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1 Introduction

This document describes how to set up the OpenScape Business communication system for Internet Telephony via ITSP (Internet Telephony Service Provider) using Web-Based Management (WBM). The guide covers mostly VoIP trunks with SIP protocol which provide a range of call numbers for business users (direct dialing inward, DID).

General administration is covered by the respective WBM administrator documentation.

Prerequisite for the configuration is that the Internet Explorer at a PC has a LAN connection to OpenScape Business, the **WBM is started**, and you are **logged on as an administrator**. Please use the menu items as described below.

Current technical information on the products, applications and solutions available from Siemens Enterprise Communications can be found under the following link: http://wiki.siemens-enterprise.com

For general information see [www.siemens-enterprise.com](http://www.siemens-enterprise.com)

2 Internet Configuration

An internet connection from your ITSP or from another Internet Service Provider (ISP) is required for Internet Telephony. The DSL bandwidth at the customer site determines the maximum number of concurrent calls.

2.1 OpenScape Business used as Router

If your OpenScape Business system is used as a DSL router, the system is configured as described below. The connection to the DSL Modem is done via WAN interface.

Please use the Internet Configuration wizard to set up your Internet access selecting a predefined provider or the most common type ‘Internet Service Provider PPPoE’.

1. In the navigation bar, click Setup.
2. In the navigation tree, click Wizards > Network / Internet.
3. Click Edit to start the Internet Configuration wizard.
4. Activate the radio button DSL at WAN Port directly and click OK & Next.
5. From the Internet Service Provider Selection drop-down list, select the standard ISP Type Provider PPPoE.
6. The settings in the IP Parameters area depend on whether or not you obtain a dynamic or fixed IP address from your ISP.
   a) Dynamic IP address: Make sure that the IP Parameters check box is disabled.
b) Fixed IP address: Enable the **IP Parameters** check box. Under **Remote IP Address of the PPP Connection**, **Local IP Address of the PPP Connection** and **Max. Data Packet Size (bytes)**, enter the values that you have received from your ISP. From the **IP Address Negotiation** drop-down list, select the item **Use configured IP address**.

7. For Internet telephony set **Full-Time Circuit** to **On** in the **Router Settings** area. Under **Forced Disconnect at (hour:min)**, enter the time (e.g., 04:59) at which the Internet connection is to be deactivated for a short time to avoid interruptions caused by internet provider’s resets.

8. The settings in the **Authentication** area depend on whether or not the ISP requires authentication via PPP.

   c) Authentication required by ISP: Make sure that the check box **PPP Authentication** is enabled. Enter the Internet access name of the ISP as the **PPP user name**. The customary standard is the **CHAP Client** authentication mode.

   d) Authentication not required by ISP: Make sure that the check box **PPP Authentication** is disabled.

9. Select the **NAT** check box in the **Address Translation** area if you want to use NAT (selected by default). Hint: Please keep in mind that if NAT is unchecked, then the system is open against the Internet. Therefore due to security reasons it is strongly recommended to keep this flag enabled.

10. Select the **Address Mapping** check box in the **Address Translation** area if you want to use IP mapping (cleared by default).

11. Set the following values in the **QoS Parameters of Interface** area:

   e) Under **Bandwidth for Downloads** and **Bandwidth for Uploads**, enter the bandwidth in Kbps for downloads and uploads, respectively, as provided by your ISP.

   f) If you want to use Internet Telephony as well, open the drop-down list **Bandwidth Control for Voice Connections** and select the item **Upload only** or **Upload and Download**, as required. In the field **Bandwidth Used for Voice/Fax (%)**, enter how much bandwidth is to be reserved for voice and fax connections as a percentage value (default value: 80%).

12. Click **OK & Next**. You are taken to the **Configure DynDNS-Account** window.

13. If you want to use a VPN or remote access, you will need to have already applied for and set up a DynDNS account (at DynDNS.org, for example).

   g) Enter the data of your DynDNS account.

   h) Test the DynDNS account with **Connection test**.

   i) After the test succeeds, click **OK**.

   j) Click **OK & Next**.

14. If you want to use neither a VPN nor remote access, click **No DynDNS**.

15. Click **Finish** to exit the **Internet Configuration** wizard.

16. A system reboot is necessary.
2.2 OpenScape Business with external Router

If you have an OpenScape Business S or want to use the DSL router from your Provider or another external router, please enter its default Gateway IP address in the **Network Configuration** wizard. Connection to the external Router is done via LAN port.

> OpenScape Business does not support routers with symmetric NAT. An Application Layer Gateway (ALG) in the router should be disabled.

Please use the Internet Configuration wizard to set up your Network and Internet access.

1. Go to Setup > Wizards > Network / Internet. > Edit **Internet Configuration**

2. Choose “TCP/IP at LAN Port via an external router” and click OK & Next.

3. In the next window configure the DNS server and the IP of your default router

4. Click Finish
3 Internet Telephony Configuration

The Internet Telephony wizard can be used to activate a predefined Internet Telephony Service Provider (ITSP). You can configure Internet telephony Stations for up to four ITSPs.

Used terminology:

**Internet Telephony Service Provider (ITSP)**

**Internet Telephony Station**: often referred as user account or SIP station. Describes the access provided by the ITSP with account or station number and a password which is needed e.g. for registration

**Internet Telephony Phone number**: The telephone number assigned to you by the ITSP. This number is used to reach you via the public telephone network. The ITSP may assign single numbers or a range of numbers (DID) for an Internet Telephony Station

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1. In the navigation bar, click **Setup**.
2. In the navigation tree, click **Wizards > Central Telephony**.
3. Click **Edit** to start the Internet Telephony wizard.
4. Clear the **No call via Internet** check box. A list of the configured ITSPs is displayed. The list contains the predefined ITSPs and custom created ITSP profiles. By default the country specific ITSPs are shown. By selecting 'all countries' you can see all ITSPs. If required, click **Display Status** to check which ITSPs have already been activated and
which Internet Telephony Stations have already been configured under each ITSP. You can activate a maximum of four ITSPs. Click OK when finished.

5. Click Edit at your ITSP Profile to manage your Internet Telephony Stations and Internet Telephony Phone Numbers.

Remark:
If the Internet Telephony Stations and Internet Telephony Phone Numbers have already been configured and you just want to activate your existing profile then click OK & Next, skip the next steps and continue with number 15.
6. Click OK & Next

7. Click Add in this screen
8. Enter the **account (username) information received** by your ITSP in **Internet Telephony Station**.
   If none was provided by your ITSP enter the pilot number of the DID range (as Internet Telephony Station is a mandatory configuration parameter)

9. Enter the **Authorization Name** and **Password** which was given to you for the account by your ITSP, if necessary

10. The next step depends on the type of numbering scheme used for your account (single numbers / DID ranges)
   a) For accounts with single call numbers select the option **Internet Telephony Phone Number**
      Enter the phone number and click **Add** for every phone number you received from your ITSP.
   b) For DID trunks select the option **Internet telephony system phone number** in the **Call number type area**.
      Enter **System phone number** which defines a common prefix for all assigned numbers in the DID range
      Enter the DID number range .
      Example:
      assigned numbers 4912345678-0 to 4912345678-9
      Prefix : 4912345678
      Range: 0 - 9

11. Click **OK & Next**. An overview of your ITSP providers is shown. Click OK & Next
12. Assign one **internal call number** for each of the Internet Telephony Phone Numbers. For subscribers without Internet Telephony Phone Number one number can be selected as **PABX number for outgoing calls**.

13. Click OK & Next. An overview of your ITSP providers is shown. Click OK & Next
14. At this step you will have to configure the Upstream Bandwidth of your internet connection.

The maximum number of simultaneous calls depends on the available Upstream bandwidth. If you have poor voice quality as a result of network load, you should reduce the number here.

E.g. for 512 kbps upstream you can have up to 4 calls (if you calculate the recommended bandwidth of 128 kbit/s for a G.711 call, up- and downstream).

If this is not the first time you run this wizard then these values will be filled in with your previous choices. Click OK when finished.
15. Next you can define the handling of special numbers in the **Dialed digits** column. The following station number entries are valid:
   - 0 to 9: allowed digits
   - -: Field separator
   - X: Any digit from 0 to 9
   - N: Any digit from 2 to 9
   - Z: One or more digits to follow up to the end of dialing
   - C: Simulated dial tone (can be entered up to three times)

16. Use the **Dial over Provider** column to specify whether the special number should be dialed via ISDN or an ITSP. Only the active ITSP is displayed. Ensure that emergency numbers can always be dialed. If you want to dial emergency numbers via an Internet Telephony Service Provider, you must make sure that the ITSP supports this feature.

17. Click **OK & Next**.
18. Here you can see the status of your ITSP. If the profile is successfully activated then you should see the status in green color. If the status color is orange, then this means that the activation was not successful. In this case please verify that you configured the correct credentials for your account. If the problem still exists then please check the STUN mode configuration. (For more details please see chapter 4.3)

19. Click Next and then Finish to exit the Internet Telephony wizard.
20. The last step is to configure the licenses for the SIP Trunks. Go to tab **License Management > CO Trunks** and set the ITSP/SIP Trunks you want to activate. The licenses required for each SIP Trunk are “OpenScape Business V1 S2M/SIP Trunks”!

**Important Info:** Please note that if you deactivate your ITSP, the SIP Trunk license configuration is reset as well. Thus, the next time you will activate your ITSP you should reconfigure the SIP Trunk licenses.

21. It is recommended to perform a data backup by clicking on Data Backup in the navigation bar and then on Backup- Immediate in the navigation tree.

Now your ITSP is ready to use. Outgoing calls via the first configured provider can be made with default prefix 855. Further providers (up to 4) can be used via default prefixes 856, 857 and 858 respectively.
4 Appendix

4.1 Fax Setup

Fax is possible in two ways, either by protocol T.38 or by using clear channel with codec G.711. Fax over T.38 is more reliable and secure than fax over G.711.

- For fax T38, nothing special needs to be configured. It is enabled by default.
- If the ITSP does not support T38, then T38 needs to be disabled in order to send the fax via G.711:

  Expert Mode > Telephony Server > Voice Gateway > Codec Parameters > Disable the flag “Fax T.38”. All the other settings should remain at the default values.

❗️ It is strongly recommended to disable T.38 only if your provider does NOT support it.

❗️ If the ITSP does not support T.38, then fax via the OpenScape Business UC Suite is NOT possible.
4.2 Codec’s and RFC2833 Setup

In the above screen, you can also configure the codec’s and its priorities for Gateway calls (calls via TDM stations). If G729 is used by the provider, then both G.729A and G.729AB MUST be activated.

Also RFC2833 is configured here. The RFC2833 dynamic payload type is negotiated between the OpenScape Business system and the ITSP. If the provider does not support negotiation and request for a specific value, this must be entered under "Payload Type for RFC2833"

4.3 Provider Hints

Profile Settings:
This guide’s goal is to present basic configuration and usage of already certified ITSPs. The preconfigured profiles already have the correct basic and advanced settings and the only thing needed is to enter the Internet Telephony Stations and Internet Telephony Phone Numbers info. Please note that some ITSP profiles do not have fixed IPs Domains for their Servers and these have to be entered manually. For more info please check the specific ITSP release notes in our official wiki page.

Nevertheless if for some reason you need to edit the basic or advanced Profile settings then you may do it in “Expert Mode > Voice Gateway > Internet Telephony Service Provider”. Please note that such changes must be done by experienced personnel, otherwise they may cause malfunction of your ITSP. For more information please refer to the “VoIP Provider Data Collection.doc” at our official ITSP wiki page here.

Account Settings:
You can find configuration hints how to enter account data for a specific provider at http://wiki.siemens-enterprise.com/index.php/How_to_enter_SIP_Provider_Account_Data

Please feel free to add information from your experience to this web page.

4.4 Configure STUN

Go to: "Expert Mode > Voice Gateway > Internet Telephony Service Provider > Edit STUN Configuration"

Notes on setting STUN mode:

The necessary STUN mode depends on ITSP infrastructure and the used router. STUN is not required for ITSPs that resolve NAT traversal using infrastructure components in the provider network such as Session Border Controller (SBC). See also:

- **“Automatic” (Default)** With an active ITSP having the “Use STUN” flag enabled STUN determines the used firewall type (NAT type) and detects IP address changes during runtime by using the configured STUN server in the ITSP profile. Depending on the detected NAT type, STUN changes certain parameters in SIP messages (NAT traversal). Please note: symmetric NAT is not supported.

- **“Always”** STUN is always active, even if no ITSP is active, for example. Depending on the detected NAT type, some parameters in SIP messages (NAT traversal) are adapted.

- **“Use static IP”** If you are using a static IP on your modem/router then use this mode and enter here the static IP and port.

- **“Port Preserving Router”** (Use this option if none of the above is working, there are some specific Modem/Routers that have a special port for NAT and need this option to work properly)

**Switching STUN on/off:**
The usage of STUN can be activated / deactivated individually for each provider. This is possible with the profile parameter: “Use STUN” as seen below.

If “Use STUN” is enabled, the global STUN Mode configuration (illustrated above) takes effect.
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