
Sonus SBC 5XX0 6.0R0 IOT BroadWorks R22 Application Notes

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Document Overview

This document provides a configuration guide for Sonus Session Border Controller 5XX0 Series (SBC) when connecting to BroadWorks R22SP1.

This configuration guide supports features given in BW-SessionBorderController-InteropTestPlan-R22.

- For additional information on BroadWorks, visit <http://broadsoft.com>
- For additional information on Sonus SBC, visit <https://ribboncommunications.com>

Introduction

The interoperability compliance testing focuses on verifying inbound and outbound call flows between Sonus SBC 5XX0 and BroadWorks R22SP1.

Audience

This is a technical document intended for telecommunications engineers with the purpose of configuring both the Sonus SBC and a third-party product. This guide requires navigating both third-party product and the Sonus SBC Command Line Interface (CLI). Understanding the basic concepts of TCP/UDP, IP/Routing, and SIP/RTP are also required to complete the configuration and any necessary troubleshooting.

i This configuration guide is offered as a convenience to Sonus customers. The specifications and information regarding the product in this guide are subject to change without notice. All statements, information, and recommendations in this guide are believed to be accurate but are presented without warranty of any kind, express or implied, and are provided "AS IS". Users must take full responsibility for the application of the specifications and information in this guide.

Requirements

The following equipment and software were used for the sample configuration provided:

Figure 1: Requirements

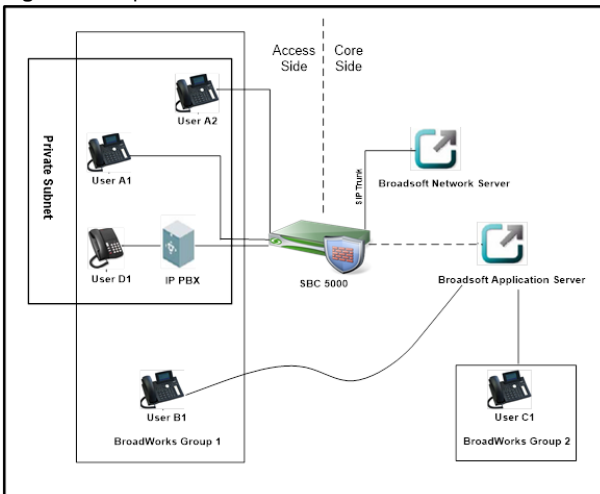


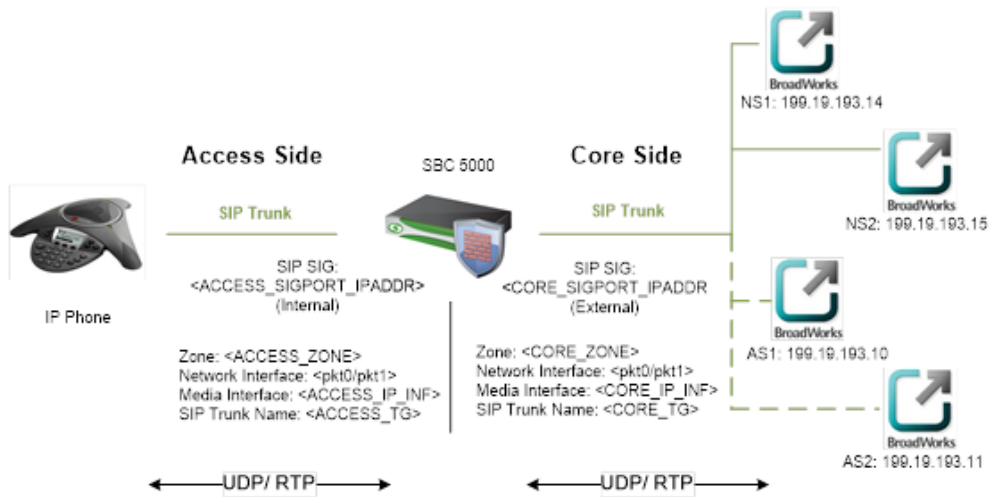
Table 1: Software Information

	Equipment	Software Version
Sonus Networks	Sonus SBC 5200	
	BMC	V03.05.00
	BIOS	V02.06.00
	ConnexIP OS	V03.02.00-R000
	SonusDB	V06.00.00-R000
	EMA	V06.00.00-R000
	SBX	V06.00.00-R000
Third-party Equipment		
OS	BroadWorks	R22SP1
Other software		

Reference Configuration

The following reference configuration shows connectivity between a third-party product and the Sonus SBC 5XX0.

Figure 2: Reference Configuration



Support

For any questions regarding the content of this document, please contact your maintenance and support provider.

Third-Party Product Features

This configuration guide supports basic and enhanced Broadsoft features. The following list indicates the packages verified using this configuration guide.

- Basic Package
- Broadsoft Services Package
- Access Device Services Package
- Redundancy Package
- Video Package
- Access Redirect Package
- IPv6 Package

Prerequisites

- **Busy Lamp Field (on TCP) with NAT Traversal**

In case of Busy Lamp Field (on TCP) requiring NAT traversal, it is recommended to set 'tcpKeepalive'Timer on SIP Trunk Group toward NAT to 45 (in seconds).

- **DTMF payload type**

Configure all servers and endpoints with the same DTMF Payload Type.

Configuration 1 - SBC Configuration

1.1 Global Configuration

1.1.1 SIP Max PDU Size

Increase the maximum PDU size from 6 kb to 60 kb to accommodate larger SIP packets.

```
set global signaling sipSigControls maxPduSizeValue pduSize60kb
commit
```

1.1.2 SIP Domain

Specify the global SIP Domain name.

```
set global sipDomain AS.IOP1.BROADWORKS.NET
commit
```

1.1.3 Crankback Profile

Add call release (reason) code 102 (Recovery on Timer Expiry) to the default Crankback Profile. The Crankback Profile contains the call release codes that automatically cause the SBC to attempt to reroute the call.

```
set profiles callRouting crankbackProfile default reason 102
commit
```

1.1.4 UDP Port Range for RTP (optional)

The Sonus SBC Core Portfolio defaults to using the UDP port range of 1024 - 65148 for RTP (media) traffic. Many enterprise networking devices, including security devices may assume a range of 16384 - 32767.

If required, the following configuration modifies the SBC to work within the limited range with no change to the existing devices. This is a global change.

```
set system media mediaPortRange baseUdpPort 16384 maxUdpPort 32767
commit
```

1.1.5 DSP Resource Allocation

This configuration only applies if the SBC has been deployed with (hardware) DSP resources. If it has not, executing these configuration steps has no negative impact.

Subsequent configuration sections (Packet service profiles) do not attempt transcoding, so lack of compression resources will not impact the overall SBC configuration in this document.

```
set system mediaProfile compression 90 tone 10
commit
```

1.1.6 MultipleContactHeader per AoR

To disable multiple contacts per AOR, the "multipleContactsPerAor" system-level flag must be disabled as shown in the example below (default configuration is 'enabled').

In BSFT deployment, when customers do not want to allow multiple devices to use the same AoR, disable this flag. Since BSFT handles the multiple devices per AoR using different AoR suffixes, there is no need to have multiple Contact Headers per AoR.

```
set global signaling sipSigControls multipleContactsPerAor disabled
commit
```

1.1.7 SIP Message Manipulation (SMM)

1.1.7.1 SURR_REG_SMM

Add the Application server FQDN in the Surrogate SIP Register going towards BSFT.

```
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 2 type header
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 2 header name To condition exist
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 1 type message
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 1 message messageTypes request
methodTypes register
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 applyMatchHeader one
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 type token operation regsub
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 to type token tokenValue urihostname
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 regexp string (?:[0-9]{1,3}\.){3}[0-9]
{1,3} matchInstance all
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 from type value value as.iopl.broadworks.
net
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 2 header name From condition exist
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 1 message messageTypes request
methodTypes register
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 applyMatchHeader one
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 type token operation regsub
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 regexp string (?:[0-9]{1,3}\.){3}[0-9]
{1,3} matchInstance all
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 from type value value as.iopl.broadworks.
net
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 to type token tokenValue urihostname
set profiles signaling sipAdaptorProfile SURR_REG_SMM state enabled
commit
```

1.1.7.2 Refer_SMM

Create a SMM that will add the Refer-To Header in the CORE side.

```

set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 type token
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 type token
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 type token
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 token condition exist tokenType
urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 token condition exist tokenType
urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 token condition exist tokenType
urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 header name Refer-To condition exist
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 header name Refer-To condition exist
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 header name Refer-To condition exist
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 message messageTypes request methodTypes
refer
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 message messageTypes request methodTypes
refer
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 message messageTypes request methodTypes
refer
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 applyMatchHeader one
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 applyMatchHeader one
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 type token operation modify
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 type token operation modify
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 type token operation modify
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 to type token tokenValue urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 from type value value as.iopl.broadworks.net
commit
set profiles signaling sipAdaptorProfile Refer_SMM state enabled advancedSMM disabled
commit

```

1.1.7.3 CORE_PROF

This provides for Pass through of all the supported sipHeaders.

It should be attached to both the Trunk Groups

```

set profiles services sipParamFilterProfile CORE_PROF sipHeader supported action passthru all
commit

```

1.1.8 Prefix Profile

Create Prefix Profile with appropriate dial plan for handling outgoing calls.

This Access dial plan places all dialing patterns into username routing.

```

set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 0 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 0 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 1 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 1 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 2 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 2 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 3 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 3 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 4 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 4 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 5 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 5 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 6 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 6 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 7 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 7 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 8 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 8 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 9 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 9 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry * 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry * 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry + 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry + 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry % 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry % 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry "#" 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry "#" 0 1 31 digitType userName
commit

```

Note

The "" (quotation marks) around # is required for CLI.

1.1.9 Numbering Plan

Create Numbering Plan by applying Prefix Profile created earlier.

```

set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN prefixProfile ACCESS_DIAL_PLAN
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths nationalNumber min 1
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths nationalNumber max 31
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths subscriberNumber min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths subscriberNumber max 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths line min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths line max 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths exchangeCode min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths exchangeCode max 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths areaCode min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths areaCode max 0
commit

```

1.1.10 Digit Manipulation/Parameter Manipulation

1.1.10.1 DM/PM Rules

Create a DM/PM rule to ignore the user=phone parameter. This allows the SBC to support both Called Number and Username Routing.

```

set profiles digitParameterHandling dmPmRule DMPM_RULE subRule 0 ruleType uri uriParameterManipulation uriType
calledUri uriParameterManipulation userParameter ip
commit

```

1.1.11 Element Routing Priority

The Element Routing Priority (ERP) Profile determines the priority or precedence for criteria used for call routing, and then applies an ERP to the Trunk Group entity.

When configuring a Trunk Group to Trunk Group, the SBC must have an ERP profile which prioritizes the Trunk Group entity above others. This allows routing of traffic from the ingress Trunk Group to the egress Trunk Group.

```
set profiles callRouting elementRoutingPriority TG_ERP entry _private 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry nationalOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry localOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry nationalType 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry internationalType 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry internationalOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry longDistanceOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry ipVpnService 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry test 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry transit 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry otherCarrierChosen 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry carrierCutThrough 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry userName 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry mobile 1 entityType trunkGroup
commit
```

1.1.12 Address reachability Service (ARS) Profile

To achieve efficient device failover to the backup/secondary Application Server, the SBC uses the Address Reachability Service (ARS) to determine if a server is reachable, providing the ability to “blacklist” a server IP address if it is found to be unreachable, as well as the ability to Remove the server from the blacklisted state.

ARS will be triggered based on the SIP-INVITE timeout, so if other requests like SUBSCRIBE, REGISTER are sent to that peer, then ARS will not be triggered.

ARS profile is suitable for the peer which is used only for INVITE.

```
set profiles services sipArsProfile CORE_ARSP blkListAlgorithms timeouts,retryafter
set profiles services sipArsProfile CORE_ARSP blkListAlgTimeoutsType sip-invite
set profiles services sipArsProfile CORE_ARSP blkListAlgTimeoutsNumTimeouts 4
set profiles services sipArsProfile CORE_ARSP blkListAlgTimeoutsDuration 120
set profiles services sipArsProfile CORE_ARSP blkListAlgRetryAfterType sip-503
set profiles services sipArsProfile CORE_ARSP recoveryAlgorithm probe
set profiles services sipArsProfile CORE_ARSP recoveryAlgProbeInterval 30
set profiles services sipArsProfile CORE_ARSP recoveryAlgProbeNumResponses 6
set profiles services sipArsProfile CORE_ARSP recoveryAlgProbeDuration 240
commit
```

1.2 Internal Side SBC Configuration

1.2.1 IP Interface Group

The configuration below is for a Sonus 52x0 system using a single port for Internal connectivity.

```
set addressContext default ipInterfaceGroup CORE_LIF ipInterface IPIF2 ceName IOTNANO portName pkt1 ipAddress
172.16.100.202 prefix 24 altIpAddress 2001:E48:80:1001::10 altPrefix 64
set addressContext default ipInterfaceGroup CORE_LIF ipInterface IPIF2 mode inService state enabled
commit
```

1.2.2 IP Static Route

Create a default route to the subnet's IP nexthop for the interface and IP Interface Group.


```
set addressContext default staticRoute 0.0.0.0 0 172.16.100.2 CORE_LIF IPIF2 preference 100
commit
set addressContext default staticRoute 0::0 0 2001:E48:80:1001::1 CORE_LIF IPIF2 preference 100
commit
```

1.3 SBC Configuration for Core

1.3.1 Profile Configuration

1.3.1.1 Codec Entry

Create a Codec Entry with the supported codec on the network.

```
set profiles media codecEntry G711_ALAW_PTIME_20 codec g711 law ALaw packetSize 20
set profiles media codecEntry G729AB-DEFAULT codec g729ab packetSize 20
commit
```

1.3.1.2 Packet Service Profile (PSP)

Create a Packet Service Profile (PSP) for the BroadWorks Core. The PSP will be specified within the SIP Trunk Group configuration.

```
set profiles media packetServiceProfile CORE_PSP codec codecEntry1 G729AB-DEFAULT
set profiles media packetServiceProfile CORE_PSP codec codecEntry2 G711_ALAW_PTIME_20
set profiles media packetServiceProfile CORE_PSP packetToPacketControl transcode transcoderFreeTransparency
set profiles media packetServiceProfile CORE_PSP rtcpOptions rtcp enable
set profiles media packetServiceProfile CORE_PSP videoCalls maxVideoBandwidth 4096
commit
```

1.3.1.3 IP Signaling Profile (IPSP)

Create an IP Signaling Profile (IPSP) for the BroadWorks Core. The IPSP will be specified within the SIP Trunk Group configuration.

```

set profiles signaling ipSignalingProfile CORE_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags disableHostTranslation enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags
includeTransportTypeInContactHeader enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags reQueryPxxOnRegisterRefresh
enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags endToEndBye enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags dialogEventPackage enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes transparencyFlags authcodeHeaders
enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes sipHeadersAndParameters flags
endToEndAck enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type1 udp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type2 tcp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type3 tlsOverTcp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type4 sctp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes flags suppressUnregister enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags noPortNumber5060 enable
commit

```

1.3.1.4 Transparency Profile (TP)

Create a Transparency Profile (TP) for the BroadWorks Core. The TP will be specified within the SIP Trunk Group configuration.

For BroadWorks, this profile is configured to make the Call Headers transparent, and exceptions will be added for the headers that will not be transparent.

```

set profiles services transparencyProfile CORE_TP sipHeader all
set profiles services transparencyProfile CORE_TP sipMessageBody all
set profiles services transparencyProfile CORE_TP sipHeader supported
set profiles services transparencyProfile CORE_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile CORE_TP state enabled
commit

```

1.3.1.5 Feature Control Profile (FCP)

Create a Feature Control Profile (FCP) for the BroadWorks Core. The FCP will be specified within the SIP Trunk Group configuration.

When BSFT uses the tgrp based routing for the enterprise Trunking, SBC needs to process the received tgrp parameter to find the egress Trunk Group.

```
set profiles featureControlProfile CORE_FCP processDestinationTgrp enable
commit
```

1.3.2 Address Context Configuration

No overlapping IP addressing is used on the SBC in this guide, all configuration will be done under the "default" Address Context.

1.3.2.1 DNS Group

DNS Groups set DNS objects that may be used for DNS resolution within a particular Zone.

If a DNS server is available and accessible by SBC, then use this section.

```
set addressContext default dnsGroup CORE_DNS_GRP type mgmt
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS ipAddress 10.54.80.101
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS priority 80
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS weight 50
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS state enabled
commit
```

1.3.2.2 Zone

This Zone groups the set of objects that is used for the communication to BroadWorks Network and Application Servers.

```
set addressContext default zone CORE id 2 remoteDeviceType appServer
commit
```

1.3.2.3 SIP Signaling Port

A SIP Signaling port is a logical address permanently bound to a specific zone and is used to send and receive SIP call signaling packets.

```
set addressContext default zone CORE sipSigPort 3 ipInterfaceGroup CORE_LIF
set addressContext default zone CORE sipSigPort 3 ipAddressV4 172.16.100.202 ipAddressV6 2001:E48:80:
1001::10
set addressContext default zone CORE sipSigPort 3 dscpValue 26
set addressContext default zone CORE sipSigPort 3 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone CORE sipSigPort 3 state enabled mode inService
commit
```

1.3.2.4 IP Peer

Create an IP Peer with the Fully-Qualified Domain Name (FQDN) of the BroadWorks Network Server Cluster and assign it to the BroadWorks Core Zone.

```
set addressContext default zone CORE ipPeer CORE_PEER policy sip fqdn ns.iopl.broadworks.net
set addressContext default zone CORE ipPeer CORE_PEER policy sip fqdnPort 5060
commit
```

1.3.2.5 SIP Param Filter Profile

Create a SIP Param filter to pass the "Supported" SIP Header.

```

set profiles services sipParamFilterProfile CORE_PROF sipHeader supported action passthru all
set profiles services sipParamFilterProfile CORE_PROF state enabled

```

1.3.2.6 SIP Trunk Group

Create a SIP Trunk Group towards BroadWorks Core and assign the Profiles configured above.

```

set addressContext default zone CORE sipTrunkGroup CORE_STG media mediaIpInterfaceGroupName CORE_LIF
set addressContext default zone CORE sipTrunkGroup CORE_STG media lateMediaSupport passthru
sourceAddressFiltering enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG media mediaAddrType matchSigAddrType
set addressContext default zone CORE sipTrunkGroup CORE_STG media sdpAttributesSelectiveRelay enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG policy digitParameterHandling numberingPlan
ACCESS_NUM_PLAN
set addressContext default zone CORE sipTrunkGroup CORE_STG policy callRouting elementRoutingPriority
TG_ERP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy media packetServiceProfile CORE_PSP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy signaling ipSignalingProfile CORE_IPSP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy signaling signalingProfile
DEFAULT_IP_PROFILE
set addressContext default zone CORE sipTrunkGroup CORE_STG services dnsSupportType a-srv-naptr
set addressContext default zone CORE sipTrunkGroup CORE_STG services sipArsProfile CORE_ARSP
set addressContext default zone CORE sipTrunkGroup CORE_STG services sipParamFilterProfile CORE_PROF
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling relayNonInviteRequest enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters general 4
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters invite 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters bye 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters cancel 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters reInvite 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling timers sessionMinSE 60
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling registration bulkRegisterFormat
followIngress
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling registration insideExpiresMinimum 3500
set addressContext default zone CORE sipTrunkGroup CORE_STG ingressIpPrefix 0.0.0.0 0
set addressContext default zone CORE sipTrunkGroup CORE_STG ingressIpPrefix 0::0 0
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling honorMaddrParam enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG services transparencyProfile CORE_TP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy featureControlProfile CORE_FCP
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling messageManipulation
outputAdapterProfile SURR_REG_SMM
set addressContext default zone CORE sipTrunkGroup CORE_STG state enabled mode inService
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling messageManipulation
outputAdapterProfile Refer_SMM
set addressContext default zone CORE sipTrunkGroup CORE_STG services sipParamFilterProfile CORE_PROF
commit

```

1.4 External Side SBC Configuration

1.4.1 IP Interface Group

The configuration below is for a Sonus 52x0 system using a single port for internal connectivity.

```

set addressContext default ipInterfaceGroup ACCESS_LIF ipInterface IPIF0 ceName IOTNANO portName pkt0 ipAddress
172.16.102.125 prefix 24 altIpAddress fc00::102:f:f:f:43 altPrefix 64
set addressContext default ipInterfaceGroup ACCESS_LIF ipInterface IPIF0 mode inService state enabled
commit

```

1.4.2 IP Static Route

Create a default route to the subnet's IP nexthop for the interface and IP Interface Group.

```
set addressContext default staticRoute 0.0.0.0 0 172.16.102.1 ACCESS_LIF IPIF0 preference 100
commit
set addressContext default staticRoute 0::0 0 fc00::20:f:f:1 ACCESS_LIF IPIF0 preference 100
commit
```

1.5 SBC Configuration for Access

1.5.1 Profile Configuration

1.5.1.1 Packet Service Profile (PSP)

Create a Packet Service Profile (PSP) for Access. The PSP will be specified within the SIP Trunk Group configuration.

```
set profiles media packetServiceProfile ACCESS_PSP packetToPacketControl transcode transcoderFreeTransparency
set profiles media packetServiceProfile ACCESS_PSP videoCalls maxVideoBandwidth 4096
set profiles media packetServiceProfile ACCESS_PSP rtcpOptions rtcp enable
set profiles media packetServiceProfile ACCESS_PSP codec codecEntry1 G729AB-DEFAULT
set profiles media packetServiceProfile ACCESS_PSP codec codecEntry2 G711_ALAW_PTIME_20
commit
```

1.5.1.2 IP Signaling Profile (IPSP)

Create an IP Signaling Profile (IPSP) for Access. The IPSP will be specified within the SIP Trunk Group configuration.

```
set profiles signaling ipSignalingProfile ACCESS_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags
includeTransportTypeInContactHeader enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags reQueryPxxOnRegisterRefresh
enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags endToEndBye enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags
relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags dialogEventPackage enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags options enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags statusCode3xx enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes transparencyFlags authcodeHeaders
enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes sipHeadersAndParameters flags
endToEndAck enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile ACCESS_IPSP ingressIpAttributes flags sendSdpInSubsequent18x enable
set profiles signaling ipSignalingProfile ACCESS_IPSP ingressIpAttributes flags suppress183WithoutSdp enable
set profiles signaling ipSignalingProfile ACCESS_IPSP ingressIpAttributes flags
suppress183For3xxRedirectResponse enable sendSdpIn200OkIf18xReliable enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags noPortNumber5060 enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags disableHostTranslation enable
commit
```

1.5.1.3 Transparency Profile (TP)

Create a Transparency Profile (TP) for Access. The TP will be specified within the SIP Trunk Group configuration.

For BroadWorks, this profile is configured to make the Call Headers transparent, and exceptions will be added for the headers that will not be transparent.

```
set profiles services transparencyProfile ACCESS_TP sipHeader all
set profiles services transparencyProfile ACCESS_TP sipMessageBody all
set profiles services transparencyProfile ACCESS_TP sipHeader supported
set profiles services transparencyProfile ACCESS_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP state enabled
commit
```

1.5.1.4 Surrogate registration Profile

Create a surrogate registration profile for surrogate registered end points. Create the profile with the pilot number configured in BroadWorks.

```
set profiles services surrogateRegistrationProfile SURR_PROF aorUserName 9876543210
commit
set profiles services surrogateRegistrationProfile SURR_PROF aorUserName 9876543210 aorState enabled
commit
```

1.5.2 Address Context Configuration

No overlapping IP addressing is used on the SBC in this document, all configurations will be done under the “default” Address Context.

1.5.2.1 Zone

This Zone groups the set of objects that is used for the communication to the Access SIP trunk.

```
set addressContext default zone ACCESS id 3 remoteDeviceType accessDevice
commit
```

1.5.2.2 SIP Signaling Port

A SIP Signaling port is a logical address permanently bound to a specific zone and is used to send and receive SIP call signaling packets

```
set addressContext default zone ACCESS sipSigPort 2 ipInterfaceGroup ACCESS_LIF
set addressContext default zone ACCESS sipSigPort 2 ipAddressV4 172.16.102.125 ipAddressV6 fc00::102:f:f:f:
43
set addressContext default zone ACCESS sipSigPort 2 dscpValue 26
set addressContext default zone ACCESS sipSigPort 2 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone ACCESS sipSigPort 2 state enabled mode inService
commit
```

1.5.2.3 IP Peer

Create an IP Peer with the IP address of the PBX on behalf of the SBC which made a surrogate registration.

```
set addressContext default zone ACCESS ipPeer SURR_PEER ipAddress 10.54.20.225 ipPort 5060
commit
set addressContext default zone ACCESS ipPeer SURR_PEER surrogateRegistration surrRegProfile SURR_PROF
hostPart as.iopl.broadworks.net
commit
set addressContext default zone ACCESS ipPeer SURR_PEER surrogateRegistration surrRegProfile SURR_PROF state
enabled
commit
```

1.5.2.5 SIP Param Filter Profile

Create a SIP Param filter to pass the "Supported" SIP Header.

```
set profiles services sipParamFilterProfile ACCESS_PROF sipHeader supported action passthru all
set profiles services sipParamFilterProfile ACCESS_PROF state enabled
```

1.5.2.6 SIP Trunk Group

Create a SIP Trunk Group towards Access and assign the Profiles configured above.

```
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media mediaIpInterfaceGroupName ACCESS_LIF
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media lateMediaSupport passthru
sourceAddressFiltering enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media mediaAddrType matchSigAddrType
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media sdpAttributesSelectiveRelay enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy digitParameterHandling numberingPlan
ACCESS_NUM_PLAN
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy callRouting elementRoutingPriority
TG_ERP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy media packetServiceProfile ACCESS_PSP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy signaling ipSignalingProfile ACCESS_IPSP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy signaling signalingProfile
DEFAULT_IP_PROFILE
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services dnsSupportType a-srv-naptr
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services sipParamFilterProfile ACCESS_PROF
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal signalingNat enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal mediaNat enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal qualifiedPrefix 10.0.0.0 8
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal qualifiedPrefix
192.168.0.0 16
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling messageManipulation
outputAdapterProfile RE_ADD_ISFOCUS
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling messageManipulation
inputAdapterProfile SMM_RM_USRPH
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling relayNonInviteRequest enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling registration requireRegistration
required
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling registration expires 3600
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling registration insideExpiresMinimum 3500
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling rel100Support disabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling psxRouteForSubscribe enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy digitParameterHandling ingressDmPmRule
DMPM_RULE
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG ingressIpPrefix 0.0.0.0 0
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG ingressIpPrefix 0::0 0
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services transparencyProfile ACCESS_TP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media sdpAttributesSelectiveRelay enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG state enabled mode inService
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services sipParamFilterProfile CORE_PROF
```

1.6.1 Profile Configuration

1.6.1.1 Packet Service Profile (PSP)

Create a Packet Service Profile (PSP) for GIN IP PBX Access. The PSP will be specified within the SIP Trunk Group configuration.

1.6 SBC Configuration for GIN PBX Access

```
set profiles media packetServiceProfile GIN_ACCESS_PSP packetToPacketControl transcode
transcoderFreeTransparency
commit
```

1.6.1.2 IP Signaling Profile (IPSP)

Create an IP Signaling Profile (IPSP) for GIN IP PBX Access. The IPSP will be specified within the SIP Trunk Group configuration.

```
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes flags
relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags dialogEventPackage
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags options enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags statusCode3xx enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags statusCode4xx6xx
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags updateWithoutSdp
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags acceptHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags
authcodeHeaders enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags callInfoHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags fromHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags mwiBody enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags sipfragBody
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags unknownBody
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags unknownHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags
userAgentHeader enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes flags disable2806Compliance
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type1 udp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type2 tcp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type3 tlsOverTcp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type4 sctp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP ingressIpAttributes flags sendSdpInSubsequent18x
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP ingressIpAttributes flags suppress183WithoutSdp
enable
commit
```

1.6.1.3 Transparency Profile (TP)

Create a Transparency Profile (TP) for GIN IP PBX Access. The TP will be specified within the SIP Trunk Group configuration.

For BroadWorks, this profile is configured to make the Call Headers transparent, and exceptions will be added for the headers that are not transparent.


```

set profiles services transparencyProfile GIN_TP sipHeader all
set profiles services transparencyProfile GIN_TP sipMessageBody all
set profiles services transparencyProfile GIN_TP sipHeader supported
set profiles services transparencyProfile GIN_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile GIN_TP state enabled
commit

```

1.6.2 Address Context Configuration

No overlapping IP addressing is used on the SBC in this document, all configurations will be done under the “default” Address Context.

1.6.2.1 Zone

This Zone groups the set of objects that is used for the communication to the GIN IP PBX Access SIP trunk.

```

set addressContext default zone GIN_ACCESS id 4 remoteDeviceType accessDevice
commit

```

1.6.2.2 SIP Signaling Port

A SIP Signaling port is a logical address permanently bound to a specific zone and is used to send and receive SIP call signaling packets.

```

set addressContext default zone GIN_ACCESS sipSigPort 4 ipInterfaceGroup ACCESS_LIF
set addressContext default zone GIN_ACCESS sipSigPort 4 ipAddressV4 172.16.102.145
set addressContext default zone GIN_ACCESS sipSigPort 4 dscpValue 26
set addressContext default zone GIN_ACCESS sipSigPort 4 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone GIN_ACCESS sipSigPort 4 state enabled mode inService
commit

```

1.6.2.3 SIP Trunk Group

Create a SIP Trunk Group towards Access and assign the Profiles configured above.

```

set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG media mediaIpInterfaceGroupName
ACCESS_LIF
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG media sourceAddressFiltering
disabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy digitParameterHandling
numberingPlan ACCESS_NUM_PLAN
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy callRouting
elementRoutingPriority TG_ERP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy media packetServiceProfile
GIN_ACCESS_PSP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy signaling
ipSignalingProfile GIN_ACCESS_IPSP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy signaling signalingProfile
DEFAULT_IP_PROFILE
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services dnsSupportType a-srv-naptr
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services natTraversal signalingNat
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services natTraversal mediaNat
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling messageManipulation
outputAdapterProfile RE_ADD_ISFOCUS
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration
requireRegistration required-group
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration
bulkRegisterFormat enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration expires 60
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration
insideExpiresMinimum 3500
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling rel100Support disabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling relayNonInviteRequest
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling psxRouteForSubscribe
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling validateAor disabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services transparencyProfile GIN_TP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG ingressIpPrefix 0.0.0.0 0
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG ingressIpPrefix 0::0 0
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG state enabled mode inService
commit

```

1.7 SBC Configuration for BroadWorks Enterprise Trunking

1.7.1 Profile Configuration

1.7.1.1 Packet Service Profile (PSP)

Create a Packet Service Profile (PSP) for BroadWorks Enterprise SIP Trunk. The PSP will be specified within the SIP Trunk Group configuration.

```

set profiles media packetServiceProfile PBX123_PSP packetToPacketControl transcode transcoderFreeTransparency
commit

```

1.7.1.2 IP Signaling Profile (IPSP)

Create an IP Signaling Profile (IPSP) for BroadWorks Enterprise SIP Trunk. The IPSP will be specified within the SIP Trunk Group configuration.

```

set profiles signaling ipSignalingProfile PBX123_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes flags
relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags dialogEventPackage enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags options enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags statusCode3xx enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags acceptHeader enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags authcodeHeaders
enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags callInfoHeader
enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags fromHeader enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags mwFromBody enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags sipfragBody enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags toHeader enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags unknownBody enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags unknownHeader
enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags userAgentHeader
enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes flags useCalledPartyInRequestUri
enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type1 udp
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type2 tcp
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type3 tlsOverTcp
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type4 sctp
set profiles signaling ipSignalingProfile PBX123_IPSP ingressIpAttributes flags sendSdpInSubsequent18x enable
commit

```

1.7.1.3 Transparency Profile (TP)

Create a Transparency Profile (TP) for BroadWorks Enterprise SIP Trunk. The TP will be specified within the SIP Trunk Group configuration.

For BroadWorks, this profile is configured to make the Call Headers transparent, and exceptions will be added for the headers that are not transparent.

```

set profiles services transparencyProfile PBX_TP sipHeader all
set profiles services transparencyProfile PBX_TP sipMessageBody all
set profiles services transparencyProfile PBX_TP sipHeader supported
set profiles services transparencyProfile PBX_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile PBX_TP state enabled
commit

```

1.7.1.4 IP Signaling Peer Group

When BroadWorks provides the destination Trunk Group (Via the DTG parameter) to the SBC, an IP Signaling Peer Group must be configured rather than an IP Peer. This is because only the IP Signaling Peer Group parameter is directly associated with a Trunk Group.

```
set profiles ipSignalingPeerGroup PBX123_IPSG description "IP-PBX for BW Trunking Example"
set profiles ipSignalingPeerGroup PBX123_IPSG ipSignalingPeerGroupData 1 ipAddress 10.54.20.168 ipPort 5070
set profiles ipSignalingPeerGroup PBX123_IPSG ipSignalingPeerGroupData 1 serviceStatus inService
commit
```

1.7.2 Address Context Configuration

No overlapping IP addressing is used on the SBC in this document, all configurations will be done under the "default" Address Context.

1.7.2.1 Zone

This Zone groups the set of objects that is used for the communication to the BroadWorks Enterprise SIP Trunk.

```
set addressContext default zone PBX_ZONE id 5
commit
```

1.7.2.2 SIP Signaling Port

A SIP Signaling port is a logical address permanently bound to a specific zone and is used to send and receive SIP call signaling packets.

```
set addressContext default zone PBX_ZONE sipSigPort 5 ipInterfaceGroup ACCESS_LIF
set addressContext default zone PBX_ZONE sipSigPort 5 ipAddressV4 172.16.102.144
set addressContext default zone PBX_ZONE sipSigPort 5 dscpValue 26
set addressContext default zone PBX_ZONE sipSigPort 5 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone PBX_ZONE sipSigPort 5 state enabled mode inService
commit
```

1.7.2.3 SIP Trunk Group

Create a SIP Trunk Group towards Access and assign the Profiles configured above.

```
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG media mediaIpInterfaceGroupName
ACCESS_LIF
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG media sourceAddressFiltering disabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy sipDomain AS.IOP1.BROADWORKS.NET
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy digitParameterHandling
numberingPlan ACCESS_NUM_PLAN
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy callRouting elementRoutingPriority
TG_ERP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy ipSignalingPeerGroup PBX123_IPSG
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy media packetServiceProfile
PBX123_PSP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy signaling ipSignalingProfile
PBX123_IPSP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy signaling signalingProfile
DEFAULT_IP_PROFILE
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services dnsSupportType a-srv-naptr
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services natTraversal signalingNat enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services natTraversal mediaNat enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG signaling rel100Support disabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG signaling relayNonInviteRequest enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG signaling psxRouteForSubscribe enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services transparencyProfile PBX_TP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG ingressIpPrefix 0.0.0.0 0
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG ingressIpPrefix 0:::0 0
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG state enabled mode inService
commit
```

1.8 Global Call Routing Configuration

A Routing Label (RL) is a new user-named object that contains a list of one or more next-hop peers – defined as Routing Label Routes – that can reach a specified destination.

A Routing Label Route (RLR) defines a single peer (Trunk Group + IP Peer) to which the call can be delivered. There may be many Routing Label Routes (1 to n) in a Routing Label.

For each call placed to a destination Routing Label, the SBC will advance through the list of peers (RLRs) until the call is completed or the list is exhausted. The RL's Prioritization Type determines the order in which the list will be processed.

Routing Labels are then assigned within the Route entity.

1.8.1 ACCESS and GIN ACCESS

Access side routing (calls egress the SBC toward the endpoint) will be done by SBC based on the SIP registration information of the endpoints stored in SBC. Call Routing Label or Route is not required.

1.8.2 PBX123

In the case of BroadWorks Enterprise trunking, where BroadWorks is performing the routing and sending the destination trunk group to the SBC, no specific outbound routes need to be configured on SBC.

This assumes that the operator has selected to not utilize the SBC's advanced routing capabilities.

1.8.3 CORE_RL

1.8.3.1 Routing Label

Create a Routing Label with a single Routing Label Route to bind the Core Trunk Group with the Core IP Peer.

```
set global callRouting routingLabel CORE_RL routePrioritizationType sequence action routes routingLabelRoute 1
trunkGroup CORE_STG ipPeer CORE_PEER inService inService
commit
```

1.8.3.2 Routing

Routing must be put in place to send calls to the correct destination. For the purpose of this scenario we have used trunk group routing, but additional routing options may be used.

Configuration of both standard and username routes are done to ensure that no matter which way the called party is addressed (a number or username) the SBC will route the message to the Core.

Create Route entries for standard Trunk Group routing with Matching Criteria and a Routing Label destination.

```
set global callRouting route trunkGroup ACCESS_STG IOTNANO standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup GIN_ACCESS_STG IOTNANO standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup PBX123_TG IOTNANO standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
commit
set global callRouting route trunkGroup ACCESS_STG IOTNANO username Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup GIN_ACCESS_STG IOTNANO username Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup PBX123_TG IOTNANO username Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
commit
```

Test Results

Table 2: Test Results

S.No	Procedure	Observation	Result	Comment



Conclusion

These Application Notes describe the configuration steps required for Sonus SBC 5XX0 to successfully interoperate with BroadWorks R22SP1. All feature and serviceability test cases were completed and passed with the exceptions/observations noted in [Test Results](#).

Appendix A: Sonus SBC Core Portfolio CLI Configuration Synopsis

This section is a synopsis of all the Sonus SBC Core Portfolio CLI commands specified within this document, including any optional configurations, in a single section for easier review and usage.

```
configure
set global signaling sipSigControls maxPduSizeValue pduSize60kb
commit
set profiles callRouting crankbackProfile default reason 102
commit
set system media mediaPortRange baseUdpPort 16384 maxUdpPort 32767
commit
set system mediaProfile compression 90 tone 10
commit
set global signaling sipSigControls multipleContactsPerAor disabled
commit

set global sipDomain AS.IOP1.BROADWORKS.NET
commit

set profiles featureControlProfile CORE_FCP processDestinationTgrp enable
commit

set profiles services transparencyProfile CORE_TP sipHeader all
set profiles services transparencyProfile CORE_TP sipMessageBody all
set profiles services transparencyProfile CORE_TP sipHeader supported
set profiles services transparencyProfile CORE_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile CORE_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile CORE_TP state enabled
commit

set profiles services transparencyProfile ACCESS_TP sipHeader all
set profiles services transparencyProfile ACCESS_TP sipMessageBody all
set profiles services transparencyProfile ACCESS_TP sipHeader supported
set profiles services transparencyProfile ACCESS_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader serviceroute ignoreTransparency yes
```

```
set profiles services transparencyProfile ACCESS_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile ACCESS_TP state enabled
commit
```

```
set profiles services transparencyProfile GIN_TP sipHeader all
set profiles services transparencyProfile GIN_TP sipMessageBody all
set profiles services transparencyProfile GIN_TP sipHeader supported
set profiles services transparencyProfile GIN_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile GIN_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile GIN_TP state enabled
commit
```

```
set profiles services transparencyProfile PBX_TP sipHeader all
set profiles services transparencyProfile PBX_TP sipMessageBody all
set profiles services transparencyProfile PBX_TP sipHeader supported
set profiles services transparencyProfile PBX_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader event ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile PBX_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile PBX_TP state enabled
commit
```

```
set profiles services surrogateRegistrationProfile SURR_PROF aorUserName 9876543210
commit
set profiles services surrogateRegistrationProfile SURR_PROF aorUserName 9876543210 aorState enabled
commit
```

```
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 type token
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 type token
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 type token
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 token condition exist tokenType
urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 token condition exist tokenType
urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 3 token condition exist tokenType
urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 header name Refer-To condition exist
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 header name Refer-To condition exist
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 2 header name Refer-To condition exist
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 message messageTypes request methodTypes
refer
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 message messageTypes request methodTypes
refer
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 criterion 1 message messageTypes request methodTypes
refer
```

```
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 applyMatchHeader one
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 applyMatchHeader one
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 type token operation modify
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 type token operation modify
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 to type token tokenValue urihostname
set profiles signaling sipAdaptorProfile Refer_SMM rule 1 action 1 from type value value as.iopl.broadworks.net
commit
set profiles signaling sipAdaptorProfile Refer_SMM state enabled advancedSMM disabled
commit
```

```
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 2 type header
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 2 header name To condition exist
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 1 type message
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 criterion 1 message messageTypes request
methodTypes register
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 applyMatchHeader one
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 type token operation rebsub
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 to type token tokenValue urihostname
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 regexp string (?:[0-9]{1,3}\.){3}[0-9]{1,3} matchInstance all
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 2 action 1 from type value value as.iopl.broadworks.net
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 2 type header
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 2 header name From condition exist
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 1 type message
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 criterion 1 message messageTypes request
methodTypes register
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 applyMatchHeader one
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 type token operation rebsub
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 regexp string (?:[0-9]{1,3}\.){3}[0-9]{1,3} matchInstance all
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 from type value value as.iopl.broadworks.net
set profiles signaling sipAdaptorProfile SURR_REG_SMM rule 1 action 1 to type token tokenValue urihostname
set profiles signaling sipAdaptorProfile SURR_REG_SMM state enabled
commit
```

```
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 0 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 0 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 1 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 1 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 2 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 2 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 3 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 3 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 4 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 4 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 5 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 5 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 6 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 6 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 7 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 7 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 8 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 8 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 9 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry 9 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry * 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry * 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry + 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry + 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry % 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry % 0 1 31 digitType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry "# 0 1 31 callType userName
set profiles digitParameterHandling prefixProfile ACCESS_DIAL_PLAN entry "# 0 1 31 digitType userName
commit
```

```
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN prefixProfile ACCESS_DIAL_PLAN
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths nationalNumber min 1
```



```

set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths nationalNumber max 31
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths subscriberNumber min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths subscriberNumber max 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths line min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths line max 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths exchangeCode min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths exchangeCode max 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths areaCode min 0
set profiles digitParameterHandling numberingPlan ACCESS_NUM_PLAN lengths areaCode max 0
commit

set profiles callRouting elementRoutingPriority TG_ERP entry _private 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry nationalOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry localOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry nationalType 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry internationalType 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry internationalOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry longDistanceOperator 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry ipVpnService 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry test 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry transit 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry otherCarrierChosen 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry carrierCutThrough 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry userName 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry mobile 1 entityType trunkGroup
commit

set profiles digitParameterHandling dmPmRule DMPM_RULE subRule 0 ruleType uri uriParameterManipulation uriType
calledUri uriParameterManipulation userParameter ip

set addressContext default ipInterfaceGroup CORE_LIF ipInterface IPIF2 ceName IOTNANO portName pkt1 ipAddress
172.16.100.202 prefix 24 altIpAddress 2001:E48:80:1001::10 altPrefix 64
set addressContext default ipInterfaceGroup CORE_LIF ipInterface IPIF2 mode inService state enabled
commit

set profiles services sipArsProfile CORE_ARSP blkListAlgorithms timeouts,retryafter
set profiles services sipArsProfile CORE_ARSP blkListAlgTimeoutsType sip-invite
set profiles services sipArsProfile CORE_ARSP blkListAlgTimeoutsNumTimeouts 4
set profiles services sipArsProfile CORE_ARSP blkListAlgTimeoutsDuration 120
set profiles services sipArsProfile CORE_ARSP blkListAlgRetryAfterType sip-503
set profiles services sipArsProfile CORE_ARSP recoveryAlgorithm probe
set profiles services sipArsProfile CORE_ARSP recoveryAlgProbeInterval 30
set profiles services sipArsProfile CORE_ARSP recoveryAlgProbeNumResponses 6
set profiles services sipArsProfile CORE_ARSP recoveryAlgProbeDuration 240
commit
set profiles media codecEntry G711_ALAW_PTIME_20 codec g711 law ALaw packetSize 20
set profiles media codecEntry G729AB-DEFAULT codec g729ab packetSize 20

set profiles media packetServiceProfile CORE_PSP codec codecEntry1 G729AB-DEFAULT
set profiles media packetServiceProfile CORE_PSP codec codecEntry2 G711_ALAW_PTIME_20
set profiles media packetServiceProfile CORE_PSP packetToPacketControl transcode transcoderFreeTransparency
set profiles media packetServiceProfile CORE_PSP rtcpOptions rtcp enable
set profiles media packetServiceProfile CORE_PSP videoCalls maxVideoBandwidth 4096
commit
set profiles signaling ipSignalingProfile CORE_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags disableHostTranslation enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags
includeTransportTypeInContactHeader enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags reQueryPxsOnRegisterRefresh
enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags endToEndBye enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags dialogEventPackage enable

```

```

set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes transparencyFlags authcodeHeaders
enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes sipHeadersAndParameters flags
endToEndAck enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type1 udp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type2 tcp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type3 tlsOverTcp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes transport type4 sctp
set profiles signaling ipSignalingProfile CORE_IPSP egressIpAttributes flags suppressUnregister enable
set profiles signaling ipSignalingProfile CORE_IPSP commonIpAttributes flags noPortNumber5060 enable
commit
set addressContext default dnsGroup CORE_DNS_GRP type mgmt
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS ipAddress 10.54.80.101
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS priority 80
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS weight 50
set addressContext default dnsGroup CORE_DNS_GRP server EXTERNAL_DNS state enabled
commit
set addressContext default zone CORE id 2 remoteDeviceType appServer
commit
set addressContext default zone CORE sipSigPort 3 ipInterfaceGroup CORE_LIF
set addressContext default zone CORE sipSigPort 3 ipAddressV4 172.16.100.202 ipAddressV6 2001:E48:80:
1001::10
set addressContext default zone CORE sipSigPort 3 dscpValue 26
set addressContext default zone CORE sipSigPort 3 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone CORE sipSigPort 3 state enabled mode inService
commit
set addressContext default zone CORE ipPeer CORE_PEER policy sip fqdn ns.iopl.broadworks.net
set addressContext default zone CORE ipPeer CORE_PEER policy sip fqdnPort 5060
commit
set addressContext default zone CORE sipTrunkGroup CORE_STG media mediaIpInterfaceGroupName CORE_LIF
set addressContext default zone CORE sipTrunkGroup CORE_STG media lateMediaSupport passthru
sourceAddressFiltering enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG media mediaAddrType matchSigAddrType
set addressContext default zone CORE sipTrunkGroup CORE_STG media sdpAttributesSelectiveRelay enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG policy digitParameterHandling numberingPlan
ACCESS_NUM_PLAN
set addressContext default zone CORE sipTrunkGroup CORE_STG policy callRouting elementRoutingPriority
TG_ERP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy media packetServiceProfile CORE_PSP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy signaling ipSignalingProfile CORE_IPSP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy signaling signalingProfile
DEFAULT_IP_PROFILE
set addressContext default zone CORE sipTrunkGroup CORE_STG services dnsSupportType a-srv-naptr
set addressContext default zone CORE sipTrunkGroup CORE_STG services sipArsProfile CORE_ARSP
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling relayNonInviteRequest enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters general 4
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters invite 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters bye 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters cancel 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling retryCounters reInvite 2
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling timers sessionMinSE 60
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling registration bulkRegisterFormat
followIngress
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling registration insideExpiresMinimum 3500
set addressContext default zone CORE sipTrunkGroup CORE_STG ingressIpPrefix 0.0.0.0 0
set addressContext default zone CORE sipTrunkGroup CORE_STG ingressIpPrefix 0::0 0
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling honorMaddrParam enabled
set addressContext default zone CORE sipTrunkGroup CORE_STG services transparencyProfile CORE_TP
set addressContext default zone CORE sipTrunkGroup CORE_STG policy featureControlProfile CORE_FCP
set addressContext default zone CORE sipTrunkGroup CORE_STG signaling messageManipulation
outputAdapterProfile SURR_REG_SMM
set addressContext default zone CORE sipTrunkGroup CORE_STG state enabled mode inService
commit

```

```

set addressContext default ipInterfaceGroup ACCESS_LIF ipInterface IPIF0 ceName IOTNANO portName pkt0 ipAddress
172.16.102.125 prefix 24 altIpAddress fc00::102:f:f:f:43 altPrefix 64
set addressContext default ipInterfaceGroup ACCESS_LIF ipInterface IPIF0 mode inService state enabled
commit

set profiles media packetServiceProfile ACCESS_PSP packetToPacketControl transcode transcoderFreeTransparency
set profiles media packetServiceProfile ACCESS_PSP videoCalls maxVideoBandwith 4096
set profiles media packetServiceProfile ACCESS_PSP rtcpOptions rtcp enable
set profiles media packetServiceProfile ACCESS_PSP codec codecEntry1 G729AB-DEFAULT
set profiles media packetServiceProfile ACCESS_PSP codec codecEntry2 G711_ALAW_PTIME_20
commit

set profiles signaling ipSignalingProfile ACCESS_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags
includeTransportTypeInContactHeader enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags reQueryPxxOnRegisterRefresh
enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags endToEndBye enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags
relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags dialogEventPackage enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags options enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags statusCode3xx enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes transparencyFlags authcodeHeaders
enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes sipHeadersAndParameters flags
endToEndAck enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile ACCESS_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile ACCESS_IPSP ingressIpAttributes flags sendSdpInSubsequent18x enable
set profiles signaling ipSignalingProfile ACCESS_IPSP ingressIpAttributes flags suppress183WithoutSdp enable
set profiles signaling ipSignalingProfile ACCESS_IPSP ingressIpAttributes flags
suppress183For3xxRedirectResponse enable sendSdpIn200OkIf18xReliable enable
set profiles signaling ipSignalingProfile ACCESS_IPSP commonIpAttributes flags noPortNumber5060 enable
commit
set addressContext default zone ACCESS id 3 remoteDeviceType accessDevice
commit
set addressContext default zone ACCESS sipSigPort 2 ipInterfaceGroup ACCESS_LIF
set addressContext default zone ACCESS sipSigPort 2 ipAddressV4 172.16.102.125 ipAddressV6 fc00::102:f:f:f:
43
set addressContext default zone ACCESS sipSigPort 2 dscpValue 26
set addressContext default zone ACCESS sipSigPort 2 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone ACCESS sipSigPort 2 state enabled mode inService
commit
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media mediaIpInterfaceGroupName ACCESS_LIF
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media lateMediaSupport passthru
sourceAddressFiltering enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media mediaAddrType matchSigAddrType
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media sdpAttributesSelectiveRelay enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy digitParameterHandling
numberingPlan ACCESS_NUM_PLAN
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy callRouting elementRoutingPriority
TG_ERP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy media packetServiceProfile
ACCESS_PSP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy signaling ipSignalingProfile
ACCESS_IPSP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy signaling signalingProfile
DEFAULT_IP_PROFILE

```

```

set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services dnsSupportType a-srv-naptr
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal signalingNat enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal mediaNat enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal qualifiedPrefix
10.0.0.0 8
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services natTraversal qualifiedPrefix
192.168.0.0 16
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling messageManipulation
outputAdapterProfile RE_ADD_ISFOCUS
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling messageManipulation
inputAdapterProfile SMM_RM_USRPH
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling relayNonInviteRequest enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling registration requireRegistration
required
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling registration expires 3600
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling registration insideExpiresMinimum
3500
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling rel100Support disabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG signaling psxRouteForSubscribe enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG policy digitParameterHandling
ingressDmPmRule DMPM_RULE

set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG ingressIpPrefix 0.0.0.0 0
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG ingressIpPrefix 0::0 0
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG services transparencyProfile ACCESS_TP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG media sdpAttributesSelectiveRelay enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_STG state enabled mode inService
commit
set addressContext default zone ACCESS ipPeer SURR_PEER ipAddress 10.54.20.225 ipPort 5060
commit
set addressContext default zone ACCESS ipPeer SURR_PEER surrogateRegistration surrRegProfile SURR_PROF
hostPart as.iopl.broadworks.net
commit
set addressContext default zone ACCESS ipPeer SURR_PEER surrogateRegistration surrRegProfile SURR_PROF state
enabled
commit

set profiles media packetServiceProfile GIN_ACCESS_PSP packetToPacketControl transcode
transcoderFreeTransparency
commit
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes flags
relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags dialogEventPackage
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags options enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags statusCode3xx enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags statusCode4xx6xx
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes relayFlags updateWithoutSdp
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags acceptHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags callInfoHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags fromHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags mwiBody enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags sipfragBody
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags unknownBody
enable

```

```

set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags unknownHeader
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP commonIpAttributes transparencyFlags
userAgentHeader enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes flags disable2806Compliance
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type1 udp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type2 tcp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type3 tlsOverTcp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP egressIpAttributes transport type4 sctp
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP ingressIpAttributes flags sendSdpInSubsequent18x
enable
set profiles signaling ipSignalingProfile GIN_ACCESS_IPSP ingressIpAttributes flags suppress183WithoutSdp
enable
commit
set addressContext default zone GIN_ACCESS id 4 remoteDeviceType accessDevice
commit
set addressContext default zone GIN_ACCESS sipSigPort 4 ipInterfaceGroup ACCESS_LIF
set addressContext default zone GIN_ACCESS sipSigPort 4 ipAddressV4 172.16.102.145
set addressContext default zone GIN_ACCESS sipSigPort 4 dscpValue 26
set addressContext default zone GIN_ACCESS sipSigPort 4 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone GIN_ACCESS sipSigPort 4 state enabled mode inService
commit
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG media mediaIpInterfaceGroupName
ACCESS_LIF
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG media sourceAddressFiltering
disabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy digitParameterHandling
numberingPlan ACCESS_NUM_PLAN
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy callRouting
elementRoutingPriority TG_ERP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy media packetServiceProfile
GIN_ACCESS_PSP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy signaling
ipSignalingProfile GIN_ACCESS_IPSP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG policy signaling signalingProfile
DEFAULT_IP_PROFILE
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services dnsSupportType a-srv-naptr
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services natTraversal signalingNat
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services natTraversal mediaNat
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling messageManipulation
outputAdapterProfile RE_ADD_ISFOCUS
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration
requireRegistration required-group
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration
bulkRegisterFormat enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration expires 60
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling registration
insideExpiresMinimum 3500
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling rel100Support disabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling relayNonInviteRequest
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling psxRouteForSubscribe
enabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG signaling validateAor disabled
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG services transparencyProfile GIN_TP
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG ingressIpPrefix 0.0.0.0 0
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG ingressIpPrefix 0::0 0
set addressContext default zone GIN_ACCESS sipTrunkGroup GIN_ACCESS_STG state enabled mode inService
commit
set profiles media packetServiceProfile PBX123_PSP packetToPacketControl transcode transcoderFreeTransparency
commit
set profiles signaling ipSignalingProfile PBX123_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes flags

```

```

relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags dialogEventPackage enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags options enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags statusCode3xx enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags acceptHeader enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags authcodeHeaders
enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags callInfoHeader
enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags fromHeader enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags mwIBody enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags sipFragBody enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags toHeader enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags unknownBody enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags unknownHeader
enable
set profiles signaling ipSignalingProfile PBX123_IPSP commonIpAttributes transparencyFlags userAgentHeader
enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes flags useCalledPartyInRequestUri
enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes privacy transparency enable
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type1 udp
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type2 tcp
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type3 tlsOverTcp
set profiles signaling ipSignalingProfile PBX123_IPSP egressIpAttributes transport type4 sctp
set profiles signaling ipSignalingProfile PBX123_IPSP ingressIpAttributes flags sendSdpInSubsequent18x enable
commit
set profiles ipSignalingPeerGroup PBX123_IPSG description "IP-PBX for BW Trunking Example"
set profiles ipSignalingPeerGroup PBX123_IPSG ipSignalingPeerGroupData 1 ipAddress 10.54.20.168 ipPort 5070
set profiles ipSignalingPeerGroup PBX123_IPSG ipSignalingPeerGroupData 1 serviceStatus inService
commit
set addressContext default zone PBX_ZONE id 5
commit
set addressContext default zone PBX_ZONE sipSigPort 5 ipInterfaceGroup ACCESS_LIF
set addressContext default zone PBX_ZONE sipSigPort 5 ipAddressV4 172.16.102.144
set addressContext default zone PBX_ZONE sipSigPort 5 dscpValue 26
set addressContext default zone PBX_ZONE sipSigPort 5 transportProtocolsAllowed sip-udp,sip-tcp
set addressContext default zone PBX_ZONE sipSigPort 5 state enabled mode inService
commit
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG media mediaIpInterfaceGroupName
ACCESS_LIF
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG media sourceAddressFiltering disabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy sipDomain AS.IOP1.BROADWORKS.NET
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy digitParameterHandling
numberingPlan ACCESS_NUM_PLAN
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy callRouting elementRoutingPriority
TG_ERP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy ipSignalingPeerGroup PBX123_IPSG
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy media packetServiceProfile
PBX123_PSP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy signaling ipSignalingProfile
PBX123_IPSP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG policy signaling signalingProfile
DEFAULT_IP_PROFILE
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services dnsSupportType a-srv-naptr
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services natTraversal signalingNat enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services natTraversal mediaNat enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG signaling rel100Support disabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG signaling relayNonInviteRequest enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG signaling psxRouteForSubscribe enabled
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG services transparencyProfile PBX_TP
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG ingressIpPrefix 0.0.0.0 0
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG ingressIpPrefix 0::0 0
set addressContext default zone PBX_ZONE sipTrunkGroup PBX123_TG state enabled mode inService

```

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commit
set global callRouting routingLabel CORE_RL routePrioritizationType sequence action routes routingLabelRoute 1
trunkGroup CORE_STG ipPeer CORE_PEER inService inService
commit
set global callRouting route trunkGroup ACCESS_STG IOTNANO standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup GIN_ACCESS_STG IOTNANO standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup PBX123_TG IOTNANO standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
commit
set global callRouting route trunkGroup ACCESS_STG IOTNANO username Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup GIN_ACCESS_STG IOTNANO username Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
set global callRouting route trunkGroup PBX123_TG IOTNANO username Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel CORE_RL
commit

set addressContext default staticRoute 0.0.0.0 0 172.16.100.2 CORE_LIF IPIF2 preference 100
commit
set addressContext default staticRoute 0.0.0.0 0 172.16.102.1 ACCESS_LIF IPIF0 preference 100
commit
set addressContext default staticRoute 0::0 0 2001:E48:80:1001::1 CORE_LIF IPIF2 preference 100
commit
set addressContext default staticRoute 0::0 0 fc00::20:f:f:f:1 ACCESS_LIF IPIF0 preference 100
commit

```