



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for IPC Alliance 16 with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.3 in a Centralized Messaging Environment – Issue 1.0**

## **Abstract**

These Application Notes describe the configuration steps required for IPC Alliance 16 to interoperate with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.3 in a centralized messaging environment.

IPC Alliance 16 is a trading communication solution. In the compliance testing, IPC Alliance MX used E1 QSIG trunks to Avaya Aura® Communication Manager, for IPC turret users to obtain voice messaging services from Avaya Modular Messaging. E1 QSIG trunks were used from IPC Alliance 16 to Avaya Aura® Communication Manager, and SIP trunks were used from Avaya Aura® Communication Manager to Avaya Aura® Session Manager to reach Avaya Modular Messaging. The Avaya Modular Messaging system in the Central site supported local subscribers from Avaya Aura® Communication Manager at the Central site, and from IPC turret users at the Remote site.

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 configuration steps required for IPC Alliance 16 to interoperate with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.3 in a centralized messaging environment.

IPC Alliance 16 is a trading communication solution. In the compliance testing, IPC Alliance MX used E1 QSIG trunks to Avaya Aura® Communication Manager, for IPC turret users to obtain voice messaging services from Avaya Modular Messaging. E1 QSIG trunks were used from IPC Alliance MX to Avaya Aura® Communication Manager, and SIP trunks were used from Avaya Aura® Communication Manager to Avaya Aura® Session Manager to reach Avaya Modular Messaging. The Avaya Modular Messaging system in the Central site supported local subscribers from Avaya Aura® Communication Manager at the Central site, and from IPC turret users at the Remote site.

## 2. General Test Approach and Test Results

The feature test cases were performed manually. Calls were manually established among IPC turret users with Avaya SIP, Avaya H.323, PSTN users, and/or the Avaya Modular Messaging voicemail pilot to verify various call scenarios. The Avaya Modular Messaging Web Subscriber Options web-based interface was used to configure subscriber features such as Call Me.

The serviceability test cases were performed manually by disconnecting and reconnecting the E1 connection to IPC Alliance 16.

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 interoperability compliance test included feature and serviceability testing.

The feature testing included subscriber login, greeting, voice message, message waiting indicator, call forward, multiple call forward, personal operator, auto attendant, find me, call me, call sender, and transfer.

The serviceability testing focused on verifying the ability of IPC Alliance 16 to recover from adverse conditions, such as disconnecting/reconnecting the E1 connection to IPC Alliance MX.

## 2.2. Test Results

All test cases were executed and passed. The following were the observations from the compliance testing.

- IPC Alliance 16 does not offer the Coverage feature, therefore coverage to voicemail for the turret users were accomplished by setting the Modular Messaging pilot number as the Call Forwarding destination for the users.
- During multiple call forward scenarios involving calls forwarded to the called party's forward-to extension and then covered subsequently to Modular Messaging based on the coverage setting at the forward-to extension, the call does not get the called party greeting. Instead, it keeps ringing at the forward-to station.

## 2.3. Support

Technical support on IPC Alliance 16 can be obtained through the following:

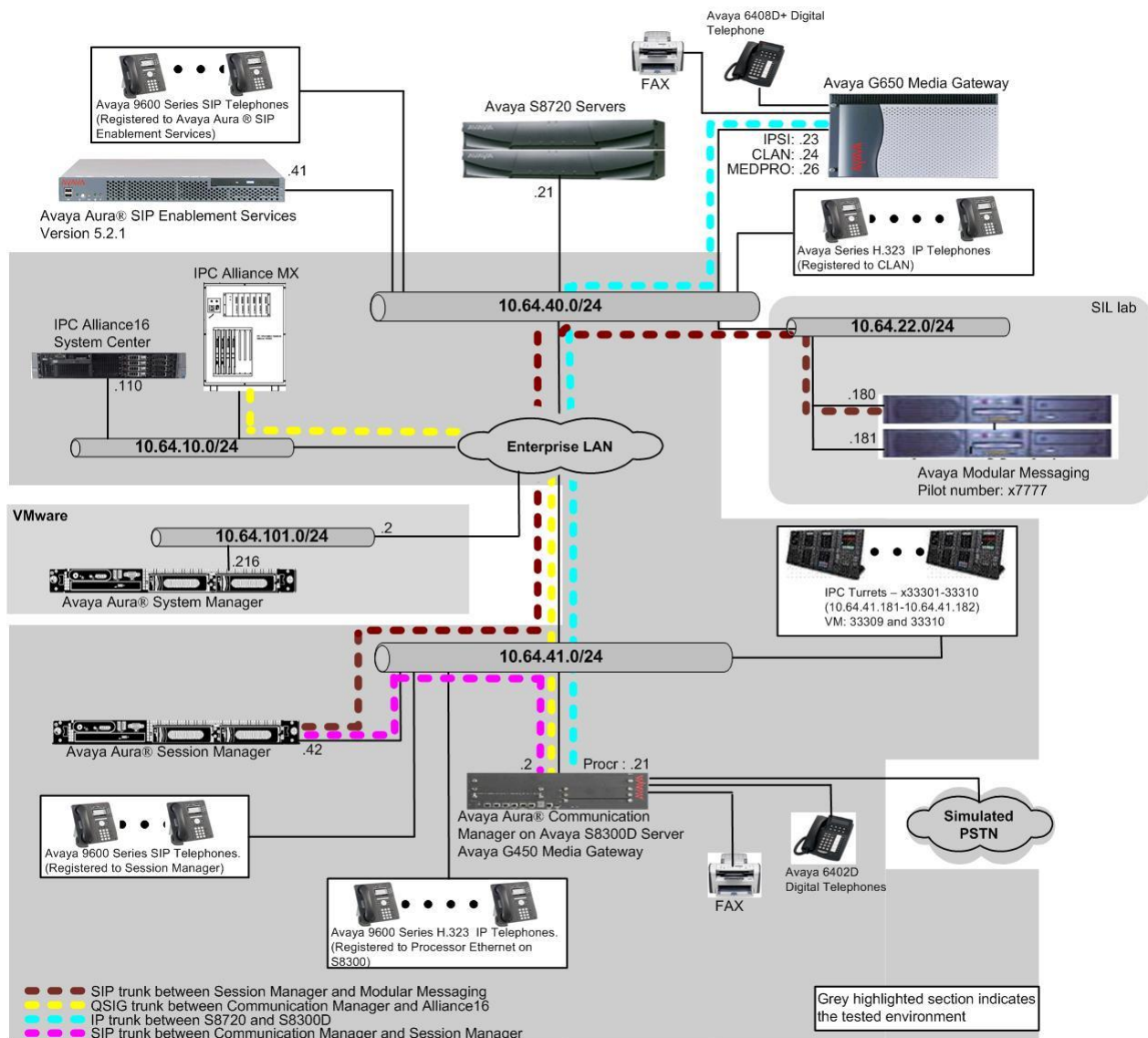
- **Phone:** (800) NEEDIPC, (203) 339-7800
- **Email:** [systems.support@ipc.com](mailto:systems.support@ipc.com)

### 3. Reference Configuration

As shown in the test configuration below, IPC Alliance 16 system at the Remote Site consisted of the Alliance MX, System Center, and Turrets. E1 QSIG trunks were used from IPC Alliance MX to Avaya Aura® Communication Manager, and SIP trunks were used from Avaya Aura® Communication Manager to Avaya Aura® Session Manager to reach Avaya Modular Messaging. In the test configuration, QSIG allowed IPC turret users at the Remote Site to “cover” to Avaya Modular Messaging at the Central site for voice messaging services.

The configuration of Avaya Aura® Session Manager is performed via the web interface of Avaya Aura® System Manager. The detailed administration of basic connectivity among Avaya Aura® Communication Manager, Avaya Aura® Session Manager, and Avaya Modular Messaging is not the focus of these Application Notes and will not be described. These Application Notes will focus on the additional configuration required to support IPC turret users as local subscribers on Avaya Modular Messaging.

The detailed administration of E1 QSIG trunks between Avaya Aura® Communication Manager and IPC Alliance MX, to enable IPC turret users to reach users on Avaya Aura® Communication Manager and on the PSTN, is assumed to be in place with details described in [3]. A five digit Uniform Dial Plan (UDP) was used to facilitate dialing between the Central and Remote sites. Unique extension ranges were associated with Avaya Aura® Communication Manager user(s) at the Central site (720xx), (2200x), and IPC turret users at the Remote site (333xx). The Avaya Modular Messaging pilot number was 7777.



**Figure 1: Test Configuration of IPC Alliance with Avaya Modular Messaging**

## 4. Equipment and Software Validated

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

Equipment	Software
Avaya Modular Messaging <ul style="list-style-type: none"><li>Messaging Storage Server</li><li>Messaging Application Server</li></ul>	5.2 SP16 (9.2.737.16002) 5.2 SP16 (9.2.737.16002)
Avaya Aura® Communication Manager on Avaya S8300D Server	6.3 (R016x.03.0.124.0-21754)
Avaya G450 Media Gateway	36.9
Avaya Aura® Session Manager	6.3.9.0.639011
Avaya Aura® System Manager	6.3.9
Avaya 9600 Series IP Telephone (H.323)	3.2.2
Avaya 96x1 Series IP Telephone (H.323)	6.2.3
Avaya 9600 Series IP Telephone (SIP)	2.6.12
Avaya 96x1 Series IP Telephone (SIP)	6.4.1
IPC Alliance 16 <ul style="list-style-type: none"><li>One Management System (OneMS)</li></ul>	16.02.01.09

## **5. Configure Avaya Aura® Communication Manager**

For a QSIG trunk configuration between Communication Manager and IPC Alliance, please refer to [3]. Otherwise, there is no special configuration in Communication Manager.

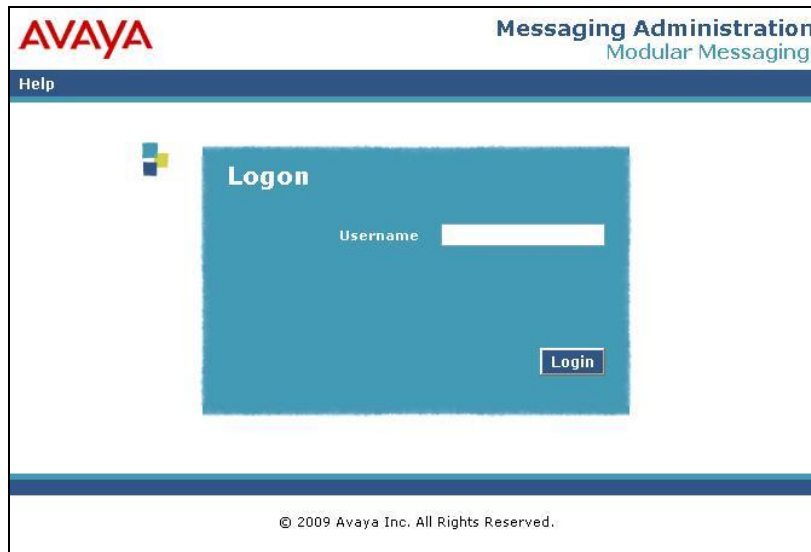
## 6. Configure Avaya Modular Messaging MSS

This section provides the procedures for configuring IPC turret users as local subscribers on Avaya Modular Messaging. The subscriber management is configured on the Messaging Storage Server (MSS) component. The configuration procedures include the following areas:

- Launch messaging administration
- Administer subscriber extension ranges
- Administer subscribers

### 6.1. Launch Messaging Administration

Access the MSS web interface by using the URL <http://ip-address> in an Internet browser window, where “ip-address” is the IP address of the MSS server. The **Logon** screen is displayed. Log in using a valid user name and password. The **Password** field will appear after a value is entered into the **Username** field.



The screenshot displays the Avaya Messaging Administration web interface. At the top left is the AVAYA logo. At the top right, it says "Messaging Administration" and "Modular Messaging". Below this is a "Help" link. The main content area features a blue "Logon" box with a "Username" label and a text input field. A "Login" button is located at the bottom right of the box. A small Avaya logo is also visible to the left of the Logon box. At the bottom of the page, a copyright notice reads "© 2009 Avaya Inc. All Rights Reserved."



The **Messaging Administration** screen appears, as shown below.

The screenshot shows the Avaya Modular Messaging Messaging Administration interface. The top header includes the Avaya logo, the title 'Modular Messaging Messaging Administration', and the server IP 'This server: 10.64.22.181'. A navigation menu on the left lists options under 'Messaging Administration' and 'Server Administration'. The main content area is titled 'Messaging Administration' and contains a descriptive paragraph about the web interface.

**AVAYA** **Modular Messaging**  
**Messaging Administration**

Help Log Off This server: 10.64.22.181

▼ **Messaging Administration**  
Subscriber Management  
Activity Log Configuration  
Messaging Attributes  
Classes-of-Service  
Enhanced-Lists  
Sending Restrictions  
System Administration  
Request Remote Update  
Networked Machines  
Trusted Servers  
▼ **Server Administration**

### Messaging Administration

The Web Interface allows you to maintain, troubleshoot, and configure your Messaging System. Select a link from the left-side menu to display the corresponding page.

## 6.2. Administer Subscriber Extension Ranges

Navigate to **Messaging Administration** → **Networked Machines** from the left pane, to display the **Manage Networked Machines** screen. Select the MSS server from the table listing, and click **Edit the Selected Networked Machine** toward the bottom right of the screen.

The screenshot shows the 'Manage Networked Machines' screen. The left navigation menu is expanded to show 'Networked Machines' under 'Messaging Administration'. The main area features a table with one entry: 'alpinemss1' with IP '10.64.22.181', type 'local', and '35' total subscribers. Below the table are several action buttons: 'Display Report of Networked Machines', 'Delete the Selected Networked Machine', 'Add a New Networked Machine', 'Edit the Selected Networked Machine', 'Display Network Snapshot', and 'Display Report of Networked Machine Ranges'.

**AVAYA** **Modular Messaging**  
**Messaging Administration**

Help Log Off This server: 10.64.22.181

▼ **Messaging Administration**  
Subscriber Management  
Activity Log Configuration  
Messaging Attributes  
Classes-of-Service  
Enhanced-Lists  
Sending Restrictions  
System Administration  
Request Remote Update  
Networked Machines  
Trusted Servers  
▼ **Server Administration**  
Configure Using DCT  
TCP/IP Network Configuration  
External Hosts  
MAS Host Setup  
MAS Host Send  
Windows Domain Setup  
Console Reboot Option  
Date/Time/NTP Server  
Syslog Server  
Modem/Terminal Display  
Modem/Terminal Configuration  
Modem/Terminal Removal  
TCP/IP Service Settings  
▼ **IMAP/SMTP Administration**  
SMTP Options  
Mail Options  
IMAP/SMTP Status  
▼ **Server Information**  
Server Status  
Alarm Summary  
Disk Information

### Manage Networked Machines


Machine	IP Address	Machine Type	Total Subs
alpinemss1	10.64.22.181	local	35

Display Report of Networked Machines Delete the Selected Networked Machine

Add a New Networked Machine Edit the Selected Networked Machine

Display Network Snapshot Display Report of Networked Machine Ranges

The **Edit Networked Machine** screen is displayed. Under the **MAILBOX NUMBER RANGES** sub-section, locate an available entry line and enter the desired starting and ending mailbox numbers to be used for the IPC subscribers as necessary. In the compliance testing, the existing entry covered the 33xxx extensions used by the IPC turret users.



**Modular Messaging**  
**Messaging Administration**

[Help](#)   [Log Off](#)

This server: 10.64.22.181

**Messaging Administration**

Subscriber Management  
 Activity Log Configuration  
 Messaging Attributes  
 Classes-of-Service  
 Enhanced-Lists  
 Sending Restrictions  
 System Administration  
 Request Remote Update  
 Networked Machines  
 Trusted Servers

**Server Administration**

Configure Using DCT  
 TCP/IP Network Configuration  
 External Hosts  
 MAS Host Setup  
 MAS Host Send  
 Windows Domain Setup  
 Console Reboot Option  
 Date/Time/NTP Server  
 Syslog Server  
 Modem/Terminal Display  
 Modem/Terminal Configuration  
 Modem/Terminal Removal  
 TCP/IP Service Settings

**IMAP/SMTP Administration**

SMTP Options  
 Mail Options  
 IMAP/SMTP Status

**Server Information**

Server Status  
 Alarm Summary  
 Disk Information  
 Server Notes  
 CMOS Settings

## Edit Networked Machine

<u>Machine Name</u>	<input type="text" value="alpinemss1"/>	<u>Password</u>	<input type="password"/>
		<u>Confirm Password</u>	<input type="password"/>
<u>IP Address</u>	<input type="text" value="10.64.22.181"/>	<u>Machine Type</u>	<input type="text" value="tcpip"/>
<u>Mailbox Number Length</u>	<input type="text" value="5"/>	<u>Default Community</u>	<input type="text" value="1"/>
<u>Updates In</u>	<input type="text" value="yes"/>	<u>Updates Out</u>	<input type="text" value="yes"/>
<u>LDAP Port</u>	<input type="text" value="56389"/>	<u>Log Updates In</u>	<input type="text" value="no"/>

MAILBOX NUMBER RANGES		
Prefix	Starting Mailbox Number	Ending Mailbox Number
<input type="text"/>	<input type="text" value="20000"/>	<input type="text" value="29999"/>
<input type="text"/>	<input type="text" value="72001"/>	<input type="text" value="79999"/>
<input type="text"/>	<input type="text" value="33301"/>	<input type="text" value="33310"/>
<input type="text"/>	<input type="text" value="42001"/>	<input type="text" value="49999"/>
<input type="text"/>	<input type="text" value="33201"/>	<input type="text" value="33210"/>

### 6.3. Administer Subscribers

Select **Messaging Administration** → **Subscriber Management** from the left pane, to display the **Manage Subscribers** screen. For the **Local Subscriber Mailbox Number** field toward the top of the screen, enter the first IPC turret user extension to add as a local subscriber, in this case “33309”. Click **Add or Edit**.

The screenshot displays the Avaya Modular Messaging Administration web interface. The top header shows the Avaya logo and the title "Modular Messaging Administration" with the server IP "10.64.22.181". A left-hand navigation pane lists various administration tasks, with "Subscriber Management" selected. The main content area is titled "Manage Subscribers". At the top of this area, there is a field for "Local Subscriber Mailbox Number" containing the value "33309", followed by an "Add or Edit" button. Below this, a table summarizes subscriber counts. The table has four columns: "Machine Name", "Local Subscriber Mailboxes", "Total Subscribers", and "Filtered Subscribers". There are two rows of data: "Local Subscribers" for the machine "alpinemss1" and "Remote Subscribers" for the machine "internet". Each row includes a "Filter" button and a "Manage" button. A "Help" button is located at the bottom left of the main content area.

	<u>Machine Name</u>	<u>Local Subscriber Mailboxes</u>	<u>Total Subscribers</u>	<u>Filtered Subscribers</u>
• Local Subscribers	alpinemss1	34	35	35
• Remote Subscribers	internet		0	0

The **Add Local Subscriber** screen is displayed next. Enter the desired string into the **Last Name**, **First Name**, and **Password** fields.

In the compliance testing, the same telephone extensions for the IPC subscribers were used for the **Mailbox Number**, **Numeric Address**, **PBX Extension**, and **Email Handle** fields. Select the appropriate **Class Of Service**, and retain the default values in the remaining fields. Repeat this section to add all IPC subscribers.

**AVAYA**

Modular Messaging  
Messaging Administration

Help Log Off

This server: 10.64.22.181

▼ Messaging Administration

Subscriber Management  
Activity Log Configuration  
Messaging Attributes  
Classes-of-Service  
Enhanced-Lists  
Sending Restrictions  
System Administration  
Request Remote Update  
Networked Machines  
Trusted Servers

▼ Server Administration

Configure Using DCT  
TCP/IP Network Configuration  
External Hosts  
MAS Host Setup  
MAS Host Send  
Windows Domain Setup  
Console Reboot Option  
Date/Time/NTP Server  
Syslog Server  
Modem/Terminal Display  
Modem/Terminal Configuration  
Modem/Terminal Removal  
TCP/IP Service Settings

▼ IMAP/SMTP Administration

SMTP Options  
Mail Options  
IMAP/SMTP Status

▼ Server Information

## Add Local Subscriber

BASIC INFORMATION

\* (Required Fields)

*Last Name	Ally16	First Name	33309
*Password		*Mailbox Number	33309
*Numeric Address	33309	PBX Extension	33309
*Class Of Service	0 - class00	*Community ID	1

SUBSCRIBER DIRECTORY

Email Handle	33309 @alpinemss1.avaya.com	Telephone Number	
Common Name		ASCII Version of Name	Ally16, 33309

## 7. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Avaya Aura® Session Manager. The procedures include the following areas:

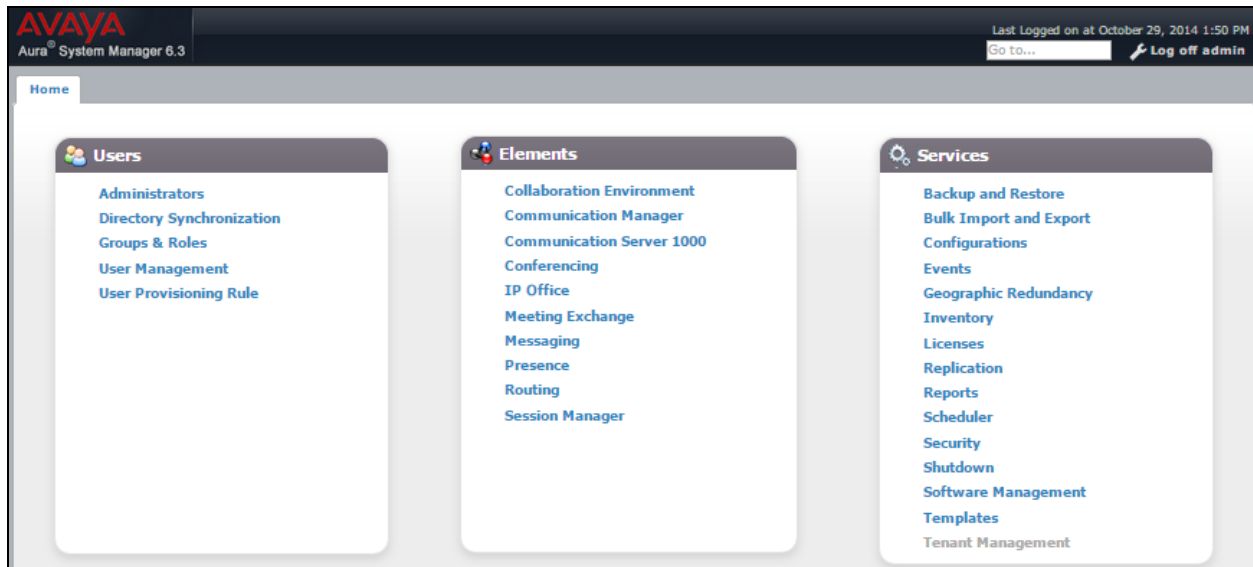
- Launch System Manager
- Administer dial patterns

### 7.1. Launch Avaya Aura® System Manager

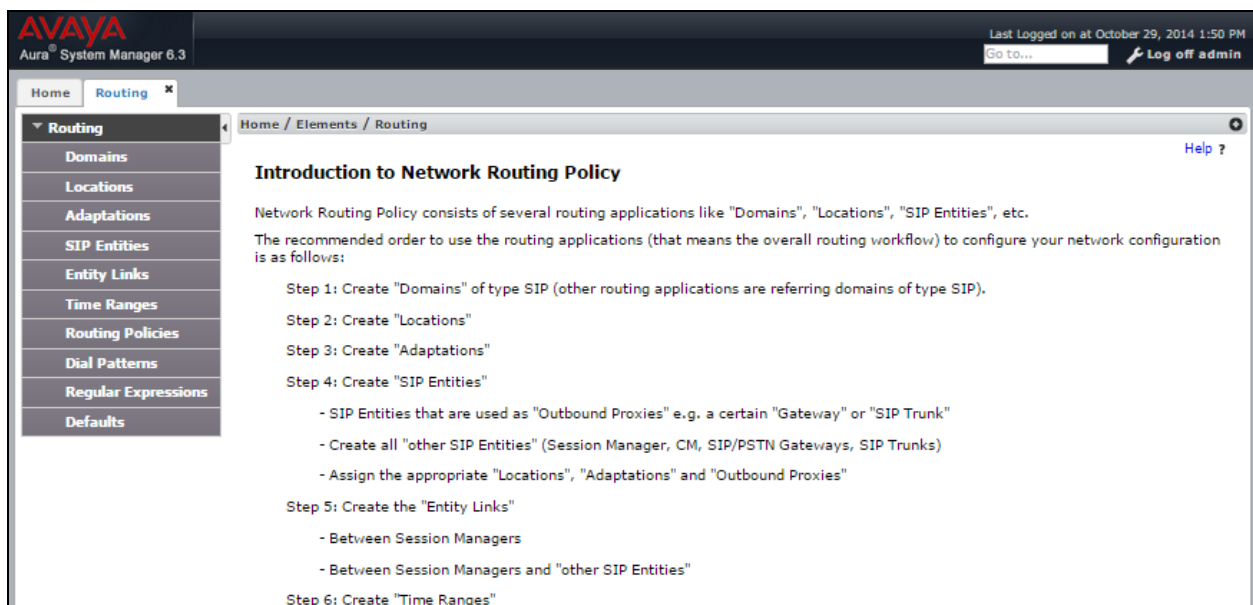
Access the System Manager Web interface by using the URL <http://ip-address> in an Internet browser window, where “ip-address” is the IP address of the System Manager server. Log in using the appropriate credentials.

Note: During the compliance testing, System Manager was installed onto a hypervisor.

The **Main** screen is displayed. Navigate to **Elements** → **Routing**



The **Introduction to Network Routing Policy** screen is displayed next.  
Navigate to **Routing** → **Dial Patterns** from the left pane.



## 7.2. Administer Dial Patterns

On the **Dial Pattern Details** screen, click **New** in the subsequent screen (not shown) to add a new dial pattern for Modular Messaging to reach IPC turret users.

The **Dial Pattern Details** screen is displayed. In the **General** sub-section, enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Pattern:** A dial pattern to match.
- **Min:** The minimum number of digits to be matched.
- **Max:** The maximum number of digits to be matched.
- **SIP Domain:** Select the applicable domain for the relevant Communication Manager.
- **Notes:** Any desired description.

In the **Originating Locations and Routing Policies** sub-section, click **Add** and create a new policy for reaching IPC turret users with extensions 333xx. In the compliance testing, select the “Apply The Selected Routing Policies to All Originating Locations” option, and the destination is Communication Manager, as shown below. Retain the default values in the remaining fields. Modular Messaging will dial out to IPC turret users for features such as Call Sender, and the call will be delivered as SIP from Modular Messaging to Session Manager, and SIP from Session Manager to Communication Manager, and then QSIG from Communication Manager to Alliance 16.

AVAYA  
Aura® System Manager 6.3

Last Logged on at October 29, 2014 1:50 PM  
Go to... Log off admin

Home Routing

Home / Elements / Routing / Dial Patterns

Dial Pattern Details

Commit Cancel

General

\* Pattern: 333

\* Min: 5

\* Max: 5

Emergency Call: ☐

Emergency Priority: 1

Emergency Type:

SIP Domain: -ALL-

Notes: To Alliance using QSIG via CM

Originating Locations and Routing Policies

Add Remove

1 Item

Originating Location Name	Originating Location Notes	Routing Policy Name	Rank	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
-ALL-		Route2CM63	0	<input type="checkbox"/>	CM63	

Select : All, None

The following screen shows the dial pattern for the pilot number, 7777, to Modular Messaging.

**AVAYA**  
Aura® System Manager 6.3

Last Logged on at October 29, 2014 1:50 PM  
Go to... Log off admin

Home Routing

Home / Elements / Routing / Dial Patterns

**Dial Pattern Details** [Commit](#) [Cancel](#) [Help ?](#)

**General**

\* Pattern: 7777

\* Min: 4

\* Max: 4

Emergency Call: ☐

Emergency Priority: 1

Emergency Type:

SIP Domain: avaya.com

Notes:

**Originating Locations and Routing Policies**

[Add](#) [Remove](#)

3 Items [Filter: Enable](#)

<input type="checkbox"/>	Originating Location Name	Originating Location Notes	Routing Policy Name	Rank	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	-ALL-		Route2MM	0	<input type="checkbox"/>	Modular Messaging	
<input type="checkbox"/>	-ALL-		Route2AAM63-VMware	0	<input checked="" type="checkbox"/>	AAM63-VMware	
<input type="checkbox"/>	-ALL-		Route2AAM63-VSP	0	<input checked="" type="checkbox"/>	AAM63-VSP	

Select : All, None



## 8. Configure IPC Alliance System

For the compliance test, no special configuration is needed for the IPC Alliance 16. For more information describing a QSIG trunk configuration between Communication Manager and IPC Alliance, please refer to [3].

## 9. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Aura® Communication Manager, Avaya Modular Messaging, Avaya Aura® Session Manager, and IPC Alliance 16.

Place a call from an IPC turret user to the Modular Messaging pilot number. Verify that Modular Messaging recognizes the calling party as a local subscriber.

## 10. Conclusion

These Application Notes describe the configuration steps required for IPC Alliance 16 to successfully interoperate with Avaya Modular Messaging 5.2 and Avaya Aura® Session Manager 6.3 in a centralized messaging environment using QSIG trunks to Avaya Aura® Communication Manager 6.3. All feature and serviceability test cases were completed with an observation noted in **Section 2.2**.

## 11. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya Aura® Communication Manager*, Document 03-300509, Release 6.3, Issue 10, June 2014, available at <http://support.avaya.com>.
2. *Avaya Modular Messaging for the Avaya Message Store Server (MSS) Configuration*, Release 5.2, December 2012, available at <http://support.avaya.com>.
3. *Application Notes for IPC Alliance 16 with Avaya Aura® Communication Manager 6.3 using QSIG Trunks*, Issue 1.0

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