Interaction > Logon/Logoff** use **Search > Table** view > **Object** view to find the mobile user that you wish to log off. Alternatively, you can also select the device where the mobile user is logged on.
2. You can use **Logoff Mobile User** to log the Mobile User off the relevant device.

## 16.14.8 Troubleshooting for Mobile User Logon/Logoff

The **History** tab in the area **Mobile Users > SIP Mobile User Interaction > Logon/Logoff** contains information regarding actions. This information is available for the Mobile User and for devices that are available for the Mobile User.

You can find a survey of all mobile user related actions in the **Mobile Users > Mobility Statistics**.

A multitude of reasons can lead to a situation where a mobile user is logged on at two phones (A and B) simultaneously. This will not cause an error in OpenScape Voice. However, the DLS provides a special error handling which tries to clear this situation by logging off the mobile user at phone A, as soon as it is reachable again.

Possible reasons for unsuccessful logoff:

1. Phone A is not available, is restarting, is plugged off, has a broken network, or a hardware problem. These are the most probable reasons.
2. Phone A has a software problem and cannot complete the protocol for executing the logoff. In most of these cases, the DLS is able to tell the phone to start a logoff, but the phone does not execute it.
3. Phone A is DCMP-enabled. SIP Mobility and DCMP do not work together. Therefore, DCMP has to be disabled when using SIP Mobility.



## Administration Scenarios

### Configuring and Adminstrating Mobility

4. Phone A is not accepted by the DLS, because it is in Secure Mode, but does not have a valid certificate of this DLS.
5. Phone A does not have the correct DLS-Address.
6. Phone A is in a phone call (see time before doing a Logoff while a Phone Call is ongoing: **Main Menu > Mobile Users > SIP Mobile User Configuration > SIP Mobility > "Mobility Logon/Logoff" Tab**).

## 16.14.9 Default Setting for the Key Layout in Mobility Telephones

For each device type, default key layouts can be defined for the four basic key functions "Prime Line", "Mobility", "Cancel" and "Shift". These defaults overwrite the key layout defined in each Mobile User's profile.

1. Select the area **Mobile Users > SIP Mobile User Interaction > SIP User Keylayout**.
2. Select the required **Device Type**.
3. Activate **Use following Defaults for Mobile User Logon**.

### 16.14.9.1 FFK/FPK settings in Mobility Telephones

DLS maintains a properties file with the default FFK/FPK settings (key function/label) for all different phone types. This file shall be read by DLS during the service startup.

The following tables illustrate the default FFK/FPK settings per phone type. These tables shall be used internally by DLS to detect if the received FPK's / FFK's have different values than the default.

Key Index	OpenStage 40	OpenStage 40 US	OpenStage 60 / 80	Desk Phone IP 35	Desk Phone IP 55
4001	Release icon	Conference icon	Release icon	Conference icon	Conference icon
4002	Forward icon	Hold icon	Forward icon	Hold icon	Hold icon
4003	(Key not present)	(Key not present)	Voice Dial icon	(Key not present)	(Key not present)
4009	Redial icon	Transfer icon	(Key not present)	Transfer icon	Transfer icon
4010	(Key not present)	(Key not present)	(Key not present)	(Key not present)	Forward icon

Key Index	OS 40	OS 40 US	OS 60	OS 80	Desk Phone IP 35	Desk Phone IP 55
1	Key icon / no imprinted label	Shift icon / no imprinted label	Key icon / no imprinted label	Key icon / no imprinted label	Forward icon	Shift icon
2	Key icon / no imprinted label	Phonebook icon / no imprinted label	Key icon / no imprinted label	Key icon / no imprinted label	Pickup icon	Key icon / no imprinted label
3	Key icon / no imprinted label	Pickup icon / no imprinted label	Key icon / no imprinted label	Key icon / no imprinted label	DND icon	Key icon / no imprinted label
4	Key icon / no imprinted label	Forward icon / no imprinted label	Key icon / no imprinted label	Key icon / no imprinted label	(Key not present)	Key icon / no imprinted label
5	Key icon / no imprinted label	DND icon / no imprinted label	Key icon / no imprinted label	Key icon / no imprinted label	(Key not present)	Key icon / no imprinted label
6	Key icon / no imprinted label	Phone Screen icon / no imprinted label	Key icon / no imprinted label	Key icon / no imprinted label	(Key not present)	Key icon / no imprinted label
7	(Key not present)	(Key not present)	Key icon / no imprinted label	Key icon / no imprinted label	(Key not present)	Key icon / no imprinted label
8	(Key not present)	(Key not present)	Key icon / no imprinted label	Key icon / no imprinted label	(Key not present)	Key icon / no imprinted label
9	(Key not present)	(Key not present)	(Key not present)	Key icon / no imprinted label	(Key not present)	(Key not present)

Whilst a mobile user is logged on, if DLS receives FPK's / FFK's as part of local changes, DLS shall compare the received FFK's / FFK's with the default FPK's / FFK's of the phone (for the keys that are not locked) and then, it shall perform the following handling:

- a) If the received key has different key function:
  - Search the mobile user keys based on the received key index
  - If there is configured mobile user key, update it
  - Otherwise (no configured mobile user key), add a new mobile user key
  
- b) If the received key has the default key function, but different key label:
  - Search the table with the custom key labels based on the received key function
  - if there is configured custom key label, update it

- Otherwise (no configured custom key label), add a new custom key label for the received key function

c) If the received key has the default key function and label:

- Search the mobile user keys based on the received key index and if there is configured mobile user key, delete it
- Search the table with the custom key labels based on the received key function and if there is configured custom key label, delete it
- Otherwise (no configured mobile user key or custom key label), nothing to do

**NOTE:** In the same manner, the "migrate to mobile user" functionality shall be enhanced to NOT move the basic user FFK's / FPK's that have the default key functions and labels of the basic user device type.

## 16.14.10 Data Backup to a .zip Archive

All mobile user data can be saved in a .zip archive. The data within the .zip archive is saved in XML format which is the format used for data exchange between workpoints and DLS.

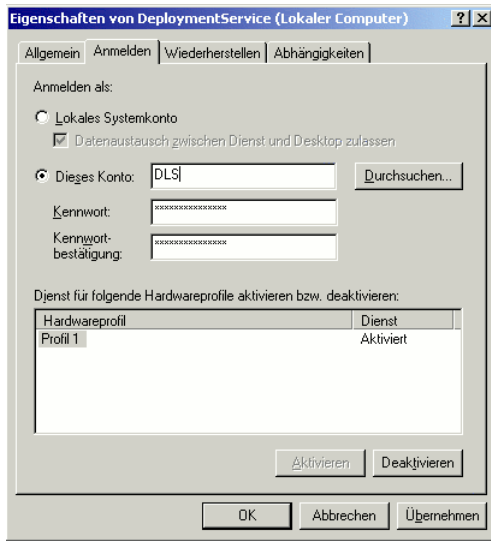
### 16.14.10.1 Preparation

Data backup should normally be performed on a network drive. Only one specific directory should be released for mobile user data storage. The following steps are required for this:

1. Stop the DeploymentService, that is the DLS Web service. To do this, click **Programs > DeploymentService > Stop Service** in the Windows Start menu.
2. As the DeploymentService runs after installation with the localadmin account for which no drives are normally mapped, it can only access local drives at first. You should therefore assign the DeploymentService an account which contains privileges for the network drive to be mapped.

**IMPORTANT:** Make sure that the DeploymentService account has administrator rights. Restrictions can lead to problems with DLS.

To assign a new account to the DeploymentService, select **Settings > Administrative Tools > Services** or **Settings > Control Panel > Administrative Tools > Services** in the Windows Start menu. Double-click the **DeploymentService** entry to open a window where you can change the properties of the service. Now activate the **This account** check box in the **Log On** tab and click **Browse** to select the relevant user account.



3. Rename the following files in the folder  
"C:\Program Files\DeploymentService\Tomcat5\bin":  
  
initdlsservice.template > initdlsservice.bat  
releasedlsservice.template > releasedlsservice.bat
4. Enter the network drive connection or release command as described in the files "initdlsservice.bat" and "releasedlsservice.bat".
5. Select **Programs > DeploymentService > Start Service** to restart the service.

### 16.14.10.2 Saving Mobile User Data

1. Select the area **Mobile Users > SIP Mobile User Interaction > SIP Mobile User**.
2. Click **Search** to find all available mobile users.
3. Select the option **Table** under **Views**. Mark the mobile user whose data you want to save.
4. Now, select the entry **Save Selected Mobile User to Archive** in the menu bar under **Action**. A dialog window opens where you can select the storage location.

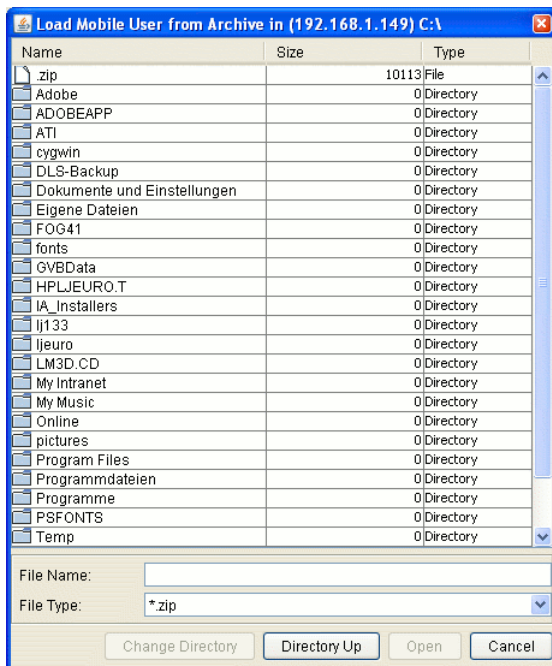


5. The contents of the drive where the DLS is installed are displayed by default. Mark a directory name and then click **Directory Change** or double-click the directory name to select the required destination directory. Click **Directory Up** to move to a higher directory level.
6. Enter a file name for the ZIP archive and confirm with **Save**. Alternatively, you can mark an existing archive in the list with a simple click and then press **Save**. In the ensuing selection window, you can choose if you want to save the mobile user data to the existing archive (**Write Data to existing Archive**) or overwrite the existing archive (**Create new Archive**).

### 16.14.10.3 Loading Mobile User Data

**NOTE:** You can only load mobile user data if the relevant mobile users are logged off. Data associated with a mobile user who is logged on will not be overwritten.

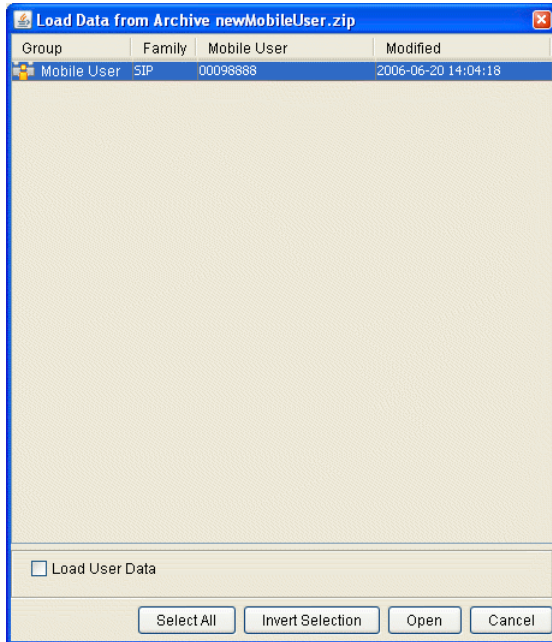
1. Select the area **Mobile Users > SIP Mobile User Interaction > SIP Mobile User**.
2. Now, select the entry **Import Mobile User** in the menu bar under **Action**. A dialog window opens for selecting the directory path. Mark a directory name and then click **Directory Change** or double-click the directory name to select the required destination directory. Click **Directory Up** to move to a higher directory level.



## Administration Scenarios

### Configuring and Adminstrating Mobility

3. Mark a .zip archive in the list and click **Open**. A list of all mobile user data records saved in this archive is displayed.



4. Mark the data records you want or, where applicable, click **Select All**. You can also select **Reset selection**. Use the **Load User Data** check box to specify whether or not non-configurable user data, such as, call lists or phone book data, should be loaded to the DLS database.

**NOTE:** Call lists and phone book data must be saved in encrypted format.

5. If you click **Open** now, the selected mobile user data is loaded to the DLS database.

**NOTE:** It may take some time to load all user data depending on the data volume.

The size of the non-configurable user data can be requested over **Mobile Users > User Data Administration**

## 16.14.11 Import Mobile User Data

It is possible to import a manually created csv file with Mobile User Data. An export of Mobile User Data is not allowed due to data security reasons.

The file must have following format:

1. row: Description of columns content:

<E.164>	Required ,valid E.164 number
<Mobile User Password>	Required
<Mobile User Profile>	Required
<Get SIP Registration Data from Virtual Devices>	optional
<Home Phone>	optional
<Allow automatic Logon at Home Phone>	Required, possible values: true, false
Get Keypad Configuration from Virtual Device	Optional

Table 16

2. and following rows: Columns content separated by ','

Import-File example:

```
12345;0000000;@profile;;;false
33333;0000000;@profile;;;false
4411594311111;0000000;MobUser;;;false
4411594312334566789;0000000;MobUser;;12345>true
```

Example of data that have to be imported for the creation of Mobile User with SIP registration and KeySet Data are as follows:

1.Import of a Virtual device with the needed SIP registration data and Keypad configuration :

```
##CreateSIPPhone <ID> <e164> <type>...<SIP Server Addr.><SIP Server Port><SIP Reg Addr.><SIP Reg Port>...
```

```
CreateSIPPhone 302108189656 OpenStage 80... 10.7.1.54 5060 10.7.1.54 5060...
```

```
##### Keysets #####
```

```
## ModifyKeypad<reset><e164 number><attribute-name>=<attribute-value>]+
```

```
ModifyKeypadFALSE302108189656line-registration-leds=true...
```

```
##### Keys #####
```

```
## ModifyKey<reset><e164 number><key function><level><module>...
```

```
ModifyKeyFALSE302108189656hold00...
```



## Administration Scenarios

### *Configuring and Administrating Mobility*

ModifyKeyFALSE302108189656do not disturb00...

ModifyKeyFALSE302108189656conference00...

ModifyKeyFALSE302108189656headset00...

ModifyKeyFALSE302108189656mobility00...

ModifyKeyFALSE3021081896567010...

ModifyKeyFALSE302108189656built-in release40...

ModifyKeyFALSE302108189656built-in forwarding40...

ModifyKeyFALSE302108189656built-in voice dial40...

2.Import of the mobile user :

302108189656;000000;temp;true;;false;true

To import a file with mobile user data, proceed as follows:

1. Switch to **Mobile Users > SIP Mobile User Interaction > SIP Mobile User** and click **Import Mobile User**. An import dialog appears, brows for valid filename.
2. Click on **Save** to save the imported mobile user.

## **16.14.12 Mobility between optiPoint and OpenStage**

Mobility between optiPoint and OpenStage is possible, but with restrictions only. For additional information see [http://wiki.unify.com/images/7/72/SIP\\_Mobility\\_User\\_-\\_optiPoint\\_and\\_OpenStage\\_Regression\\_Test.pdf](http://wiki.unify.com/images/7/72/SIP_Mobility_User_-_optiPoint_and_OpenStage_Regression_Test.pdf)

## 16.15 HFA Mobility with HiPath 3000

This feature allows the HiPath 3000 IP Mobility feature to be used in a networked (TDM or IP trunks) environment with a closed numbering range.

**NOTE:** Technically, only a matching HiPath 3000 LCR dial plan entry is required for the IP Clients on other nodes, while LCR routing is irrelevant. Without a matching LCR dial plan entry, it will only be possible to enter local E.164 subscriber numbers when using the feature. The network trunks are not used for this feature.

On HiPath 3000 systems, the DLS is responsible for sending the correct registration information to IP Clients that are not logging-on at their home location.

HFA Mobility with HiPath 3000 systems works as follows: A subscriber from a different HiPath 3000 system logs on at an IP Phone, which results in the phone being unable to communicate with the gateway because of modified registration data. The IP Phone contacts the DLS, which thereupon looks up the virtual device that belongs to the subscriber's E.164 number. The registration data of this virtual device are now sent to the IP Phone, thus enabling it to register.

For further settings, see Section 7.1.18, "HFA Mobility".

### 16.15.1 HiPath 3000 Configuration Prerequisites

IP mobility is configured and working on each HiPath 3000 node as described in the HiPath 3000/5000 feature description.

### 16.15.2 DLS Configuration for Network-wide HFA Mobility

Only the extra DLS configuration required for HFA Mobility with HiPath 3000 will be considered here:

- Import the configuration from each node into the DLS using "Element Manager" (including the mobile IP Clients). The mobile IP Clients are virtual devices on the DLS.
- In **IP Devices > IP Device Management > IP Device Configuration > "General" Tab** activate the **Use for HFA Mobility with HiPath 3000** switch for each mobile IP Client in each node.

### 16.15.3 Operating procedure

1. Activate (Mobile user logon) with this entry:  
\*9419 + E.164 subscriber number + password (password optional if not configured)
2. The IP Phone will try to logon at the current HiPath 3000 node using the E.164 subscriber number that has been entered. The message "Logging On To Home" will be displayed briefly. The logon will fail because the mobile IP Client is not configured at this HiPath 3000 node. The message "Mobile Log On Failed" will appear on the top line of the display, with "Contacting DLS" on the bottom line of the display.

The IP Phone will then send a "mobility-configuration-request" message to the DLS. The DLS will then send the correct registration information that will allow this mobile IP Client to log-on at the correct home node.

3. Deactivate (Mobile user logoff) by entering #9419.

## 16.16 Data Structures for DLS-hosted XML applications

In the following, the storage locations for data to be used by DLS-hosted XML applications are described. This enables customizing the applications by the user resp. administrator.

### 16.16.1 Directory Structure

- Texts and default pictures are searched under `<DLS installation path>/DeploymentService/Tomcat5/webapps/XMLApplications/data/default`
- For customization by means of customer texts and pictures, it is possible to create a directory `<DLS installation path>/DeploymentService/Tomcat5/webapps/XMLApplications/data/custom` which will then serve as search path for the texts and pictures.

**NOTE:** It is recommended to copy the directory

`.../XMLApplications/data/default` to

`.../XMLApplications/data/custom` and then make the intended changes there.

- Under

`.../XMLApplications/data/DeploymentService,`

`.../XMLApplications/data/LocationService,`

`.../XMLApplications/data/MakeCall,`

`.../XMLApplications/data/NewsService`

the texts for the respective XML applications are stored. These directories may not be changed by the user.

### 16.16.2 Directories at Upgrade Installations

With regard to upgrade installations, please consider the following:

- The `.../XMLApplications/data/default` directory is updated.
- The `.../XMLApplications/data/custom` is renamed to `.../XMLApplications/custom_old`

**NOTE:** If customizations have been made, these must be redone. For this, copy `.../`

`XMLApplications/data/default` to

`.../XMLApplications/data/custom` again or rename

`.../XMLApplications/data/custom_old` to `.../XMLApplications/data/custom`

- The directories

`.../XMLApplications/data/DeploymentService,`

`.../XMLApplications/data/LocationService,`

`.../XMLApplications/data/MakeCall,`

`.../XMLApplications/data/NewsService`

remain unchanged.

### 16.16.3 Directories at Backup/Restore

With regard to a restore, please consider the following:

- The directory `.../XMLApplications/data/default` is not saved.
- The directory `.../XMLApplications/data/custom` is saved and will either be restored or copied to `.../XMLApplications/data/custom_<old Version>`, dependent on the setting of **Administration > Backup/Restore > "Restore" Tab > Restore XML Application File too**.

**NOTE:** If customizations have been made, these must be redone. For this, copy

`.../XMLApplications/data/default` to

`.../XMLApplications/data/custom` again or rename

`.../XMLApplications/data/custom_old` to `.../XMLApplications/data/custom`

- The directories `.../XMLApplications/data/DeploymentService`,  
`.../XMLApplications/data/LocationService`,  
`.../XMLApplications/data/MakeCall`,  
`.../XMLApplications/data/NewsService` are saved and restored. These directories may not be changed by the user.

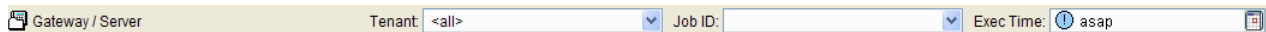
## 16.17 Use Multi-Tenancy

In the following, the administration of data from multiple clients (=tenants) with one single DLS installation is described.

**NOTE:** This function is available only when DLS multi-tenancy has been installed. This will be asked by the installation assistant.

With multi-tenancy masks, the selection menu **Tenants** is available. Otherwise, it is greyed out.

**NOTE:** When a new object is created without selecting a tenant, an error message appears.



With multi-tenancy masks, it will make a difference whether the object is assigned to a tenant or not, that is, in the tool bar under **Tenant**, either the tenant's name or <not assigned> will be displayed.

When objects are added which require a license, the tenant specific limits are checked. If a tenant is created or changed, the license dependent data are checked. The respective alarm thresholds are set tenant specific (see Section 6.3.1, "Tenants"). Basically, there is a difference between tenant dependent and tenant independent alarms.

**IMPORTANT:** The tenancy feature is stored in the database - but this feature is activated during setup and so it is system dependent and NOT database dependent.

Hence it is possible to restore a DLS database that previously contained tenancy relations to a DLS installation where the tenancy feature is not installed.

In this rare scenario, if you have installed a system without tenant and restore a tenant database you will not see any tenants and no-tenant dependent objects afterwards since this feature was never installed before.

### 16.17.1 Install/Deinstall Multi-Tenancy

#### 16.17.1.1 First Installation

Follow the instructions of the installation assistant and, at **Components**, click **Multi-Tenancy**.

#### 16.17.1.2 Update Installation

Follow the instructions of the installation assistant and, at **Components**, click **Multi-Tenancy**.

For all data that can be tenant specific, <not assigned> is entered as a tenant. Later, the data can be assigned to defined tenants.

### **16.17.1.3 Uninstalling**

Execute an update installation and, at **Components**, deactivate **Multi-Tenancy**.



#### 16.17.1.4 Import Tenants From OpenScape Voice Assistant

1. When you use a version > V3.0 of OpenScape Voice Assistant, open:  
**Element Manager > Element Manager Configuration > "OpenScape Voice Assistant" Tab**
2. Enable **Tenants synchronization** and click **Update Business Groups**.

For each business group, a tenant and a location is created. The names used hereby are constructed from <BusinessGroups Switchname (OpenScape Voice Assistant Version > V3.0) ><BusinessGroups Name>. Tenants and locations already existing are updated.

#### 16.17.2 Set Up Tenants

1. Navigate to **Administration > Server Configuration > Tenants**.
2. Enter the required number of licenses. You can check the total number via **Administration > Server Licenses**.
3. If an appropriate location exists already, assign it to the tenant now via **Administration > Server Configuration > Tenants > "Locations" Tab**. The possible values are displayed in a selection list. It is possible to assign multiple locations. After this, continue with step 6.
4. If no appropriate location should be set up yet, click **Save** firstly to create the tenant, as this will be required for setting up the location. After this, navigate to **Administration > Server Configuration > Location** and create a location.

**NOTE:** All IP Devices must be assigned to a defined location which is different from the default location. When IP Clients are used, please ensure that all IP addresses available for IP Clients are included when entering IP ranges.

**NOTE:** If IP Clients are used, please regard that all IP addresses possible for the IP Clients are incorporated when entering IP ranges.

5. Change to **Administration > Server Configuration > Location > "Tenants" Tab** and assign the location to a tenant. A location can be assigned to only one tenant.
6. Change to **Administration > Account Management > Account Configuration** and assign the tenant to that account which shall access the data belonging to this tenant.

**NOTE:** The newly created tenant will be assigned to the "admin" account. This assignment cannot be effected via the GUI.

### 16.17.3 Delete Tenants

To delete a tenant, all references to this tenant must be removed first.

1. Navigate to **Administration > Server Configuration > Tenants**.
2. Mark the desired tenant and delete the locations listed in the **"Locations" Tab**.
3. Click **Delete** and, in the dialog window, confirm that the tenant is to be deleted.

**NOTE:** A tenant that has been deleted will be removed automatically from the "admin" account. This cannot be effected via the GUI.

### 16.17.4 Set Up a Multi-Tenancy Account

1. Navigate to **Administration > Account Management > Account Configuration**.
2. Create an account, as described in Section 6.1, "Account Management". As **Access Type**, choose **DLS-GUI**.
3. Assign the desired roles. The role EDIT\_GENERAL\_ONE ensures that the account may only edit multi-tenancy masks. With the role EDIT\_SYSTEM, also system relevant masks which affect all tenants can be edited.
4. Change to the **"Tenants" Tab**. In **Tenant**, enter the tenants that can be edited by this account.

Multi-tenancy accounts can edit data belonging to the assigned tenants as well as data marked with <not assigned>. To the "admin" account, the selection <all> is available in addition. With <all>, all data present in the database can be displayed and edited.

### 16.17.5 Multi-Tenancy Alarm Configuration

When a tenant is set up, a tenant specific alarm configuration is created automatically. At this, the data of the generic (<not assigned>) alarm configuration are copied. If a tenant is chosen in the tool bar, the corresponding tenant dependent alarm configuration will be selected. Thus, Email addresses, batch files, and SNMP traps can be entered for license, mobility, and certificate expiration in a tenant-specific manner.

## 16.17.6 Server Assignments

For FTP server, HTTPS server, and network drives, the tenants must be assigned in the "Tenants" tab of the respective masks. The assignment of a location (see Set Up Tenants) is not sufficient, though servers are assigned to the location on its part.

## 16.17.7 Mobile Users

With regard to the mobile user functionality, please regard the following:

- For the location of a tenant, an E.164 pattern should be specified in order to ensure that the call number configured for the mobile user is valid.
- If call number bands are shifted from one tenant to another, the mobile users must be assigned to the new tenant manually. For this, navigate to **Mobile Users > SIP Mobile User Interaction > SIP Mobile User** and enter the tenant in the **Tenant** field.

## 16.17.8 Multi-Tenancy Profile Management

When a location is added to a tenant, also the default profiles are assigned to this tenant, including the contained templates. All remaining profiles, user data profiles, and templates can be assigned to individual tenants via the respective "Tenants" tab.

## 16.17.9 Automatic Number Pool with Multi-Tenancy

The virtual devices that are part of a Plug&Play number pool will be assigned to that location whose number pool contains the appropriate E.164 number. If multi tenancy is available in this DLS installation, the E.164 number is assigned to a tenant accordingly.

## 16.18 Migration Scenarios

Migration scenarios include deployment change as opposed to Upgrade scenarios who refer to an installation of a new DLS version over a previous one by using the same deployment.

OpenScape Deployment Service supports the following scenarios :

- **Upgrade scenarios**

From	To
Onboard DLS in Integrated Simplex V6R1/V7R1	Onboard DLS in Integrated Simplex V7R2
Windows DLS Single Node V6R1/V7R1	Windows DLS Single Node V7R2
Windows DLS Multi Node V6R1/V7R1	Windows DLS Multi Node V7R2

- **Migration scenarios**

Starting with **CV422**, DLS V7R2 currently supports the following:

From	To
Onboard DLS in Integrated Simplex V6R1/V7R1	Windows DLS Single Node V7R2
Onboard DLS in Integrated Simplex V6R1/V7R1	Windows DLS Multi Node V7R2
Windows DLS Single Node V6R1/V7R1	Windows DLS Multi Node V7R2

**NOTE:** Windows DLS Single Node with Local or Remote Data Base is also supported.

### 16.18.1 Onboard DLS in Integrated Simplex V6R1/V7R1 to Windows DLS Single-Node V7R2

#### Backing Up DLS Database Data for Onboard DLS in Integrated Simplex

1. Close all browser windows connected to the DLS.
2. End DeploymentService on the Onboard DLS in Integrated Simplex by executing the command `"/symphoniad stop"` under `/etc/init.d/` directory
3. Execute the command `"sh dbexport.sh /tmp/filename.zip"` under `/enterprise/share/tomcat/webapps/DeploymentService/database.`  
  
This will export the DLS dB under `/tmp` directory path or choose another directory path and archive it in the `"filename.zip"` file.
4. Start Deployment Service on the Onboard DLS in Integrated Simplex by executing the command `"/symphoniad start"` under `/etc/init.d/` directory.

#### Migrating the DLS Database Data to the Windows DLS Single-Node

1. Fresh install Windows DLS V7R2 Single-Node.
2. Copy the file "filename.zip" to the folder:  
`[Installation path]\DeploymentService\Tomcat\webapps\DeploymentService\database\`
3. Close all browser windows connected to the DLS.
4. End DeploymentService on the DLS server by clicking **Start > Programs > Deployment Service > Stop Service** in the Windows Start menu.
5. In order to migrate the DLS data, execute the following command on Command Prompt (run as administrator):  
`[Installationpath]\DeploymentService\Tomcat\webapps\DeploymentService\database\migrate.bat filename.zip`
6. Start Deployment Service on the DLS server. Do this by clicking **Start >Programs > Deployment Service > Start Service** in the Windows Start menu.

#### 16.18.2 Onboard DLS in Integrated Simplex V6R1/V7R1 to Windows DLS Multi-Node V7R2

##### Backing Up DLS Database Data for the Onboard DLS in Integrated Simplex

1. Close all browser windows connected to the DLS.
2. End DeploymentService on the Onboard DLS in Integrated Simplex by executing the command `"/symphoniad stop" under /etc/init.d/ directory`
3. Execute the command `"sh dbexport.sh /tmp/filename.zip" under /enterprise/share/tomcat/webapps/DeploymentService/database`  
  
This will export the DLS dB under `/tmp` directory path or choose another directory path and archive it in the "filename.zip" file.
4. Start Deployment Service on the Onboard DLS in Integrated Simplex by executing the following command `"/symphoniad start" under /etc/init.d/ directory`

##### Migrating DLS Database Data for the Windows DLS Multi-Node

The following example demonstrates the migration of a Multi Node with two (2) DLS Nodes:

1. Fresh install Windows DLS V7R2 Multi-Node system.
2. Copy the file "filename.zip" to the first DLS node under the folder:  
`[Installationpath]\DeploymentService\Tomcat\webapps\DeploymentService\database\`
3. Close all browser windows connected to the DLS.
4. End Deployment Service on DLS server for both Nodes by clicking **Start > Programs > Deployment Service > Stop Service** in the Windows Start menu.

5. To migrate the DLS data, execute the following command on Command Prompt (run as administrator) for the first DLS Node :

```
[Installationpath]\DeploymentService\Tomcat\webapps\DeploymentService\database\
migrate.bat filename.zip
```

6. Start Deployment Service on DLS server for both Nodes by clicking **Start > Programs > Deployment Service > Start Service** in the Windows Start menu.

### 16.18.3 Windows DLS Single-Node V6R1/V7R1 to Windows DLS Multi-Node V7R2

#### Backing Up DLS Database Data for the Windows DLS Single-Node

1. Close all browser windows connected to the DLS.
2. End DeploymentService on DLS server by clicking **Start > Programs > Deployment Service > Stop Service** in the Windows Start menu.
3. In order to backup the DLS data, execute the following command on Command Prompt (run as administrator) for the DLS Single Node :

```
[Installationpath]\DeploymentService\Tomcat\webapps\DeploymentService\database\
dbexport.bat filename.zip
```

This will export the DLS dB and archive it in the filename.zip file.

4. Start Deployment Service on DLS server by clicking **Start > Programs > Deployment Service > Start Service** in the Windows Start menu.

#### Migrating DLS Database Data for the Windows DLS Multi-Node

The following example demonstrates the migration of a Multi Node with two (2) DLS Nodes:

1. Fresh install Windows DLS V7R2 Multi-Node system.
2. Copy the file "filename.zip" to the first DLS node under the folder:  
[Installationpath]\DeploymentService\Tomcat\webapps\DeploymentService\database\
3. Close all browser windows connected to the DLS.
4. End DeploymentService on DLS server for both Nodes by clicking **Start > Programs > Deployment Service > Stop Service** in the Windows Start menu.
5. To migrate the DLS data, execute the following command on Command Prompt (run as administrator) for the first DLS Node :  
[Installationpath]\DeploymentService\Tomcat\webapps\DeploymentService\database\  
migrate.bat filename.zip
6. Start Deployment Service on DLS server for both Nodes by clicking **Start > Programs > Deployment Service > Start Service** in the Windows Start menu.

**NOTE:** When database mirroring is active for a Windows DLS Multi-Node, no migration of backups is possible.

**NOTE:** In order to execute the "migrate.bat" command you should run the Command Prompt as administrator (UAC windows feature).

**NOTE:** Nearly all data is wiped out on the target DLS installation if present.

Only the following data is conserved when data is migrated on the target load:

- configuration of license server (this is to avoid consuming all licenses on the license server when a second DLS with same data is started)
- configuration of localized data which needs to be adopted to the current installation, e.g. trace file directories.

**NOTE:** Due to enhancement changes in V6R1, from **CV111.00** onwards the database representation of the languages for the batch file, snmp and e-mail alarms has been swapped.

Therefore, in a migration attempt from any DLS (either Linux or Windows) **CV110.00** or earlier to a **CV111.00** or later, expect the above mentioned alarm language configuration to be swapped (i.e. German will be English and English will be German).

An IP adaptation must follow for a successful migration since the newly introduced DLS server will now hold a new IP address. The procedure is described in the following paragraph:

#### 16.18.3.1 Subsequent IP adaptation

DLS uses all enabled LAN interface cards of the server it is installed on. When changing the IP address of a LAN card (or replacing DLS server hardware), or applying a migration procedure, the following actions must take place:

1. DLS must be restarted.
2. All DLS objects using the old IP address must be adapted, which includes DLS address in SCAN objects and FTP Server address in case an FTP Server is installed on DLS host.
3. All devices and applications which communicate with DLS must be reconfigured:
  - **Phones configured via DHCP:** adapt DHCP server, the phones will use the new DLS address after DHCP lease timed out. Since the lease may never time out, this may be a time-consuming action, it is therefore recommended to:
    - *restart all phones* (outside business hours) - this will take some time and when all jobs are finished, check failed jobs and/or search for all phones which are still configured for the old DLS IP address. Either retry or resolve manually the problem, i.e. in case the phone is switched off.
  - **Phones not configured via DHCP:** manually set the new IP address using DLS **before** the IP is changed or scan these phones using the new IP address.

- **Gateways, HiPath 4000 Manager, HiPath 8000 Assistant, HiPath QoS:** manual reconfiguration of DLS address using the individual mechanisms of these products. As an example, reconfigure the DLS parameters inside CMP to reflect the new IP address of the DLS Server.



## 16.18.4 DLS Multi-Node Systems with Database Mirroring Operating System Upgrade/Migration Procedure

This process is designed so that the upgrade/migration of the operating system is executed within the minimum possible downtime for the DLS service.

### Requirements

Make sure of the following :

- All devices, browsers and API clients are configured to use the Cluster IP and not the DLS Node IP's
- No administrative tasks are allowed during the time that this procedure lasts. The functionality that is guaranteed to work – with the exception of the outage period, where the service is stopped – is mobility and device registration. Administrative tasks that are automatically triggered should also be disabled (e.g. Element Manager Synchronization, Plug &Play)
- All scheduled jobs must be deleted or cancelled before starting this process
- All GUI browser sessions are logged off
- If DCMP is installed on the DLS nodes, each node must have a DCMP instance configured in cluster mode, as the DLS Admin Guide describes (see Section 4.4.2, Step 3). If the DCMP is on an external system, it will not be affected.
- Have the DLS Admin Guide in handy. All installation and configuration steps below should be done according to the OpenScape Deployment Service Admin Guide.

### Abbreviations about the involved machines

**Front End 1 (FE1):** This is the computer designated as DLS Node 1 of the DLS Cluster.

**Front End 2 (FE2):** This is the computer designated as DLS Node 2 of the DLS Cluster.

**Back End 1 (BE1) :** This is the computer designated as Database Server having the Principal Role which is configured during the installation of the system. If any fail-over has occurred since the installation of the system, **BE1** might have changed to the Mirror Role. **BE1** is the system that was intended to be the Database Server with the Principal Role during the initial installation of the system.

**Back End 2 (BE2) :** This is the computer designated as Database Server having the Mirror Role. Look above (**BE1**) for clarifications.

**Back End 3 (BE3):** This is the computer designated as the Database Witness Server.

For abbreviations and additional information, you can also refer to Section 17.1, "Abbreviations and Technical Terms"

### Prerequisites

- A DLS Multi-Node environment in a working state.
- The DLS Common Data folder to be located on an external computer (not in **FEx** or **BEx**).

- The CLA to be located on an external computer (not in **FE**x or **BE**x).

Proceed with the following steps :

### 1. Preparation of database servers

- a) Check if **BE2** has the Principal Role - if yes skip to step d.
- b) Perform manual database failover using SQL Server Management Studio (the mirror database server will become the principal database server and the principal database server will become the mirror database server)
- c) Verify that **FE2** is in functional state. Try to login directly to **FE2** GUI (not virtual IP) and check if login process completed successfully.
- d) Disable the Database Mirroring using the Microsoft SQL Management Studio

### 2. Shutdown of **FE1** & **BE1** & **BE3**

**NOTE:** **BE3** (Witness Server) is optional; therefore it is not used by all configurations. In the case where the **BE3** does not exist, skip instructions targeting **BE3**.

- a) Shutdown **FE1**, **BE1** & **BE3**
- b) Verify that **FE2** has gained master role and the DLS service is operational by logging in using the Virtual Cluster IP
- c) Remove **FE1** from Load Balancer's network configuration
  - For Microsoft NLB: NLB is automatically disabled when the DLS service is stopped (already done in step a). Verify in the NLB Management Console from **FE2** that **FE1** appears in red and **FE2** remains converged.
  - For external Load Balancer: Configure the external Load Balancer as appropriate.

**NOTE:** At this point the DLS Cluster does not support High Availability nor Load Balancing, however, the DLS service is still available from **FE2** and **BE2**.

### 3. Installation of Windows Server 2008 R2

- a) Installation of Windows Server 2008 R2 + Service Packs on **FE1**, **BE1** and **BE3**.
- b) Network configuration of **FE1**, **BE1** and **BE3**.
- c) Installation of the Microsoft NLB (if an external Load Balancer is used, skip this step).
  - Install the Microsoft NLB on **FE1** by adding it as a feature from the Server Manager.

**IMPORTANT:** DO NOT proceed with the NLB configuration to create a cluster.
- d) Install and configure the Windows FTP Server on **FE1** as appropriate (skip this step if Windows FTP Server is not used).
- e) Installation of SQL Server Native Client 2008 R2.

## Administration Scenarios

### Migration Scenarios

#### 4. Installation of SQL Server 2008 R2 on **BE1** & **BE3**

#### 5. Installation of DLS on **FE1**

- a) Create a new Common DLS Data folder

**NOTE:** The folder should be granted with respective permissions. Do NOT use Common DLS Data folder of previous installation.

- The Common DLS Data folder is recommended to be located on **BE3** or on an external computer and certainly NOT in the computer where CLA is installed.

- b) Installation of DLS on **FE1**

- Use the exact same configuration as the old system. If DCMP was installed, install DCMP on this new system as well.
- Do NOT install a hotfix directly. Instead first install the base version of the hotfix and then upgrade to the hotfix (e.g. the base version of **V6 R1 127.05** is the **V6 R1 127.00**).

- c) Stop the DLS service on **FE1**

#### 6. Database Migration

- a) Backup the DLS database from **BE2** – Through DLS GUI proceed with backup. Verify that backup file is saved on a network path accessible from **FE1** – **BE1**. (e.g. on **BE3**)

**NOTE:** From the time when the backup procedure is started and after, all actions – requests sent to DLS will NOT be restored to the new installation.

**IMPORTANT:** From this point the DLS service will be unavailable

- b) Stop the DLS service on **FE2** – If Microsoft NLB is used, then check on NLB Management that the Console host for **FE2** is stopped. If not, then stop host manually on NLB.

- Remove **FE2** from Load Balancer's network configuration.
- For Microsoft NLB: NLB is automatically disabled when the DLS service is stopped (already done in step b).
- For external Load Balancer: Configure the external Load Balancer as appropriate

- c) Uninstall, Re-Install CLA and then activate licenses for DLS.

**NOTE:** In case there are other products which use the same CLA then it is mandatory to additionally activate licenses for these products

- d) Restore the DLS database to **BE1**. Through DLS GUI proceed with restore. Verify that the backup file is saved on a network path accessible from **FE1** and **BE1**

#### 7. NLB Configuration and start of the new cluster

- a) Configure Load Balancer's network configuration for **FE1**.

- Create the Cluster using the same IP and configuration as in the old system.
- For Microsoft NLB: Add **FE1** to the Cluster. Using NLB Manager Console, select "Create New Cluster" and proceed with the new Cluster with Host 1 = **FE1** and Cluster IP = Virtual IP.

- For external Load Balancer: Configure the external Load Balancer as appropriate.
- b) Start DLS on **FE1**
- c) Verify that the new DLS installation is operational by logging in using the Virtual IP of the system.

**NOTE:** From this point on the DLS service will be available again, serving from the newly installed Windows Server 2008 R2 system.

8. Installation of Windows Server 2008 R2

- a) Installation of Windows Server 2008 R2 on **FE2** and **BE2**
- b) Network configuration of **FE2** and **BE2**.
- c) Installation of the Microsoft NLB (if an external Load Balancer is used, skip this step).
  - Install the Microsoft NLB on **FE1** by adding it as a feature from the Server Manager.
- IMPORTANT:** DO NOT proceed with the NLB configuration to create a cluster.
- d) If a FTP server used for file deployment was installed on **FE2**, install, configure & test the FTP service on Windows.

9. Installation of SQL Server 2008 R2 on **BE2**

10. Setup Database mirroring between **BE1**, **BE2** and **BE3** according to the Admin Guide

11. Installation of DLS on **FE2**

- a) Use the exact same configuration as the previous system. If DCMP was installed, install DCMP on this new system as well.
- b) Do NOT install a hotfix directly. Instead, install the base version of the hotfix first, and then upgrade to the hotfix (e.g. the base version of **V6 R1 127.05** is the **V6 R1 127.00**).
- c) Verify that DLS login is possible using the **FE2** IP (not the Cluster IP).
- d) Configure Load Balancer's network configuration for **FE2**.
  - For Microsoft NLB: Add **FE2** to the Cluster. Using NLB Manager Console, connect to the existing cluster and then add **FE2** as host on the Cluster.
  - For external Load Balancer: Configure the external Load Balancer as appropriate.

12. Verify that DLS login is possible using the Virtual IP of the cluster.

- a) Enable any automated administrative tasks that were disabled before the migration procedure (e.g. Element Manager Synchronization, P&P)
- b) Activate any scheduled jobs that were cancelled before the migration procedure

The upgrade/migration is complete. The DLS Cluster should be operational again, without any data loss.

## **Administration Scenarios**

### *Migration Scenarios*

The IP and MAC assignments of the computers as well as the DLS Node's order within the Cluster and the Database Mirroring should be unaffected.

## 17 Appendix

The appendix contains abbreviations and additional information.

### 17.1 Abbreviations and Technical Terms

For more information on network technology and Voice over IP (VoIP), refer to the relevant reference material.

**NOTE:** For definitions of the terminology related to the mobility feature, see Section 3.8.1, „Mobility Definitions“.

#### **EA**

Abbreviation for "External Access".

If appropriately configured, the external access must precede a phone number if this number is an external phone number. See also Canonical format.

#### **AMO**

Abbreviation for "Administration and Maintenance Order".

An order which directly provides the CBX (Computerized Branch Exchange) with administration or maintenance information. An AMO is transmitted via EMMML (Extended Machine Maintenance Language).

#### **ANAT**

Abbreviation for "Alternative Network Address Type" in SIP.

#### **ASCII code**

Standardized character set for representing and processing text in computers and communication systems (see ASCII tables on the following pages).

## Appendix

### Abbreviations and Technical Terms

ASCII Table (Standard)

Character	ASCII (hex)	ASCII (dec)	Character	ASCII (hex)	ASCII (dec)	Character	ASCII (hex)	ASCII (dec)	Character	ASCII (hex)	ASCII (dec)
	0	0	SP	20	32	@	40	64		'60	96
^A	1	1	!	21	33	A	41	65	a	61	97
^B	2	2	"	22	34	B	42	66	b	62	98
^C	3	3	#	23	35	C	43	67	c	63	99
^D	4	4	\$	24	36	D	44	68	d	64	100
^E	5	5	%	25	37	E	45	69	e	65	101
^F	6	6	&	26	38	F	46	70	f	66	102
^G	7	7	'	27	39	G	47	71	g	67	103
^H	8	8	(	28	40	H	48	72	h	68	104
^I	9	9	)	29	41	I	49	73	i	69	105
^J	0A	10	*	2A	42	J	4A	74	j	6A	106
^K	0B	11	+	2B	43	K	4B	75	k	6B	107
^L	0C	12	,	2C	44	L	4C	76	l	6C	108
^M	0D	13	-	2D	45	M	4D	77	m	6D	109
^N	0E	14	.	2E	46	N	4E	78	n	6E	110
^O	0F	15	/	2F	47	O	4F	79	o	6F	111
^P	10	16	0	30	48	P	50	80	p	70	112
^Q	11	17	1	31	49	Q	51	81	q	71	113
^R	12	18	2	32	50	R	52	82	r	72	114
^S	13	19	3	33	51	S	53	83	s	73	115
^T	14	20	4	34	52	T	54	84	t	74	116
^U	15	21	5	35	53	U	55	85	u	75	117
^V	16	22	6	36	54	V	56	86	v	76	118
^W	17	23	7	37	55	W	57	87	w	77	119
^X	18	24	8	38	56	X	58	88	x	78	120
^Y	19	25	9	39	57	Y	59	89	y	79	121
^Z	1A	26	:	3A	58	Z	5A	90	z	7A	122
	1B	27	;	3B	59	[	5B	91	{	7B	123
	1C	28	<	3C	60	\	5C	92		7C	124
	1D	29	=	3D	61	]	5D	93	}	7D	125
	1E	30	>	3E	62	^	5E	94	~	7E	126
	1F	31	?	3F	63	_	5F	95	DEL	7F	127

ASCII Table (Enhanced)

Character	ASCII (hex)	ASCII (dec)	Character	ASCII (hex)	ASCII (dec)	Character	ASCII (hex)	ASCII (dec)	Character	ASCII (hex)	ASCII (dec)
—	80	128		A0	160	À	C0	192	à	E0	224
—	81	129	ı	A1	161	Á	C1	193	á	E1	225
,	82	130	ø	A2	162	Â	C2	194	â	E2	226
f	83	131	£	A3	163	Ã	C3	195	ã	E3	227
"	84	132	¤	A4	164	Ä	C4	196	ä	E4	228
...	85	133	¥	A5	165	Å	C5	197	å	E5	229
†	86	134	ı	A6	166	Æ	C6	198	æ	E6	230
‡	87	135	§	A7	167	Ç	C7	199	ç	E7	231
^	88	136	¨	A8	168	È	C8	200	è	E8	232
‰	89	137	©	A9	169	É	C8	201	é	E9	233
Š	8A	138	ª	AA	170	Ê	CA	202	ê	EA	234
‹	8B	139	«	AB	171	Ë	CB	203	ë	EB	235
Œ	8C	140	¬	AC	172	Ì	CC	204	ì	EC	236
—	8D	141	-	AD	173	Í	CD	205	í	ED	237
—	8E	142	®	AE	174	Î	CE	206	î	EE	238
—	8F	143	—	AF	175	Ï	CF	207	ï	EF	239
—	90	144	°	B0	176	Ð	D0	208	ð	F0	240
‘	91	145	±	B1	177	Ñ	D1	209	ñ	F1	241
’	92	146	²	B2	178	Ò	D2	210	ò	F2	242
"	93	147	³	B3	179	Ó	D3	211	ó	F3	243
"	94	148	´	B4	180	Ô	D4	212	ô	F4	244
•	95	149	µ	B5	181	Õ	D5	213	õ	F5	245
—	96	150	¶	B6	182	Ö	D6	214	ö	F6	246
—	97	151	·	B7	183	×	D7	215	÷	F7	247
~	98	152	¸	B8	184	Ø	D8	216	ø	F8	248
™	99	153	¹	B9	185	Ù	D9	217	ù	F9	249
š	9A	154	º	BA	186	Ú	DA	218	ú	FA	250
›	9B	155	»	BB	187	Û	DB	219	û	FB	251
œ	9C	156	¼	BC	188	Ü	DC	220	ü	FC	252
—	9D	157	½	BD	189	Ý	DD	221	ý	FD	253
—	9E	158	¾	BE	190	Þ	DE	222	þ	FE	254
ÿ	9F	159	¿	BF	191	ß	DF	223	ÿ	FF	255

## PU

Abbreviation for "Call Pickup".

If you have one workpoint in an office and another in a lab and want your contacts to be able to reach you at a single subscriber number, you can create a pickup group containing both workpoints. The workpoint called rings. The call can be accepted. The "call pickup" LED also flashes on the other workpoint. You can answer the call by simply pressing the appropriate button.



## Appendix

### Abbreviations and Technical Terms

#### BE1

Abbreviation for "**Back End 1**".

This is the computer designated as Database Server having the Principal Role which is configured during the installation of the system. If any fail-over has occurred since the installation of the system, BE1 might have changed to the Mirror Role. BE1 is the system that was intended to be the Database Server with the Principal Role during the initial installation of the system.

#### BE2

Abbreviation for "**Back End 2**".

This is the computer designated as Database Server having the Mirror Role. Look above (BE1) for clarifications.

#### BE3

Abbreviation for "**Back End 3**".

This is the computer designated as the Database Witness Server.

#### C-SWS

Abbreviation for "**Central Software Supply Server**".

Name of the central software supply server in Brussels.

#### CA

Abbreviation for "**Certification Authority**".

#### CAP

Abbreviation for "**Common Application Platform**".

#### CAT NetInstall

In Germany, you can use CAT NetInstall for installation on ⑦ TAP.

#### CD

Abbreviation for "**Call Deflection**".

ISDN feature for call deflection in ringing state.

#### CF

Abbreviation for "**Call Forwarding**".

ISDN feature for automatic call forwarding.

The following types of call forwarding exist:

- **CFU**  
Call Forwarding **U**nconditional (immediate call forwarding)
- **CFNR**  
Call Forwarding **N**o **R**eplay (forward call if no reply)
- **CFB**  
Call Forwarding **B**usy (forward call if busy)

## **CLA**

Abbreviation for "**C**ustomer **L**icense **A**gent".

The HLM component that encrypts the licenses for the product and assigns them to the relevant products.

## **CLI**

Abbreviation for "**C**ommand **L**ine **I**nterface".

Operating network devices by entering data in a command line. This interface is usually password-protected and is reached via Telnet.

## **CLM**

Abbreviation for "**C**ustomer **L**icense **M**anager".

The HLM component that administers HiPath product licenses for the customer.

## **CSV**

Abbreviation for "**C**omma-**S**eparated **V**alues".

File with tabular data. In some cases, the column labels are entered in the first line. In general, a column is set off by a semicolon or comma, and a line change is indicated by the start of a new line. Can be imported with Microsoft Excel, for example.

## **CTI**

Abbreviation for "**C**omputer **T**elephony **I**ntegration".

CTI uses computer technology to support telephone services. It not only supports the varied attendant functions associated with service features but also system management and accounting.

## **CTS**

Abbreviation for "**C**lear **T**o **S**end".

Clear to send is an interface function signal. It is part of modem control in handshake mode and is also used for access authorization in the CSMA/CA procedure. In this procedure (which is also used in WLANs with 802.11), a station that wants to send data transmits an RTS (Ready To Send) packet. If the transmission route to the receiver is clear, the station receives a CTS packet.

## **CW**

Abbreviation for "**C**all **W**aiting".

ISDN feature for signaling the arrival of more calls during a call.

## **DBFS**

Abbreviation for "**D**atabase **F**eature **S**erver".

Manager for the HiPath 3000/5000 communication platform.

## **Default Route**

A default route is a route that is suitable for each target address. This means that the route can be used for all target addresses. The default route has the lowest priority and is only used if no other routes match. A route essentially determines which path the packets should or can take for transport in the network – if no path is prescribed or known, the default route is used.

## Appendix

### Abbreviations and Technical Terms

#### DCMP

Abbreviation for "**DLS-Contact-Me-Proxy**". The DCMP acts as a proxy for routing between the DLS and devices when a firewall or NAT prevents the DLS from sending Contact-Me messages to the devices. The DCMP can communicate with the DLS over the firewall or NAT and is polled regularly by the devices for messages from the DLS. If messages are present, the DCMP creates a connection between the device and the DLS. The DLS can then send control and configuration data to the device.

#### DHCP

Abbreviation for "**Dynamic Host Configuration Protocol**".

Dynamic assignment of IP addresses for stations in an IP network using a central DHCP server.

#### DLS

Abbreviation for "**OpenScape Deployment Service**".

The DLS is an OpenScape Management application for administering IP devices (IP phones, IP client installations, and IP gateways) in HiPath and non-HiPath networks.

#### DMC

Abbreviation for "**Direct Media Connection**".

Workpoints that use signaling to establish connections via a switching element (for example, a gateway) also usually transmit reference data via this switching element. If both workpoints use the same signaling protocol and the same type of reference data transmission, switching via the gateway can be used to directly exchange reference data between the two workpoints. This direct exchange of reference data is referred to as "**Direct Media Connection**".

#### DNS

Abbreviation for "**Domain Name Service**".

The DNS service converts an alphanumeric name query (such as [www.unify.com/us/](http://www.unify.com/us/)) into an IP address.

The large primary name servers at InterNIC and the national registration agencies (such as, en-NIC for Germany) have database servers for this to assign the IP addresses to the host names.

#### Domain

A domain is a logical network of computers and can also be split up into subdomains. DNS servers are used for resolving domain names. An example of a domain name is [www.microsoft.com](http://www.microsoft.com), for example. In this case, the "." (period) stands for the ROOT of the DNS server, ".com" stands for the commercial top-level domain, ".microsoft" stands for the company and "www" stands for the computer. Domain names are resolved from right to left.

#### Downgrade

Installation of software with a version number that is lower than the one currently in use.

#### DSM

Abbreviation for "**optiPoint Display Module**".

A key module for optiPoint workpoints which features a touchscreen and enhanced functions, such as phone book, browser, and Java programs.

## **DTMF**

Abbreviation for "**D**ual-**T**one **M**ultifrequency".

This dual-tone procedure is used in phone systems for dialing. DTMF replaced the pulse-tone procedure used in older rotary-dial telephones and establishes connections quickly in communications networks. The DTMF signal consists of two tones which are generated by pressing the keys on a phone and transmitted to the switching center. These two tones are taken from a set of eight different tones. They are assigned to the lines (1, 4, 7, star) and rows (1, 2, 3) on a telephone keypad. The DTMF procedure can also be used to access menu-driven services (for example, answering machines, mailboxes) directly via a telephone keypad.

## **E.164**

Standardized phone number according to the ITU's international numbering plan with a maximum of 15 digits. Normally composed of three parts: CC, (**C**ountry **C**ode), NDC (**N**ational **D**estination **C**ode) and SN (**S**ubscriber **N**umber).

## **EAP**

Abbreviation for "**E**xtensible **A**uthentication **P**rotocol".

## **ECT**

Abbreviation for "**E**xplicit **C**all **T**ransfer".

ISDN feature for call transfer during the call.

## **ENB**

Abbreviation for "**E**lectronic **N**ote **B**ook".

A personal phone book in a display or application module.

## **EOR**

Abbreviation for "**E**nd **O**f **R**ecord".

Describes the end of a data record or reporting interval.

## **EOS**

Abbreviation for "**E**nd **O**f **S**ession".

Describes the end of a connection.

## **FE1**

Abbreviation for "**F**ront **E**nd **1**".

This is the computer designated as DLS Node 1 of the DLS Cluster.

## **FE2**

Abbreviation for "**F**ront **E**nd **2**".

This is the computer designated as DLS Node 2 of the DLS Cluster.

## **FTP**

Abbreviation for "**F**ile **T**ransfer **P**rotocol".

Used for transferring files in networks, for example, for updating telephone software.

## **Appendix**

### *Abbreviations and Technical Terms*

#### **G.711**

Audio protocol for uncompressed voice transmission based on the Pulse Code Modulation (PCM) procedure. Requires a bandwidth of 64 Kbps ("ISDN quality").

#### **G.722**

Audio protocol for compressed voice transmission with max. 7 kHz. Requires a bandwidth of 64 Kbps.

#### **G.723**

Audio protocol for compressed voice transmission. The quality is inferior to G.711 and G.729. Requires a bandwidth of approximately 6 Kbps.

#### **G.729**

Audio protocol for compressed voice transmission. The quality is inferior to G.711 and superior to G.723. Requires a bandwidth of approximately 8 Kbps.

#### **Gatekeeper**

A gatekeeper is a logical component of the H.323 standard that can be implemented as Windows or UNIX software, as a router option, or as a part of an MCU or a Gateway.

#### **Gateway**

A system (computer or module) that transmits data between different networks. Where necessary, gateways coordinate different protocols with each other, for example, IP network and ISDN network protocols. A gateway can also simultaneously comprise a Router.

### **H.323 standard**

The standard consists of at least three of the following components:

- Terminals
- Gateways
- Gatekeeper
- Multipoint Control Units (MCUs)

### **HFA**

Abbreviation for "**H**icom **F**eature **A**ccess" or "**H**iPath **F**eature **A**ccess".

Produces the connection using a gateway (for example, HG 1500 or HG 3530) between IP telephony and a PBX.

### **HLM**

Abbreviation for "**H**iPath **L**icense **M**anagement".

### **HTTP**

Abbreviation for "**H**ypertext **T**ransfer **P**rotocol".

Protocol for transmitting data in IP networks.

### **INCA**

Abbreviation for "**I**nterleaved **N**ative **C**ompiled **A**rchitecture".

Part of the software and hardware architecture of a workpoint.

### **IP**

Abbreviation for "**I**nternet **P**rotocol".

### **IP address**

Also called "IP" for short. Unambiguous address of a telephone in the network; both IPv4 and IPv6 can be used.

An IPv4 address consists of 4 number blocks, each between 0 and 255, separated by ".". Example:

1.222.44.123

An IPv6 address consists of 8 hexadecimal number blocks, separated by ":". Example:

2001:0db8:85a3:08d3:1319:8a2e:0370:7347

or, if not all blocks are used:

2000:1::3

### **IPSec**

Abbreviation for "**I**nternet **P**rotocol **S**ecurity".

### **Jitter**

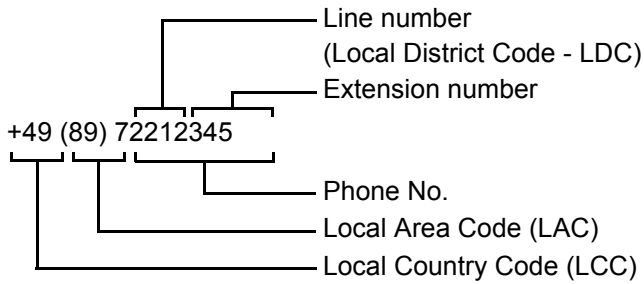
Runtime fluctuations during data transmission in IP networks.

JDBC

Abbreviation for "Java Database Connectivity".  
JDBC is an interface that establishes a connection between a Java program and a database.

Canonical format

Example of a phone number in canonical format:



To dial phone numbers saved in canonical format, these must be made "dialable" using output rules or dialing properties. The various codes are recognized here as part of the phone number and, where applicable, replaced with the corresponding dial prefixes (see DP) or the external access code (see EA).

Examples of number resolution:

Phone number saved in canonical format:	LCC/IDP	LAC/NDP	LDC/EA	Phone number dialed
+49 (89) 722 12345	49/00	89/0	722/0	12345
+49 (89) 5593 22581	49/00	89/0	722/0	0559322581
+49 (9721) 884 6543	49/00	89/0	722/0	0097218846543
+43 (562) 2186 22415	49/00	89/0	722/0	00043562218622415
+43 (562) 2186 22415	43/00	562/0	2186/9	22415
+49 (89) 722 12345	49/00	89/0	5593/9	972212345
+49 (89) 722 12345	49/00	9721/0	5593/74	7408972212345
+49 (89) 722 12345	43/00	562/0	2186/74	7400498972212345

Table 17 Examples of number resolution:

KDC

Abbreviation for "Key Distribution Center".

LAN

Abbreviation for "Local Area Network".

Layer 2

Second layer (data link layer) in the seven-layer OSI model for describing data transmission interfaces.

The "network access protocol" in the LAN is found in layer 2. The layer contains the access mechanism (for example, CSMA/CD in the case of Ethernet) and MAC addresses.

### **Layer 3**

Third layer (network layer) in the seven-layer OSI model for description of data transmission interfaces.

The network protocol, for example, IP (Internet Protocol) is found on layer 3. This can unambiguously transmit data packets based on the address. Devices that perform this task are called routers.

### **LDAP**

Abbreviation for "**L**ightweight **D**irectory **A**ccess **P**rotocol".

Simplified protocol for access to standardized directory systems, such as, a company telephone book.

### **LCD**

Abbreviation for "**L**iquid **C**rystal **D**isplay".

Display of numbers, text, or graphics, using liquid crystal technology.

### **LEAP**

Abbreviation for "**L**ightweight **E**xtensible **A**uthentication **P**rotocol".

### **LED**

Abbreviation for "**L**ight **E**mitting **D**iode".

Cold-light lamp with low energy consumption and various colors.

### **LLDP-MED**

Abbreviation for "**L**ink **L**ayer **D**iscovery **P**rotocol - **M**edia **E**ndpoint **D**iscovery".

### **LOGO**

A graphically designed image.

### **Mask**

The subnet mask classifies networks into A, B, and C networks. Each class has a subnet mask that masks out the relevant bits. 255.0.0.0 for class A, 255.255.0.0 for class B, and 255.255.255.0 for class C. For example, 254 ⑦ IP addresses are available in a class C network.

### **MAC**

Abbreviation for "**M**edium **A**ccess **C**ontrol **A**ddress".

A 48-bit address with which each terminal (for example, ⑦ IP telephone or network card) unambiguously identifies itself globally in a network.

### **MCU**

An MCU (**M**ultipoint **C**ontrol **U**nit) makes conferences possible between three or more geographically discrete stations. The MCU acts as a kind of "star distributor", which connects the telephones (known as "commercial systems") to one another.

### **MD5**

Abbreviation for "**M**essage **D**igest". The **5** stands for a new variant of the MD algorithm. MD5 is a pure hash algorithm and generates a unique checksum comprising 128 bits (16 characters)



## Appendix

### Abbreviations and Technical Terms

from any data length.

#### **MDIX**

Abbreviation for "**M**ultiple **D**ocument **I**nterface".

Allows users to display one or more documents in different views within a window.

#### **MDI-X**

Abbreviation for **M**edia **D**ependent Interface crossover. Allows two network devices to be connected without using a crossover cable. If auto MDI-X is available, the MDI can automatically switch between normal connection assignment and crossover assignment, depending on the connected device.

#### **MEB**

Abbreviation for "**M**edia **E**xtension **B**ridge".

#### **MIB**

Abbreviation for "**M**anagement **I**nformation **B**ase".

Database that contains descriptions and error messages for devices and functions in a network.

#### **MoH**

The file contains **M**usic **o**n **H**old (waiting melody).

#### **MWI**

Abbreviation for "**M**essage **W**aiting **I**ndicator".

Signals a new message, meaning one that has not yet been read or heard.

#### **NAT**

Abbreviation for "**N**etwork **A**ddress **T**ranslation".

The source NAT (source address) and/or the destination NAT are replaced by other addresses via a router, firewall or another network component. This translation usually occurs between two networks, for example between the local network and the Internet.

#### **OCK**

A fast roaming technology made possible by 802.11i is also referred to as "**O**ppportunistic **K**ey **C**aching" or "Proactive Key Caching".

If multiple Access Points share PMKs (Pairwise Master Keys), it is possible that an IP Phone changes over to an access point it has not visited before without having performed pre-authentication. The PMK that has been used with the last access point is reused thereby.

#### **Outbound Proxy**

SIP proxy (=representative) that decides in the case of a dialed SIP-URI where the outgoing call is routed.

In the following example, the registrar server is in *dom1.com* and is resolved as the IP address *w.x.y.z*; *dom2.com* is resolved as *a.b.c.d*.

Dialed URI (before proxy)	Outbound Proxy			

### **Payload**

That percentage of the IP data or of an IP data package that contains the user data, such as, the voice data in the VoIP .

### **PBX**

Abbreviation for "**P**ri**v**ate **B**ranch **E**Xchange".

Private telephone system that connects different internal devices to the ISDN network.

### **PING**

Abbreviation for "**P**acket **I**nternet **G**roper".

Program for testing whether a connection can be set up to a defined IP destination. During the test, data is sent to the destination and back again. The result that is output is the success or failure of the transmission and, if applicable, additional information, such as transmission time.

### **Port**

Ports are used to allow multiple communication connections at one time in IP networks. Different services often have different port numbers.

### **Proxy**

A proxy server is interim memory that saves information locally.

### **PSK**

Abbreviation for "**P**re-**S**hared **K**ey".

A passphrase that is distributed and used for authenticating encrypted communication.

### **PSE**

Abbreviation for "**P**ersonal **S**ecurity **E**nvironment".

That covers e.g. phone certificate, WPI client certificate etc.

### **PSS**

Abbreviation for "**P**re-**S**hared **S**ecret".

Password for authentication in VoIP Security.

### **PSTN**

Abbreviation for "**P**ublic **S**witched **T**elephone **N**etwork", analog telephone network or analog connections to digital network nodes, also public international telephone network.

## Appendix

### *Abbreviations and Technical Terms*

#### **QCU**

Abbreviation for "**Quality Control Unit**".

#### **QDC**

Abbreviation for "**Quality Data Collection**".

Concept for centrally collecting data on the quality of voice connections via IP networks.

#### **QoS**

Abbreviation for "**Quality of Service**".

Describes the subjectively detectable quality of a voice connection over IP networks. QoS properties are packet loss rate, packet delay, delay variation, reserved bandwidth, type of bit rate (variable, constant, or unspecified bit rate), and the bit rate.

#### **RADIUS**

Abbreviation for "**Remote Authentication Dial-In User Service**".

Protocol or software for user authentication via dial-up lines.

#### **RAM**

Abbreviation for "**Random Access Memory**".

Memory with read/write access.

#### **RCC**

Abbreviation for "**Routing Control Center**".

If central routing is used in a network, individual network nodes transmit local route information to the RCC in regular intervals. The RCC saves this information and uses its global network knowledge to calculate the best routes between nodes.

#### **Regular expression**

Character string that uses specific syntactic rules to describe a set or subset of character strings. Regular expressions are firstly a type of text-based filter criterion that compares the expression in the form of a pattern with the text. For instance, it lets you find all character strings starting with 1 or 2, without having to enter any subsequent digits. Secondly, you can use regular expressions as a type of template for generating sets of digit combinations without having to specify each individual digit combination.

#### **ROM**

Abbreviation for "**Read Only Memory**".

Memory with read-only access.

#### **Router**

Routers set up connections to gateways and have access to several subnets and other routers. Using the IP address, a router determines the subnet or other router to which it should send data. It decides which path is the most favorable for the data at a given time.

#### **RSM**

Abbreviation for "**Realtime Service Manager**".

**RTC**

Abbreviation for "**R**eal-**T**ime **C**ommunications **S**erver" from Microsoft.

**RTS**

Abbreviation for "**R**eady **T**o **S**end).

This transmission request is part of modem control and is also used in the collision-free access procedure CSMA/CA (as implemented in 802.11). In modem control, the RTS signal is used in handshake mode as a control signal between a modem and a digital device that initiates data transmission via the transmission line.

**SDLP**

Abbreviation for "**S**tandard **D**evice **L**evel **P**rotocol".

## Appendix

### *Abbreviations and Technical Terms*

#### **SHA-1**

Abbreviation for "**Secure Hash Algorithm**". The **1** indicates a newer version. SHA-1 is a hash algorithm and generates a checksum of 160 bits (20 characters) out of data lengths under 264 bits.

#### **SIP**

Abbreviation for "**Session Initiation Protocol**".  
Protocol standard for initializing calls in IP networks.

#### **SNMP**

Abbreviation for "**Simple Network Management Protocol**".  
The protocol is used for communicating with servers that take on network management functions. For example, this includes logging errors that occur on network components (SNMP trap).

#### **SNTP**

Abbreviation for "**Simple Network Time Protocol**".  
The protocol is used between time servers and telephones in a network in order to synchronize the time on the telephones.

#### **SPA**

Abbreviation for "**Software Product Assurance**".

#### **SQL**

Abbreviation for Structured Query Language. This is programming language that was developed by IBM to retrieve information from relational databases (for example, Microsoft Access).  
Particular emphasis was placed on client/server environments (a client sends a request, the server provides the relevant information) during development.

#### **SRSR**

Abbreviation for "**Small Remote Side Redundancy**".  
Indicates that a redundancy system is available.

#### **SRTP**

Abbreviation for "**Secure Realtime Transport Protocol**".  
Protocol for the secure transmission of multimedia data via symmetrical encryption.

#### **SSID**

Abbreviation for "**Service Set Identifier**".  
Network name in a WLAN.

#### **SSL**

Abbreviation for "**Secure Socket Layer**".  
Technology for encrypted data transmission between client and server using authentication.

## **SSSO**

Abbreviation for "**Secure Single Sign On**".

Access to the DLS is password-protected. The SSSO and all information in the DLS are transmitted in encrypted form using SSL.

## **Switch**

Switching center in a star-shaped network, for example, HiPath 4000 system.

## **TAP**

Abbreviation for "**Techniker ArbeitsPlatz**" (EWS - Engineering Workstation).

## **TCP**

Abbreviation for "**Transmission Control Protocol**".

Along with IP, this is the main protocol on the Internet. It provides a reliable, connection-oriented, full duplex service in the form of a data flow.

## **TKIP**

Abbreviation for "**Temporal Key Integrity Protocol**".

Algorithm for encryption in WLANs.

## **TLS**

Abbreviation for "**Transport Layer Security**".

Standard protocol for performing computer authentication using certificates and encryption.

## **TTL**

Abbreviation for "**Time To Live**".

This value specifies the lifespan of an IP data packet. Data packets transferred in IP networks can take different routes to reach their destination. Every time the data packet moves to a new network it passes a router which decrements the packet's TTL value by one. The packet is discarded when the value reaches 0. This ensures that packets that are unable to find their destination despite lengthy searches do not drift around the Internet ad infinitum. The higher the original TTL value of a data packet, therefore, the longer the packet can try to reach its destination.

## **UDP**

Abbreviation for "**User Datagram Protocol**".

Can be used as an alternative to TCP if there are no requirements in terms of reliability. UDP does not guarantee to deliver packets or supply them in a particular sequence.

## **URI/URL**

Abbreviations for "**Uniform Resource Identifier**" and "**Uniform Resource Locator**".

These are the address of a file or a directory. The most common form of a URI is a URL. A typical URI indicates:

- the mechanism for accessing the contents (for example, a protocol such as http, ftp, or file).
- the computer where the contents can be found, and
- the specific name of the contents on this computer (usually a file name).

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The parts are optional with the result that a file name is in itself a URL (even a relative one).

#### **DP**

Abbreviation for "**Dial Prefix**".

A distinction is made between the national DP (NDP or National Dial Prefix) and the international DP (IDP or International Dial Prefix). For example, the national DP for Munich is the "0" in "**089**". See also Canonical format.

#### **VLAN**

Abbreviation for "**Virtual Local Area Network**".

Subdivision of an IP network into autonomous administration groups (domains). An option for identifying VLAN membership is by using a VLAN ID.

VLAN is, therefore, a network structure with all the properties of a conventional LAN but without any physical connections. In contrast to LANs where the distances between stations are subject to restriction, VLANs allows nodes that are further apart to be combined into a virtual local network.

#### **VoIP**

Abbreviation for "**Voice over IP**".

This refers to voice transmission using IP technology.

#### **VoIP Security**

Abbreviation for "**Voice over IP Security**".

This describes measures for secure VoIP voice transmission.

## **VPN**

Abbreviation for "**Virtual Private Network**".

A VPN connects two networks, a computer, and a network or two computers via public connections (for example, the Internet).

A tunneling protocol encrypts and decodes transmitted data to ensure that it cannot be accessed by unauthorized parties.

This technology was developed to cut costs as it is considerably cheaper for field workers to send data to headquarters via public lines than to create individual networks.

## **WAP**

Abbreviation for "**Wireless Application Protocol**".

This also refers to graphic applications on mobile telephones, organizers, and other suitable terminals that are transmitted using the protocol of the same name.

## **WBM**

Abbreviation for "**Web-Based Management**".

A Web-based workpoint (IP phone) interface for administering configurations and modifying user settings via remote access.

## **WEP**

Abbreviation for "**Wired Equivalent Privacy**".

Standard encryption for WLANs. All stations in a WLAN and the access point or WLAN router use the same key for encrypting and decoding data. WEP distinguishes between 64- and 128-bit encryption.

See also WPA, WPA-PSK.

## **WLAN**

Abbreviation for "**Wireless Local Area Network**".

## **Workpoint**

Workpoint is a term for both IP telephones, such as, optiPoint 410 standard, and soft clients, such as optiClient 130.

## **WPA**

Abbreviation for "**Wi-Fi Protected Access**".

WPA provides security in WLANs by using dynamic keys for encryption. When a connection or session is set up, dynamic keys are exchanged via the Extensible Authentication Protocol (EAP).

See also WEP, WPA-PSK.

## **WPA-PSK**

Abbreviation for "**Wi-Fi Protected Access with Pre-Shared Key**".

An encryption procedure for WLANs. This procedure uses station-specific keys made up of a pre-shared key and the MAC address of each device. These keys are automatically updated at regular intervals (rekeying intervals)

See also WEP, WPA.



## **Appendix**

### *Abbreviations and Technical Terms*

#### **WSP**

Abbreviation for "**W**ireless **S**ession **P**rotocol".

Protocol for transmitting data on WAP-compatible telephones.

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