
Sonus SBC 5XXX 6.1.0R001 IOT Avaya SM7 and CM7 AT&T IP Flex Reach SIP Trunk Application Notes

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Document Overview

This document provides a configuration guide for Sonus Session Border Controller 5XXX Series (SBC) when connecting with Avaya Session Manager 7 (SM7) and Avaya Communication Manager (CM7).

- For additional information on Avaya Platform, visit <http://www.avaya.com>
- For additional information on Sonus SBC, visit <http://sonus.net>.

Introduction

The interoperability compliance testing focuses on verifying inbound and outbound call flows between Sonus SBC 5XXX and Avaya Session Manager 7 (SM7) and Avaya Communication Manager (CM7) .

Audience

This technical document is intended for telecommunication engineers with the purpose of configuring the Sonus SBC 5XXX series aspects of the AT&T Flex Reach SIP trunk group with the Avaya SM7 and CM7. This configuration requires the navigation of a third-party server and the Sonus SBC Web browser user interface, Embedded Management Application (EMA). Understanding the basic concepts for IP/Routing, SIP, RTP and TLS are also required for completing the configuration and any necessary troubleshooting.

Requirements

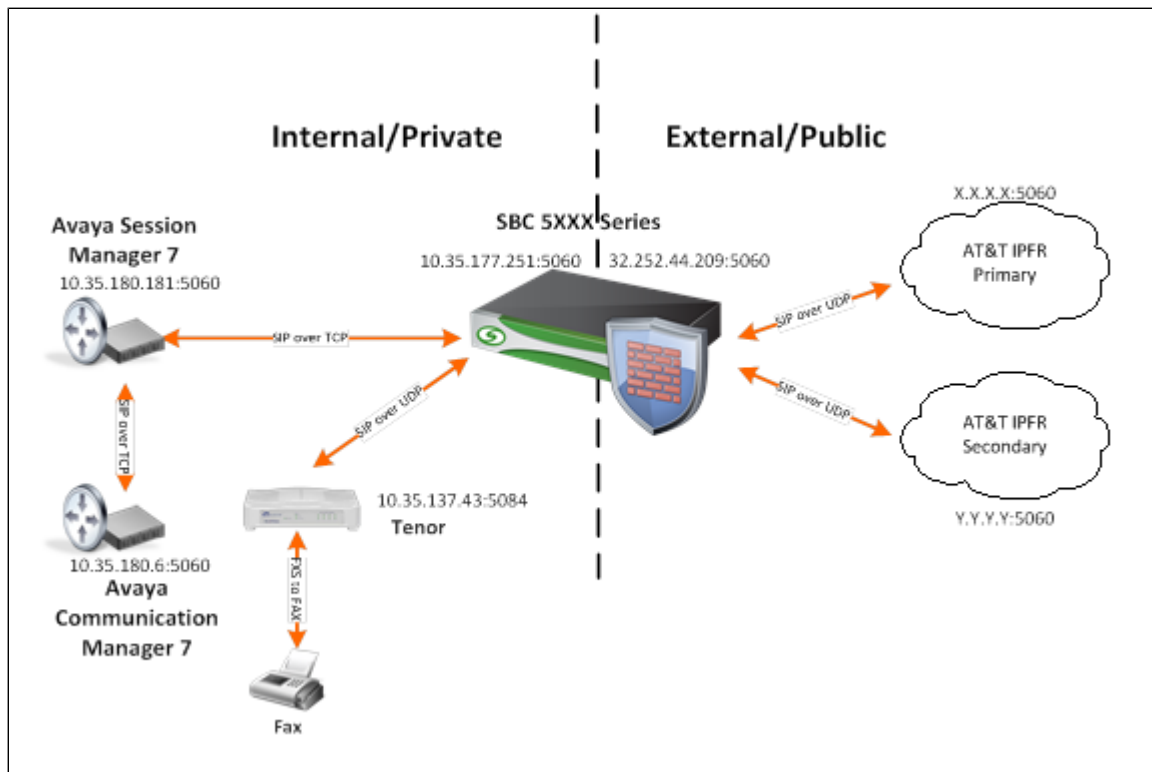
The following equipment and software were used for the sample configuration (see [Topology](#)):

	Equipment	Software Version
Sonus Networks	Sonus SBC 5XXX (5200)	V06.01.00-R001
	BMC	V03.14.00
	BIOS	V02.06.00
	ConnexIP OS	V03.03.00-R001
	SonusDB	V06.01.00-R001
	EMA	V06.01.00-R001
Third-party Equipment	Avaya Communication Manager 7.0	R017x.00.0.441.0
	Avaya Session Manager 7.0	7.0.0.0.700007
	Avaya 9608 IP Deskphone	6.3037

Reference Configuration

The following reference configuration illustrates the connectivity between a third-party and the Sonus SBC 5XXX.

Figure 1: Topology



Support

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

Third-Party Product Features

The testing was executed with the AT&T test plan, and the following features were tested:

- Basic originated and terminated calls
- Calling Number presentation
- Hold and Resume
- Voice Mail
- Conference Call
- Network-Based Call Transfer (Blind and Unattended transfers are only supported with Avaya SIP endpoints)
- Call Forwarding
- Auto Attendant
- Meet-Meet Conference
- AT&T IP Teleconferencing
- N11 Calls
- FAX
- DTMF
- Network Based Enhanced Features

Not Supported Features

- cRTP
- SBC sends SIP 18x or 200 response without p-time in SDP

Verify License

No special licensing required.

Avaya SM 7 Configuration

This section includes the following new configurations :

1. [Domain](#)

2. Location
3. SIP Entity
4. Entity Link
5. Routing Policy
6. Dial Pattern

1. Domain

Select **Home > Routing > Domains**

Figure 2: Domain

The screenshot shows the AVAYA System Manager 7.0 interface. The breadcrumb navigation is Home / Elements / Routing / Domains. The main heading is "Domain Management" with "Commit" and "Cancel" buttons. Below this, there is a table with 1 item:

Name	Type	Notes
avayacm7.votest.com	sip	Avaya 7

At the bottom of the table, there are "Commit" and "Cancel" buttons.

2. Location

Select **Home > Routing > Locations**

Figure 3: Location for CM

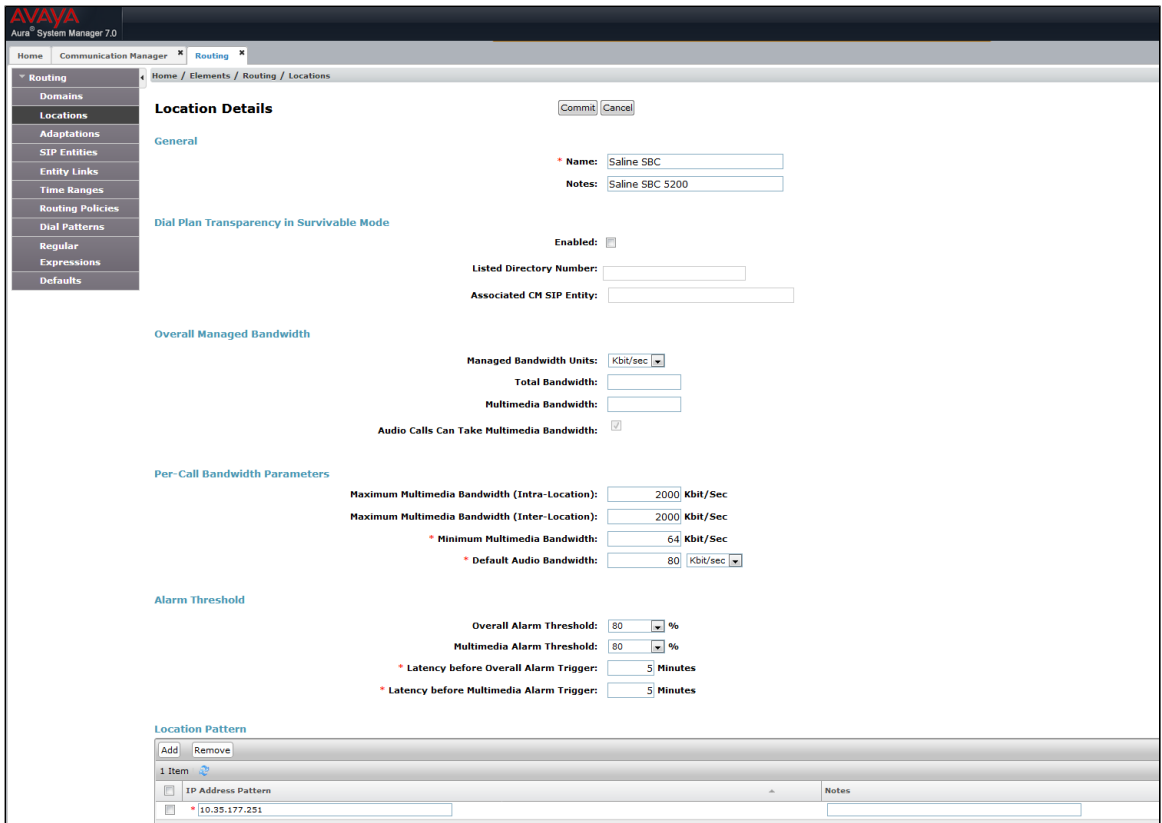
The screenshot shows the AVAYA System Manager 7.0 interface for "Location Details" of "Dallas CM 7.0". The breadcrumb navigation is Home / Elements / Routing / Locations. The main heading is "Location Details" with "Commit" and "Cancel" buttons. The configuration is organized into several sections:

- General:** Name: Dallas CM 7.0, Notes: (empty)
- Dial Plan Transparency in Survivable Mode:** Enabled: . Listed Directory Number: (empty), Associated CM SIP Entity: (empty)
- Overall Managed Bandwidth:** Managed Bandwidth Units: Kbit/sec, Total Bandwidth: (empty), Multimedia Bandwidth: (empty), Audio Calls Can Take Multimedia Bandwidth:
- Per-Call Bandwidth Parameters:**
 - Maximum Multimedia Bandwidth (Intra-Location): 1000 Kbit/Sec
 - Maximum Multimedia Bandwidth (Inter-Location): 1000 Kbit/Sec
 - Minimum Multimedia Bandwidth: 64 Kbit/Sec
 - Default Audio Bandwidth: 80 Kbit/Sec
- Alarm Threshold:**
 - Overall Alarm Threshold: 80 %
 - Multimedia Alarm Threshold: 80 %
 - Latency before Overall Alarm Trigger: 5 Minutes
 - Latency before Multimedia Alarm Trigger: 5 Minutes
- Location Pattern:** Add, Remove buttons. 1 Item table:

IP Address Pattern	Notes
10.35.180.1-10.35.180.30	

 Select: All, None

Figure 4: Location for SBC



3. SIP Entity

Select Home > Routing > SIP Entities

Figure 5: SIP Entity for CM

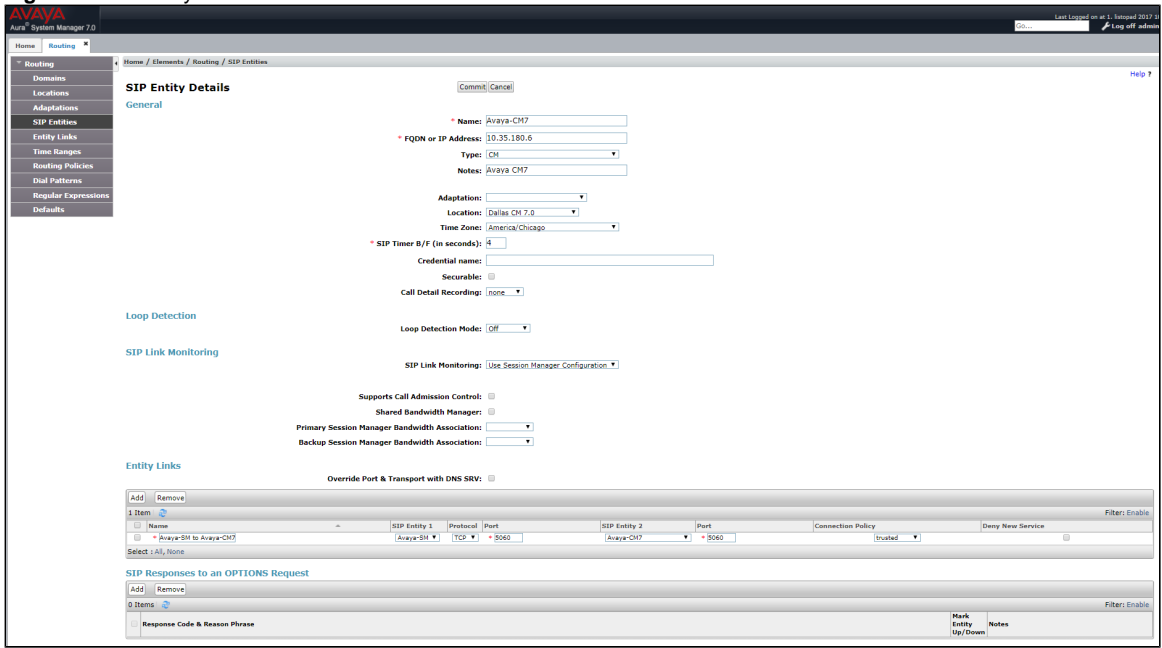
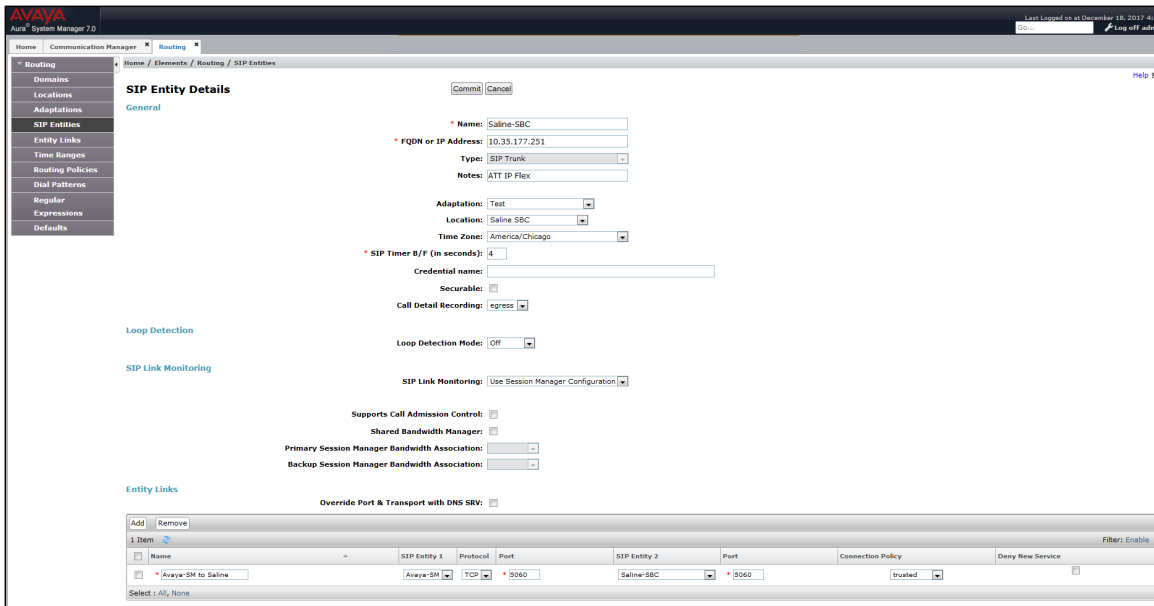


Figure 6: SIP Entity for SBC



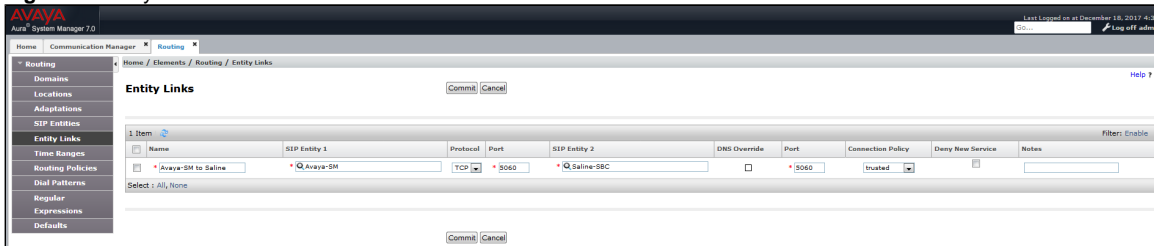
4. Entity Link

Select Home > Routing > Entity Links

Figure 7: Entity Link for CM



Figure 8: Entity Link for SBC



5. Routing Policy

Select Home > Routing > Routing Policies

Figure 9: Route Policy for CM

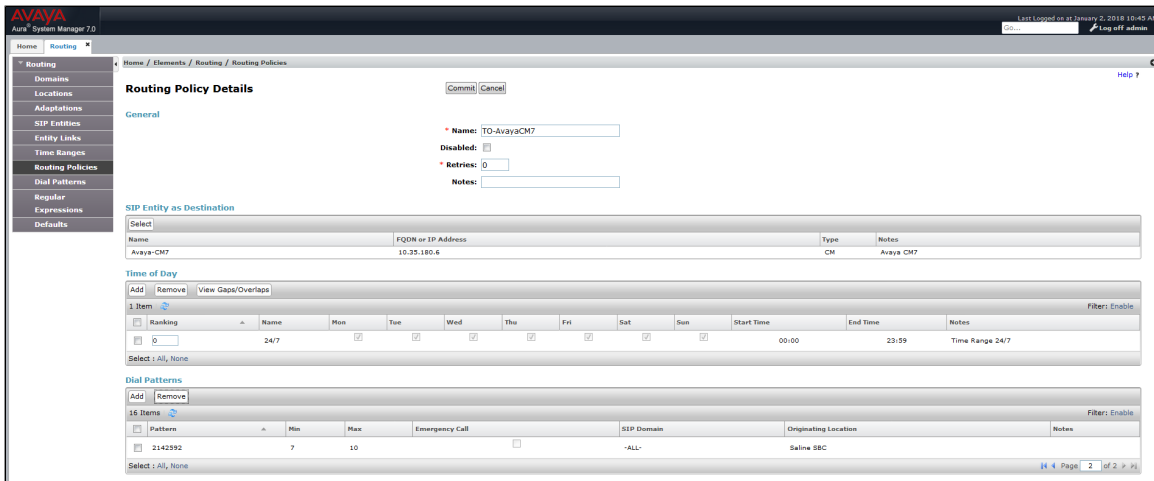
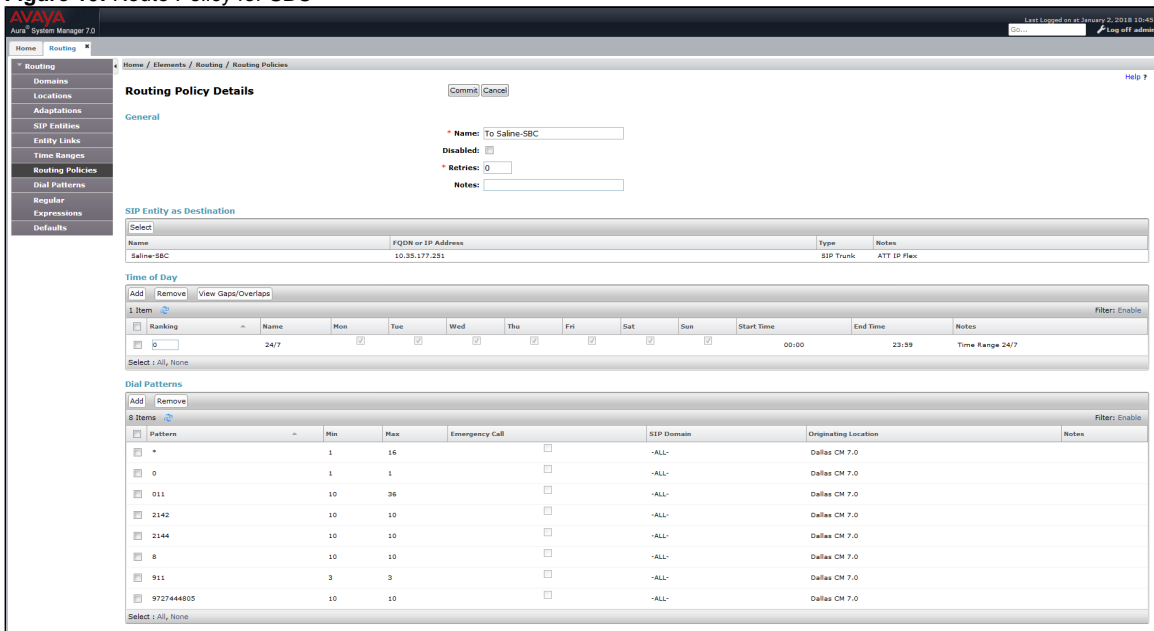


Figure 10: Route Policy for SBC



6. Dial Pattern

Select **Home > Routing > Dial Patterns**



Note

Use this procedure to create any Dial Pattern configuration.

Figure 11: Dial Pattern for CM

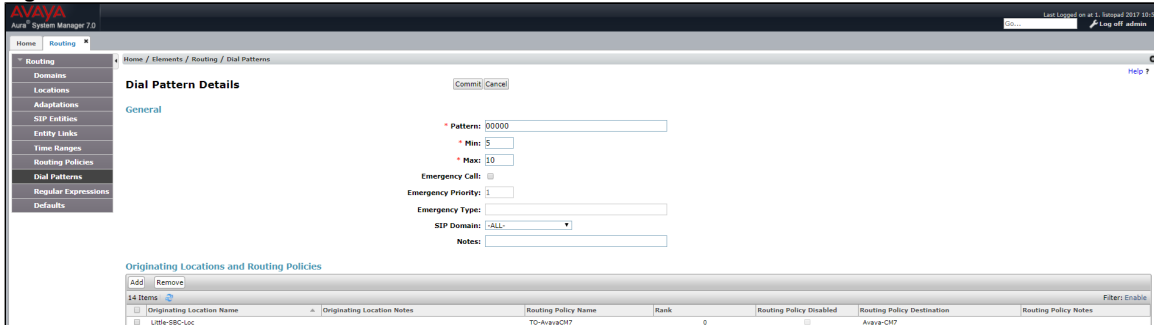
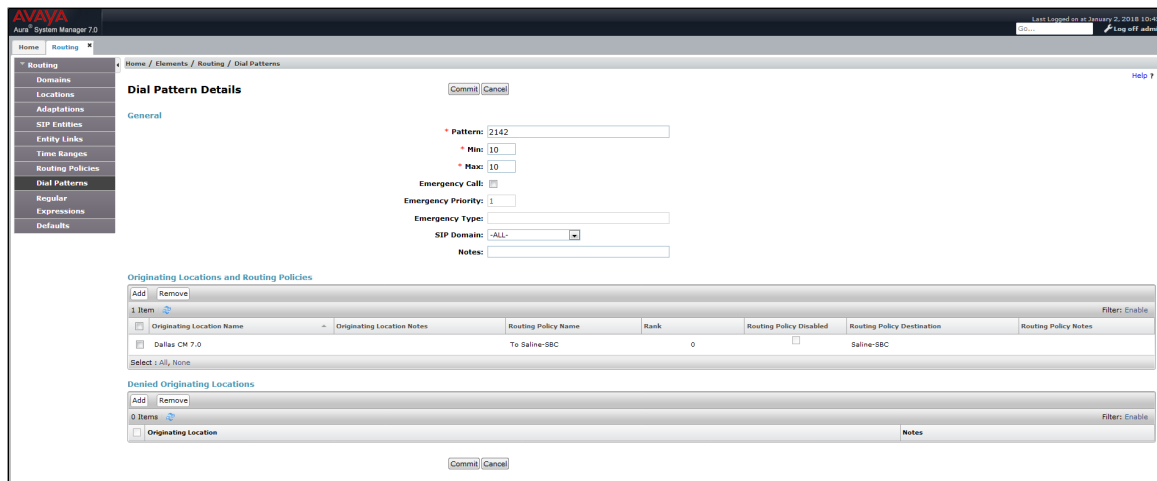


Figure 12: Dial Pattern for SBC



Avaya CM 7 Configuration

This section includes the following new configurations :

1. [Node Name](#)
2. [Signaling Group](#)
3. [Trunk Group](#)
4. [Route Pattern](#)
5. [ARS Digit Analysis Table](#)
6. [Station](#)
7. [Vector Directory Number](#)
8. [Vector](#)

1. Node Name

1. Using the Site Administration, log into Avaya CM 6.0.
2. Type `change node-names ip` in the command line.
3. Press the **Down Arrow** key to a blank line and add the appropriate information.
4. Press **F3** to save when complete.

Figure 13: Node Name

Avaya7.0 GEDI

change node-names ip send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 | 2 |

IP NODE NAMES

Name	IP Address
ASM6.3	10.35.180.41
ASM7.0	10.35.180.181
avayacn5-mas	10.35.180.11
avayacn5-ses	10.35.180.6
cd-verde	10.35.179.241
cimarron-ssm	10.35.176.32
clear-ssm	10.35.178.12
default	0.0.0.0
procr	10.35.180.6
procr6	::
rio-ssm	10.35.176.12
sbc-colby-hays	10.35.177.202
sbc-hays	10.35.177.200
sbc-little	10.35.177.247
sbc-long	10.35.177.228
sbc-newport	10.35.177.232

(16 of 18 administered node-names were displayed)
 Use 'list node-names' command to see all the administered node-names
 Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name

2. Signaling Group

1. Using the Site Administration, log into Avaya CM 7.0.
2. Type add `signaling-group next` in the command line.



Note

The "next" switch will auto-generate the next available group number for the Signaling Group and is the most efficient method to use when creating a new Signaling Group.

3. Add the appropriate information and press **F3** to save when complete. For more details, refer to [Avaya CM 7.0 guide](#).

Figure 14: Signaling Group

Avaya7.0 GEDI

change signaling-group 6 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 2

SIGNALING GROUP

Group Number: 6 Group Type: sip
 IMS Enabled? Transport Method: tcp
 Q-SIP?
 IP Video? Enforce SIPS URI for SRTP?
 Peer Detection Enabled? Peer Server: SM
 Prepend '+' to Outgoing Calling/Alerting/Diverting/Connected Public Numbers?
 Remove '+' from Incoming Called/Calling/Alerting/Diverting/Connected Numbers?
 Alert Incoming SIP Crisis Calls?
 Near-end Node Name: procr Far-end Node Name: ASM7.0
 Near-end Listen Port: 5060 Far-end Listen Port: 5060
 Far-end Network Region: 1
 Far-end Domain: avayacm7.votest.com
 Incoming Dialog Loopbacks: eliminate Bypass If IP Threshold Exceeded?
 DTMF over IP: rtp-payload RFC 3389 Comfort Noise?
 Session Establishment Timer(min): 3 Direct IP-IP Audio Connections?
 Enable Layer 3 Test? IP Audio Hairpinning?
 H.323 Station Outgoing Direct Media? Initial IP-IP Direct Media?
 Alternate Route Timer(sec): 6

3. Trunk Group

1. Using the Site Administration, log into Avaya CM 7.0.
2. Type add trunk-group next in the command line.
3. Add the appropriate information and press F3 to save when complete. For more details, refer to [Avaya CM 7.0 guide](#).

Figure 15: Trunk Group

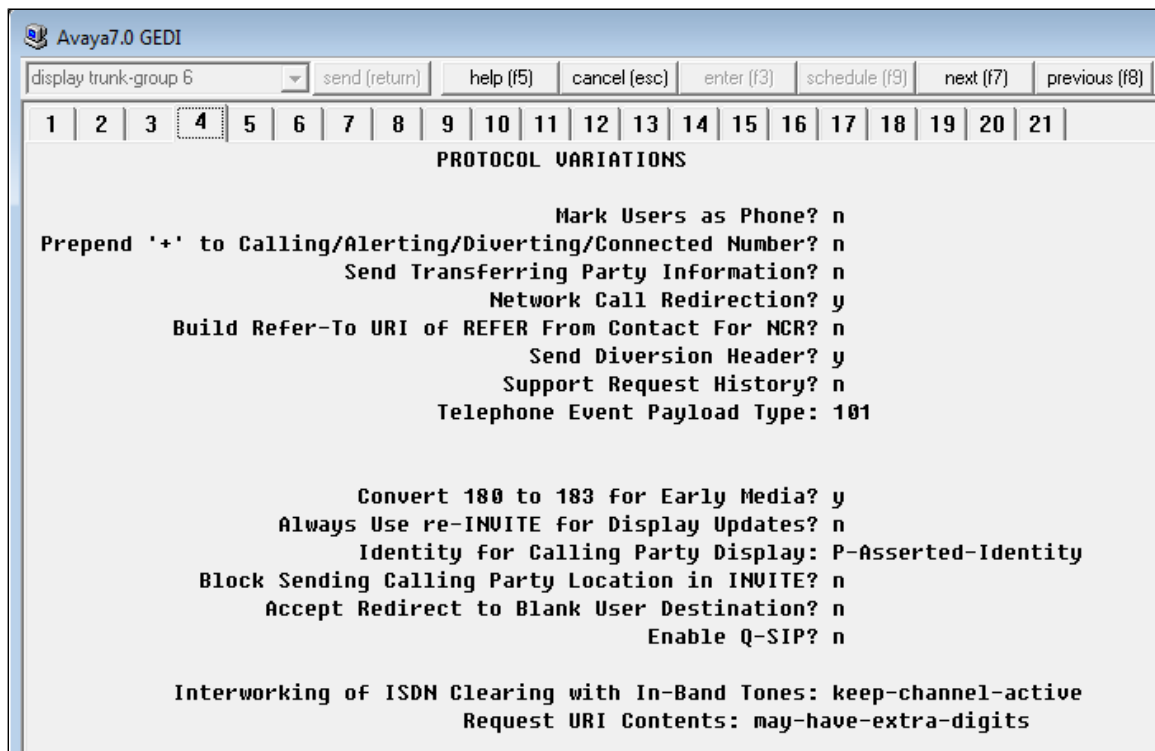
Avaya7.0 GEDI

change trunk-group 6 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

TRUNK GROUP

Group Number: 6 Group Type: sip CDR Reports:
 Group Name: SIP Trunk to SM COR: 1 TN: 1 TAC: #006
 Direction: two-way Outgoing Display?
 Dial Access? n Night Service:
 Queue Length: 0
 Service Type: public-ntwrk Auth Code?
 Member Assignment Method: auto
 Signaling Group: 6
 Number of Members: 10



4. Route Pattern

1. Using Site Administration, log into Avaya CM 7.0.
2. Type `list route-pattern` in the command line to determine the next available route pattern.
3. Identify the route-pattern number you are going to use and then press **F1** to exit the current operation.
4. Type `change route-pattern` and then enter the available route pattern number. Add the appropriate information and press **F3** to save when complete.

Figure 16: Route Pattern

Avaya7.0 GEDI

change route-pattern 6 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 | 2 | 3

Pattern Number: 6 Pattern Name: SIP to ASM

SCCAN? Secure SIP? Used for SIP stations?

Grp No	FRL	NPA	Pfx	Hop	Toll	No. Del	Inserted Dgts	DCS/ IXC	Intw
1:	6	0						n	user
2:								n	user
3:								n	user
4:								n	user
5:								n	user
6:								n	user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	PARM	Sub	Numbering	LAR
0	1	2	M	4	W	Request	Dgts	Format		
1:	y	y	y	y	n	n	rest			none
2:	y	y	y	y	n	n	rest			none
3:	y	y	y	y	n	n	rest			none
4:	y	y	y	y	n	n	rest			none
5:	y	y	y	y	n	n	rest			none
6:	y	y	y	y	n	n	rest			none

5. ARS Digit Analysis Table

- Using the Site Administration, log into Avaya CM 7.0.
- Type `change ars analysis (dialed number)` to add or change the called number handling.

Figure 17: ARS Digit Analysis Table

Avaya7.0 GEDI

change ars analysis 21443268 li send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 | 2

ARS DIGIT ANALYSIS TABLE

Location: all Percent Full: 3

Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Reqd
21443268	10	10	6	hnpa		n

6. Station

- Using the Site Administration, log into Avaya CM 7.0.
- Type `add station next` to add a new station.

Figure 18: Station

Avaya7.0 GEDI

change station 0000011041 | send (return) | help (f5) | cancel (esc) | enter (f3) | schedule (f9) | next (f7) | previous (f8)

1 | 2 | 3 | 4 | 5

STATION

Extension: 000-001-1041 **Lock Messages?** n **BCC:** 0
Type: 9608 **Security Code:** * **TN:** 1
Port: S00013 **Coverage Path 1:** **COR:** 1
Name: IPTF1 **Coverage Path 2:** **COS:** 1
Hunt-to Station: **Tests?** n

STATION OPTIONS

Loss Group: 19 **Time of Day Lock Table:** **Personalized Ringing Pattern:** 1
Speakerphone: 2-way **Message Lamp Ext:** 000-001-1041
Display Language: english **Mute Button Enabled?** y
Survivable GK Node Name: **Button Modules:** 0
Survivable COR: internal **Media Complex Ext:** **IP SoftPhone?** n
Survivable Trunk Dest? y **IP Video?** n
Short/Prefixed Registration Allowed: default
Customizable Labels? y

7. Vector Directory Number

1. Using the Site Administration, log into Avaya CM 7.0.
2. Type add vdn <extension> to add a new vector directory number.

Figure 19: Vector Directory Number for Auto Attendant

Avaya7.0 GEDI

display vdn 2142592293 | send (return) | help (f5) | cancel (esc) | enter (f3) | schedule (f9) | next (f7) | previous (f8)

1 | 2

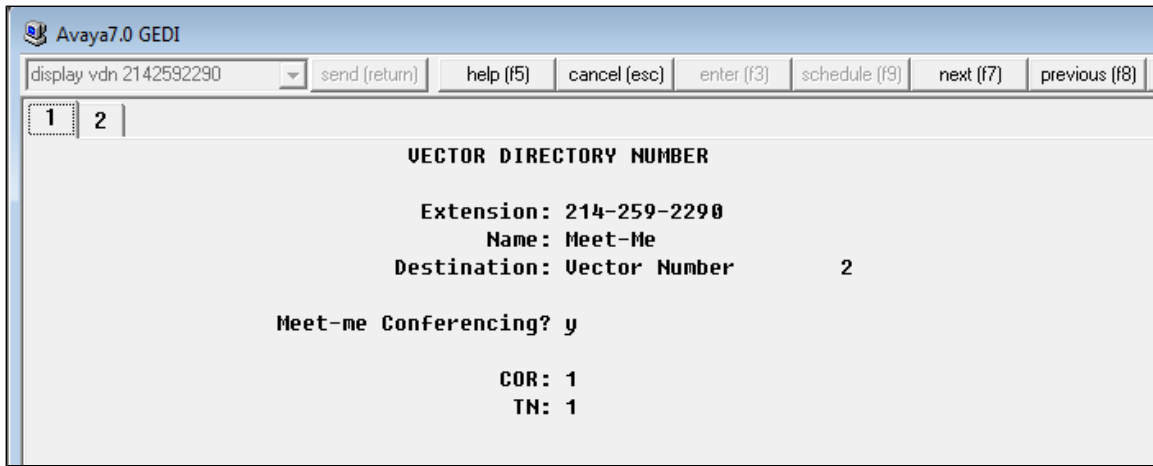
VECTOR DIRECTORY NUMBER

Extension: 214-259-2293
Name*: AAforCM
Destination: Vector Number 1
Attendant Vectoring? n
Meet-me Conferencing? n
Allow UDN Override? n
COR: 1
TN*: 1
Measured: none

UDN of Origin Annc. Extension*:

*** Follows UDN Override Rules**

Figure 20: Vector Directory Number for Meet-Me Conference



8. Vector

1. Using the Site Administration, log into Avaya CM 7.0.
2. Type `add vector next` to add a new vector.

Figure 21: Vector for Auto Attendant

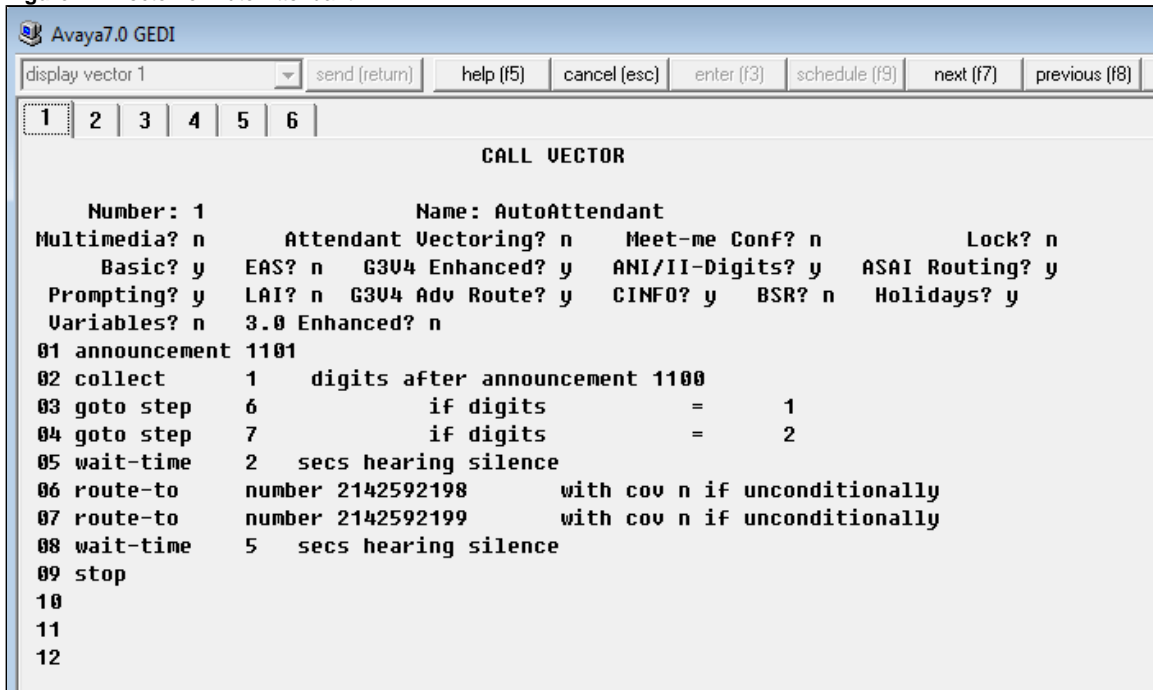


Figure 22: Vector for Meet-Me Conference

Avaya7.0 GEDI

display vector 2 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 | 2 | 3 | 4 | 5 | 6

CALL VECTOR

Number: 2 Name: Meet-Me

Multimedia? n Attendant Vectoring? n Meet-me Conf? y Lock? y

Basic? y EAS? n G3U4 Enhanced? y ANI/II-Digits? y ASAI Routing? y

Prompting? y LAI? n G3U4 Adv Route? y CINFO? y BSR? n Holidays? y

Variables? n 3.0 Enhanced? n

01 announcement 1104

02 wait-time 2 secs hearing silence

03 collect 6 digits after announcement 1103

04 wait-time 3 secs hearing silence

05 goto step 7 if digits = meet-me-access

06 wait-time 1 secs hearing silence

07 announcement 1102

08 route-to meetme

09

10

11

12

Sonus SBC 5XXX Series Configuration

Complete Configuration

```
configure

#AVAYA7 codecs
set profiles media codecEntry G711u_AVAYA7 codec g711 packetSize 20 law ULaw
set profiles media codecEntry G711u_AVAYA7 dtmf relay rfc2833 removeDigits enable
set profiles media codecEntry G711u_AVAYA7 fax failureHandling continue toneTreatment none
set profiles media codecEntry G711u_AVAYA7 modem failureHandling continue toneTreatment none
commit

#ATT codecs
set profiles media codecEntry G729_ATT codec g729a packetSize 30 preferredRtpPayloadType 128
set profiles media codecEntry G729ab_ATT codec g729ab packetSize 30 preferredRtpPayloadType 128
set profiles media codecEntry G711u_ATT codec g711 packetSize 30 law ULaw
set profiles media codecEntry G711u_ATT dtmf relay rfc2833 removeDigits enable
set profiles media codecEntry G729_ATT dtmf relay rfc2833 removeDigits enable
set profiles media codecEntry G729ab_ATT dtmf relay rfc2833 removeDigits enable
set profiles media codecEntry G711u_ATT fax failureHandling continue toneTreatment FaxRelay
set profiles media codecEntry G729_ATT fax failureHandling continue toneTreatment FaxRelay
set profiles media codecEntry G729_ATT modem failureHandling continue toneTreatment applyFaxTreatment
set profiles media codecEntry G729ab_ATT fax failureHandling continue toneTreatment FaxRelay
set profiles media codecEntry G729ab_ATT modem failureHandling continue toneTreatment applyFaxTreatment
set profiles media codecEntry G711u_ATT modem failureHandling continue toneTreatment applyFaxTreatment
commit

#Tenor fax codecs
set profiles media codecEntry G729_Tenor_T38 codec g729a packetSize 20 preferredRtpPayloadType 128
set profiles media codecEntry G711u_Tenor_T38 codec g711 packetSize 20 law ULaw
set profiles media codecEntry G711u_Tenor_T38 dtmf relay rfc2833 removeDigits enable
set profiles media codecEntry G729_Tenor_T38 dtmf relay rfc2833 removeDigits enable
```

```

set profiles media codecEntry G711u_Tenor_T38 fax failureHandling continue toneTreatment FaxRelay
set profiles media codecEntry G729_Tenor_T38 fax failureHandling continue toneTreatment FaxRelay
set profiles media codecEntry G729_Tenor_T38 modem failureHandling continue toneTreatment applyFaxTreatment
set profiles media codecEntry G711u_Tenor_T38 modem failureHandling continue toneTreatment applyFaxTreatment
commit

#Element Routing Priority
set profiles callRouting elementRoutingPriority TG_ERP entry internationalType 0 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry nationalType 0 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry localOperator 0 entityType trunkGroup
set profiles callRouting elementRoutingPriority TG_ERP entry userName 0 entityType trunkGroup
commit

#Internal Side Configuration
#IP Interface Group
set addressContext default ipInterfaceGroup TRUSTED ipInterface TRUSTED ceName Little portName pkt0 ipAddress
10.35.177.246 prefix 26 mode outOfService state disabled
set addressContext default ipInterfaceGroup TRUSTED ipInterface TRUSTED mode inService state enabled
commit

#IP Static Route
set addressContext default staticRoute 0.0.0.0 0 10.35.177.2 Private Private-pkt0 preference 100
commit

#SBC Configuration for AVAYA7 Trunk
#Packet Service Profile (PSP)
set profiles media packetServiceProfile AVAYA7_PSP codec codecEntry1 G711u_AVAYA7
set profiles media packetServiceProfile AVAYA7_PSP packetToPacketControl codecsAllowedForTranscoding thisLeg g711u,
g729 otherLeg g711u,g729
set profiles media packetServiceProfile AVAYA7_PSP packetToPacketControl transcode conditional
set profiles media packetServiceProfile AVAYA7_PSP rtcpOptions rtcp enable terminationForPassthrough enable
set profiles media packetServiceProfile AVAYA7_PSP silenceInsertionDescriptor g711SidRtpPayloadType 13 heartbeat
enable
commit

#IP Signaling profiles(IPSP)
set profiles signaling ipSignalingProfile AVAYA7_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile AVAYA7_IPSP commonIpAttributes relayFlags referToHeaderRelay
relayReferIfNoMatchForCallId
set profiles signaling ipSignalingProfile AVAYA7_IPSP commonIpAttributes flags disableMediaLockDown enable
includeReasonHeader enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable publishIPInHoldSDP enable sendPtimeInSdp enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP commonIpAttributes flags sendRtcpPortInSdp enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP commonIpAttributes transparencyFlags mwiBody enable
unknownBody enable unknownHeader enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP commonIpAttributes flags includeTransportTypeInContactHeader
enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP ingressIpAttributes flags sendSdpIn2000kIf18xReliable enable
sendSdpInSubsequent18x enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile AVAYA7_IPSP egressIpAttributes transport type1 tcp type2 none type3 none
type4 none
commit

#Signaling profiles(SP)
set profiles signaling signalingProfile AVAYA711_SP egress egressFlags addPrefix011ForInternationalCalls enable
convertNumbersToE164Format enable
commit

#Prefix profile
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 9 0 10 31 callType nationalType digitType
national natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 13 0 2 10 callType nationalType digitType
subscriber natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 411 0 3 3 callType nationalType digitType
directoryAssistance natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea disable

```


set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 500 0 10 31 callType nationalType digitType
serviceAccessCode natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 5551212 4 11 31 callType nationalType
digitType directoryAssistance natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 07 0 11 31 callType nationalOperator
digitType nationalOperator natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 411 1 4 4 callType nationalType digitType
directoryAssistance natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 19 0 11 31 callType nationalType digitType
national natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 1600 0 11 31 callType nationalType digitType
serviceAccessCode natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 800 0 10 31 callType nationalType digitType
tollFree natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 10 0 5 5 callType carrierCutThrough
digitType carrierAccess natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 2
numberLeadingPrefixDigitsToStrip 2 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 12 0 11 31 callType nationalType digitType
national natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 6 0 1 9 callType nationalType digitType
subscriber natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 1900 0 11 31 callType nationalType digitType
900PremiumToll natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 1855 0 11 31 callType nationalType digitType
tollFree natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry * 0 3 31 callType userName digitType unknown
natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0 numberLeadingPrefixDigitsToStrip 0
applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 5 0 10 31 callType nationalType digitType
national natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 06 0 11 31 callType nationalOperator
digitType nationalOperator natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 15551212 0 8 8 callType nationalType
digitType directoryAssistance natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 18 0 11 31 callType nationalType digitType
national natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 17 0 2 10 callType nationalType digitType
subscriber natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry + 0 1 31 callType internationalType
digitType international dmPmRule SIP_REMOVE_PLUS1 natureOfAddress international numberingPlanIndicator none
numberLeadingPrefixDigits 1 numberLeadingPrefixDigitsToStrip 1 applyDmRule enable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 06 0 2 10 callType nationalOperator
digitType subscriberOperator natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 8 0 1 9 callType nationalType digitType
subscriber natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 300 0 10 31 callType nationalType digitType
serviceAccessCode natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 0
numberLeadingPrefixDigitsToStrip 0 applyDmRule disable determineArea enable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 12 0 2 10 callType nationalType digitType
subscriber natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 1
numberLeadingPrefixDigitsToStrip 1 applyDmRule disable determineArea disable
set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry 101 0 8 31 callType carrierCutThrough
digitType carrierAccess natureOfAddress none numberingPlanIndicator none numberLeadingPrefixDigits 3
numberLeadingPrefixDigitsToStrip 3 applyDmRule disable determineArea disable


```

set profiles digitParameterHandling prefixProfile ATT_DIAL_PLAN entry +1 0 2 31 callType nationalType digitType
national dmPmRule SIP_REMOVE_PLUS1 natureOfAddress national numberingPlanIndicator none numberLeadingPrefixDigits
2 numberLeadingPrefixDigitsToStrip 2 applyDmRule enable determineArea enable
commit
#Numbering plan
set profiles digitParameterHandling numberingPlan ATT_DIAL_PLAN lengths areaCode min 3 max 3
set profiles digitParameterHandling numberingPlan ATT_DIAL_PLAN lengths exchangeCode min 3 max 3
set profiles digitParameterHandling numberingPlan ATT_DIAL_PLAN lengths line min 4 max 4
set profiles digitParameterHandling numberingPlan ATT_DIAL_PLAN lengths nationalNumber min 10 max 10
set profiles digitParameterHandling numberingPlan ATT_DIAL_PLAN lengths subscriberNumber min 7 max 7
set profiles digitParameterHandling numberingPlan ATT_DIAL_PLAN prefixProfile ATT_DIAL_PLAN
commit

#zone
set addressContext default zone TRUSTED id 3
commit

#SIP signaling port
set addressContext default zone TRUSTED sipSigPort 25 ipInterfaceGroupName Private ipAddressV4 10.35.179.250
portNumber 5060 mode outOfService state disabled siprec disabled transportProtocolsAllowed sip-tcp
set addressContext default zone TRUSTED sipSigPort 25 mode inService state enabled
commit

#IP Peer
set addressContext default zone ZONE_INTERNAL ipPeer AVAYA7_SIP_SERVER policy sip fqdnPort 0
set addressContext default zone ZONE_INTERNAL ipPeer AVAYA7_SIP_SERVER ipAddress 10.35.180.180 ipPort 5060
commit

#SIP trunk group
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 media mediaIpInterfaceGroupName
IPIG1 sourceAddressFiltering disabled
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 signaling rel100Support enabled
acceptHistoryInfo enabled
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 ingressIpPrefix 10.35.180.110 32
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 policy digitParameterHandling
numberingPlan ATT_DIAL_PLAN
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 policy media packetServiceProfile
AVAYA7_PSP
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 policy services classOfService
DEFAULT_IP
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 policy signaling ipSignalingProfile
AVAYA7_IPSP signalingProfile AVAYA7_SP
set addressContext default zone ZONE_INTERNAL sipTrunkGroup TWO-WAY-SIP-AVAYA7 state enabled mode inService
commit

#SBC Configuration for Fax Trunk
#Packet Service Profile
set profiles media packetServiceProfile TENOR_PSP codec codecEntry1 G711u_Tenor_T38 codecEntry2 G729_Tenor_T38
set profiles media packetServiceProfile TENOR_PSP packetToPacketControl codecsAllowedForTranscoding thisLeg g711u,
g729,t38 otherLeg g711u,g729,t38
set profiles media packetServiceProfile TENOR_PSP packetToPacketControl transcode only
set profiles media packetServiceProfile TENOR_PSP rtcpOptions rtcp enable
commit

#IP signaling profile
set profiles signaling ipSignalingProfile TENOR_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile TENOR_IPSP commonIpAttributes flags disableMediaLockDown enable
includeReasonHeader enable
set profiles signaling ipSignalingProfile TENOR_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable publishIPInHoldSDP enable sendPtimeInSdp enable
set profiles signaling ipSignalingProfile TENOR_IPSP commonIpAttributes flags sendRtcpPortInSdp enable
set profiles signaling ipSignalingProfile TENOR_IPSP commonIpAttributes relayFlags notify enable
set profiles signaling ipSignalingProfile TENOR_IPSP commonIpAttributes transparencyFlags mwiBody enable
unknownBody enable unknownHeader enable
set profiles signaling ipSignalingProfile TENOR_IPSP ingressIpAttributes flags sendSdpIn2000kIf18xReliable enable
sendSdpInSubsequent18x enable
set profiles signaling ipSignalingProfile TENOR_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile TENOR_IPSP egressIpAttributes transport type1 udp type2 none type3 none
type4 none
commit

```

```

#Signaling profiles
set profiles signaling signalingProfile TENOR_SP egress egressFlags addPrefix011ForInternationalCalls enable
convertNumbersToE164Format enable
commit

#IP peer
set addressContext default zone TRUSTED ipPeer TENOR_SIP_SERVER policy sip fqdnPort 0
set addressContext default zone TRUSTED ipPeer TENOR_SIP_SERVER ipAddress 10.35.137.43 ipPort 5084 defaultForIp
false
commit

#SIP trunk group
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR media mediaIpInterfaceGroupName TRUSTED
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR media mediaIpInterfaceGroupName TRUSTED
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR signaling rel100Support enabled
acceptHistoryInfo enabled
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR ingressIpPrefix 10.35.137.43 32
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR policy digitParameterHandling
numberingPlan ATT_NANP
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR policy media packetServiceProfile TENOR_PSP
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR policy services classOfService DEFAULT_IP
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR policy signaling ipSignalingProfile
TENOR_IPSP signalingProfile TENOR_SP
set addressContext default zone TRUSTED sipTrunkGroup TWO-WAY-SIP-TENOR state enabled mode inService
commit

#External Side SBC Configuration

#IP Interface Group
set addressContext default zone UNTRUSTED sipSigPort 10 ipInterfaceGroupName UNTRUSTED ipAddressV4 216.50.36.118
portNumber 5060 mode outOfService state disabled transportProtocolsAllowed sip-udp sip-tcp
set addressContext default zone UNTRUSTED sipSigPort 10 mode inService state enabled
commit

#IP static route
set addressContext default staticRoute 216.206.64.0 24 216.110.2.225 Public Public-pkt2 preference 100
commit

#SBC Configuration for ATT SIP Trunk

#Packet Service Profile (PSP)
set profiles media packetServiceProfile ATT_PSP codec codecEntry1 G729_ATT codecEntry2 G729ab_ATT codecEntry3
G711u_ATT
set profiles media packetServiceProfile ATT_PSP packetToPacketControl codecsAllowedForTranscoding thisLeg g711u,
g729,g726,t38 otherLeg g711u,g729,g726,t38
set profiles media packetServiceProfile ATT_PSP packetToPacketControl transcode conditional
set profiles media packetServiceProfile ATT_PSP rtcpOptions rtcp enable terminationForPassthrough enable
set profiles media packetServiceProfile ATT_PSP silenceInsertionDescriptor g711SidRtpPayloadType 13 heartbeat
enable
set profiles media packetServiceProfile ATT_PSP typeOfService 160
set profiles media packetServiceProfile ATT_PSP packetToPacketControl conditionsInAdditionToNoCommonCodec
honorOfferPreference enable
set profiles media packetServiceProfile ATT_PSP mediaPacketCos 1
commit

#IP Signaling profiles(IPSP)
set profiles signaling ipSignalingProfile ATT_IPSP ipProtocolType sipOnly
set profiles signaling ipSignalingProfile ATT_IPSP commonIpAttributes relayFlags referToHeaderRelay
relayReferIfNoMatchForCallId
set profiles signaling ipSignalingProfile ATT_IPSP commonIpAttributes flags disableMediaLockDown enable
includeReasonHeader enable
set profiles signaling ipSignalingProfile ATT_IPSP commonIpAttributes flags
minimizeRelayingOfMediaChangesFromOtherCallLegAll enable publishIPInHoldSDP enable sendPtimeInSdp enable
set profiles signaling ipSignalingProfile ATT_IPSP commonIpAttributes flags sendRtcpPortInSdp enable
set profiles signaling ipSignalingProfile ATT_IPSP commonIpAttributes transparencyFlags mwiBody enable
unknownBody enable unknownHeader enable
set profiles signaling ipSignalingProfile ATT_IPSP ingressIpAttributes flags sendSdpIn200kIf18xReliable enable
sendSdpInSubsequent18x enable
set profiles signaling ipSignalingProfile ATT_IPSP egressIpAttributes flags disable2806Compliance enable
set profiles signaling ipSignalingProfile ATT_IPSP egressIpAttributes transport type1 udp type2 none type3 none

```

```

type4 none
set profiles signaling ipSignalingProfile ATT_IPSP egressIpAttributes privacy privacyInformation pAssertedId
commit

#Signaling profiles(SP)
set profiles signaling signalingProfile ATT_SP egress egressFlags addPrefix011ForInternationalCalls enable
convertNumbersToE164Format enable
commit

#Zone
set addressContext default zone UNTRUSTED id 20
commit

#SIP signaling port
set addressContext default zone UNTRUSTED sipSigPort 10 ipInterfaceGroupName UNTRUSTED ipAddressV4 216.50.36.117
portNumber 5060 mode outOfService state disabled transportProtocolsAllowed sip-udp
set addressContext default zone UNTRUSTED sipSigPort 10 dscpValue 14
set addressContext default zone UNTRUSTED sipSigPort 10 mode inService state enabled
commit

#IP peer
set addressContext default zone UNTRUSTED ipPeer ATT_SIP_SERVER policy sip fqdnPort 0
set addressContext default zone UNTRUSTED ipPeer ATT_SIP_SERVER ipAddress 207.242.225.210 ipPort 5100 defaultForIp
false
commit

#SIP trunk group
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT media mediaIpInterfaceGroupName UNTRUSTED
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT media mediaPortRange baseUdpPort 16384
maxUdpPort 32767
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT signaling rel100Support enabled
acceptHistoryInfo enabled
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT ingressIpPrefix 207.242.225.210 32
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT policy digitParameterHandling
numberingPlan ATT_DIAL_PLAN
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT policy media packetServiceProfile ATT_PSP
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT policy services classOfService DEFAULT_IP
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT policy signaling ipSignalingProfile
ATT_IPSP signalingProfile ATT_SP
set addressContext default zone UNTRUSTED sipTrunkGroup TWO-WAY-SIP-ATT state enabled mode inService
commit

#AVAYA7 Routing
set global callRouting routingLabel TO_AVAYA7 routingLabelRoute 0 trunkGroup TWO-WAY-SIP-AVAYA7 ipPeer
AVAYA7_SIP_SERVER proportion 100 cost 100 inService inService testing normal
set global callRouting routingLabel TO_AVAYA7 overflowNOA none overflowNPI none routePrioritizationType sequence
action routes numRoutesPerCall 10
set global callRouting route trunkGroup TWO-WAY-SIP-AVAYA7 SALINEa standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel TO_ATT
commit

#ATT routing
set global callRouting routingLabel TO_ATT routingLabelRoute 0 trunkGroup TWO-WAY-SIP-ATT ipPeer ATT_SIP_SERVER
proportion 100 cost 100 inService inService testing normal
set global callRouting routingLabel TO_ATT overflowNOA none overflowNPI none routePrioritizationType
proportionAllocation action routes numRoutesPerCall 10
set global callRouting route trunkGroup TWO-WAY-SIP-ATT SALINEa standard Sonus_NULL Sonus_NULL all all ALL none
Sonus_NULL routingLabel TO_AVAYA7
commit

set global callRouting routingLabel TO_TENOR routingLabelRoute 0 trunkGroup TWO-WAY-SIP-TENOR ipPeer
TENOR_SIP_SERVER proportion 100 cost 100 inService inService testing normal
set global callRouting routingLabel TO_TENOR overflowNOA none overflowNPI none routePrioritizationType sequence
action routes numRoutesPerCall 10
set global callRouting route trunkGroup TWO-WAY-SIP-ATT SALINEa standard 2142592291 +1 all all ALL none Sonus_NULL
routingLabel TO_TENOR

```

Conclusion

These Application Notes outline the configuration steps to successfully interoperate the Sonus SBC 5XXX series with the AT&T IP Flex Reach SIP Trunk. All feature and serviceability test cases were completed.