CCS-UC-1

SIP Endpoint with Avaya Aura® 7.0 System

Configuration Guide

Crestron Electronics, Inc.

The product warranty can be found at www.crestron.com/warranty.

The specific patents that cover Crestron products are listed at patents.crestron.com.

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This document was written by the Technical Publications department at Crestron.

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Introduction

This configuration guide describes the necessary procedure to configure a Crestron® Mercury™ device to register to the Avaya® Aura Communication Manager as a basic SIP endpoint.

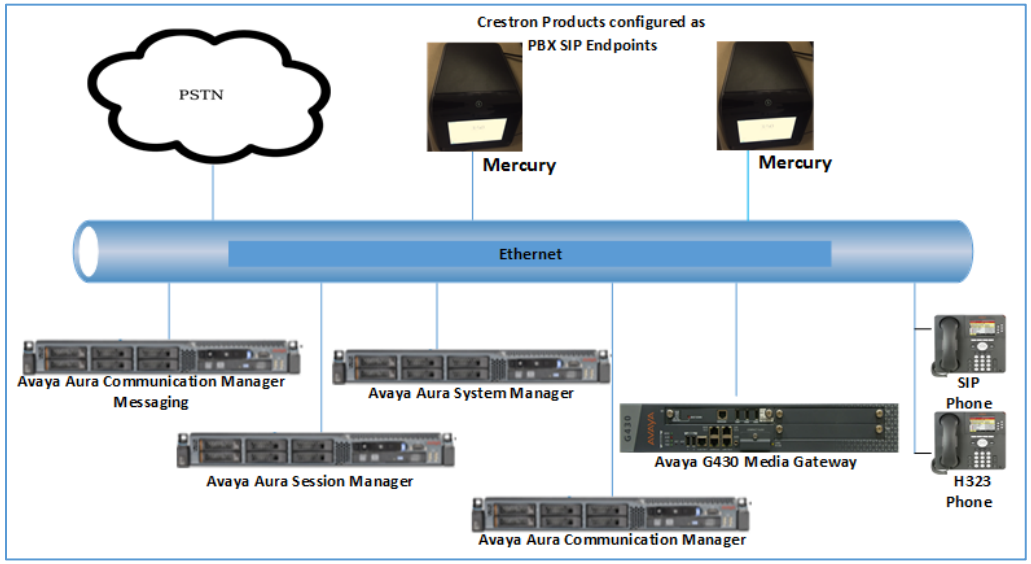
Audience

This document is intended for users attempting to configure and use Crestron Mercury devices as SIP endpoints registering to the Avaya Aura® Communication Manager.

Topology

The network topology for the Crestron Mercury endpoint to interop with the Avaya Aura is shown below.

SIP Endpoint Integration with Avaya - Reference Network



The lab network consists of the following components:

- Avaya Aura Communication Manager
- Avaya Aura Session Manager
- Avaya Aura System Manager
- Avaya H323 and SIP phones
- Avaya G430 Media Gateway
- Avaya Aura Communication Manager Messaging as the voicemail system
- Mercury as the SIP endpoints

Software Requirements

- Avaya Aura Communication manager v 7.0.1.1.0.441.23169
- Avaya Aura Communication manager messaging v 7.0-28.0
- Avaya Aura System Manager v 7.0
- Avaya Aura Session Manager v 7.0.1.1.701114
- Avaya G430 Media Gateway v 37 .39 .0 /2
- Mercury devices v 1.3211.00020

Hardware Requirements

- Avaya Components either in a virtual environment or separate hardware servers
    - Avaya Aura Communication Manager
    - Avaya Aura Session Manager
    - Avaya G430 Media Gateway
    - Avaya Aura Communication Manager Messaging
    - Avaya Aura Session Manager
- PSTN Gateway
- Avaya Phones (3) in SIP and H323 mode
- Crestron Mercury devices (2)

Product Description

The Mercury device is a complete solution for conference rooms. It acts as an all-in-one touch screen, speakerphone, and AirMedia product for conference rooms that integrates microphones and speakers into the user interface at the table.

Crestron Toolbox™ is used to discover and control all Crestron devices on the network.

The Crestron Mercury web interface is used to control the Crestron Mercury devices on the network.

Summary

The Mercury devices were configured on the Avaya Aura as basic SIP endpoints since they support only a single line/extension. The devices were successfully registered to the Avaya Aura Session Manager with digest authentication.

Features Supported

- Registration with digest authentication
- Basic calls with G722, G711u, and G711a codecs
- Caller ID (limited to only calling number)
- DTMF support
- Early media support
- Retrieval of a parked call
- Transferee in a call transfer
- Conference participant
- Member of hunt group
- Voicemail access and interaction

Features Not Supported

- Caller ID presentation with name and number display
- Call hold and resume
- Call forwarding on the device (Forwarding can be configured on the PBX for the DN assigned to the endpoint.)
- Call waiting
- Conference
- Attended call transfer
- Early attended call transfer
- Blind call transfer
- Shared line (configuration of shared line on device)
- Call park (initiating call park)
- Message Waiting Indicator

Known Issues/Limitations

- Caller ID is not supported on Mercury. This issue is tracked via Crestron's Bugzilla™ Defect: 119006.
- The Mercury device does not support music on hold when integrated with Cisco® Call Manager. This issue is tracked via Crestron's Bugzilla Defect: 118993.
- Message Waiting Indicator (MWI) is not supported on Mercury. This issue is tracked via Crestron's Bugzilla Defect: 116290.

Mercury Configuration

Setup

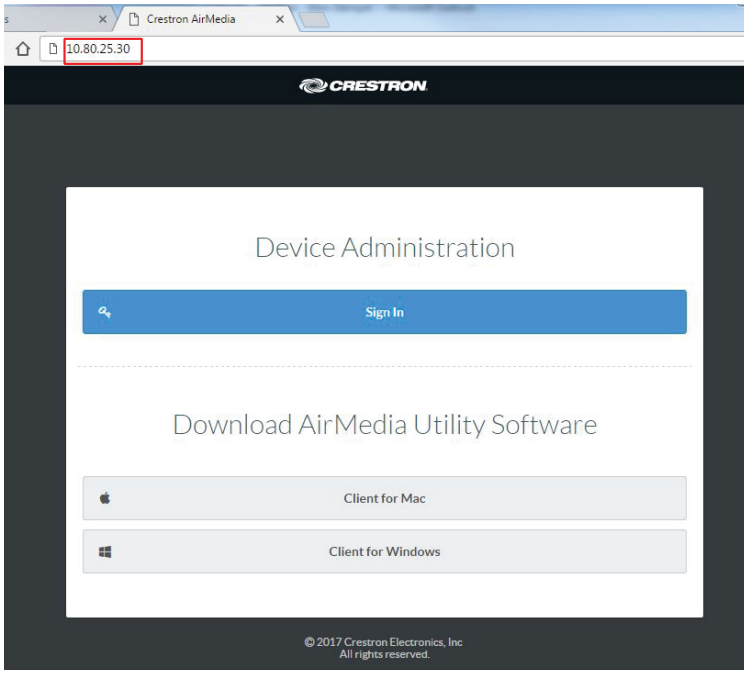
The Mercury device requires only one connection from its LAN port. The LAN port needs to be connected to one POE+ port to power it up and to be connected to the network for reachability to the Avaya Aura.

Configuring the Device

1. Access the web GUI for the device by using an http session with the device's IP address. 10.80.25.30 was used during test as the device IP address.

   The initial page that displays is as shown below.

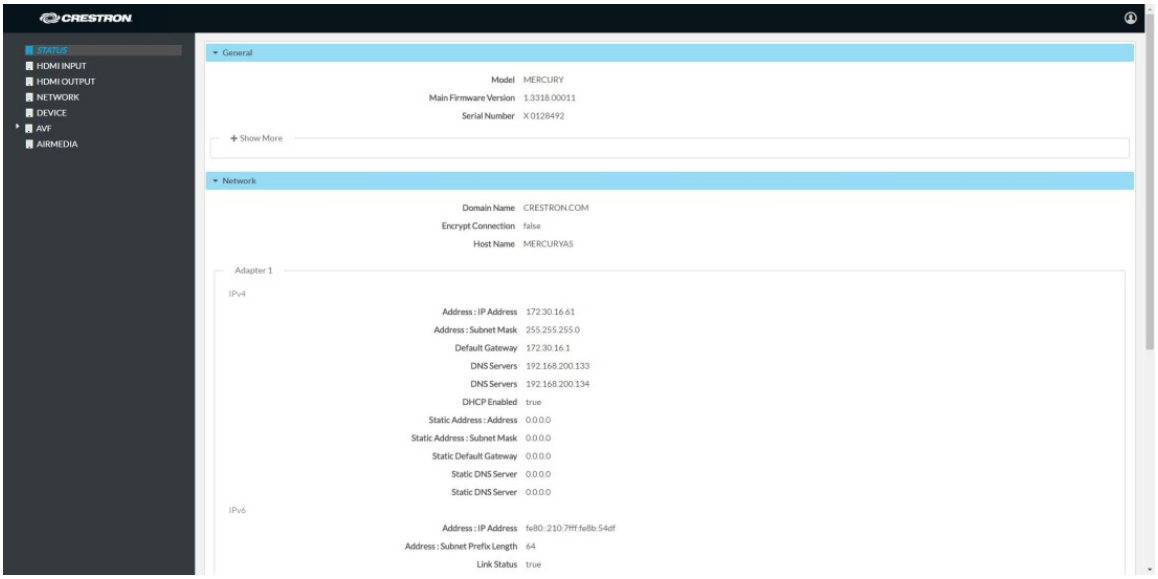
   Crestron Mercury Login to Web GUI



2. Click **Sign In** and log in to the device. For information on device administration, refer to Doc. 7844 at www.crestron.com/manuals.

   The **Status** screen that appears displays basic information on the device as shown below.

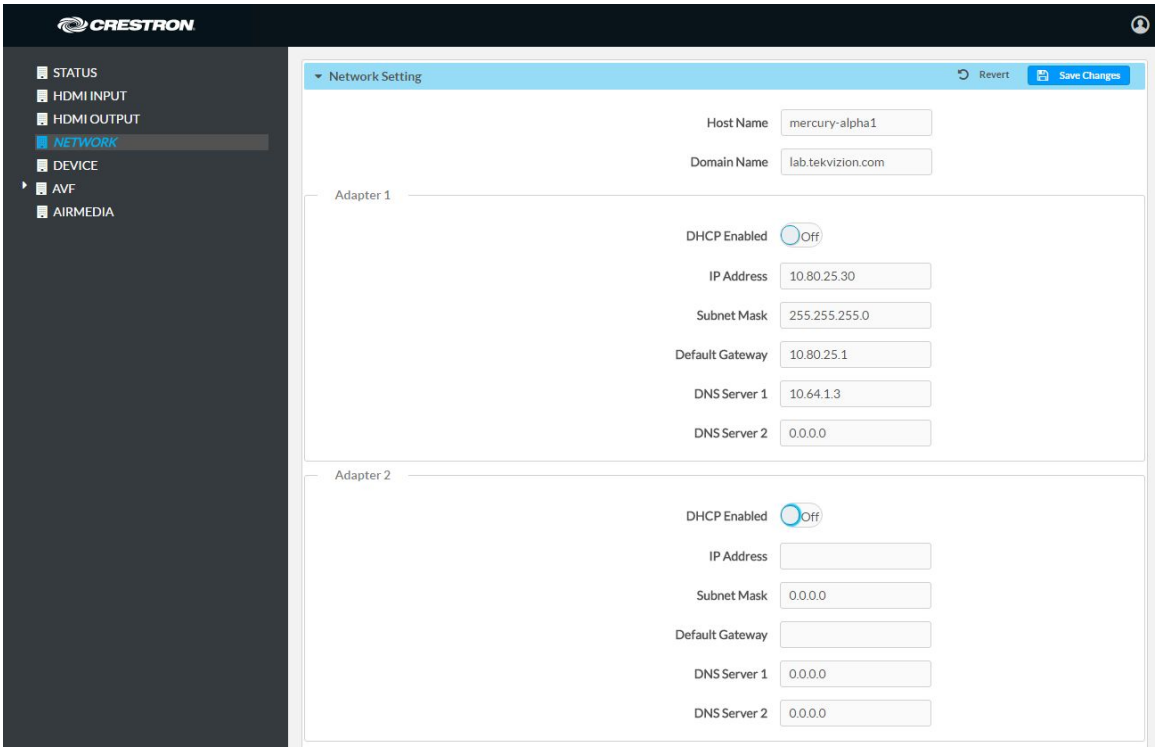
Crestron Mercury Configuration: Status Screen



The device can be configured from the Network page.

3. On the web GUI, navigate to **Network**.

Crestron Mercury Configuration: Network Screen



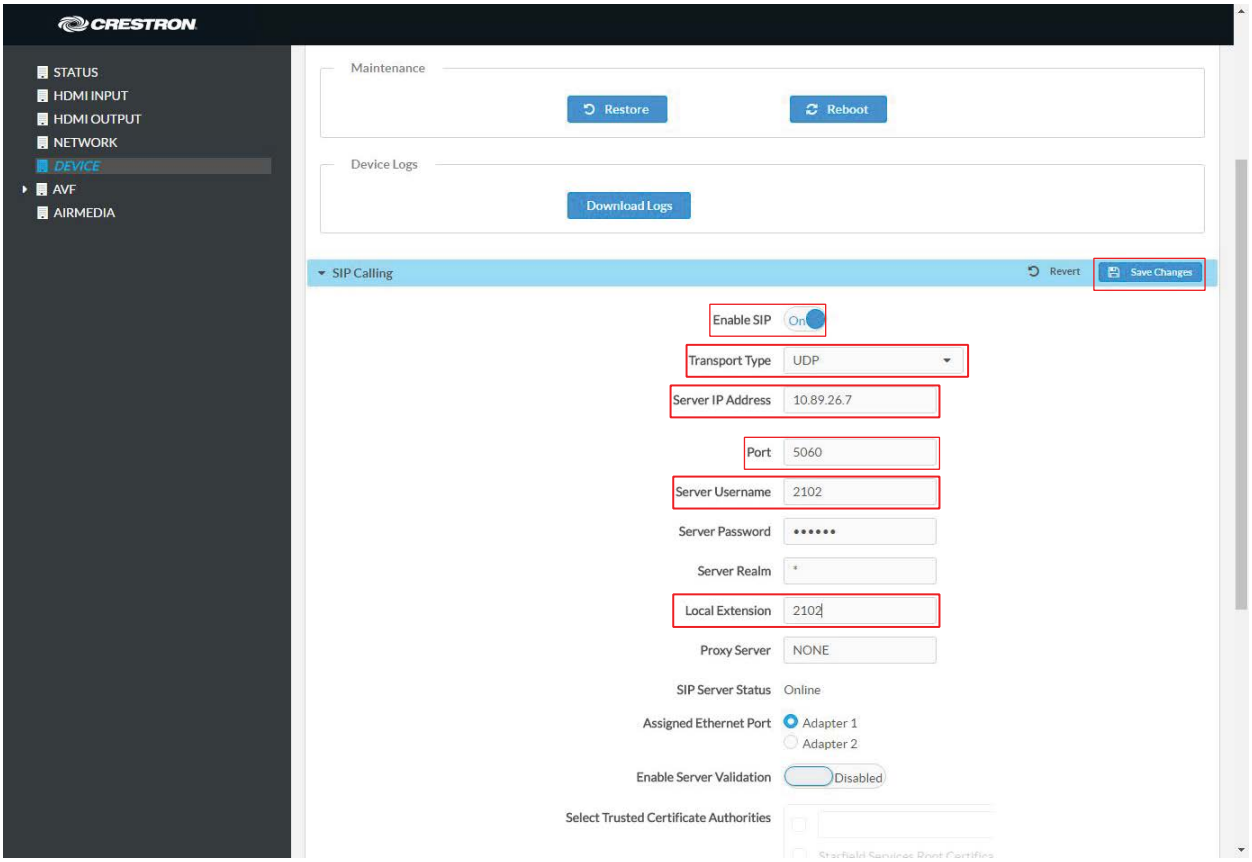
4. Enter the following parameters in the **Adapter 1** section to configure the Mercury device.
   - **Domain Name**: lab.tekvizion.com, used in this example (mostly auto-detected by device when in DHCP mode).
   - **DHCP:** Either of the two can be chosen:
     - o **Obtain an IP address automatically**
     - o **Use the following IP address**

     For the test, a static IP was configured with the following parameters.
       - **IP address**: 10.80.25.30, used in this example.
       - **Subnet Mask**: 255.255.255.0, used in this example.
       - **Default Gateway**: 10.80.25.1, used in this example.
       - **DNS Servers**: 10.64.1.3, used in this example.
5. Click **Save Changes.**

Configure the SIP Parameters

1. On the web GUI, navigate to **Device > SIP Calling**.

Crestron: Mercury: Device Configuration: SIP Parameters



2. Enable the check box for **Enable SIP**.
3. Configure the **SIP Server IP Address:** Enter the IP address of the Avaya Aura Session Manager node. *10.80.26.7* was used in this example.
4. Configure the **SIP port**: *5060,* used in this example.
5. Configure the **SIP Server Username**: Enter the end user configured on Avaya Aura Communication Manager for this device. *2102* was used in this example.
6. Configure the **SIP Server Password**: Enter the password as configured on Avaya Aura Communication Manager for this end user.
7. Configure the **SIP Local Extension**: Enter the directory number that was configured for this device on Avaya Aura Communication Manager. *2102* was used in this example.
8. Leave all other fields at their default values.
9. Click **Save Changes**.

Once the device successfully registers with the Avaya Aura Session Manager, the **SIP Server Status** updates its status to show *Online*.

Avaya Aura Communication Manager Configuration

This section describes the configuration necessary on the Avaya Aura Communication Manager (Avaya CM) to support registration of the devices and connectivity to PSTN.

It is assumed that the general installation and basic Avaya configuration has already been administered.

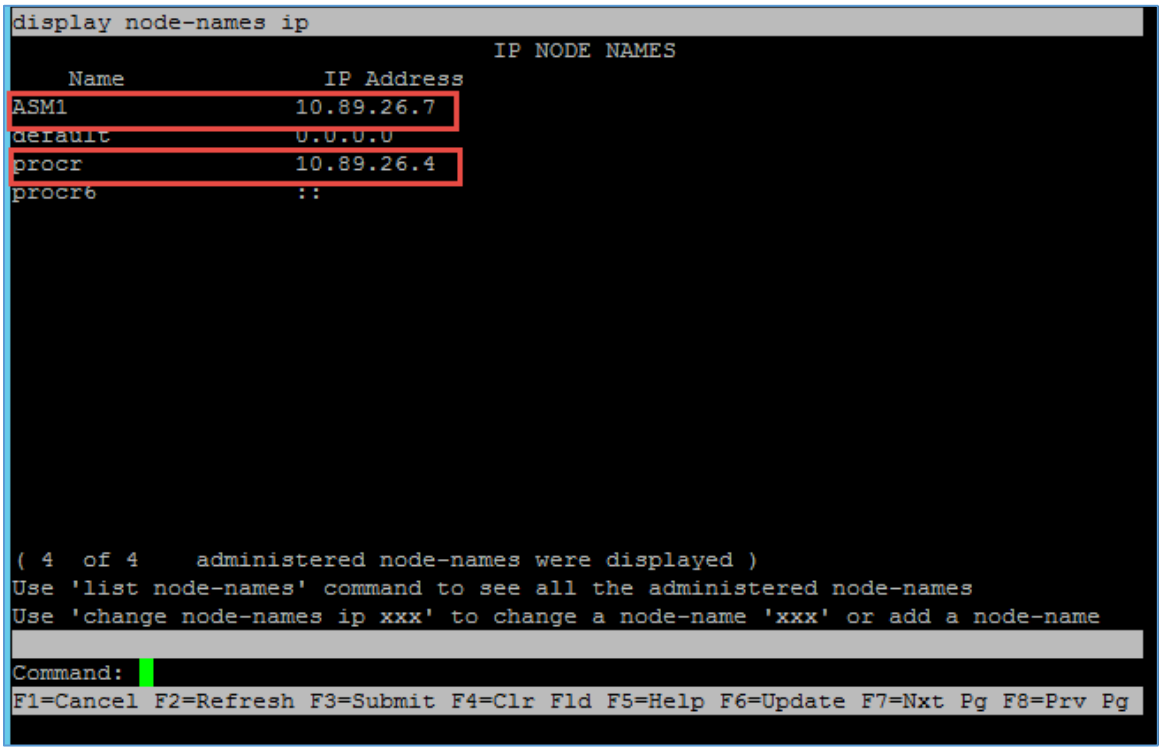
Node Names

Configure the node IP for Avaya Aura Session Manager and Avaya CM.

Use the change name-names ip command to add the node name. In this example, *ASM1* and *procr* have been added with their respective IPs.

- *ASM1* is an Avaya Aura Session Manager used in this example and is used to register the SIP phones and third-party SIP devices.
- *procr* is used to register H323 phones and SIP trunk.

Avaya Aura CM: Configure Node

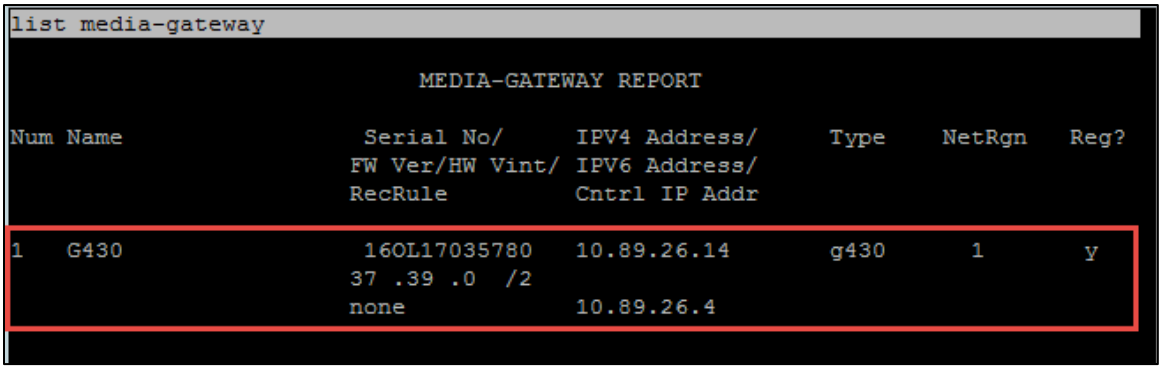


Media Gateway

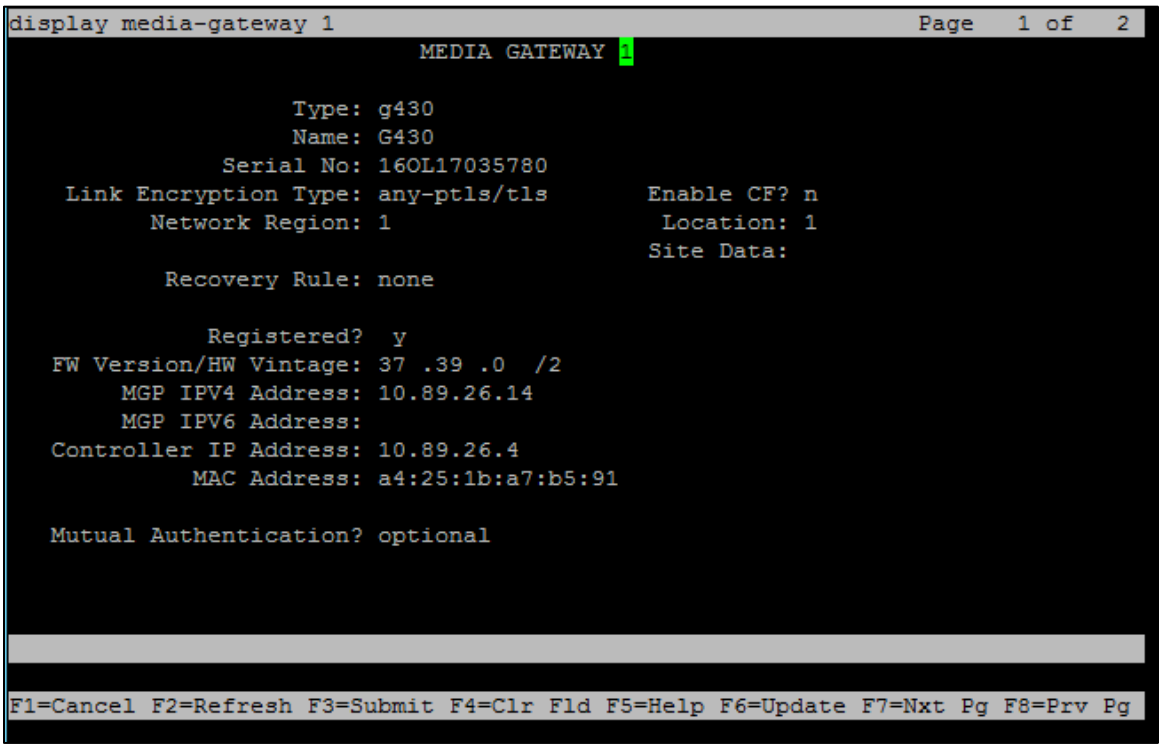
The G430 media gateway was added for DSP resources utilization in Avaya.

The G430 provides VoIP services over the LAN and WAN. The G430 has an on-board VoIP DSP providing 20 VoIP channels, and supports an optional additional DSP board providing 10, 20, or 80 VoIP channels.

Avaya Aura CM: Media Gateway Configuration (1/3)



Avaya Aura CM: Media Gateway Configuration (2/3)

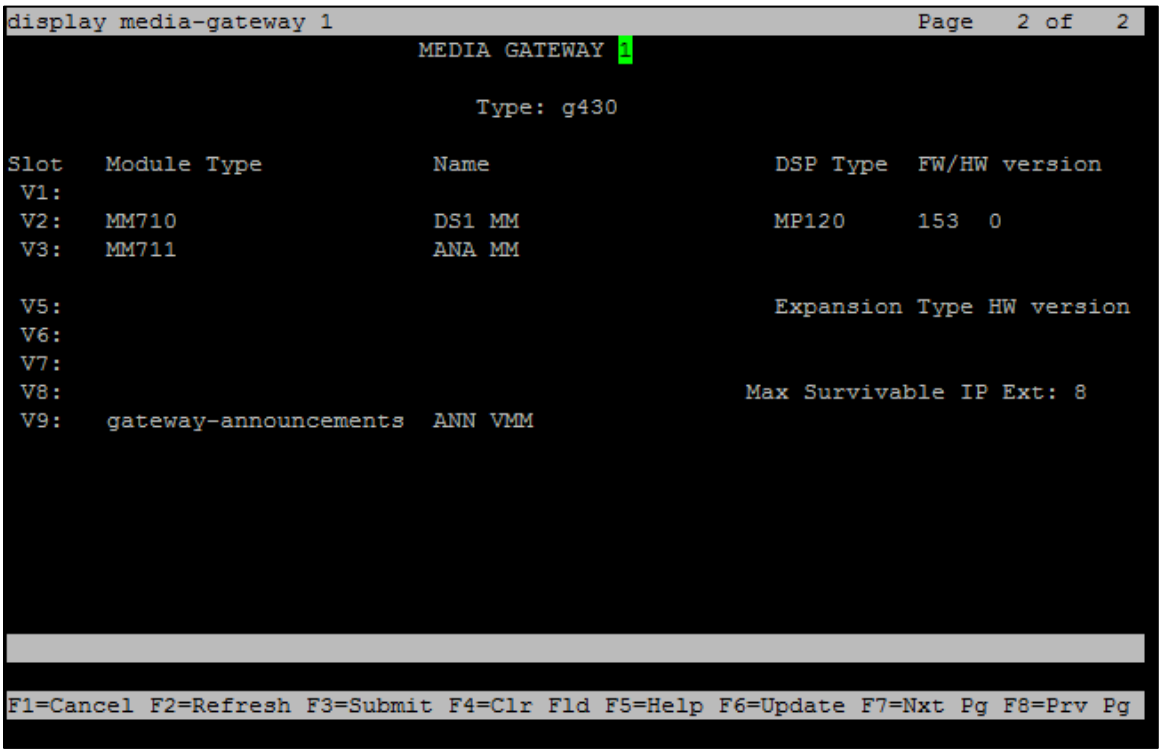


Configure the media gateway as shown above using the **add media-gateway** command.

- **Type**: *g430*, used in this example.
- **Name**: *G430*, used in this example.
- **Serial No**: *16OL17035780*, used in this example.
- **Registered?**: *Y*, used in this example.

- MGP IPV4 Address: *10.89.26.14*, used in this example.
- Controller IP Address: *10.89.26.4*, procr IP used in this example.

Avaya Aura CM: Media Gateway Configuration (3/3)

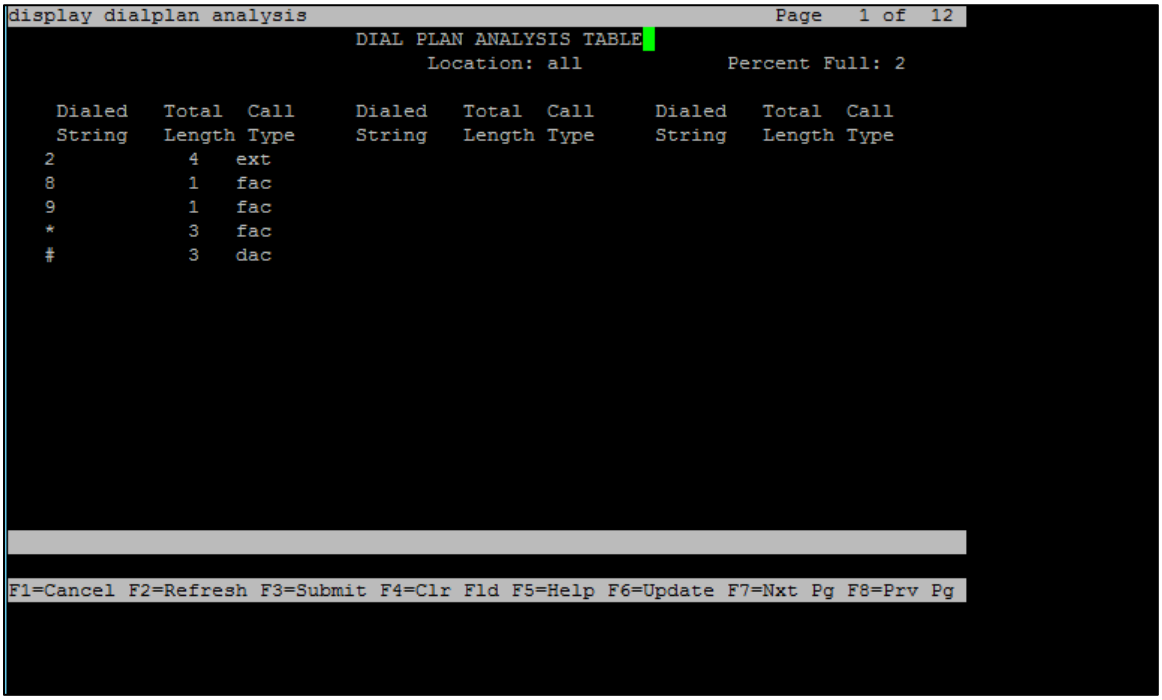


Dial Plan Analysis

Several dial strings were configured for this test to ensure complete test coverage that included calling between stations, calling to PSTN and accessing PBX features.

Configure the following dial patterns using the change dialplan analysis command.

Avaya Aura CM: Dial Plan Analysis



- Dialed string: *2*, used in this example for station number.
- Dialed string: *8*, used in this example as feature access code.
- Dialed string: *9*, used in this example as feature access code.
- Dialed string:*, used in this example as feature access code.
- Dialed string: #, used in this example as a dial access code.

The display dialplan analysis command can be used to view the configured dialed strings/codes.

Uniform Dial Plan

Configure a dial plan using the change uniform-dialplan n command, where n is the first digit of the extension numbers used for SIP stations in the system.

In the sample configuration, 4-digit extension numbers starting with "21xx" were used for extensions associated with the Avaya SIP phones and Crestron SIP devices.

To add the dialplan, issue the above command and configure:

- Matching Pattern: *21*, starting digit of the extension number used for SIP in this example.
- Len: *4*, used in this example.
- Del: *0*, used in this example.

- **Net**: *aar*, used in this example.

Inbound Routing

DID numbers received from PSTN were mapped to extensions using the incoming call handling treatment of the receiving trunk group. Use the **change inc-call-handling-trmt** command to create an entry for each DID number.

Avaya Aura CM: Inbound Routing

```
change inc-call-handling-trmt trunk-group 1                          Page   1 of   3
                        INCOMING CALL HANDLING TREATMENT
 Service/      Number   Number       Del  Insert
 Feature         Len       Digits
 tie              10  9722657277      10  2102
 tie              10  9722657278      10  2103
 tie
 tie
 tie
```

Outbound Routing

Automatic Route Selection (ARS)

The **Automatic Route Selection (ARS)** feature is used to route outbound calls via the SIP trunk to the PSTN. In the sample configuration, the single digit **9** is used as the ARS access code. PBX users dial 9 to initiate a call to PSTN. This common configuration is illustrated below with little elaboration. Use the **change dialplan analysis** command to define a dialed string beginning with *9* of length *1* as a feature access code (**fac**).

Avaya Aura CM: Outbound Routing: Configure Dial Plan Analysis Table

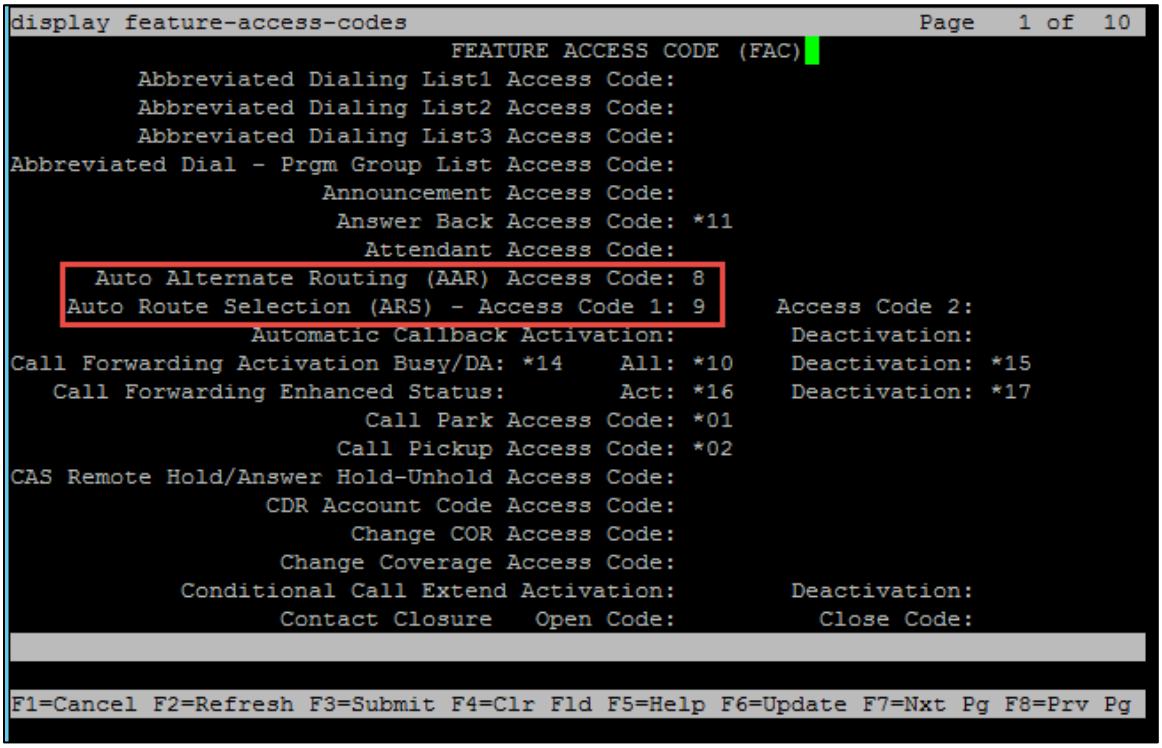
```
change dialplan analysis                                              Page   1 of  12
                              DIAL PLAN ANALYSIS TABLE
                                    Location: all            Percent Full: 3

    Dialed    Total  Call      Dialed    Total  Call      Dialed    Total  Call
    String    Length Type      String    Length Type      String    Length Type
   0            1   attd      [redacted]
   [redacted]
                               9            1    fac
                               [redacted]
```

The following feature access codes were configured for this test:

- **Auto Alternate Routing (AAR)**: *8*, used in this example.
- **Automatic Route Selection (ARS)**: *9*, used in this example.

Avaya Aura CM: Outbound Routing: Configure Feature Access Codes

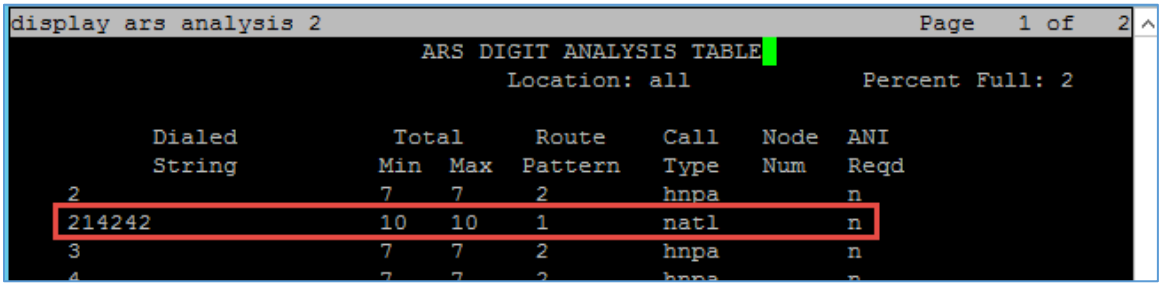


Use the **change ars analysis** command to configure the routing of dialed digits following the first digit 9.

For the test, an entry for the number beginning with 214242 was added using the above command and configuring:

- **Dialed string**: *214242*, used in this example to call PSTN numbers.
- **Min**: *10*, used in this example.
- **Max**: *10*, used in this example.
- **Route Pattern**: *1*, used in this example.
- **Call Type**: *natl*, used in this example.

Avaya Aura CM: Outbound Routing: Auto Route Selection



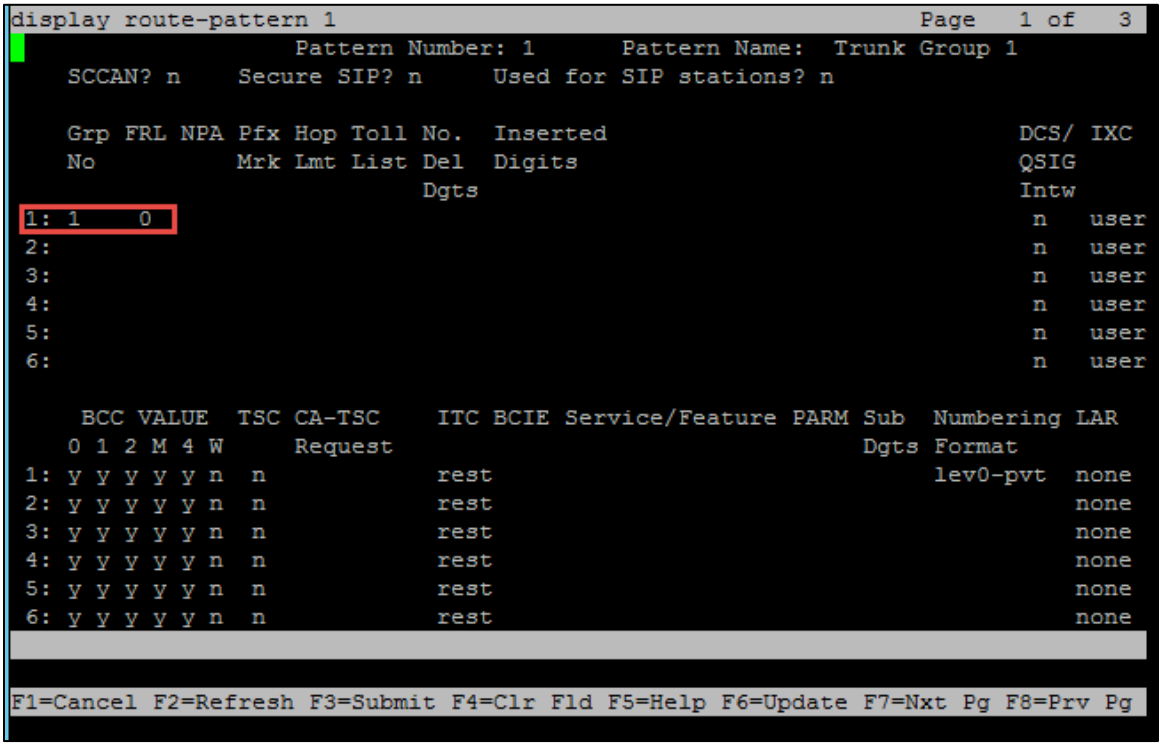
Route Pattern

The route pattern defines which trunk group will be used for the call and performs any necessary digit manipulation. Use the **change route pattern n** command, where n is the route pattern number to configure the parameters for the PSTN trunk route pattern.

Route pattern: *1*, used for Public numbering plan for calling PSTN via Avaya Aura Session manager.

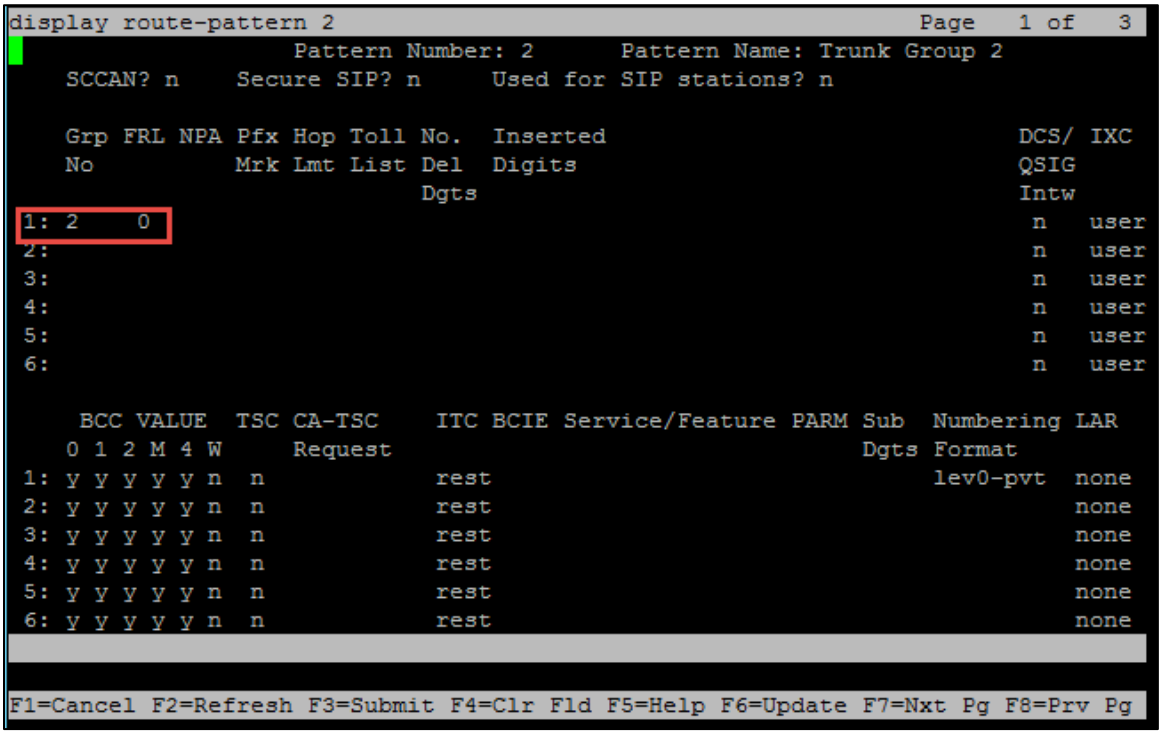
Grp No: *1*, used in this example.

Avaya Aura CM: PSTN Route Pattern Configuration



Route pattern: *2*, used as a Private numbering plan for accessing the Voicemail feature offered by Avaya Communication Manager Messaging via Avaya Aura Session manager.

Avaya Aura CM: Voicemail Route Pattern Configuration



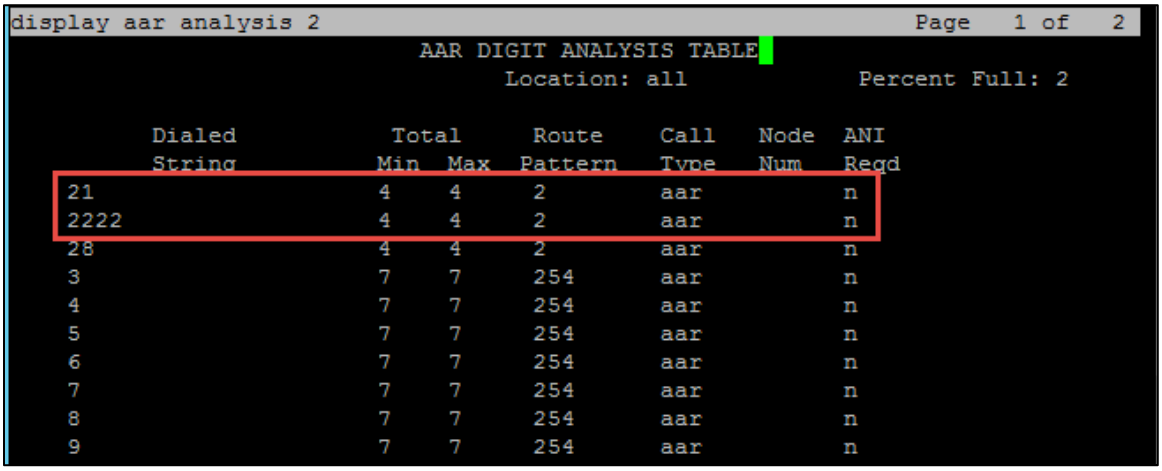
Auto Alternative Routing

Use the **change aar analysis n** command, where **n** is the first digit of the extension numbers used for SIP stations in the system.

The following entries were configured for this test:

- **Dialed number**: *21*, used for Avaya SIP phones and Crestron Mercury SIP devices.
- **Dialed number**: *2222*, used for voicemail access.

Avaya Aura CM: Modify AAR Digit Analysis Table



```
display aar analysis 2                                        Page   1 of   2
                           AAR DIGIT ANALYSIS TABLE
                                   Location: all            Percent Full: 2

      Dialed           Total      Route    Call   Node  ANI
      String          Min  Max  Pattern   Type   Num   Reqd
21                    4    4    2         aar          n
2222                  4    4    2         aar          n
28                    4    4    2         aar          n
3                     7    7    254       aar          n
4                     7    7    254       aar          n
5                     7    7    254       aar          n
6                     7    7    254       aar          n
7                     7    7    254       aar          n
8                     7    7    254       aar          n
9                     7    7    254       aar          n
```

Trunk Groups

Two trunk groups were configured for this test:

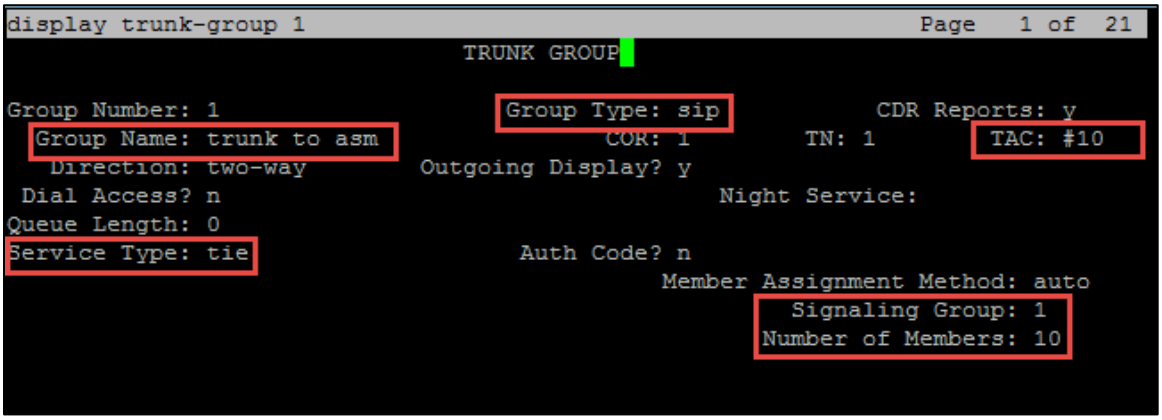
- Trunk Group 1 utilized a public numbering plan to access the stations registered to the Avaya Session Manager.
- Trunk Group 2 utilized a private numbering plan to send 4-digit calling number to Avaya Communication Manager Messaging or voicemail access.

Use the **add trunk-group n** command to add a new trunk group, where **n** is the trunk group number.

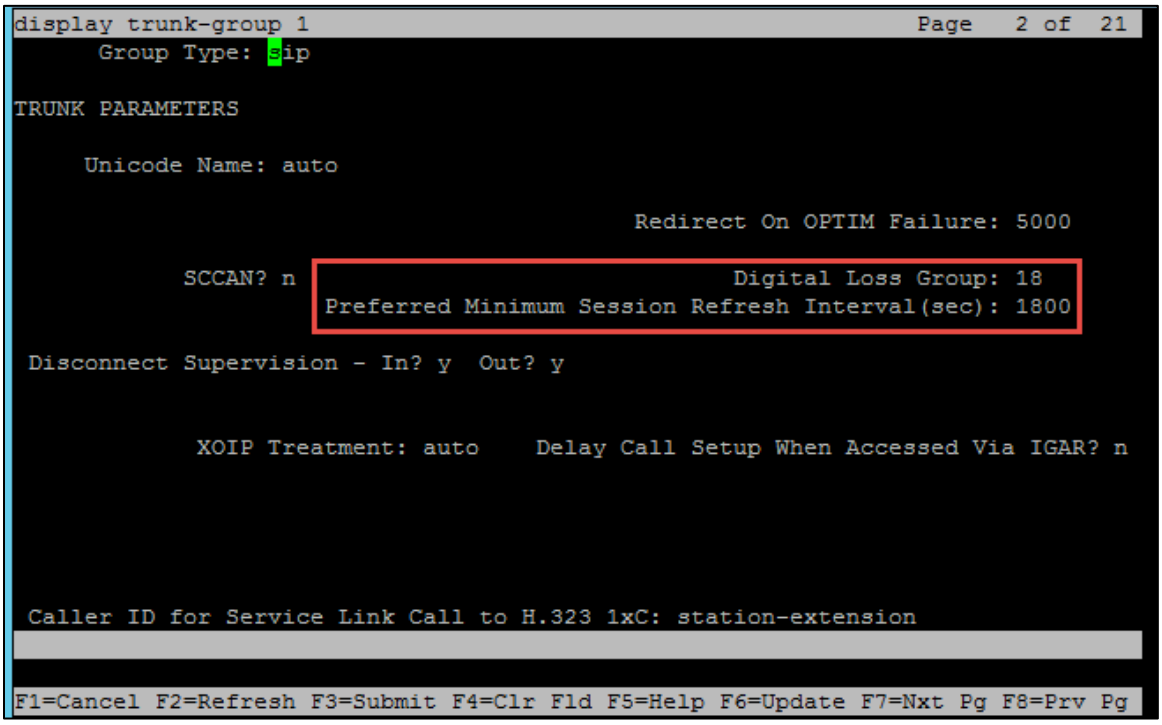
Configure Trunk Group 1:

- **Group Number:** *1*, used in this example.
- **Group Name:** *trunk to asm*, used in this example.
- **Group Type:** *sip,* used in this example.
- **Service Type:** *tie*, used in this example.
- **TAC:** *#10*, used in this example.
- **Signaling Group:** *1*, used in this example.
- **Number of Members:** *10*, used in this example.
- **Preferred Minimum Session Refresh Interval (Sec):** *1800.*
- **Numbering Format:** *public.*

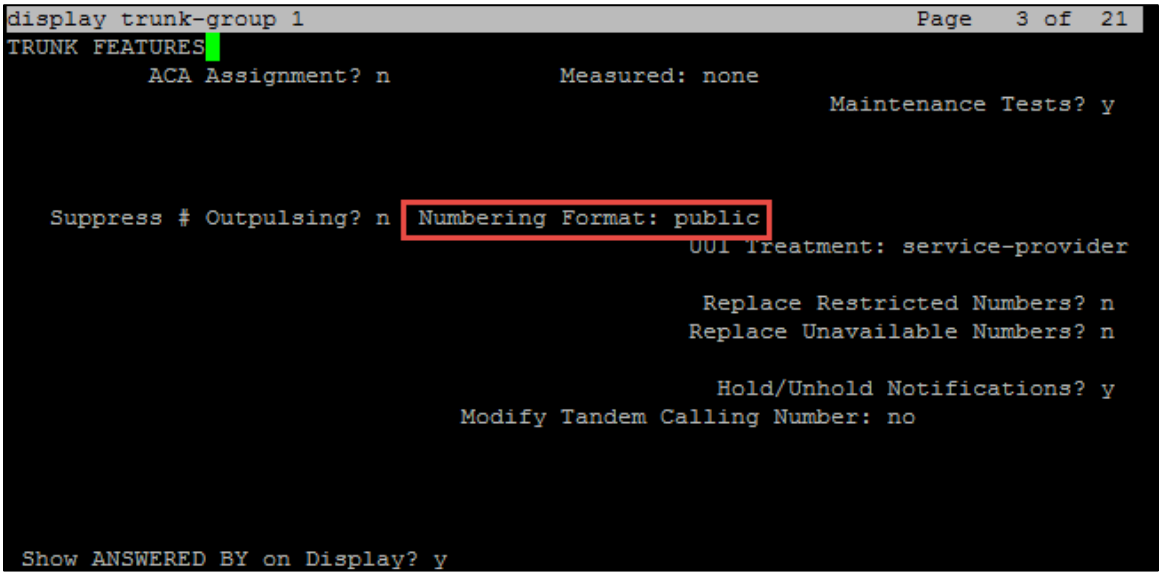
Avaya Aura CM: Trunk Configuration to Session Manager (1/4)



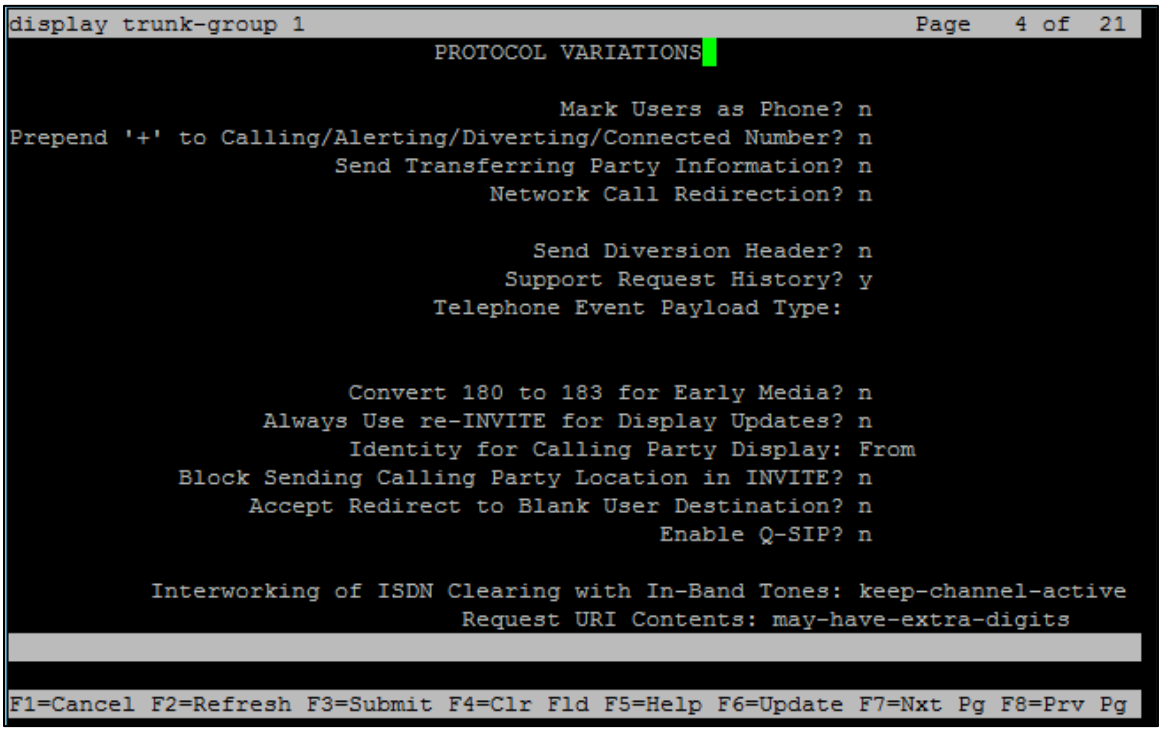
Avaya Aura CM: Trunk Configuration to Session Manager (2/4)



Avaya Aura CM: Trunk Configuration to Session Manager (3/4)



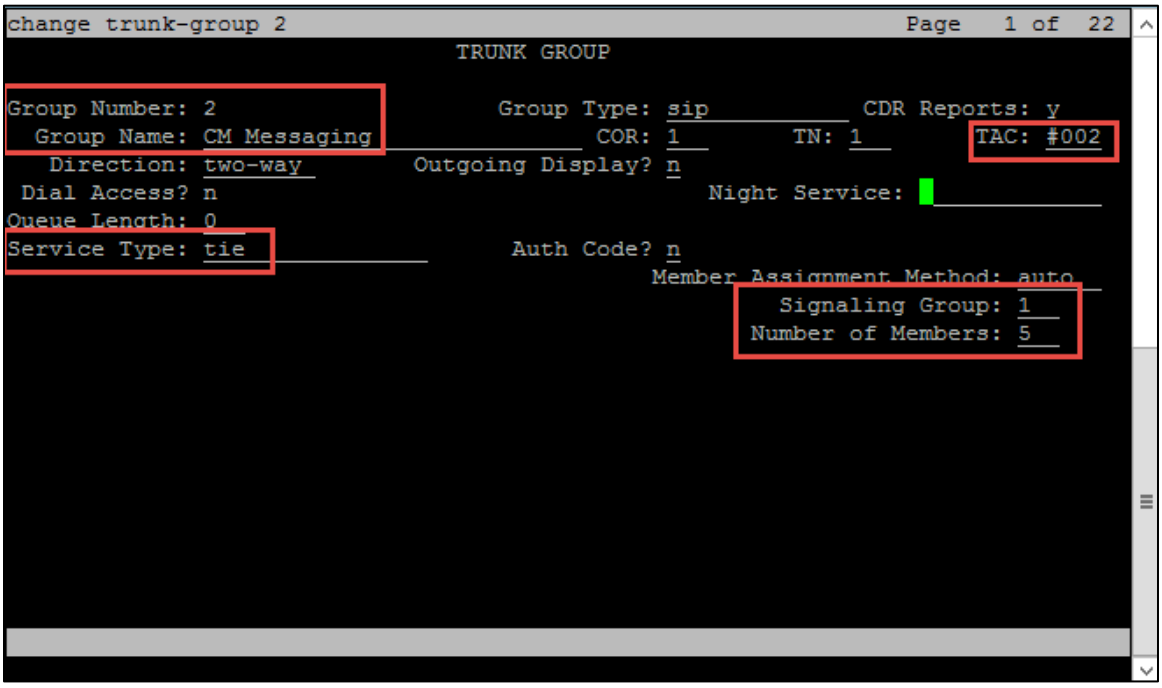
Avaya Aura CM: Trunk Configuration to Session Manager (4/4)



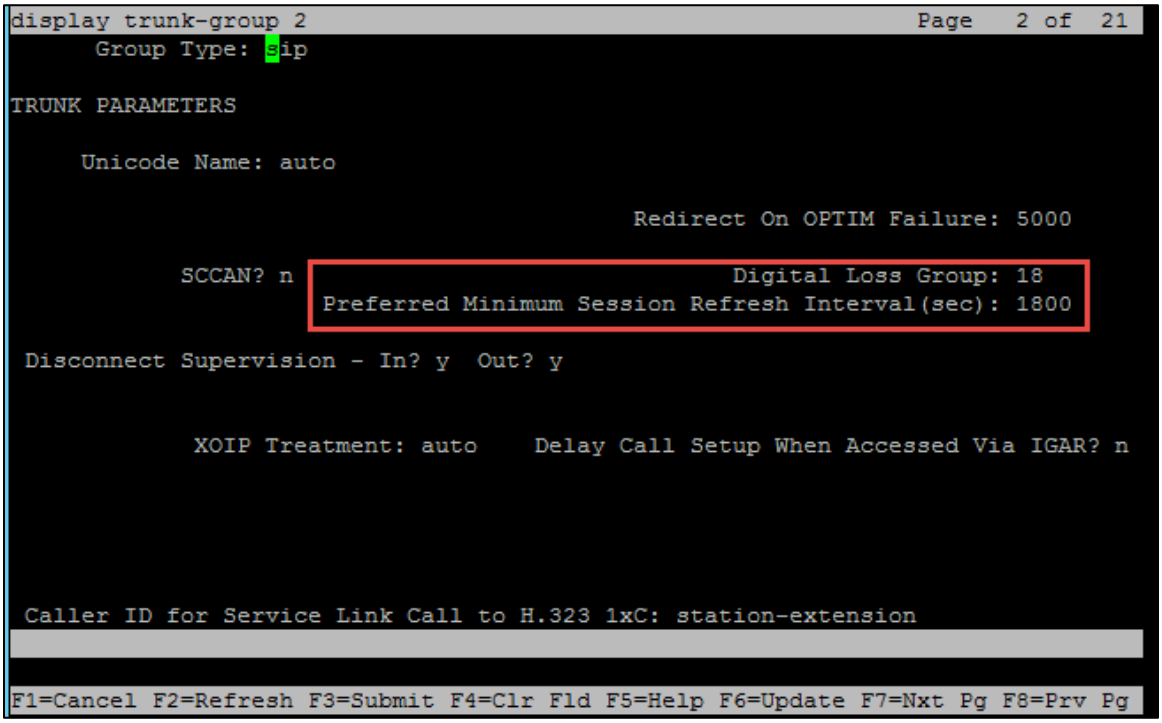
Configure Trunk Group 2:

- **Group Number:** *2*, used in this example.
- **Group Name:** *CM Messaging,* used in this example.
- **Group Type:** *sip*, used in this example.
- **Service Type:** *tie*, used in this example.
- **TAC:** *#002*, used in this example.
- **Signaling Group:** *1*, used in this example.
- **Number of Members:** *5*, used in this example.
- **Preferred Minimum Session Refresh Interval (Sec):** *1800.*
- **Numbering Format:** *private.*

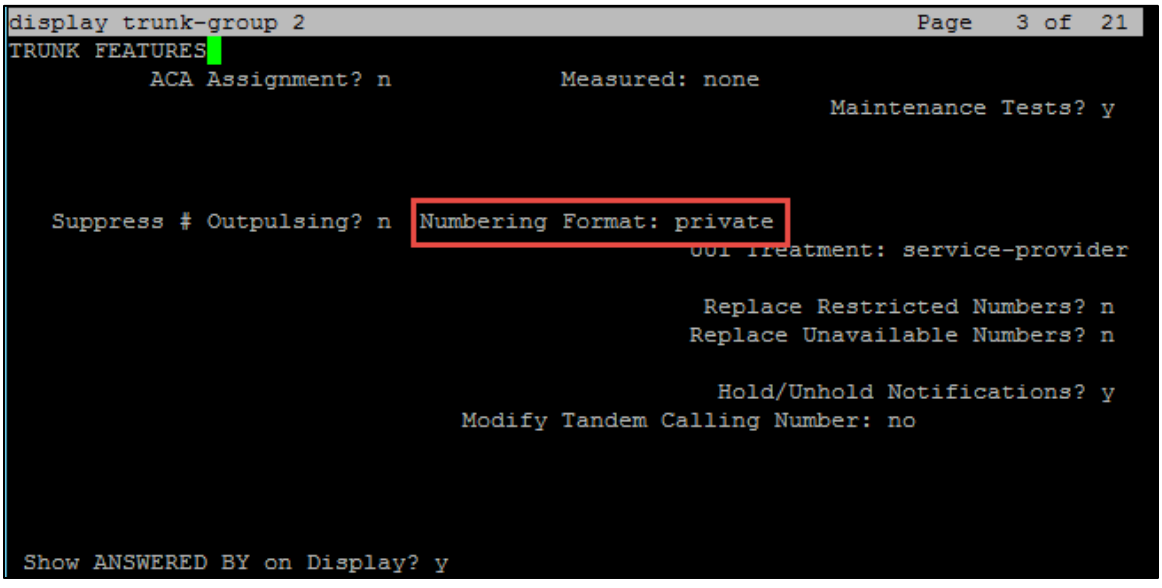
Avaya Aura CM: Trunk Configuration to Session Manager (1/4)



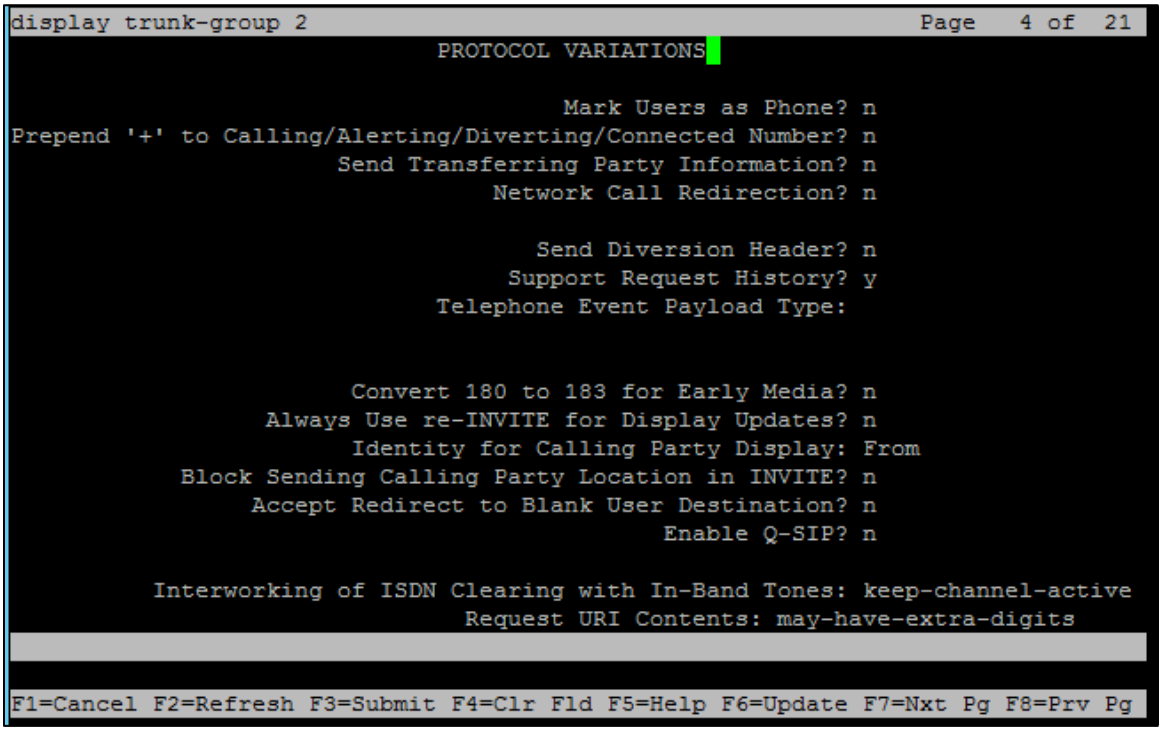
Avaya Aura CM: Trunk Group 2 Configuration for Private Numbering (2/4)



Avaya Aura CM: Trunk Group 2 Configuration for Private Numbering (3/4)



Avaya Aura CM: Trunk Group 2 Configuration for Private Numbering (4/4)



Signaling Group

Use the *add signaling-group* command to create a signaling group between Communication Manager and Session Manager for use by the PSTN SIP trunk. This signaling group is used for inbound and outbound calls between the PBX and PSTN.

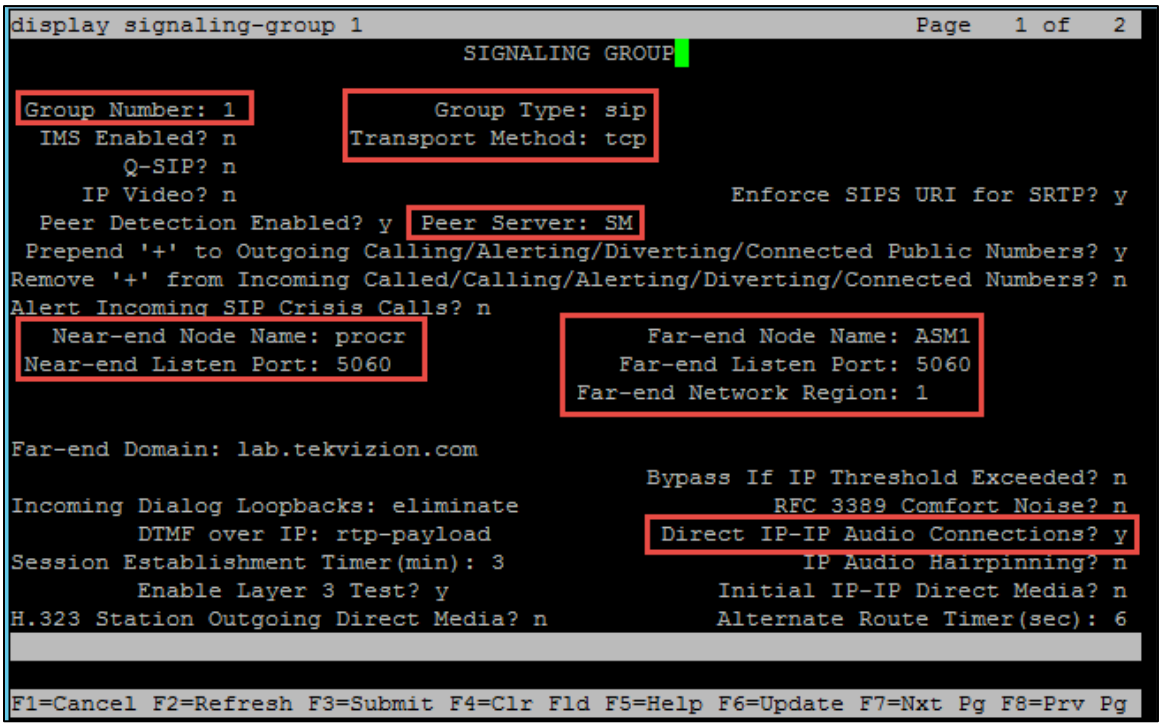
The *add signaling-group n* command was used to add the Signaling Group in the system, where n is the signaling group number used in this example.

For this test, signaling group 1 was configured.

- Group Number: *1*, used in this example.
- Group Type: *sip*, used in this example.
- Transport Method: *tcp*, used in this example.
- Peer Server: *SM*, used in this example.
- Near-end Node Name: *procr*, used in this example.
- Near-end Listen Port: *5060*, used in this example.
- Far-end Node Name: *ASM1*, used in this example.
- Far-end Listen Port: *5060*, used in this example.
- Far-end Network Region: *1*, used in this example.
- Far-end Domain: *lab.tekvizion.com*, used in this example.

- Direct IP-IP Audio Connections? *n*, used in this example.

Avaya Aura CM: Signaling Group Configuration

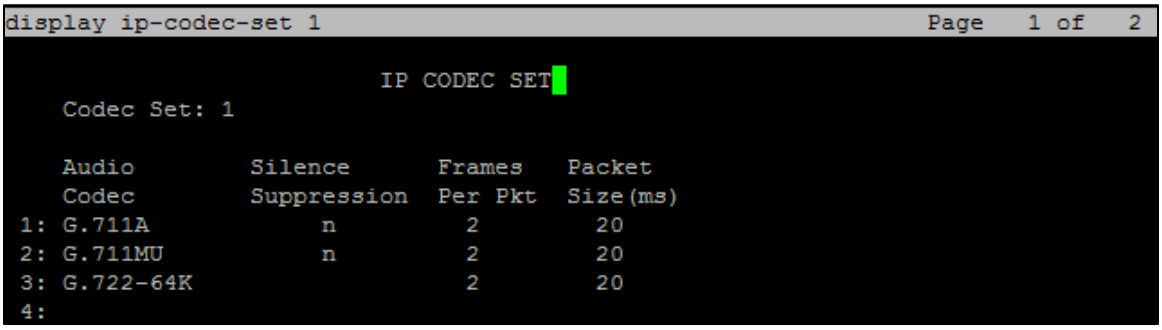


Codecs

Use the **change ip-codec-set** command to define a list of codecs to use for calls between the PBX and PSTN.

For the test, **ip-codec-set 1** was used for this purpose. The Crestron Mercury device supports **G.711A, G.722**, and **G.711MU**. These codecs were configured in this set. To test the codecs with Mercury, enter *G.711A, G722*, and *G.711MU* in the **Audio Codec** column of the table. Default values can be used for all other fields.

Avaya Aura CM: Codec Configuration



Hunt Group

Two hunt groups were configured for this test:

- Hunt Group Extension: *2200*, used in this example for Group Hunt feature.
- Hunt Group Extension: *2222*, used in this example for Voicemail feature.

Use the ***add hunt-group n*** to add a new hunt group, where n is the available hunt group number.

Avaya Aura CM: Hunt Group Configuration (1/3)

```
list hunt-group

                                HUNT GROUPS
Grp  Grp
No.  Name/           Grp     ACD/              No. Cov  Notif/  Dom    Message
     Ext             Type    MEAS Vec MCH  Que Mem Path Ctg Adj Ctrl   Center

1    Crestron HG
     2200            circ    n/-  n   none n   0   1    n              n
2    cmm_hunt
     2222            ucd-mia n/-  n   none n   0        n              S
```

Configure the Hunt Group:

- Group Number: *1*, used in this example.
- Group Name: *Crestron HG,* used in this example.
- Group Extension: *2200*, used in this example.
- Group Type: *circ*, used in this example to enable sequential ringing on the hunt group members.
- Coverage Path: *1*, used in this example that includes hunt group members that will be alerted sequentially.

Avaya Aura CM: Hunt Group Configuration (2/3)

```
display hunt-group 1                                            Page   1 of  60
                                  HUNT GROUP

          Group Number: 1
            Group Name: Crestron HG
       Group Extension: 2200
            Group Type: circ                       Coverage Path: 1
                    TN: 1            Night Service Destination:
                   COR: 1                      MM Early Answer? n
         Security Code:                  Local Agent Preference? n
ISDN/SIP Caller Display:
```

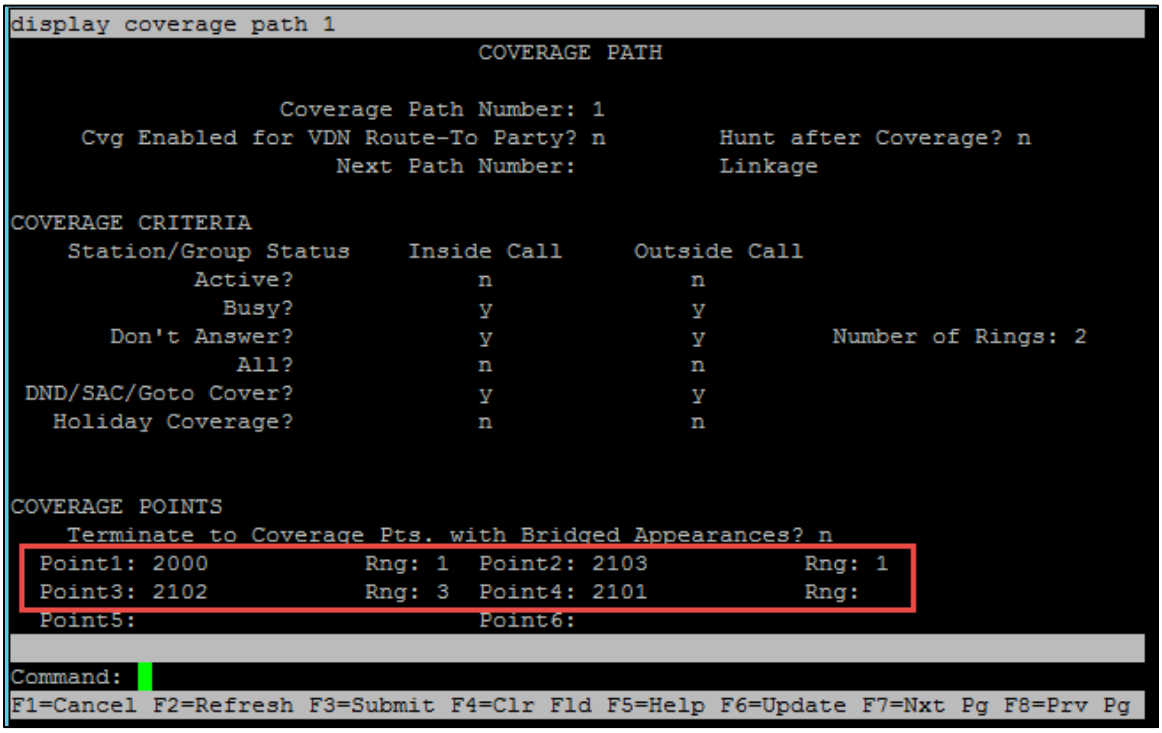
Use the ***add coverage path n*** command, where n is the available coverage path number, to add the coverage path which includes members of the hunt group.

Coverage path 1 was configured in the test. This is invoked by Hunt Group 1.

Coverage Points configured:

- Point1: *2000*, station used in this example.
- Point2: *2103*, station used in this example.
- Point3: *2102*, station used in this example.
- Point4: *2101*, station used in this example.

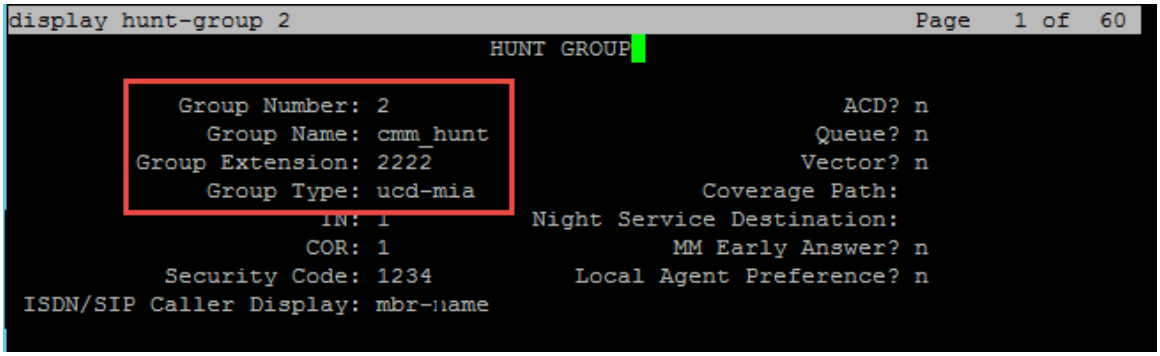
Avaya Aura CM: Hunt Group Coverage Path Configuration



Configure the voicemail hunt pilot:

- Group Number: *2*, used in this example.
- Group Name: *cmm_hunt*, used in this example.
- Group Extension: *2222*, used in this example.
- Group Type: *ucd_mia*, used in this example.

Avaya Aura CM: Hunt Group Configuration for Voicemail

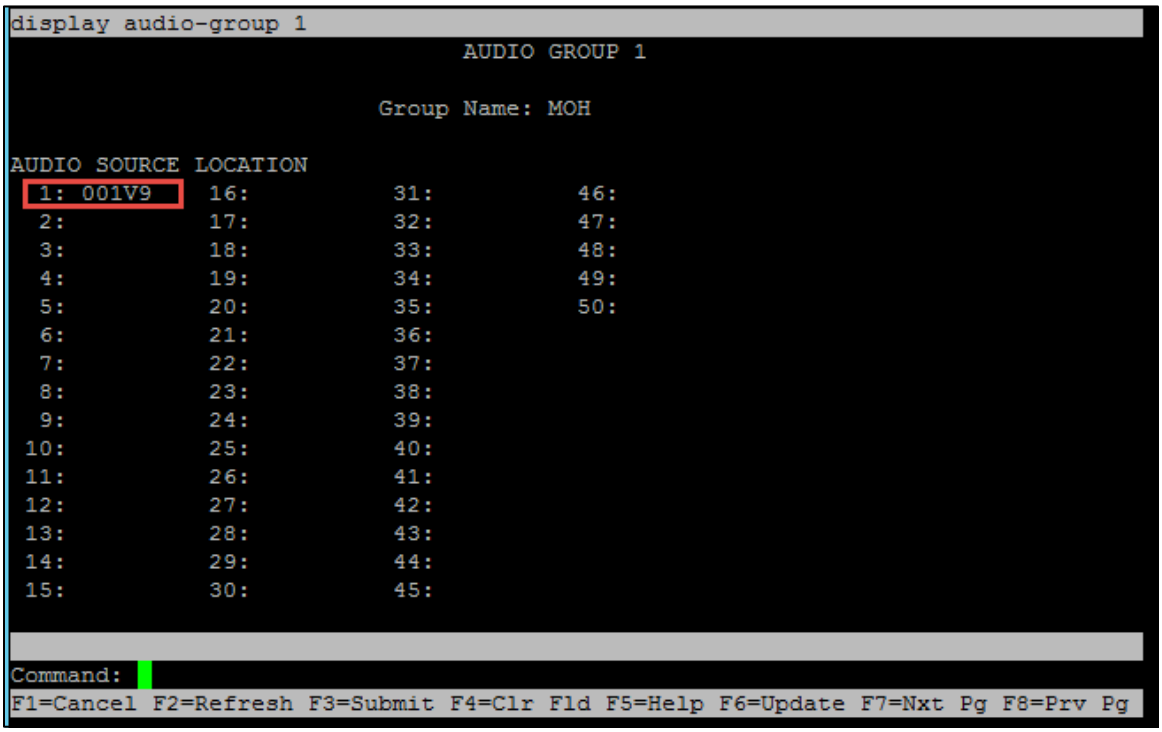


Music on Hold

Configure the Music on Hold source using the following:

- *enable announcement-board 1v9* command to enable music source 1v9.
- *add audio group n* command to add the source of audio.
    - Audio Source Location: 001v9, used in this example.

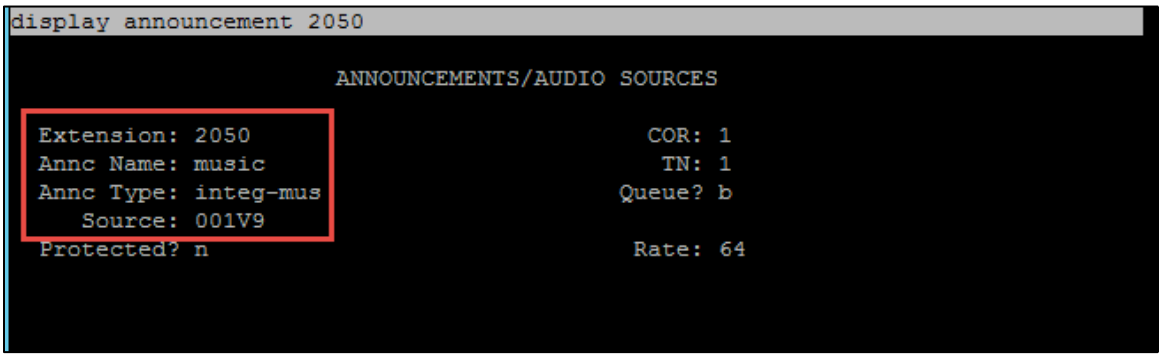
Avaya Aura CM: MoH Configuration



- *add announcement n* command is used to add the new announcement associated with station number.

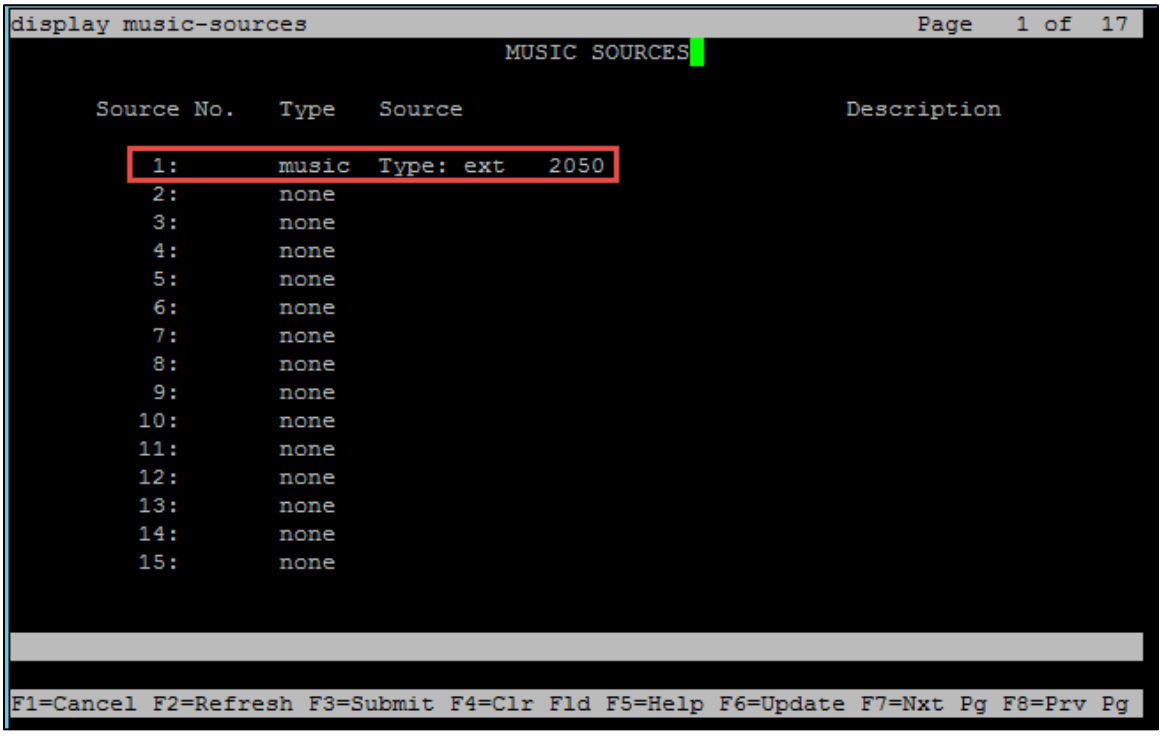
- Extension: *2050*, used in this example.
- Annc Name: *music*, used in this example.
- Annc Type: *integ-mus*, used in this example.
- Source: *001v9*, used in this example.

Avaya Aura CM: Announcement Configuration



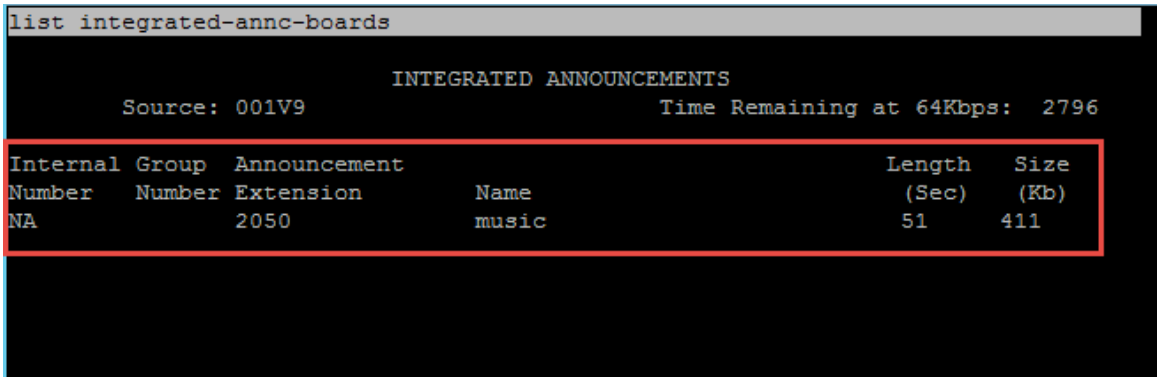
- *display music-sources* command used to see the list of music sources configured on the system.
  - Source No: *1*, used in this example.
  - Type: *music*, used in this example.
  - Source: Type: e*xt 2050*, used in this example.

Avaya Aura CM: Music Source Configuration



Verify the configuration using the **list integrated-announcement board**.

Avaya Aura CM: Integrated Announcement Configuration



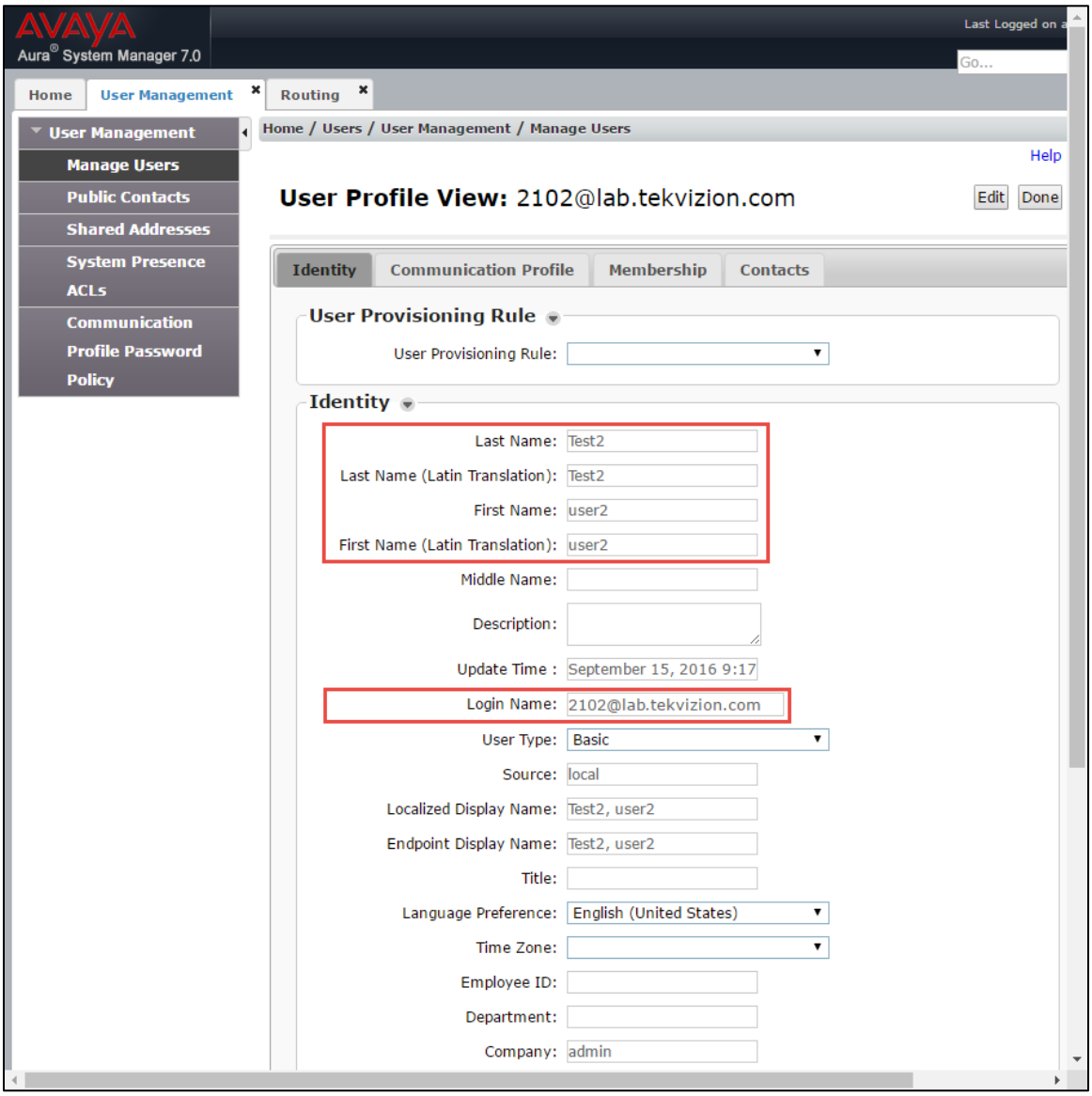
Configuring a User for Each Device/Phone

A user was configured for each phone or Crestron device used in the test.

Navigate to **Home > User Management > Manage Users**.

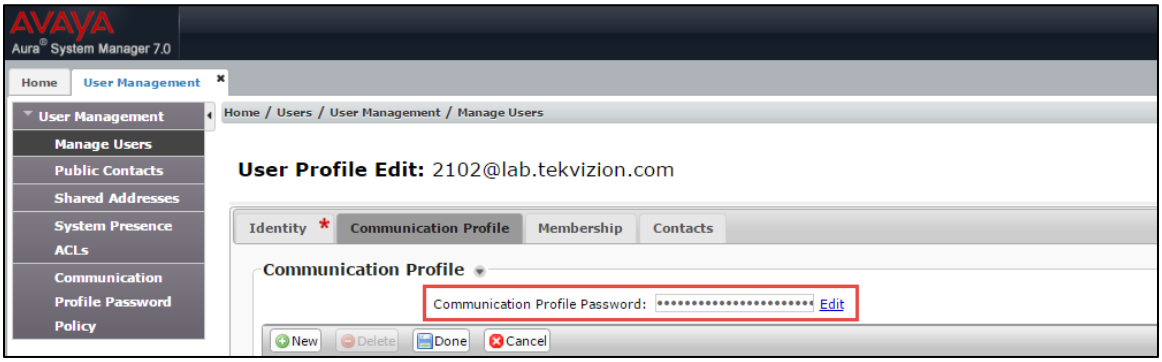
1. Click **Add New**. The User Profile configuration window appears.

Avaya Aura CM: Phone Configuration (1/4)



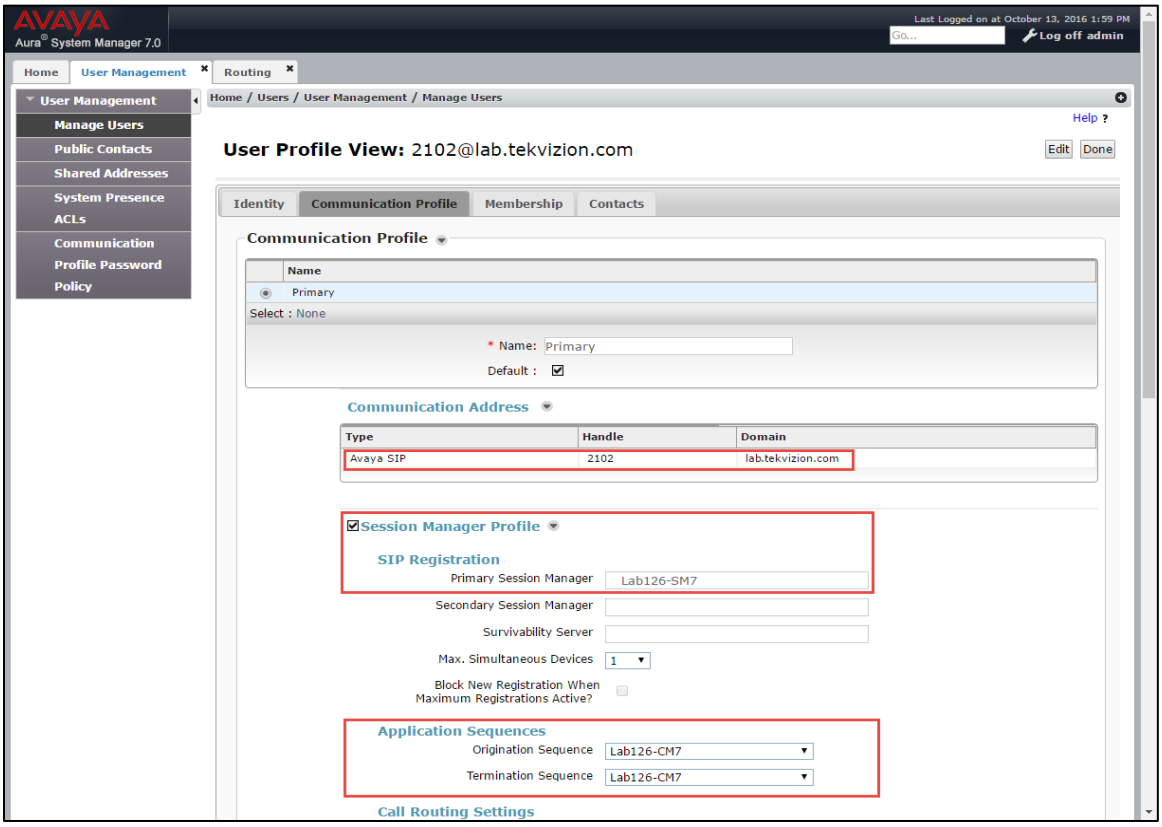
2. Configure **Last Name** and **First Name:** *Test2*, used in this example.
3. Configure **Login Name:** *2102@lab.tekvizion.com*, used in this example.
4. Select **Communication Profile** tab.

Avaya Aura CM: Phone Configuration (2/4)



5. Configure **Communication Profile Password:** enter the desired password for the SIP user to use for registration.
6. Confirm Password.
7. Scroll down to Communication Address sub-section, and click **New** to add a new address.

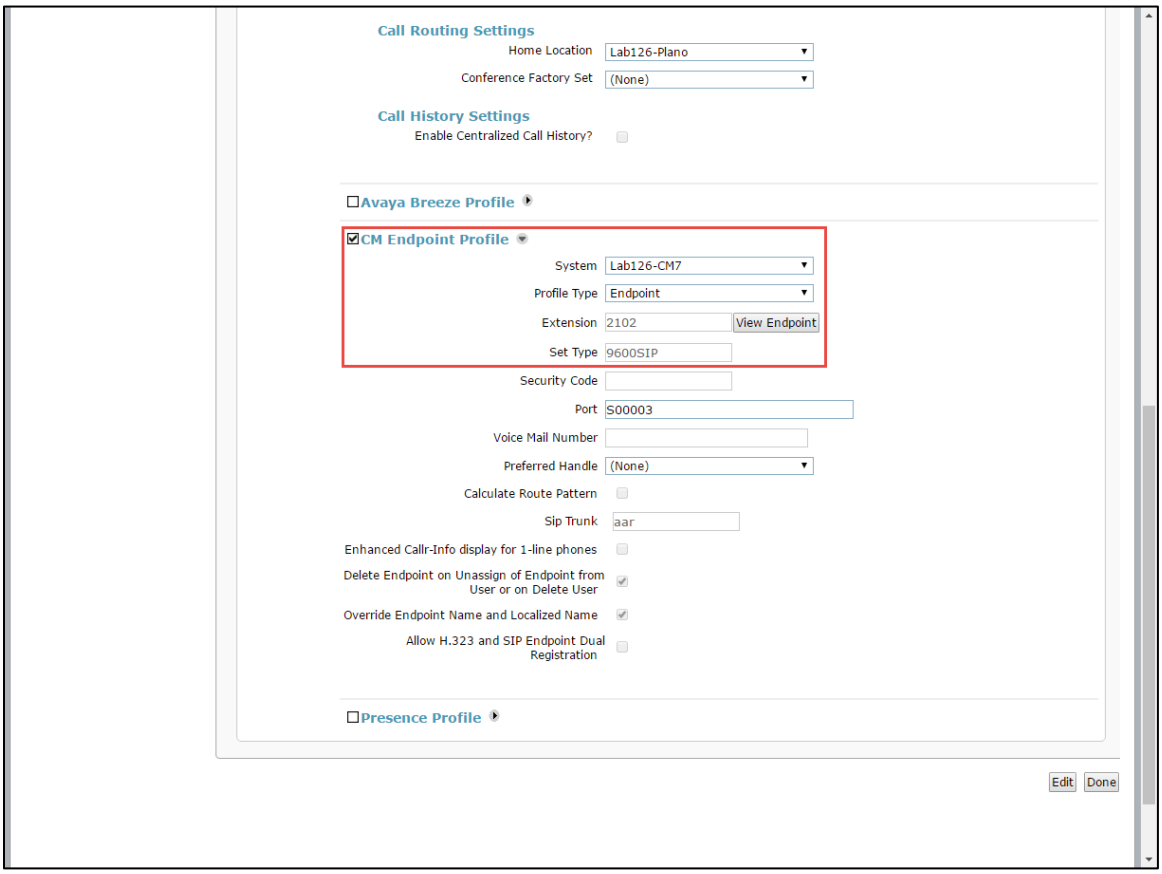
Avaya Aura CM: Phone Configuration (3/4)



8. Communication Manager Type **Avaya SIP**.

9. **SIP Registration:** Primary Session Manager.
10. Check the **CM Endpoint Profile** check box.

Avaya Aura CM: Phone Configuration (4/4)



11. Configure **System:** *Lab126-CM7*, used in this example.
12. Configure **Profile Type**: *Endpoint*, used in this example.
13. Configure **Extension:** *2102*, used in this example.
14. Click **Done**.

Avaya Aura Session Manger

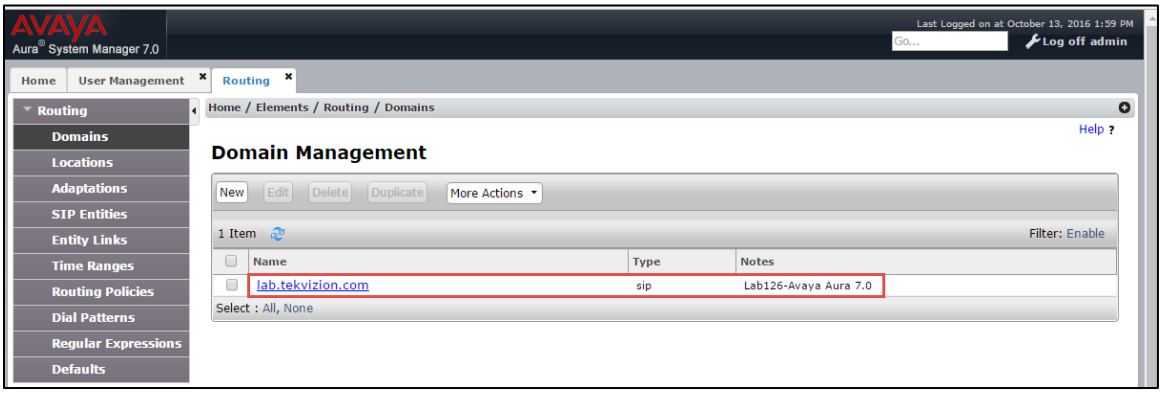
Domain

Create an SIP domain for each domain the Session Manager needs to be aware of in order to route calls.

To configure a domain, perform the following procedure.

1. Navigate to **Home > Routing > Domains**.
2. Click **New**.
3. Enter the following information.
    - **Name:** Enter the domain name. *lab.tekvizion.com* was used in this example.
    - **Type:** Select ***sip*** from the drop-down menu.
    - **Notes:** Add a brief description (optional).
    - Click **Commit** to save (not shown).

Avaya Aura SM: Domain Configuration



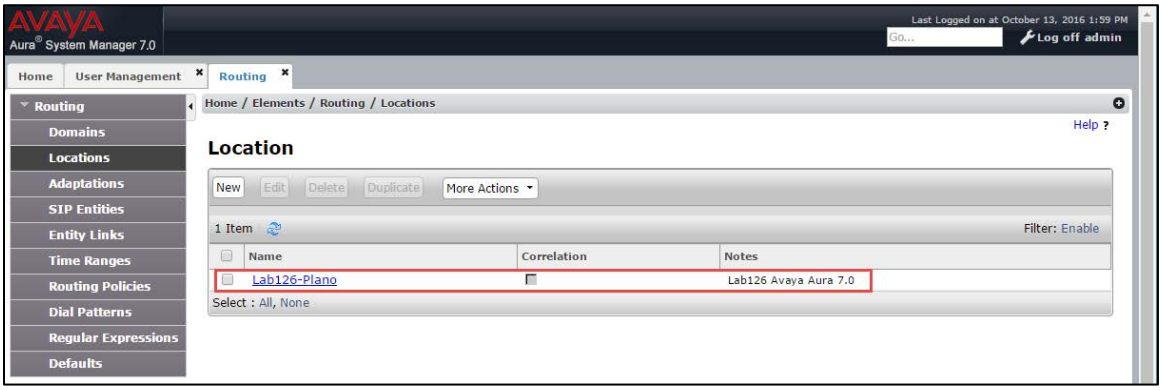
Location

Locations can be used to identify logical and/or physical locations where SIP Entities reside for the purposes of bandwidth management and call admission control.

To add a location, perform the following procedure.

1. Navigate to **Routing > Locations**.
2. Click the **New** button.
3. In the General section, enter the following values:
    - **Name:** Enter a descriptive name for the location: *Lab126-Plano* was used in this example.
    - **Notes:** Add a brief description (optional).
    - Use default values for all remaining fields.
    - Click **Commit** to save.

Avaya Aura SM: Location Configuration



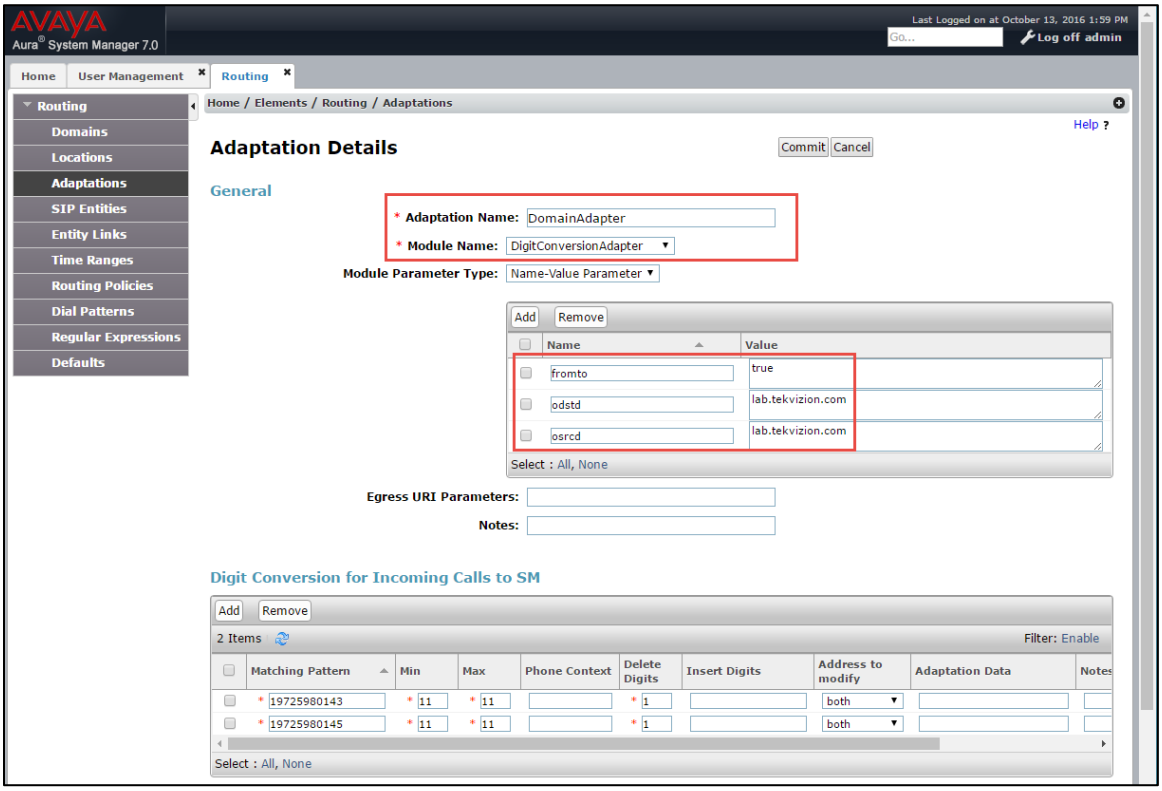
Adaptation

Adaptations are used to modify SIP messages that are administered. An SIP entity can have its own unique adaptation, or one adaptation can be shared among multiple entities. Session Manager includes a module called DigitConversionAdapter, which can convert digit strings in various message headers as well as hostnames in the Request-URI and other headers.

To configure an adaptation, perform the following procedure.

1. Navigate to: Home > Routing > Adaptations.
2. Click **New**.

Avaya Aura SM: Adaptation Configuration

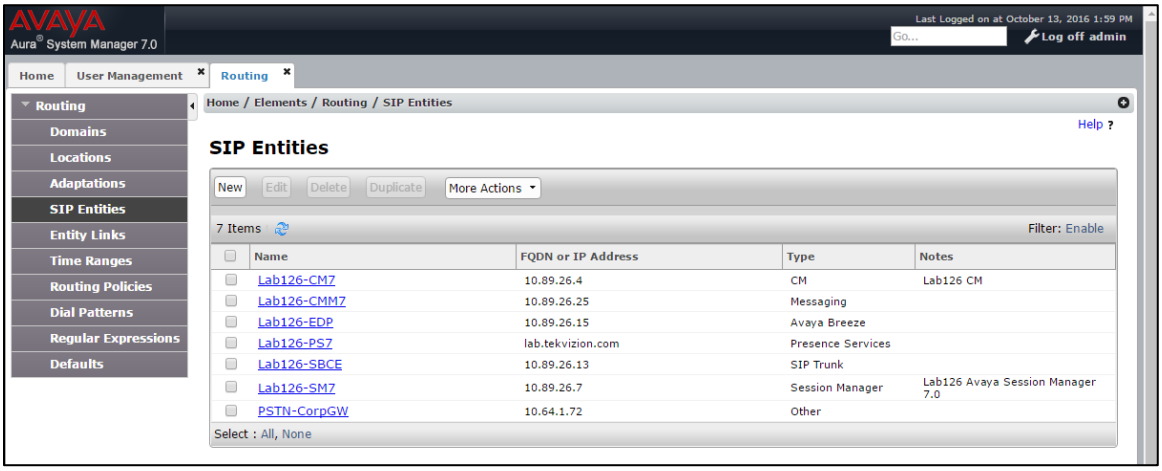


3. Configure the adaptation as follows:
    - **Adaptation Name:** *DomainAdapter*, used in this example.
    - **Module Name:** *DigitConversionAdapter* from the drop-down menu.
    - **Module Parameter Type:** *Name-Value Parameter* from the drop-down menu.
    - **Fromto:** *true.*
    - **Odstd:** *lab.tekvizion.com.*
    - **Osrcd:** *lab.tekvizion.com.*
    - **Notes:** Add a brief description (optional).
    - Click **Commit** to save.

SIP Entity

An SIP Entity must be added for Session Manager and for each SIP telephony system connected to it, which includes Communication Manager and Avaya Communication Manager Messaging component.

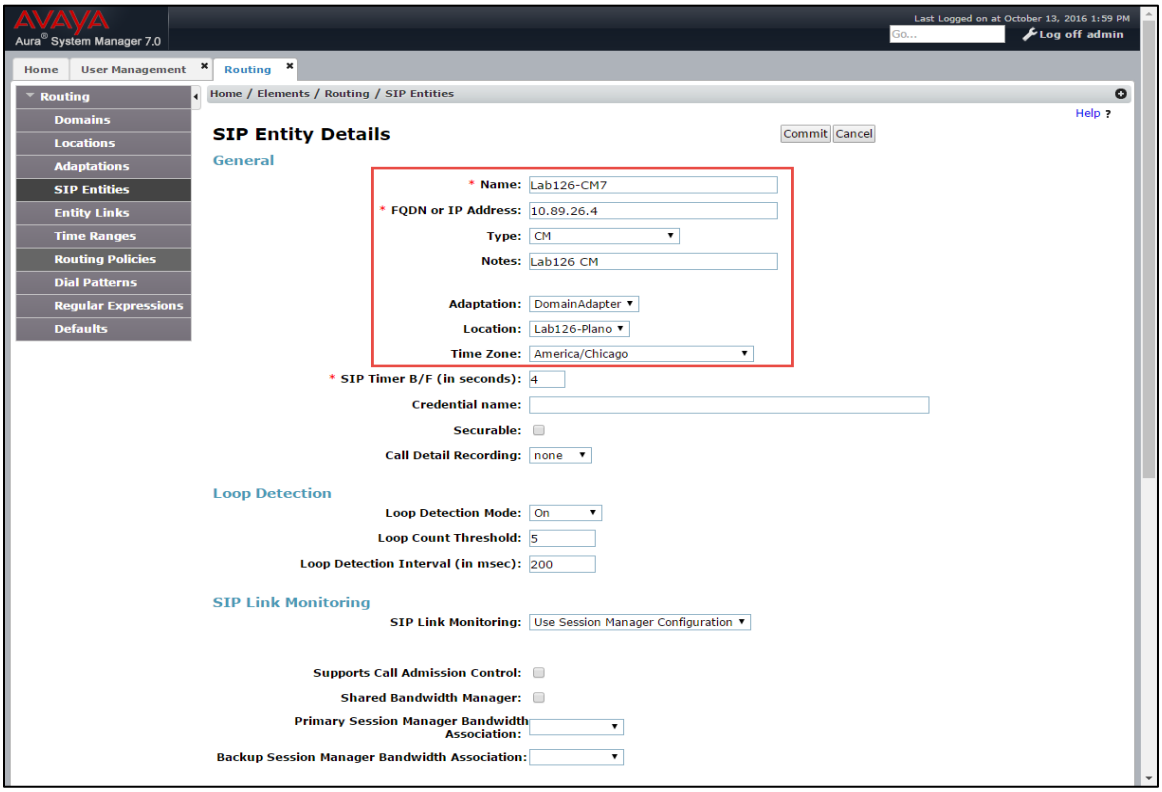
Avaya Aura SM: SIP Entity



To add an SIP entity, perform the following procedure.

1. Navigate to **Routing > SIP Entities.**
2. Click on the **New** button.

Avaya Aura CM: SIP Entity- CM Configuration (1/2)



3. In the General section, enter the following values.

a. **Name:** Enter a descriptive name. *Lab126-CM7* was used for the Avaya CM in this example.

b. **FQDN or IP Address:** Enter the FQDN or IP address of the SIP Entity interface that is used for SIP signaling. *10.89.26.4* was used in this example.

c. **Type:** Enter *Session Manager* for Session Manager, *CM* for Communication Manager, and *Other* for the Avaya SBCe.

d. **Adaptation:** *DomainAdapter*, used in this example.

e. **Location:** Select one of the locations defined previously—*Lab126-Plano*.

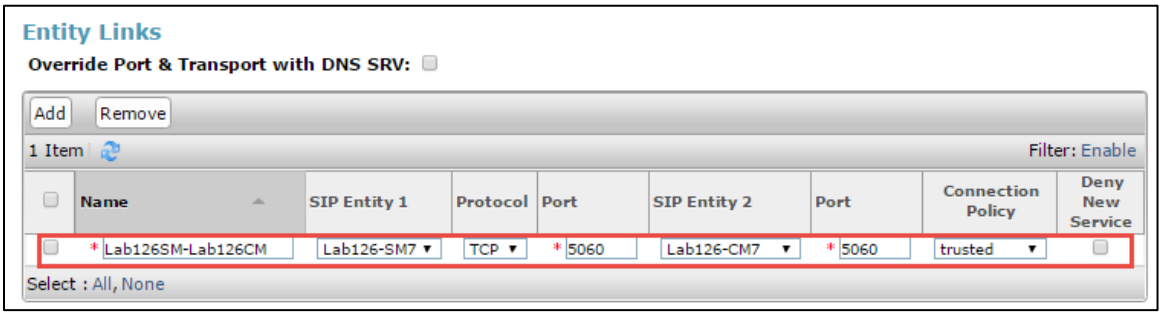
f. **Time Zone:** Select the time zone for the location above.

g. To define the ports used by Communication Manager, scroll down to the **Port** section of the **SIP Entity Details** screen.

h. In the **Port** section, click **Add** and enter the following values.

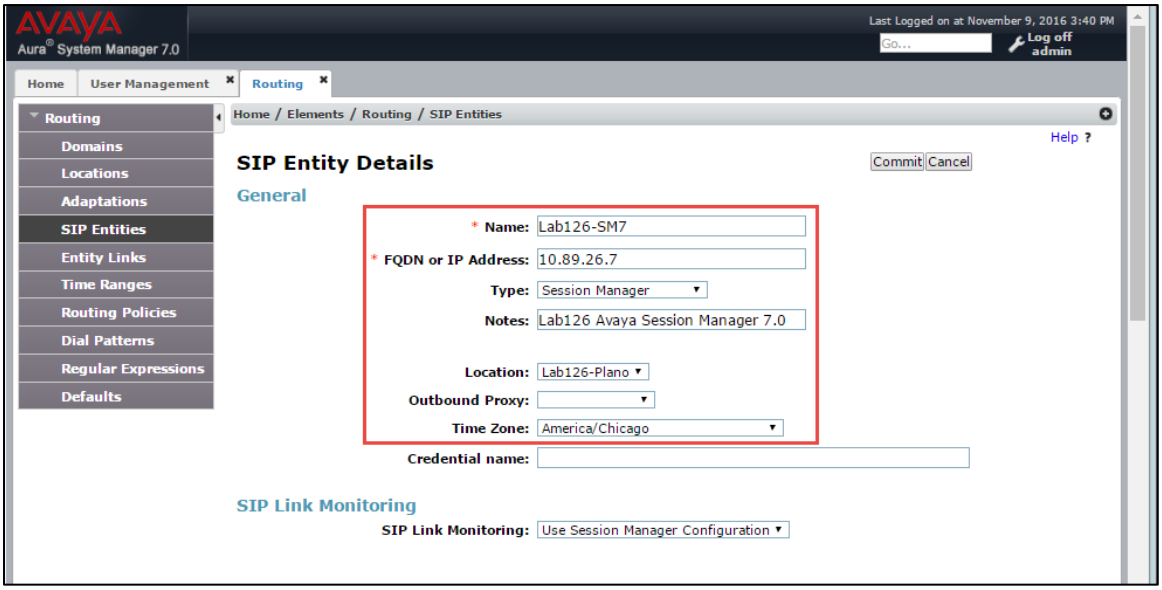
- **Port:** Port number on which the CM will listen for SIP requests. *5060* was used in this example.
- **Protocol:** Transport protocol to be used to send SIP requests. *TCP* was used in this example.
- Use default values for all remaining fields.

Avaya Aura CM: SIP Entity-CM Configuration (2/2)



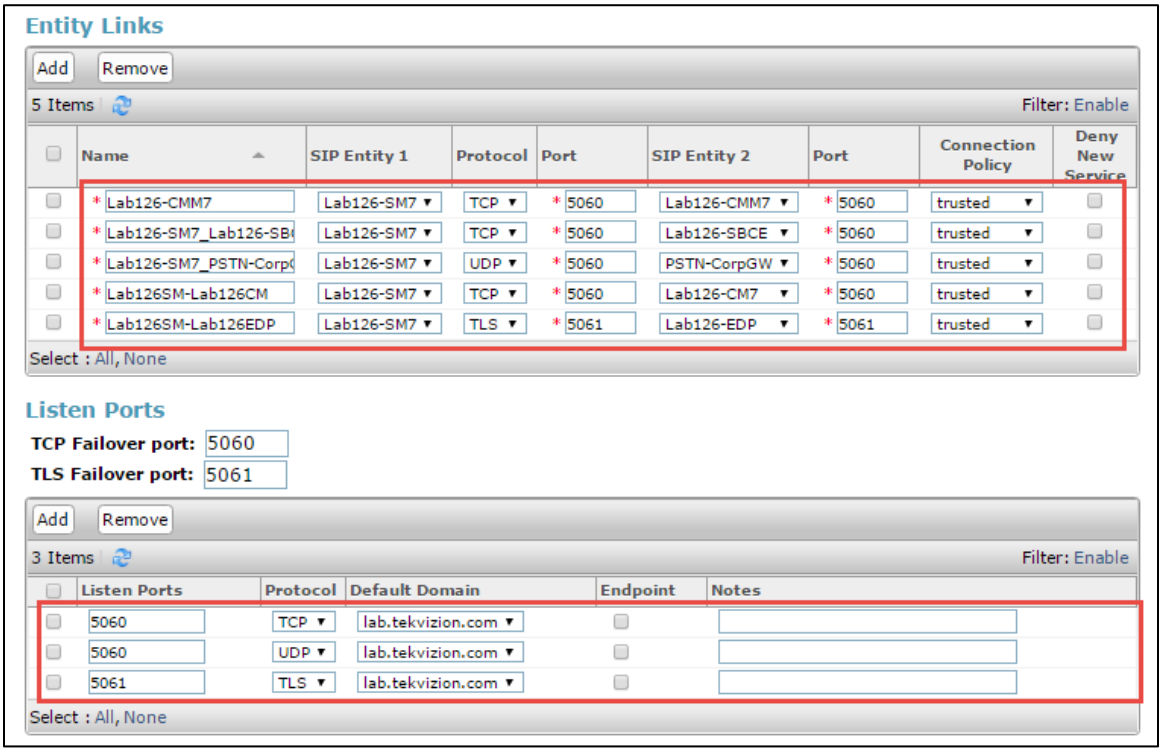
Similarly, add an SIP entity for the Avaya SM.

Avaya Aura SM: SIP Entity- SM Configuration (1/2)



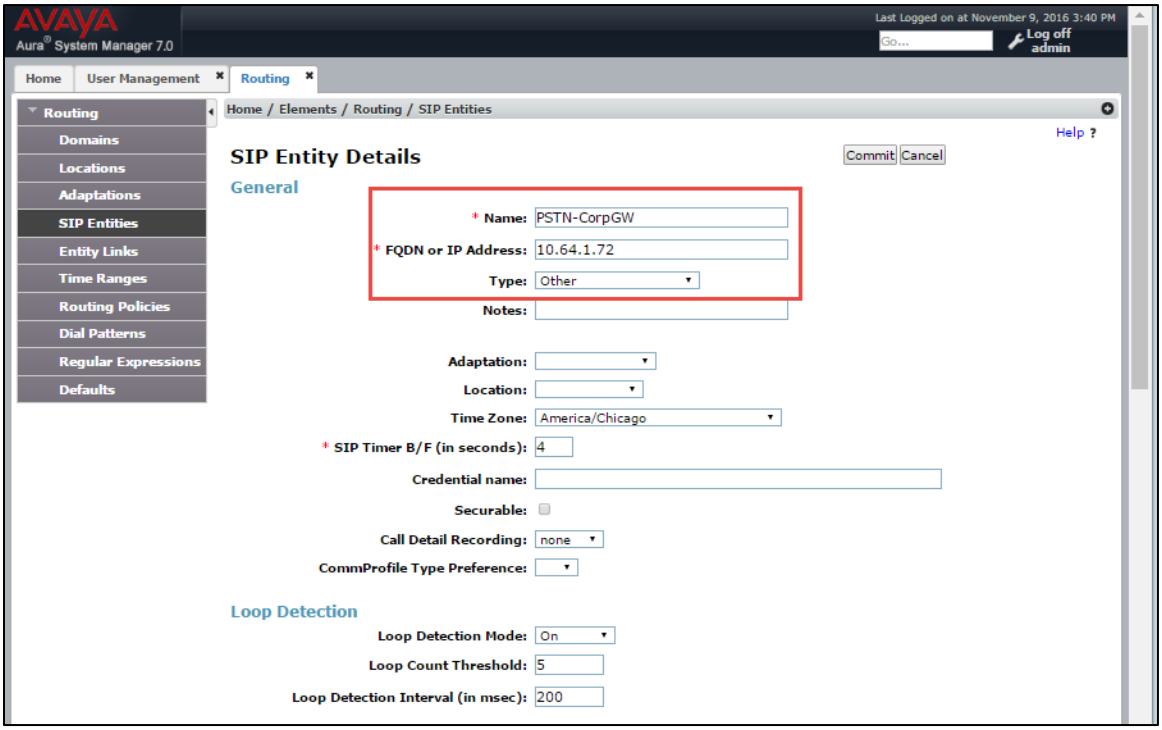
- Name: *Lab126-SM7*, used in this example for an SIP entity of Avaya SM.
- IP address: *10.89.26.7*, used in this example.
- Type: *Session Manager*, used in this example.
- Notes: *Lab126 Avaya Aura Session Manager 7.0*, used in this example.
- Adaptation: *DomainAdapter*, used in this example.
- Location: *Lab126-Plano*, used in this example.
- Time Zone: *America/Chicago,* used in this example.

Avaya Aura SM: SIP Entity-SM Configuration (2/2)



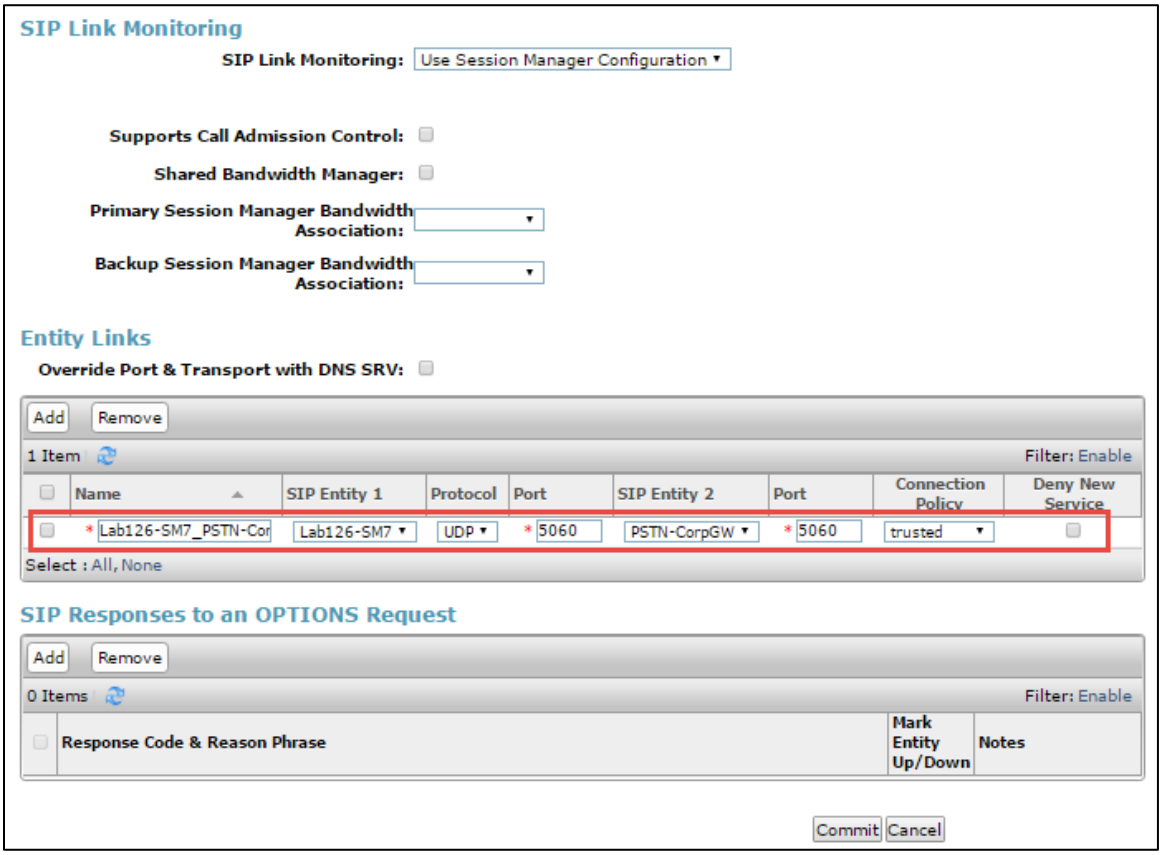
Similarly, add an SIP entity for the PSTN Gateway.

Avaya Aura SM: SIP Entity- PSTN GW Configuration (1/2)



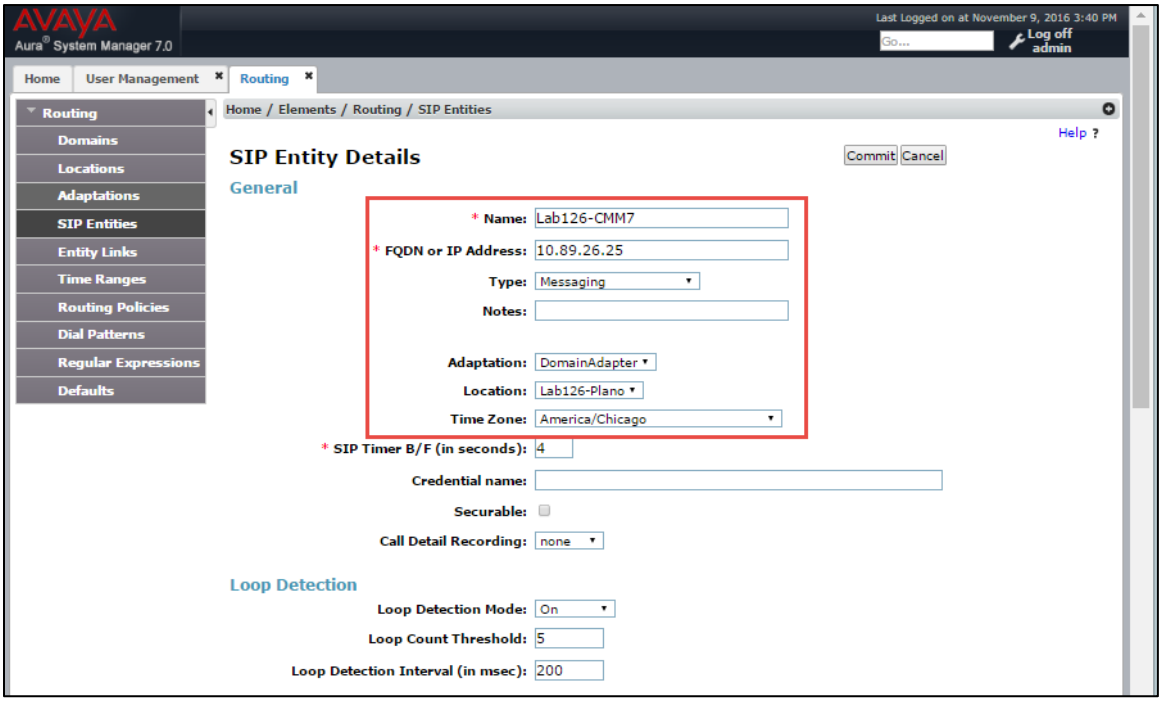
- Name: *PSTN-CorpGW*, used in this example for an SIP entity of PSTN Gateway.
- IP address: *10.64.1.72*, used in this example.
- Type: *Other*, used in this example.
- Time Zone: *America/Chicago*, used in this example.

Avaya Aura SM: SIP Entity Configuration (2/2)



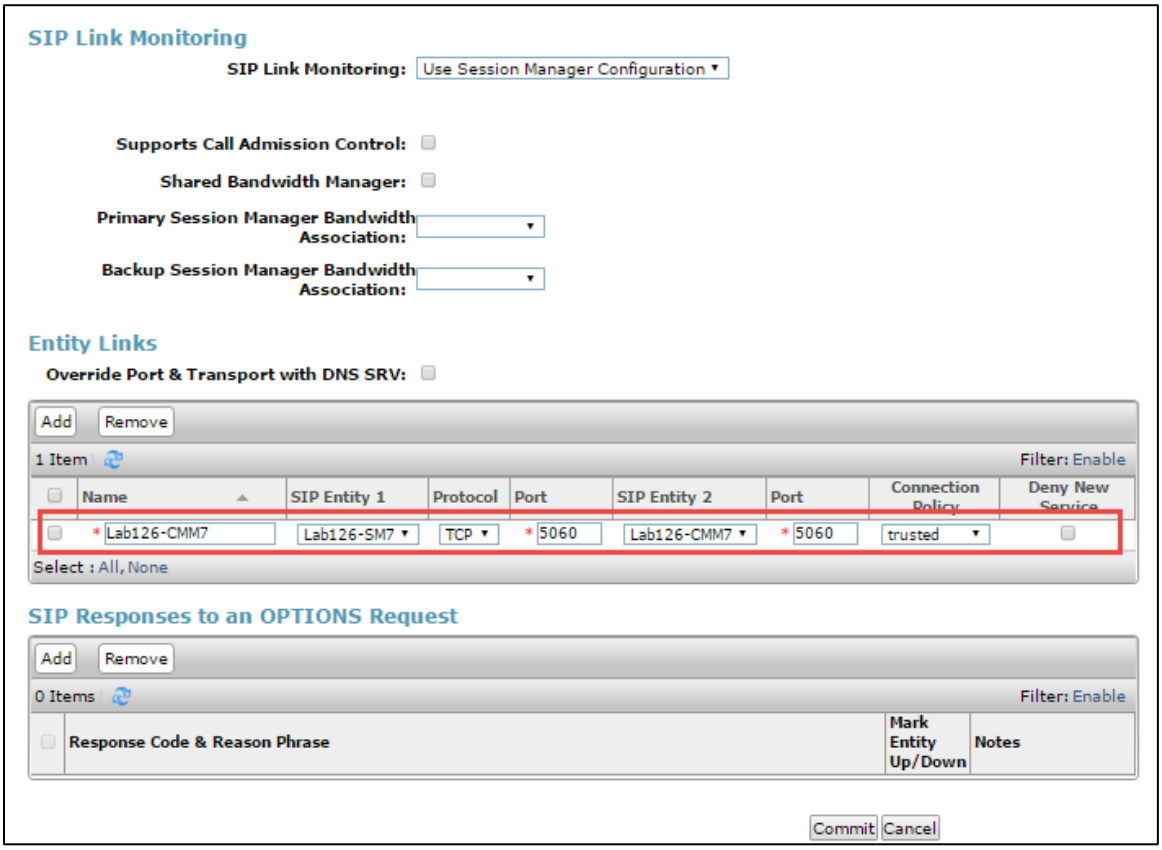
Similarly, add an SIP entity for the Avaya Communication Manager Messaging.

Avaya Aura SM: SIP Entity- Avaya Communication Manager Messaging Configuration (1/2)



- Name: *Lab126-CMM7*, an entity of Avaya Communication Manager Messaging.
- IP address: *10.89.26.25*, used in this example.
- Type: *Messaging*, used in this example.
- Adaptation: *DomainAdapter*, used in this example.
- Location: *Lab126-Plano*, used in this example.
- Time Zone: *America/Chicago*, used in this example.

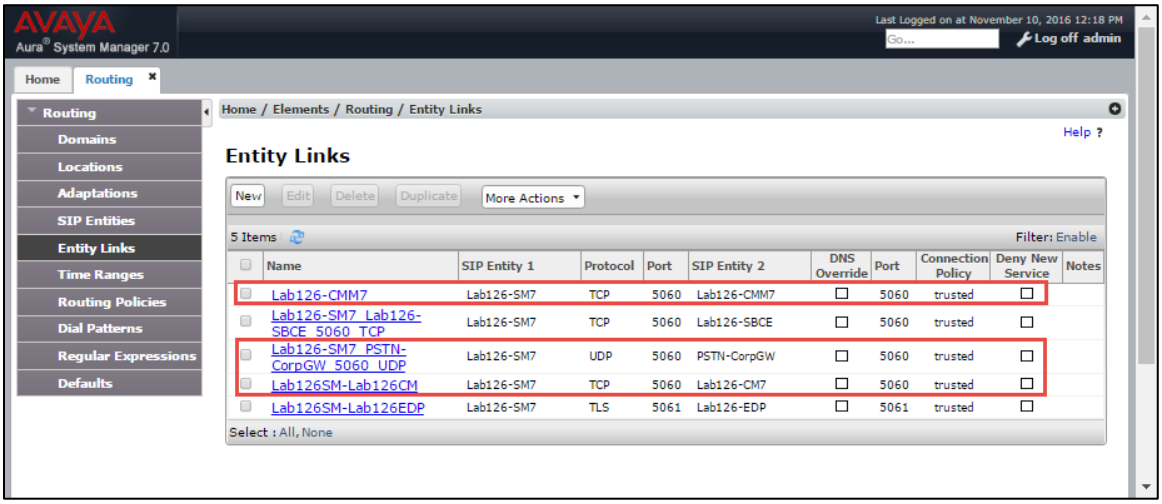
Avaya Aura SM: SIP Entity - Avaya Communication Manager Messaging Configuration (2/2)



Entity Links

An SIP trunk between Avaya Session Manager and a telephony system is described by an Entity Link. Three entity links were created: one to Communication Manager, one to the Avaya Communication Manager Messaging, and one to the PSTN gateway.

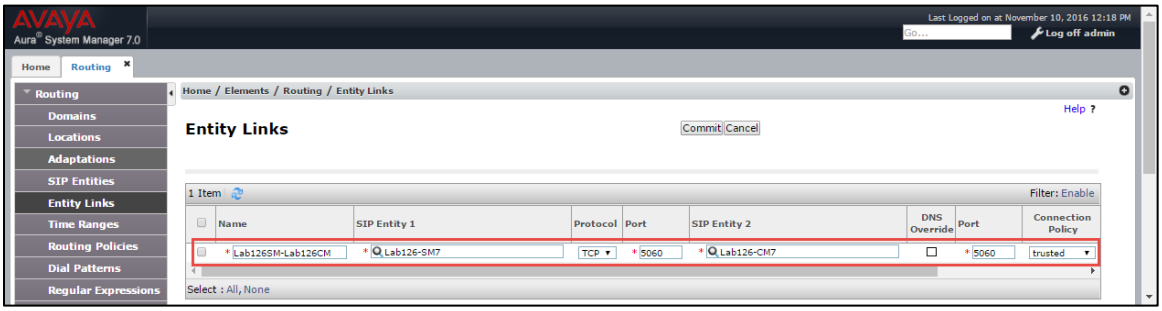
Avaya Aura SM: Entity Links



To add Avaya CM as an entity link, perform the following procedure.

1. Navigate to **Routing > Entity Links**.
2. Click on the **New** button. Fill in the following fields in the new row that is displayed:
    - **Name:** Enter a descriptive name.
    - **SIP Entity 1:** Select the Session Manager.
    - **Protocol:** *TCP*, used in this example.
    - **Port:** *5060*, used in this example.
    - **SIP Entity 2:** Select the Communication Manager.
    - **Port:** *5060*, used in this example.
    - **Connection Policy:** Select *Trusted*.
3. Click **Commit** to save.

Avaya Aura SM: Avaya CM Entity Link Configuration

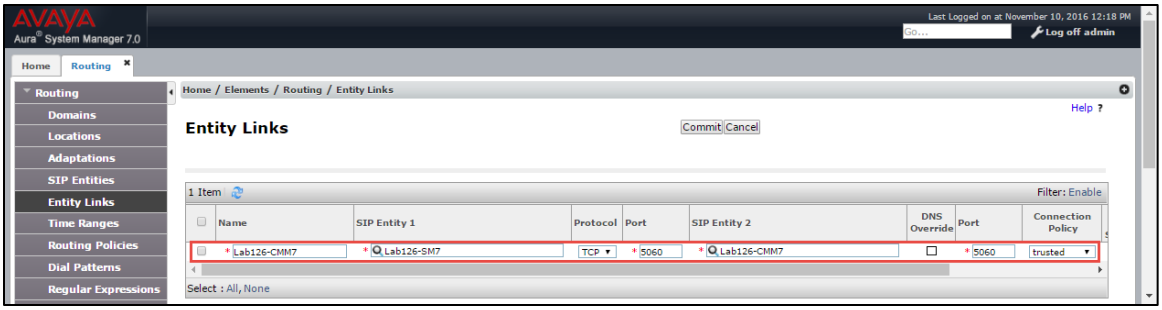


To add Avaya Communication Manager Messaging as an entity link, perform the following procedure.

1. Navigate to **Routing > Entity Links**.

2. Click on the **New** button. Fill in the following fields in the new row that is displayed:
    - **Name:** Enter a descriptive name.
    - **SIP Entity 1:** Select the Avaya Communication Manager Messaging.
    - **Protocol:** *TCP*, used in this example.
    - **Port:** *5060*, used in this example.
    - **SIP Entity 2:** Select the Session Manager.
    - **Port:** *5060*, used in this example.
    - **Connection Policy:** Select *Trusted*.
3. Click **Commit** to save.

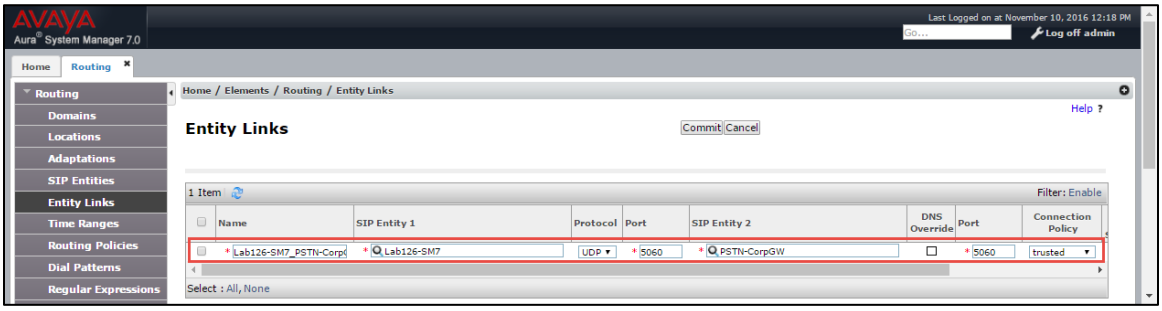
Avaya Aura SM: Avaya CMM Entity Link Configuration



To add PSTN GW as an entity link, perform the following procedure.

1. Navigate to **Routing > Entity Links**.
2. Click on the **New** button. Fill in the following fields in the new row that is displayed:
    - **Name:** Enter a descriptive name.
    - **SIP Entity 1:** Select the PSTN GW.
    - **Protocol:** *TCP*, used in this example.
    - **Port:** *5060*, used in this example.
    - **SIP Entity 2:** Select the Session Manager.
    - **Port:** *5060*, used in this example.
    - **Connection Policy:** Select *Trusted*.
3. Click **Commit** to save.

Avaya Aura SM: PSTN GW Entity Link Configuration



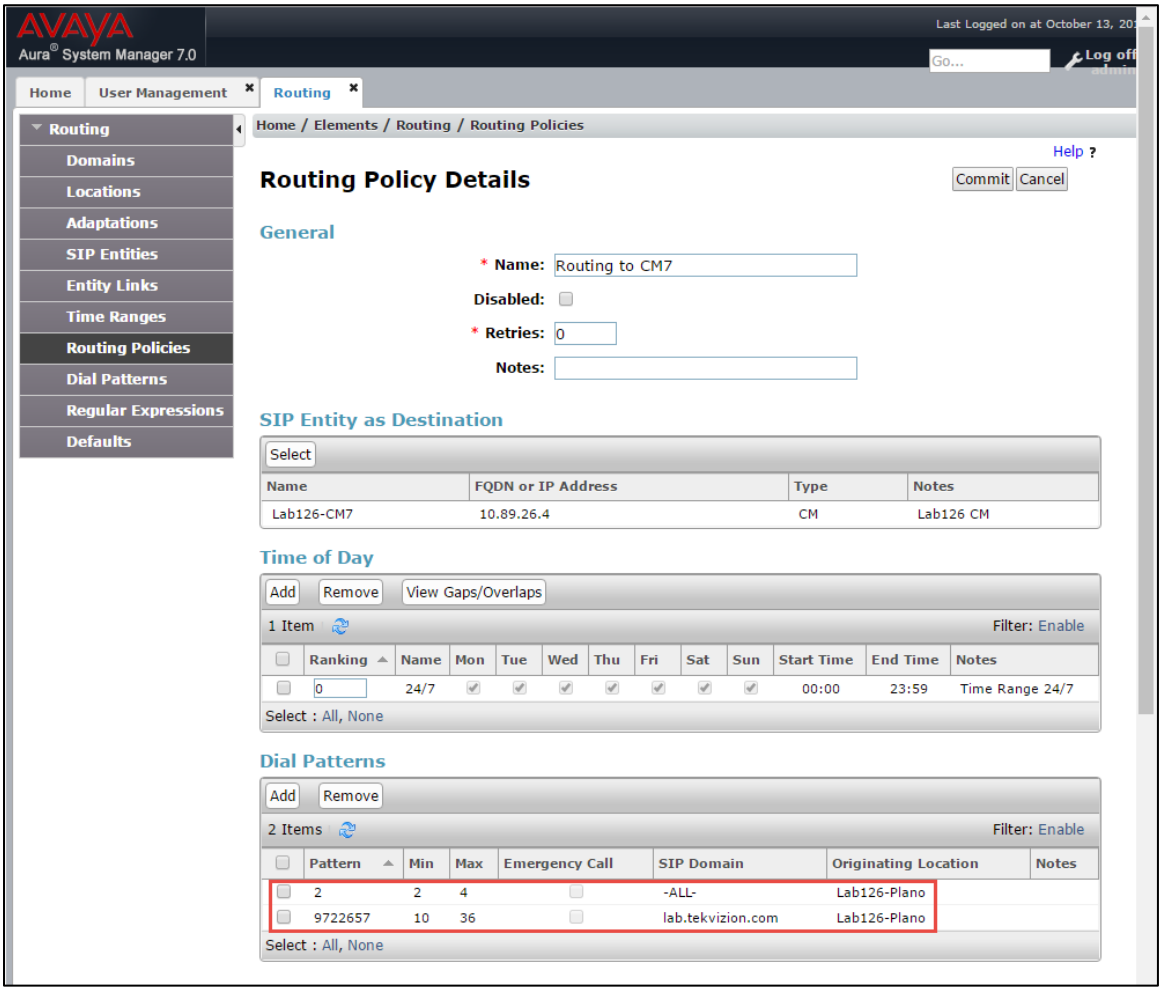
Routing Policy

Routing Policies describe the conditions under which calls are routed to the SIP entities. Three routing policies were added for this test: one for Communication Manager, one for the Voicemail, and one to the PSTN GW.

To add a routing policy for Avaya CM, perform the following procedure.

1. Navigate to **Routing > Routing Policies**.
2. Click on the **New** button.

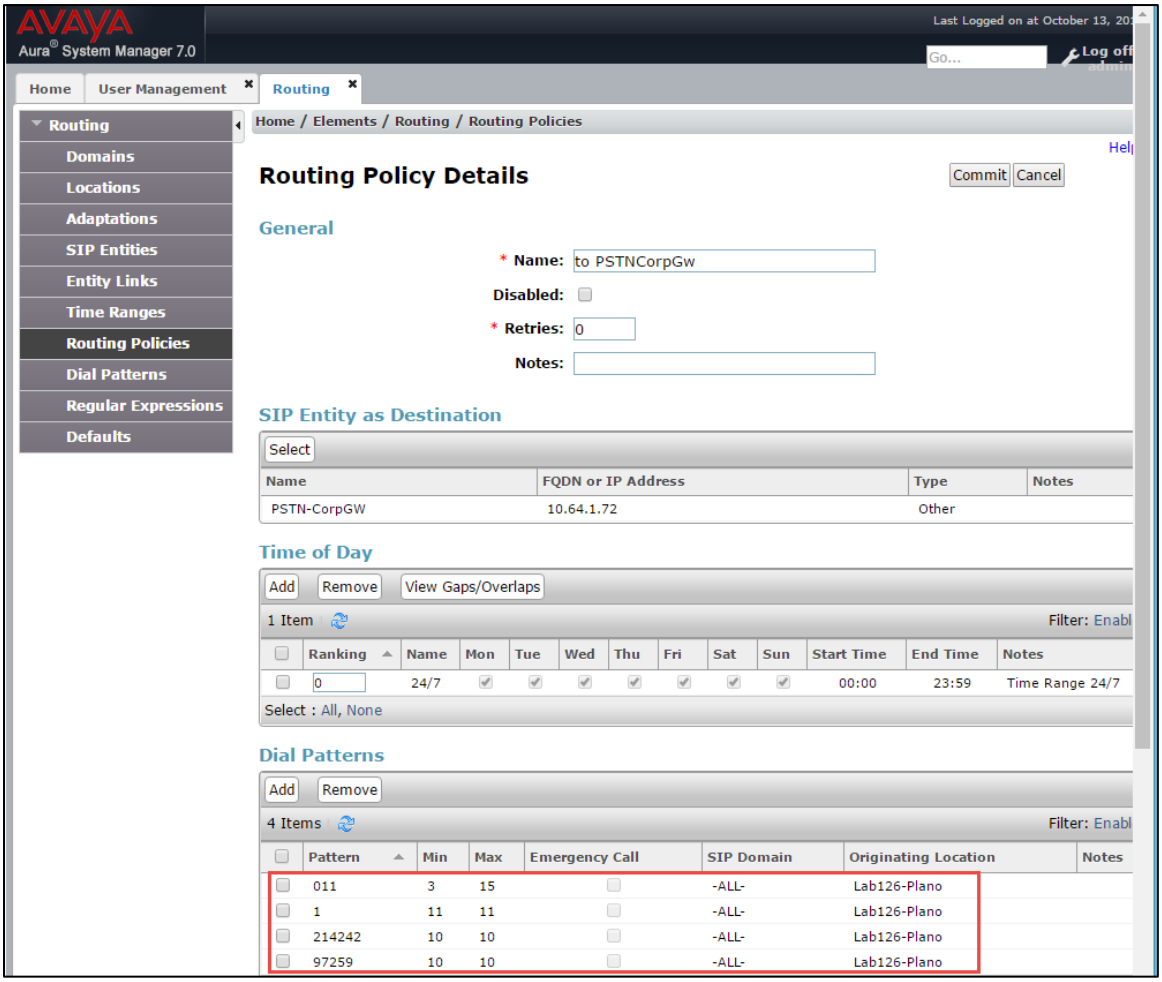
Avaya Aura SM: Routing Policy Configuration (1/3)



3. In the General section, enter the following values.
   - **Name:** *Routing to CM7* used in this example.
   - **SIP Entity as Destination:** Select the Avaya CM: *Lab126-CM7* used in this example.
   - Use default values for all remaining fields.
4. Add the following Dial patterns that can be routed using this policy:
   - **Pattern:** *2,* Avaya and Crestron endpoints had their 4 digit extensions starting with 2.
   - **Pattern:** *9722657*, 10 digit Avaya and Crestron endpoints DID starting with 9722657.

Similarly, add a routing policy for the PSTN GW.

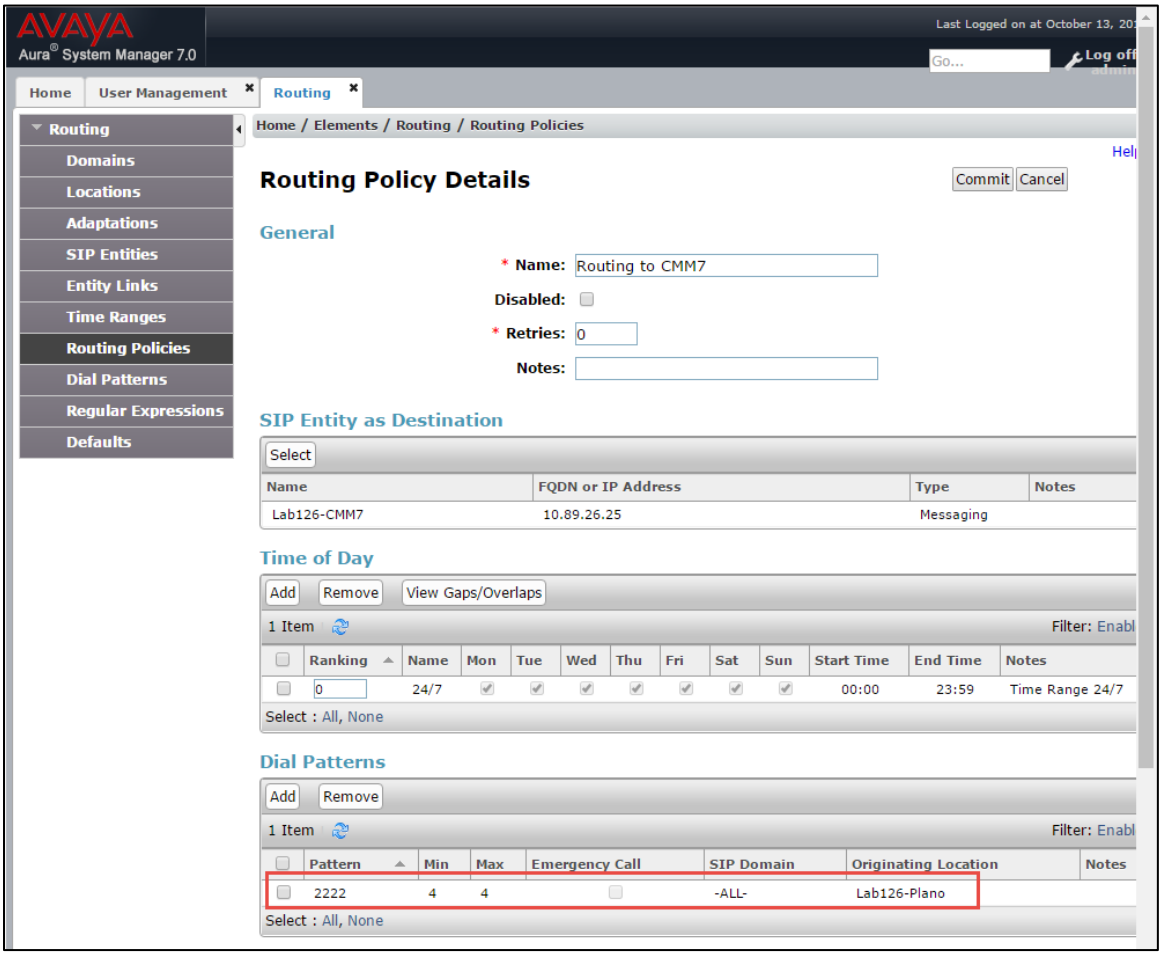
Avaya Aura SM: Routing Policy Configuration (2/3)



1. In the **General** section, enter the following values.
   - **Name:** *to PSTNCorpGw*, used to reach PSTN in this example.
   - **SIP Entity as Destination:** *PSTNCorpGw*, used in this example.
   - Use default values for all remaining fields.
2. Add the following Dial patterns that can be routed using this policy:
   - **Pattern:** *011*, an 11 digit international dialing pattern starting with 1 was used in this example.
   - **Pattern:** *214242*, a 10 digit PSTN dialing pattern starting with 214242 was used in this example.
   - **Pattern:** *1*, an 11 digit national dialing pattern starting with 1 was used in this example.

Similarly, add a routing policy for the Avaya Communication Manager Messaging - Voicemail System.

Avaya Aura SM: Routing Policy Configuration (3/3)



1. In the **General** section, enter the following values.
   - **Name:** *Routing to CMM7* was used to reach PSTN in this example.
   - **SIP Entity as Destination:** *Lab126-CMM7*, used in this example.
   - Use default values for all remaining fields.
2. Add the following Dial patterns that can be routed using this policy:
   - **Pattern:** *2222*, used as the Voicemail pilot in this example.

Avaya Communication Manager Messaging

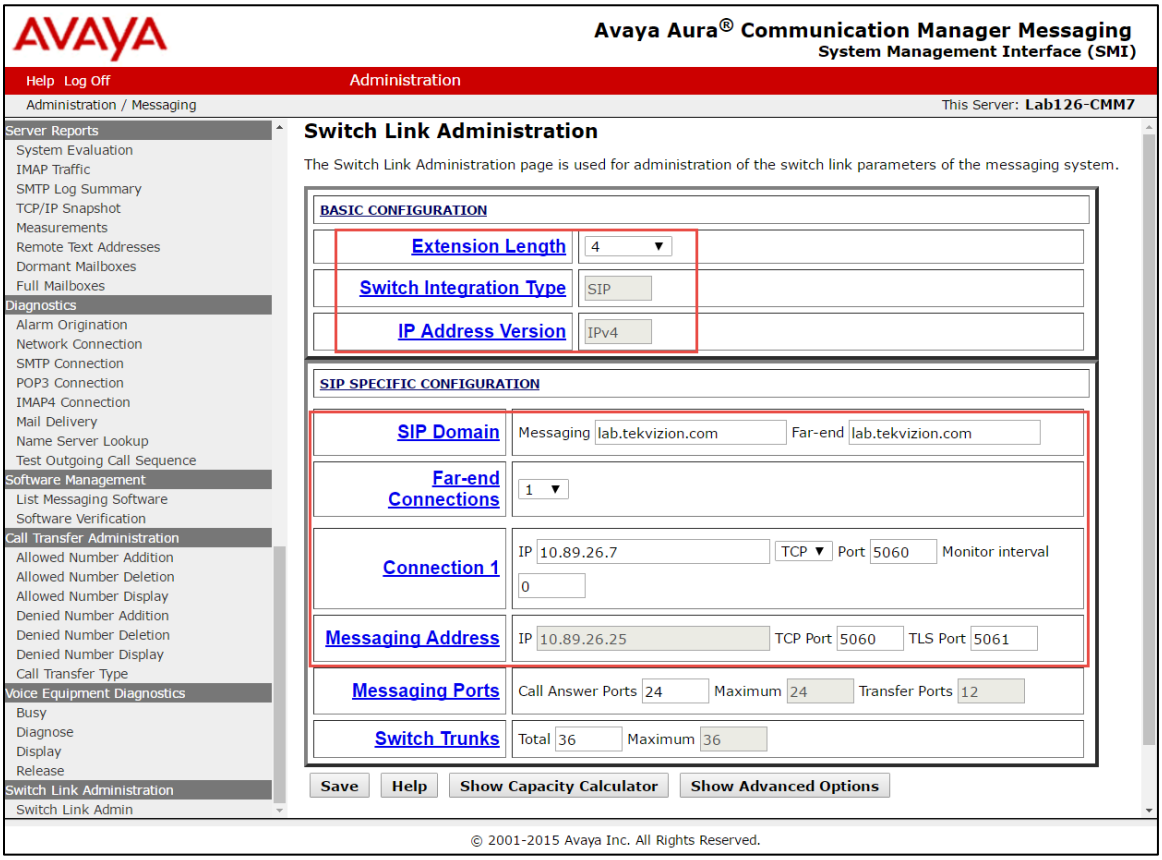
This section describes the steps for configuring the Avaya Communication Manager Messaging to interoperate with Avaya Aura Session Manager via SIP trunking.

Switch Link Administration

To administer the switch link, perform the following procedure.

1. Navigate to **Administration > Messaging > Switch Link Administration > Switch Link Admin**.

Avaya Communication Manager Messaging Switch Link Administration



2. Configure the following:
   - **Extension Length**: *4*, used in this example.
   - **Switch Integration Type**: *SIP*, used in this example.
   - **IP Address Version**: *IPV4*, used in this example.
   - **SIP Domain**: *lab.tekvizion.com*, used in this example.
- **Connection 1:** *10.89.26.7,* Avaya Session manager IP used in this example.

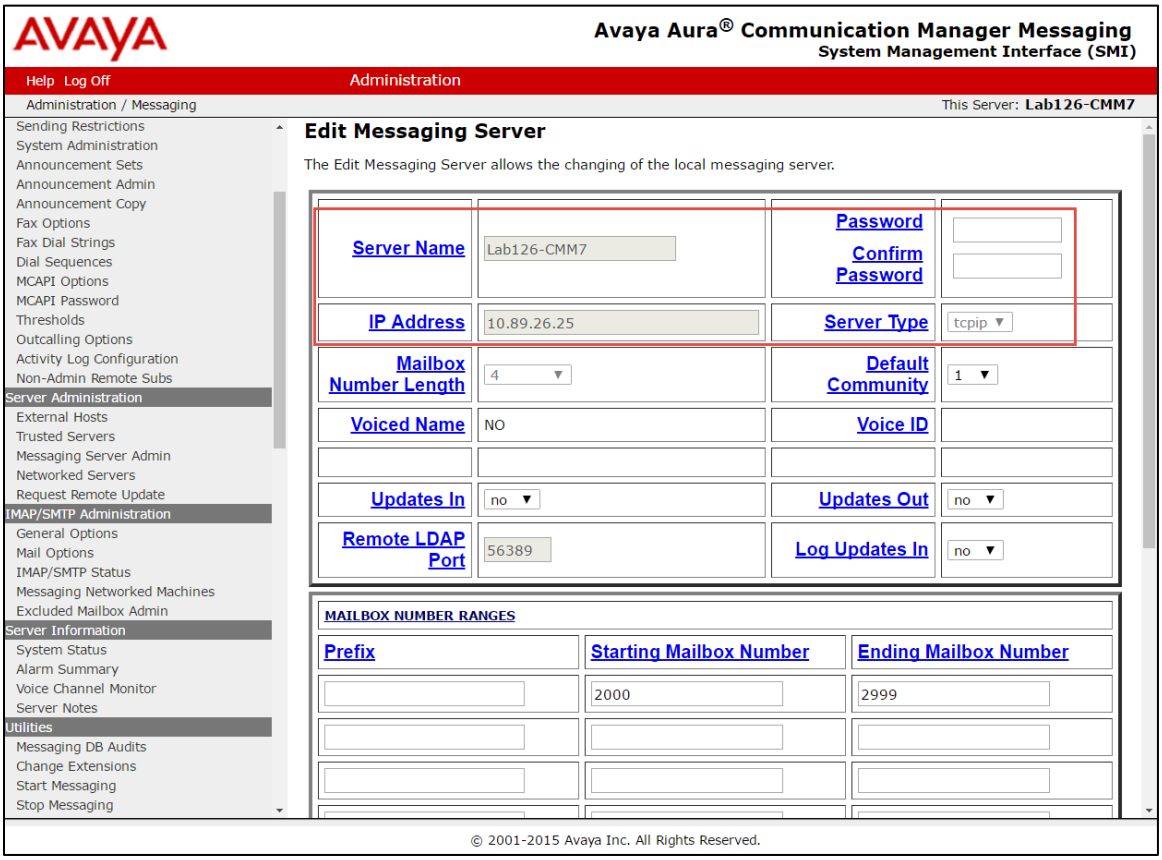
- **Messaging Address:** *10.89.26.25*, used in this example.

Messaging Server

To configure the parameters for the Communication Manager Messaging Server, perform the following procedure.

1. Navigate to **Administration > Messaging >Server Administration > Messaging Server Admin**.

Avaya Communication Manager Messaging: Messaging Server Configuration



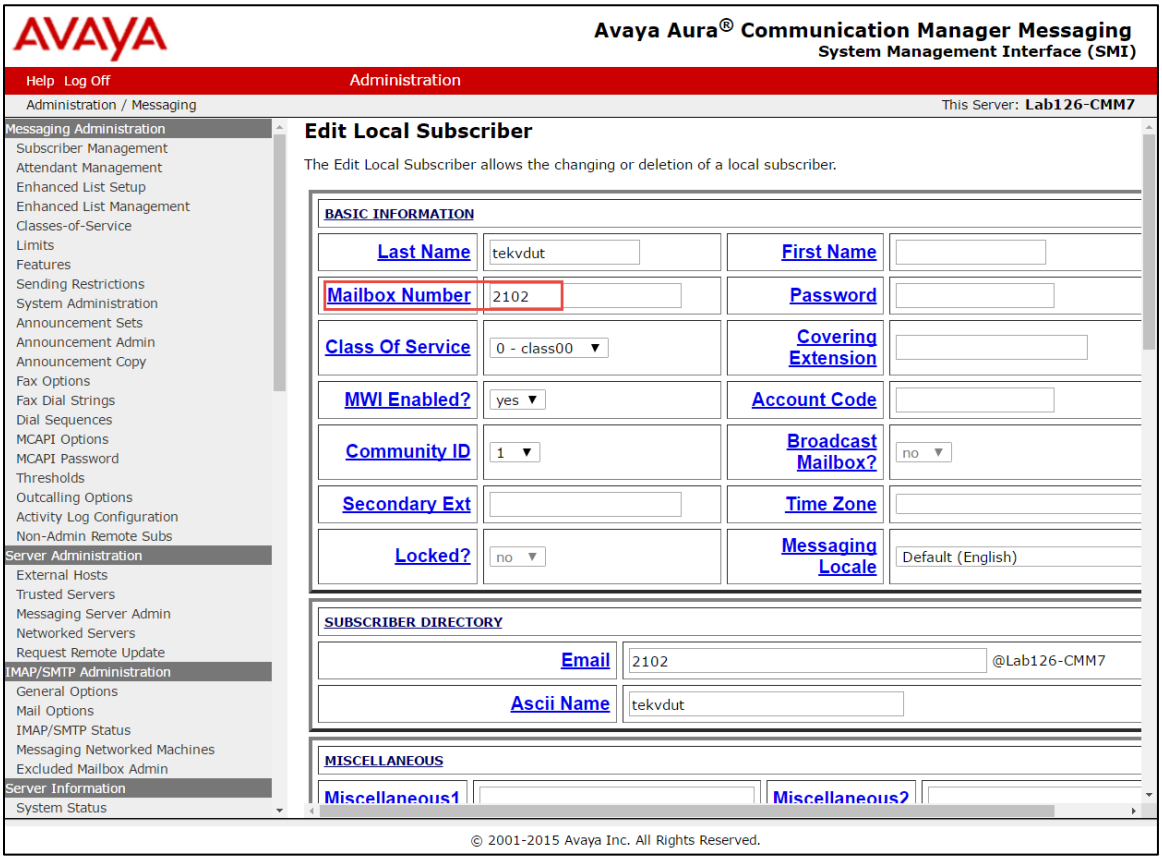
2. Configure the following parameters:
   - **Server Name**: *Lab126-CMM7*, used in this example.
   - **IP Address**: *10.89.26.25*, used in this example.
   - **Starting Mailbox Number**: *2000*, used in this example.
   - **Ending Mailbox Number**: *2999*, used in this example.

Subscriber

To create a subscriber of the messaging server, perform the following procedure.

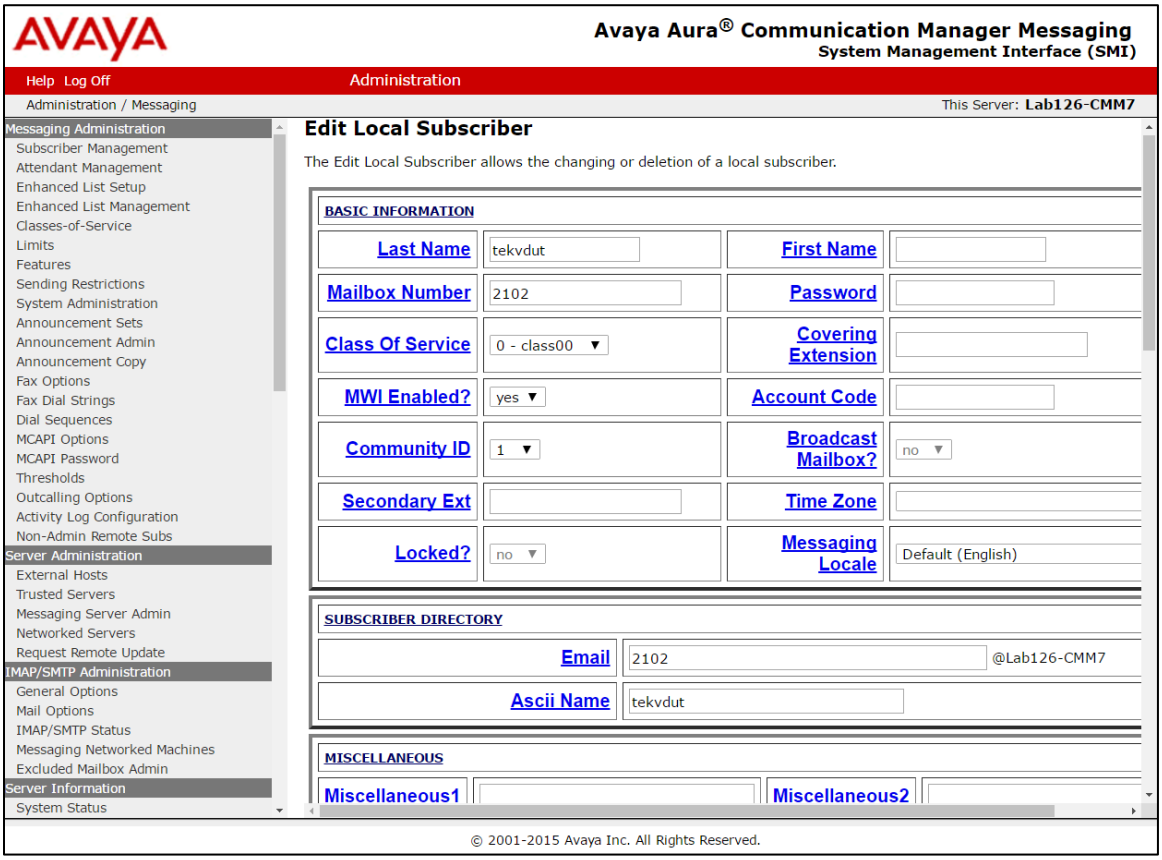
1. Navigate to: Administration > Messaging > Messaging Administration > Subscriber Management.

Avaya Communication Manager Messaging Subscriber Configuration (1/3)

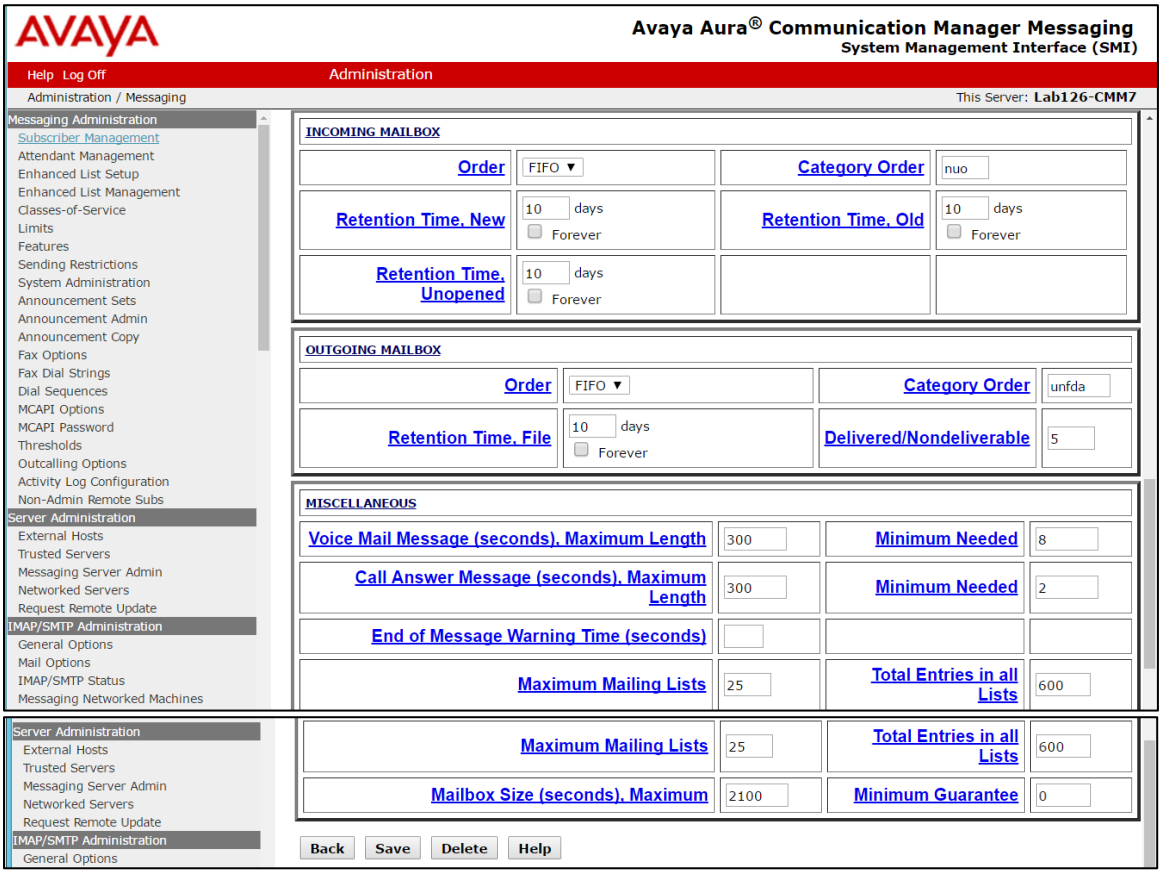


2. Click Add and configure the following:
   - Last Name: *tekvdut*, used in this example.
   - Mailbox Number: *2102*, used in this example.
   - MWI Enabled: *yes.*
3. Leave all other fields with their default values.

Avaya Communication Manager Messaging Subscriber Configuration (2/3)



Avaya Communication Manager Messaging Subscriber Configuration (3/3)



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Specifications subject to
change without notice.