

OpenScape Business V2

How to Configure SIP Trunk for Hong Kong Broadband Network (HKBN)

Table of Contents

Information.....	4
Trunk Configuration Data provided by HKBN.....	4
Configuration Setup Wizard	6
Internet Telephony.....	6
Additional Configuration	14
License	14
Route configuration (optional).....	14
LCR changes (optional)	16
How to check the status of SIP connection with HKBN.....	18
Known restrictions:	19
Appendix.....	20

Table of History


Date	Version	Changes
02.05.2017	0.1	First version
26.06.2017	0.2	Optimize document by deleting useless parts

Information

Trunk Configuration Data provided by HKBN

The configuration data needed to setup the SIP trunk can be found on the HKBN sales order and installation order form.


Setting



香港寬頻
HONG KONG
BROADBAND NETWORK

Business Line Installation Order Form

VOICE
Order type: NEW(WIRING)
Job#: 022510
Tech(IP) type: GPON-Huawei(FIXED IP)
Location: 1/F
IP/Port: 7070
ADDR: 7070 1/F 7070 000000

Company Information						
Company Name: 37046900T-STRUNK(1)						
Account No.: 37046900T		Building Code: 37046900T				
Contact Person: 37046900T		Contact Tel.: 37046900T				
Installation Address: FLOOR 8, 37046900T, NO. 3 LAM LEE STR, CHOWA CONVENTION						
Wiring/Socket Installation Information						
Appointment Date: 2017/03/08		Target Time:				
1st Appointment Date:		Handled by: 37046900T				
Follow-Up Date:		Handled by: 37046900T				
Finish Date:		Handled by:				
Remarks: SETTING (SIP TRUNK*8CHANNEL)						
Installation Equipment	Serial Number	List Price	Quantity			
IAD	RB200 10017000	10017000	1			
3 COM Switch	ONT 485740000000	48574000	1			
				 <small>SN: 48575400000000000000</small>		
Customer Installation Information						
Ref No	Testing /Permanent	DN Number	Switch Port No.	Floor of IP Box	IP Box Port No.	IAD IP address
37046900T-STRUNK(1)	Permanent	37046900				

Information from ITSP – HKBN provider:

Name of customer related data	Example	Used in field of OSBiz – WBM	Needed to be configured
Call number	37046900 ~ 999		
Number of DIDs	100 (i.e. 900 ~ 999) ^{*1}	DID for subscriber	Yes
IP address / subnet mask, default router / gateway	192.168.0.101 / 24 192.168.0.1	Internet Configuration	Yes
SIP Domain	ippbx.hkbn.net	ITSP Domain Name	Yes
Proxy	10.15.224.199	ITSP Provider Proxy	Yes
Prime number	37046900	Internet telephone station / Default number	Yes
Number of SIP channels	8	Assigned Lines	2 ^{*2}

Remarks:

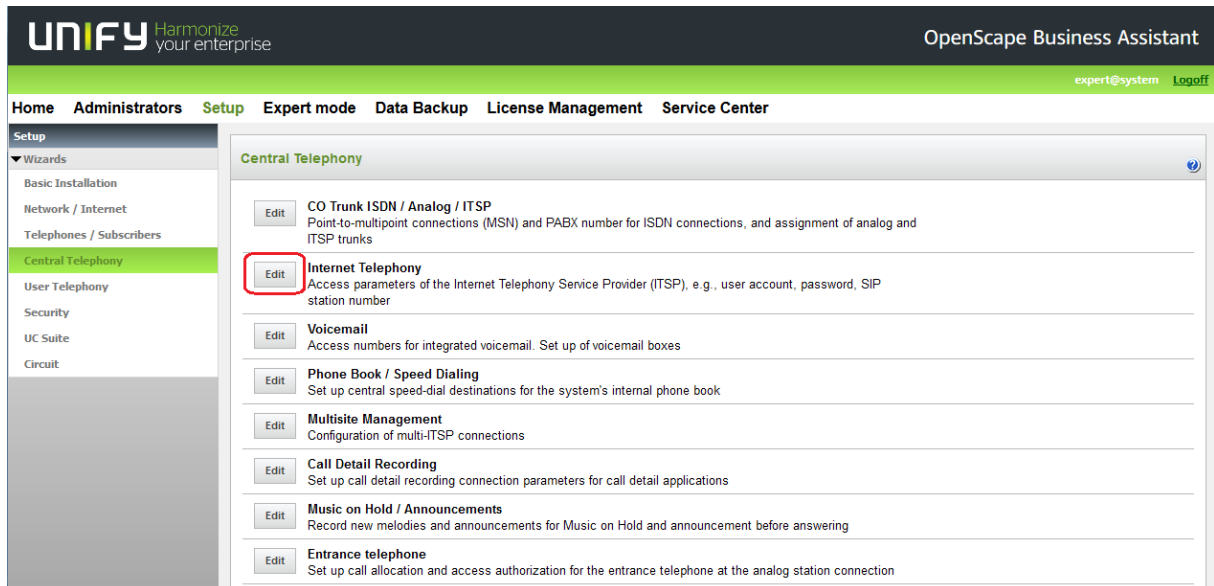
^{*1} The digit length and range of DID number can be negotiated with ITSP (i.e. HKBN) on application

^{*2} The number of “Assigned Lines” are limited by “Number of SIP channels” provided by ITSP and “Available licenses for SIP trunk” in License Management

Configuration Setup Wizard

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

The screenshot shows the 'Overview' page of the 'Setup - Wizards - Central Telephony - Internet Telephony' wizard. It features a green header bar with the title and a close button. Below the header, 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'. The main section is titled 'PABX number' and contains three input fields: 'Country code: 001 852 (mandatory)', 'Local area code: 37046 (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 “County specific view” to select “All countries” and select “HKBN” 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"/>	COLT UK & Europe
Edit	<input type="checkbox"/>	COLT VPN
Edit	<input checked="" type="checkbox"/>	HKBN
Edit	<input type="checkbox"/>	Skype Connect
Edit	<input type="checkbox"/>	Verizon
Edit	<input type="checkbox"/>	Vodafone Anlagenanschluss R3

Help Abort Back OK & Next Display Status

Click on [Edit]

Setup - Wizards - Central Telephony - Internet Telephony

Internet Telephony Service Provider

Provider Name: HKBN

Enable Provider: ☒

Secure Trunk: ☐

Domain Name: jppbx.hkbn.net

Provider Registrar

Use Registrar: ☐

IP Address / Host name:

Port: 5060

Reregistration Interval at Provider (sec): 600

Provider Proxy

IP Address / Host name: 10.15.224.199

Port: 5060

Provider Outbound Proxy

Use Outbound Proxy: ☐

IP Address / Host name: 0.0.0.0

Help Abort Back OK & Next Delete Data

Enter the data with reference to ITSP SIP trunk information, and then click [OK & Next]

	Name of Internet Telephony Station	New Internet Telephony Station
Add		

Click on [Add] to create new Internet Telephony Station

Internet telephony station: 37046900

Authorization name:

Password:

Confirm Password:

Call number assignment

Use public number (DID)

If using 'configurable clip' you have to change the configuration to 'Use public number (DID)' here!
Changing trunk parameters in case of internal subscriber no. is not allowed!

Default Number: 37046900

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 in general and then click [OK & Next].

Setup - Wizards - Central Telephony - Internet Telephony

Internet Telephony Stations for HKBN

	Name of Internet Telephony Station
Edit	37046900

Help Abort Back OK & Next

Click [OK & Next]

Setup - Wizards - Central Telephony - Internet Telephony

Call Number Assignment for HKBN

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:

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"/>	COLT UK & Europe
Edit	<input type="checkbox"/>	COLT VPN
Edit	<input checked="" type="checkbox"/>	HKBN
Edit	<input type="checkbox"/>	Skype Connect
Edit	<input type="checkbox"/>	Verizon
Edit	<input type="checkbox"/>	Vodafone Anlagenanschluss R3

Help Abort Back OK & Next Display Status

Click [Display Status] to verify SIP trunk for “HKBN” is activated

Setup - Wizards - Central Telephony - Internet Telephony

Status for the Internet Telephony Service Provider (ITSP)

	Provider	Enabled	User	
<input checked="" type="checkbox"/> Restart	HKBN	Enabled	37046900	registered Diagnose

Help Abort Back OK

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
HKBN	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	<input type="text" value="7C999"/>	<input type="text" value="HKBN"/>
2	<input type="text"/>	<input type="text" value="HKBN"/>
3	<input type="text"/>	<input type="text" value="HKBN"/>
4	<input type="text"/>	<input type="text" value="HKBN"/>
5	<input type="text"/>	<input type="text" value="HKBN"/>
6	<input type="text"/>	<input type="text" value="HKBN"/>

Help Abort Back OK & Next

Enter special phone number; such as emergency telephone number (e.g. “999”), leading with access code for SIP trunk (e.g. “7”), 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 4900

Dial over Provider HKBN

Help Abort Back OK & Next

In this example, default Trunk Access Code was set to “4900”.

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'	
HKBN	7

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	Active
921	921	921	Digital	Digital, 921	-	
922	922	922	Digital	Digital, 922	-	
923	923	923	Digital	Digital, 923	-	
-	-	-	-	-	-	
-	-	-	-	-	-	

Hint 1: 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.

Hint 2: It is possible to change CLIP for station subscriber individually as request.

Additional Configuration

License

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

The screenshot shows the 'License Management' section of the OpenScape Business Assistant. The left sidebar lists various license categories, with 'CO Trunks' highlighted. The main panel displays 'CO Trunks' information, including a note about access to central office via PRI(S2m/T1) trunks. Below this, the 'SIP trunks' section shows configuration details for simultaneous Internet calls. A table for 'PRI (S2M/T1)' is also visible, with columns for Type, Slot, Port, Feature, Demands, and used licenses. The interface includes navigation tabs at the top and a sidebar on the left.

Route configuration (optional)

The route configuration will be generated automatically after setup wizard. It may change the seizure code as need.

The screenshot shows the 'Expert mode - Telephony Server' window, specifically the 'Route' configuration section. The left sidebar lists various route groups, with 'Trk Grp. 7' highlighted. The main panel displays configuration fields for 'Route Name', 'Seizure code', and 'CO code (2nd trunk code)'. Below these, the 'Gateway Location' section shows fields for 'Country code', 'Local area code', and 'PABX number'. The 'PABX number-incoming' and 'PABX number-outgoing' sections also have similar fields. The interface includes a sidebar on the left and a bottom bar with 'Apply', 'Undo', and 'Help' buttons.

In general, there is nothing change for routing parameter or special parameter

Expert mode - Telephony Server

Trunks/Routing

- Trunks
- Route
- ISDN
 - Trk Grp. 2
 - Trk Grp. 3
 - Trk Grp. 4
 - Trk Grp. 5
 - Trk Grp. 6
 - Trk Grp. 7
 - UC Suite
 - Trk Grp. 9
 - Trk Grp. 10
 - Trk Grp. 11
- HKBN
 - Trk Grp. 13
 - Trk Grp. 14
 - Trk Grp. 15
 - Networking
 - QSIG-Feature
- MSN assign
- ISDN Parameters

Route

Change Route | Change Routing Parameters | Special Parameter change

Name in CO: ☐

Segmentation: yes

deactivate UUS per route: ☐

Always use DSP: ☐

Analog trunk seizure: no pause

Trunk call pause: Pause 6 s

Type of seizure: linear

Route type: CO

No. and type, outgoing: Local area code

Call number type: Direct inward dialing

Rerouting

Change route allowed: ☐

Route optimize active: No

Apply | Undo | Help

Expert mode - Telephony Server

Trunks/Routing

- Trunks
- Route
- ISDN
 - Trk Grp. 2
 - Trk Grp. 3
 - Trk Grp. 4
 - Trk Grp. 5
 - Trk Grp. 6
 - Trk Grp. 7
 - UC Suite
 - Trk Grp. 9
 - Trk Grp. 10
 - Trk Grp. 11
- HKBN
 - Trk Grp. 13
 - Trk Grp. 14
 - Trk Grp. 15
 - Networking
 - QSIG-Feature
- MSN assign
- ISDN Parameters

Route

Change Route | Change Routing Parameters | Special Parameter change

Numbering plan

Called Party Number: System check

All others: System check

Site: Always station

COLP: ☐

Notify send: ☒

without CLIP: ☐

No SETUP ACK.: ☐

no DIV.LEG-Info: ☐

With sending complete: ☐

Internal call like external: ☐

Without CCNR: ☐

Apply | Undo | Help

LCR changes (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	7C999	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15			2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16	Services	7C185XX	2 →	<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
36	Local	7C90XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
37	Local	7C91XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
38	Local	7C92XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
39	Local	7C93XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
40	Local	7C94XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
41	Local	7C95XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
42	Local	7C96XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
43	Local	7C97XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
44	Local	7C98XXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
45	Local	7C13XXXXXXXXXX	2 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
46	Toll	7C00Z	3 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
47	Toll	7C17Z	3 →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
48			- →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
49			- →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
50			- →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
51			- →	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Page 1 of 10

1

2

3

4

5

6

7

8

9

10

Items per page 10 25 50 100

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

19 - Table

20 - Table

21 - Table

Routing Table

Change Routing Table

en-bloc sending

Routing Table 2

Index	Dedicated Route	Route	Dial Rule	min. COS	Warning	Dedicated Gateway	GW Node ID
1	<input type="checkbox"/>	HKBN	HKBN_Local	10	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	
11	<input type="checkbox"/>	None	None	15	None	No	
12	<input type="checkbox"/>	None	None	15	None	No	
13	<input type="checkbox"/>	None	None	15	None	No	
14	<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 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	E4A	Main network supplier	Unknown
9	Add_cc_to_Canoni	D852E2A	Main network supplier	Country code
10	National_to_Cano	D852E3A	Main network supplier	Country code
11	Internat_to_Can	E3A	Main network supplier	Country code
12	SIP local_Canoni	HE2A	Main network supplier	Country code
13	HKBN_Local	A	Main network supplier	Unknown
14	HKBN_Toll	A	Main network supplier	Unknown
15			Unknown	Unknown
16			Unknown	Unknown

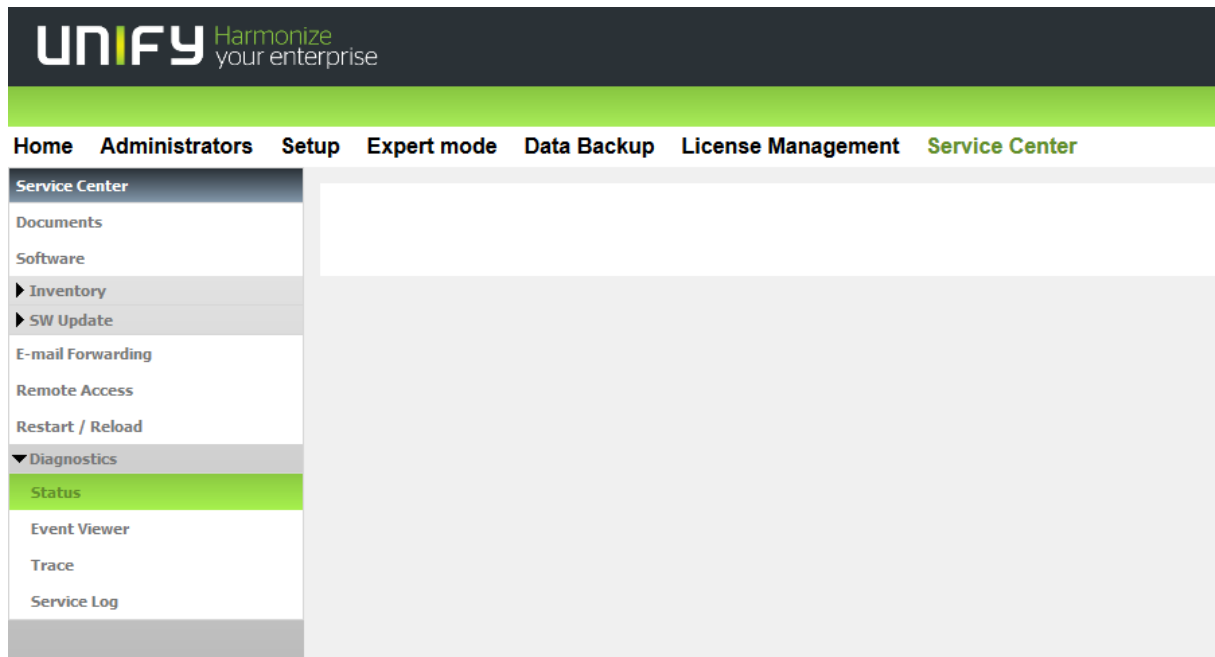
Page 1 of 11

Items per page 10 25 50 100

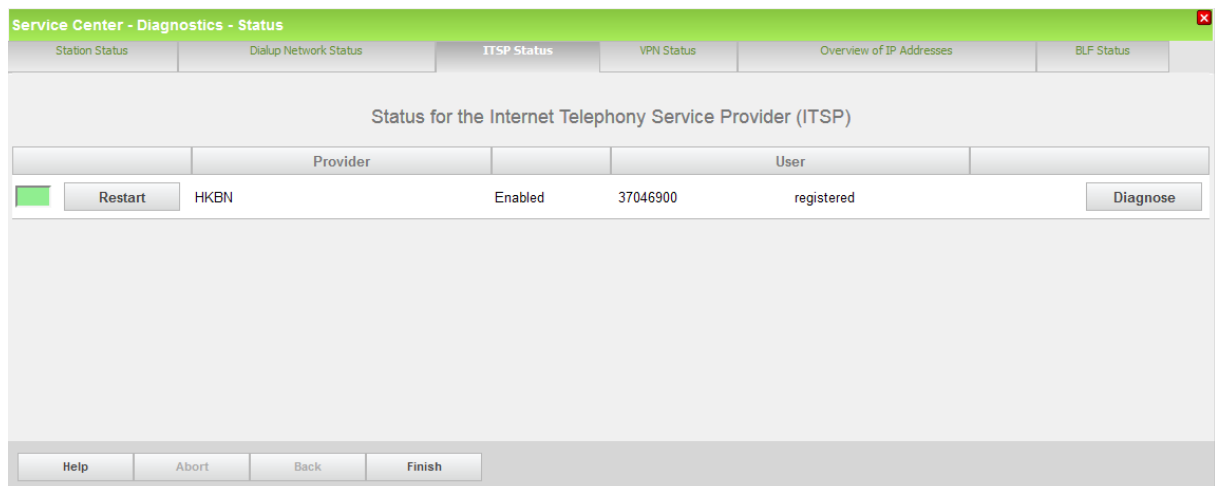
Apply Undo Help

How to check the status of SIP connection with HKBN

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

Appendix

In general, the numbering plan for telecommunications services in Hong Kong is managed by Hong Kong Government, Office of the Communications Authority (OFCA). The details number assignment may be assigned by individual service provider.

- http://www.ofca.gov.hk/en/industry_focus/telecommunications/index.html
- <https://www.hkbnes.net/en/solutions/voice/enterprise-sip-trunk.shtml>