Avaya Solution & Interoperability Test Lab

Application Notes for Configuring TigerTMS InnLine VoIPLink v3.1.4 with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3 - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for TigerTMS InnLine VoIPLink v3.1.4 to interoperate with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3. TigerTMS InnLine VoIPLink provides voicemail functionality over a SIP trunk and is used in conjunction with other Tiger Group products.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the compliance-tested configuration using TigerTMS InnLine VoIPLink SIP Voicemail R3.1.4 and Avaya Aura® Communication Manager R6.3 with Avaya Aura® Session Manager R6.3. TigerTMS InnLine VoIPLink SIP Voicemail is part of a hospitality system that provides voicemail functionality. The voicemail feature is delivered via SIP and connects to Avaya Aura® Session Manager as a SIP trunk.

2. General Test Approach and Test Results

The interoperability compliance testing included feature and serviceability testing. The feature testing evaluated the voicemail functionality of TigerTMS InnLine VoIPLink SIP Voicemail (InnLine IP) server which is delivered via SIP over IP to the Session Manager. The serviceability testing introduced failure scenarios to see if SIP voicemail could resume after a link failure with Session Manager.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The general test approach was to validate correct operation of typical voicemail functions including:

- Call coverage in Busy and No Answer scenarios.
- Recording messages on the voicemail system.
- Retrieving messages by dialing directly from the called extension.
- Message Waiting Indication (MWI) lamp on and off.
- Voicemail integration with hospitality features like check-in, check-out and room transfer.
- Link Failure and Recovery of the IP connection.

Feature functionality testing was performed manually. Call coverage was verified when there was no answer on a dialed extension and when dialed extension was busy. Direct access to the Voicemail system was verified with message retrieval from the extension which had the message waiting. Voicemail integration with hospitality features like check-in, room transfer and check-out was verified using an additional piece of Software from Tiger called Tiger TMS Hotel Pro. As a result of check-in, voicemail box was setup for the extension. As a result of check-out, station MWI lamp was turned off and voicemail box is emptied. As a result of room transfer, the old extension's MWI lamp was turned off and voicemail was purged and new extension's MWI lamp was on and voicemail was moved to the new extension.

2.2. Test Results

All executed test cases were completed successfully.

2.3. Support

If product support is required, the following contact details can be used.

- Email: support@tigercomms.com
- Phone: +44 1425 891 000

3. Reference Configuration

An Avaya Aura® Communication Manager R6.3 serving H.323 endpoints with an Avaya G430 Media Gateway was configured along with Avaya Aura® Session Manager R6.3 providing SIP trunks and SIP endpoints. TigerTMS InnLine VoIPLink was configured on the same IP network for connection to the SIP Signalling interface of Avaya Aura® Session Manager.

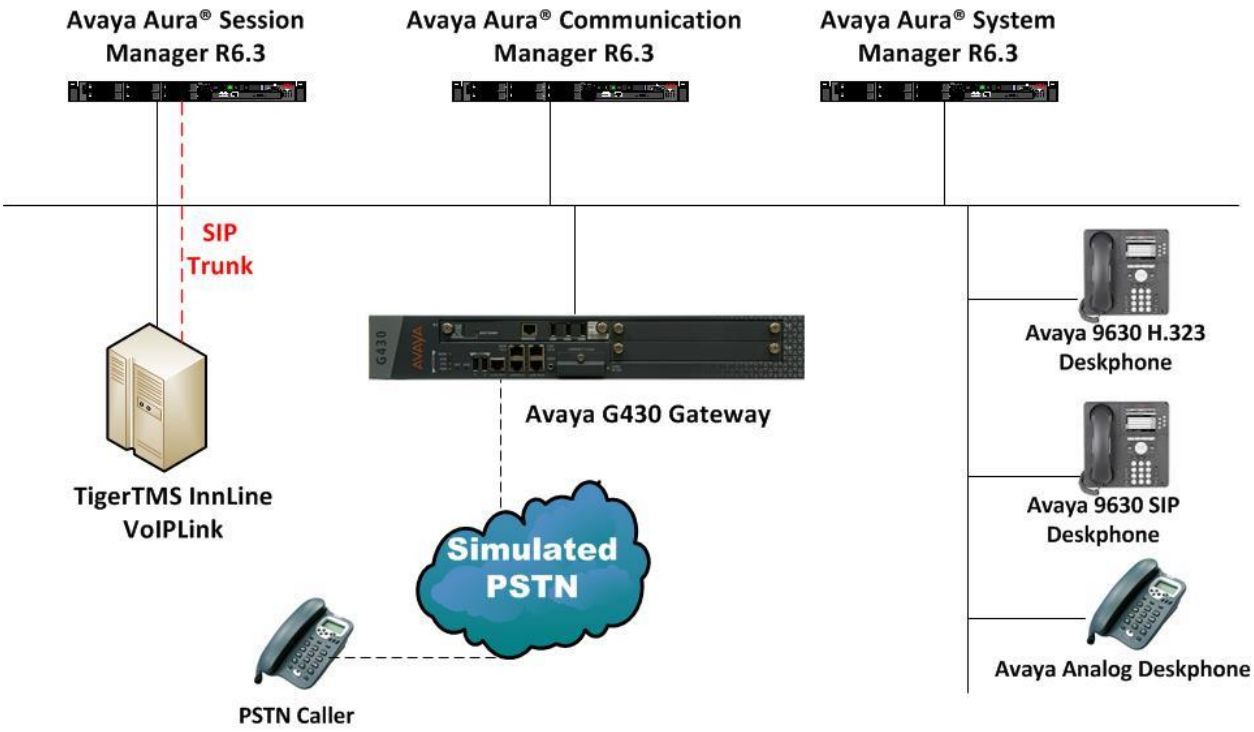


Figure 1: Avaya Aura® Communication Manager and Avaya Aura® Session Manager with TigerTMS InnLine VoIPLink Solution

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® System Manager running on Avaya S8800 Server	System Manager 6.3.0 - FP2 Build No. - 6.3.0.8.5682-6.3.8.1814 Software Update Revision No: 6.3.3.5.1719
Avaya Aura® Communication Manager running on Avaya S8800 Server	R6.3 SP1 R016x.03.0.124.0
Avaya Aura® Session Manager running on Avaya S8800 Server	Session Manager R6.3 (SP3) SM 6.3.3.0.633004
Avaya G430 Gateway	R6.3
Avaya 9630 IP Deskphone	• H323 S3.105S • SIP 2.6.8.4
TigerTMS InnLine VoIPLink	V3.1.4

5. Configure Avaya Aura® Communication Manager

This section describes the steps for the necessary configuration required to interoperate with InnLine VoIPLink. The steps are performed through the System Access Terminal (SAT) interface. It is assumed a dial plan and extensions are already commissioned on Communication Manager as is the required administration for connection to Session Manager. For the purposes of the compliance test station extension numbers 6000 – 6003 were used.

5.1. Configure Private and Public Numbering plans

Ensure that the extensions used are added to the private and public numbering plans, in order to add these type **change private-numbering x**. The screen below shows an **Ext Code** beginning with **6** which has a **Total Length** of **4** is configured to both trunk groups **1** and **9**.

```
change private-numbering 1                                    Page   1 of   2
                           NUMBERING - PRIVATE FORMAT

Ext Ext              Trk        Private          Total
Len Code             Grp(s)     Prefix           Len
 4  1                1                           4     Total Administered: 3
 4  2                1                           4        Maximum Entries: 540
 4  3                1                           4
 4  6                1                           4
 4  6                9                           4
```

Type **change public-unknown -numbering x**. The screen below shows an **Ext Code** beginning with **6** which has a **Total Length** of **4** is configured to both trunk groups **1** and **9**.

```
display public-unknown-numbering 1                            Page   1 of   2
                      NUMBERING - PUBLIC/UNKNOWN FORMAT
                                          Total
Ext Ext              Trk       CPN        CPN
Len Code             Grp(s)    Prefix     Len
                                            Total Administered: 6
 4  1                1                       4  Maximum Entries: 9999
 4  2                1                       4
 4  6                1                       4  Note: If an entry applies to
 4  6                9                       4  a SIP connection to Avaya
                                               Aura(R) Session Manager,
                                               the resulting number must
                                               be a complete E.164 number.

                                               Communication Manager
                                               automatically inserts
                                               a '+' digit in this case.
```

5.2. Configure Dialplan

The dialplan on Communication Manager must be configured as required. Enter the command **change dialplan analysis**, the screen below shows that a **Dialed String** beginning with **4** which has a **Total Length** of **4** is configured to go to the **UDP** table.

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

    Dialed   Total  Call      Dialed   Total  Call      Dialed   Total  Call
    String   Length Type      String   Length Type      String   Length Type
   1           3   fac
   2           10  udp
   3           11  udp
   4           4   udp
   5           4   ext
   6           4   ext
   7           3   dac
   8           4   udp
   9           1   fac
   *           3   fac
```

5.3. Configure UDP Table

Enter the command **change uniform-dialplan 0**, the screen below shows that a **Matching Pattern** beginning with **4** with a **Length** of **4** digits will have **0** digits **Del**eted and will be passed to the **aar** table configured in the **Net** column.

```
change uniform-dialplan 0                                     Page   1 of   2
                      UNIFORM DIAL PLAN TABLE
                                                              Percent Full: 0

  Matching                    Insert              Node
  Pattern        Len Del      Digits     Net Conv Num
 2                10  0                  ars  n
 3                11  0                  aar  n
 4                4   0                  aar  n
 8                4   0                  aar  n
                                              n
```

5.4. Configure AAR Table

Enter the command **change aar analysis 8**, the screen below shows that a **Dialed String** of **4300** with a **Min** and **Max** length of **4** will use **Route Pattern 1** with a **Call Type** of **aar**. In this instance route pattern 1 references trunk 1 which is the SIP trunk between Communication Manager and Session Manager.

```
change aar analysis 8                                          Page   1 of   2
                           AAR DIGIT ANALYSIS TABLE
                                  Location: all            Percent Full: 0
          Dialed           Total     Route    Call   Node  ANI
          String          Min  Max  Pattern   Type   Num   Reqd
    4300                  4    4     1        aar          n
                                                           n
                                                           n
                                                           n
```

5.5. Configure Remote Cover Path

A remote coverage path is configured with the pilot number of the InnLine VoIPLink voicemail server. Enter the command **change coverage remote 1** and enter the pilot number in an available field, in this case **01** is chosen, which is denoted as r1 when referenced in a coverage path.

```
change coverage remote 1                                       Page   1 of  23

                       REMOTE CALL COVERAGE TABLE
                       ENTRIES FROM 1    TO 1000

01: 4300                  16:                       31:
02:                       17:                       32:
03:                       18:                       33:
04:                       19:                       34:
```

5.6. Add Coverage Path

Stations administered with voicemail should be configured with a coverage path which covers the inbound call to the voicemail pilot number. Enter the command **add coverage path next**, in **Point1** enter the remove coverage path administered in **Section 6.4**, in this case **r1.** Take a note of the **Coverage Path Number**, in this case **2**, this is configured in the station form for stations administered with voicemail.

```
add coverage path next                                          Page   1 of   1
                                COVERAGE PATH

                  Coverage Path Number: 2
     Cvg Enabled for VDN Route-To Party? n        Hunt after Coverage? n
                      Next Path Number:           Linkage

COVERAGE CRITERIA
    Station/Group Status    Inside Call     Outside Call
              Active?             n              n
                Busy?             y              y
       Don't Answer?              y              y         Number of Rings: 2
                 All?             n              n
 DND/SAC/Goto Cover?              y              y
   Holiday Coverage?              n              n


COVERAGE POINTS
    Terminate to Coverage Pts. with Bridged Appearances? n
  Point1: r1                      Point2:
  Point3:                         Point4:
  Point5:                         Point6:
```

5.7. Configure Stations with Voicemail Coverage Path

Enter the command **change station xxxx,** where xxxx is an extension configured with voicemail. Configure the **Coverage Path 1** field with the coverage path number configured in **Section 6.5**.

```
change station 6000                                          Page   1 of   5
                                    STATION
Extension: 6000                        Lock Messages? n                BCC: 0
     Type: 9630                        Security Code: 1234              TN: 1
     Port: S00006                     Coverage Path 1: 2                COR: 1
     Name: Extn,6000                  Coverage Path 2:                  COS: 2
                                       Hunt-to Station:
STATION OPTIONS
                                            Time of Day Lock Table:
              Loss Group: 19          Personalized Ringing Pattern: 1
                                                 Message Lamp Ext: 6000
           Speakerphone: 2-way                Mute Button Enabled? y
        Display Language: english                  Button Modules: 0
 Survivable GK Node Name:
          Survivable COR: internal               Media Complex Ext:
   Survivable Trunk Dest? y                           IP SoftPhone? n
                                                          IP Video? n
                              Short/Prefixed Registration Allowed: default
                                              Customizable Labels? y
```

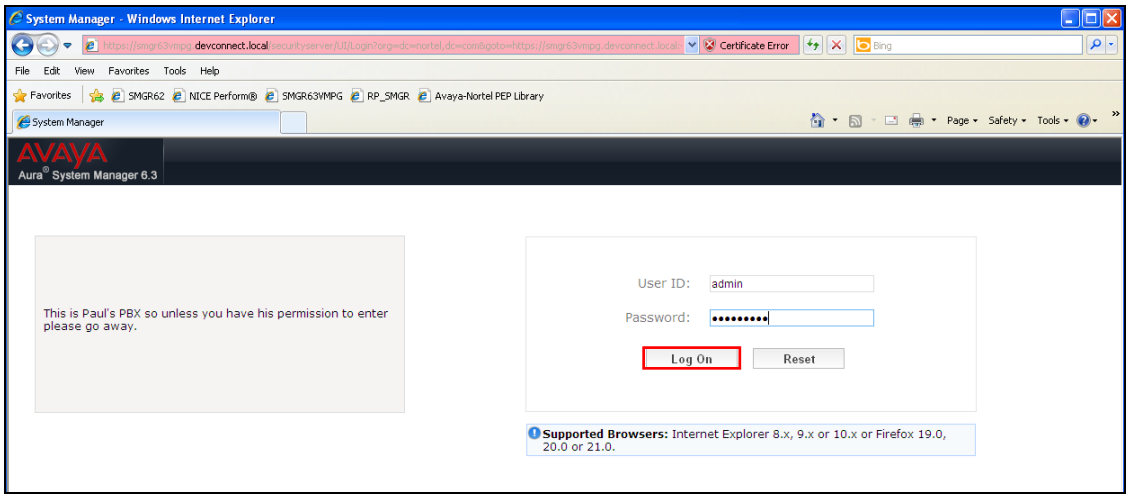
6. Configure Avaya Aura® Session Manager

This section describes the steps for configuring the SIP trunk from Session Manager to the InnLine VoIPLink server. The procedures include the following areas:

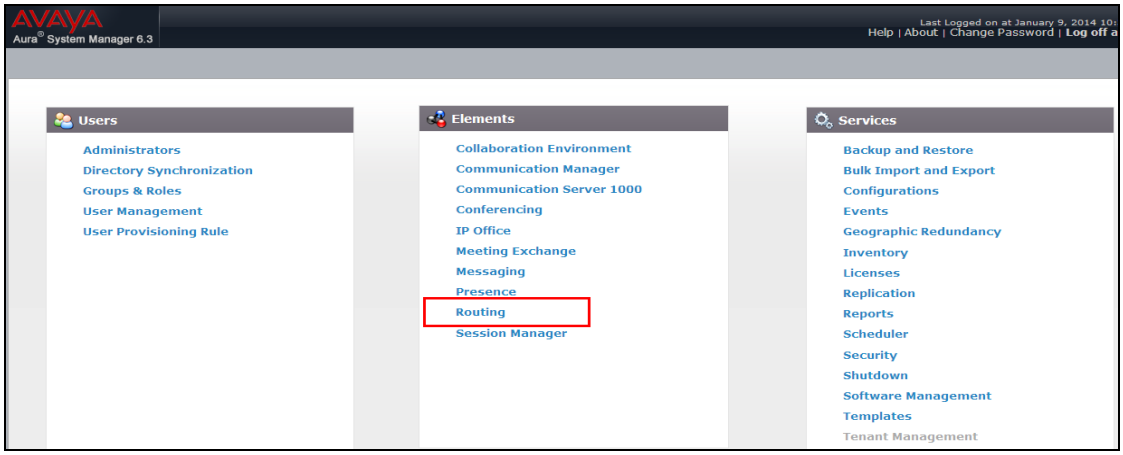
- Log into Avaya Aura® Session Manager
- Administer SIP Domain
- Administer Location
- Administer SIP Entities
- Administer Routing Policies
- Administer Dial Patterns

6.1. Log into Avaya Aura® System Manager

Access the System Manager using a Web Browser by entering **http://<FQDN >/SMGR**, where **<FQDN>** is the fully qualified domain name of System Manager or **http://<IP Adddress >/SMGR**. Log in using appropriate credentials.

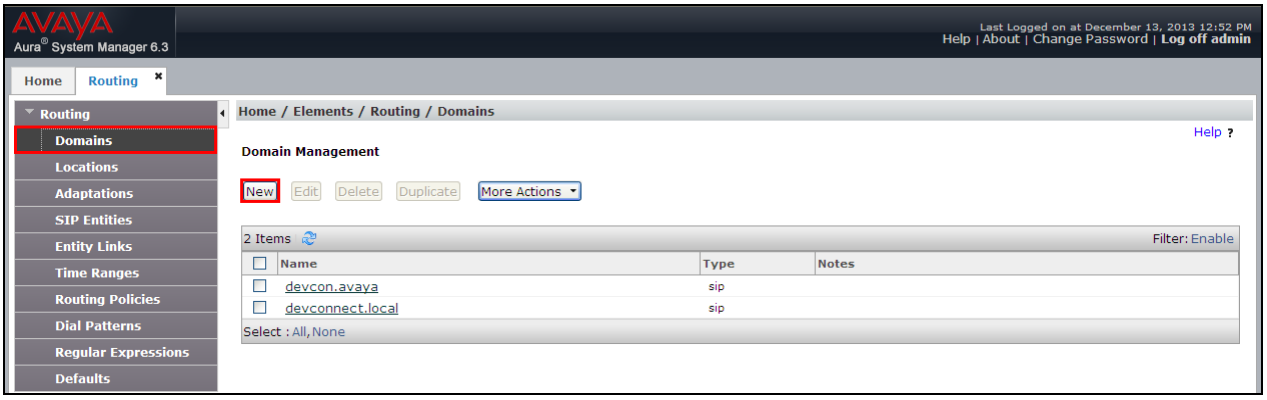


Once logged ion click on **Routing** as highlighted.

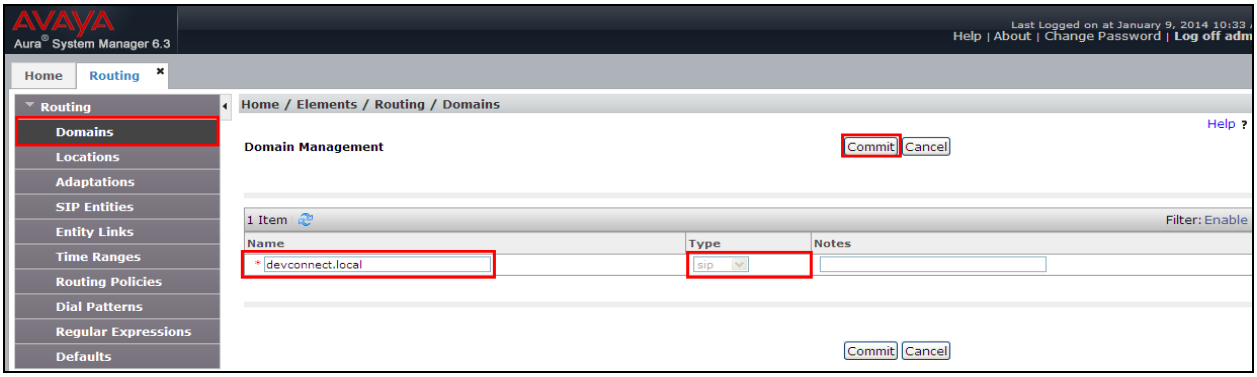


6.2. Administer SIP Domain

Click on **Domains** in the left window. If there is not a domain already configured, click on **New** highlighted below

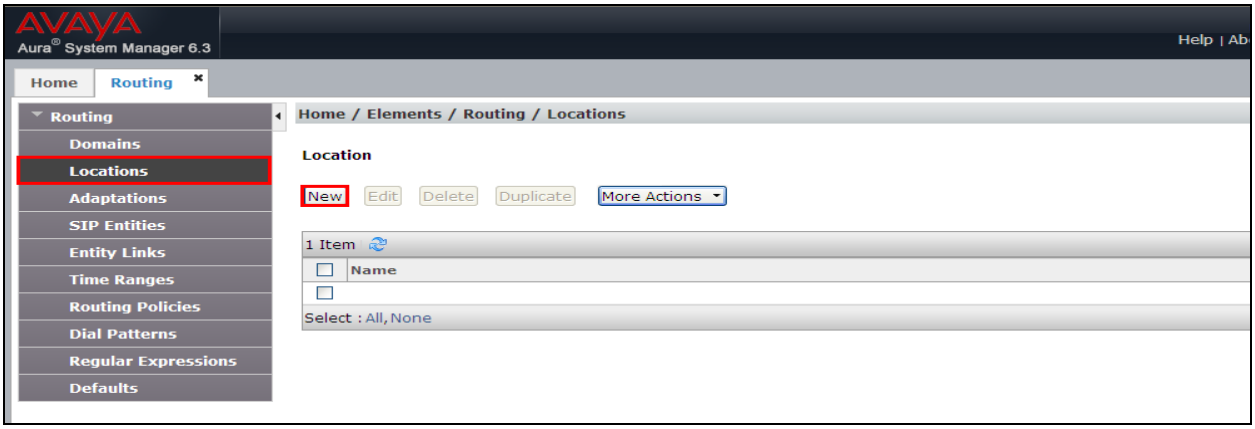


Enter the name of the domain note this will be referenced in **Section 7.1**. The **Type** should be **sip**. Click on **Commit** once done.

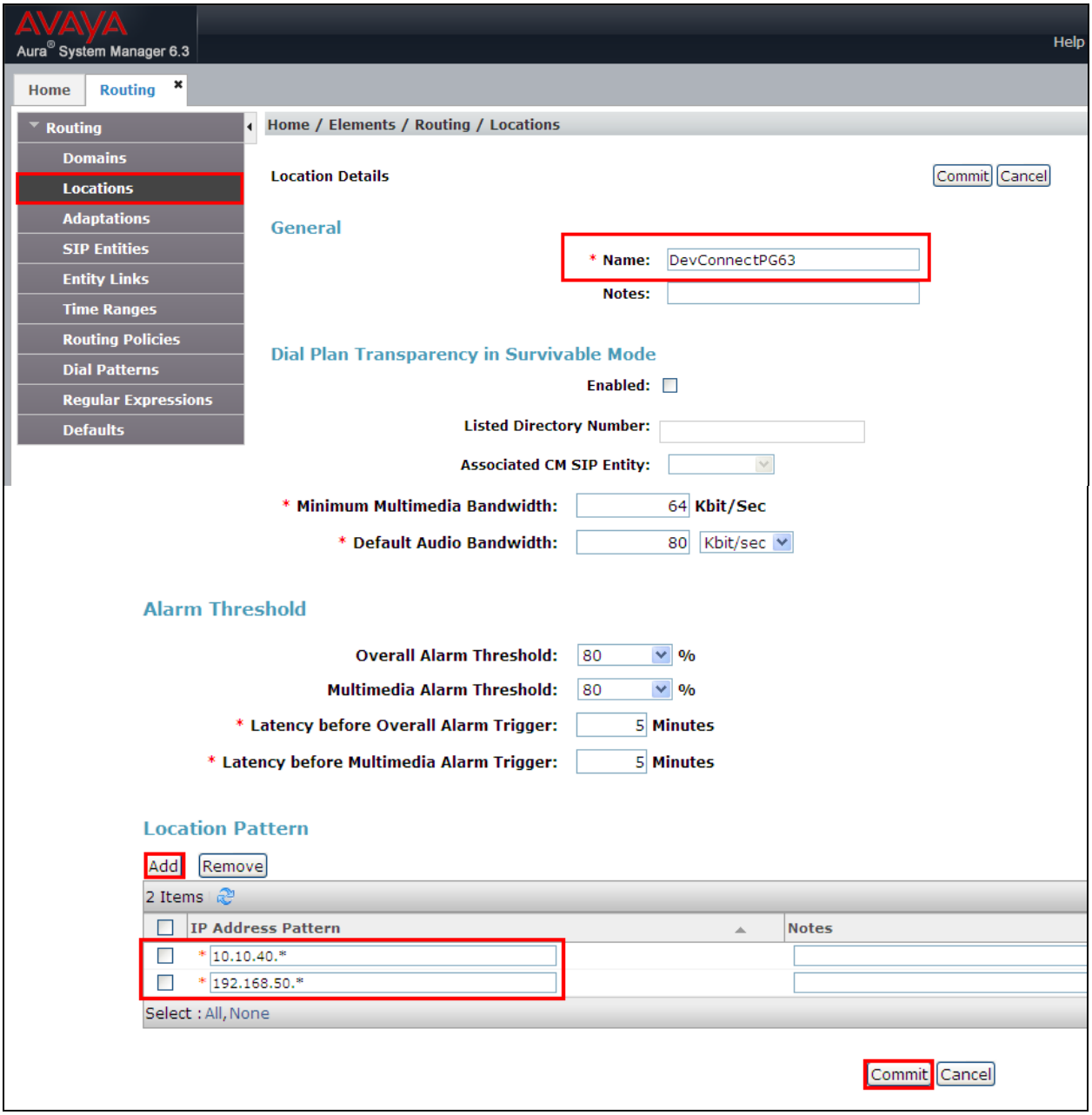


6.3. Configure Location

Select **Locations** from the left window and select **New** from the main window.

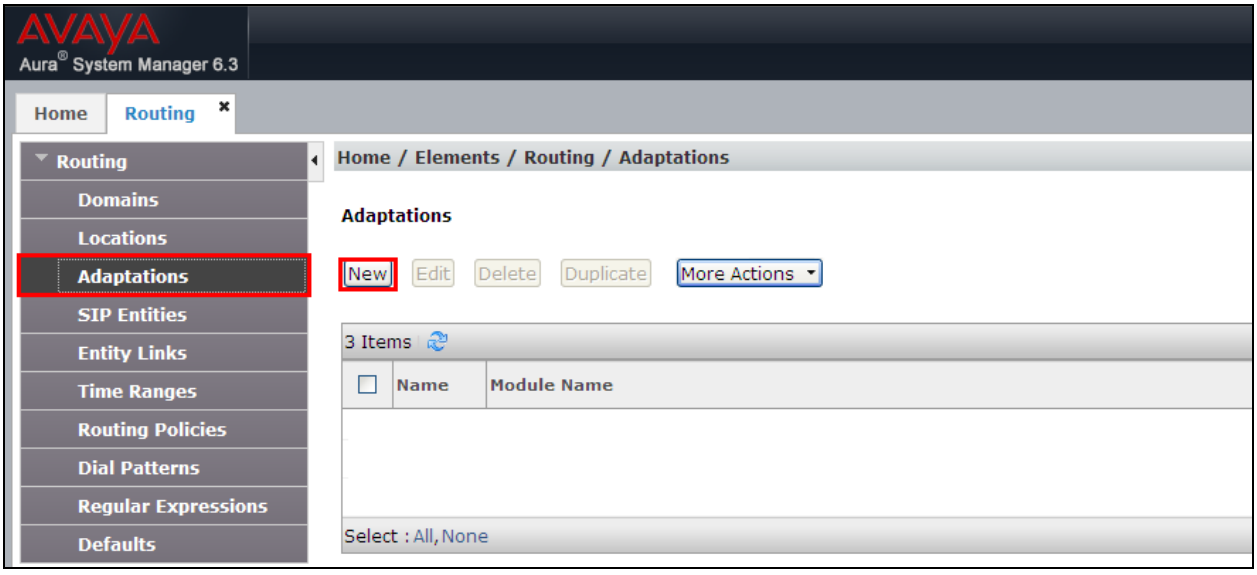


Enter a suitable name for the location and scroll down to the bottom of the page and enter the IP addresses associated with the location in the case there are two ranges **10.10.40.x** and **192.168.50.x** and click on **Add**. Once completed, click on **Commit** to continue.



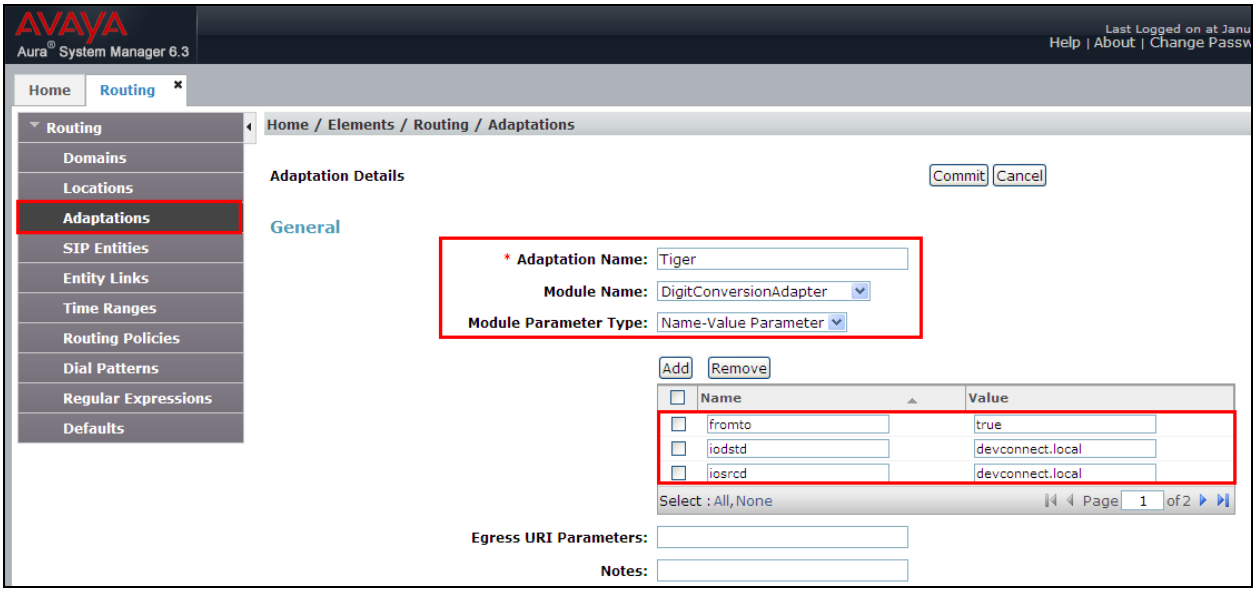
6.4. Configure Adaptation

To configure a new Adaptation select **Adaptations** from the left window and click on **New** from the main window.



Enter a suitable **Name** and select **DigitConversionAdapter** for the **Module Name.** Select **Name-Value Parameter** as the **Module Parameter Type**. Add the following Parameters:

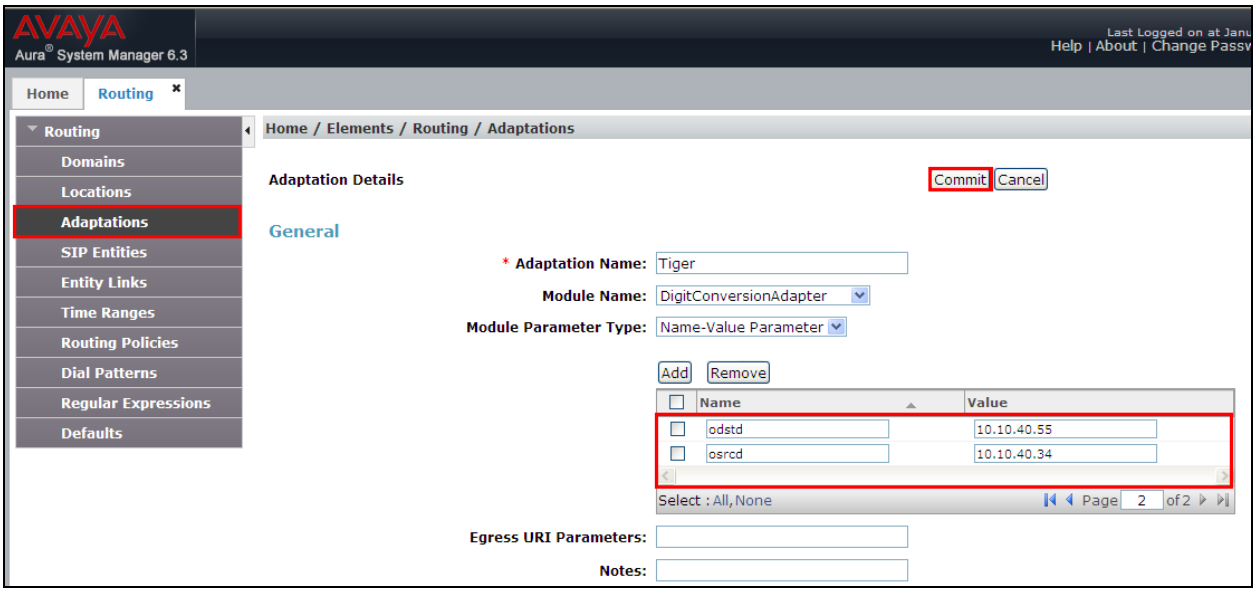
	Name	**Value**
•	fromto	true
•	iodstd	"domain"
•	iosrcd	"domain"



Continue to add the following Parameters:

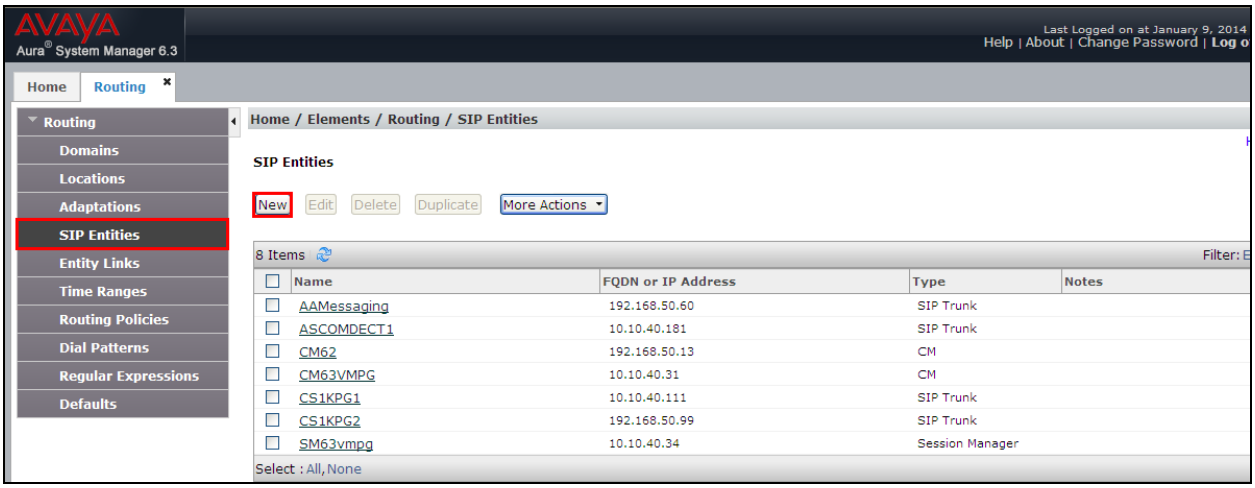
	Name	Value
•	odstd	"Tiger, IP Address"
•	osrcd	"Session Manager IP Address"

Click on Commit once completed.

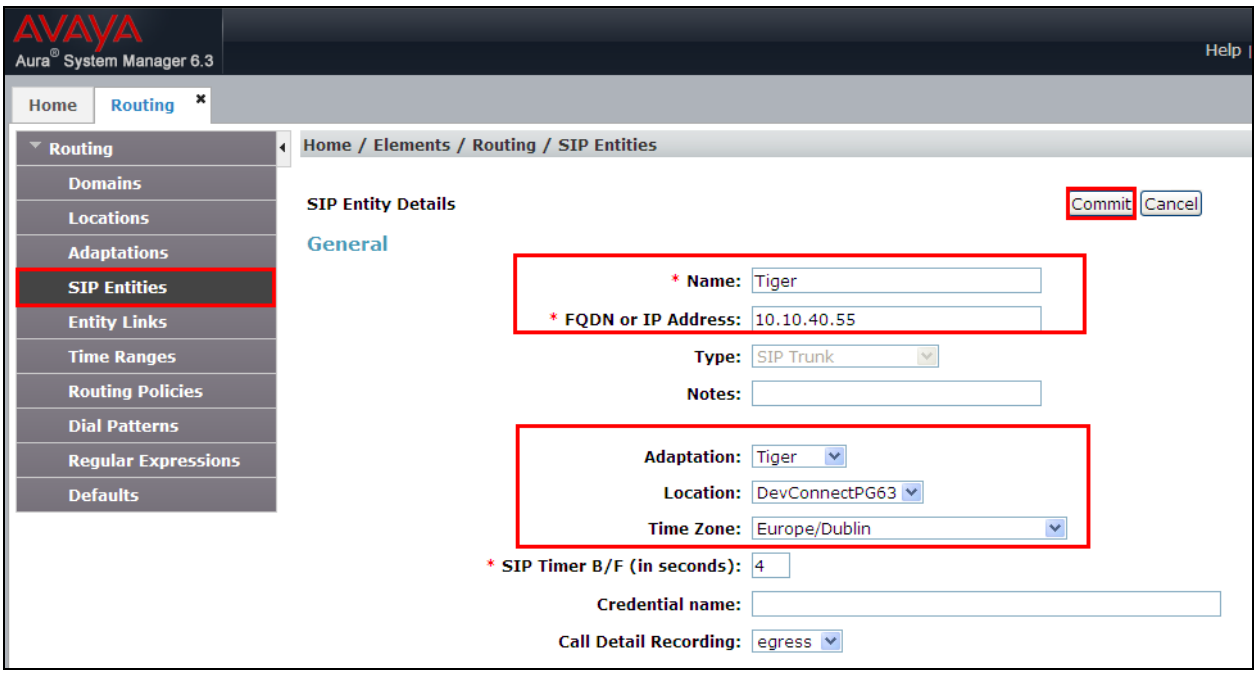


6.5. Configure SIP Entity for Tiger InnLine VoIPLink

Select **SIP Entities** from the left window and click on **New** in the main window.

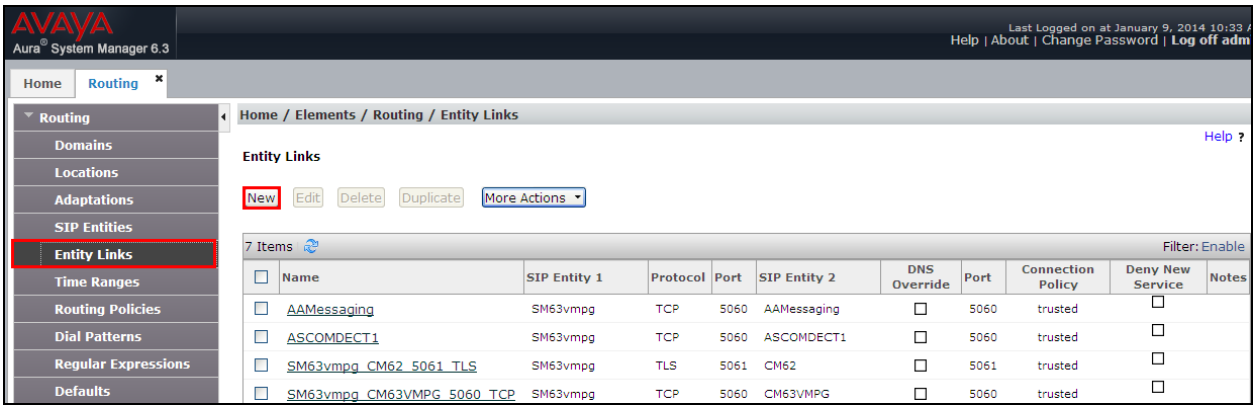


Enter a suitable **Name** and ensure that the **Adaptation** that was created in **Section 6.4** is used. Enter the **Location** that was configured in **Section 6.2** and the correct **Time Zone**.

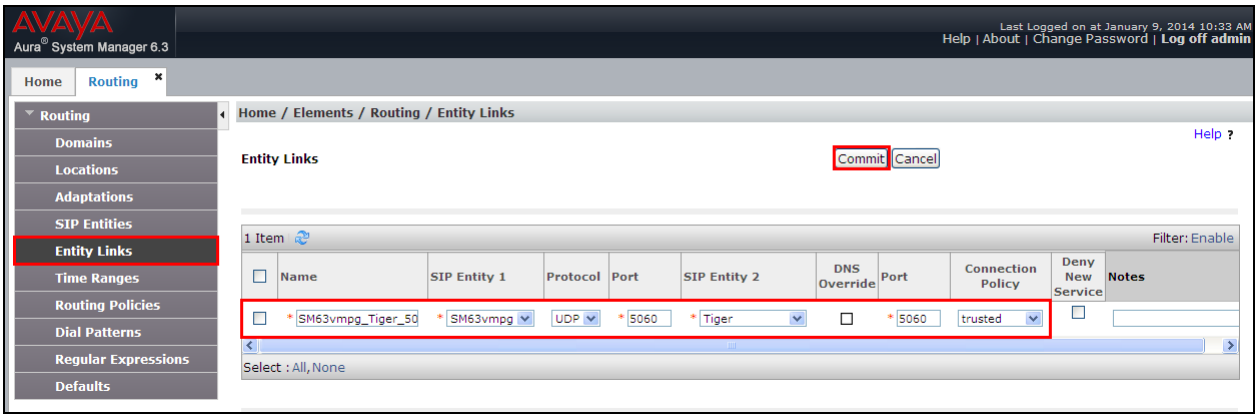


6.6. Configure Entity Link for Tiger InnLine VoIPLink

Select **Entity Link** from the left window and click on **New** in the main window.

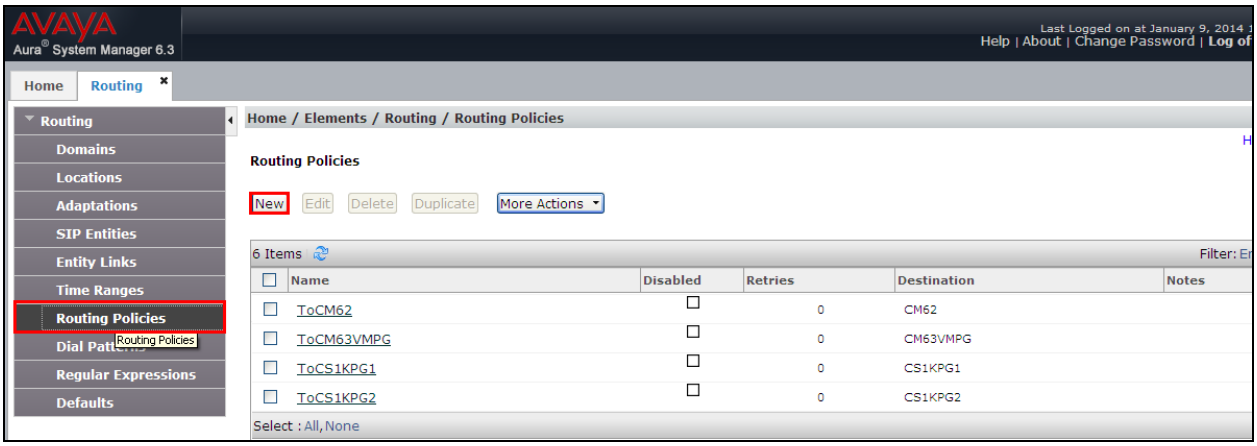


Select the correct **SIP Entity** that was created in **Section 6.5** and ensure that **UDP** is used as the **Protocol**. Note the **Port** is **5060**.

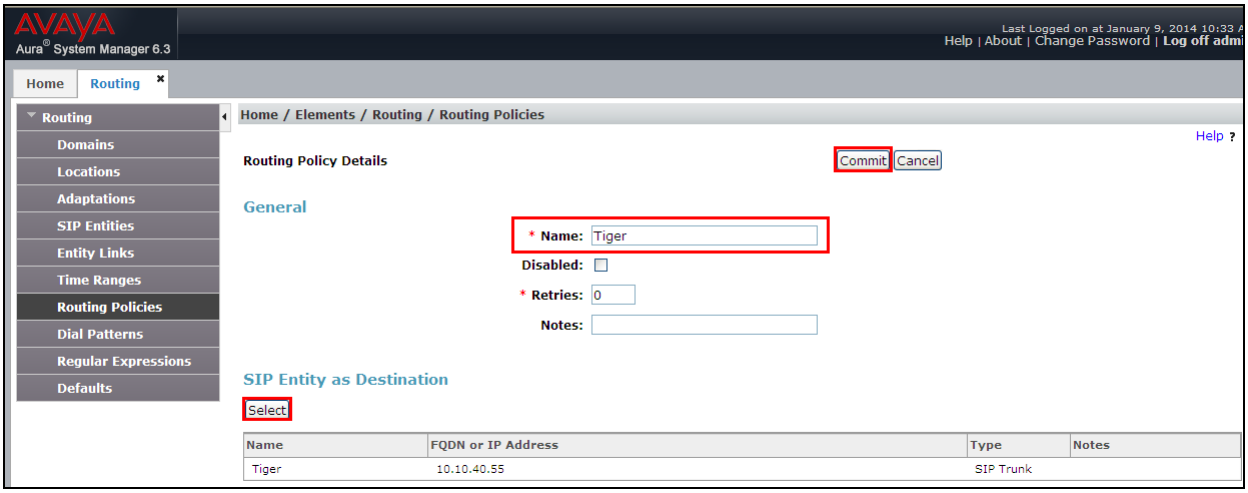


6.7. Configure Routing Policy for Tiger InnLine VoIPLink

Select **Routing Policies** from the left window and click on **New** in the main window.

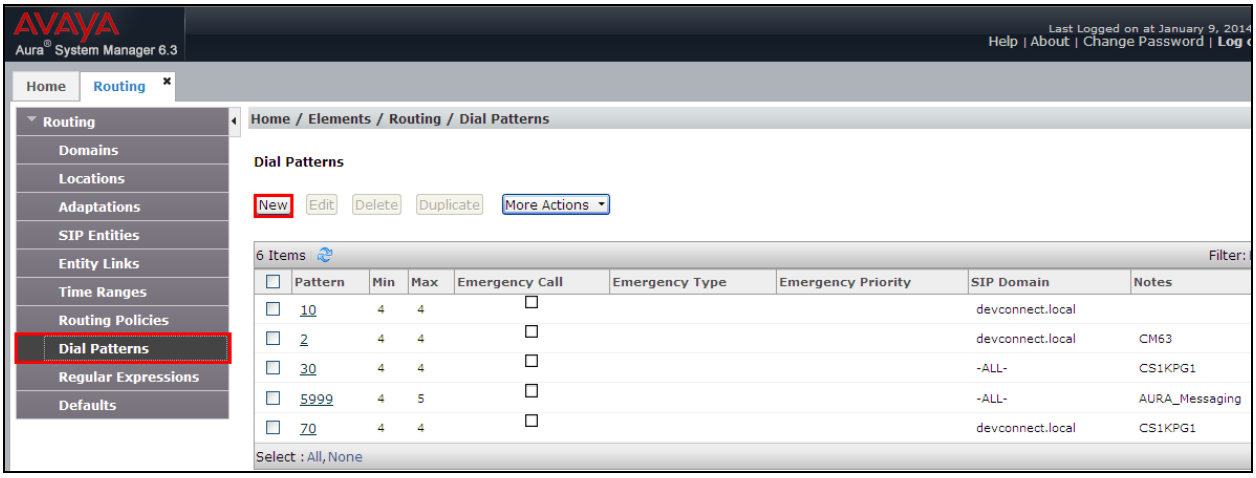


Enter a suitable **Name** and click on **Select** highlighted in order to associate this routing policy with a SIP Entity. Select the **Tiger** SIP Entity created in **Section 6.5** (not shown) and click on **Commit** when done.

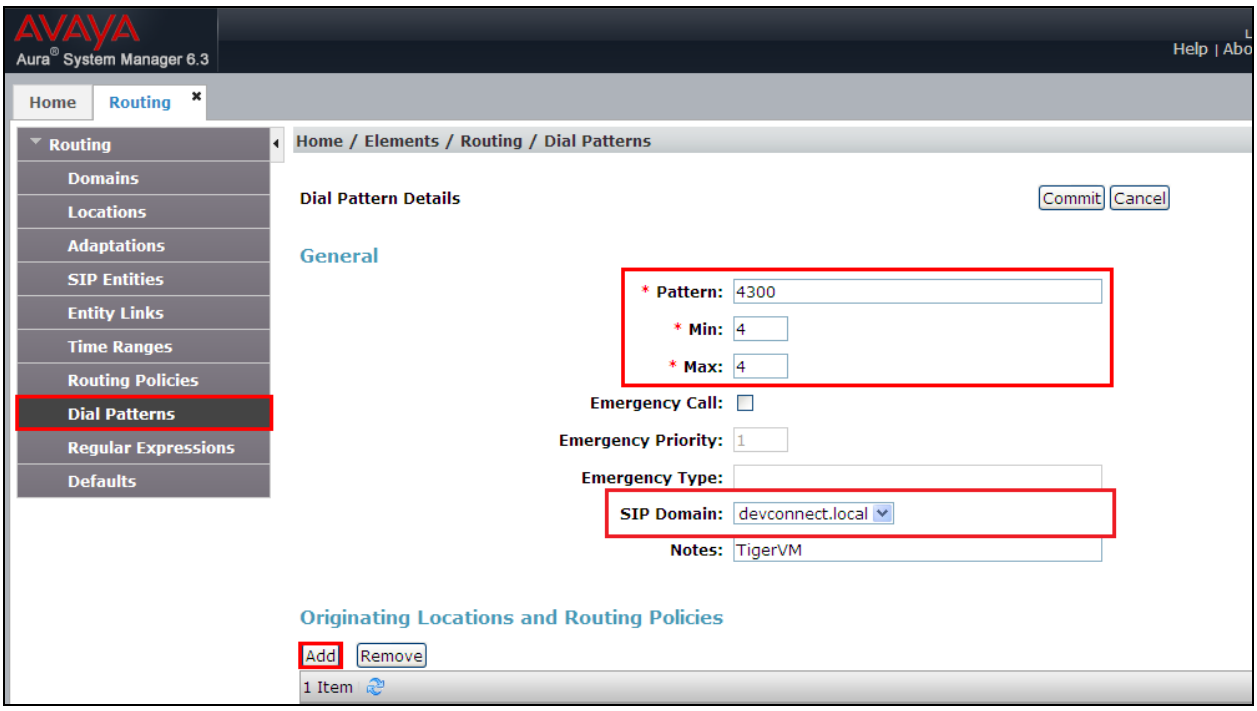


6.8. Configure Dial Pattern for Tiger InnLine VoIPLink

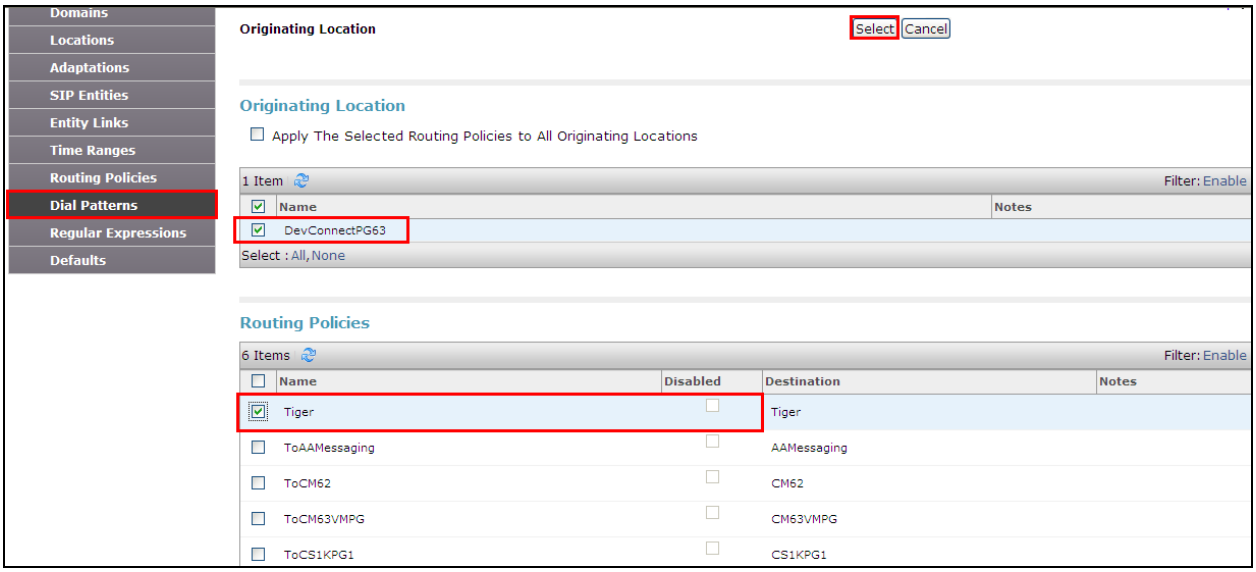
In order to route calls to the InnLine IP, a dial pattern is created pointing to the SIP Entity. Select **Dial Patterns** from the left window and click on **New** in the main window.



Enter the number to be routed noting this will be the same number outlined in **Section 5.3**. Note the **SIP Domain** is that configured in **Section 6.2**. Click on **Add** to select the SIP Entity.

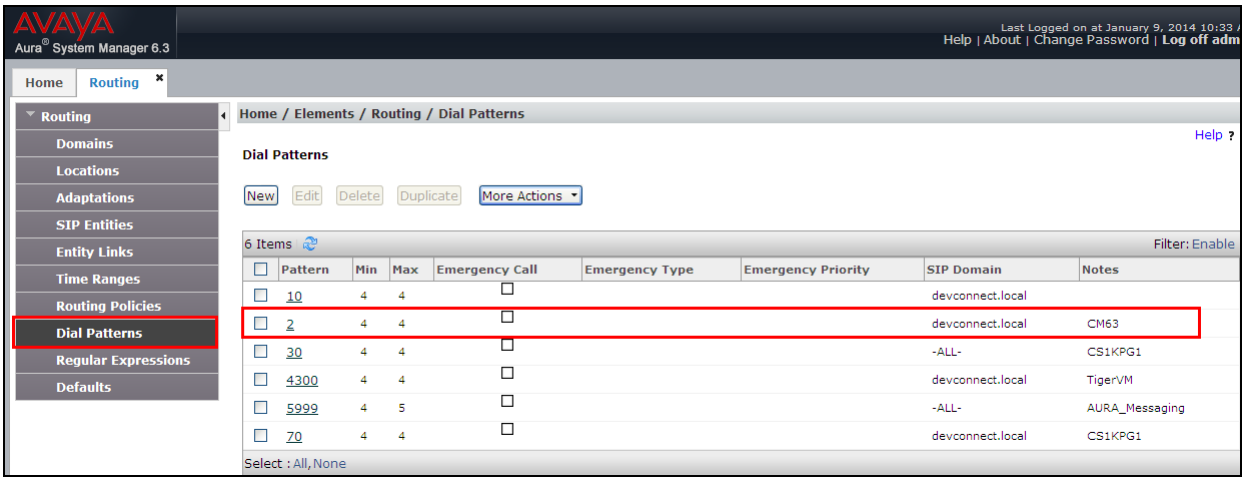


Tick on the **Originating Location** as shown below and select the **Tiger** Routing Policy. Click on **Select** once complete.



6.9. Create Dial Pattern for MWI SIP Notify Messages

A dial pattern must be created in order to route the MWI SIP Notify messages to the Communication Manager SIP Entity. Note the screen shot below highlights the Dial Pattern that was in place during the compliance testing as all extensions on Communication Manager started with 2. If this is not in place add the Dial Pattern as described in **Section 6.8**.



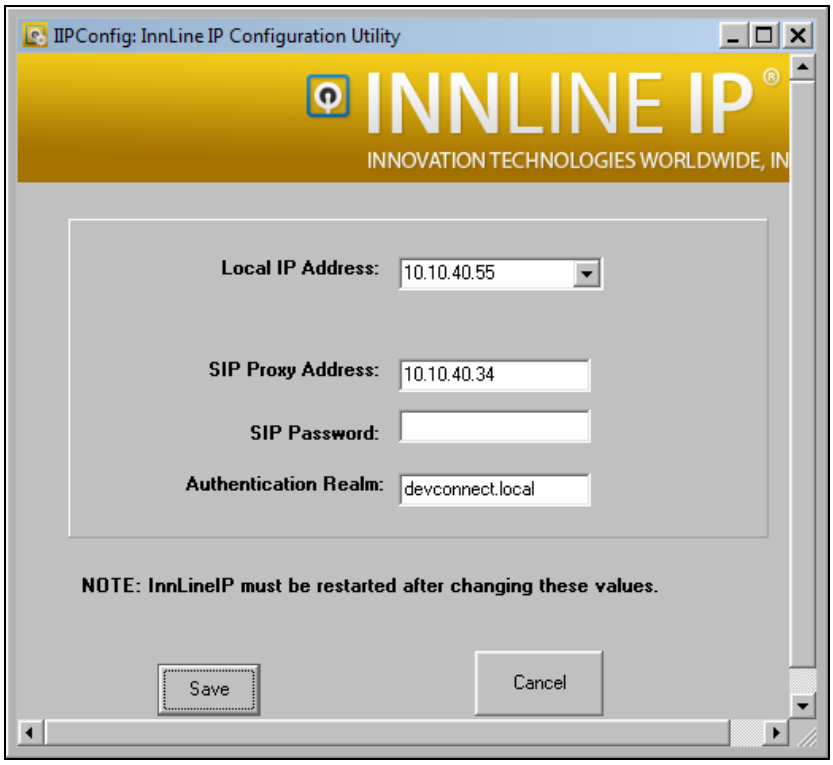
7. Configure TigerTMS InnLine VoIPLink

The configuration information provided in this section describes the steps required to configure InnLine VoIPLink to interoperate with Session Manager and Communication Manager. For all other provisioning information, such as software installation, installations of optional components, and configuration of InnLine VoIPLink, please refer to the TigerTMS product documentation in **Section 10**.

7.1. Configure SIP Trunk Settings for Voicemail Server

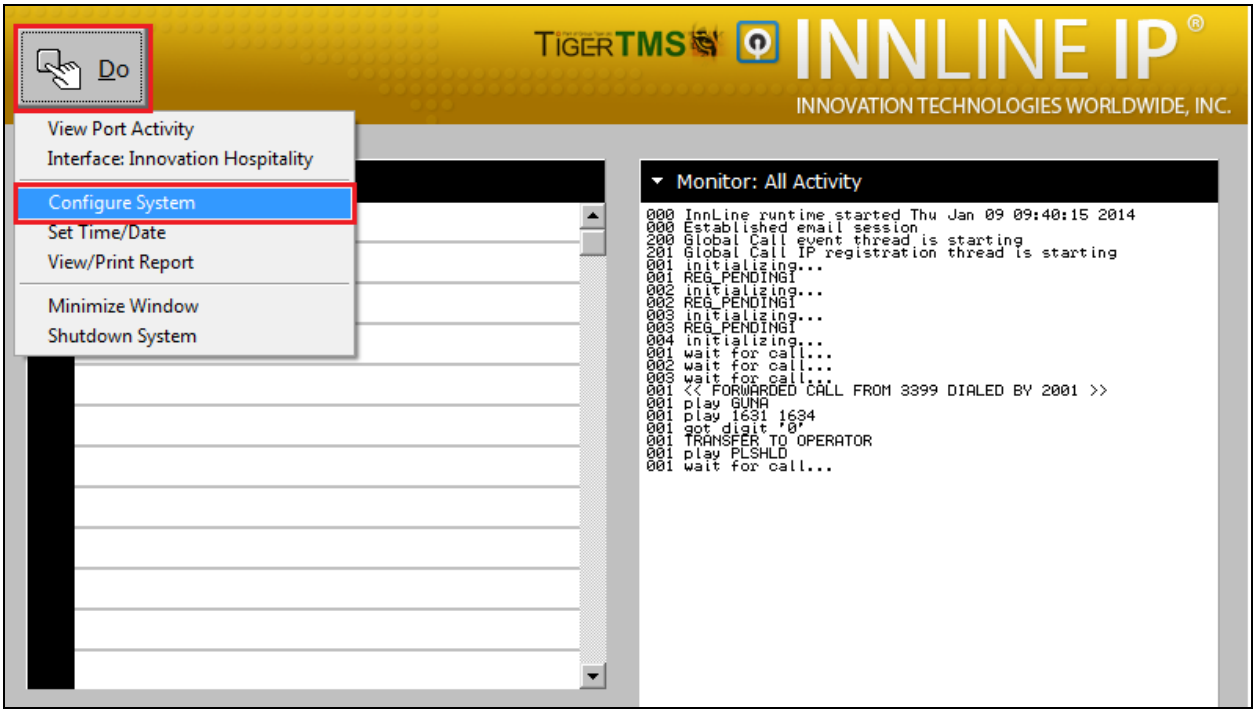
To configure the InnLine IP double-click on the **InnLine IP Config**uration Tool icon on the desktop of the server.

The screen below will appear; configure the **Local IP Address** of the server on which InnLine VoIPLink resides, in this case **10.10.40.55**. Configure the **SIP Proxy Address** with the Session Manager SIP Signaling Interface IP Address, in this case **10.10.40.34**. Enter the telephony domain used for the **Authentication Realm** note this will be the domain configured in **Section 6.1**. Click **Save** when done.



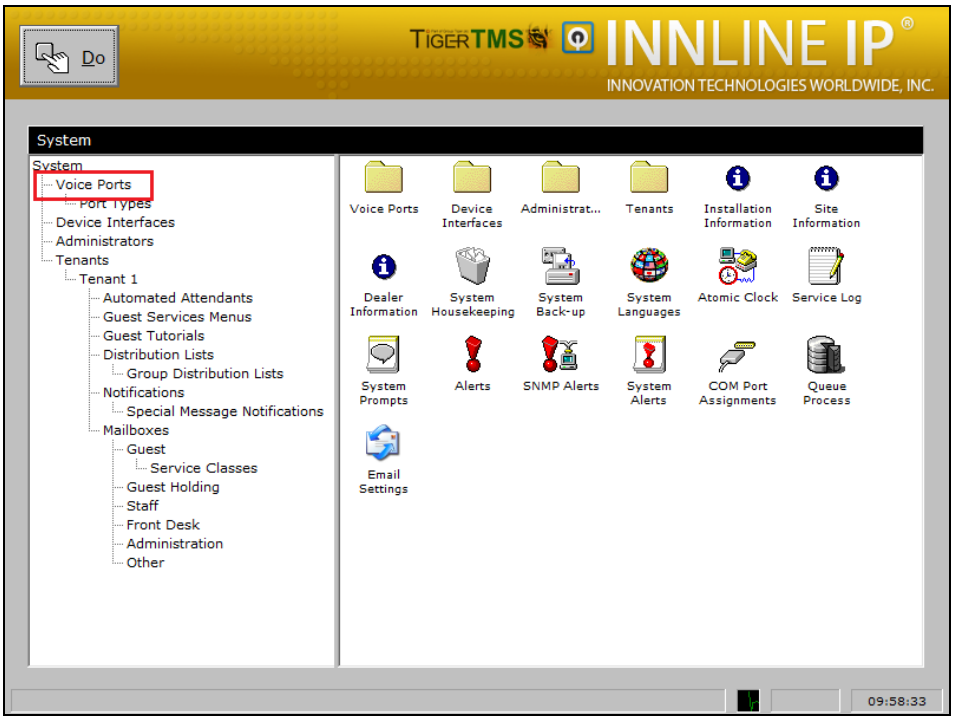
7.2. Configure Voicemail

Once the InnLine IP server boots up the following screen appears, click the **Do** button at the top left and select **Configure System** highlighted.

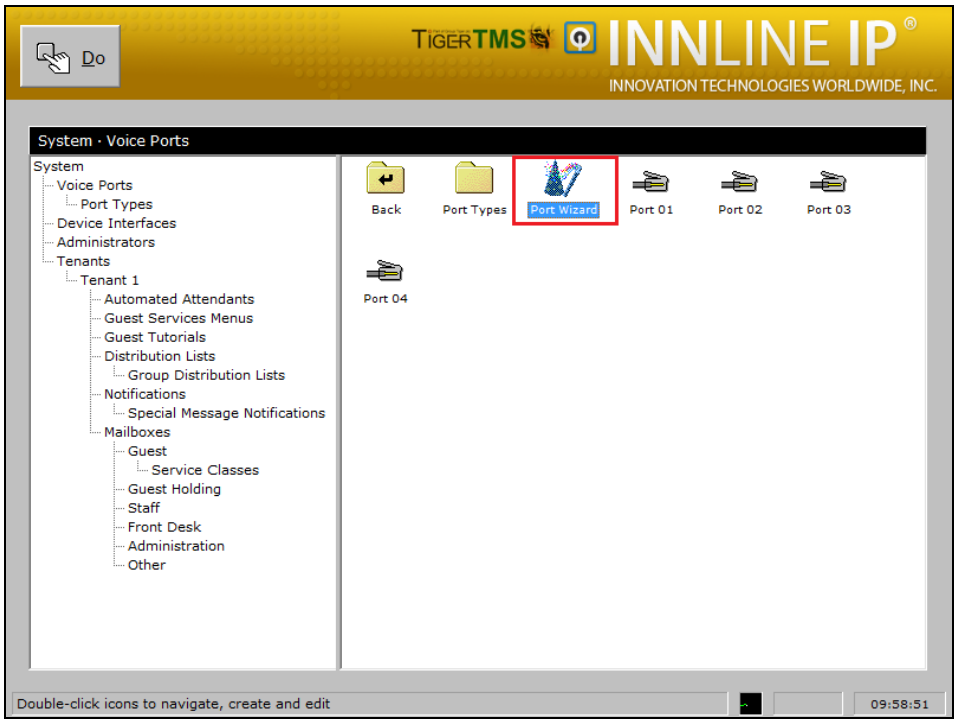


7.2.1. Configure voicemail ports

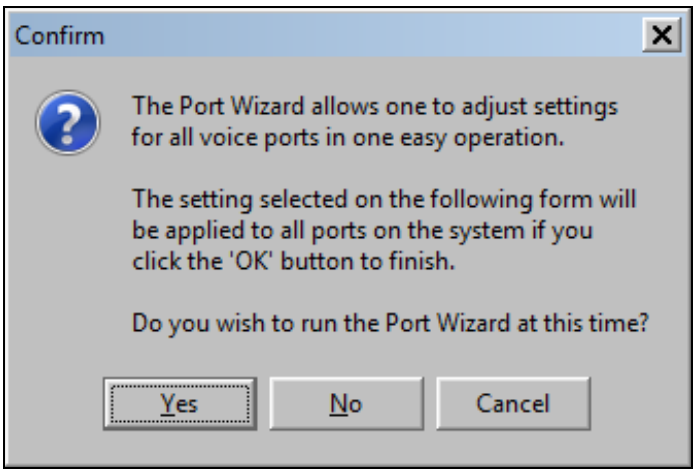
In the left window select **Voice Ports.**



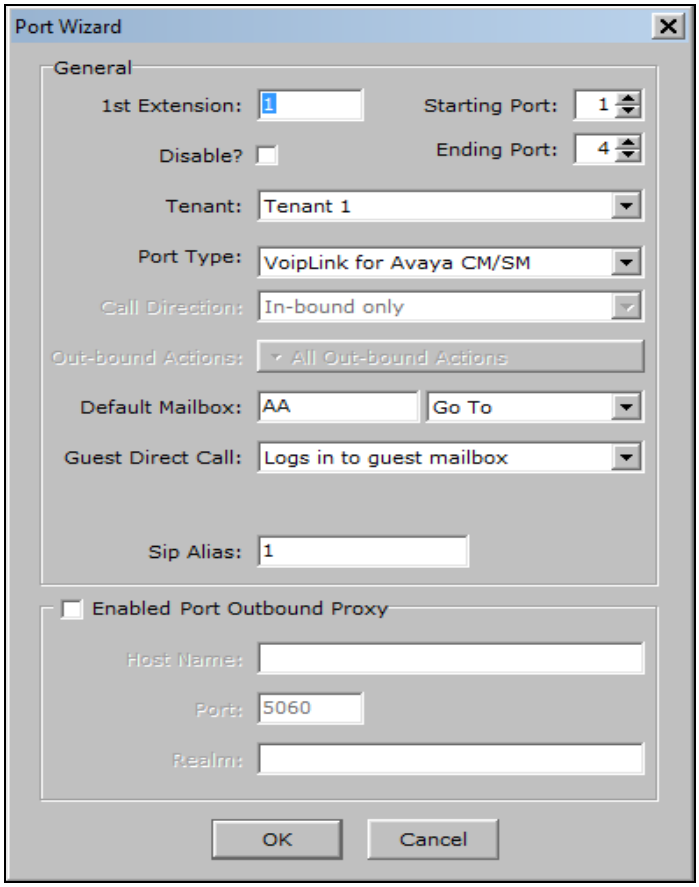
Double click on **Port Wizard** in the main window.



Click on **Yes** to continue.

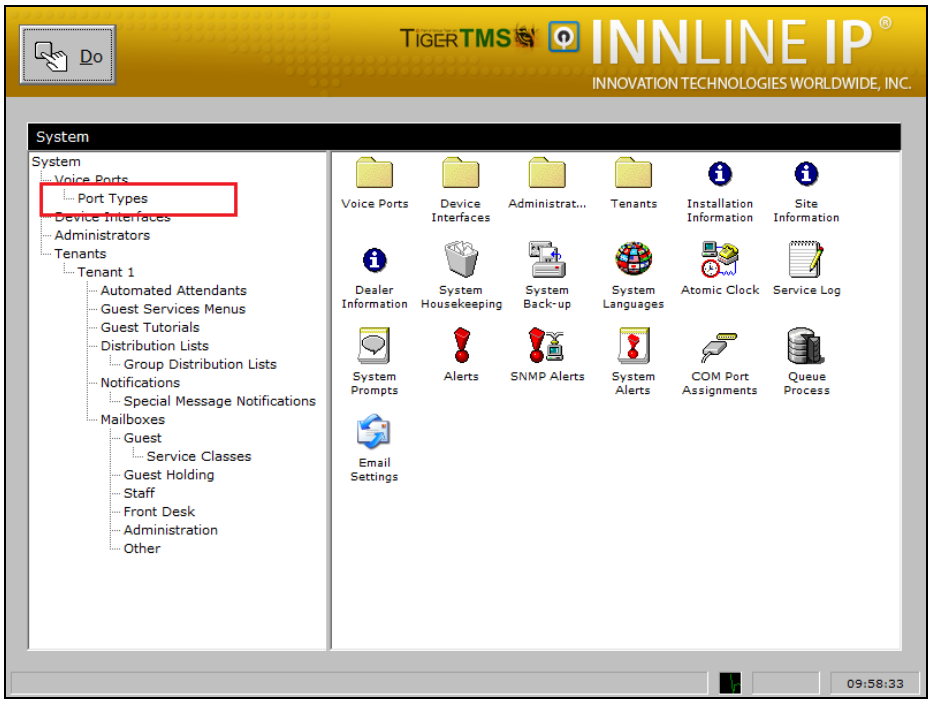


Enter the information as shown below. Click on **OK** once completed.

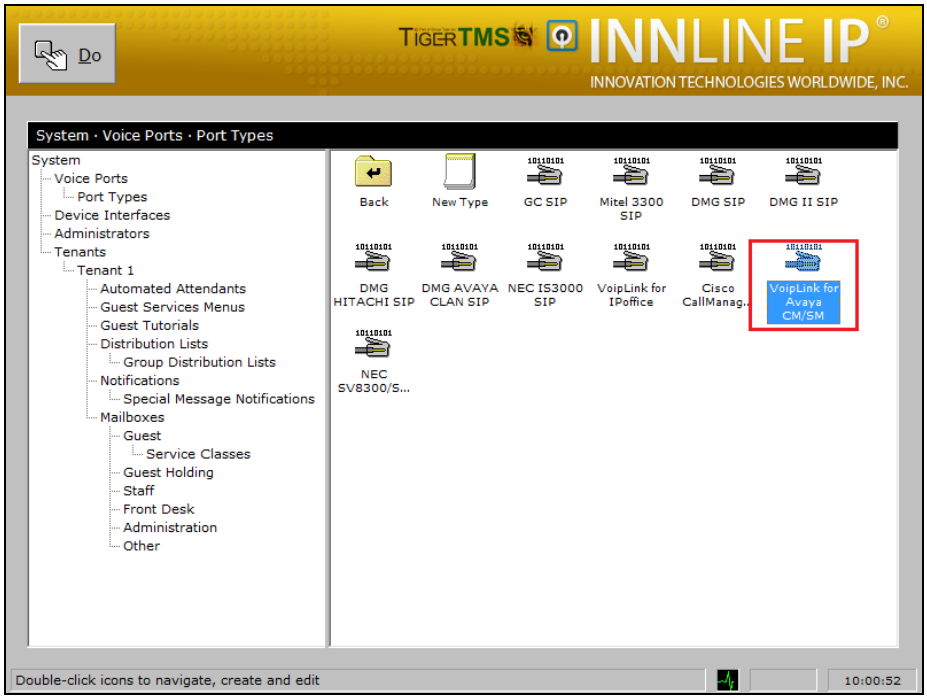


7.2.2. Configure Voicemail Pilot Number

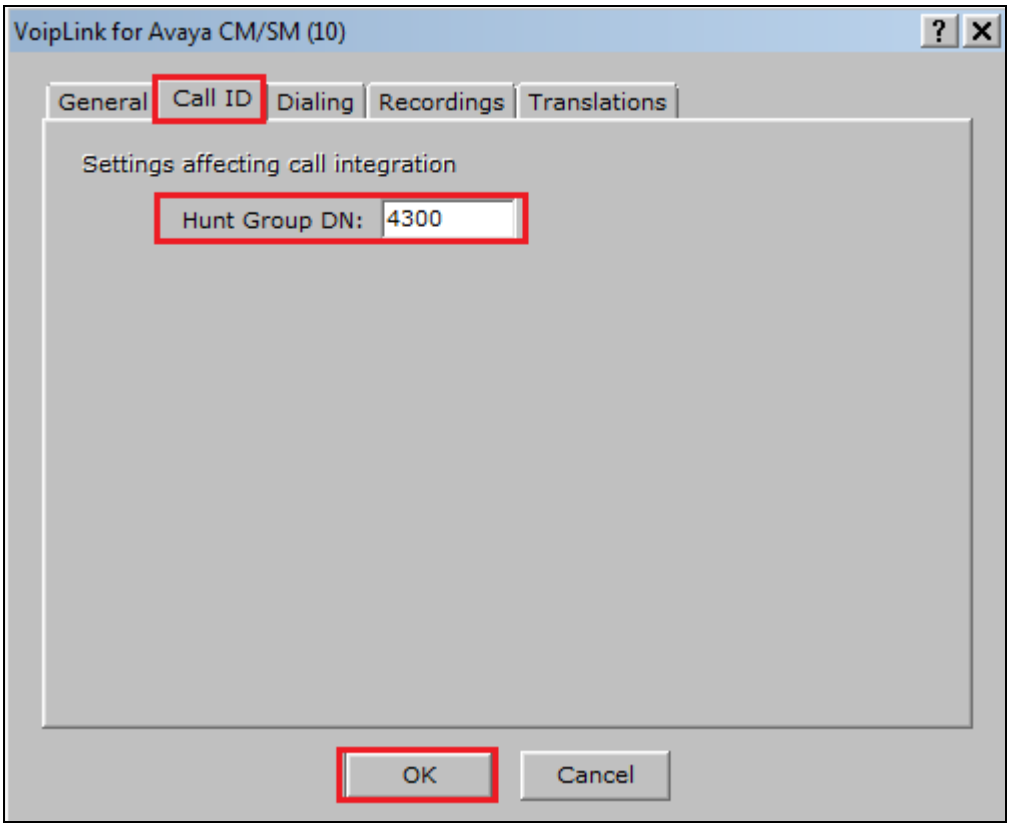
From the main menu select **Port Types** in the left window.



Double click on the **VoipLink for Avaya CM/SM** highlighted in the main window.



Select the **Call ID** tab and enter the voicemail number which should be the same as that configured in **Section 6.4**. Click on **OK** once completed.



8. Verification Steps

These are the steps taken to verify that a successful connection between the InnLine IP server and Session Manager via SIP trunk.

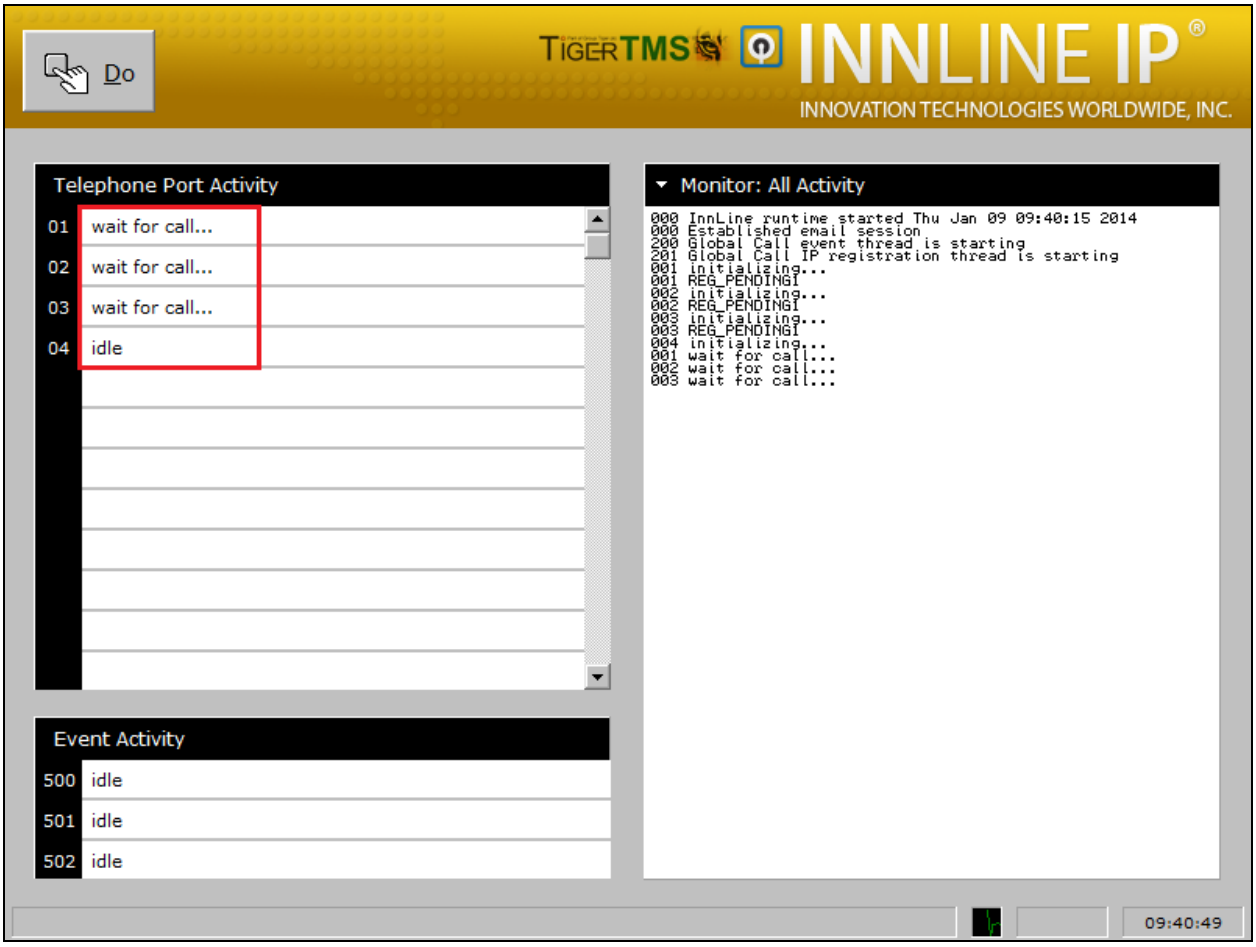
8.1. Verify Correct Operation TigerTMS InnLine VoIPLink Server

Place a call to an administered extension and allow it to go to coverage.

- Verify the InnLine VoIPLink greeting answers and leave a message.
- Verify that the MWI lamp of the dialed station is turned ON.
- Dial the InnLine VoIPLink voicemail pilot number from an extension administered with voicemail, verify succesful login, listen to voicemails and delete voicemails, verify MWI is extinguished accordingly.

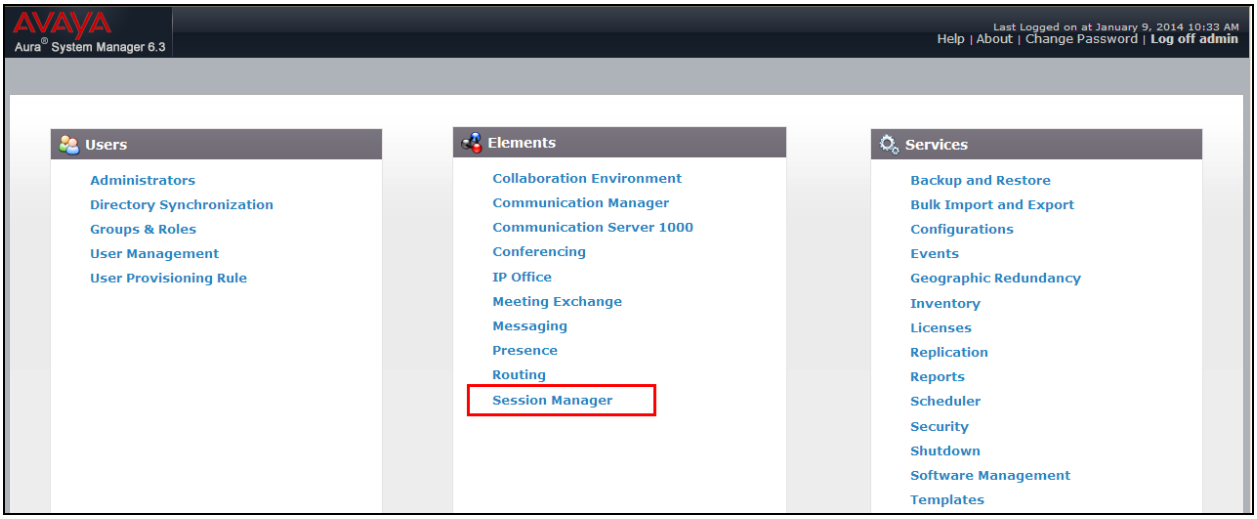
8.2. Verify InnLine VoIPLink SIP Channel Status

From the InnLine VoIPLink server, run the **VoiceServer.exe** (not shown) and verify that the administered number of channels display an accurate status according to actual current usage. Confirm the **Telephone Port Activity** window displays **wait for call…** and the **Monitor** window displays **wait for call…**.

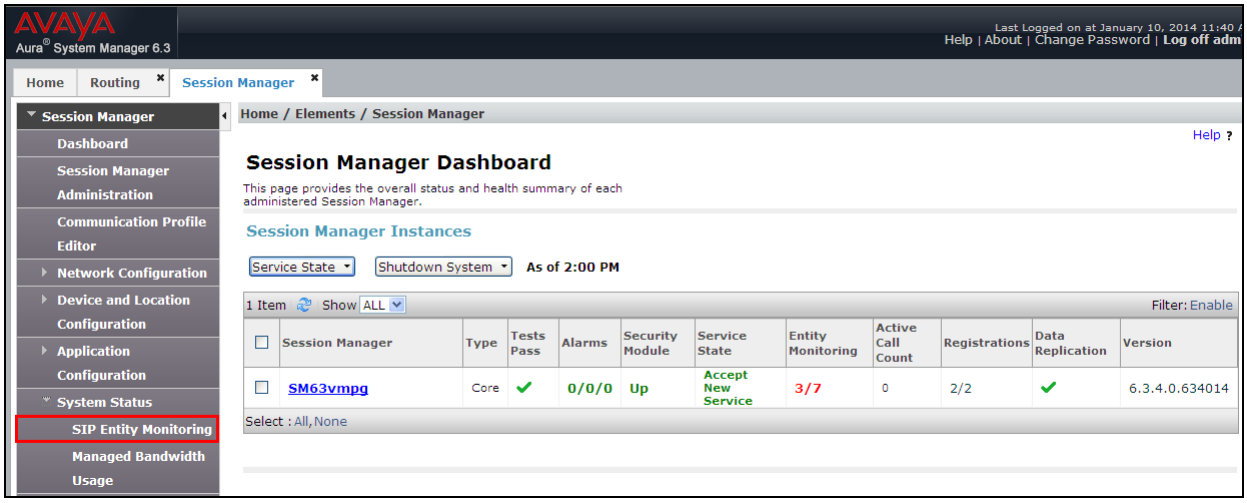


8.3. Verify TigerTMS InnLine VoIPLink SIP Entity is up

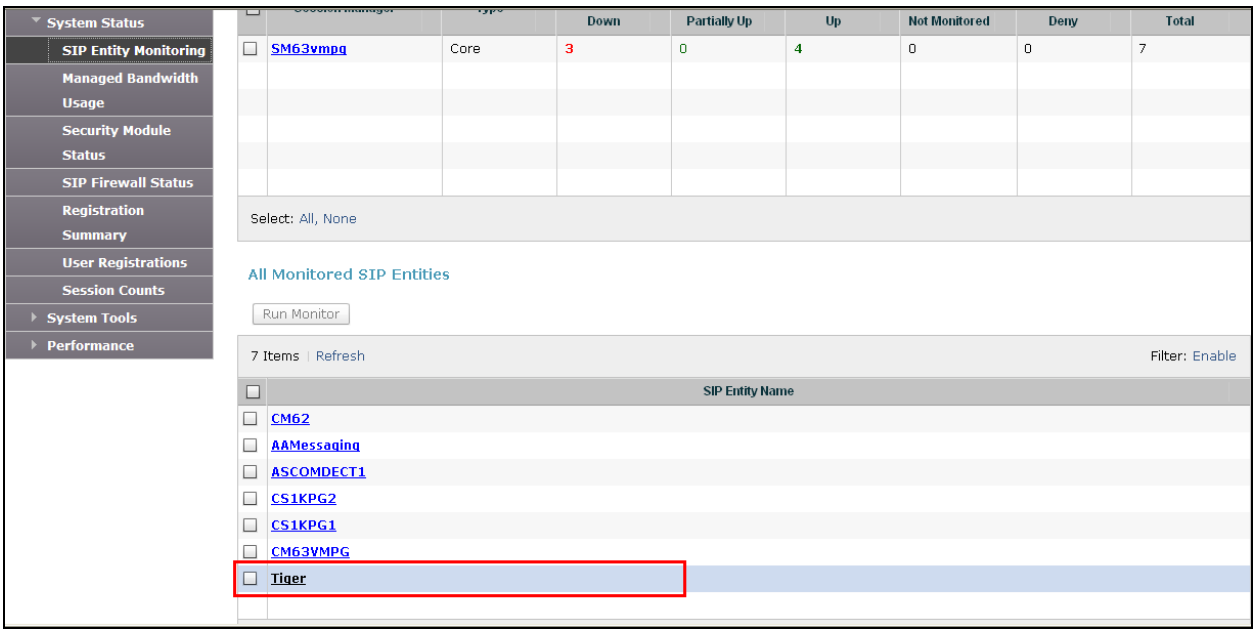
Log into System Manager as per **Section 6.1**. From the main menu select Session Manager as shown below.



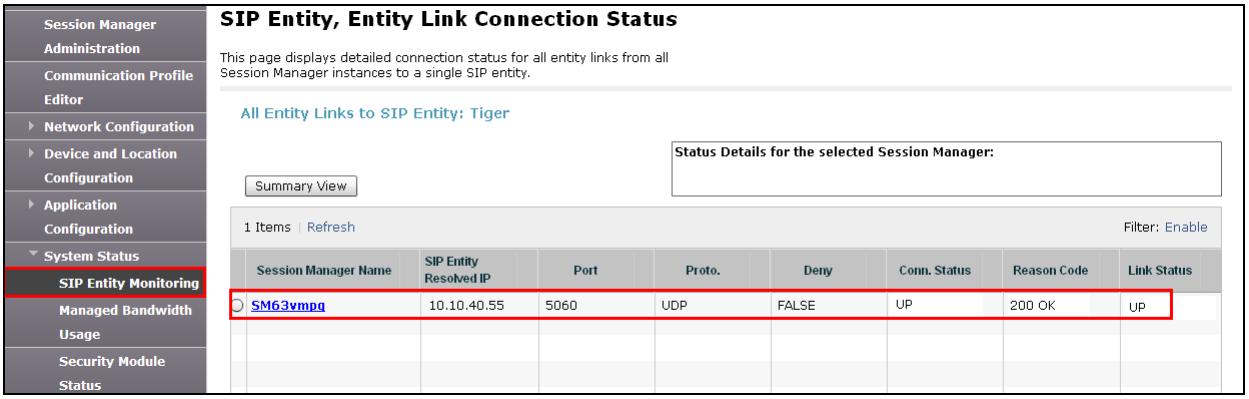
Navigate to **System Status → SIP Entity Monitoring**.



Select the **Tiger** SIP Entity.



Note that both the **Conn. Status** and **Link Status** show **UP**.



9. Conclusion

These Application Notes describe the required configuration steps necessary for TigerTMS InnLine VoIPLink v3.4.1 to interoperate with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3. All test cases passed successfully.

10. Additional References

This section references the product documentations that are relevant to these Application Notes.

Avaya product documentation can be found at http://support.avaya.com.

- *Administering Avaya Aura® Communication Manager, Release 6.3,* 03-300509
- *Administering Avaya Aura® Session Manager, Release 6.3,* 03-603324

TigerTMS InnLine VoIPLink product information is available from http://www.tigertms.com

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.