

# OpenScape Business V2

## How to Configure SIP Trunk for HGC Hong Kong

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## Table of Contents

Information.....	4
Trunk Configuration Data provided by HGC.....	4
Configuration Wizard .....	5
Internet Configuration.....	5
Internet Telephony.....	7
DID configuration .....	14
Additional Configuration .....	15
License .....	15
Port management.....	15
Voice activity detection (VAD).....	16
Route configuration (optional).....	17
How to check the status of SIP connection with HGC.....	19
Known restrictions: .....	20

## Table of History

Date	Version	Changes
12.02.2018	0.1	First version
15.03.2018	0.2	Minor update

## Information

The HGC provider is available and released for the countries: Hong Kong.

## Trunk Configuration Data provided by HGC

The configuration data needed to setup the SIP trunk can be found on the HGC service order and SIP router acceptance form.

 <b>HGC</b> Hutchison Global Communications		Hutchison Global Communications Limited 9/F, Hutchison Telecom Tower 99 Cheung Fai Road, Tsing Yi, New Territories Hong Kong Tel: 2128 5452 Fax: 21231234	
<b><u>SIP Router Acceptance Form</u></b>			
Circuit No.	: _____ A / B / Z	Order No	: _____
Type of Job	: <input checked="" type="checkbox"/> New Installation <input type="checkbox"/> Re-configuration <input type="checkbox"/> Relocation		
Customer Name	: <u>Unify Limited</u>		
Contact Person	: _____	Installation Date	: _____
Installation Address	: _____		
(A / B / Z – End)	: _____		
Circuit Type	: <input checked="" type="checkbox"/> FTTO <input type="checkbox"/> : _____	Interface	: <input checked="" type="checkbox"/> Ethernet <input type="checkbox"/> : _____ *1
Switch	SIP from NP: _____	No. Range	: <u>3906 20xx (3 digits)</u>
<b><u>FTTO Circuit Specifications:</u></b>			
FTTO IP	: _____		
Subnet Mask	: _____		
Gateway	: _____		
		**SIP Proxy: <u>10.100.221.232:5061</u> *2	
<b><u>SIP Router Installed:</u></b>			
Brand	: <input checked="" type="checkbox"/> Huawei <input type="checkbox"/> _____	Router IP Address	: <u>192.168.29.159 / 24</u> *3
Model No.	: <input type="checkbox"/> AR161 <input type="checkbox"/> AR1220 <input type="checkbox"/> _____		
Serial No.	: _____		
✧ The equipment above shall remain Hutchison Global Communications Limited's property at all time and is used for provision of the above data services at customer premise.			
✧ The customer shall be liable to Hutchison Global Communications Limited for any loss or damage to the equipment above.			
<b><u>SIP test information:</u></b>			
Date	: _____	Return	: <input checked="" type="checkbox"/> 200 <input type="checkbox"/> _____
Time	: _____	Result	: <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL
Simulated IP PABX IP	: <u>192.168.29.158 / 24</u> *4		

## Configuration Wizard

### Internet Configuration

With reference to SIP trunk configuration data from ITSP, it is assigned with dedicated IP address (field #4 in SIP Router Acceptance Form) with default gateway that connecting to ITSP network router or switch.

It can be setup through Setup Wizards > “Network / Internet” > “Internet Configuration”

Setup - Wizards - Network / Internet - Internet Configuration

Internet Access

Automatic Address Configuration (via DHCP): ☐

IP Address: 192.168.29.158

Subnet Mask: 255.255.255.0

MAC Address : 00:1a:e8:5e:a6:23

Ethernet Link Mode: Auto

Max. Data Packet Size (bytes): 1500

Network Address Translation: ☒

Bandwidth Control for Voice Connections: None

Bandwidth for Downloads: 10000

Bandwidth for Uploads: 10000

Bandwidth Used for Voice/Fax (%): 80

IEEE802.1p/q Tagging: ☐

IEEE802.1p/q VLAN ID: 0

Help Abort Back OK & Next

Depending on system model, the IP address of WAN interface for OpenScape Business X8 system can be checked or modified in Expert mode > “Telephony Server” > “Network Interface”:

Expert mode - Telephony Server

Network Interfaces

- Mainboard
  - Host Name
  - LAN 1 (WAN)
  - LAN 2
  - LAN 3 (Admin)
  - FTP-Server
  - DHCP
- Application Board
  - Host Name
  - LAN 1
  - LAN 2

Mainboard LAN 1 (WAN)

Show LAN 1 Mode Edit LAN 1 Interface Edit ACD

Internet Service Provider Selection: LAN Connection Type TCP/IP

Internet access via an external Router: ☒

Automatic Address Configuration (via DHCP): ☐

IP Address: 192.168.29.158

Subnet Mask: 255.255.255.0

MAC Address : 00:1a:e8:5e:a6:23

Ethernet Link Mode: Auto

Max. Data Packet Size (bytes): 1500

Network Address Translation: ☒

Bandwidth Control for Voice Connections: None

Bandwidth for Downloads: 10000

Bandwidth for Uploads: 10000

Bandwidth Used for Voice/Fax (%): 80

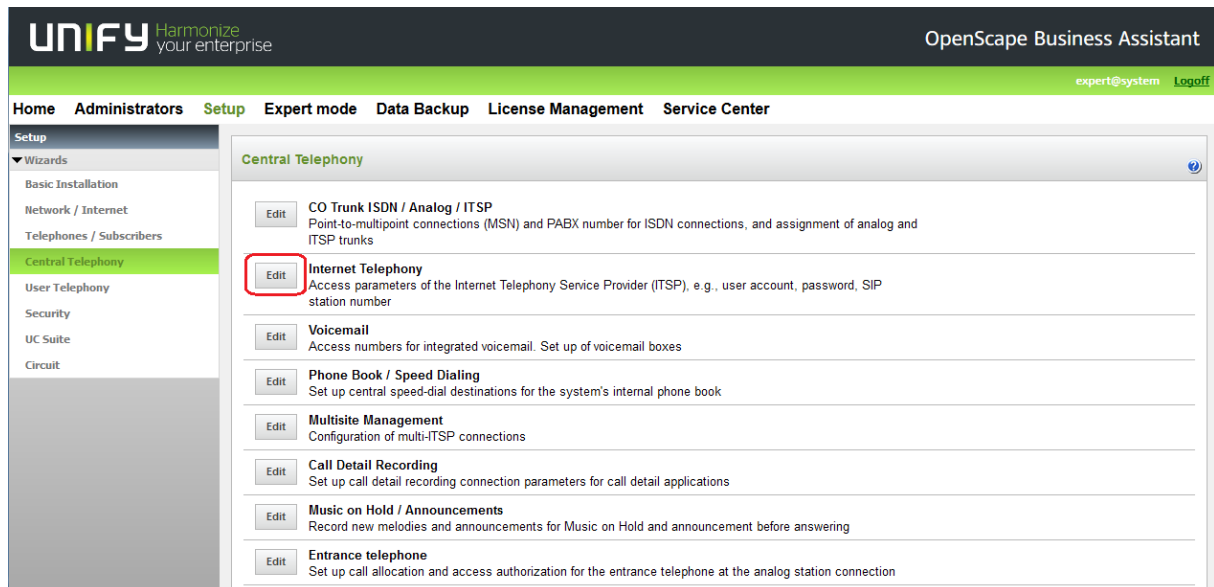
Apply Undo Help

The IP address of default gateway (field #3 in SIP Router Acceptance Form) can be reviewed in Expert mode > “Telephony Server” > “Routing”:

The screenshot displays the 'Expert mode - Telephony Server' configuration window. On the left is a navigation tree with the following items: 'Routing' (expanded), 'IP Routing', 'Mainboard' (expanded), 'Static Routes', 'Default Router' (highlighted in green), 'DNS Server', 'Application Board', 'NAT', and 'PSTN'. The main panel is titled 'Default Router' and contains an 'Edit Default Router' section. Within this section, there are two fields: 'Default Routing via:' with a dropdown menu set to 'LAN', and 'IP Address of Default Router:' with a text box containing '192.168.29.159'. This text box is highlighted with a red rectangle. At the bottom of the panel are three buttons: 'Apply', 'Undo', and 'Help'.

## Internet Telephony

Go to Setup Wizards > “Central Telephony” > “Internet Telephony”



The overview page appears for entering the location data.

Please enter country code (i.e. “852” for Hong Kong region) with optional local area code, which is depending on number of digits on ITSP incoming calls.

The number of digit length and range of DID number can be negotiated with HGC on application

The local area code will be combined with subscriber DID number as CLIP for outgoing call.

The screenshot shows the 'Setup - Wizards - Central Telephony - Internet Telephony' wizard. The title bar is green with a red close button. The main content area is titled 'Overview'. Below the title, there are two red notes: 'Note: changes done in expert mode must be reviewed/repeated after running through the wizard.' and 'Note: At least the configuration of the 'Country code' is needed for features such as 'Internet telephony' and 'MeetMe conference'. Below the notes, there is a section for 'PABX number' with three input fields: 'Country code: 001 852 (mandatory)', 'Local area code: 39062 (optional)', and 'PABX number: (optional)'. At the bottom, there are four buttons: 'Help', 'Abort', 'Back', and 'OK & Next'.

Click [OK & Next]

Provider configuration and activation for Internet Telephony -> uncheck “No call via Internet”, use “Country specific view” to select “All countries” and select “HGC” as “Activate Provider”.

Setup - Wizards - Central Telephony - Internet Telephony

Provider configuration and activation for Internet Telephony

No call via Internet: ☐

Country specific view: All countries

Note: changes done in expert mode must be reviewed/repeated after running through the wizard.

	Activate Provider	Internet Telephony Service Provider
Add		Other Provider
Edit	<input type="checkbox"/>	Broadcloud
Edit	<input type="checkbox"/>	COLT UK & Europe
Edit	<input type="checkbox"/>	COLT VPN
Edit	<input checked="" type="checkbox"/>	HGC
Edit	<input type="checkbox"/>	HKBN
Edit	<input type="checkbox"/>	Skype Connect

Help Abort Back OK & Next Display Status

Click on [Edit]

Setup - Wizards - Central Telephony - Internet Telephony

Internet Telephony Service Provider

Provider Name: HGC

Enable Provider: ☒

Secure Trunk: ☐

Domain Name: insert.domain.here

Transport protocol: udp

Provider Registrar

Use Registrar: ☐

IP Address / Host name:

Port: 5060

Reregistration Interval at Provider (sec) 600

Provider Proxy

IP Address / Host name: insert.ip.here

Port: 5061

Provider Outbound Proxy

Help Abort Back OK & Next Delete Data

With reference to trunk configuration data that provided by HGC to fill in “Domain Name” and “IP Address / Host name” of Provider Proxy. Please ensure that the port number of Provider Proxy must be set as 5061.



Setup - Wizards - Central Telephony - Internet Telephony

### Internet Telephony Service Provider

Provider Name: HGC

Enable Provider: ☒

Secure Trunk: ☐

Domain Name: 10.100.221.232

Transport protocol: udp

**Provider Registrar**

Use Registrar: ☐

IP Address / Host name:

Port: 5060

Reregistration Interval at Provider (sec) 600

**Provider Proxy**

IP Address / Host name: 10.100.221.232

Port: 5061

Help Abort Back OK & Next Delete Data

Enter the data (field #2 in SIP Router Acceptance Form) with reference to ITSP SIP trunk information. Then click [OK & Next]

Setup - Wizards - Central Telephony - Internet Telephony

### Internet Telephony Stations for HGC

	Name of Internet Telephony Station
Add	New Internet Telephony Station

Click on [Add] to create new Internet Telephony Station

Setup - Wizards - Central Telephony - Internet Telephony

### Internet Telephony Station for HGC

Internet telephony station: 39062000

Authorization name:

Password:

Confirm Password:

ITSP-multiple route: ☐

Default Number: 39062000

**Default Number**  
 ITSP as primary CO access  
 Enter one of the call numbers supplied by your network provider here. This will be used in outgoing calls as the calling party number in case no other number is available for the respective call.  
 All call numbers supplied by your network provider are to be entered within the trunk and telephones configuration (DID field) primary CO access.

Help Abort Back OK & Next Delete Data

Enter the data of "Internet telephony station" and "Default Number" with reference to prime number of SIP trunk (field #1 in SIP Router Acceptance Form) and then click [OK & Next].

Setup - Wizards - Central Telephony - Internet Telephony

### Internet Telephony Stations for HGC

	Name of Internet Telephony Station
Edit	39062000

Help Abort Back OK & Next

Click [OK & Next]

Setup - Wizards - Central Telephony - Internet Telephony

### Call Number Assignment for HGC

Name of Internet Telephony Station	Internet Telephony Phone Number	Direct inward dialing	Use as PABX number for outgoing calls
<p>In order to complete the configuration please verify that the relevant user DIDs are set in stations.(Telephones / Subscribers configuration)</p>			

Help Abort Back OK & Next

Click [OK & Next]

Setup - Wizards - Central Telephony - Internet Telephony

### Provider configuration and activation for Internet Telephony

No call via Internet: ☐

Country specific view: All countries

Note: changes done in expert mode must be reviewed/repeated after running through the wizard.

	Activate Provider	Internet Telephony Service Provider
Add		Other Provider
Edit	<input type="checkbox"/>	Broadcloud
Edit	<input type="checkbox"/>	COLT UK & Europe
Edit	<input type="checkbox"/>	COLT VPN
Edit	<input checked="" type="checkbox"/>	HGC
Edit	<input type="checkbox"/>	HKBN
Edit	<input type="checkbox"/>	Skype Connect

Help Abort Back OK & Next Display Status

Click [Display Status] to verify SIP trunk for "HGC" is activated

Setup - Wizards - Central Telephony - Internet Telephony

### Status for the Internet Telephony Service Provider (ITSP)

	Provider	Enabled	User	
<span style="border: 2px solid green; padding: 2px;">Restart</span>	HGC	Enabled	39062000	registered

Help Abort Back OK Diagnose

Green color box means the ITSP provider is activated, click [OK] to return, then click [OK & Next] with no further input

Enter number of simultaneous Internet calls with reference to number of channels by ITSP SIP trunk and available license for SIP trunk in License Management, then click “Distribute Lines”.

**Settings for Internet Telephony**

**Simultaneous Internet Calls**  
 Available Lines for ITSP: 204  
 Under 'Setup - Wizards - Network / Internet - Internet Access', you have entered the value **Upstream up to (Kbps) = 10000**  
 In the 'Change Feature --> Internet Telephony' Assistant. This upstream allows you to conduct up to 60 Internet phone calls simultaneously. If the call quality deteriorates due to the network load, you will need to reduce this number of simultaneous calls.  
 The number of simultaneous Internet Calls also depends on the licensing.

Number of Simultaneous Internet Calls:  Distribute Lines

**Line assignment**

Internet Telephony Service Provider	Configured Lines	Assigned Lines
HGC	2	<input type="text" value="2"/>

Help Abort Back OK & Next

Click [OK & Next]

**Special phone numbers**

Note:  
 Please make sure that all special call numbers are supported by the selected provider without fail.

Special phone number	Dialed digits	Dial over Provider
1	9C999	HGC ▼
2	<input type="text"/>	HGC ▼
3	<input type="text"/>	HGC ▼
4	<input type="text"/>	HGC ▼
5	<input type="text"/>	HGC ▼
6	<input type="text"/>	HGC ▼

Help Abort Back OK & Next

Enter special phone numbers; such as emergency telephone number (e.g. “999”), leading with access code for SIP trunk (e.g. “9”), then click [OK & Next] and [Next] with no further input.

Remarks:

- It is strongly recommended to select TDM trunk for emergency call out if available.
- Dial plan can be modified on LCR in Expert mode afterwards

Setup - Wizards - Central Telephony - Internet Telephony

### Exchange Line Seizure

Exchange Line Seizure

Trunk Access Code 4111

Dial over Provider HGC ▼

Help Abort Back OK & Next

Click [OK & Next] with no further input (“Trunk Access Code” was assigned on Setup Wizards)

Setup - Wizards - Central Telephony - Internet Telephony

### Seizure Code for the 'Outside line Seizure'

Seizure code for 'Outside line Seizure'

HGC 9

Help Abort Back OK & Next

Click [OK & Next] with no further input (Seizure code for “Outside line Seizure” was assigned on Setup Wizards)

Setup - Wizards - Central Telephony - Internet Telephony

### The changes for the feature 'Internet Telephony' are completed

The Internet Telephony is switched on and configured.  
Once an "Internet Telephony Service Provider" has been activated/deactivated, it is necessary to run through the "Central Telephony - CO Trunk ISDN / Analog" wizard again.

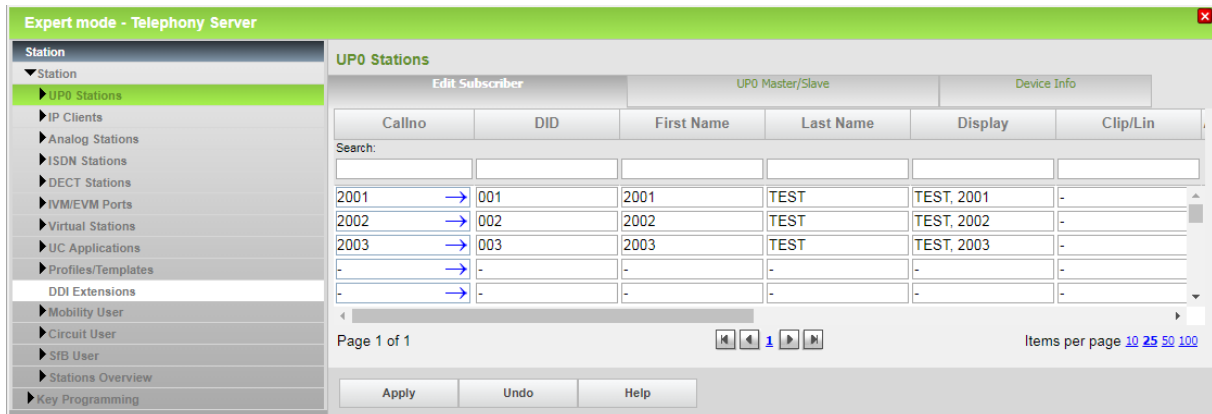
For your own security, you should save the configuration data. To do this, upon completion of the wizard, choose 'Backup' in the main menu, and follow this by choosing 'Backup Immediately'.

Help Abort Back Finish

Click [Finish] to complete setup wizard

## DID configuration

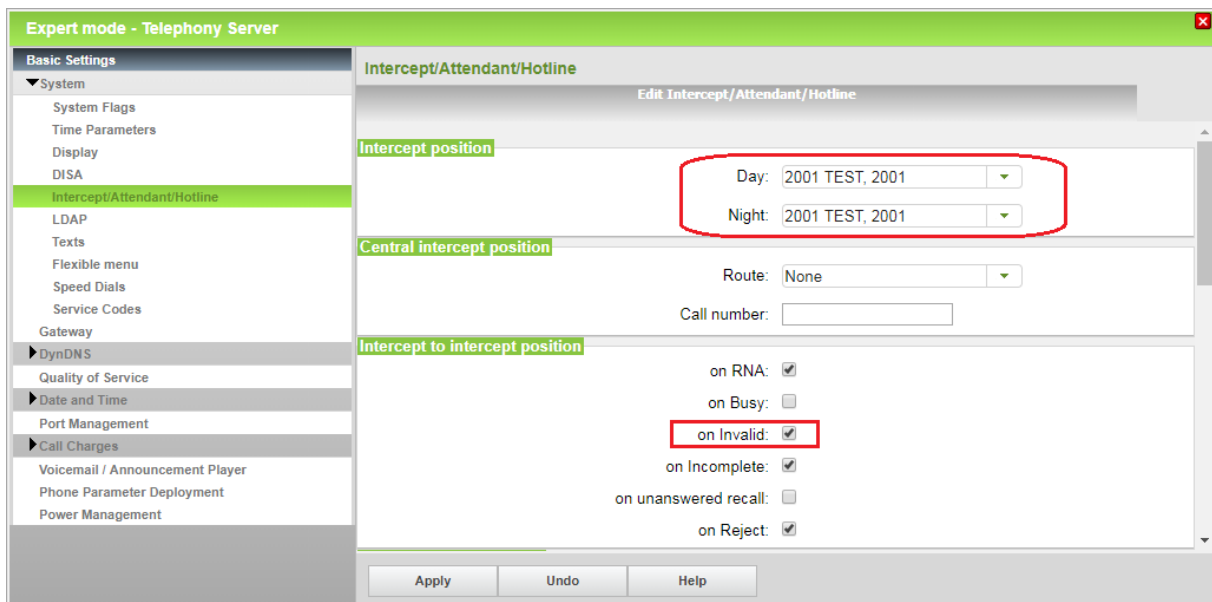
The DID number range should be reference to ITSP SIP trunk information. It may assign “Callno” and “DID” with same number for easy management.



Callno	DID	First Name	Last Name	Display	Clip/Lin
2001	001	2001	TEST	TEST, 2001	-
2002	002	2002	TEST	TEST, 2002	-
2003	003	2003	TEST	TEST, 2003	-
-	-	-	-	-	-
-	-	-	-	-	-

The Local area code (which is set on “Internet Telephony” setup wizard) will be used to combine with “DID” number as caller display on outbound call. It is possible to change CLIP for station subscriber individually as request.

Station can be set and activated as intercept position for those spare (i.e. not in use) DID number as need.



Intercept position

Day: 2001 TEST, 2001

Night: 2001 TEST, 2001

Central intercept position

Route: None

Call number:

Intercept to intercept position

on RNA: ☒

on Busy: ☐

on Invalid: ☒

on Incomplete: ☒

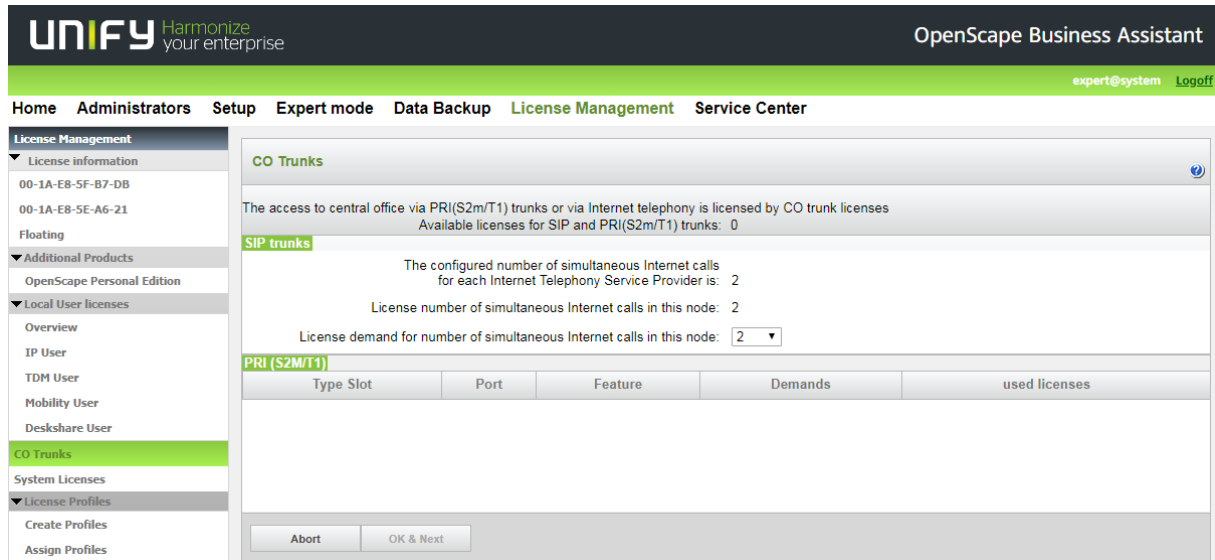
on unanswered recall: ☐

on Reject: ☒

## Additional Configuration

### License

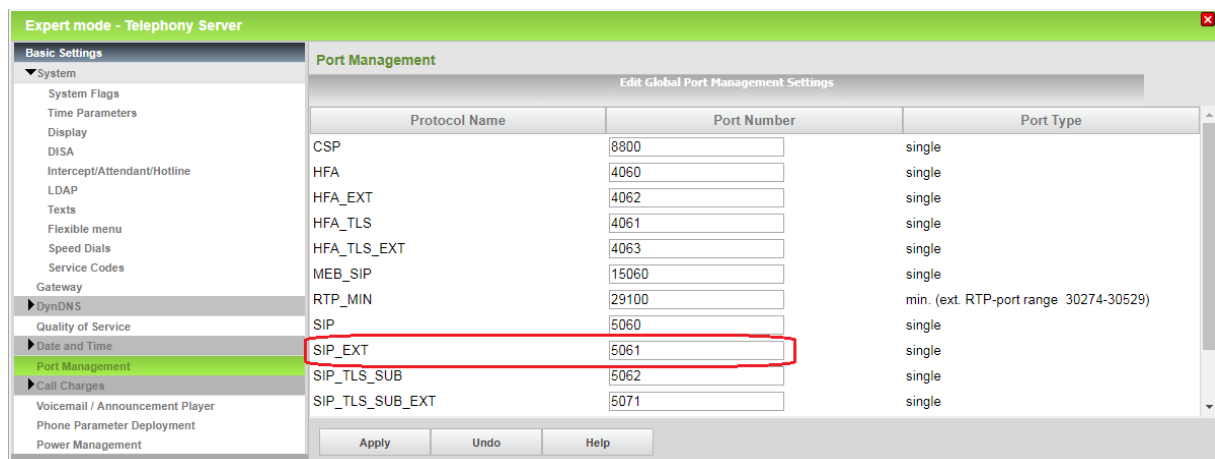
Add the “S2M/SIP Trunk” license to the SIP-Trunk



### Port management

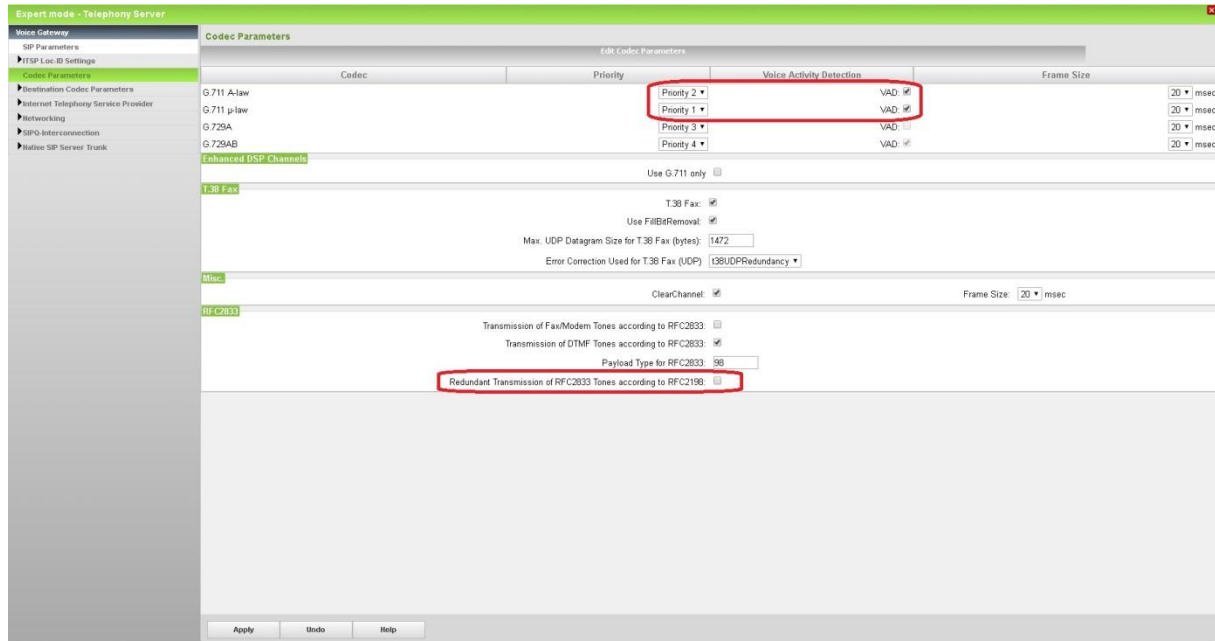
According to ITSP requirement, it has to assign **port 5061** for SIP signaling.

Go through Expert Mode – Telephony Server – Basic Settings – Port Management and set SIP\_EXT to 5061. Please consider that a restart of system is required after applying this adjustment.

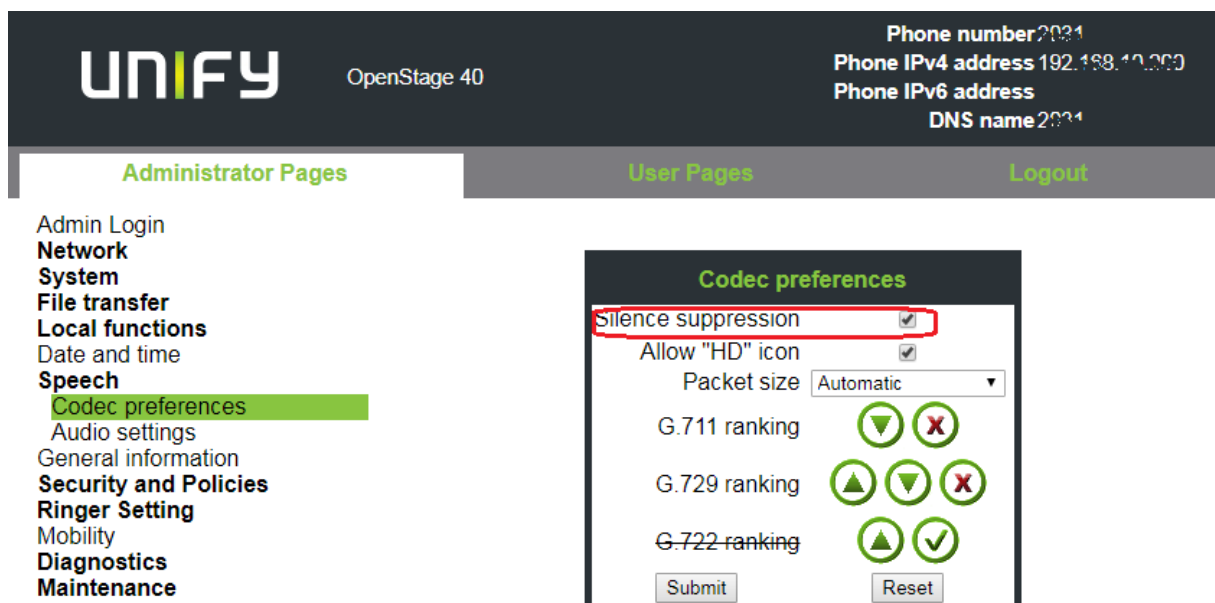


## Voice activity detection (VAD)

According to ITSP requirement, voice activity detection (VAD) must be activated for G711 codecs.  
In addition Redundant Transmission for RFC2833 must be disabled.



Moreover, silence suppression for all IP phones (HFA & SIP) must be activated.





## Route configuration (optional)

There are some dial strings are generated automatically in Dial Plan after setup wizard. With reference to numbering plan for telecommunications services in Hong Kong, please update dial plan setting as need.

Expert mode - Telephony Server

LCR

LCR Flags

Classes Of Service

Dial Plan

Routing table

Dial rule

Multisite

Dial Plan

Change Dial Plan

Display Dial Plan

Dial Plan	Name	Dialed digits	Routing Table	Acc. code	Classes of service	Emergency
1	Emergency call	9C999	4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16	Service call	9C185XX	4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17			4 ▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Page 1 of 10

Apply

Undo

Help

It may assign different routing table on designated dialed digits that assign different Class of Service (COS) as toll control.

Expert mode - Telephony Server

LCR

LCR Flags

Classes Of Service

Dial Plan

Routing table

Dial rule

Multisite

Dial Plan

Change Dial Plan

Display Dial Plan

Dial Plan	Name	Dialed digits	Routing Table	Acc. code	Classes of service	Emergency
28	Local	9C92XXXXXX	4 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
29	Local	9C93XXXXXX	4 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
30	Local	9C94XXXXXX	4 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
31	Local	9C95XXXXXX	4 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
32	Local	9C96XXXXXX	4 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
33	Local	9C97XXXXXX	4 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
34	Local	9C98XXXXXX	4 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
35		-	▼ →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
36	Appl-Suite	-099	12 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
37	Ann-Player		12 ▼	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
38	IP-Network	-Z	13 ▼	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
39			- ▼	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
40			- ▼	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
41	Toll-Call	9C00Z	6 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
42	Toll-Call	9C17Z	6 ▼	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
43			- ▼	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Page 1 of 10

Apply

Undo

Help

Expert mode - Telephony Server

LCR

- LCR Flags
- Classes Of Service
- Dial Plan
- Routing table
  - 1 - Table
  - 2 - Table
  - 3 - Table
  - 4 - Table
  - 5 - Table
  - 6 - Table
  - 7 - Table
  - 8 - Table
  - 9 - Table
  - 10 - Table
  - 11 - Table
  - 12 - Table
  - 13 - Table
  - 14 - Table
  - 15 - Table
  - 16 - Table
  - 17 - Table
  - 18 - Table

Routing Table

Change Routing Table

en-bloc sending

Routing Table: 4

Index	Dedicated Route	Route	Dial Rule	min. COS	Warning	Dedicated Gateway	GW Node ID
1	<input type="checkbox"/>	HGC	SIP	15	None	No	
2	<input type="checkbox"/>	None	None	15	None	No	
3	<input type="checkbox"/>	None	None	15	None	No	
4	<input type="checkbox"/>	None	None	15	None	No	
5	<input type="checkbox"/>	None	None	15	None	No	
6	<input type="checkbox"/>	None	None	15	None	No	
7	<input type="checkbox"/>	None	None	15	None	No	
8	<input type="checkbox"/>	None	None	15	None	No	
9	<input type="checkbox"/>	None	None	15	None	No	
10	<input type="checkbox"/>	None	None	15	None	No	

Apply Undo Help

Expert mode - Telephony Server

LCR

- LCR Flags
- Classes Of Service
- Dial Plan
- Routing table
  - Dial rule
  - Multisite

Dial Rule

Change Dial Rule

	Rule Name	Dial rule format	Network access	Type
1	CO	A	Main network supplie	Unknown
2	SIP	A	Main network supplie	Unknown
3	SIP local	HE2A	Main network supplie	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	E4A	Main network supplie	Unknown
9	Add_cc_to_Canoni	D852E2A	Main network supplie	Country code
10	National_to_Cano	D852E3A	Main network supplie	Country code
11	Internat_to_Can	E3A	Main network supplie	Country code
12	SIP local_Canoni	HE2A	Main network supplie	Country code
13			Unknown	Unknown

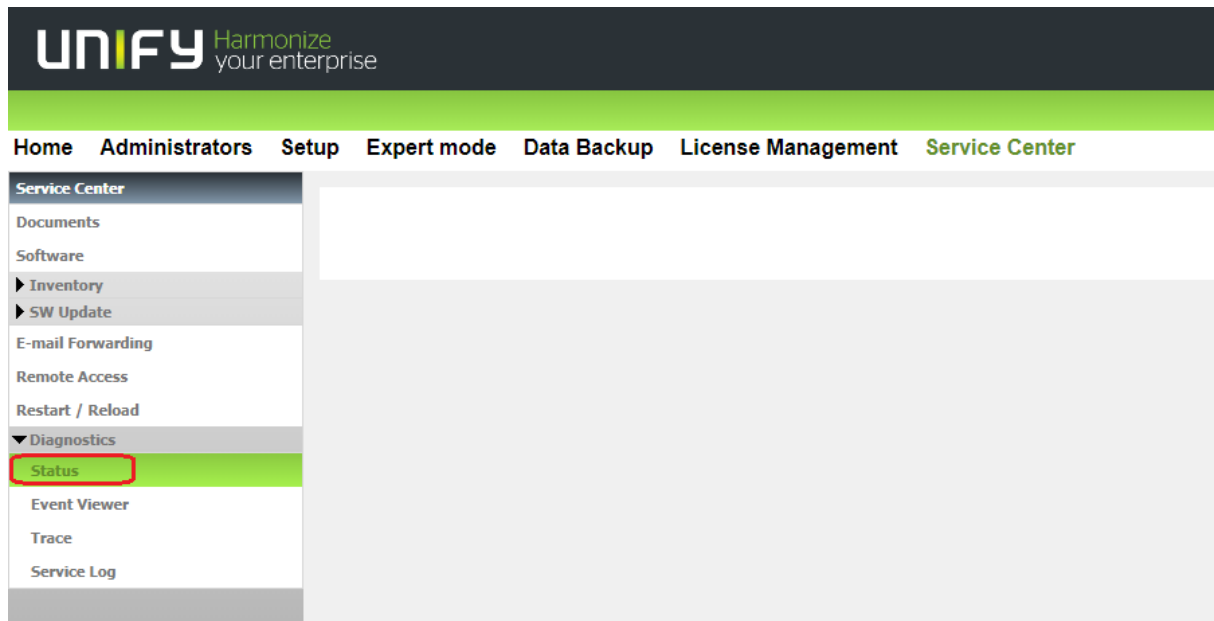
Page 1 of 11

Items per page 10 25 50 100

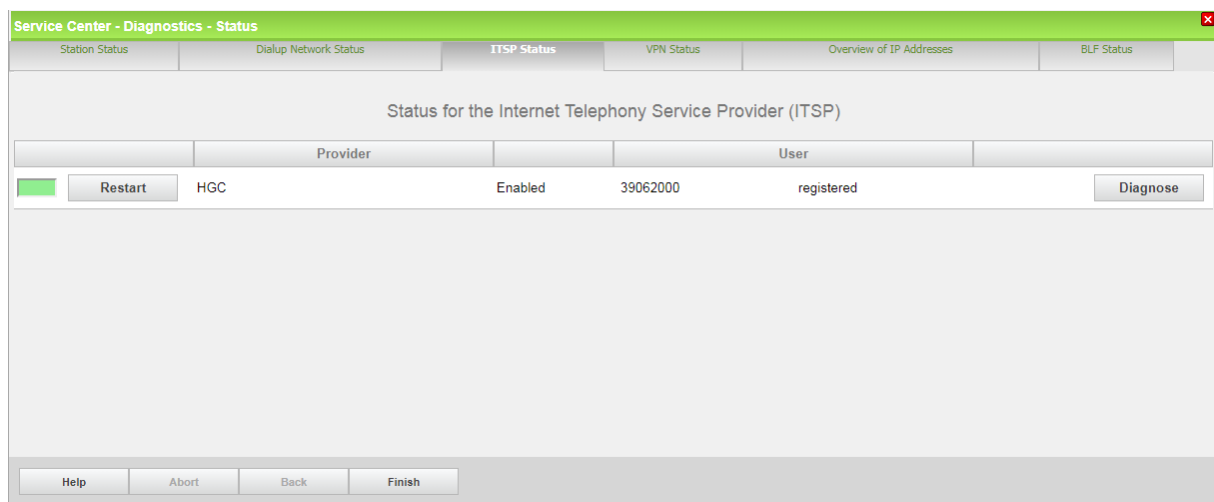
Apply Undo Help

## How to check the status of SIP connection with HGC

It is supported to check with Service Center > “Diagnostics” > “Status” for ITSP registration status or restart as need.



Select “ITSP Status” tag to check status of SIP trunk, green color means in ready state.



### **Known restrictions:**

- “CLIR” is not supported by ITSP; user may dial with prefix “133” to mask caller display instead
- “CLIP no screening” is not supported by ITSP
- “COLP” is not supported by ITSP