



Avaya Solution & Interoperability Test Lab

Application Notes for Movitas MvPBX and Movitas Mobile SIP Apps with Avaya Aura[®] Session Manager and Avaya Aura[®] Communication Manager – 1.0

Abstract

These Application Notes describe configuration steps required for Movitas MvPBX and Movitas Mobile SIP Apps with Avaya Aura[®] Session Manager and Avaya Aura[®] Communication Manager.

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

The objective of this compliance test was to validate the interoperability of Avaya Aura[®] Session Manager and Avaya Aura[®] Communication Manager with Movitas MvPBX system and its respective iPhone, Android and Blackberry SIP apps. The testing included multiple call scenarios including calls between Avaya Endpoints (desk phones), Movitas SIP apps users and calls to PSTN lines via Avaya Aura[®] Communication Manager and Avaya Aura Session Manager[®]. Primary objective of this test was to test Avaya Aura[®] Communication Manager's Extension to Cellular (EC500) that route calls to Movitas SIP apps and Avaya Endpoints simultaneously.

2. General Test Approach and Test Results

The general test approach was to verify that calls are routed to/from Avaya Aura[®] Communication Manager and Avaya Aura[®] Session Manager to Movitas SIP apps via Movitas MvPBX. Avaya Aura[®] Communication Manager's Extension to Cellular (EC500) feature was used to send calls to two simultaneous phones at the same time. EC500 feature provides the ability to route calls to an Avaya Extension and a non-Avaya phone, at the same time. During interoperability testing, calls were routed to an Avaya extension and a SIP phone using EC500.

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

During the compliance there were 4 extensions associated with Avaya Aura[®] Communication Manager and Avaya Aura[®] Session Manager; Front Desk, Room 1, Room 2, Room 3; Room extensions were associated with 4 respective SIP Users in the Movitas MvPBX system. Avaya Endpoints included Avaya Analog Phone, Avaya Digital Phone, Avaya H.323 Phone and Avaya SIP Phone.

Movitas SIP User is a SIP application installed on a smart mobile devices; iPhone, Android and Blackberry. These SIP Users are registered to the Movitas MvPBX system. Any call that comes in to one of the three Avaya extensions will also ring their associated SIP User in the smart phone. The call can be accepted either at Avaya Endpoint or Movitas SIP User. Whichever phone answers the call, the other stops ringing and becomes idle.

The focus of this testing was to verify the SIP Trunk interoperability between Avaya Aura[®] Session Manager and Movitas MvPBX in placing multiple call scenarios between two systems. The following test areas were practiced in the compliance testing:

- SIP Trunk registration of Movitas MvPBX to Avaya Aura[®] Session Manager.
- Calls from PSTN to Avaya Extension and SIP User.

- Calls from SIP User to Avaya Extension.
- Calls from Avaya Extension to another Avaya Extension and a SIP User.
- Calls from SIP User to a PSTN Line.
- Calls from SIP User to another SIP User and Avaya Extensions
- SIP settings compatibility for codec support and packet size negotiation.

2.2. Test Results

All Test Cases Passed

2.3. Support

Technical support for Movitas can be obtained through the following:

- Phone: 888-343-3721
- Email: support@movitas.com

3. Reference Configuration

Figure 1 illustrates the compliance test configuration consisting of:

- Avaya Aura® Communication Manager
- Avaya Aura® Session Manager
- Avaya G430 Media Gateway
- Avaya IP (H.323 and SIP) Phones
- Avaya Digital Phones
- Avaya Analog Phones
- Movitas SIP PBX Server; MvPBX
- Movitas SIP Users

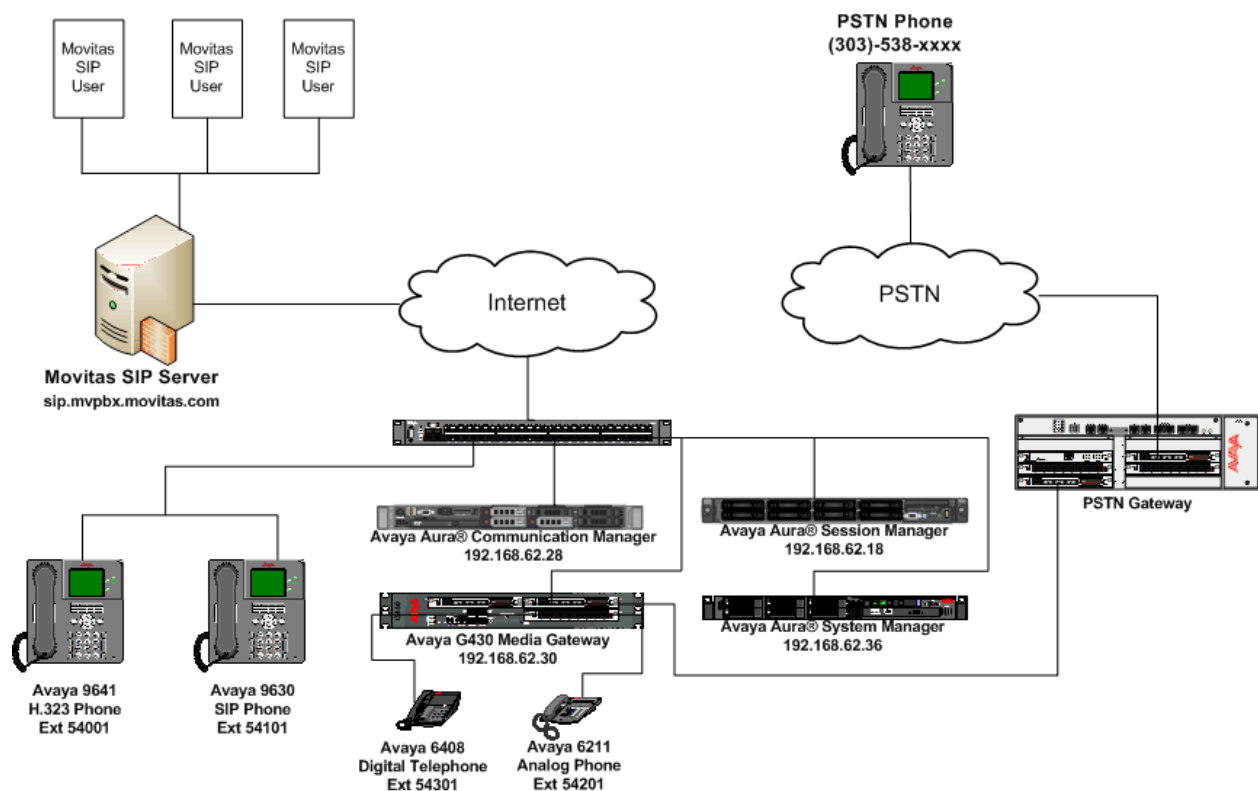


Figure 1 – Test Configuration

4. Equipment and Software Validated

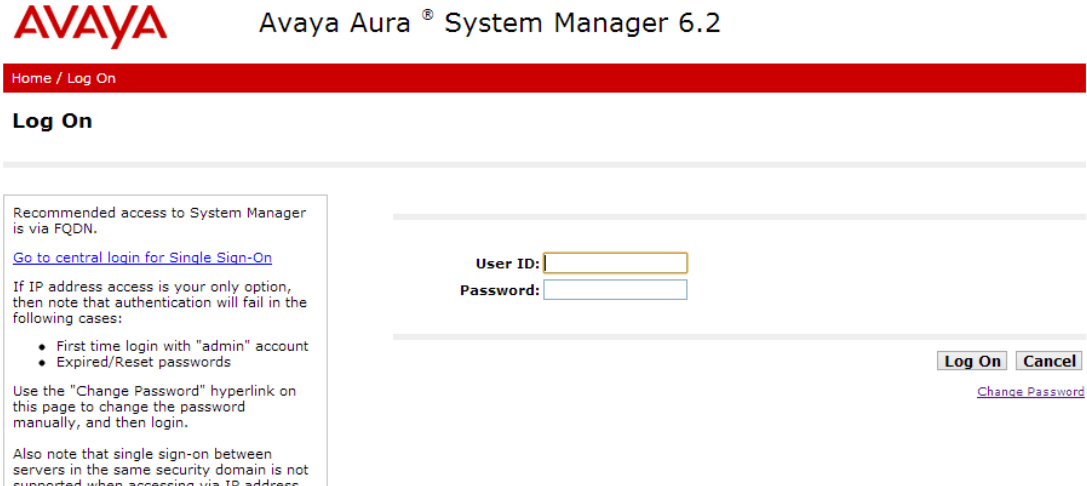
The following equipment and version were used in the reference configuration described above:

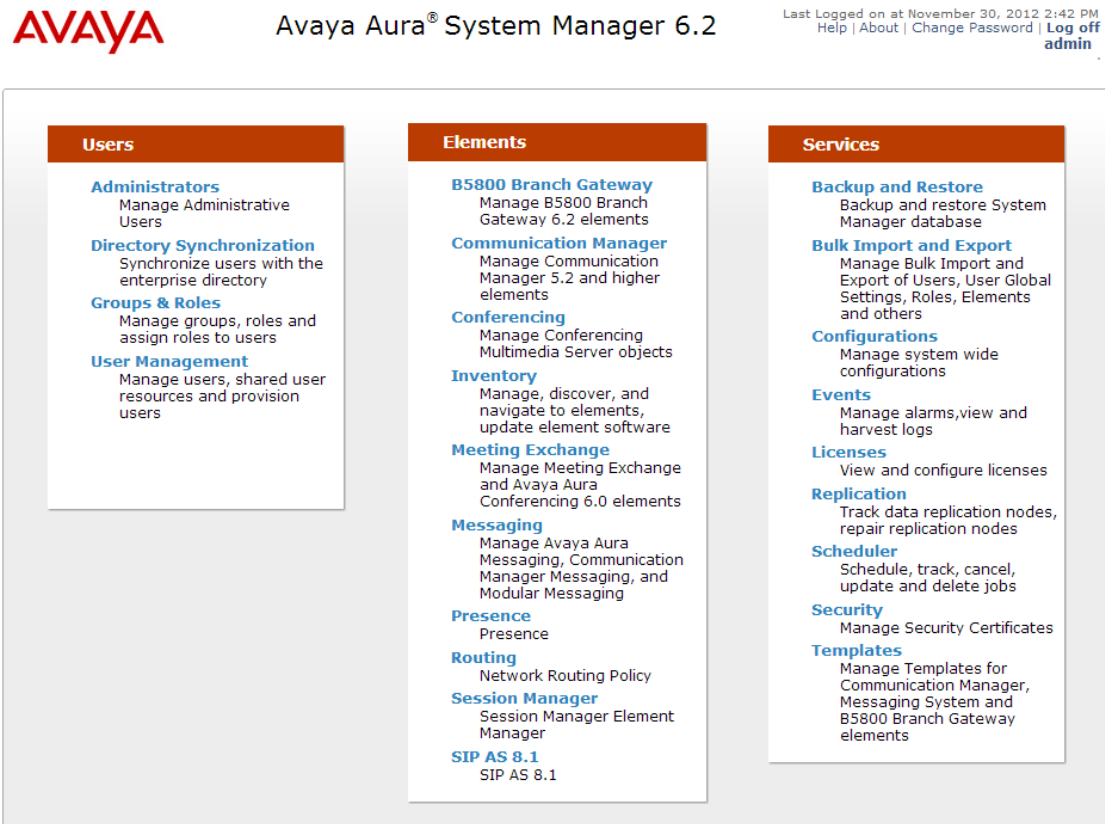
Equipment/Software	Release/Version	Description
Avaya Aura® Communication Manager	6.2 SP3	Runs Avaya Aura® Communication Manager call processing software.
Avaya G430 Media Gateway : MM710BP (DS1) MM712AP (DCP) MM711(AMM)	FW 31.20.1	Supports analog, DCP and IP phones.
Avaya Aura® Session Manager	6.2 SP3	SIP Routing Engine
Avaya Aura® System Manager	6.2	Administers Session Manager
Movitas MvPBX	ab6eb8c2 Rev 89984ed	Movitas PBX
Blackberry 9360	7.0	Runs Movitas Phone app
Movitas Phone	2.0.3	
iPhone 4S	5.1.1	Runs Movitas Phone app
MovitasPhone	2.0.3	
Samsung Galaxy SII	4.0.3	Runs Movitas Phone app
MovitasPhone	2.0.3	

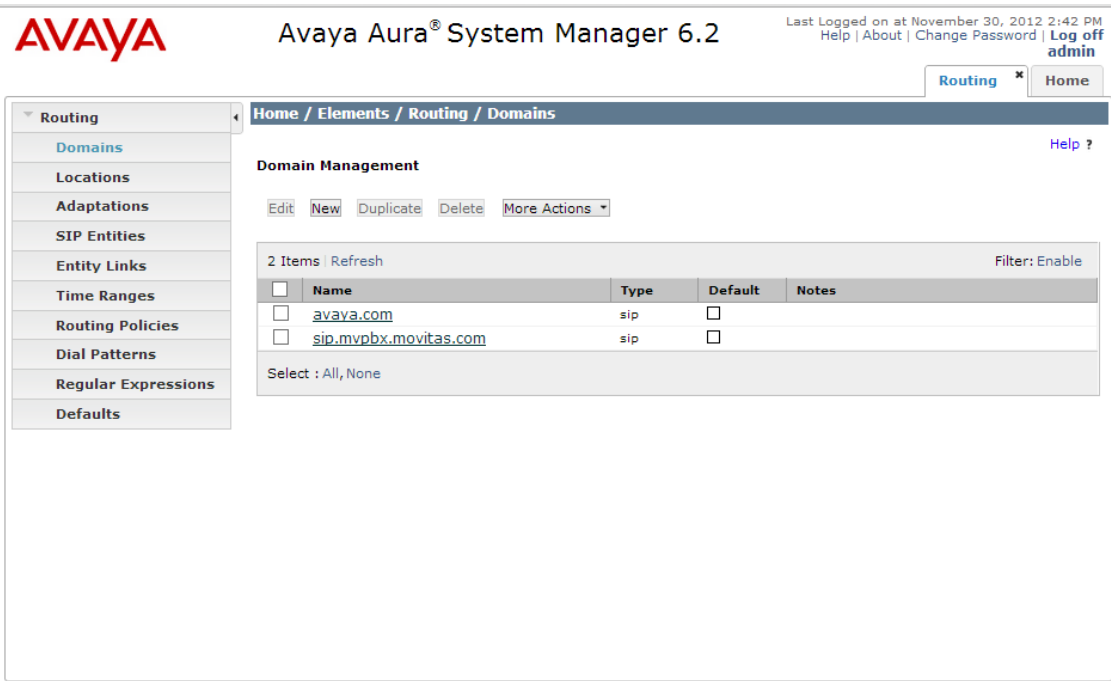
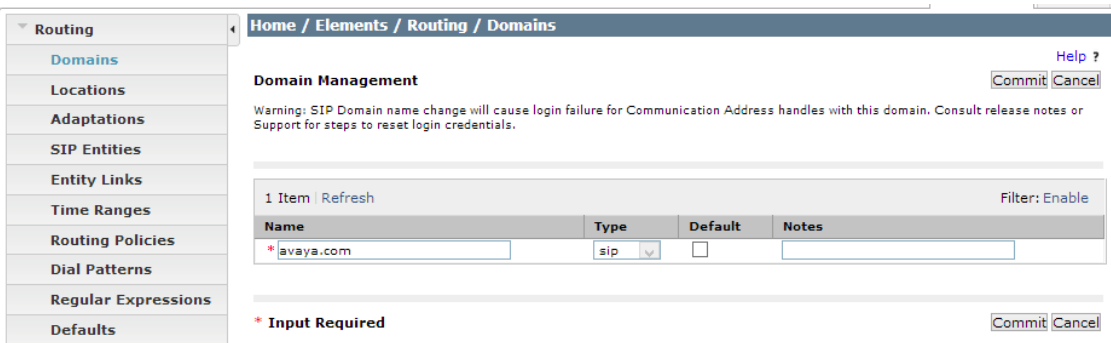
5. Configure Avaya Aura® Session Manager


This section provides the steps for configuring Session Manager to communicate with Movitas MvPBX. For more details, see the administration guide.

5.1. Configuration details

Step	Description
1.	<p>Avaya Aura® Session Manager is configured using browser access to Avaya Aura® System Manager. Enter the URL of System Manager https://<hostname>/network-login/SMGR where <hostname> is the ip address or qualified domain name of the System Manager. Log in using appropriate credentials.</p> 

Step	Description
2.	<p>The home page is a navigation screen as shown below. Each of these links will open a new tab within the webpage. Click on Routing.</p> <div><div></div><div><div><div><div>AVAYA</div><div>Avaya Aura® System Manager 6.2</div></div><div>Last Logged on at November 30, 2012 2:42 PM Help About Change Password Log off admin</div></div><div><div><div><div>Users</div><div><div>Administrators</div><div>Manage Administrative Users</div></div><div>Directory Synchronization</div><div>Synchronize users with the enterprise directory</div></div><div>Groups & Roles</div><div>Manage groups, roles and assign roles to users</div></div><div>User Management</div><div>Manage users, shared user resources and provision users</div></div></div><div><div><div><div>Elements</div><div><div>B5800 Branch Gateway</div><div>Manage B5800 Branch Gateway 6.2 elements</div></div><div>Communication Manager</div><div>Manage Communication Manager 5.2 and higher elements</div></div><div>Conferencing</div><div>Manage Conferencing Multimedia Server objects</div></div><div>Inventory</div><div>Manage, discover, and navigate to elements, update element software</div></div><div>Meeting Exchange</div><div>Manage Meeting Exchange and Avaya Aura Conferencing 6.0 elements</div></div> <div>Messaging</div> <div>Manage Avaya Aura Messaging, Communication Manager Messaging, and Modular Messaging</div> <div>Presence</div> <div>Presence</div> <div>Routing</div> <div>Network Routing Policy</div> <div>Session Manager</div> <div>Session Manager Element Manager</div> <div>SIP AS 8.1</div> <div>SIP AS 8.1</div> <div><div><div><div>Services</div><div><div>Backup and Restore</div><div>Backup and restore System Manager database</div></div><div>Bulk Import and Export</div><div>Manage Bulk Import and Export of Users, User Global Settings, Roles, Elements and others</div></div><div>Configurations</div><div>Manage system wide configurations</div></div><div>Events</div><div>Manage alarms,view and harvest logs</div></div> <div>Licenses</div> <div>View and configure licenses</div> <div>Replication</div> <div>Track data replication nodes, repair replication nodes</div> <div>Scheduler</div> <div>Schedule, track, cancel, update and delete jobs</div> <div>Security</div> <div>Manage Security Certificates</div> <div>Templates</div> <div>Manage Templates for Communication Manager, Messaging System and B5800 Branch Gateway elements</div>

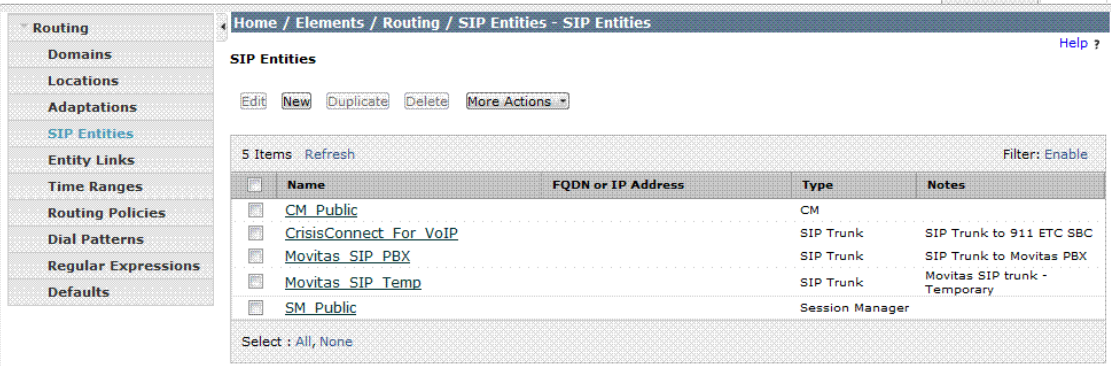
Step	Description
<p>3.</p>	<p>Add a Domain On the left pane, click on Domains</p> <ul style="list-style-type: none"> On the Domains page, click on New.  <p>The screenshot shows the Avaya Aura System Manager 6.2 interface. The left navigation pane has 'Domains' selected under the 'Routing' section. The main content area is titled 'Domain Management' and shows a table with 2 items. The table has columns: Name, Type, Default, and Notes. The items are 'avaya.com' and 'sip.mvpbx.movitas.com', both of type 'sip'. There are buttons for 'Edit', 'New', 'Duplicate', 'Delete', and 'More Actions' at the top. A 'Filter: Enable' link is on the right.</p>
<p>4.</p>	<ul style="list-style-type: none"> For the Name field, type in a domain. Set Type to sip. Commit changes after done. <p>For Compliance testing, avaya.com sip domain was used within Avaya environment. sip.mvpbx.movitas.com domain was used when routing calls to MvPBX. Repeat steps 3-4 to add another domain.</p>  <p>The screenshot shows the 'Domain Management' page with a warning message: 'Warning: SIP Domain name change will cause login failure for Communication Address handles with this domain. Consult release notes or Support for steps to reset login credentials.' Below the warning, there is a table with 1 item. The table has columns: Name, Type, Default, and Notes. The item is 'avaya.com' of type 'sip'. There are input fields for 'Name', 'Type', 'Default', and 'Notes'. At the bottom, there is a red asterisk and the text '* Input Required'.</p>

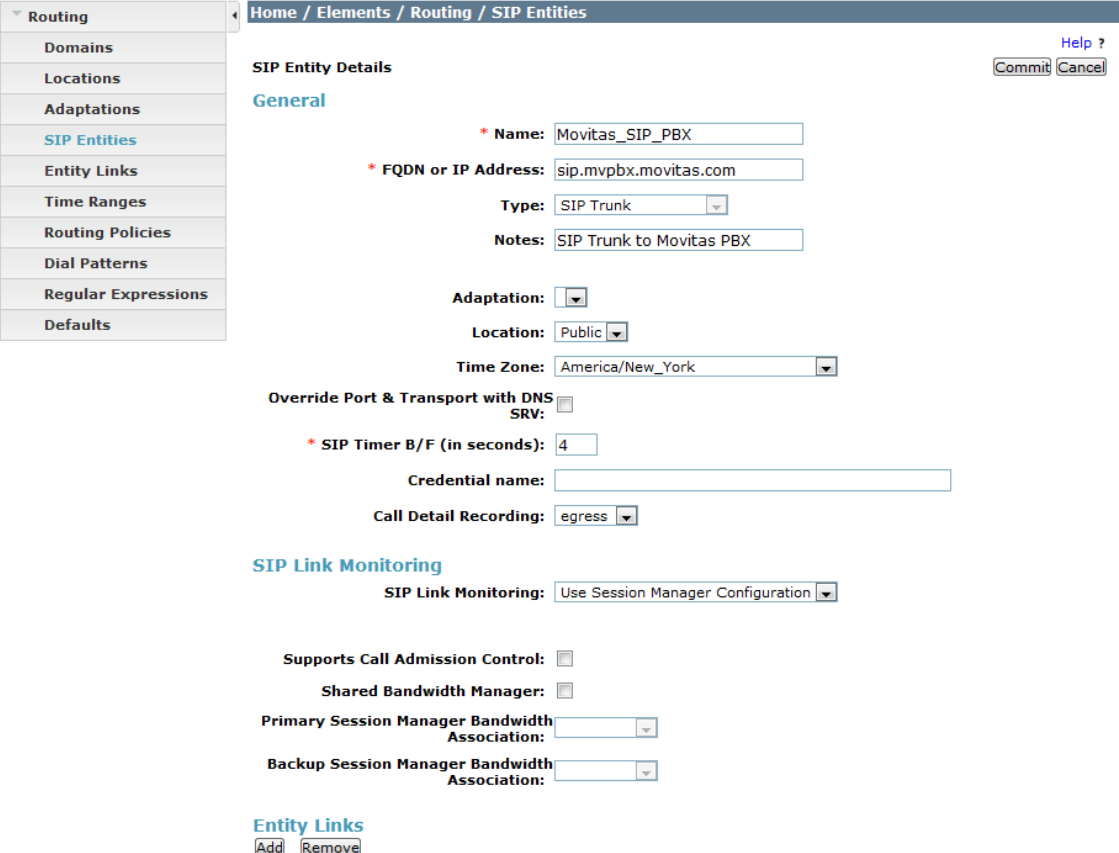
Step	Description
5.	<p>Add a Location</p> <p>On the left pane, click on Locations.</p> <ul style="list-style-type: none"> On the Location page, click on New. 

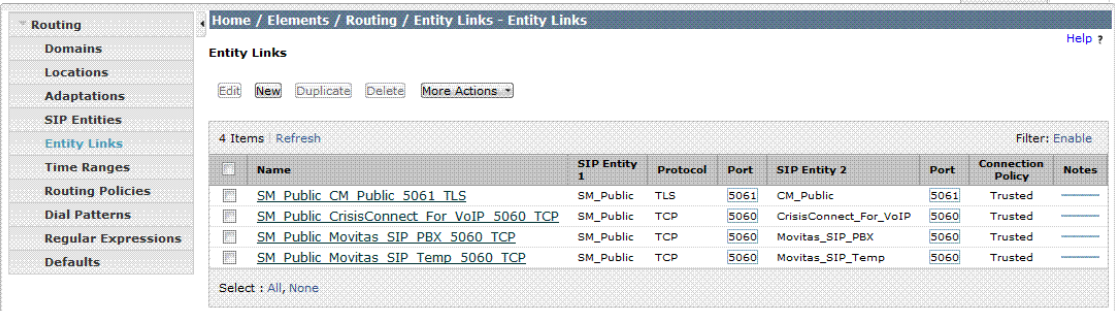
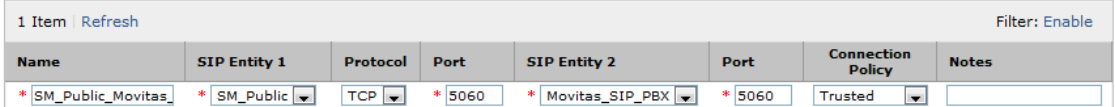
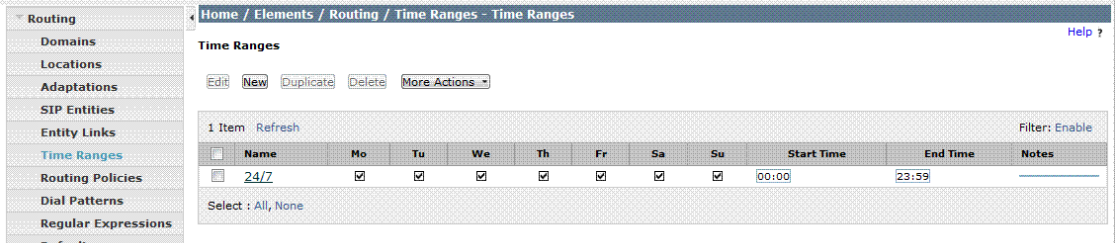
Step

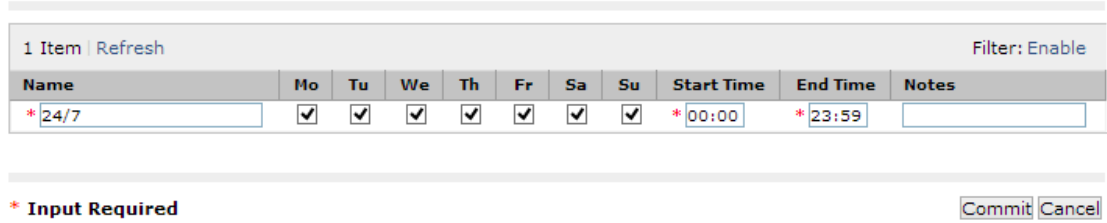
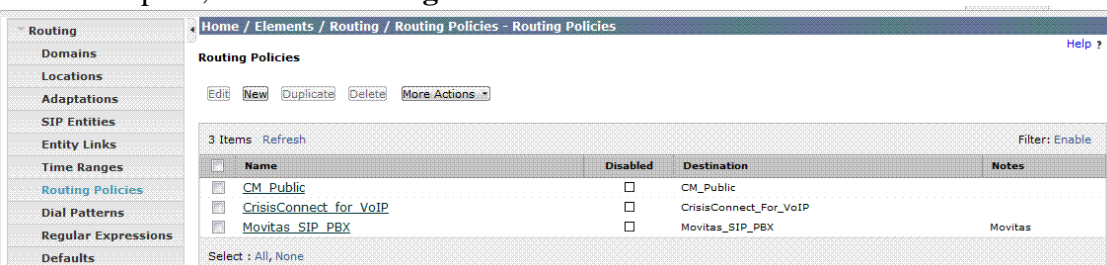
6.

Description

Step	Description
7.	<p>On the left pane, click on SIP Entities.</p>  <p>The screenshot displays the 'SIP Entities' configuration page. On the left, a sidebar contains a tree view with the following items: Routing, Domains, Locations, Adaptations, SIP Entities (highlighted), Entity Links, Time Ranges, Routing Policies, Dial Patterns, Regular Expressions, and Defaults. The main content area has a breadcrumb trail: Home / Elements / Routing / SIP Entities - SIP Entities. Below the breadcrumb, there are buttons for Edit, New, Duplicate, Delete, and More Actions. A table titled 'SIP Entities' shows 5 items. The table has columns for Name, FQDN or IP Address, Type, and Notes. The items listed are: CM_Public (Type: CM), CrisisConnect For VoIP (Type: SIP Trunk, Notes: SIP Trunk to 911 ETC SBC), Movitas SIP PBX (Type: SIP Trunk, Notes: SIP Trunk to Movitas PBX), Movitas SIP Temp (Type: SIP Trunk, Notes: Movitas SIP trunk - Temporary), and SM_Public (Type: Session Manager). At the bottom of the table, there is a 'Select' dropdown with options 'All' and 'None'.</p>

Step	Description
8.	<p>Add a SIP Entity</p> <p>On the SIP Entity page, click on New.</p> <ul style="list-style-type: none"> • Enter the Name and FQDN or IP Address • Set Type to SIP Trunk • Set Location to the location added in earlier in this section • Set Time Zone to desired time zone • Commit changes after done <p>For Compliance testing the following information was used. Also, please note that SIP Entities for Avaya Aura[®] Communication Manager and Avaya Aura[®] Session Manager was also added for this configuration, but is not shown in this document.</p>  <p>The screenshot displays the 'SIP Entity Details' configuration page. On the left is a navigation menu with options: Routing, Domains, Locations, Adaptations, SIP Entities (selected), Entity Links, Time Ranges, Routing Policies, Dial Patterns, Regular Expressions, and Defaults. The main content area has a breadcrumb trail 'Home / Elements / Routing / SIP Entities' and a 'Help ?' link. Below this is the 'SIP Entity Details' section with a 'Commit' button and a 'Cancel' button. The 'General' tab is active, showing fields for: <ul style="list-style-type: none"> * Name: Movitas_SIP_PBX * FQDN or IP Address: sip.mvvpbx.movitas.com Type: SIP Trunk (dropdown) Notes: SIP Trunk to Movitas PBX Adaptation: (dropdown) Location: Public (dropdown) Time Zone: America/New_York (dropdown) Override Port & Transport with DNS SRV: (checkbox) * SIP Timer B/F (in seconds): 4 Credential name: (text field) Call Detail Recording: egress (dropdown) The 'SIP Link Monitoring' section shows 'SIP Link Monitoring' set to 'Use Session Manager Configuration' (dropdown). Below this are checkboxes for 'Supports Call Admission Control' and 'Shared Bandwidth Manager'. The 'Primary Session Manager Bandwidth Association' and 'Backup Session Manager Bandwidth Association' are both set to (dropdown). At the bottom, the 'Entity Links' section has 'Add' and 'Remove' buttons. </p>

Step	Description
9.	<p>On the left pane, click on Entity Links</p> 
10.	<p>Add an Entity Link</p> <p>On the Entity Link page, click on New.</p> <ul style="list-style-type: none"> • Add a Name. • Set SIP Entity 1 to SM_Public, which is SIP Entity name of Avaya Aura[®] Session Manager and was pre-configured . • Set the Protocol Type and type in Port. • Set SIP Entity 2 as added in Step 8 and set the Port. • Set the Connection Policy to be Trusted. • Commit changes after done. <p>For Compliance testing the following information was used.</p> 
11.	<p>On the left pane, Click on Time Ranges</p> 

Step	Description
12.	<p>Add a Time Range</p> <p>On the Time Range page, click on New.</p> <ul style="list-style-type: none"> Type in the Name of the time range. Select the Days and Start Time and End Time used for all days. Commit changes after done. <p>For Compliance testing the following information was used.</p>  <p>* Input Required</p>
13.	<p>On the left pane, click on Routing Policies</p> 

Step	Description																																															
14.	<p>On the Routing Policy page, click on New</p> <ul style="list-style-type: none">Type in the Name for Routing PolicyClick on Select under SIP Entity as a Destination.<ul style="list-style-type: none">Select SIP Entity configured in Step 10.Select a Time Range added in Step 12.Commit changes after done. <p>For Compliance testing the following information was used. Routing Policy for Communication Manager was pre-configured and is not shown in this document.</p> <div><div><h3>General</h3><div><div>* Name:</div><div>Movitas_SIP_PBX</div></div><div><div>Disabled:</div><div><input type="checkbox"/></div></div><div><div>* Retries:</div><div>0</div></div><div><div>Notes:</div><div>Movitas</div></div></div><div><h3>SIP Entity as Destination</h3><div>Select</div><table><tr><th>Name</th><th>FQDN or IP Address</th><th>Type</th><th>Notes</th></tr><tr><td>Movitas_SIP_PBX</td><td>sip.mvpbx.movitas.com</td><td>SIP Trunk</td><td>SIP Trunk to Movitas PBX</td></tr></table></div><div><h3>Time of Day</h3><div><div>Add</div><div>Remove</div><div>View Gaps/Overlaps</div></div><div><div>1 Item</div><div>Refresh</div><div>Filter: Enable</div></div><table><tr><th><input type="checkbox"/></th><th>Ranking 1 ▲</th><th>Name 2 ▲</th><th>Mon</th><th>Tue</th><th>Wed</th><th>Thu</th><th>Fri</th><th>Sat</th><th>Sun</th><th>Start Time</th><th>End Time</th><th>Notes</th></tr><tr><td><input type="checkbox"/></td><td>0</td><td>24/7</td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td>00:00</td><td>23:59</td><td></td></tr></table><div>Select : All, None</div></div><div><h3>Dial Patterns</h3><div><div>Add</div><div>Remove</div></div><div><div>0 Items</div><div>Refresh</div><div>Filter: Enable</div></div><table><tr><th><input type="checkbox"/></th><th>Pattern</th><th>Min</th><th>Max</th><th>Emergency Call</th><th>SIP Domain</th><th>Originating Location</th><th>Notes</th></tr></table></div><div><h3>Regular Expressions</h3><div><div>Add</div><div>Remove</div></div><div><div>0 Items</div><div>Refresh</div><div>Filter: Enable</div></div><table><tr><th><input type="checkbox"/></th><th>Pattern</th><th>Rank Order</th><th>Deny</th><th>Notes</th></tr></table></div><div><div>* Input Required</div><div><div>Commit</div><div>Cancel</div></div></div></div>	Name	FQDN or IP Address	Type	Notes	Movitas_SIP_PBX	sip.mvpbx.movitas.com	SIP Trunk	SIP Trunk to Movitas PBX	<input type="checkbox"/>	Ranking 1 ▲	Name 2 ▲	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes	<input type="checkbox"/>	0	24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59		<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes	<input type="checkbox"/>	Pattern	Rank Order	Deny	Notes
Name	FQDN or IP Address	Type	Notes																																													
Movitas_SIP_PBX	sip.mvpbx.movitas.com	SIP Trunk	SIP Trunk to Movitas PBX																																													
<input type="checkbox"/>	Ranking 1 ▲	Name 2 ▲	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes																																				
<input type="checkbox"/>	0	24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59																																					
<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes																																									
<input type="checkbox"/>	Pattern	Rank Order	Deny	Notes																																												

Step	Description
15.	On the left pane, click on Dial Patterns

Routing

Domains

Locations

Adaptations

SIP Entities

Entity Links

Time Ranges

Routing Policies

Dial Patterns

Regular Expressions

Defaults

Home / Elements / Routing / Dial Patterns - Dial Patterns

Help ?

Dial Patterns

Edit

New

Duplicate

Delete

More Actions

8 Items

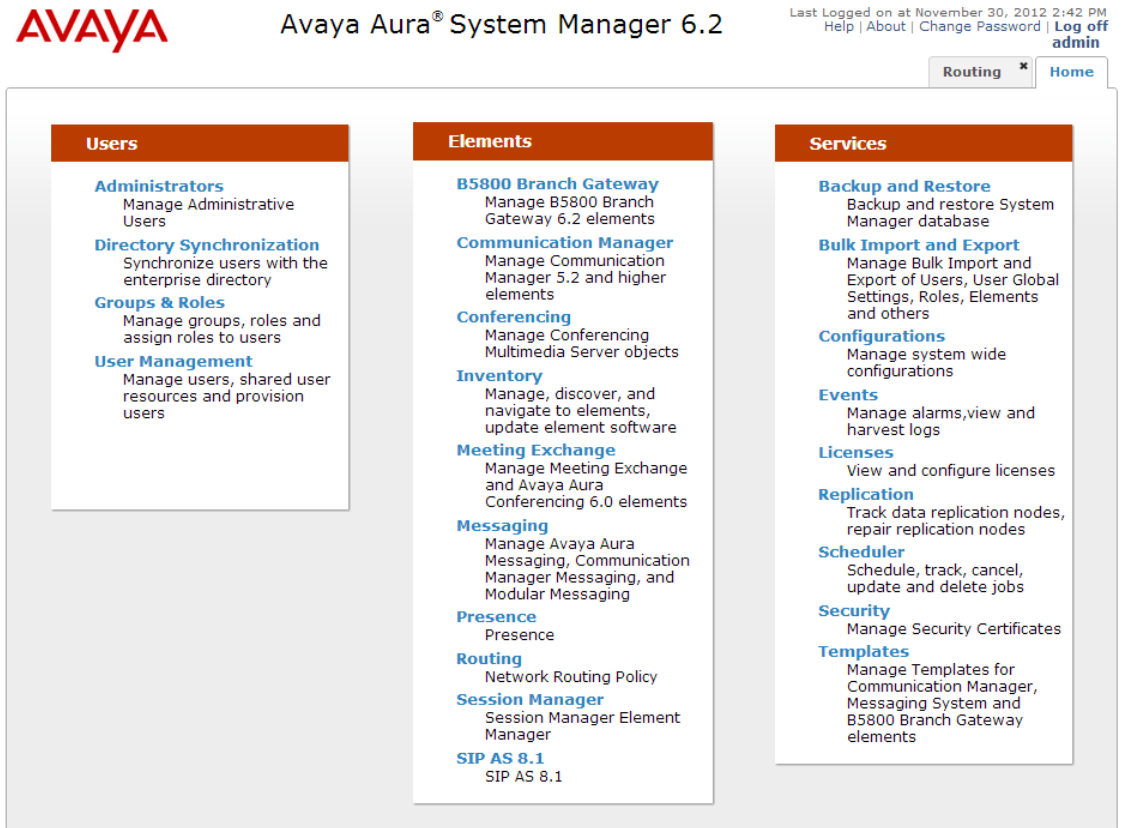
Refresh

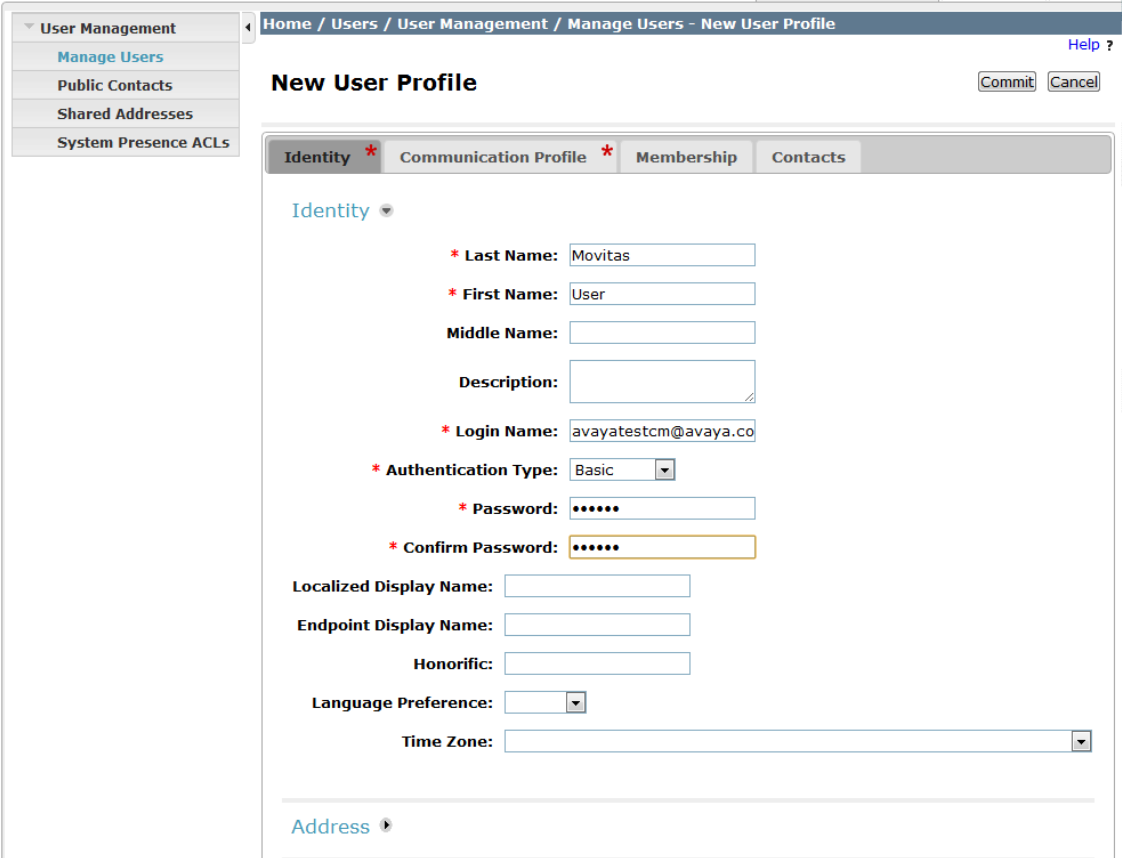
Filter: Enable

<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Notes
<input type="checkbox"/>	1303	11	11	<input type="checkbox"/>	-ALL-	
<input type="checkbox"/>	303	10	10	<input type="checkbox"/>	-ALL-	
<input type="checkbox"/>	54	5	5	<input type="checkbox"/>	-ALL-	
<input type="checkbox"/>	650	5	5	<input type="checkbox"/>	avaya.com	
<input type="checkbox"/>	73	5	5	<input type="checkbox"/>	sip.mvpbx.movitas.com	
<input type="checkbox"/>	89	5	5	<input type="checkbox"/>	avaya.com	
<input type="checkbox"/>	9	11	12	<input type="checkbox"/>	-ALL-	
<input type="checkbox"/>	911	3	3	<input type="checkbox"/>	avaya.com	

Select : All, None

Step	Description																			
16.	<p>On Dial Patterns page, click on New. For compliance testing the following pattern was used. All calls dialed with 5 digits and started with 7, routed to Movitas MvPBX.</p> <ul style="list-style-type: none">• Set Pattern to 7.• Set Min and Max to 5.• Set SIP Domain to -ALL-.• Click on Add under Originating Locations and Routing Policies, screenshot not shown for this step.<ul style="list-style-type: none">○ Select location configured in Step 6.○ Select Routing Policy configured in Step 14.○ Click on Select once done.• Commit changes after done <p>Dial Pattern for Communication Manager was pre-configured and is not shown in this document.</p> <div><div>Dial Pattern Details</div><div><div>Commit</div><div>Cancel</div></div><div><div>General</div><div><div>* Pattern: 7</div><div>* Min: 5</div><div>* Max: 5</div><div>Emergency Call: <input type="checkbox"/></div><div>Emergency Priority: 1</div><div>Emergency Type: </div><div>SIP Domain: -ALL-</div><div>Notes: </div></div></div><div><div>Originating Locations and Routing Policies</div><div><div>Add</div><div>Remove</div></div><div><div>1 Item Refresh</div><div>Filter: Enable</div></div><table><tr><th><input type="checkbox"/></th><th>Originating Location Name 1 ▲</th><th>Originating Location Notes</th><th>Routing Policy Name</th><th>Rank 2 ▲</th><th>Routing Policy Disabled</th><th>Routing Policy Destination</th><th>Routing Policy Notes</th></tr><tr><td><input type="checkbox"/></td><td>Public</td><td></td><td>Movitas-PBX</td><td>0</td><td><input type="checkbox"/></td><td>Movitas-PBX</td><td>Movitas</td></tr></table><div>Select : All, None</div></div><div><div>Denied Originating Locations</div><div><div>Add</div><div>Remove</div></div><div><div>0 Items Refresh</div><div>Filter: Enable</div></div><table><tr><th><input type="checkbox"/></th><th>Originating Location</th><th>Notes</th></tr></table></div><div><div>* Input Required</div><div><div>Commit</div><div>Cancel</div></div></div></div>	<input type="checkbox"/>	Originating Location Name 1 ▲	Originating Location Notes	Routing Policy Name	Rank 2 ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes	<input type="checkbox"/>	Public		Movitas-PBX	0	<input type="checkbox"/>	Movitas-PBX	Movitas	<input type="checkbox"/>	Originating Location	Notes
<input type="checkbox"/>	Originating Location Name 1 ▲	Originating Location Notes	Routing Policy Name	Rank 2 ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes													
<input type="checkbox"/>	Public		Movitas-PBX	0	<input type="checkbox"/>	Movitas-PBX	Movitas													
<input type="checkbox"/>	Originating Location	Notes																		

Step	Description
17.	<p>Go back to the Home screen by click Home tab on the right top corner, and click on User Management.</p>  <p>The screenshot displays the Avaya Aura System Manager 6.2 interface. At the top left is the Avaya logo. To its right is the text 'Avaya Aura® System Manager 6.2'. In the top right corner, there is a status bar showing 'Last Logged on at November 30, 2012 2:42 PM' and links for 'Help About Change Password Log off admin'. Below this is a navigation bar with 'Routing' and 'Home' tabs. The main content area is organized into three vertical panels. The 'Users' panel on the left lists: 'Administrators' (Manage Administrative Users), 'Directory Synchronization' (Synchronize users with the enterprise directory), 'Groups & Roles' (Manage groups, roles and assign roles to users), and 'User Management' (Manage users, shared user resources and provision users). The 'Elements' panel in the center lists: 'B5800 Branch Gateway' (Manage B5800 Branch Gateway 6.2 elements), 'Communication Manager' (Manage Communication Manager 5.2 and higher elements), 'Conferencing' (Manage Conferencing Multimedia Server objects), 'Inventory' (Manage, discover, and navigate to elements, update element software), 'Meeting Exchange' (Manage Meeting Exchange and Avaya Aura Conferencing 6.0 elements), 'Messaging' (Manage Avaya Aura Messaging, Communication Manager Messaging, and Modular Messaging), 'Presence' (Presence), 'Routing' (Network Routing Policy), 'Session Manager' (Session Manager Element Manager), and 'SIP AS 8.1' (SIP AS 8.1). The 'Services' panel on the right lists: 'Backup and Restore' (Backup and restore System Manager database), 'Bulk Import and Export' (Manage Bulk Import and Export of Users, User Global Settings, Roles, Elements and others), 'Configurations' (Manage system wide configurations), 'Events' (Manage alarms, view and harvest logs), 'Licenses' (View and configure licenses), 'Replication' (Track data replication nodes, repair replication nodes), 'Scheduler' (Schedule, track, cancel, update and delete jobs), 'Security' (Manage Security Certificates), and 'Templates' (Manage Templates for Communication Manager, Messaging System and B5800 Branch Gateway elements).</p>

Step	Description
18.	<p>Click on Manage Users and then New (Not shown). The user added in this section was used by Movitas MvPBX for registering with Avaya Aura[®] Session Manager. Under the Identity tab:</p> <ul style="list-style-type: none"> • Set Last Name and First Name • Set Login Name to avayatestcm@avaya.com and set the Password. 

Step	Description
19.	<p>Under the Communication Profile tab:</p> <ul style="list-style-type: none"> • Set the Communication Profile Password and Confirm Password. • Under Confirm Password, click on New <ul style="list-style-type: none"> ○ Set the Handle and Domain to an extension that will be used by MvPBX to register. ○ For Compliance testing, information shown in the following screen shot was used. • Check the Session Manager Profile box and set the Primary Session Manager to configured Session Manager. • Check the CM Endpoint Profile box (not shown). <ul style="list-style-type: none"> ○ Set System to configured Avaya Aura[®] Communication Manager • Note: Avaya Aura[®] Communication Manager was pre-configured. <ul style="list-style-type: none"> ○ Set Profile Type to Endpoint. ○ Set Extension same as the Handle used in this step. ○ Set Security Code to a desired value. This information will be used when registering MvPBX. ○ Set Port to IP. • Commit the changes. <p>Screenshot on next page</p>

Step	Description																				
	<div> <div> Identity * Communication Profile * Membership Contacts </div> <div> Communication Profile ▼ </div> <div> Communication Profile Password: Edit </div> <div> New Delete Done Cancel </div> <div> <table border="1"> <thead> <tr> <th>Name</th> </tr> </thead> <tbody> <tr> <td>Primary</td> </tr> </tbody> </table> Select : None </div> <div> * Name: Primary </div> <div> Default : <input checked="" type="checkbox"/> </div> <div> Communication Address ▼ </div> <div> New Edit Delete </div> <div> <table border="1"> <thead> <tr> <th>Type</th> <th>Handle</th> <th>Domain</th> </tr> </thead> <tbody> <tr> <td>Avaya SIP</td> <td>54000</td> <td>avaya.com</td> </tr> </tbody> </table> Select : All, None </div> <div> <input checked="" type="checkbox"/> Session Manager Profile ▼ </div> <div> * Primary Session Manager SM-Public ▼ <table border="1"> <thead> <tr> <th>Primary</th> <th>Secondary</th> <th>Maximum</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>0</td> <td>5</td> </tr> </tbody> </table> </div> <div> Secondary Session Manager (None) ▼ <table border="1"> <thead> <tr> <th>Primary</th> <th>Secondary</th> <th>Maximum</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> </div> <div> Origination Application Sequence (None) ▼ </div> <div> Termination Application Sequence (None) ▼ </div> <div> Conference Factory Set (None) ▼ </div> <div> Survivability Server (None) ▼ </div> <div> * Home Location Public ▼ </div> </div>	Name	Primary	Type	Handle	Domain	Avaya SIP	54000	avaya.com	Primary	Secondary	Maximum	5	0	5	Primary	Secondary	Maximum			
Name																					
Primary																					
Type	Handle	Domain																			
Avaya SIP	54000	avaya.com																			
Primary	Secondary	Maximum																			
5	0	5																			
Primary	Secondary	Maximum																			

6. Configure Avaya Aura® Communication Manager

This section describes Avaya Aura® Communication Manager configuration to support connectivity to Avaya Aura® Session Manager and related functionality.

The configuration of Avaya Aura® Communication Manager was performed using the System Access Terminal (SAT). After completion of the configuration, perform a **save translation** command to make the changes permanent. Please note that some administration was already performed prior to this test effort. If needed, please refer to *Administering Avaya Aura® Communication Manager* for more details.

6.1. Trunk Configuration – for SIP Trunks to Avaya Aura® Session Manager

This section summarizes the configuration of the SIP trunk that connects the Avaya Aura® Communication Manager to Avaya Aura® Session Manager

Step	Description
1.	<p>System Parameters – Customer Options</p> <p>Use the display system-parameters customer-options command to verify that the options highlighted below are enabled on Page 4.</p> <div><pre>display system-parameters customer-options Page 4 of 11 OPTIONAL FEATURES Emergency Access to Attendant? y IP Stations? y Enable 'dadmin' Login? y Enhanced Conferencing? y ISDN Feature Plus? y Enhanced EC500? y ISDN/SIP Network Call Redirection? n Enterprise Survivable Server? n ISDN-BRI Trunks? y Enterprise Wide Licensing? n ISDN-PRI? y ESS Administration? n Local Survivable Processor? n Extended Cvg/Fwd Admin? y Malicious Call Trace? y External Device Alarm Admin? n Media Encryption Over IP? y Five Port Networks Max Per MCC? n Mode Code for Centralized Voice Mail? n Flexible Billing? n Forced Entry of Account Codes? n Multifrequency Signaling? y Global Call Classification? n Multimedia Call Handling (Basic)? y Hospitality (Basic)? y Multimedia Call Handling (Enhanced)? y Hospitality (G3V3 Enhancements)? n Multimedia IP SIP Trunking? y IP Trunks? y IP Attendant Consoles? n</pre></div>

Step	Description
2.	<p data-bbox="313 233 1438 415">Node Names Use the change node-names ip command to create a node name for Avaya Aura® Session Manager. The example below shows the node names and IP addresses used for the compliance test. These node names will be used in the administration of other forms in Avaya Aura® Communication Manager.</p> <div data-bbox="349 451 1399 640"> <pre data-bbox="370 464 1380 485">change node-names ip</pre> <pre data-bbox="370 489 1380 510">IP NODE NAMES</pre> <pre data-bbox="370 514 1380 535">Name IP Address</pre> <pre data-bbox="370 539 1380 560">default 0.0.0.0</pre> <pre data-bbox="370 564 1380 585">procr 192.168.62.28</pre> <pre data-bbox="370 590 1380 611">procr6 ::</pre> <pre data-bbox="370 615 1380 636">sm 192.168.62.18</pre> </div>

Step	Description
3.	<p>IP network region</p> <p>Avaya Aura[®] Communication Manager, Avaya Aura[®] Session Manager and VoIP (H.323/SIP) endpoints were located in a single IP network region (IP network region 1) using the parameters described below. Use the change ip-network-region 1 command to view these settings. By default, all elements will also be in IP network region 1 unless specifically placed in a separate region using the ip-network-map command. The example below shows the values used for the compliance test.</p> <ul style="list-style-type: none"> ▪ A descriptive name was entered for the Name field. ▪ The Codec Set field was set to the IP codec set to be used for calls within this IP network region. In this case, IP codec set 1 was selected. This is the codec set that will be used for calls between the Movitas and Avaya Aura[®] Communication Manager, via Avaya Aura[®] Session Manager since all components are in IP network region 1. ▪ Enter a domain that was used in Session Manager configuration in Authoritative Domain. <p>The default values were used for all other fields.</p> <div data-bbox="318 852 1401 1409"> <pre> change ip-network-region 1 Page 1 of 20 IP NETWORK REGION Region: 1 Location: 1 Authoritative Domain: avaya.com Name: Public Domain MEDIA PARAMETERS Intra-region IP-IP Direct Audio: yes Codec Set: 1 Inter-region IP-IP Direct Audio: yes UDP Port Min: 2048 IP Audio Hairpinning? n UDP Port Max: 3329 DIFFSERV/TOS PARAMETERS Call Control PHB Value: 46 Audio PHB Value: 46 Video PHB Value: 26 802.1P/Q PARAMETERS Call Control 802.1p Priority: 6 Audio 802.1p Priority: 6 Video 802.1p Priority: 5 AUDIO RESOURCE RESERVATION PARAMETERS H.323 IP ENDPOINTS RSVP Enabled? n H.323 Link Bounce Recovery? y Idle Traffic Interval (sec): 20 Keep-Alive Interval (sec): 5 Keep-Alive Count: 5 </pre> </div>

Step	Description																
4.	<div><div>Codecs</div><div>Use the change ip-codec-set 1 command to define the codecs used by IP codec set 1.</div></div> <div><div><div>change ip-codec-set 1</div><div>Page 1 of 2</div></div><div><div>IP Codec Set</div><div>Codec Set: 1</div><div><table><tr><th>Audio Codec</th><th>Silence Suppression</th><th>Frames Per Pkt</th><th>Packet Size (ms)</th></tr><tr><td>1: G.711MU</td><td>n</td><td>2</td><td>20</td></tr><tr><td>2:</td><td></td><td></td><td></td></tr><tr><td>3:</td><td></td><td></td><td></td></tr></table></div></div></div>	Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size (ms)	1: G.711MU	n	2	20	2:				3:			
Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size (ms)														
1: G.711MU	n	2	20														
2:																	
3:																	

Step	Description
5.	<p>Signaling Group</p> <p>Use the add signaling-group <i>n</i> command, where <i>n</i> is an unused signaling group, to create a new signaling group for each SIP trunk to Avaya Aura[®] Session Manager. For compliance test, signaling group 1 was created for the trunk to Avaya Aura[®] Session Manager. Signaling group 1 was configured using the parameters highlighted below. Default values were used for all other fields.</p> <ul style="list-style-type: none"> ▪ Set the Group Type to <i>sip</i>. ▪ Set the Near-end Node Name to <i>procr</i>. This node name maps to the IP address of the Avaya Aura[®] Communication Manager. Node names are defined using the change node-names ip command (Step 2). ▪ Set the Far-end Node Name to <i>sm</i>. This node name maps to the IP address of the Avaya Aura[®] Session Manager as defined using the change node-names ip command (Step 2). ▪ Set the Near-end Listen Port and Far-end Listen Port to <i>5061</i>. ▪ Set the Far-end Network Region to <i>1</i>. This is the IP network region which contains the Avaya Aura[®] Session Manager. ▪ Set DTMF over IP to <i>in-band</i>. ▪ Set Far-end Domain to the domain configured in Session Manager. ▪ The default values were used for all other fields. <div data-bbox="347 961 1401 1539" style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <pre> add signaling-group 1 SIGNALING GROUP Group Number: 1 Group Type: sip IMS Enabled? n Transport Method: tls Q-SIP? n SIP Enabled LSP? n IP Video? n Enforce SIPS URI for SRTP? y Peer Detection Enabled? y Peer Server: SM Near-end Node Name: procr Far-end Node Name: sm Near-end Listen Port: 5061 Far-end Listen Port: 5061 Far-end Network Region: 1 Far-end Domain: avaya.com Incoming Dialog Loopbacks: eliminate Bypass If IP Threshold Exceeded? n DTMF over IP: in-band RFC 3389 Comfort Noise? n Session Establishment Timer(min): 3 Direct IP-IP Audio Connections? y Enable Layer 3 Test? y IP Audio Hairpinning? n H.323 Station Outgoing Direct Media? n Initial IP-IP Direct Media? n Alternate Route Timer(sec): 6 </pre> </div>

Step	Description
6.	<p>Trunk Group</p> <p>Use the add trunk-group <i>n</i> command, where <i>n</i> is an unused trunk group, to create a new trunk group for each SIP trunk to Avaya Aura[®] Session Manager. For the compliance test, trunk group 1 was created for the trunk to Avaya Aura[®] Session Manager. Trunk group 1 was configured using the parameters highlighted below.</p> <p>On Page 1:</p> <ul style="list-style-type: none"> ▪ Set the Group Type to <i>sip</i>. ▪ Enter a descriptive name for the Group Name. ▪ Enter an available trunk access code (TAC) that is consistent with the existing dial plan in the TAC field. ▪ Set the Service Type to <i>tie</i>. ▪ Set the Member Assignment Method to <i>auto</i>. ▪ Set the Signaling Group to the signaling group shown in the previous step. ▪ Set the Number of Members field to the number of channels available in this trunk. For the compliance test, the number of members was chosen to be 10. ▪ Set Outgoing Display to <i>y</i> ▪ The default values were used for all other fields. <div data-bbox="355 926 1391 1346" style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <pre> add trunk-group 1 Page 3 of 21 TRUNK GROUP Group Number: 1 Group Type: sip CDR Reports: y Group Name: to_SM COR: 1 TN: 1 TAC: *004 Direction: two-way Outgoing Display? y Night Service: Dial Access? n Queue Length: 0 Service Type: tie Auth Code? n Member Assignment Method: auto Signaling Group: 1 Number of Members: 10 </pre> </div>

Step	Description														
7.	<p>Trunk Group – continued</p> <p>On Page 3:</p> <ul style="list-style-type: none">It is required that the Send Name field is set to y and the Send Calling Number field is set to y.Set the Format field to <i>public</i>. This field specifies the format of the calling party number sent to the far-end.The default values were used for all other fields. <div><div>add trunk-group 1</div><div>TRUNK FEATURES</div><div>ACA Assignment? n</div><div>Measured: none</div><div>Internal Alert? n</div><div>Maintenance Tests? y</div><div>Data Restriction? n</div><div>NCA-TSC Trunk Member:</div><div>Send Name: y</div><div>Send Calling Number: y</div><div>Used for DCS? n</div><div>Send EMU Visitor CPN? n</div><div>Suppress # Outpulsing? n</div><div>Format: public</div><div>UUI IE Treatment: service-provider</div><div>Replace Restricted Numbers? n</div><div>Replace Unavailable Numbers? n</div><div>Send Connected Number: n</div><div>Hold/Unhold Notifications? n</div><div>Modify Tandem Calling Number? n</div><div>Send UUI IE? y</div><div>Send UCID? n</div><div>Send Codeset 6/7 LAI IE? y</div></div>														
8.	<p>Automatic Route Selection (ARS)</p> <p>For the compliance test, ARS was used to route calls to EC500 extension that was 5 digits long and leading digit was 7. Use the change ars analysis command to create an entry in the ARS table.</p> <ul style="list-style-type: none">Set Dialed String to 7Set Total Min and Max to 5Set Route Pattern to 1Set Call Type to <i>svcl</i> <div><div>change ars analysis 7</div><div>ARS DIGIT ANALYSIS TABLE</div><div>Location: all</div><div>Percent Full: 2</div><table><tr><th>Dialed String</th><th>Total Min</th><th>Total Max</th><th>Route Pattern</th><th>Call Type</th><th>Node Num</th><th>ANI Req'd</th></tr><tr><td>7</td><td>5</td><td>5</td><td>1</td><td>svcl</td><td></td><td>n</td></tr></table></div>	Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Req'd	7	5	5	1	svcl		n
Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Req'd									
7	5	5	1	svcl		n									

Step	Description
9.	<p>Route Patterns</p> <p>Use the change route pattern <i>n</i> command, where <i>n</i> is an unused route pattern.</p> <p>The example below shows route pattern 1 used in the compliance test. Route pattern 1 was accessed when ARS matches on a dialed string of 7xxxx. For the first entry, set the Grp No. field to the trunk group of Avaya Aura® Session Manager (trunk group 1). Set the Facility Restriction Level (FRL) of the trunk to an appropriate level to allow authorized users to access the trunk. The level of 0 is the least restrictive.</p> <pre> change route-pattern 1 Page 1 of 3 Pattern Number: 1 Pattern Name: SCCAN? n Secure SIP? n Grp FRL NPA Pfx Hop Toll No. Inserted DCS/ IXC No Mrk Lmt List Del Digits QSIG Dgts Intw 1: 1 0 n user 2: n user 3: n user 4: n user 5: n user 6: n user BCC VALUE TSC CA-TSC ITC BCIE Service/Feature PARM No. Numbering LAR 0 1 2 M 4 W Request Dgts Format Subaddress 1: y y y y y n n rest none 2: y y y y y n n rest none 3: y y y y y n n rest none 4: y y y y y n n rest none 5: y y y y y n n rest none 6: y y y y y n n rest none </pre>

6.2. Trunk Configuration – for ISDN/PRI to PSTN

ISDN calls to PSTN were also tested.

Step	Description
1.	<p>System Parameters – Customer Options</p> <p>Use the display system-parameters customer-options command to verify that the options highlighted below are enabled. If this option is disabled please check with Avaya sales or business partner to get appropriate license.</p> <pre> display system-parameters customer-options Page 4 of 11 OPTIONAL FEATURES Emergency Access to Attendant? y IP Stations? y Enable 'dadmin' Login? y Enhanced Conferencing? y ISDN Feature Plus? y Enhanced EC500? y ISDN/SIP Network Call Redirection? n Enterprise Survivable Server? n ISDN-BRI Trunks? y Enterprise Wide Licensing? n ISDN-PRI? y ESS Administration? n Local Survivable Processor? n Extended Cvg/Fwd Admin? y Malicious Call Trace? y External Device Alarm Admin? n Media Encryption Over IP? y Five Port Networks Max Per MCC? n Mode Code for Centralized Voice Mail? n Flexible Billing? n Forced Entry of Account Codes? n Multifrequency Signaling? y Global Call Classification? n Multimedia Call Handling (Basic)? y Hospitality (Basic)? y Multimedia Call Handling (Enhanced)? y Hospitality (G3V3 Enhancements)? n Multimedia IP SIP Trunking? y IP Trunks? y IP Attendant Consoles? n </pre>

Step	Description
2.	<p>Add DS1</p> <p>Use the add ds1 <i>Board-location</i> command to add a DS1. In this case, board V2 was used. The gateway used for this testing, was connected to another Avaya Media Gateway which had access to PSTN. This configuration pertains to the Media Gateway G430 as show in the Test Configuration diagram.</p> <ul style="list-style-type: none"> • Set Signaling Mode to <i>isdn-pri</i> • Set Name to a desired name • Set Line Coding to <i>b8zs</i> • Set Protocol Version to <i>b</i> <div data-bbox="316 604 1385 1108" style="border: 1px solid black; padding: 10px;"> <pre> add ds1 01V2 Page 1 of 2 DS1 CIRCUIT PACK Location: 001V2 Name: PSTN Bit Rate: 1.544 Line Coding: b8zs Line Compensation: 1 Framing Mode: esf Signaling Mode: isdn-pri Connect: network TN-C7 Long Timers? n Country Protocol: 1 Interworking Message: PROGress Protocol Version: b Interface Companding: mulaw CRC? n Idle Code: 11111111 DCP/Analog Bearer Capability: 3.1kHz T303 Timer(sec): 4 Slip Detection? n Near-end CSU Type: other Echo Cancellation? n Block Progress Indicator? n </pre> </div>
3.	<p>Signaling Group</p> <p>Use the add signaling-group <i>n</i> command, where <i>n</i> is an unused signaling group, to create a new signaling group for each ISDN to PSTN Gateway. For the compliance test, signaling group 3 was created for the trunk to the PSTN Gateway.</p> <ul style="list-style-type: none"> ▪ Set the Group Type to <i>isdn-pri</i>. ▪ Set the Trunk Group for Channel Selection field to the trunk group created in the next step. This cannot be done until the trunk group is created. Thus, initially this field is left blank and later changed to the correct value after the trunk group is created. A separate trunk group will be created for each signaling-group. ▪ Set Primary D-Channel as the 24th channel for ds1 added in Step 2. ▪ The default values were used for all other fields. <div data-bbox="345 1587 1401 1824" style="border: 1px solid black; padding: 10px;"> <pre> add signaling-group 3 Page 1 of 5 SIGNALING GROUP Group Number: 3 Group Type: isdn-pri Associated Signaling? y Max number of NCA TSC: 0 Primary D-Channel: 001V224 Max number of CA TSC: 0 Trunk Group for Channel Selection: Trunk Group for NCA TSC: TSC Supplementary Service Protocol: a X-Mobility/Wireless Type: NONE Network Call Transfer? n </pre> </div>

Step	Description
4.	<p>Trunk Group</p> <p>Use the add trunk-group <i>n</i> command, where <i>n</i> is an unused trunk group, to create a new trunk group for each ISDN/PRI to PSTN gateway. For the compliance test, trunk group 3 was created for the trunk to the Media Gateway as shown in the Test Configuration diagram.</p> <p>On Page 1:</p> <ul style="list-style-type: none"> ▪ Set the Group Type to <i>isdn</i>. ▪ Enter a descriptive name for the Group Name. ▪ Enter an available trunk access code (TAC) that is consistent with the existing dial plan in the TAC field. ▪ Set the Carrier Medium to <i>PRI/BRI</i>. ▪ Set the Service Type to <i>public-ntwrk</i>. ▪ The default values were used for all other fields. <div data-bbox="344 781 1406 1092" style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <pre> add trunk-group 3 Page 1 of 21 TRUNK GROUP Group Number: 3 Group Type: isdn CDR Reports: r Group Name: PSTN COR: 1 TN: 1 TAC: *003 Direction: two-way Outgoing Display? y Carrier Medium: PRI/BRI Dial Access? y Busy Threshold: 255 Night Service: Queue Length: 0 Service Type: public-ntwrk Auth Code? n TestCall ITC: rest Far End Test Line No: TestCall BCC: 4 </pre> </div>

Step	Description
5.	<p>Trunk Group – Continued On Page 3:</p> <ul style="list-style-type: none"> Set Send Name to y. Set Send Calling Number to y. Set Format to Public. Set Connected Number to y. <div> <pre> add trunk-group 3 TRUNK FEATURES ACA Assignment? n Measured: none Wideband Support? n Data Restriction? n Maintenance Tests? y Send Name: y NCA-TSC Trunk Member: Send Calling Number: y Send EMU Visitor CPN? n Used for DCS? n Suppress # Outpulsing? n Format: public Outgoing Channel ID Encoding: preferred UUI IE Treatment: service-provider Replace Restricted Numbers? n Replace Unavailable Numbers? n Send Connected Number: y Network Call Redirection: none Hold/Unhold Notifications? n Send UUI IE? y Modify Tandem Calling Number: no Send UCID? n Send Codeset 6/7 LAI IE? y Dsl Echo Cancellation? n Apply Local Ringback? n US NI Delayed Calling Name Update? n Show ANSWERED BY on Display? y Network (Japan) Needs Connect Before Disconnect? n </pre> </div>
6.	<p>Trunk Group – Continued On Page 5, type in define all 23 ports for the ds1 added in Step 3. Ports are defined in the format such that Port value is set as board name followed by channel number. In our case the board was 001V2 and channel numbers 01-04 were used, as seen the box below.</p> <div> <pre> add trunk-group 3 TRUNK GROUP Administered Members (min/max): 1/4 GROUP MEMBER ASSIGNMENTS Total Administered Members: 4 Port Code Sfx Name Night Sig Grp 1: 001V201 MM710 2: 001V202 MM710 3: 001V203 MM710 4: 001V204 MM710 </pre> </div>

Step	Description																																																																																																																																																																								
7.	<div><div>Automatic Route Selection (ARS)</div><div>For the compliance test, an entry was added to route call to PSTN by dialing an 11 digit Telephone Number (TN) and 10 digit TN. The entry is highlighted below which is used to route calls to PSTN by dialing 1303xxxxxxx. This dialed string is mapped to route pattern 3 which routes calls to trunk 3 connected to the PSTN.</div><div><div>change ars analysis 13</div><div>ARS DIGIT ANALYSIS TABLE</div><div>Location: all</div><div>Percent Full: 2</div><div><table><tr><th>Dialed</th><th>Total</th><th>Route</th><th>Call</th><th>Node</th><th>ANI</th></tr><tr><th>String</th><th>Min</th><th>Max</th><th>Pattern</th><th>Type</th><th>Num</th></tr><tr><td>1303</td><td>11</td><td>11</td><td>3</td><td>hnpa</td><td>n</td></tr></table></div></div></div>	Dialed	Total	Route	Call	Node	ANI	String	Min	Max	Pattern	Type	Num	1303	11	11	3	hnpa	n																																																																																																																																																						
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8.	<div><div>Route Pattern – PSTN Trunk</div><div>This route pattern is used in cases where the SIP Users or Avaya Extensions need to be used to calls the PSTN number. Avaya Aura® Communication Manager will then route the call out the PSTN trunk.</div><div><ul style="list-style-type: none">Set Grp No to trunk group in Step 4, 3.Set FRL to 0.</div><div><div>change route-pattern 4</div><div>Pattern Number: 4</div><div>Pattern Name:</div><div>SCCAN? n</div><div>Secure SIP? n</div><div><table><tr><th>Grp</th><th>FRL</th><th>NPA</th><th>Pfx</th><th>Hop</th><th>Toll</th><th>No.</th><th>Inserted</th><th>DCS/</th><th>IXC</th></tr><tr><th>No</th><th></th><th></th><th>Mrk</th><th>Lmt</th><th>List</th><th>Del</th><th>Digits</th><th>QSIG</th><th></th></tr><tr><td>1:</td><td>3</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td>Intw</td><td></td></tr><tr><td>2:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>n</td><td>user</td></tr><tr><td>3:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>n</td><td>user</td></tr><tr><td>4:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>n</td><td>user</td></tr><tr><td>5:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>n</td><td>user</td></tr><tr><td>6:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>n</td><td>user</td></tr></table></div><div><table><tr><th>BCC</th><th>VALUE</th><th>TSC</th><th>CA-TSC</th><th>ITC</th><th>BCIE</th><th>Service/Feature</th><th>PARM</th><th>No.</th><th>Numbering</th><th>LAR</th></tr><tr><td>0</td><td>1</td><td>2</td><td>4</td><td>W</td><td></td><td>Request</td><td></td><td>Dgts</td><td>Format</td><td></td></tr><tr><td>1:</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>n</td><td>n</td><td></td><td></td><td>rest</td></tr><tr><td>2:</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>n</td><td>n</td><td></td><td></td><td>rest</td></tr><tr><td>3:</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>n</td><td>n</td><td></td><td></td><td>rest</td></tr><tr><td>4:</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>n</td><td>n</td><td></td><td></td><td>rest</td></tr><tr><td>5:</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>n</td><td>n</td><td></td><td></td><td>rest</td></tr><tr><td>6:</td><td>y</td><td>y</td><td>y</td><td>y</td><td>y</td><td>n</td><td>n</td><td></td><td></td><td>rest</td></tr></table></div></div></div>	Grp	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/	IXC	No			Mrk	Lmt	List	Del	Digits	QSIG		1:	3	0						Intw		2:								n	user	3:								n	user	4:								n	user	5:								n	user	6:								n	user	BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	PARM	No.	Numbering	LAR	0	1	2	4	W		Request		Dgts	Format		1:	y	y	y	y	y	n	n			rest	2:	y	y	y	y	y	n	n			rest	3:	y	y	y	y	y	n	n			rest	4:	y	y	y	y	y	n	n			rest	5:	y	y	y	y	y	n	n			rest	6:	y	y	y	y	y	n	n			rest
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6.3. EC500 Configuration

Step	Description																																																								
1.	<p>EC500 – Digital and IP stations</p> <p>Use change off-pbx-telephone station-mapping <i>n</i> to map an EC500 extension where <i>n</i> is the Avaya Digital or H.323 Extension.</p> <ul style="list-style-type: none">▪ Set Application to <i>EC500</i>▪ Set Phone Number to the SIP User extension on MvPBX. Note that this phone number must comply with the ars analysis for calls starting with digit 7 in Section 6.1.▪ Set Trunk Selection to <i>ars</i> <div><div>change off-pbx-telephone station-mapping 54006</div><div>Page 1 of 3</div><div>STATIONS WITH OFF-PBX TELEPHONE INTEGRATION</div><table><tr><th>Station Extension</th><th>Application</th><th>Dial Prefix</th><th>CC</th><th>Phone Number</th><th>Trunk Selection</th><th>Config Set</th><th>Dual Mode</th></tr><tr><td>54001</td><td>EC500</td><td>-</td><td></td><td>70001</td><td>ars</td><td>1</td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr></table></div>	Station Extension	Application	Dial Prefix	CC	Phone Number	Trunk Selection	Config Set	Dual Mode	54001	EC500	-		70001	ars	1				-								-								-								-								-					
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Step	Description
2.	<p>EC500 – Analog station</p> <p>EC500 for analog station is achieved by adding a virtual IP station and assigning bridge functionality.</p> <p>To add a virtual station, use add station <i>n</i> command, where <i>n</i> is an available extension.</p> <p>On Page 1:</p> <ul style="list-style-type: none"> Set the type to 9630. Type in Name. <pre> add station 40201 Page 1 of 5 STATION Extension: 40201 Lock Messages? n BCC: 0 Type: 9630 Security Code: TN: 1 Port: IP Coverage Path 1: COR: 1 Name: Analog EC500 Coverage Path 2: COS: 1 Hunt-to Station: STATION OPTIONS Time of Day Lock Table: Personalized Ringing Pattern: 1 Message Lamp Ext: 40201 Mute Button Enabled? y Button Modules: 0 Loss Group: 19 Speakerphone: 2-way Display Language: english Survivable GK Node Name: </pre> <p>On Page 4, under BUTTON ASSIGNMENTS</p> <ul style="list-style-type: none"> On a new line, type in abrdg-appr. For Ext. type in the Analog extension which needs EC500 functionality. <pre> add station 40201 Page 4 of 5 STATION SITE DATA Room: Headset? n Jack: Speaker? n Cable: Mounting: d Floor: Cord Length: 0 Building: Set Color: ABBREVIATED DIALING List1: List2: List3: BUTTON ASSIGNMENTS 1: call-appr 5: 2: call-appr 6: 3: call-appr 7: 4: abrdg-appr Ext: 54201 8: voice-mail </pre>

Step	Description																																																								
	<p>Use change off-pbx-telephone station-mapping <i>n</i> to map an EC500 extension where <i>n</i> is the Avaya virtual extension added above.</p> <ul style="list-style-type: none">▪ Set Application to <i>EC500</i>.▪ Set Phone Number to the SIP User extension on MvPBX.▪ Set Trunk Selection to <i>ars</i>. <div><div>change off-pbx-telephone station-mapping 54006</div><div>Page 1 of 3</div><div>STATIONS WITH OFF-PBX TELEPHONE INTEGRATION</div><table><tr><th>Station Extension</th><th>Application</th><th>Dial Prefix</th><th>CC</th><th>Phone Number</th><th>Trunk Selection</th><th>Config Set</th><th>Dual Mode</th></tr><tr><td>40201</td><td>EC500</td><td>-</td><td></td><td>70201</td><td>ars</td><td>1</td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr></table></div>	Station Extension	Application	Dial Prefix	CC	Phone Number	Trunk Selection	Config Set	Dual Mode	40201	EC500	-		70201	ars	1				-								-								-								-								-					
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7. Configure Movitas

Configuration for Movitas MvPBX was performed by a Movitas Engineer. This document assumes that the Movitas MvPBX system was properly installed and configured by a Movitas Engineer. This section provides the steps of how to configure Movitas MvPBX working with Avaya Aura[®] Communication Manager and Avaya Aura[®] Session Manager.

7.1. Configure Business Account

As a partner on Movitas.com, a business account is established by signing up, choosing a name for the account and providing any necessary billing information. Once this is established the content, users, designs and business extensions can be managed via the Movitas interface.

7.2. Enable the Business Account for Calling

After a business account is established, a Movitas admin can set up the business to enable calling functionality on the Account Settings Price Profile page. This can be done by logging into the Movitas system, clicking on **Account Settings** in the top right, and then clicking on the **Price Profile** tab. Note: This is only available to Movitas Admins and not all admins. Once calling is enabled, this will result in an additional account setting tab where the SIP trunk can be set, IP addresses can be setup to restrict calls to certain sites, push notifications can be configured and more. For Avaya Aura[®] Communication Manager testing, the only required field is the SIP Trunk, which will be assigned in **Step 7.3** below.

Test Dreams Account Settings« back to the Main Menu

Basic Business Info | Manage Locations | Billing & Payment | Upgrade! | Business Price Profiles | Connect to Networks | Manage Call Settings

Account Settings

Calling Settings

☐ Long Distance Enabled
☐ Local Calls Enabled
☐ International Warning
☐ Bridge Numbers Enabled
☐ Extensions Enabled
☐ Restrict Outgoing SIP Calls to Designated IP's
☐ Restrict Incoming SIP Calls to Designated IP's
☐ Restrict Outgoing External Calls to Designated IP's
Restricted IP's (separate multiple ID's by commas and subnets are supported)
Primary SIP Trunk Extension
Allowed Country Codes
Secondary SIP Trunk Extension
Android App URL
iOS App URL
Consumer Caller ID Number Format
Consumer Caller ID Name Format
Extension Caller ID Number Format
Extension Caller ID Name Format

iPhone App Settings [Note](#)

Upload Certificate (.p12)
p12 File Password (optional):
Confirm Password:

Android App Settings [Note](#)

Account Type:
Sender ID:
Password:
Confirm Password:
Application ID:

7.3. Configure SIP Trunk in MvPBX

Once a business is setup, Movitas can assign a SIP Trunk username and password for the Avaya system. The required settings for this are:

- **Name:** a short name to use as an identifier for the trunk
- **Full name:** a human-friendly used to describe the trunk

- **Secret:** the password used for authentication from user created in System Manager
- **Host:** the IP address of the Avaya Aura[®] Session Manager that will be connected to as a user
- **Transport:** should be set to UDP
- **Directmedia:** should be set to nonat
- **Register:** registration entry for MvPBX (ex. 54000@avaya.com:movitas:54000@205.168.62.18/54000~3600)
- **Default country code:** the numerical country code for outgoing international call parsing
- **PSTN prefix:** prefix for outbound calls
- **From Domain:** from domain where calls will come from (ex. avaya.com)

Once established the credentials are provided to complete the setup in Avaya Aura[®] Session Manager and Avaya Aura[®] Communication Manager.

7.4. Assign SIP Trunk to Business Account

Following the trunk creation, the account administrator can return to the business account for the application and enter the SIP Trunk name into the **Primary SIP Trunk** field.

7.5. Setup Business Extensions

Once the trunk is established, administrators can navigate to the room extensions page where they can create and manage extensions.

» skip to sitemap dbellenger@movitas.com | Change Password | Sign out

movitas
» Movitas » Test Dreams

Build Your Site
Send Messages
See Who's Signed Up
Help Desk
Account Settings

Extension Management

Add Extension
Delete Selected Extensions

<input type="checkbox"/>	Name	Description	# of Destinations	# of Users
<input type="checkbox"/>	54006	Test room for Avaya Testing	1	1
<input type="checkbox"/>	001	Test front desk extensions for Avaya testing	1	1
<input type="checkbox"/>	Room 102	Second Room Phone for Avaya Test	1	1
<input type="checkbox"/>	1235	Room 1235	1	0
<input type="checkbox"/>	2435	Room 2435	1	0
<input type="checkbox"/>	1135	Room 1135	1	0
<input type="checkbox"/>	1142	Room 1142	1	0
<input type="checkbox"/>	1215	Room 1215	1	0
<input type="checkbox"/>	1240	Room 1240	1	0
<input type="checkbox"/>	2335	Room 2335	1	0

« 1 »

Page: 1 of 1 Go

Page size: 10 Change

Item 1 to 10 of 10

Then click “**Add Extension**” to be taken to the new extension page shown below:

» skip to sitemap dbellenger@movitas.com | Change Password | Sign out

movitas

» Movitas » Test Dreams

Build Your Site | Send Messages | See Who's Signed Up | Help Desk | Account Settings

Room Extension « back to Manage Extensions

Extension Details

Extension Name:

Description:

Caller ID:

Third Party Extension:

☐ Allow Voicemails

SIP Login

SIP Username: Username Generated On Save

SIP Password: Password Generated On Save

Save Extension

The information that should be added is

- **Extension Name** – a familiar name that can be used to identify the extension (ex. Room 101)
- **Description** – a description of the name if required
- **Caller ID** – if a different caller ID is required for the extension it can be entered here. (Note: caller ID and caller Number for consumer extensions and business extensions can also be formatted on the call settings page using variables such as room number, first name, last name, booking last name, caller ID, extension name, etc).
- **Third Party Extension** – for Avaya implementations, the PCA number should be added here in order to map calls to these extensions. This number must be unique for each business extension

Once all the settings are complete, click **Save Extension** and the extension will now be enabled and call destinations can be configured such as users, DID's, SIP extensions, or Avaya Aura[®] Communication Manager extensions. An example of the updated page is below.

Room Extension
« back to Manage Extensions

Extension Details

Extension Name:

Description:

Test room for Avaya Testing

Caller ID:

Third Party Extension:

☐ Allow Voicemails

SIP Login

SIP Username:

SIP Password:

Save Extension

Extension Destinations

Calls made to this extension will be directed to:

☒ one destination number at a time, in the order that they are listed. (Drag and drop to re-order)

☐ all destination numbers at the same time.

Add Destination

Priority	Name	Destination #	Type	
1	54006 Avaya Extension	54006	Extension	Edit Delete

Page 1 of 1 items 1 to 1 of 1

Manage Extension Users

Add or remove users from this extension number. Click on a user's name to view and edit their information.

Add User to Extension

User's Name	User's Email	
Doug Bellenger	doug.bellenger@gmail.com	Delete

Page 1 of 1 items 1 to 1 of 1

7.6. Setup Call Destinations for the Extension

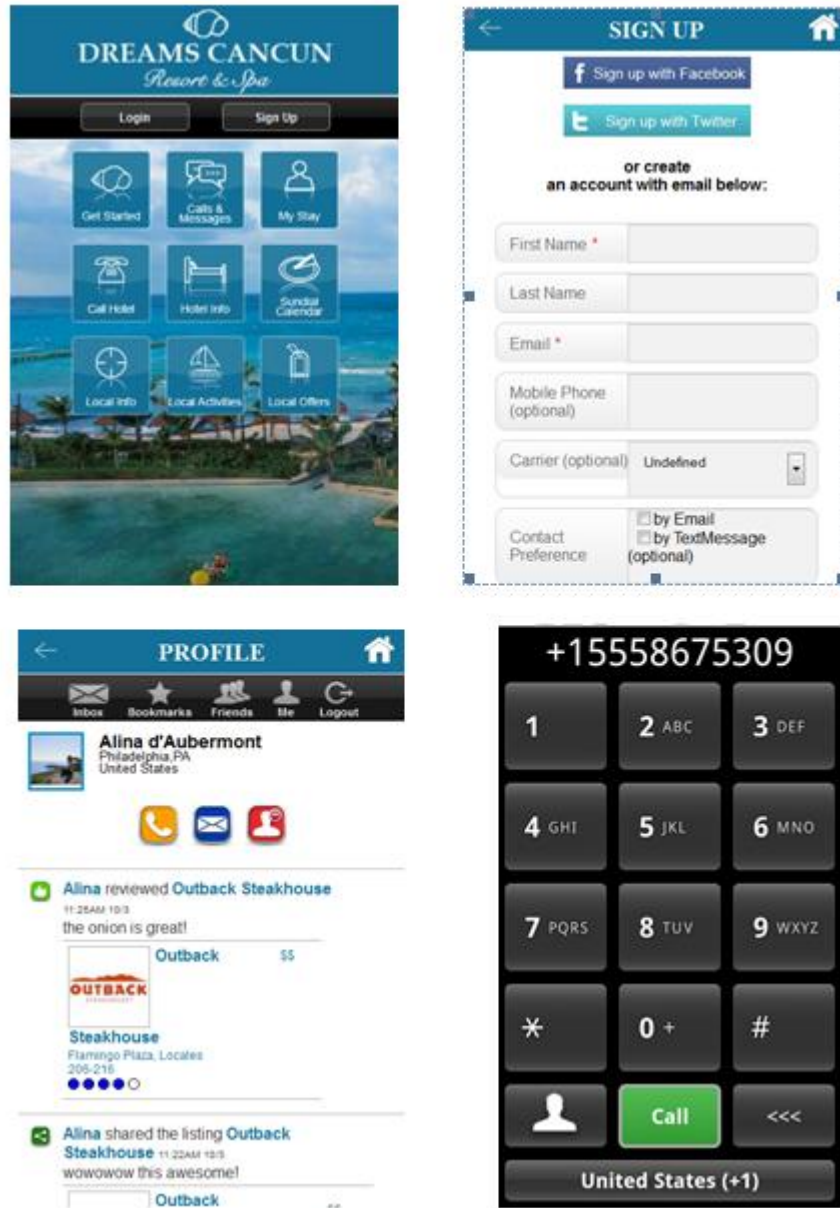
In order to forward calls from a user to the room, in addition to setting up the Third Party Extension with the appropriate redirect number, the Direct Number (DN) also should be added as an extension as shown above. (Warning: setting up the redirect number as a call destination is not recommended due to the creation of a loop between the two systems). In addition to hotel extensions, a call destination can be pointed at a SIP address, a DID, or a user in the system.

7.7. Deploy Applications Via App Stores

In order to complete the setup of the applications, Movitas will package the content and calling functionality into the required apps and enter them into the appropriate app store. Once completed the application will be available for download and the content and extensions can be updated via the Movitas portal. Any changes to the SIP Trunk for the business, IP addresses or other settings can be updated as well.

7.8. User Creates Account on Application

In order to place calls via the application following the setup, a user will signup for an account, log in to the application and then they will be registered with MvPBX automatically. Once they are logged in, they can navigate to the dialpad where they can dial an extension direct or dial another user account.



Note: The above shows an example hotel website with the following sections:

- Top Left: Home screen with icons related to hotel services, local information, and guest communication tools
- Top Right: An example of a sign up page for the hotel application
- Bottom Right: An example profile for a user from the application
- Bottom Left: An example dial pad from the Android application for the hotel

7.9. Assign User Such as Front Desk to Extension

Once a user account is setup, administrators can assign users to extensions by accessing the business extension from the extension management page in **Section 7.5** and the clicking on the extension to manage. When on the extension management page, an administrator can assign a user to an extension by adding their email address under the **Manage Extension Users** section on the right side of the page. A user can also be deleted from this page by clicking the “delete” link by their name once they have been added.

Room Extension [« back to Manage Extensions](#)

Extension Details

Extension Name:

Description:

Caller ID:

Third Party Extension:

☐ Allow Voicemails

SIP Login

SIP Username:

SIP Password:

Extension Destinations

Manage Extension Users

Add or remove users from this extension number. Click on a user's name to view and edit their information.

User's Name	User's Email	
Doug Bellenger	doug.bellenger@gmail.com	Delete

1 Page 1 of 1, items 1 to 1 of 1

7.10. Assigning User to Room Phone From Application

Pending the availability of web services into a Property Management System (PMS) for a specific client, for example a hotel, a page may be setup to enable forwarding of the room phone as outlined below. This will associate the user with the appropriate extension that calls can be forwarded or received from. This can also be handled by web services and will need to be established custom for each implementation by Movitas.

The screenshot shows a web application interface with a dark navigation bar at the top containing icons and labels for 'Inbox', 'Bookmarks', 'Friends', 'Me', and 'Logout'. Below this, there are three main sections, each with a blue header and a white content area. The first section, 'My Room Info', contains a text prompt, two input fields (one with 'Bellenger' and one with '1235'), and a 'Submit' button. The second section, 'My Bill', contains a text prompt and a 'View Bill' button. The third section, 'My Room Phone', contains a text prompt and an 'Enable Room Forwarding' button.

Inbox Bookmarks Friends Me Logout

My Room Info

Please fill in your last name and room number to turn on My Stay functions.

Last Name

Room No.

Submit

My Bill

Click the button to view your current charges.

View Bill

My Room Phone

Click the button to activate call forwarding from your room phone to this phone.

Enable Room Forwarding

Note: This is an example of a page setup for hotels that allows their guests to enable room forwarding from Communication Manager to the application for the length of their stay. At the end of their stay calls will no longer be forwarded to them based on their checkout date.

8. Verification Steps

The following are typical steps to verify the interoperability between the Movitas system and Avaya Aura® Communication Manager and Avaya Aura® Session Manager

- Place a call to Front Desk phone which is one of three Avaya extensions associated with Movitas SIP users.
- The Front Desk phone in the Avaya Aura® Communication Manager rings and the Movitas SIP user associated with the Front Desk phone also rings.
- Accept the call on the Movitas SIP user, the Front Desk phone in Avaya Aura® Communication Manager stops ringing and become idle.
- Check two-way audio path between the caller and Movitas SIP user

9. Conclusion

All of the executed test cases have passed and met the objectives as outlined in **Section 2**. The Movitas SIP MvPBX system and its respective iPhone, Android and Blackberry applications are considered compliant with Avaya Aura® Communication Manager and Avaya Aura® Session Manager.

10. Additional References

Product documentation for Avaya products may be found at <http://support.avaya.com>.

Avaya

- [1] *Administering Avaya Aura® Communication Manager*, Doc # 03-603558, Release 6.0.1, Issue 1.3, December 2010.
- [2] *Administering Avaya Aura® Session Manager*, Doc # 03-603324, Release 6.1 November 2010

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