

OpenScape Business V2

How To Configure SIP Trunk for your ITSP X2COM NL IP

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Table of History

| Date | Version | Changes |
|------------|---------|-------------------|
| 19.02.2016 | 1.0 | First version |
| 05.04.2016 | 1.1 | ITSP X2COM |
| 13.09.2024 | 1.2 | editorial changes |
| | | |

Note: The basis for this document is the current OpenScape Business at the time of certification. Since OpenScape Business is constantly developed, input masks and interfaces as well as requirements may change in the future. The settings and entries described here then apply accordingly.

Configuration Data

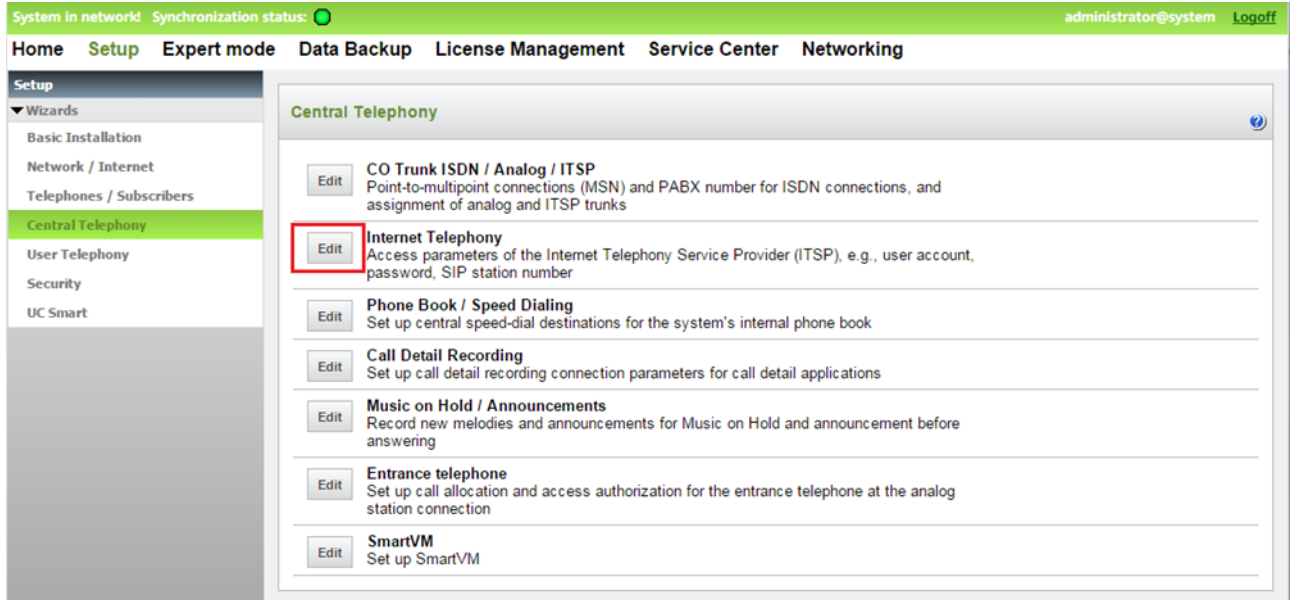
Information from ITSP X2COM NL provided:

| Name | Example |
|---------------------------|------------------------|
| Call Number: | (073) 7200.....970-974 |
| Number of DID digits: | 7 |
| SIP Domain: | sip.x2c.nl |
| SBC_IP: | 37.235.80.80 UDP 0 |
| digest Auth.: | Yes |
| SIP Username: | 31737200970 |
| SIP Password: | n/a |
| | |
| Clip no Screening: | yes |
| Number of voice-channels: | 2 |

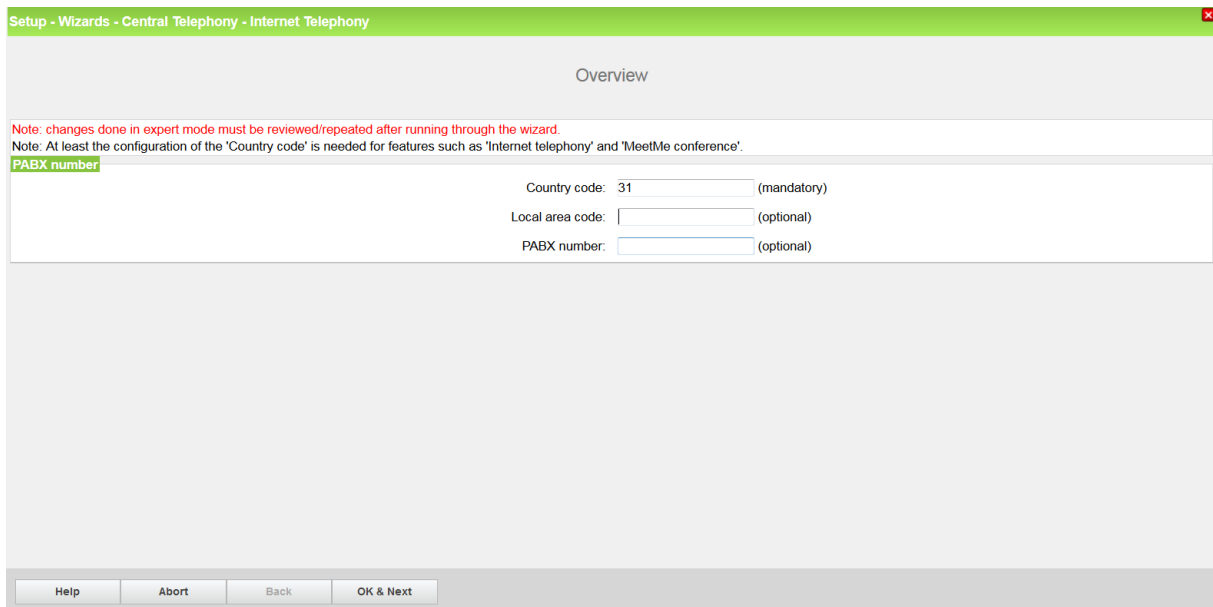
Configuration Wizard

Internet Telephony

Go to „Central Telephony – Internet Telephony“

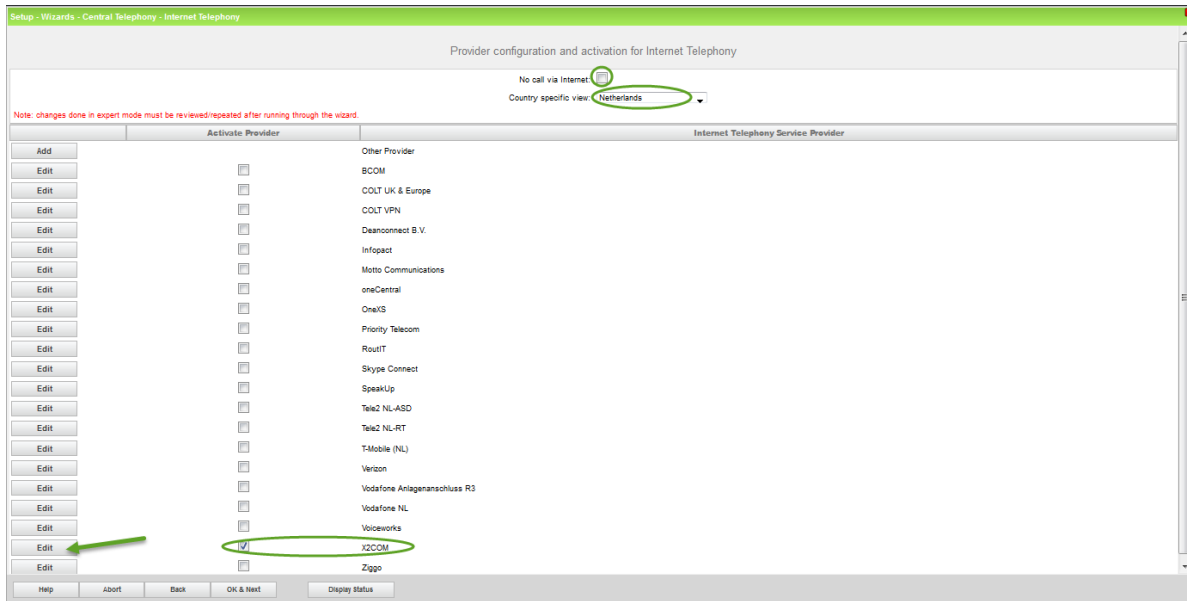


The overview page appears for entering the location data. The most flexible type of configuration is to enter the Country code only. For Multisite scenarios and CLIP No Screening this is mandatory.



As outgoing number only the port assigned phone numbers are used.
In this case, remaining digits are filled in DID field.
Click [OK & Next]

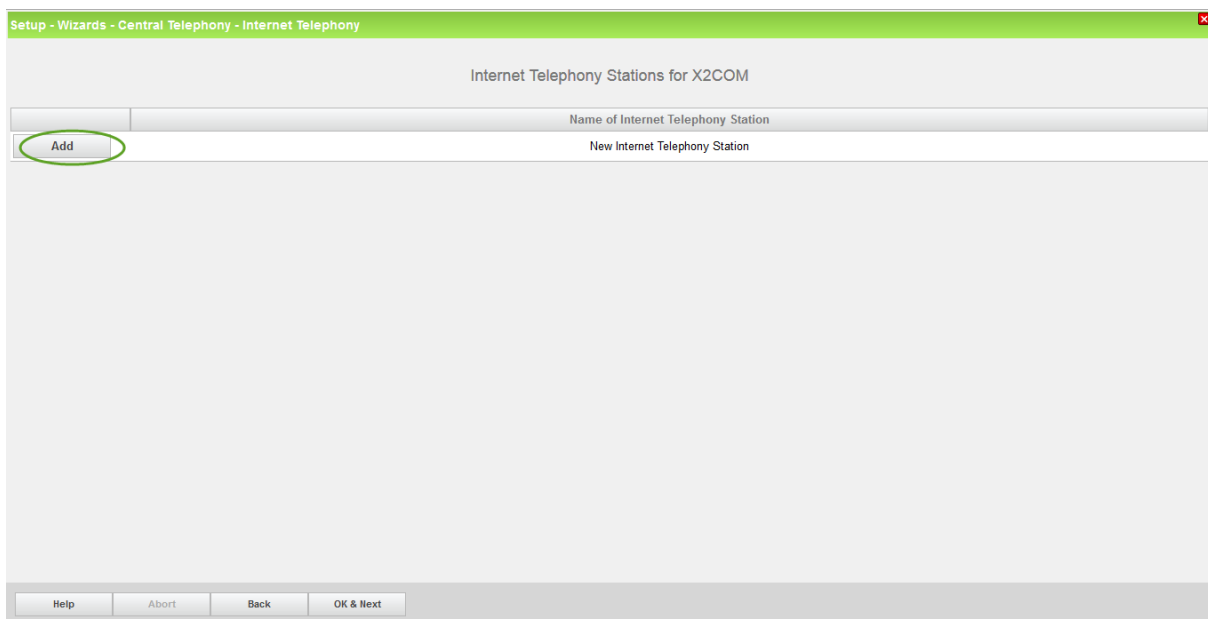
Provider configuration and activation for Internet Telephony -> No call via Internet -> uncheck Use County specific view : Netherlands and select **X2COM**.



Activate Provider and click on [Edit].

Internet Telephony configuration

In this dialog the specific customer SIP Userdata will be configured.

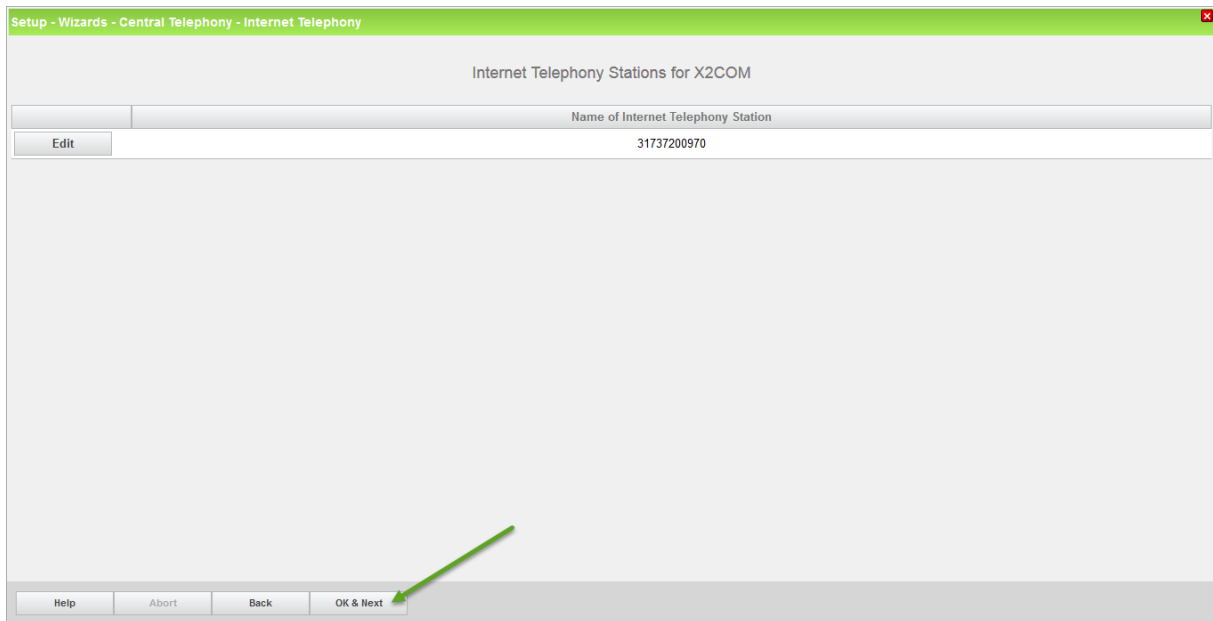


Click on [Add].

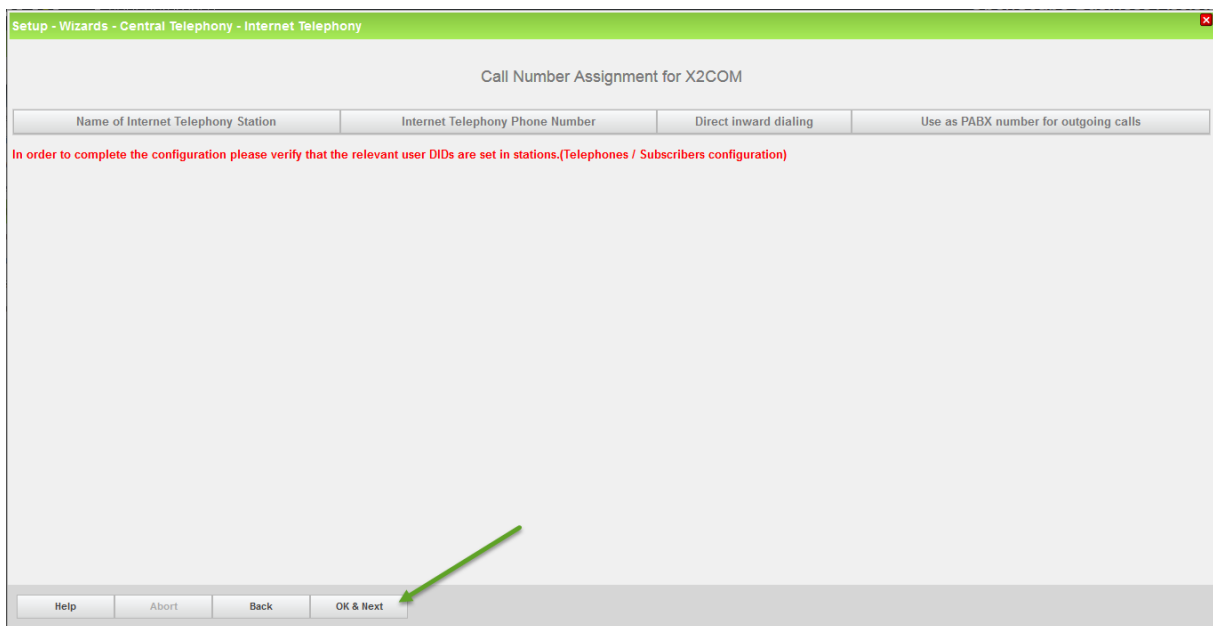
Data provided by ITSP X2COM is inserted here.

- Internet telephony station: SIP Username is inserted here (gebruikersnaam)
- Authorization name: SIP Username is inserted here (gebruikersnaam)
- Password: Password provided by ITSP BCom provider. (wachtwoord)
- Default number: Main number of connection. The default number is used as outgoing number when no DDI number is assigned to a station,.

Click [OK & Next].

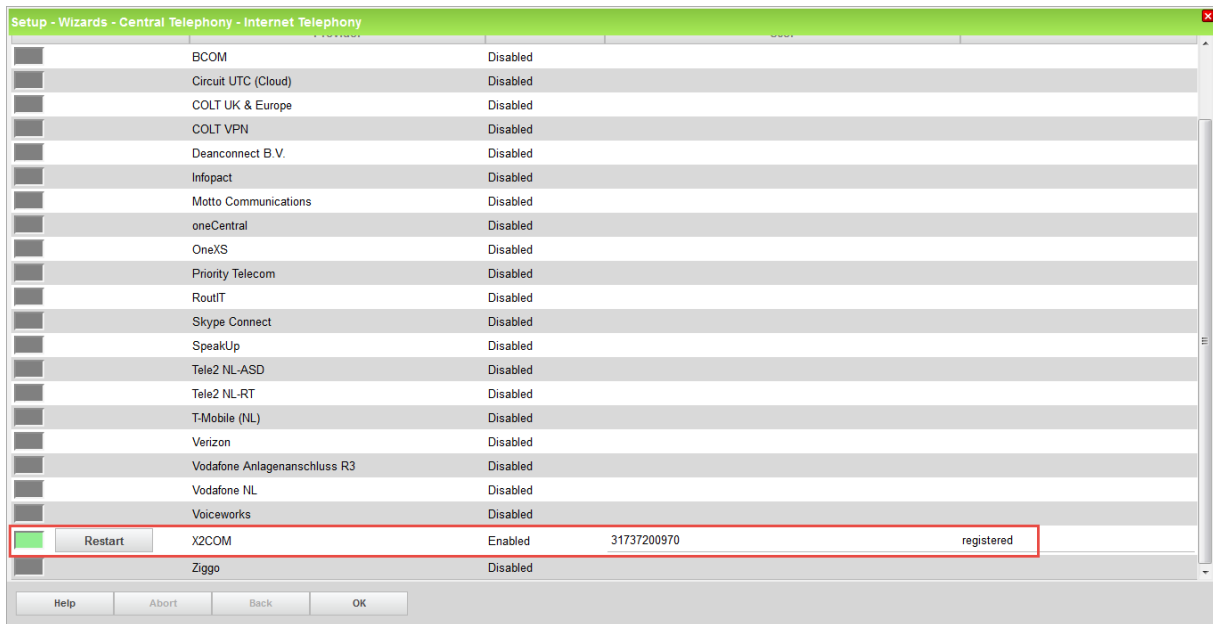


Click [OK & Next].



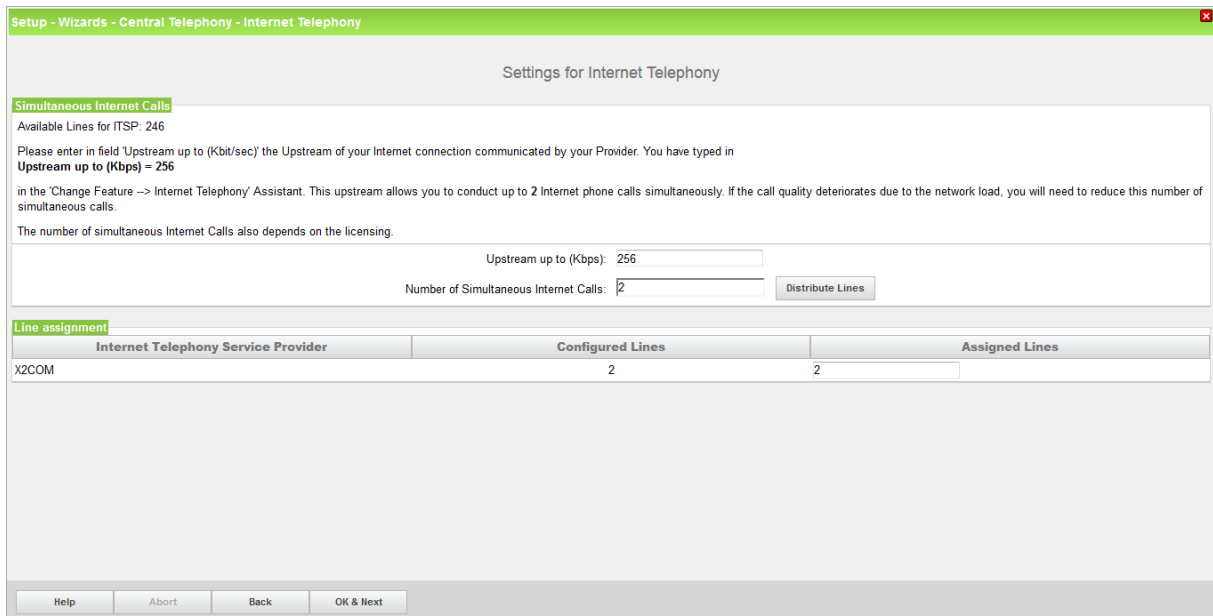
Click [OK & Next] (no input needed)

Next page status of ITSP is displayed. In case of a wrong SBC Address in Expert mode status of ITSP is „not registered“



Define bandwidth (# Trunks)

In the next part the number of simultaneous calls via the SIP trunk will be defined. The calculation of the number of trunks is done by the wizard automatically depending on the bandwidth. For each 128K, one trunk is created.



Click [OK & Next]

Special phone numbers

In this dialog it is possible to route special phone numbers. When special phone numbers are not supported over the ITSP route it is possible to change this here.

| Special phone number | Dialed digits | Dial over Provider |
|----------------------|---------------|--------------------|
| 1 | 0C112 | X2COM |
| 2 | | ISDN |
| 3 | | ISDN |
| 4 | | ISDN |
| 5 | | ISDN |
| 6 | | ISDN |
| 7 | | ISDN |
| 8 | | ISDN |
| 9 | | ISDN |
| 10 | | ISDN |
| 11 | | ISDN |
| 12 | | ISDN |
| 13 | | ISDN |
| 14 | | ISDN |
| 15 | | ISDN |

After this status page two more dialogs with „Exchange Line Seizure“ and an overview with all configured „Outside line Seizure“ are displayed.

Multisite configuration

Multi-site refers to the integration of several ITSP numbers from currently up to 8 different local area codes in a single system. (For example, numbers from Veghel 0413 xxx, Roermond 0475xxx, etc.). All up to 8 area codes must be within one country.

Additional configuration notes:

DID configuration

In general the DID has to be configured in long format. E.g. Mike Miller,413411005 for a user in Veghel, Tobi Foster 475123456 for user in Roermond.

The country code 31 has to be configured as described as before.

Setup - Wizards - Telephones / Subscribers - IP Telephones

Select a station -LAN Phones/WLAN Phones

Take DID from changed call number

| Callno | First Name | Last Name | Name | DID | Type | Fax Callno | |
|--------|------------|-----------|--------------|-----------|---------------|------------|---|
| 998 | Mike | Miller | Miller, Mike | 413411005 | System Client | - | - |
| 999 | Tobi | Foster | Foster, Tobi | 475123456 | System Client | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |
| - | - | - | - | - | No Port | - | - |

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Help Abort Back OK & Next Save Data

Multisite Table

The Multisite wizard is available when at least one ITSP is active. In expert mode Multisite can be found in the LCR configuration.

The screenshot shows the 'Multisite' configuration window in 'Expert mode - Telephony Server'. The window has a sidebar on the left with a tree view containing 'LCR', 'LCR Flags', 'Classes Of Service', 'Dial Plan', 'Routing table', 'Dial rule', and 'Multisite'. The main area is titled 'Multisite' and has two tabs: 'Edit Areas' and 'Edit Stations/Groups'. The 'Edit Areas' tab is active, showing a table with 8 rows. The first row is pre-filled with '0' in the 'Area Code' field and 'Veghel' in the 'Area' field. The second row has '0413' in 'Area Code' and 'Veghel' in 'Area'. The third row has '0475' in 'Area Code' and 'Roermond' in 'Area'. The other rows are empty. The 'Dedicated Route' column has a dropdown menu with 'X2COM' selected for rows 2 and 3. At the bottom, there are 'Apply', 'Undo', and 'Help' buttons.

| | Delete | Area Code | Area | Dedicated Route |
|---|--------------------------|-----------|----------|-----------------|
| 1 | | 0 | Veghel | X2COM |
| 2 | <input type="checkbox"/> | 0413 | Veghel | X2COM |
| 3 | <input type="checkbox"/> | 0475 | Roermond | X2COM |
| 4 | <input type="checkbox"/> | | | |
| 5 | <input type="checkbox"/> | | | |
| 6 | <input type="checkbox"/> | | | |
| 7 | <input type="checkbox"/> | | | |
| 8 | <input type="checkbox"/> | | | |

Edit Stations/Groups

The screenshot shows the 'Edit Stations/Groups' configuration window in 'Expert mode - Telephony Server'. The window has a sidebar on the left with a tree view containing 'LCR', 'LCR Flags', 'Classes Of Service', 'Dial Plan', 'Routing table', 'Dial rule', and 'Multisite'. The main area is titled 'Multisite' and has two tabs: 'Edit Areas' and 'Edit Stations/Groups'. The 'Edit Stations/Groups' tab is active, showing a table with columns: 'Callno', 'DID', 'Name', 'Type', 'Area', and 'Dedicated Route'. There is a search bar at the top. The table contains 16 rows. The first two rows are highlighted with a red circle: row 131 with '413411005', 'Mike Miller', 'System Client', 'Veghel', and 'X2COM'; and row 134 with '475123456', 'Tobi Foster', 'System Client', 'Roermond', and 'X2COM'. At the bottom, there are 'Apply', 'Undo', and 'Help' buttons.

| Callno | DID | Name | Type | Area | Dedicated Route |
|--------|-----------|-------------|---------------|----------|-----------------|
| 131 | 413411005 | Mike Miller | System Client | Veghel | X2COM |
| 134 | 475123456 | Tobi Foster | System Client | Roermond | X2COM |
| | | | | | |
| | | | | | |
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| | | | | | |

Important “Dial rule” for local calls

| Rule Name | Dial rule format | Network access | Type |
|------------------|------------------|-----------------------|-------------|
| 1 CO | A | Main network supplier | Unknown |
| 2 SIP | A | Main network supplier | Unknown |
| 3 SIP local | HE2A | Main network supplier | Unknown |
| 4 MEB | E1A | Corporate Network | PABX number |
| 5 IP-Network | A | Corporate Network | Unknown |
| 6 Multi-Location | BA | Corporate Network | Unknown |
| 7 Gateway call | E1A | Corporate Network | Unknown |
| 8 COInternat | D0E3A | Main network supplier | Unknown |
| 9 | | Unknown | Unknown |
| 10 | | Unknown | Unknown |
| 11 | | Unknown | Unknown |
| 12 | | Unknown | Unknown |
| 13 | | Unknown | Unknown |
| 14 | | Unknown | Unknown |
| 15 | | Unknown | Unknown |
| 16 | | Unknown | Unknown |
| 17 | | Unknown | Unknown |
| 18 | | Unknown | Unknown |
| 19 | | Unknown | Unknown |
| 20 | | Unknown | Unknown |
| 21 | | Unknown | Unknown |
| 22 | | Unknown | Unknown |

Clip No Screening to be disabled

Internet Telephony Service Provider

CLIR outgoing in From header - display part: omit

CLIR outgoing in From header - user part: fully anonymous

CLIR outgoing Privacy header: id

COLP / TIP supported for outgoing calls: COLP supported

Call number formatting

Incoming call - Called party number: request line

Incoming call - Calling party number: From header user part

Incoming call - Type of number (calling): automatic

Incoming call - Type of number (called): automatic

Outgoing call - Type of number (calling): automatic

Mapping of provider number: off

CLIP no Screening support: CLIP in From / trusted number in PAI

Call No. with international/national prefix: CLIP in From / trusted number in PAI

Registration

Register Contact contains IP-Address: localIPAddr

ContactUriWithProtocol:

BNC Registration (SIPconnect): normal registration

ReRegistration interval after failure (sec): 120

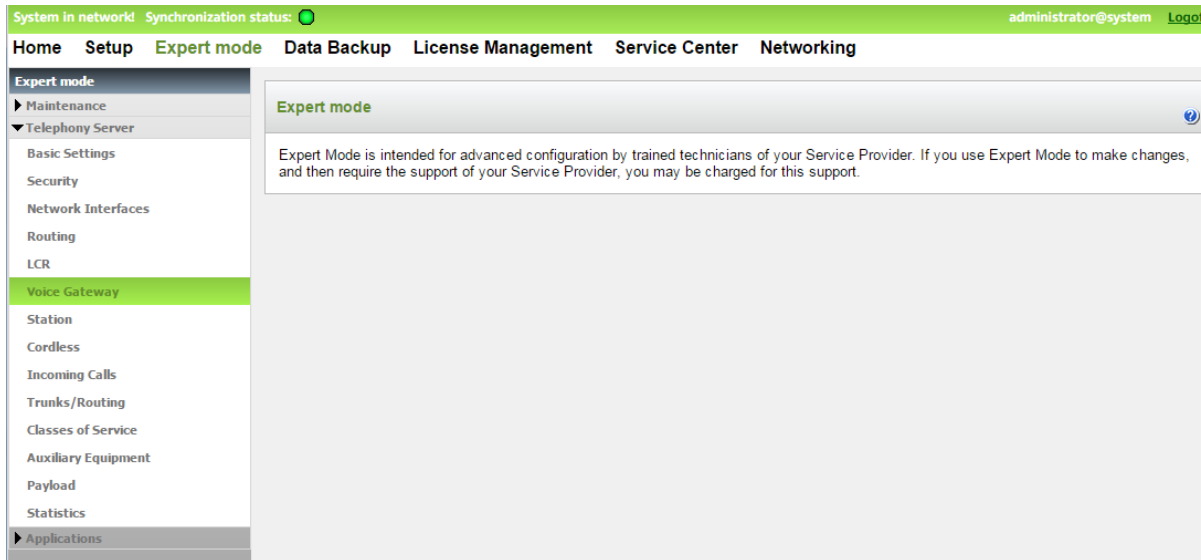
„Clip No Screening“ has to be disabled in combination with Multisite configuration. It results in signaling of CLIP in both, From- und PAI-Headers. Important for emergency calls.

Route configuration

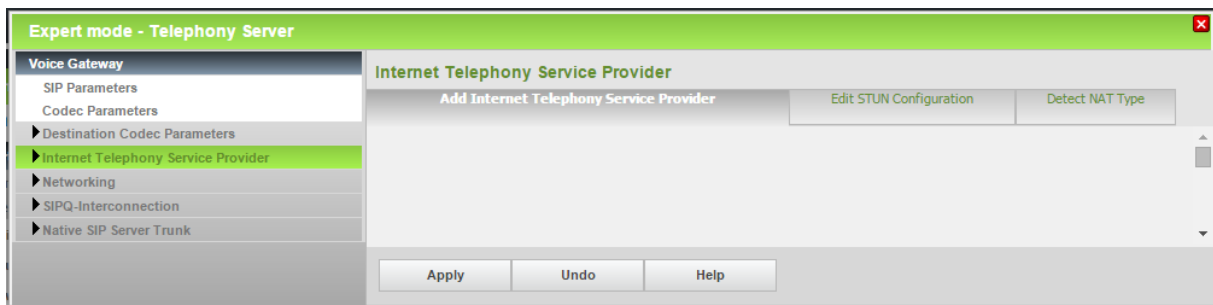
Only one ITSP (one Route) for all local areas needed.

Check type of number for outgoing calls.

Configuration in Expert mode



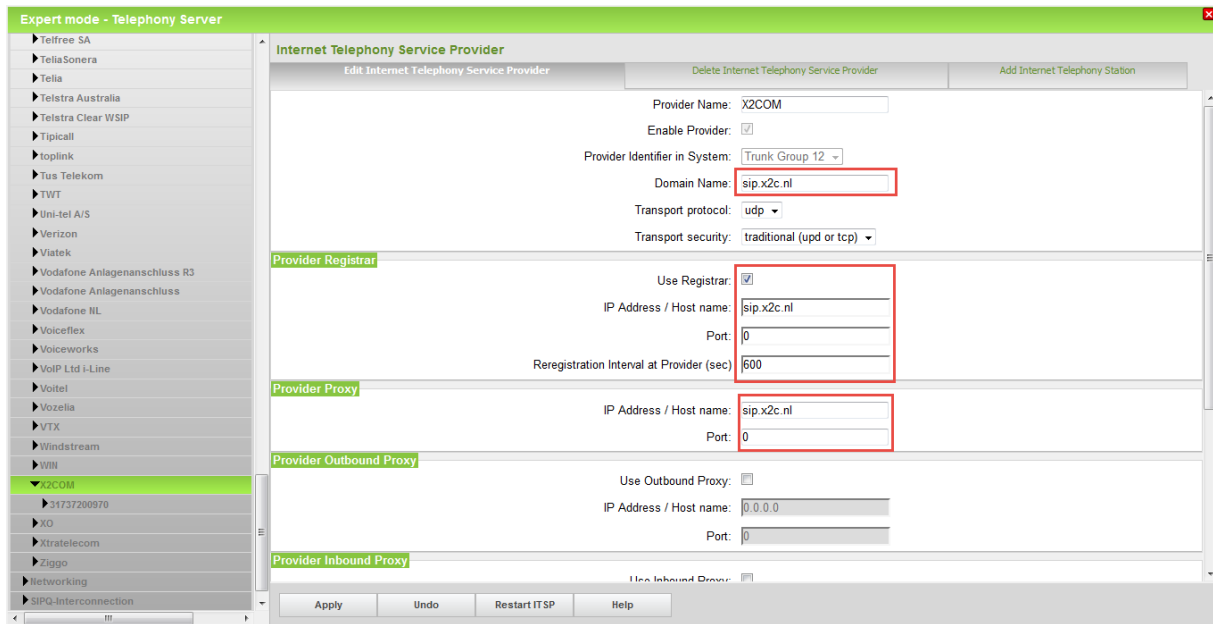
Choose [Voice Gateway] and „Internet Telephony Service Provider“



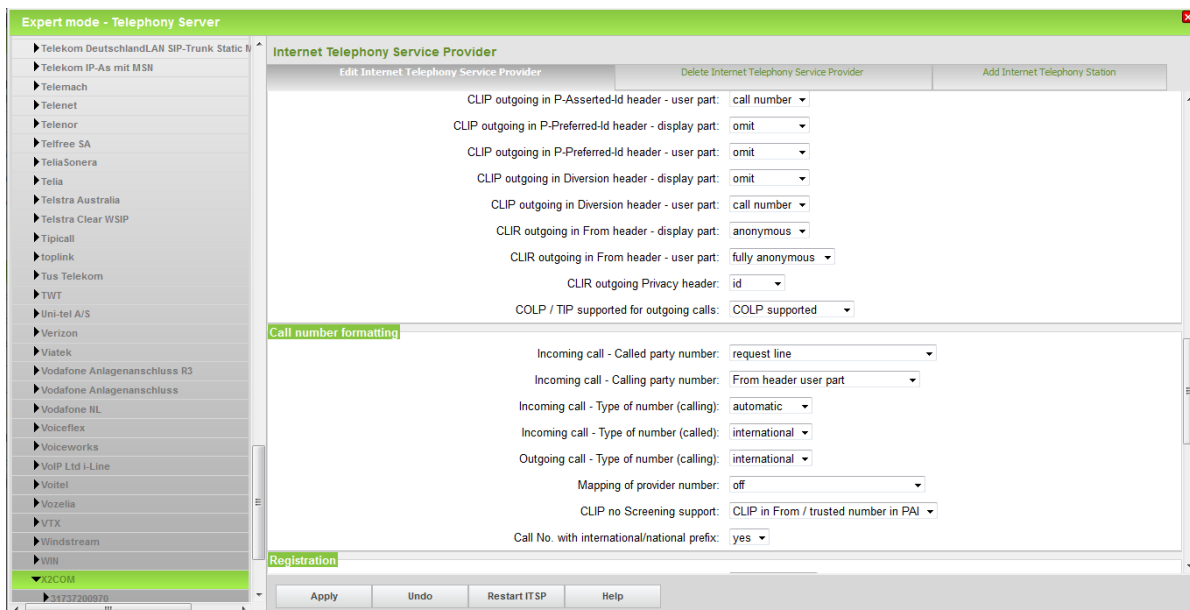
Select „**BCom**“.

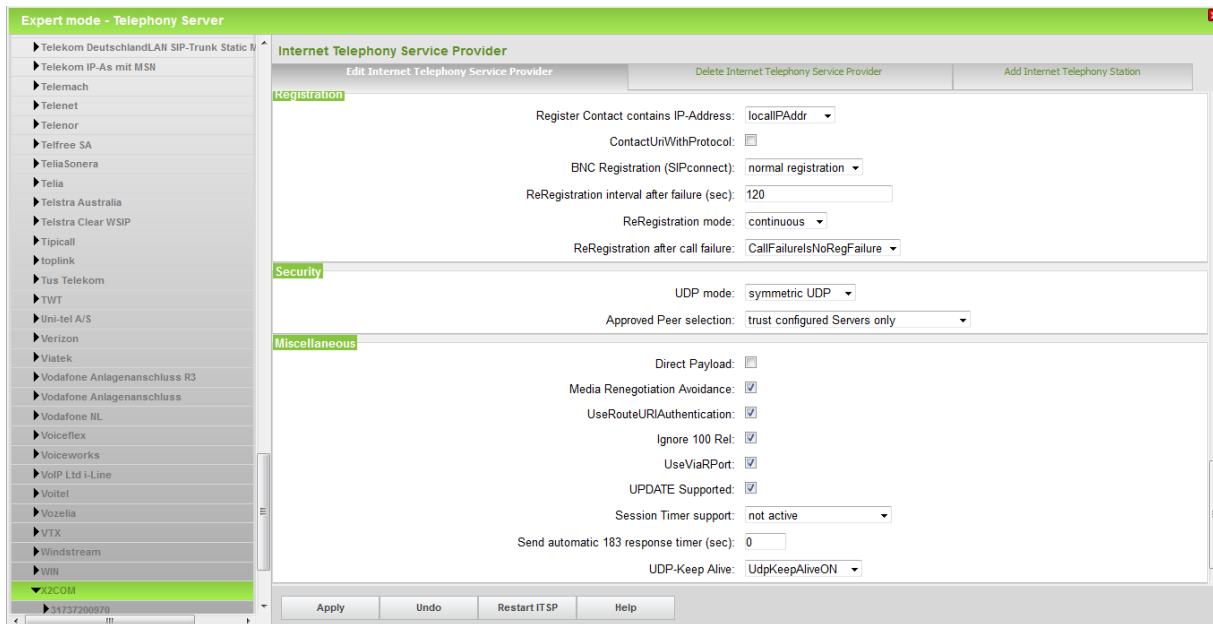
The „Domain Name“ and “Provider Proxy “ are defined with the SIP Domain provided from ITSP. Transport protocol and UDP Port are set by default. ITSP X2COM supports DNS SRV, so in our case port number is set to „0“.

| | |
|-------------|--------------------|
| SIP Domain: | sip.x2com.nl |
| SBC_IP: | 37.235.80.80 UDP 0 |

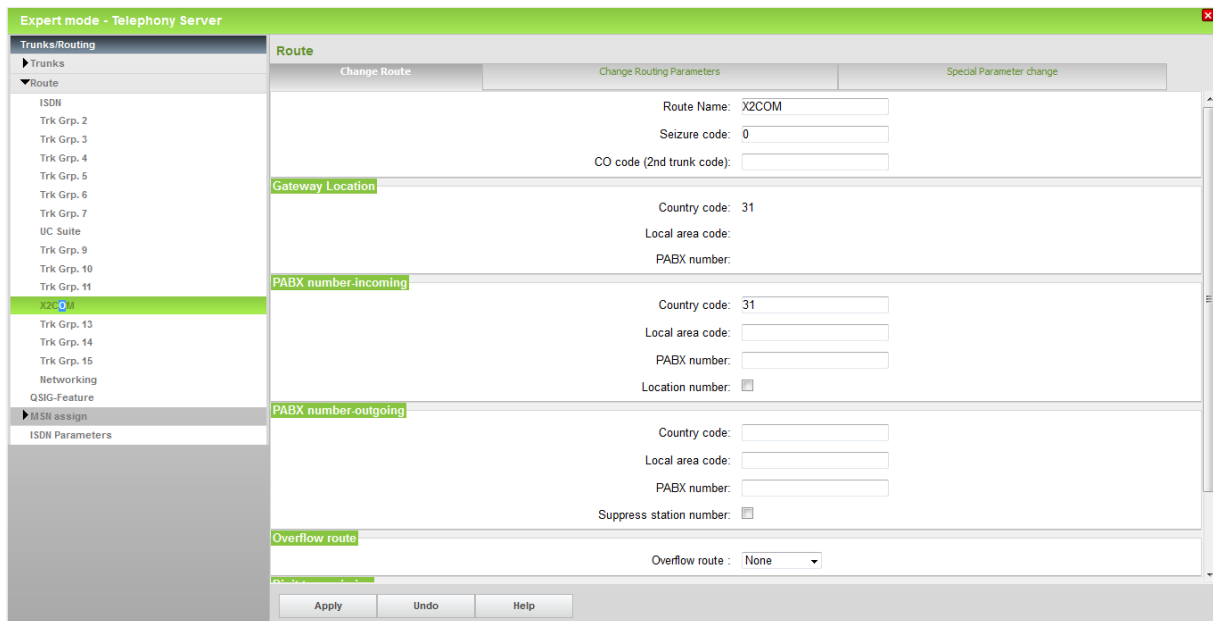


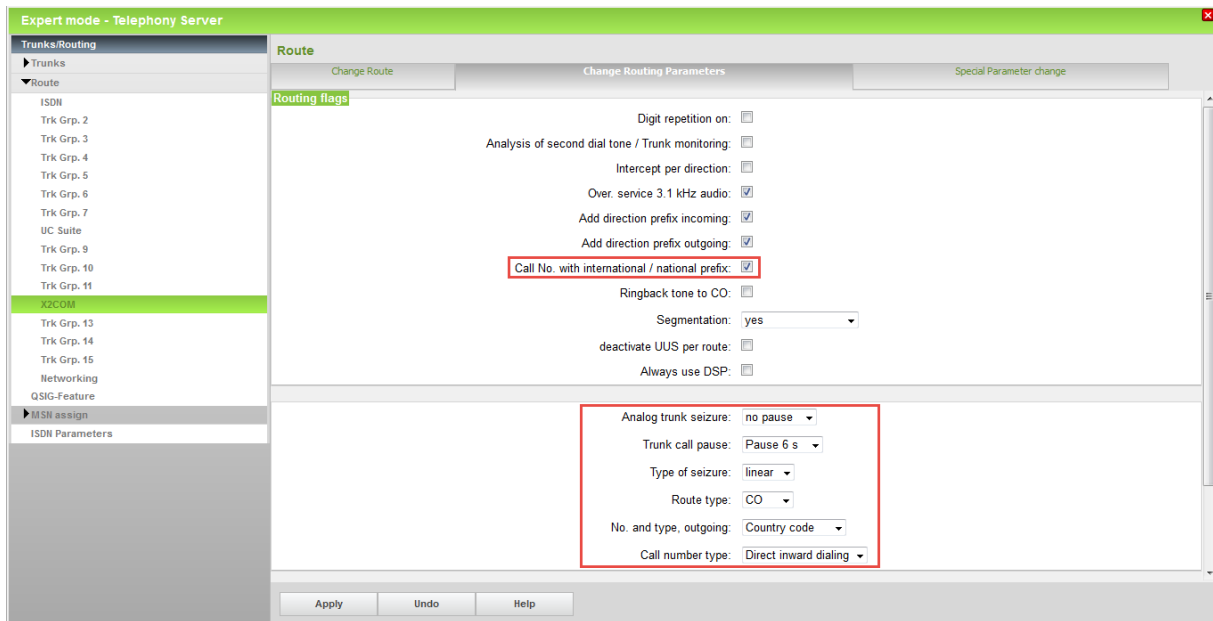
Extended SIP parameters have been checked within the certification procedure. There is no need for any modification unless the provider (in this example x2com) changes any parameters in his SIP Stack. So these parameters are for information only.





In Expert mode – Telephony Server – Trunks/Routing





Troubleshooting/Maintenance

Status from ITSP perspective

After successful registration, X2COM provides some information on their Internet portal.

Ingelogd

| Contact | Call ID | User Agent | Last Modified | Verlooptijd | Flags | CFlags | Cseq |
|---------------------------------|------------------|---|---------------------|---------------------|-------|--------|------|
| sp:31737200970@192.168.5.2:5060 | b0c8ccbc96cd354e | OpenScape Business MST SIP Stack/4.2... | 2016-04-06 09:06:55 | 2016-04-06 09:16:55 | NoDB | NAT | 919 |
| sp:31737200970@192.168.5.2:5060 | b0c8ccbc96cd354e | OpenScape Business MST SIP Stack/4.2... | 2016-04-06 09:06:55 | 2016-04-06 09:16:55 | NoDB | NAT | 919 |

Status OpenScape Business

In the service center there are some informations to check the status of the provider.

Home Administrators Setup Expert mode Data Backup License Management **Service Center**

- Service Center
- Documents
- Software
- Inventory
- SW Update
- E-mail Forwarding
- Remote Access
- Restart / Reload
- Diagnostics
 - Status
 - Event Viewer
 - Trace
 - Service Log

The Event Viewer shows important information about the ITSP.

Service Center - Diagnostics - Event Viewer

Display Load via HTTP Delete Event Viewer Log

Events

06 Apr 2016 08:17:59:18 SIP :2:
registration status: unregistered, SIP provider X2COM,
SIP user name 31737200970, SIP binding 192.168.5.2:5060

06 Apr 2016 08:18:11:46 SIP :2:
registration status: registered, SIP provider X2COM,
SIP user name 31737200970, SIP binding 192.168.5.2:5060

auto refresh

Seconds until next automatic refresh: 7

Help Abort Back Finish Clear Display Refresh

“Status” provides information about the registration status of the ITSP. The ITSP registration can also be restarted here.

Service Center - Diagnostics - Status

| Station Status | | Dialup Network Status | ITSP Status | VPN Status | Overview of IP Addresses | BLF Status | |
|----------------|----------|---------------------------------|------------------------------|-------------------|--------------------------|----------------------|----------|
| Callno | Name | Device Type | IP Address | MAC Address | Current SW Version | HW Version | Status |
| 100 | TDM 100 | optiPoint 500 Basic | - | - | VM.PR2.02 | - | Disabled |
| 101 | - | OpenStage 40 | - | - | - | - | Disabled |
| 102 | - | optiPoint 500 Standard | - | - | P20 | - | Disabled |
| 103 | - | - | - | - | - | - | Disabled |
| 104 | - | - | - | - | - | - | Disabled |
| 105 | - | optiPoint 500 Standard | - | - | P20 | - | Disabled |
| 106 | - | Basestation | - | - | - | - | Disabled |
| 107 | - | Basestation | - | - | P20 | - | Disabled |
| 150 | - | analog | - | - | - | - | Enabled |
| 151 | FAX 151 | analog | - | - | - | - | Enabled |
| 152 | - | analog | - | - | - | - | Enabled |
| 153 | - | analog | - | - | - | - | Enabled |
| **131 | OS60 131 | OpenStage 60/80 | 192.168.5.70 | 00:1a:e8:58:3f:f9 | V3R0 28.0 HFA C01 | - | Enabled |
| 132 | - | OpenStage 80 | 192.168.5.50 | 00:1a:e8:03:02:99 | V3R0 28.0 HFA C01 | - | Enabled |
| 133 | OS15 133 | OpenStage 15 | - | - | - | 387S41D0-0 | Enabled |
| 134 | DP35 132 | OpenScape Desk Phone IP 35G Eco | 192.168.5.68 | 00:1a:e8:74:f1:1a | V3R0 25.0 HFA C01 | S30817-S7710-A307-06 | Enabled |
| 135 | OS60 135 | OpenStage 60/80 | 192.168.5.57 | 00:1a:e8:4f:8a:ea | V3 R0 28.0 | 387S43B0-1 | Enabled |
| 136 | - | OpenStage 40 | - | - | - | 387S42B0-1 | Disabled |

Page 1 of 1 Items per page 10 25 50 100

Help

Service Center - Diagnostics - Status

| Station Status | Dialup Network Status | ITSP Status | VPN Status | Overview of IP Addresses | BLF Status |
|--------------------------|------------------------------|-------------|------------|--------------------------|------------|
| | Circuit UTC (Cloud) | Disabled | | | |
| | COLT UK & Europe | Disabled | | | |
| | COLT VPN | Disabled | | | |
| | Deanconnect B.V. | Disabled | | | |
| | Infopact | Disabled | | | |
| | Motto Communications | Disabled | | | |
| | oneCentral | Disabled | | | |
| | OneXS | Disabled | | | |
| | Priority Telecom | Disabled | | | |
| | RouteIT | Disabled | | | |
| | Skype Connect | Disabled | | | |
| | SpeakUp | Disabled | | | |
| | Tele2 NL-ASD | Disabled | | | |
| | Tele2 NL-RT | Disabled | | | |
| | T-Mobile (NL) | Disabled | | | |
| | Verizon | Disabled | | | |
| | Vodafone Anlagenanschluss R3 | Disabled | | | |
| | Vodafone NL | Disabled | | | |
| | Voiceworks | Disabled | | | |
| <input type="checkbox"/> | Restart | X2COM | Enabled | 31737200970 | registered |
| | Ziggo | Disabled | | | |

Help Abort Back Finish

Traces

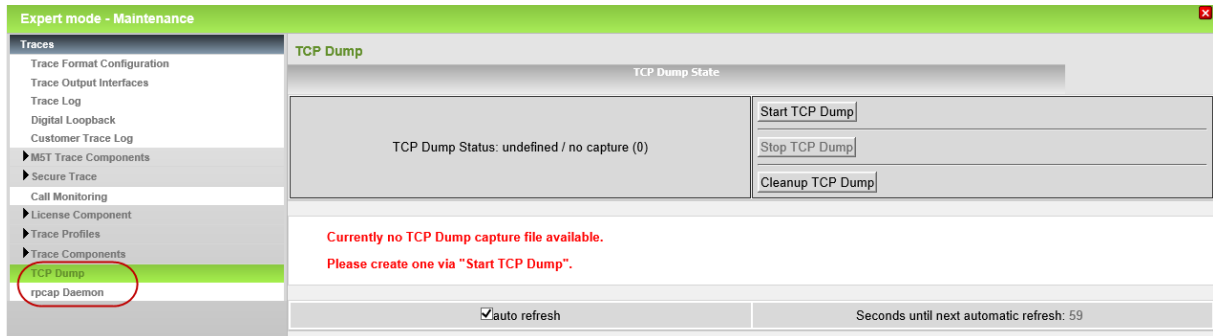
Wireshark traces

A Wireshark trace helps you to analyse SIP issues very easily. It is possible to start traces on the system which can be analysed via Wireshark.

Expert mode / maintenance / traces

TCP Dump: Create max. 5 files with PCAP which can be downloaded afterwards and opened in Wireshark.

Rpcap Daemon: Will start the rpcap daemon and open a server port which allows direct remote access from protocol analysers like Wireshark.



Internal traces

For a better analyses of problems internal system traces will be needed. Trace profiles are already pre-configured to make it easier to capture internal traces.

When issues with ITSP's occurs, the following trace profiles should be activated:

- Basic
- Voice_Fax_Connection
- SIP_Interconnection_Subscriber_ITSP

In case there are issues with the registration of an ITSP the following trace profile should also be activated.

- SIP_Registration

The screenshot shows the 'Expert mode - Maintenance' window with the 'Traces' section selected. The 'Trace Profile' configuration is displayed for 'SIP_Interconnection_Subscriber_ITSP'. The profile is read-only and has been started. A red warning message states: 'This trace profile has been started.' Below this, a table lists the trace components and their levels.

| Trace Component | Level |
|-------------------|-------|
| CAR | 6 |
| CNQ | 6 |
| ERH_SIP_ADMISSION | 3 |
| FP_DH-SIP | 9 |
| IPNC | 6 |
| IPSTACK_NAT | 9 |
| LLC_CALL | 6 |
| MSH | 6 |

After proceeding the test the traces can be downloaded via trace log.

The screenshot shows the 'Expert mode - Maintenance' window with the 'Trace Log' section selected. The 'Trace Log' configuration is displayed, showing options to load via HTTP and clear the trace log. The 'Own Selection' dropdown is highlighted with a red circle. The date range is set from '19 Feb 2016 10:15:00' to 'Now'.