SIPREC Configuration Guide

Cisco Unified Communications Manager (CUCM) and Cisco Unified Border Element (CUBE)

September 2022

Document History

Rev. No.	Date	Description
1.0	Dec-17-2020	Draft SIP Trunk Configuration Guide
1.1	Feb-04-2021	Updated the document based on feedback
2.0	Sep-14-2022	Updated for Cisco UCM 14.0 and CUBE 14.4

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1 Audience

This document is intended for technical staff and Value Added Resellers (VAR) with installation and operational responsibilities. This configuration guide provides steps for configuring Network Based Recording using **Cisco Unified Communications Manager** (**CUCM)** and **Cisco Unified Border Element (CUBE)** to connect to **Amazon Chime Voice Connector** for streaming audio to Amazon Kinesis Video Streams (KVS).

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1.1 Amazon Chime Voice Connector

Amazon Chime Voice Connector is a pay-as-you-go service that enables companies to make or receive secure phone calls over the internet or AWS Direct Connect using their existing telephone system or session border controller (SBC). The service has no upfront fees, elastically scales based on demand, supports calling both landline and mobile phone numbers in over 100 countries, and gives customers the option to enable inbound calling, outbound calling, or both.

Amazon Chime Voice Connector uses the industry-standard Session Initiation Protocol (SIP). Amazon Chime Voice Connector does not require dedicated data circuits. A company can use their existing Internet connection or AWS Direct Connect public virtual interface for SIP connectivity to AWS. Voice connectors can be configured in minutes using the AWS Management Console or Amazon Chime API. Amazon Chime Voice Connector offers cost-effective rates for inbound and outbound calls. Calls into Amazon Chime meetings, as well as calls to other Amazon Chime Voice Connector customers are at no additional cost. With Amazon Chime Voice Connector, companies can reduce their voice calling costs without having to replace their on-premises phone system.

2 SIP Trunking Network Components

The network for the SIPREC reference configuration is illustrated below and is representative of Cisco UCM with Cisco UBE configuration.

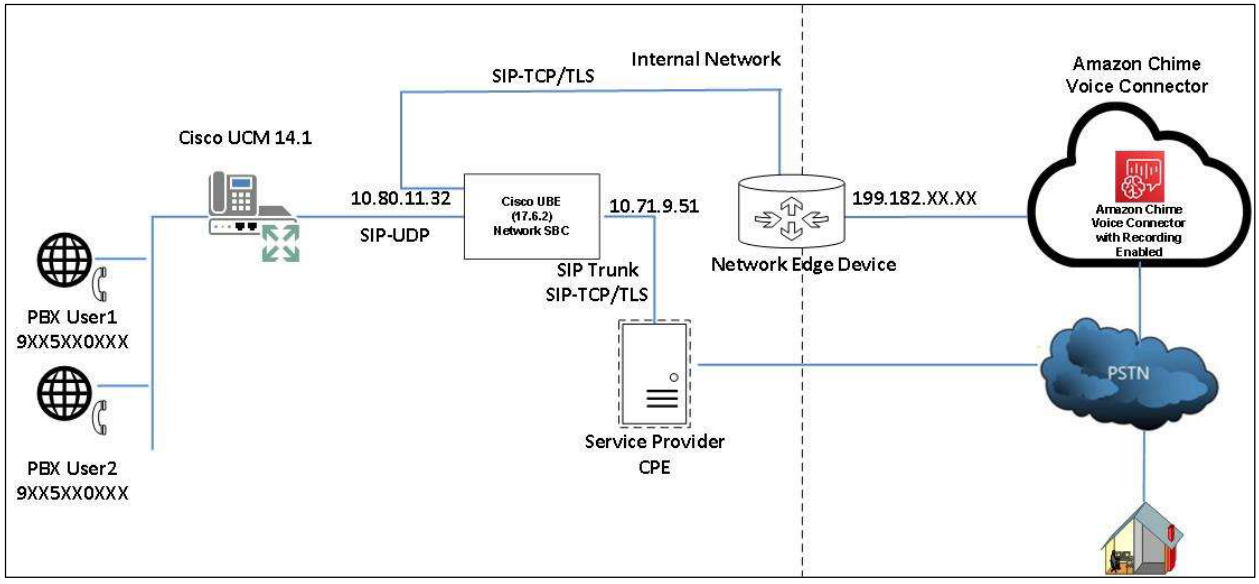

Figure 1 Network Topology

2.1 Hardware Components

- UCS-C240 VMWare server running ESXi 5.5 or later used for the following virtual machines
    - Cisco Unified Communications Manager (CUCM)
- Cisco UBE (CUBE) on Cisco ISR 4321 router
- Cisco IP Phone(s)-7841

2.2 Software Requirements

- Cisco UCM : 14.0.1.11900-132
- Cisco UBE: 14.4 running on IOS-XE 17.6.2(isr4300-universalk9.17.06.02.SPA.bin)

3 Features

3.1 Features Supported

- Inbound call
- Outbound Call
- Call Hold
- Attended Transfer
- Semi-Attended transfer

3.2 Features Not Supported

- None

3.3 Features Not Tested

- None

3.4 Caveats and Limitations

- None

4 Configuration

The specific values listed in this guide are used in the lab configuration described in this document and are for illustrative purposes only. You must obtain and use the appropriate values for your deployment. Encryption is always recommended if supported.

4.1 Configuration Checklist

In this section we present an overview of the steps that are required to configure **Cisco UCM** and **Cisco UBE** for SIP Trunking with **Amazon Chime Voice Connector.**

Table 1 – PBX Configuration Steps

Steps	Description	Reference
Step 1	Cisco UCM Configuration	Section 4.3
Step 2	Cisco UBE Configuration	Section 4.4

4.2 Cisco UCM Configuration

This section with screen shots taken from Cisco UCM used for the interoperability testing gives a general overview of the PBX configuration.

4.2.1 Cisco UCM Login and Version

Open an instance of a web browser and connect to the CUCM,
Log in using an appropriate user ID and password. Verify the system version being tested.

Figure 2: Cisco UCM software version

4.2.2 Cisco UCM SIP Profile Configuration

1. Navigate to **Device** ->**Device Settings**-> **SIP Profile**.

2. On the screen that appears, copy the "**Standard SIP Profile**" and save the SIP Profile with the name **Standard SIP Profile-AWS** and configure the SIP Profile as below.
3. Then click **Save** and then **Apply Config**

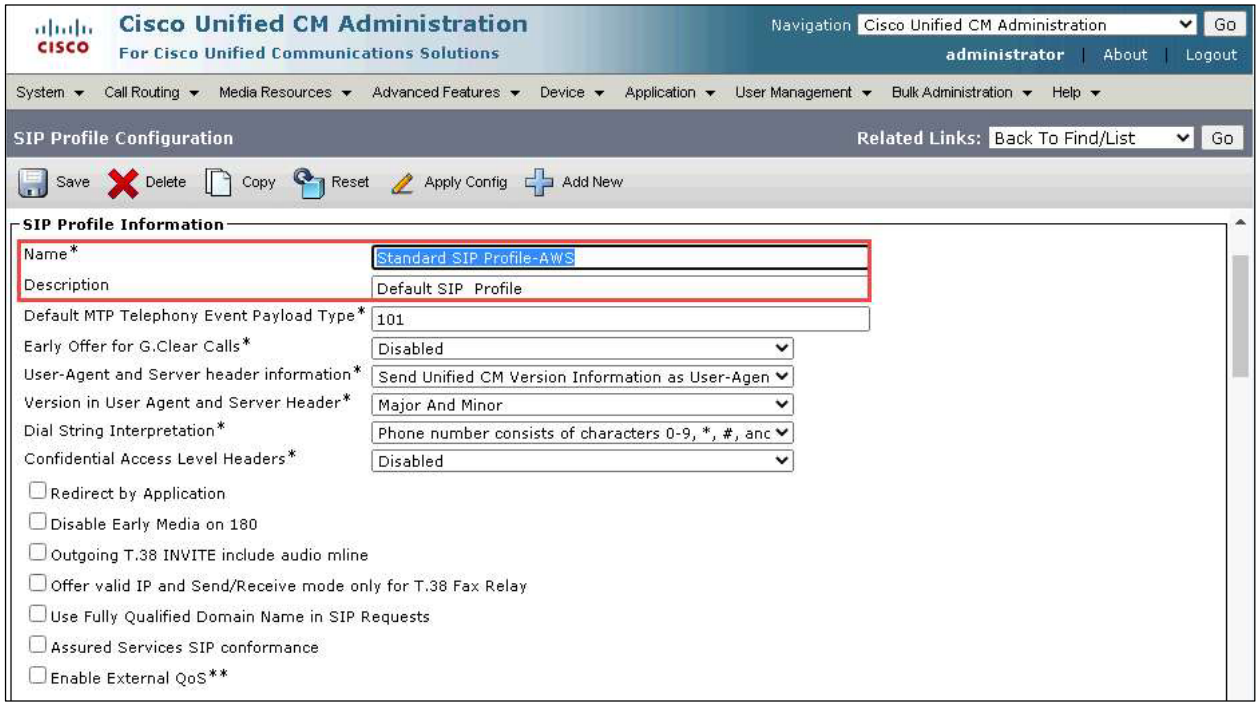

Figure 3 Cisco UCM SIP Profile

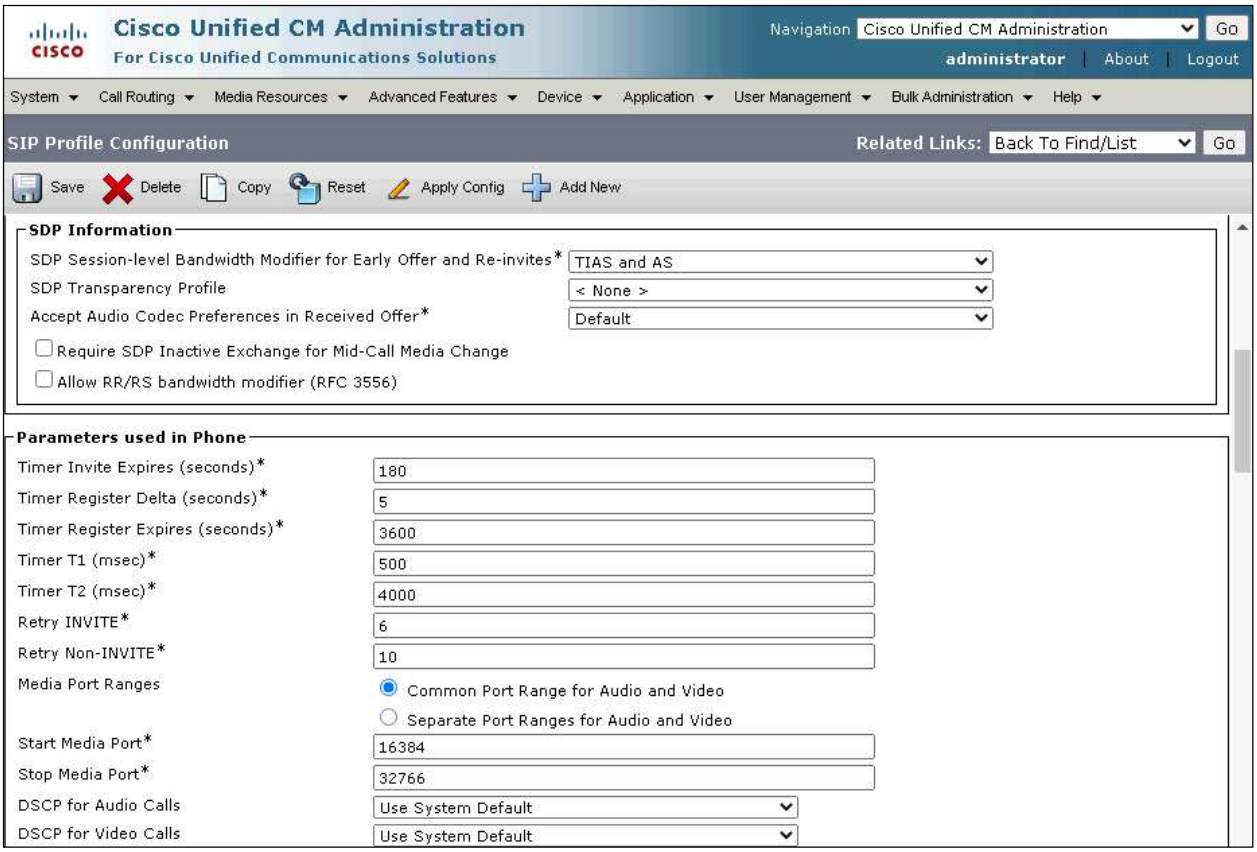

Figure 4 Cisco UCM SIP Profile Contd.,

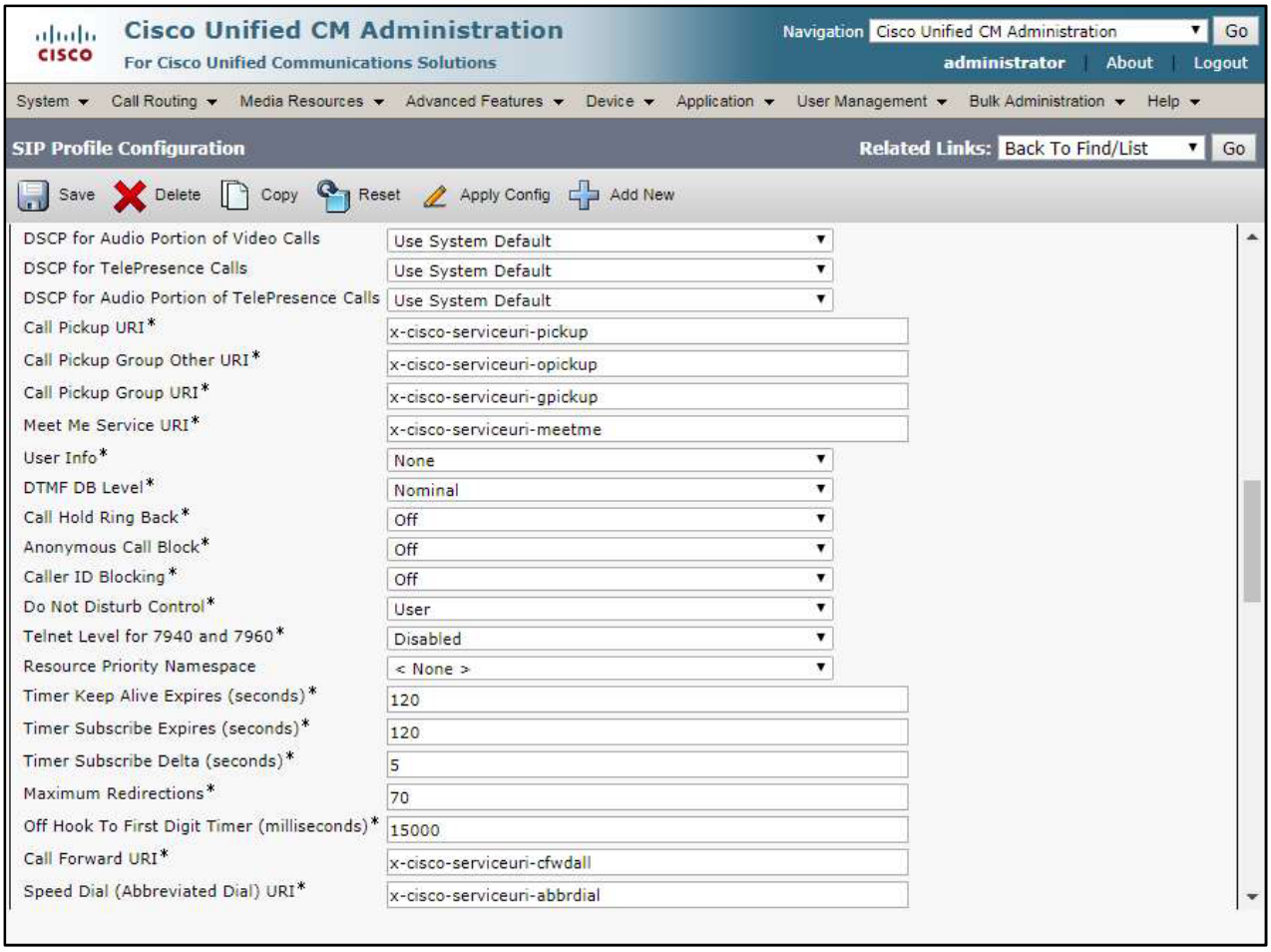

Figure 5 Cisco UCM SIP Profile Contd.,

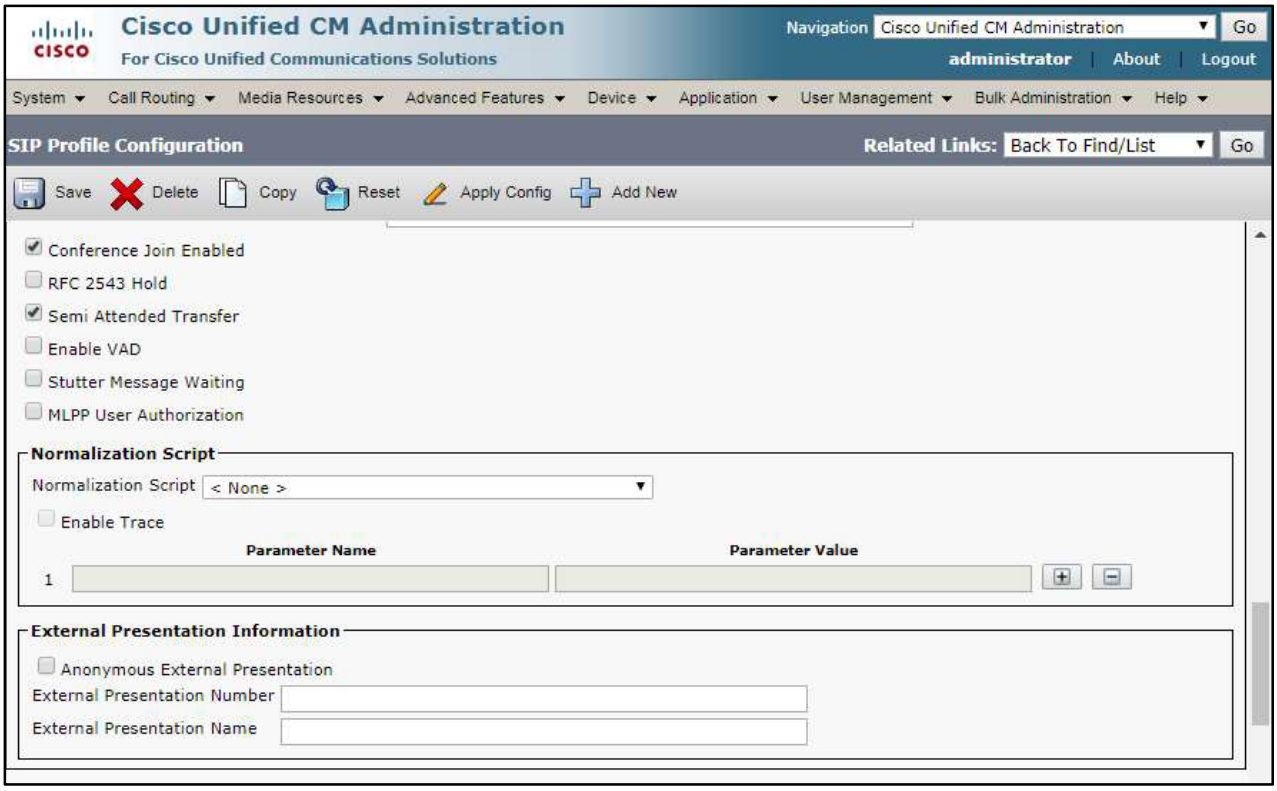

Figure 6 Cisco UCM SIP Profile Contd.,

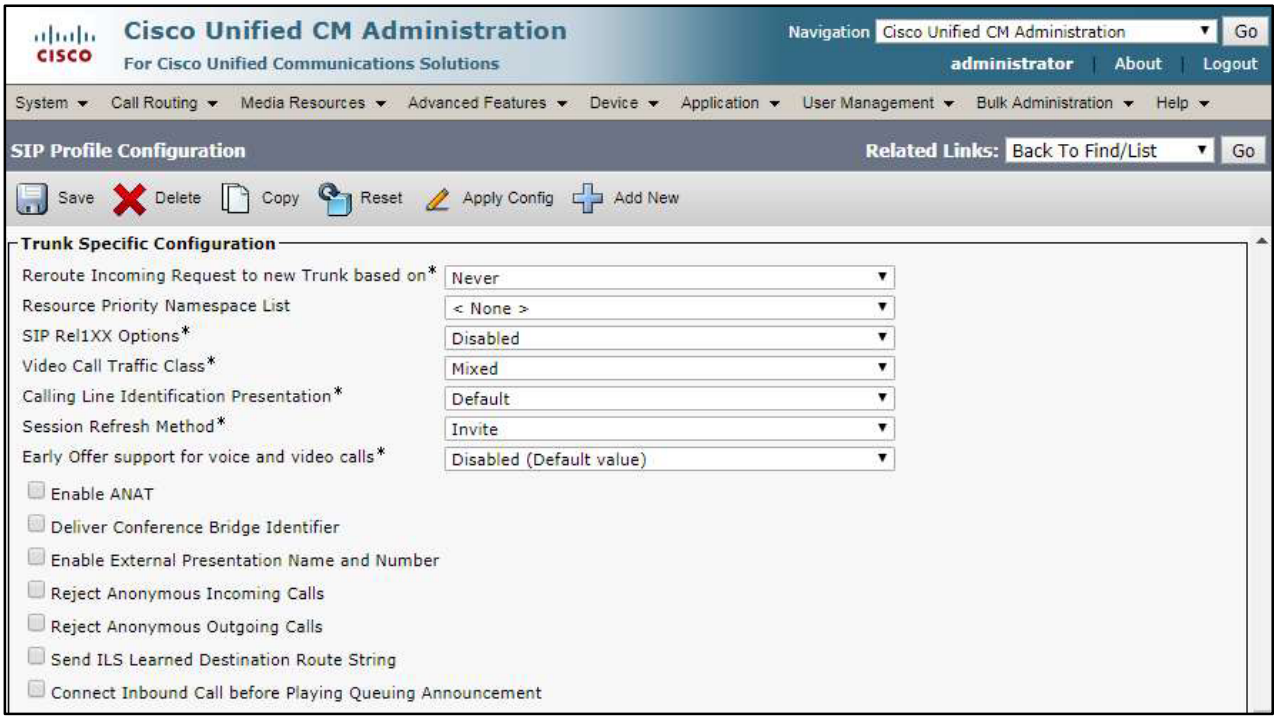

Figure 7 Cisco UCM SIP Profile Contd.,

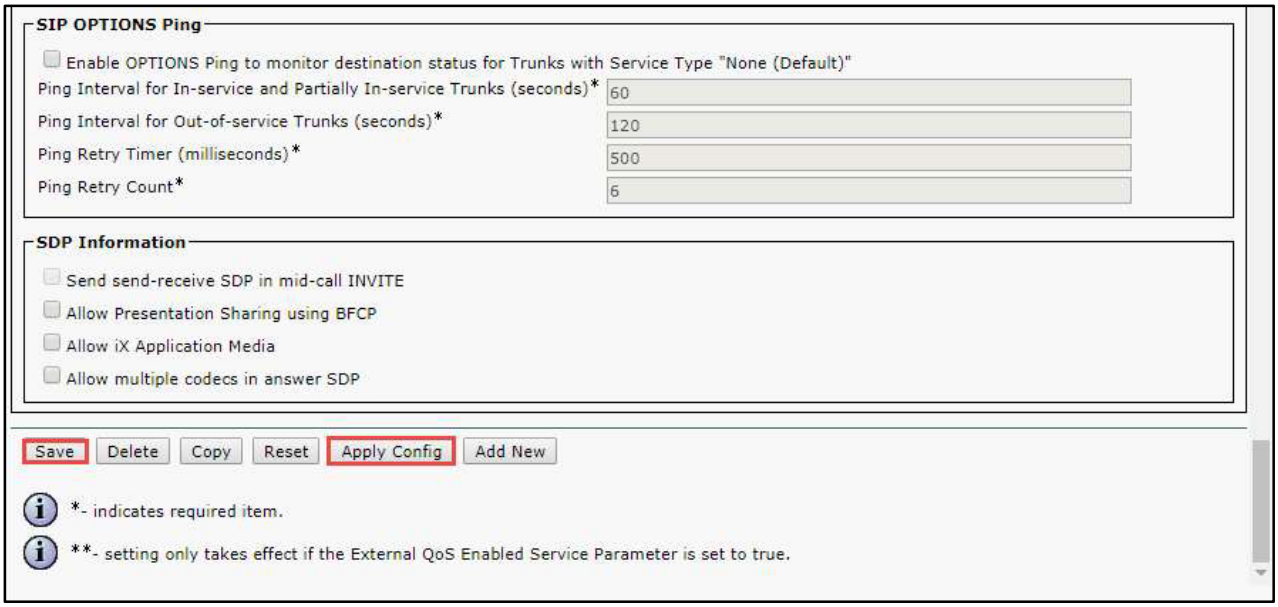

Figure 8 Cisco UCM SIP Profile Contd.,

4.2.3 Cisco UCM Device Pool Configuration

4.2.3.1 Codec Preference list

1. Navigate to **System → Region Information → Audio Codec Preference List**
2. Click **Add New**
3. Provide a Name and Description: **G711_Preferred Codec List** was used in this test
4. Prioritize codecs as shown below

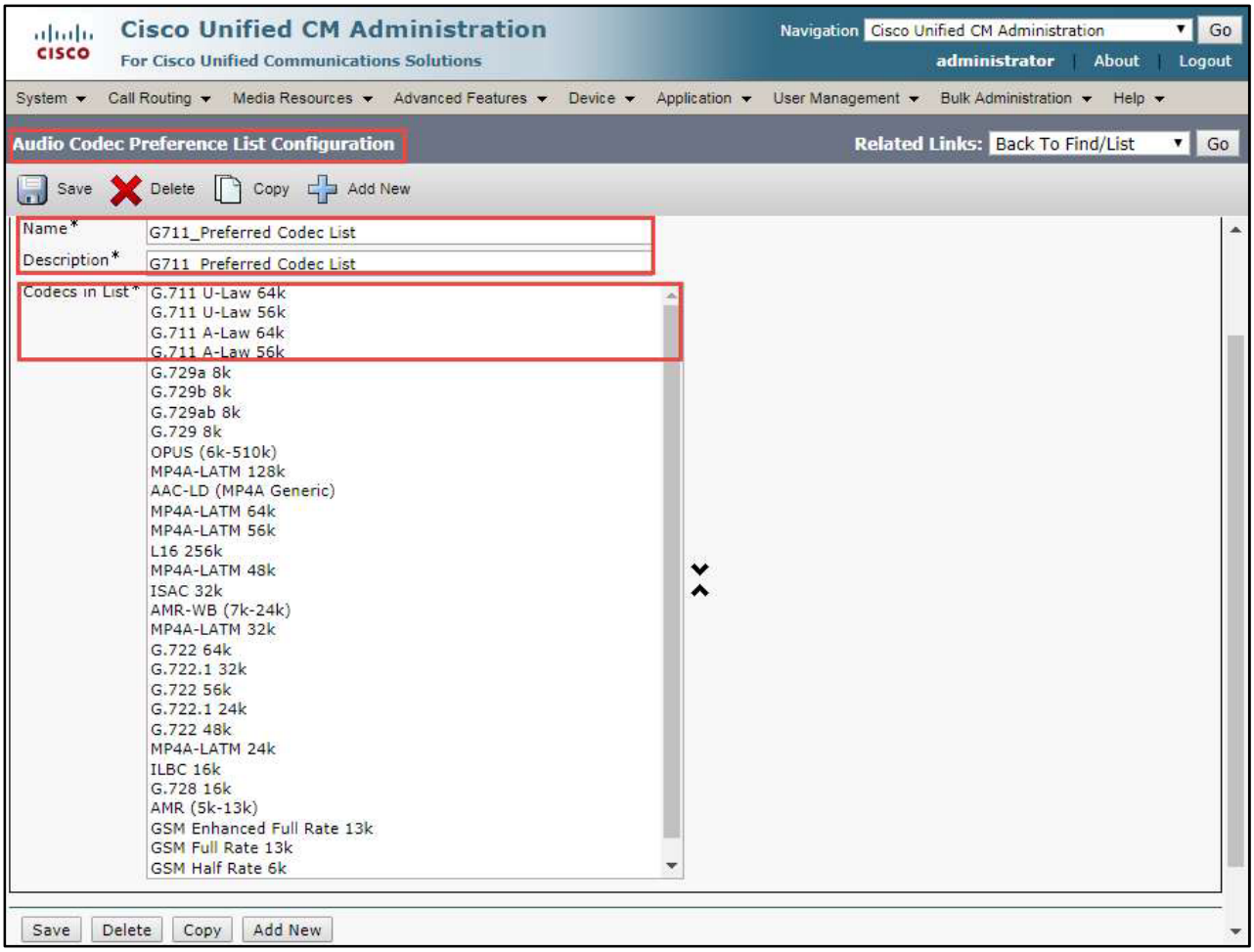

Figure 9 Cisco UCM Audio Codec Preference List

4.2.3.2 Region

1. Navigate to **System → Region information → Region**
2. Click **Add New**
3. Provide a Name: **G711_Region** was used in this test
4. Associate the codec preference list **G711_Preferred Codec List** to this Region

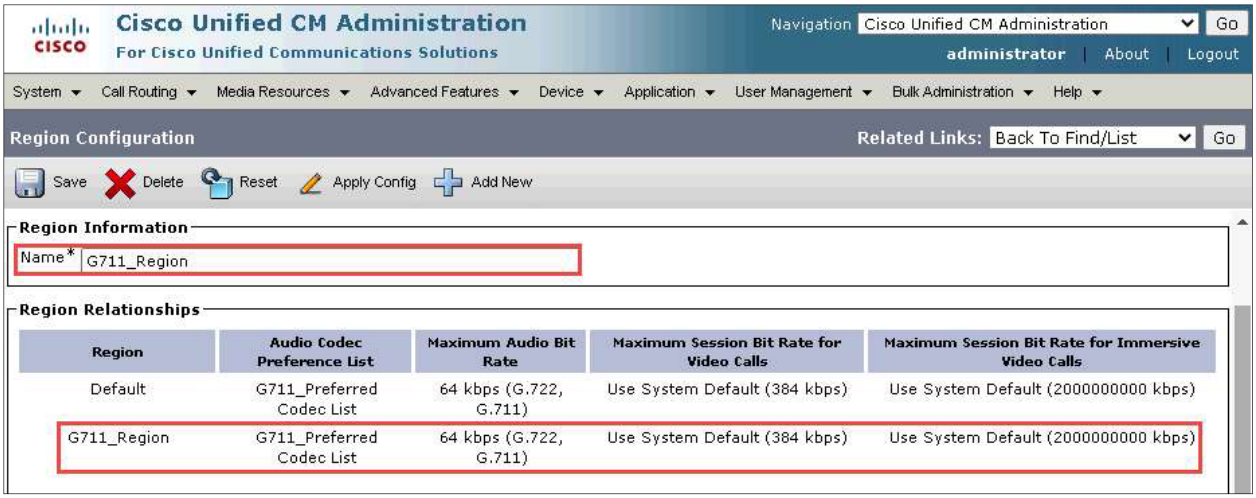

Figure 10 Cisco UCM Region

4.2.3.3 Device Pool

1. Navigate to **System** → **Device Pool**
2. Click **Add New**
3. Provide a Device Pool Name: **G711_pool** was used in this test
4. Associate the Region: **G711_Region** to this Device Pool
5. Associate the Media resource Group List: **MRGL_SW_No_MTP**
6. Leave all other parameters at their default settings
7. Click **Save**

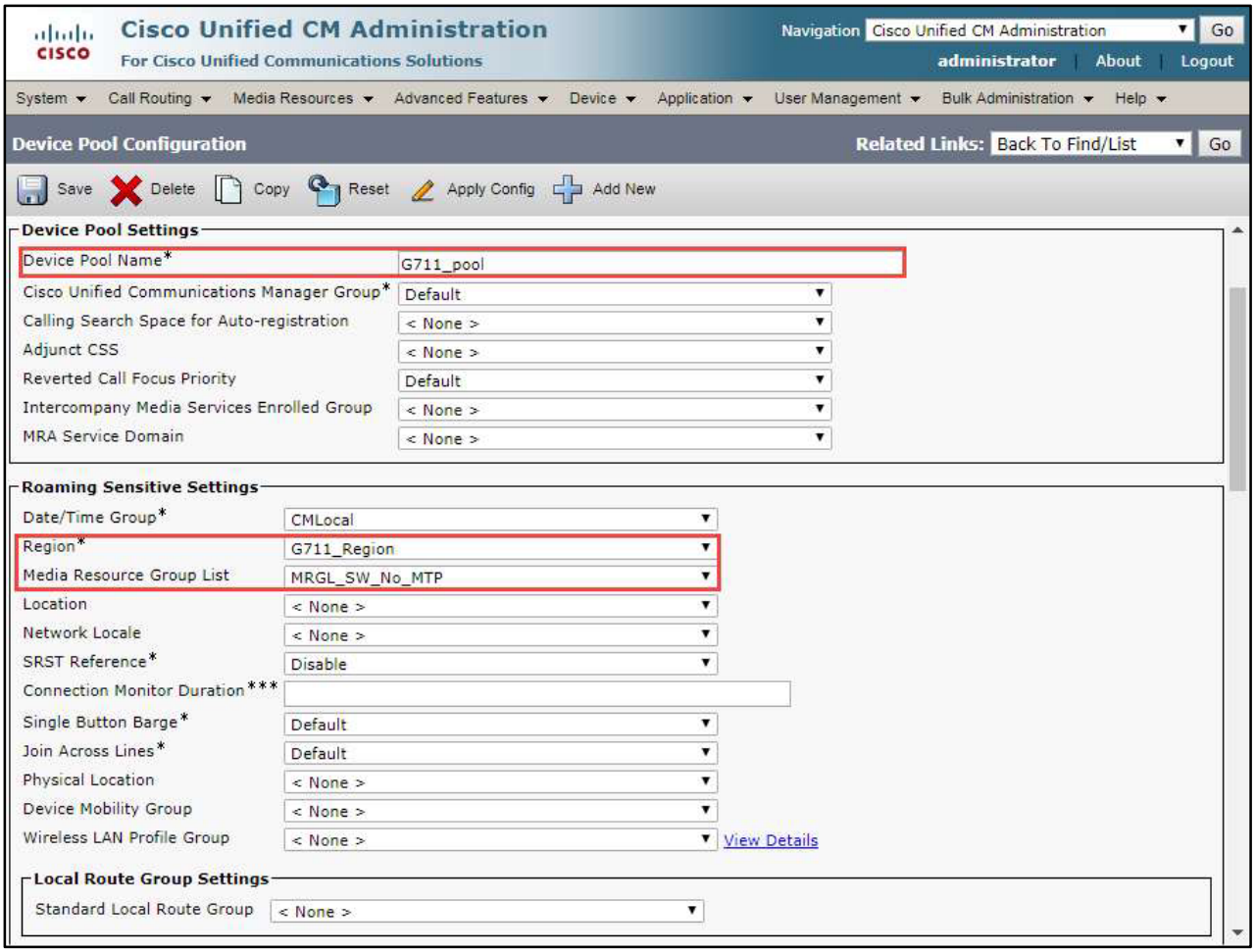

Figure 11 Cisco UCM Device Pool

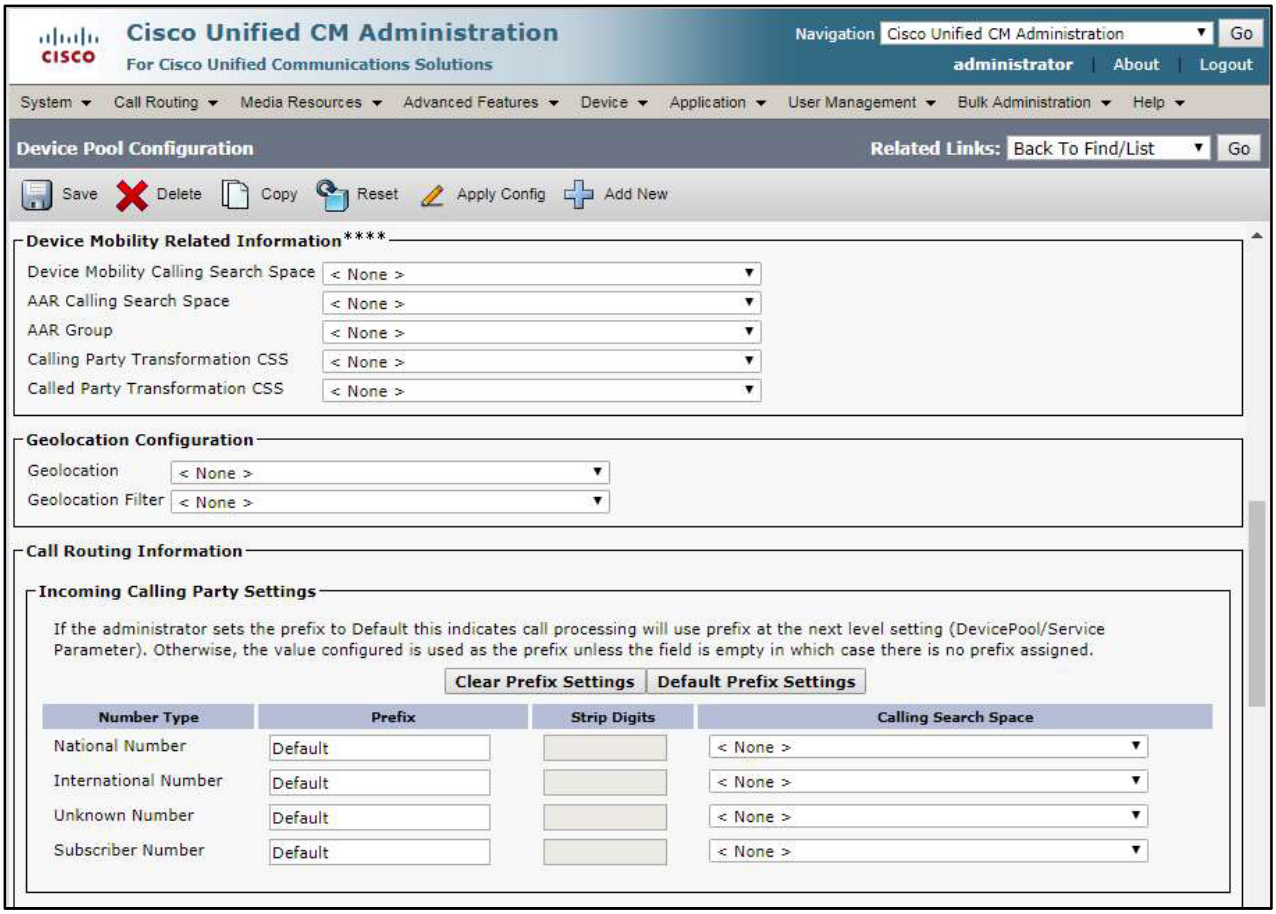

Figure 12 Cisco UCM Device Pool Contd.,

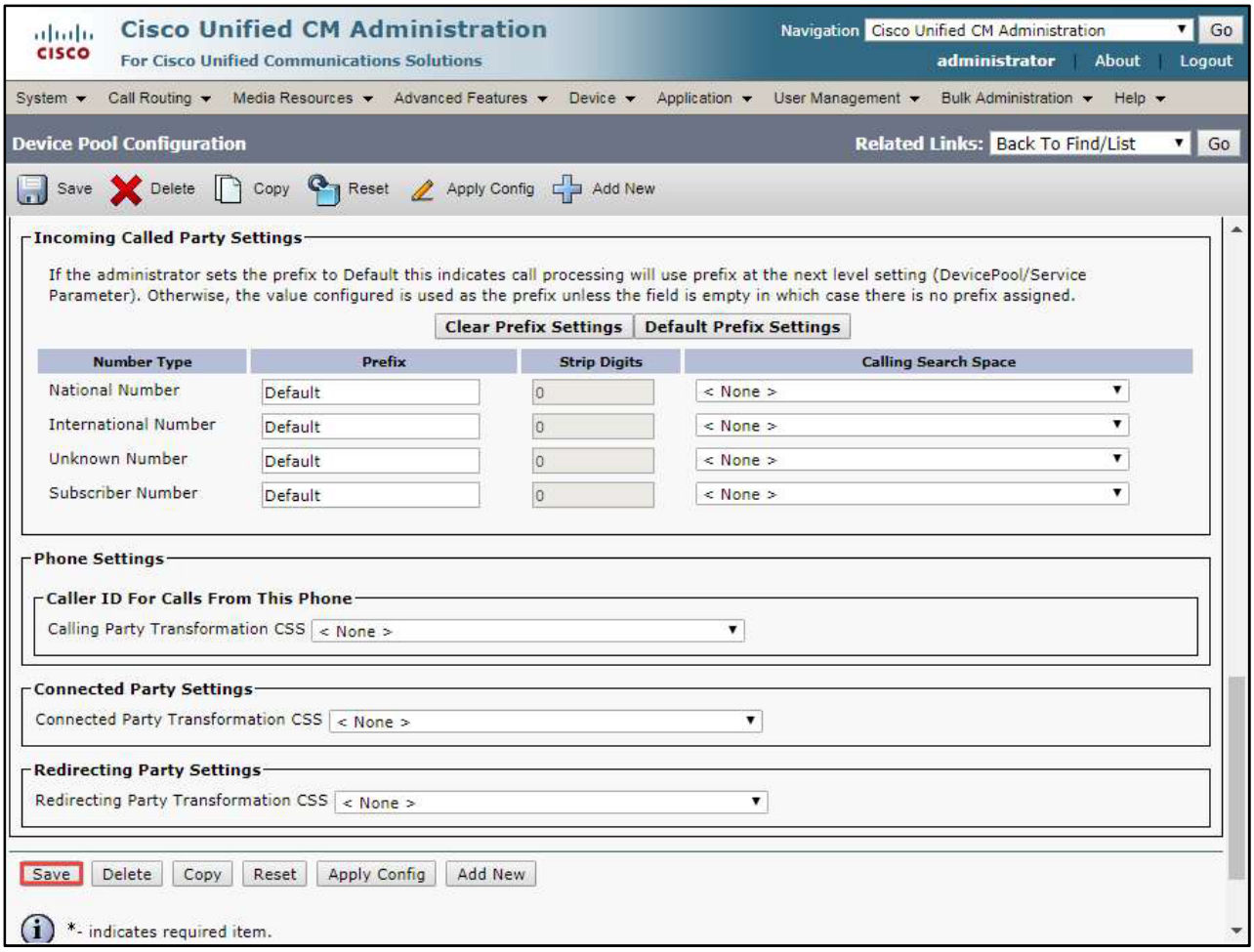

Figure 13 Cisco UCM Device Pool Contd.,

4.2.4 Media Resources

4.2.4.1 Media Resources Group

1. Navigate to Media Resources -> Media Resource Group.
2. Add New.
3. Provide a Name: **MRG With SW_NOMTP** was used in this test
4. Select Media Resources from the Available Media Resources

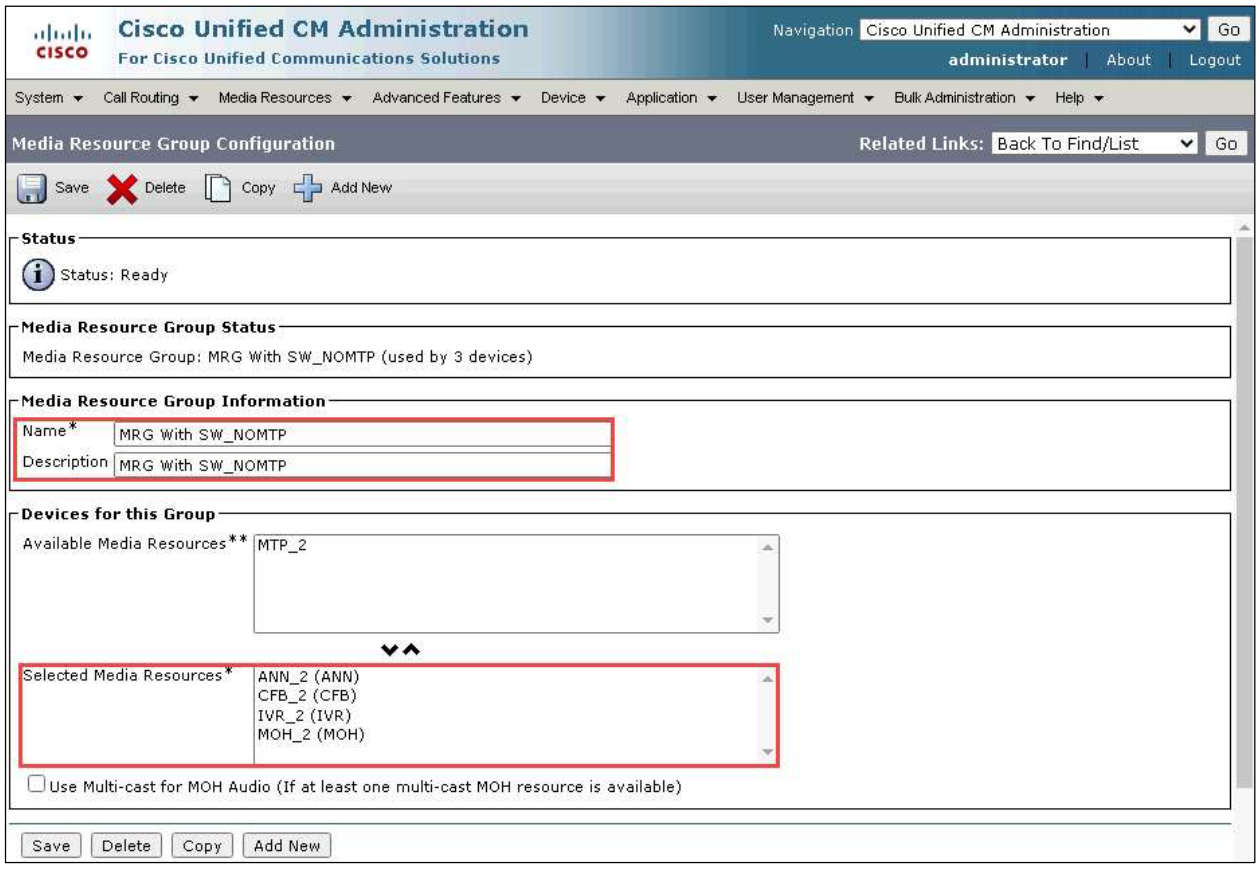

Figure 14 Cisco UCM Media Resources Group

4.2.4.2 Media Resources Group List

1. Navigate to **Media Resources** -> **Media Resource Group List**
2. **Add New**
3. Provide a Name: **MRGL_SW_No_MTP** was used in this test
4. Select the media resource group from the list of Available Media Resource Groups
5. Click on **Save**

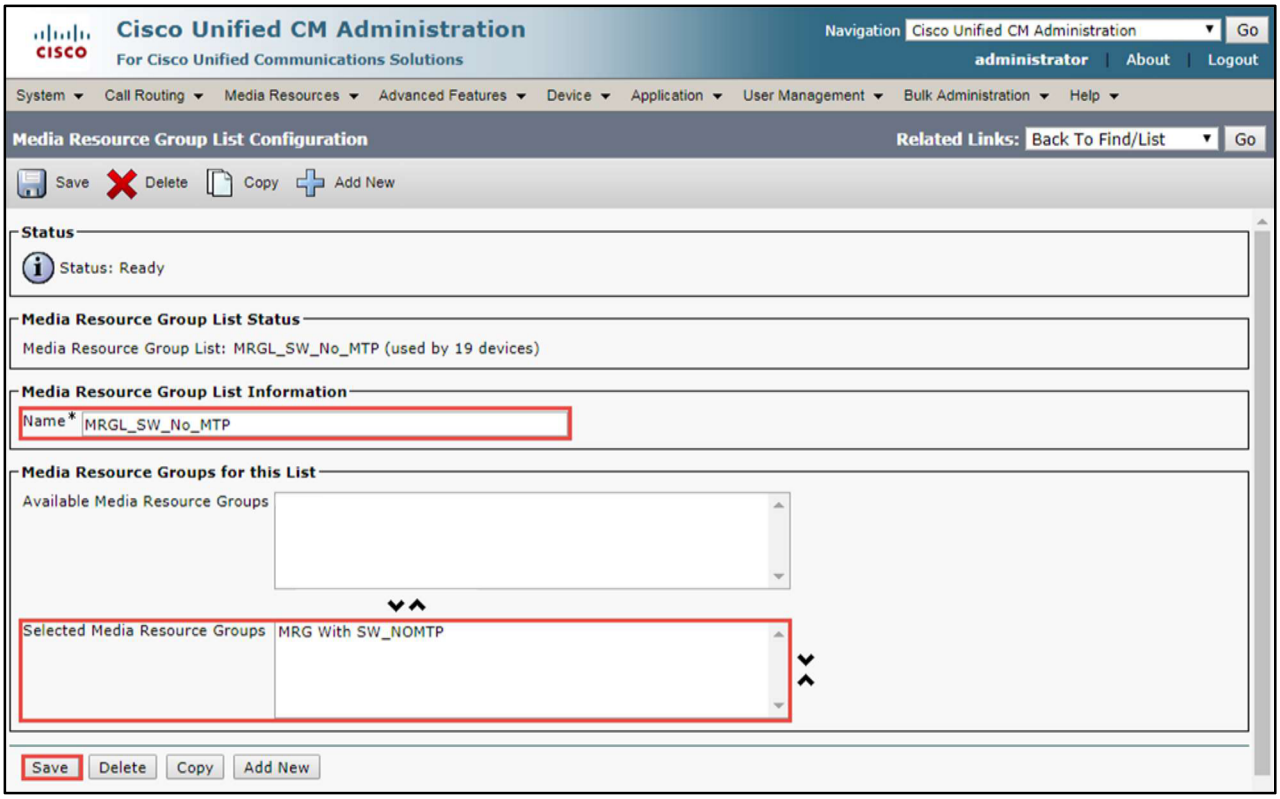

Figure 15 Cisco UCM Media Resources Group List

4.2.5 SIP Trunk Security Profile

1. Navigate to: **System→Security→ SIP Trunk Security Profile**
2. Provide a Name: **Non Secure SIP Trunk Profile-AWS** was used for this test
3. Select Incoming Transport Type: **TCP+UDP** was used in this test
4. Select Outgoing Transport Type: **UDP** was used in this test
5. Click **Save**

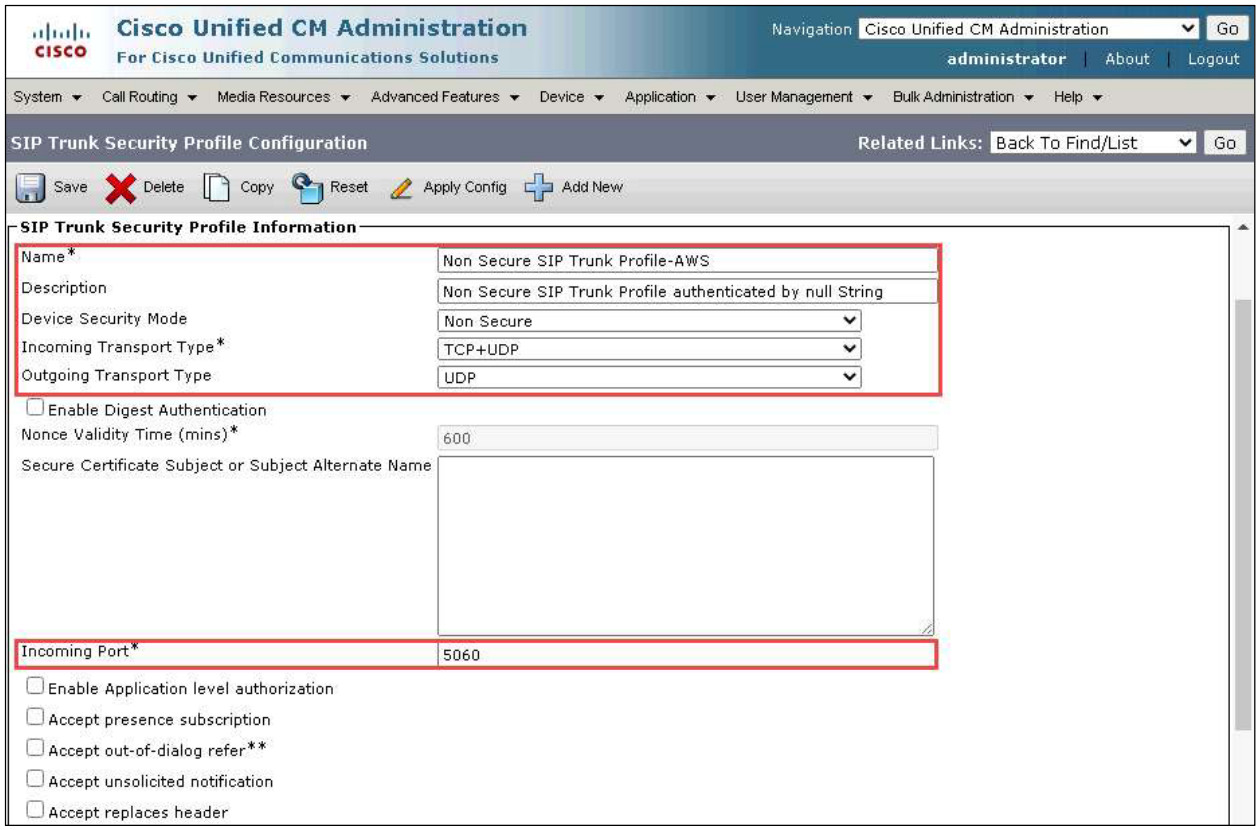

Figure 16 Cisco UCM SIP Trunk Security Profile

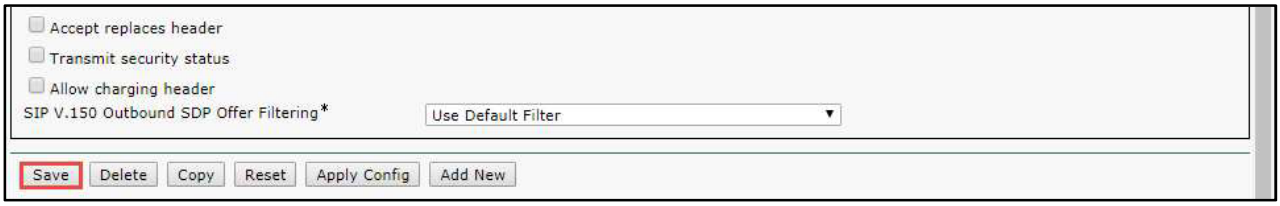

Figure 17 Cisco UCM SIP Trunk Security Profile Contd.,

4.2.6 SIP Trunk to Cisco UBE

1. Navigate to **Device→ Trunk**
2. Provide a **Device Name**: AmazonSIPTrunkCUBE
3. Provide a **Description**: AmazonSIPTrunkCUBE
4. Set **Device Pool**: G711_pool
5. Set **Destination Address**: Set IP address of Cisco UBE
6. Set **SIP Trunk Security Profile**: Non Secure SIP Trunk Profile-AWS
7. Set **SIP Profile**: Standard SIP Profile – AWS
8. Set **DTMF Signaling Method**: RFC2833

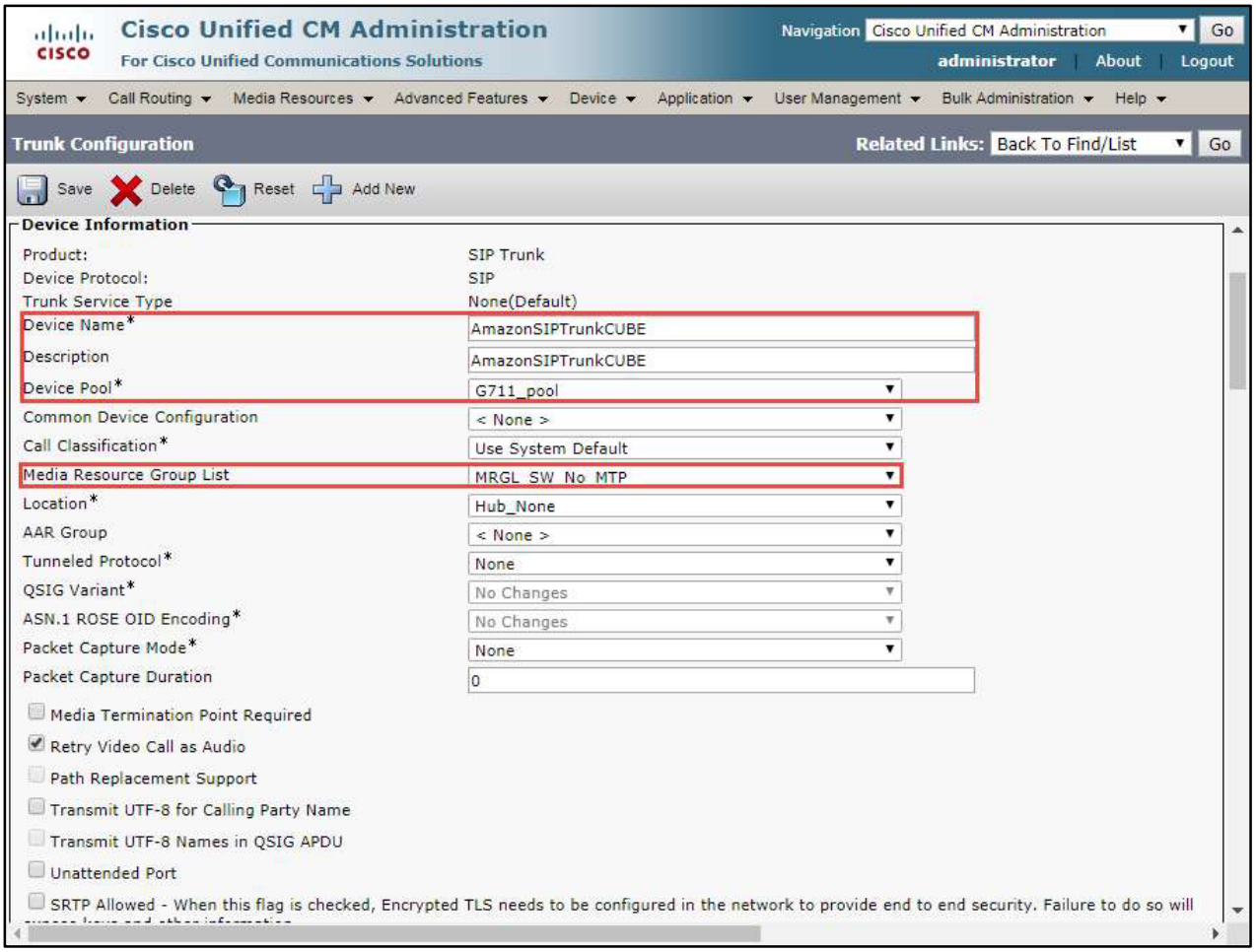

Figure 18 Cisco UCM SIP Trunk Configuration

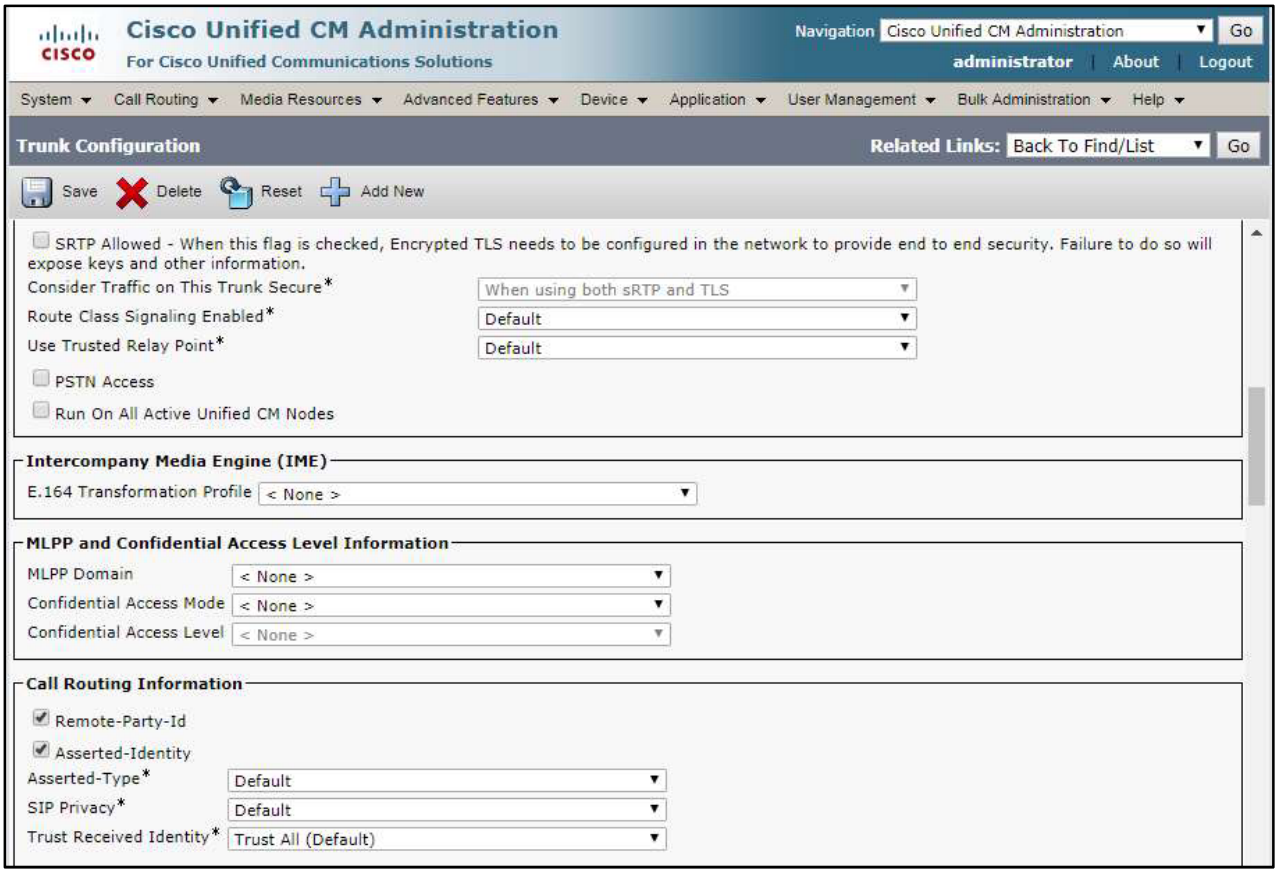

Figure 19 Cisco UCM SIP Trunk Configuration Contd.,

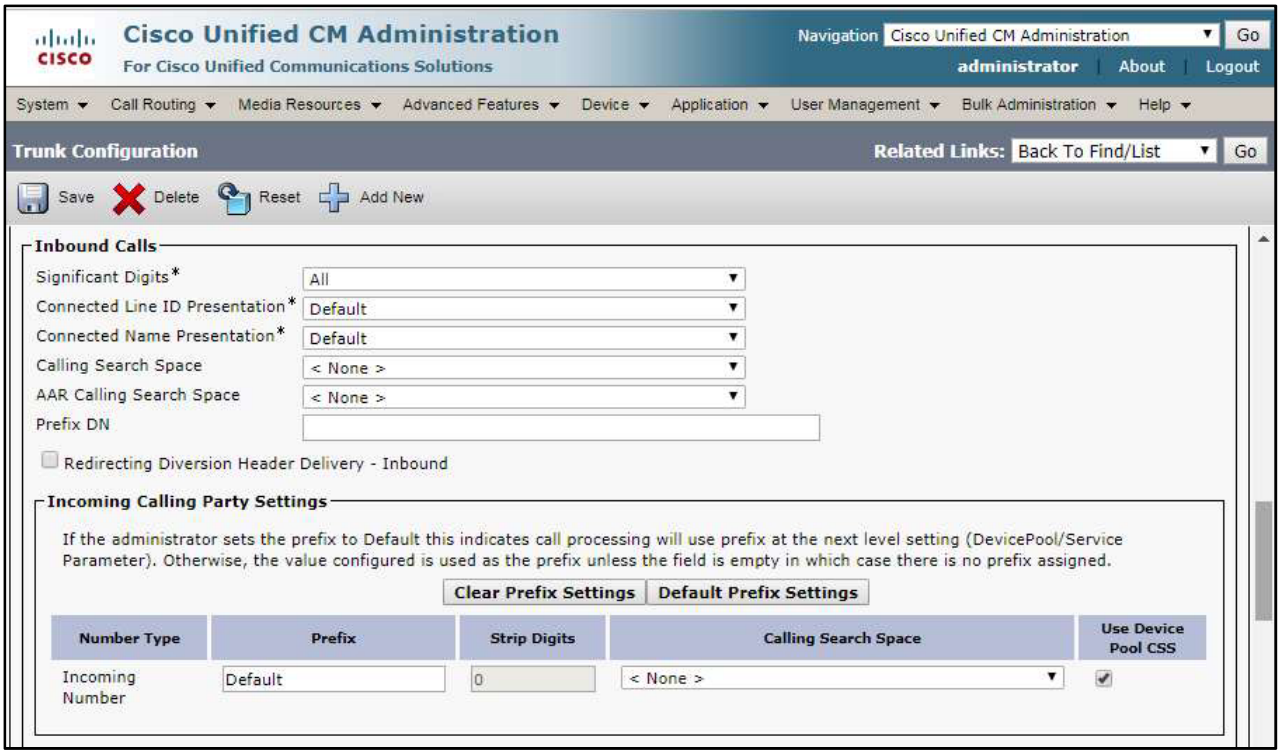

Figure 20 Cisco UCM SIP Trunk Configuration Contd.,

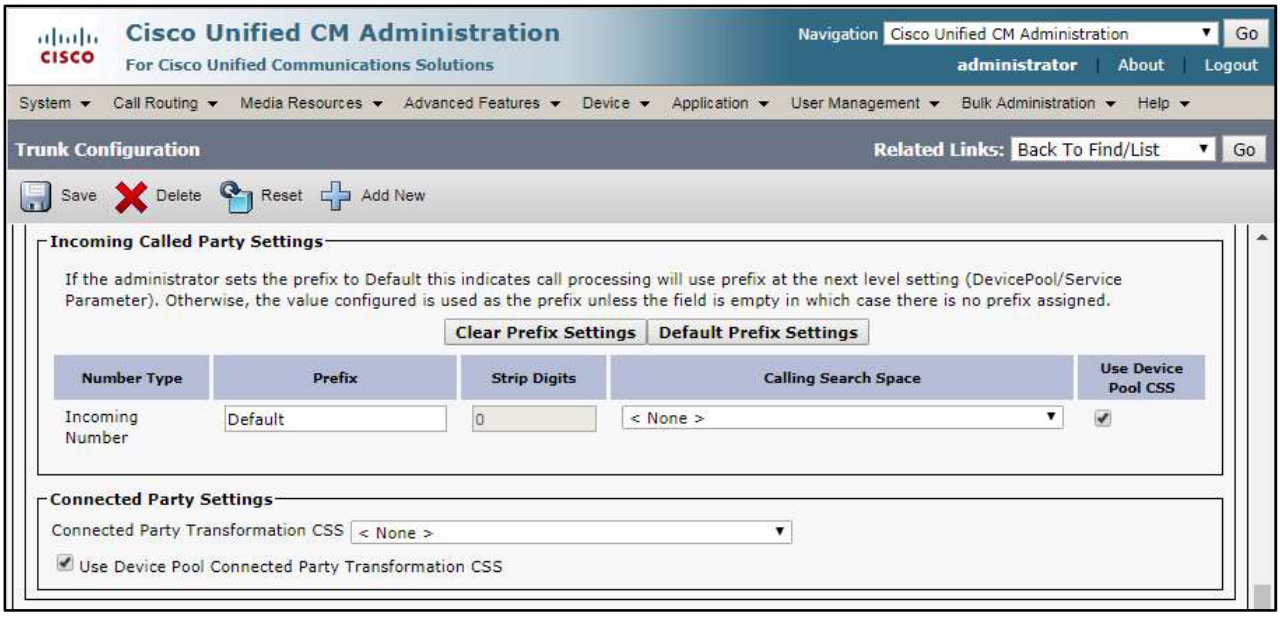

Figure 21 Cisco UCM SIP Trunk Configuration Contd.,

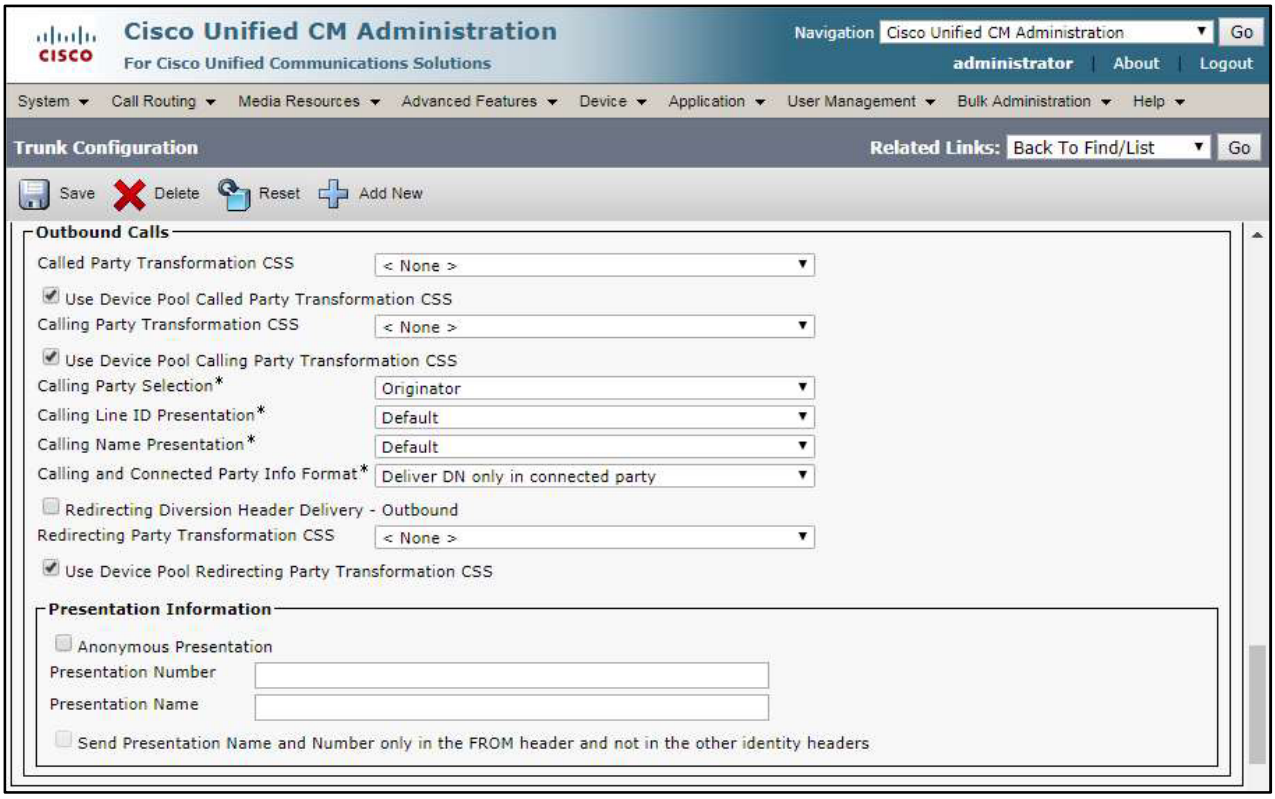

Figure 22 Cisco UCM SIP Trunk Configuration Contd.,

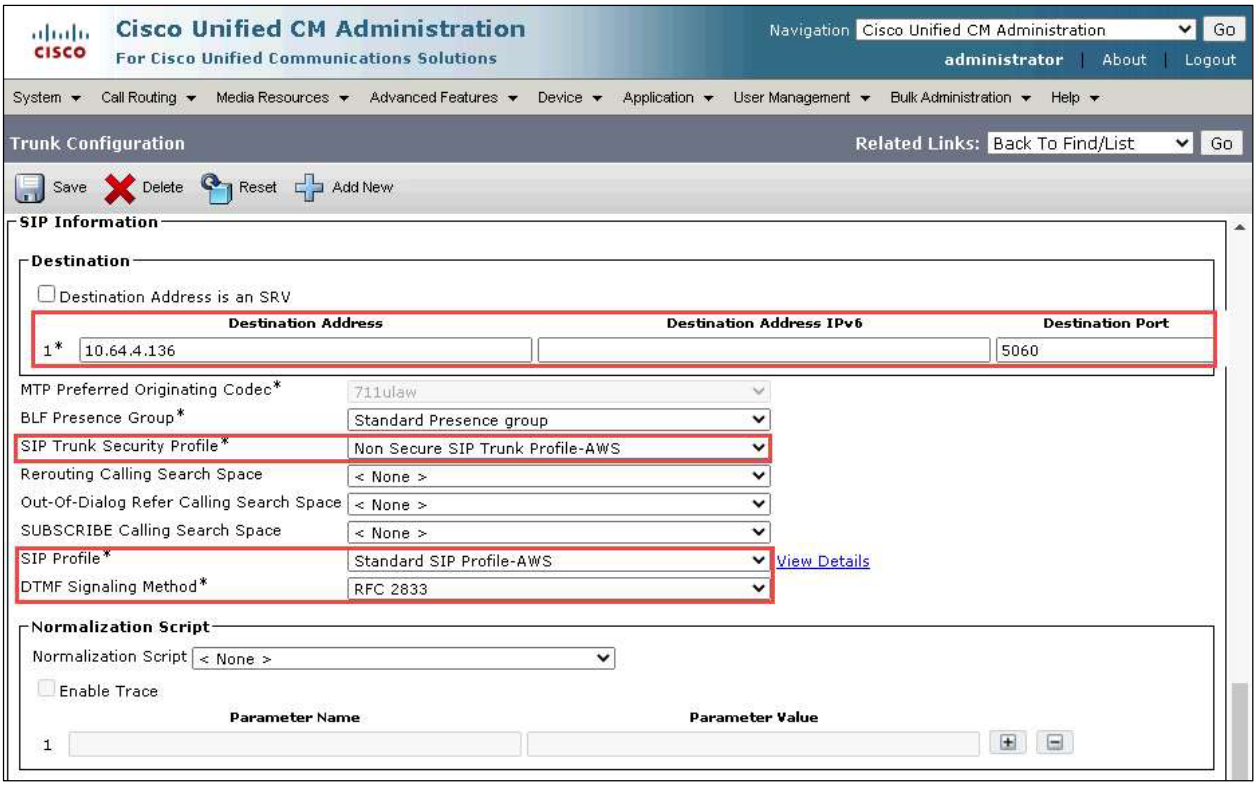

Figure 23 Cisco UCM SIP Trunk Configuration Contd.,

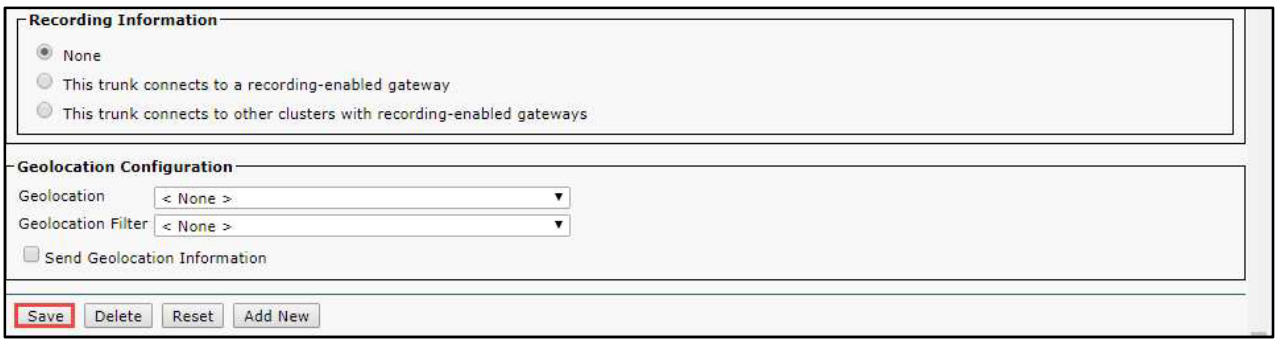

Figure 24 Cisco UCM SIP Trunk Configuration Contd.,

4.2.7 Route Pattern

1. Navigate to **Call Routing** -> **Route/Hunt**-> **Route Pattern**
2. Select **Add New** to create a new Route Pattern
3. The route pattern "9.[0-9]![0-9#]" was configured to enable outbound dialing from CUCM to PSTN using the access code as "9".
4. Set **Gateway/Route List**: AmazonSIPTrunkCUBE
5. Set **Discard Digits**: *PreDot* was used in this test (configure this option to remove the prefix '9' from called party number while sending the call out to Cisco UBE)
6. Click on **Save**

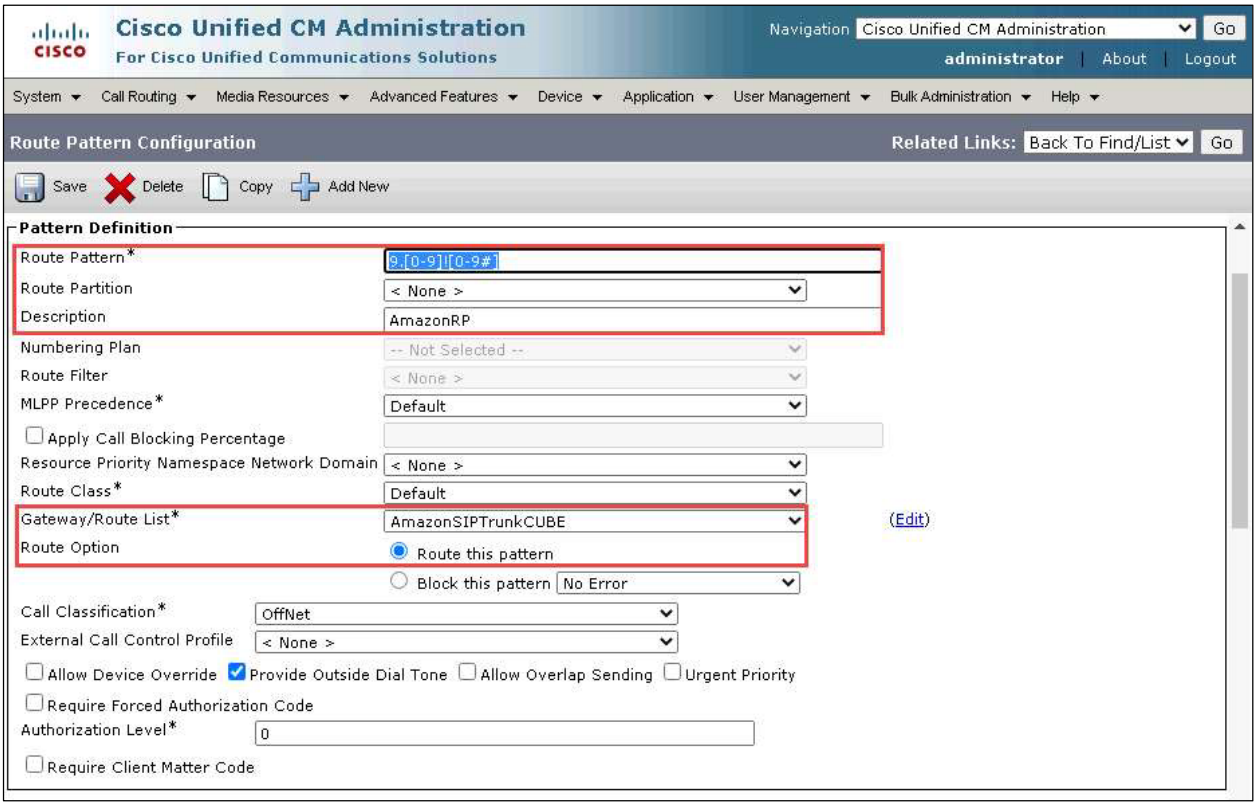

Figure 25 Cisco UCM Route Pattern Configuration

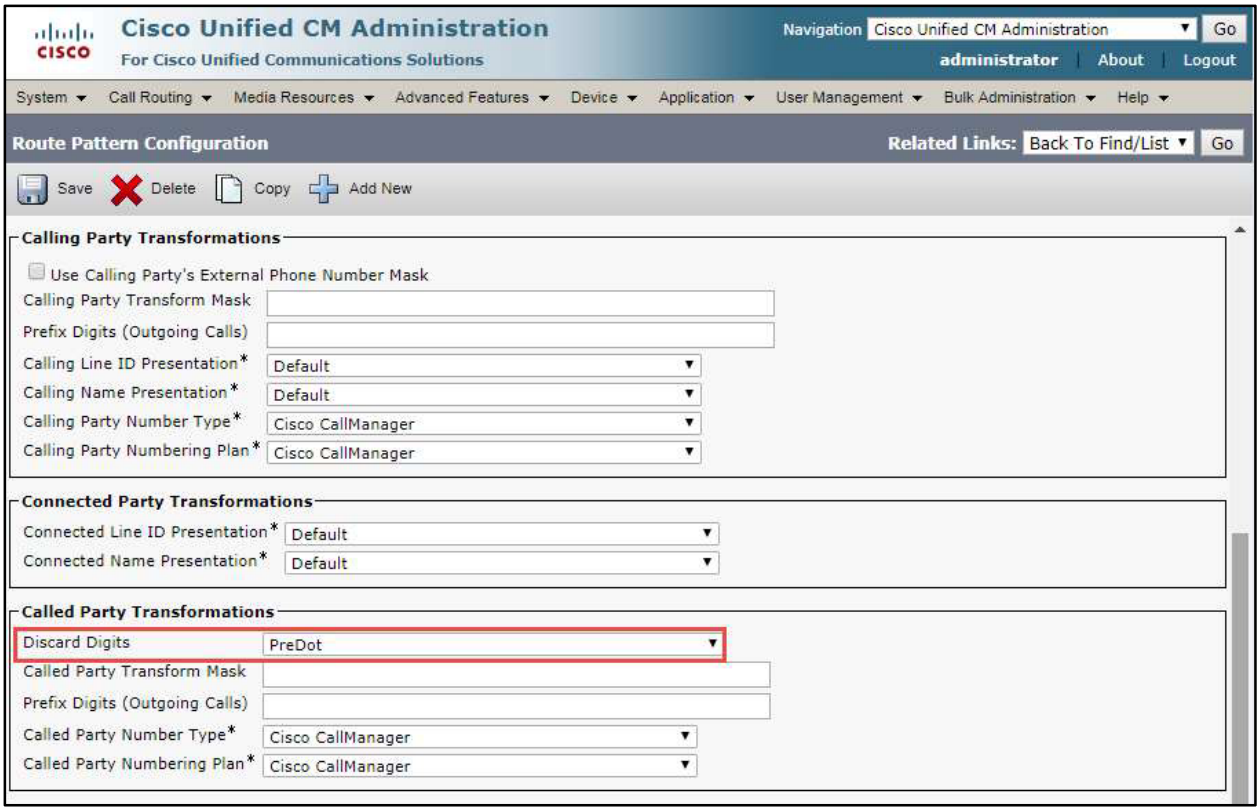

Figure 26 Cisco UCM Route Pattern Configuration Contd.,

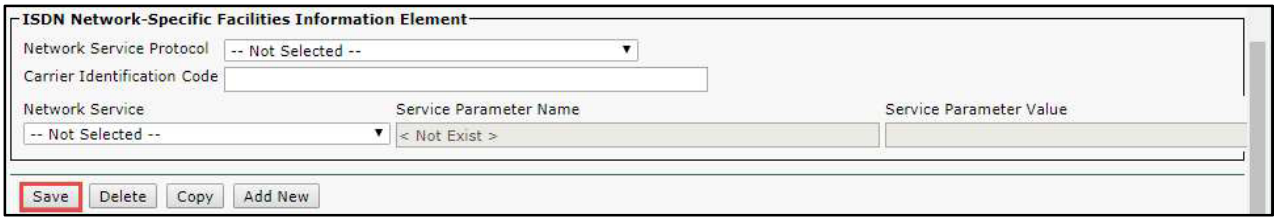

Figure 27 Cisco UCM Route Pattern Configuration Contd.,

4.3 Cisco UBE Configuration

4.3.1 Global Cisco UBE settings

```
voice service voip
 ip address trusted list
  ipv4 10.64.1.72
  ipv4 10.80.23.11
  ipv4 10.80.23.12
  ipv4 3.xx.xx.xx 255.xx.xx.xx
  ipv4 52.xx.xx.xx 255.xx.xx.xx
  ipv4 52.xx.xx.xx 255.xx.xx.xx
  ipv4 34.xx.xx.xx 255.xx.xx.xx
  ipv4 34.xx.xx.xx 255.xx.xx.xx
  ipv4 10.80.11.79 255.255.255.255
  ipv4 10.80.11.141 255.255.255.255
 address-hiding
 mode border-element
 allow-connections sip to sip
 no supplementary-service sip moved-temporarily
 no supplementary-service sip handle-replaces
 fax protocol pass-through g711ulaw
 trace
 sip
  session refresh
  asserted-id pai
  early-offer forced
  midcall-signaling passthru
  pass-thru headers unsupp
```

4.3.2 Codecs

```
voice class codec 1
 codec preference 1 g711ulaw
```

4.3.3 SIPREC

4.3.3.1 SIPREC Common configuration for TCP and TLS

4.3.3.1.1 Media Profile

```
media profile recorder 2020
 media-type audio
 media-recording 5980090
```

4.3.3.1.2 Media Class

```
media class 2020
 recorder profile 2020 siprec
```

4.3.3.2 SIPREC specific configuration using TCP

4.3.3.2.1 Dial-Peer to Amazon Voice Connector

```
dial-peer voice 5980090 voip
 description DP_AmazonVCRecording
 destination-pattern +1972598XXXX
 session protocol sipv2
 session target dns:dtndXXXX.voiceconnector.chime.aws
 session transport tcp
 voice-class codec 1
 voice-class sip localhost dns:dtndXXXX.voiceconnector.chime.aws
preferred
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 no vad
```

4.3.3.3 SIPREC specific configuration using TLS

Amazon Chime Voice Connector Root Certificate can be downloaded from Amazon Chime Voice Connector account

4.3.3.3.1 Trust point for Amazon in CUBE

```
crypto pki trustpoint AMZVCROOT
 enrollment terminal pem
 chain-validation continue AMZVCROOT
 revocation-check none
```

4.3.3.3.2 SIP-UA

```
sip-ua
crypto signaling remote-addr 10.80.11.79 255.255.255.255  trustpoint awscube7
 crypto signaling default trustpoint AMZVCROOT
```

4.3.3.3.3 Dial-Peer to Amazon Voice Connector for Call Recording

```
dial-peer voice 5980090 voip
 description DP_AmazonVCRecording
 destination-pattern +1972598XXXX
 session protocol sipv2
 session target dns:dtndXXXX.voiceconnector.chime.aws:5061
 session transport tcp tls
 voice-class codec 1
 voice-class sip localhost dns:dtndXXXX.voiceconnector.chime.aws preferred
 voice-class sip srtp-crypto 1
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
```

```
 srtp pass-thru
 no vad
```

4.3.4 Dial Peer

Inbound Dial Peer for Cisco UCM

```
dial-peer voice 200 voip
 description Incoming dial-peer from CUCM to PSTNGW
 session protocol sipv2
 destination dpg 100
 incoming uri via CUCM
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip tenant 200
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 media-class 2020
 dtmf-relay rtp-nte
 no vad
```

Inbound Dial Peer for Gateway

```
dial-peer voice 100 voip
 description Incoming dial-peer from PSTNGW to CUCM
 session protocol sipv2
 session transport tcp tls
 destination dpg 200
 incoming called e164-pattern-map 890
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip srtp-crypto 1
 voice-class sip bind control source-interface GigabitEthernet0/0/1
 voice-class sip bind media source-interface GigabitEthernet0/0/1
 dtmf-relay rtp-nte
 srtp
```

```
 no vad
```

Outbound Dial Peer to Cisco UCM

```
dial-peer voice 201 voip
 description Outgoing dial-peer from PSTNGW to CUCM
 destination-pattern BAD.BAD
 session protocol sipv2
 session target sip-server
 voice-class codec 1
 voice-class sip options-ping 60
 voice-class sip tenant 100
 voice-class sip options-keepalive
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 media-class 2020
 dtmf-relay rtp-nte
 no vad
```

Outbound Dial Peer to Gateway

```
dial-peer voice 101 voip
 description Outgoing dial-peer from CUCM to PSTNGW
 destination-pattern BAD.BAD
 session protocol sipv2
 session target sip-server
 session transport tcp tls
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip tenant 200
 voice-class sip srtp-crypto 1
 voice-class sip bind control source-interface GigabitEthernet0/0/1
 voice-class sip bind media source-interface GigabitEthernet0/0/1
 dtmf-relay rtp-nte
```

```
 srtp
 no vad
```

4.3.5 Cisco UBE Running Configuration-SIPREC using TCP

```
awscube7#show running-config
Building configuration...

Current configuration : 22610 bytes
!
! Last configuration change at 05:47:23 UTC Tue Jul 19 2022
!
version 17.6
service config
service timestamps debug datetime msec
service timestamps log datetime msec
service call-home
platform qfp utilization monitor load 80
platform punt-keepalive disable-kernel-core
!
hostname awscube7
!
boot-start-marker
boot system flash bootflash:isr4300-universalk9.17.06.02.SPA.bin
boot-end-marker
!
!
vrf definition Mgmt-intf
 !
 address-family ipv4
 exit-address-family
 !
```

```
 address-family ipv6
 exit-address-family
!
logging buffered 147483647
!
no aaa new-model
!
!
!
!
!
!
!
ip name-server 8.8.8.8
!
!
!
login on-success log
!
!
!
!
!
!
!
subscriber templating
!
!
!
!
!
!
!
multilink bundle-name authenticated
```

```
!
!
!
!
!
!
!
password encryption aes
!
!
crypto pki trustpoint TP-self-signed-2194658987
 enrollment selfsigned
 subject-name cn=IOS-Self-Signed-Certificate-2194658987
 revocation-check none
 rsakeypair TP-self-signed-2194658987
!
crypto pki trustpoint SLA-TrustPoint
 enrollment pkcs12
 revocation-check crl
!
crypto pki trustpoint awscube7
 enrollment terminal
 fqdn awsXXX.XXX.com
 subject-name cn= awsXXX.XXX.com
 subject-alt-name awsXXX.XXX.com
 revocation-check none
 rsakeypair isr4k
!
crypto pki trustpoint tekrootca
 enrollment terminal
 revocation-check none
!
crypto pki trustpoint AMZVCROOT
```

```
 enrollment terminal pem
 chain-validation continue AMZVCROOT
 revocation-check none
!
!
crypto pki certificate chain TP-self-signed-2194658987
 certificate self-signed 01
  30820330 30820218 A0030201 02020101 300D0609 2A864886 F70D0101
05050030
  31312F30 2D060355 04031326 494F532D 53656C66 2D536967 6E65642D
43657274
  69666963 6174652D 32313934 36353839 3837301E 170D3231 31323031
31393438
  33395A17 0D333131 32303131 39343833 395A3031 312F302D 06035504
03132649
  4F532D53 656C662D 5369676E 65642D43 65727469 66696361 74652D32
31393436
  35383938 37308201 22300D06 092A8648 86F70D01 01010500 0382010F
00308201
  0A028201 0100A8DF 131F787F 10B7F65C B724DD9D 91BAF7B0 84ECEF1A
2A77ABEE
  2253DA5C C628097E 5A9EE0C0 F40B766B 93D23245 B7B456B8 43E97E8C
15D61B56
  29E818C6 32AF75DB 3DB128BE 7690B60F B579819E 9136A3EC D3DCB421
A7840BE9
  33200FDE 2BCC40ED CFCA29EF A9D8A84A C6765D8C 6C492162 0A98C294
5DBA5872
  47D49F71 A84CAFA0 E49B29C8 F444BFFA 75D26A7D 9D874369 843528E5
F9AF3787
  78324251 0295A4B4 CC645849 DDFAA56C 2FAB2F51 239B073F DE9F4F7B
17AC9007
  2AE08E3B 0E4F70B9 BEE9AB6F E4050514 5A094561 67001621 D64DFBA0
59278D4B
  9800DAB9 B37A71E7 AC362CA4 3F36076E 43C55A00 56C70416 562C510A
68A470A5
  DF2E3648 C7750203 010001A3 53305130 0F060355 1D130101 FF040530
030101FF
  301F0603 551D2304 18301680 1489CB24 B6A7FC49 15E613AC FF8A9AC5
7A9F70D1
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  47301D06 03551D0E 04160414 89CB24B6 A7FC4915 E613ACFF 8A9AC57A
9F70D147

  300D0609 2A864886 F70D0101 05050003 82010100 939ED35B 838D3917
7146744B

  8183795B 03CF8116 B2E14D3C CE4CD12D 807C5497 D2906722 72919944
4041119E

  9799AF9B 0E9E0101 30660BE9 12D090CA 0F410AED 53A77F6C FF2125B9
00A6488F

  5979314E 1F93E30B 083824D0 6975F108 F6C2A090 FE086175 736832A4
FD1CE4AE

  9E781B74 7DBC25F9 BB28B978 08CA4830 94F654F0 9C19A66B 0A3D12D7
5F12CCD1

  F5B7FDE9 1C14D6FF B12FF49E F6B34C15 D14E9725 602D5590 FB4F44E4
DD2C030C

  C0650DE4 CE9FF9B8 FC149B16 C591B43F 4FA30C7A 5076B21B D59A2451
F80AB784

  AE8A7966 B689B7E5 EB11838B C3997D18 FAA19BDB 7E94E0CA A716EA52
C8E6726B

  13134171 382E3838 477EDB61 E921463C 98609C02

       quit

crypto pki certificate chain SLA-TrustPoint

 certificate ca 01

  30820321 30820209 A0030201 02020101 300D0609 2A864886 F70D0101
0B050030

  32310E30 0C060355 040A1305 43697363 6F312030 1E060355 04031317
43697363

  6F204C69 63656E73 696E6720 526F6F74 20434130 1E170D31 33303533
30313934

  3834375A 170D3338 30353330 31393438 34375A30 32310E30 0C060355
040A1305

  43697363 6F312030 1E060355 04031317 43697363 6F204C69 63656E73
696E6720

  526F6F74 20434130 82012230 0D06092A 864886F7 0D010101 05000382
010F0030

  82010A02 82010100 A6BCBD96 131E05F7 145EA72C 2CD686E6 17222EA1
F1EFF64D

  CBB4C798 212AA147 C655D8D7 9471380D 8711441E 1AAF071A 9CAE6388
8A38E520

  1C394D78 462EF239 C659F715 B98C0A59 5BBB5CBD 0CFEBEA3 700A8BF7
D8F256EE
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  4AA4E80D DB6FD1C9 60B1FD18 FFC69C96 6FA68957 A2617DE7 104FDC5F
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  7390A3EB 2B5436AD C847A2C5 DAB553EB 69A9A535 58E9F3E3 C0BD23CF
58BD7188

  68E69491 20F320E7 948E71D7 AE3BCC84 F10684C7 4BC8E00F 539BA42B
42C68BB7

  C7479096 B4CB2D62 EA2F505D C7B062A4 6811D95B E8250FC4 5D5D5FB8
8F27D191

  C55F0D76 61F9A4CD 3D992327 A8BB03BD 4E6D7069 7CBADF8B DF5F4368
95135E44

  DFC7C6CF 04DD7FD1 02030100 01A34230 40300E06 03551D0F 0101FF04
04030201

  06300F06 03551D13 0101FF04 05300301 01FF301D 0603551D 0E041604
1449DC85

  4B3D31E5 1B3E6A17 606AF333 3D3B4C73 E8300D06 092A8648 86F70D01
010B0500

  03820101 00507F24 D3932A66 86025D9F E838AE5C 6D4DF6B0 49631C78
240DA905

  604EDCDE FF4FED2B 77FC460E CD636FDB DD44681E 3A5673AB 9093D3B1
6C9E3D8B

  D98987BF E40CBD9E 1AECA0C2 2189BB5C 8FA85686 CD98B646 5575B146
8DFC66A8

  467A3DF4 4D565700 6ADF0F0D CF835015 3C04FF7C 21E878AC 11BA9CD2
55A9232C

  7CA7B7E6 C1AF74F6 152E99B7 B1FCF9BB E973DE7F 5BDDEB86 C71E3B49
1765308B

  5FB0DA06 B92AFE7F 494E8A9E 07B85737 F3A58BE1 1A48A229 C37C1E69
39F08678

  80DDCD16 D6BACECA EEBC7CF9 8428787B 35202CDC 60E4616A B623CDBD
230E3AFB

  418616A9 4093E049 4D10AB75 27E86F73 932E35B5 8862FDAE 0275156F
719BB2F0

  D697DF7F 28

        quit

crypto pki certificate chain awscube7

 certificate 2800000283D2F3682A8EDD7AF9000200000283

  3082058E 30820476 A0030201 02021328 00000283 D2F3682A 8EDD7AF9
00020000

  0283300D 06092A86 4886F70D 01010B05 00305431 13301106 0A099226
8993F22C
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64011916 03636F6D 311D301B 060A0992 268993F2 2C640119 160D7465
6B76697A

696F6E6C 61627331 1E301C06 03550403 13157465 6B76697A 696F6E6C
6162732D

44433031 2D434130 1E170D32 32303630 37313132 3330395A 170D3234
30363036

31313233 30395A30 25312330 21060355 0403131A 61777363 75626537
2E74656B

76697A69 6F6E6C61 62732E63 6F6D3082 0122300D 06092A86 4886F70D
01010105

00038201 0F003082 010A0282 010100D5 3E3C9541 3142BD44 E3705671
F1B6264F

1AF4F794 FBD1BCD3 B6F18DB5 0EC7D902 5F1868E7 A656571C A2CA072E
D535AEFE

C30F4EE1 13937C29 D7D7A4D8 C1E73473 5A06390C 177C6C0F 3125C2B5
8FB8DED2

3D476603 6DEDC0C1 5DE92206 D0415F14 34B95321 0D73C806 21BE30C9
5E13DC03

78959776 9B6F8FC0 14B139EB 7E813882 1009CC4A 29D446E0 1E0C7C21
8824D0EA

BE495A38 8EFC05CA DF8F9402 71D86112 F2FEC59D A9865127 36805B93
95417FCC

47242BFE BB9BB9D4 0EFAA420 89FF648F 3C28CC97 249D0107 6A555FBA
1DF92A5C

8F1452F6 B4A5EABC 5F303A70 F8E02522 3FED2797 743C69FF 42A7DEC1
D7BD560A

3CEB7185 27BFB189 9A1BE1A5 ED29C102 03010001 A3820286 30820282
300E0603

551D0F01 01FF0404 030205A0 301D0603 551D0E04 160414D0 A02D44EC
AECFC808

8F123298 CDBC15A0 014D7730 1F060355 1D230418 30168014 72436FF9
07F69BA8

61E068B9 963AE77F 79E3948F 3081D906 03551D1F 0481D130 81CE3081
CBA081C8

A081C586 81C26C64 61703A2F 2F2F434E 3D74656B 76697A69 6F6E6C61
62732D44

4330312D 43412832 292C434E 3D444330 312C434E 3D434450 2C434E3D
5075626C

69632532 304B6579 25323053 65727669 6365732C 434E3D53 65727669
6365732C

434E3D43 6F6E6669 67757261 74696F6E 2C44433D 74656B76 697A696F 6E6C6162

732C4443 3D636F6D 3F636572 74696669 63617465 5265766F 63617469 6F6E4C69

73743F62 6173653F 6F626A65 6374436C 6173733D 63524C44 69737472 69627574

696F6E50 6F696E74 3081CD06 082B0601 05050701 010481C0 3081BD30 81BA0608

2B060105 05073002 8681AD6C 6461703A 2F2F2F43 4E3D7465 6B76697A 696F6E6C

6162732D 44433031 2D43412C 434E3D41 49412C43 4E3D5075 626C6963 2532304B

65792532 30536572 76696365 732C434E 3D536572 76696365 732C434E 3D436F6E

66696775 72617469 6F6E2C44 433D7465 6B76697A 696F6E6C 6162732C 44433D63

6F6D3F63 41436572 74696669 63617465 3F626173 653F6F62 6A656374 436C6173

733D6365 72746966 69636174 696F6E41 7574686F 72697479 303C0609 2B060104

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ABE11182 87AF4777 85FA8667 83D3F26E 02016402 0113301D 0603551D 25041630

1406082B 06010505 07030106 082B0601 05050703 02302706 092B0601 04018237

150A041A 3018300A 06082B06 01050507 0301300A 06082B06 01050507 0302300D

06092A86 4886F70D 01010B05 00038201 0100C7DA AD9C2001 B33EE5C6 EADE4EE6

88AA5F1A 880C14D9 BA7A9162 8E0CB0A4 4E8BB839 2B9CA518 FE9828DE ADDA5507

3E591D6E D3F9F243 20889EC1 4273FEDA AE8C0CF6 1DA76648 4DF1306C ECF4E696

53A62596 1FD351B4 BB20733D 31BBDCB1 0036091E 1339BBE4 73260C7B FE81A01E

4F8D4EA8 AC04F485 10CDBF35 056A1100 6FBC55E4 E9A185BD 767BC1FB 9E1CAADC

110A5891 45E6951E F5AF862B 782FA032 D14B354A 505C55D9 0F21B567 B3EF5EFF

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  E6EB82BD 14C0263D 3C237005 672FA83F 6F5BA21E 704E4A6B EB771DB8
D90B9C76

  AA8384DB 4362E267 F4C21C76 BD8FF6E6 1A1DCAC9 F2F5FEE6 5B448DE8
ED2D0CEB

  567B1CC6 ACB555FE 24E1297A 4BD842DD 5994

        quit

 certificate ca 638979817A493C9B493902E58ACBFFD1

  308203AA 30820292 A0030201 02021063 8979817A 493C9B49 3902E58A
CBFFD130

  0D06092A 864886F7 0D01010B 05003054 31133011 060A0992 268993F2
2C640119

  1603636F 6D311D30 1B060A09 92268993 F22C6401 19160D74 656B7669
7A696F6E

  6C616273 311E301C 06035504 03131574 656B7669 7A696F6E 6C616273
2D444330

  312D4341 301E170D 32303036 33303135 33313238 5A170D32 35303633
30313534

  3132375A 30543113 3011060A 09922689 93F22C64 01191603 636F6D31
1D301B06

  0A099226 8993F22C 64011916 0D74656B 76697A69 6F6E6C61 6273311E
301C0603

  55040313 1574656B 76697A69 6F6E6C61 62732D44 4330312D 43413082
0122300D

  06092A86 4886F70D 01010105 00038201 0F003082 010A0282 010100DE
DE363E05

  A352830D 7E884B00 D8143004 E2035E25 43113EED 9AD3B9D9 EF5429A8
DD24CB37

  593797C1 69B73A66 C0207E25 5F93694A 4D20F7C6 752B0EB0 FA57AD95
EFB9C7D1

  BA737380 9BF8FBD1 EC3205D1 24FD1256 913764CC 785847A6 354CB43E
7E15B0E2

  22A34671 5EFD65AF A402B0DD 9D840FA3 18FDA4F3 1450832C 71F9141E
F32CBD49

  62B25280 4017BD86 6DCADEA8 47DCD301 5BBB9008 1E26D662 61405F01
A915A755

  1A017264 25F7308A 09C65C11 E7DCC13B CCDA9095 169C4D87 0CA50D4A
26CF974D

  E9AFB0BF 0772E71F BC32F88D 59C9B70F 600258D7 116C5136 95DB4436
8CB4A17C
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  23BD81F0 E76759EE 8D596197 9587AC98 D5B5E6F5 B83329DB 65643102
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05300301

  01FF301D 0603551D 0E041604 1472436F F907F69B A861E068 B9963AE7
7F79E394

  8F301206 092B0601 04018237 15010405 02030200 02302306 092B0601
04018237

  15020416 041457ED 303498C1 C522F2CA 009C2928 C1CE24F9 E9C1300D
06092A86

  4886F70D 01010B05 00038201 0100B1E0 6BDA2750 931F2C7D C7001B64
77121710

  81DE50F5 EFD4104D 2AC1C30D 20AA2419 87ADA819 54C2812A 2637CCF0
BF39BDEC

  38327C4E 36F3FCCD DA9C12CB 7F308B0A 8CCE46B1 3533819E 8D656234
D93CA8F3

  F564FAED E9E5C18D 99BAEFAB 15902DC5 1CFA203B A6F9D9D3 0CF0586F
B36C0CBA

  C0D43E35 4E394A51 45BCCFA7 15C6855C 8677A207 A9686FAC 8250639E
92B8FE52

  FBEC5DD5 177642E0 53667395 8F8CD168 076E9889 99FA470A 9AE56523
F152232F

  3ECAF7AF A9A47F9B DF2194AC 95BA9B70 6CB657CF E67888B8 683BA1A6
9AB4E732

  D104CF15 853BE6D0 9CBCC46D 31AEE431 E01E0F62 879E503E 7BF4B58F
055C38CC

  DD19869F 7FB54E42 06F1D4F9 4527

        quit

crypto pki certificate chain tekrootca

 certificate ca 638979817A493C9B493902E58ACBFFD1

  308203AA 30820292 A0030201 02021063 8979817A 493C9B49 3902E58A
CBFFD130

  0D06092A 864886F7 0D01010B 05003054 31133011 060A0992 268993F2
2C640119

  1603636F 6D311D30 1B060A09 92268993 F22C6401 19160D74 656B7669
7A696F6E

  6C616273 311E301C 06035504 03131574 656B7669 7A696F6E 6C616273
2D444330

  312D4341 301E170D 32303036 33303135 33313238 5A170D32 35303633
30313534
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3132375A 30543113 3011060A 09922689 93F22C64 01191603 636F6D31
1D301B06

0A099226 8993F22C 64011916 0D74656B 76697A69 6F6E6C61 6273311E
301C0603

55040313 1574656B 76697A69 6F6E6C61 62732D44 4330312D 43413082
0122300D

06092A86 4886F70D 01010105 00038201 0F003082 010A0282 010100DE
DE363E05

A352830D 7E884B00 D8143004 E2035E25 43113EED 9AD3B9D9 EF5429A8
DD24CB37

593797C1 69B73A66 C0207E25 5F93694A 4D20F7C6 752B0EB0 FA57AD95
EFB9C7D1

BA737380 9BF8FBD1 EC3205D1 24FD1256 913764CC 785847A6 354CB43E
7E15B0E2

22A34671 5EFD65AF A402B0DD 9D840FA3 18FDA4F3 1450832C 71F9141E
F32CBD49

62B25280 4017BD86 6DCADEA8 47DCD301 5BBB9008 1E26D662 61405F01
A915A755

1A017264 25F7308A 09C65C11 E7DCC13B CCDA9095 169C4D87 0CA50D4A
26CF974D

E9AFB0BF 0772E71F BC32F88D 59C9B70F 600258D7 116C5136 95DB4436
8CB4A17C

23BD81F0 E76759EE 8D596197 9587AC98 D5B5E6F5 B83329DB 65643102
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A3783076 300B0603 551D0F04 04030201 86300F06 03551D13 0101FF04
05300301

01FF301D 0603551D 0E041604 1472436F F907F69B A861E068 B9963AE7
7F79E394

8F301206 092B0601 04018237 15010405 02030200 02302306 092B0601
04018237

15020416 041457ED 303498C1 C522F2CA 009C2928 C1CE24F9 E9C1300D
06092A86

4886F70D 01010B05 00038201 0100B1E0 6BDA2750 931F2C7D C7001B64
77121710

81DE50F5 EFD4104D 2AC1C30D 20AA2419 87ADA819 54C2812A 2637CCF0
BF39BDEC

38327C4E 36F3FCCD DA9C12CB 7F308B0A 8CCE46B1 3533819E 8D656234
D93CA8F3

F564FAED E9E5C18D 99BAEFAB 15902DC5 1CFA203B A6F9D9D3 0CF0586F
B36C0CBA

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  C0D43E35 4E394A51 45BCCFA7 15C6855C 8677A207 A9686FAC 8250639E
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  FBEC5DD5 177642E0 53667395 8F8CD168 076E9889 99FA470A 9AE56523
F152232F

  3ECAF7AF A9A47F9B DF2194AC 95BA9B70 6CB657CF E67888B8 683BA1A6
9AB4E732

  D104CF15 853BE6D0 9CBCC46D 31AEE431 E01E0F62 879E503E 7BF4B58F
055C38CC

  DD19869F 7FB54E42 06F1D4F9 4527

        quit

crypto pki certificate chain AMZVCROOT

 certificate ca 066C9FCF99BF8C0A39E2F0788A43E696365BCA

  30820341 30820229 A0030201 02021306 6C9FCF99 BF8C0A39 E2F0788A
43E69636

  5BCA300D 06092A86 4886F70D 01010B05 00303931 0B300906 03550406
13025553

  310F300D 06035504 0A130641 6D617A6F 6E311930 17060355 04031310
416D617A

  6F6E2052 6F6F7420 43412031 301E170D 31353035 32363030 30303030
5A170D33

  38303131 37303030 3030305A 3039310B 30090603 55040613 02555331
0F300D06

  0355040A 1306416D 617A6F6E 31193017 06035504 03131041 6D617A6F
6E20526F

  6F742043 41203130 82012230 0D06092A 864886F7 0D010101 05000382
010F0030

  82010A02 82010100 B2788071 CA78D5E3 71AF4780 50747D6E D8D78876
F49968F7

  582160F9 7484012F AC022D86 D3A0437A 4EB2A4D0 36BA01BE 8DDB48C8
0717364C

  F4EE8823 C73EEB37 F5B519F8 4968B0DE D7B97638 1D619EA4 FE8236A5
E54A56E4

  45E1F9FD B416FA74 DA9C9B35 392FFAB0 2050066C 7AD080B2 A6F9AFEC
47198F50

  3807DCA2 873958F8 BAD5A9F9 48673096 EE94785E 6F89A351 C0308666
A14566BA

  54EBA3C3 91F948DC FFD1E830 2D7D2D74 7035D788 24F79EC4 596EBB73
8717F232

  4628B843 FAB71DAA CAB4F29F 240E2D4B F7715C5E 69FFEA95 02CB388A
AE50386F
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  DBFB2D62 1BC5C71E 54E177E0 67C80F9C 8723D63F 40207F20 80C4804C
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05300301
  01FF300E 0603551D 0F0101FF 04040302 0186301D 0603551D 0E041604
148418CC
  8534ECBC 0C94942E 08599CC7 B2104E0A 08300D06 092A8648 86F70D01
010B0500
  03820101 0098F237 5A4190A1 1AC57651 28203623 0EAEE628 BBAAF894
AE48A430
  7F1BFC24 8D4BB4C8 A197F6B6 F17A70C8 5393CC08 28E39825 CF23A4F9
DE21D37C
  8509AD4E 9A753AC2 0B6A8978 76444718 656C8D41 8E3B7F9A CBF4B5A7
50D7052C
  37E8034B ADE961A0 026EF5F2 F0C5B2ED 5BB7DCFA 945C779E 13A57F52
AD95F2F8
  933BDE8B 5C5BCA5A 525B60AF 14F74BEF A3FB9F40 956D3154 FC42D3C7
461F23AD
  D90F4870 9AD97578 71D17243 34756E57 59C2025C 266029CF 2319168E
8843A5D4
  E4CB08FB 231143E8 43297262 A1A95D5E 08D490AE B8D8CE14 C2D055F2
86F6C493
  43776661 C0B9E841 D7977860 036E4A72 AEA5D17D BA109E86 6C1B8AB9
5933F8EB
  C490BEF1 B9
        quit
!
crypto pki certificate pool
 cabundle nvram:Trustpool45.cer
 cabundle nvram:Trustpool44.cer
 cabundle nvram:ios_core.p7b
 cabundle nvram:Trustpool40.cer
 cabundle nvram:Trustpool41.cer
 cabundle nvram:Trustpool42.cer
 cabundle nvram:Trustpool43.cer
 cabundle nvram:Trustpool46.cer
!
```

```
!
!
!
voice service voip
 ip address trusted list
  ipv4 10.64.1.72
  ipv4 10.80.23.11
  ipv4 10.80.23.12
  ipv4 3.xx.xx.xx 255.xx.xx.xx
  ipv4 52.xx.xx.xx 255.xx.xx.xx
  ipv4 52.xx.xx.xx 255.xx.xx.xx
  ipv4 34.xx.xx.xx 255.xx.xx.xx
  ipv4 34.xx.xx.xx 255.xx.xx.xx
  ipv4 10.80.11.79 255.255.255.255
  ipv4 10.80.11.141 255.255.255.255
 address-hiding
 mode border-element
 allow-connections sip to sip
 no supplementary-service sip moved-temporarily
 no supplementary-service sip handle-replaces
 fax protocol pass-through g711ulaw
 trace
 sip
  session refresh
  asserted-id pai
  early-offer forced
  midcall-signaling passthru
  pass-thru headers unsupp
!
!
voice class uri CUCM sip
 host 10.80.11.141
voice class codec 1
```

```
 codec preference 1 g711ulaw
!
!
!
!
voice class e164-pattern-map 890
  e164 +1972598XXXX$
  e164 +1972598XXXX$
 !
!
voice class dpg 200
 description Incoming PSTNGW(DP100) to CUCM(DP201)
 dial-peer 201 preference 1
!
voice class dpg 100
 description Incoming CUCM(DP200) to PSTNGW(DP101)
 dial-peer 101 preference 1
!
voice class tenant 200
  sip-server ipv4:10.80.11.79
  connection-reuse
  session transport tcp
  session refresh
  error-passthru
  asserted-id pai
  bind control source-interface GigabitEthernet0/0/1
  bind media source-interface GigabitEthernet0/0/1
  no pass-thru content custom-sdp
!
voice class tenant 100
  sip-server ipv4:10.80.11.141
  no connection-reuse
  options-ping 60
```

```
  session transport udp
  session refresh
  error-passthru
  asserted-id pai
  bind control source-interface GigabitEthernet0/0/0
  bind media source-interface GigabitEthernet0/0/0
  no pass-thru content custom-sdp
!
voice class srtp-crypto 1
 crypto 1 AES_CM_128_HMAC_SHA1_80
!
!
!
!
voice translation-rule 770
 rule 1 /\+1\(972.......\)/ /\1/
!
!
voice translation-profile AWS-CUCM
 translate called 770
!
!
!
media profile recorder 2020
 media-type audio
 media-recording 5980090
!
media class 2020
 recorder profile 2020 siprec
!
!
!
voice-card 0/2
```

```
 no watchdog
!
voice-card 0/4
 no watchdog
!
no license feature hseck9
license udi pid ISR4331/K9 sn FDO21381GMV
license accept end user agreement
license boot level appxk9
license boot level uck9
license boot level securityk9
memory free low-watermark processor 67522
!
diagnostic bootup level minimal
!
spanning-tree extend system-id
!
!
redundancy
 mode none
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
!
!
!
!
!
!
!
!
!
!
!
!
interface GigabitEthernet0/0/0
 description Access01 g4/0/2 CUBE 7 Interface facing CUCM
 ip dhcp client client-id ascii FLM2141V250
 ip address 10.64.3.192 255.255.0.0
 negotiation auto
!
interface GigabitEthernet0/0/1
 description Access01 g4/0/4 CUBE 7 Interface facing PSTN
 ip address 10.71.12.10 255.255.255.0
 negotiation auto
!
interface GigabitEthernet0/0/2
 description Access01 g4/0/9 CUBE 7 Interface facing Mutare
 ip address 192.65.79.44 255.255.255.224
 negotiation auto
!
interface GigabitEthernet0/1/0
 no ip address
 negotiation auto
!
```

```
interface Service-Engine0/2/0
!
interface Service-Engine0/4/0
!
interface GigabitEthernet0
 vrf forwarding Mgmt-intf
 no ip address
 negotiation auto
!
ip http server
ip http authentication local
ip http secure-server
ip http client source-interface GigabitEthernet0/0/0
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 10.64.1.1
ip route 10.71.12.0 255.255.255.0 10.71.12.1
ip route 10.80.11.0 255.255.255.0 10.71.12.1
ip route 172.16.0.0 255.255.0.0 10.71.12.1
ip route 172.16.29.154 255.255.255.255 192.65.79.33
!
!
!
!
!
!
!
control-plane
!
!
voice-port 0/2/0
!
voice-port 0/2/1
!
```

```
mgcp behavior rsip-range tgcp-only
mgcp behavior comedia-role none
mgcp behavior comedia-check-media-src disable
mgcp behavior comedia-sdp-force disable
!
mgcp profile default
!
!
!
!
dial-peer voice 100 voip
 description Incoming dial-peer from PSTNGW to CUCM
 session protocol sipv2
 session transport tcp
 destination dpg 200
 incoming called e164-pattern-map 890
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip bind control source-interface GigabitEthernet0/0/1
 voice-class sip bind media source-interface GigabitEthernet0/0/1
 dtmf-relay rtp-nte
 no vad
!
dial-peer voice 200 voip
 description Incoming dial-peer from CUCM to PSTNGW
 session protocol sipv2
 destination dpg 100
 incoming uri via CUCM
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip tenant 200
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
```

```
 media-class 2020
 dtmf-relay rtp-nte
 no vad
!
dial-peer voice 101 voip
 description Outgoing dial-peer from CUCM to PSTNGW
 destination-pattern BAD.BAD
 session protocol sipv2
 session target sip-server
 session transport tcp
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip tenant 200
 voice-class sip bind control source-interface GigabitEthernet0/0/1
 voice-class sip bind media source-interface GigabitEthernet0/0/1
 dtmf-relay rtp-nte
no vad
!
dial-peer voice 5980090 voip
 description DP_AmazonVCRecording
 destination-pattern +197259XXXXX
 session protocol sipv2
 session target dns:dtndXXXX.voiceconnector.chime.aws
 session transport tcp
 voice-class codec 1
 voice-class sip localhost dns:dtndXXXX.voiceconnector.chime.aws
preferred
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 no vad
!
dial-peer voice 201 voip
 description Outgoing dial-peer from PSTNGW to CUCM
```

```
 destination-pattern BAD.BAD
 session protocol sipv2
 session target sip-server
 voice-class codec 1
 voice-class sip options-ping 60
 voice-class sip tenant 100
 voice-class sip options-keepalive
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 media-class 2020
 dtmf-relay rtp-nte
 no vad
!
!
gateway
 timer receive-rtp 1200
!
sip-ua
 crypto signaling remote-addr 10.80.11.79 255.255.255.255  trustpoint
awscube7
 crypto signaling default trustpoint AMZVCROOT
!
!
line con 0
 exec-timeout 5 0
 password tekV1z10n
 logging synchronous
 login
 stopbits 1
line aux 0
line vty 0 4
 exec-timeout 15 0
 password tekV1z10n
```

```
 logging synchronous
 login
 transport input telnet
line vty 5 14
 login
 transport input ssh
!
call-home
 ! If contact email address in call-home is configured as sch-smart-
licensing@cisco.com
 ! the email address configured in Cisco Smart License Portal will be
used as contact email address to send SCH notifications.
 contact-email-addr sch-smart-licensing@cisco.com
 profile "CiscoTAC-1"
  active
  destination transport-method http
!
!
!
!
!
!
end
```

4.3.6 Cisco UBE Running Configuration-SIPREC using TLS

```
awscube7#show running-config
Building configuration...


Current configuration : 22610 bytes
!
! Last configuration change at 05:47:23 UTC Tue Jul 19 2022
```

```
!
version 17.6
service config
service timestamps debug datetime msec
service timestamps log datetime msec
service call-home
platform qfp utilization monitor load 80
platform punt-keepalive disable-kernel-core
!
hostname awscube7
!
boot-start-marker
boot system flash bootflash:isr4300-universalk9.17.06.02.SPA.bin
boot-end-marker
!
!
vrf definition Mgmt-intf
 !
 address-family ipv4
 exit-address-family
 !
 address-family ipv6
 exit-address-family
!
logging buffered 147483647
!
no aaa new-model
!
!
!
!
!
!
```

```
!
ip name-server 8.8.8.8
!
!
!
login on-success log
!
!
!
!
!
!
!
subscriber templating
!
!
!
!
!
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
password encryption aes
!
!
crypto pki trustpoint TP-self-signed-2194658987
 enrollment selfsigned
```

```
 subject-name cn=IOS-Self-Signed-Certificate-2194658987
 revocation-check none
 rsakeypair TP-self-signed-2194658987
!
crypto pki trustpoint SLA-TrustPoint
 enrollment pkcs12
 revocation-check crl
!
crypto pki trustpoint awscube7
 enrollment terminal
 fqdn awsXXX.XXX.com
 subject-name cn= awsXXX.XXX.com
 subject-alt-name awsXXX.XXX.com
 revocation-check none
 rsakeypair isr4k
!
crypto pki trustpoint tekrootca
 enrollment terminal
 revocation-check none
!
crypto pki trustpoint AMZVCROOT
 enrollment terminal pem
 chain-validation continue AMZVCROOT
 revocation-check none
!
!
crypto pki certificate chain TP-self-signed-2194658987
 certificate self-signed 01
  30820330 30820218 A0030201 02020101 300D0609 2A864886 F70D0101
05050030
  31312F30 2D060355 04031326 494F532D 53656C66 2D536967 6E65642D
43657274
  69666963 6174652D 32313934 36353839 3837301E 170D3231 31323031
31393438
```

33395A17 0D333131 32303131 39343833 395A3031 312F302D 06035504
03132649

4F532D53 656C662D 5369676E 65642D43 65727469 66696361 74652D32
31393436

35383938 37308201 22300D06 092A8648 86F70D01 01010500 0382010F
00308201

0A028201 0100A8DF 131F787F 10B7F65C B724DD9D 91BAF7B0 84ECEF1A
2A77ABEE

2253DA5C C628097E 5A9EE0C0 F40B766B 93D23245 B7B456B8 43E97E8C
15D61B56

29E818C6 32AF75DB 3DB128BE 7690B60F B579819E 9136A3EC D3DCB421
A7840BE9

33200FDE 2BCC40ED CFCA29EF A9D8A84A C6765D8C 6C492162 0A98C294
5DBA5872

47D49F71 A84CAFA0 E49B29C8 F444BFFA 75D26A7D 9D874369 843528E5
F9AF3787

78324251 0295A4B4 CC645849 DDFAA56C 2FAB2F51 239B073F DE9F4F7B
17AC9007

2AE08E3B 0E4F70B9 BEE9AB6F E4050514 5A094561 67001621 D64DFBA0
59278D4B

9800DAB9 B37A71E7 AC362CA4 3F36076E 43C55A00 56C70416 562C510A
68A470A5

DF2E3648 C7750203 010001A3 53305130 0F060355 1D130101 FF040530
030101FF

301F0603 551D2304 18301680 1489CB24 B6A7FC49 15E613AC FF8A9AC5
7A9F70D1

47301D06 03551D0E 04160414 89CB24B6 A7FC4915 E613ACFF 8A9AC57A
9F70D147

300D0609 2A864886 F70D0101 05050003 82010100 939ED35B 838D3917
7146744B

8183795B 03CF8116 B2E14D3C CE4CD12D 807C5497 D2906722 72919944
4041119E

9799AF9B 0E9E0101 30660BE9 12D090CA 0F410AED 53A77F6C FF2125B9
00A6488F

5979314E 1F93E30B 083824D0 6975F108 F6C2A090 FE086175 736832A4
FD1CE4AE

9E781B74 7DBC25F9 BB28B978 08CA4830 94F654F0 9C19A66B 0A3D12D7
5F12CCD1

F5B7FDE9 1C14D6FF B12FF49E F6B34C15 D14E9725 602D5590 FB4F44E4
DD2C030C

```
  C0650DE4 CE9FF9B8 FC149B16 C591B43F 4FA30C7A 5076B21B D59A2451
F80AB784

  AE8A7966 B689B7E5 EB11838B C3997D18 FAA19BDB 7E94E0CA A716EA52
C8E6726B

  13134171 382E3838 477EDB61 E921463C 98609C02

       quit

crypto pki certificate chain SLA-TrustPoint

 certificate ca 01

  30820321 30820209 A0030201 02020101 300D0609 2A864886 F70D0101
0B050030

  32310E30 0C060355 040A1305 43697363 6F312030 1E060355 04031317
43697363

  6F204C69 63656E73 696E6720 526F6F74 20434130 1E170D31 33303533
30313934

  3834375A 170D3338 30353330 31393438 34375A30 32310E30 0C060355
040A1305

  43697363 6F312030 1E060355 04031317 43697363 6F204C69 63656E73
696E6720

  526F6F74 20434130 82012230 0D06092A 864886F7 0D010101 05000382
010F0030

  82010A02 82010100 A6BCBD96 131E05F7 145EA72C 2CD686E6 17222EA1
F1EFF64D

  CBB4C798 212AA147 C655D8D7 9471380D 8711441E 1AAF071A 9CAE6388
8A38E520

  1C394D78 462EF239 C659F715 B98C0A59 5BBB5CBD 0CFEBEA3 700A8BF7
D8F256EE

  4AA4E80D DB6FD1C9 60B1FD18 FFC69C96 6FA68957 A2617DE7 104FDC5F
EA2956AC

  7390A3EB 2B5436AD C847A2C5 DAB553EB 69A9A535 58E9F3E3 C0BD23CF
58BD7188

  68E69491 20F320E7 948E71D7 AE3BCC84 F10684C7 4BC8E00F 539BA42B
42C68BB7

  C7479096 B4CB2D62 EA2F505D C7B062A4 6811D95B E8250FC4 5D5D5FB8
8F27D191

  C55F0D76 61F9A4CD 3D992327 A8BB03BD 4E6D7069 7CBADF8B DF5F4368
95135E44

  DFC7C6CF 04DD7FD1 02030100 01A34230 40300E06 03551D0F 0101FF04
04030201

  06300F06 03551D13 0101FF04 05300301 01FF301D 0603551D 0E041604
1449DC85
```

```
  4B3D31E5 1B3E6A17 606AF333 3D3B4C73 E8300D06 092A8648 86F70D01
010B0500

  03820101 00507F24 D3932A66 86025D9F E838AE5C 6D4DF6B0 49631C78
240DA905

  604EDCDE FF4FED2B 77FC460E CD636FDB DD44681E 3A5673AB 9093D3B1
6C9E3D8B

  D98987BF E40CBD9E 1AECA0C2 2189BB5C 8FA85686 CD98B646 5575B146
8DFC66A8

  467A3DF4 4D565700 6ADF0F0D CF835015 3C04FF7C 21E878AC 11BA9CD2
55A9232C

  7CA7B7E6 C1AF74F6 152E99B7 B1FCF9BB E973DE7F 5BDDEB86 C71E3B49
1765308B

  5FB0DA06 B92AFE7F 494E8A9E 07B85737 F3A58BE1 1A48A229 C37C1E69
39F08678

  80DDCD16 D6BACECA EEBC7CF9 8428787B 35202CDC 60E4616A B623CDBD
230E3AFB

  418616A9 4093E049 4D10AB75 27E86F73 932E35B5 8862FDAE 0275156F
719BB2F0

  D697DF7F 28

        quit

crypto pki certificate chain awscube7

 certificate 2800000283D2F3682A8EDD7AF9000200000283

  3082058E 30820476 A0030201 02021328 00000283 D2F3682A 8EDD7AF9
00020000

  0283300D 06092A86 4886F70D 01010B05 00305431 13301106 0A099226
8993F22C

  64011916 03636F6D 311D301B 060A0992 268993F2 2C640119 160D7465
6B76697A

  696F6E6C 61627331 1E301C06 03550403 13157465 6B76697A 696F6E6C
6162732D

  44433031 2D434130 1E170D32 32303630 37313132 3330395A 170D3234
30363036

  31313233 30395A30 25312330 21060355 0403131A 61777363 75626537
2E74656B

  76697A69 6F6E6C61 62732E63 6F6D3082 0122300D 06092A86 4886F70D
01010105

  00038201 0F003082 010A0282 010100D5 3E3C9541 3142BD44 E3705671
F1B6264F

  1AF4F794 FBD1BCD3 B6F18DB5 0EC7D902 5F1868E7 A656571C A2CA072E
D535AEFE
```

C30F4EE1 13937C29 D7D7A4D8 C1E73473 5A06390C 177C6C0F 3125C2B5
8FB8DED2

3D476603 6DEDC0C1 5DE92206 D0415F14 34B95321 0D73C806 21BE30C9
5E13DC03

78959776 9B6F8FC0 14B139EB 7E813882 1009CC4A 29D446E0 1E0C7C21
8824D0EA

BE495A38 8EFC05CA DF8F9402 71D86112 F2FEC59D A9865127 36805B93
95417FCC

47242BFE BB9BB9D4 0EFAA420 89FF648F 3C28CC97 249D0107 6A555FBA
1DF92A5C

8F1452F6 B4A5EABC 5F303A70 F8E02522 3FED2797 743C69FF 42A7DEC1
D7BD560A

3CEB7185 27BFB189 9A1BE1A5 ED29C102 03010001 A3820286 30820282
300E0603

551D0F01 01FF0404 030205A0 301D0603 551D0E04 160414D0 A02D44EC
AECFC808

8F123298 CDBC15A0 014D7730 1F060355 1D230418 30168014 72436FF9
07F69BA8

61E068B9 963AE77F 79E3948F 3081D906 03551D1F 0481D130 81CE3081
CBA081C8

A081C586 81C26C64 61703A2F 2F2F434E 3D74656B 76697A69 6F6E6C61
62732D44

4330312D 43412832 292C434E 3D444330 312C434E 3D434450 2C434E3D
5075626C

69632532 304B6579 25323053 65727669 6365732C 434E3D53 65727669
6365732C

434E3D43 6F6E6669 67757261 74696F6E 2C44433D 74656B76 697A696F
6E6C6162

732C4443 3D636F6D 3F636572 74696669 63617465 5265766F 63617469
6F6E4C69

73743F62 6173653F 6F626A65 6374436C 6173733D 63524C44 69737472
69627574

696F6E50 6F696E74 3081CD06 082B0601 05050701 010481C0 3081BD30
81BA0608

2B060105 05073002 8681AD6C 6461703A 2F2F2F43 4E3D7465 6B76697A
696F6E6C

6162732D 44433031 2D43412C 434E3D41 49412C43 4E3D5075 626C6963
2532304B

65792532 30536572 76696365 732C434E 3D536572 76696365 732C434E
3D436F6E

```
  66696775 72617469 6F6E2C44 433D7465 6B76697A 696F6E6C 6162732C
44433D63

  6F6D3F63 41436572 74696669 63617465 3F626173 653F6F62 6A656374
436C6173

  733D6365 72746966 69636174 696F6E41 7574686F 72697479 303C0609
2B060104

  01823715 07042F30 2D06252B 06010401 82371508 8687C462 84ACFF0F
A5871581

  ABE11182 87AF4777 85FA8667 83D3F26E 02016402 0113301D 0603551D
25041630

  1406082B 06010505 07030106 082B0601 05050703 02302706 092B0601
04018237

  150A041A 3018300A 06082B06 01050507 0301300A 06082B06 01050507
0302300D

  06092A86 4886F70D 01010B05 00038201 0100C7DA AD9C2001 B33EE5C6
EADE4EE6

  88AA5F1A 880C14D9 BA7A9162 8E0CB0A4 4E8BB839 2B9CA518 FE9828DE
ADDA5507

  3E591D6E D3F9F243 20889EC1 4273FEDA AE8C0CF6 1DA76648 4DF1306C
ECF4E696

  53A62596 1FD351B4 BB20733D 31BBDCB1 0036091E 1339BBE4 73260C7B
FE81A01E

  4F8D4EA8 AC04F485 10CDBF35 056A1100 6FBC55E4 E9A185BD 767BC1FB
9E1CAADC

  110A5891 45E6951E F5AF862B 782FA032 D14B354A 505C55D9 0F21B567
B3EF5EFF

  E6EB82BD 14C0263D 3C237005 672FA83F 6F5BA21E 704E4A6B EB771DB8
D90B9C76

  AA8384DB 4362E267 F4C21C76 BD8FF6E6 1A1DCAC9 F2F5FEE6 5B448DE8
ED2D0CEB

  567B1CC6 ACB555FE 24E1297A 4BD842DD 5994

        quit

 certificate ca 638979817A493C9B493902E58ACBFFD1

  308203AA 30820292 A0030201 02021063 8979817A 493C9B49 3902E58A
CBFFD130

  0D06092A 864886F7 0D01010B 05003054 31133011 060A0992 268993F2
2C640119

  1603636F 6D311D30 1B060A09 92268993 F22C6401 19160D74 656B7669
7A696F6E
```

6C616273 311E301C 06035504 03131574 656B7669 7A696F6E 6C616273 2D444330

312D4341 301E170D 32303036 33303135 33313238 5A170D32 35303633 30313534

3132375A 30543113 3011060A 09922689 93F22C64 01191603 636F6D31 1D301B06

0A099226 8993F22C 64011916 0D74656B 76697A69 6F6E6C61 6273311E 301C0603

55040313 1574656B 76697A69 6F6E6C61 62732D44 4330312D 43413082 0122300D

06092A86 4886F70D 01010105 00038201 0F003082 010A0282 010100DE DE363E05

A352830D 7E884B00 D8143004 E2035E25 43113EED 9AD3B9D9 EF5429A8 DD24CB37

593797C1 69B73A66 C0207E25 5F93694A 4D20F7C6 752B0EB0 FA57AD95 EFB9C7D1

BA737380 9BF8FBD1 EC3205D1 24FD1256 913764CC 785847A6 354CB43E 7E15B0E2

22A34671 5EFD65AF A402B0DD 9D840FA3 18FDA4F3 1450832C 71F9141E F32CBD49

62B25280 4017BD86 6DCADEA8 47DCD301 5BBB9008 1E26D662 61405F01 A915A755

1A017264 25F7308A 09C65C11 E7DCC13B CCDA9095 169C4D87 0CA50D4A 26CF974D

E9AFB0BF 0772E71F BC32F88D 59C9B70F 600258D7 116C5136 95DB4436 8CB4A17C

23BD81F0 E76759EE 8D596197 9587AC98 D5B5E6F5 B83329DB 65643102 03010001

A3783076 300B0603 551D0F04 04030201 86300F06 03551D13 0101FF04 05300301

01FF301D 0603551D 0E041604 1472436F F907F69B A861E068 B9963AE7 7F79E394

8F301206 092B0601 04018237 15010405 02030200 02302306 092B0601 04018237

15020416 041457ED 303498C1 C522F2CA 009C2928 C1CE24F9 E9C1300D 06092A86

4886F70D 01010B05 00038201 0100B1E0 6BDA2750 931F2C7D C7001B64 77121710

81DE50F5 EFD4104D 2AC1C30D 20AA2419 87ADA819 54C2812A 2637CCF0 BF39BDEC

```
  38327C4E 36F3FCCD DA9C12CB 7F308B0A 8CCE46B1 3533819E 8D656234
D93CA8F3

  F564FAED E9E5C18D 99BAEFAB 15902DC5 1CFA203B A6F9D9D3 0CF0586F
B36C0CBA

  C0D43E35 4E394A51 45BCCFA7 15C6855C 8677A207 A9686FAC 8250639E
92B8FE52

  FBEC5DD5 177642E0 53667395 8F8CD168 076E9889 99FA470A 9AE56523
F152232F

  3ECAF7AF A9A47F9B DF2194AC 95BA9B70 6CB657CF E67888B8 683BA1A6
9AB4E732

  D104CF15 853BE6D0 9CBCC46D 31AEE431 E01E0F62 879E503E 7BF4B58F
055C38CC

  DD19869F 7FB54E42 06F1D4F9 4527

        quit

crypto pki certificate chain tekrootca

 certificate ca 638979817A493C9B493902E58ACBFFD1

  308203AA 30820292 A0030201 02021063 8979817A 493C9B49 3902E58A
CBFFD130

  0D06092A 864886F7 0D01010B 05003054 31133011 060A0992 268993F2
2C640119

  1603636F 6D311D30 1B060A09 92268993 F22C6401 19160D74 656B7669
7A696F6E

  6C616273 311E301C 06035504 03131574 656B7669 7A696F6E 6C616273
2D444330

  312D4341 301E170D 32303036 33303135 33313238 5A170D32 35303633
30313534

  3132375A 30543113 3011060A 09922689 93F22C64 01191603 636F6D31
1D301B06

  0A099226 8993F22C 64011916 0D74656B 76697A69 6F6E6C61 6273311E
301C0603

  55040313 1574656B 76697A69 6F6E6C61 62732D44 4330312D 43413082
0122300D

  06092A86 4886F70D 01010105 00038201 0F003082 010A0282 010100DE
DE363E05

  A352830D 7E884B00 D8143004 E2035E25 43113EED 9AD3B9D9 EF5429A8
DD24CB37

  593797C1 69B73A66 C0207E25 5F93694A 4D20F7C6 752B0EB0 FA57AD95
EFB9C7D1

  BA737380 9BF8FBD1 EC3205D1 24FD1256 913764CC 785847A6 354CB43E
7E15B0E2
```

```
  22A34671 5EFD65AF A402B0DD 9D840FA3 18FDA4F3 1450832C 71F9141E
F32CBD49

  62B25280 4017BD86 6DCADEA8 47DCD301 5BBB9008 1E26D662 61405F01
A915A755

  1A017264 25F7308A 09C65C11 E7DCC13B CCDA9095 169C4D87 0CA50D4A
26CF974D

  E9AFB0BF 0772E71F BC32F88D 59C9B70F 600258D7 116C5136 95DB4436
8CB4A17C

  23BD81F0 E76759EE 8D596197 9587AC98 D5B5E6F5 B83329DB 65643102
03010001

  A3783076 300B0603 551D0F04 04030201 86300F06 03551D13 0101FF04
05300301

  01FF301D 0603551D 0E041604 1472436F F907F69B A861E068 B9963AE7
7F79E394

  8F301206 092B0601 04018237 15010405 02030200 02302306 092B0601
04018237

  15020416 041457ED 303498C1 C522F2CA 009C2928 C1CE24F9 E9C1300D
06092A86

  4886F70D 01010B05 00038201 0100B1E0 6BDA2750 931F2C7D C7001B64
77121710

  81DE50F5 EFD4104D 2AC1C30D 20AA2419 87ADA819 54C2812A 2637CCF0
BF39BDEC

  38327C4E 36F3FCCD DA9C12CB 7F308B0A 8CCE46B1 3533819E 8D656234
D93CA8F3

  F564FAED E9E5C18D 99BAEFAB 15902DC5 1CFA203B A6F9D9D3 0CF0586F
B36C0CBA

  C0D43E35 4E394A51 45BCCFA7 15C6855C 8677A207 A9686FAC 8250639E
92B8FE52

  FBEC5DD5 177642E0 53667395 8F8CD168 076E9889 99FA470A 9AE56523
F152232F

  3ECAF7AF A9A47F9B DF2194AC 95BA9B70 6CB657CF E67888B8 683BA1A6
9AB4E732

  D104CF15 853BE6D0 9CBCC46D 31AEE431 E01E0F62 879E503E 7BF4B58F
055C38CC

  DD19869F 7FB54E42 06F1D4F9 4527

        quit

crypto pki certificate chain AMZVCROOT

 certificate ca 066C9FCF99BF8C0A39E2F0788A43E696365BCA

  30820341 30820229 A0030201 02021306 6C9FCF99 BF8C0A39 E2F0788A
43E69636
```

5BCA300D 06092A86 4886F70D 01010B05 00303931 0B300906 03550406
13025553

310F300D 06035504 0A130641 6D617A6F 6E311930 17060355 04031310
416D617A

6F6E2052 6F6F7420 43412031 301E170D 31353035 32363030 30303030
5A170D33

38303131 37303030 3030305A 3039310B 30090603 55040613 02555331
0F300D06

0355040A 1306416D 617A6F6E 31193017 06035504 03131041 6D617A6F
6E20526F

6F742043 41203130 82012230 0D06092A 864886F7 0D010101 05000382
010F0030

82010A02 82010100 B2788071 CA78D5E3 71AF4780 50747D6E D8D78876
F49968F7

582160F9 7484012F AC022D86 D3A0437A 4EB2A4D0 36BA01BE 8DDB48C8
0717364C

F4EE8823 C73EEB37 F5B519F8 4968B0DE D7B97638 1D619EA4 FE8236A5
E54A56E4

45E1F9FD B416FA74 DA9C9B35 392FFAB0 2050066C 7AD080B2 A6F9AFEC
47198F50

3807DCA2 873958F8 BAD5A9F9 48673096 EE94785E 6F89A351 C0308666
A14566BA

54EBA3C3 91F948DC FFD1E830 2D7D2D74 7035D788 24F79EC4 596EBB73
8717F232

4628B843 FAB71DAA CAB4F29F 240E2D4B F7715C5E 69FFEA95 02CB388A
AE50386F

DBFB2D62 1BC5C71E 54E177E0 67C80F9C 8723D63F 40207F20 80C4804C
3E3B2426

8E04AE6C 9AC8AA0D 02030100 01A34230 40300F06 03551D13 0101FF04
05300301

01FF300E 0603551D 0F0101FF 04040302 0186301D 0603551D 0E041604
148418CC

8534ECBC 0C94942E 08599CC7 B2104E0A 08300D06 092A8648 86F70D01
010B0500

03820101 0098F237 5A4190A1 1AC57651 28203623 0EAEE628 BBAAF894
AE48A430

7F1BFC24 8D4BB4C8 A197F6B6 F17A70C8 5393CC08 28E39825 CF23A4F9
DE21D37C

8509AD4E 9A753AC2 0B6A8978 76444718 656C8D41 8E3B7F9A CBF4B5A7
50D7052C

```
  37E8034B ADE961A0 026EF5F2 F0C5B2ED 5BB7DCFA 945C779E 13A57F52
AD95F2F8
  933BDE8B 5C5BCA5A 525B60AF 14F74BEF A3FB9F40 956D3154 FC42D3C7
461F23AD
  D90F4870 9AD97578 71D17243 34756E57 59C2025C 266029CF 2319168E
8843A5D4
  E4CB08FB 231143E8 43297262 A1A95D5E 08D490AE B8D8CE14 C2D055F2
86F6C493
  43776661 C0B9E841 D7977860 036E4A72 AEA5D17D BA109E86 6C1B8AB9
5933F8EB
  C490BEF1 B9
        quit
!
crypto pki certificate pool
 cabundle nvram:Trustpool45.cer
 cabundle nvram:Trustpool44.cer
 cabundle nvram:ios_core.p7b
 cabundle nvram:Trustpool40.cer
 cabundle nvram:Trustpool41.cer
 cabundle nvram:Trustpool42.cer
 cabundle nvram:Trustpool43.cer
 cabundle nvram:Trustpool46.cer
!
!
!
!
voice service voip
 ip address trusted list
  ipv4 10.64.1.72
  ipv4 10.80.23.11
  ipv4 10.80.23.12
  ipv4 3.XX.XX.XX 255.XX.XX.XX
  ipv4 52.XX.XX.XX 255.XX.XX.XX
  ipv4 52.XX.XX.XX 255.XX.XX.XX
  ipv4 34.XX.XX.XX 255.XX.XX.XX
```

```
  ipv4 34.XX.XX.XX 255.XX.XX.XX
  ipv4 10.80.11.79 255.255.255.255
  ipv4 10.80.11.141 255.255.255.255
 address-hiding
 mode border-element
 allow-connections sip to sip
 no supplementary-service sip moved-temporarily
 no supplementary-service sip handle-replaces
 fax protocol pass-through g711ulaw
 trace
 sip
  session refresh
  asserted-id pai
  early-offer forced
  midcall-signaling passthru
  pass-thru headers unsupp
!
!
voice class uri CUCM sip
 host 10.80.11.141
voice class codec 1
 codec preference 1 g711ulaw
!
!
!
!
voice class e164-pattern-map 890
  e164 +1972598XXX$
  e164 +1972598XXX$
 !
!
voice class dpg 200
 description Incoming PSTNGW(DP100) to CUCM(DP201)
```

```
 dial-peer 201 preference 1
!
voice class dpg 100
 description Incoming CUCM(DP200) to PSTNGW(DP101)
 dial-peer 101 preference 1
!
voice class tenant 200
  sip-server ipv4:10.80.11.79
  connection-reuse
  session transport tcp tls
  session refresh
  error-passthru
  asserted-id pai
  bind control source-interface GigabitEthernet0/0/1
  bind media source-interface GigabitEthernet0/0/1
  no pass-thru content custom-sdp
!
voice class tenant 100
  sip-server ipv4:10.80.11.141
  no connection-reuse
  options-ping 60
  session transport udp
  session refresh
  error-passthru
  asserted-id pai
  bind control source-interface GigabitEthernet0/0/0
  bind media source-interface GigabitEthernet0/0/0
  no pass-thru content custom-sdp
!
voice class srtp-crypto 1
 crypto 1 AES_CM_128_HMAC_SHA1_80
!
!
```

```
!
!
voice translation-rule 770
 rule 1 /\+1\(972.......\)/ /\1/
!
!
voice translation-profile AWS-CUCM
 translate called 770
!
!
!
media profile recorder 2020
 media-type audio
 media-recording 5980090
!
media class 2020
 recorder profile 2020 siprec
!
!
!
voice-card 0/2
 no watchdog
!
voice-card 0/4
 no watchdog
!
no license feature hseck9
license udi pid ISR4331/K9 sn FDO21381GMV
license accept end user agreement
license boot level appxk9
license boot level uck9
license boot level securityk9
memory free low-watermark processor 67522
```

```
!
diagnostic bootup level minimal
!
spanning-tree extend system-id
!
!
redundancy
 mode none
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
!
interface GigabitEthernet0/0/0
 description Access01 g4/0/2 CUBE 7 Interface facing CUCM
 ip dhcp client client-id ascii FLM2141V250
 ip address 10.64.3.192 255.255.0.0
 negotiation auto
!
interface GigabitEthernet0/0/1
 description Access01 g4/0/4 CUBE 7 Interface facing PSTN
 ip address 10.71.12.10 255.255.255.0
 negotiation auto
!
interface GigabitEthernet0/0/2
 description Access01 g4/0/9 CUBE 7 Interface facing Mutare
 ip address 192.65.79.44 255.255.255.224
 negotiation auto
!
interface GigabitEthernet0/1/0
 no ip address
 negotiation auto
!
interface Service-Engine0/2/0
!
interface Service-Engine0/4/0
!
interface GigabitEthernet0
 vrf forwarding Mgmt-intf
 no ip address
 negotiation auto
!
ip http server
ip http authentication local
ip http secure-server
```

```
ip http client source-interface GigabitEthernet0/0/0
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 10.64.1.1
ip route 10.71.12.0 255.255.255.0 10.71.12.1
ip route 10.80.11.0 255.255.255.0 10.71.12.1
ip route 172.16.0.0 255.255.0.0 10.71.12.1
ip route 172.16.29.154 255.255.255.255 192.65.79.33
!
!
!
!
!
!
!
control-plane
!
!
voice-port 0/2/0
!
voice-port 0/2/1
!
mgcp behavior rsip-range tgcp-only
mgcp behavior comedia-role none
mgcp behavior comedia-check-media-src disable
mgcp behavior comedia-sdp-force disable
!
mgcp profile default
!
!
!
!
dial-peer voice 100 voip
 description Incoming dial-peer from PSTNGW to CUCM
```

```
 session protocol sipv2
 session transport tcp tls
 destination dpg 200
 incoming called e164-pattern-map 890
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip srtp-crypto 1
 voice-class sip bind control source-interface GigabitEthernet0/0/1
 voice-class sip bind media source-interface GigabitEthernet0/0/1
 dtmf-relay rtp-nte
 srtp
 no vad
!
dial-peer voice 200 voip
 description Incoming dial-peer from CUCM to PSTNGW
 session protocol sipv2
 destination dpg 100
 incoming uri via CUCM
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip tenant 200
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 media-class 2020
 dtmf-relay rtp-nte
 no vad
!
dial-peer voice 101 voip
 description Outgoing dial-peer from CUCM to PSTNGW
 destination-pattern BAD.BAD
 session protocol sipv2
 session target sip-server
 session transport tcp tls
```

```
 voice-class codec 1
 voice-class sip asserted-id pai
 voice-class sip tenant 200
 voice-class sip srtp-crypto 1
 voice-class sip bind control source-interface GigabitEthernet0/0/1
 voice-class sip bind media source-interface GigabitEthernet0/0/1
 dtmf-relay rtp-nte
 srtp
 no vad
!
dial-peer voice 5980090 voip
 description DP_AmazonVCRecording
 destination-pattern +197259XXXXX
 session protocol sipv2
 session target dns:dtndXXXX.voiceconnector.chime.aws:5061
 session transport tcp tls
 voice-class codec 1
 voice-class sip localhost dns:dtndxXXXX.voiceconnector.chime.aws
preferred
 voice-class sip srtp-crypto 1
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 srtp pass-thru voice service voip
 no vad
!
dial-peer voice 201 voip
 description Outgoing dial-peer from PSTNGW to CUCM
 destination-pattern BAD.BAD
 session protocol sipv2
 session target sip-server
 voice-class codec 1
 voice-class sip options-ping 60
 voice-class sip tenant 100
```

```
 voice-class sip options-keepalive
 voice-class sip bind control source-interface GigabitEthernet0/0/0
 voice-class sip bind media source-interface GigabitEthernet0/0/0
 media-class 2020
 dtmf-relay rtp-nte
 no vad
!
!
gateway
 timer receive-rtp 1200
!
sip-ua
 crypto signaling remote-addr 10.80.11.79 255.255.255.255  trustpoint
awscube7
 crypto signaling default trustpoint AMZVCROOT
!
!
line con 0
 exec-timeout 5 0
 password tekV1z10n
 logging synchronous
 login
 stopbits 1
line aux 0
line vty 0 4
 exec-timeout 15 0
 password tekV1z10n
 logging synchronous
 login
 transport input telnet
line vty 5 14
 login
 transport input ssh
```

```
!
call-home
 ! If contact email address in call-home is configured as sch-smart-
licensing@cisco.com
 ! the email address configured in Cisco Smart License Portal will be
used as contact email address to send SCH notifications.
 contact-email-addr sch-smart-licensing@cisco.com
 profile "CiscoTAC-1"
  active
  destination transport-method http
!
!
!
!
!
!
end
```