



## Avaya Solution & Interoperability Test Lab

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# Application Notes for Virtual Hold Concierge™ with Avaya Voice Portal – Issue 1.0

### Abstract

These Application Notes describe the configuration steps required to integrate Virtual Hold Concierge™ with Avaya Voice Portal.

Virtual Hold Concierge™ is a contact center solution that calculates the expected wait time and maintains the caller position in a virtual queue. Virtual Hold Concierge™ can call the user back and connect to an agent when the caller's turn comes up. This is achieved by their Virtual Hold VXML Interaction Server, which runs the Avaya Voice Portal supported VXML application. Virtual Hold Concierge™ consists of Virtual Hold VXML Interaction Server and Virtual Hold Queue Manager. The integration with Avaya Aura® Communication Manager is achieved through the Avaya Aura® Application Enablement Service (AES) TSAPI service for events. Calls to Virtual Hold Concierge™ are routed using H.323 connection from Avaya Aura® Communication Manager and using SIP connection from Avaya Aura® Communication Manager via Avaya Aura® Session 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.

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## 1. Introduction

Virtual Hold Concierge™ is a contact center solution that calculates the expected wait time and maintains the caller position in a virtual queue. Virtual Hold Concierge™ can call the user back and connect to an agent when the caller's turn comes up. Virtual Hold Concierge™ consists of Virtual Hold VXML Interaction Server and Virtual Hold Queue Manager. The integration with Avaya Aura® Communication Manager is achieved through the Avaya Aura® Application Enablement Service (AES) TSAPI service.

Virtual Hold Concierge™ is installed over the existing voice framework to add intelligent queue management. As calls come into the contact center, Virtual Hold monitors the Estimated Wait Time (EWT) and determines how calls are treated. If EWT is less than the turn-on threshold, the calls are routed to queue, as normal, to be answered by an agent. If EWT is more than the turn-on threshold, the calls are routed to the Virtual Hold IVR for the Virtual Hold options. Virtual Hold offers to save the callers' places in line and call them back when it is their turn. If a caller declines the option, the caller is routed to queue to wait being answered by an agent. If a caller accepts the Virtual Hold option, he enters his callback phone number, records his name, and then hangs up. When it is nearly the caller's turn in queue, Virtual Hold calls him back, verifies he is on the line, and transfers him to queue at high priority, which makes him the next call that is answered by an agent

Virtual Hold Queue Manager uses the Avaya Aura® AES TSAPI service to query and monitor the agent states and service speed, and uses the provided CTI event reports to calculate the expected wait time. Incoming calls are routed to Virtual Hold Concierge™ via Avaya Voice Portal, where Virtual Hold Concierge™ can play the expected wait time to the caller and provide the caller with option to be called back when the caller's turn comes up or at a future designated time. Virtual Hold VXML Interaction Server uses the Application Interface Web Service provided by Avaya Voice Portal to launch VXML application and send callback requests.

Call routing to and from Avaya Voice portal is performed using H.323 connection from Avaya Aura® Communication Manager and using SIP connection from Avaya Aura® Communication Manager via Avaya Aura® Session Manager.

## 2. General Test Approach and Test Results

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 purpose of this compliance testing was to interoperate Avaya Voice Portal with Virtual Hold Concierge™.

Compliance testing was performed on two separate configurations.

1. Trunks to Avaya Voice Portal using H.323
2. Trunks to Avaya Voice Portal using SIP via Avaya Aura® Session Manager

The interoperability compliance test included events, feature and serviceability testing. Feature testing entailed placing calls manually to Voice Portal and verifying that Virtual Hold VXML application was launched. Testing was performed with Virtual Hold applications running on a virtual machine with Windows Server 2008 SP2.

Serviceability testing focused on verifying the ability of Voice Portal and Virtual Hold to recover after a network or application outage.

The interoperability compliance test included feature and serviceability testing. Feature testing focused on verifying the following features and functionality:

- Voice Portal configuration for Virtual Hold VXML applications.
- Voice Portal using SIP and H.323 as VoIP Connections.
- Voice Portal Call Detail Records and Alarms generation.
- TSAPI tests for various events
- Feature tests for Virtual Hold to play Estimated Wait Time (EWT)
- Various scenarios for Virtual Hold to perform callbacks.

### 2.2. Test Results

All test cases were passed.

### 2.3. Support

To obtain technical support for Virtual Hold:

- **Web:** [www.virtualhold.com](http://www.virtualhold.com)
- **Email:** [support@virtualhold.com](mailto:support@virtualhold.com)
- **Phone:** (866) 670 - 2223

### 3. Reference Configuration

The diagram below illustrates the test configuration.

For this test effort, two different configurations were tested:

1. H.323 to Avaya Voice Portal
2. SIP to Avaya Voice Portal via Session Manager

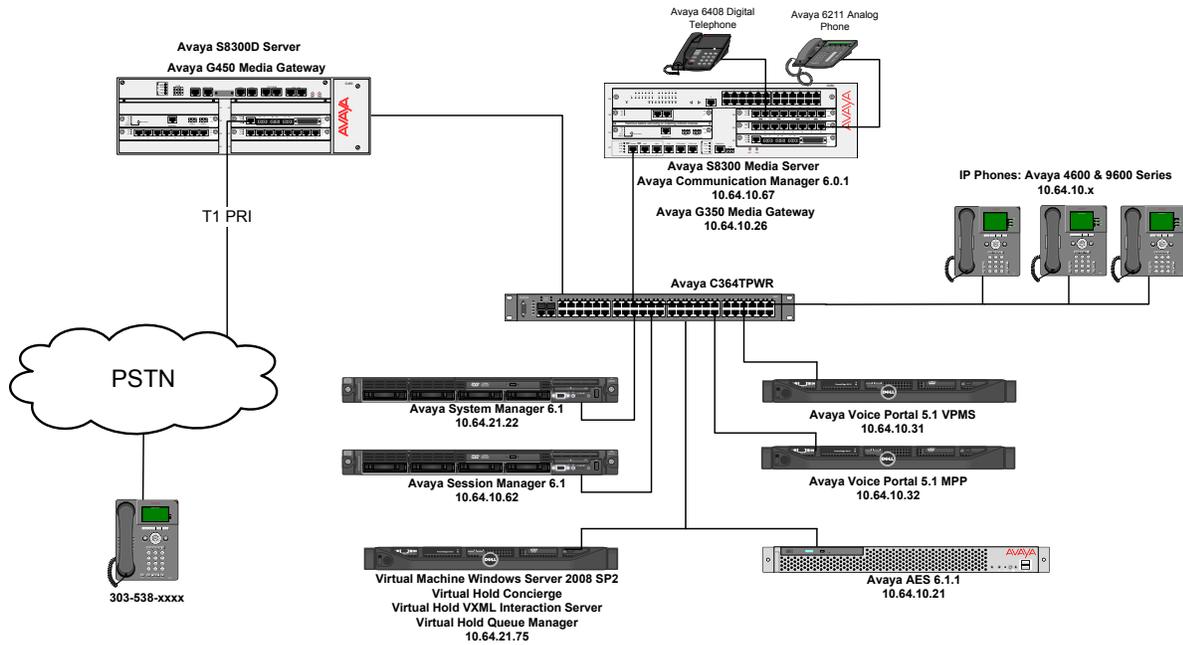


Figure 1: Test Configuration

### 3.1. Equipment and Software Validated

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

Equipment	Software
Avaya Voice Portal	5.1 (5.1.0.0.4201)
Avaya S8300 Server running Avaya Aura <sup>®</sup> Communication Manager	6.0.1 SP 00.1.510.1-19528
Avaya Aura <sup>®</sup> Session Manager	6.1.6.0.616008
Avaya Aura <sup>®</sup> System Manager	6.1 SP 6.1.0.0.7345-6.1.5.606
Avaya Aura <sup>®</sup> Application Enablement Services	6.1.1 6-1-1-30-0
Virtual Hold Concierge <sup>™</sup>	7.3
Virtual Hold VIS	1.0

## 4. Configure Avaya Aura® Communication Manager

This section describes the Communication Manager configuration for both H.323 and SIP trunks to Avaya Voice Portal.

The configuration of Communication Manager was performed using the System Access Terminal (SAT). After the completion of the configuration, perform a **save translation** command to make the changes permanent.

Though required, please note that Administration required for setting up H.323 and SIP trunk groups and signaling groups is out of scope for document.

Step	Description																														
1.	<p><b>Communication Manager - Licenses</b>            Verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the <b>display system-parameters customer-options</b> command to verify that the <b>Computer Telephony Adjunct Links</b> customer option is set to <b>y</b> on Page 3. If this option is not set to <b>y</b>, then contact the Avaya sales team or business partner for a proper license file.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre style="text-align: center;">OPTIONAL FEATURES</pre> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Abbreviated Dialing Enhanced List? y</td> <td style="width: 50%;">Audible Message Waiting? y</td> </tr> <tr> <td>Access Security Gateway (ASG)? n</td> <td>Authorization Codes? y</td> </tr> <tr> <td>Analog Trunk Incoming Call ID? y</td> <td>CAS Branch? n</td> </tr> <tr> <td>A/D Grp/Sys List Dialing Start at 01? y</td> <td>CAS Main? n</td> </tr> <tr> <td>Answer Supervision by Call Classifier? y</td> <td>Change COR by FAC? n</td> </tr> <tr> <td>ARS? y</td> <td><b>Computer Telephony Adjunct Links? y</b></td> </tr> <tr> <td>ARS/AAR Partitioning? y</td> <td>Cvg Of Calls Redirected Off-net? y</td> </tr> <tr> <td>ARS/AAR Dialing without FAC? y</td> <td>DCS (Basic)? y</td> </tr> <tr> <td>ASAI Link Core Capabilities? n</td> <td>DCS Call Coverage? y</td> </tr> <tr> <td>ASAI Link Plus Capabilities? n</td> <td>DCS with Rerouting? y</td> </tr> <tr> <td>Async. Transfer Mode (ATM) PNC? n</td> <td>Digital Loss Plan Modification? y</td> </tr> <tr> <td>Async. Transfer Mode (ATM) Trunking? n</td> <td>DS1 MSP? y</td> </tr> <tr> <td>ATM WAN Spare Processor? n</td> <td>DS1 Echo Cancellation? y</td> </tr> <tr> <td>ATMS? y</td> <td></td> </tr> <tr> <td>Attendant Vectoring? y</td> <td></td> </tr> </table> <p style="text-align: center; margin-top: 10px;">(NOTE: You must logoff &amp; login to effect the permission changes.)</p> </div>	Abbreviated Dialing Enhanced List? y	Audible Message Waiting? y	Access Security Gateway (ASG)? n	Authorization Codes? y	Analog Trunk Incoming Call ID? y	CAS Branch? n	A/D Grp/Sys List Dialing Start at 01? y	CAS Main? n	Answer Supervision by Call Classifier? y	Change COR by FAC? n	ARS? y	<b>Computer Telephony Adjunct Links? y</b>	ARS/AAR Partitioning? y	Cvg Of Calls Redirected Off-net? y	ARS/AAR Dialing without FAC? y	DCS (Basic)? y	ASAI Link Core Capabilities? n	DCS Call Coverage? y	ASAI Link Plus Capabilities? n	DCS with Rerouting? y	Async. Transfer Mode (ATM) PNC? n	Digital Loss Plan Modification? y	Async. Transfer Mode (ATM) Trunking? n	DS1 MSP? y	ATM WAN Spare Processor? n	DS1 Echo Cancellation? y	ATMS? y		Attendant Vectoring? y	
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Step	Description
<p>2.</p>	<p><b>Communication Manager – Licenses - Continued</b>            Navigate to Page 6, and verify that the <b>Vectoring (Basic)</b> customer option is set to <b>y</b>.</p> <pre data-bbox="326 323 1375 867"> display system-parameters customer-options                               Page 6 of 11                                 CALL CENTER OPTIONAL FEATURES                                  Call Center Release: 6.0                                  ACD? y                                Reason Codes? y                                 BCMS (Basic)? y                      Service Level Maximizer? n                                 BCMS/VuStats Service Level? y      Service Observing (Basic)? y                                 BSR Local Treatment for IP &amp; ISDN? y  Service Observing (Remote/By FAC)? y                                 Business Advocate? n                Service Observing (VDNs)? y                                 Call Work Codes? y                    Timed ACW? y                                 DTMF Feedback Signals For VRU? y      <b>Vectoring (Basic)? y</b>                                 Dynamic Advocate? n                  Vectoring (Prompting)? y                                 Expert Agent Selection (EAS)? y      Vectoring (G3V4 Enhanced)? y                                 EAS-PHD? y                          Vectoring (3.0 Enhanced)? y                                 Forced ACD Calls? n                 Vectoring (ANI/II-Digits Routing)? y                                 Least Occupied Agent? y             Vectoring (G3V4 Advanced Routing)? y                                 Lookahead Interflow (LAI)? y        Vectoring (CINFO)? y                                 Multiple Call Handling (On Request)? y Vectoring (Best Service Routing)? y                                 Multiple Call Handling (Forced)? y   Vectoring (Holidays)? y                                 PASTE (Display PBX Data on Phone)? y Vectoring (Variables)? y                                 (NOTE: You must logout &amp; login to effect the permission changes.)           </pre>
<p>3.</p>	<p><b>Add Cti-link</b>            Add a CTI link using the <b>add cti-link n</b> command, where <b>n</b> is an available CTI link number. Enter an available extension number in the Extension field. Note that the CTI link number and extension number may vary. Enter <b>ADJ-IP</b> in the <b>Type</b> field, and a descriptive name in the <b>Name</b> field. Default values may be used in the remaining fields.</p> <pre data-bbox="318 1163 1401 1367"> change cti-link 1   Page 1 of 3                                  CTI LINK                                  CTI Link: 1                                 Extension: 6201                                 <b>Type: ADJ-IP</b>                                 Name: to AES-10.64.10.21                                 COR: 1           </pre>

Step	Description
4.	<p><b>Create Hunt-Group for H.323 Configuration</b>  Administer a hunt group to be used for routing of calls to Voice Portal. Use the <b>add hunt-group n</b> command, where <b>n</b> is an available hunt group number.</p> <p>On Page 1:</p> <ul style="list-style-type: none"> <li>• Type in <b>Group Name</b>.</li> <li>• Type in an available <b>Group Extension</b>.</li> <li>• Set <b>ACD, Queue</b> and <b>Vector</b> to <b>y</b>.</li> </ul> <div data-bbox="318 569 1401 963" style="border: 1px solid black; padding: 5px;"> <pre> add hunt-group 55                                     Page 1 of 4                                      HUNT GROUP  Group Number: 55                                     ACD? y Group Name: Voice Portal                             Queue? y Group Extension: 61055                               Vector? y Group Type: ucd-mia TN: 1 COR: 1   MM Early Answer? n Security Code:                                       Local Agent Preference? n ISDN/SIP Caller Display:  Queue Limit: unlimited Calls Warning Threshold: Port: Time Warning Threshold: Port: </pre> </div> <p>On Page 2:</p> <ul style="list-style-type: none"> <li>• Set <b>Skill</b> and <b>AAS</b> to <b>y</b>.</li> </ul> <div data-bbox="318 1119 1401 1514" style="border: 1px solid black; padding: 5px;"> <pre> add hunt-group 55                                     Page 2 of 4                                      HUNT GROUP  Skill? y      Expected Call Handling Time (sec): 180 AAS? y Measured: none Supervisor Extension:  Controlling Adjunct: none  Multiple Call Handling: none </pre> </div> <p>Administer another hunt group to be used for <b>Call Center Agents</b>. Use the <b>add hunt-group n</b> command, where <b>n</b> is an available hunt group number.</p> <p>Configuration for this hunt group will be same as the one created early on in this step</p>

Step	Description
5.	<p data-bbox="316 237 885 268"><b>Create Hunt-Group for SIP configuration</b></p> <p data-bbox="316 273 1396 342">Administer another hunt group to be used for Call Center Agents. Use the <b>add hunt-group n</b> command, where <b>n</b> is an available hunt group number.</p> <p data-bbox="316 384 454 415">On Page 1:</p> <ul data-bbox="365 426 917 531" style="list-style-type: none"> <li>• Type in <b>Group Name</b>.</li> <li>• Type in an available <b>Group Extension</b>.</li> <li>• Set <b>ACD, Queue</b> and <b>Vector</b> to <b>y</b>.</li> </ul> <div data-bbox="316 569 1401 968" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="337 579 1307 940"> add hunt-group 51                                     Page 1 of 4                                      HUNT GROUP Group Number: 51                                     ACD? y   Group Name: Skill 51                               Queue? y   Group Extension: 61051                             Vector? y   Group Type: ucd-mia     TN: 1     COR: 1   MM Early Answer? n   Security Code:                                     Local Agent Preference? n   ISDN/SIP Caller Display: Queue Limit: unlimited   Calls Warning Threshold:      Port:   Time Warning Threshold:      Port: </pre> </div> <p data-bbox="316 1010 454 1041">On Page 2:</p> <ul data-bbox="365 1052 706 1083" style="list-style-type: none"> <li>• Set <b>Skill</b> and <b>AAS</b> to <b>y</b>.</li> </ul> <div data-bbox="316 1121 1401 1551" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="337 1131 1307 1495"> add hunt-group 55                                     Page 2 of 4                                      HUNT GROUP Skill? y      Expected Call Handling Time (sec): 180   AAS? y   Measured: none   Supervisor Extension: Controlling Adjunct: none Multiple Call Handling: none </pre> </div>

Step	Description
6.	<p><b>VDNs and Vectors for H.323 connection</b></p> <p>Administer a set of vectors and Vector Directory Numbers (VDNs) for the following purposes:</p> <p>Entry/Hold: To provide converse route and failure coverage and to queue incoming calls to the skill group at medium priority.</p> <p>Callback: To queue callback calls to the skill group at high priority.</p> <p><b>Entry/Hold VDN and Vector</b></p> <p>Modify an available vector using the <b>change vector n</b> command, where <b>n</b> is an existing vector number.</p> <p>Following configuration was used during compliance testing and may vary.</p> <pre data-bbox="318 705 1416 1136"> change vector 100                                     Page 1 of 6   CALL VECTOR Number: 100   Name: Entry Multimedia? n      Attendant Vectoring? n      Meet-me Conf? n      Lock? n Basic? y      EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? y      Holidays? y Variables? y      3.0 Enhanced? y 01 wait-time      0      secs hearing silence 02 converse-on      skill 55      pri h passing none      and none 03 collect      10      digits after announcement 61011      for none 04 goto step      5      if digits      =      1 05 queue-to      skill 51      pri m 06 wait-time      999 secs hearing music 07 disconnect      after announcement none 08 stop 09 </pre> <p>Add a VDN using the <b>add vdn n</b> command, where <b>n</b> is an available extension number. Enter a descriptive <b>Name</b>, and the vector number from above for <b>Vector Number</b>. Retain the default values for all remaining fields.</p> <pre data-bbox="318 1325 1416 1642"> add vdn 61000                                     Page 1 of 3   VECTOR DIRECTORY NUMBER Extension: 61000 Name*: Entry for H.323 Destination: Vector Number      100 Attendant Vectoring? n Meet-me Conferencing? n Allow VDN Override? n COR: 1 TN*: 1 Measured: none </pre> <p><b>Callback VDN and Vector</b></p> <p>Modify an available vector using the <b>change vector n</b> command, where <b>n</b> is an existing vector number.</p> <p><b>Continued on next page</b></p>

Step	Description
	<p data-bbox="315 233 1276 264">Following configuration was used during compliance testing and may vary.</p> <div data-bbox="347 304 1401 877" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="365 317 1380 846"> change vector 101                                     Page 1 of 6   CALL VECTOR  Number: 101   Name: Callback Multimedia? n      Attendant Vectoring? n      Meet-me Conf? n      Lock? n Basic? y      EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? y      Holidays? y Variables? y      3.0 Enhanced? y 01 wait-time      2 secs hearing silence 02 announcement 61011 03 queue-to      skill 51 pri h 04 wait-time      30 secs hearing ringback 05 goto step      4 if unconditionally 06 disconnect      after announcement none 07 stop 08 09 10 11 12  Press 'Esc f 6' for Vector Editing </pre> </div> <p data-bbox="315 919 1425 1024">Add a VDN using the <b>add vdn n</b> command, where <b>n</b> is an available extension number. Enter a descriptive <b>Name</b>, and the vector number from above for <b>Vector Number</b>. Retain the default values for all remaining fields.</p> <div data-bbox="315 1066 1370 1520" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="337 1079 1347 1507"> change vdn 61025                                     Page 1 of 3   VECTOR DIRECTORY NUMBER  Extension: 61025 Name*: Callback Destination: Vector Number      102 Attendant Vectoring? n Meet-me Conferencing? n Allow VDN Override? n COR: 1 TN*: 1 Measured: none  VDN of Origin Annc. Extension*: 1st Skill*: 2nd Skill*: 3rd Skill*: </pre> </div>

Step	Description
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7. **VDNs and Vectors for SIP Connection**

Administer a set of vectors and Vector Directory Numbers (VDNs) for the following purposes:

Entry: To provide adjunct route and failure coverage

Hold: To queue incoming calls to the skill group at medium priority.

Callback: To queue callback calls to the skill group at high priority.

**Entry VDN and Vector**

Modify an available vector using the **change vector n** command, where **n** is an existing vector number.

Following configuration was used during compliance testing and may vary.

```

change vector 104                                     Page 1 of 6
                                           CALL VECTOR

Number: 104                      Name: SIP Virtual Hol
Multimedia? n      Attendant Vectoring? n      Meet-me Conf? n      Lock? n
Basic? y           EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y
Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? y      Holidays? y
Variables? y      3.0 Enhanced? y
01 wait-time      0      secs hearing silence
02 route-to      number 61175      with cov n if unconditionally
03 wait-time      10      secs hearing ringback
04 queue-to      skill 51      pri m
05 wait-time      30      secs hearing ringback
06 goto step      4      if unconditionally
07 disconnect      after announcement none
08 stop
09
  
```

Add a VDN using the **add vdn n** command, where **n** is an available extension number. Enter a descriptive **Name**, and the vector number from above for **Vector Number**.

Retain the default values for all remaining fields.

```

change vdn 61027                                     Page 1 of 3
                                           VECTOR DIRECTORY NUMBER

Extension: 61027
Name*: SIP VDN for Virtual Hold
Destination: Vector Number      104
Attendant Vectoring? n
Meet-me Conferencing? n
Allow VDN Override? n
COR: 1
TN*: 1
Measured: none

VDN of Origin Annc. Extension*:
1st Skill*:
2nd Skill*:
3rd Skill*:
  
```

**Continued on next page**

Step	Description
	<p><b>Hold VDN and Vector</b></p> <p>Modify an available vector using the <b>change vector n</b> command, where <b>n</b> is an existing vector number.</p> <p>Following configuration was used during compliance testing and may vary.</p> <div data-bbox="318 487 1365 865" style="border: 1px solid black; padding: 5px;"> <pre> change vector 105                                     Page 1 of 6                                      CALL VECTOR Number: 105   Name: Hold Multimedia? n      Attendant Vectoring? n      Meet-me Conf? n      Lock? n   Basic? y      EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y   Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? y      Holidays? y   Variables? y      3.0 Enhanced? y 01 wait-time      0      secs hearing silence 02 announcement      61011 03 queue-to      skill 55      pri m 04 wait-time      30      secs hearing ringback 05 goto step      4      if unconditionally 06 disconnect      after announcement none 07 stop </pre> </div> <p>Add a VDN using the <b>add vdn n</b> command, where <b>n</b> is an available extension number. Enter a descriptive <b>Name</b>, and the vector number from above for <b>Vector Number</b>. Retain the default values for all remaining fields.</p> <div data-bbox="318 1052 1365 1524" style="border: 1px solid black; padding: 5px;"> <pre> change vdn 61028                                     Page 1 of 3                                      VECTOR DIRECTORY NUMBER Extension: 61028 Name*: Hold Destination: Vector Number      105 Attendant Vectoring? n Meet-me Conferencing? n Allow VDN Override? n COR: 1 TN*: 1 Measured: none VDN of Origin Annc. Extension*: 1st Skill*: 2nd Skill*: 3rd Skill*: </pre> </div> <p><b>Callback VDN and Vector</b></p> <p>VDN and Vector used for H.323 were re-used for SIP connection</p>

Step	Description
<p>8.</p>	<p><b>Automatic Alternate Routing (AAR)</b>  For compliance test, AAR was used to route calls to Voice Portal via SM. Use <b>change aar analysis</b> command to add an entry to AAR table.</p> <p>For compliance test, all calls with dialed digits of 611xx were route to SM.</p> <pre data-bbox="316 451 1364 640"> change aar analysis 611 AAR DIGIT ANALYSIS TABLE Location: all          Percent Full: 1  Dialed      Total      Route      Call      Node      ANI String      Min      Max      Pattern   Type      Num      Reqd 611         5        5        50        aar       n </pre> <p>Route Pattern 50 used trunk group 50, which was configured for SM. This trunk group was used for routing SIP calls to SM.</p>
<p>9.</p>	<p><b>Route Patterns</b>  Use the <b>change route pattern n</b> command, where <i>n</i> is an unused route pattern.</p> <pre data-bbox="337 903 1409 1480"> change route-pattern 50 Pattern Number: 50  Pattern Name: SCCAN? n          Secure SIP? n Grp FRL NPA Pfx Hop Toll No.  Inserted          DCS/ IXC No   No   Mrk Lmt List Del  Digits           QSIG Intw 1: 50   0 2: 3: 4: 5: 6:           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>

Step	Description
10.	<p><b>H.323 Stations – Voice Portal</b></p> <p>Use the <b>add station n</b> command, where <b>n</b> is a valid unused station number, for example 58881. The station numbers correspond to the stations assigned to the Voice Portal ports and will be used later for Voice Portal <b>H.323 VoIP Connection</b> configuration. On Page 1, enter the following values:</p> <ul style="list-style-type: none"> <li>• Set <b>Type</b> to <b>7434ND</b>.</li> <li>• Set <b>Port</b> to <b>IP</b>.</li> <li>• Enter a descriptive name in <b>Name</b> field</li> <li>• Enter a <b>Security Code</b>, which will later be used by Voice Portal.</li> <li>• Set <b>IP Softphone</b> to <b>y</b>.</li> </ul> <div data-bbox="316 646 1388 1192" style="border: 1px solid black; padding: 5px;"> <pre> add station 58881                                     Page 1 of 5   STATION Extension: 58881                                     Lock Messages? n                               BCC: 0 Type: 7434ND   Security Code: 123456                           TN: 1 Port: S00134   Coverage Path 1:                               COR: 1 Name: 1  Coverage Path 2:                               COS: 1   Hunt-to Station: STATION OPTIONS Loss Group: 2   Time of Day Lock Table: Data Module? n                                       Personalized Ringing Pattern: 1 Display Module? n                                    Message Lamp Ext: 58881   Coverage Module? n Survivable COR: internal                             Media Complex Ext: Survivable Trunk Dest? y                             IP SoftPhone? y   Remote Office Phone? n   IP Video Softphone? n Short/Prefixed Registration Allowed: default </pre> </div> <p>On Page 2, set <b>Multimedia Mode</b> to <b>enhanced</b>.</p> <div data-bbox="316 1308 1388 1749" style="border: 1px solid black; padding: 5px;"> <pre> add station 58881                                     Page 2 of 5   STATION FEATURE OPTIONS LWC Reception: spe                                   Auto Select Any Idle Appearance? n LWC Activation? y                                   Coverage Msg Retrieval? y LWC Log External Calls? n                           Auto Answer: none CDR Privacy? n                                       Data Restriction? n Redirect Notification? y                               Idle Appearance Preference? n Per Button Ring Control? n                           Bridged Idle Line Preference? n Bridged Call Alerting? n                             Restrict Last Appearance? y Active Station Ringing: single H.320 Conversion? n                                 Per Station CPN - Send Calling Number? Service Link Mode: as-needed                          EC500 State: enabled <b>Multimedia Mode: enhanced</b>                        Audible Message Waiting? n MWI Served User Type:                               Display Client Redirection? n AUDIX Name:  Select Last Used Appearance? n   Coverage After Forwarding? s </pre> </div> <p>Repeat this step to add more stations.</p>

Step	Description
11.	<p><b>Agents – Voice Portal</b></p> <p>For each H.323 station for Voice Portal, add an Auto Answer agent using <b>add agent-loginID n</b>, where <b>n</b> is an available agent ID. For compliance test, agent 5881 was created and station 58881 was used as <b>Port Extension</b>. On Page 1,</p> <ul style="list-style-type: none"> <li>• Set <b>AAS</b> to <b>y</b>.</li> <li>• Set a <b>Security Code</b>.</li> <li>• Set <b>Port Extension</b> to station created in step 10.</li> <li>• Set <b>Auto Answer</b> to <b>station</b>.</li> </ul> <pre data-bbox="318 533 1386 1066"> add agent-loginID 5881                                     Page 1 of 2                                 AGENT LOGINID                                 Login ID: 5881             AAS? y                                 Name: VHT AVP Agent 1       AUDIX? n                                 TN: 1                       LWC Reception: spe                                 COR: 1                       LWC Log External Calls? n                                 Coverage Path:               AUDIX Name for Messaging:                                 Security Code: 1234                                 Port Extension: 58881       LoginID for ISDN/SIP Display? n                                  Auto Answer: station                                 MIA Across Skills: system                                 ACW Agent Considered Idle: system                                 Aux Work Reason Code Type: system                                 Logout Reason Code Type: system                                 Maximum time agent in ACW before logout (sec): system                                 Forced Agent Logout Time:    :  WARNING: Agent must log in again before changes take effect </pre> <p>On Page 2, for line 1, set <b>SN</b> to the hunt group created for routing calls to Voice Portal in step 4. Set <b>SL</b> to <b>1</b>.</p> <pre data-bbox="318 1205 1386 1415"> add agent-loginID 5881                                     Page 2 of 2                                 AGENT LOGINID                                 Direct Agent Skill:         Service Objective? n                                 Call Handling Preference: skill-level Local Call Preference? n                                  SN   RL SL                 SN   RL SL                                 1: 55   1                 16: </pre> <p>Repeat this step to add more stations.</p>

Step	Description
12.	<p><b>H.323 Stations – Call Center Agents</b></p> <p>Use the <b>add station n</b> command, where <b>n</b> is a valid unused station number, for example 61020. The station numbers in this step correspond to the stations that will be used by Call Center Agents to answer calls <b>H.323 VoIP Connection</b> configuration. On Page 1, enter the following values:</p> <ul style="list-style-type: none"> <li>• Set <b>Type</b> to the type of station.</li> <li>• Enter a descriptive name in <b>Name</b> field</li> <li>• Enter a <b>Security Code</b>, which will later be used by Voice Portal.</li> </ul> <pre data-bbox="316 569 1386 1119"> add station 61020                                     Page 1 of 5                                      STATION Extension: 61020                                     Lock Messages? n          BCC: 0 Type: 9630   Security Code: 123456     TN: 1 Port: S00113   Coverage Path 1:         COR: 1 Name: Virtual Hold Sta                               Coverage Path 2:         COS: 1                                      Hunt-to Station:  STATION OPTIONS                                      Time of Day Lock Table: Loss Group: 19                                       Personalized Ringing Pattern: 1                                      Message Lamp Ext: 61020 Speakerphone: 2-way                                   Mute Button Enabled? y Display Language: english                             Button Modules: 0 Survivable GK Node Name:                               Media Complex Ext: Survivable COR: internal                               IP SoftPhone? n Survivable Trunk Dest? y                               IP Video? n                                      Short/Prefixed Registration Allowed: default                                      Customizable Labels? y </pre> <p>On Page 2, set <b>Multimedia Mode</b> to <b>enhanced</b>.</p> <pre data-bbox="316 1230 1386 1703"> add station 61020                                     Page 2 of 5                                      STATION FEATURE OPTIONS LWC Reception: spe                                   Auto Select Any Idle Appearance? n LWC Activation? y                                   Coverage Msg Retrieval? y LWC Log External Calls? n                           Auto Answer: none CDR Privacy? n                                       Data Restriction? n Redirect Notification? y                               Idle Appearance Preference? n Per Button Ring Control? n                           Bridged Idle Line Preference? n Bridged Call Alerting? n                             Restrict Last Appearance? y Active Station Ringing: single  H.320 Conversion? n                                 Per Station CPN - Send Calling Number? Service Link Mode: as-needed                           EC500 State: enabled <b>Multimedia Mode: enhanced</b>                         Audible Message Waiting? n MWI Served User Type:                               Display Client Redirection? n AUDIX Name:   Select Last Used Appearance? n                                      Coverage After Forwarding? s </pre> <p>Repeat this step to add more stations.</p>

Step	Description
13.	<p><b>Agents – Call Center Agents</b></p> <p>For each station added for Call Center Agents, add an Auto Answer agent using <b>add agent-loginID n</b>, where <b>n</b> is an available agent ID. For compliance test, agent 1020 was created and station 60120 was used as <b>Port Extension</b>. On Page 1,</p> <ul style="list-style-type: none"> <li>• Set <b>AAS</b> to <b>y</b>.</li> <li>• Set a <b>Security Code</b>.</li> <li>• Set <b>Port Extension</b> to station created in step 12.</li> <li>• Set <b>Auto Answer</b> to <b>station</b>.</li> </ul> <pre data-bbox="318 533 1386 1066"> add agent-loginID 5881                               Page 1 of 2                 AGENT LOGINID  Login ID: 5881                                       AAS? y Name: VHT AVP Agent 1                               AUDIX? n TN: 1   LWC Reception: spe COR: 1  LWC Log External Calls? n Coverage Path:                                     AUDIX Name for Messaging: Security Code: 1234 Port Extension: 58881                               LoginID for ISDN/SIP Display? n  Auto Answer: station MIA Across Skills: system ACW Agent Considered Idle: system Aux Work Reason Code Type: system Logout Reason Code Type: system Maximum time agent in ACW before logout (sec): system Forced Agent Logout Time:  WARNING: Agent must log in again before changes take effect </pre> <p>On Page 2, for line 1, set <b>SN</b> to the hunt group created for routing calls to Call Center Agents in step 6. Set <b>SL</b> to <b>1</b>.</p> <pre data-bbox="318 1205 1386 1415"> add agent-loginID 5881                               Page 2 of 2                 AGENT LOGINID  Direct Agent Skill:                                Service Objective? n Call Handling Preference: skill-level              Local Call Preference? n  SN  RL SL          SN  RL SL 1: 51      1      16: </pre> <p>Repeat this step to add more stations.</p>

## 5. Configure Avaya Aura® Application Enablement Services

All administration for Avaya Aura® Application Enablement Services (AES) is performed by web browser. Initially, users land on the Welcome to OAM page shown below. Note that all navigation is performed by clicking links in the Navigation Panel on the left side of the screen, context panels will then appear on the right side of the screen.

The procedures fall into the following areas:

- Configure Virtual Hold User
- Enable Unrestricted Access
- Note the TLink Information

1.

### Configure Virtual Hold user

In the Navigation Panel, select **User Management** → **User Admin** → **Add User**. The **Add User** panel will display as shown below, enter an appropriate **User Id**, **Common Name**, **Surname**, **User Password**, and **Confirm Password**.

Click **Apply** at the bottom of the pages to save the entries.

#### Add User

Fields marked with \* can not be empty.

* User Id	<input type="text" value="vhtaes"/>
* Common Name	<input type="text" value="vhtaes"/>
* Surname	<input type="text" value="vhtaes"/>
User Password	<input type="text"/>
Confirm Password	<input type="text"/>
Admin Note	<input type="text"/>
Avaya Role	<input type="text" value="None"/>
Business Category	<input type="text"/>
Car License	<input type="text"/>
CM Home	<input type="text"/>
Css Home	<input type="text"/>
CT User	<input type="text" value="Yes"/>
Department Number	<input type="text"/>
Display Name	<input type="text"/>
Employee Number	<input type="text"/>
Employee Type	<input type="text"/>
Enterprise Handle	<input type="text"/>
Given Name	<input type="text"/>
Home Phone	<input type="text"/>
Home Postal Address	<input type="text"/>
Initials	<input type="text"/>
Labeled URI	<input type="text"/>
Mail	<input type="text"/>
MM Home	<input type="text"/>
Mobile	<input type="text"/>
Organization	<input type="text"/>
Pager	<input type="text"/>
Preferred Language	<input type="text" value="English"/>
Room Number	<input type="text"/>
Telephone Number	<input type="text"/>

2.

### Enable Unrestricted Access

If the Security Database (SDB) is enabled on Application Enablement Services, set the vhtaes user account to Unrestricted Access to enable any device to be used implicitly.

Navigate to **Security → Security Database → CTI Users → List All Users** and select the **vhtaes** user and click **Edit**.

On the **Edit CTI User** panel, check the **Unrestricted Access** box and click the **Apply Changes** button.

Click **Apply** when asked to confirm the change on the **Apply Changes to CTI User Properties** dialog.

#### Edit CTI User

User Profile:	User ID	vhtaes
	Common Name	vhtaes
	Worktop Name	NONE ▼
	Unrestricted Access	<input checked="" type="checkbox"/>
<hr/>		
Call and Device Control:	Call Origination/Termination and Device Status	None ▼
<hr/>		
Call and Device Monitoring:	Device Monitoring	None ▼
	Calls On A Device Monitoring	None ▼
	Call Monitoring	<input type="checkbox"/>
<hr/>		
Routing Control:	Allow Routing on Listed Devices	None ▼
<hr/>		
<input type="button" value="Apply Changes"/> <input type="button" value="Cancel Changes"/>		

3.

**Note the TLink Information**

Navigate to **AE Services > TSAPI > TSAPI Links**. Edit the **TSAP Link** and click on **Advanced Settings**; note the **TLinks Configured**. This information will be used by Virtual Hold to capture events.

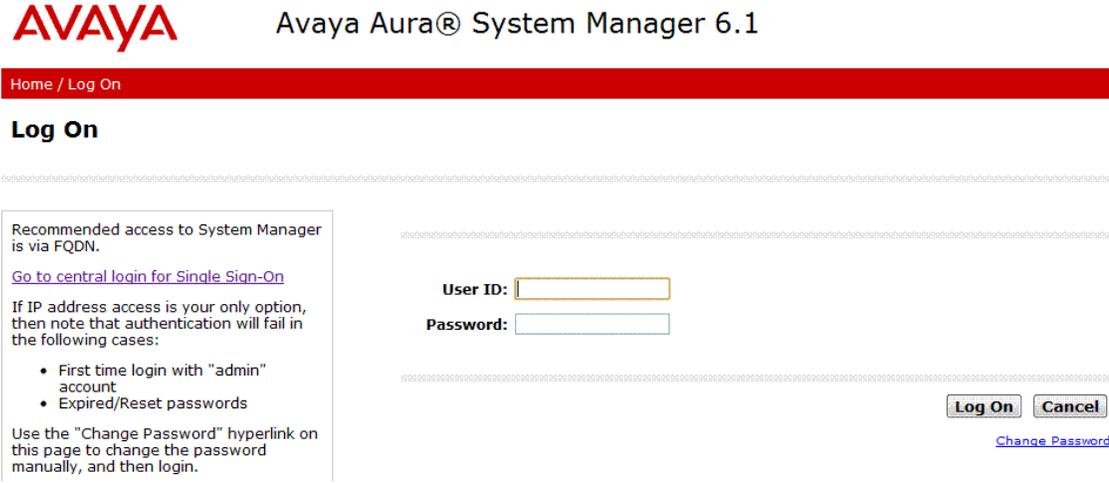
**Please note that TSAPI links were pre-configured for this test and configuration is out of scope for this document.**

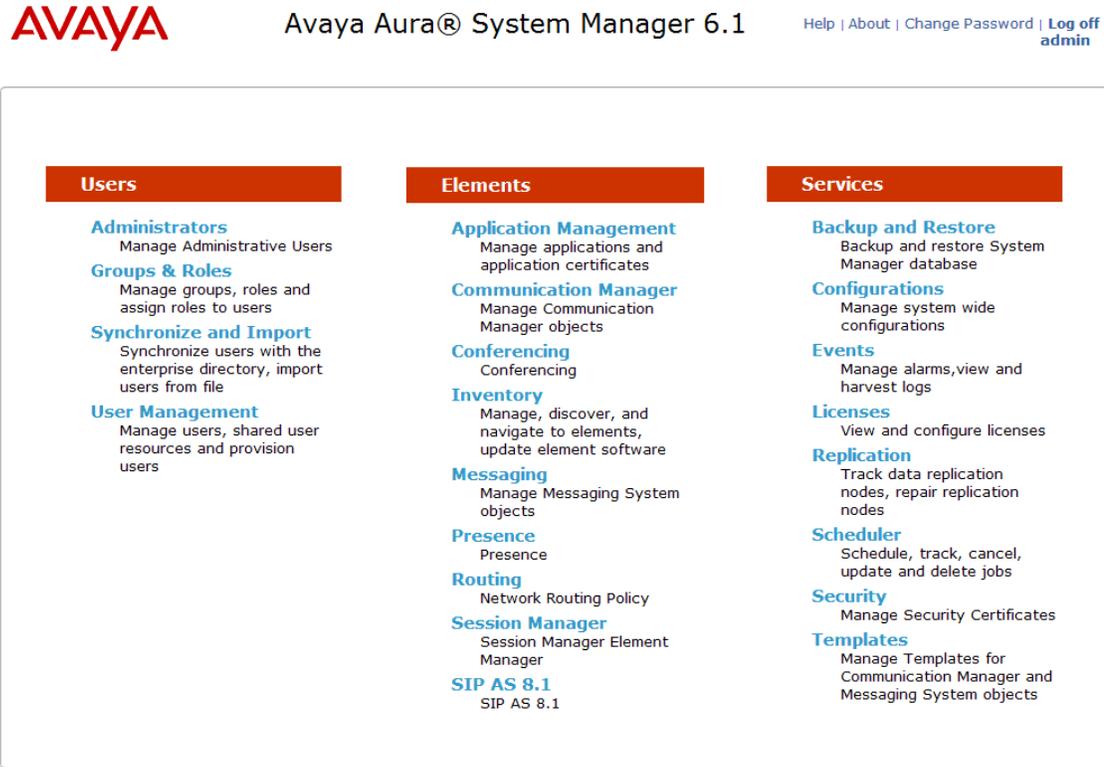
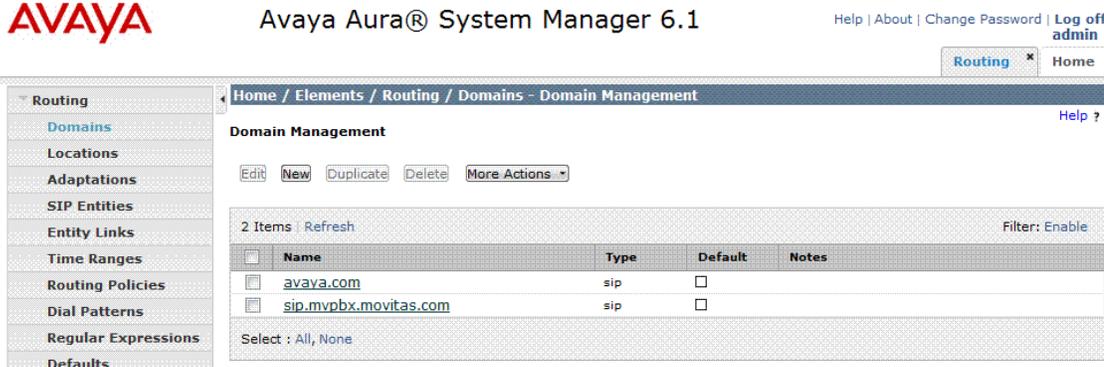
**TSAPI Link - Advanced Settings**

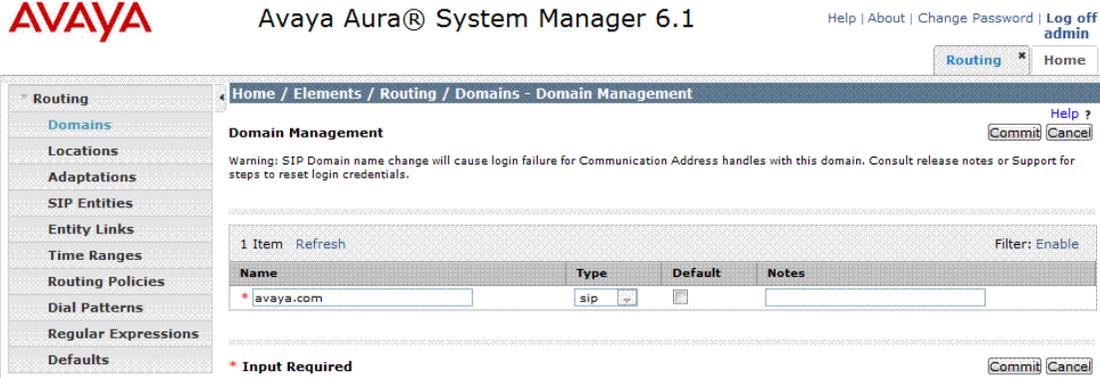
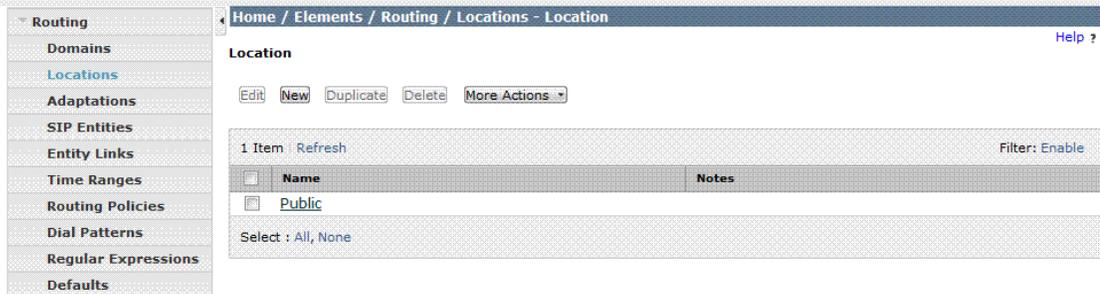
Tlinks Configured	<input type="text" value="AVAYA#TR18300#CSTA-S#AES6_TR1"/>
	<input type="text" value="AVAYA#TR18300#CSTA#AES6_TR1"/>
Max Flow Allowed	<input type="text" value="800"/>
TSDI Size	<input type="text" value="2097152"/>
TSDI High Water Mark	<input type="text" value="1677721"/>
<input type="button" value="Apply Changes"/> <input type="button" value="Cancel Changes"/> <input type="button" value="Restore Defaults"/>	

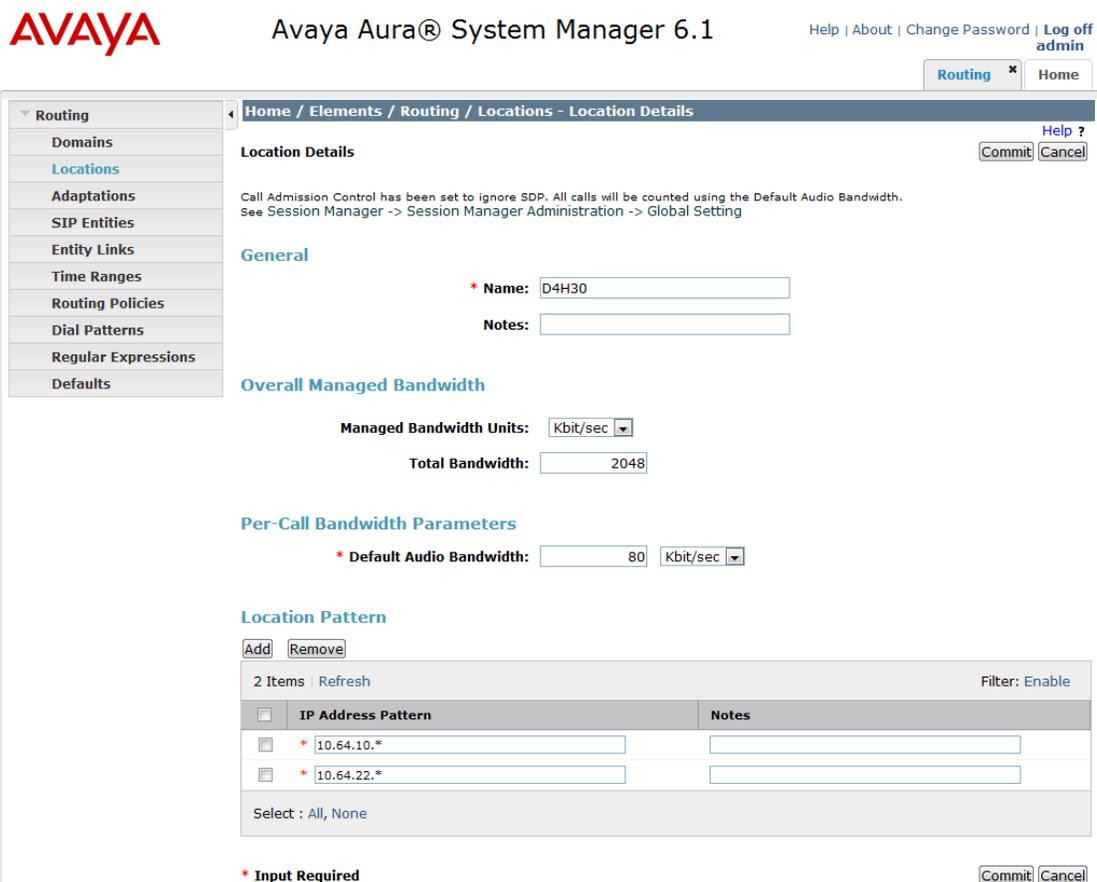
## 6. Configure Avaya Aura® Session Manager

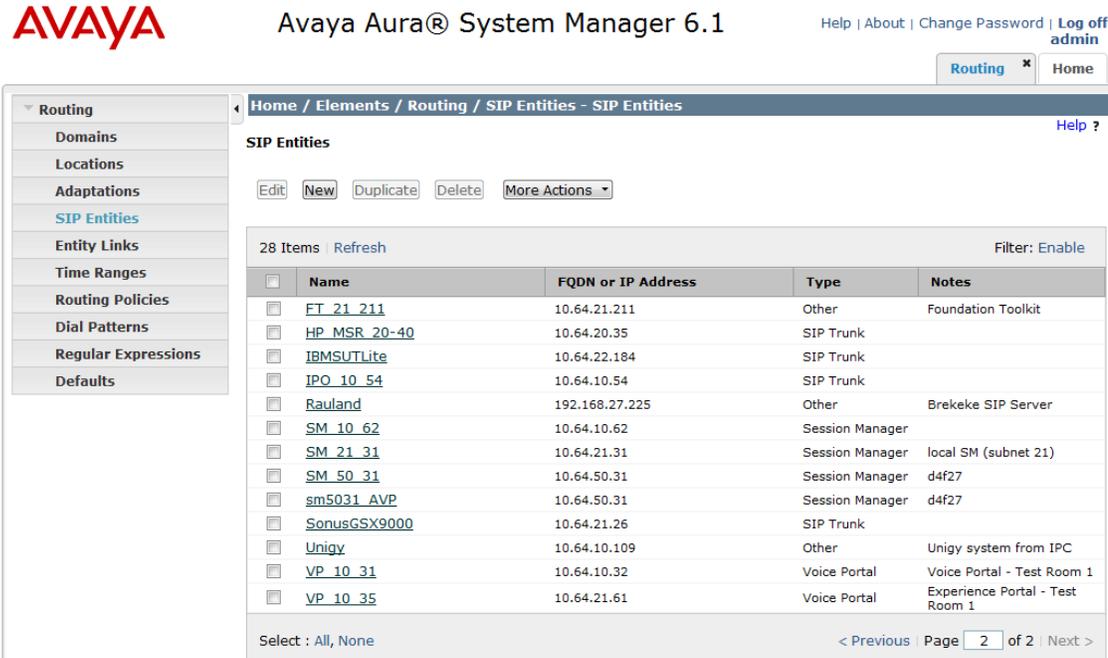
This section provides the steps for configuring Session Manager to route calls to Voice Portal.

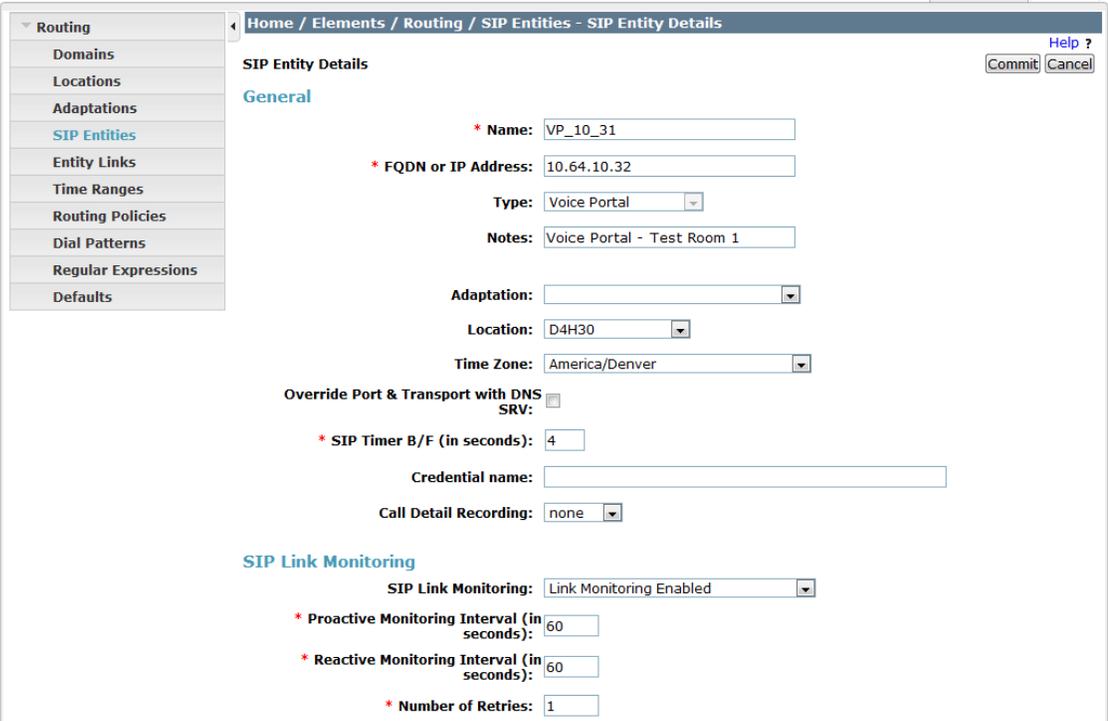
Step	Description
1.	<p>Session Manager is configured using browser access to System Manager. Enter the URL of System Manager such as <a href="https://&lt;ip-addr&gt;/network-login/SMGR">https://&lt;ip-addr&gt;/network-login/SMGR</a> where &lt;ip-addr&gt; is the IP address or qualified domain name of the System Manager. Login using appropriate credentials.</p> 

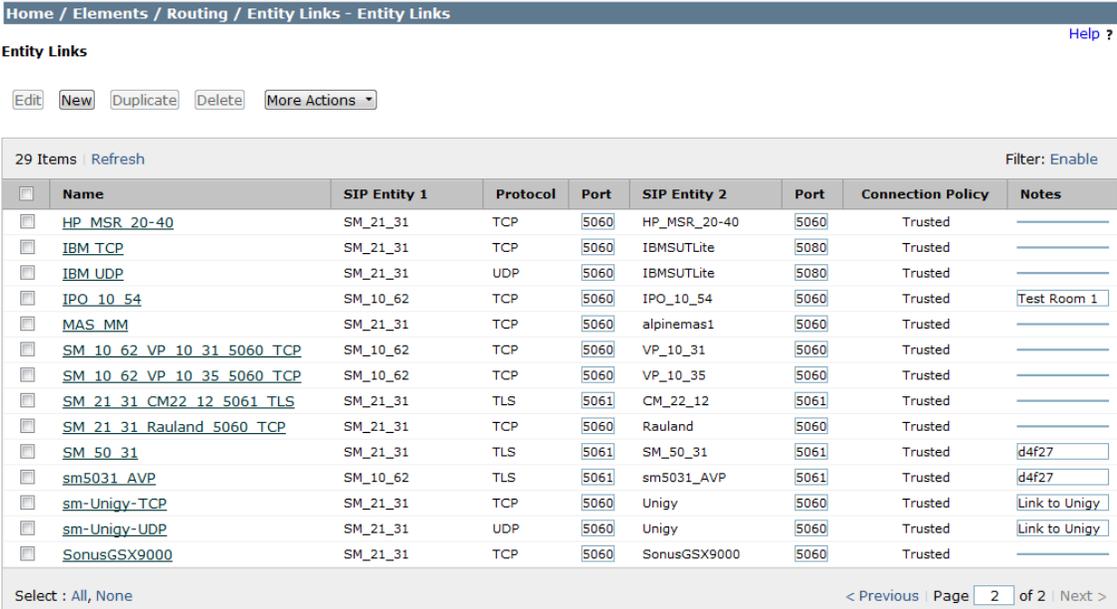
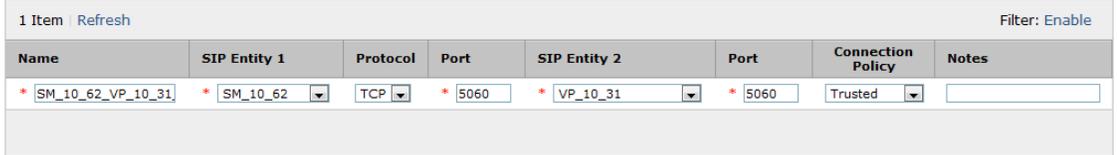
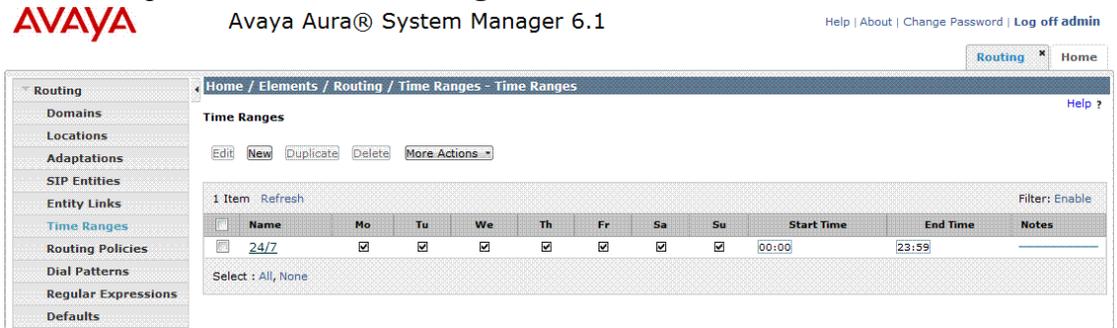
Step	Description
2.	<p>The home page is a navigation screen as shown below. Each of these links will open a new tab from which to navigate to the details of the managed environment. Click on Routing.</p> 
3.	<p>One the left pane, click on <b>Domains</b></p> 

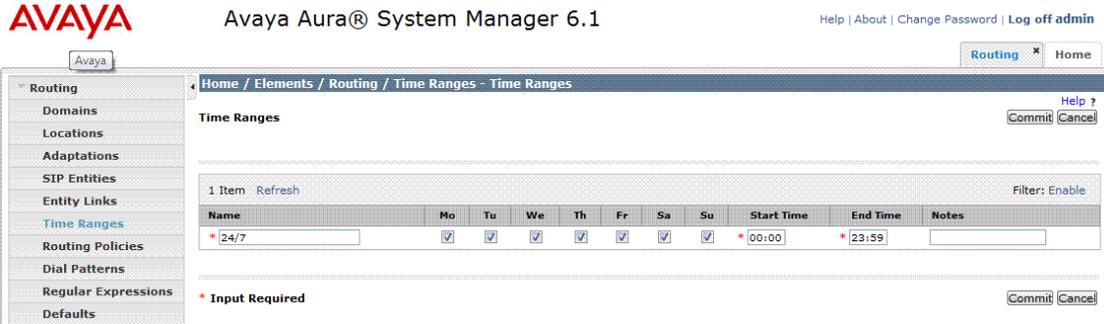
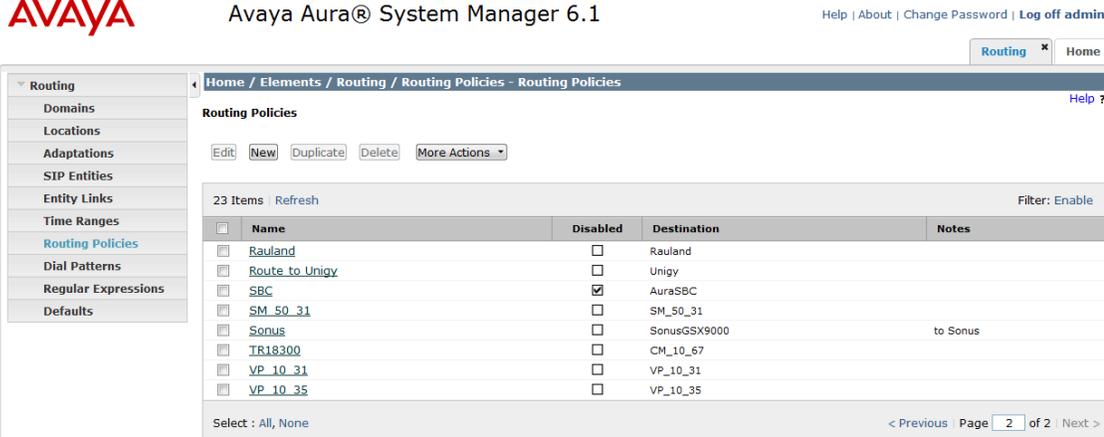
Step	Description
<p>4.</p>	<p><b>Add a Domain</b>  On the <b>Domains</b> page, click on <b>New</b>.</p> <ul style="list-style-type: none"> <li>For the <b>Name</b> field, type in the domain</li> <li>Set <b>Type</b> to <b>sip</b></li> </ul> <p>For Compliance testing, <b>avaya.com</b> sip domain was used.</p> 
<p>5.</p>	<p>On the left pane, click on <b>Locations</b></p> 

Step	Description
6.	<p><b>Add a Location</b></p> <p>On the <b>Location</b> page, click on <b>New</b>.</p> <ul style="list-style-type: none"> <li>• Enter the <b>Name</b> of the location</li> <li>• Add a <b>Location Pattern</b></li> </ul> <p>For Compliance testing the following information was used.</p>  <p>The screenshot displays the Avaya Aura System Manager 6.1 interface. At the top, the Avaya logo and 'Avaya Aura® System Manager 6.1' are visible. The breadcrumb trail is 'Home / Elements / Routing / Locations - Location Details'. The left sidebar contains a navigation menu with 'Locations' selected. The main content area is titled 'Location Details' and includes a 'Help ?' link and 'Commit' and 'Cancel' buttons. A warning message states: 'Call Admission Control has been set to ignore SDP. All calls will be counted using the Default Audio Bandwidth. See Session Manager -&gt; Session Manager Administration -&gt; Global Setting'. The 'General' section has a required field for 'Name' with the value 'D4H30' and an empty 'Notes' field. The 'Overall Managed Bandwidth' section shows 'Managed Bandwidth Units' as 'Kbit/sec' and 'Total Bandwidth' as '2048'. The 'Per-Call Bandwidth Parameters' section has a required field for 'Default Audio Bandwidth' set to '80 Kbit/sec'. The 'Location Pattern' section has 'Add' and 'Remove' buttons and shows a table with 2 items. The table has columns for 'IP Address Pattern' and 'Notes'. The first row has the pattern '* 10.64.10.*' and the second row has '* 10.64.22.*'. Below the table is a 'Select : All, None' option. At the bottom, there is a '* Input Required' message and 'Commit' and 'Cancel' buttons.</p>

Step	Description
7.	<p>On the left pane, click on <b>SIP Entities</b>.</p> 

8.	<p><b>Add a SIP Entity for Voice Portal</b>  On the <b>SIP Entity</b> page, click on <b>New</b>.</p> <ul style="list-style-type: none"> <li>Enter the <b>Name</b> and <b>FQDN or IP Address</b></li> </ul> <p>For Compliance testing the following information was used.</p> 
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Step	Description
<p>9.</p>	<p>On the left pane, click on <b>Entity Links</b></p> 
<p>10.</p>	<p><b>Add an Entity Link</b>  On the <b>Entity Link</b> page, click on <b>New</b></p> <ul style="list-style-type: none"> <li>• Add a <b>Name</b></li> <li>• Set <b>SIP Entity 1</b> as <b>SM_10_62</b>.</li> <li>• Set the <b>Protocol Type</b> and type in <b>Port</b></li> <li>• Set <b>SIP Entity 2</b> as added in <b>Step 8</b> and set the <b>Port</b></li> <li>• Set the connection Policy to be <b>Trusted</b></li> </ul> <p>For Compliance testing the following information was used.</p> 
<p>11.</p>	<p>On the left pane, Click on <b>Time Ranges</b></p> 

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

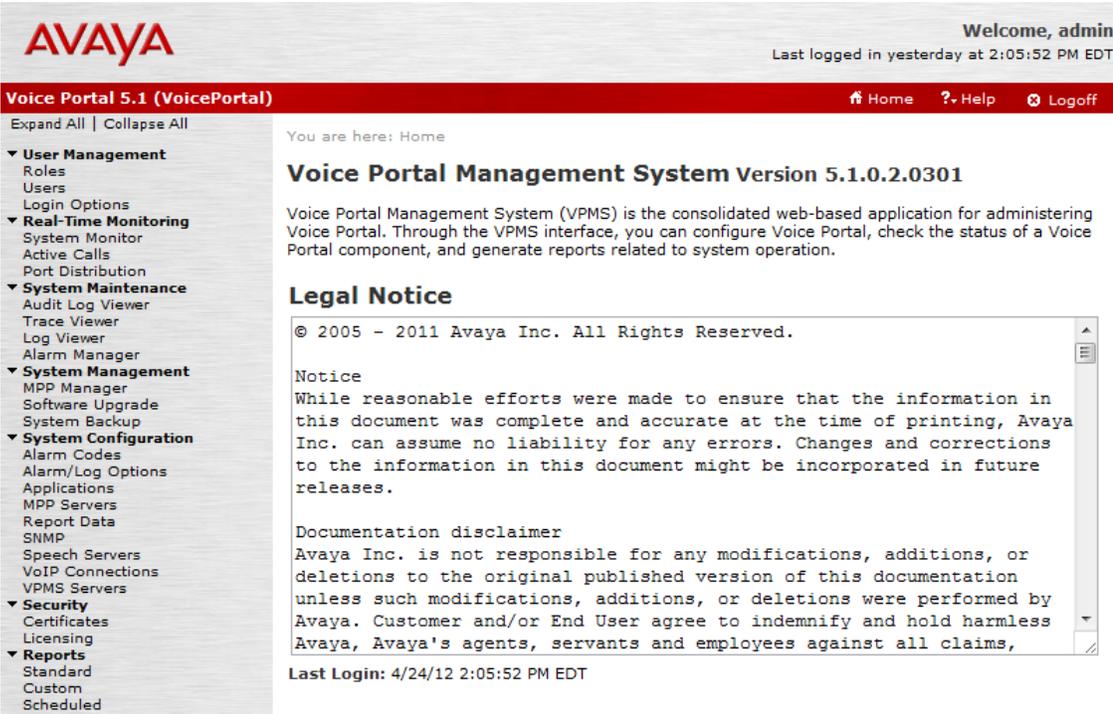
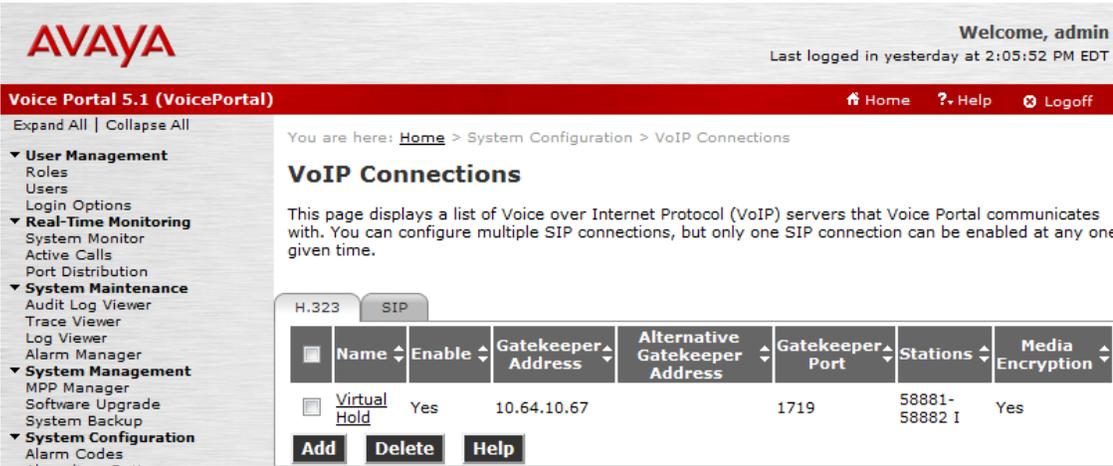
Step	Description																																																										
14.	<p>On the <b>Routing Policy</b> page, click on <b>New</b></p> <ul style="list-style-type: none"> <li>Type in the <b>Name</b> for Routing Policy</li> <li>Select <b>SIP Entity as a destination</b> <ul style="list-style-type: none"> <li>Select SIP Entity configure in <b>Step 8</b></li> </ul> </li> <li>Select a <b>Time Range</b> added in <b>Step 12</b></li> </ul> <p>For Compliance testing the following information was used.</p> <p>Home / Elements / Routing / Routing Policies - Routing Policy Details <span style="float: right;"><a href="#">Help ?</a></span></p> <p><b>Routing Policy Details</b> <span style="float: right;"><input type="button" value="Commit"/> <input type="button" value="Cancel"/></span></p> <p><b>General</b></p> <p>* Name: <input type="text" value="VP_10_31"/></p> <p>Disabled: <input type="checkbox"/></p> <p>Notes: <input type="text"/></p> <p><b>SIP Entity as Destination</b></p> <p><input type="button" value="Select"/></p> <table border="1"> <thead> <tr> <th>Name</th> <th>FQDN or IP Address</th> <th>Type</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>VP_10_31</td> <td>10.64.10.32</td> <td>Voice Portal</td> <td>Voice Portal - Test Room 1</td> </tr> </tbody> </table> <p><b>Time of Day</b></p> <p><input type="button" value="Add"/> <input type="button" value="Remove"/> <input type="button" value="View Gaps/Overlaps"/></p> <p>1 Item <a href="#">Refresh</a> <span style="float: right;">Filter: Enable</span></p> <table border="1"> <thead> <tr> <th><input type="checkbox"/></th> <th>Ranking</th> <th>Name</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> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>0</td> <td>24/7</td> <td><input checked="" type="checkbox"/></td> <td>00:00</td> <td>23:59</td> <td>Time Range 24/7</td> </tr> </tbody> </table> <p>Select : All, None</p> <p><b>Dial Patterns</b></p> <p><input type="button" value="Add"/> <input type="button" value="Remove"/></p> <p>2 Items <a href="#">Refresh</a> <span style="float: right;">Filter: Enable</span></p> <table border="1"> <thead> <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> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>611</td> <td>5</td> <td>5</td> <td><input type="checkbox"/></td> <td>-ALL-</td> <td>D4H30</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>69</td> <td>5</td> <td>5</td> <td><input type="checkbox"/></td> <td>avaya.com</td> <td>D4H30</td> <td></td> </tr> </tbody> </table> <p>Select : All, None</p>	Name	FQDN or IP Address	Type	Notes	VP_10_31	10.64.10.32	Voice Portal	Voice Portal - Test Room 1	<input type="checkbox"/>	Ranking	Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes	<input type="checkbox"/>	0	24/7	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7	<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes	<input type="checkbox"/>	611	5	5	<input type="checkbox"/>	-ALL-	D4H30		<input type="checkbox"/>	69	5	5	<input type="checkbox"/>	avaya.com	D4H30							
Name	FQDN or IP Address	Type	Notes																																																								
VP_10_31	10.64.10.32	Voice Portal	Voice Portal - Test Room 1																																																								
<input type="checkbox"/>	Ranking	Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes																																															
<input type="checkbox"/>	0	24/7	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7																																																					
<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes																																																				
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<input type="checkbox"/>	69	5	5	<input type="checkbox"/>	avaya.com	D4H30																																																					

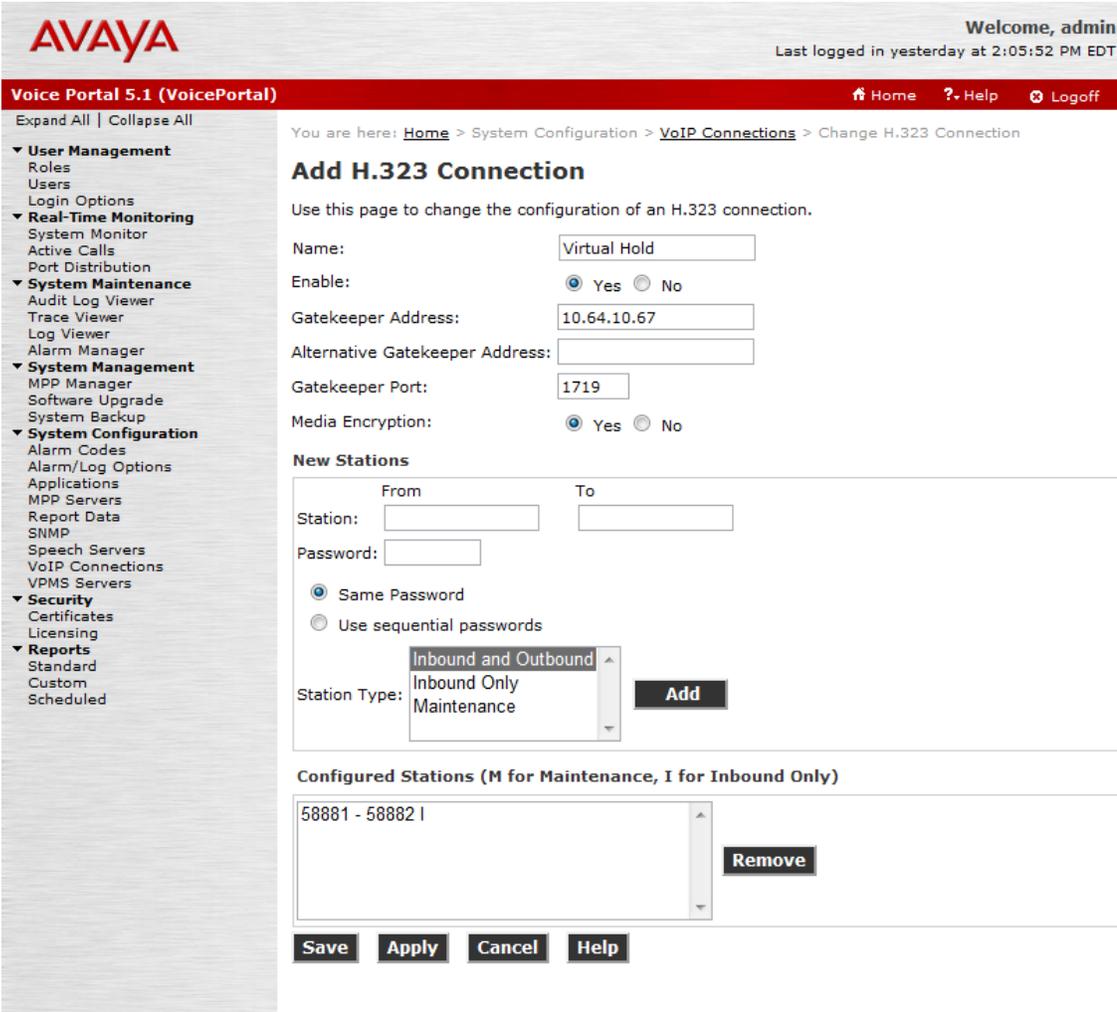
Step	Description																																																																																																																
15.	<p data-bbox="315 233 824 264">On the left pane, click on <b>Dial Patterns</b></p> <div data-bbox="315 268 1432 890"> <p data-bbox="315 275 784 294">Home / Elements / Routing / Dial Patterns - Dial Patterns <span data-bbox="1382 296 1432 312">Help ?</span></p> <p data-bbox="315 312 412 327"><b>Dial Patterns</b></p> <p data-bbox="315 359 688 380"> <input type="button" value="Edit"/> <input type="button" value="New"/> <input type="button" value="Duplicate"/> <input type="button" value="Delete"/> <input type="button" value="More Actions"/> </p> <p data-bbox="315 417 1414 438">42 Items <input type="button" value="Refresh"/> <span data-bbox="1317 417 1414 438">Filter: Enable</span></p> <table border="1" data-bbox="315 447 1432 842"> <thead> <tr> <th><input type="checkbox"/></th> <th>Pattern</th> <th>Min</th> <th>Max</th> <th>Emergency Call</th> <th>SIP Domain</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/></td><td>*0</td><td>3</td><td>3</td><td><input type="checkbox"/></td><td>-ALL-</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>1303</td><td>11</td><td>11</td><td><input type="checkbox"/></td><td>avaya.com</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>130322</td><td>11</td><td>11</td><td><input type="checkbox"/></td><td>-ALL-</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>1719</td><td>11</td><td>11</td><td><input type="checkbox"/></td><td>-ALL-</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>20</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>20000</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>220</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td>extensions 0n S8720</td></tr> <tr><td><input type="checkbox"/></td><td>23</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>270</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>2800</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>29</td><td>2</td><td>2</td><td><input type="checkbox"/></td><td>-ALL-</td><td></td></tr> <tr><td><input type="checkbox"/></td><td>3</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td>extensions on CM_20_72</td></tr> <tr><td><input type="checkbox"/></td><td>30353</td><td>10</td><td>10</td><td><input type="checkbox"/></td><td>avaya.com</td><td>Thrupoint DID</td></tr> <tr><td><input type="checkbox"/></td><td>333</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td>IPC system</td></tr> <tr><td><input type="checkbox"/></td><td>40</td><td>5</td><td>5</td><td><input type="checkbox"/></td><td>avaya.com</td><td></td></tr> </tbody> </table> <p data-bbox="315 863 448 884">Select : All, None <span data-bbox="1154 863 1422 884">&lt; Previous   Page 1 of 3   Next &gt;</span></p> </div>	<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Notes	<input type="checkbox"/>	*0	3	3	<input type="checkbox"/>	-ALL-		<input type="checkbox"/>	1303	11	11	<input type="checkbox"/>	avaya.com		<input type="checkbox"/>	130322	11	11	<input type="checkbox"/>	-ALL-		<input type="checkbox"/>	1719	11	11	<input type="checkbox"/>	-ALL-		<input type="checkbox"/>	20	5	5	<input type="checkbox"/>	avaya.com		<input type="checkbox"/>	20000	5	5	<input type="checkbox"/>	avaya.com		<input type="checkbox"/>	220	5	5	<input type="checkbox"/>	avaya.com	extensions 0n S8720	<input type="checkbox"/>	23	5	5	<input type="checkbox"/>	avaya.com		<input type="checkbox"/>	270	5	5	<input type="checkbox"/>	avaya.com		<input type="checkbox"/>	2800	5	5	<input type="checkbox"/>	avaya.com		<input type="checkbox"/>	29	2	2	<input type="checkbox"/>	-ALL-		<input type="checkbox"/>	3	5	5	<input type="checkbox"/>	avaya.com	extensions on CM_20_72	<input type="checkbox"/>	30353	10	10	<input type="checkbox"/>	avaya.com	Thrupoint DID	<input type="checkbox"/>	333	5	5	<input type="checkbox"/>	avaya.com	IPC system	<input type="checkbox"/>	40	5	5	<input type="checkbox"/>	avaya.com	
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<input type="checkbox"/>	40	5	5	<input type="checkbox"/>	avaya.com																																																																																																												

Step	Description																						
16.	<p data-bbox="315 233 797 264">On <b>Dial Patterns</b> page, click on <b>New</b></p> <p data-bbox="315 268 1382 338">For compliance testing the following pattern was used. All calls dialed with 5 digits and starts with 611 will route to Avaya Voice Portal.</p> <ul data-bbox="363 344 1024 548" style="list-style-type: none"> <li>• Set <b>Pattern</b> to <b>611</b></li> <li>• Set <b>Min</b> and <b>Max</b> to <b>5</b></li> <li>• Set <b>SIP Domain</b> to the domain configured in <b>Step 4</b></li> <li>• Add <b>Originating Locations and Routing Policies</b> <ul data-bbox="461 485 1024 548" style="list-style-type: none"> <li>○ Select location configured in <b>Step 6</b></li> <li>○ Select Routing Policy configured in <b>Step 14</b></li> </ul> </li> </ul> <div data-bbox="315 552 1430 1346"> <p data-bbox="315 552 834 573">Home / Elements / Routing / Dial Patterns - Dial Pattern Details <span data-bbox="1377 573 1430 590">Help ?</span></p> <p data-bbox="315 594 459 611">Dial Pattern Details <span data-bbox="1312 594 1430 611">Commit Cancel</span></p> <p data-bbox="315 642 386 661"><b>General</b></p> <p data-bbox="623 678 1040 697">* Pattern: <input data-bbox="708 678 1040 697" type="text" value="611"/></p> <p data-bbox="651 716 764 735">* Min: <input data-bbox="708 716 764 735" type="text" value="5"/></p> <p data-bbox="651 753 764 772">* Max: <input data-bbox="708 753 764 772" type="text" value="5"/></p> <p data-bbox="578 789 724 808">Emergency Call: <input data-bbox="708 789 724 808" type="checkbox"/></p> <p data-bbox="605 825 898 844">SIP Domain: <input data-bbox="708 825 898 844" type="text" value="-ALL-"/></p> <p data-bbox="651 861 1040 879">Notes: <input data-bbox="708 861 1040 879" type="text"/></p> <p data-bbox="315 921 693 940"><b>Originating Locations and Routing Policies</b></p> <p data-bbox="315 955 423 974">Add Remove</p> <p data-bbox="326 989 1414 1008">1 Item Refresh <span data-bbox="1312 989 1414 1008">Filter: Enable</span></p> <table border="1" data-bbox="315 1020 1430 1142"> <thead> <tr> <th data-bbox="326 1031 354 1050"><input type="checkbox"/></th> <th data-bbox="370 1031 602 1050">Originating Location Name 1 ▲</th> <th data-bbox="618 1031 764 1050">Originating Location Notes</th> <th data-bbox="781 1031 894 1050">Routing Policy Name</th> <th data-bbox="911 1031 992 1050">Rank 2 ▲</th> <th data-bbox="1008 1031 1105 1050">Routing Policy Disabled</th> <th data-bbox="1122 1031 1235 1050">Routing Policy Destination</th> <th data-bbox="1252 1031 1414 1050">Routing Policy Notes</th> </tr> </thead> <tbody> <tr> <td data-bbox="326 1073 354 1092"><input type="checkbox"/></td> <td data-bbox="370 1073 602 1092">D4H30</td> <td data-bbox="618 1073 764 1092"></td> <td data-bbox="781 1073 894 1092">VP_10_31</td> <td data-bbox="911 1073 992 1092">0</td> <td data-bbox="1008 1073 1105 1092"><input type="checkbox"/></td> <td data-bbox="1122 1073 1235 1092">VP_10_31</td> <td data-bbox="1252 1073 1414 1092"></td> </tr> </tbody> </table> <p data-bbox="326 1108 448 1127">Select : All, None</p> <p data-bbox="315 1171 574 1190"><b>Denied Originating Locations</b></p> <p data-bbox="315 1205 423 1224">Add Remove</p> <p data-bbox="326 1239 1414 1257">0 Items Refresh <span data-bbox="1312 1239 1414 1257">Filter: Enable</span></p> <table border="1" data-bbox="315 1270 1430 1299"> <thead> <tr> <th data-bbox="326 1276 354 1295"><input type="checkbox"/></th> <th data-bbox="370 1276 1122 1295">Originating Location</th> <th data-bbox="1138 1276 1414 1295">Notes</th> </tr> </thead> <tbody> <tr> <td data-bbox="326 1297 354 1316"><input type="checkbox"/></td> <td data-bbox="370 1297 1122 1316"></td> <td data-bbox="1138 1297 1414 1316"></td> </tr> </tbody> </table> <p data-bbox="315 1331 440 1350">* Input Required <span data-bbox="1312 1331 1430 1350">Commit Cancel</span></p> </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"/>	D4H30		VP_10_31	0	<input type="checkbox"/>	VP_10_31		<input type="checkbox"/>	Originating Location	Notes	<input type="checkbox"/>		
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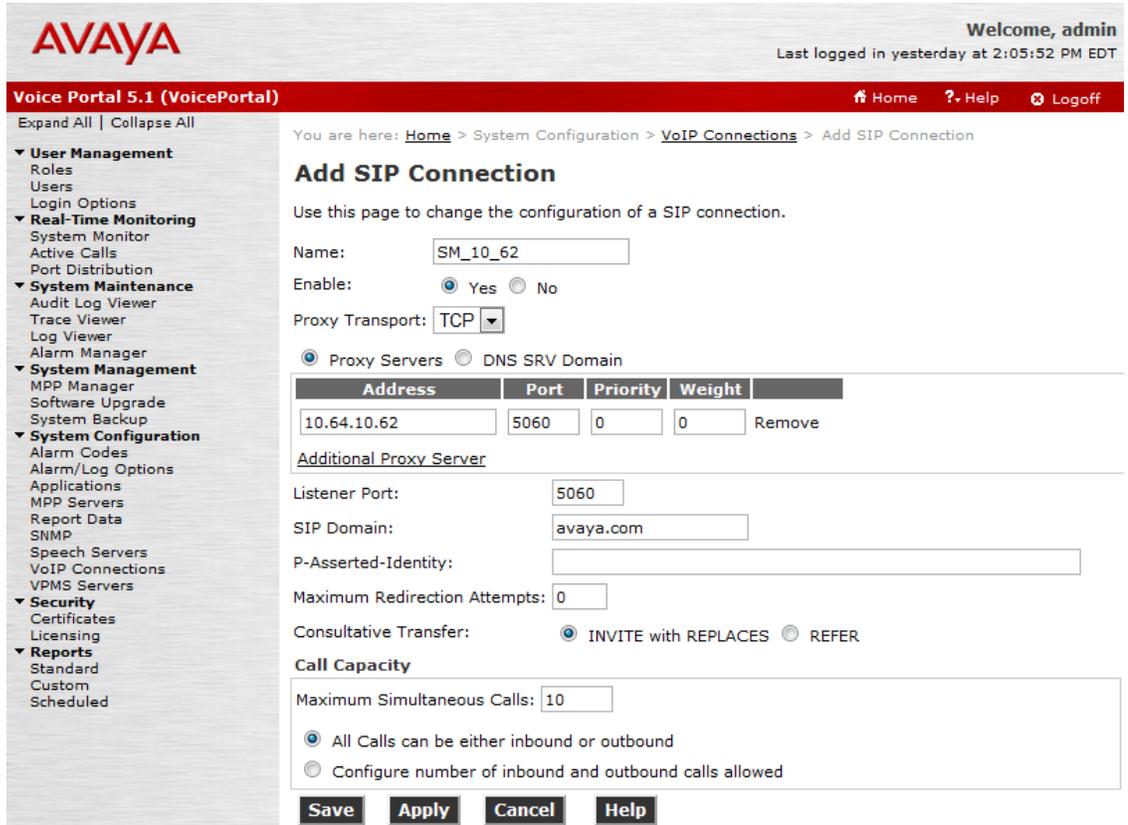
## 7. Configure Avaya Voice Portal

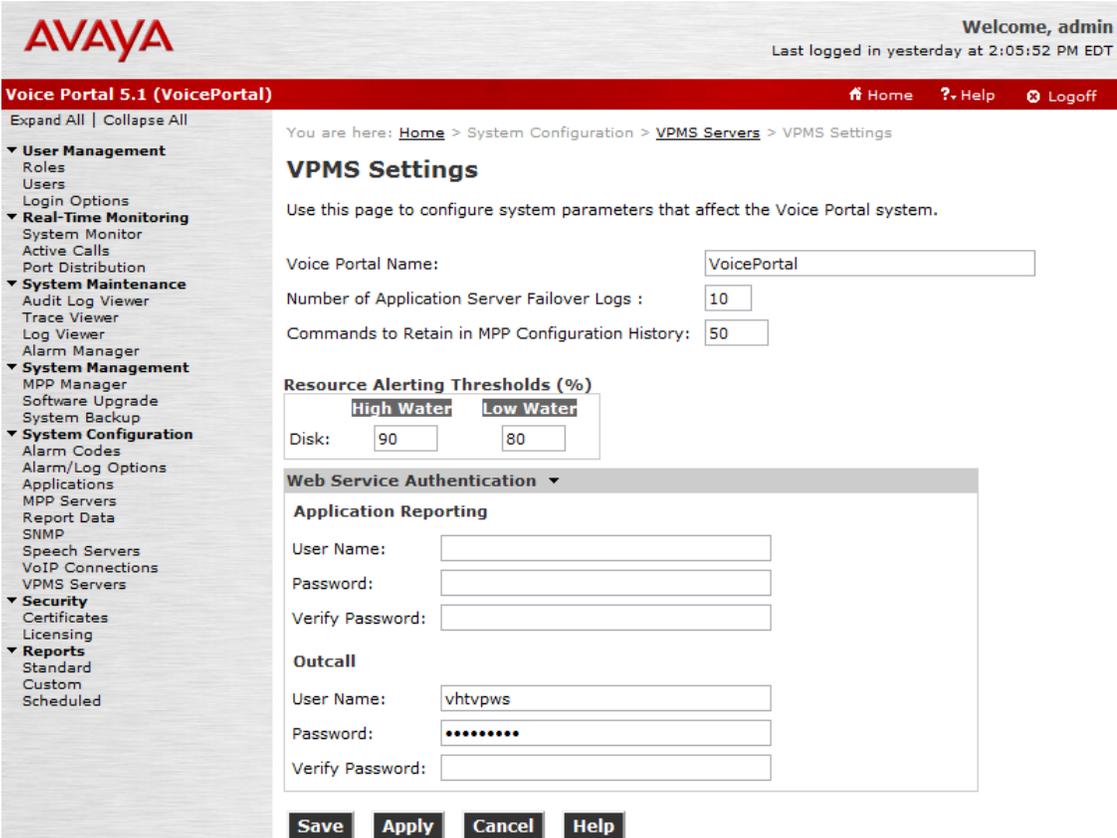
Voice Portal Management System (VPMS) web interface is used to configure Voice Portal.

Step	Description														
1.	<p>To access the web interface, type in <code>http://&lt;ip-addr&gt;/</code> as the URL in a web browser; <code>&lt;ip-addr&gt;</code> is the IP address of the VPMS. Log in using the Administrator user role.</p> 														
2.	<p>On the left pane, click on <b>VoIP Connections</b>.</p>  <table border="1" data-bbox="592 1612 1429 1753"> <thead> <tr> <th>Name</th> <th>Enable</th> <th>Gatekeeper Address</th> <th>Alternative Gatekeeper Address</th> <th>Gatekeeper Port</th> <th>Stations</th> <th>Media Encryption</th> </tr> </thead> <tbody> <tr> <td>Virtual Hold</td> <td>Yes</td> <td>10.64.10.67</td> <td></td> <td>1719</td> <td>58881-58882 I</td> <td>Yes</td> </tr> </tbody> </table>	Name	Enable	Gatekeeper Address	Alternative Gatekeeper Address	Gatekeeper Port	Stations	Media Encryption	Virtual Hold	Yes	10.64.10.67		1719	58881-58882 I	Yes
Name	Enable	Gatekeeper Address	Alternative Gatekeeper Address	Gatekeeper Port	Stations	Media Encryption									
Virtual Hold	Yes	10.64.10.67		1719	58881-58882 I	Yes									

Step	Description
3.	<p>To add a H.323 Connection, click on <b>H.323</b> tab and click <b>Add</b></p> <ul style="list-style-type: none"> <li>• Type in <b>Name</b></li> <li>• Fill in <b>Gatekeeper Address</b>. Gatekeeper address is the IP address of CM</li> <li>• Fill in <b>Station From</b> and <b>To</b>, and <b>Password</b>. This information will be used from configuration performed on CM for adding stations for <b>Inbound and Outbound</b> and <b>Inbound Only</b>.</li> <li>• The rest of the values are left at <b>Default</b>.</li> <li>• Click on <b>Save</b></li> </ul> 

Step	Description
4.	<p>To add a <b>SIP Connection</b>, click on <b>SIP</b> tab on <b>VoIP Connections</b> page.</p> <ul style="list-style-type: none"> <li>• Fill in <b>Name</b>.</li> <li>• In the <b>Address</b> and <b>Port</b> boxes, fill the the IP address and Port of SM.</li> <li>• In <b>SIP Domain</b>, type in the domain. Please note that the domain should be the domain used in configuration steps for SM.</li> <li>• Type in <b>Maximum Simultaneous Calls</b>.</li> <li>• The rest of the values are left at <b>Default</b>.</li> <li>• Click on <b>Save</b></li> </ul>

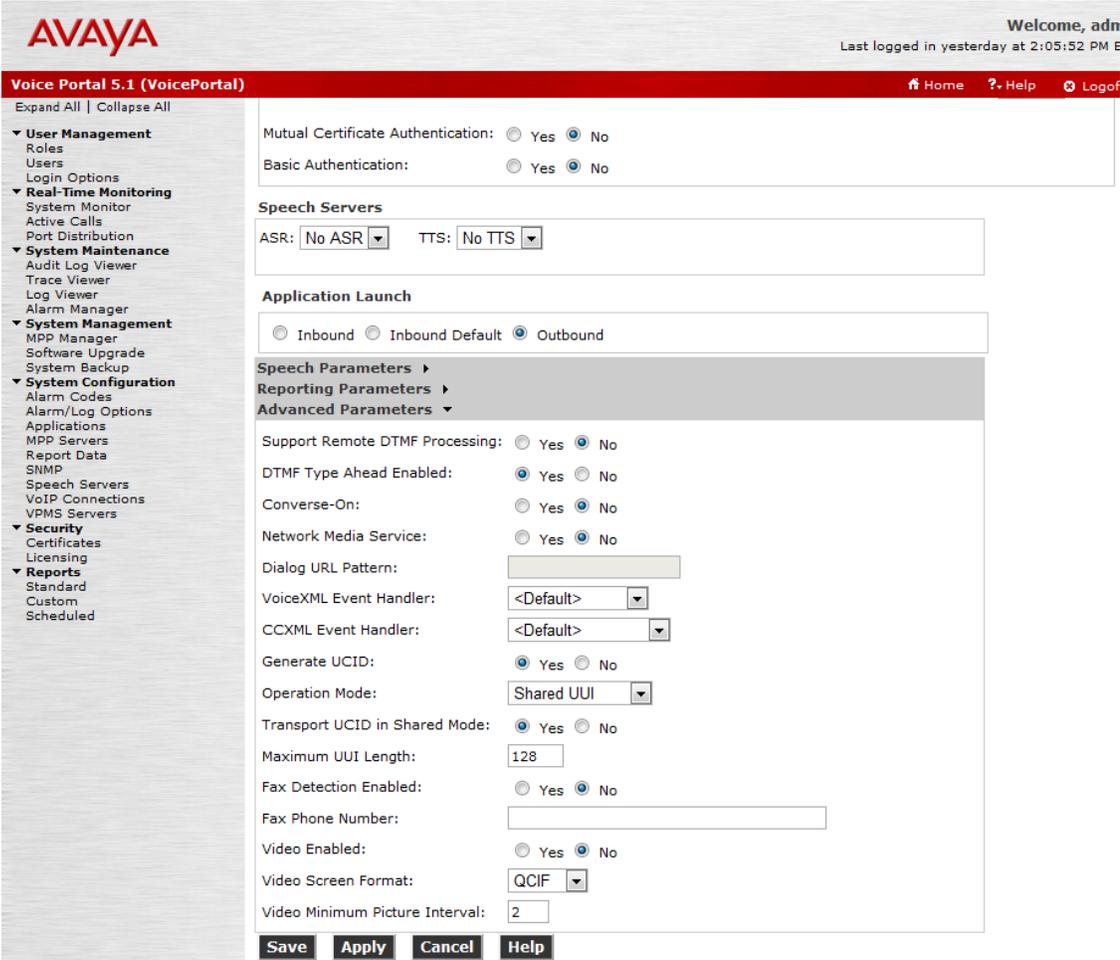


Step	Description
5.	<p>On the left pane, click on <b>VPMS Servers</b>, under <b>System Configuration</b>. Click on <b>VPMS Settings</b>.</p> <ul style="list-style-type: none"> <li>Under <b>Web Service Administration</b> section, for <b>Outcall</b>, type in <b>Username</b>, <b>Password</b> and <b>Verify Password</b>. This information will be used by Virtual Hold to initiate an outbound call.</li> <li>Click on <b>Save</b>.</li> </ul> 

Step	Description
6.	<p>On the left pane, click on <b>Applications</b>, under <b>System Configuration</b>. Click on <b>Add</b>. There needs to be two applications configured; one for inbound and one for outbound. Following steps need to be performed for both applications.</p> <ul style="list-style-type: none"> <li>• Fill in <b>Name</b>.</li> <li>• For <b>Type</b>, select <b>VoiceXML</b> from the drop down menu.</li> <li>• Fill in <b>VoiceXML URL</b>. <ul style="list-style-type: none"> <li>○ Inbound: <a href="http://10.64.21.75:8080/VXMLIVR_1.0.2.1975/PlatformSupport_AVP/Begin/?Tenant=VHTAVP&amp;ScriptID=1&amp;MODE=AVP">http://10.64.21.75:8080/VXMLIVR_1.0.2.1975/PlatformSupport_AVP/Begin/?Tenant=VHTAVP&amp;ScriptID=1&amp;MODE=AVP</a></li> <li>○ Outbound: <a href="http://10.64.21.75:8080/VXMLIVR_1.0.2.1975/PlatformSupport_AVP/Outbound/?Tenant=VHTAVP&amp;ScriptID=1&amp;MODE=AVP&amp;Segment=61000">http://10.64.21.75:8080/VXMLIVR_1.0.2.1975/PlatformSupport_AVP/Outbound/?Tenant=VHTAVP&amp;ScriptID=1&amp;MODE=AVP&amp;Segment=61000</a></li> <li>○ 10.64.21.75 and 8080 is the IP Address and Port of Virtual Hold Server running Virtual Hold VXML Interaction Server</li> </ul> </li> <li>• Add <b>Called Number</b> as configured in CM.</li> </ul> <p>Continued in next step</p>

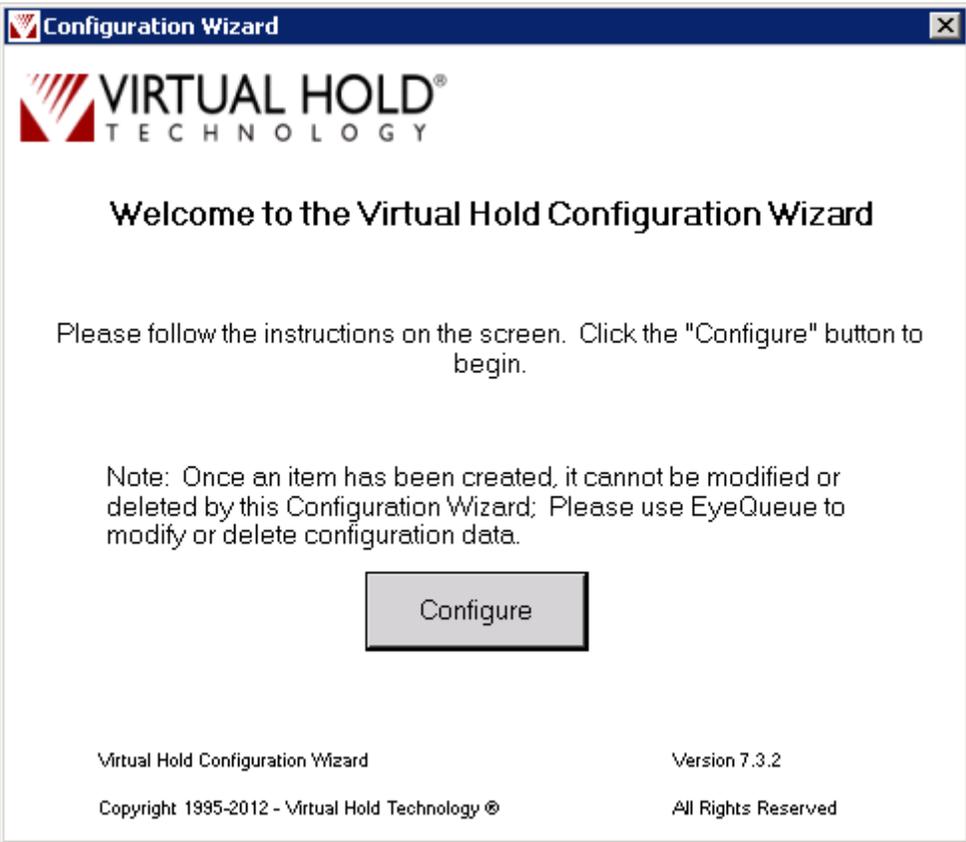
The screenshot displays the 'Add Application' configuration page in the Avaya Voice Portal 5.1. The page is titled 'Add Application' and includes a navigation breadcrumb: 'Home > System Configuration > Applications > Add Application'. The main content area contains the following sections:

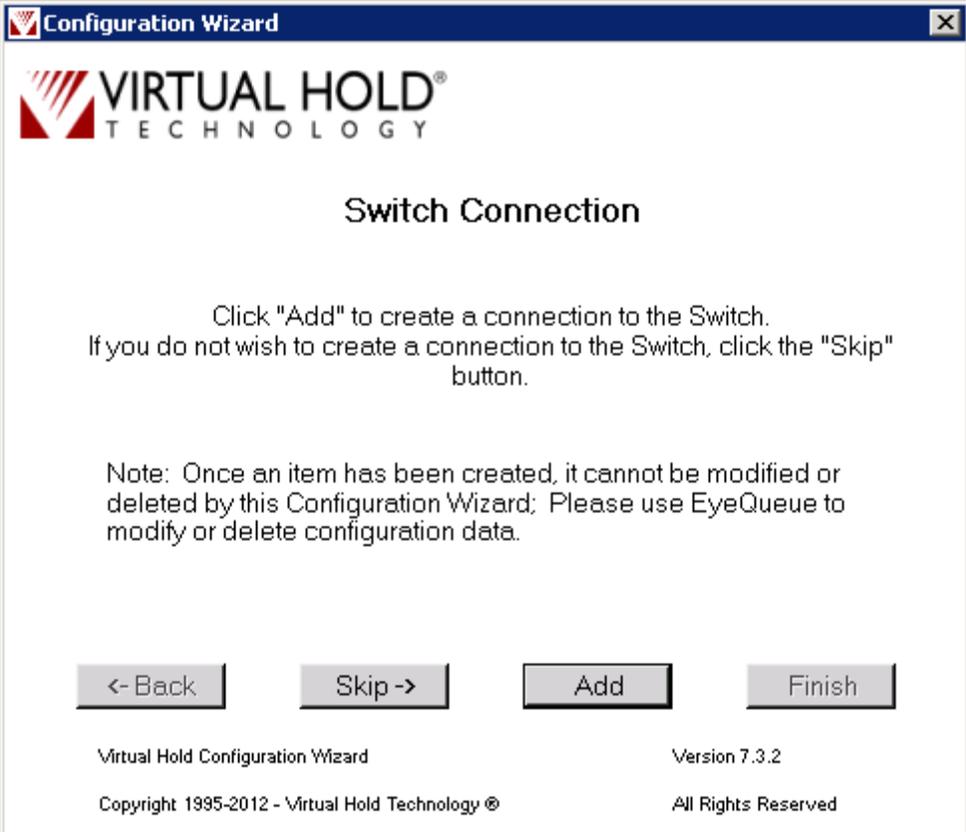
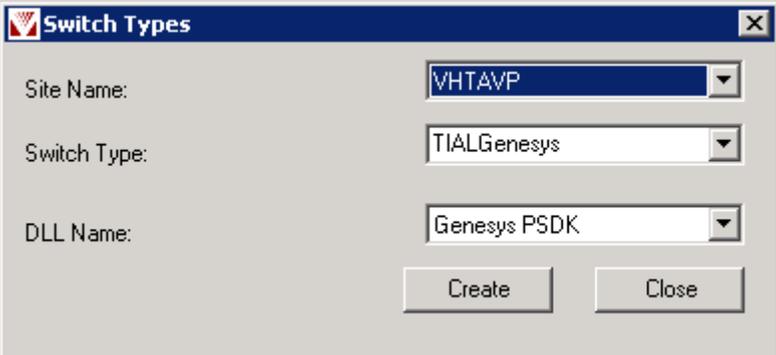
- Name:** VH\_IB
- Enable:** Yes (selected)
- Type:** VoiceXML
- URL:**  Single  Fail Over  Load Balance. The URL field contains: `http://10.64.21.75:8080/VXMLIVR_1.0.2.1975/PlatformSupport_AVP/Begin/?Tenant=VI` with a 'Verify' button.
- Mutual Certificate Authentication:** No (selected)
- Basic Authentication:** No (selected)
- Speech Servers:** ASR: No ASR, TTS: No TTS
- Application Launch:** Inbound (selected), Number (selected). The 'Called Number' field contains a list: 61175, 58881, 61000. A button labeled 'Configured Called Numbers or Called URIs' is visible next to the list.
- Buttons:** Save, Apply, Cancel, Help

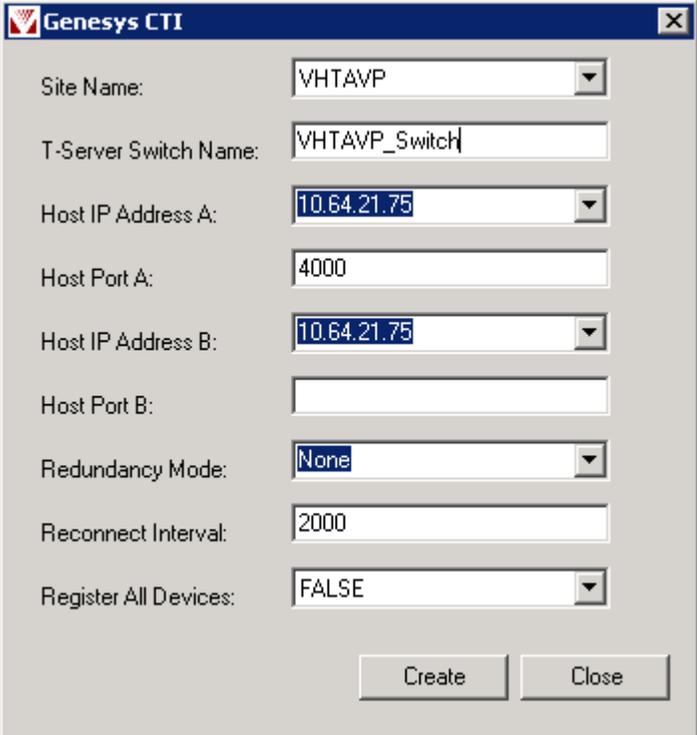
Step	Description
	<p>Click on <b>Advanced Parameters</b>.</p> <ul style="list-style-type: none"> <li>• Set <b>Generate UCID</b> to <b>Yes</b>.</li> <li>• Set <b>Operation Mode</b> to <b>Shared UUI</b>.</li> <li>• Set <b>Transport UCID</b> to <b>Yes</b>.</li> <li>• Click <b>Save</b>.</li> </ul> 

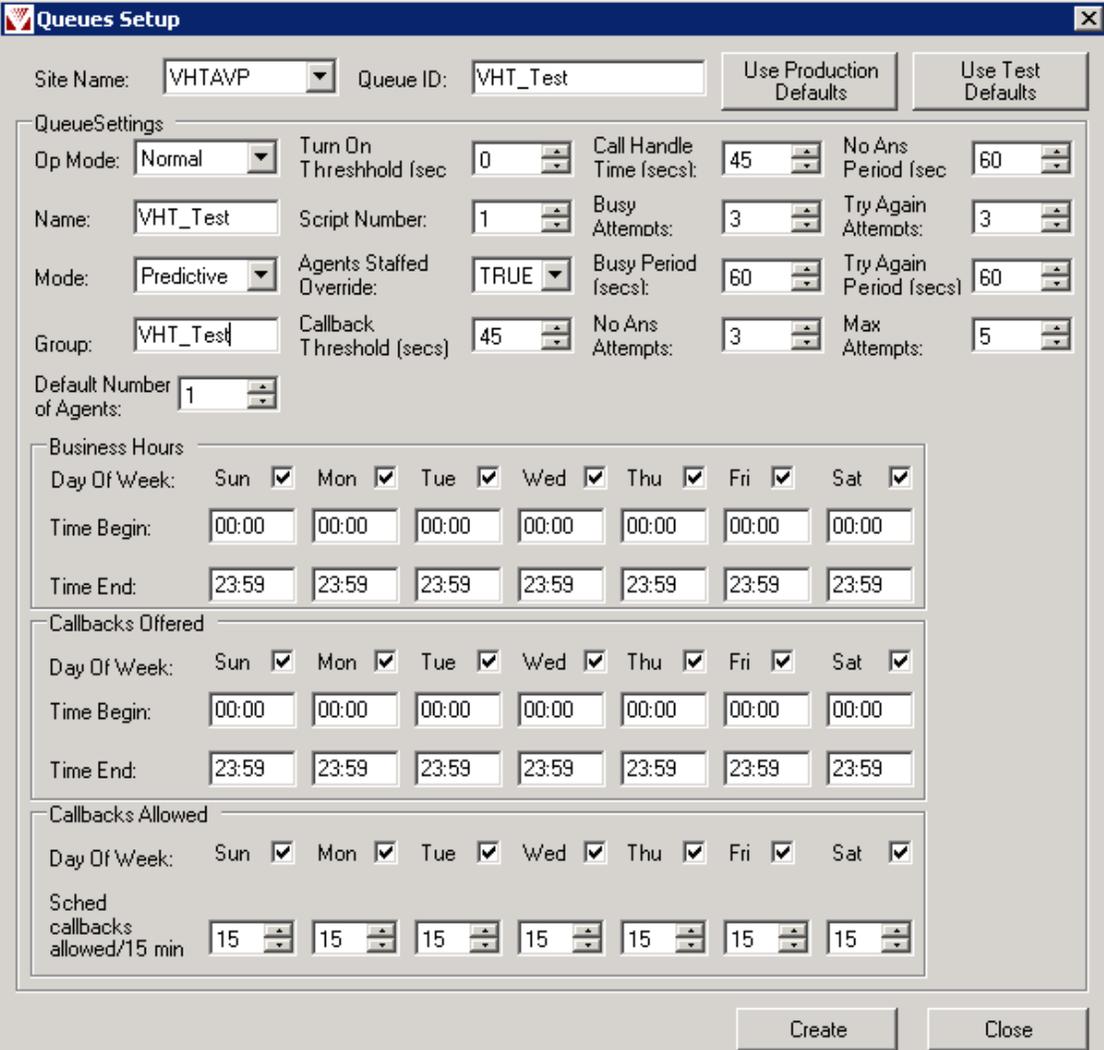
## 8. Configure Virtual Hold Concierge™

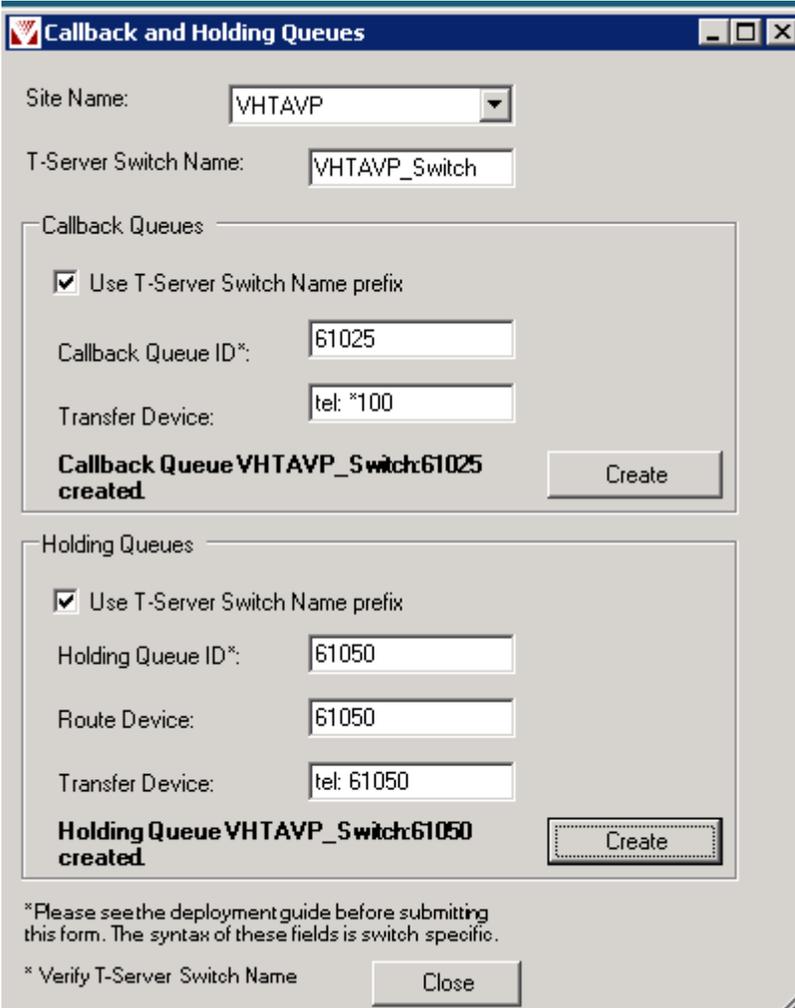
Login to the Windows 2008 server that has Virtual Hold Concierge™ installed.

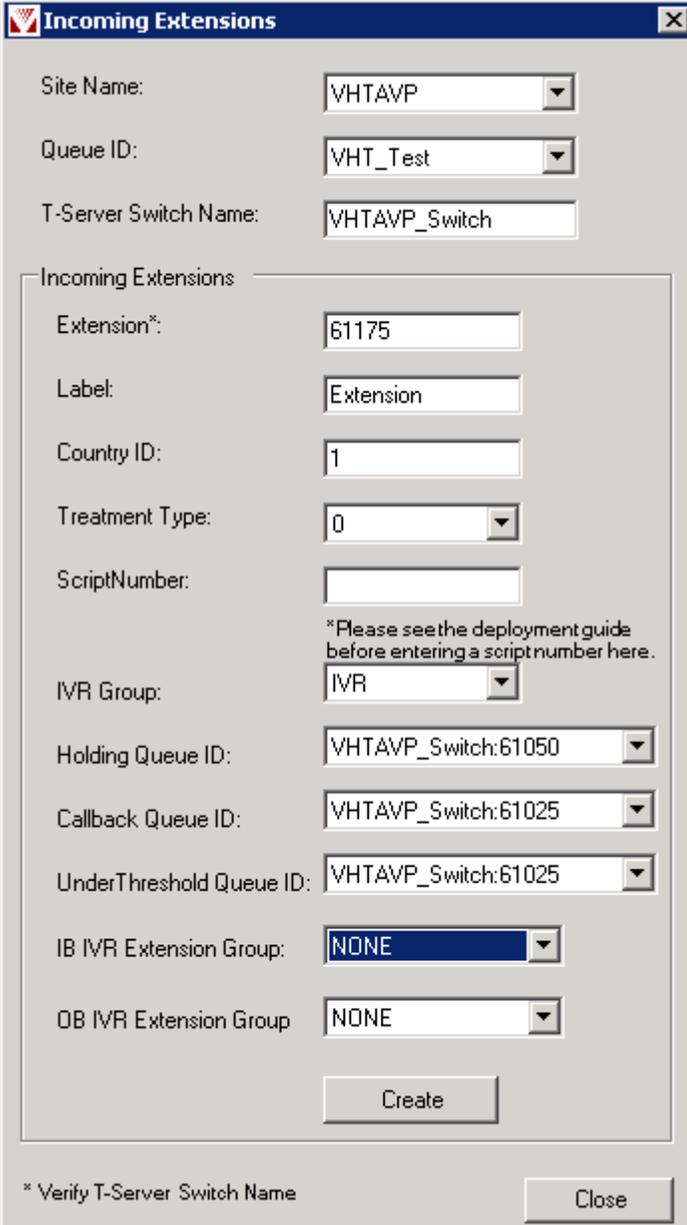
Step	Description
1.	Once <b>Virtual Hold Concierge™</b> is installed, open <b>VHT Configuration Wizard</b> . A shortcut to <b>VHT Configuration Wizard</b> should have been created on the desktop of the server. Double click the shortcut to open <b>VHT Configuration Wizard</b> . Please note that this configuration as show here was for SIP configuration. Same steps will need to be performed for H.323 configuration with different VDNs and Extensions.
2.	Click on <b>Configure</b> . 

Step	Description
3.	<p data-bbox="315 233 919 268">On the <b>Switch Connection</b> page, click on <b>Add</b></p> 
4.	<p data-bbox="315 1148 922 1184">Configure <b>Switch</b> as follows, and click <b>Create</b>:</p> 

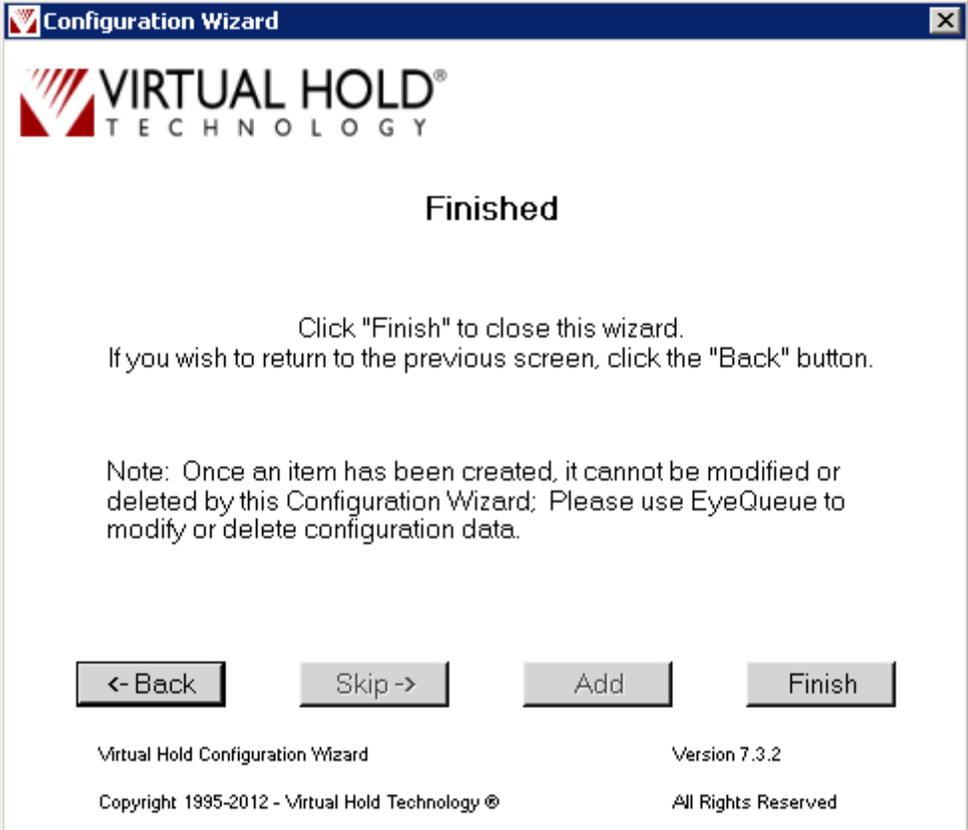
Step	Description
5.	<p>On the <b>Genesys CTI T-Server Connection</b> page, click on <b>Add</b>. Fill-in the information as follows:</p> <p>Host IP Address is the IP Address of the Virtual Hold Concierge™ server.</p> 
6.	<p>Skip <b>Agent Groups</b> and <b>Agents</b> page. On the <b>IVR Servers</b> page click on <b>Add</b>.</p> <p>Fill in the information as shown in the screenshot below.</p> 

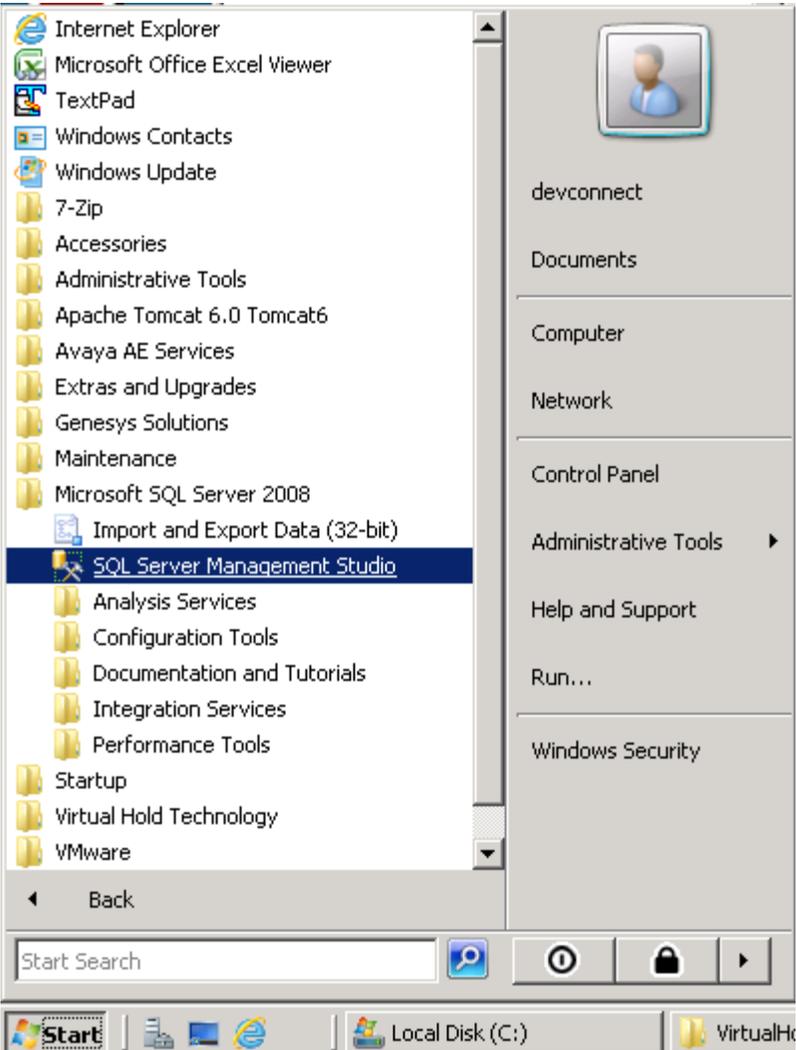
Step	Description
7.	<p>Skip <b>IVR Extensions</b> page and click <b>Add</b> on <b>Queues</b> page. Accept the defaults values and click <b>Create</b>.</p>  <p><b>Queues Setup</b></p> <p>Site Name: <input type="text" value="VHTAVP"/> Queue ID: <input type="text" value="VHT_Test"/> <input type="button" value="Use Production Defaults"/> <input type="button" value="Use Test Defaults"/></p> <p>QueueSettings</p> <p>Op Mode: <input type="text" value="Normal"/> Turn On Threshold (sec): <input type="text" value="0"/> Call Handle Time (secs): <input type="text" value="45"/> No Ans Period (sec): <input type="text" value="60"/></p> <p>Name: <input type="text" value="VHT_Test"/> Script Number: <input type="text" value="1"/> Busy Attempts: <input type="text" value="3"/> Try Again Attempts: <input type="text" value="3"/></p> <p>Mode: <input type="text" value="Predictive"/> Agents Staffed Override: <input type="text" value="TRUE"/> Busy Period (secs): <input type="text" value="60"/> Try Again Period (secs): <input type="text" value="60"/></p> <p>Group: <input type="text" value="VHT_Test"/> Callback Threshold (secs): <input type="text" value="45"/> No Ans Attempts: <input type="text" value="3"/> Max Attempts: <input type="text" value="5"/></p> <p>Default Number of Agents: <input type="text" value="1"/></p> <p>Business Hours</p> <p>Day Of Week: Sun <input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/></p> <p>Time Begin: <input type="text" value="00:00"/> <input type="text" value="00:00"/></p> <p>Time End: <input type="text" value="23:59"/> <input type="text" value="23:59"/></p> <p>Callbacks Offered</p> <p>Day Of Week: Sun <input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/></p> <p>Time Begin: <input type="text" value="00:00"/> <input type="text" value="00:00"/></p> <p>Time End: <input type="text" value="23:59"/> <input type="text" value="23:59"/></p> <p>Callbacks Allowed</p> <p>Day Of Week: Sun <input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/></p> <p>Sched callbacks allowed/15 min: <input type="text" value="15"/> <input type="text" value="15"/></p> <p><input type="button" value="Create"/> <input type="button" value="Close"/></p>

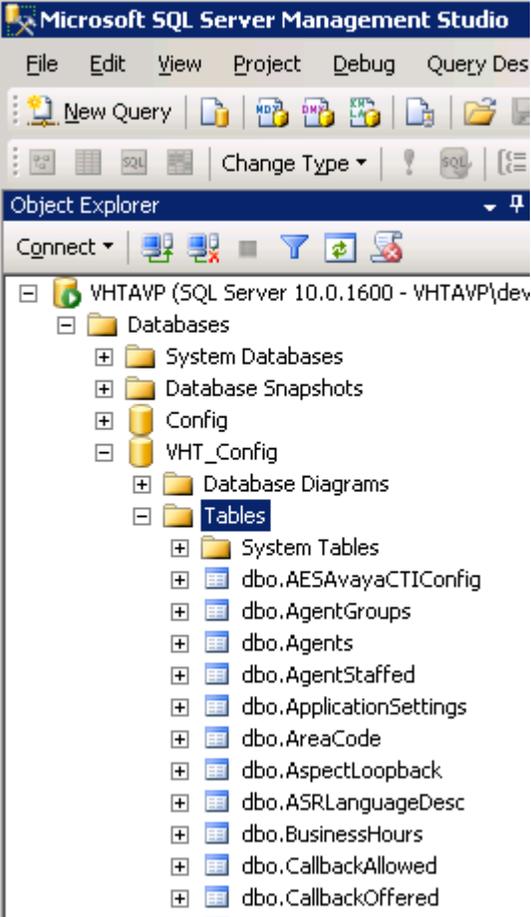
Step	Description
8.	<p data-bbox="315 233 964 268">On the <b>Callback and Holding Queues</b>, click <b>Add</b>.</p> <p data-bbox="315 306 1409 380">Use the information configured in Communication Manager to fill-in Callback Queue ID and Holding Queue ID.</p> 

Step	Description
9.	<p data-bbox="315 233 954 268">On the <b>Incoming Extensions</b> page, click on <b>Add</b>.</p> <p data-bbox="315 306 1398 380">Use the information configured in Communication Manager to configure <b>Extension</b>. Each extension configured in Communication Manager, needs to be created.</p> <div data-bbox="318 415 1005 1640" style="border: 1px solid gray; padding: 5px;">  <p data-bbox="326 422 997 449"><b>Incoming Extensions</b> [X]</p> <p data-bbox="354 489 889 527">Site Name: VHTAVP</p> <p data-bbox="354 552 889 590">Queue ID: VHT_Test</p> <p data-bbox="354 615 889 653">T-Server Switch Name: VHTAVP_Switch</p> <p data-bbox="354 678 987 705">Incoming Extensions</p> <p data-bbox="370 726 834 764">Extension*: 61175</p> <p data-bbox="370 789 834 827">Label: Extension</p> <p data-bbox="370 852 834 890">Country ID: 1</p> <p data-bbox="370 915 834 953">Treatment Type: 0</p> <p data-bbox="370 978 834 1016">ScriptNumber:</p> <p data-bbox="643 1031 971 1079">*Please see the deployment guide before entering a script number here.</p> <p data-bbox="370 1083 834 1121">IVR Group: IVR</p> <p data-bbox="370 1146 971 1184">Holding Queue ID: VHTAVP_Switch:61050</p> <p data-bbox="370 1209 971 1247">Callback Queue ID: VHTAVP_Switch:61025</p> <p data-bbox="370 1272 971 1310">UnderThreshold Queue ID: VHTAVP_Switch:61025</p> <p data-bbox="370 1335 878 1373">IB IVR Extension Group: NONE</p> <p data-bbox="370 1398 878 1436">OB IVR Extension Group: NONE</p> <p data-bbox="643 1493 813 1535">Create</p> <p data-bbox="337 1591 987 1629">* Verify T-Server Switch Name [Close]</p> </div>

Step	Description
10.	<p data-bbox="315 233 1239 302"><b>Skip the Incoming Application page and click Add on Phone Number Configuration.</b></p> <p data-bbox="315 344 1091 375">Fill in the information as shown in the following screen shot.</p> <div data-bbox="318 415 1430 1020" style="border: 1px solid gray; padding: 5px;"> </div>

Step	Description
11.	<p>The final page shows that the configuration is finished. Click on <b>Finish</b>.</p> 

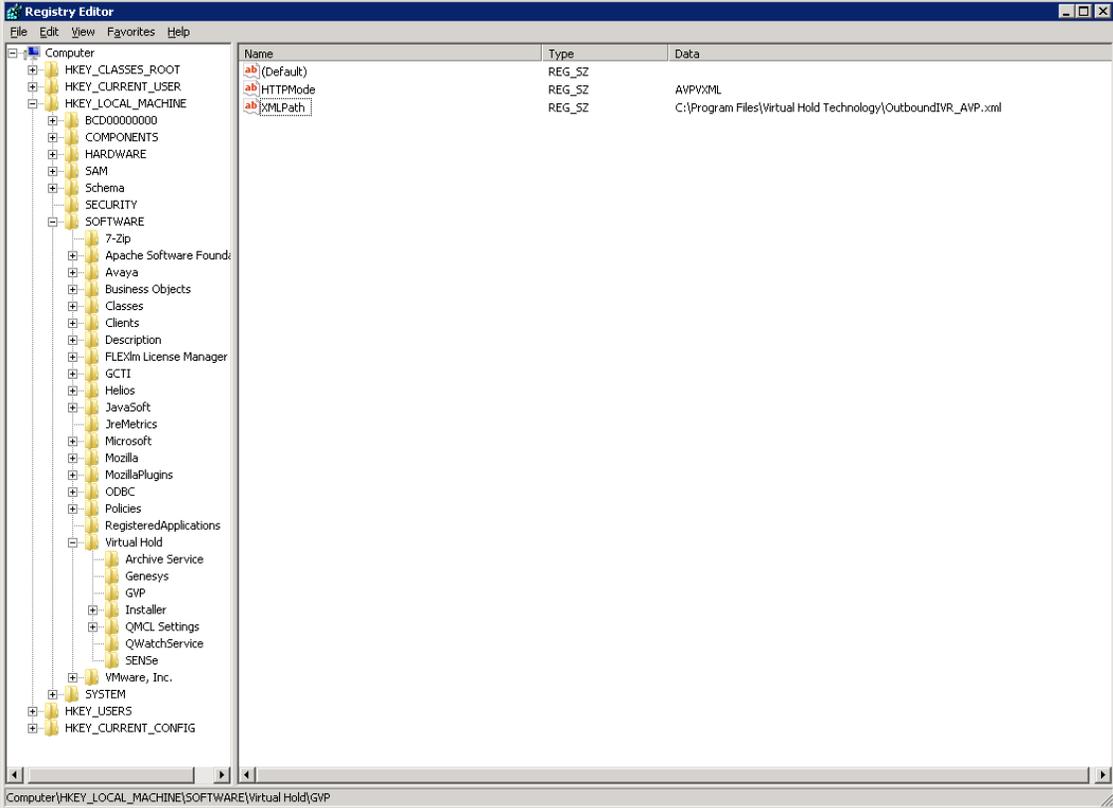
Step	Description
12.	<p>On the Virtual Hold server, open <b>SQL Server Management Studio</b> by navigating to <b>Start → All Programs → Microsoft SQL Server 2008 → SQL Server Management Studio</b></p>  <p>The screenshot shows the Windows Start menu interface. The left pane lists various programs and folders, with 'SQL Server Management Studio' highlighted in blue. The right pane shows the user's profile and system settings like 'devconnect', 'Documents', 'Computer', 'Network', 'Control Panel', 'Administrative Tools', 'Help and Support', 'Run...', and 'Windows Security'. The taskbar at the bottom shows the Start button, search bar, and system tray with 'Local Disk (C:)' and 'VirtualH' visible.</p>

Step	Description																																
13.	<p>Once <b>SQL Server Management Studio</b> is opened, in <b>Object Explorer</b> on the left pane, navigate to &lt;Server Hostname&gt;→ <b>Databases</b> → <b>VHT_Config</b> → <b>Tables</b>. &lt;Server Hostname&gt; is the hostname of the server.</p> 																																
14.	<p>Verify the following entry in table, <b>dbo.SwitchType</b>.</p> <table border="1" data-bbox="316 1375 1430 1497"> <thead> <tr> <th colspan="8">VHTAVP.VHT_Co...bo.SwitchType</th> </tr> <tr> <th></th> <th>SiteName</th> <th>SwitchId</th> <th>HostName</th> <th>Port</th> <th>LogicalId</th> <th>DLLName</th> <th>SwitchTypeId</th> </tr> </thead> <tbody> <tr> <td>▶</td> <td>VHTAVP</td> <td>207</td> <td>10.64.21.75</td> <td>4000</td> <td>TIAL_Genesys_...</td> <td>TIAL_Genesys_...</td> <td>1</td> </tr> <tr> <td>*</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> </tr> </tbody> </table>	VHTAVP.VHT_Co...bo.SwitchType									SiteName	SwitchId	HostName	Port	LogicalId	DLLName	SwitchTypeId	▶	VHTAVP	207	10.64.21.75	4000	TIAL_Genesys_...	TIAL_Genesys_...	1	*	NULL						
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Step	Description																																																																																																																							
15.	<p>Verify the following entry in table <b>dbo.CallbackQueues</b>.</p> <ul style="list-style-type: none"> <li>• SiteName: VHTAVP</li> <li>• CallbackQueueID: VHTAVP_Switch:61050</li> <li>• TransferDevice: tel:61050</li> </ul> <p>61025 is the VDN that was used for Callback and configured in configuration steps for Communication Manager in <b>Section 4</b>.</p> <table border="1"> <thead> <tr> <th colspan="2">VHTAVP.VHT_Co...allbackQueues</th> <th colspan="2">VHTAVP.VHT_C...Holding</th> </tr> <tr> <th></th> <th>SiteName</th> <th>CallbackQueueId</th> <th>TransferDevice</th> </tr> </thead> <tbody> <tr> <td></td> <td>VHTAVP</td> <td>VHTAVP_Switch:...</td> <td>tel: *100</td> </tr> <tr> <td></td> <td>VHTAVP</td> <td>VHTAVP_Switch:...</td> <td>tel:61025 </td> </tr> <tr> <td>*</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> </tr> </tbody> </table>	VHTAVP.VHT_Co...allbackQueues		VHTAVP.VHT_C...Holding			SiteName	CallbackQueueId	TransferDevice		VHTAVP	VHTAVP_Switch:...	tel: *100		VHTAVP	VHTAVP_Switch:...	tel:61025	*	NULL	NULL	NULL																																																																																																			
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16.	<p>Verify the following entries in table <b>dbo.IVRServers</b> as follows:</p> <table border="1"> <thead> <tr> <th colspan="6">VHTAVP.VHT_Co...bo.IVRServers</th> </tr> <tr> <th></th> <th>SiteName</th> <th>IVRGroup</th> <th>ServerName</th> <th>RoutePoint</th> <th>IVRServersTabl...</th> </tr> </thead> <tbody> <tr> <td></td> <td>VHTAVP</td> <td>IVR</td> <td>VHTAVP</td> <td>tel:*102</td> <td>1</td> </tr> <tr> <td>*</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> </tr> </tbody> </table>	VHTAVP.VHT_Co...bo.IVRServers							SiteName	IVRGroup	ServerName	RoutePoint	IVRServersTabl...		VHTAVP	IVR	VHTAVP	tel:*102	1	*	NULL	NULL	NULL	NULL	NULL																																																																																															
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17.	<p>Verify the following entries in table <b>dbo.HoldingQueues</b> using the VDNs configured in CM for Hold.</p> <table border="1"> <thead> <tr> <th colspan="5">VHTAVP.VHT_C...HoldingQueues</th> </tr> <tr> <th></th> <th>SiteName</th> <th>HoldingQueueId</th> <th>RouteDevice</th> <th>TransferDevice</th> </tr> </thead> <tbody> <tr> <td></td> <td>VHTAVP</td> <td>VHTAVP_Switch:...</td> <td>61050</td> <td>tel: 61050</td> </tr> <tr> <td>*</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> <td>NULL</td> </tr> </tbody> </table>	VHTAVP.VHT_C...HoldingQueues						SiteName	HoldingQueueId	RouteDevice	TransferDevice		VHTAVP	VHTAVP_Switch:...	61050	tel: 61050	*	NULL	NULL	NULL	NULL																																																																																																			
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18.	<p>Verify the following entry in <b>dbo.IncomingExtensions</b>.</p> <table border="1"> <thead> <tr> <th colspan="14">VHTAVP.VHT_Co...ingExtensions</th> </tr> <tr> <th></th> <th>SiteN...</th> <th>QueueId</th> <th>Exten...</th> <th>Exteni...</th> <th>Cou...</th> <th>Treat...</th> <th>HoldingQueueId</th> <th>CallbackQueueId</th> <th>UnderThresholdQueueId</th> <th>IVRGroup</th> <th>S...</th> <th>IBIVRE...</th> <th>OBI...</th> <th>Incomi...</th> </tr> </thead> <tbody> <tr> <td></td> <td>VHTAVP</td> <td>VHT_Test</td> <td>61000</td> <td>Extension</td> <td>1</td> <td>20</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:61000</td> <td>IVR</td> <td></td> <td>NONE</td> <td>NONE</td> <td>1</td> </tr> <tr> <td></td> <td>VHTAVP</td> <td>VHT_Test</td> <td>61175</td> <td>Extension</td> <td>1</td> <td>20</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:61025</td> <td>IVR</td> <td></td> <td>NONE</td> <td>NONE</td> <td>2</td> </tr> <tr> <td></td> <td>VHTAVP</td> <td>VHT_Test</td> <td>58881</td> <td>Extension</td> <td>1</td> <td>20</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:61000</td> <td>IVR</td> <td></td> <td>NONE</td> <td>NONE</td> <td>4</td> </tr> <tr> <td></td> <td>VHTAVP</td> <td>VHT_Test</td> <td>61027</td> <td>Extension</td> <td>1</td> <td>20</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:61025</td> <td>IVR</td> <td></td> <td>NONE</td> <td>NONE</td> <td>5</td> </tr> <tr> <td></td> <td>VHTAVP</td> <td>VHTAV...</td> <td></td> <td>Extension</td> <td>1</td> <td>2</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:...</td> <td>VHTAVP_Switch:61025</td> <td>IVR</td> <td></td> <td>NONE</td> <td>NONE</td> <td>6</td> </tr> <tr> <td>*</td> <td>NULL</td> <td></td> <td>NULL</td> <td>NULL</td> <td>NULL</td> </tr> </tbody> </table>	VHTAVP.VHT_Co...ingExtensions															SiteN...	QueueId	Exten...	Exteni...	Cou...	Treat...	HoldingQueueId	CallbackQueueId	UnderThresholdQueueId	IVRGroup	S...	IBIVRE...	OBI...	Incomi...		VHTAVP	VHT_Test	61000	Extension	1	20	VHTAVP_Switch:...	VHTAVP_Switch:...	VHTAVP_Switch:61000	IVR		NONE	NONE	1		VHTAVP	VHT_Test	61175	Extension	1	20	VHTAVP_Switch:...	VHTAVP_Switch:...	VHTAVP_Switch:61025	IVR		NONE	NONE	2		VHTAVP	VHT_Test	58881	Extension	1	20	VHTAVP_Switch:...	VHTAVP_Switch:...	VHTAVP_Switch:61000	IVR		NONE	NONE	4		VHTAVP	VHT_Test	61027	Extension	1	20	VHTAVP_Switch:...	VHTAVP_Switch:...	VHTAVP_Switch:61025	IVR		NONE	NONE	5		VHTAVP	VHTAV...		Extension	1	2	VHTAVP_Switch:...	VHTAVP_Switch:...	VHTAVP_Switch:61025	IVR		NONE	NONE	6	*	NULL		NULL	NULL	NULL									
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Step	Description																																																						
19.	<p>Verify the following entry in <b>dbo.CountryCode</b> for routing calls to PSTN.</p> <ul style="list-style-type: none"> <li>• Set <b>CountryCode</b> and <b>CountryID</b> to <b>1</b>.</li> <li>• Set <b>CountryName</b> to <b>North America</b>.</li> <li>• Set <b>DialPrefix</b> to <b>91</b>.</li> </ul> <table border="1" data-bbox="318 422 1430 596"> <thead> <tr> <th colspan="9">VHTAVP.VHT_C...o.CountryCode</th> </tr> <tr> <th>SiteName</th> <th>CountryCode</th> <th>CountryId</th> <th>CountryName</th> <th>DialPrefix</th> <th>DialSuffix</th> <th>TimeZone</th> <th>DSTDelta</th> <th></th> </tr> </thead> <tbody> <tr> <td>VHTAVP</td> <td>1</td> <td>1</td> <td>North America</td> <td>91</td> <td></td> <td>-300</td> <td>60</td> <td></td> </tr> <tr> <td>VHTAVP</td> <td>2</td> <td>2</td> <td>Jerusalem</td> <td>, 9, 0112</td> <td></td> <td>180</td> <td>60</td> <td></td> </tr> <tr> <td>VHTAVP</td> <td>20</td> <td>20</td> <td>Egypt</td> <td>, 9, 01120</td> <td></td> <td>120</td> <td>60</td> <td></td> </tr> <tr> <td>VHTAVP</td> <td>212</td> <td>212</td> <td>Morocco and We...</td> <td>, 9, 011212</td> <td></td> <td>0</td> <td>0</td> <td></td> </tr> </tbody> </table>	VHTAVP.VHT_C...o.CountryCode									SiteName	CountryCode	CountryId	CountryName	DialPrefix	DialSuffix	TimeZone	DSTDelta		VHTAVP	1	1	North America	91		-300	60		VHTAVP	2	2	Jerusalem	, 9, 0112		180	60		VHTAVP	20	20	Egypt	, 9, 01120		120	60		VHTAVP	212	212	Morocco and We...	, 9, 011212		0	0	
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20.	<p>Verify the following entry in <b>dbo.GenesysCTIConfig</b> for CTI configuration.</p> <table border="1" data-bbox="318 674 1430 745"> <thead> <tr> <th colspan="12">VHTAVP.VHT_Co...esysCTIConfig</th> </tr> <tr> <th>SiteName</th> <th>TServerName</th> <th>HostNameA</th> <th>PortA</th> <th>HostNameB</th> <th>PortB</th> <th>Protocol</th> <th>RedundancyMode</th> <th>ReconnectInter...</th> <th>RegisterAllDevi...</th> <th>AcceptOnlyThe...</th> <th>GenesysCTICo...</th> </tr> </thead> <tbody> <tr> <td>VHTAVP</td> <td>VHTAVP_Switch</td> <td>10.64.21.75</td> <td>4000</td> <td>10.64.21.75</td> <td></td> <td>NULL</td> <td>2</td> <td>2000</td> <td>FALSE</td> <td>NULL</td> <td>1</td> </tr> <tr> <td>NULL</td> </tr> </tbody> </table>	VHTAVP.VHT_Co...esysCTIConfig												SiteName	TServerName	HostNameA	PortA	HostNameB	PortB	Protocol	RedundancyMode	ReconnectInter...	RegisterAllDevi...	AcceptOnlyThe...	GenesysCTICo...	VHTAVP	VHTAVP_Switch	10.64.21.75	4000	10.64.21.75		NULL	2	2000	FALSE	NULL	1	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL						
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NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL																																												
21.	<p>Open a Windows Explorer window and navigate to <b>C:\Program Files\Virtual Hold Technology</b>. Open <b>OutboundIVR_AVP.xml</b> using notepad.</p> <p>In the &lt;Connection1&gt;, configure information for Avaya Voice Portal. This information must match the configuration in Avaya Voice Portal.</p> <pre data-bbox="318 974 1430 1717"> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;LoadBalancerManager&gt;   &lt;DefaultID&gt;NONE&lt;/DefaultID&gt;   &lt;NumberOfConnectionSets&gt;1&lt;/NumberOfConnectionSets&gt;   &lt;ConnectionSet1&gt;     &lt;Count&gt;1&lt;/Count&gt;     &lt;Identifier&gt;VHT_Test&lt;/Identifier&gt;     &lt;FirstConnection&gt;Connection1&lt;/FirstConnection&gt;     &lt;LastConnection&gt;Connection1&lt;/LastConnection&gt;     &lt;Connection1&gt;       &lt;URI&gt;http://10.64.10.31:8080/axis/services/AppIntfWS&lt;/URI&gt;       &lt;OutboundANI&gt;8005555555&lt;/OutboundANI&gt;       &lt;!-- AVP provisioned Virtual Hold outbound application --&gt;       &lt;ApplicationName&gt;VH_OB&lt;/ApplicationName&gt;       &lt;AppInterfaceUsername&gt;vhtvpws&lt;/AppInterfaceUsername&gt;       &lt;AppInterfacePassword&gt;Virtual123!&lt;/AppInterfacePassword&gt;       &lt;ConnectTimeout&gt;30&lt;/ConnectTimeout&gt;        &lt;MaxConcurrentOutboundDialRequests&gt;2&lt;/MaxConcurrentOutboundDialRequests&gt;       &lt;WebServiceClientTimeoutInMilliseconds&gt;180000       &lt;/WebServiceClientTimeoutInMilliseconds&gt;      &lt;/Connection1&gt;   &lt;/ConnectionSet1&gt; &lt;/LoadBalancerManager&gt; </pre>																																																						

Step	Description
22.	<p>In the Windows Explorer window, navigate to <b>C:\VirtualHold</b>. Open toolkit.properties.</p> <p>In the example below, 10.64.21.75 is Virtual Hold Concierge's IP address.</p> <ul style="list-style-type: none"> <li>• <b>Modify IP Address</b> as mentioned above</li> <li>• <b>Set</b> <code>com.virtualhold.toolkit.useDnisAsSegment</code> <b>to true</b>, if false</li> <li>• <b>Verify audio path for Name File Configuration</b></li> <li>• <b>Change</b> <code>com.virtualhold.toolkit.defaultdestination</code> <b>to the VDN for Entry/Hold</b></li> </ul> <pre> #sample configuration file for VHT com.virtualhold.toolkit.loopback=false  #URL for the PTK webservices com.virtualhold.toolkit.baseurl=http://10.64.21.75/VHTPlatformWS-v2/  #Name file configuration com.virtualhold.toolkit.audiopath=C:/Program Files/Apache Software Foundation/Tomcat 6.0/webapps/ROOT com.virtualhold.toolkit.webaudiopath=http://10.64.21.75:8080/  #Default transfer destination if destination cannot be retrieved from PTK <b>com.virtualhold.toolkit.defaultdestination=tel:61000</b>  #Set this to true if you want to use the call's DNIS as the incoming PTK segment. <b>com.virtualhold.toolkit.useDnisAsSegment=true</b>  # Default transfer mode (use disconnectontransfer = true if your routing engine retains call control after &lt;disconnect /&gt; ) # Also, this property can be overridden with the URL query string parameter DisconnectOnTransfer com.virtualhold.toolkit.disconnectontransfer=true  #Time group ranges - used in day/time selection com.virtualhold.toolkit.earlymorning=(12:00 am 6:00 am) com.virtualhold.toolkit.morning=(6:00 am 12:00 pm) com.virtualhold.toolkit.afternoon=(12:00 pm 5:00 pm) com.virtualhold.toolkit.evening=(5:00 pm 9:00 pm) com.virtualhold.toolkit.night=(9:00 pm 11:59 pm)  # com.virtualhold.toolkit.avp.disconnectdtmf=tel:*101 </pre>

Step	Description
23.	<p>Open <b>Registry Editor</b>. Start → type in regedit            Navigate to <b>GVP</b> folder as shown in the following screen shot.            Ensure the string values are as show below. If they are not present, add them.</p> 

## 9. Verification Steps

### 9.1. Avaya Voice Portal

To verify VoIP Connections in Avaya Voice Portal are **in service**, click on **Port Distribution** under **Real Time Monitoring**. The **State** for the configured ports should be **in service**.

**AVAYA**

**Voice Portal 5.1 (VoicePortal)**

Expand All | Collapse All

You are here: [Home](#) > Real-Time Monitoring > Port Distribution

### Port Distribution (4/25/12 5:55:40 PM EDT)

This page displays information about how the telephony resources have been distributed to the f

**Total Ports: 11** **Last Poll: 4/25/12 5:55:40 PM EDT**

Port	Mode	State	Port Group	Protocol	Current Allocation	Base Allocation
58881	Inbound	In service	Virtual Hold	H323	mpp1	
58882	Inbound	Available	Virtual Hold	H323	<None>	<None>
1	Online	Connected	SM_10_62	SIP_Trunk	mpp1	
2	Online	In service	SM_10_62	SIP_Trunk	mpp1	
3	Online	In service	SM_10_62	SIP_Trunk	mpp1	
4	Online	In service	SM_10_62	SIP_Trunk	mpp1	
5	Online	In service	SM_10_62	SIP_Trunk	mpp1	
6	Online	In service	SM_10_62	SIP_Trunk	mpp1	
7	Online	In service	SM_10_62	SIP_Trunk	mpp1	
8	Online	In service	SM_10_62	SIP_Trunk	mpp1	
9	Online	In service	SM_10_62	SIP_Trunk	mpp1	

[Help](#)

### 9.2. Avaya Aura® Session Manager

To verify connectivity to Avaya Voice Portal, Click on **Session Manager** on the Home page of Avaya System Manager web interface. Navigate to **Session Manager** → **System Status** → **SIP Entity Monitoring**. Locate the SIP Entity added for Avaya Voice Portal under **All Monitored SIP Entities** and Click on it.

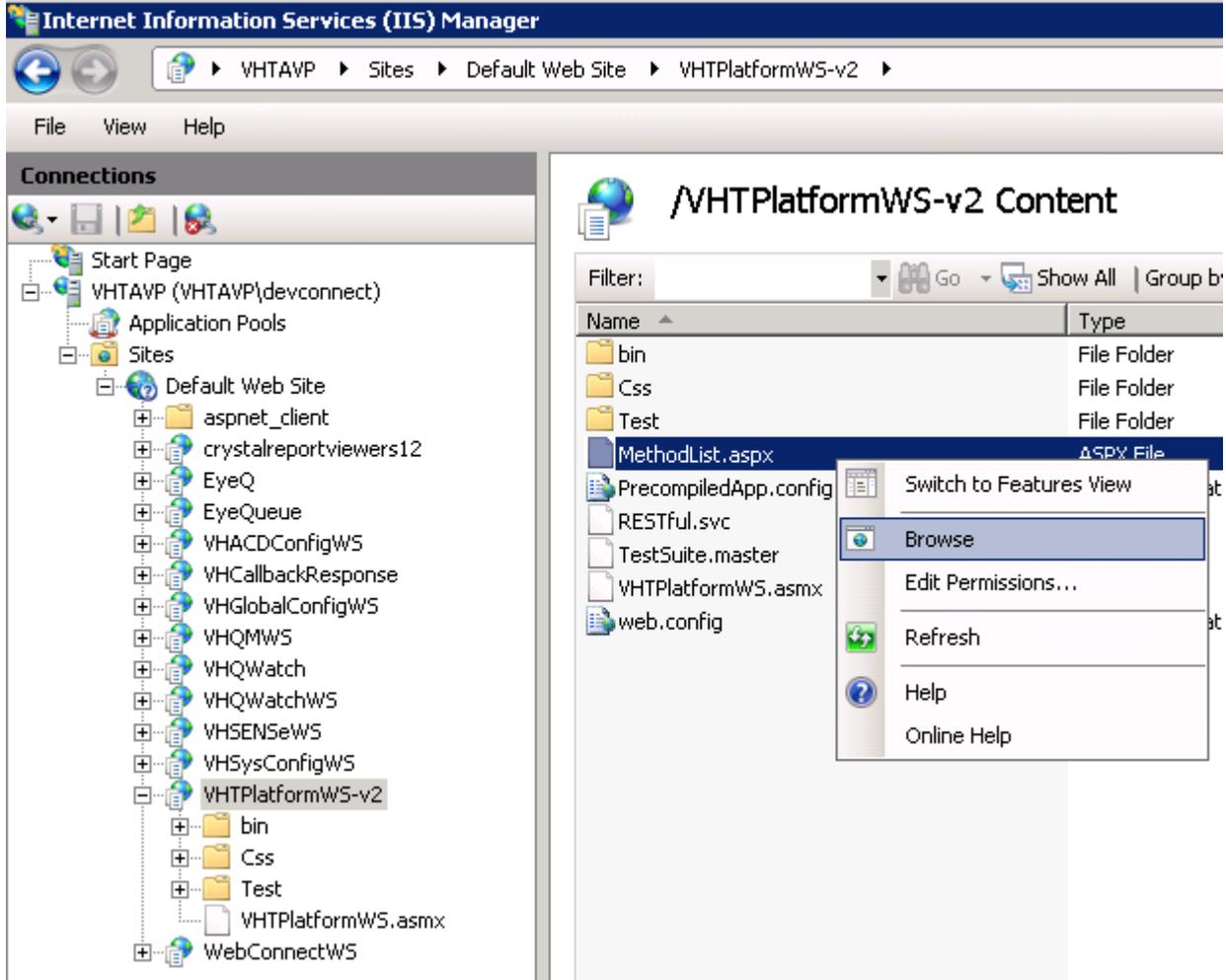
1 Item | Refresh Filter: Enable

Details	Session Manager Name	SIP Entity Resolved IP	Port	Proto.	Conn. Status	Reason Code	Link Status
▶ Show	<a href="#">SM_10_62</a>	10.64.10.32	5060	TCP	Up	200 OK	Up

**Connection Status and Link Status should be Up.**

### 9.3. Virtual Hold Concierge™

On the Virtual Hold Concierge server, open IIS and navigate to **VHTPlatformWS-vs**. On the right side pane, right click on **MethodList.aspx**, and click on **Browse**.



A webpage with **VHPlatform Toolkit** will open as follows:

The following operations are supported:

- [AddInteraction](#)
- [AssociateInteractionWithExternalTrackingId](#)
- [FindInteraction](#)
- [GetInteractionData](#)
- [GetNextAppointmentTime](#)
- [GetSegmentState](#)
- [GetSegments](#)
- [GetSegmentVariables](#)
- [GetStatus](#)
- [GetVersion](#)
- [ModifyInteraction](#)
- [RemoveInteraction](#)
- [ValidateContact](#)

Click on **GetStatus**. On the next page click on **Get Status**.

GetStatus

Click [Here](#) for list of methods.

Required Parameters:

Options

Client ID:

Tenant:

Request: Get Status

```
<soap12:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soap12="http://www.w3.org/2003/05/soap-
envelope">
  <soap12:Body>
    <GetStatus xmlns="http://www.virtualhold.com/Toolkit/Platform-v2" />
  </soap12:Body>
</soap12:Envelope>
```

Response:

```
<PlatformToolkitResponse>
  <Header>
    <ClientID></ClientID>
    <Id>4806101f-37c4-4d76-9b82-3f23826f5453</Id>
    <Status>
      <Code>107000</Code>
      <Description>The platform completed the request.</Description>
      <ErrorMessage></ErrorMessage>
      <Result>RequestCompleted</Result>
    </Status>
  </Header>
  <Data>
    <Tenants>
      <Tenant Name="VHTAVP">
        <Status>
          <Code>106000</Code>
          <Description>The platform for the tenant can process requests now.</Description>
          <ErrorMessage></ErrorMessage>
          <Result>PlatformAvailable</Result>
        </Status>
      </Tenant>
    </Tenants>
  </Data>
</PlatformToolkitResponse>
```

Line 17 in **Response:** should be **The platform for the tenant can process requests now.** This validates that the Virtual Hold Platform is operational.

Go back to the list of methods and click on **GetSegmentState**.  
Type the name of the Tenant and the Segment, click on **Get Segment State**.

In our test, we used VHTAVP and 61000.

http://localhost/VHTPlatformWS-v2/Test/GetSegmentStateTest.aspx - Windows Internet Explorer

### GetSegmentState

Click [Here](#) for list of methods.

Required Parameters

Tenant:

Segment:

Options

Client ID:

Request:

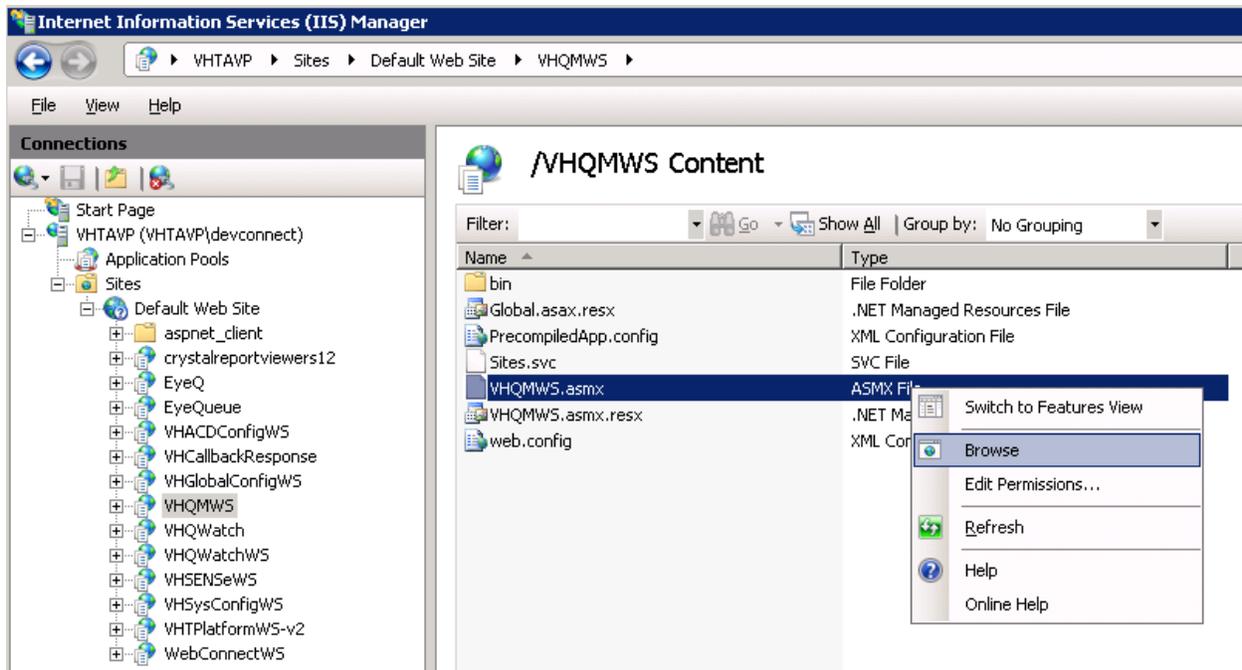
```
<soap12:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soap12="http://www.w3.org/2003/05/soap-
envelope">
  <soap12:Body>
    <GetSegmentState xmlns="http://www.virtualhold.com/Toolkit/Platform-v2">
      <data>
        <Tenant>VHTAVP</Tenant>
        <Segment>61000</Segment>
      </data>
    </GetSegmentState>
  </soap12:Body>
</soap12:Envelope>
```

Response:

```
<PlatformToolkitResponse>
  <Header>
    <ClientID></ClientID>
    <Id>25e1fcbcb-3d0d-4523-88c3-be087021d1c0</Id>
    <Status>
      <Code>107000</Code>
      <Description>The platform completed the request.</Description>
      <ErrorMessage></ErrorMessage>
      <Result>RequestCompleted</Result>
    </Status>
  </Header>
  <Data>
    <Segments>
      <Segment Name="61000" Queue="VHT_Test" Tenant="VHTAVP">
        <StateData>
          <StateData Name="OperationMode" Value="Normal"/>
          <StateData Name="EWT" Value="0"/>
          <StateData Name="OfferTreatment" Value="1"/>
          <StateData Name="ModeStatus" Value=""/>
        </StateData>
      </Segment>
    </Segments>
  </Data>
</PlatformToolkitResponse>
```

The response should return results similar to shown in the screen shots above. This test validates the configuration.

On IIS, navigate to **VHQMWS**. On the right side pane, right click on **VHQMWS.asmx** and click on **Browse**.



A web page with **VHQMWS** as title will open. Locate **GetConnections** and click on it. On the next page, click on **Invoke**.

```
<?xml version="1.0" encoding="utf-8" ?>
<string xmlns="http://virtualhold.com/webservices/VHQMWS">VHWS_OK|VHTAVP
</string>
```

This result should be similar as shown above. This validates connectivity to the database.

## 10. Conclusion

These Application Notes describe the configuration steps required to integrate Virtual Hold Concierge™ with Avaya Voice Portal for Callbacks via Avaya Aura® Communication Manager and Avaya Aura® Session Manager. All feature and serviceability test cases were completed successfully.

## 11. Additional References

This section references the Avaya documentation relevant to these Application Notes. The following Avaya product documentation is available at <http://support.avaya.com>.

- [1] *Implementing Voice Portal on multiple servers*, March 2012.
- [2] *Implementing Voice Portal on single servers*, March 2012.
- [3] *Administering Voice Portal*, January 2011.
- [4] *Administering Avaya Aura® Communication Manager*, Doc # 03-603558, Release 6.0.1, Issue 1.3, December 2010.
- [5] *Administering Avaya Aura® Session Manager*, Doc # 03-603324, Release 6.2, February 2012
- [6] *Avaya Aura® Application Enablement Services Administration and Maintenance Guide*, Release 6.1, Issue 2, February 2011.

Please contact Virtual Hold Support, see section 2.3, for the latest version of Virtual Hold Concierge™ and VXML Interaction Server documentation.

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