Configuration Note

AudioCodes Professional Services - Interoperability Lab

Connecting innovaphone IP-PBX with BroadCloud SIP Trunk using Mediant™ SBC

Version 7.2

innovaphone
PURE IP COMMUNICATIONS

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Notice

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

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1 Introduction

This Configuration Note describes how to set up AudioCodes Enterprise Session Border Controller (hereafter, referred to as *E-SBC*) for interworking between BroadCloud's SIP Trunk and the innovaphone 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 innovaphone 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.

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2 Component Information

2.1 IP-PBX Version

Table 2-1: IP-PBX Version

Vendor	innovaphone
Model	IP411 v.11r2 sr10
Protocol	SIP/UDP
Additional Notes	

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 ▪ Mediant SW-SBC
Software Version	SIP_F7.20A.001
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

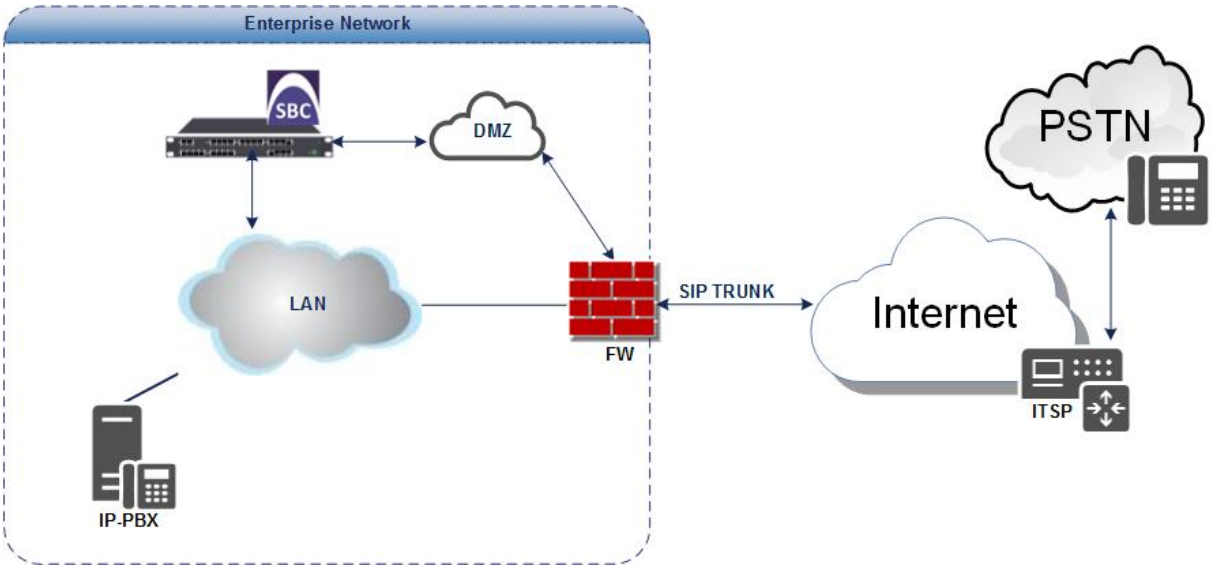
2.4 Interoperability Test Topology

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

- Enterprise deployed with IP-PBX in its private network for enhanced communication within the Enterprise.
- Enterprise wishes to offer its employees enterprise-voice capabilities and to connect the Enterprise to the PSTN network using BroadCloud's SIP Trunking service.
- 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.

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3 Configuring Unify Innovaphone IP-PBX

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

Note: For more complicated configuration parameters, refer to the *Users Manual* for each IP-PBX.

3.1 Basic Configuration Parameters

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

Figure 3-1: innovaphone Interface- IP411 Info

Figure 3-2: innovaphone Interface- IP411- ETHO

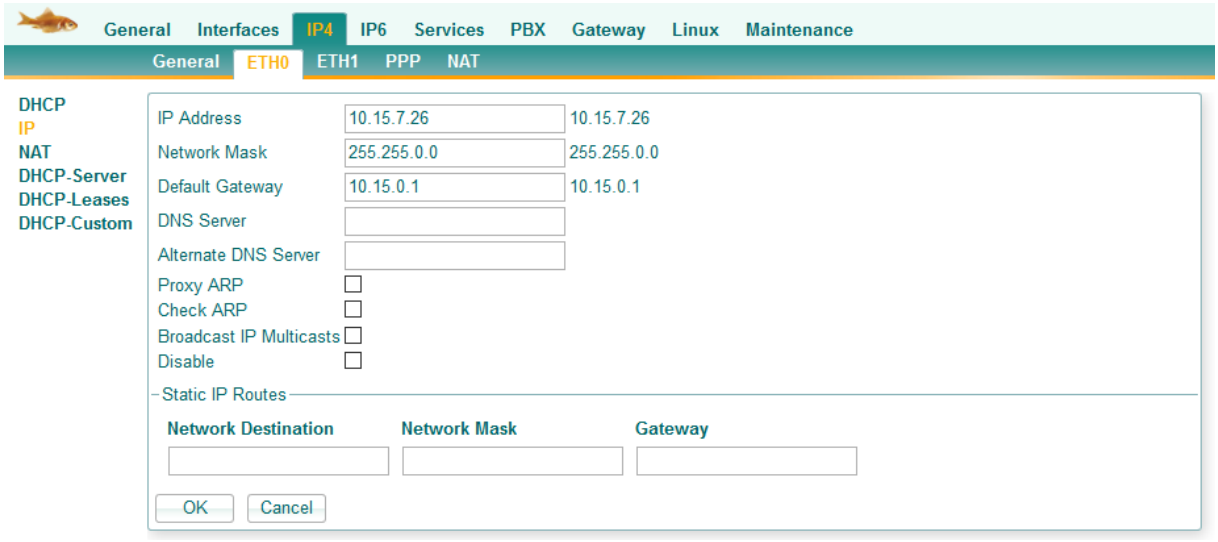


Figure 3-3: innovaphone Interface- PBX

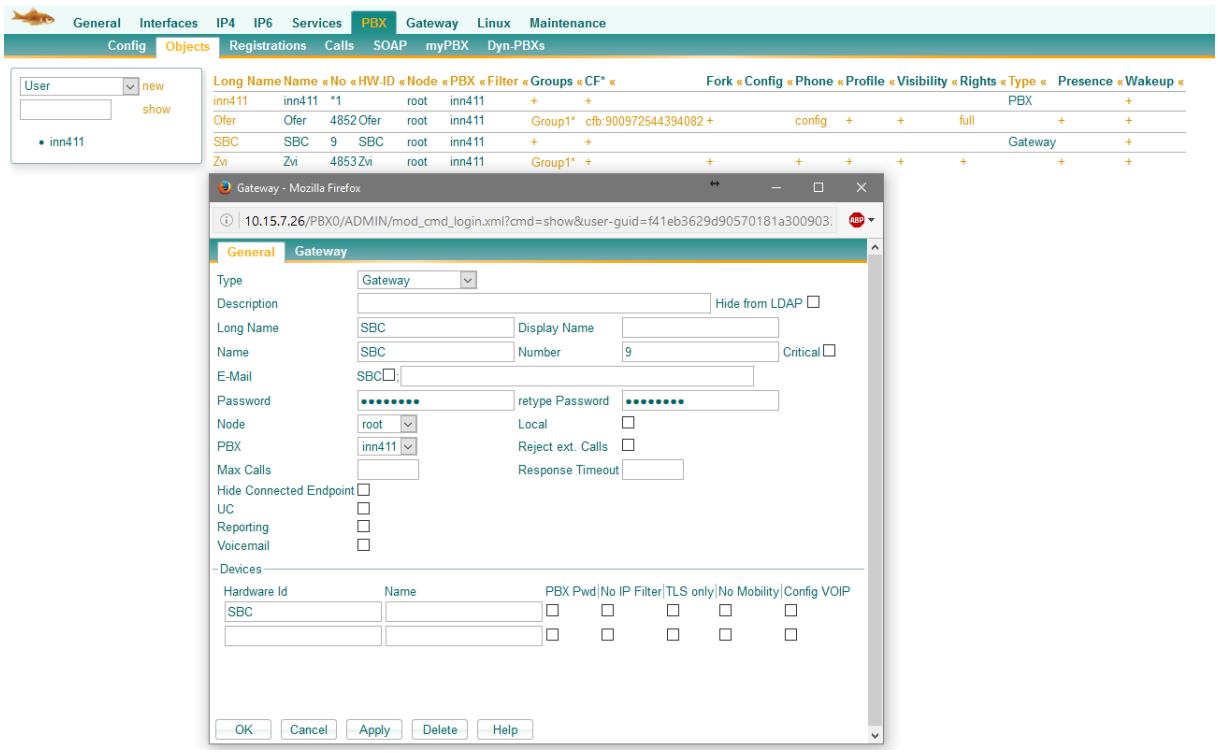


Figure 3-4: innovaphone Interface- General

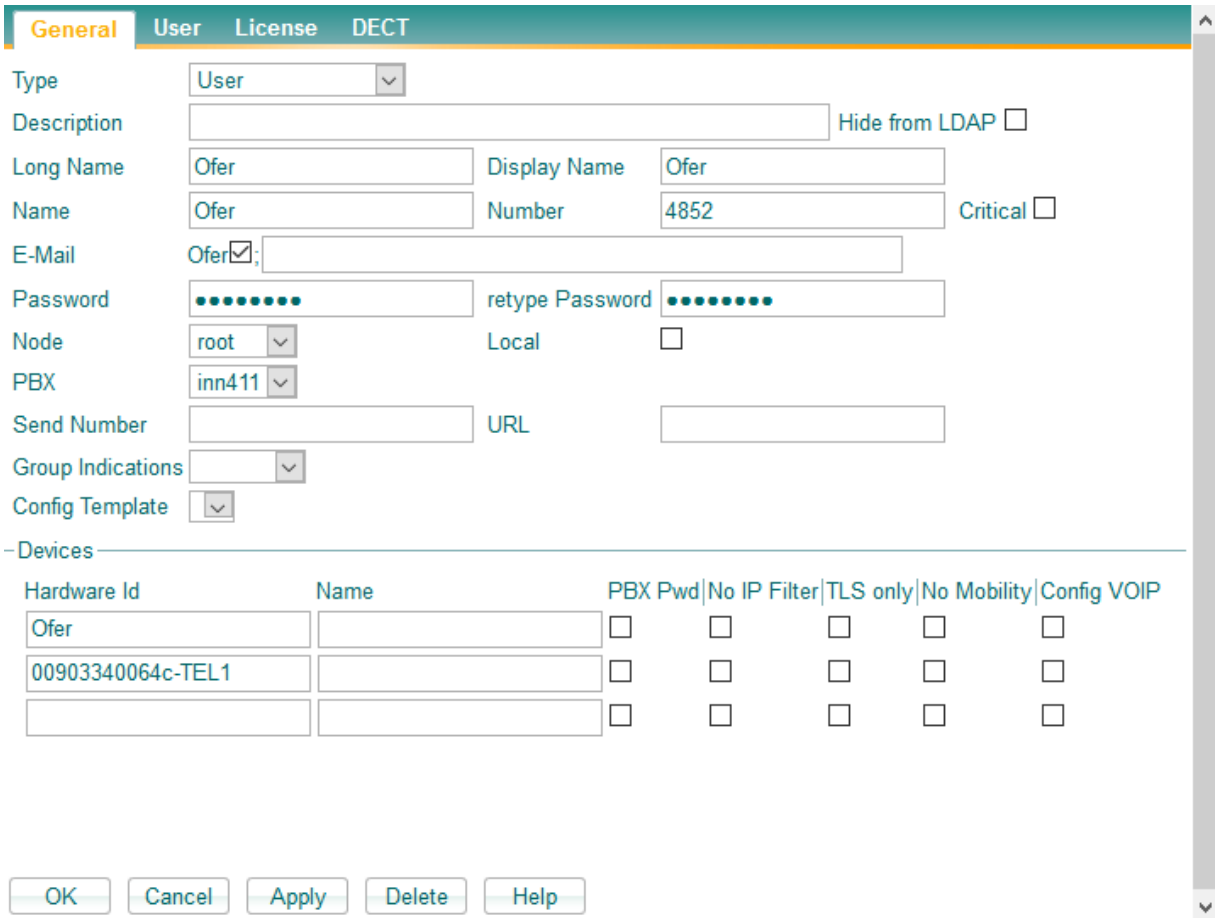


Figure 3-5: innovaphone Interface- Gateway

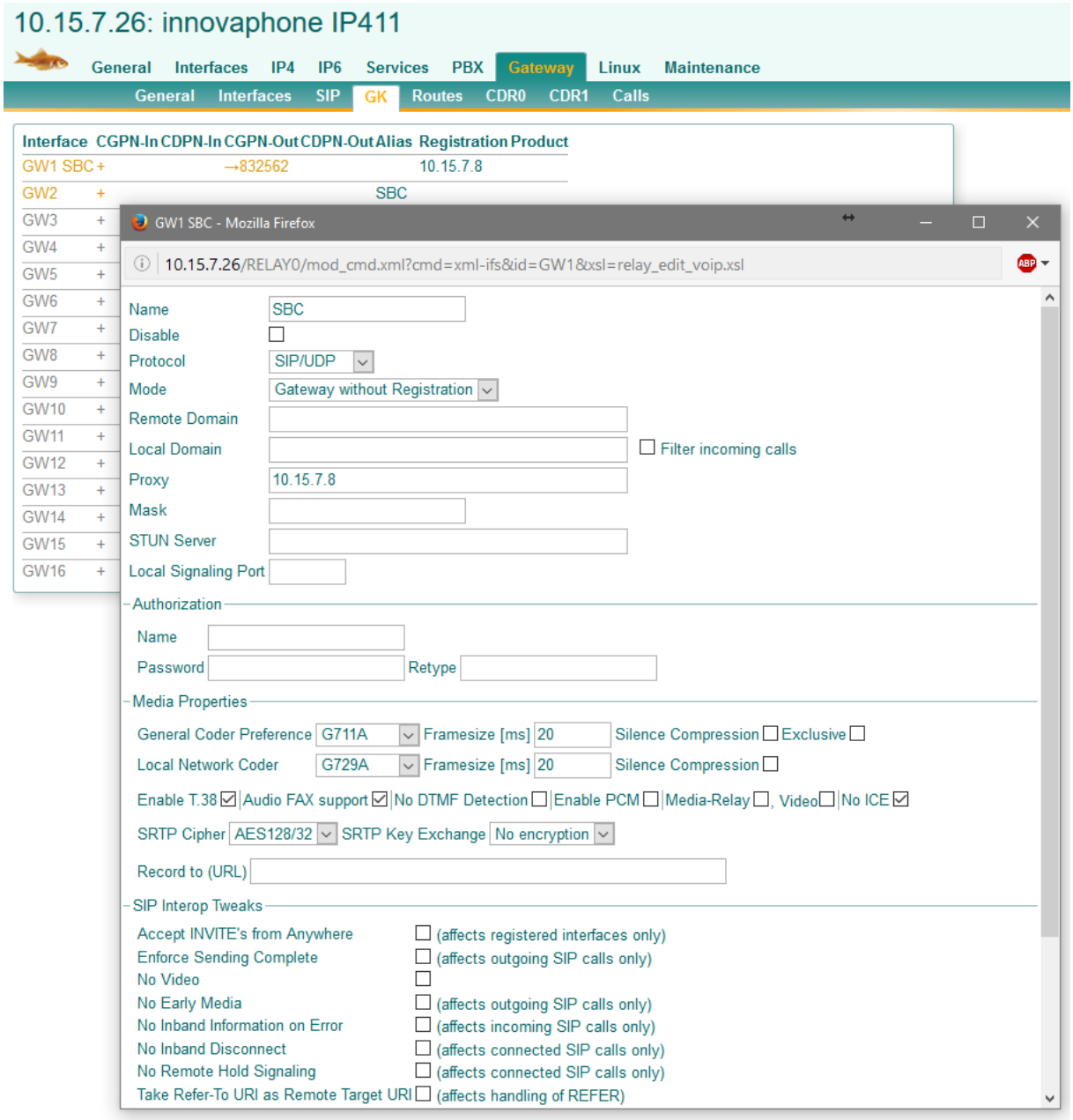


Figure 3-6: innovaphone Interface- Media Properties

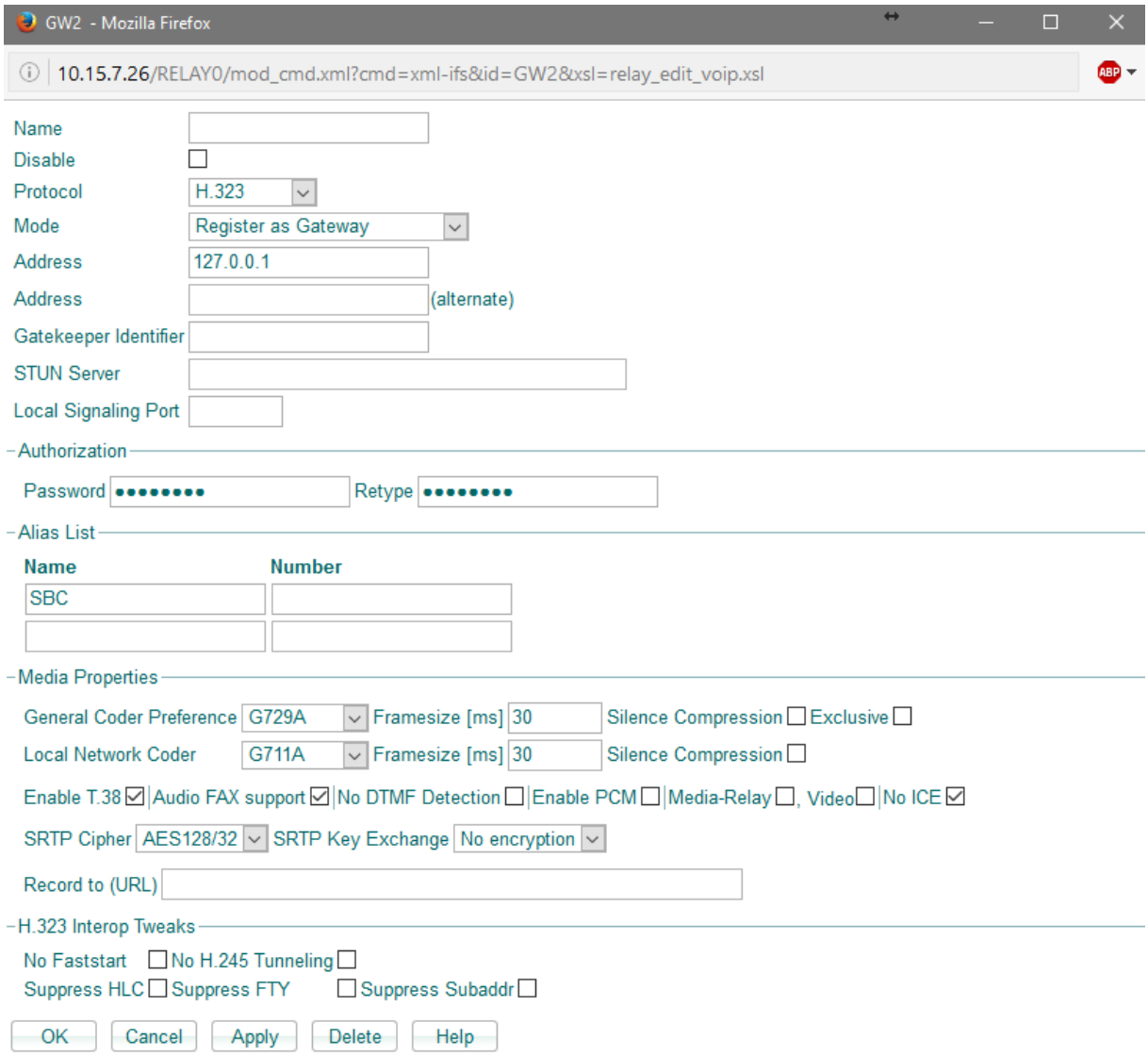
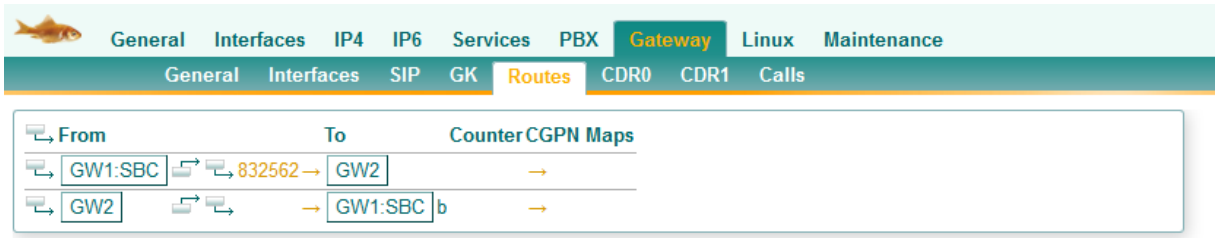


Figure 3-7: innovaphone Interface- Gateway



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4 Configuring AudioCodes E-SBC

This chapter provides step-by-step procedures on how to configure the 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 includes the following main areas:

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

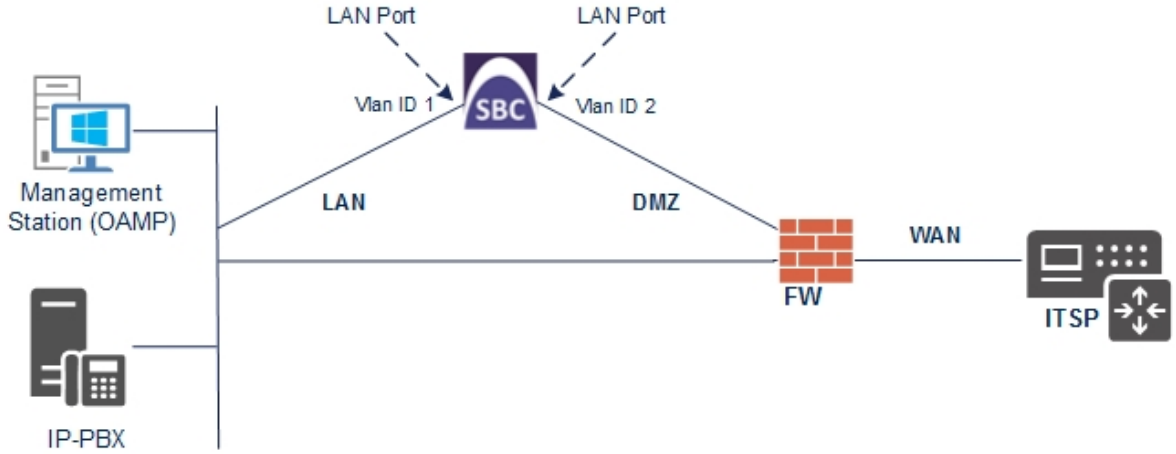
This configuration is done using the E-SBC's embedded Web server (hereafter, referred to as *Web interface*).

4.1 Step 1: IP Network Interfaces Configuration

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

- E-SBC interfaces with the following IP entities:
  - IP-PBX, located on the LAN
  - BroadCloud SIP Trunk, located on the WAN
- E-SBC connects to the WAN through a DMZ network
- 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 are used).
- 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:

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

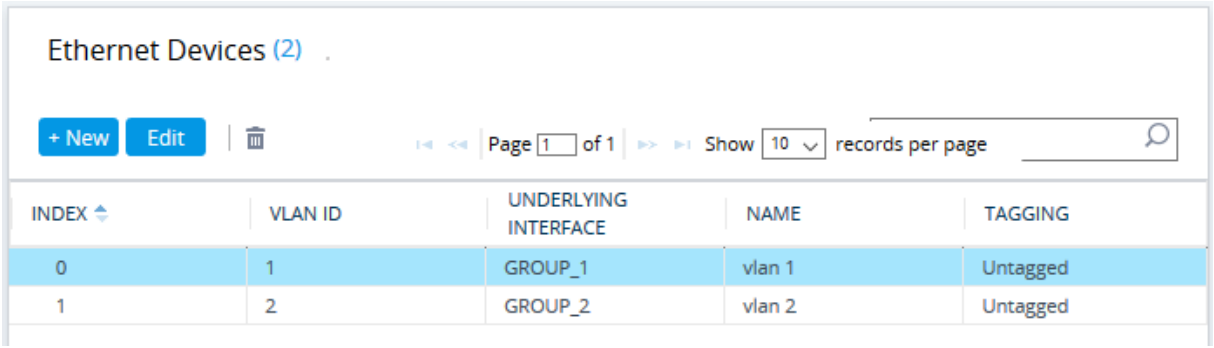
➢ **To configure the VLANs:**

1. Open the Ethernet Devices Table page (**Setup** menu > **IP Network** tab > **Core Entities** folder > **Ethernet Devices**).

   There will be one existing row for VLAN ID 1 and underlying interface GROUP_1.
2. 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



4.1.2 Step 1b: Configure Network Interfaces

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

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

➢ **To configure the IP network interfaces:**

1. Open the IP Interfaces Table page (**Setup** menu > **IP Network** tab > **Core Entities** folder > **IP Interfaces**).
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
Application Type	**OAMP + Media + Control**
IP Address	**10.15.7.8** (IP address of E-SBC)
Prefix Length	**16** (subnet mask in bits for 255.255.0.0)
Default Gateway	**10.15.0.1**
Name	**Voice** (arbitrary descriptive name)
Primary DNS Server IP Address	**0.0.0.0**
Ethernet Device	**vlan 1**

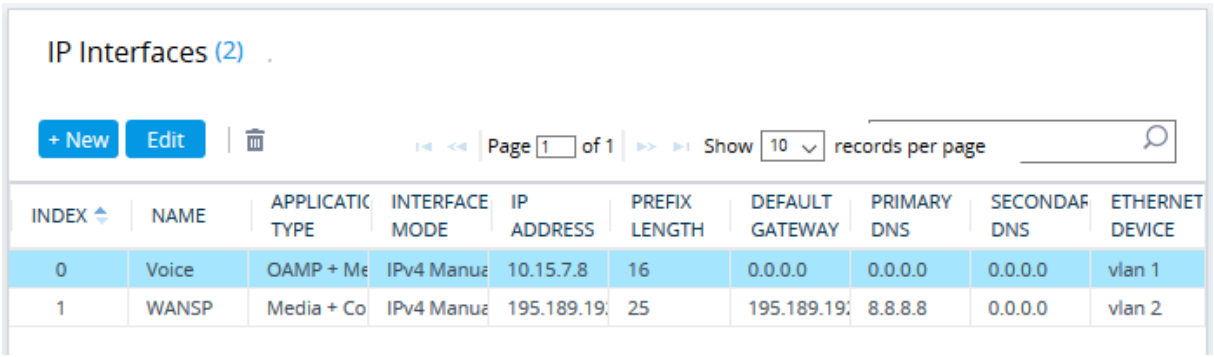
3. Add a network interface for the WAN side:
   a. Enter **1**, and then click **Add Index**.
   b. Configure the interface as follows:

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)
Name	**WANSP**
Primary DNS Server IP Address	**8.8.8.8**
Secondary DNS Server IP Address	**0.0.0.0**
Ethernet 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



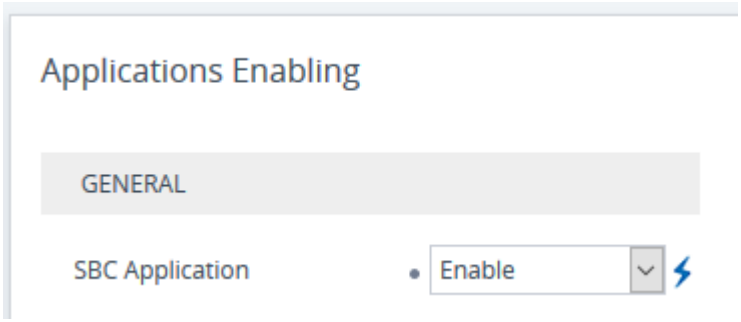
4.2 Step 2: Enable the SBC Application

This step describes how to enable the SBC application.

➢ **To enable the SBC application:**

1. Open the Applications Enabling page (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **Applications Enabling**).

Figure 4-4: Enabling SBC Application



2. From the 'SBC Application' drop-down list, select **Enable**.
3. Click **Apply**.
4. Reset the E-SBC with a burn to flash for this setting to take effect (see Section 4.13 on page 48).

4.3 Step 3: Configure Media Realms

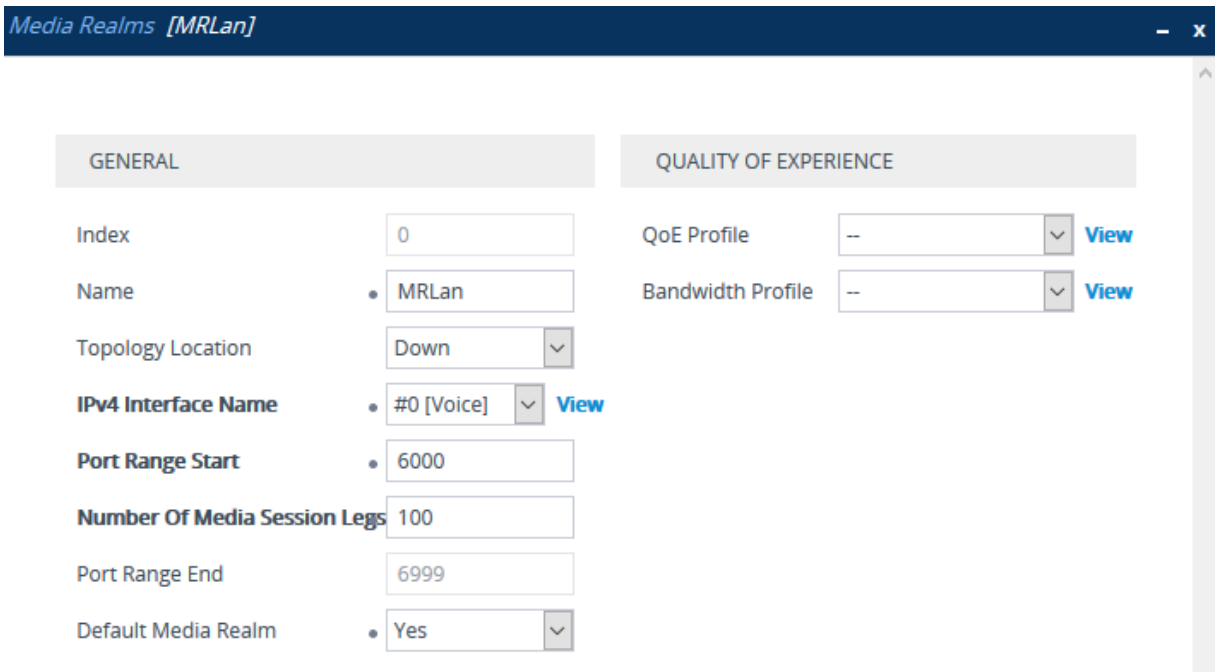
This step describes how to configure Media Realms. The simplest configuration is to create two Media Realms - one for internal (LAN) traffic and one for external (WAN) traffic.

➢ **To configure Media Realms:**

1. Open the Media Realm Table page (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **Media Realms**).
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**
Name	**MRLan** (descriptive name)
IPv4 Interface Name	**Voice**
Port Range Start	**6000** (as required by IP-PBX)
Number of Media Session Legs	**100** (media sessions assigned with port range)

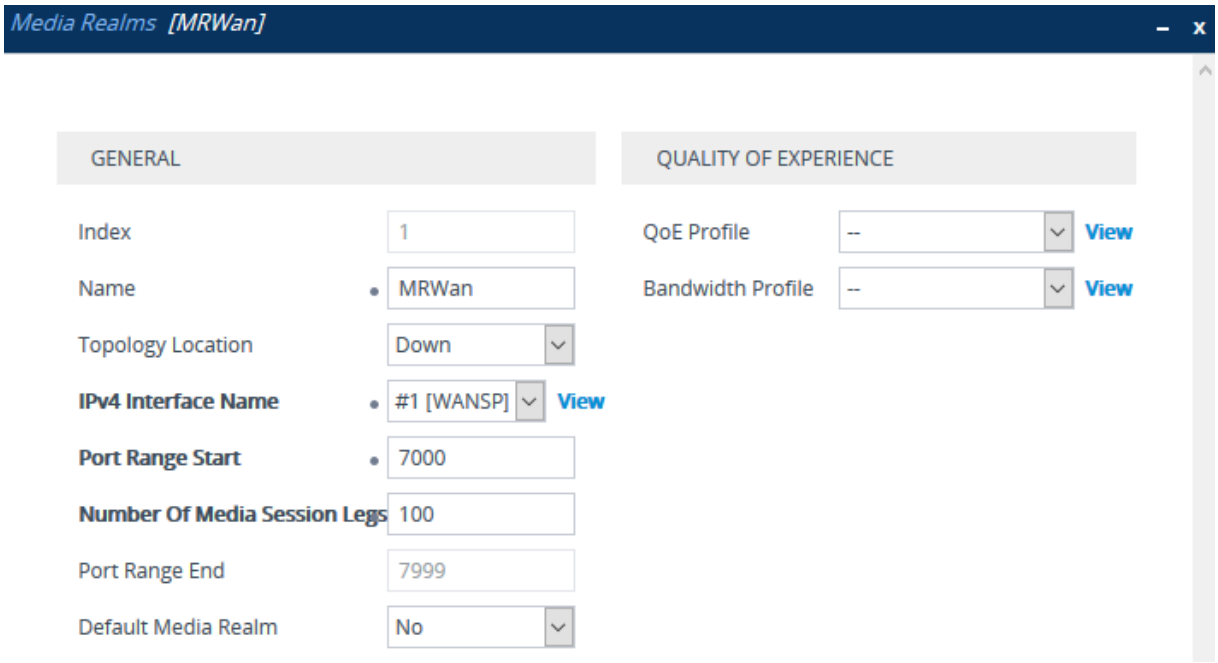
Figure 4-5: Configuring Media Realm for LAN



3. Configure a Media Realm for WAN traffic:

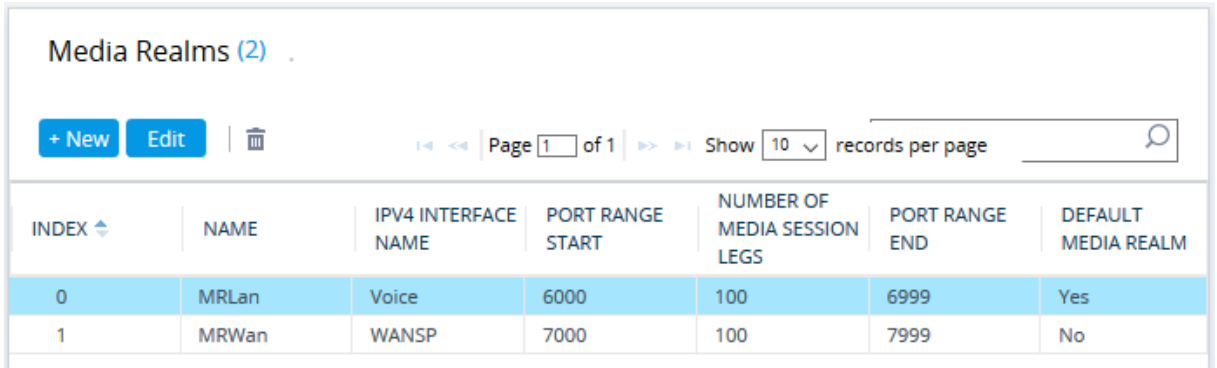
Parameter	Value
Index	**1**
Name	**MRWan** (arbitrary name)
IPv4 Interface Name	**WANSP**
Port Range Start	**7000** (represents lowest UDP port number used for media on WAN)
Number of Media Session Legs	**100** (media sessions assigned with port range)

Figure 4-6: Configuring Media Realm for WAN



The configured Media Realms are shown in the figure below:

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



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.

➢ **To configure SIP Interfaces:**

1. Open the SIP Interfaces table (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **SIP Interfaces**).
2. Add a SIP Interface for the LAN interface. You can use the default SIP Interface (Index 0), but modify it as shown below:

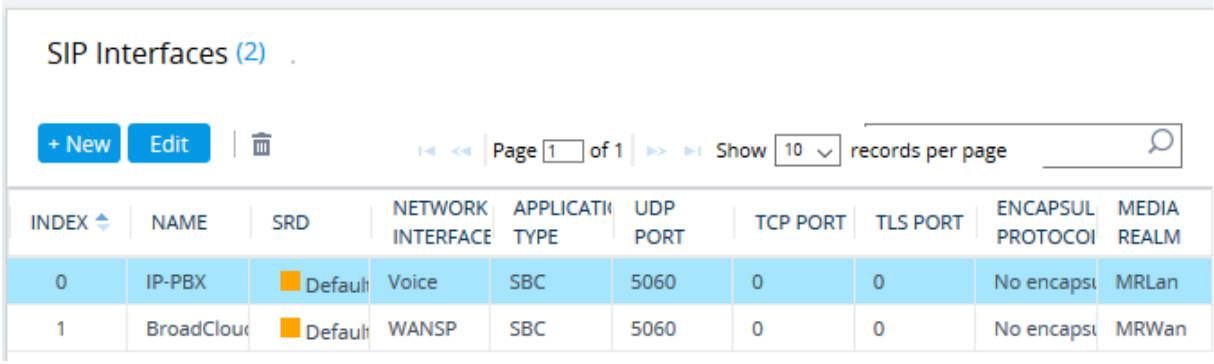
Parameter	Value
Index	**0**
Name	**IP-PBX**
Network Interface	**Voice**
Application Type	**SBC**
TLS Port	**5060**
TCP and UDP	**0**
Media Realm	**MRLan**

3. Configure a SIP Interface for the WAN:

Parameter	Value
Index	**1**
Name	**BroadCloud**
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



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:

- IP-PBX
- BroadCloud SIP Trunk

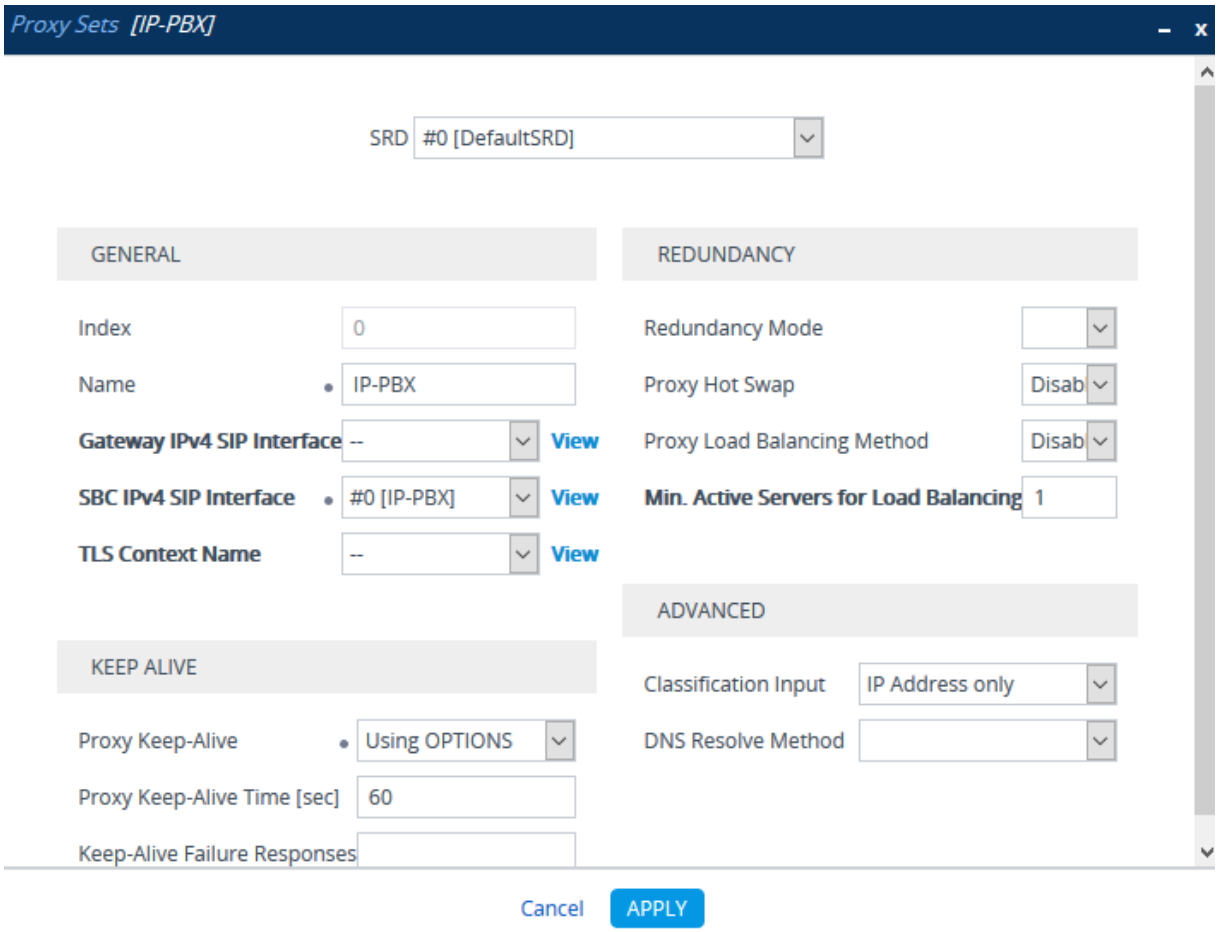
The Proxy Sets will be later applying to the VoIP network by assigning them to IP Groups.

➢ **To configure Proxy Sets:**

1. Open the Proxy Sets Table page (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **Proxy Sets**).
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
Index	**0**
Name	**IP-PBX**
SBC IPv4 SIP Interface	**IP-PBX**
Proxy Keep Alive	**Using Options**

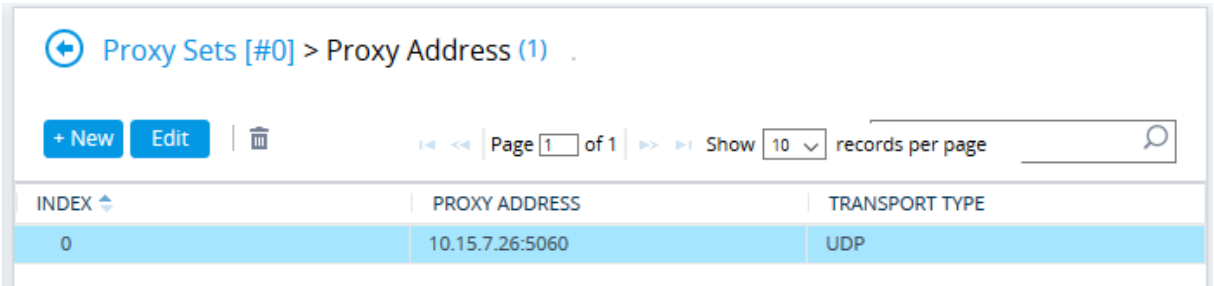
Figure 4-9: Configuring Proxy Set for IP-PBX



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

Parameter	Value
Index	**0**
Proxy Address	**10.15.7.26:5060** (IP-PBX IP address / FQDN and destination port)
Transport Type	**UDP**

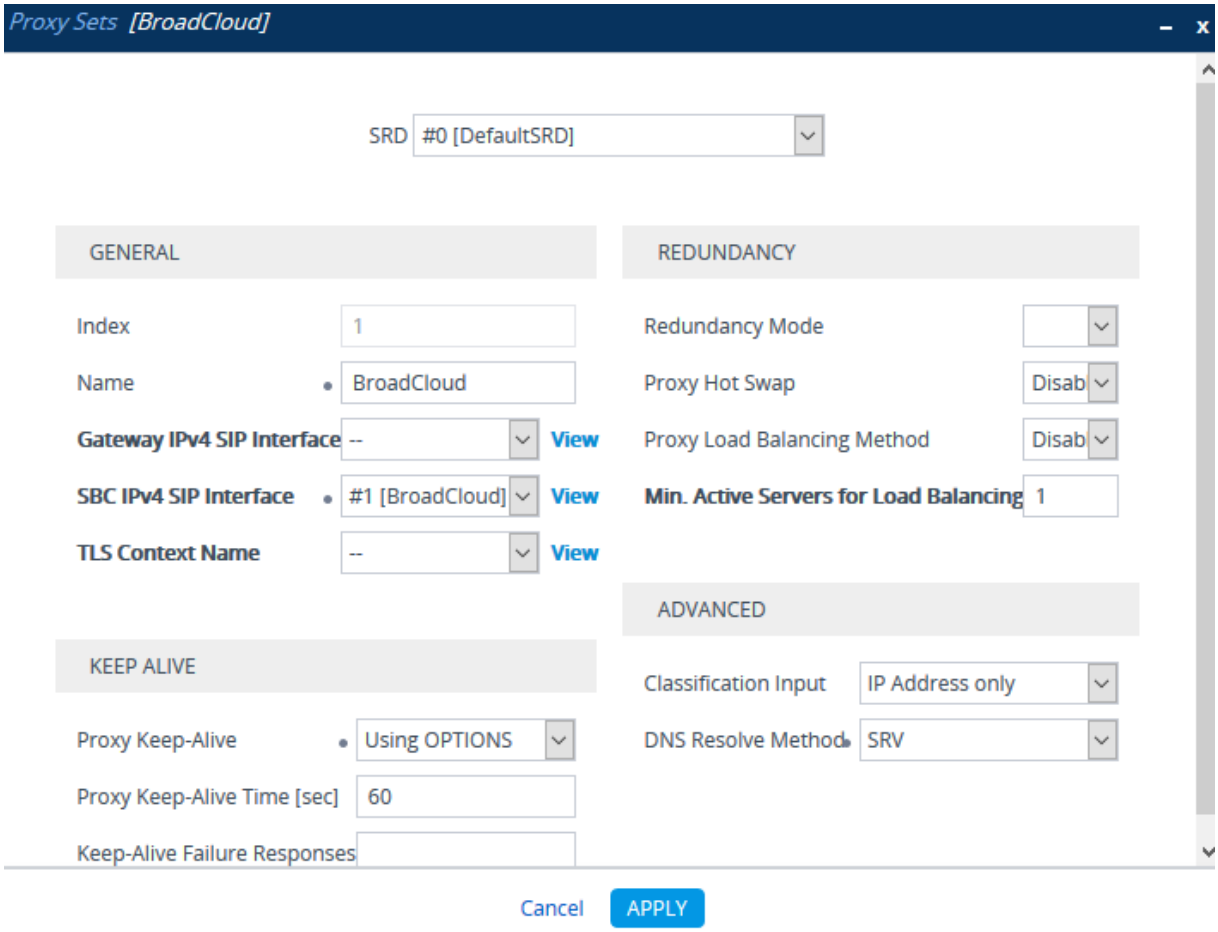
Figure 4-10: Configuring Proxy Address for IP-PBX



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

Parameter	Value
Index	**1**
Name	**BroadCloud**
SBC IPv4 SIP Interface	**BroadCloud**
Proxy Keep Alive	**Using Options**

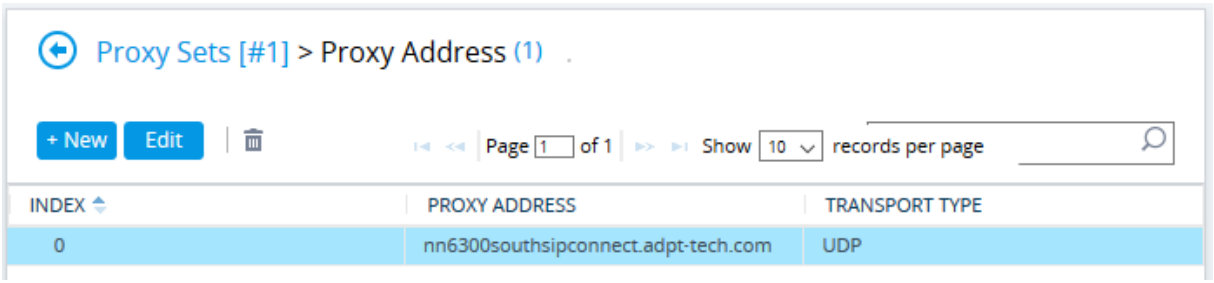
Figure 4-11: Configuring Proxy Set for BroadCloud SIP Trunk



a. Configure a Proxy Address Table for Proxy Set 1:
b. Go to Proxy Address.

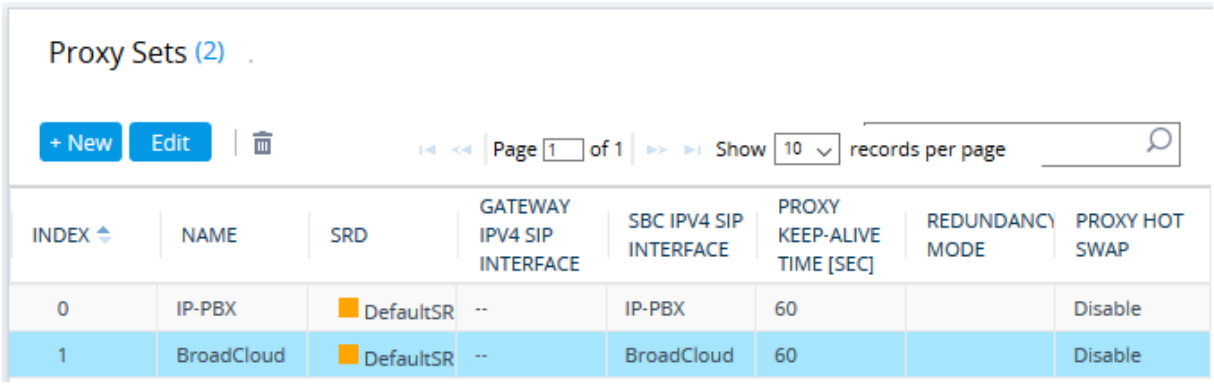
Parameter	Value
Index	**0**
Proxy Address	**nn6300southsipconnect.adpt-tech.com** (IP-PBX IP address / FQDN and destination port)
Transport Type	**UDP**

Figure 4-12: Configuring Proxy Address for BroadCloud SIP Trunk



The configured Proxy Sets are shown in the figure below:

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



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:

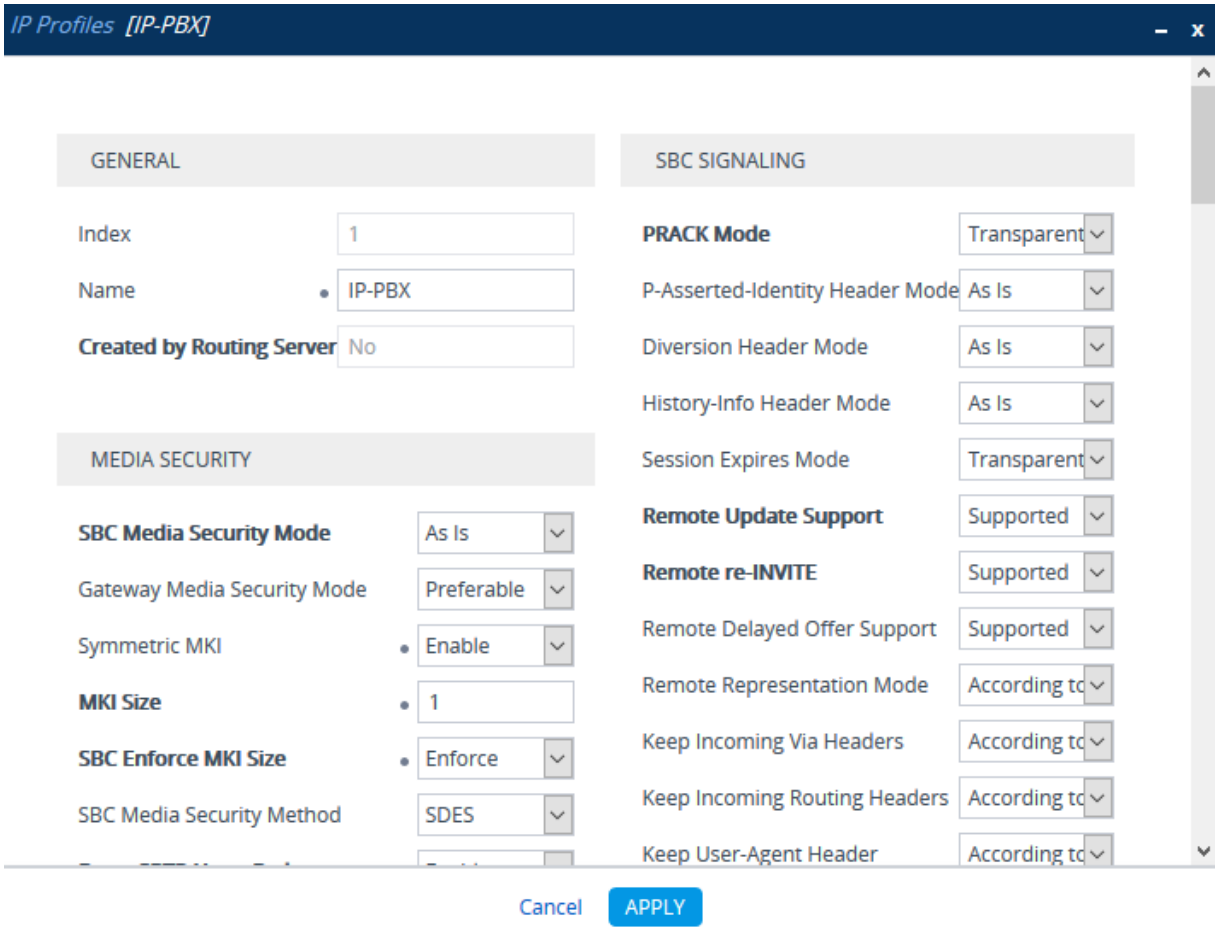
- IP-PBX - to operate in non-secure mode using RTP and UDP
- BroadCloud SIP trunk - to operate in non-secure mode using RTP and UDP

➢ **To configure IP Profile for the IP-PBX:**

1. Open the IP Profile Settings page (**Setup** menu > **Signaling & Media** tab > **Coders & Profiles** folder > **IP Profiles**).
2. Click **Add**.
3. Configure the parameters as follows:

Parameter	Value
Index	**1**
Name	**IP-PBX**
Remote Update Support	**Supported**
Remote re-INVITE	**Supported**
SBC Media Security Mode	**RTP**

Figure 4-14: Configuring IP Profile for IP-PBX

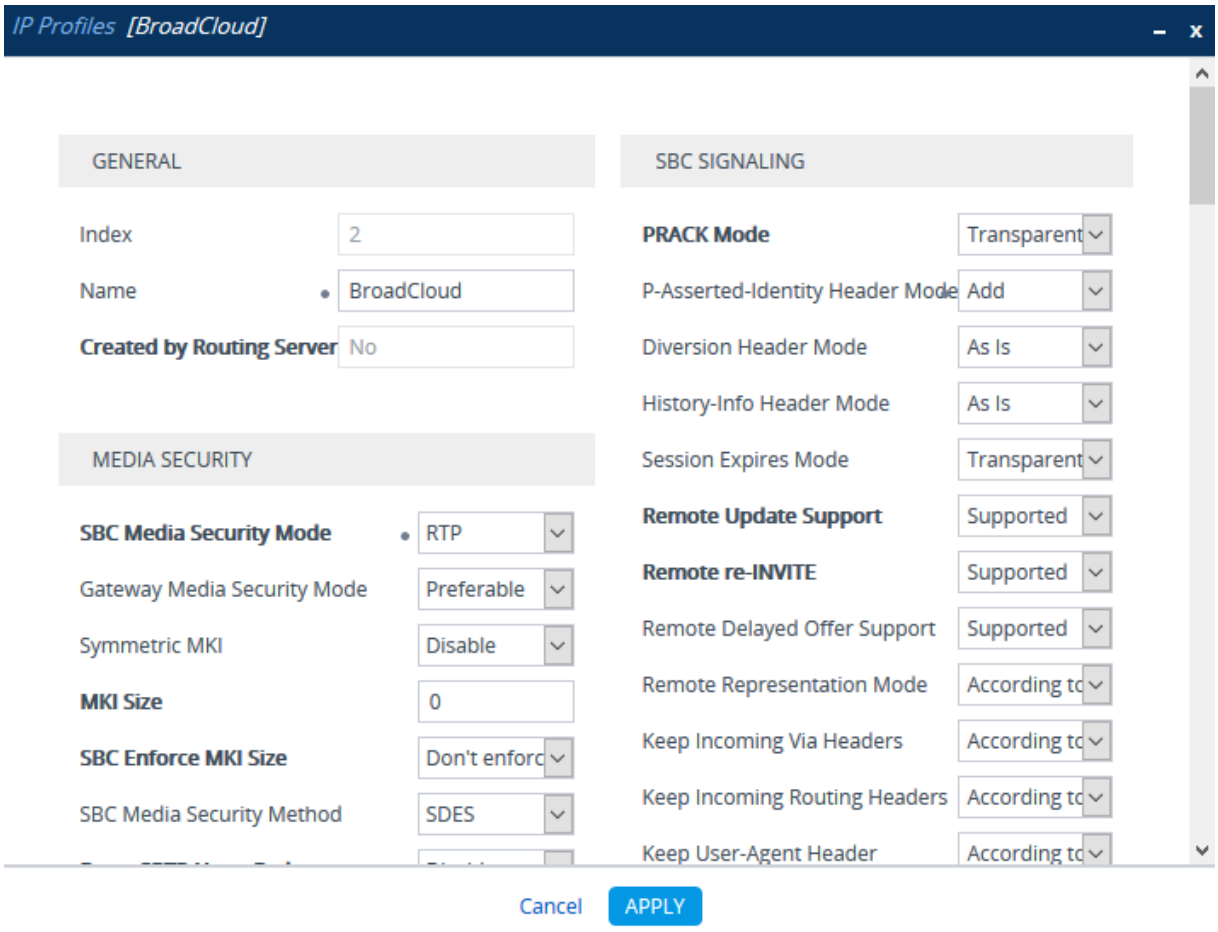


➢ **To configure an IP Profile for the BroadCloud SIP Trunk:**

1. Click **Add**.
2. Configure the parameters as follows:

Parameter	Value
Index	**2**
Name	**BroadCloud**
P-Asserted-Identity Header Mode	**Add (required for anonymous calls)**
SBC Media Security Mode	**RTP**

Figure 4-15: Configuring IP Profile for BroadCloud SIP Trunk



4.7 Step 8: 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 for denoting source and destination of the call.

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

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

➢ **To configure IP Groups:**

1. Open the IP Group Table page (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **IP Groups**).
2. Add an IP Group for the IP-PBX. You can use the default IP Group (Index 0), but modify it as shown below:

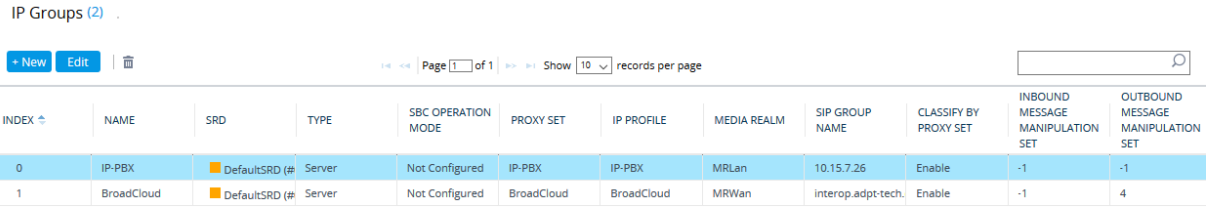
Parameter	Value
Index	**0**
Name	**IP-PBX**
Type	**Server**
Proxy Set	**IP-PBX**
IP Profile	**IP-PBX**
Media Realm	**MRLan**
SIP Group Name	**10.15.7.26** (according to IP-PBX requirement)

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**
Outbound Message Manipulation Set	**4**
SIP Group Name	**interop.adpt-tech.com** (according to ITSP requirement)

The configured IP Groups are shown in the figure below:

Figure 4-16: Configured IP Groups in IP Group Table


IP Groups (2)

+ New | Edit | Page 1 of 1 | Show 10 records per page

INDEX	NAME	SRD	TYPE	SBC OPERATION MODE	PROXY SET	IP PROFILE	MEDIA REALM	SIP GROUP NAME	CLASSIFY BY PROXY SET	INBOUND MESSAGE MANIPULATION SET	OUTBOUND MESSAGE MANIPULATION SET
0	IP-PBX	DefaultSRD (#	Server	Not Configured	IP-PBX	IP-PBX	MRLan	10.15.7.26	Enable	-1	-1
1	BroadCloud	DefaultSRD (#	Server	Not Configured	BroadCloud	BroadCloud	MRWan	interop.adpt-tech.	Enable	-1	4

4.8 Step 9: 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 IP-PBX (LAN) and BroadCloud SIP Trunk (WAN):

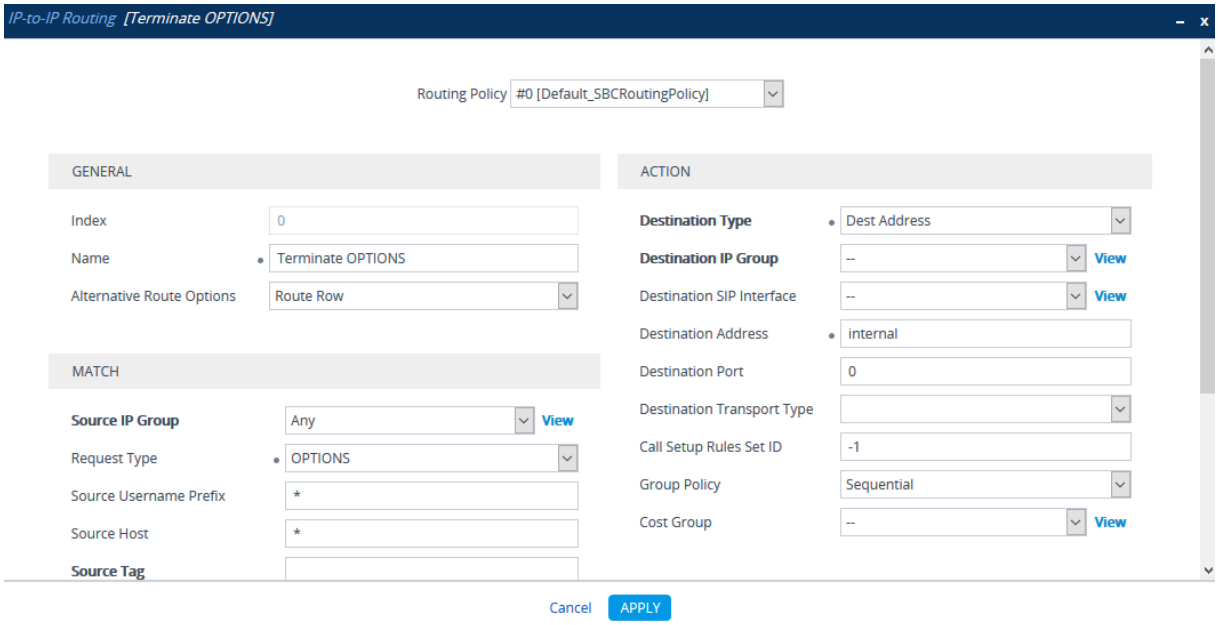
- Terminate SIP OPTIONS messages on the E-SBC
- Calls from IP-PBX to BroadCloud SIP Trunk
- Calls from BroadCloud SIP Trunk to IP-PBX

➢ **To configure IP-to-IP routing rules:**

1. Open the IP-to-IP Routing table (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Routing** > **IP-to-IP Routing**).
2. Configure a rule to terminate SIP OPTIONS messages received from the LAN:
   a. Click **Add**.
   b. Configure the parameters as follows:

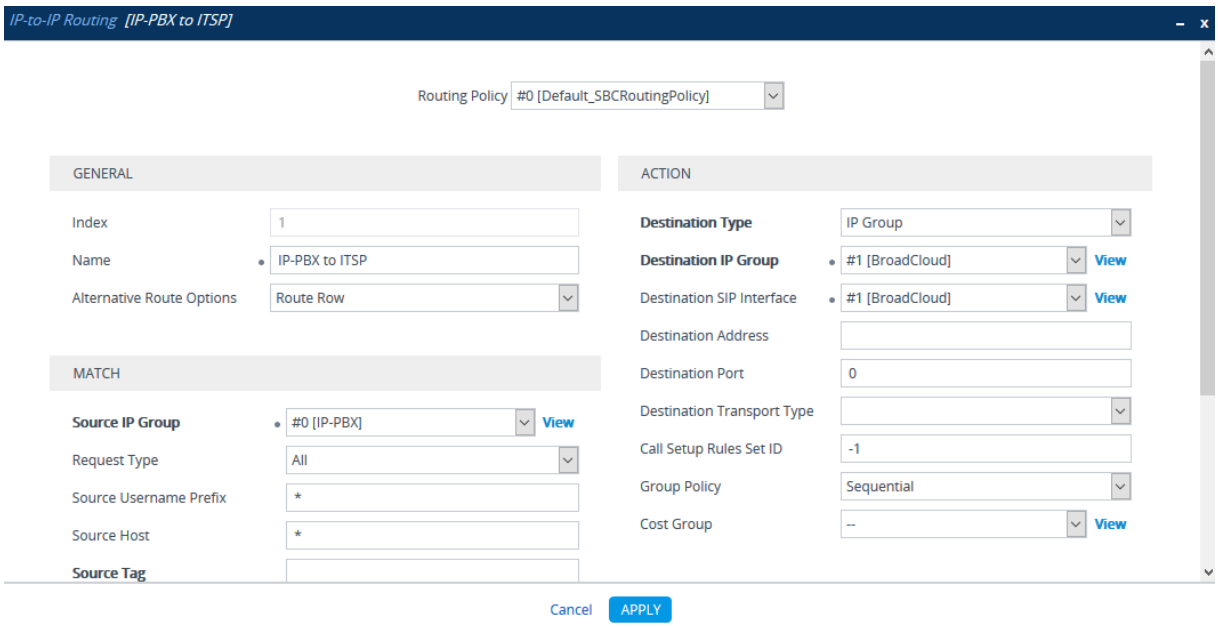
Parameter	Value
Index	**0**
Name	**Terminate OPTIONS** (arbitrary descriptive name)
Source IP Group	**Any**
Request Type	**OPTIONS**
Destination Type	**Dest Address**
Destination Address	**internal**
Index	**1**
Name	**IP-PBX to ITSP (arbitrary descriptive name)**
Source IP Group	**IP-PBX**

Figure 4-17: Configuring IP-to-IP Routing Rule for Terminating SIP OPTIONS



3. Configure a rule to route calls from Skype IP-PBX to BroadCloud SIP Trunk:
   a. Click **Add**.

Figure 4-18: Configuring IP-to-IP Routing Rule for IP-PBX to ITSP



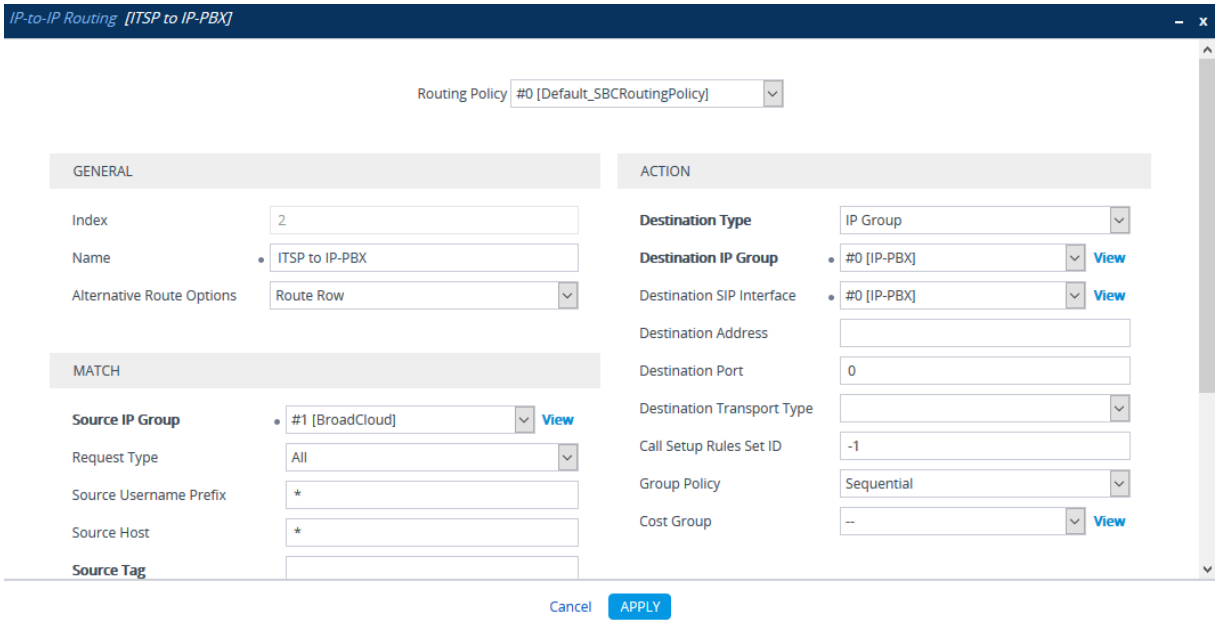
   b. Configure the parameters as follows:

Parameter	Value
Source IP Group	**#0 [IP-PBX]**
Destination Type	**IP Group**
Destination IP Group	**#1 [BroadCloud]**
Destination SIP Interface	**#1 [BroadCloud]**

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

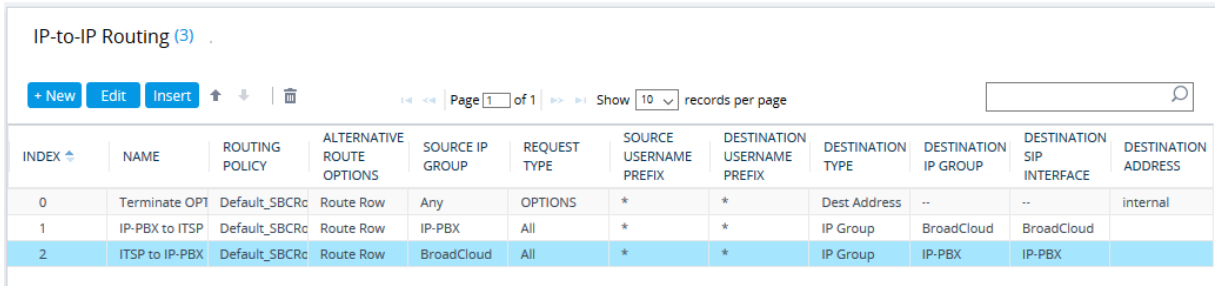
Parameter	Value
Index	**2**
Name	**ITSP to IP-PBX** (arbitrary descriptive name)
Source IP Group	**#1 [BroadCloud]**
Destination Type	**IP Group**
Destination IP Group	**#0 [IP-PBX]**
Destination SIP Interface	**#0 [IP-PBX]**

Figure 4-19: Configuring IP-to-IP Routing Rule for ITSP to IP-PBX – Rule tab



The configured routing rules are shown in the figure below:

Figure 4-20: 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 OPT	Default_SBCRc	Route Row	Any	OPTIONS	*	*	Dest Address	--	--	internal
1	IP-PBX to ITSP	Default_SBCRc	Route Row	IP-PBX	All	*	*	IP Group	BroadCloud	BroadCloud	
2	ITSP to IP-PBX	Default_SBCRc	Route Row	BroadCloud	All	*	*	IP Group	IP-PBX	IP-PBX	

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

4.9 Step 10: 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 IP-PBX, and IP Group 1 represents BroadCloud SIP Trunk.

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

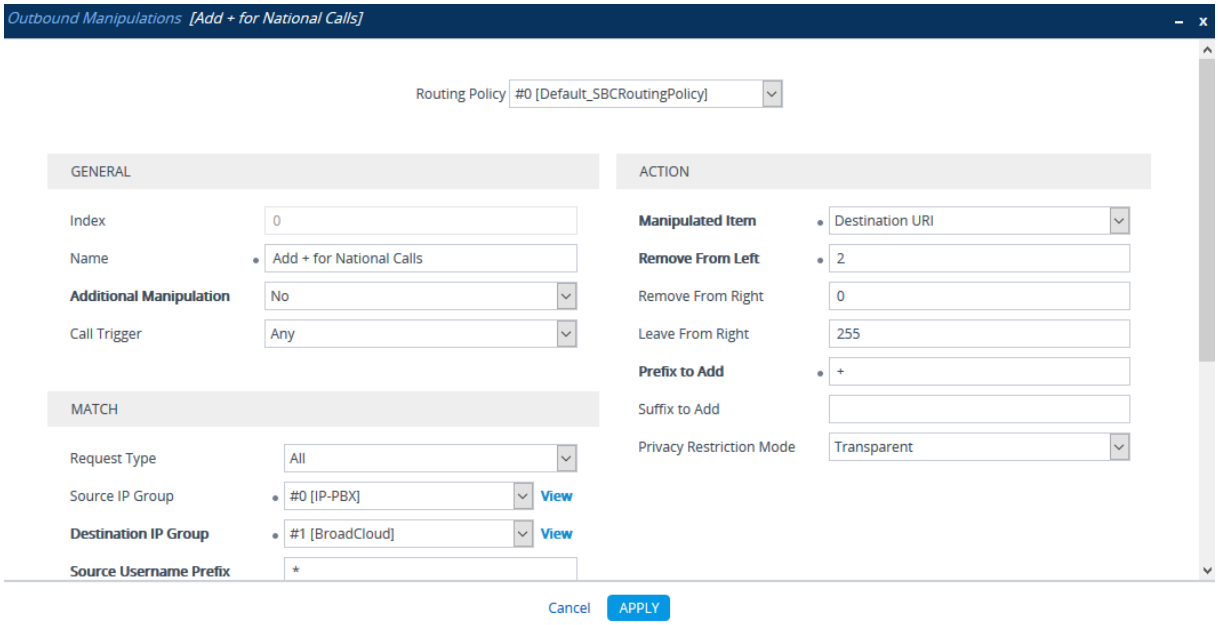
For example, for this interoperability test topology, a manipulation was configured to add the prefix to the destination number for calls from the IP-PBX IP Group to the BroadCloud SIP Trunk IP Group for specific destination username prefix.

➢ **To configure a number manipulation rule:**

1. Open the IP-to-IP Outbound Manipulation table (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Manipulation** > **Outbound Manipulations**).
2. Click **Add**.
3. Configure the parameters as follows:

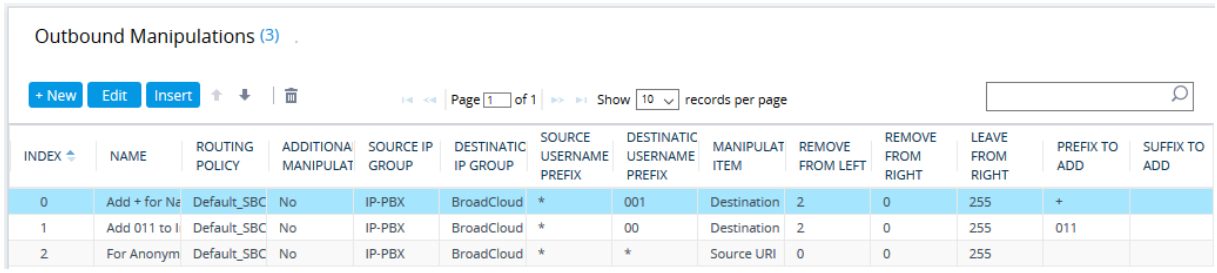
Parameter	Value
Index	**0**
Name	**Add + for National Calls**
Source IP Group	**IP-PBX**
Destination IP Group	**BroadCloud**
Destination Username Prefix	**001**
Manipulated Item	**Destination URI**
Remove From Left	**2**
Prefix to Add	**+**

Figure 4-21: Configuring IP-to-IP Outbound Manipulation Rule



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 4-22: Example of Configured IP-to-IP Outbound Manipulation Rules



4.10 Step 11: 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).

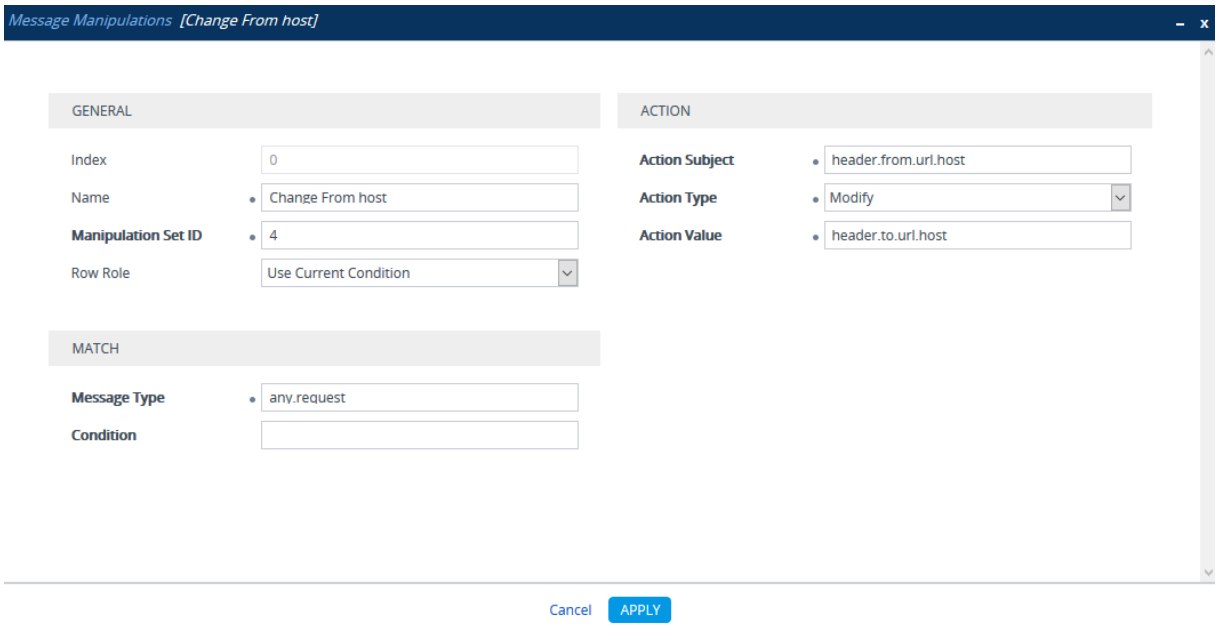
Once you have configured the SIP message manipulation rules, you need to assign them to the relevant IP Group (in the IP Group table) and determine whether they must be applied to inbound or outbound messages.

➢ **To configure SIP message manipulation rule:**

1. Open the Message Manipulations page (**Setup** menu > **Signaling & Media** tab > **Message Manipulation** folder > **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**

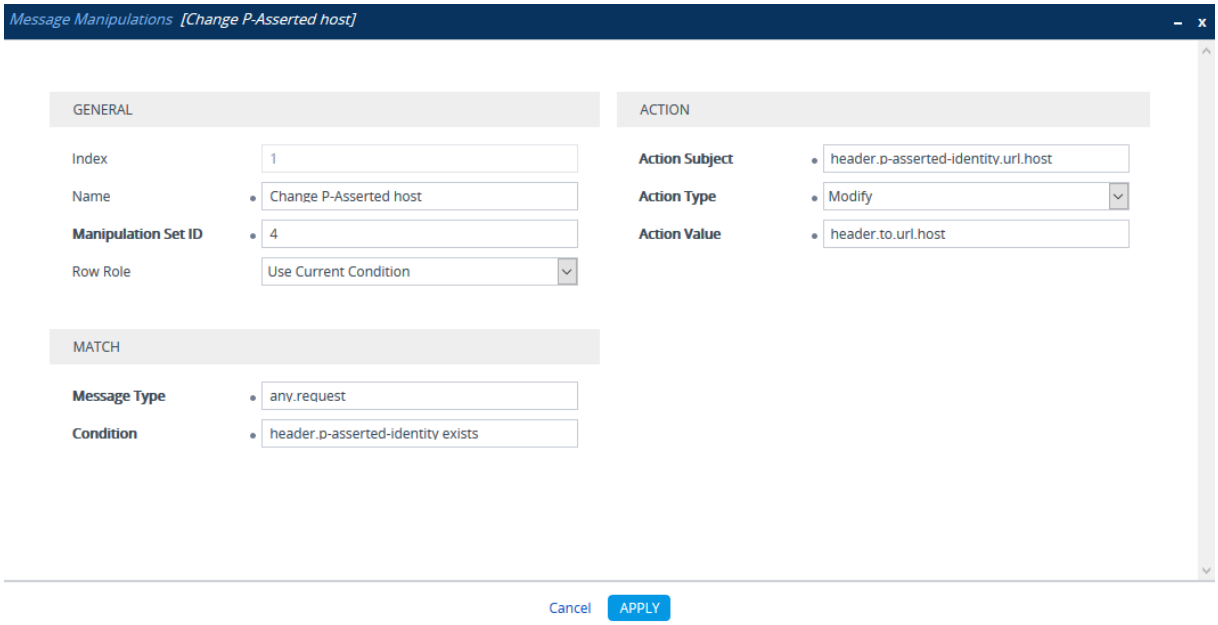
Figure 4-23: Configuring SIP Message Manipulation Rule 0 (for BroadCloud SIP Trunk)



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 4-24: Configuring SIP Message Manipulation Rule 1 (for BroadCloud SIP Trunk)



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	**Change PAI if History-Info exists**
Manipulation Set ID	**4**
Message Type	
Condition	**header.History-Info.0 regex (.*)(sip:)(.*)(@)(.*)**
Action Subject	**header.P-Asserted-Identity.url.user**

Parameter	Value
Action Type	**Modify**
Action Value	**$3**

Figure 4-25: Configuring SIP Message Manipulation Rule 2 (for BroadCloud SIP Trunk)

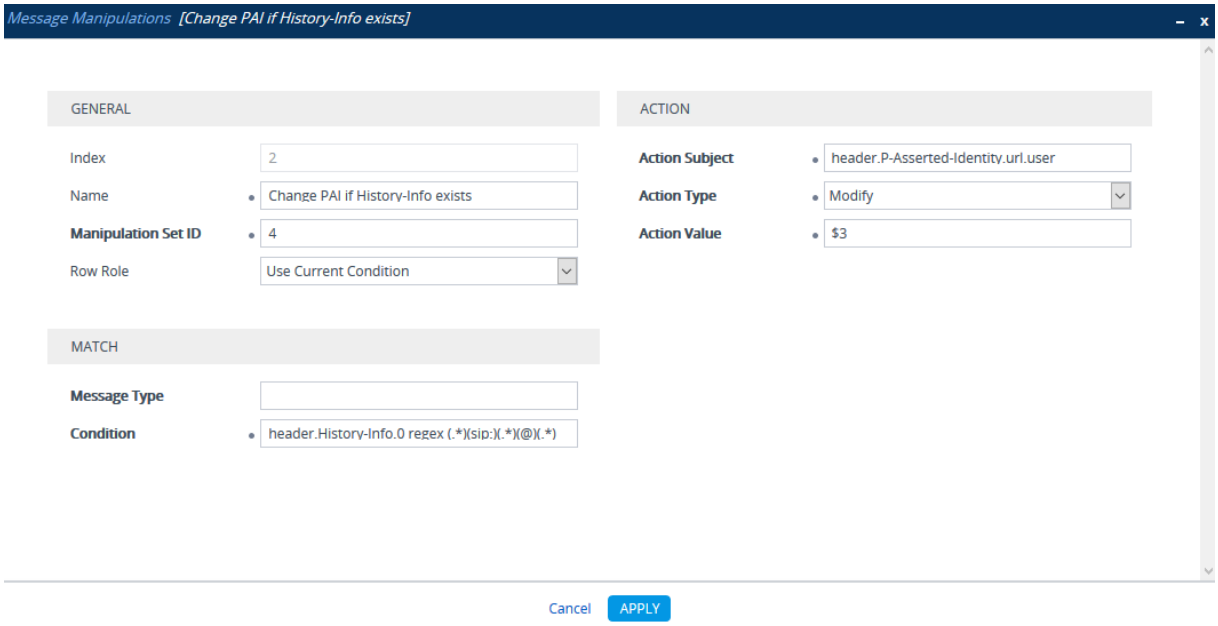
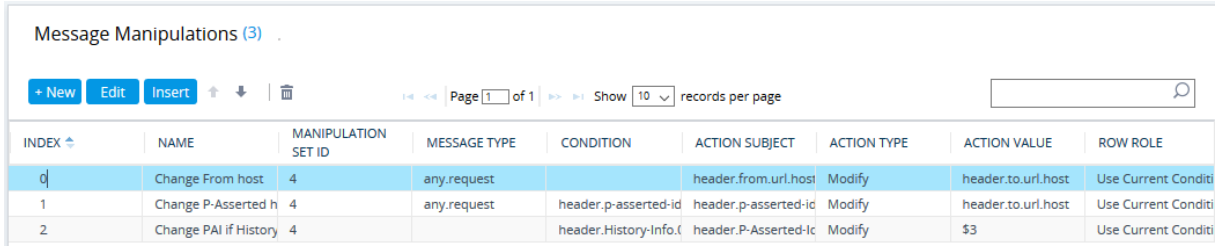


Figure 4-26: Example of Configured SIP Message Manipulation Rules



The table displayed below includes SIP message manipulation rules, which are bound together by commonality via the Manipulation Set ID 4, which are executed for messages sent to the BroadCloud SIP Trunk IP Group. These rules are specifically required to enable proper 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 messages sent to the BroadCloud SIP Trunk IP Group for Forward call.	BroadCloud SIP Trunk required that all calls will send with P-Asserted-Identity that contain BroadCloud number.

5. Assign Manipulation Set ID 4 to the BroadCloud SIP trunk IP Group.

4.11 Step 12: Configure Registration Accounts

This step describes how to configure SIP registration accounts. This is required 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 IP-PBX IP Group and the Serving IP Group is BroadCloud SIP Trunk IP Group.

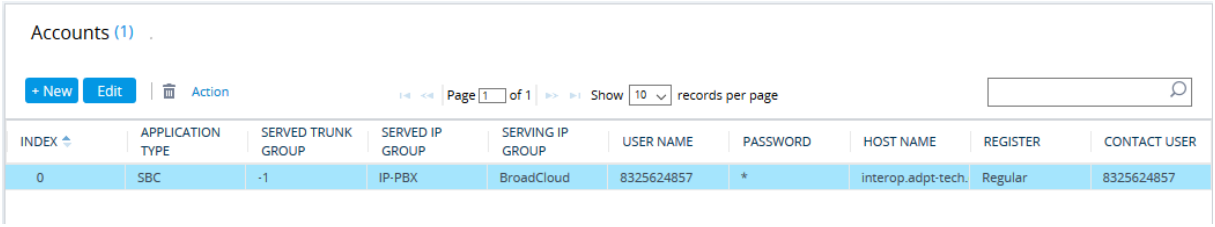
➢ **To configure a registration account:**

1. Open the Account Table page (**Setup** menu > **Signaling & Media** tab > **SIP Definitions** folder > **Accounts**).
2. Enter an index number (e.g., "0"), and then click **Add**.
3. Configure the account according to the provided information from , 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 4-27: Configuring SIP Registration Account



4.12 Step 13: Miscellaneous Configuration

This section describes miscellaneous E-SBC configuration.

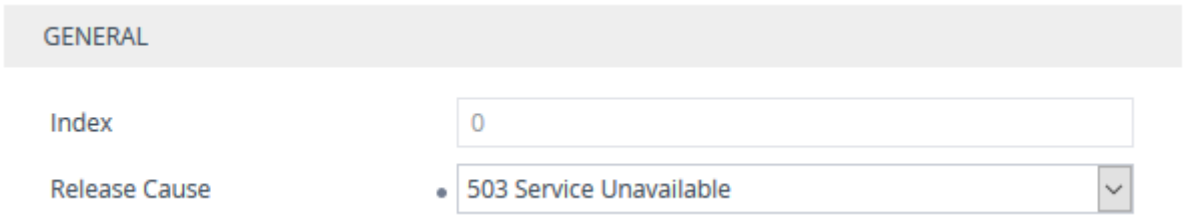
4.12.1 Step 13a: Configure SBC Alternative Routing Reasons

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 E-SBC attempts to locate an alternative route for the call.

➢ **To configure SIP reason codes for alternative IP routing:**

1. Open the SBC Alternative Routing Reasons page (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Routing** > **Alternative Reasons**.
2. Click **Add**; the following dialog box appears:

Figure 4-28: SBC Alternative Routing Reasons Table - Add Record



3. Click **Apply**.

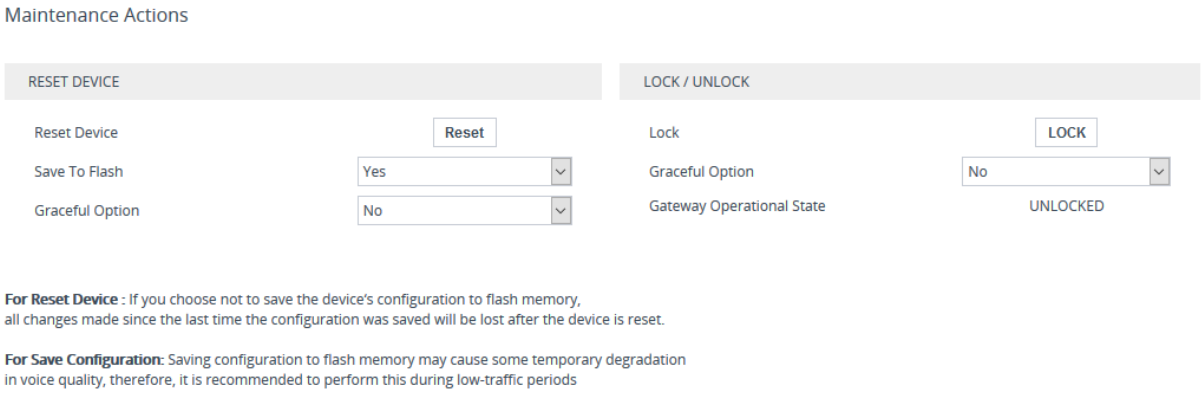
4.13 Step 14: Reset the E-SBC

After you have completed the 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.

➢ **To save the configuration to flash memory:**

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

Figure 4-29: Resetting the E-SBC



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

A AudioCodes INI File

The *ini* configuration file of the E-SBC, corresponding to the Web-based configuration as described in Section 4 on page 19, 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: 72
;Serial Number: 3887604
;Slot Number: 1
;Software Version: 7.20A.001
;DSP Software Version: 5014AE3_R => 720.23
;Board IP Address: 10.15.7.8
;Board Subnet Mask: 255.255.0.0
;Board Default Gateway: 0.0.0.0
;Ram size: 512M Flash size: 64M Core speed: 300Mhz
;Num of DSP Cores: 3 Num DSP Channels: 30
;Num of physical LAN ports: 12
;Profile: NONE
;;;Key features:;Board Type: 72 ;E1Trunks=2 ;T1Trunks=2 ;FXSPorts=8
;FXOPorts=8 ;DSP Voice features: ;Security: IPSEC MediaEncryption
StrongEncryption EncryptControlProtocol ;Channel Type: RTP DspCh=30
IPMediaDspCh=30 ;IP Media: TrunkTesting ;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 ;Control Protocols: MSFT
TRANSCODING=10 FEU=10 TestCall=10 SIPRec=10 CODER-TRANSCODING=10 SBC-
SIGNALING=120 SBC-MEDIA=120 MGCP SIP SBC=120 ;Default features:;Coders:
G711 G726;

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

[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]

CallProgressTonesFilename = 'usa_tones_13.dat'

[WEB Params]

UseRProductName = 'Mediant 800 E-SBC'
LogoWidth = '145'
UseProductName = 1
HTTPSCipherString = 'RC4:EXP'
;HTTPSPkeyFileName is hidden but has non-default value

[SIP Params]

MEDIACHANNELS = 30
GWDEBUGLEVEL = 5
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 4 = "FE_5_1", 0, 4, "User Port #4", "None", " ";
PhysicalPortsTable 5 = "FE_5_2", 0, 4, "User Port #5", "None", " ";
PhysicalPortsTable 6 = "FE_5_3", 0, 4, "User Port #6", "None", " ";
PhysicalPortsTable 7 = "FE_5_4", 0, 4, "User Port #7", "None", " ";
PhysicalPortsTable 8 = "FE_5_5", 1, 4, "User Port #8", "GROUP_5", "Active";
PhysicalPortsTable 9 = "FE_5_6", 1, 4, "User Port #9", "GROUP_5",
"Redundant";
PhysicalPortsTable 10 = "FE_5_7", 1, 4, "User Port #10", "GROUP_6",
"Active";
PhysicalPortsTable 11 = "FE_5_8", 1, 4, "User Port #11", "GROUP_6",
"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 4 = "GROUP_5", 2, "FE_5_5", "FE_5_6";
EtherGroupTable 5 = "GROUP_6", 2, "FE_5_7", "FE_5_8";
EtherGroupTable 6 = "GROUP_7", 0, "", "";
EtherGroupTable 7 = "GROUP_8", 0, "", "";
EtherGroupTable 8 = "GROUP_9", 0, "", "";
EtherGroupTable 9 = "GROUP_10", 0, "", "";
EtherGroupTable 10 = "GROUP_11", 0, "", "";
EtherGroupTable 11 = "GROUP_12", 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, 10.15.7.8, 16, 0.0.0.0, "Voice", 0.0.0.0,
0.0.0.0, "vlan 1";
InterfaceTable 1 = 5, 10, 195.189.192.156, 25, 195.189.192.129, "WANSP",
8.8.8.8, 0.0.0.0, "vlan 2";

[ \InterfaceTable ]


[ TLSContexts ]

FORMAT TLSContexts_Index = TLSContexts_Name, TLSContexts_TLSVersion,
TLSContexts_ServerCipherString, TLSContexts_ClientCipherString,
TLSContexts_RequireStrictCert, TLSContexts_OcspEnable,
TLSContexts_OcspServerPrimary, TLSContexts_OcspServerSecondary,
TLSContexts_OcspServerPort, TLSContexts_OcspDefaultResponse;
TLSContexts 0 = "default", 0, "RC4:AES128", "ALL:!aNULL", 0, 0, , , 2560,
0;

[ \TLSContexts ]


[ AudioCodersGroups ]

FORMAT AudioCodersGroups_Index = AudioCodersGroups_Name;
AudioCodersGroups 0 = "AudioCodersGroups_0";
AudioCodersGroups 2 = "AudioCodersGroups_2";

[ \AudioCodersGroups ]


[ AllowedAudioCodersGroups ]

FORMAT AllowedAudioCodersGroups_Index = AllowedAudioCodersGroups_Name;
AllowedAudioCodersGroups 2 = "BroadCloud";

[ \AllowedAudioCodersGroups ]


[ IpProfile ]

FORMAT IpProfile_Index = IpProfile_ProfileName, IpProfile_IpPreference,
IpProfile_CodersGroupName, IpProfile_IsFaxUsed,
IpProfile_JitterBufMinDelay, IpProfile_JitterBufOptFactor,
IpProfile_IPDiffServ, IpProfile_SigIPDiffServ, IpProfile_SCE,
IpProfile_RTPRedundancyDepth, 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_SBCExtensionCodersGroupName, IpProfile_MediaIPVersionPreference,
IpProfile_TranscodingMode, IpProfile_SBCAllowedMediaTypes,
IpProfile_SBCAllowedAudioCodersGroupName,
IpProfile_SBCAllowedVideoCodersGroupName, IpProfile_SBCAllowedCodersMode,
IpProfile_SBCMediaSecurityBehaviour, IpProfile_SBCRFC2833Behavior,
IpProfile_SBCAlternativeDTMFMethod, IpProfile_SBCAssertIdentity,
IpProfile_AMDSensitivityParameterSuit, IpProfile_AMDSensitivityLevel,
IpProfile_AMDMaxGreetingTime, IpProfile_AMDMaxPostSilenceGreetingTime,
```

```
IpProfile_SBCDiversionMode, IpProfile_SBCHistoryInfoMode,
IpProfile_EnableQSIGTunneling, IpProfile_SBCFaxCodersGroupName,
IpProfile_SBCFaxBehavior, IpProfile_SBCFaxOfferMode,
IpProfile_SBCFaxAnswerMode, IpProfile_SbcPrackMode,
IpProfile_SBCSessionExpiresMode, IpProfile_SBCRemoteUpdateSupport,
IpProfile_SBCRemoteReinviteSupport, IpProfile_SBCRemoteDelayedOfferSupport,
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_CreatedByRoutingServer, IpProfile_SBCMaxCallDuration,
IpProfile_SBCGenerateRTP, IpProfile_SBCISUPBodyHandling,
IpProfile_SBCISUPVariant, IpProfile_SBCVoiceQualityEnhancement,
IpProfile_SBCMaxOpusBW;
IpProfile 1 = "IP-PBX", 1, "AudioCodersGroups_0", 0, 10, 10, 46, 40, 0, 0,
0, 2, 0, 0, 0, 0, -1, 1, 0, 0, -1, 0, 4, -1, 1, 1, 0, 0, "",
"AudioCodersGroups_0", 0, 0, "", "", "", 0, 0, 0, 0, 0, 0, 8, 300, 400, 0,
0, 0, "", 1, 0, 1, 3, 0, 2, 2, 1, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0,
0, 1, 0, 1, 1, 0, 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, 0, 0, 0, 0, 0, 0, 0;
IpProfile 2 = "BroadCloud", 1, "AudioCodersGroups_0", 0, 10, 10, 46, 40, 0,
0, 0, 2, 0, 0, 0, 0, -1, 1, 0, 0, -1, 0, 4, -1, 1, 1, 0, 0, "",
"AudioCodersGroups_2", 0, 0, "", "BroadCloud", "", 0, 2, 0, 0, 1, 0, 8,
300, 400, 0, 0, 0, "", 1, 0, 1, 3, 0, 2, 2, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0,
0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 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, 0, 0, 0, 0, 0, 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_TopologyLocation;
```

```
CpMediaRealm 0 = "MRLan", "Voice", "", 6000, 100, 6999, 1, "", "", 0;
CpMediaRealm 1 = "MRWan", "WANSP", "", 7000, 100, 7999, 0, "", "", 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_SBCRoutingPolicyName,
SRD_SBCDialPlanName;
SRD 0 = "DefaultSRD", 0, -1, 1, 0, 0, 0, "Default_SBCRoutingPolicy", "";

[ \SRD ]


[ MessagePolicy ]

FORMAT MessagePolicy_Index = MessagePolicy_Name,
MessagePolicy_MaxMessageLength, MessagePolicy_MaxHeaderLength,
MessagePolicy_MaxBodyLength, MessagePolicy_MaxNumHeaders,
MessagePolicy_MaxNumBodies, MessagePolicy_SendRejection,
MessagePolicy_MethodList, MessagePolicy_MethodListType,
MessagePolicy_BodyList, MessagePolicy_BodyListType,
MessagePolicy_UseMaliciousSignatureDB;
MessagePolicy 0 = "Malicious Signature DB Protection", -1, -1, -1, -1, -1,
1, "", 0, "", 0, 1;

[ \MessagePolicy ]


[ 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_TopologyLocation;
SIPInterface 0 = "IP-PBX", "Voice", 2, 5060, 0, 0, "DefaultSRD", "",
"default", -1, 0, 500, -1, 0, "MRLan", 0, -1, -1, -1, 0, 0;
SIPInterface 1 = "BroadCloud", "WANSP", 2, 5060, 0, 0, "DefaultSRD", "",
"default", -1, 0, 500, -1, 0, "MRWan", 0, -1, -1, -1, 0, 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_GWIPv6SIPInterfaceName, ProxySet_SBCIPv6SIPInterfaceName,
ProxySet_MinActiveServersLB;
ProxySet 0 = "IP-PBX", 1, 60, 0, 0, "DefaultSRD", 0, "", -1, -1, "", "",
"IP-PBX", "", "", 1;
ProxySet 1 = "BroadCloud", 1, 60, 0, 0, "DefaultSRD", 0, "", -1, 1, "", "",
"BroadCloud", "", "", 1;

[ \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_EnableSBCClientForking, IPGroup_SourceUriInput,
IPGroup_DestUriInput, IPGroup_ContactName, IPGroup_Username,
IPGroup_Password, IPGroup_UUIFormat, IPGroup_QOEProfile, IPGroup_BWProfile,
IPGroup_AlwaysUseSourceAddr, IPGroup_MsgManUserDef1,
IPGroup_MsgManUserDef2, IPGroup_SIPConnect, IPGroup_SBCPSAPMode,
IPGroup_DTLSContext, IPGroup_CreatedByRoutingServer,
IPGroup_UsedByRoutingServer, IPGroup_SBCOperationMode,
IPGroup_SBCRouteUsingRequestURIPort, IPGroup_SBCKeepOriginalCallID,
IPGroup_TopologyLocation, IPGroup_SBCDialPlanName,
IPGroup_CallSetupRulesSetId;
IPGroup 0 = 0, "IP-PBX", "IP-PBX", "", "", -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, 0, 0, "", -1;
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, 0, 0, "", -
1;

[ \IPGroup ]


[ SBCAlternativeRoutingReasons ]

FORMAT SBCAlternativeRoutingReasons_Index =
SBCAlternativeRoutingReasons_ReleaseCause;
SBCAlternativeRoutingReasons 0 = 503;

[ \SBCAlternativeRoutingReasons ]


[ ProxyIp ]
```

```
FORMAT ProxyIp_Index = ProxyIp_ProxySetId, ProxyIp_ProxyIpIndex,
ProxyIp_IpAddress, ProxyIp_TransportType;
ProxyIp 0 = "0", 0, "10.15.7.26:5060", 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_DestTags,
IP2IPRouting_SrcTags;
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_DestTags, IPOutboundManipulation_SrcTags;
IPOutboundManipulation 0 = "Add + for National Calls",
"Default_SBCRoutingPolicy", 0, "IP-PBX", "BroadCloud", "*", "*", "001",
"*", "*", "", 0, "Any", 0, 1, 2, 0, 255, "+", "", 0, "", "";
IPOutboundManipulation 1 = "Add 011 to International Calls",
"Default_SBCRoutingPolicy", 0, "IP-PBX", "BroadCloud", "*", "*", "00", "*",
"*", "", 0, "Any", 0, 1, 2, 0, 255, "011", "", 0, "", "";
IPOutboundManipulation 2 = "For Anonymous", "Default_SBCRoutingPolicy", 0,
"IP-PBX", "BroadCloud", "*", "*", "*", "*", "*", "", 0, "Any", 0, 0, 0, 0,
255, "", "", 0, "", "";

[ \IPOutboundManipulation ]


[ CodersGroup0 ]

;
; *** TABLE CodersGroup0 ***
; This table contains hidden elements and will not be exposed.
; This table exists on board and will be saved during restarts.
;

[ \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 = "Change PAI if History-Info exists", 4, "",
"header.History-Info.0 regex (.*)(sip:)(.*)(@)(.*)", "header.P-Asserted-
Identity.url.user", 2, "$3", 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 ]


[ MaliciousSignatureDB ]

FORMAT MaliciousSignatureDB_Index = MaliciousSignatureDB_Name,
MaliciousSignatureDB_Pattern;
MaliciousSignatureDB 0 = "SIPVicious", "Header.User-Agent.content prefix
'friendly-scanner'";
MaliciousSignatureDB 1 = "SIPScan", "Header.User-Agent.content prefix 'sip-
scan'";
MaliciousSignatureDB 2 = "Smap", "Header.User-Agent.content prefix 'smap'";
MaliciousSignatureDB 3 = "Sipsak", "Header.User-Agent.content prefix
'sipsak'";
MaliciousSignatureDB 4 = "Sipcli", "Header.User-Agent.content prefix
'sipcli'";
MaliciousSignatureDB 5 = "Sivus", "Header.User-Agent.content prefix
'SIVuS'";
MaliciousSignatureDB 6 = "Gulp", "Header.User-Agent.content prefix 'Gulp'";
MaliciousSignatureDB 7 = "Sipv", "Header.User-Agent.content prefix 'sipv'";
MaliciousSignatureDB 8 = "Sundayddr Worm", "Header.User-Agent.content
prefix 'sundayddr'";
MaliciousSignatureDB 9 = "VaxIPUserAgent", "Header.User-Agent.content
prefix 'VaxIPUserAgent'";
MaliciousSignatureDB 10 = "VaxSIPUserAgent", "Header.User-Agent.content
prefix 'VaxSIPUserAgent'";
MaliciousSignatureDB 11 = "SipArmyKnife", "Header.User-Agent.content prefix
'siparmyknife'";

[ \MaliciousSignatureDB ]


[ AllowedAudioCoders ]

FORMAT AllowedAudioCoders_Index =
AllowedAudioCoders_AllowedAudioCodersGroupName,
AllowedAudioCoders_AllowedAudioCodersIndex, AllowedAudioCoders_CoderID,
AllowedAudioCoders_UserDefineCoder;
AllowedAudioCoders 0 = "BroadCloud", 0, 3, "";

[ \AllowedAudioCoders ]


[ AudioCoders ]

FORMAT AudioCoders_Index = AudioCoders_AudioCodersGroupId,
AudioCoders_AudioCodersIndex, AudioCoders_Name, AudioCoders_pTime,
AudioCoders_rate, AudioCoders_PayloadType, AudioCoders_Sce,
AudioCoders_CoderSpecific;
AudioCoders 0 = "AudioCodersGroups_0", 0, 1, 2, 90, -1, 0, "";
AudioCoders 1 = "AudioCodersGroups_2", 0, 1, 2, 90, -1, 0, "";
```

```
AudioCoders 2 = "AudioCodersGroups_2", 1, 2, 2, 90, -1, 0, "";
AudioCoders 3 = "AudioCodersGroups_2", 2, 3, 2, 19, -1, 0, "";
AudioCoders 4 = "AudioCodersGroups_0", 1, 2, 2, 90, -1, 0, "";

[ \AudioCoders ]
```

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