BroadSoft Partner Configuration Guide

AudioCodes Enterprise-SBC – Network Peering

February 2013

Document Version 1.4

1 Hayarden Street,
Airport City Lod, Israel, 70151
Tel: +972-3-976-4000
Fax: +972-3-976-4040

WWW.AUDIOCODES.COM

BroadWorks® Guide

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This document describes the configuration procedures required for the AudioCodes E-SBC to be interoperable with BroadWorks.

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Date Published: February 2013

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Document Revision History

Version	Reason for Change
1.1	Introduced document for AudioCodes E-SBC Product Family version F6.60A.026.003 validation with BroadWorks Release 18.sp1 as a network peering device.
1.2	Edited and published document.
1.3	Modified document title specifying “network peering”.
1.4	Edited changes and published document.

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1 Overview

This guide describes the configuration procedures required for the AudioCodes Enterprise-Session Border Controller (E-SBC) Product Family to be interoperable of BroadWorks.

The AudioCodes E-SBC product family can be configured to provide various functions in conjunction with BroadWorks including enterprise session border controller and network peering capabilities. This document describes the implementation of the AudioCodes E-SBC as a network peering device. This includes the following AudioCodes E-SBC product models:

- Mediant 800/850
- Mediant 1000B
- Mediant 3000
- Mediant 4000

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 E-SBC. For those details, see the user's manuals supplied by AudioCodes.

For more information, see the user's manuals listed in the *References* section.

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2 Interoperability Status

This section provides the known interoperability status of the AudioCodes E-SBC Product Family with BroadWorks. This includes the version(s) tested, 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 E-SBC Product Family 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.

Compatible Versions in the following table identifies specific AudioCodes E-SBC Product Family versions, which the partner has identified as compatible and should interface properly with BroadWorks. Generally, maintenance releases of the validated version are considered compatible and may not be specifically listed here. Contact AudioCodes for questions concerning maintenance and compatible releases.

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 self-testing the combination using the *BroadWorks Network Device Interoperability Test Plan* [7].

Verified Versions Table

Date (mm/yyyy)	BroadWorks Release	E-SBC Product Family Verified Version	E-SBC Product Family Compatible Versions
01/2013	Release 18.sp1	F6.60A.026.003	None

2.2 Interface Capabilities Supported

The AudioCodes E-SBC Product Family has completed interoperability testing with BroadWorks using the *BroadWorks Network Device Interoperability Test Plan* [7]. 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.

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The *Supported* column in the following table identifies the AudioCodes E-SBC Product Family's 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 or clarifications are identified in the *Comments* column.

Note that the *DUT* in the following table refers to the *Device Under Test,* which in this case is the AudioCodes E-SBC Product Family.

BroadWorks SIP Network Device Interoperability Test Plan Support Table			
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	
	Early-Session	No	
	181 Call Being Forwarded	Yes	
	Dial Plan	Yes	
	DTMF – Inband	Yes	
	DTMF – RFC 2833	Yes	
	DTMF – DTMF Relay	Yes	
	Codec Negotiation	Yes	
	Codec Renegotiation	Yes	
BroadWorks Services	Third-Party Call Control	Yes	
	Voice Message Deposit/Retrieval	Yes	
	Voice Portal Outcall	Yes	
	BroadWorks Anywhere	Yes	
	Equal Access CIC	Yes	
	Diversion Header	Yes	
	History-Info Header	Yes	
	Calling Line ID	Yes	
	Calling Line ID with Unicode Characters	Yes	
	Connected Line ID	Yes	

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BroadWorks SIP Network Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	Connected Line ID with Unicode Characters	Yes	
	Connected Line ID on UPDATE	Yes	
	Connected Line ID on Re-INVITE	Yes	
	Meet-Me Conferencing	Yes	
DUT Services – Call Control Services	Call Waiting	Yes	
	Call Hold	Yes	
	Call Transfer	Yes	
	Three-Way Calling	Yes	
	Network-Based Conference	Yes	
DUT Services – Fax	G711 Fax Passthrough	Yes	
	G711 Fax Fallback	Yes	
	T38 Fax Messaging	Yes	
Redundancy	DNS SRV Lookup	Yes	
	INVITE Failover	Yes	
	INVITE Failover – 302 Contact	Yes	
	Bye Failover	Yes	
	Global-Failure Response Handling	Yes	
Video – Basic Video Calls	Call Origination	Yes	
	Call Termination	Yes	
	Call Hold	Yes	
	Call Waiting	Yes	
	Call Transfer	Yes	
Video – BroadWorks Video Services	Auto Attendant	Yes	
	Auto Attendant – HD	NT	No HD device is available for test.
	Voice Messaging	Yes	
	Voice Messaging – HD	NT	No HD device is available for test.
IPV6	Call Origination	NT	IPv6 was not available on BroadSoft Interoperability server during interoperability testing.
	Call Termination	NT	
	Session Audit	NT	
	Ringback	NT	
	Codec Negotiation/Renegotiation	NT	
	Call Control	NT	

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BroadWorks SIP Network Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	Registration with Authentication	NT	
	T38 Fax Messaging	NT	
	Redundancy	NT	
	Video	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.

The *Issue Number* is a BroadSoft ExtraView partner issue number if the testing was performed by BroadSoft. If the testing was performed by the partner or a third party, 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 partner release notes.

Issue Number	**Issue Description**	**Partner Version**			
		F6.60A.026.003			
	No issues identified.				

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3 BroadWorks Configuration

This section identifies any unique BroadWorks configuration settings required for interoperability with the E-SBC.

3.1 BroadWorks Network Server Configuration

This section identifies BroadWorks Network Server configuration settings important when deploying the AudioCodes E-SBC Product Family with BroadWorks.

3.1.1 BroadWorks Network Server SIP Parameter Configuration

The following table identifies SIP settings important for use when deploying the AudioCodes E-SBC Product Family with BroadWorks.

Step	Command	Purpose
Step 1	**Enable DNS lookup.** NS_CLI/Interface/SIP> set **useDNSLookup** true	Configure the Network Server to perform DNS lookup on the host.
Step 2	**Enable E.164 numbering.** NS_CLI/Interface/SIP> set sendE164 true	Configure the Network Server to use E.164 numbering when supported by the routingNE.

3.1.2 BroadWorks Network Server SIP Parameter Configuration Example

```
NS_CLI/Interface/SIP> get
SIP configuration
=================
   listeningPort = 5060
   T1  =  500
   T2  =  4000
   GlobalCicEnabled   =  false
   q minimum  =  0
   q maximum  =  0.5
   useViaHost =  true
   useDNSLookup =  true
   sendLata   =  false
   symmetricSignaling =  false
   supportTcp =  true
   supportDnsNaptr =  false
   sendE164        =  true
   maxNumberTcpSocketsPerSystem =  1000
   maxNumberTcpSocketsPerPeer =  100
   autoDiscardStaleConnections =  false
   staleConnectionTimerInMinutes =  60
   addCICInSourceId=  false
   sendReasonHeader=  false
   IMSApplication=  false
   BEAApplication=  false
   supportRFC3966PhoneContext=  false
   redirectNumNonCallThreads = 4
   redirectNumCallThreads = 4
   sipNumNonCallReceiveThreads = 4
```


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```
    sipNumCallReceiveThreads = 4
    sipNumEncoderThreads = 4
    useSessionCompletionTimer = true
    sessionCompletionTimerMillis = 5000
    udpReceiveBufferSize = 262144
    sipIpVersion = both
    viaHost =
```

3.2 BroadWorks Application Server Configuration

This section identifies BroadWorks Application Server configuration settings important when deploying the AudioCodes E-SBC Product Family with BroadWorks.

3.2.1 BroadWorks Application Server Startup Parameter Configuration

The following table identifies startup settings important for use when deploying the AudioCodes E-SBC Product Family with BroadWorks.

Step	Command	Purpose
Step 1	**Configure access contact.** `AS_CLI/System/StartupParam> bw.sip.accessclustercontacthost as.iop1.broadworks.net`	Set the BroadWorks access side contact to the Application Server cluster FQDN.
Step 2	**Configure network contact.** `AS_CLI/System/StartupParam> set bw.sip.networkclustercontacthost as.iop1.broadworks.net`	Set the BroadWorks network side contact to the Application Server cluster FQDN.

3.2.2 BroadWorks Application Server Startup Parameter Configuration Example

```
AS_CLI/System/StartupParam> get
  bw.accounting.numThreads = 1
  bw.accounting.useuuidforlinuxsystemid = false
  bw.asr.source.ip = <nil>
  bw.callcenter.monitoringPeriodThrottling = 5
  bw.callcenter.remoteHostAddress = <nil>
  bw.callcenter.statusDowngradeDelayPeriod = 5
  bw.callhalf.numNonCallThreads = 1
  bw.callhalf.numThreads = 4
  bw.cap.numDecoderThreads = 1
  bw.cap.numEncoderThreads = 1
  bw.cpl.cplHttpRequestTimeout = 20
  bw.cpl.maxNumHttpWorkerThreads = 10
  bw.cpl.minNumHttpWorkerThreads = 1
  bw.database = AppServer
  bw.diameter.ps.identity = identity
  bw.diameter.ps.listeningAddress = 199.19.193.10
  bw.diameter.ps.maxPoolSize = 1
  bw.diameter.xs.identity = identity
  bw.diameter.xs.listeningAddress = 199.19.193.10
  bw.diameter.xs.maxPoolSize = 1
  bw.eccr.eventQueueFileSize = 4096
  bw.eccr.numEventQueueFiles = 2048
  bw.eccr.numProcessors = 4
```


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```
bw.ecl.eventQueueFileSize = 2048
bw.ecl.eventQueueMemSize = 10
bw.ecl.numEventQueueFiles = 2048
bw.ecl.numProcessors = 1
bw.eventnotification.disablestartupnotification = false
bw.eventnotification.startupnotificationdelay = 0
bw.http.mediaif = <nil>
bw.ims.max.threads = 128
bw.ims.min.threads = 10
bw.mediacr.numberOfThreads = 1
bw.mediacr.tcpConnectionTimeout = 5
bw.mediacr.warningTimeout = 0
bw.mediacr.watchdogTimeout = 0
bw.meetmeconferencing.xsiEventsThreshold = 1000
bw.mgcp.numEncoderThreads = 1
bw.mgcp.numThreads = 2
bw.nameservice.cachePolicy = Configured
bw.nameservice.cacheTtlSecs = 86400
bw.nameservice.denyTimeBoundedDuplicateLookups = true
bw.nameservice.nCachePolicy = Configured
bw.nameservice.nCacheTtlSecs = 600
bw.nameservice.timeBoundedPoolSize = 2
bw.nameservice.unreachableServerLingerSecs = 60
bw.nameservice.useAdditionalSrvRrs = true
bw.ocic.numDecoderThreads = 1
bw.ocic.numEncoderThreads = 1
bw.persistence.xla.server.port = 2048
bw.ps.dms.numThreads = 1
bw.ps.ocip.slowOCIPTransactionsNumThreads = 5
bw.routepoint.failThrottleInterval = 1000
bw.routepoint.numCallToProcessPerInterval = 5
bw.service.calltypequery = false
bw.servicecontrol.numThreads = 1
bw.sh.numThreads = 4
bw.sh.systemRefreshPublicIdentitiesPerHour = 10000
bw.sip.accessclustercontacthost = as.iop1.broadworks.net
bw.sip.accessclustercontactincludetcptransport = true
bw.sip.accessclustercontactincludeudptransport = false
bw.sip.accessclustercontactport = <nil>
bw.sip.accessinterfaceviahost = <nil>
bw.sip.maxsipcallinvitingpersipuacalled = 100
bw.sip.maxsipcallinvitingpersipuacaller = 100
bw.sip.maxsipcallpersipua = 100
bw.sip.msclustercontacthost = <nil>
bw.sip.msclustercontactincludetcptransport = true
bw.sip.msclustercontactincludeudptransport = false
bw.sip.msclustercontactport = <nil>
bw.sip.msinterfaceviahost = <nil>
bw.sip.networkclustercontacthost = as.iop1.broadworks.net
bw.sip.networkclustercontactincludetcptransport = true
bw.sip.networkclustercontactincludeudptransport = false
bw.sip.networkclustercontactport = <nil>
bw.sip.networkinterfacehost = <nil>
bw.sip.networkinterfaceport = <nil>
bw.sip.networkinterfacetransport = <nil>
bw.sip.networkinterfaceviahost = <nil>
bw.sip.numEncoderThreads = 1
```


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```
  bw.sip.numNonCallThreads = 2
  bw.sip.numThreads = 2
  bw.sip.peeraccessinterfacehost = <nil>
  bw.sip.peeraccessinterfaceport = <nil>
  bw.sip.peeraccessinterfacetransport = <nil>
  bw.sip.peernetworkinterfacehost = <nil>
  bw.sip.peernetworkinterfaceport = <nil>
  bw.sip.peernetworkinterfacetransport = <nil>
  bw.sip.replicated.accessclustercontacthost = <nil>
  bw.sip.replicated.accessinterfaceviahost = <nil>
  bw.sip.replicated.msclustercontacthost = <nil>
  bw.sip.replicated.msinterfaceviahost = <nil>
  bw.sip.replicated.networkclustercontacthost = <nil>
  bw.sip.replicated.networkinterfaceviahost = <nil>
  bw.sip.tcp.sendBufferSize = 0
  bw.sip.udp.receiveBufferSize = 262144
  bw.soap.max.threads = 32
  bw.soap.min.threads = 1
  bw.soap.perquery.timeout = 2
  bw.xs.oci.reconnectIntervalInSeconds = 30
  bw.xs.oci.timeoutInSeconds = 7
  customerSoundFileDir = /var/broadworks/userfiles/customFiles/
  dtdLocation = /usr/local/broadworks/bw_base/conf/cpl.dtd
  java.ldap.connect.timeout = 5
  org.apache.commons.logging.Log =
com.broadsoft.util.log.CommonsLoggingInputChannel
  privateIPAddress = <nil>
  privateIPv6Address = <nil>
  publicIPAddress = 199.19.193.10
  publicIPv6Address = 2620:108:0:b600:20c:29ff:fece:f140
```

3.2.3 BroadWorks Application Server SIP Parameter Configuration

The following table identifies SIP settings important for use when deploying the AudioCodes E-SBC Product Family with BroadWorks.

Step	Command	Purpose

Step 1	**Enable 3264 hold implementation.**
	`AS_CLI/Interface/SIP> set enableHoldNormalization true`
	`AS_CLI/Interface/SIP> set networkHoldNormalization useRfc3264`
		Configure BroadWorks to use RFC 3264 hold implementation.

Step 2	**Enable privacy version** `AS_CLI/Interface/SIP> set privacyVersion RFC3323`	Set privacy version to RFC 3323.
Step 3	**Enable INVITE without SDP on network side.** `AS_CLI/Interface/SIP> set networkSupportInviteWithoutSdp true`	Configure the network side to support INVITE without SDP.

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Step	Command	Purpose
Step 4	**Enable forking on network side.** AS_CLI/Interface/SIP> set networkForkingSupport multipleDialogsWithErrorCorrection	Configure the network side to support forking dialog.
Step 5	**Enable digit collection.** AS_CLI/Interface/SIP> set requiresBroadWorksDigitCollection true	Enable digit collection on BroadWorks.
Step 6	**Enable 181 responses.** AS_CLI/Interface/SIP> set send181Response true	Enable BroadWorks to send or proxy 181 responses.

3.2.4 BroadWorks Application Server SIP Parameter Configuration Example

```
AS_CLI/Interface/SIP> get
  t1 = 1000
  t2 = 8000
  maxForwardingHops = 20
  inviteAuthenticationRatio = 1.0
  encryptFromHeader = true
  100rel = true
  useDomainForSubscriberAddress = true
  accessControl = false
  sendE164 = true
  suspiciousAddressThreshold = 3
  privacyVersion = RFC3323
  privacyEnforceScreening = false
  listeningPort = 5060
  networkProxyHost =
  networkProxyPort =
  networkProxyTransport = unspecified
  accessProxyHost =
  accessProxyPort =
  accessProxyTransport = unspecified
  supportDnsSrv = true
  maxAddressesPerHostname = 10
  maxAddressesPerHostnameInDialog = 4
  useDomainForRealm = true
  defaultRealm = BroadWorks
  includeT38CapabilityInfo = true
  reInviteAuthentication = true
  supportAnswerAfter = true
  networkSupportGtd = false
  privateDialPlanOriginatorUsesExtension = false
  disallowHoldingEmergencyCall = false
  enableHoldNormalization = true
  callingPartyCategoryFormat = cpc
  networkSupportInviteWithoutSdp = true
  symmetricSignaling = true
  supportTcp = true
  supportDnsNaptr = false
  sendCarrierSelection = true
  sendDialedCAC = false
```


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```
  originatingTrunkGroupFormat = otg
  destinationTrunkGroupFormat = dtg
  supportRFC3398 = false
  restrictedDisplayName = Anonymous
  maxNumberTcpSocketsPerSystem = 1000
  maxNumberTcpSocketsPerPeer = 100
  autoDiscardStaleConnections = false
  staleConnectionTimerInMinutes = 60
  treatDTMFPoundAsFlash = true
  supportPEarlyMediaHeader = false
  sendDiversionInhibitor = true
  networkSupportVideo = true
  callingPartyE164Normalization = systemCountryCode
  supportRFC3966PhoneContext = false
  includePrivacyUser = true
  broadworksHoldingSDPMethod = holdSDP
  broadworksHoldingSDPNetAddress = 199.19.193.10
  broadworksHoldingSDPIPv6NetAddress =
2620:108:0:b600:20c:29ff:fece:f140
  useStrictRFC3264Compliance = true
  disableSDPChangesForAnswerResponses = true
  accessForkingSupport = multipleDialogsWithErrorCorrection
  networkForkingSupport = multipleDialogsWithErrorCorrection
  proxyInfoInAllowHeader = true
  proxyUpdateInAllowHeader = true
  useSessionCompletionTimer = false
  sessionCompletionTimer = 5000
  useHistoryInfoHeaderOnNetworkSide = true
  requiresBroadWorksDigitCollection = true
  supportXFeatureControl = false
  chargeHeaderFormat = chargeHeaderTel
  noaValue = clgp-ani-natl-num
  forceAnswerSDPOnAnswer = true
  sendXBroadWorksDNCHeader = false
  encryptXBroadWorksDNCHeader = false
  xBroadWorksDNCHeaderKey = m!rUqR\x24T8Z7NgSyD
  allowBroadWorksConferenceInfo = false
  sendCallerNameInfoForNetworkCalls = true
  includeClassmark = false
  send181Response = true
  routeToTrunkingDomainByDefault = false
  clusterAddress =
  disabledCLIDNumberValue =
  suppressImplicitReferSubscription = perRFC3515
  networkSendIdentityInUpdateAndReInvite = true
  networkReceiveIdentityInUpdateAndReInvite = true
  enableTS29163Compliance = false
  redirectingAssertedIdentityPolicy = assertedIdentity
  useAssertedIdentityForPrivateCLID = false
  transferNetworkCauseID = false
  sipIpVersion = both
  networkHoldNormalization = useRfc3264
  supportPrivacyNone = false
  reportAltcSupported = true
  suppressUnreliableAlertingForIVR = false
```


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4 AudioCodes E-SBC Product Family Configuration

The AudioCodes E-SBC Product Family can be configured with a configuration file through its embedded web server. 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 following examples describe how to set the parameters using a configuration file.

The capabilities of the AudioCodes E-SBC Product Family 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 the individual configuration items, refer to the specific device configuration guide listed in the *References* section.

Configuration Files

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

When new software (**.cmp*) is downloaded to the E-SBC 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". Go to the *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. Go to *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 resets automatically.

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4.1 Step 1: Configuring System Network

This procedure describes system configuration items that are generally required for the E-SBC device Network Setting.

There are several ways to deploy the E-SBC; this Partner Configuration Guide covers only the following scenario.

The E-SBC deployed in this scenario, interfaces between the enterprise users of the IP-PBX located in the Local Area Network (LAN) and the BroadWorks Network Server and Application Server located in the Wide Area Network (WAN).

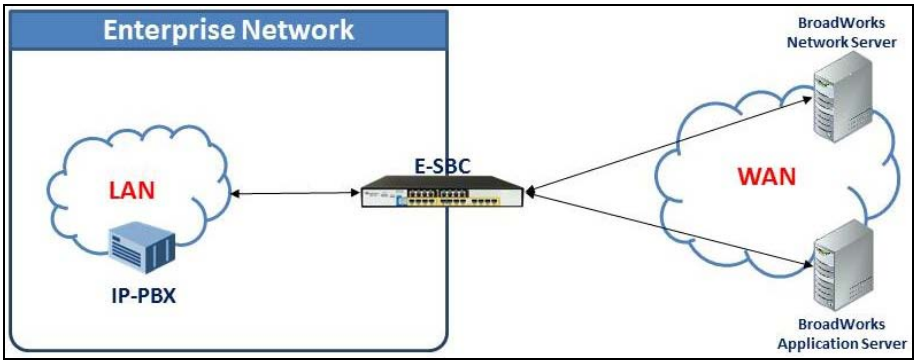

Figure 1 E-SBC as Network Device Deployment

4.1.1 Configuring Network Interfaces

This procedure describes typical physical LAN port connections of the deployed E-SBC at the Enterprise. The type of physical LAN connection depends on the method used for connecting to the Enterprise's network.

In this example, E-SBC connects to the LAN and WAN using dedicated LAN ports that is, two ports and network cables) and with two logical Network Interfaces at the enterprise (one to the LAN and one to the WAN).

- The *Multiple Interface Table* page allows you to configure the IP addresses, Default Gateway (DG), and Virtual Local Area Network (VLANs) for the device, one for each of the following interface names:
- LAN VoIP (Voice)
- WAN VoIP (WanBS)

To configure a Network Interface, use the following steps.

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

Index	Application Type	Interface Mode	IP Address	Prefix Length	Gateway	VLAN ID	Interface Name	Primary DNS Server IP Address	Secondary DNS Server IP Address	Underlying
0	OAMP + Media + Control	IPv4 Manual	10.15.17.100	16	10.15.0.1	1	Voice	10.1.1.11	10.1.1.10	GROUP_1
1	Media + Control	IPv4 Manual	195.189.192.150	25	195.189.192.129	2	WanBS	80.179.52.100	80.179.55.100	GROUP_2

Figure 2 Multiple Interface Table Screen

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

Set the following parameters:

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- *IP-Address*: <E-SBC IP-Address> (for example, “10.15.17.100”).
- *Prefix Length*: <Subnet Mask in bits> (for example, 1”6” for “255.255.0.0”).
- *Gateway*: <Gateway Default Gateway> (for example, “10.15.0.1”).
- *VLAN ID*: < Vlan ID number> (for example, “1”).
- *Interface Name*: <Internal Name> (that is, “Voice”).
- *Primary DNS Server IP Address*: <DNS IP-Address> (for example, “10.1.1.11”).
- *Secondary DNS Server IP Address*: <DNS IP-Address> (for example, “10.1.1.10”).
- *Underlying Interface*: <Group number> (for example, “GROUP_1”).

3) Add another network interface (for the WAN side). Enter “1” and click **Add Index**.

Set the following parameters:

- *Application Type*: “Media + Control”
- *IP-Address*: <WAN IP-Address> (for example, “195.189.192.150”).
- *Prefix Length*: <Subnet Mask in bits> (for example, “16” for “255.255.0.0”).
- *Gateway*: <DG Router’s IP Address> (for example, “195.189.192.129”).
- *VLAN ID*: <Wan VLAN ID number> (for example, “2”).
- *Interface Name*: <Wan Name> (for example, “WanBS”).
- *Primary DNS Server IP Address*: <DNS IP-Address> (for example, “80.179.52.100”).
- *Secondary DNS Server IP Address*: <DNS IP-Addr> (for example, “80.179.55.100”).
- *Underlying Interface*:<Group number> (for example, “GROUP_2”).

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

4.1.2 Setting the Native VLAN ID

To set the Native VLAN ID, using the following steps:

1) Open the *Physical Ports Settings* page (*Configuration → VoIP → Network → Physical Ports Settings*).

2) For *GROUP_1* set Native Vlan to “1” (assigned to Network Interface *Voice*).

3) For *GROUP_2* set Native Vlan to “2” (assigned to Network Interface *WanBS*).

Index	Port	Mode	Native Vlan	Speed&Duplex	Description	Group Member	Group Status
1	GE_4_1	Enable	1	Auto Negotiation	User Port #0	GROUP_1	Active
2	GE_4_2	Enable	1	Auto Negotiation	User Port #1	GROUP_1	Redundant
3	GE_4_3	Enable	2	Auto Negotiation	User Port #2	GROUP_2	Active
4	GE_4_4	Enable	2	Auto Negotiation	User Port #3	GROUP_2	Redundant
5	FE_5_1	Enable	1	Auto Negotiation	User Port #4	GROUP_3	Active
6	FE_5_2	Enable	1	Auto Negotiation	User Port #5	GROUP_3	Redundant
7	FE_5_3	Enable	1	Auto Negotiation	User Port #6	GROUP_4	Active
8	FE_5_4	Enable	1	Auto Negotiation	User Port #7	GROUP_4	Redundant
9	FE_5_5	Enable	1	Auto Negotiation	User Port #8	GROUP_5	Active
10	FE_5_6	Enable	1	Auto Negotiation	User Port #9	GROUP_5	Redundant
11	FE_5_7	Enable	1	Auto Negotiation	User Port #10	GROUP_6	Active
12	FE_5_8	Enable	1	Auto Negotiation	User Port #11	GROUP_6	Redundant

Figure 3 Ports Native VLAN

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4.2 Step 2: Enabling SBC Application

This procedure describes how to enable the SBC application mode.

For the E-SBC to operate as an SBC, you need to enable the SBC application. Once enabled, the SBC-specific parameters and pages become available in the web interface.

To enable the SBC Application, use the following steps.

1) Open the *Applications Enabling* page (*Configuration* → *VoIP* → *Applications Enabling* → *Applications Enabling*).

2) From the *SBC Application* drop-down list, select "Enable".

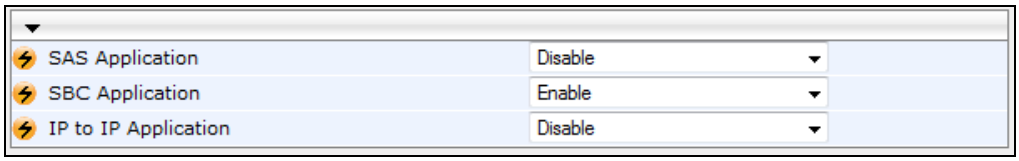

Figure 4 Enable SBC Application

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

4) Save your settings to the flash memory and reset the device.

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4.3 Step 3: Configuring Media Channels

This procedure describes how to configure the number of media channels for the IP media.

To perform the coder transcoding, you need to define digital signaling processors Digital Signal Processor (DSP) channels. The number of media channels represents the number of DSP channels that the device allocates from IP-to-IP calls (the remaining DSP channels can be used for PSTN calls).

To configure media channels, use the following steps.

1) Open the *IP Media Settings* page (*Configuration tab → VoIP menu → IP Media → IP Media Settings*).

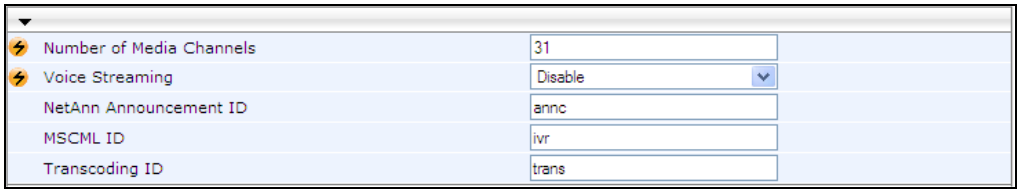

Figure 5 IP Media Settings

2) Set the *Number of Media Channels* (for example, "31").

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4.4 Step 4: Configuring Signaling Routing Domains

This procedure describes how to configure the Signaling Routing Domain (SRD).

An SRD is a set of definitions comprising IP interfaces, device resources, SIP behaviors, and media realms. Together, these create virtual multi-service gateways from a single physical device.

Once configured, the SRD can be assigned to an IP Group (see *4.6 Step 6: Configuring IP Groups*) and/or to a Proxy Set (see *4.5 Step 5: Configuring Proxy Set Tables*).

4.4.1 Configuring Media Realms

A Media Realm represents a set of ports, associated with an IP interface, that are used by the E-SBC to transmit or receive media (RTP or SRTP). When in use, Media Realms are associated with SRDs or IP Groups.

The simplest configuration is to create one Media Realm for internal traffic, and another for external (Internet-facing) traffic.

You need to configure two Media Realms as shown in the following figure.

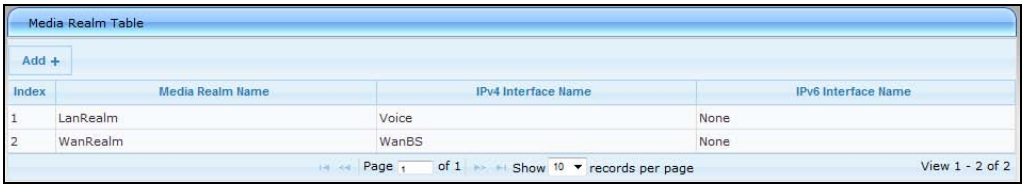

Figure 6 Media Realm Table Showing Required Configuration

To configure an Internal Media Realm, use the following steps.

1) Open the SIP *Media Realm Table* page (*Configuration* → *VoIP* → *Media* → *Media Realm Configuration*).

2) Click **Add**.

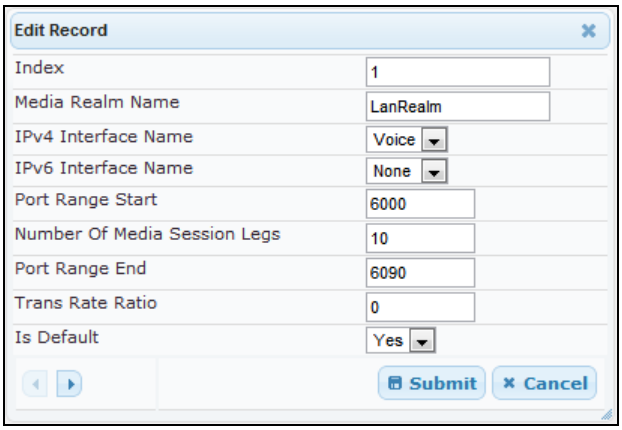

Figure 7 Internal Media Realm Configuration

3) In the *Index* field, enter "1".

4) In the *Media Realm Name* field, enter a name (for example, "LanRealm").

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5) From the *IPv4 Interface Name* drop-down list, select interface name "Voice".
6) In the *Port Range Start* field, enter a number that represents the lowest UDP port number that will be used for media in the LAN (for example, "6000").
7) In the *Number of Media Session* Legs field, define the number of media sessions that are assigned with the port range (for example, "10")
8) Click **Submit**.

To configure an external Media Realm, use the following steps.

1) Open the *SIP Media Realm Table* page (*Configuration → VoIP → Media → Media Realm Configuration*).
2) Click **Add**.

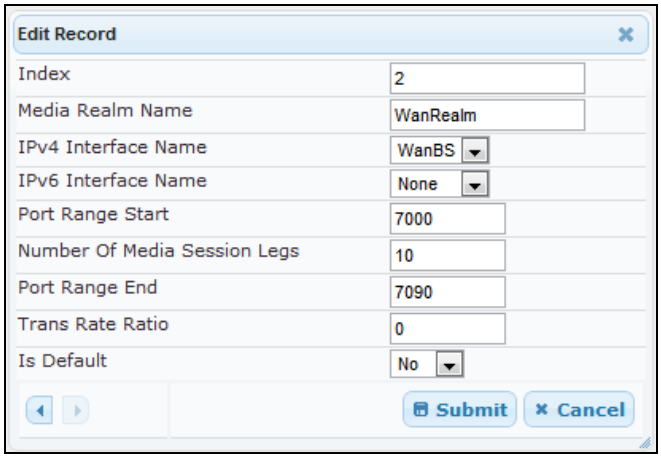

Figure 8 External Media Realm Configuration

3) In the *Index* field, enter "2".
4) In the *Media Realm Name* field, enter a name (for example, "WanRealm").
5) From the *IPv4 Interface Name* drop-down list, select interface name "WanBS".
6) In the *Port Range Start* field, enter a number that represents the lowest UDP port number that will be used for media in the WAN (for example, "7000").
7) In the *Number of Media Session Legs* field, define the number of media sessions that are assigned with the port range (for example, "10").
8) Click **Submit**.

4.4.2 Configuring SRDs

To configure an internal SRD, use the following steps.

1) Open the *SRD Table* page (*Configuration → VoIP → Control Network → SRD Table*).
2) Add an entry with Index "1" to the *SRD* table. This will represent the SBC's internal interface (towards the LAN).
3) Assign a descriptive name to the interface entry (for example, "LanSRD").
4) Enter the *Media Realm field* value, (for example, "LanRealm").

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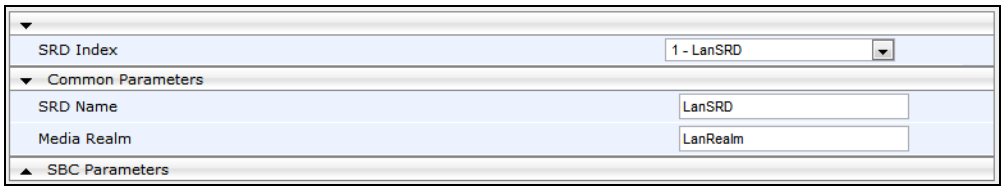


Figure 9 Internal SRD Configuration

5) Click **Submit**.

To configure an external SRD, use the following steps.

1) Open the *SRD Table* page (*Configuration* → *VoIP* → *Control Network* → *SRD Table*).
2) Add an entry with Index "2" to the SRD table. This will represent the SBC's External interface (towards the WAN).
3) Assign a descriptive name to the interface entry (for example, "WanSRD").
4) Enter the *Media Realm* field value, (for example, "WanRealm").

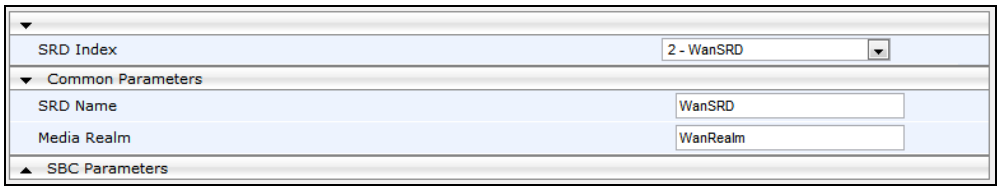


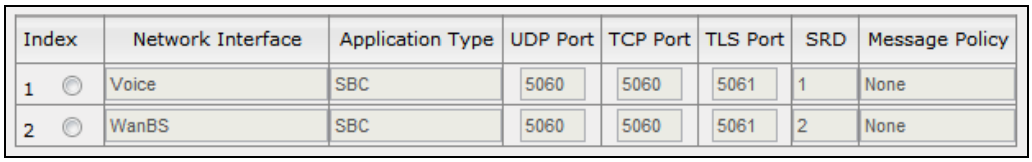
Figure 10 External SRD Configuration

5) Click **Submit**.

4.4.3 Configuring SIP Signaling Interfaces

A *SIP Signaling Interface* represents a combination of ports (UDP, TCP, and TLS) associated with a specific IP address. It allows other SIP nodes on the network to communicate with a specific, using the SIP Interface associated with it.

You need to specify internal and external SIP interfaces for the device as shown in following figure and described in the subsequent sub-sections:



Index	Network Interface	Application Type	UDP Port	TCP Port	TLS Port	SRD	Message Policy
1	Voice	SBC	5060	5060	5061	1	None
2	WanBS	SBC	5060	5060	5061	2	None

Figure 11 SIP Interface Required Configuration

To configure internal SIP Signaling Interfaces, use the following steps.

1) Open the *SIP Interface Table* page (*Configuration* → *VoIP* → *Control Network* → *SIP Interface Table*).
2) Create a new row; enter "1" and then click **Add**.
3) In the *Network Interface* field, enter the name "Voice".
4) From the *Application Type* drop-down list, select "SBC".

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5) Verify the *UDP Port* is “5060”.

6) Set the *SRD* field value to “1”.

7) Click **Apply**.

To configure external SIP Signaling Interfaces, use the following steps.

1) Open the *SIP Interface Table* page (*Configuration* → *VoIP* → *Control Network* → *SIP Interface Table*).

2) Select the row with Index “2” (WAN).

3) In the *Network Interface* field, enter the name “WanBS”.

4) From the *Application Type* drop-down list, select “SBC”.

5) Verify the *UDP Port* is “5060”.

6) Set the *SRD* field value to “2”.

7) Click **Apply**.

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4.5 Step 5: Configuring Proxy Set Tables

The following procedure describes how to configure the Proxy Set table. It represents the address to which the E-SBC sends INVITE messages when it offers a SIP session (call).

You need to configure a proxy set for each of the following entities:

- LAN devices
- BroadWorks Network Server
- BroadWorks Application Server

To configure a Proxy Set for LAN IP-PBX, use the following steps.

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

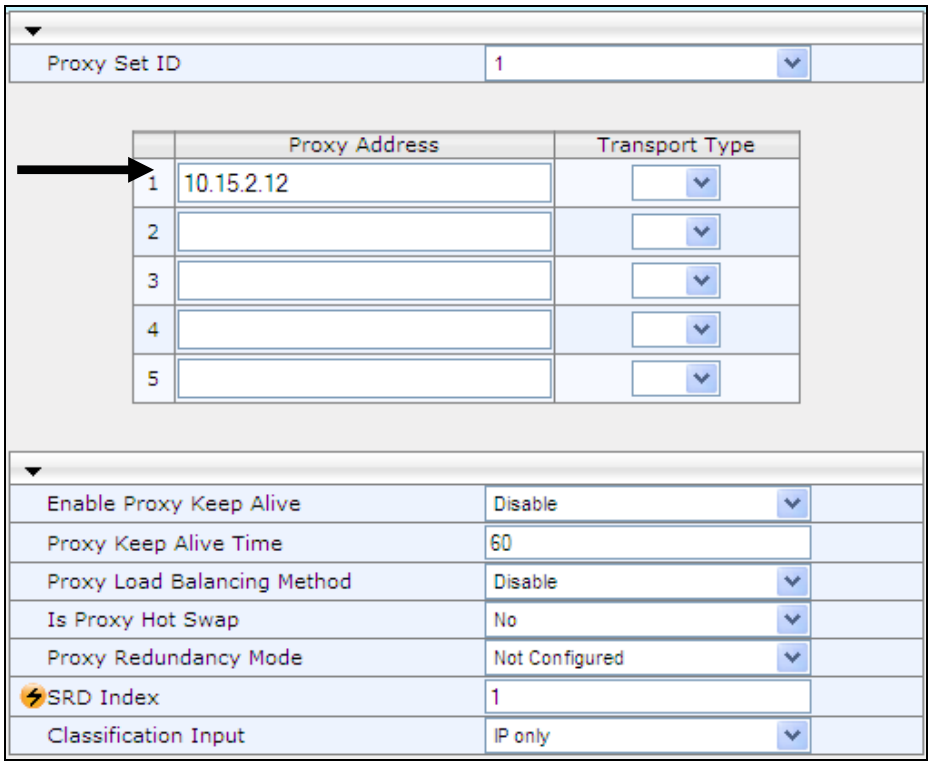

Figure 12 Proxy Sets Table 1

2) From the *Proxy Set ID* drop-down list, select "1".

3) Configure the LAN device IP Address (for example, "10.15.2.12").

4) Set *SRD Index* to "1" (this allows classification by the Proxy Set for this SRD ID in the IP Group, pertaining to the LAN devices).

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To configure a Proxy Set for BroadWorks Network Server, use the following steps.

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

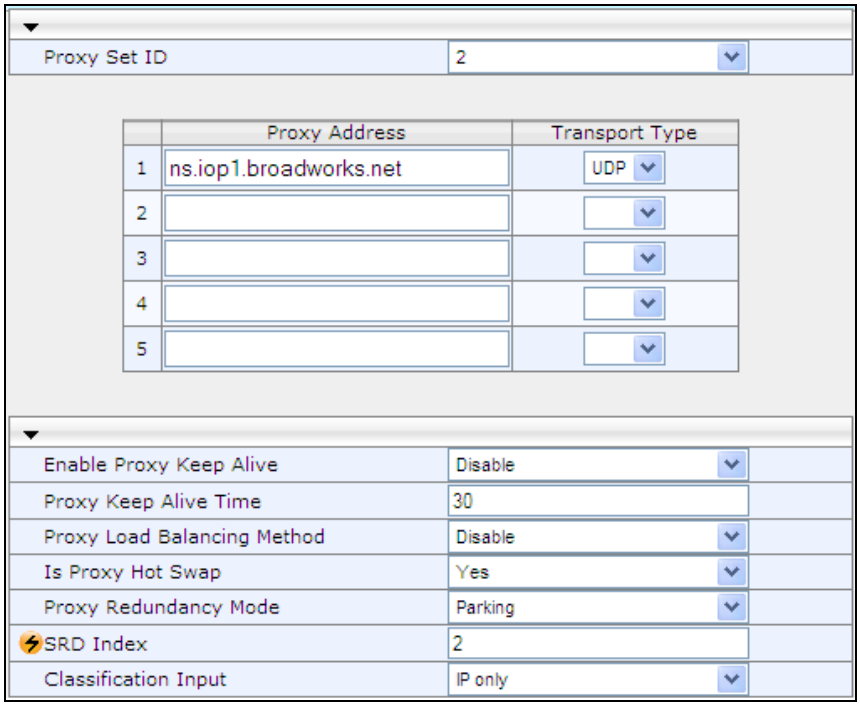

Figure 13 Proxy Sets Table 2

2) From the *Proxy Set ID* drop-down list, select "2".
3) Configure the BroadWorks Network Server FQDN (for example, "ns.iop1.broadworks.net").
4) In the *Proxy Keep Alive Time* field, enter "30".
5) From the *Is Proxy Hot Swap* drop-down list, select "Yes".
6) From the *Proxy Redundancy* Mode drop-down list, select:
   - "Parking" – The device continues operating with a redundant Proxy server.
   - "Homing" – The device always attempts to operate with the primary Proxy server.
7) In the *SRD Index* field, enter "2" (this allows classification by the Proxy Set for this SRD ID in the IP Group, pertaining to the BroadWorks Network Server).

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To configure Proxy Sets for the BroadWorks Application Server, use the following steps.

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

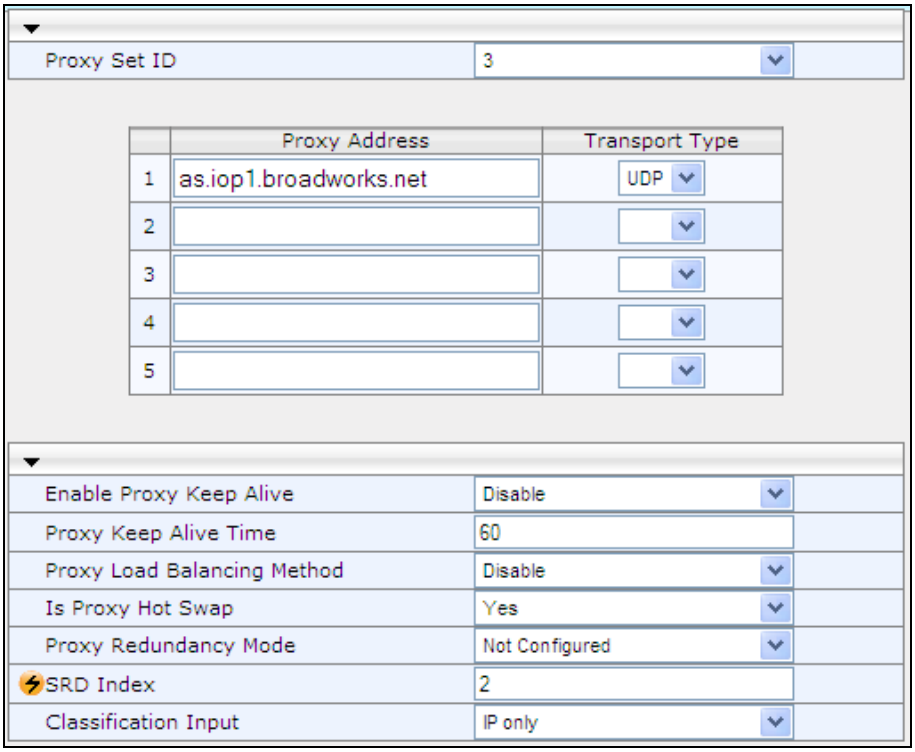

Figure 14 Proxy Sets Table 3

2) From the *Proxy Set ID* drop-down list, select "3".

3) Configure BroadWorks Application Server FQDN (for example, "as.iop1.broadworks.net").

4) From the Is *Proxy Hot Swap* drop-down list, select "Yes".

5) In the *SRD Index* field, enter "2" (this allows classification by the Proxy Set for this SRD ID in the IP Group, pertaining to the BroadWorks Network Server).

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4.6 Step 6: Configuring IP Groups

This procedure describes how to create IP groups. Each IP group represents a SIP entity in the SBC's network. You need to create IP groups for the following entities:

- Enterprise LAN (that is, IP-PBX/IP Phones/Gateways)
- WAN to BroadWorks Network Server
- WAN to BroadWorks Application Server

To configure the IP Group Table for LAN Devices, use the following steps.

1) Open the *SIP Interface Table* page (*Configuration* → *VoIP* → *Control Network* → *IP Group Table*).

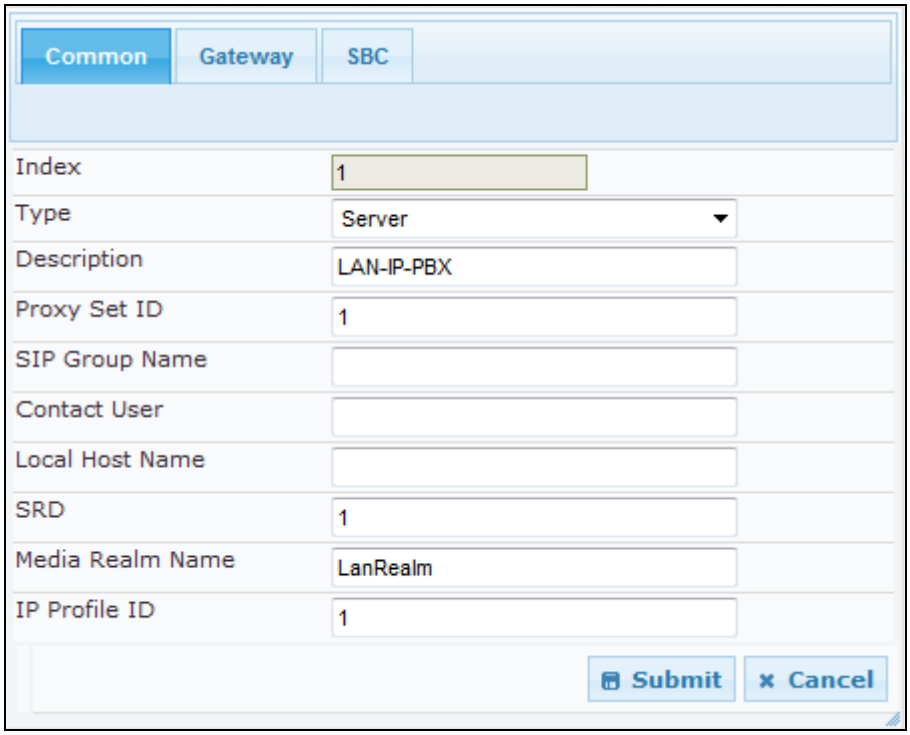

Figure 15 IP Group 1 for LAN Devices

2) On the *Common* tab, add a new entry with Index "1" (to represent the internal SIP peer).
3) From the *Type* drop-down list, select "Server".
4) In the *Description* field, add a name that will help to identify this as the internal group (for example, "LAN-IP-PBX").
5) From the *Media Realm* drop-down list, select "LanRealm" (to associate this IP Group with the LAN Media Realm).
6) In the *IP Profile ID* field, enter the number of an appropriated IP profile (for example, "1").

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To configure the IP Group Table for BroadWorks Network Server, use the following steps.

1) Open the *SIP Interface Table* page (*Configuration → VoIP → Control Network → IP Group Table*).

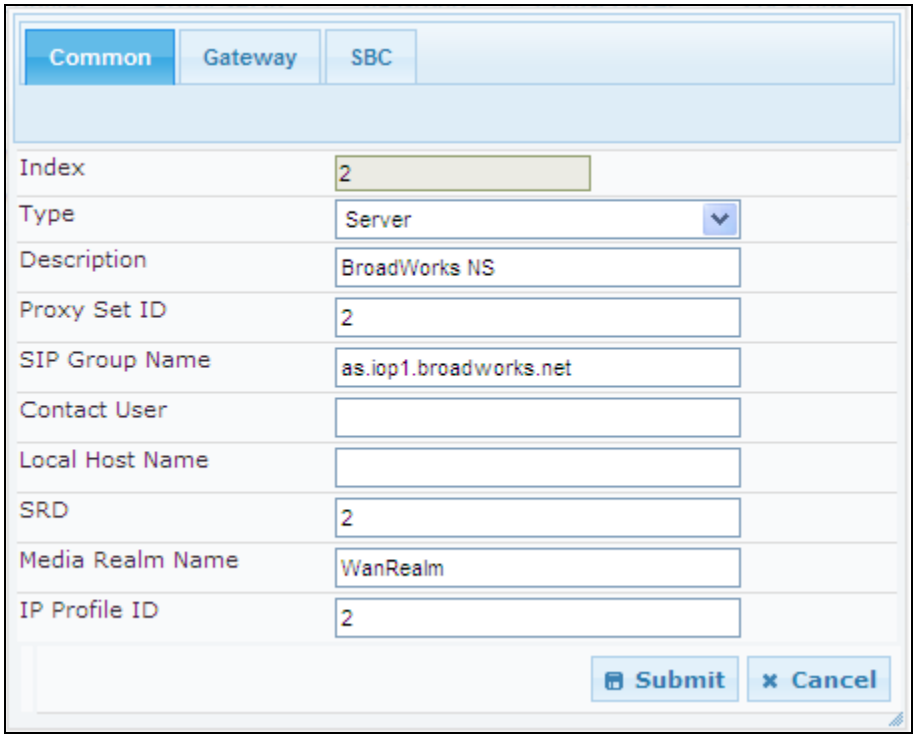

Figure 16 IP Group 2 for BroadWorks Network Server

2) On the *Common* tab, add a new entry with Index "2" (to represent the internal SIP peer).

3) From the *Type* drop-down list, select "Server".

4) In the *Description* field, add a name that will help to identify this as the external group (for example, "BroadWorks Network Server").

5) From the *Proxy Set ID* drop-down list, select "2" (to associate this IP Group with Proxy Set 2).

6) In the *SIP Group Name* field, add the BroadWorks server name (for example, "as.iop1.broadworks.net").

7) From the *Media Real* drop-down list, select "WanRealm" (to associate this IP Group with the WAN Media Realm).

8) In the *IP Profile ID* field, enter the number of an appropriated IP profile (for example, "2").

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To configure the IP Group Table for BroadWorks Application Server, use the following steps.

1) Open the *SIP Interface Table* page (*Configuration → VoIP → Control Network → IP Group Table*).

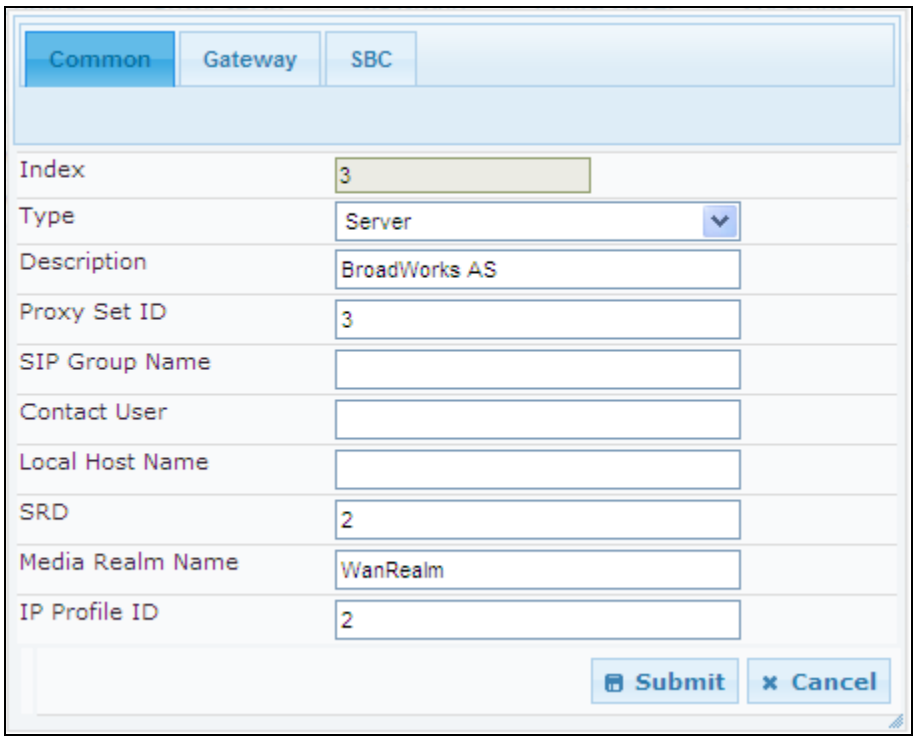

Figure 17 IP Group 2 for BroadWorks Application Server

2) On the *Common* tab, add a new entry with Index "3" (to represent the internal SIP peer).
3) From the *Type* drop-down list, select "Server".
4) In the *Description* field, add a name that will help to identify this as the external group (for example, "BroadWorks Application Server").
5) From the *Proxy Set ID* drop-down list, select "3" (to associate this IP Group with Proxy Set "3").
6) From the *Media Realm* drop-down list, select "WanRealm" (to associate this IP Group with the WAN Media Realm).
7) In the *IP Profile ID* field, enter the number of an appropriated IP profile (for example, "2").

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4.7 Step 7: Configuring IP Profiles

This procedure describes how to create IP Profiles. IP Profiles provide high-level adaptation when the E-SBC interworks between different equipment and protocols, each of which may require different handling by the E-SBC. IP Profiles are used to assign special configuration settings for E-SBC handling of specific calls. For example, if specific IP calls require the use of the G.711 coder, you can configure an IP Profile with this coder and assign it to these calls. You need to create IP Profiles for the following entities:

- Enterprise LAN IP-PBX
- BroadWorks server

To configure an IP Profile for an Enterprise LAN IP-PBX, use the following steps.

1) Open the *IP Profile Settings* page (*Configuration tab → VoIP menu → Coders and Profiles submenu → IP Profile Settings*).
2) From the *Profile ID* drop-down list, select the IP Profile index (for example, "1").
3) In the *Profile Name* field, enter a name that allows you to easily identify the IP Profile (for example, "LAN-IP-PBX").

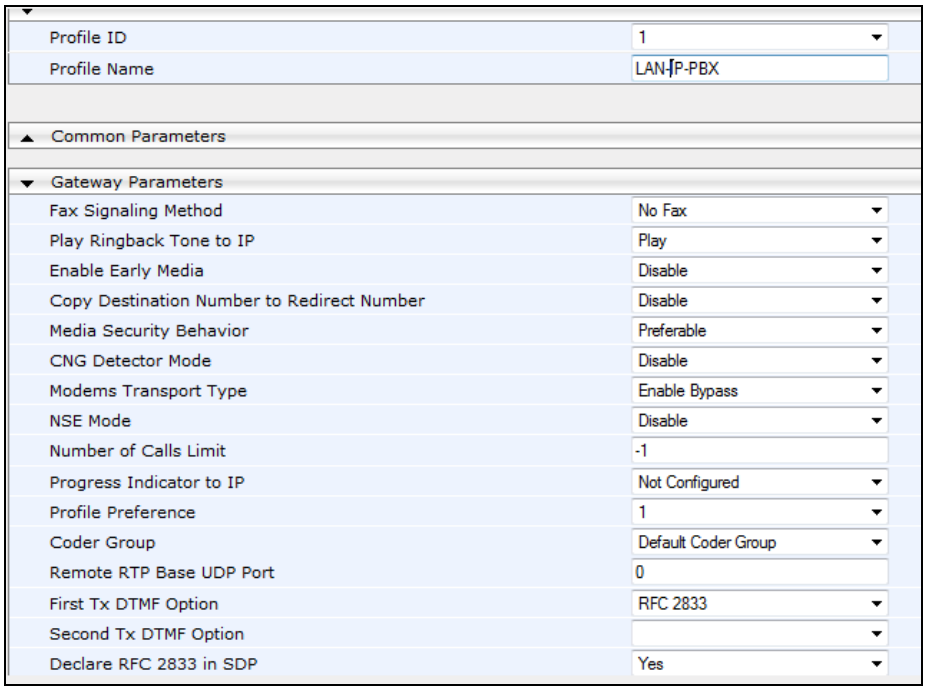

Figure 18 IP Profile 1 for LAN IP-PBX

4) Configure the parameters as required.
5) Click **Submit** to apply your changes.

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To configure an IP Profile for a BroadWorks server:

1) Open the *IP Profile Settings* page (*Configuration tab → VoIP menu → Coders and Profiles submenu → IP Profile Settings*).
2) From the *Profile ID* drop-down list, select the IP Profile index (for example, "2").
3) In the *Profile Name* field, enter a name that allows you to easily identify the IP Profile (for example, "BSFT").
4) Configure the parameters as required.
   - If there is a requirement to remove the "Diversion" header, then choose the appropriate value for *Diversion Mode* parameter.
   - If there is a requirement to add the "P-Asserted Identity" header, then choose the "Add" value for *P-Asserted Identity* parameter.
   - If, for example, the remote device does not support REFER messages (as BroadSoft), then choose "Handle Locally" value for *SBC Remote Refer Behavior* parameter.
   - If there is a requirement to support early media, then choose the "supported" value for *SBC Remote Early Media Support* parameter.

   For all parameter values, see the specific device configuration guide listed in the *References* section.

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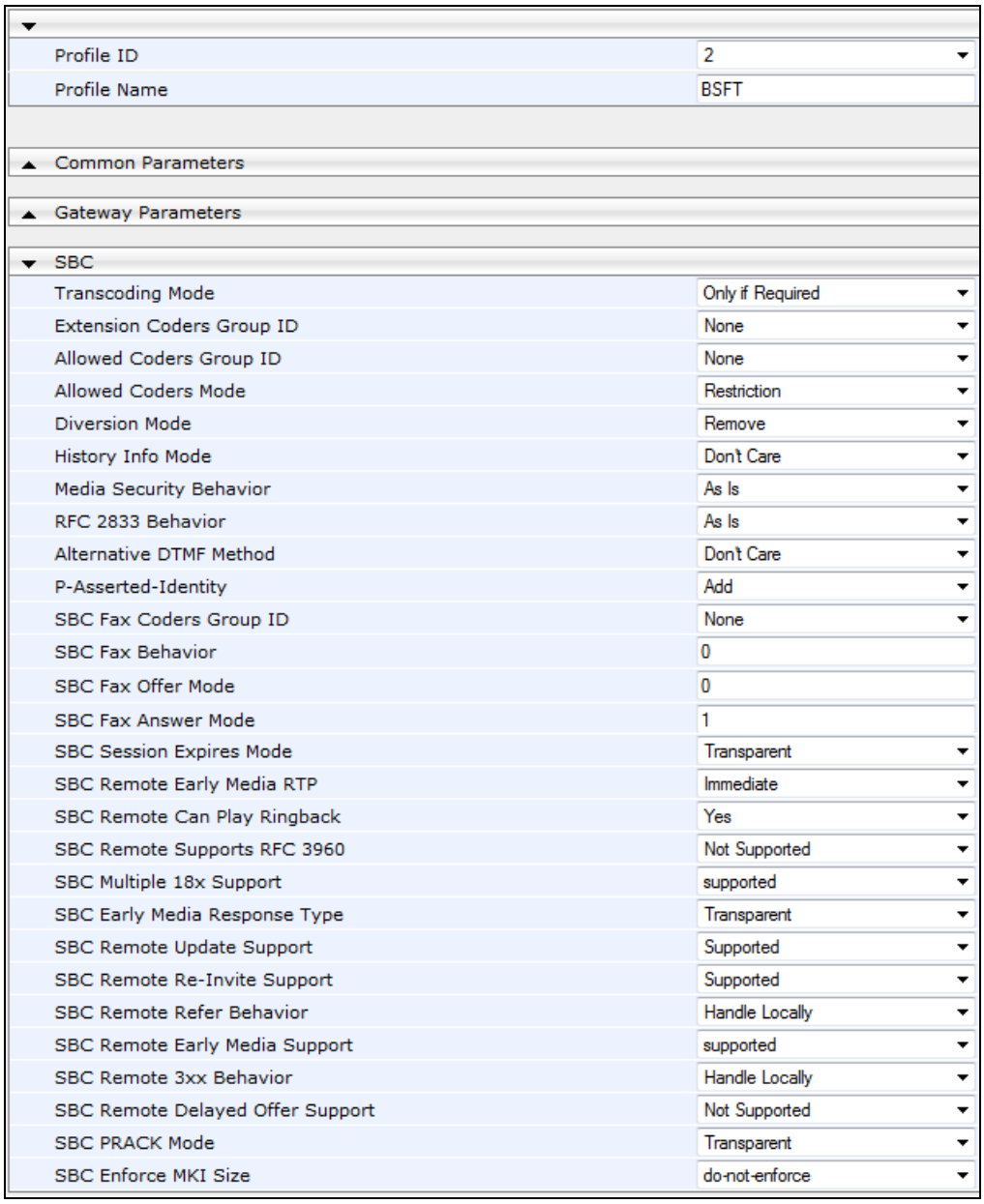

Profile ID	2
Profile Name	BSFT
Common Parameters	
Gateway Parameters	
SBC	
Transcoding Mode	Only if Required
Extension Coders Group ID	None
Allowed Coders Group ID	None
Allowed Coders Mode	Restriction
Diversion Mode	Remove
History Info Mode	Don't Care
Media Security Behavior	As Is
RFC 2833 Behavior	As Is
Alternative DTMF Method	Don't Care
P-Asserted-Identity	Add
SBC Fax Coders Group ID	None
SBC Fax Behavior	0
SBC Fax Offer Mode	0
SBC Fax Answer Mode	1
SBC Session Expires Mode	Transparent
SBC Remote Early Media RTP	Immediate
SBC Remote Can Play Ringback	Yes
SBC Remote Supports RFC 3960	Not Supported
SBC Multiple 18x Support	supported
SBC Early Media Response Type	Transparent
SBC Remote Update Support	Supported
SBC Remote Re-Invite Support	Supported
SBC Remote Refer Behavior	Handle Locally
SBC Remote Early Media Support	supported
SBC Remote 3xx Behavior	Handle Locally
SBC Remote Delayed Offer Support	Not Supported
SBC PRACK Mode	Transparent
SBC Enforce MKI Size	do-not-enforce

Figure 19 IP Profile 2 for BroadWorks Server

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

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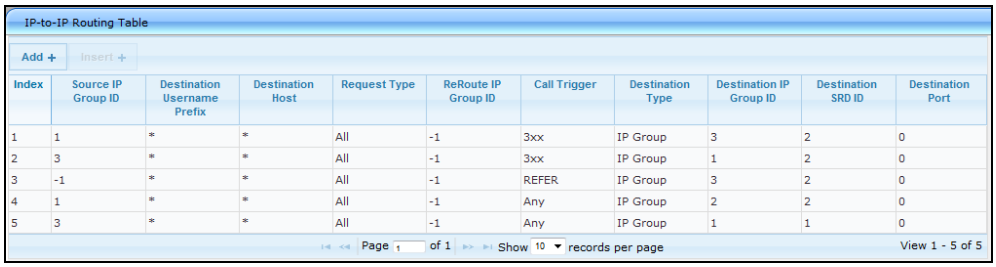
4.8 Step 8: Configuring IP-to-IP Call Routing Rules

This procedure describes how to configure the IP-to-IP Routing Rules. This table defines rules for transferring SIP messages (for example, an INVITE), received at one IP interface, to another interface. The message is routed according to a rule whereby the configured input characteristics (for example, source IP Group) match those of the message. If the characteristics of an incoming message do not match the first rule in the table, then they are compared by the second rule, and so on until a matching rule is located. If no rule is matched, the message is rejected.

You need to add IP-to-IP routing rules for the following routing directions:

- Calls from the LAN side to the BroadWorks Network Server (3xx re-route case).
- Calls from the BroadWorks Application Server to the LAN side (3xx re-route case).
- REFER case calls from any side should be routed to the BroadWorks Application Server.
- Calls from the LAN side to the BroadWorks Network Server.
- Calls from the BroadWorks Application Server to the LAN side.
- The call routing rules use the IP Groups of these entities to denote the source and destination of the route.


IP-to-IP Routing Table

Add + Insert +

Index	Source IP Group ID	Destination Username Prefix	Destination Host	Request Type	ReRoute IP Group ID	Call Trigger	Destination Type	Destination IP Group ID	Destination SRD ID	Destination Port
1	1	*	*	All	-1	3xx	IP Group	3	2	0
2	3	*	*	All	-1	3xx	IP Group	1	2	0
3	-1	*	*	All	-1	REFER	IP Group	3	2	0
4	1	*	*	All	-1	Any	IP Group	2	2	0
5	3	*	*	All	-1	Any	IP Group	1	1	0

Page 1 of 1 Show 10 records per page View 1 - 5 of 5

Figure 20 IP-to-IP Routing Table

To route from an internal to an external (BroadWorks Application Server), IP Group (3xx re-route case), use the following steps.

1) Open the *IP2IP Routing Table* page (*Configuration → VoIP → SBC → Routing SBC → IP to IP Routing Table*).
2) Click **Add** and add a rule for Index "1" to the table.

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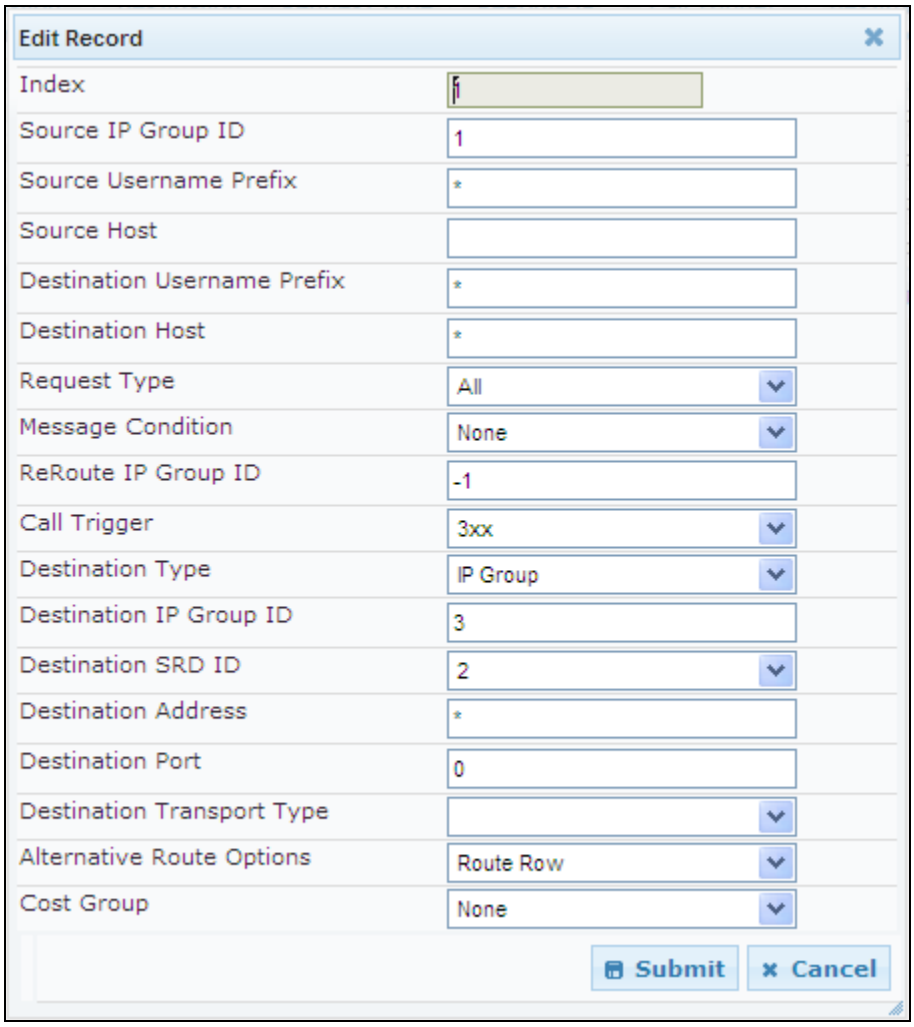

Figure 21 Internal to External (BroadWorks Application Server) IP-to-IP Routing Configuration (3xx Case)

1) From the *Source IP Group ID* drop-down list, select "1".
2) From the *Call Trigger* drop-down list, select "3xx" (this allows re-route the request if it was triggered as a result of a SIP 3xx response).
3) From the *Destination Type* drop-down list, select "IP Group".
4) From the *Destination IP Group ID* drop-down list, select "3".
5) From the *Destination SRD ID* drop-down list, select "2".
6) Click **Submit**.

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To route from an external (BroadWorks Application Server) to an internal IP Group (3xx re-route case), use the following steps.

1) Open the *IP2IP Routing Table* page (*Configuration* → *VoIP* → *SBC* → *Routing SBC* → *IP to IP Routing Table*).

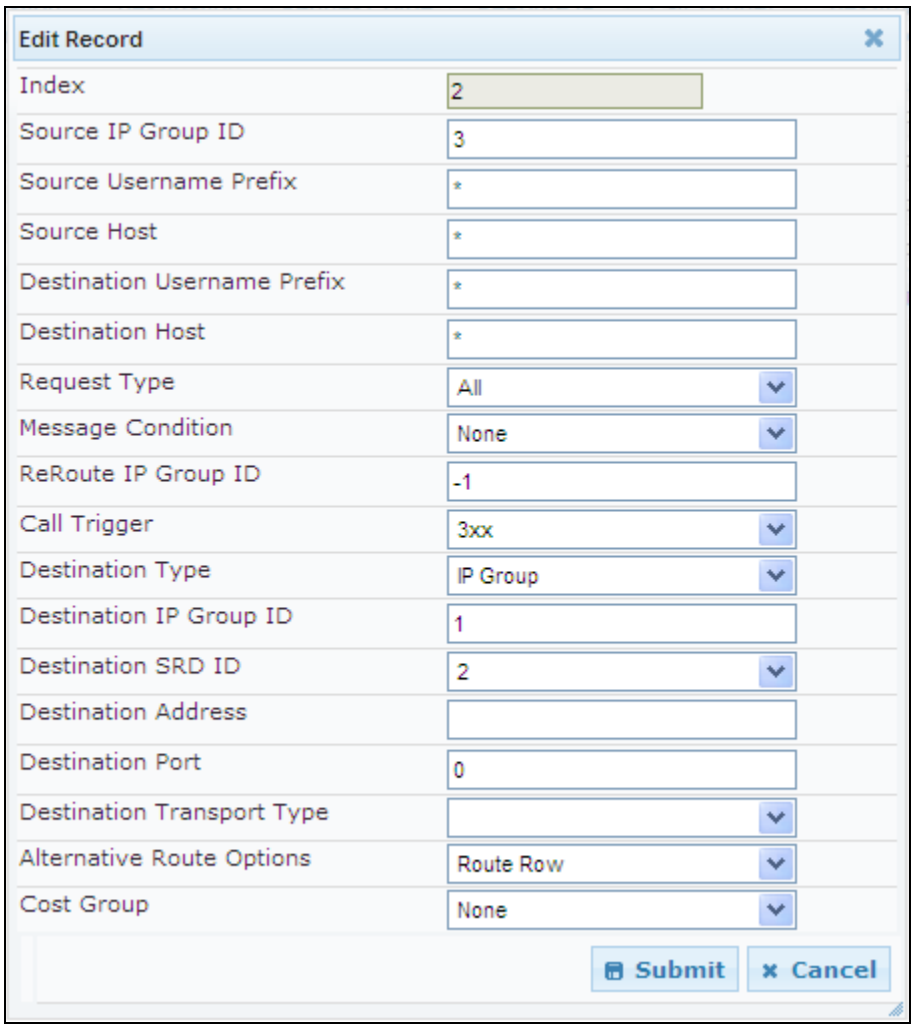

Figure 22 External (BroadWorks Application Server) to Internal IP-to-IP Routing Configuration (3xx Case)

2) Click **Add** and add a rule for Index "2" to the table.
3) From the *Source IP Group ID* drop-down list, select "3".
4) From the *Call Trigger* drop-down list, select "3xx" (this allows re-route the request if it was triggered as a result of a SIP 3xx response).
5) From the *Destination Type* drop-down list, select "IP Group".
6) From the *Destination IP Group ID* drop-down list, select "1".
7) From the *Destination SRD ID* drop-down list, select "2".
8) Click **Submit**.

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To re-route REFER message from any IP Group, use the following steps.

1) Open the *IP2IP Routing Table* page (*Configuration → VoIP > SBC → Routing SBC → IP to IP Routing Table*).

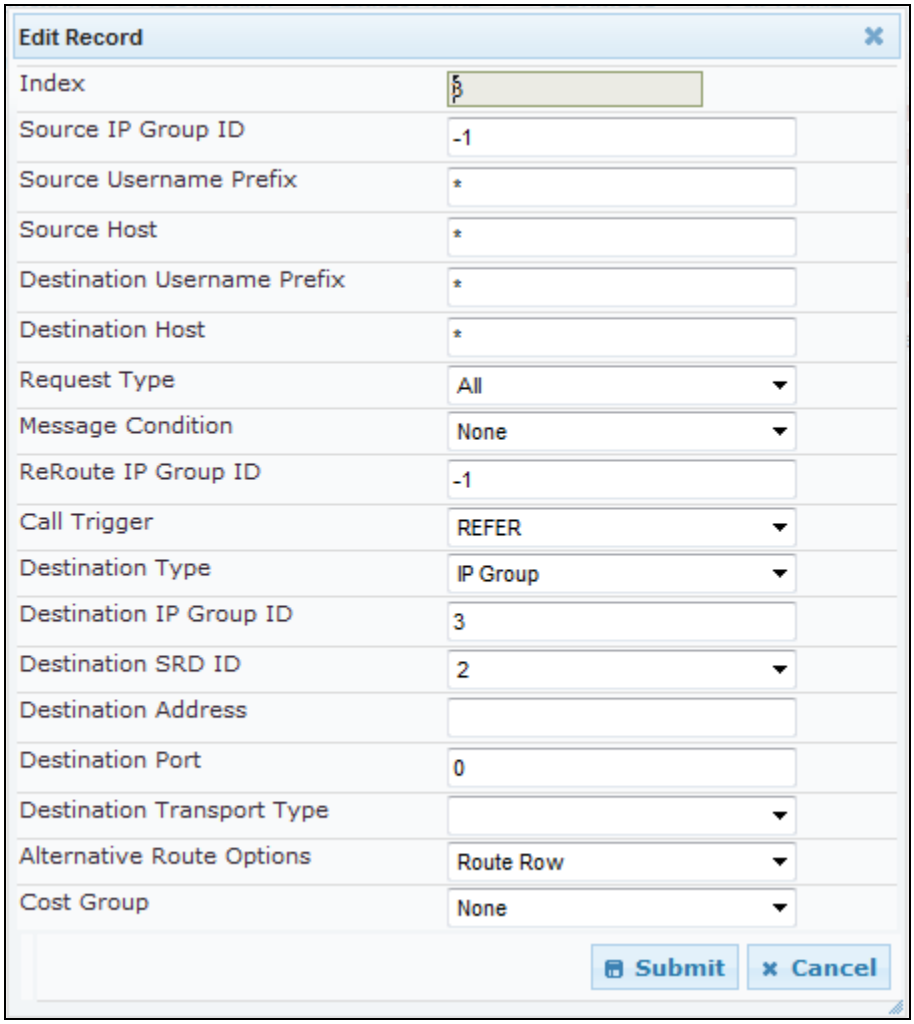

Figure 23 REFER Re-routing IP-to-IP Routing Configuration

2) Click **Add** and add a rule for Index "3" to the table.
3) From the *Source IP Group ID* drop-down list, select "-1".
4) From the *Call Trigger* drop-down list, select "REFER".
5) From the *Destination Type* drop-down list, select "IP Group".
6) From the *Destination IP Group ID* drop-down list, select "3".
7) From the *Destination SRD ID* drop-down list, select "2".
8) Click **Submit**.

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To route from an internal to an external IP Group, use the following steps:

1) Open the *IP2IP Routing Table* page (*Configuration* → *VoIP* → *SBC* → *Routing SBC* → *IP to IP Routing Table*).

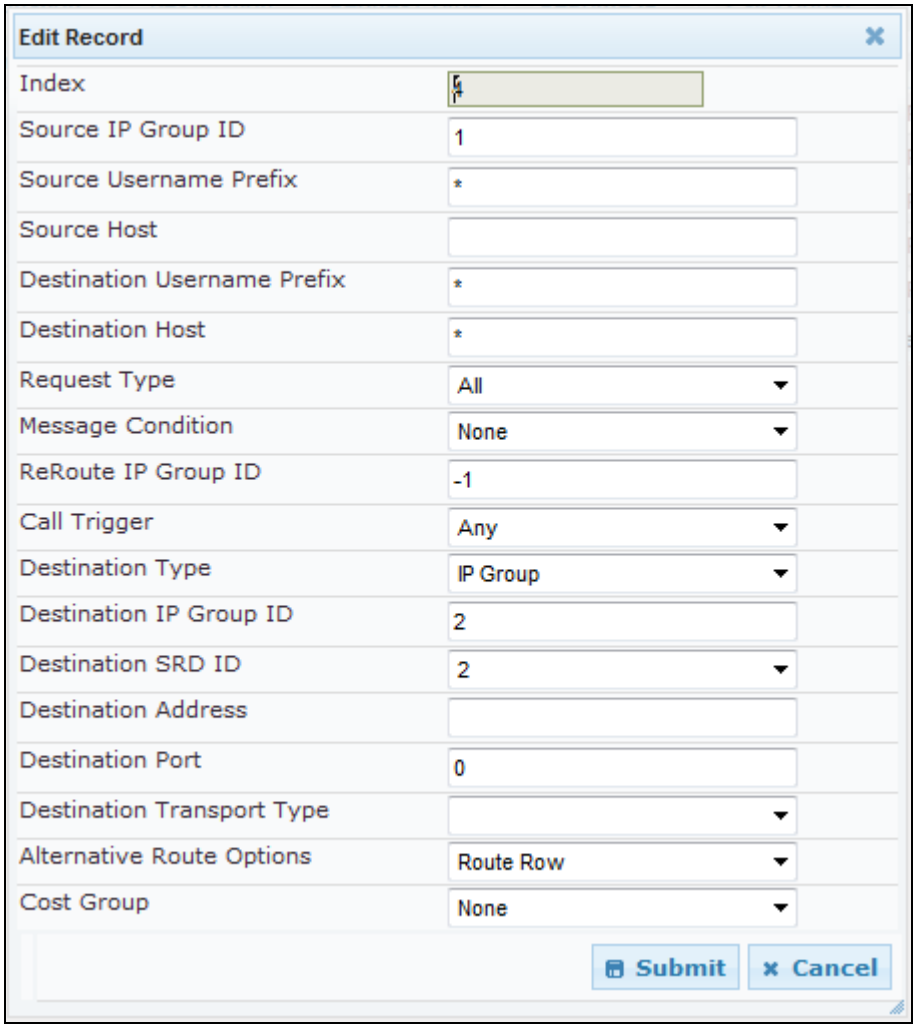

Figure 24 Internal to External IP-to-IP Routing Configuration

2) Click **Add** and add a rule for Index "4" to the table.
3) From the *Source IP Group ID* drop-down list, select **1**.
4) From the *Destination Type* drop-down list, select "IP Group".
5) From the *Destination IP Group ID* drop-down list, select "2".
6) From the *Destination SRD ID* drop-down list, select "2".
7) Click **Submit**.

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To route from an external to an internal IP Group, use the following steps.

1) Open the *IP2IP Routing Table* page (*Configuration* → *VoIP* → *SBC* → *Routing SBC* → *IP to IP Routing Table*).

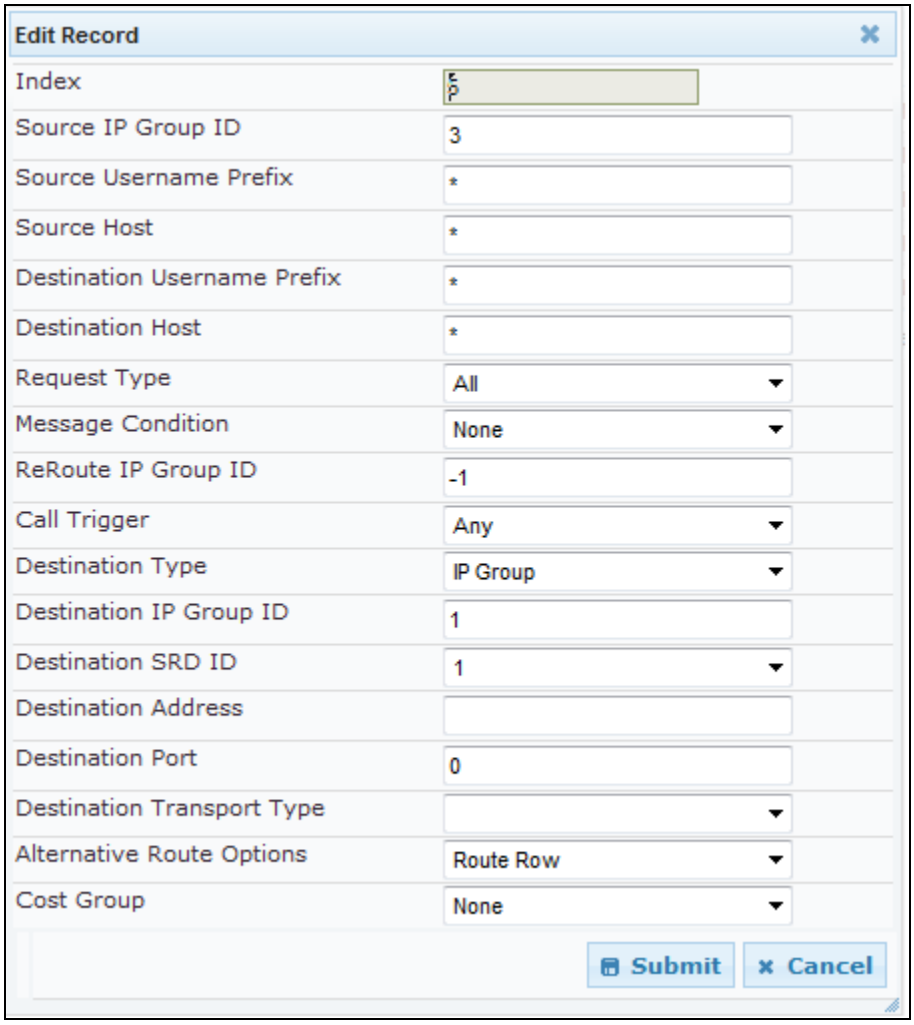

Figure 25 External to Internal IP-to-IP Routing Configuration

2) Click **Add** and add a rule for Index "5" to the table.
3) From the *Source IP Group ID* drop-down list, select "3".
4) From the *Destination Type* drop-down list, select "IP Group".
5) From the *Destination IP Group ID* drop-down list, select "1".
6) From the *Destination SRD ID* drop-down list, select "1".
7) Click **Submit**.

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4.9 Step 9: Configuring General SIP Parameters

This procedure identifies the E-SBC Network Device configuration required to support the SIP General configuration.

4.9.1 Configuring Registration Parameters

The following procedure shows how to configure the SIP Proxy and Registration. This configuration includes setting a DNS query for the BroadWorks Proxy Set.

To configure the SIP Proxy and Registration, use the following steps.

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

Figure 26 Registration Parameters Screen

2) From the *DNS Query Type* drop-down list, select "SRV".

3) From the *Proxy DNS Query Type* drop-down list, select "SRV".

4.9.2 Configuring Disconnect Parameters

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

To configure the Disconnect and Answer Supervision, use the following steps.

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

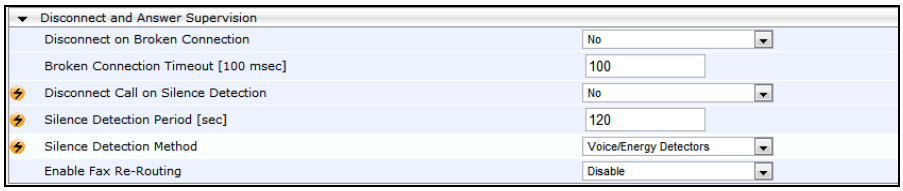

Figure 27 Disconnect Parameters Screen

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

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Appendix A: Example E-SBC Configuration File

E-SBC Configuration File: M800-SBC.INI

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

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

;Board: Mediant 800 - MSBG
;Serial Number: 2542001
;Slot Number: 1
;Software Version: 6.60A.026.003
;DSP Software Version: 5014AE3_R_LD => 660.15
;Board IP Address: 10.15.17.100
;Board Subnet Mask: 255.255.0.0
;Board Default Gateway: 10.15.0.1
;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: Mediant 800 - MSBG ;Channel Type: RTP DspCh=30
IPMediaDspCh=30 ;Security: IPSEC MediaEncryption StrongEncryption
EncryptControlProtocol ;IP Media: Conf VoicePromptAnnounc(H248.9) CALEA
TrunkTesting POC ;PSTN FALLBACK Supported ;QOE features:
VoiceQualityMonitoring MediaEnhancement ;DSP Voice features: IpmDetector
RTCP-XR AMRPolicyManagement V150=30 ;E1Trunks=1 ;T1Trunks=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 ;PSTN
Protocols: IUA=1 ;Control Protocols: MGCP MEGACO H323 SIP TPNCP
SASurvivability SBC=30 MSFT CLI TRANSCODING=30 FEU=5 TestCall=5 ;Default
features:;Coders: G711 G726;

;------- Mediant-800 HW components-------
;
; Slot # : Module type : # of ports
;--------------------------------------------
;      1 : FALC56      : 1
;      2 : Empty
;      3 : Empty
;--------------------------------------------


[SYSTEM Params]

SyslogServerIP = 10.15.17.200
EnableSyslog = 1
NTPServerIP = '0.0.0.0'
LDAPSEARCHDNSINPARALLEL = 0

[BSP Params]

PCMLawSelect = 3

[Analog Params]
```


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```
[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]

ClockMaster = 1
TerminationSide = 1

[SS7 Params]


[Voice Engine Params]


[WEB Params]

LogoWidth = '145'
HTTPSCipherString = 'RC4:EXP'

[SIP Params]

MEDIACHANNELS = 31
GWDEBUGLEVEL = 5
DISCONNECTONBROKENCONNECTION = 0
ISFAXUSED = 1
DNSQUERYTYPE = 1
PROXYDNSQUERYTYPE = 1
SIPSDPSESSIONOWNER = 'Audiocodes_SBC'
ENABLESBCAPPLICATION = 1
MSLDAPPRIMARYKEY = 'telephoneNumber'
ENABLEEARLY183 = 1
SBCREFERBEHAVIOR = 2
SBCEXTENSIONSPROVISIONINGMODE = 1
E911GATEWAY = 1
SBCFORKINGHANDLINGMODE = 1


[ 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, 2, 4, "User Port #2", "GROUP_2",
"Active";
PhysicalPortsTable 3 = "GE_4_4", 1, 2, 4, "User Port #3", "GROUP_2",
"Redundant";
```


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```
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, 10.15.17.100, 16, 10.15.0.1, 1, "Voice",
10.1.1.11, 10.1.1.10, GROUP_1;
InterfaceTable 1 = 5, 10, 195.189.192.150, 25, 195.189.192.129, 2,
"WanBS", 80.179.52.100, 80.179.55.100, GROUP_2;

[ \InterfaceTable ]


[ CpMediaRealm ]

FORMAT CpMediaRealm_Index = CpMediaRealm_MediaRealmName,
CpMediaRealm_IPv4IF, CpMediaRealm_IPv6IF, CpMediaRealm_PortRangeStart,
CpMediaRealm_MediaSessionLeg, CpMediaRealm_PortRangeEnd,
CpMediaRealm_IsDefault;
CpMediaRealm 1 = "LanRealm", Voice, , 6000, 10, 6090, 1;
CpMediaRealm 2 = "WanRealm", WanBS, , 7000, 10, 7090, 0;

[ \CpMediaRealm ]
```


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```
[ SRD ]

FORMAT SRD_Index = SRD_Name, SRD_MediaRealm, SRD_IntraSRDMediaAnchoring,
SRD_BlockUnRegUsers, SRD_MaxNumOfRegUsers,
SRD_EnableUnAuthenticatedRegistrations;
SRD 1 = "LanSRD", "LanRealm", 0, 0, -1, 1;
SRD 2 = "WanSRD", "WanRealm", 0, 0, -1, 1;

[ \SRD ]


[ ProxyIp ]

FORMAT ProxyIp_Index = ProxyIp_IpAddress, ProxyIp_TransportType,
ProxyIp_ProxySetId;
ProxyIp 0 = "ns.iop1.broadworks.net", 0, 2;
ProxyIp 1 = "10.15.2.12", -1, 1;
ProxyIp 2 = "as.iop1.broadworks.net", 0, 3;

[ \ProxyIp ]


[ IpProfile ]

FORMAT IpProfile_Index = IpProfile_ProfileName, IpProfile_IpPreference,
IpProfile_CodersGroupID, IpProfile_IsFaxUsed,
IpProfile_JitterBufMinDelay, IpProfile_JitterBufOptFactor,
IpProfile_IPDiffServ, IpProfile_SigIPDiffServ, IpProfile_SCE,
IpProfile_RTPRedundancyDepth, IpProfile_RemoteBaseUDPPort,
IpProfile_CNGmode, IpProfile_VxxTransportType, IpProfile_NSEMode,
IpProfile_IsDTMFUsed, IpProfile_PlayRBTone2IP,
IpProfile_EnableEarlyMedia, IpProfile_ProgressIndicator2IP,
IpProfile_EnableEchoCanceller, IpProfile_CopyDest2RedirectNumber,
IpProfile_MediaSecurityBehaviour, IpProfile_CallLimit,
IpProfile_DisconnectOnBrokenConnection, IpProfile_FirstTxDtmfOption,
IpProfile_SecondTxDtmfOption, IpProfile_RxDTMFOption,
IpProfile_EnableHold, IpProfile_InputGain, IpProfile_VoiceVolume,
IpProfile_AddIEInSetup, IpProfile_SBCExtensionCodersGroupID,
IpProfile_MediaIPVersionPreference, IpProfile_TranscodingMode,
IpProfile_SBCAllowedCodersGroupID, 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_SBCFaxCodersGroupID,
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 1 = "LAN-IP-PBX", 1, 0, 0, 10, 10, 46, 40, 0, 0, 0, 0, 2, 0, 0,
1, 0, -1, 1, 0, 0, -1, 0, 4, -1, 1, 1, 0, 0, "", -1, 0, 0, -1, 0, 0, 0,
0, 0, 0, 8, 300, 400, 0, 0, 0, -1, 0, 0, 1, 3, 0, 2, 2, 1, 2, 2, 1, 0, 1,
0, 0, 0, 0, 0, 1, 1, 0, 0, -1, 0;
```


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

[ \IpProfile ]


[ ProxySet ]

FORMAT ProxySet_Index = ProxySet_EnableProxyKeepAlive,
ProxySet_ProxyKeepAliveTime, ProxySet_ProxyLoadBalancingMethod,
ProxySet_IsProxyHotSwap, ProxySet_SRD, ProxySet_ClassificationInput,
ProxySet_ProxyRedundancyMode;
ProxySet 0 = 0, 60, 0, 0, 0, 0, -1;
ProxySet 1 = 0, 60, 0, 0, 1, 0, -1;
ProxySet 2 = 0, 30, 0, 1, 2, 0, 0;
ProxySet 3 = 0, 60, 0, 1, 2, 0, -1;

[ \ProxySet ]


[ IPGroup ]

FORMAT IPGroup_Index = IPGroup_Type, IPGroup_Description,
IPGroup_ProxySetId, IPGroup_SIPGroupName, IPGroup_ContactUser,
IPGroup_EnableSurvivability, IPGroup_ServingIPGroup,
IPGroup_SipReRoutingMode, IPGroup_AlwaysUseRouteTable,
IPGroup_RoutingMode, IPGroup_SRD, IPGroup_MediaRealm,
IPGroup_ClassifyByProxySet, IPGroup_ProfileId, IPGroup_MaxNumOfRegUsers,
IPGroup_InboundManSet, IPGroup_OutboundManSet, IPGroup_RegistrationMode,
IPGroup_AuthenticationMode, IPGroup_MethodList,
IPGroup_EnableSBCClientForking, IPGroup_SourceUriInput,
IPGroup_DestUriInput, IPGroup_ContactName;
IPGroup 1 = 0, "LAN-IP-PBX", 1, "", "", 0, -1, -1, 0, -1, 1, "LanRealm",
1, 1, -1, -1, -1, 0, 0, "", 0, -1, -1, "";
IPGroup 2 = 0, "BroadWorks NS", 2, "as.iop1.broadworks.net", "", 0, -1, -
1, 0, -1, 2, "WanRealm", 1, 2, -1, -1, 1, 0, 0, "", 0, -1, -1, "";
IPGroup 3 = 0, "BroadWorks AS", 3, "", "", 0, -1, -1, 0, -1, 2,
"WanRealm", 1, 2, -1, -1, 1, 0, 0, "", 0, -1, -1, "";

[ \IPGroup ]


[ IP2IPRouting ]

FORMAT IP2IPRouting_Index = IP2IPRouting_SrcIPGroupID,
IP2IPRouting_SrcUsernamePrefix, IP2IPRouting_SrcHost,
IP2IPRouting_DestUsernamePrefix, IP2IPRouting_DestHost,
IP2IPRouting_RequestType, IP2IPRouting_MessageCondition,
IP2IPRouting_ReRouteIPGroupID, IP2IPRouting_Trigger,
IP2IPRouting_DestType, IP2IPRouting_DestIPGroupID,
IP2IPRouting_DestSRDID, IP2IPRouting_DestAddress, IP2IPRouting_DestPort,
IP2IPRouting_DestTransportType, IP2IPRouting_AltRouteOptions,
IP2IPRouting_CostGroup;
IP2IPRouting 1 = 1, "*", "", "*", "*", 0, , -1, 1, 0, 3, 2, "*", 0, -1,
0, ;
IP2IPRouting 2 = 3, "*", "*", "*", "*", 0, , -1, 1, 0, 1, 2, "", 0, -1,
0, ;
IP2IPRouting 3 = -1, "*", "*", "*", "*", 0, , -1, 2, 0, 3, 2, "", 0, -1,
0, ;
IP2IPRouting 4 = 1, "*", "", "*", "*", 0, , -1, 0, 0, 2, 2, "", 0, -1, 0,
;
```


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```
IP2IPRouting 5 = 3, "*", "*", "*", "*", 0, , -1, 0, 0, 1, 1, "", 0, -1,
0, ;

[ \IP2IPRouting ]


[ SIPInterface ]

FORMAT SIPInterface_Index = SIPInterface_NetworkInterface,
SIPInterface_ApplicationType, SIPInterface_UDPPort, SIPInterface_TCPPort,
SIPInterface_TLSPort, SIPInterface_SRD, SIPInterface_MessagePolicy,
SIPInterface_TLSMutualAuthentication, SIPInterface_TCPKeepaliveEnable;
SIPInterface 1 = "Voice", 2, 5060, 5060, 5061, 1, , -1, 0;
SIPInterface 2 = "WanBS", 2, 5060, 5060, 5061, 2, , -1, 0;

[ \SIPInterface ]


[ CodersGroup0 ]

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

[ \CodersGroup0 ]


[ 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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