

OpenScape Business

Tutorial system device@home configuration

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8. Abbreviations

Table of History

Date	Version	Changes
2016-02-25	1.0	Initial Creation for OpenScape Business V2R1
2016-03-24	1.1	Minor enhancements and functional boundary regarding WAN interface added
2016-06-16	1.2	Enhancements for V2R2
2017-06-29	1.3	Enhancements for V2R3
2019-03-06	1.4	Enhancements for V2R6 Chapter added for Signalling and Payload Encryption (SPE)
2019-07-24	1.5	Enhancements for V2R7 myPortal @work remote usage via device@home
2024-08-05	1.6	Rebrand to Mitel layout

Disclaimer

This document describes the required configuration steps for the configuration of the feature **Device@Home** for **System Devices**. It also provides useful information regarding supported scenarios, known limitations and security considerations.

This description refers to OpenScape Business V2R7.

Within the following the term **"System Device"** is used in general for the following system clients, which support the **HFA** protocol: OpenStage, OpenScape DeskPhone IP and OpenScape DeskPhone CP phones as well as the integrated **VoIP clients** for myPortal @work (WebRTC)

The document might contains applications which are no longer in support, such as myPortal to go or mentioned phones such as OpenStage. Please also use the official administrator documentation which can be downloaded via Mitel Partner Portal

1. Configuration Overview

The feature "Device@Home" offers registration and operation of System Devices, which are connected over the Internet as internal devices of OpenScape Business.



For all examples within the document, the following basic network scenario is used.

Figure 1 Typical network environment

1.1. Network Scenario Description:

OpenScape Business is located within a company LAN, which is connected to the Internet via the Company Internet Router. This router is accessible from the Internet either via public IP Address **87.173.127.147** or via DNS name **company.com**.

The System Device@Home is connected to the LAN within a Home Network, which is connected to the Internet via a Home Internet Router. The Home Router is accessible from the Internet with the public Internet Address 87.173.125.178.

Within the Internet a STUN (Session Traversal Utilities for NAT) Server for public IP address discovery and an ITSP for Internet Telephone in general are available.

1.2. Configuration Steps

To connect the System Device@Home to OpenScape Business the following components need to be configured accordingly:

- OpenScape Business system within the company
- Company Internet Router
- System Devices @Home
- myPortal @work (optional)

1.2.1. Overview OpenScape Business Configuration

In OpenScape Business the following configuration steps are required:

- Activate STUN support, if not already done for an ITSP, which is connected to OpenScape Business.
- Configure the number of "simultaneous Internet calls". This value is implicitly set when the parameter "upstream up to (Kbps)" is set to a useful value in the basic installation wizard.
- Configure System Client as externally connected client
 - Assign an IP user license.
 - Enable Authentication and configure **STRONG** passwords for the System Device@Home, which is connected via Internet.
 - Allow System Client registration from external (i.e. over the Internet) individually for each System Client by activating the integrated SBC function for that System Client.
- Enable SW Deployment for @home devices
- Optional: Enable signalling (and payload) encryption (SPE) for the System Device@home (only if required).

1.2.2. Overview Company Internet Router Configuration

As the System Device@Home must reach the OpenScape Business system from the Internet and vice versa. The following configuration steps have to be done for the Company Internet Router:

- Configuration of a UDP port forwarding (see 3) for the RTP protocol port range.
- Configuration of a TCP port forwarding for the HFA protocol (when using System Devices).
- Configuration of a TCP port forwarding rule for the DLI service
- Optional: Configuration of a TCP port forwarding rule for HTTPS (only when using myPortal @work (remote) or DeskPhone CP 400/600 @Home).

Note:

If the company Internet router restricts outbound IP traffic, it may be necessary to explicitly open the ports also for outgoing IP traffic.

The normal SW-Update procedure of the DLI for an internally connected device cannot be used for System Device (HFA)@Home as the DLI cannot determine the IP address of device which resides in a LAN environments using NAT in the Internet Router. Therefore the DLI SW-Update procedure uses an additional HTTPS connection via port 8804 (default setting) in combination with the DLI port 18443 (default setting) to determine SW version of the Device@Home and to perform the SW-Update.

1.2.3. Overview System Device@Home Configuration

Within the System Device@Home, following configuration steps have to be fulfilled:

- Configuration of the gateway IP address: Enter the public IP address (if fix) or public domain name of the OpenScape Business
- Configuration of the HFA password
- Configuration of DLS:

1.3. Technical boundaries and limitations

1.3.1. Internet access of OpenScape Business

 Device@Home is tested and released for connection to the LAN2 interface of OpenScape Business. The WAN (LAN1) interface is not supported • ITSP trunks and System Device@Home have to be connected to the same LAN interface of OpenScape Business. Using different LAN interfaces, e.g. ITSP connected to the LAN 1 (WAN) and Device@Home connected via Internet to LAN 2, is not supported.

1.3.2. NAT configuration within Company and Home Router

Routers with NAT type "Symmetric NAT" are not compatible to the Device@Home solution. If the NAT behaviour is configurable in the router, it needs to be changed accordingly if possible.

Note:

The NAT type detection of the OpenScape Business (see Assistant) may falsely detect the NAT type of the Company router as "Symmetric NAT", if outbound IP traffic is restricted in the Company Internet router.

1.3.3. myPortal @work VoIP Client:

- The VoIP client within the myPortal @work Application requires direct HTTPS access to TCP/8802 port within OpenScape Business.
- myPortal @work client supports Opus audio codec between two myPortal @work stations and G.711/ G7.22 codec to other stations.

1.3.4. OpenScape DeskPhone CP 400/600:

• The OpenScape DeskPhone CP 400/600 requires direct HTTPS access to TCP/8802 port within OpenScape Business, if UC server access is configured.

1.3.5. Secured Connections to System Device @Home

• Signaling:

For secured connections the TLS protocol is used for encryption of the signaling information. TLS version 1.2 is used per default. A fallback to TLS 1.0 is possible in V2R6, if the device does not support TLS 1.2.

TLS is not supported at WAN interface.

 Payload: Payload encryption using SRTP and SDES is not supported for System Device @Home.

1.3.6. Desksharing Support

The feature System Device@Home is not released in combination with Deskshare mobility (relocate), nevertheless up from V2R7 myPortal @work can be used in different user scenarios, for e.g. in the office or being at home, by using the new profile selection on login screen.

1.3.7. Capacities

Open Scape Business uses a so called "RTP proxy" for all VoIP connection via Internet. The RTP Proxy offers **a shared pool** with a **limited amount of channels** which are assigned to the Internet connections as follows:

- 1 RTP proxy channel per ITSP call
- 1 RTP proxy channel per Circuit call
- 1 RTP proxy channel per System Device @Home in a call
- 1 RTP proxy channel per SIP Device @Home in a call

Within the different OpenScape Business models following resources are available:

System variant	RTP proxy channels
OpenScape Business X1/X3/X5/X8 with or without Booster card/server	60
OpenScape Business S	180

2. OpenScape Business configuration

In general there are different scenarios to connect OpenScape Business system to the internet.

- 1. Behind an Internet Router connected to LAN2 interface
- 2. Behind an Internet Router connected to LAN 1 (WAN) interface
- 3. Behind an Broadband Modem connected to LAN1 (WAN) interface

Only scenario 1 is supported for device @home.

Scenario 2 and 3 cannot be used for connection of System Device@Home.

2.1. Supported Internet Access Scenarios for System Device@Home

The following scenarios are supported for connection of a System Device@Home via the Internet to OpenScape Business.





Figure 2 OpenScape Business behind access router connected to LAN2 interface

2.2. Configuring a System Client to be used from Internet

System Devices with HFA protocol are configured as System Clients within OpenScape Business Assistant (WBM). The general configuration of a System Client is described within the administration manual of OpenScape Business. In addition to the basic configuration the following settings in "Expert Mode" are necessary for System Device@Home.

The flag "Internet Registration with internal SBC" MUST be set for each System Client, which is connected via Internet.

The authentication has to be enabled for the external device and a strong authentication password has to be chosen before the SBC flag can be set. The password has to comply with the password policy of the Administration Portal, otherwise it is not accepted and guidelines are displayed.

Expert mode - Telephony Server					·
Station	Station				
▼ Station	Edit station parameters	Edit station flags	Edit workpoint	client data	Edit Group/CEW
UP0 Stations	care or a done parameter o	Lacolation hago			Luit or oup/or m
▼IP Clients	Station - 46				
System Clients			Type: System Client		
SIP Clients		Call n	mber: 269		
RASUser		n	enlaw Homooffice		
Deskshare User		U	opiay. HomeOllice		
Analog Stations	Parameter				
ISDN Stations		Status me	sage:		
DECT Stations		Authentication	active: 🔽		
VM/EVM Ports		New pas	word:		
Virtual Stations					
UC Applications		Confirm pas	sword:		
Profiles/Templates		Blocked for Deskshare	User:		
DDI Extensions		Secondary syst	em ID:		
Mobility User		Cocondary by or			
Circuit User		Internet Registration with interna	SBC: M		

In addition the Class of Service (COS) and System Flags should be reduced to the required needs for the System Clients in order to prevent toll fraud by dialing expensive premium or international numbers or by programming call forwarding to such numbers.

2.3. Configuring the number of simultaneous internet calls

Set the "Number of simultaneous internet calls" to a value bigger than zero. The value is implicitly set when the parameter "Upstream up to (Kbps)" is set to a useful value in the basic installation wizard.

The number of simultaneous Internet Calls also depends on the licensing.			2
	Upstream up to (Kbps):	256	
	Number of Simultaneous Internet Calls:	2	Distribute Lines

2.4. Configuring STUN

The integrated Session Boarder Controller (SBC) function of OpenScape Business must be able to detect its public IPaddress and -ports. This is done by using the STUN protocol.

In case that the system is already connected to an ITSP with activated STUN server, no additional configuration is required. The system is able to detect its public IP-address and port

In case that:

- OpenScape Business is connected to an ITSP with disabled STUN
- No ITSP is configured in the system

a STUN configuration is necessary within the system in order to determine its public IP address and port.

into outomay	- E	Internet Telephony Service Provider	
SIP Parameters		Add Internet Telephony Service Provider Edit STII	Configuration Detect NAT Type
Codec Parameters	E	Add internet relepitony betwee Fronder	Detectiver type
Destination Codec Parameters	-	STUN Mode: Auto	matic 👻
nternet Telephony Service Provider			
18.1		Detected Nat-Type: Detec	ction in progress
Acropolis		Default STUN Server	
Amis		IP Address / Host name: stun.	example.com
AT&T		Port: 3478	
Belgacom IMS			
Belgacom			
BT IPVS			
Cablecom			
Cbeyond			
CenturyLink 1			
CenturyLink 2			
COLT UK & Europe			

This STUN server configured in "Edit STUN Configuration" will be used only if no STUN server is configured for an ITSP.

2.5. Port configuration within OpenScape Business

The subsequent ports, which are used by OpenScape Business for signalling and voice payload transmission to externally connected System Devices, must not be changed within the system configuration

2.5.1. Signalling Ports

Protocol	Default port	
HFA (not encrypted)	TCP 4062	(for HFA phones)
HFA (encrypted)	TLS 4063 go)	(for physical HFA phones, not needed for myPortal @work / myPortal to
HTTPS	TCP/8802	(for myPortal @work and for OpenScape DeskPhone CP 400/600)

2.5.2. Voice Payload Ports

For voice payload, the following port range is used:

Protocol	Default port
RTP	UDP/30274-30529 (for OpenScape Business X1/X3/X5/X8)
	UDP/30528-30887 (for OpenScape Business S)

2.6. Configuring SW Deployment

From V2R6 on automatic firmware update via DLI is also supported for System Device@Home. The software update of a Device@Home by the DLI has to be configured in OpenScape Business. It is disabled per default and needs to be enabled explicitly.

Expert mode - Telephony Server	
Basic Settings	Phone Parameter Deployment
▼System	Edit Phone Parameter Denloyment Device Info
System Flags	
Time Parameters	Phone Parameter Deployment:
Display	Phone Parameter Deployment enabled
DISA	Deploy SW to @Home devices:
Intercept/Attendant/Hotline	
LDAP	After the feature is enabled, the configured phone settings are sent to all phones.
Texts	Phone Parameter Settings:
Flexible menu	PC bort:
Speed Dials	
Service Codes	Codec setting is "low bandwidth preferred":
HFA Registration Password	Display calling party images:
Gateway	
DynDNS	individual phone settings may be changed by the local admin procedure or the web-based administration of the corresponding phone.
Quality of Service	The phone settings are no longer applied to these phones.
Date and Time	If you activate the flag "Display Calling Party Image", you need to activate HTTP too:
Port Management	Go to Expert Mode -> Telephony Server -> Security -> SSL -> Web Security. In the "Web Clients" window, activate "Access via HTTP".
Call Charges	Apply Phone Parameter Settings:
Voicemail / Announcement Player	Apply phone parameter settings to all phones:
Phone Parameter Deployment	· #Prij Presić Paralitički obaligo to ali protičo.
Power Management	f you activate this flag, phone parameter settings will overwrite any local administered settings.

2.7. Configuring SPE (optional)

From V2R6 on OpenScape Business supports Signalling and Payload Encryption (SPE) also for System Device @Home. The SPE configuration of a system device @home is done in general in the same way as for locally connected system devices.

Certificates are required for encryption and authentication. Certificates used for device authentication needs to be deployed via DLS to the devices. At least one Root CA certificate and one Server / Peer certificate are required for SPE encryption.

OpenScape Business supports creation of self-signed Root CA certificates and the import of Trusted Center signed Root CA certificates.

The SPE feature needs to be enabled on system and on device level within the system configuration.

In the following the main steps for SPE configuration and the handling of the "encryption certificate" is described, as a DLS for certificate deployment is not available in most installations.

2.7.1. SPE Enabling for the system

The system flags enable the feature in general. A system restart is required to activate the settings.

Basic Settings System Flags ✓ ystem Edit System Flags System Flags Caller list at destination in case of horward Line: Display Call forwarding after deflect call / single step transfer: DisA Follow call management in case of deflect call / single step transfer: LDAP Warning tone during voice recording: Texts E.164 numbering scheme: Flexible menu Extended Key Functionality: Speed Dials Calling number in pick-up groups / ringing groups / CFN / RNA: Service Codes Calling number in pick-up groups / ringing groups / CFN / RNA: MHA Registration Password SPE support: Gateway SPE advisory tone: Oyn0NS Transparent dialing of * and # on trunk interfaces: Port Management Add seizure code for MEX:	Expert mode - Telephony Server	
System Edit System Flags System Flags Caller list at destination in case of Forward Line: Imme Prameters Display Call forwarding after deflect call / single step transfer: Imme Prameters DISA Follow call management in case of deflect call / single step transfer: Imme Prameters DISA Follow call management in case of deflect call / single step transfer: Imme Prameters LDAP Warning tone during voice recording: Imme Prameters Texts E.164 numbering scheme: E.164 numbering scheme: Seevice Codes Calling number in pick-up groups / ringing groups / CFN / RNA: Imme Prameters MHFA Registration Password Gateway SPE support: SPE support: OynDNS Guality of Service Transparent dialing of * and # on trunk interfaces: Add seizure code for MEX:	Basic Settings	System Flags
System Flags Caller list at destination in case of Horward Line: Time Parameters Call forwarding after deflect call / single step transfer: Display Call forwarding after deflect call / single step transfer: DISA Follow call management in case of deflect call / single step transfer: LDAP Warning tone during voice recording: Texts E.164 numbering scheme: Flexible menu Extended Key Functionality: Seevol Dalas Extended Key Functionality: Service Codes Calling number in pick-up groups / ringing groups / CFN /RNA: HFA Registration Password SPE support: Gateway SPE advisory tone: DynDNS Transparent dialing of * and # on trunk interfaces: Port Management Add seizure code for MEX:	▼System	Fdit System Flans
Time Parameters Caller list at destination in case of horward Line: Display Call forwarding after deflect call / single step transfer: DISA Follow call management in case of deflect call / single step transfer: LDAP Follow call management in case of deflect call / single step transfer: LDAP Warning tone during voice recording: Texts E.164 numbering scheme: Flexible menu Extended Key Functionality: Speed Dials Calling number in pick-up groups / cFN / RNA: MFA Registration Password SPE support: Gateway SPE support: Quality of Service Transparent dialing of * and # on trunk interfaces: Port Management Add seizure code for MEX:	System Flags	
Display Call forwarding after deflect call / single step transfer: DiSA Follow call management in case of deflect call / single step transfer: LDAP Warning tone during voice recording: Texts E.164 numbering scheme: Flexible menu Extended Key Functionality: Speed Dials Calling number in pick-up groups / ringing groups / CFN / RNA: HFA Registration Password SPE support: Gateway SPE advisory tone: VoynDNS Transparent dialing of * and # on trunk interfaces: Port Management Add seizure code for MEX:	Time Parameters	Caller list at destination in case of Forward Line:
DISA Follow call management in case of deflect call / single step transfer: Intercept/Attendant/Hottine Follow call management in case of deflect call / single step transfer: LDAP Warning tone during voice recording: Texts E.164 numbering scheme: Flexible menu E.164 numbering scheme: Seed Dials Extended Key Functionality: Service Codes Calling number in pick-up groups / ringing groups / CFN /RNA: HFA Registration Password SPE support: Gateway SPE advisory tone: DynDNS SPE advisory tone: Port Management Add seizure code for MEX:	Display	Call forwarding after deflect call / single step transfer:
InterceptAttendant/Hotline InterceptAttendant/Hotline LDAP Warning tone during voice recording: Texts E.164 numbering scheme: Flexible menu Extended Key Functionality: Seved Dals Extended Key Functionality: Service Codes Calling number in pick-up groups / CFN /RNA: HFA Registration Password SPE support: Gateway SPE advisory tone: Date and Time Add seizure code for MEX:	DISA	Follow call management in accord fidefact call / cingle start transfer:
LDAP Warning tone during voice recording: Texts E.164 numbering scheme: Flexible menu E.164 numbering scheme: Speed Dials Extended Key Functionality: Service Codes Calling number in pick-up groups / CFN /RNA: HFA Registration Password SPE support: Gateway SPE support: Quality of Service SPE advisory tone: Port Management Add seizure code for MEX:	Intercept/Attendant/Hotline	i olow can management in case of denetit can / single step transfer.
Texts E.164 numbering scheme: Flexible menu Extended Key Functionality: Speed Dials Extended Key Functionality: Service Codes Calling number in pick-up groups / cFN /RNA: HFA Registration Password SPE support: Gateway SPE advisory tone: Outlity of Service SPE advisory tone: Date and Time Add seizure code for MEX:	LDAP	Warning tone during voice recording: 🗹
Flexible menu Extended Key Functionality: Service Codes Calling number in pick-up groups / CFN /RNA: Gateway SPE support: PopNDIS SPE advisory tone: Quality of Service Transparent dialing of * and # on trunk interfaces: Port Management Add seizure code for MEX:	Texts	E 164 numbering scheme:
Speed Dials Extended Key Functionality: Service Codes Calling number in pick-up groups / ringing groups / CFN /RNA: HFA Registration Password SPE support: Gateway SPE support: PonNNS SPE advisory tone: Quality of Service Transparent dialing of * and # on trunk interfaces: Port Management Add seizure code for MEX:	Flexible menu	
Service Codes Calling number in pick-up groups / ringing groups / CFN /RNA: HFA Registration Password SPE support: OpynDNS SPE advisory tone: Outlity of Service SPE advisory tone: Date and Time Add seizure code for MEX:	Speed Dials	Extended Key Functionality:
HFA Registration Password SPE support: I Gateway SPE advisory tone: I > DynDNS SPE advisory tone: I Quality of Service Transparent dialing of * and # on trunk interfaces: I > Date and Time Add seizure code for MEX: I	Service Codes	Calling number in pick-up groups / ringing groups / CFN /RNA: 🗹
Gateway SPE support: ● ▶)opnDNS SPE advisory tone: ● Quality of Service Transparent dialing of * and # on trunk interfaces: □ ▶otte and Time Add seizure code for MEX: □	HFA Registration Password	
OynDNS SPE advisory tone: @ Quality of service Transparent dialing of * and # on trunk interfaces: Port Management Add seizure code for MEX:	Gateway	SPE support: 💌
Quality of Service Transparent dialing of * and # on trunk interfaces: Date and Time Add seizure code for MEX:	DynDNS	SPE advisory tone:
Date and Time Add seizure code for MEX: Port Management Add seizure code for MEX:	Quality of Service	Transparent dialing of * and # op trunk interfaces:
Port Management Add seizure code for MEX:	Date and Time	
	Port Management	Add seizure code for MEX:
Call Charges CMI MWI Ringer:	Call Charges	CMI MWI Ringer:
Voicemail / Announcement Player	Voicemail / Announcement Player	
Phone Parameter Deployment Automatic OpenStage 1DM Phone Software Update:	Phone Parameter Deployment	Automatic OpenStage 1DM Phone Software Update:
Power Management Restrict indirect trunk group connections according to CON Matrix:	Power Management	Restrict indirect trunk group connections according to CON Matrix:

2.7.2. SPE enabling for Stations

Each system device needs to be enabled individually for use of SPE. This is done by setting the appropriate station parameters.

Expert mode - Telephony Server			
Station	Station	1	
▼ Station	Edit station parameters	Edit station flags	Edit worknoint diant data
UP0 Stations		Edit station nags	Edit Workpoint client data
▼IP Clients	Station - 31		
▼System Clients		Type:	System Client
26 126 Supervisor		Call number:	131 ×
27 127 Agent, One		our number.	
28 128 Agent, Two		First Name:	HFA ×
31 131 Teilnehmer, HFA		Last Name	Teilnehmer ×
45 145 Client, Mobil		240(114110)	
SIP Clients		Display:	Teilnehmer, HFA ×
RAS User		Direct inward dialing:	131 ×
Deskshare User			0.01.40
Analog Stations		Device Type:	OpenStage 40
ISDN Stations		Clip/Lin:	- ×
DECT Stations		Access	AN 0-5Y5-4
VM/EVM Ports		A00633.	EAN 0-010-4
Virtual Stations	Fax		
UC Applications		Call number:	- ×
Profiles/Templates		Direct inward dialing:	- ×
DDI Extensions	Mobility		
Mobility User	incontry		
Circuit User		Mobile Call number:	- ×
SfB User		Web Feature ID	None 🔻
Stations Overview	Parameter		
Key Programming		Extension Type:	Standard T
		Extension type.	Standard
		Language:	German 🔻
		Call signaling internal:	Ring type 1 🔻
		Call signaling external:	Ring type 1 🔻
		Class of service (LCR):	15 ▼
		Hotline Mode:	Off 🔹
		Hotline:	None T
		Payload Security:	On T
		ITSP Loc-ID:	
	Apply Undo Help		

2.7.3. SPE Certificates

In a first step the minimal length of encryption keys used for SPE has to be defined and the certificate validation function has to be disabled.

Expert mode - Telephony Server			
Security	Signaling and Payload Encryption (SPE)		
Application Firewall	Edit Security Configuration		
Deployment and Licensing Client (DLSC)		conscient, comparato	
Signaling and Payload Encryption (SPE)		Minimal length of RSA keys:	1024 🔻
SPE Certificate		·····	
SPE CA Certificate(s)		Certificate validation:	off 🔻
VPN		Subject name check:	
SSL		0.00	
Web Security		CRL verification:	
Sql Security	Enforce Ser	cure Renegotiation (RFC 5746):	
	Maxir	mum Re-Keying interval [hours]:	24

2.7.3.1. Root CA Certificate Creation

In no Trust Center generated Root CA Certificate is available a self signed Root CA Certificate has to be created and imported into the SPE certificate store. This is done in Expert Mode: Telephony \rightarrow Security \rightarrow SSL \rightarrow Certificate Generation \rightarrow Generate CA Certifikate.

- Enter a name for the requested certificate under Certificate Name (Do not use blanks in the name).
- Enter a serial number of your choice under Serial Number of the Certificate
- A serial number that has already been assigned cannot be used again for another certificate, since the serial numbers for all certificates that were ever created must be unique.
- Under Type of Signature Algorithm, enter the desired algorithm for the certificate sha256RSA or sha512RSA.
- Under Public Key Length, enter the length of the public key e.g., 2048. This value must comply with the minimum key length for SPE that has been configured before)
- In the next step, enter the date and time for the start of the validity period under Start Time of Validity Period (GMT). The date specified is interpreted as Greenwich Mean Time (GMT).

- Enter the date and time for the end of the validity period under End Time of Validity Period (GMT).
- Under Subject Name, enter the Country ©, the Organization (O), the Organization Unit (OU) and Common Name (CN).
- Leaves the optional field at default values
 - You can optionally also enter an alternative subject name under the Subject Alternative Name field. If you have done this, you will also need to select a format (e.g., IP address or DNS name). The input window depends on the selected format.
 - Enter the distribution point for the CRL lists (listed in a drop-down menu) in the CRL Distribution Point field.

Expert mode - Telephony Server				
Security	Display General Information			
Application Firewall	Generate CA Certificate		Generate Self-Signed Certificate	
Deployment and Licensing Client (DLSC)	delicitate ex certificate		Generate Sen-Signed Certificate	
 Signaling and Payload Encryption (SPE) 		Name of the Certificate:	SPE-self-signed-RootCA	
SPE Certificate				
SPE CA Certificate(s)		Serial Number of Certificate:	1000	
► VPN		Type of Signature Algorithm:	sha256RSA V	
SSL Contificate Constation		Dublis Kaul as athr	2040 -	
Certificate Generation		Public Key Length.	2048	
Web Security	Start Time of Validity Period (GMT)			
Sal Security		Day	Month	Year
		6	3	2019
		Hour	Min.	Sec.
		0	D	0
	End Time of Validity Period (GMT)			
		Day	Month	Year
		6	3	2029
		Hour	Min.	Sec.
		0	0	0
	Subject Name			
		Country (C):	DE	
		Organization (O):	Unify	
		Organization Unit (OU):	Software & Solutions	
		Common Name (CN);	Product House	
	Subject Alternative Name			
		Distinguished Name Format	Other Format®	
	Sub	iect Alternative Name Extension:	DNS Name (optional)	
	Add	Subject Alternative Name:	(optional)	
		CRL Distribution Point Type:	DNS Name	
		CRL Distribution Point:	(optional)	
	Apply Help			

Click on Apply.

The self-signed Root CA Certificate is now available in the SSL certificate store.

2.7.3.2. Server (Peer) Certificate Creation

A double click to the Root CA Certificate name opens the certificate content and offers the option to create a Server (Peer) Certificate signed by the Root CA Certificate. Click to the Tab Generate CA-Signed Server Certifiate (PKCS#12).

Expert mode - Telephony Server					
Security	Display General Infor	mation			
Application Firewall	View Certificate	Dalata Cartificata	Export Cartificate [V 509]	Cenerate C	Signed Server Certificate [PKCS#12]
Deployment and Licensing Client (DLSC)	view certificate	Delete Certificate	Export Certificate [X:505]	Generate C	-Signed Server Cerdinate [FRCS#12]
 Signaling and Payload Encryption (SPE) 			Name of	the Certificate:	SPE-self-signed-RootCA
SPE Certificate			-		
SPE CA Certificate(s)			C	ertificate Type:	Self-Signed CA Certificate
VPN			Serial Numbe	r of Certificate:	1000
▼SSL			Serial Number of C	ertificate (hex):	03E8
Certificate Generation			Tune of Signa	turo Algorithm:	aba356DSA
SPE-self-signed-RootCA			Type of Signa	iture Algonithin.	Shazborish
Certificate Management			Start Time of Validity	Period (GMT):	Wednesday, 03/06/2019 00:00:00
Server Certificates			End Time of Validity	Period (GMT):	Tuesday, 03/06/2029 00:00:00
Default Server Certificate (active)			CBL Di	tribution Boint:	
Web Security			CRL DIS	surbution Foint.	
Sql Security	Issued by CA				

Fill in the data for the Server (Peer) Certificate. The requested passphrase is used to encrypt and to decrypt the file containing the certificate.

Expert mode - Telephony Server						
Security	Display Coperal Inf	formation				
Application Firewall	- Display General III	Delete Certificate	Durant Cast Parts IV	Fool Commission Char		Hadda CA Closed Corner CodiRects Dr (202)
Deployment and Licensing Client (DLSC)	view Ceruncate	Delete Certificate	Export Ceruncate (A.	Generate CA-	signed Server Ceruncate [PKC5#12]	opdate Ck-signed server Certificate [X.509]
 Signaling and Payload Encryption (SPE) 				Decembrane for every sting.	[]	A
SPE Certificate				Passphrase for encryption.		
SPE CA Certificate(s)				Reenter Passphrase for encryption:		
VPN				Control Number of Contiferation	1010	
SSL				Senai Number of Certificate.	1010	
Certificate Generation				Type of Signature Algorithm:	sha256RSA	
SPE-self-signed-RootCA				Public Key Length:	2048 •	
Certificate Management	Caset Time a CMall dia	Deale d (CMT)		. abite (16) 201911		
Server Certificates	Start Time of Validity	Period (GMT)		D	Mth	N
Default Server Certificate (active)				Day	wonth	rear
Web Security				6	3	2019
Sql Security				Hour	Min.	Sec.
				0	0	0
	E 1 E 1 A 1 B 10	D 1 1 (CMT)		5	5	
	End Time of Validity	Period (GMT)				
				Day	Month	Year
				6	3	2029
				Hour	Min.	Sec.
				0	0	0
	Subject Name					
				Country (C):	DE	
				Organization (O):	Unify	
				Organization Unit (OU):	Software & Solutions	
				Common Name (CN):	SPE at Home Peer 001	
	Subject Alternative N	Name				
				Distinguished Name Format	Other Format®	
				Subject Alternative Name Extension:	DNS Name (optional)
			Ad	d Subject Alternative Name:	(optional)
				CRL Distribution Point Type:	DNS Name (optional)
	Generate Certific	cate Help				

Click to Generate Certificate

An encrypted .p12 file is created that contains the server certificate. The file can be stored on the admin PC for further use e.g. import or transport.

Dateiname:	BasedOnSPE-self-signed-RootCA.p12	-
Dateityp:	Personal Information Exchange (*.p12)	•
er ausblende	n	Speichern Abbrechen

2.7.3.3. Server (Peer) Certificate Import

The generated server certificate has to be imported into the SPE certificate store.

This is in Expert Mode Telephony Server \rightarrow Security \rightarrow Signaling and Payload Encryption (SPE) \rightarrow SPE Certificate. Type in passphrase for decryption of the file and choose the previously stored .p12 file for import.

Expert mode - Telephony Server	
Security	SPE Certificate
Application Firewall	Timport SDE cartificata nhus nrivata kay (DKCS#13 fila)
Deployment and Licensing Client (DLSC)	
Signaling and Payload Encryption (SPE)	Pasaphrase for description:
SPE Certificate	Passpirase for decryption.
SPE CA Certificate(s)	File with certificate and private Key (PEM or PKCS#12 format): Datei auswählen BasedOnSotCA.p12
VPN	
▼SSL	Note: If you are installing a SPE certificate for the first time and SPE is active a reboot will be done automatically!
Certificate Generation	

Click to **View Fingerprint** and to **Import Certificate from file** afterwards. The certificate is now imported in the SPE Server Certificate store. A click to the number of the imported certificated displays its content.

Expert mode - Telephony Server		
Security	SPE Cartificate	
Application Firewall	View Certificate	Remove Certificate
Deployment and Licensing Client (DLSC)		Kunoic Caranate
 Signaling and Payload Encryption (SPE) 	Certificate Type:	CA-Signed Peer Certificate
▼SPE Certificate	Serial Number of Certificate:	1010
	Parial Number of Cartificate (hav)	0250
SPE CA Certificate(s)	Senai Number of Certificate (nex).	USFZ
	Type of Signature Algorithm:	sha256RSA
Certificate Generation	Start Time of Validity Period (GMT):	Wednesday, 03/06/2019 00:00:00
Certificate Management	End Time of Validity Period (GMT):	Tuesday, 03/06/2029 00:00:00
Web Security	CRL Distribution Point:	
Sql Security	Issued by CA	
	Country (C):	DE
	Organization (O):	Unify
	Organization Unit (OU):	Software & Solutions
	Common Monte (CD).	Deedwet House
	Common Name (CN).	Product House
	Subject Name	DE
	Country (c).	
	Organization (O):	Unify
	Organization Unit (OU):	Software & Solutions
	Common Name (CN):	SPE at Home Peer 001
	Subject Alternative Name	
	Public Key Encryption Data	
	Public Key Length:	2048
	Public Key:	9E03E02986E48BFD528B4EA841 CAAEAF4046C05BA6F0D1EA065 886F5C8162D2730BE462E0253C
	Fingerprint:	2F04 46AF CDE2 DD63 5BEA B0A3 B6AB BCE8 6375 140B

The certificate is used by the SPE function for encryption.

3. Company Internet Router Configuration

3.1. Port forwarding / firewall

The default configuration of the firewall within the Company Internet Router does not allow incoming VoIP traffic to the OpenScape Business system. Therefore the following port forwarding rules have to be defined within the router.

Protocol	Internal Port in system	External port (Internet)	Comment
HFA not encrypted	TCP/UDP 4062	TCP/UDP 4060	
HFA encrypted	TCP/UDP 4063	TCP/UDP 4061	
DLI DLI HTTPS	TCP/UDP 18443 TCP 8804	TCP/UDP 18443 TCP 8804	Only if SW update is required for device @home
RTP	UDP/30274- 30529 UDP/30528- 30887	UDP/30274-30529 UDP/30528-30887	Port range for OSBiz X Port range for OSBiz S

Note:

No gateway port adaptation is required within the System Device@Home. All related settings are done within the company router.

3.2. Internet access with dynamic IP Address (DynDNS)

In case that the Internet Service Provider provides only a dynamic IP address (DynDNS) instead of a static IP address for the Internet connection of the company, appropriate means have to be taken into account to publish the current IP address of the company.

This can be achieved by using a dynamic DNS service like DynDNS. The Company Internet Router has to be configured with the dynamic DNS account data, which are supplied by the service provider.

Note:

Usually dynamic DNS accounts which are free of charge expire in regular intervals without manual reconfirmation. This will cause an outage of the Device@Home feature.

3.3. NAT type

The System Device@Home feature does not work in combination with company internet routers or home routers with NAT type "Symmetric NAT".

The NAT type detection option within OpenScape Business can be used to determine the configured NAT type of the company internet router. If possible please change the NAT behavior of the router, in case that "Symmetric NAT" is detected by OpenScape Business.

Expert mode - Telephony Server					
Voice Gateway	^	Internet Telephony Service Provider			
SIP Parameters Codec Parameters		Add Internet Telephony Service Provider		Edit STUN Configuration	Detect NAT Type
Destination Codec Parameters		l (Detected Nat-Type:	Port Restricted Cone NAT	1
▼Internet Telephony Service Provider		L	71)

Note: The NAT type detection of the OpenScape Business (may falsely detect the NAT type of the Company router as "Symmetric NAT" if outbound IP traffic is restricted in the Company router. Please make sure that the ports listed above are open in outbound direction as well.

4. System Device configuration

The feature System Device@Home is supported by the following devices and clients:

Device / Client	Minimum software version
OpenStage HFA	V3 R0.40.4
Desk Phone IP HFA	V3 R0.40.4
DeskPhone CP HFA	V1 R2.8.0
myPortal @work VoIP	Client Version: >V2.0.12 / OSBiz: >/= V2R7

4.1. System Device Configuration

Network

•

IP configuration

- IP address of the device in the home network
 - = either fixed IP address manually entered or DHCP

System

Gateway

- IP address either
 - = Public IPv4 address of the OpenScape Business (if available via a fix IP address) or Public DNS name of the OpenScape Business.
- Subscriber number / Identity
 - = Internal phone number
- Password
 - = Password as configured for device authentication within OpenScape Business

Security (optional if SPE is used)

- System
 - Signalling transport main = TLS
 - TLS renegotiation = Secure (RFC5746)

Date and Time

Source = System

Network

Update Service DLS

0

Update Service / DLS: = public IP address of OSBiz [fix IP address]

5. Home Internet Router

Usually no specific configuration is necessary for the System Device@Home feature in the Home Internet Router. The router MUST comply with the following requirements:

- The Home router must provide VoIP enabled NAT (no symmetric NAT) ,
- The ALG function in the router must be deactivated, if available.

Note:

It has to be ensured that the Home Internet connection provides sufficient bandwidth for real time traffic. This applies especially for asymmetric DSL connections, which may have reduced upload bandwidth.

6. Security considerations

The System Device@Home feature is designed to be a cost effective option to connect home- and mobile worker etc. to OpenScape Business. It provides following security measures

Client type	Security level
System Device@Home	 Access control by device / user authentication secured by enforced password Signalling and payload encryption by SPE feature Use of different IP ports for internally and externally connected system devices
myPortal @work (@home)	Authentication via encrypted UC password - Signaling over "Secure WebSocket (WSS) - Payload encryption via (DTLS)-SRTP

The System Device@Home feature is not applicable for:

Environments with strict router/firewall policies where port forwarding from the internet are not allowed or symmetric NAT is in place. In this case, a VPN infrastructure between the central office and the home / mobile worker has to be considered.

Note:

It is recommended to use myPortal @work only in trusted WiFi and LAN environments (company, home office, ...).

7. Troubleshooting



In case of connection problems the following traces are needed. The numbers within the figure demonstrate which the physical location of the data which are traced.

- 1. Internal trace from OpenScape Business with the following Trace profiles activated:
 - Voice_Fax_connection
 - SIP_Interconnection_Subscriber_ITSP
 - Calls_with_System_Device_HFA
 - CSTA_applications
- 2. Wireshark trace capturing the traffic between the office router and the OpenScape Business system. This could be a TCP-dump from the router or a capture taken from the LAN
- 3. Wireshark trace from the remote location capturing the traffic between the affected HFA phone and the Home-/SOHO-Router. This could be a TCP-dump from the router (if supported) or a capture taken from the LAN
- Information about Setup, e.g.
 Used device (type and software release) at remote location
 Used router at remote location
 Used router at office location
 List of IP addresses of all involved entities (HFA phone, smart phone, routers, OpenScape Business system)

8. Abbreviations

ALG	Application Layer Gateway
СО	Central Office
HFA	HiPath Feature Access (protocol)
HTTPS	Hypertext Transport Protocol Secure
IP	Internet Protocol
ITSP	Internet Telephone Service Provider
LAN	Local Area Network
NAT	Network Address Translation
SBC	Session Boarder Controller
SIP	Session Initiation Protocol
OSBiz X	OpenScape Business X model
OSBiz S	OpenScape Business Server model
SPE	Signaling and Payload Encryption
STUN	Session Traversal Utilities for NAT
VoIP	Voice over IP
WAN	Wide Area Network

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Powering connections

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