Ribbon SBC Core 5K_7K_SWe R10.0 Interop with Zoom Phone Local Proxy : Interoperability Guide

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Interoperable Vendors

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Document Overview

This document outlines the configuration best practices for the Ribbon solution covering the Ribbon SBC Core (SBC 5K, 7K, SWe) when deployed as a proxy between native Zoom Client and Zoom Cloud.

A Session Border Controller (SBC) is a network element deployed to protect SIP-based Voice over Internet Protocol (VoIP) networks. Early deployments of SBCs were focused on the borders between two service provider networks in a peering environment. This role has now expanded to include significant deployments between a service provider's access network and a backbone network to provide service to residential and/or enterprise customers. The interoperability compliance testing focuses on verifying inbound and outbound call flows when Ribbon SBC 5K/7K/SWe is deployed as a proxy between native Zoom Client and Zoom Cloud.

Ribbon SBC 5K/7K/SWe is deployed on the customer site in order to meet the following customer requirements:

- Ribbon SBC Core acts a proxy, prevents direct TLS access from Zoom Client to Zoom Cloud through public internet.
- B2B Encryption of both signaling (TLS) and media (SRTP).
- Topology hiding - Zoom customers enterprise internal network is totally hidden from public internet.
- Advanced routing capabilities - Ribbon SBC solutions may add some advanced routing capabilities that would enable to connect additional devices, third party carriers (BYOC), PBX, etc.

The interoperability compliance testing focuses on verifying inbound and outbound call flows between Ribbon SBC Core & Zoom Cloud.

This guide contains the following configuration sections:

- Section A: Ribbon SBC Core Configuration
  - Captures general SBC Core configurations for deploying SBC as a proxy between native Zoom Client and Zoom Cloud.
- Section B: Zoom Configuration
  - Captures the Zoom configuration.
- All basic calls, along with the supplementary features like call hold, call transfer, and conference can be tested with configurations from Section A and Section B.
- Advanced supplementary features can be configured on Zoom as mentioned in Supplementary Services Configuration on Zoom. These cover:
  - Auto Receptionist
  - Call Flip
  - Shared Line Appearance (SLA) or Call Delegation
  - Shared Line Group (SLG)

⚠ SBC 5x10, 5400, 7000 and SWe are represented as SBC Core in the subsequent sections.

Non-Goals

It is not the goal of this guide to provide detailed configurations that will meet the requirements of every customer. Use this guide as a starting point and build the ATA configurations in consultation with network design and deployment engineers.

Audience

This is a technical document intended for telecommunications engineers with the purpose of configuring both the Ribbon SBCs and the third-party product.

To perform this interop, you need

- to use the graphical user interface (GUI) or command line interface (CLI) of the Ribbon product.
- to understand the basic concepts of TCP/UDP/TLS and IP/Routing.
- to have SIP/RTP/SRTP to complete the configuration and for troubleshooting.

Note
This configuration guide is offered as a convenience to Ribbon 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.

Prerequisites

The following aspects are required before proceeding with the interop:

- Ribbon SBC Core
- Public IP Addresses
- Zoom Go account - a special type of Zoom account that has the option of Phone System Management.
- TLS Certificates for Ribbon SBC Core signed by one of Zoom's approved CA vendors.
- Certificate must have the FQDN or domain name that is configured on Zoom admin portal.

Product and Device Details

The sample configuration in this document uses the following equipment and software:

Table 1: Requirements

	Equipment	Software Version
Ribbon Communications	Ribbon SBC Core	V10.00.00-R001
Zoom	Zoom Desktop app	5.8.6 (2048)
	Zoom Mobile app	5.9.1 (3642)

Note

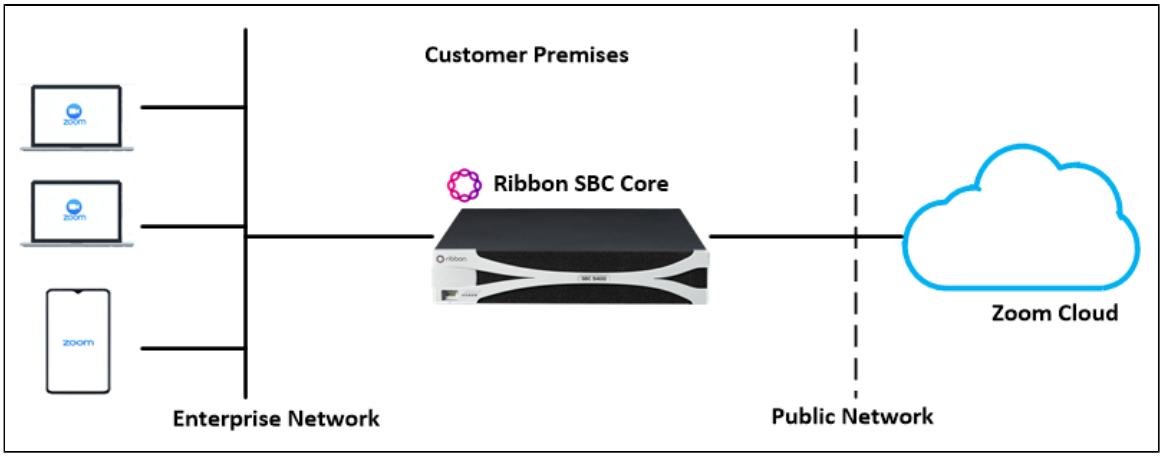
- Zoom Desktop app version is 5.8.6 (2048) or later.
- Zoom Mobile app version is 5.9.1 (3642) or later.

Network Topology Diagram

This section covers the Ribbon EdgeMarc deployment topology and the Interoperability Test Lab Topology.

Deployment Topology

Figure 1: Ribbon SBC Core Deployment Topology



Interoperability Test Lab Topology

The following lab topology diagram shows connectivity between Zoom Client and Zoom server with SBC Core as a proxy.

Figure 2: SBC Core as a proxy in Access network

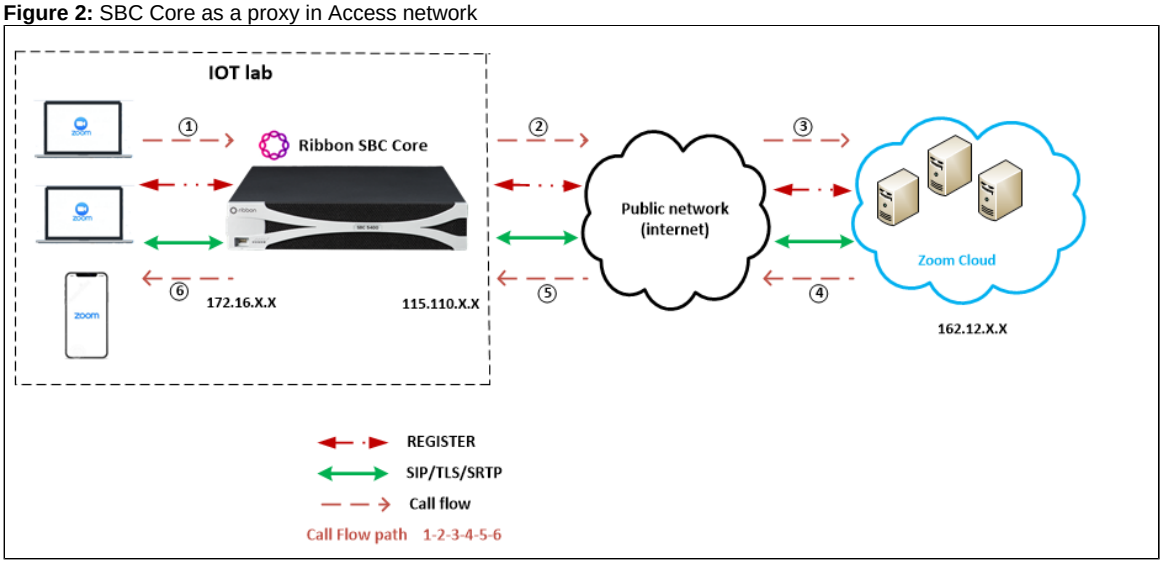
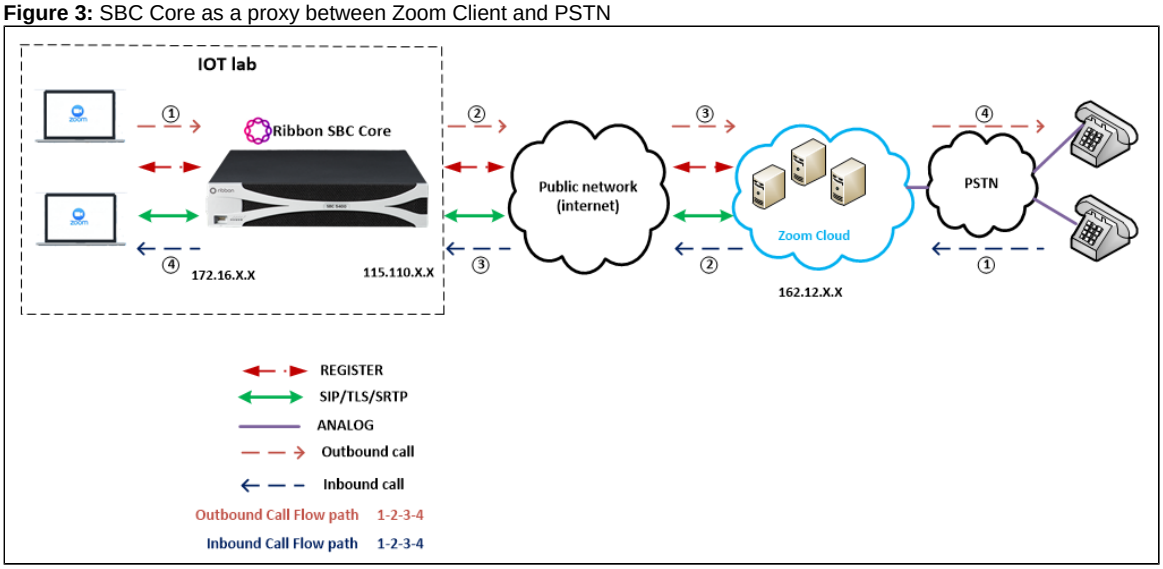
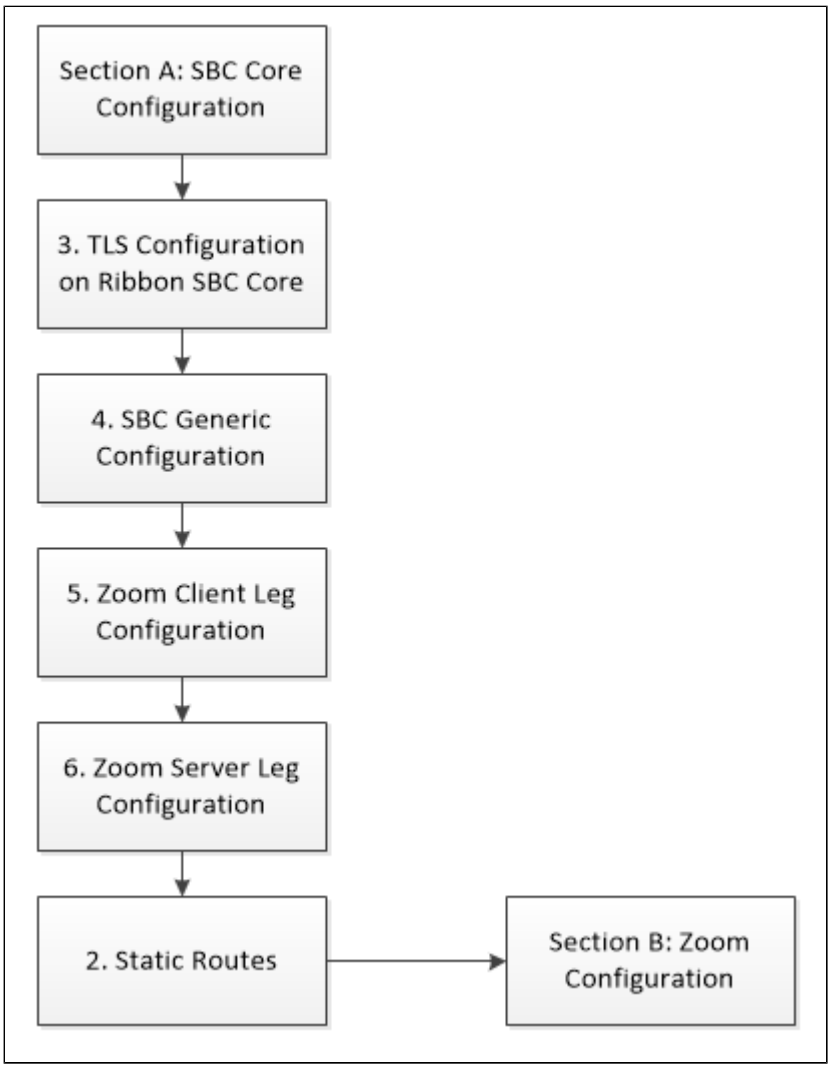


Figure 3: SBC Core as a proxy between Zoom Client and PSTN



Document workflow



Section A: SBC Core Configuration

The following SBC Core configurations are included in this section:

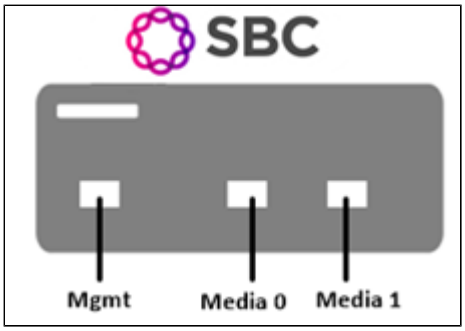
1. Network and Connectivity
2. Static Routes
3. TLS Configuration on Ribbon SBC Core
4. Zoom Client Leg Configuration
5. Zoom Server Leg Configuration

- SBC Core can connect to the network as mentioned in Network and Connectivity.
- Zoom prefers transport as TLS. Establishing a TLS connection between SBC Core and Zoom is covered under TLS Configuration on Ribbon SBC Core.
- SBC Core specific configuration related to Zoom Client is covered under Zoom Client Leg Configuration.
- SBC Core specific configuration related to Zoom Server is covered under Zoom Server Leg Configuration.

1. Network and Connectivity

Ribbon SBC is as shown below:

Figure 4: Ribbon SBC



Mgmt is an RJ45 port and is the management interface of the SBC.

Media 0/Media1 depicted as pkt0/pkt1 are RJ45 ports. Media 0 and Media 1 are used in the current deployment and the same interfaces can be used in SBC Core 5K , 7K (appliance based).

For the SBC SWe (virtualized platform), the logical pkt0/pkt1 interfaces must be mapped to a physical port.

2. Static Routes

Static routes are used to create communication to remote networks. In a production environment, static routes are mainly configured for routing from a specific network to a network that can only be accessed through one point or one interface (single path access or default route).

Tip

- For smaller networks with just one or two routes, configuring static routing is preferable. This is often more efficient since a link is not being wasted by exchanging dynamic routing information.
- For networks that have a LAN-side Gateway on Voice VLAN or Multi-Switch Edge Devices (MSEs) with Voice VLAN towards SBC Core, static routing configurations are not required.

Add the static route once Zoom Client Leg and Zoom Server Leg configurations are done on the SBC.

Static route towards Access

```
set addressContext default staticRoute 0.0.0.0 0 10.54.X.X LIF1 PKT0_V4 preference 100
commit
```

Static route towards Zoom

```
set addressContext default staticRoute 0.0.0.0 0 115.110.X.X LIF2 PKT1_V4 preference 100
commit
```

3. TLS Configuration on Ribbon SBC Core

Prerequisites:

- For TLS to work, a trusted CA (Certificate Authority) is needed. In this scenario, GoDaddy is used as a Trusted CA.
- Make an entry of Ribbon SBC Core private IP in the Public DNS. In this scenario, Godaddy public DNS is used.
- Digicert Root Certificate is required on public side of Zoom.
- Enable Zoom Server with TLS/SRTP.

Generate a CSR with OpenSSL

```
# To create a Certificate Signing Request (CSR) and key file for a Subject Alternative Name (SAN) certificate with
multiple subject alternate names, complete the following procedure:

Create an OpenSSL configuration file (text file) on the local computer by editing the fields to the company
requirements.

Note 1: In the example used in this article the configuration file is req.conf.

Note 2: req_extensions will put the subject alternative names in a CSR, whereas x509_extensions would be used when
creating an actual certificate file.

[req]
        distinguished_name = req_distinguished_name
        req_extensions = v3_req
        prompt = no
        [req_distinguished_name]
        C = US
        ST = VA
        L = SomeCity
        O = MyCompany
        OU = MyDivision
        CN = www.company.com
        [v3_req]
        keyUsage = keyEncipherment, dataEncipherment
        extendedKeyUsage = serverAuth
        subjectAltName = @alt_names
        [alt_names]
        DNS.1 = www.company.com
        DNS.2 = company.com
        DNS.3 = www.company.net
        DNS.4 = company.net

Make sure there are no whitespaces at the end of the lines.

#Run the following commands to create the Certificate Signing Request (CSR) and a new Key file:
openssl req -new -out company_san.csr -newkey rsa:2048 -nodes -sha256 -keyout company_san.key.temp -config req.conf

#Run the following command to verify the Certificate Signing Request:
openssl req -text -noout -verify -in company_san.csr

# After receiving the CSR with above information, provide it to CA (Certificate Authority). You will then receive
the proper CA signed certificate in .crt format that is convertable into other formats using openssl.

# By default, you should receive two or more certificates from CA (depanding upon your CA). One is the SBC
certificate, and other is CA's root and intermediate certificate.

# Upload the certificates to the SBC at /opt/sonus/external and convert them into SBC-readable format, i.e. SBC
certificate is in .pem or .p12 format and root certificate is in .cer or .der.

#Converting .crt to .pem USING OPENSSL for SBC certificate.
openssl x509 -in sbc_cert.crt -out sbc_cert.der -outform DER
openssl x509 -in sbc_cert.der -inform DER -out sbc_cert.pem -outform PEM

#After generating sbc_cert.pem file, convert it to .p12 format using below command and the location of the
certificate key.
openssl pkcs12 -export -out sbc1_cert.p12 -in sbc_cert.pem -inkey /opt/sonus/company_san.key.temp

#CONVERTING CRT to CER USING OPENSSL for CA's root and intermediate certificate.
openssl x509 -in root_cert.crt -out root_cert.cer -outform DER

After converting all these certificates upload them on SBC at /opt/sonus/external location.
```

3.1 Generate Required Certificates on Zoom Client Leg

```
#Import Public CA Root Certificate into database.
set system security pki certificate CA_ROOT_CERT type remote fileName root_cert.cer state enabled

#Import Public CA Certified SBC Server Certificate into database.
set system security pki certificate SBC_CERT filename sbc1_cert.p12 passPhrase <Password defined during CSR
generation> state enabled type local
```

3.2 TLS Profile on Zoom Client Leg

A TLS Profile is required for the TLS handshake between Zoom Client and SBC Core. This profile defines cipher suites supported by SBC Core. Create the TLS profile as mentioned below:

```
set profiles security tlsProfile TLS_PROF clientCertName SBC_CERT serverCertName SBC_CERT cipherSuite1
tls_ecdhe_rsa_with_aes_256_cbc_sha384 cipherSuite2 tls_ecdhe_rsa_with_aes_128_cbc_sha authClient false
allowedRoles server acceptableCertValidationErrors invalidPurpose
set profiles security tlsProfile TLS_PROF v1_0 disable
set profiles security tlsProfile TLS_PROF v1_1 enable
set profiles security tlsProfile TLS_PROF v1_2 enable
commit
```

Attach the TLS Profile to the SIP Signaling Port that will be created later in Zoom Client Leg Configuration.

3.3 Generate Required Certificates on Zoom Server Leg

```
#Import Public CA Root Certificate into database.
set system security pki certificate CA_ROOT_CERT_EXT type remote fileName root_cert_ext.cer state enabled

#Import Public CA Certified SBC Server Certificate into database.
set system security pki certificate SBC_CERT_EXT filename sbc1_cert_ext.p12 passPhrase <Password defined during
CSR generation> state enabled type local
```

3.4 TLS Profile on Zoom Server Leg

A TLS Profile is required for the TLS handshake between SBC Core and Zoom Server. This profile defines cipher suites supported by SBC Core. Create the TLS profile as mentioned below:

```
set profiles security tlsProfile ZOOM_TLS_PROF clientCertName SBC_CERT_EXT serverCertName SBC_CERT_EXT
cipherSuite1 tls_ecdhe_rsa_with_aes_256_cbc_sha384 cipherSuite2 tls_ecdhe_rsa_with_aes_128_cbc_sha cipherSuite3
rsa-with-aes-256-cbc-sha-256 authClient true allowedRoles clientandserver acceptableCertValidationErrors
invalidPurpose
set profiles security tlsProfile ZOOM_TLS_PROF v1_0 disable
set profiles security tlsProfile ZOOM_TLS_PROF v1_1 enable
set profiles security tlsProfile ZOOM_TLS_PROF v1_2 enable
commit
```

Attach the TLS Profile to the SIP Signaling Port that will be created later in Zoom Server Leg Configuration.

4. SBC Generic Configuration

This section covers the SBC Generic configuration like Element Routing Priority, Prefix Profile, E164 Profile, Codec Entry and Packet Service Profile.

4.1 Element Routing Priority

```
set profiles callRouting elementRoutingPriority ZOOM_ERP entry _private 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry nationalOperator 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry localOperator 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry nationalType 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority ZOOM_ERP entry nationalType 2 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry internationalType 1 entityType trunkGroup
set profiles callRouting elementRoutingPriority ZOOM_ERP entry internationalType 2 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry internationalOperator 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry longDistanceOperator 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry ipVpnService 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry test 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry transit 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry otherCarrierChosen 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry carrierCutThrough 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry userName 1 entityType none
set profiles callRouting elementRoutingPriority ZOOM_ERP entry mobile 1 entityType none
commit
```

4.2 Prefix Profile

Prefix Profiles contain multiple matching pattern definitions used to determine the call type, nature of address, Prefix Profile indicator, and other attributes associated with the specified matching patterns.

```
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 digitType verticalServiceCode
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry * 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry + 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 0 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 1 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 2 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 callType nationalType
```

```
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 3 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 4 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 5 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 6 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 7 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 8 0 1 31 determineArea disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 callType nationalType
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 digitType national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 natureOfAddress national
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 numberingPlanIndicator none
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 numberLeadingPrefixDigits 1
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 numberLeadingPrefixDigitsToStrip 0
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 applyDmRule disable
set profiles digitParameterHandling prefixProfile ZOOM_PXPF entry 9 0 1 31 determineArea disable
commit
```

4.3 E164 Profile

```
set profiles signaling E164Profile ZOOM_E164 sonusE164ProfCharStar allow
set profiles signaling E164Profile ZOOM_E164 sonusE164ProfCharHash allow
commit
```

4.4 Codec Entry

Codec entry allows you to specify the codec used for the call. Create the codec entry for Opus codec with packet size 20 and rfc2833 method for dtmf.

```
set profiles media codecEntry Opus_2833 codec opus
set profiles media codecEntry Opus_2833 packetSize 20
set profiles media codecEntry Opus_2833 preferredRtpPayloadType 96
set profiles media codecEntry Opus_2833 dtmf relay rfc2833
commit
```

4.5 Packet Service Profile (PSP)

Create a Packet Service Profile (PSP) common for both the legs. The PSP is attached to sipTrunkGroup created later in this section.

Since there is SRTP between Zoom Client and Zoom server, crypto suite profile need to be created as follows:

```
set profiles security cryptoSuiteProfile SRTP_ZOOM entry 1 cryptoSuite AEAD_AES_256_GCM
set profiles security cryptoSuiteProfile SRTP_ZOOM entry 2 cryptoSuite AES-CM-128-HMAC-SHA1-32
set profiles security cryptoSuiteProfile SRTP_ZOOM entry 3 cryptoSuite AES_256_CM_HMAC_SHA1_80
set profiles security cryptoSuiteProfile SRTP_ZOOM entry 4 cryptoSuite AES_256_CM_HMAC_SHA1_32
commit
```

The Crypto Suite profile is attached to the ZOOM_SRTP_PSP.

```
set profiles media packetServiceProfile ZOOM_SRTP_PSP dataCalls packetSize 20
set profiles media packetServiceProfile ZOOM_SRTP_PSP rtcpOptions rtcp enable
set profiles media packetServiceProfile ZOOM_SRTP_PSP codec codecEntry1 Opus_2833
set profiles media packetServiceProfile ZOOM_SRTP_PSP packetToPacketControl transcode transcoderFreeTransparency
set profiles media packetServiceProfile ZOOM_SRTP_PSP secureRtpRtcp cryptoSuiteProfile SRTP_ZOOM
set profiles media packetServiceProfile ZOOM_SRTP_PSP secureRtpRtcp flags allowFallback enable
set profiles media packetServiceProfile ZOOM_SRTP_PSP secureRtpRtcp flags enableSrtp enable
commit
```

5. Zoom Client Leg Configuration

Create profiles with a specific set of characteristics corresponding to Zoom Client. This includes configuration of the following entities on Zoom Client leg:

1. IP Signaling Profile
2. IP Interface Group
3. Zone
4. SIP Signaling Port
5. Transparency Profile
6. SIP Trunk Group

5.1 IP Signaling Profile (IPSP)

Create an IP Signaling Profile with appropriate signaling flags towards Zoom Client Leg.

```
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes flags disableHostTranslation enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes flags endToEndBye enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes flags
relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes flags reQueryPsxOnRegisterRefresh enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes flags storePChargingVector enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes relayFlags dialogEventPackage enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags authcodeHeaders enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags mwiBody enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags sipBody enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags sipfragBody enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags unknownBody enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags unknownHeader enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags warningHeader enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags userAgentHeader enable
set profiles signaling ipSignalingProfile CLIENT_IPSP commonIpAttributes transparencyFlags serverHeader enable
set profiles signaling ipSignalingProfile CLIENT_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile CLIENT_IPSP egressIpAttributes flags sameCallIdForRequiredAuthorization
enable
set profiles signaling ipSignalingProfile CLIENT_IPSP egressIpAttributes privacy privacyInformation pAssertedId
set profiles signaling ipSignalingProfile CLIENT_IPSP egressIpAttributes privacy flags includePrivacy enable
set profiles signaling ipSignalingProfile CLIENT_IPSP egressIpAttributes sipHeadersAndParameters flags endToEndAck
enable
commit
```

5.2 IP Interface Group

Create an IP interface group.

> Replace "x.x.x.x" with the SBC's packet interface (pkt) IP address towards Zoom Client (example pkt0 IP), and "Y" with its prefix length. Provide ceName used during an SBC deployment.
>
> Here, the ceName is "ZOOM1".

```
set addressContext default ipInterfaceGroup LIF1 ipInterface PKT0_V4 ceName ZOOM1 portName pkt0
set addressContext default ipInterfaceGroup LIF1 ipInterface PKT0_V4 portName pkt0
set addressContext default ipInterfaceGroup LIF1 ipInterface PKT0_V4 ipAddress x.x.x.x prefix Y
set addressContext default ipInterfaceGroup LIF1 ipInterface PKT0_V4 mode inService
set addressContext default ipInterfaceGroup LIF1 ipInterface PKT0_V4 state enabled
commit
```

5.3 Zone

Create Zone towards Zoom Client and specify the ID of the zone.

> This Zone groups the set of objects used for the communication towards Zoom Client.

```
set addressContext default zone ACCESS id 2
commit
```

5.4 SIP Signaling Port

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

Replace "x.x.x.x" with SIP Signaling Port IP of SBC towards Zoom Client.

```
set addressContext default zone ACCESS sipSigPort 3 ipInterfaceGroupName LIF1
set addressContext default zone ACCESS sipSigPort 3 ipAddressV4 x.x.x.x
set addressContext default zone ACCESS sipSigPort 3 portNumber 5090
set addressContext default zone ACCESS sipSigPort 3 mode inService
set addressContext default zone ACCESS sipSigPort 3 state enabled
commit
set addressContext default zone ACCESS sipSigPort 3 tlsProfileName TLS_PROF
set addressContext default zone ACCESS sipSigPort 3 transportProtocolsAllowed sip-tls-tcp
commit
```

Attached the TLS Profile created earlier TLS_PROF.

5.5 Transparency Profile

Create a transparency profile as follows:

```
set profiles services transparencyProfile CLIENT_TP state enabled
set profiles services transparencyProfile CLIENT_TP sipHeader to ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader all
set profiles services transparencyProfile CLIENT_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader From ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader path ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader allow ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader route ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader supported ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader request-uri ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader record-route ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile CLIENT_TP sipMessageBody all
commit
```

5.6 SIP Trunk Group

Create a SIP Trunk Group towards the Zoom Client and assign corresponding profiles like PSP, IPSP created in earlier steps.

You must configure Trunk Group names using capital letters.

```
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG media mediaIpInterfaceGroupName LIF1
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG mode inService state enabled
commit

set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG policy digitParameterHandling numberingPlan
ZOOM_DIAL
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG policy callRouting elementRoutingPriority ZOOM_ERP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG policy media packetServiceProfile ZOOM_SRTP_PSP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG policy services classOfService DEFAULT_IP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG policy signaling ipSignalingProfile CLIENT_IPSP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG policy featureControlProfile DEFAULT_IP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG signaling registration requireRegistration required
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG signaling transportPreference preference1 tls-tcp
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG signaling E164Profiles e164LocalProfile ZOOM_E164
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG services natTraversal qualifiedPrefix 192.168.0.0 16
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG services natTraversal signalingNat enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG services natTraversal mediaNat enabled
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG services transparencyProfile CLIENT_TP
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG media mediaIpInterfaceGroupName LIF1
set addressContext default zone ACCESS sipTrunkGroup ACCESS_TG ingressIpPrefix 0.0.0.0 0
commit
```

6. Zoom Server Leg Configuration

Create profiles with a specific set of characteristics corresponding to Zoom. This includes configuration of the following entities on Zoom leg:

1. IP Signaling Profile
2. IP Interface Group
3. Zone
4. SIP Signaling Port
5. IP Peer
6. Transparency Profile
7. SIP Trunk Group
8. Routing Label
9. Call Routing

6.1 IP Signaling Profile (IPSP)

Create an IP Signaling Profile with appropriate signaling flags towards Zoom.

```
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags disableHostTranslation enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags disableMediaLockDown enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags endToEndBye enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags
includeTransportTypeInContactHeader enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags
relayDataPathModeChangeFromOtherCallLeg enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags reQueryPsxOnRegisterRefresh enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes flags storePChargingVector enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags dialogEventPackage enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags info enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags options enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags refer enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags statusCode3xx enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags statusCode4xx6xx enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags thirdPartyBodies enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags publish enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes relayFlags updateWithoutSdp enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes transparencyFlags authcodeHeaders enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP commonIpAttributes transparencyFlags mwiBody enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP egressIpAttributes flags
sameCallIdForRequiredAuthorization enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP egressIpAttributes privacy privacyInformation pPreferredId
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP egressIpAttributes privacy flags includePrivacy enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP egressIpAttributes sipHeadersAndParameters flags
endToEndAck enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP ingressIpAttributes flags sendSdpInSubsequent18x enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP ingressIpAttributes flags
suppress183For3xxRedirectResponse enable
set profiles signaling ipSignalingProfile ZOOM_PUB_IPSP ingressIpAttributes flags suppress183WithoutSdp enable
commit
```

6.2 IP Interface Group

Create an IP interface group.

> Replace "x.x.x.x" with the SBC's packet interface (pkt) IP address towards ZOOM (example pkt1 IP), and "Y" with its prefix length. Provide the ceName used during an SBC deployment.
>
> Here, the ceName is "ZOOM1".

```
set addressContext default ipInterfaceGroup LIF2 ipInterface PKT1_V4 ceName ZOOM1 portName pkt1
set addressContext default ipInterfaceGroup LIF2 ipInterface PKT1_V4 ipAddress x.x.x.x prefix Y
set addressContext default ipInterfaceGroup LIF2 ipInterface PKT1_V4 mode inService state enabled
commit
```

6.3 Zone

Create a Zone towards Zoom and specify the ID of the zone.

> This Zone groups the set of objects used for communication towards Zoom.

```
set addressContext default zone ZOOM id 6
set addressContext default zone ZOOM remoteDeviceType appServer
commit
```

6.4 SIP Signaling Port

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

Replace "x.x.x.x" with the SIP Signaling Port IP address of the SBC towards Zoom.

```
set addressContext default zone ZOOM sipSigPort 7 ipInterfaceGroupName LIF2
set addressContext default zone ZOOM sipSigPort 7 ipAddressV4 x.x.x.x
set addressContext default zone ZOOM sipSigPort 7 portNumber 5090
set addressContext default zone ZOOM sipSigPort 7 tlsProfileName ZOOM_TLSPROF
set addressContext default zone ZOOM sipSigPort 7 transportProtocolsAllowed sip-tls-tcp
set addressContext default zone ZOOM sipSigPort 7 mode inService
set addressContext default zone ZOOM sipSigPort 7 state enabled
commit
```

Attached the TLS Profile created earlier ZOOM_TLS_PROF.

There are a few areas that result in a TLS negotiation issue. One area involves assigning the incorrect port. Ensure the following are accomplished:

- Zoom listens on port number 5091 (default setting).
- Configure port number 5090 on Zoom IP-Peer since Ribbon SBC Core increments the port by 1 when the transport protocol is TLS.

6.5 IP Peer

Create an IP Peer with the signaling IP address of ZOOM and assign it to ZOOM Zone.

Replace "x.x.x.x" with the Zoom SIP signaling IP.

```
set addressContext default zone ZOOM ipPeer ZOOM_IPP ipAddress x.x.x.x
set addressContext default zone ZOOM ipPeer ZOOM_IPP ipPort 5090
commit
```

Path Check Profile

Create a path check profile that attaches to the Zoom side.

```
set profiles services pathCheckProfile ZOOM_OPTIONS protocol sipOptions sendInterval 20 replyTimeoutCount 1
recoveryCount 1
set profiles services pathCheckProfile ZOOM_OPTIONS transportPreference preference1 tls-tcp
commit
```

6.6 Transparency Profile

Create a transparency profile as follows:

```
set profiles services transparencyProfile ZOOM_TP state enabled
set profiles services transparencyProfile ZOOM_TP sipHeader all
set profiles services transparencyProfile ZOOM_TP sipHeader via ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader From ignoreTransparency no
set profiles services transparencyProfile ZOOM_TP sipHeader allow ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader route ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader min-se ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader contact ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader expires ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader require ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader supported ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader record-route ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader serviceroute ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader proxy-Require ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipHeader session-expires ignoreTransparency yes
set profiles services transparencyProfile ZOOM_TP sipMessageBody all
commit
```

6.7 SIP Trunk Group

Create a SIP Trunk Group towards ZOOM and assign corresponding profiles like PSP, IPSP that were created in earlier steps.

> You must configure Trunk Group names using capital letters.

```
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG media mediaIpInterfaceGroupName LIF2
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG mode inService state enabled
commit

set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG policy digitParameterHandling numberingPlan ZOOM_DIAL
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG policy callRouting elementRoutingPriority ZOOM_ERP
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG policy media packetServiceProfile ZOOM_SRTP_PSP
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG policy services classOfService DEFAULT_IP
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG policy signaling ipSignalingProfile ZOOM_PUB_IPSP
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG signaling transportPreference preference1 tls-tcp
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG signaling E164Profiles e164LocalProfile ZOOM_E164
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG services natTraversal mediaNat disabled
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG services transparencyProfile ZOOM_TP
set addressContext default zone ZOOM sipTrunkGroup ZOOM_TG ingressIpPrefix 0.0.0.0 0
commit
```

6.8 Routing Label

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

```
set global callRouting routingLabel ZOOM_RL routingLabelRoute 1 trunkGroup ZOOM_TG
set global callRouting routingLabel ZOOM_RL routingLabelRoute 1 ipPeer ZOOM_IPP
set global callRouting routingLabel ZOOM_RL routingLabelRoute 1 inService inService
commit
```

6.9 Call Routing

This entry is used to route all the calls coming from Zoom Client towards ZOOM server.

> Provide ceName used during an SBC deployment. "ZOOM1" is the ceName.

```
set global callRouting route trunkGroup ACCESS_TG ZOOM1 standard Sonus_NULL 1 all all ALL none Sonus_NULL
routingLabel ZOOM_RL
commit
```

Section B: Zoom Configuration

Login to Zoom Go account Web portal at https://go.zoom.us/.

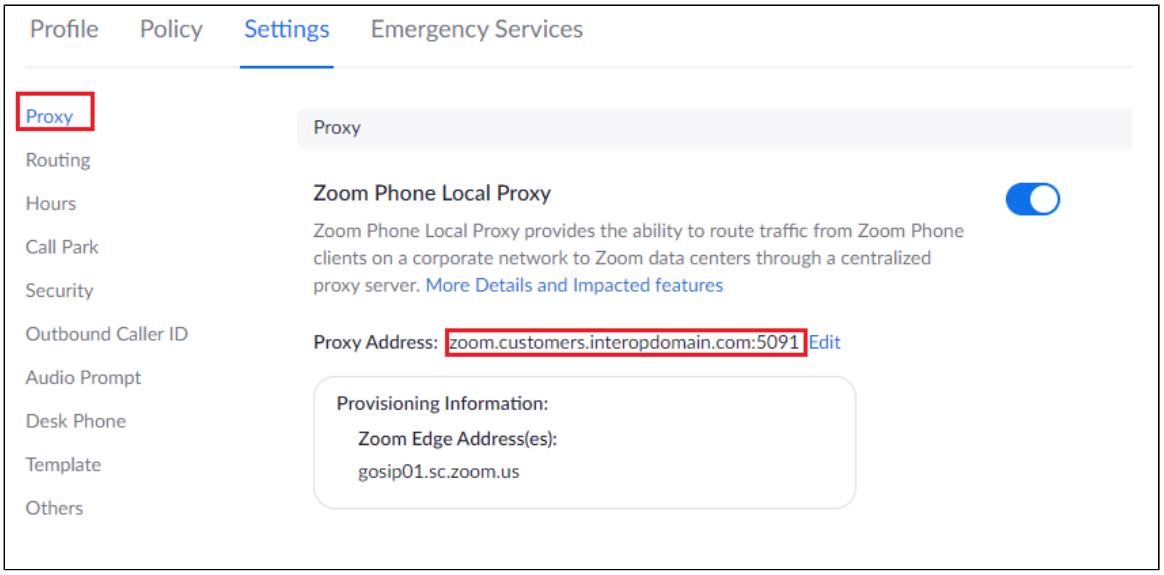
This section describes the following Zoom configurations:

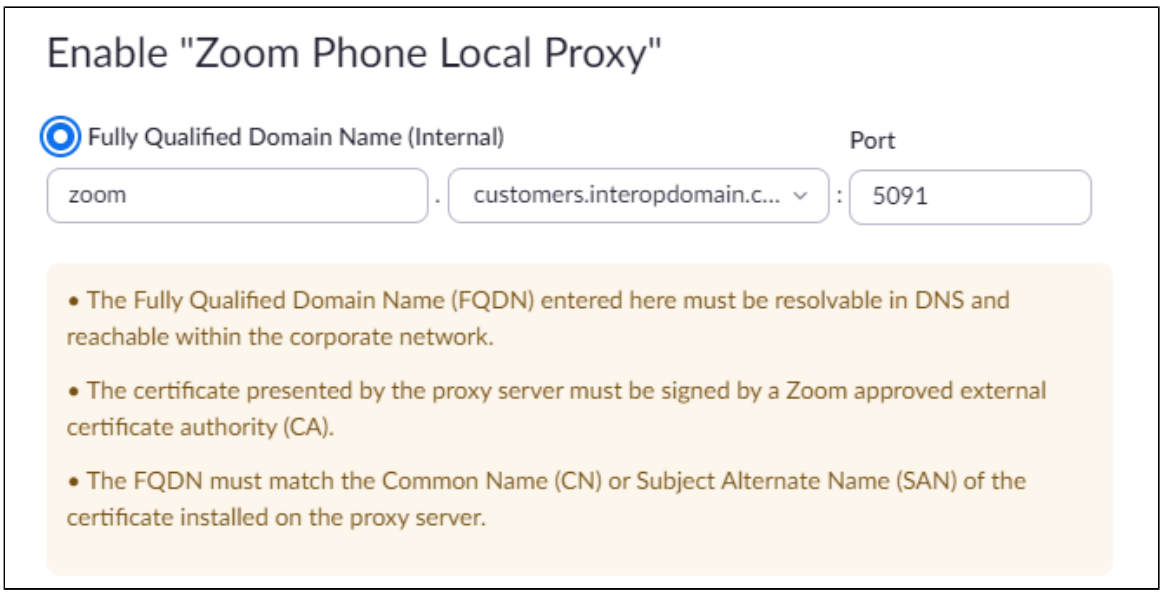
1. Adding SBC FQDN in Zoom portal
2. Configuring Zoom User
3. Configuring supplementary services configuration on Zoom

Adding SBC FQDN in Zoom Portal

1. Navigate to **Phone Systems Management > Company Info > *"Site name"* > Settings > Proxy > Zoom Phone Local Proxy**
2. Add the SBC FQDN (Internal) and Port as shown below, **Save and Apply** the configuration.

Figure 5: Add External Number





⚠ SBC FQDN "zoom.customers.interopdomain.com" should resolve to private IP and the entry for the same should be done in public DNS.

Anonymous Call - *67 is a feature access code to enable Anonymous call. Zoom app shows the following notification when dialed *67

"Caller ID blocking is not guaranteed to be effective in all countries or regions".

Configuring Zoom User

To create new Zoom User, refer to the following link:

https://support.zoom.us/hc/en-us/articles/201363183-Managing-users

Configuring Supplementary Services Configuration on Zoom

Zoom supports multiple supplementary services. To configure different supplementary services in Zoom, refer to the following links:

- Auto Receptionist: https://support.zoom.us/hc/en-us/articles/360001297663-Getting-started-with-Zoom-Phone-admin-#h_a625f531-94c6-4291-909e-3d68ad685b68
- Call Flip: https://support.zoom.us/hc/en-us/articles/360034613311-Using-Call-Flip
- Shared Line Appearance (SLA) or Call Delegation: https://support.zoom.us/hc/en-us/articles/360032881731
- Shared Line Group (SLG): https://support.zoom.us/hc/en-us/articles/360038850792/

Supplementary Services and Features Coverage

The following checklist depicts the set of services/features covered through the configuration defined in this Interop Guide.

Sr. No.	Supplementary Features/Services	Coverage
1	Basic Registration over TLS	✓
2	Basic Call Setup	✓
3	Basic Call Termination	✓
4	Auto Receptionist (Auto Attendant)	✓
5	Call Hold/Resume	✓
6	Call Transfer - Blind (Cold transfer)	✓
7	Call Transfer - Consult (Warm transfer)	✓
8	Conference	✓
9	Call Queue	✓
10	Shared Line Group (SLG)	✓
11	Shared Line Appearance (SLA) or Call Delegation	✓
12	Call Recording	✓
13	Group Call Pickup	✓
14	Call Park	✓

Legend

✓	Supported
✗	Not Supported
N/A	Not Applicable

Support

For any support related queries about this guide, contact your local Ribbon representative, or use the details below:

- Sales and Support: 1-833-742-2661
- Other Queries: 1-877-412-8867
- Website: https://ribboncommunications.com/services/ribbon-support-portal

References

For detailed information about Ribbon products & solutions, go to :

https://ribboncommunications.com/products

For information about Zoom products & solutions, go to:

https://zoom.us/

Conclusion

This Interoperability Guide describes successful configuration covering Zoom interop with Ribbon SBC Core.

All features and capabilities tested are detailed within this document - any limitations, notes or observations are also recorded in order to provide the reader with an accurate understanding of what has been covered, and what has not.

Configuration guidance is provided to enable the reader to replicate the same base setup - there maybe additional configuration changes required to suit the exact deployment environment.