

Connecting Panasonic IP-PBX to BroadCloud SIP Trunk using AudioCodes Mediant™ E-SBC

Version 7.0

Panasonic



Table of Contents

1	Introduction	7
1.1	Intended Audience	7
1.2	About AudioCodes E-SBC Product Series.....	7
2	Component Information.....	9
2.1	IP-PBX Version	9
2.2	AudioCodes E-SBC Version	9
2.3	BroadCloud SIP Trunking Version	9
2.4	Interoperability Test Topology.....	10
2.4.1	Environment Setup	11
2.4.2	Known Limitations.....	11
3	Configuring Panasonic IP-PBX	13
3.1	Configuring Basic Configuration Parameters	13
4	Configuring AudioCodes E-SBC.....	19
4.1	Step 1: Configure IP Network Interfaces.....	20
4.1.1	Step 1a: Configure VLANs	21
4.1.2	Step 1b: Configure Network Interfaces.....	21
4.2	Step 2: Enable the SBC Application.....	23
4.3	Step 3: Configure Media Realms	24
4.4	Step 4: Configure SIP Signaling Interfaces.....	26
4.5	Step 5: Configure Proxy Sets.....	28
4.6	Step 6: Configure IP Profiles.....	32
4.7	Step 7: Configure IP Groups	38
4.8	Step 8: Configure IP-to-IP Call Routing Rules	40
4.9	Step 9: Configure IP-to-IP Manipulation Rules	47
4.10	Step 10: Configure Message Manipulation Rules	50
4.11	Step 11: Configure Registration Accounts	55
4.12	Step 12: Configure Miscellaneous E-SBC Settings	56
4.12.1	Step 12a: Configure SBC Alternative Routing Reasons	56
4.13	Step 13: Reset the E-SBC	57
A	AudioCodes INI File	59

This page is intentionally left blank.

Notice

This document describes how to connect the IP-PBX and BroadCloud SIP Trunk using AudioCodes Mediant E-SBC product series.

Information contained in this document is believed to be accurate and reliable at the time of printing. However, due to ongoing product improvements and revisions, AudioCodes cannot guarantee accuracy of printed material after the Date Published, nor can it accept responsibility for errors or omissions. Updates to this document and other documents as well as software files can be viewed by registered customers at <http://www.audiocodes.com/downloads>.

© Copyright 2015 AudioCodes Ltd. All rights reserved.

This document is subject to change without notice.

Date Published: November-11-2015

Trademarks

AudioCodes, AC, HD VoIP, HD VoIP Sounds Better, IPmedia, Mediant, MediaPack, What's Inside Matters, OSN, SmartTAP, VMAS, VoIPerfect, VoIPerfectHD, Your Gateway To VoIP, 3GX, VocaNOM and One Box 365 are trademarks or registered trademarks of AudioCodes Limited. All other products or trademarks are property of their respective owners. Product specifications are subject to change without notice.

WEEE EU Directive

Pursuant to the WEEE EU Directive, electronic and electrical waste must not be disposed of with unsorted waste. Please contact your local recycling authority for disposal of this product.

Customer Support

Customer technical support and services are provided by AudioCodes or by an authorized AudioCodes Service Partner. For more information on how to buy technical support for AudioCodes products and for contact information, please visit our Web site at www.audiocodes.com/support.

Document Revision Record

LTRT	Description
12502	Initial document release for Version 7.0.

Documentation Feedback

AudioCodes continually strives to produce high quality documentation. If you have any comments (suggestions or errors) regarding this document, please fill out the Documentation Feedback form on our Web site at <http://www.audiocodes.com/downloads>.

1 Introduction

This Configuration Note describes how to set up AudioCodes Enterprise Session Border Controller (referred to in this document as *E-SBC*) for interworking between BroadCloud's SIP Trunk and Panasonic's IP-PBX environment.

1.1 Intended Audience

The document is intended for engineers, or AudioCodes and BroadCloud Partners who are responsible for installing and configuring BroadCloud's SIP Trunk and IP-PBX for enabling VoIP calls using AudioCodes E-SBC.

1.2 About AudioCodes E-SBC Product Series

AudioCodes' family of E-SBC devices enables reliable connectivity and security between the Enterprise's and the service provider's VoIP networks.

The E-SBC provides perimeter defense as a way of protecting Enterprises from malicious VoIP attacks; mediation for allowing the connection of any PBX and/or IP-PBX to any service provider; and Service Assurance for service quality and manageability.

Designed as a cost-effective appliance, the E-SBC is based on field-proven VoIP and network services with a native host processor, allowing the creation of purpose-built multiservice appliances, providing smooth connectivity to cloud services, with integrated quality of service, SLA monitoring, security and manageability. The native implementation of SBC provides a host of additional capabilities that are not possible with standalone SBC appliances such as VoIP mediation, PSTN access survivability, and third-party value-added services applications. This enables Enterprises to utilize the advantages of converged networks and eliminate the need for standalone appliances.

AudioCodes E-SBC is available as an integrated solution running on top of its field-proven Mediant Media Gateway and Multi-Service Business Router platforms, or as a software-only solution for deployment with third-party hardware.

This page is intentionally left blank.

2 Component Information

2.1 IP-PBX Version

Table 2-1: IP-PBX Version

Vendor	Panasonic
Model	▪ KX-NS500 ▪ KX-NS1000
Software Version	004.20043
Model	▪ KX-TDE100 ▪ KX-TDE200 ▪ KX-TDE600 ▪ KX-NCP500 ▪ KX-NCP1000
Software Version	8.01
Protocol	SIP/UDP
Additional Notes	None

2.2 AudioCodes E-SBC Version

Table 2-2: AudioCodes E-SBC Version

SBC Vendor	AudioCodes
Models	▪ Mediant 500 E-SBC ▪ Mediant 800 Gateway & E-SBC ▪ Mediant 1000B Gateway & E-SBC ▪ Mediant 3000 Gateway & E-SBC ▪ Mediant 2600 E-SBC ▪ Mediant 4000 E-SBC
Software Version	SIP_F7.00A.035.006
Protocol	SIP/UDP (to the both BroadCloud SIP Trunk and IP-PBX)
Additional Notes	None

2.3 BroadCloud SIP Trunking Version

Table 2-3: BroadCloud Version

Vendor/Service Provider	BroadCloud
SSW Model/Service	BroadWorks
Software Version	21
Protocol	SIP/UDP
Additional Notes	None

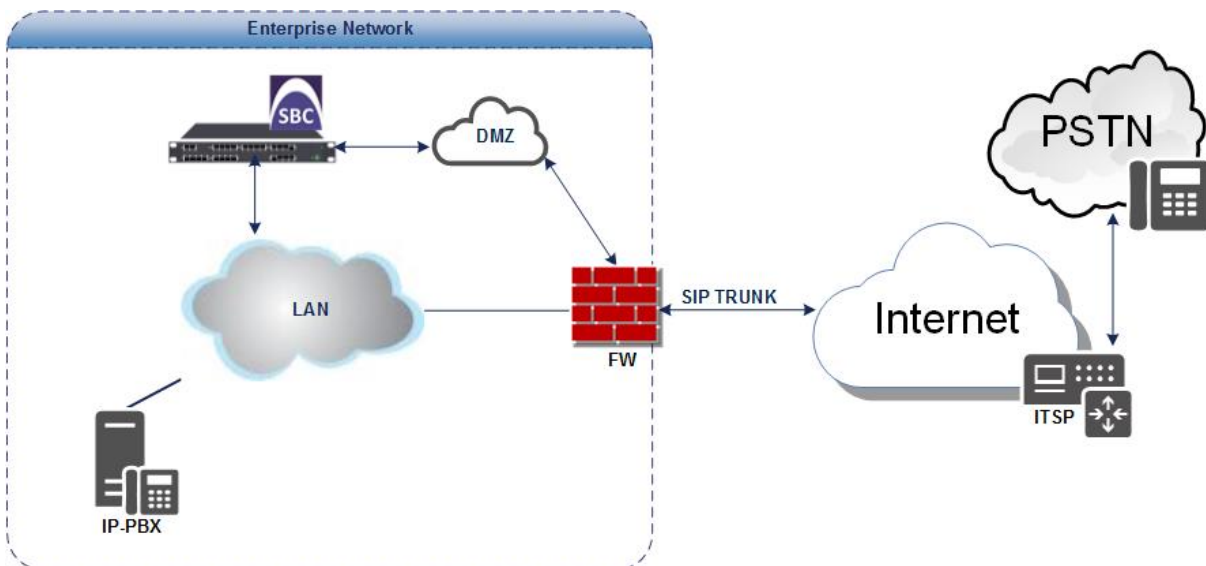
2.4 Interoperability Test Topology

The interoperability testing between AudioCodes E-SBC and BroadCloud SIP Trunk with IP-PBX was done using the following topology setup:

- n Enterprise deployed with IP-PBX in its private network for enhanced communication within the Enterprise.
- n Enterprise wishes to offer its employees enterprise-voice capabilities and to connect the enterprise to the PSTN network using BroadCloud's SIP Trunking service.
- n AudioCodes' E-SBC is implemented to interconnect between the enterprise LAN and the SIP Trunk.
 - **Session:** Real-time voice session using the IP-based Session Initiation Protocol (SIP).
 - **Border:** IP-to-IP network border between IP-PBX network in the enterprise LAN and BroadCloud's SIP Trunk located in the public network.

The figure below illustrates this interoperability test topology:

Figure 2-1: Interoperability Test Topology between E-SBC and IP-PBX with BroadCloud SIP Trunk



2.4.1 Environment Setup

The interoperability test topology includes the following environment setup:

Table 2-4: Environment Setup

Area	Setup
Network	§ IP-PBX is located on the Enterprise's LAN § BroadCloud SIP Trunk is located on the WAN
Signaling Transcoding	§ IP-PBX operates with SIP-over-UDP transport type § BroadCloud SIP Trunk operates with SIP-over-UDP transport type
Codecs Transcoding	§ IP-PBX supports G.711A-law, G.711U-law, and G.729 coder § BroadCloud SIP Trunk supports G.711A-law, G.711U-law, and G.729 coder
Media Transcoding	§ IP-PBX operates with RTP media type § BroadCloud SIP Trunk operates with RTP media type

2.4.2 Known Limitations

There were no limitations observed in the interoperability tests done for the AudioCodes E-SBC interworking between IP-PBX and BroadCloud 's SIP Trunk.

This page is intentionally left blank.

3 Configuring Panasonic IP-PBX

This chapter describes how to configure basic parameters of the Panasonic IP-PBX to operate with AudioCodes' E-SBC.



Note:

- For more advanced configuration, refer to the *User Manual* of each IP-PBX.
- Throughout this chapter, screenshots of the KX-NS500 are shown as an example.

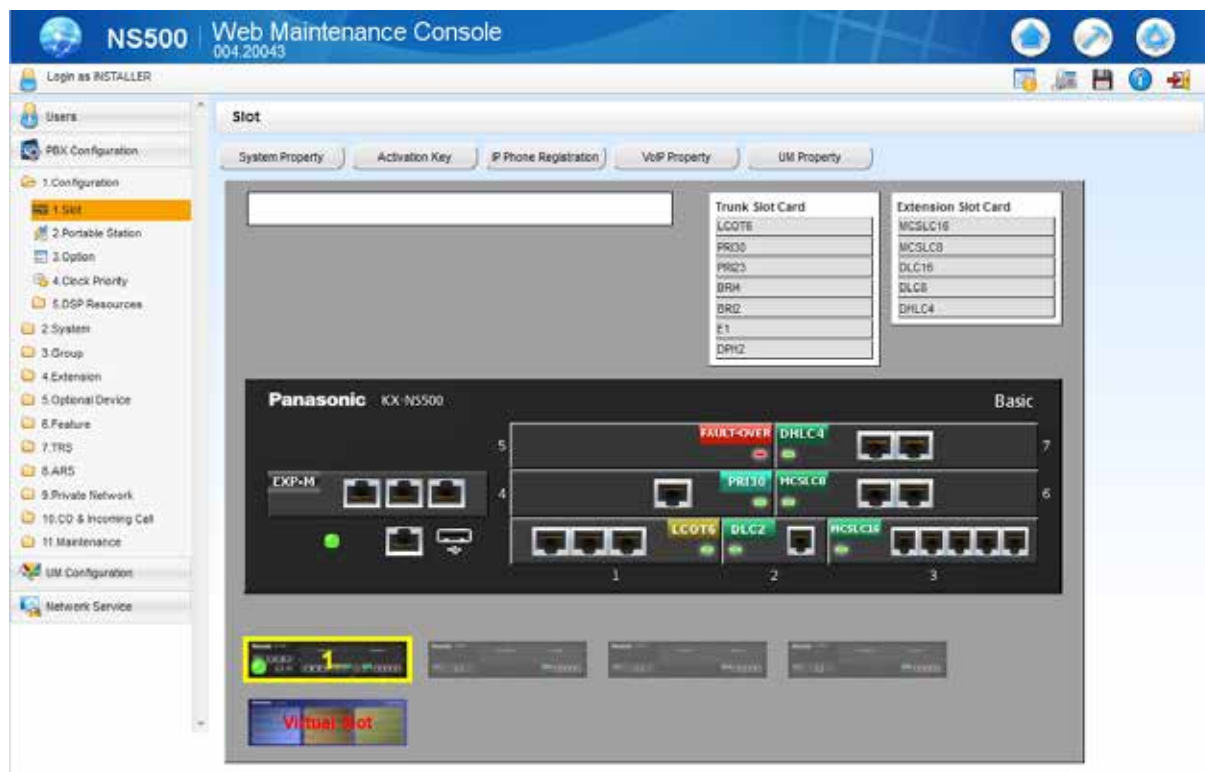
3.1 Configuring Basic Configuration Parameters

The screenshots below show the main parameters that should be configured on the Panasonic IP-PBX in order to operate with the AudioCodes E-SBC.

Ø **To configure Panasonic IP-PBX:**

1. Open the Main Web Maintenance Console on the IP-PBX:

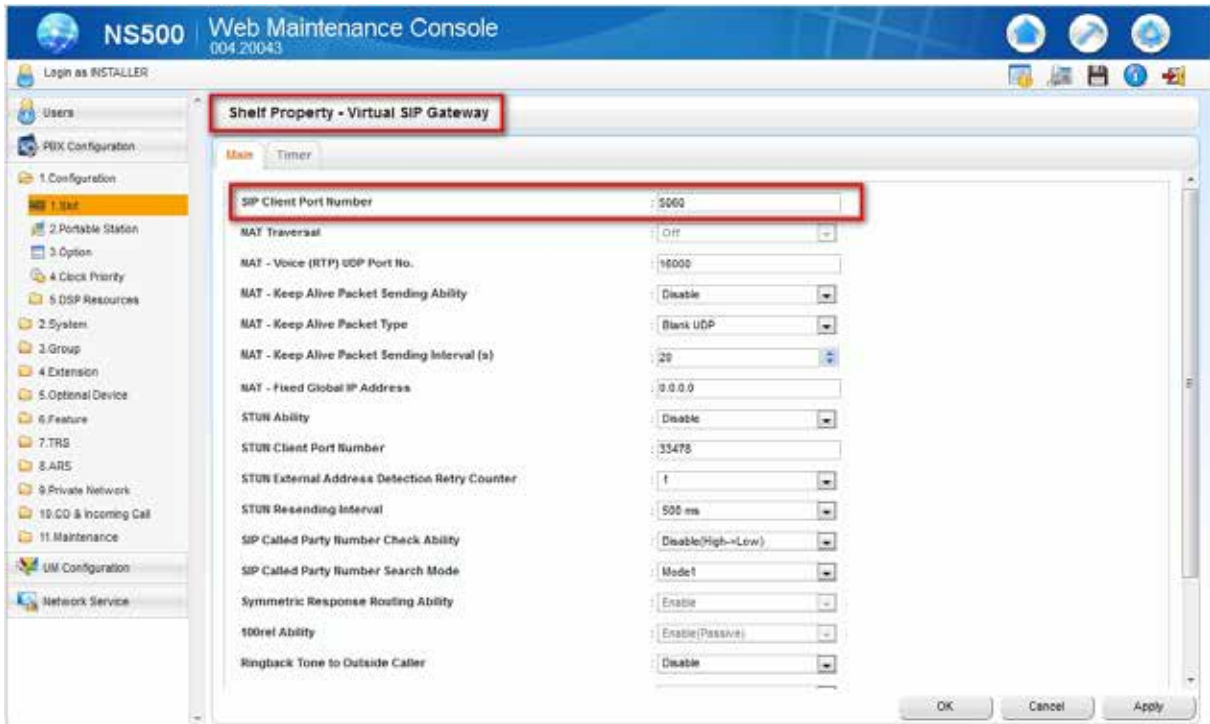
Figure 3-1: Home Page of the Panasonic Web Maintenance Console



Note: 'Virtual Slot' should be configured to be **Out Of Service** for most general parameters (local SIP port, destination IP and port).

2. Under **1.Configuration > 1.Slot > Shelf Property > Main**, define the IP-PBX's local SIP Port:

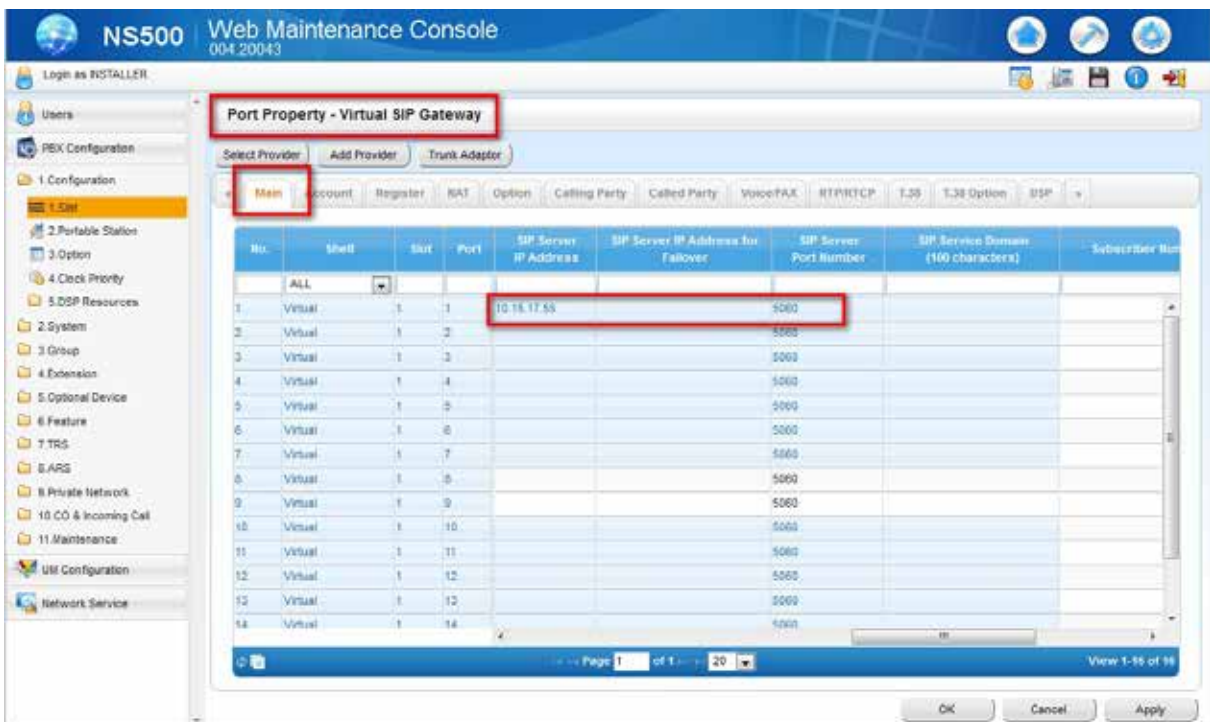
Figure 3-2: SIP Listening Port



The screenshot shows the 'Shelf Property - Virtual SIP Gateway' configuration page in the NS500 Web Maintenance Console. The 'Main' tab is selected. The 'SIP Client Port Number' is set to 5060. Other settings include MAT Traversal (Off), MAT - Voice (RTP) UDP Port No. (16000), MAT - Keep Alive Packet Sending Ability (Disable), MAT - Keep Alive Packet Type (Blank UDP), MAT - Keep Alive Packet Sending Interval (s) (20), MAT - Fixed Global IP Address (0.0.0.0), STUN Ability (Disable), STUN Client Port Number (35478), STUN External Address Detection Retry Counter (1), STUN Resending Interval (500 ms), SIP Called Party Number Check Ability (Disable(High-Low)), SIP Called Party Number Search Mode (Mode1), Symmetric Response Routing Ability (Enable), 100rel Ability (Enable(Passive)), and Ringback Tone to Outside Caller (Disable).

3. Under **1.Configuration > 1.Slot > Port Property > Main**, configure the destination (AudioCodes' E-SBC) IP address and SIP Port:

Figure 3-3: Destination (AudioCodes' E-SBC) IP Address and Port

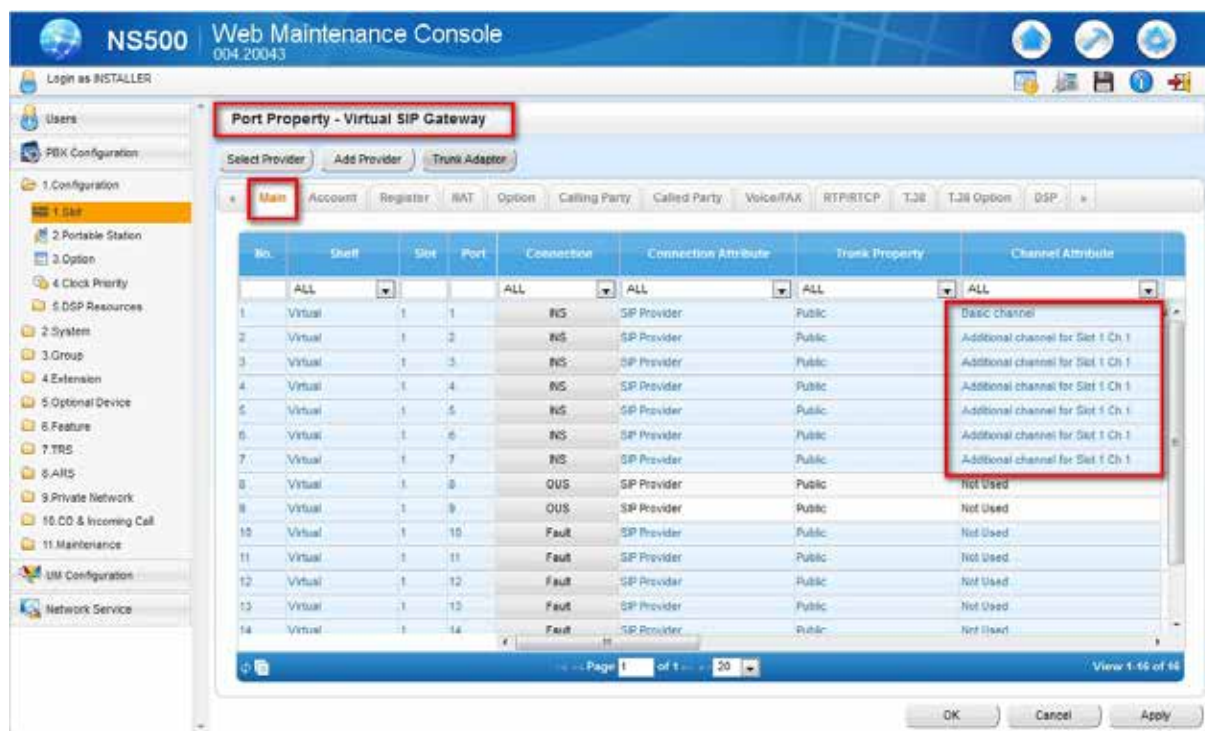


The screenshot shows the 'Port Property - Virtual SIP Gateway' configuration page in the NS500 Web Maintenance Console. The 'Main' tab is selected. The 'SIP Server IP Address' is set to 10.16.17.55 and the 'SIP Server Port Number' is set to 5060. The table below shows the configuration for 14 ports.

No.	Shelf	Slot	Port	SIP Server IP Address	SIP Server IP Address for Failover	SIP Server Port Number	SIP Service Domain (160 characters)	Subscriber Num
1	Virtual	1	1	10.16.17.55		5060		
2	Virtual	1	2			5060		
3	Virtual	1	3			5060		
4	Virtual	1	4			5060		
5	Virtual	1	5			5060		
6	Virtual	1	6			5060		
7	Virtual	1	7			5060		
8	Virtual	1	8			5060		
9	Virtual	1	9			5060		
10	Virtual	1	10			5060		
11	Virtual	1	11			5060		
12	Virtual	1	12			5060		
13	Virtual	1	13			5060		
14	Virtual	1	14			5060		

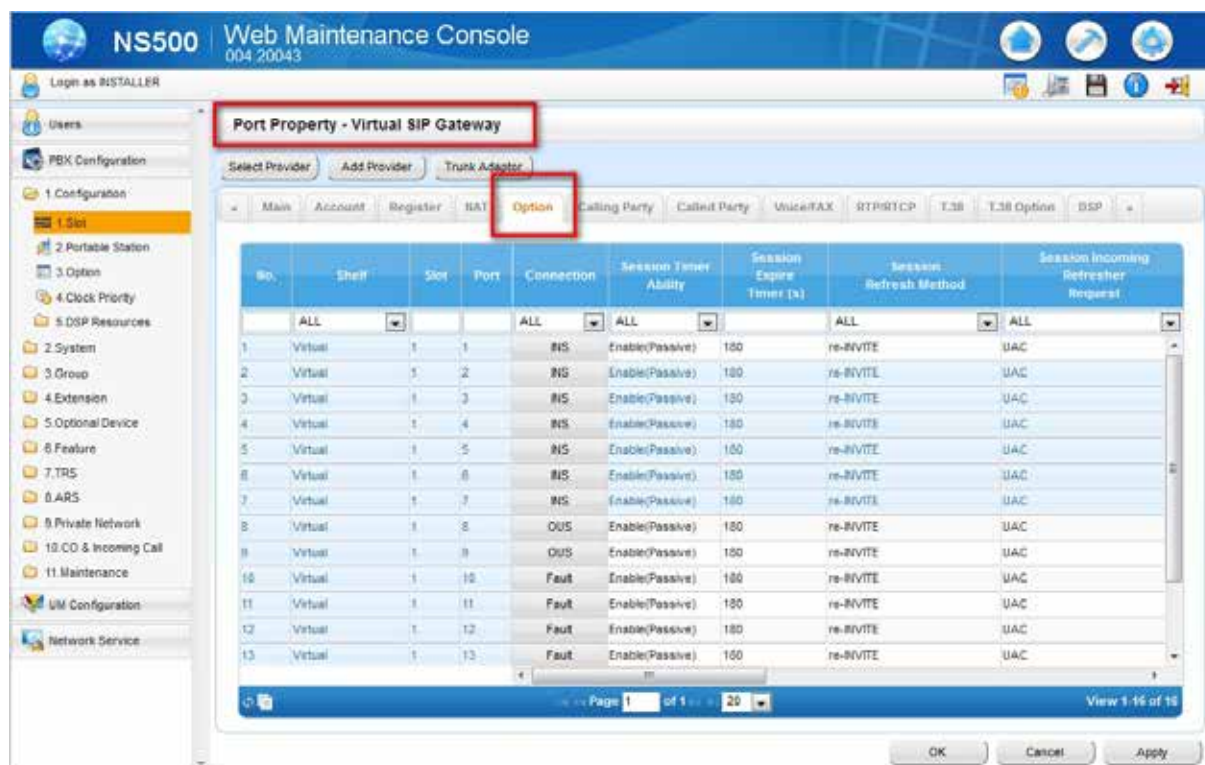
4. Under **1.Configuration > 1.Slot > Port Property > Main**, configure the number of channels for analog phones. Note that for each call made via the PBX, two channels must be configured.

Figure 3-4: Channels for Analog Phones



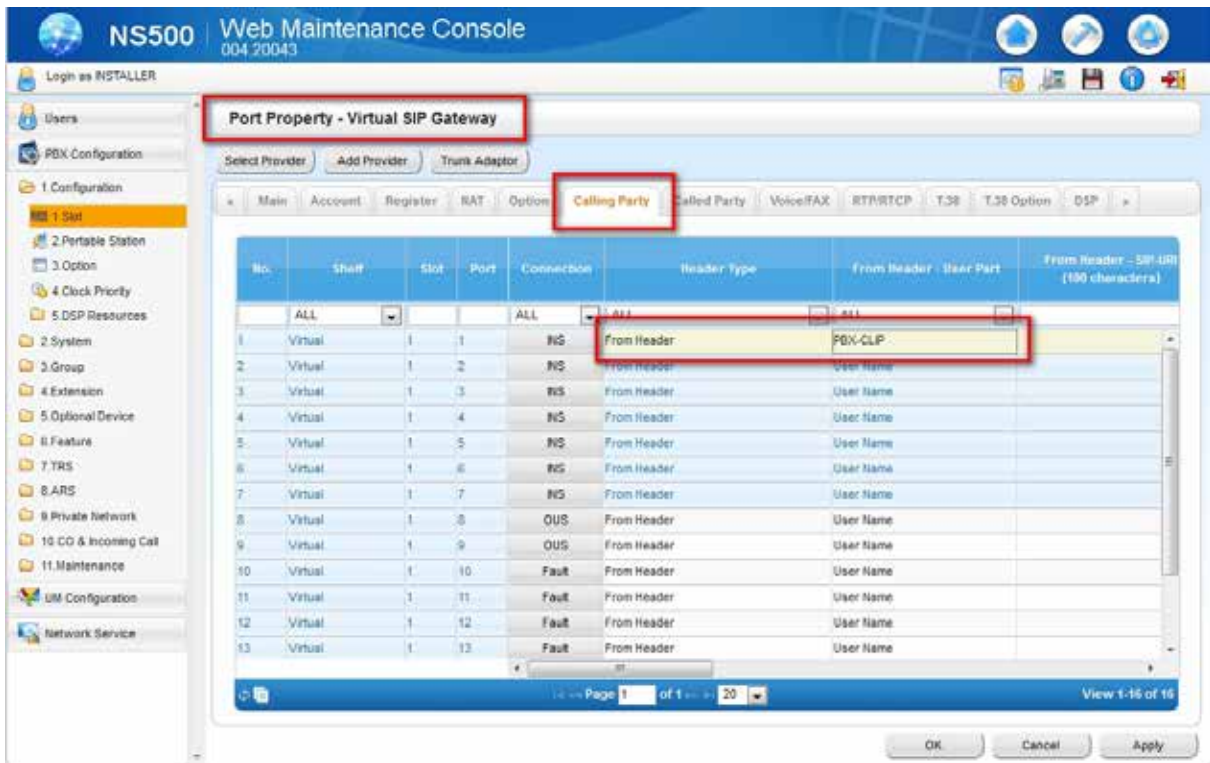
5. Under **1.Configuration > 1.Slot > Port Property > Option**, enable or disable 'Session Timer' and its value, as shown below:

Figure 3-5: Session Timer



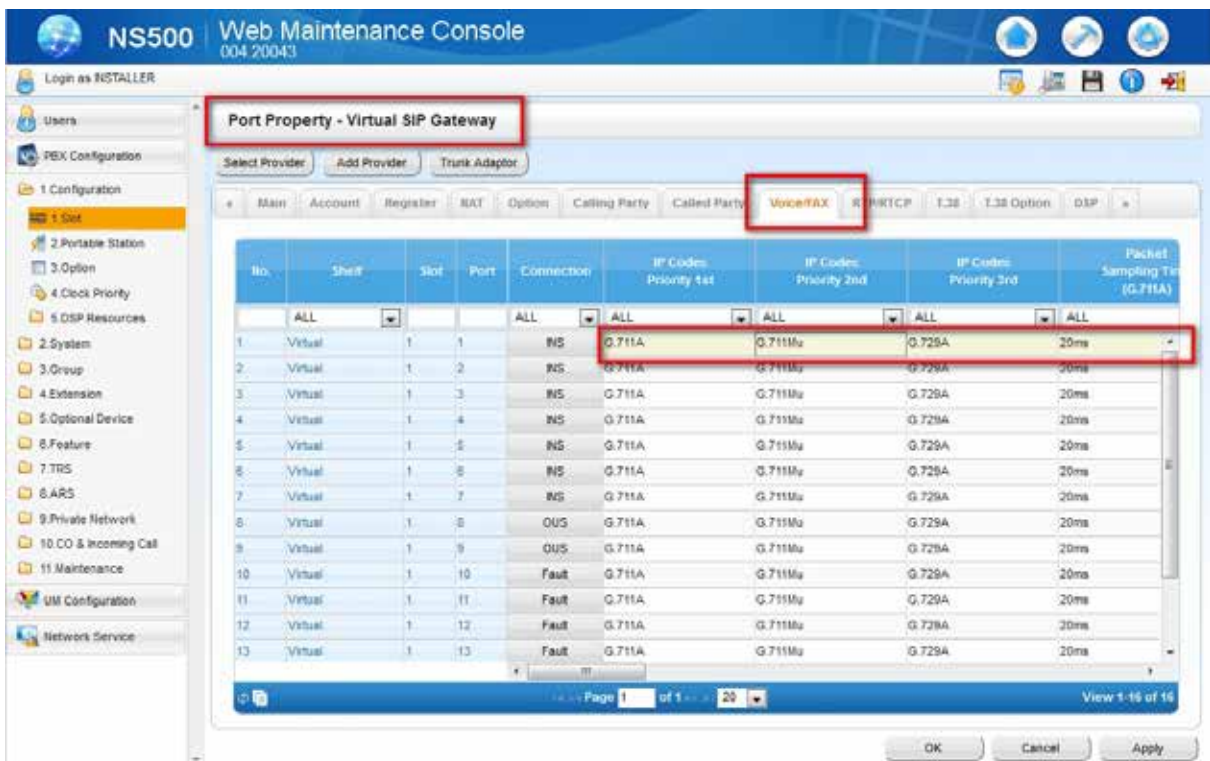
6. Under **1.Configuration > 1.Slot > Port Property > Calling Party**, configure the format of the calling party presentation, as shown below:

Figure 3-6: Calling Name Presentation



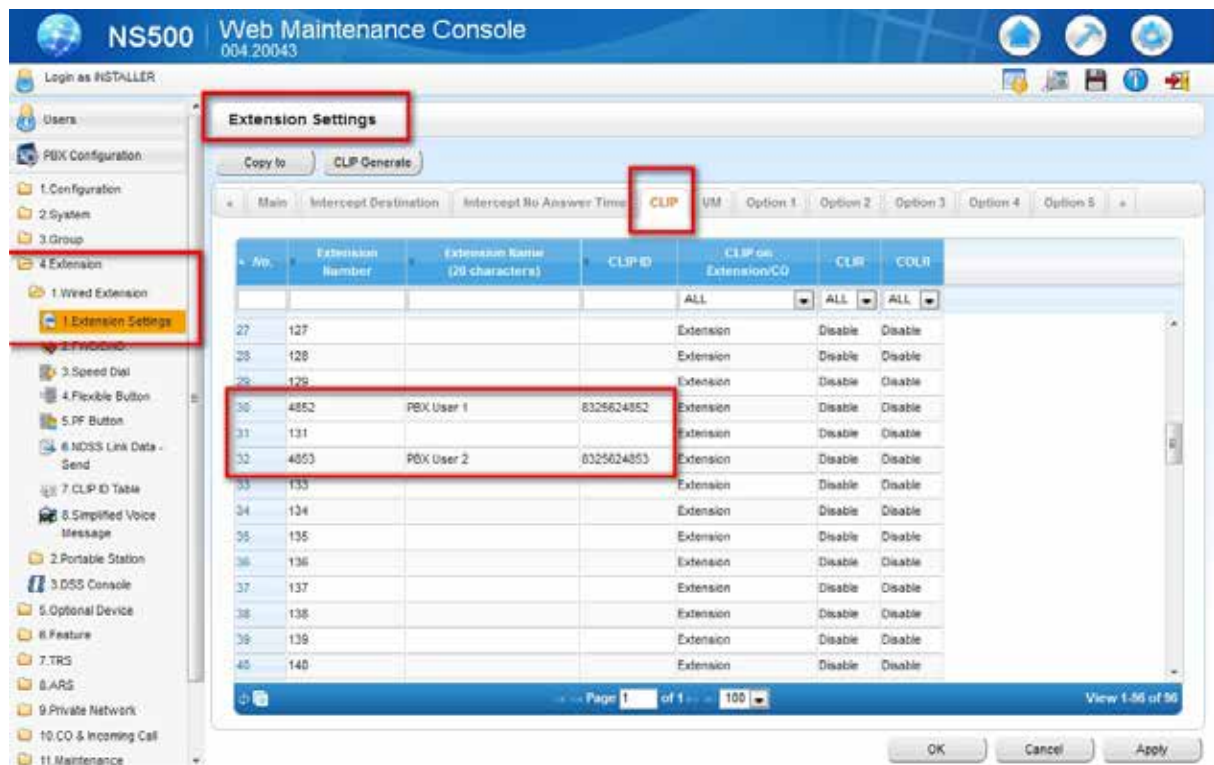
7. Under **1.Configuration > 1.Slot > Port Property > Voice/FAX**, configure appropriated coders, fax and DTMF behavior per channel, as shown below:

Figure 3-7: Configuring Coders, Fax and DTMF Behavior



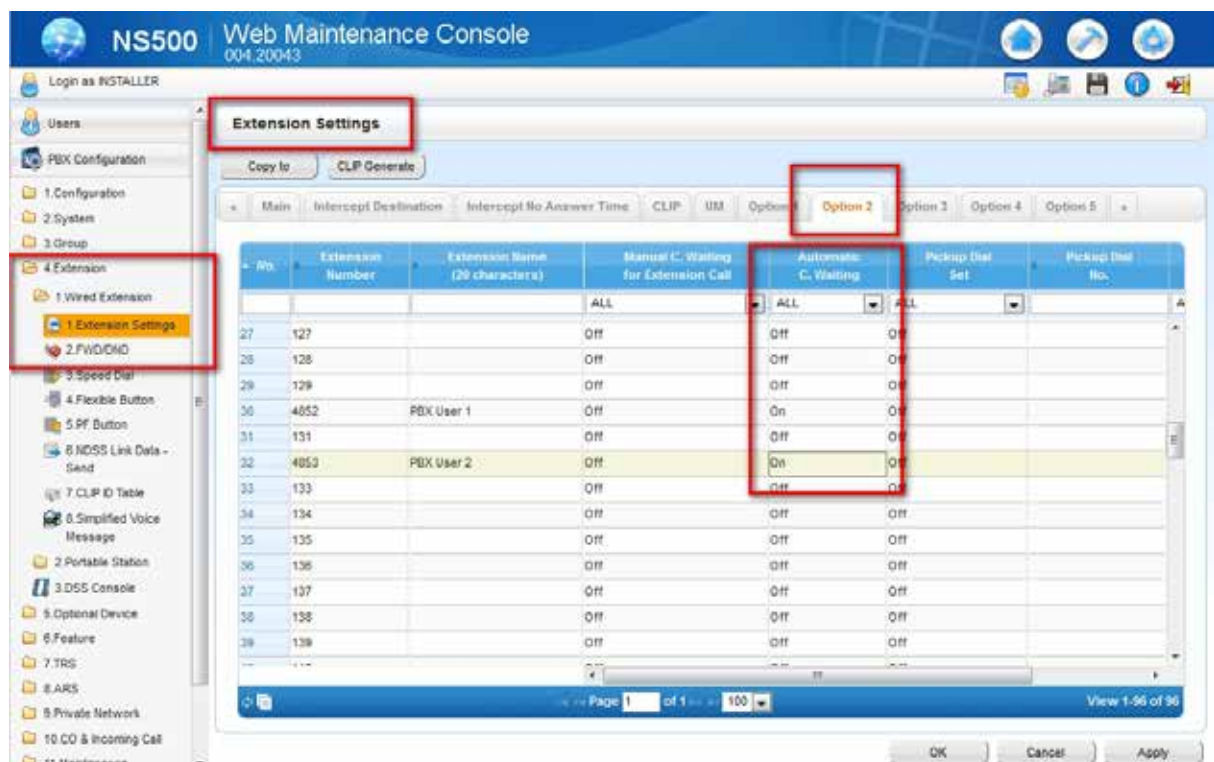
8. Under **4.Extension > 1.Wired Extension > 1.Extension Settings**, configure extension number, name and presentation per channel, as shown below:

Figure 3-8: Configuring Extensions



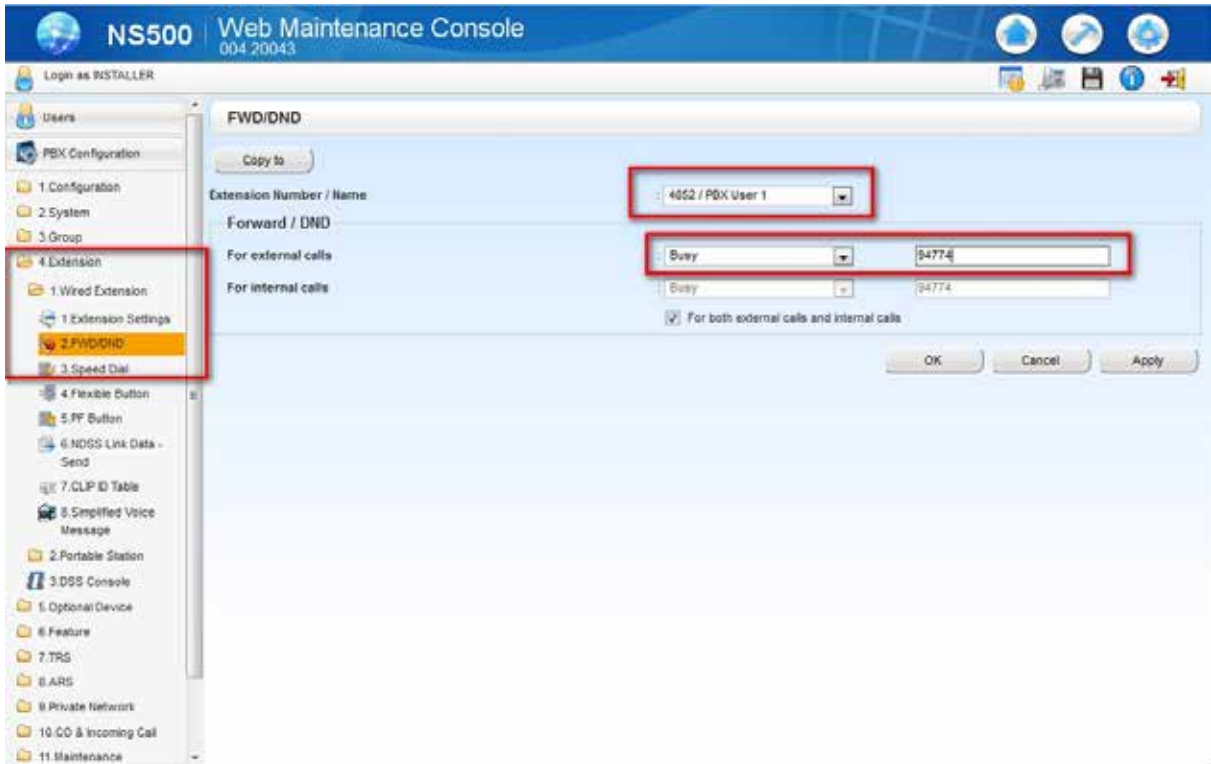
9. Under **4.Extension > 1.Wired Extension > 1.Extension Settings**, enable or disable Call Waiting per extension, as shown below:

Figure 3-9: Enabling Call Waiting



10. Under **4.Extension > 1.Wired Extension > 2.FWD/DND**, configure Call Forward behavior per extension, as shown below:

Figure 3-10: Configuring Call Forwarding



NS500 Web Maintenance Console
004.20043

Login as INSTALLER

FWD/DND

Copy to

Extension Number / Name: 4052 / PDX User 1

Forward / DND

For external calls: Busy 34774

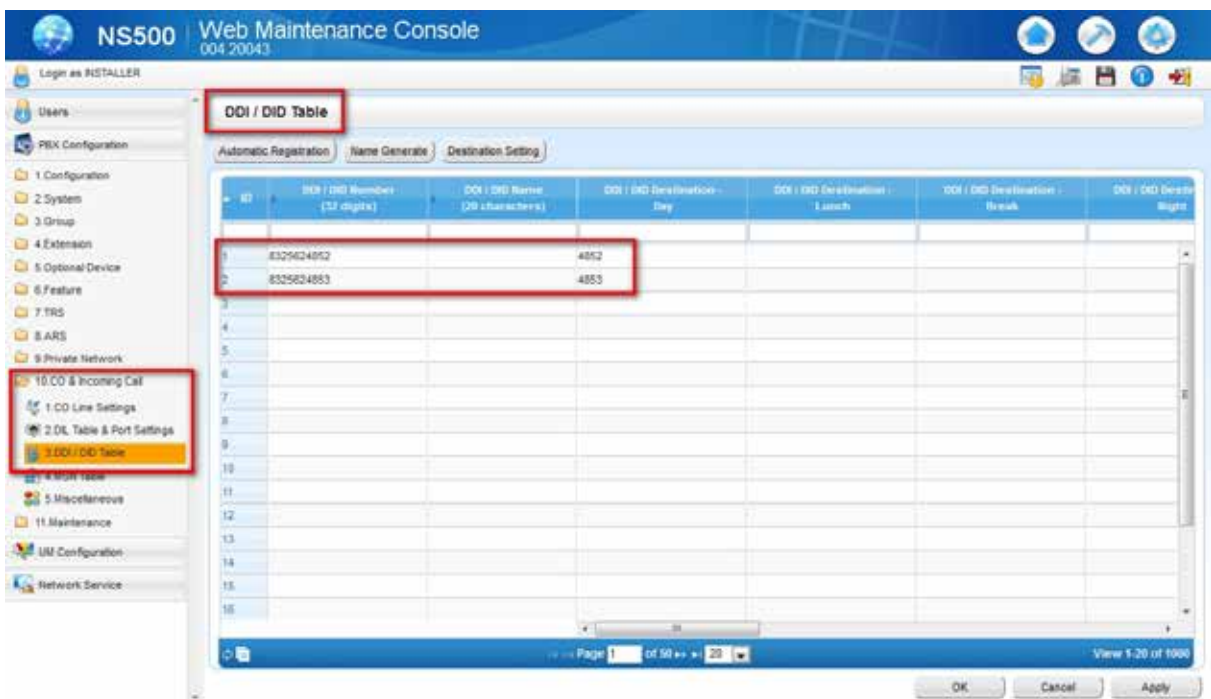
For internal calls: Busy 34774

☒ For both external calls and internal calls

OK Cancel Apply

11. Under **10.CO & Incoming Call > 3.DDI/DID Table**, configure an internal number translation for each extension (for example, from a full number to a 4-digits number), as shown below:

Figure 3-11: Configuring Incoming Call Translation



NS500 Web Maintenance Console
004.20043

Login as INSTALLER

DDI / DID Table

Automatic Registration Name Generate Destination Setting

ID	DID / DID Number (12 digits)	DDI / DID Name (20 characters)	DDI / DID Destination Day	DDI / DID Destination Month	DDI / DID Destination Break	DDI / DID Destination Night
1	8329624852		4852			
2	8329624853		4853			
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Page 1 of 59 View 1/20 of 1000

OK Cancel Apply

4 Configuring AudioCodes E-SBC

This chapter provides step-by-step procedures on how to configure AudioCodes' E-SBC for interworking between IP-PBX and the BroadCloud SIP Trunk.

These configuration procedures are based on the interoperability test topology described in Section 2.4 on page 10, and include the following main areas:

- n** E-SBC WAN interface - BroadCloud SIP Trunking environment
- n** E-SBC LAN interface - IP-PBX environment

Configuration is performed using the E-SBC's embedded Web server (referred to in this document as the *Web interface*).

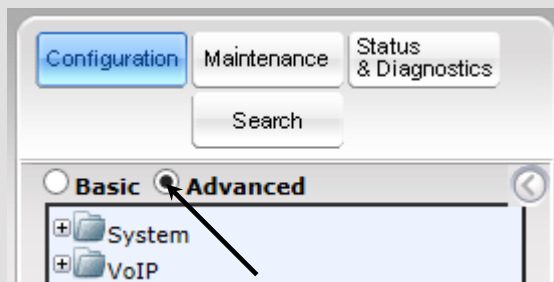
Note:

- To implement the IP-PBX and the BroadCloud SIP Trunk based on the configuration described in this section, AudioCodes E-SBC must be installed with a Software License Key that includes the following software features:

- ✓ SBC
- ✓ Security
- ✓ DSP
- ✓ RTP
- ✓ SIP

For more information about the Software License Key, contact your AudioCodes sales representative.

- The scope of this interoperability test and document does *not* cover all security aspects of connecting the SIP Trunk to the IP-PBX environment. Comprehensive security measures should be implemented in line with your organization's security policies. For security recommendations on AudioCodes' products, refer to the *Recommended Security Guidelines* document.
- Before you begin configuring the E-SBC, make sure the E-SBC's Web interface navigation tree is in **Advanced** display mode. To do this, select the **Advanced** option, as shown below:



- Note that when the E-SBC is reset, the navigation tree reverts to the **Basic** display.

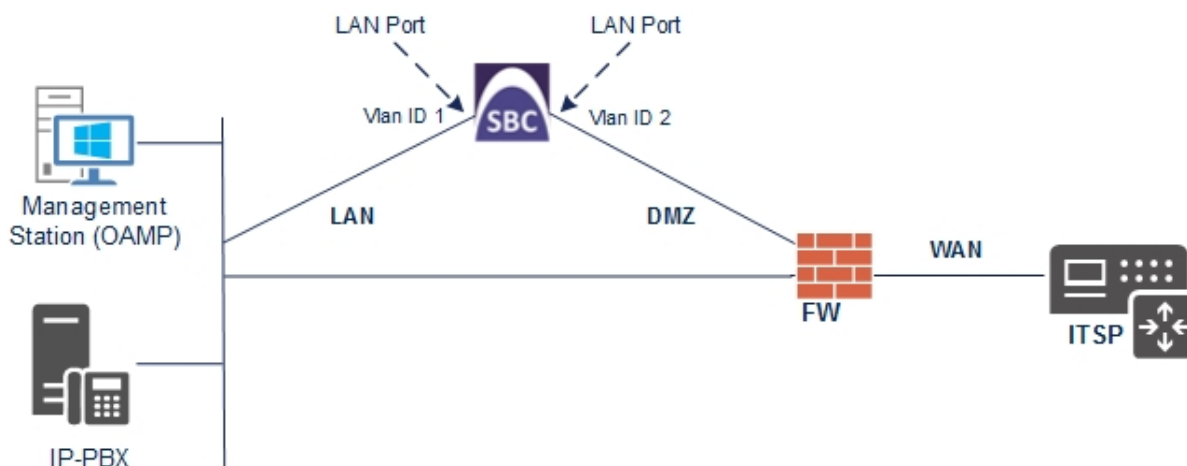


4.1 Step 1: Configure IP Network Interfaces

This step describes how to configure the E-SBC's IP network interfaces. There are several ways to deploy the E-SBC though this interoperability test topology employs the following deployment method:

- n E-SBC interfaces with the following IP entities:
 - IP-PBX, located on the LAN
 - BroadCloud SIP Trunk, located on the WAN
- n E-SBC connects to the WAN through a DMZ network
- n Physical connection: The type of physical connection to the LAN depends on the method used to connect to the enterprise's network. In the interoperability test topology, the E-SBC connects to the LAN and WAN using dedicated LAN ports (i.e., two ports and two network cables).
- n E-SBC also uses two logical network interfaces:
 - LAN (VLAN ID 1)
 - WAN (VLAN ID 2)

Figure 4-1: Network Interfaces in Interoperability Test Topology



4.1.1 Step 1a: Configure VLANs

This step describes how to define VLANs for each of the following interfaces:

- n LAN VoIP (assigned the name "Voice")
- n WAN VoIP (assigned the name "WANSP")

Ø To configure the VLANs:

1. Open the Ethernet Device Table page (**Configuration** tab > **VoIP** menu > **Network** > **Ethernet Device Table**).
2. View one existing row for VLAN ID 1 and underlying interface GROUP_1.
3. Add another VLAN ID 2 for the WAN side as follows:

Parameter	Value
Index	1
VLAN ID	2
Underlying Interface	GROUP_2 (Ethernet port group)
Name	vlan 2
Tagging	Untagged

Figure 4-2: Configured VLAN IDs in Ethernet Device Table

The screenshot shows the 'Ethernet Device Table' interface. At the top, there are buttons for 'Add +', 'Edit', 'Delete', and 'Show / Hide'. Below these is a search bar with 'All' selected and a 'Search' button. The table has five columns: Index, VLAN ID, Underlying Interface, Name, and Tagging. There are two rows of data. The first row has Index 0, VLAN ID 1, Underlying Interface GROUP_1, Name vlan 1, and Tagging Untagged. The second row has Index 1, VLAN ID 2, Underlying Interface GROUP_2, Name vlan 2, and Tagging Untagged. At the bottom, there is a pagination bar showing 'Page 1 of 1' and 'View 1 - 2 of 2'.

Index	VLAN ID	Underlying Interface	Name	Tagging
0	1	GROUP_1	vlan 1	Untagged
1	2	GROUP_2	vlan 2	Untagged

4.1.2 Step 1b: Configure Network Interfaces

This step describes how to configure the IP network interfaces for each of the following interfaces:

- n LAN VoIP (assigned the name "Voice")
- n WAN VoIP (assigned the name "WANSP")

Ø To configure the IP network interfaces:

1. Open the IP Interfaces Table page (**Configuration** tab > **VoIP** menu > **Network** > **IP Interfaces Table**).
2. Modify the existing LAN network interface:
 - a. Select the **Index** radio button of the OAMP + Media + Control table row, and then click **Edit**.

- b. Configure the interface as follows:

Parameter	Value
IP Address	10.15.17.10 (IP address of the E-SBC)
Prefix Length	16 (subnet mask in bits for 255.255.0.0)
Default Gateway	10.15.0.1
VLAN ID	1
Interface Name	Voice (arbitrary descriptive name)
Primary DNS Server IP Address	10.15.25.1
Underlying Device	vlan 1

3. Add a network interface for the WAN side:

- a. Enter **1**, and then click **Add Index**.

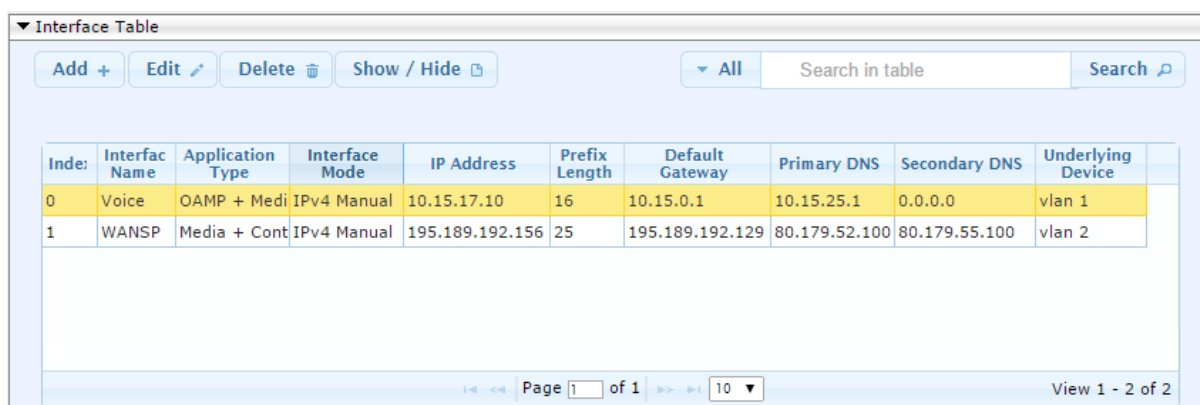
- b. Configure the interface as follows:

Parameter	Value
Application Type	Media + Control
IP Address	195.189.192.156 (WAN IP address)
Prefix Length	25 (for 255.255.255.128)
Default Gateway	195.189.192.129 (router's IP address)
VLAN ID	2
Interface Name	WANSP
Primary DNS Server IP Address	80.179.52.100
Secondary DNS Server IP Address	80.179.55.100
Underlying Device	vlan 2

4. Click **Apply**, and then **Done**.

The configured IP network interfaces are shown below:

Figure 4-3: Configured Network Interfaces in IP Interfaces Table



Inde	Interfac Name	Application Type	Interface Mode	IP Address	Prefix Length	Default Gateway	Primary DNS	Secondary DNS	Underlying Device
0	Voice	OAMP + Medi	IPv4 Manual	10.15.17.10	16	10.15.0.1	10.15.25.1	0.0.0.0	vlan 1
1	WANSP	Media + Cont	IPv4 Manual	195.189.192.156	25	195.189.192.129	80.179.52.100	80.179.55.100	vlan 2

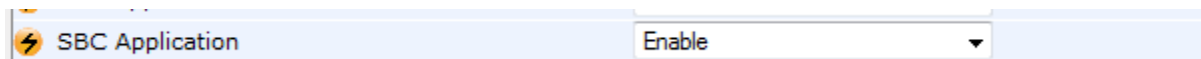
4.2 Step 2: Enable the SBC Application

This step describes how to enable the SBC application.

Ø **To enable the SBC application:**

1. Open the Applications Enabling page (**Configuration** tab > **VoIP** menu > **Applications Enabling** > **Applications Enabling**).

Figure 4-4: Enabling SBC Application



2. From the 'SBC Application' drop-down list, select **Enable**.
3. Click **Submit**.
4. Reset the E-SBC with a burn to flash for this setting to take effect (see Section 4.13 on page 57).

4.3 Step 3: Configure Media Realms

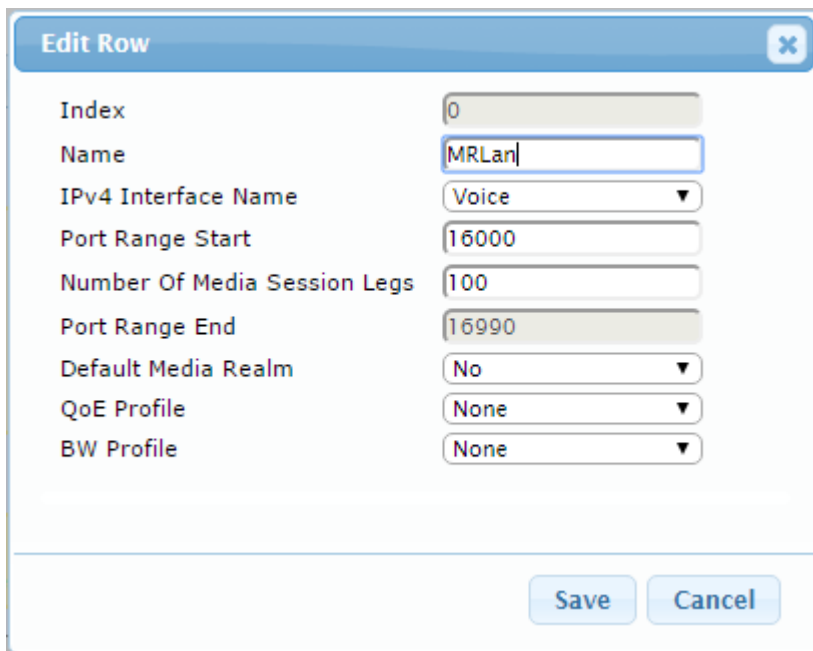
This step describes how to configure Media Realms. The simplest configuration is to create two Media Realms - one for internal (LAN) traffic and one for external (WAN) traffic.

Ø To configure Media Realms:

1. Open the Media Realm Table page (**Configuration** tab > **VoIP** menu > **VoIP Network** > **Media Realm Table**).
2. Add a Media Realm for the LAN interface. You can use the default Media Realm (Index 0), but modify it as shown below:

Parameter	Value
Index	0
Media Realm Name	MRLan (descriptive name)
IPv4 Interface Name	Voice
Port Range Start	16000 (as required by the IP-PBX)
Number of Media Session Legs	100 (media sessions assigned with port range)

Figure 4-5: Configuring Media Realm for LAN



Edit Row

Index

0

Name

MRLan

IPv4 Interface Name

Voice

Port Range Start

16000

Number Of Media Session Legs

100

Port Range End

16990

Default Media Realm

No

QoS Profile

None

BW Profile

None

Save

Cancel

3. Configure a Media Realm for WAN traffic:

Parameter	Value
Index	1
Media Realm Name	MRWan (arbitrary name)
IPv4 Interface Name	WANSP
Port Range Start	7000 (represents the lowest UDP port number used for media on WAN)
Number of Media Session Legs	100 (media sessions assigned with port range)

Figure 4-6: Configuring Media Realm for WAN

Add Row

Index: 1

Name: MRWan

IPv4 Interface Name: WANSP

Port Range Start: 7000

Number Of Media Session Legs: 100

Port Range End: -1

Default Media Realm: No

QoE Profile: None

BW Profile: None

Add Cancel

The configured Media Realms are shown in the figure below:

Figure 4-7: Configured Media Realms in Media Realm Table

Media Realm Table

Add + Edit Delete Show / Hide

All Search in table Search

Index	Name	IPv4 Interface Name	Port Range Start	Number Of Media Session Legs	Port Range End	Default Media Realm
0	MRLan	Voice	16000	100	16990	No
1	MRWan	WANSP	7000	100	7990	No

Page 1 of 1 10 View 1 - 2 of 2

4.4 Step 4: Configure SIP Signaling Interfaces

This step describes how to configure SIP Interfaces. For the interoperability test topology, an internal and external SIP Interface must be configured for the E-SBC.

Ø To configure SIP Interfaces:

1. Open the SIP Interface Table page (**Configuration** tab > **VoIP** menu > **VoIP Network** > **SIP Interface Table**).
2. Add a SIP Interface for the LAN interface. You can use the default SIP Interface (Index 0), but modify it as shown below:

Parameter	Value
Index	0
Interface Name	IP-PBX (see the Note below)
Network Interface	Voice
Application Type	SBC
TLS Port	5060
TCP and UDP	0
Media Realm	MRLan

3. Configure a SIP Interface for the WAN:

Parameter	Value
Index	1
Interface Name	BroadCloud (see the Note below)
Network Interface	WANSP
Application Type	SBC
UDP Port	5060
TCP and TLS	0
Media Realm	MRWan

The configured SIP Interfaces are shown in the figure below:

Figure 4-8: Configured SIP Interfaces in SIP Interface Table

▼ SIP Interface Table									
Add +		Edit ✎	Delete 🗑	Show / Hide 📄		▼ All	Search in table		Search 🔍
Index ↕	Name	SRD	Network Interface	Application Type	UDP Port	TCP Port	TLS Port	Encapsulating Protocol	Media Realm
0	IP-PBX	DefaultSRD	Voice	SBC	5060	0	0	No encapsulation	MRLan
1	BroadCloud	DefaultSRD	WANSP	SBC	5060	0	0	No encapsulation	MRWan
⏪ ⏩ Page 1 of 1 10 ▼ View 1 - 2 of 2									



Note: Unlike in previous software releases where configuration entities (e.g., SIP Interface, Proxy Sets, and IP Groups) were associated with each other using table row indices, Version 7.0 uses the string **names** of the configuration entities. It's therefore recommended to configure each configuration entity with a meaningful name for easy identification.

4.5 Step 5: Configure Proxy Sets

This step describes how to configure Proxy Sets. The Proxy Set defines the destination address (IP address or FQDN) of the IP entity server. Proxy Sets can also be used to configure load balancing between multiple servers.

For the interoperability test topology, two Proxy Sets need to be configured for the following IP entities:

- n IP-PBX
- n BroadCloud SIP Trunk

The Proxy Sets will later be applied to the VoIP network by assigning them to IP Groups.

Ø To configure Proxy Sets:

1. Open the Proxy Sets Table page (**Configuration** tab > **VoIP** menu > **VoIP Network** > **Proxy Sets Table**).
2. Add a Proxy Set for the IP-PBX. You can use the default Proxy Set (Index 0), but modify it as shown below:

Parameter	Value
Proxy Set ID	0
Proxy Name	IP-PBX
SBC IPv4 SIP Interface	IP-PBX
Proxy Keep Alive	Using Options

Figure 4-9: Configuring Proxy Set for IP-PBX

Index	0
SRD	DefaultSRD
Name	IP-PBX
Gateway IPv4 SIP Interface	None
SBC IPv4 SIP Interface	IP-PBX
Proxy Keep-Alive	Using OPTIONS
Proxy Keep-Alive Time [sec]	60
Redundancy Mode	
Proxy Load Balancing Method	Disable
DNS Resolve Method	
Proxy Hot Swap	Disable
Keep-Alive Failure Responses	
Classification Input	IP Address only
TLS Context Name	None

Save Cancel

3. Configure a Proxy Address Table for Proxy Set for IP-PBX:

- a. Go to the **Configuration** tab > **VoIP** menu > **VoIP Network** > **Proxy Sets Table** > **Proxy Address Table**.

Parameter	Value
Index	0
Proxy Address	10.15.25.12:5060 (IP-PBX IP address / FQDN and destination port)
Transport Type	UDP

Figure 4-10: Configuring Proxy Address for IP-PBX

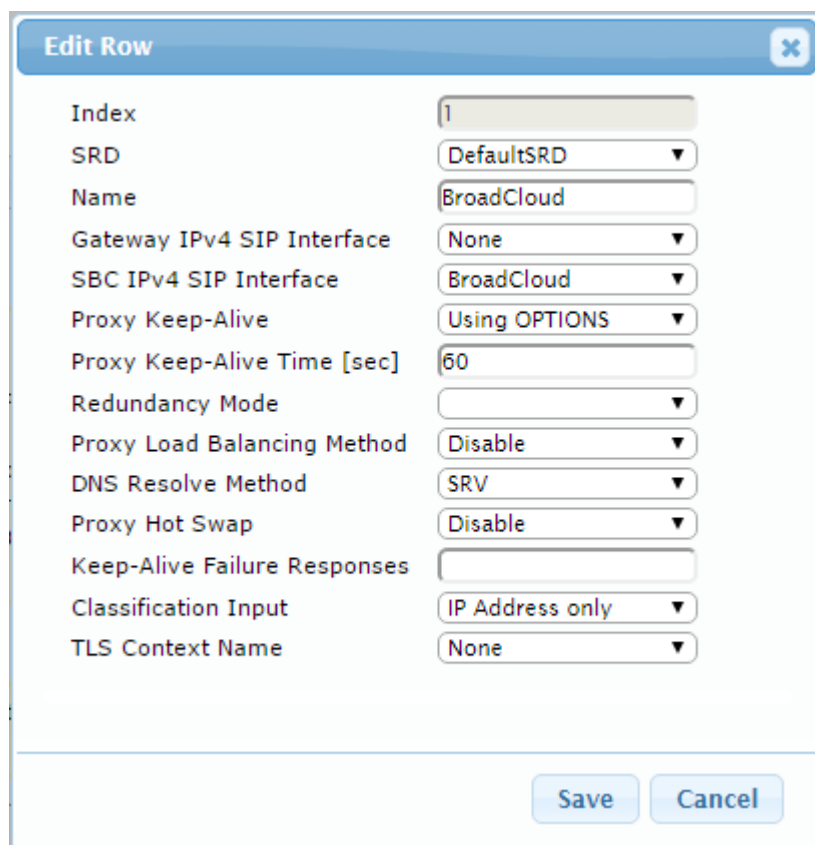
Index	0
Proxy Address	10.15.25.12:5060
Transport Type	UDP

Save Cancel

4. Configure a Proxy Set for the BroadCloud SIP Trunk:

Parameter	Value
Proxy Set ID	1
Proxy Name	BroadCloud
SBC IPv4 SIP Interface	BroadCloud
Proxy Keep Alive	Using Options

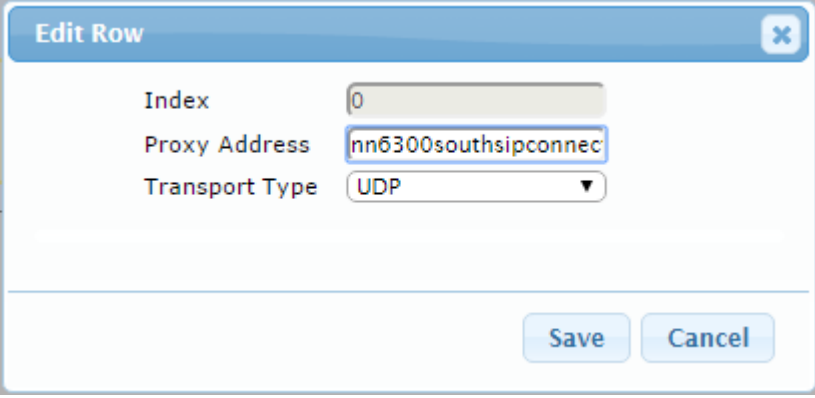
Figure 4-11: Configuring Proxy Set for BroadCloud SIP Trunk



Parameter	Value
Index	1
SRD	DefaultSRD
Name	BroadCloud
Gateway IPv4 SIP Interface	None
SBC IPv4 SIP Interface	BroadCloud
Proxy Keep-Alive	Using OPTIONS
Proxy Keep-Alive Time [sec]	60
Redundancy Mode	
Proxy Load Balancing Method	Disable
DNS Resolve Method	SRV
Proxy Hot Swap	Disable
Keep-Alive Failure Responses	
Classification Input	IP Address only
TLS Context Name	None

- a. Configure a Proxy Address Table for Proxy Set 1:
- b. Go to **Configuration** tab > **VoIP** menu > **VoIP Network** > **Proxy Sets Table** > **Proxy Address Table**.

Parameter	Value
Index	0
Proxy Address	nn6300southsipconnect.adpt-tech.com (IP-PBX IP address / FQDN and destination port)
Transport Type	UDP

Figure 4-12: Configuring Proxy Address for


The 'Edit Row' dialog box contains the following fields:

- Index:** 0
- Proxy Address:** nn6300southsipconnec
- Transport Type:** UDP

Buttons at the bottom: Save, Cancel

The configured Proxy Sets are shown in the figure below:

Figure 4-13: Configured Proxy Sets in Proxy Sets Table

▼ Proxy Sets Table

[Add +](#)
[Edit](#)
[Delete](#)
[Show / Hide](#)

[All](#)

[Search](#)

Index	Name	SRD	Gateway IPv4 SIP Interface	SBC IPv4 SIP Interface	Proxy Keep-Alive Time [sec]	Redundancy Mode	Proxy Hot Swap
0	IP-PBX	DefaultSRD (#0)	None	IP-PBX	60		Disable
1	BroadCloud	DefaultSRD (#0)	None	BroadCloud	60		Disable

[Page 1 of 1](#)
[10](#)
[View 1 - 2 of 2](#)

4.6 Step 6: Configure IP Profiles

This step describes how to configure IP Profiles. The IP Profile defines a set of call capabilities relating to signaling (e.g., SIP message terminations such as REFER) and media (e.g., coder and transcoding method).

In this interoperability test topology, IP Profiles need to be configured for the following IP entities:

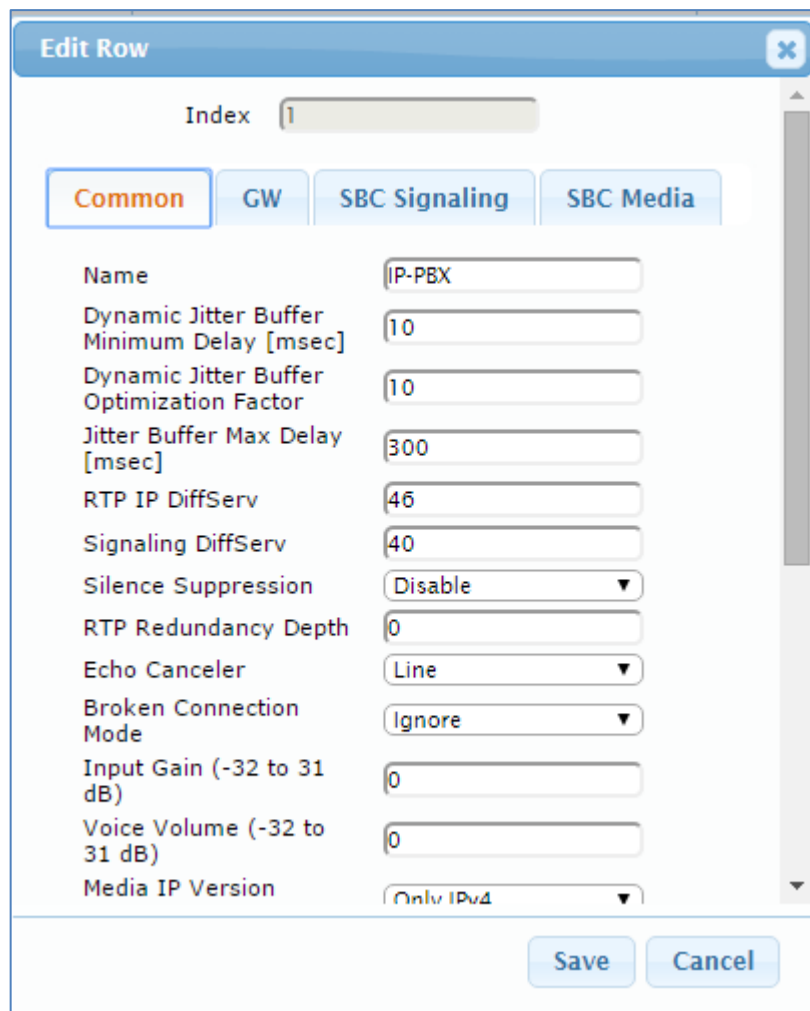
- n IP-PBX - to operate in non-secure mode using RTP and UDP
- n BroadCloud SIP trunk - to operate in non-secure mode using RTP and UDP

Ø To configure IP Profile for the IP-PBX:

1. Open the IP Profile Settings page (**Configuration** tab > **VoIP** > **Coders and Profiles** > **IP Profile Settings**).
2. Click **Add**.
3. Click the **Common** tab, and then configure the parameters as follows:

Parameter	Value
Index	1
Name	IP-PBX

Figure 4-14: Configuring IP Profile for IP-PBX – Common Tab



The screenshot shows the 'Edit Row' dialog box for configuring IP Profile for IP-PBX. The 'Index' is set to 1. The 'Common' tab is selected, and the following parameters are configured:

Parameter	Value
Name	IP-PBX
Dynamic Jitter Buffer Minimum Delay [msec]	10
Dynamic Jitter Buffer Optimization Factor	10
Jitter Buffer Max Delay [msec]	300
RTP IP DiffServ	46
Signaling DiffServ	40
Silence Suppression	Disable
RTP Redundancy Depth	0
Echo Canceler	Line
Broken Connection Mode	Ignore
Input Gain (-32 to 31 dB)	0
Voice Volume (-32 to 31 dB)	0
Media IP Version	Only IPv4

Buttons: Save, Cancel

4. Click the **SBC Signaling** tab, and then configure the parameters as follows:

Parameter	Value
Remote Update Support	Supported
Remote re-INVITE Support	Supported

Figure 4-15: Configuring IP Profile for IP-PBX – SBC Signaling Tab

Edit Row [X]

Index:

Common | GW | **SBC Signaling** | SBC Media

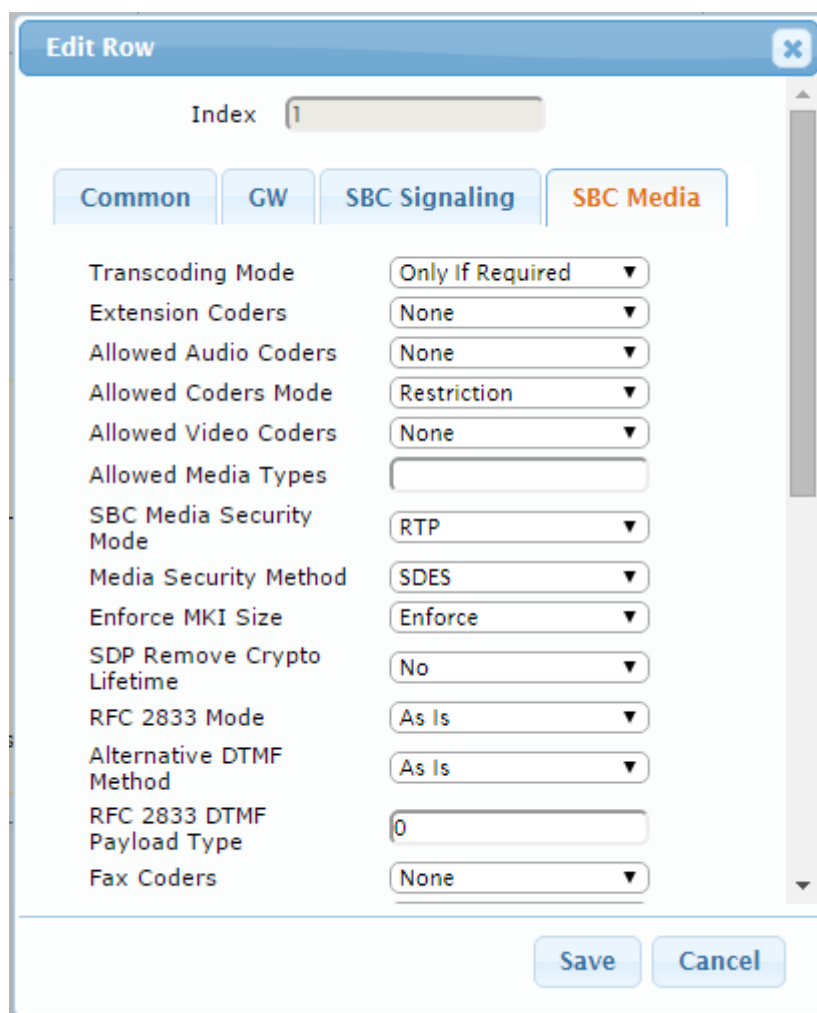
PRACK Mode	Transparent
P-Asserted-Identity Header Mode	As Is
Diversion Header Mode	As Is
History-Info Header Mode	As Is
Session Expires Mode	Transparent
Remote Update Support	Supported
Remote re-INVITE	Supported
Remote Delayed Offer Support	Supported
User Registration Time	0
NAT UDP Registration Time	-1
NAT TCP Registration Time	-1
Remote REFER Mode	Regular
Remote Replaces Mode	Standard

Save Cancel

5. Click the **SBC Media** tab, and then configure the parameters as follows:

Parameter	Value
Media Security Behavior	RTP

Figure 4-16: Configuring IP Profile for IP-PBX – SBC Media Tab



The screenshot shows the 'Edit Row' dialog box with the 'SBC Media' tab selected. The 'Index' is set to 1. The parameters and their values are as follows:

Parameter	Value
Transcoding Mode	Only If Required
Extension Coders	None
Allowed Audio Coders	None
Allowed Coders Mode	Restriction
Allowed Video Coders	None
Allowed Media Types	
SBC Media Security Mode	RTP
Media Security Method	SDES
Enforce MKI Size	Enforce
SDP Remove Crypto Lifetime	No
RFC 2833 Mode	As Is
Alternative DTMF Method	As Is
RFC 2833 DTMF Payload Type	0
Fax Coders	None

Buttons: Save, Cancel

Ø To configure an IP Profile for the BroadCloud SIP Trunk:

1. Click **Add**.
2. Click the **Common** tab, and then configure the parameters as follows:

Parameter	Value
Index	2
Profile Name	BroadCloud

Figure 4-17: Configuring IP Profile for BroadCloud SIP Trunk – Common Tab

Edit Row [X]

Index: 2

Common | GW | SBC Signaling | SBC Media

Name: BroadCloud

Dynamic Jitter Buffer Minimum Delay [msec]: 10

Dynamic Jitter Buffer Optimization Factor: 10

Jitter Buffer Max Delay [msec]: 300

RTP IP DiffServ: 46

Signaling DiffServ: 40

Silence Suppression: Disable ▼

RTP Redundancy Depth: 0

Echo Canceler: Line ▼

Broken Connection Mode: Ignore ▼

Input Gain (-32 to 31 dB): 0

Voice Volume (-32 to 31 dB): 0

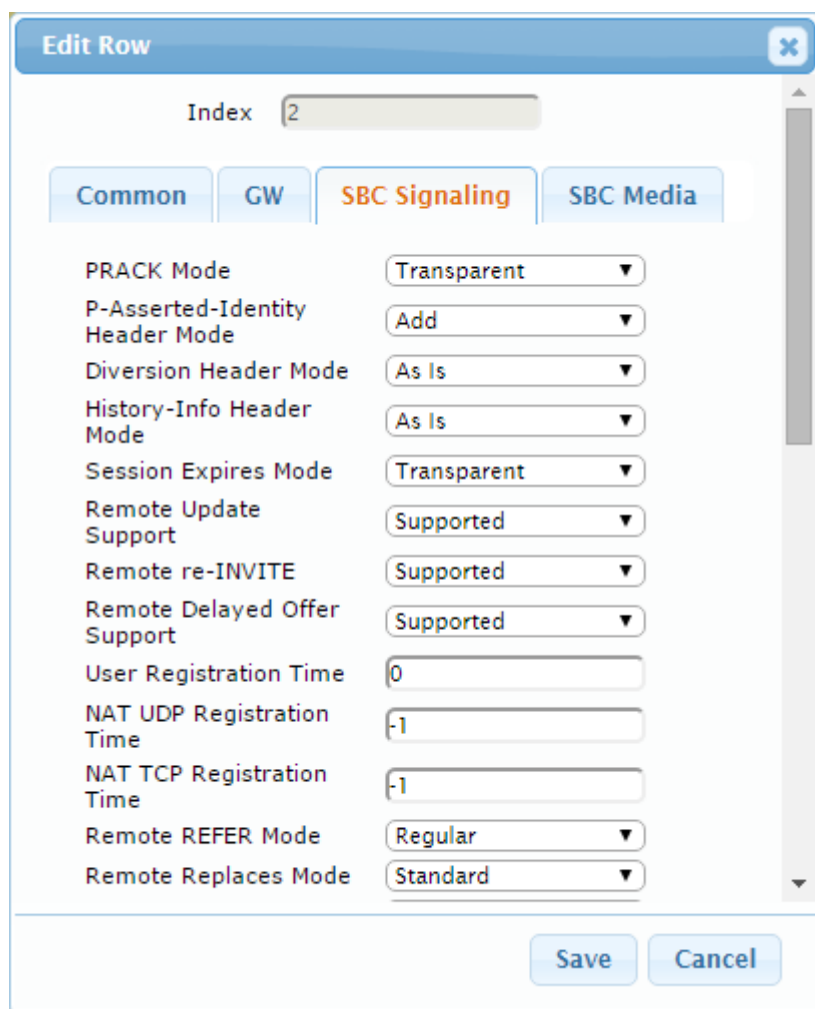
Media IP Version: Only IPv4 ▼

Save Cancel

3. Click the **SBC Signaling** tab, and then configure the parameters as follows:

Parameter	Value
P-Asserted-Identity Header Mode	Add (required for anonymous calls)

Figure 4-18: Configuring IP Profile for BroadCloud SIP Trunk – SBC Signaling Tab



Edit Row [X]

Index: 2

Common | GW | **SBC Signaling** | SBC Media

PRACK Mode	Transparent ▼
P-Asserted-Identity Header Mode	Add ▼
Diversion Header Mode	As Is ▼
History-Info Header Mode	As Is ▼
Session Expires Mode	Transparent ▼
Remote Update Support	Supported ▼
Remote re-INVITE	Supported ▼
Remote Delayed Offer Support	Supported ▼
User Registration Time	0
NAT UDP Registration Time	-1
NAT TCP Registration Time	-1
Remote REFER Mode	Regular ▼
Remote Replaces Mode	Standard ▼

Save Cancel

4. Click the **SBC Media** tab, and then configure the parameters as follows:

Parameter	Value
Media Security Behavior	RTP

Figure 4-19: Configuring IP Profile for BroadCloud SIP Trunk – SBC Media Tab

The screenshot shows the 'Edit Row' dialog box for configuring the SBC Media tab. The 'Index' is set to 2. The 'SBC Media' tab is selected. The parameters and their values are as follows:

Parameter	Value
Transcoding Mode	Only If Required
Extension Coders	None
Allowed Audio Coders	None
Allowed Coders Mode	Restriction
Allowed Video Coders	None
Allowed Media Types	
SBC Media Security Mode	RTP
Media Security Method	SDES
Enforce MKI Size	Don't enforce
SDP Remove Crypto Lifetime	No
RFC 2833 Mode	As Is
Alternative DTMF Method	As Is
RFC 2833 DTMF Payload Type	0
Fax Coders	None

Buttons: Save, Cancel

4.7 Step 7: Configure IP Groups

This step describes how to configure IP Groups. The IP Group represents an IP entity on the network with which the E-SBC communicates. This can be a server (e.g., IP PBX or ITSP) or it can be a group of users (e.g., LAN IP phones). For servers, the IP Group is typically used to define the server's IP address by associating it with a Proxy Set. Once IP Groups are configured, they are used to configure IP-to-IP routing rules to denote source and destination of the call.

In this interoperability test topology, IP Groups must be configured for the following IP entities:

- n IP-PBX located on the LAN
- n BroadCloud SIP Trunk located on the WAN

Ø To configure IP Groups:

1. Open the IP Group Table page (**Configuration** tab > **VoIP** menu > **VoIP Network** > **IP Group Table**).
2. Add an IP Group for the IP-PBX. You can use the default IP Group (Index 0), but modify it as shown below:

Parameter	Value
Index	0
Name	IP-PBX
Type	Server
Proxy Set	IP-PBX
IP Profile	IP-PBX
Media Realm	MRLan
SIP Group Name	10.15.25.12 (according to IP-PBX requirement)

3. Configure an IP Group for the BroadCloud SIP Trunk:

Parameter	Value
Index	1
Name	BroadCloud
Type	Server
Proxy Set	BroadCloud
IP Profile	BroadCloud
Media Realm	MRWan
SIP Group Name	interop.adpt-tech.com (according to ITSP requirement)

The configured IP Groups are shown in the figure below:

Figure 4-20: Configured IP Groups in IP Group Table

▼ IP Group Table

Add +

Edit 

Delete 

Show / Hide 

▼ All

Search in table

Search 

Index 	Name	SRD	Type	SBC Operation Mode	Proxy Set	IP Profile	Media Realm	SIP Group Name	Classify By Proxy Set	Inbound Message Manipulat Set	Outbound Message Manipulati Set
0	IP-PBX	 Default	Server	Not Configu	IP-PBX	IP-PBX	MRLan	10.15.25.12	Enable	-1	-1
1	BroadCloud	 Default	Server	Not Configu	BroadCloud	BroadCloud	MRWan	interop.adpt-te	Enable	-1	4

4.8 Step 8: Configure IP-to-IP Call Routing Rules

This step describes how to configure IP-to-IP call routing rules. These rules define the routes for forwarding SIP messages (e.g., INVITE) received from one IP entity to another. The E-SBC selects the rule whose configured input characteristics (e.g., IP Group) match those of the incoming SIP message. If the input characteristics do not match the first rule in the table, they are compared to the second rule, and so on, until a matching rule is located. If no rule is matched, the message is rejected. The routing rules use the configured IP Groups to denote the source and destination of the call. As configured in Section 4.7 on page 31, IP Group 1 represents IP-PBX, and IP Group 2 represents BroadCloud SIP Trunk.

For the interoperability test topology, the following IP-to-IP routing rules need to be configured to route calls between the IP-PBX (LAN) and the BroadCloud SIP Trunk (WAN):

- n Terminate SIP OPTIONS messages on the E-SBC
- n Calls from the IP-PBX to BroadCloud SIP Trunk
- n Calls from BroadCloud SIP Trunk to the IP-PBX

Ø To configure IP-to-IP routing rules:

1. Open the IP-to-IP Routing Table page (**Configuration** tab > **VoIP** menu > **SBC** > **Routing SBC** > **IP-to-IP Routing Table**).
2. Configure a rule to terminate SIP OPTIONS messages received from the LAN:
 - a. Click **Add**.
 - b. Click the **Rule** tab, and then configure the parameters as follows:

Parameter	Value
Index	0
Name	Terminate OPTIONS (arbitrary descriptive name)
Source IP Group	Any
Request Type	OPTIONS

Figure 4-21: Configuring IP-to-IP Routing Rule for Terminating SIP OPTIONS – Rule Tab

Edit Row

Index: 0

Routing Policy: Default_SBCRouting

Rule | Action

Name: Terminate OPTIONS

Alternative Route Options: Route Row

Source IP Group: Any

Request Type: OPTIONS

Source Username Prefix: *

Source Host: *

Destination Username Prefix: *

Destination Host: *

Message Condition: None

Call Trigger: Any

ReRoute IP Group: Any

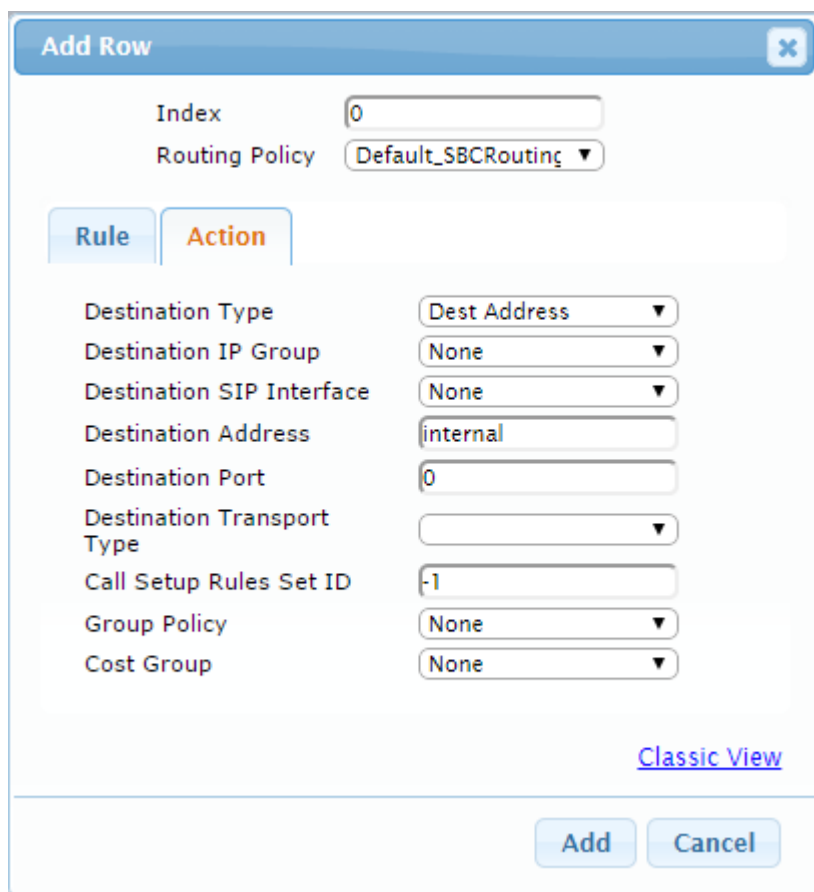
[Classic View](#)

Save Cancel

- a. Click the **Action** tab, and then configure the parameters as follows:

Parameter	Value
Destination Type	Dest Address
Destination Address	internal

Figure 4-22: Configuring IP-to-IP Routing Rule for Terminating SIP OPTIONS – Action Tab



3. Configure a rule to route calls from the IP-PBX to BroadCloud SIP Trunk:
 - a. Click **Add**.
 - b. Click the **Rule** tab, and then configure the parameters as follows:

Parameter	Value
Index	1
Route Name	IP-PBX to ITSP (arbitrary descriptive name)
Source IP Group	IP-PBX

Figure 4-23: Configuring IP-to-IP Routing Rule for IP-PBX to ITSP – Rule tab

Edit Row

Index: 1
Routing Policy: Default_SBCRouting

Rule | **Action**

Name: IP-PBX to ITSP
Alternative Route Options: Route Row
Source IP Group: IP-PBX
Request Type: All
Source Username Prefix: *
Source Host: *
Destination Username Prefix: *
Destination Host: *
Message Condition: None
Call Trigger: Any
ReRoute IP Group: Any

[Classic View](#)

Save Cancel

- a. Click the **Action** tab, and then configure the parameters as follows:

Parameter	Value
Destination Type	IP Group
Destination IP Group	BroadCloud
Destination SIP Interface	BroadCloud

Figure 4-24: Configuring IP-to-IP Routing Rule for IP-PBX to ITSP – Action tab

Edit Row

Index
1
Routing Policy
Default_SBCRouting

Rule

Action

Destination Type
IP Group
Destination IP Group
BroadCloud
Destination SIP Interface
BroadCloud
Destination Address
Destination Port
0
Destination Transport Type
Call Setup Rules Set ID
-1
Group Policy
None
Cost Group
None

[Classic View](#)

Save

Cancel

4. To configure rule to route calls from BroadCloud SIP Trunk to the IP-PBX:
 - a. Click **Add**.
 - b. Click the **Rule** tab, and then configure the parameters as follows:

Parameter	Value
Index	2
Route Name	ITSP to IP-PBX (arbitrary descriptive name)
Source IP Group	BroadCloud

Figure 4-25: Configuring IP-to-IP Routing Rule for ITSP to IP-PBX – Rule tab

Edit Row

Index: 2

Routing Policy: Default_SBCRouting

Rule | Action

Name: ITSP to IP-PBX

Alternative Route Options: Route Row

Source IP Group: BroadCloud

Request Type: All

Source Username Prefix: *

Source Host: *

Destination Username Prefix: *

Destination Host: *

Message Condition: None

Call Trigger: Any

ReRoute IP Group: Any

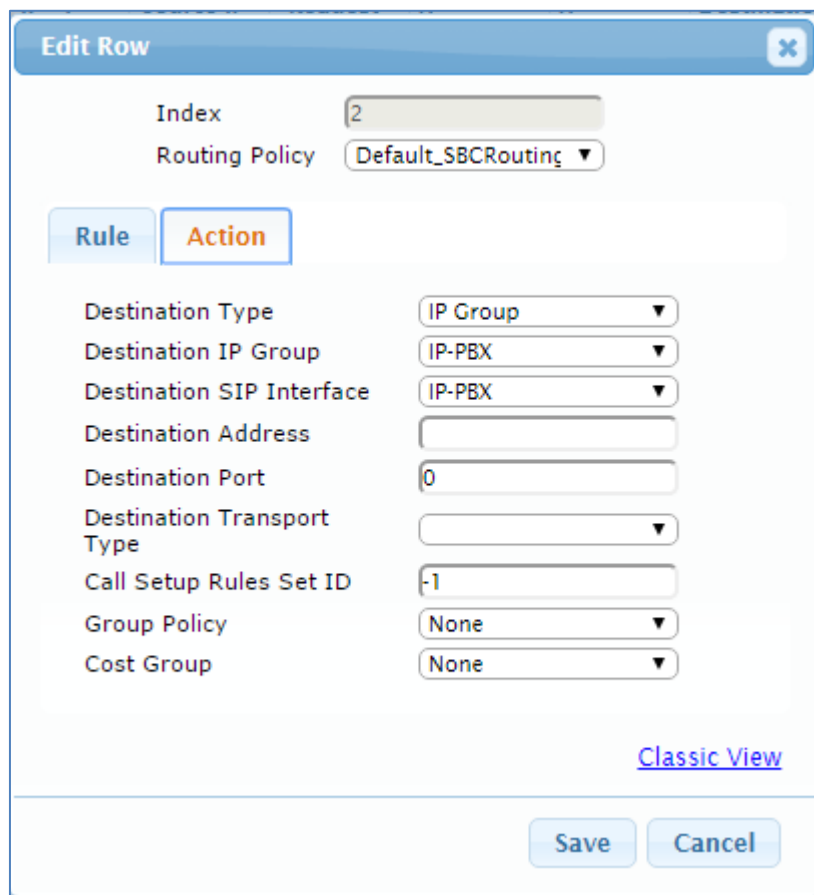
[Classic View](#)

Save Cancel

- a. Click the **Action** tab, and then configure the parameters as follows:

Parameter	Value
Destination Type	IP Group
Destination IP Group	IP-PBX
Destination SIP Interface	IP-PBX

Figure 4-26: Configuring IP-to-IP Routing Rule for ITSP to IP-PBX – Action tab



Edit Row

Index: 2

Routing Policy: Default_SBCRouting

Rule | **Action**

Destination Type: IP Group

Destination IP Group: IP-PBX

Destination SIP Interface: IP-PBX

Destination Address:

Destination Port: 0

Destination Transport Type:

Call Setup Rules Set ID: -1

Group Policy: None

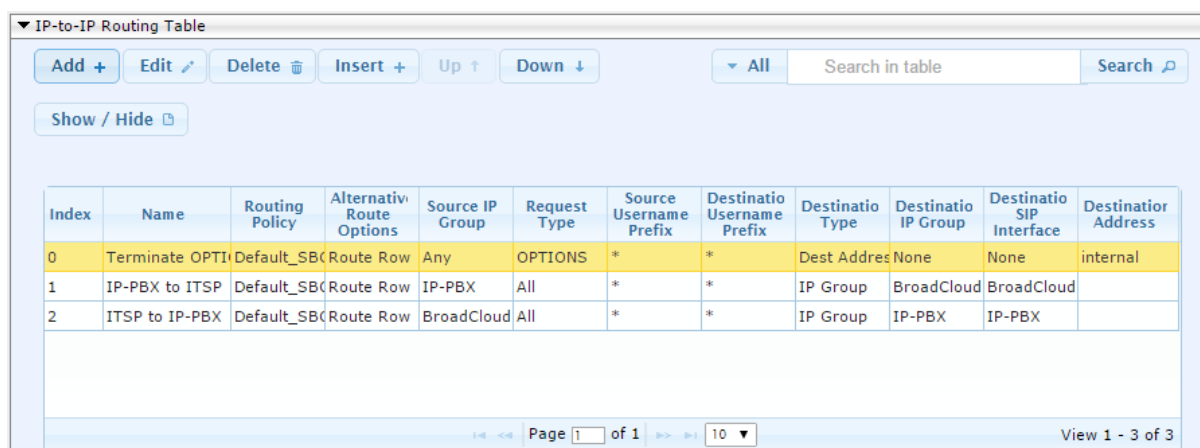
Cost Group: None

[Classic View](#)

Save Cancel

The configured routing rules are shown in the figure below:

Figure 4-27: Configured IP-to-IP Routing Rules in IP-to-IP Routing Table



Index	Name	Routing Policy	Alternative Route Options	Source IP Group	Request Type	Source Username Prefix	Destination Username Prefix	Destination Type	Destination IP Group	Destination SIP Interface	Destination Address
0	Terminate OPTI	Default_SBC	Route Row	Any	OPTIONS	*	*	Dest Address	None	None	internal
1	IP-PBX to ITSP	Default_SBC	Route Row	IP-PBX	All	*	*	IP Group	BroadCloud	BroadCloud	
2	ITSP to IP-PBX	Default_SBC	Route Row	BroadCloud	All	*	*	IP Group	IP-PBX	IP-PBX	

Page 1 of 1 | 10 | View 1 - 3 of 3



Note: The routing configuration may change according to your specific deployment topology.

4.9 Step 9: Configure IP-to-IP Manipulation Rules

This step describes how to configure IP-to-IP manipulation rules. These rules manipulate the source and / or destination number. The manipulation rules use the configured IP Groups to denote the source and destination of the call. As configured in Section 4.7 on page 31, IP Group 0 represents the IP-PBX, and IP Group 1 represents BroadCloud SIP Trunk.



Note: Adapt the manipulation table according to your environment dial plan.

For example, for this interoperability test topology, a manipulation was configured to add the prefix to the destination number for calls from the IP-PBX IP Group to the BroadCloud SIP Trunk IP Group for a specific destination username prefix.

Ø To configure a number manipulation rule:

1. Open the IP-to-IP Outbound Manipulation page (**Configuration** tab > **VoIP** menu > **SBC** > **Manipulations SBC** > **IP-to-IP Outbound**).
2. Click **Add**.
3. Click the **Rule** tab, and then configure the parameters as follows:

Parameter	Value
Index	0
Name	Call to desk
Source IP Group	IP-PBX
Destination IP Group	BroadCloud
Destination Username Prefix	4347

Figure 4-28: Configuring IP-to-IP Outbound Manipulation Rule – Rule Tab

Edit Row

Index
0
Routing Policy
Default_SBCRouting

Rule

Action

Name
Call to desk
Additional Manipulation
No
Request Type
All
Source IP Group
IP-PBX
Destination IP Group
BroadCloud
Source Username Prefix
*
Source Host
*
Destination Username Prefix
4347
Destination Host
*
Calling Name Prefix
*
Message Condition
None
Call Trigger
Any
ReRoute IP Group
Any

Save
Cancel

- Click the **Action** tab, and then configure the parameters as follows:

Parameter	Value
Manipulated Item	Destination URI
Prefix to Add	0119723976

Figure 4-29: Configuring IP-to-IP Outbound Manipulation Rule - Action Tab

Edit Row

Index: 0

Routing Policy: Default_SBCRouting

Rule **Action**

Manipulated Item: Destination URI

Remove From Left: 0

Remove From Right: 0

Leave From Right: 255

Prefix to Add: 0119723976

Suffix to Add:

Privacy Restriction Mode: Transparent

[Classic View](#)

Save Cancel

5. Click **Submit**.

The figure below shows an example of configured IP-to-IP outbound manipulation rules for calls between IP-PBX IP Group and BroadCloud SIP Trunk IP Group:

Figure 4-30: Example of Configured IP-to-IP Outbound Manipulation Rules

▼ IP to IP Outbound Manipulation

Add + Edit Edit Delete Delete Insert + Up ↑ Down ↓
 ▼ All Search in table Search 🔍

Show / Hide 📄

Inde:	Name	Routing Policy	Additi Mani	Source IP Group	Destinatio IP Group	Source Usernam Prefix	Destinat Usernam Prefix	Manipul: Item	Remove From Left	Remove From Right	Leave From Right	Prefix to Add	Suffix to Add
0	Call to desk	Default_S	No	IP-PBX	BroadCloud	*	4347	Destinatio	0	0	255	01197239	
1	Call to mobile	Default_S	No	IP-PBX	BroadCloud	*	4774	Destinatio	1	0	255	01197254	
2	For Anonymo	Default_S	No	IP-PBX	BroadCloud	*	*	Source UR	0	0	255		

Page 1 of 1 10 View 1 - 3 of 3

4.10 Step 10: Configure Message Manipulation Rules

This step describes how to configure SIP message manipulation rules. SIP message manipulation rules can include insertion, removal, and/or modification of SIP headers. Manipulation rules are grouped into Manipulation Sets, enabling you to apply multiple rules to the same SIP message (IP entity).

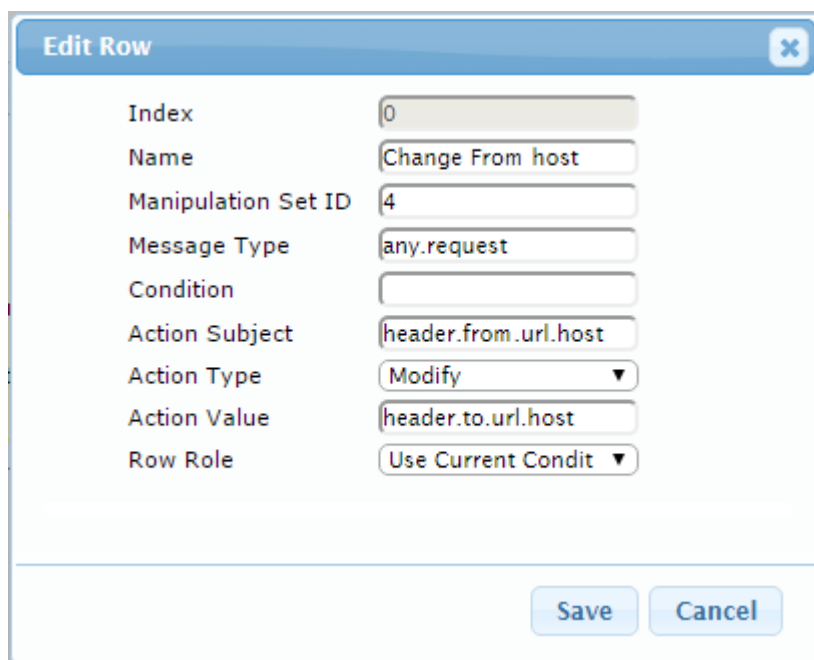
Once you have configured the SIP message manipulation rules, you need to assign them to the relevant IP Group (in the IP Group table) and determine whether they must be applied to inbound or outbound messages.

Ø To configure SIP message manipulation rule:

1. Open the Message Manipulations page (**Configuration** tab > **VoIP** menu > **SIP Definitions** > **Msg Policy & Manipulation** > **Message Manipulations**).
2. Configure a new manipulation rule (Manipulation Set 4) for BroadCloud SIP Trunk. This rule applies to messages sent to the BroadCloud SIP Trunk IP Group. This replaces the host part of the SIP From Header with the value from the SIP To Header.

Parameter	Value
Index	0
Name	Change From host
Manipulation Set ID	4
Message Type	any.request
Action Subject	header.from.url.host
Action Type	Modify
Action Value	header.to.url.host

Figure 4-31: Configuring SIP Message Manipulation Rule 0 (for BroadCloud SIP Trunk)



Edit Row	
Index	0
Name	Change From host
Manipulation Set ID	4
Message Type	any.request
Condition	
Action Subject	header.from.url.host
Action Type	Modify
Action Value	header.to.url.host
Row Role	Use Current Condit
Save Cancel	

3. Configure another manipulation rule (Manipulation Set 4) for BroadCloud SIP Trunk. This rule applies to messages sent to the BroadCloud SIP Trunk IP Group. This replaces the host part of the SIP P-Asserted-Identity Header with the value from the SIP To Header.

Parameter	Value
Index	1
Manipulation Name	Change P-Asserted host
Manipulation Set ID	4
Message Type	any.request
Condition	header.p-asserted-identity exists
Action Subject	header.p-asserted-identity
Action Type	Modify
Action Value	header.to.url.host

Figure 4-32: Configuring SIP Message Manipulation Rule 1 (for BroadCloud SIP Trunk)

The screenshot shows a web-based configuration interface for SIP message manipulation rules. The 'Edit Row' dialog is open, displaying the configuration for Rule 1. The fields are as follows:

- Index:** 1
- Name:** Change P-Asserted host
- Manipulation Set ID:** 4
- Message Type:** any.request
- Condition:** header.p-asserted-identity exists
- Action Subject:** header.p-asserted-identity
- Action Type:** Modify
- Action Value:** header.to.url.host
- Row Role:** Use Current Condition

At the bottom of the dialog are 'Save' and 'Cancel' buttons.

4. Configure another manipulation rule (Manipulation Set 4) for BroadCloud SIP Trunk. This rule is applied to response messages sent to the BroadCloud SIP Trunk IP Group for Rejected Calls initiated by the IP-PBX. This replaces the method type '502' with the value '480', because BroadCloud SIP Trunk not recognizes '502' method type.

Parameter	Value
Index	2
Name	Reject Responses
Manipulation Set ID	4
Message Type	any.response
Condition	header.request-uri.methodtype=='502'

Action Subject	header.request-uri.methodtype
Action Type	Modify
Action Value	'480'

Figure 4-33: Configuring SIP Message Manipulation Rule 2 (for BroadCloud SIP Trunk)

Edit Row

Index

2

Name

Reject Responses

Manipulation Set ID

4

Message Type

any.response

Condition

header.request-uri.met

Action Subject

header.request-uri.met

Action Type

Modify

Action Value

'480'

Row Role

Use Current Condit

Save

Cancel

Figure 4-34: Example of Configured SIP Message Manipulation Rules

▼ Message Manipulations

Add +

Edit ↗

Delete ✖

Insert +

Up ↑

Down ↓

Show / Hide ☐

▼ All

Search in table

Search 🔍

Index	Name	Manipulation Set ID	Message Type	Condition	Action Subject	Action Type	Action Value	Row Role
0	Change From host 4	4	any.request		header.from.uri.host	Modify	header.to.uri.host	Use Current Cond
1	Change P-Asserte	4	any.request	header.p-asserted-identity	header.p-asserted-ide	Modify	header.to.uri.host	Use Current Cond
2	Reject Responses	4	any.response	header.request-uri.metho	header.request-uri.me	Modify	'480'	Use Current Cond

Page 1 of 1

10

View 1 - 3 of 3

The table displayed below includes SIP message manipulation rules which Manipulation Set ID 4 groups together and which are executed for messages sent to the BroadCloud SIP Trunk IP Group.

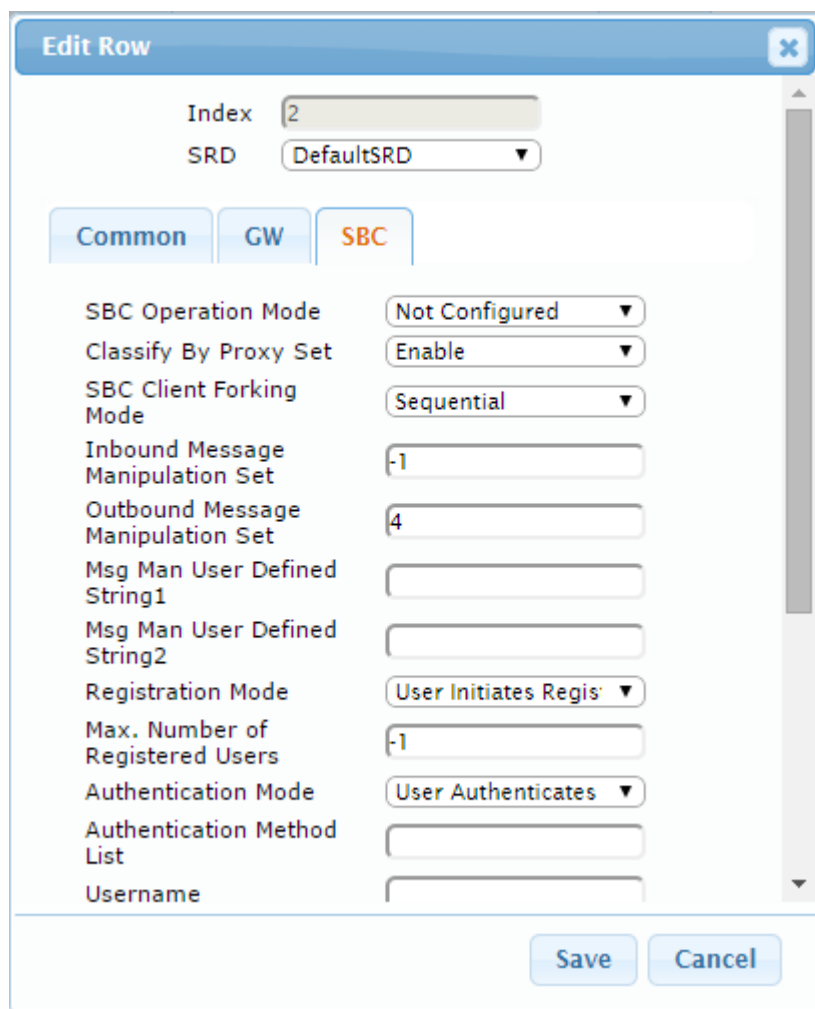
These rules are specifically required to enable correct interworking between BroadCloud SIP Trunk and IP-PBX.

Refer to the *User's Manual* for further details concerning the full capabilities of header manipulation.

Rule Index	Rule Description	Reason for Introducing Rule
0	This rule applies to messages sent to the BroadCloud SIP Trunk IP Group. This replaces the host part of the SIP From Header with the value from the SIP To Header.	BroadCloud SIP Trunk required that all messages should be from known hosts.
1	This rule applies to messages sent to the BroadCloud SIP Trunk IP Group. This replaces the host part of the SIP P-Asserted-Identity Header with the value from the SIP To Header.	
2	This rule applies to response messages sent to the BroadCloud SIP Trunk IP Group for Rejected Calls initiated by the IP-PBX IP Group. This replaces the '502' method type with the value '480'.	IP-PBX response with '502' method type when a call is made to an unavailable destination and BroadCloud SIP Trunk does not recognize '502' method type.

5. Assign Manipulation Set ID 4 to the BroadCloud SIP trunk IP Group:
 - a. Open the IP Group Table page (**Configuration** tab > **VoIP** menu > **VoIP Network** > **IP Group Table**).
 - b. Select the row of the BroadCloud SIP trunk IP Group, and then click **Edit**.
 - c. Click the **SBC** tab.
 - d. Set the 'Outbound Message Manipulation Set' field to 4.

Figure 4-35: Assigning Manipulation Set 4 to the BroadCloud SIP Trunk IP Group



Edit Row

Index: 2
SRD: DefaultSRD

Common **GW** **SBC**

SBC Operation Mode: Not Configured
Classify By Proxy Set: Enable
SBC Client Forking Mode: Sequential
Inbound Message Manipulation Set: -1
Outbound Message Manipulation Set: 4
Msg Man User Defined String1:
Msg Man User Defined String2:
Registration Mode: User Initiates Regis
Max. Number of Registered Users: -1
Authentication Mode: User Authenticates
Authentication Method List:
Username:

Save Cancel

- e. Click **Submit**.

4.11 Step 11: Configure Registration Accounts

This step describes how to configure SIP registration accounts so that the E-SBC can register with the BroadCloud SIP Trunk on behalf of the IP-PBX. The BroadCloud SIP Trunk requires registration and authentication to provide service.

In the interoperability test topology, the Served IP Group is the IP-PBX IP Group and the Serving IP Group is BroadCloud SIP Trunk IP Group.

Ø To configure a registration account:

1. Open the Account Table page (**Configuration** tab > **VoIP** menu > **SIP Definitions** > **Account Table**).
2. Enter an index number (e.g., "0"), and then click **Add**.
3. Configure the account according to provided information, for example:

Parameter	Value
Application Type	SBC
Served IP Group	IP-PBX
Serving IP Group	BroadCloud
Username	As provided by BroadCloud
Password	As provided by BroadCloud
Host Name	interop.adpt-tech.com
Register	Regular
Contact User	8325624857 (pilot number)

4. Click **Apply**.

Figure 4-36: Configuring SIP Registration Account

The screenshot shows the 'Account Table' interface. At the top, there are buttons for 'Add +', 'Edit', 'Delete', 'Action', and 'Show / Hide'. Below these is a search bar with 'All' selected and a 'Search' button. The table has 10 columns: Index, Application Type, Served Trunk Group, Served IP Group, Serving IP Group, User Name, Password, Host Name, Register, and Contact User. A single row is displayed with the following values: Index 0, Application Type SBC, Served Trunk Group -1, Served IP Group IP-PBX, Serving IP Group BroadCloud, User Name 8325624857, Password *, Host Name interop.adpt-, Register Regular, and Contact User 8325624857. At the bottom, there is a pagination bar showing 'Page 1 of 1' and 'View 1 - 1 of 1'.

Index	Application Type	Served Trunk Group	Served IP Group	Serving IP Group	User Name	Password	Host Name	Register	Contact User
0	SBC	-1	IP-PBX	BroadCloud	8325624857	*	interop.adpt-	Regular	8325624857

4.12 Step 12: Configure Miscellaneous E-SBC Settings

This section describes how to configure miscellaneous E-SBC settings.

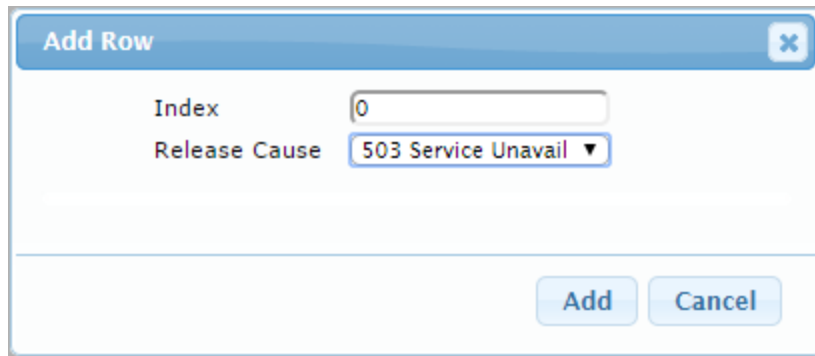
4.12.1 Step 12a: Configure SBC Alternative Routing Reasons

This step describes how to configure the E-SBC's handling of SIP 503 responses received for outgoing SIP dialog-initiating methods, e.g., INVITE, OPTIONS, and SUBSCRIBE messages. In this case, the E-SBC attempts to locate an alternative route for the call.

Ø To configure SIP reason codes for alternative IP routing:

1. Open the SBC Alternative Routing Reasons page (**Configuration** tab > **VoIP** menu > **SBC** > **Routing SBC** > **SBC Alternative Routing Reasons**).
2. Click **Add**; the following is displayed:

Figure 4-37: SBC Alternative Routing Reasons Table - Add Record



Add Row	
Index	0
Release Cause	503 Service Unavail
Add Cancel	

3. Click **Add**.

4.13 Step 13: Reset the E-SBC

After completing configuration of the E-SBC described in this chapter, save ("burn") the configuration to the E-SBC's flash memory with a reset for the settings to take effect.

Ø To save the configuration to flash memory:

1. Open the Maintenance Actions page (**Maintenance** tab > **Maintenance** menu > **Maintenance Actions**).

Figure 4-38: Resetting the E-SBC



The screenshot displays a web-based configuration interface for an E-SBC. It is organized into three main sections, each with a dropdown arrow on the left:

- Reset Configuration:** Contains three fields: 'Reset Board' with a 'Reset' button, 'Burn To FLASH' with a dropdown menu set to 'Yes', and 'Graceful Option' with a dropdown menu set to 'No'.
- LOCK / UNLOCK:** Contains three fields: 'Lock' with a 'LOCK' button, 'Graceful Option' with a dropdown menu set to 'No', and 'Gateway Operational State' with a text field displaying 'UNLOCKED'.
- Save Configuration:** Contains one field: 'Burn To FLASH' with a 'BURN' button.

2. Ensure that the 'Burn to FLASH' field is set to **Yes** (default).
3. Click the **Reset** button.

This page is intentionally left blank.

A AudioCodes INI File

The E-SBC's *ini* configuration file, corresponding to the Web-based configuration as described in Section 4, is shown below:



Note: To load and save an *ini* file, use the Configuration File page (**Maintenance** tab > **Software Update** menu > **Configuration File**).

```
*****
;
; ** Ini File **
;
*****

;Board: Mediant 800 E-SBC
;HW Board Type: 69  FK Board Type: 74
;Serial Number: 5299378
;Slot Number: 1
;Software Version: 7.00A.035.006
;DSP Software Version: 5014AE3_R => 700.40
;Board IP Address: 10.15.17.55
;Board Subnet Mask: 255.255.0.0
;Board Default Gateway: 10.15.0.1
;Ram size: 369M  Flash size: 64M  Core speed: 500Mhz
;Num of DSP Cores: 3  Num DSP Channels: 30
;Num of physical LAN ports: 4
;Profile: NONE
;;;Key features;;Board Type: 74 ;IP Media: Conf VXML
VoicePromptAnnounc(H248.9) CALEA TrunkTesting POC ;Channel Type: DspCh=30
IPMediaDspCh=30 ;Coders: G723 G729 G728 NETCODER GSM-FR GSM-EFR AMR EVRC-
QCELP G727 ILBC EVRC-B AMR-WB G722 EG711 MS_RTA_NB MS_RTA_WB SILK_NB
SILK_WB SPEEX_NB SPEEX_WB ;DSP Voice features: IpmDetector RTCP-XR
AMRPolicyManagement ;E1Trunks=1 ;FXSPorts=8 ;FXOPorts=0 ;BRITrunks=5
;Security: IPSEC MediaEncryption StrongEncryption EncryptControlProtocol
;DATA features: ;QOE features: VoiceQualityMonitoring MediaEnhancement
;Control Protocols: MSFT CLI TRANSCODING=30 FEU=100 TestCall=100 MGCP
MEGACO H323 SIP TPNCPC SASurvivability SBC=50 ;Default features;;Coders:
G711 G726;

;----- HW components-----
;
; Slot # : Module type : # of ports
;-----
;      1 : FALC56      : 1
;      2 : FXS         : 4
;      3 : BRI         : 4
;-----

[SYSTEM Params]

SyslogServerIP = 10.15.17.100
EnableSyslog = 1
;NTPServerIP_abs is hidden but has non-default value
NTPServerUTCOffset = 7200
;VpFileLastUpdateTime is hidden but has non-default value
NTPServerIP = '10.15.25.1'
```

```
;LastConfigChangeTime is hidden but has non-default value
;PM_gwINVITEDialogs is hidden but has non-default value
;PM_gwSUBSCRIBEDialogs is hidden but has non-default value
;PM_gwSBCRegisteredUsers is hidden but has non-default value
;PM_gwSBCMediaLegs is hidden but has non-default value
;PM_gwSBCTranscodingSessions is hidden but has non-default value
```

[BSP Params]

```
PCMLawSelect = 3
UdpPortSpacing = 10
EnterCpuOverloadPercent = 99
ExitCpuOverloadPercent = 95
```

[Analog Params]

[ControlProtocols Params]

```
AdminStateLockControl = 0
```

[MGCP Params]

[MEGACO Params]

```
EP_Num_0 = 0
EP_Num_1 = 1
EP_Num_2 = 1
EP_Num_3 = 0
EP_Num_4 = 0
```

[PSTN Params]

[SS7 Params]

[Voice Engine Params]

```
ENABLEMEDIASEcurity = 1
CallProgressTonesFilename = 'usa_tones_13.dat'
```

[WEB Params]

```
UserProductName = 'Mediant 800 E-SBC'
WebLogoText = 'BroadCloud'
UseWeblogo = 1
;UseLogoInWeb is hidden but has non-default value
UseProductName = 1
HTTPSCipherString = 'RC4:EXP'
;HTTPSPkeyFileName is hidden but has non-default value
```

[SIP Params]

```
MEDIACHANNELS = 30
```

```

GWDEBUGLEVEL = 5
;ISPRACKREQUIRED is hidden but has non-default value
ENABLESBCAPPLICATION = 1
MSLDAPPRIMARYKEY = 'telephoneNumber'
MEDIACDRREPORTLEVEL = 1
SBCFORKINGHANDLINGMODE = 1
ENERGYDETECTORCMD = 587202560
ANSWERDETECTORCMD = 10486144
;GWAPPCONFIGURATIONVERSION is hidden but has non-default value

[SCTP Params]

[IPsec Params]

[Audio Staging Params]

[SNMP Params]

[ PhysicalPortsTable ]

FORMAT PhysicalPortsTable_Index = PhysicalPortsTable_Port,
PhysicalPortsTable_Mode, PhysicalPortsTable_SpeedDuplex,
PhysicalPortsTable_PortDescription, PhysicalPortsTable_GroupMember,
PhysicalPortsTable_GroupStatus;
PhysicalPortsTable 0 = "GE_4_1", 1, 4, "User Port #0", "GROUP_1",
"Active";
PhysicalPortsTable 1 = "GE_4_2", 1, 4, "User Port #1", "GROUP_1",
"Redundant";
PhysicalPortsTable 2 = "GE_4_3", 1, 4, "User Port #2", "GROUP_2",
"Active";
PhysicalPortsTable 3 = "GE_4_4", 1, 4, "User Port #3", "GROUP_2",
"Redundant";

[ \PhysicalPortsTable ]

[ EtherGroupTable ]

FORMAT EtherGroupTable_Index = EtherGroupTable_Group,
EtherGroupTable_Mode, EtherGroupTable_Member1, EtherGroupTable_Member2;
EtherGroupTable 0 = "GROUP_1", 2, "GE_4_1", "GE_4_2";
EtherGroupTable 1 = "GROUP_2", 2, "GE_4_3", "GE_4_4";
EtherGroupTable 2 = "GROUP_3", 0, "", "";
EtherGroupTable 3 = "GROUP_4", 0, "", "";

[ \EtherGroupTable ]

[ DeviceTable ]

FORMAT DeviceTable_Index = DeviceTable_VlanID,
DeviceTable_UnderlyingInterface, DeviceTable_DeviceName,
DeviceTable_Tagging;
DeviceTable 0 = 1, "GROUP_1", "vlan 1", 0;

```

```

DeviceTable 1 = 2, "GROUP_2", "vlan 2", 0;

[ \DeviceTable ]

[ InterfaceTable ]

FORMAT InterfaceTable_Index = InterfaceTable_ApplicationTypes,
InterfaceTable_InterfaceMode, InterfaceTable_IPAddress,
InterfaceTable_PrefixLength, InterfaceTable_Gateway,
InterfaceTable_InterfaceName, InterfaceTable_PrimaryDNSServerIPAddress,
InterfaceTable_SecondaryDNSServerIPAddress,
InterfaceTable_UnderlyingDevice;
InterfaceTable 0 = 6, 10, 10.15.17.55, 16, 10.15.0.1, "Voice",
10.15.25.1, 0.0.0.0, "vlan 1";
InterfaceTable 1 = 5, 10, 195.189.192.139, 25, 195.189.192.129, "WANSP",
80.179.52.100, 80.179.55.100, "vlan 2";

[ \InterfaceTable ]

[ DspTemplates ]

;
; *** TABLE DspTemplates ***
; This table contains hidden elements and will not be exposed.
; This table exists on board and will be saved during restarts.
;

[ \DspTemplates ]

[ WebUsers ]

FORMAT WebUsers_Index = WebUsers_Username, WebUsers_Password,
WebUsers_Status, WebUsers_PwAgeInterval, WebUsers_SessionLimit,
WebUsers_SessionTimeout, WebUsers_BlockTime, WebUsers_UserLevel,
WebUsers_PwNonce;
WebUsers 0 = "Admin",
"$1$hbGzsL2477/p67a29KP0pvCkpqL9+/+rpPmprZaRlJCVl8KQmJuSz52enJvShIqBh42Gh
oCMjtij34yGovD18Pw=", 1, 0, 2, 15, 60, 200,
"e4cd1118cb1cb9e6bfc32988cb8a667";
WebUsers 1 = "User",
"$1$nKmork2Sx8GXlpCRlp2RycqUy5ac0tSF1oGE1NSNjoqD2tiH3Pn1o6am9fShraz7+v///
PzmsOXj5eTls+6/6e4=", 1, 0, 2, 15, 60, 50,
"b2873413d626646820e3070f0a994893";

[ \WebUsers ]

[ TLSContexts ]

FORMAT TLSContexts_Index = TLSContexts_Name, TLSContexts_TLSVersion,
TLSContexts_ServerCipherString, TLSContexts_ClientCipherString,
TLSContexts_OcspEnable, TLSContexts_OcspServerPrimary,
TLSContexts_OcspServerSecondary, TLSContexts_OcspServerPort,
TLSContexts_OcspDefaultResponse;
TLSContexts 0 = "default", 0, "RC4:EXP", "ALL:!ADH", 0, 0.0.0.0, 0.0.0.0,
2560, 0;

```

```
[ \TLSContexts ]
```

```
[ IpProfile ]
```

```
FORMAT IpProfile_Index = IpProfile_ProfileName, IpProfile_IpPreference,
IpProfile_CodersGroupID, IpProfile_IsFaxUsed,
IpProfile_JitterBufMinDelay, IpProfile_JitterBufOptFactor,
IpProfile_IPDiffServ, IpProfile_SigIPDiffServ, IpProfile_SCE,
IpProfile_RTPRedundancyDepth, IpProfile_RemoteBaseUDPPort,
IpProfile_CNGmode, IpProfile_VxxTransportType, IpProfile_NSEMode,
IpProfile_IsDTMFUsed, IpProfile_PlayRBTone2IP,
IpProfile_EnableEarlyMedia, IpProfile_ProgressIndicator2IP,
IpProfile_EnableEchoCanceller, IpProfile_CopyDest2RedirectNumber,
IpProfile_MediaSecurityBehaviour, IpProfile_CallLimit,
IpProfile_DisconnectOnBrokenConnection, IpProfile_FirstTxDtmfOption,
IpProfile_SecondTxDtmfOption, IpProfile_RxDTMFOption,
IpProfile_EnableHold, IpProfile_InputGain, IpProfile_VoiceVolume,
IpProfile_AddIEInSetup, IpProfile_SBCExtensionCodersGroupID,
IpProfile_MediaIPVersionPreference, IpProfile_TranscodingMode,
IpProfile_SBCAllowedMediaTypes, IpProfile_SBCAllowedCodersGroupID,
IpProfile_SBCAllowedVideoCodersGroupID, IpProfile_SBCAllowedCodersMode,
IpProfile_SBCMediaSecurityBehaviour, IpProfile_SBCRFC2833Behavior,
IpProfile_SBCAlternativeDTMFMethod, IpProfile_SBCAssertIdentity,
IpProfile_AMDSensitivityParameterSuit, IpProfile_AMDSensitivityLevel,
IpProfile_AMDMaxGreetingTime, IpProfile_AMDMaxPostSilenceGreetingTime,
IpProfile_SBCDiversionsMode, IpProfile_SBCHistoryInfoMode,
IpProfile_EnableQSIGTunneling, IpProfile_SBCFaxCodersGroupID,
IpProfile_SBCFaxBehavior, IpProfile_SBCFaxOfferMode,
IpProfile_SBCFaxAnswerMode, IpProfile_SbcPrackMode,
IpProfile_SBCSessionExpiresMode, IpProfile_SBCRemoteUpdateSupport,
IpProfile_SBCRemoteReinviteSupport,
IpProfile_SBCRemoteDelayedOffersSupport, IpProfile_SBCRemoteReferBehavior,
IpProfile_SBCRemote3xxBehavior, IpProfile_SBCRemoteMultiple18xSupport,
IpProfile_SBCRemoteEarlyMediaResponseType,
IpProfile_SBCRemoteEarlyMediaSupport, IpProfile_EnableSymmetricMKI,
IpProfile_MKISize, IpProfile_SBCEnforceMKISize,
IpProfile_SBCRemoteEarlyMediaRTP, IpProfile_SBCRemoteSupportsRFC3960,
IpProfile_SBCRemoteCanPlayRingback, IpProfile_EnableEarly183,
IpProfile_EarlyAnswerTimeout, IpProfile_SBC2833DTMFPayloadType,
IpProfile_SBCUserRegistrationTime, IpProfile_ResetSRTPStateUponRekey,
IpProfile_AmdMode, IpProfile_SBCReliableHeldToneSource,
IpProfile_GenerateSRTPKeys, IpProfile_SBCPlayHeldTone,
IpProfile_SBCRemoteHoldFormat, IpProfile_SBCRemoteReplacesBehavior,
IpProfile_SBCSDPptimeAnswer, IpProfile_SBCPreferredPTime,
IpProfile_SBCUseSilenceSupp, IpProfile_SBCRTPRedundancyBehavior,
IpProfile_SBCPlayRBTToTransferee, IpProfile_SBCRTCPMode,
IpProfile_SBCJitterCompensation,
IpProfile_SBCRemoteRenegotiateOnFaxDetection,
IpProfile_JitterBufMaxDelay,
IpProfile_SBCUserBehindUdpNATRegistrationTime,
IpProfile_SBCUserBehindTcpNATRegistrationTime,
IpProfile_SBCSDPHandleRTCPAttribute,
IpProfile_SBCRemoveCryptoLifetimeInSDP, IpProfile_SBCIceMode,
IpProfile_SBCRTCPMux, IpProfile_SBCMediaSecurityMethod,
IpProfile_SBCHandleXDetect, IpProfile_SBCRTCPFeedback,
IpProfile_SBCRemoteRepresentationMode, IpProfile_SBCKeepVIAHeaders,
IpProfile_SBCKeepRoutingHeaders, IpProfile_SBCKeepUserAgentHeader,
IpProfile_SBCRemoteMultipleEarlyDialogs,
IpProfile_SBCRemoteMultipleAnswersMode, IpProfile_SBCDirectMediaTag,
IpProfile_SBCAdaptRFC2833BWToVoiceCoderBW;
IpProfile 1 = "IP-PBX", 1, 0, 0, 10, 10, 46, 40, 0, 0, 0, 0, 2, 0, 0, 0,
0, -1, 1, 0, 0, -1, 0, 4, -1, 1, 1, 0, 0, "", -1, 0, 0, "", -1, -1, 0, 0,
0, 0, 0, 0, 8, 300, 400, 0, 0, 0, -1, 0, 0, 1, 3, 0, 2, 2, 1, 0, 0, 1, 0,
1, 1, 1, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 300, -1, -1, 0, 0, 0, 0, 0, 0, 0, -1, -1, -1, -1, -1, 0, "", 0;
```

```

IpProfile 2 = "BroadCloud", 1, 0, 0, 10, 10, 46, 40, 0, 0, 0, 0, 2, 0, 0,
0, 0, -1, 1, 0, 0, -1, 0, 4, -1, 1, 1, 0, 0, "", -1, 0, 0, "", -1, -1, 0,
2, 0, 0, 1, 0, 8, 300, 400, 0, 0, 0, -1, 0, 0, 1, 3, 0, 2, 2, 1, 0, 0, 1,
0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1,
0, 0, 0, 300, -1, -1, 0, 0, 0, 0, 0, 0, 0, -1, -1, -1, -1, -1, 0, "", 0;

[ \IpProfile ]

[ CpMediaRealm ]

FORMAT CpMediaRealm_Index = CpMediaRealm_MediaRealmName,
CpMediaRealm_IPv4IF, CpMediaRealm_IPv6IF, CpMediaRealm_PortRangeStart,
CpMediaRealm_MediaSessionLeg, CpMediaRealm_PortRangeEnd,
CpMediaRealm_IsDefault, CpMediaRealm_QoeProfile, CpMediaRealm_BWProfile;
CpMediaRealm 0 = "MRLan", "Voice", "", 16000, 100, 16990, 0, "", "";
CpMediaRealm 1 = "MRwan", "WANSP", "", 7000, 100, 7990, 0, "", "";

[ \CpMediaRealm ]

[ SBCRoutingPolicy ]

FORMAT SBCRoutingPolicy_Index = SBCRoutingPolicy_Name,
SBCRoutingPolicy_LCREnable, SBCRoutingPolicy_LCRAverageCallLength,
SBCRoutingPolicy_LCRDefaultCost, SBCRoutingPolicy_LdapServerGroupName;
SBCRoutingPolicy 0 = "Default_SBCRoutingPolicy", 0, 1, 0, "";

[ \SBCRoutingPolicy ]

[ SRD ]

FORMAT SRD_Index = SRD_Name, SRD_BlockUnRegUsers, SRD_MaxNumOfRegUsers,
SRD_EnableUnAuthenticatedRegistrations, SRD_SharingPolicy,
SRD_UsedByRoutingServer, SRD_SBCOperationMode,
SRD_SBCRegisteredUsersClassificationMethod, SRD_SBCRoutingPolicyName;
SRD 0 = "DefaultSRD", 0, -1, 1, 0, 0, 0, -1, "Default_SBCRoutingPolicy";

[ \SRD ]

[ SIPInterface ]

FORMAT SIPInterface_Index = SIPInterface_InterfaceName,
SIPInterface_NetworkInterface, SIPInterface_ApplicationType,
SIPInterface_UDPPort, SIPInterface_TCPPort, SIPInterface_TLSPort,
SIPInterface_SRDName, SIPInterface_MessagePolicyName,
SIPInterface_TLSContext, SIPInterface_TLSMutualAuthentication,
SIPInterface_TCPKeepaliveEnable,
SIPInterface_ClassificationFailureResponseType,
SIPInterface_PreClassificationManSet, SIPInterface_EncapsulatingProtocol,
SIPInterface_MediaRealm, SIPInterface_SBCDirectMedia,
SIPInterface_BlockUnRegUsers, SIPInterface_MaxNumOfRegUsers,
SIPInterface_EnableUnAuthenticatedRegistrations,
SIPInterface_UsedByRoutingServer;
SIPInterface 0 = "IP-PBX", "Voice", 2, 5060, 0, 0, "DefaultSRD", "",
"default", -1, 0, 500, -1, 0, "MRLan", 0, -1, -1, -1, 0;
SIPInterface 1 = "BroadCloud", "WANSP", 2, 5060, 0, 0, "DefaultSRD", "",
"default", -1, 0, 500, -1, 0, "MRwan", 0, -1, -1, -1, 0;

```

```

[ \SIPInterface ]

[ ProxySet ]

FORMAT ProxySet_Index = ProxySet_ProxyName,
ProxySet_EnableProxyKeepAlive, ProxySet_ProxyKeepAliveTime,
ProxySet_ProxyLoadBalancingMethod, ProxySet_IsProxyHotSwap,
ProxySet_SRDName, ProxySet_ClassificationInput, ProxySet_TLSContextName,
ProxySet_ProxyRedundancyMode, ProxySet_DNSResolveMethod,
ProxySet_KeepAliveFailureResp, ProxySet_GWIPv4SIPInterfaceName,
ProxySet_SBCIPv4SIPInterfaceName, ProxySet_SASIPv4SIPInterfaceName,
ProxySet_GWIPv6SIPInterfaceName, ProxySet_SBCIPv6SIPInterfaceName,
ProxySet_SASIPv6SIPInterfaceName;
ProxySet 0 = "IP-PBX", 1, 60, 0, 0, "DefaultSRD", 0, "", -1, -1, "", "",
"IP-PBX", "", "", "", "";
ProxySet 1 = "BroadCloud", 1, 60, 0, 0, "DefaultSRD", 0, "", -1, 1, "",
"", "BroadCloud", "", "", "", "";

[ \ProxySet ]

[ IPGroup ]

FORMAT IPGroup_Index = IPGroup_Type, IPGroup_Name, IPGroup_ProxySetName,
IPGroup_SIPGroupName, IPGroup_ContactUser, IPGroup_SipReRoutingMode,
IPGroup_AlwaysUseRouteTable, IPGroup_SRDName, IPGroup_MediaRealm,
IPGroup_ClassifyByProxySet, IPGroup_ProfileName,
IPGroup_MaxNumOfRegUsers, IPGroup_InboundManSet, IPGroup_OutboundManSet,
IPGroup_RegistrationMode, IPGroup_AuthenticationMode, IPGroup_MethodList,
IPGroup_EnablesSBCCClientForking, IPGroup_SourceUriInput,
IPGroup_DestUriInput, IPGroup_ContactName, IPGroup_Username,
IPGroup_Password, IPGroup_UUIFormat, IPGroup_QOEProfile,
IPGroup_BWProfile, IPGroup_MediaEnhancementProfile,
IPGroup_AlwaysUseSourceAddr, IPGroup_MsgManUserDef1,
IPGroup_MsgManUserDef2, IPGroup_SIPConnect, IPGroup_SBCPSAPMode,
IPGroup_DTLSContext, IPGroup_CreatedByRoutingServer,
IPGroup_UsedByRoutingServer, IPGroup_SBCOperationMode,
IPGroup_SBCRouteUsingRequestURIPort;
IPGroup 0 = 0, "IP-PBX", "IP-PBX", "10.15.25.12", "", -1, 0,
"DefaultSRD", "MRLan", 1, "IP-PBX", -1, -1, -1, 0, 0, "", 0, -1, -1, "",
"", "$1$gQ==", 0, "", "", "", 0, "", "", 0, 0, "", 0, 0, -1, 0;
IPGroup 1 = 0, "BroadCloud", "BroadCloud", "interop.adpt-tech.com", "", -
1, 0, "DefaultSRD", "MRwan", 1, "BroadCloud", -1, -1, 4, 0, 0, "", 0, -1,
-1, "", "", "$1$gQ==", 0, "", "", "", 0, "", "", 0, 0, "", 0, 0, -1, 0;

[ \IPGroup ]

[ SBCCAlternativeRoutingReasons ]

FORMAT SBCCAlternativeRoutingReasons_Index =
SBCCAlternativeRoutingReasons_ReleaseCause;
SBCCAlternativeRoutingReasons 0 = 503;

[ \SBCCAlternativeRoutingReasons ]

[ ProxyIp ]

```

```

FORMAT ProxyIp_Index = ProxyIp_ProxySetId, ProxyIp_ProxyIpIndex,
ProxyIp_IpAddress, ProxyIp_TransportType;
ProxyIp 0 = "0", 0, "10.15.25.12:5060", 0;
ProxyIp 1 = "1", 0, "nn6300southsipconnect.adpt-tech.com", 0;

[ \ProxyIp ]

[ Account ]

FORMAT Account_Index = Account_ServedTrunkGroup,
Account_ServedIPGroupName, Account_ServingIPGroupName, Account_Username,
Account_Password, Account_HostName, Account_Register,
Account_ContactUser, Account_ApplicationType;
Account 0 = -1, "IP-PBX", "BroadCloud", "8325624857",
"$1$SSg/LyUiDSA0NCFhZGRj", "interop.adpt-tech.com", 1, "8325624857", 2;

[ \Account ]

[ IP2IPRouting ]

FORMAT IP2IPRouting_Index = IP2IPRouting_RouteName,
IP2IPRouting_RoutingPolicyName, IP2IPRouting_SrcIPGroupName,
IP2IPRouting_SrcUsernamePrefix, IP2IPRouting_SrcHost,
IP2IPRouting_DestUsernamePrefix, IP2IPRouting_DestHost,
IP2IPRouting_RequestType, IP2IPRouting_MessageConditionName,
IP2IPRouting_ReRouteIPGroupName, IP2IPRouting_Trigger,
IP2IPRouting_CallSetupRulesSetId, IP2IPRouting_DestType,
IP2IPRouting_DestIPGroupName, IP2IPRouting_DestSIPInterfaceName,
IP2IPRouting_DestAddress, IP2IPRouting_DestPort,
IP2IPRouting_DestTransportType, IP2IPRouting_AltRouteOptions,
IP2IPRouting_GroupPolicy, IP2IPRouting_CostGroup;
IP2IPRouting 0 = "Terminate OPTIONS", "Default_SBCRoutingPolicy", "Any",
"*, **", "", "", 6, "", "Any", 0, -1, 1, "", "", "internal", 0, -1, 0,
0, "";
IP2IPRouting 1 = "IP-PBX to ITSP", "Default_SBCRoutingPolicy", "IP-PBX",
"*, **", "", "", 0, "", "Any", 0, -1, 0, "BroadCloud", "BroadCloud",
"", 0, -1, 0, 0, "";
IP2IPRouting 2 = "ITSP to IP-PBX", "Default_SBCRoutingPolicy",
"BroadCloud", "", "", "", "", 0, "", "Any", 0, -1, 0, "IP-PBX", "IP-
PBX", "", 0, -1, 0, 0, "";

[ \IP2IPRouting ]

[ IPOutboundManipulation ]

FORMAT IPOutboundManipulation_Index =
IPOutboundManipulation_ManipulationName,
IPOutboundManipulation_RoutingPolicyName,
IPOutboundManipulation_IsAdditionalManipulation,
IPOutboundManipulation_SrcIPGroupName,
IPOutboundManipulation_DestIPGroupName,
IPOutboundManipulation_SrcUsernamePrefix, IPOutboundManipulation_SrcHost,
IPOutboundManipulation_DestUsernamePrefix,
IPOutboundManipulation_DestHost,
IPOutboundManipulation_CallingNamePrefix,
IPOutboundManipulation_MessageConditionName,
IPOutboundManipulation_RequestType,
IPOutboundManipulation_ReRouteIPGroupName,
IPOutboundManipulation_Trigger, IPOutboundManipulation_ManipulatedURI,

```

```

IPOutboundManipulation_RemoveFromLeft,
IPOutboundManipulation_RemoveFromRight,
IPOutboundManipulation_LeaveFromRight, IPOutboundManipulation_Prefix2Add,
IPOutboundManipulation_Suffix2Add,
IPOutboundManipulation_PrivacyRestrictionMode;
IPOutboundManipulation 0 = "Call to desk", "Default_SBCRoutingPolicy", 0,
"IP-PBX", "BroadCloud", "*", "*", "4347", "*", "*", "", 0, "Any", 0, 1,
0, 0, 255, "0119723976", "", 0;
IPOutboundManipulation 1 = "Call to mobile", "Default_SBCRoutingPolicy",
0, "IP-PBX", "BroadCloud", "*", "*", "4774", "*", "*", "", 0, "Any", 0,
1, 1, 0, 255, "011972546262", "", 0;
IPOutboundManipulation 2 = "For Anonymous", "Default_SBCRoutingPolicy",
0, "IP-PBX", "BroadCloud", "*", "*", "*", "*", "*", "", 0, "Any", 0, 0,
0, 0, 255, "", "", 0;

[ \IPOutboundManipulation ]

[ CodersGroup0 ]

FORMAT CodersGroup0_Index = CodersGroup0_Name, CodersGroup0_pTime,
CodersGroup0_rate, CodersGroup0_PayloadType, CodersGroup0_Sce,
CodersGroup0_CoderSpecific;
CodersGroup0 0 = "g711Alaw64k", 20, 255, -1, 0, "";

[ \CodersGroup0 ]

[ MessageManipulations ]

FORMAT MessageManipulations_Index =
MessageManipulations_ManipulationName, MessageManipulations_ManSetID,
MessageManipulations_MessageType, MessageManipulations_Condition,
MessageManipulations_ActionSubject, MessageManipulations_ActionType,
MessageManipulations_ActionValue, MessageManipulations_RowRole;
MessageManipulations 0 = "Change From host", 4, "any.request", "",
"header.from.url.host", 2, "header.to.url.host", 0;
MessageManipulations 1 = "Change P-Asserted host", 4, "any.request",
"header.p-asserted-identity exists", "header.p-asserted-
identity.url.host", 2, "header.to.url.host", 0;
MessageManipulations 2 = "Reject Responses", 4, "any.response",
"header.request-uri.methodtype=='502'", "header.request-uri.methodtype",
2, "'480'", 0;

[ \MessageManipulations ]

[ GwRoutingPolicy ]

FORMAT GwRoutingPolicy_Index = GwRoutingPolicy_Name,
GwRoutingPolicy_LCREnable, GwRoutingPolicy_LCRAverageCallLength,
GwRoutingPolicy_LCRDefaultCost, GwRoutingPolicy_LdapServerGroupName;
GwRoutingPolicy 0 = "GwRoutingPolicy", 0, 1, 0, "";

[ \GwRoutingPolicy ]

[ ResourcePriorityNetworkDomains ]

```

```
FORMAT ResourcePriorityNetworkDomains_Index =  
ResourcePriorityNetworkDomains_Name,  
ResourcePriorityNetworkDomains_Ip2TelInterworking;  
ResourcePriorityNetworkDomains 1 = "dsn", 1;  
ResourcePriorityNetworkDomains 2 = "dod", 1;  
ResourcePriorityNetworkDomains 3 = "drsn", 1;  
ResourcePriorityNetworkDomains 5 = "uc", 1;  
ResourcePriorityNetworkDomains 7 = "cuc", 1;  
  
[ \ResourcePriorityNetworkDomains ]
```

This page is intentionally left blank.

International Headquarters

1 Hayarden Street,
Airport City
Lod 7019900, Israel
Tel: +972-3-976-4000
Fax: +972-3-976-4040

AudioCodes Inc.

27 World's Fair Drive,
Somerset, NJ 08873
Tel: +1-732-469-0880
Fax: +1-732-469-2298

Contact us: www.audiocodes.com/info

Website: www.audiocodes.com



Document #: LTRT-12502