BroadSoft Partner Configuration Guide

AudioCodes Enterprise SBC PBX Trunking

June 2013

Document Version 1.2

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BroadWorks® Guide

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This document describes the configuration procedures required for the AudioCodes Mediant M800/850/1000 to be interoperable with BroadWorks as BRI PBX Trunking Device.

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Before consulting this guide always check the Release Notes for this version regarding feature preconditions and/or specific support. In cases where there are differences between this document and the Release Notes, the information in the Release Notes supersedes that in this document.

Updates to this document and other documents can be viewed by registered customers at: http://www.audiocodes.com/downloads.

Date Published: June, 2013

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Document Revision History

Version	Reason for Change
1.1	Introduced document for AudioCodes Enterprise SBC PBX Trunk version F6.60A.224.004 validation with BroadWorks Release 19.sp1.
1.2	Edited and published document.

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Table Of Figures

1 Overview

This guide describes the configuration procedures required for AudioCodes Enterprise SBC PBX Trunking for interoperability with BroadWorks. The following AudioCodes Mediant gateways support this task:

- Mediant 800 (or M800)
- Mediant 850 (or M850)
- Mediant 1000B (or M1000B)

The Enterprise SBC PBX Trunk is a PBX trunking device that uses the Session Initiation Protocol (SIP) to communicate with BroadWorks for call control.

This guide describes the configuration of the Enterprise SBC PBX Trunk for use as an access trunking gateway in a BroadWorks deployment. In this configuration, the Enterprise SBC PBX Trunk acts as an access device on the BroadWorks network, providing a Basic Rate Interface (BRI) front end for BRI devices, such as a Private Branch Exchange (PBX).

This guide describes the specific configuration items that are important for use with BroadWorks. It does not describe the purpose and use of all configuration items on the Enterprise SBC PBX Trunk. For those details, see the *Mediant 800 Gateway & E-SBC User's Manual Ver. 6.6* [1] supplied by AudioCodes.

2 Interoperability Status

This section provides the known interoperability status of the AudioCodes Enterprise SBC PBX Trunking with BroadWorks. This includes the version(s) tested, the capabilities supported, and known issues.

Interoperability testing validates that the device interfaces properly with BroadWorks via the SIP interface. Qualitative aspects of the device or device capabilities not affecting the SIP interface such as display features, performance, and audio qualities are not covered by interoperability testing. Requests for information and/or issues regarding these aspects should be directed to AudioCodes.

2.1 Verified Versions

The following table identifies the verified AudioCodes Enterprise SBC PBX Trunking and BroadWorks versions and the month/year the testing occurred. If the device has undergone more than one test cycle, versions for each test cycle are listed, with the most recent listed first.

In the following table, *Compatible Versions* identify specific Enterprise SBC PBX Trunk versions that the partner has identified as compatible and should interface properly with BroadWorks. Generally, maintenance releases of the validated version are considered compatible and are not specifically listed here. For questions concerning maintenance and compatible releases, contact AudioCodes.

NOTE: Interoperability testing is usually performed with the latest generally available (GA) device firmware/software and the latest GA BroadWorks release and service pack at the time the testing occurs. If there is a need to use a non-verified mix of BroadWorks and device software versions, customers can mitigate their risk by testing the combination themselves, using the *BroadWorks IP-PBX/PBX Trunking Interoperability Test Plan* [8].

Verified Versions

Date (mm/yyyy)	BroadWorks Release	Enterprise SBC PBX Trunk Verified Version	Enterprise SBC PBX Trunk Compatible Versions
05/2013	Release 19.sp1	F6.60A.224.004	Any maintenance release of the verified revisions.

2.2 Interface Capabilities Supported

The AudioCodes Enterprise SBC PBX Trunking has completed interoperability testing with BroadWorks using the *BroadWorks SIP IP-PBX/PBX Trunking Interoperability Test Plan* [8]. The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas, such as "Basic" call scenarios and "Redundancy" scenarios. Each package is composed of one or more test items, which in turn, are composed of one or more test cases. The test plan exercises the SIP interface between the device and BroadWorks with the intent to ensure interoperability sufficient to support the BroadWorks feature set.

The *Supported* column in the following table identifies the AudioCodes Enterprise SBC PBX Trunking support for each of the items covered in the test plan packages with the following designations:

- Yes Test item is supported.
- No Test item is not supported.
- NA Test item is not applicable to the device type.
- NT Test item was not tested.

Caveats and clarifications are identified in the *Comments* column.

NOTE: *DUT* in the following table refers to the Device *Under Test,* which in this case is the AudioCodes Enterprise SBC PBX Trunking

BroadWorks IP-PBX/PBX Trunking Interoperability Test Plan Support			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
Basic	Call Origination	Yes	
	Call Termination	Yes	
	Session Audit	Yes	
	Session Timer	Yes	
	Ringback	Yes	
	Forked Dialog	Yes	
	Early UPDATE	Yes	Except sending of Early UPDATE
	Early-Session	No	
	181 Call Being Forwarded	Yes	
	Dial Plan	Yes	
	Dual-Tone Multi-Frequency (DTMF) – Inband	Yes	
	DTMF – RFC 2833	Yes	
	DTMF – DTMF Relay	Yes	
	Codec Negotiation	Yes	

BroadWorks IP-PBX/PBX Trunking Interoperability Test Plan Support			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	Codec Renegotiation	Yes	
SIP Connect	GIN Registration	Yes	
	Private Branch Exchange (PBX) Redirect	Yes	
	Calling Line ID and Privacy	Yes	
	Calling Line ID with Unicode Characters	Yes	
	E.164 Numbering	Yes	
BroadWorks Services	Voice Message Deposit or Retrieval	Yes	
	Message Waiting Indicator	Yes	
	Connected Line ID	Yes	
	Connected Line ID with Unicode Characters	Yes	
	Connected Line ID on UPDATE	Yes	
	Connected Line ID on Re-INVITE	Yes	
	Diversion Header	Yes	
	History-Info Header	Yes	
	Enterprise Trunking – Originating Trunk Group (OTG)	Yes	
	Enterprise Trunking – Destination Trunk Group (DTG)	Yes	
	Enterprise Trunking – Trunk Group (TGRP)	Yes	
	Advice of Charge	No	
	Meet-Me Conferencing	Yes	
DUT Services – Call Control Services	Call Waiting	Yes	
	Call Hold	Yes	Except MoH
	Call Transfer	Yes	
	2 B Channel Transfer	No	
	Three-Way Calling	Yes	Except before answer (NT)
DUT Services – Registration and Authentication	Register Authentication	Yes	
	Maximum Registration	Yes	
	Minimum Registration	Yes	
	Invite Authentication	Yes	
	Re-Invite or Update Authentication	Yes	
	Refer Authentication	Yes	
	Device Authenticating BroadWorks	No	
DUT Services – Fax	G711 Fax Passthrough	Yes	

BroadWorks IP-PBX/PBX Trunking Interoperability Test Plan Support			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	G711 Fax Fallback	Yes	
	T38 Fax Messaging	Yes	
Session Border Controller (SBC)/ Application Layer Gateway (ALG)	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
Video – Basic Video Calls	Call Origination	No	
	Call Termination	No	
	Call Hold	No	
	Call Waiting	No	
	Call Transfer	No	
Video – BroadWorks Video Services	Auto Attendant	No	
	Auto Attendant – HD	No	
	Voice Messaging	No	
	Voice Messaging – HD	No	
	Custom Ringback	No	
TCP	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
IPV6	Call Origination	NT	
	Call Termination	NT	
	Session Audit	NT	
	Ringback	NT	
	Codec Negotiation or Renegotiation	NT	
	Voice Message Deposit/Retrieval	NT	
	Call Control	NT	
	Registration with Authentication	NT	
	T38 Fax Messaging	NT	
	Redundancy	NT	
	SBC	NT	
	Dual Stack with Alternate Connectivity	NT	

2.3 Known Issues

This section lists the known interoperability issues between BroadWorks and specific partner release(s). Issues identified during interoperability testing and known issues identified in the field are listed.

The following table provides a description of each issue and, where possible, identifies a workaround. The verified partner device versions are listed with an "X" indicating that the issue occurs in the specific release. The issues identified are device deficiencies or bugs, so typically not BroadWorks release dependent.

If the testing was performed by BroadSoft, then the *Issue Number* is a BroadSoft ExtraView partner issue number. If the testing was performed by the partner or a third party, then the partner may or may not supply a tracking number.

For more information on any issues related to the particular partner device release, see the AudioCodes release notes.

Issue Number	Issue Description	Partner Version			
		F6.60A.224.004			

3 Solution Configuration

The following figure shows an example of a typical deployment configuration with the Enterprise SBC PBX Trunk. Typically, the Enterprise SBC PBX Trunk is placed on the customer premises to which SIP phones are registered and is on a private network, which necessitates an edge device or an SBC.

The Enterprise SBC PBX Trunk registers its main line (or pilot number) with the trunk group configured on BroadWorks via an SBC. A single registration, identifying the pilot number via Globally Identifiable Number (GIN) registration, conforms to SIP Connect standards for trunk registration. This enables all PBX users to be implicitly registered with BroadWorks via the pilot number registration.

The Enterprise SBC PBX Trunk is identified as a BroadWorks PBX Classification Type A – SIP Registering PBX. For PBX classification descriptions, see the *BroadWorks SIP Trunking Solution Guide* [6]. To determine how to configure Acme Packet for this PBX classification type, see the *SIP Trunking Configuration* table in the *BroadSoft Partner Configuration Guide AcmePacket Net-Net 3000/4000 Series* [7].

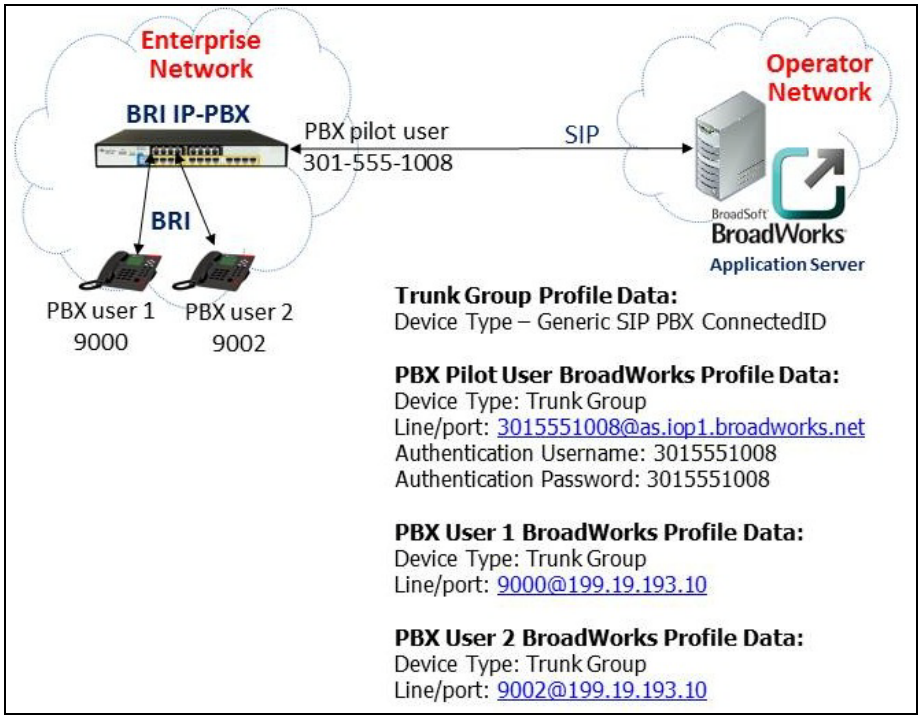

Figure 1 AudioCodes Mediant Configuration Setup (IP-PBX)

The following configuration sections describe how to configure the AudioCodes Mediant to support the configuration shown in the above diagram. The AudioCodes Mediant configuration examples refer to data in the diagram.

4 BroadWorks Configuration

This section identifies the required BroadWorks device profile type for the AudioCodes Enterprise SBC PBX Trunking and any other unique BroadWorks configuration required for interoperability with the Enterprise SBC PBX Trunk.

4.1 BroadWorks Device Profile Type Configuration

This section identifies the device profile type to use when deploying the AudioCodes Enterprise SBC PBX Trunking with BroadWorks.

The following table identifies the required BroadWorks device identity/profile settings for interoperability between the Enterprise SBC PBX Trunk and BroadWorks. For more information on profile parameters, see the *BroadWorks Device Management Configuration Guide* [4].

For most of the following parameters, an "X" indicates that the parameter function is supported and/or required. If the item is blank, it is not supported. For items where text is supplied, the text content maps directly to the web page to add or modify a device profile type.

AudioCodes Enterprise SBC PBX Trunking Identity/Device Profile Type	
Signaling Address Type	Intelligent Proxy Addressing
Standard Options	
Number of Ports	Unlimited
Ringback Tone or Early Media Support	RTP – Session
Authentication	Enabled
Hold Normalization	RFC 3264
Registration Capable	X
Static Registration Capable	X
E.164 Capable	X
Trusted	
Authenticate REFER	X
Video Capable	
Use History-Info Header	
Advanced Options	
Route Advance	
Wireless Integration	
PBX Integration	X
Add P-Called-Party-ID	
Auto Configuration Soft Client	
Requires BroadWorks Call Waiting Tone	
Advice of Charge Capable	

AudioCodes Enterprise SBC PBX Trunking Identity/Device Profile Type	
Support Emergency Disconnect Control	
Enable Monitoring	
Static Line/Port Ordering	
Forwarding Override	
Conference Device	
Music On Hold Device	
Requires BroadWorks Digit Collection	
Requires MWI Subscription	
Support Call Center MIME Type	
Support Identity in UPDATE and Re-INVITE	
Support RFC 3398	X
Reset Event	Not Supported
Trunk Mode	User
Hold Announcement Method	Inactive
Unscreened Presentation Identity Policy	Profile
Web Based Configuration URL Extension	
Device Configuration Options	
Device Configuration Options	Not Supported

4.2 BroadWorks Configuration Steps

There is no additional BroadWorks configuration steps required.

5 Enterprise SBC PBX Trunk Configuration

The AudioCodes Mediant can be configured with a configuration file using the Trivial File Transfer Protocol (TFTP) or through its embedded web server. The following examples describe how to set the parameters using a configuration file. To retrieve the currently-used parameter settings, use the link in your browser: *HTTP://<device IP address>/* to retrieve the currently-used INI file. The file can then be modified and downloaded back to the device. The AudioCodes Mediant should be configured to load the configuration file each time it resets or re-synchronizes. For detailed information on automated provisioning, refer to the specific device configuration note (listed in the References section [1], [2] and [3]).

The capabilities of the AudioCodes Mediant have been verified for use with BroadWorks based on the settings described in the following table. For more information on the meaning, purposes, and applicability of individual configuration items, refer to the specific device configuration note (listed in the References section [1], [2] and [3]).

Configuration Files

Files Provided by Partner	Level	Description
*.CMP	System	Contains the device firmware load.
*.INI	System	*ini* file: Contains configurable parameters for the Voice session controller device.
use_tones.dat	System or Subscriber	Call Progress Tones file.

When new software (**.cmp*) is downloaded to the Mediant device, follow these steps. After downloading, you must reset the device for it to take effect.

Step	Command
Step 1	Log on to the AudioCodes Web client and open the *Software Upgrade Wizard* (*Management tab → Software Update menu → Software Upgrade Wizard*); the *Software Upgrade Wizard* page appears.
Step 2	Click the **Start Software Upgrade** button; the *Load a CMP file* Wizard page appears.
Step 3	Use the **Browse** button to locate the required CMP file. Click **Send File**. The file is sent to the gateway.
Step 4	You can now download the remaining files required.
Step 5	Click **Reset**.

When only the *ini* file is downloaded to the E-SBC device, follow these steps. After downloading the new *ini* file, you must reset the device for it to take effect.

Step	Command
Step 1	Log on to the AudioCodes Web client and open the *Configuration File* page (*Management tab → Software Update menu → Configuration File*).
Step 2	You can choose whether to send a Voice *ini* file or Data configuration *ini* file. Use the **Browse** button to locate the required file. Click **Send ini File**. The file is sent to the gateway. The E-SBC device will reset automatically.

5.1 Step 1: Configuring System Network

This step describes system configuration items that are generally required for the BRI IP-PBX/Trunking Gateway Network Setting.

There are several ways to deploy the BRI IP-PBX/Trunking Gateway; this Partner Configuration Guide covers only the following scenario.

The BRI IP-PBX/Trunking Gateway deployed in this scenario, interfaces between the Enterprise users of the BRI PBX or BRI phones located in the Enterprise Network and the BroadWorks Application Server located in the Operator LAN.

5.1.1 Configuring Network Interfaces

This section describes typical physical Ethernet port connections of the deployed BRI Gateway.

In this example, BRI IP-PBX/Trunking Gateway connects to the Operator Network using dedicated LAN port (that is, Ethernet port and network cable) and with logical network interface.

The *Multiple Interface Table* page allows you to configure the IP address, Default Gateway, and VLAN for the device:

To configure a Network Interface:

1) Open the Multiple Interface Table page (*Configuration → Network Settings → IP Settings*).

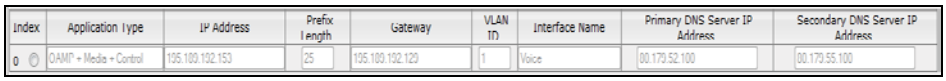

Figure 2 Multiple Interface Table Screen

2) Select the **Index** radio button corresponding to the Application Type *OAMP + Media + Control*, and then click **Edit**.

Set the following parameters:

- *IP-Address*: <Trunking Gateway IP-Address> (for example, 195.189.192.153).
- *Prefix Length*: <Subnet Mask in bits> (for example, 25 for 255.255.255.128).
- *Gateway*: <Gateway Default Gateway> (for example, 195.189.192.129).
- *VLAN ID*: < Vlan ID number> (for example, 1).
- *Interface Name*: <Internal Name> (for example, Voice).
- *Primary DNS Server IP Address*: <DNS IP-Address> (for example, 80.179.52.100).
- *Secondary DNS Server IP Address*: <DNS IP-Address> (for example, 80.179.55.100).
- *Underlying Interface*: <Group number> (for example, **GROUP_1**)

3) Click **Apply**, and then **Done**.

5.2 Step 2: Configuring PSTN Trunk Settings

This step describes how to configure PSTN Trunk Settings.

To configure PSTN:

1) Open the Trunk settings page (*Configuration → VoIP → PSTN → Trunk Settings*).
2) From the *Protocol Type* drop-down list, select appropriated variant of BRI protocol, for example: BRI EURO ISDN.
3) From the *ISDN Termination Side* drop-down list, select *Network side*.
4) From the *BRI Layer2 Mode* drop-down list, select *Point To Multipoint*.
5) Set the following parameters for BRI Behavior:
   - Q931 Layer Response Behavior: 0x8000000
   - Incoming Calls Behavior: 0x11000
6) From the *Select Receiving of Overlap Dialing* drop-down list, select *Local Receiving*.

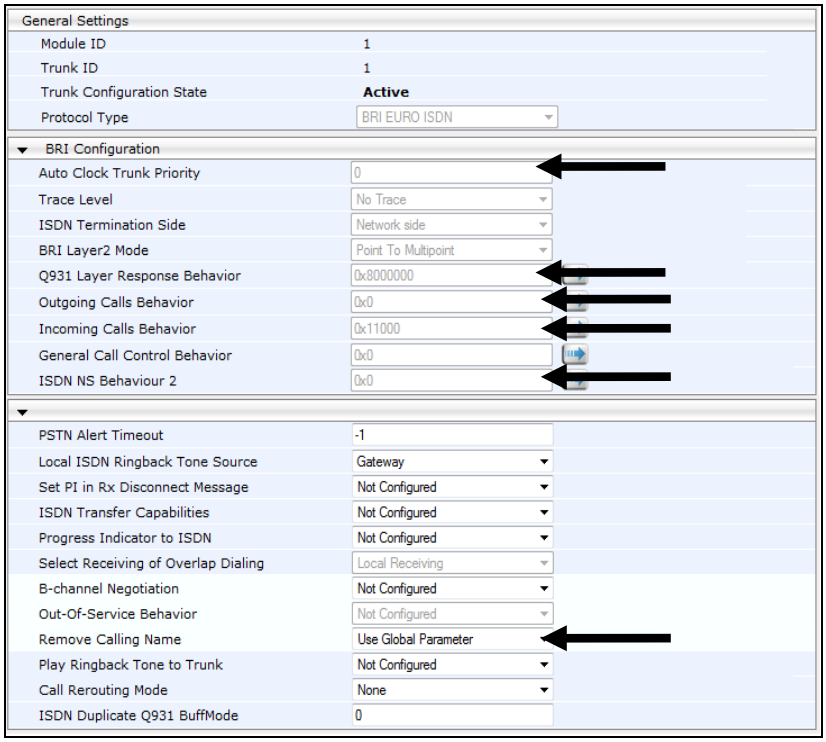

Figure 3 Configuring PSTN BRI

7) Click **Apply Trunk Settings** to apply the changes.
8) Save your settings to flash memory (burn) with a device reset.

5.3 Step 3: Configuring Proxy Set Tables

This step describes how to configure the Proxy Set table. It represents the address to which the BRI Gateway sends INVITE messages when it offers a SIP session (call).

To configure Proxy Set for BroadWorks Application Server:

1) Open the Proxy Sets Table page (*Configuration tab → VoIP menu → Control Network → Proxy Sets Table*).

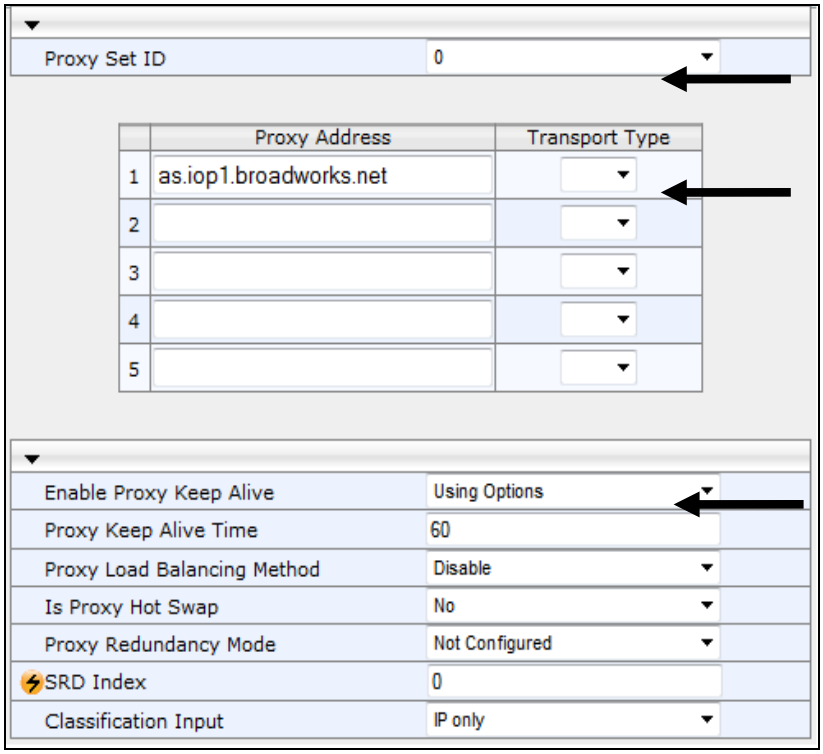

Figure 4 Proxy Sets Table

2) From the *Proxy Set ID* drop-down list, select *0*.
3) Configure BroadWorks Application Server FQDN (for example, ***as.iop1.broadworks.net***).
4) From the *Enable Proxy Keep Alive* drop-down list, select *Using Options*.

5.4 Step 4: Configuring General SIP Parameters

This step identifies the BRI Trunk Gateway configuration needed to support SIP General configuration.

5.4.1 Configuring Registration Parameters

The following describes how to configure the SIP Proxy and Registration Parameters. This configuration includes setting a Proxy Name, Registrar Name, DNS query for the BroadWorks Proxy Set, Registration and Subscription modes.

To configure the SIP Proxy & Registration Parameters:

1) Open the *Proxy & Registration* page (*Configuration* → *VoIP* → *SIP Definitions* → *Proxy & Registration*).

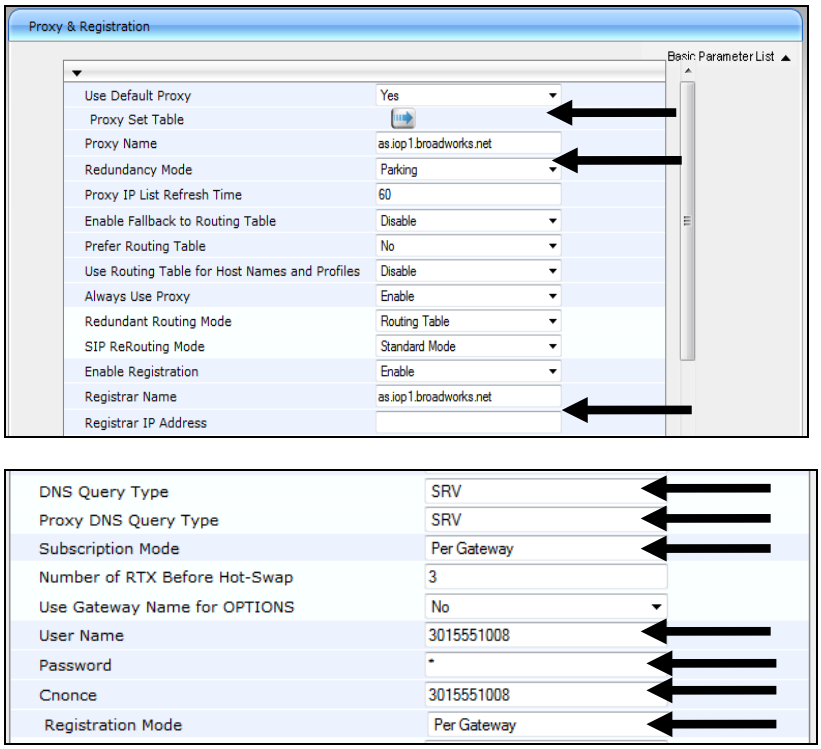

Figure 5 Proxy and Registration Screen

2) From the *Use Default Proxy* drop-down list, select *Yes*.
3) Configure BroadWorks Application Server FQDN as Proxy Name (for example, *as.iop1.broadworks.net*).
4) Configure BroadWorks Application Server FQDN as Registrar Name (for example, as.iop1.broadworks.net).
5) From the *DNS Query Type* drop-down list, select *SRV*.
6) From the *Proxy DNS Query* Type drop-down list, select *SRV*.
7) From the *Subscription Mode* drop-down list, select *Per Gateway*.
8) Configure Trunk Group Pilot User in the User *Name* field.
9) Configure Trunk Group Pilot User Password in the *Password* field.
10) Repeat Trunk Group Pilot User Password in the *Cnonce* field.
11) From the *Registration Mode* drop-down list, select *Per Gateway*.
12) Click **Submit** to apply your changes.

5.4.2 Configuring Disconnect Parameters

The following describes how to configure the Disconnect and Answer Supervision.

To configure the Disconnect and Answer Supervision

1) Open the *Advance Parameters* page (*Configuration tab → VoIP menu → SIP Definitions → Advance Parameters*).

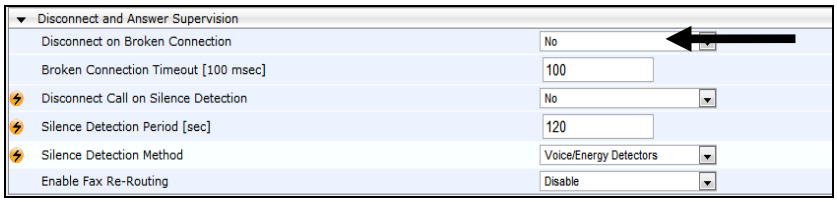

Figure 6 Disconnect Parameters Screen

2) From the *Disconnect on Broken Connection* drop-down list, select *No*.

5.4.3 Configuring Source Header For Called Number Parameters

When PBX configured with pilot user, all incoming calls received with this user in Invite header. Real endpoint address appears only in *To* header. To perform *IP-to-Tel* routing according to *real* endpoint number, the following parameter should be changed:

To configure the Source Header For Called Number

1) Open the Advance Parameters page (Configuration tab → *VoIP menu* → *SIP Definitions* → *Advance Parameters*).

Figure 7 Misc. Parameters Screen

2) From the *Source Header For Called Number* drop-down list, select *use To header*.

5.5 Step 5: Trunk Group Parameters

This section describes the configuration of the device's channels, which entails assigning them numbers and Trunk Group IDs.

5.5.1 Configuring Trunk Group Table

The following section describes how to configure BRI Trunk Group.

To configure the Trunk Group Table:

1) Open the *Trunk Group* Table page (*Configuration tab* → *VoIP menu* → *GW and IP to IP submenu* → *Trunk Group* → *Trunk Group*).

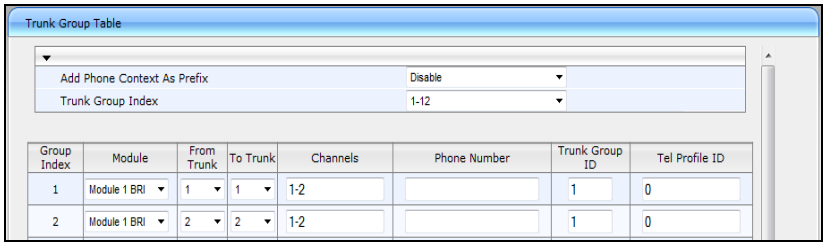

Figure 8 Trunk Group Table Page

2) Configure the Trunk Group as required.

3) Click **Submit** to apply your changes.

5.5.2 Configuring Trunk Group Settings

The Trunk Group Settings allows you to configure the following per Trunk Group:

- Channel select method by which *IP-to-Tel* calls are assigned to the Trunk Group's channels.
- Registration method for registering Trunk Groups.

To configure the Trunk Group Settings:

1) Open the *Trunk Group* Table page (*Configuration tab → VoIP menu → GW and IP to IP submenu → Trunk Group → Trunk Group Settings*).

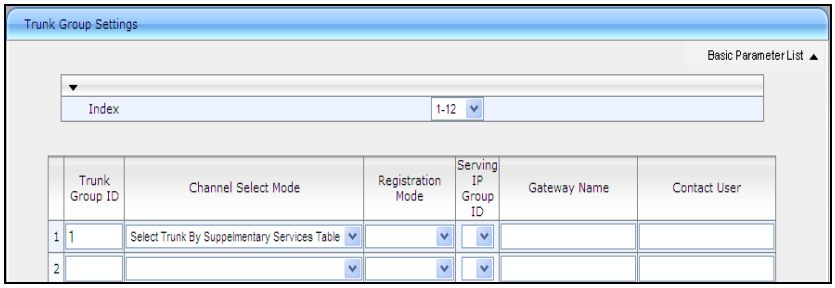

Figure 9 Trunk Group Settings Page

2) From the *Index* drop-down list, select the range of entries that you want to edit.

3) From the *Channel Select Mode* drop-down list, use *Select Trunk By Supplementary Services table*.

4) Click **Submit** to apply your changes.

5.6 Step 6: Configuring Routing Parameters

This step identifies the BRI Trunk Gateway configuration of call routing rules. Because Default Proxy is used, outbound calls always routed to the proxy. Therefore not additional configuration needed for outbound (*IP-to-Tel*) routing.

5.6.1 Configuring Inbound IP Routing

The following describes how to configure BRI Trunk Gateway Inbound (*IP-to-Tel*) Routing:

To configure IT-to-Tel or Inbound IP Routing Rules:

1) Open the *Inbound IP Routing* Table page (*Configuration tab → VoIP menu → GW and IP to IP submenu → Routing → IP to Trunk Group Routing*).

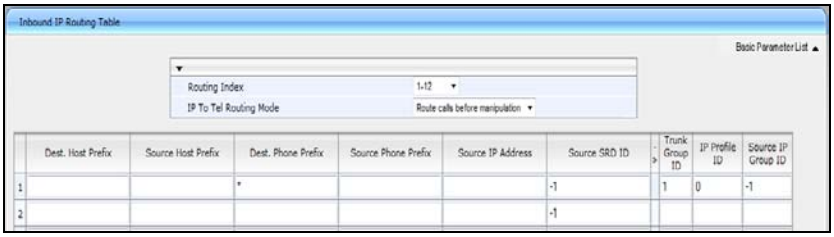

Figure 10 Inbound IP Routing Table Page

2) Configure rule for all incoming from IP calls, route them to Trunk Group ID 1.

3) Click **Submit** to apply your changes.

5.7 Step 7: Configuring DTMF and Supplementary Services Parameters

This step identifies the BRI Trunk Gateway configuration of DTMF and Supplementary Services parameters.

5.7.1 Configuring DTMF and Dialing

The DTMF and Dialing page is used to configure parameters associated with dual-tone multi-frequency (DTMF) and dialing.

To configure DTMF and Dialing parameters:

1) Open the *DTMF & Dialing* page (*Configuration tab → VoIP menu → GW and IP to IP submenu → DTMF & Supplementary submenu → DTMF & Dialing*).

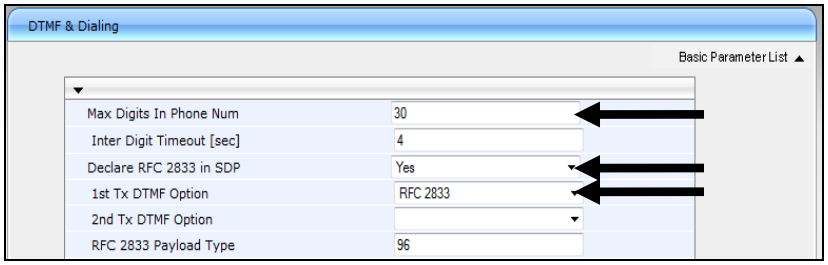

Figure 11 DTMF and Dialing Page

2) Configure the parameters as required. For example:
   - Max Digits In Phone Num
   - Declare RFC 2833 in SDP
   - DTMF Option
3) Click **Submit** to apply your changes.

5.7.2 Configuring Supplementary Services

This section describes SIP supplementary services that can enhance telephone service.

To configure BRI supplementary services parameters:

1) Open the *Supplementary Services* page (*Configuration tab → VoIP menu → GW and IP to IP submenu → DTMF & Supplementary submenu → Supplementary Services*).

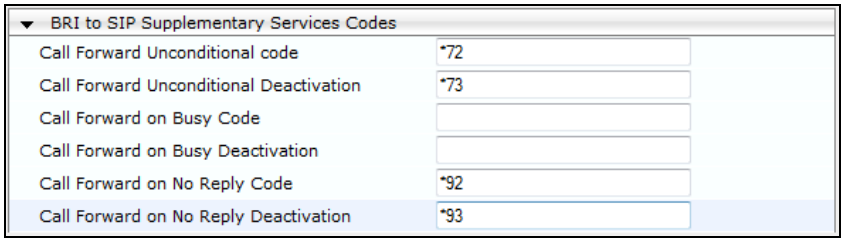

Figure 12 BRI to SIP Supplementary Services

2) Configure BRI to SIP Supplementary Services Codes according to the definition in BroadSoft's BroadWorks Application Server.

3) There are additional parameters which can be changed according to customer request. For example, Hold Format (0.0.0.0 or Send Only), Hook-Flash Code and so on.

4) Click **Submit** to apply your changes.

To configure BRI Supplementary Services Table:

1) Open *the ISDN Supp Services* Table page (*Configuration tab → VoIP menu → GW and IP to IP submenu → DTMF & Supplementary submenu → Supp Services Table*).

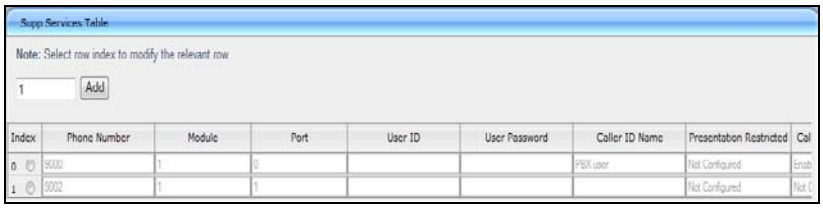

Figure 13 ISDN Supp Services Table Page

2) Under the *Phone Number* column define the telephone extension number for the BRI endpoint.

3) Under the *Module* column define the BRI module number that the BRI extension pertains to.

4) Under the *Port* column define the port number on the BRI module that the BRI extension is connected to.

5) Under the *Caller ID Name* define the caller ID name of the BRI extension (sent to the IP side).

6) Under the *Caller ID Enabled* enter “Enabled” (the device sends Caller ID information to the BRI extension).

7) Click **Submit** to apply your changes.

5.8 Step 8: Configuring Additional Parameters

This step describes how to configure additional parameters to be able to work with the BroadWorks server for different scenarios.

1) Open the Admin page, by entering the case-sensitive suffix “AdminPage” to the Media Gateway's IP address in your Web browser's URL field (for example, http://195.189.192.153/AdminPage).

2) On the left pane, click *ini Parameters*.

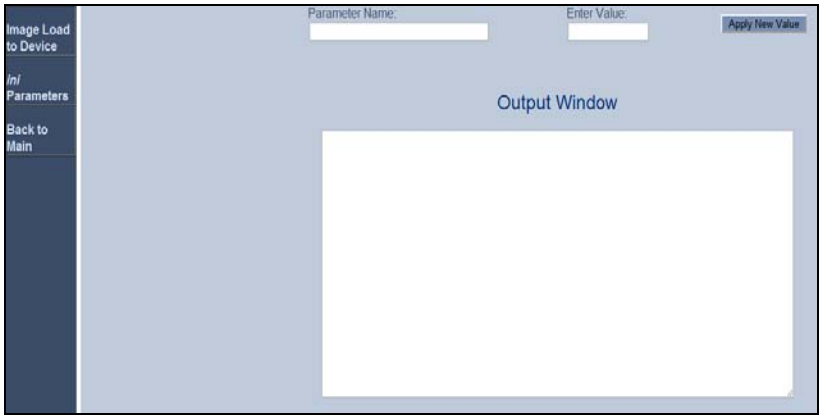

Figure 14 *ini* Parameters Window

3) In the *Parameter Name* field, enter the following parameters with their values:
   – *ISO8859CharacterSet* = “0” (to receive Caller ID with Unicode Characters)

4) Click **Apply New Value** for all these parameters.

Appendix A: Sample Mediant Configuration File

NOTE: The following samples are examples and should be used as a reference only. DO NOT CUT AND PASTE THESE EXAMPLES TO GENERATE YOUR CONFIGURATION FILES. Use the configuration files obtained from AudioCodes with the specific release to generate your configuration files.

Mediant BRI IP-PBX Configuration File: M800-BRI-IP-PBX.INI

NOTE: This is an example file and should be used for reference only.

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

;Board: Mediant 800
;Board Type: 69
;Serial Number: 2265355
;Slot Number: 1
;Software Version: 6.60A.224.004
;DSP Software Version: 5014AE3_R_LD => 660.22
;Board IP Address: 195.189.192.153
;Board Subnet Mask: 255.255.255.128
;Board Default Gateway: 195.189.192.129
;Ram size: 368M Flash size: 64M
;Num of DSP Cores: 1 Num DSP Channels: 22
;Num of physical LAN ports: 12
;Profile: NONE
;Key features:;Board Type: 69 ;Channel Type: RTP DspCh=30
IPMediaDspCh=30 ;QOE features: VoiceQualityMonitoring
MediaEnhancement ;PSTN Protocols: IUA=1 ;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 V150=50 ;IP Media: Conf VXML
VoicePromptAnnounc(H248.9) CALEA TrunkTesting POC ;Security:
IPSEC MediaEncryption StrongEncryption EncryptControlProtocol
;PSTN FALLBACK Supported ;E1Trunks=2 ;T1Trunks=2 ;FXSPorts=4
;FXOPorts=4 ;Control Protocols: MSFT CLI TRANSCODING=50 FEU=50
TestCall=100 MGCP MEGACO H323 SIP TPNCP SASurvivability SBC=50
;Default features:;Coders: G711 G726;

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

```
[SYSTEM Params]

SyslogServerIP = 195.189.192.151
EnableSyslog = 1
NTPServerIP = '0.0.0.0'
LDAPSEARCHDNSINPARALLEL = 0

[BSP Params]

PCMLawSelect = 1

[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]

ProtocolType = 50
TerminationSide = 1
ISDNIBehavior = 134217728
ISDNOutCallsBehavior = 0
BriLayer2Mode = 1

[SS7 Params]


[Voice Engine Params]

CallProgressTonesFilename = 'usa_tones_13.dat'

[WEB Params]

UseRProductName = 'Mediant 800'
LogoWidth = '145'
UseProductName = 1
HTTPSCipherString = 'RC4:EXP'

[SIP Params]

PLAYRBTONE2IP = 1
ISPROXYUSED = 1
ISREGISTERNEEDED = 1
```



```
ROUTEMODEIP2TEL = 1
ROUTEMODETEL2IP = 1
GWDEBUGLEVEL = 5
ENABLEEARLYMEDIA = 1
ISDNRXOVERLAP = 1
PROXYNAME = 'as.iop1.broadworks.net'
SIPGATEWAYNAME = 'as.iop1.broadworks.net'
USERNAME = '3015551008'
CNONCE = '3015551008'
ALWAYSSENDTOPROXY = 1
DISCONNECTONBROKENCONNECTION = 0
SUBSCRIPTIONMODE = 1
HOLDFORMAT = 1
REGISTRARNAME = 'as.iop1.broadworks.net'
SESSIONEXPIRESMETHOD = 1
LOCALISDNRBSOURCE = 1
DNSQUERYTYPE = 1
PROXYDNSQUERYTYPE = 1
SIPSDPSESSIONOWNER = 'AudiocodesBRI_GW'
ENABLEIP2IPAPPLICATION = 1
SELECTSOURCEHEADERFORCALLEDNUMBER = 1
MSLDAPPRIMARYKEY = 'telephoneNumber'
SUPPSERVCODECFU = '*72'
SUPPSERVCODECFUDEACT = '*73'
SUPPSERVCODECFNR = '*92'
SUPPSERVCODECFNRDEACT = '*93'
ISO8859CHARACTERSET = 0

[SCTP Params]


[IPsec Params]


[Audio Staging Params]


[SNMP Params]


[ PhysicalPortsTable ]

FORMAT PhysicalPortsTable_Index = PhysicalPortsTable_Port,
PhysicalPortsTable_Mode, PhysicalPortsTable_NativeVlan,
PhysicalPortsTable_SpeedDuplex,
PhysicalPortsTable_PortDescription,
PhysicalPortsTable_GroupMember,
PhysicalPortsTable_GroupStatus;
PhysicalPortsTable 0 = "GE_4_1", 1, 1, 4, "User Port #0",
"GROUP_1", "Active";
PhysicalPortsTable 1 = "GE_4_2", 1, 1, 4, "User Port #1",
"GROUP_1", "Redundant";
PhysicalPortsTable 2 = "GE_4_3", 1, 1, 4, "User Port #2",
"GROUP_2", "Active";
PhysicalPortsTable 3 = "GE_4_4", 1, 1, 4, "User Port #3",
"GROUP_2", "Redundant";
PhysicalPortsTable 4 = "FE_5_1", 1, 1, 4, "User Port #4",
```

```
"GROUP_3", "Active";
PhysicalPortsTable 5 = "FE_5_2", 1, 1, 4, "User Port #5",
"GROUP_3", "Redundant";
PhysicalPortsTable 6 = "FE_5_3", 1, 1, 4, "User Port #6",
"GROUP_4", "Active";
PhysicalPortsTable 7 = "FE_5_4", 1, 1, 4, "User Port #7",
"GROUP_4", "Redundant";
PhysicalPortsTable 8 = "FE_5_5", 1, 1, 4, "User Port #8",
"GROUP_5", "Active";
PhysicalPortsTable 9 = "FE_5_6", 1, 1, 4, "User Port #9",
"GROUP_5", "Redundant";
PhysicalPortsTable 10 = "FE_5_7", 1, 1, 4, "User Port #10",
"GROUP_6", "Active";
PhysicalPortsTable 11 = "FE_5_8", 1, 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", 2, FE_5_1, FE_5_2;
EtherGroupTable 3 = "GROUP_4", 2, FE_5_3, FE_5_4;
EtherGroupTable 4 = "GROUP_5", 2, FE_5_5, FE_5_6;
EtherGroupTable 5 = "GROUP_6", 2, FE_5_7, FE_5_8;

[ \EtherGroupTable ]


[ InterfaceTable ]

FORMAT InterfaceTable_Index = InterfaceTable_ApplicationTypes,
InterfaceTable_InterfaceMode, InterfaceTable_IPAddress,
InterfaceTable_PrefixLength, InterfaceTable_Gateway,
InterfaceTable_VlanID, InterfaceTable_InterfaceName,
InterfaceTable_PrimaryDNSServerIPAddress,
InterfaceTable_SecondaryDNSServerIPAddress,
InterfaceTable_UnderlyingInterface;
InterfaceTable 0 = 6, 10, 195.189.192.153, 25,
195.189.192.129, 1, "Voice", 80.179.52.100, 80.179.55.100,
GROUP_1;

[ \InterfaceTable ]


[ TrunkGroup ]

FORMAT TrunkGroup_Index = TrunkGroup_TrunkGroupNum,
TrunkGroup_FirstTrunkId, TrunkGroup_FirstBChannel,
TrunkGroup_LastBChannel, TrunkGroup_FirstPhoneNumber,
TrunkGroup_ProfileId, TrunkGroup_LastTrunkId,
TrunkGroup_Module;
```

```
TrunkGroup 0 = 1, 0, 1, 2, "", 0, 0, 1;
TrunkGroup 1 = 1, 1, 1, 2, "", 0, 1, 1;

[ \TrunkGroup ]


[ PstnPrefix ]

FORMAT PstnPrefix_Index = PstnPrefix_DestPrefix,
PstnPrefix_TrunkGroupId, PstnPrefix_SourcePrefix,
PstnPrefix_SourceAddress, PstnPrefix_ProfileId,
PstnPrefix_SrcIPGroupID, PstnPrefix_DestHostPrefix,
PstnPrefix_SrcHostPrefix, PstnPrefix_SrcSRDID,
PstnPrefix_TrunkId;
PstnPrefix 0 = "*", 1, "", "", 0, -1, "", "", , -1;

[ \PstnPrefix ]


[ ProxyIp ]

FORMAT ProxyIp_Index = ProxyIp_IpAddress,
ProxyIp_TransportType, ProxyIp_ProxySetId;
ProxyIp 0 = "as.iop1.broadworks.net", -1, 0;

[ \ProxyIp ]


[ TrunkGroupSettings ]

FORMAT TrunkGroupSettings_Index =
TrunkGroupSettings_TrunkGroupId,
TrunkGroupSettings_ChannelSelectMode,
TrunkGroupSettings_RegistrationMode,
TrunkGroupSettings_GatewayName,
TrunkGroupSettings_ContactUser,
TrunkGroupSettings_ServingIPGroup,
TrunkGroupSettings_MWIInterrogationType,
TrunkGroupSettings_TrunkGroupName;
TrunkGroupSettings 0 = 1, 10, 255, "", "", -1, 255, "";

[ \TrunkGroupSettings ]


[ ProxySet ]

FORMAT ProxySet_Index = ProxySet_EnableProxyKeepAlive,
ProxySet_ProxyKeepAliveTime,
ProxySet_ProxyLoadBalancingMethod, ProxySet_IsProxyHotSwap,
ProxySet_SRD, ProxySet_ClassificationInput,
ProxySet_ProxyRedundancyMode;
ProxySet 0 = 1, 60, 0, 0, 0, 0, -1;

[ \ProxySet ]


[ CodersGroup0 ]
```

```
FORMAT CodersGroup0_Index = CodersGroup0_Name,
CodersGroup0_pTime, CodersGroup0_rate,
CodersGroup0_PayloadType, CodersGroup0_Sce;
CodersGroup0 0 = "g711Ulaw64k", 20, 0, -1, 0;
CodersGroup0 1 = "g729", 20, 0, -1, 0;

[ \CodersGroup0 ]


[ ISDNSuppServ ]

FORMAT ISDNSuppServ_Index = ISDNSuppServ_PhoneNumber,
ISDNSuppServ_Module, ISDNSuppServ_Port, ISDNSuppServ_UserId,
ISDNSuppServ_UserPassword, ISDNSuppServ_CallerID,
ISDNSuppServ_IsPresentationRestricted,
ISDNSuppServ_IsCallerIDEnabled;
ISDNSuppServ 0 = "9000", 1, 0, "", *, "PBX user", 255, 1;
ISDNSuppServ 1 = "9002", 1, 1, "", *, "", 255, 255;

[ \ISDNSuppServ ]


[ RoutingRuleGroups ]

FORMAT RoutingRuleGroups_Index = RoutingRuleGroups_LCREnable,
RoutingRuleGroups_LCRAverageCallLength,
RoutingRuleGroups_LCRDefaultCost;
RoutingRuleGroups 0 = 0, 0, 1;

[ \RoutingRuleGroups ]


[ ResourcePriorityNetworkDomains ]

FORMAT ResourcePriorityNetworkDomains_Index =
ResourcePriorityNetworkDomains_Name,
ResourcePriorityNetworkDomains_Ip2TelInterworking;
ResourcePriorityNetworkDomains 1 = "dsn", 0;
ResourcePriorityNetworkDomains 2 = "dod", 0;
ResourcePriorityNetworkDomains 3 = "drsn", 0;
ResourcePriorityNetworkDomains 5 = "uc", 1;
ResourcePriorityNetworkDomains 7 = "cuc", 0;

[ \ResourcePriorityNetworkDomains ]
```

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