



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

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# **Application Notes for InfoTalk-Recognizer 9.0 with Avaya Aura® Experience Portal 6.0 and Avaya Aura® Communication Manager 6.2 – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for InfoTalk-Recognizer 9.0 to successfully interoperate with Avaya Aura® Experience Portal, Avaya Aura® Communication Manager and Avaya Aura® Session Manager. The Avaya Aura® Experience Portal running VoiceXML applications hosted on Microsoft IIS utilizes the automatic speech recognition (ASR) features of InfoTalk-Recognizer 9.0 using the Media Resource Control Protocol (MRCP) Version 2.

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

# 1. Introduction

These Application Notes describe the configuration steps required for InfoTalk-Recognizer 9.0 to successfully interoperate with Avaya Aura® Experience Portal, Avaya Aura® Communication Manager and Avaya Aura® Session Manager. The Avaya Aura® Experience Portal (AAEP) running VoiceXML applications hosted on Microsoft IIS utilizes the automatic speech recognition (ASR) features of InfoTalk-Recognizer 9.0 using the Media Resource Control Protocol (MRCP) Version 2.

InfoTalk-Recognizer is a software solution running both the InfoTalk-Recognizer ASR engine and the InfoTalk MRCP Server Version 2.0 application on a Microsoft Windows 2000 or 2003 Server or Windows 2000 or XP Professional machine.

## 2. General Test Approach

The general test approach is to place calls manually to Avaya Aura® Experience Portal running VXML applications that uses the ASR resources of InfoTalk-Recognizer solution.

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

This Interoperability Compliance Test included feature and serviceability testing. The feature testing focused on placing calls to Avaya Experience Portal that ran Voice XML scripts in English, Cantonese and Putonghua (Traditional Chinese) that uses the ASR engines on the InfoTalk-Recognizer solution. The compliance test focused on placing calls to verify the accuracy of ASR detection.

The serviceability testing focused on verifying the ability of InfoTalk-Recognizer solution to recover from adverse conditions such as rebooting of InfoTalk server and Avaya Experience Portal 6.0 and disconnecting the LAN cables to the InfoTalk server.

### 2.2. Test Results

All test cases passed. Avaya Aura® Experience Portal 6.0 was successful in running applications that use the ASR resources of the InfoTalk-Recognizer solution. A point to note is that Speech Synthesis Markup Language (SSML) is currently not supported.

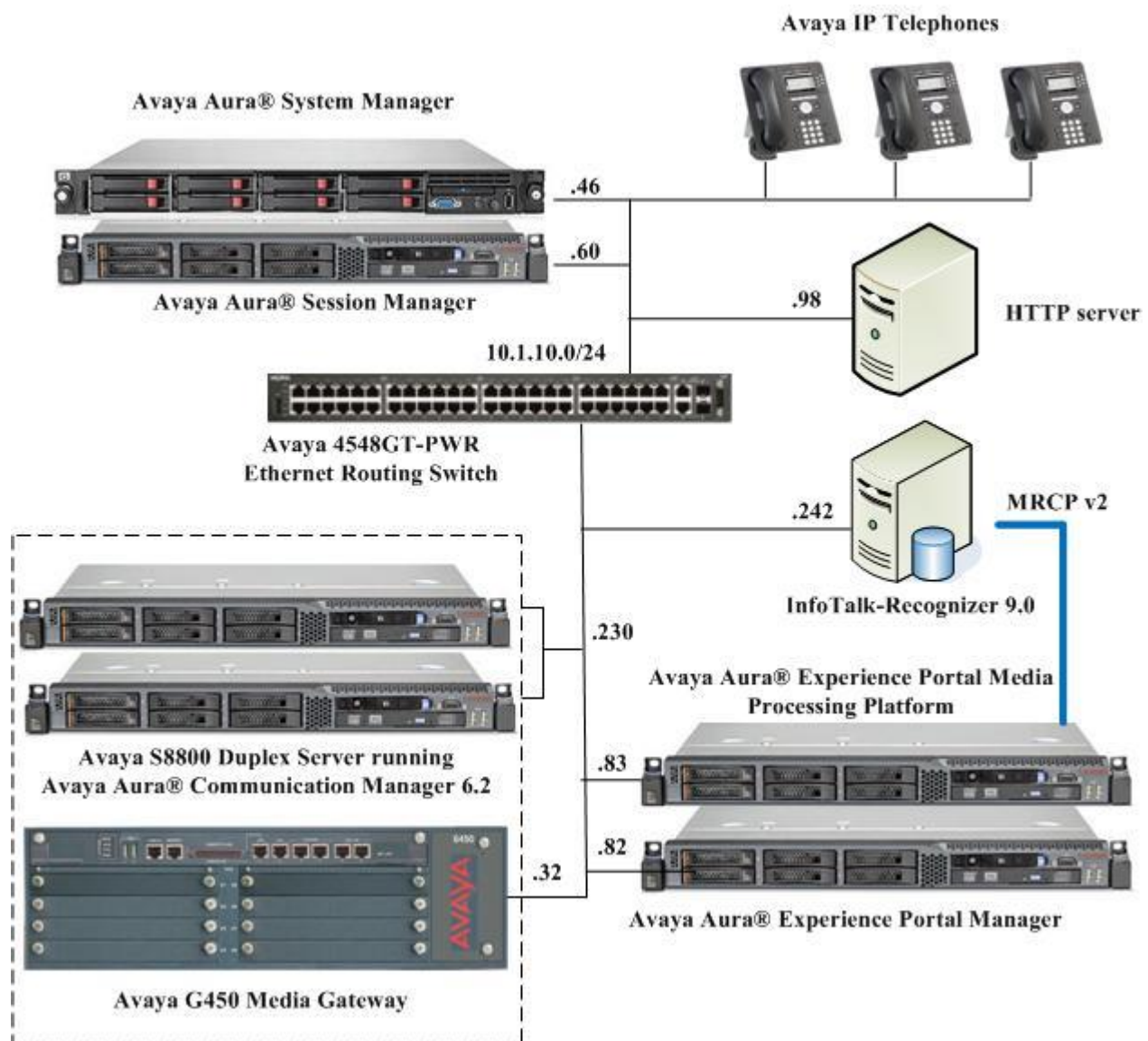
## 2.3. Support

For technical support on InfoTalk-Recognizer and MRCP Server contact:

- Telephone : +852 2190 9600
- Fax : +852 2788 2306
- Email : [support@infotalkcorp.com](mailto:support@infotalkcorp.com)

### 3. Reference Configuration

**Figure 1** illustrates the configuration used to verify InfoTalk-Recognizer 9.0 solution. The InfoTalk-Recognizer 9.0 and InfoTalk MRCP Server 2.0 software were installed on a Windows 2003 Server with Service Pack 2. VoiceXML scripts that used the ASR engine were hosted on another Windows 2003 Server with Service Pack 2 installed running IIS 6.0. Avaya Aura® Experience Portal is connected to Avaya Aura® Session Manager and Avaya Aura® Communication Manager using SIP VoIP Connections. Avaya IP telephones were used to place calls to Avaya Aura® Experience Portal, which would run the VoiceXML applications. The applications would use the InfoTalk-Recognizer ASR engine for speech detection.



**Figure 1: InfoTalk-Recognizer 9.0 with Avaya Aura® Experience Portal Configuration**

## 4. Equipment and Software Validated

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

Equipment	Software
Avaya Aura® Experience Portal 6.0 on Avaya S8800 Server	R6.0 SP1
Avaya Aura® Communication Manager on Avaya S8800 Server (Duplex)	R6.2 SP2.01
Avaya G450 Media Gateway	31.22.0
Avaya Aura® System Manager on HP DL360 G7	6.2 SP 3
Avaya Aura® Session Manager on Avaya S8800 Server	6.1 SP 3
Avaya 9621 IP Telephones	6.2 SP2 (H.323)
Avaya 4548GT-PWR Ethernet Routing Switch	V6.2.4.010
InfoTalk-Recognizer on Microsoft Windows Server 2003 R2 Standard Edition SP2	9.0
Microsoft IIS on Windows Server 2003 Standard Edition SP2	6.0

## 5. Configure Avaya Communication Manager

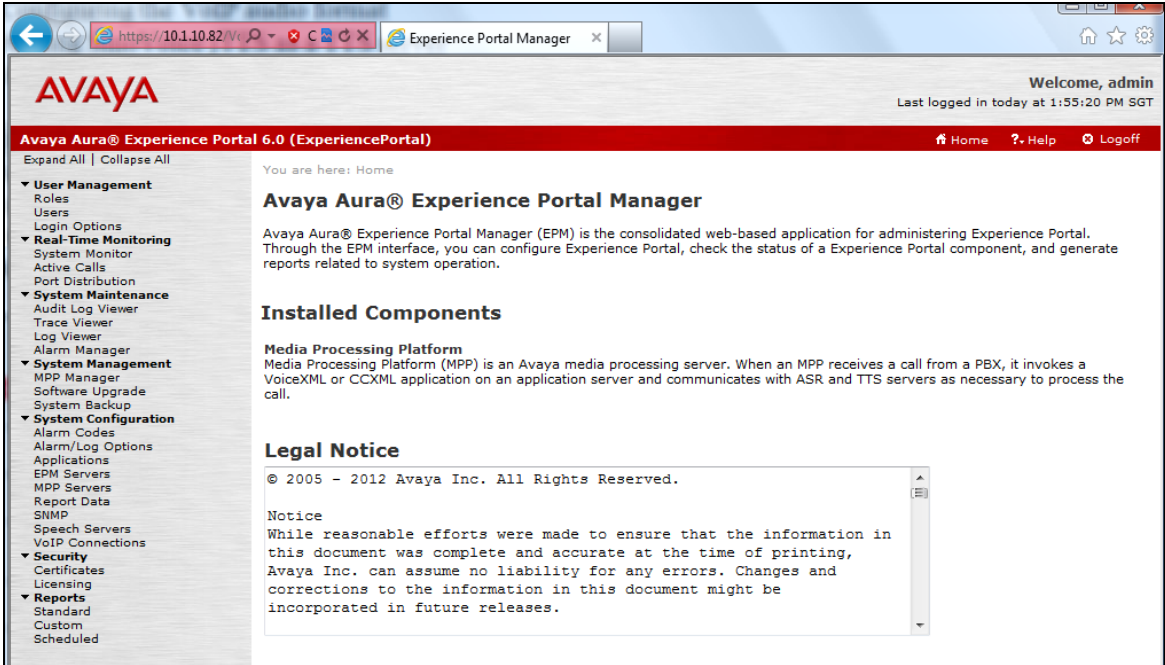
The configuration of the SIP Trunks between Communication Manager and Session Manager, and the routing of calls to Experience Portal are assumed to be in place and will not be discussed here. This section provides the additional procedures to configure Communication Manager for the purpose of administering InfoTalk-Recognizer. The configuration is performed via the System Access Terminal (SAT).

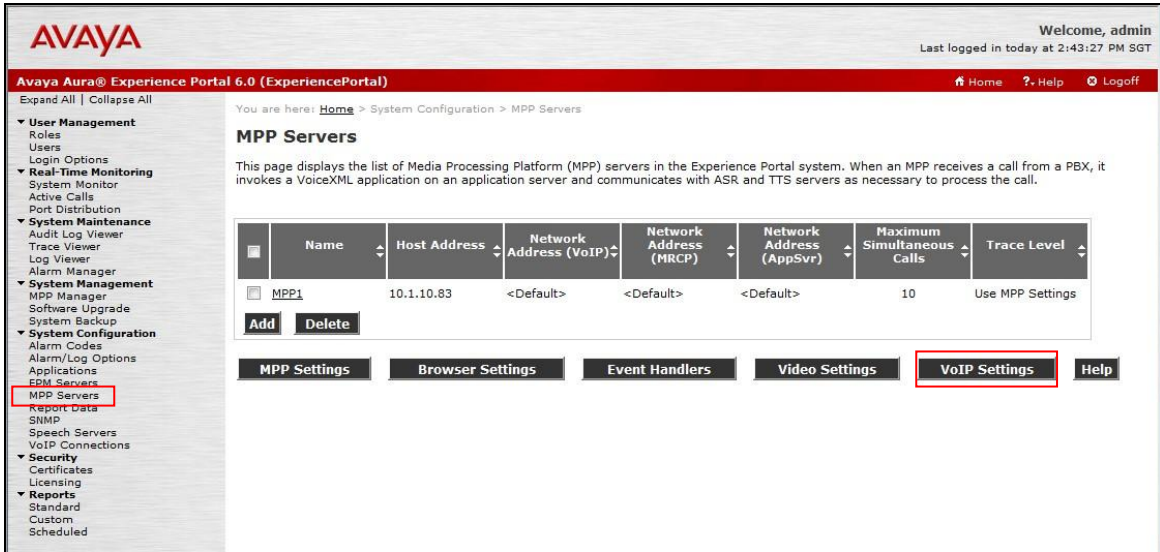
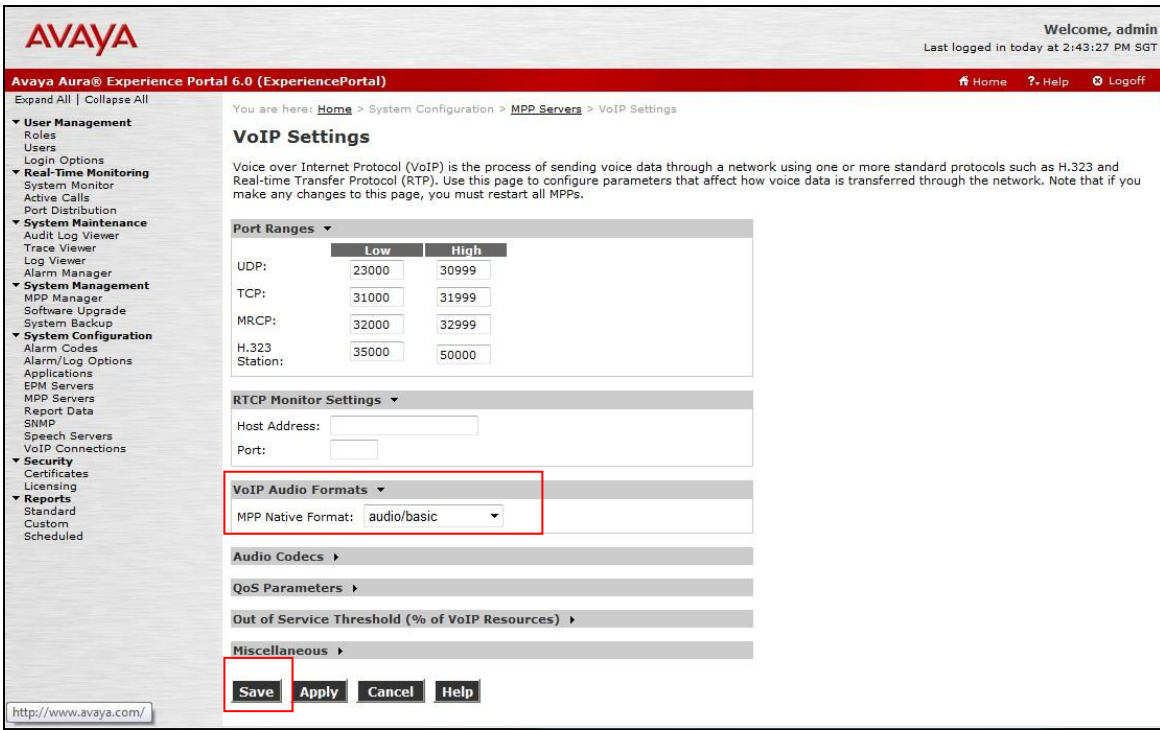
Step	Description
1.	<p>Enter the <b>change ip-codec-set n</b> command where <b>n</b> is a valid IP codec-set associated with the IP network region that is used by Experience Portal, typically the IP network region assigned to the Session Manager SIP Trunk signaling group. Set <b>Audio Codec</b> to an appropriate value supported by Avaya Experience Portal and InfoTalk-Recognizer. In this configuration, the <b>G.711Mu</b> codec was used.</p> <pre> change ip-codec-set 6 Page 1 of 2  IP Codec Set  Codec Set: 6  Audio      Silence      Frames      Packet Codec      Suppression  Per Pkt    Size (ms) 1: <b>G.711Mu</b>      n             2          20 2: 3: 4: 5: 6: 7: </pre>

## 6. Configure Avaya Aura® Experience Portal

The initial administration of Avaya Experience Portal and the configuration of the SIP VoIP Connection to Session Manager are assumed to be in place and will not be discussed here. This section covers the additional procedures of Avaya Experience Portal that is required for the purpose of administering InfoTalk-Recognizer. The following steps will be covered:

- Configuring the VoIP audio format
- Adding InfoTalk-Recognizer as a ASR server
- Adding applications

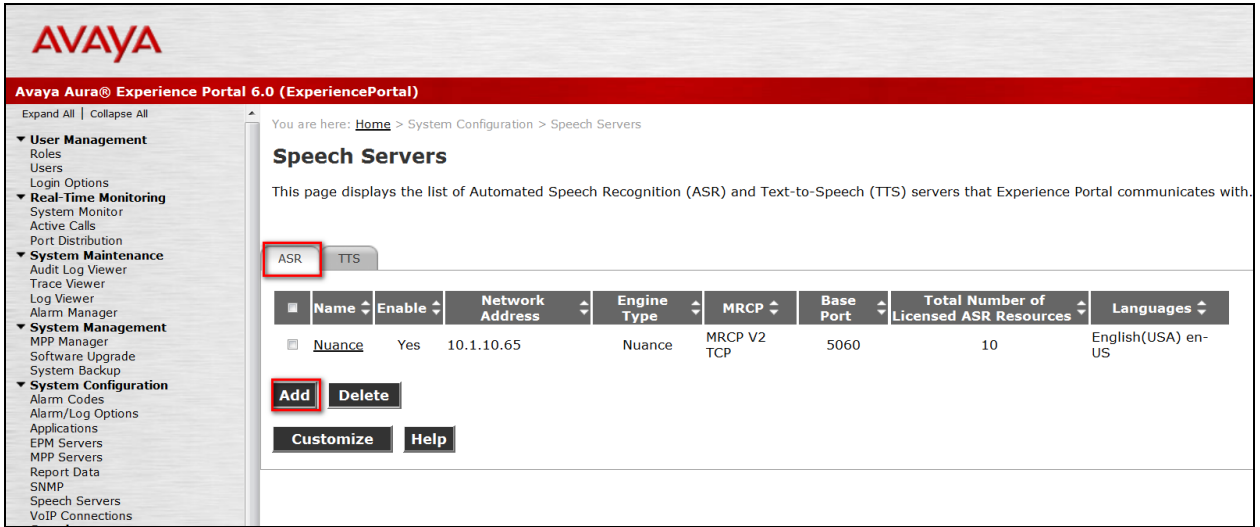
Step	Description
1.	<p>Avaya Experience Portal is configured via the Experience Portal Manager (EPM) web interface. To access the web interface, enter <b>https://&lt;ip-addr&gt;</b> as the URL in an internet browser, where <b>&lt;ip-addr&gt;</b> is the IP address of the EPM. Log in using an account with the Administration role to display the main page.</p> 

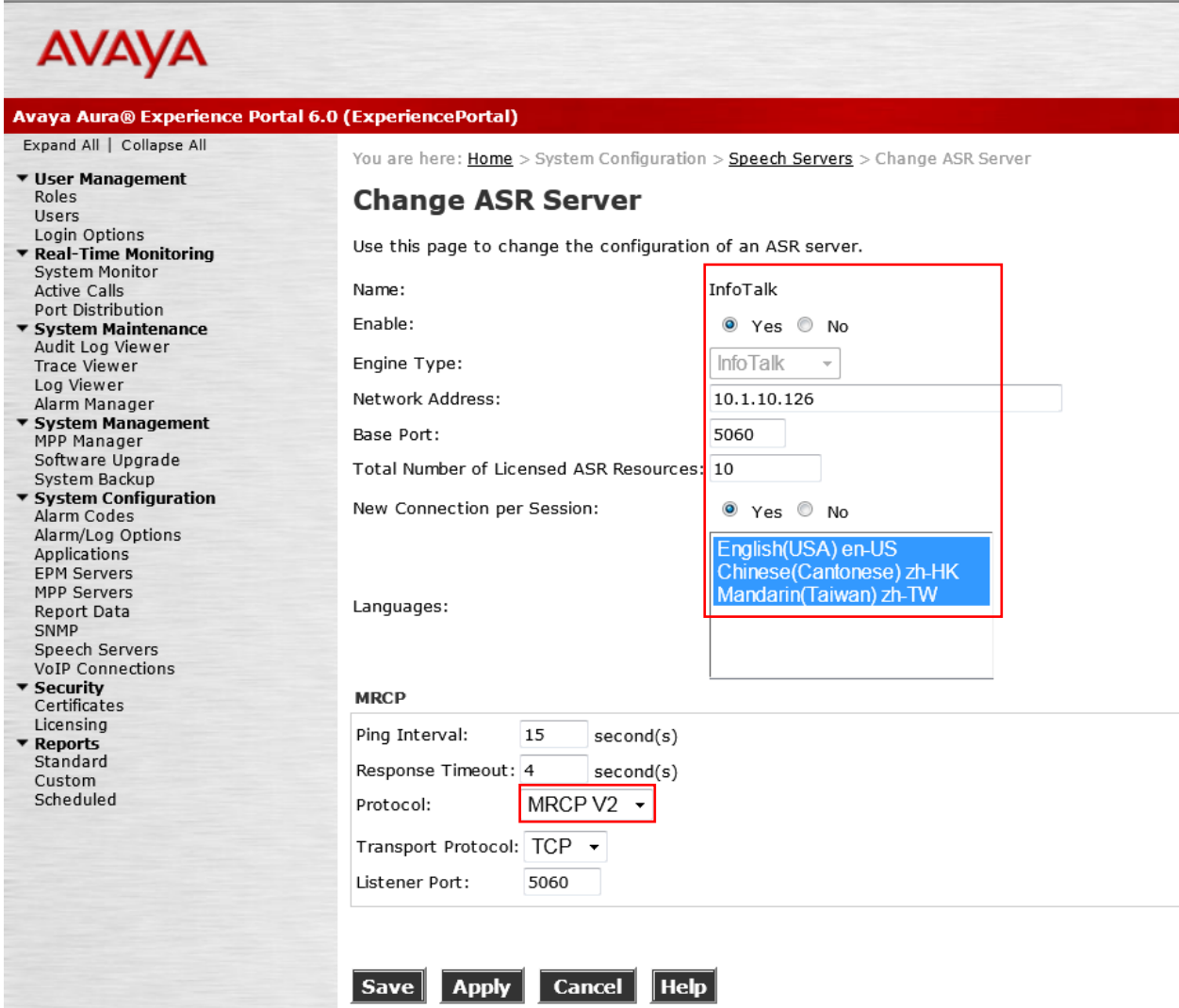
Step	Description
2.	<p>To configure the codec used by the Media Processing Platform (MPP) server, click <b>System Configuration</b> → <b>MPP Servers</b> in the left pane and click <b>VoIP Settings</b>.</p> 
3.	<p>Set <b>MPP Native Format</b> to <b>audio/basic</b> to configure the MPP server for G.711 mu-law to match the configuration on Communication Manager in <b>Section 5</b>. Scroll down the page and click <b>Save</b>.</p> 






Step	Description
5.	<p>Locate the <code>languages.properties</code> file found in <code>/opt/Tomcat/apache-tomcat-6.0.32/webapps/VoicePortal/WEB-INF/classes/config</code>. Edit the file and add the fields and lines shown below to the appropriate section.</p> <pre> # # Engine Type options displayed on the page # asrEngines=IBM WVS,Loquendo,Nuance ASREngines=IBM WVS,Loquendo,Nuance,InfoTalk asrEnginesAmsOnly=Nuance ASREnginesAmsOnly=Nuance  # Engine Type conversion from display to internal data in the databas &lt; Some lines removed for brevity &gt;  InfoTalkASR=infotalk  # Engine Type conversion from internal data in the database to display &lt; Some lines removed for brevity &gt;  infotalk=InfoTalk  # # Languages # &lt; Some lines removed for brevity &gt;  InfoTalkASRlanguages=en-US,zh-HK,zh-TW  # ASR LANGUAGE &lt; Some lines removed for brevity &gt;  InfoTalkASRlanguages=zh-HK ITCan F,zh-TW ITPut F,en-US ENG1 F  # # Language Default # &lt; Some lines removed for brevity &gt;  InfoTalkASRlanguagesDefault=en-US  # # default base port # &lt; Some lines removed for brevity &gt; InfoTalkBasePort=554 # # default New Connection per Session # &lt; Some lines removed for brevity &gt;  InfoTalkPerPort=Yes # # default URL # &lt; Some lines removed for brevity &gt;  InfoTalkRtspUrlAsr=/media/ASR # </pre>

Step	Description
	<pre> # Grammar Type # &lt; Some lines removed for brevity &gt;  infotalkGrammarType=srgs # # MRCP Protocol # &lt; Some lines removed for brevity &gt;  InfoTalkMRCPValues=mrCPv1,mrCPv2 # # Transport # &lt; Some lines removed for brevity &gt;  InfoTalkTransportValues=tcp  &lt; remaining lines removed for brevity &gt; </pre>
6.	Reboot the EPM server for the above changes to take effect.
7.	<p>To configure the InfoTalk-Recognizer server, click <b>System Configuration → Speech Servers</b>. Click the <b>ASR</b> tab and click <b>Add</b>.</p>  <p>The screenshot shows the Avaya Aura Experience Portal 6.0 interface. The left sidebar contains a navigation menu with categories like User Management, Real-Time Monitoring, System Maintenance, System Management, and System Configuration. The main content area is titled 'Speech Servers' and includes a description: 'This page displays the list of Automated Speech Recognition (ASR) and Text-to-Speech (TTS) servers that Experience Portal communicates with.' There are two tabs: 'ASR' (selected) and 'TTS'. Below the tabs is a table with columns: Name, Enable, Network Address, Engine Type, MRCP, Base Port, Total Number of Licensed ASR Resources, and Languages. A single entry is shown for 'Nuance' with 'Yes' for Enable, '10.1.10.65' for Network Address, 'Nuance' for Engine Type, 'MRCP V2 TCP' for MRCP, '5060' for Base Port, '10' for Total Number of Licensed ASR Resources, and 'English(USA) en-US' for Languages. Below the table are buttons for 'Add', 'Delete', 'Customize', and 'Help'. The 'Add' button is highlighted with a red box.</p>
8.	<p>In the <b>Add ASR Server</b> page, select <b>InfoTalk</b> as the <b>Engine Type</b>. This engine type option was added by modifying the <code>languages.properties</code> files in <b>Steps 4</b> and <b>5</b>. In the <b>MRCP</b> section, set <b>Protocol</b> to <b>MRCP V2</b>. Specify the <b>Name</b>, select <b>Yes</b> to <b>Enable</b>, set <b>Network Address</b> to the IP address or Full FQDN of the InfoTalk-Recognizer Server and select the desired <b>Voices</b> used by the applications. The <b>Total Number of Licensed ASR Resources</b> should also be set to the number of licenses available on the InfoTalk-Recognizer Server. All other fields were left at their default values. Click <b>Save</b>.</p>

Step	Description
	
9.	<p>To assign InfoTalk-Recognizer to an Avaya Experience Portal application, click <b>System Configuration → Applications</b> and then click <b>Add</b> on the Applications page (not shown). Configure the Add Application page as shown below. This configuration assigns the default Avaya Experience Portal test application deployed on the http server to the called number <b>10391</b>. Specify the <b>Name</b>, select <b>Yes</b> to <b>Enable</b>, set <b>MIME Type</b> to <b>VoiceXML</b> and set <b>VoiceXML URL</b> to HTTP server address location of the VoiceXML script. Select <b>InfoTalk</b> for <b>ASR</b> and then select the appropriate <b>Voices</b> to use. Click <b>Save</b> (not shown).</p> <p>Repeat this procedure to assign InfoTalk-Recognizer to other Experience Portal applications.</p>

Step	Description
	<div>  <p><b>Avaya Aura® Experience Portal 6.0 (ExperiencePortal)</b></p> <p>Expand All   Collapse All</p> <ul style="list-style-type: none"> <li>▼ <b>User Management</b> <ul style="list-style-type: none"> <li>Roles</li> <li>Users</li> <li>Login Options</li> </ul> </li> <li>▼ <b>Real-Time Monitoring</b> <ul style="list-style-type: none"> <li>System Monitor</li> <li>Active Calls</li> <li>Port Distribution</li> </ul> </li> <li>▼ <b>System Maintenance</b> <ul style="list-style-type: none"> <li>Audit Log Viewer</li> <li>Trace Viewer</li> <li>Log Viewer</li> <li>Alarm Manager</li> </ul> </li> <li>▼ <b>System Management</b> <ul style="list-style-type: none"> <li>MPP Manager</li> <li>Software Upgrade</li> <li>System Backup</li> </ul> </li> <li>▼ <b>System Configuration</b> <ul style="list-style-type: none"> <li>Alarm Codes</li> <li>Alarm/Log Options</li> <li>Applications</li> <li>EPM Servers</li> <li>MPP Servers</li> <li>Report Data</li> <li>SNMP</li> <li>Speech Servers</li> <li>VoIP Connections</li> </ul> </li> <li>▼ <b>Security</b> <ul style="list-style-type: none"> <li>Certificates</li> <li>Licensing</li> </ul> </li> <li>▼ <b>Reports</b> <ul style="list-style-type: none"> <li>Standard</li> <li>Custom</li> <li>Scheduled</li> </ul> </li> </ul> <p>You are here: <a href="#">Home</a> &gt; <a href="#">System Configuration</a> &gt; <a href="#">Applications</a> &gt; <a href="#">Change Application</a></p> <h2>Change Application</h2> <p>Use this page to change the configuration of an application.</p> <div> <p>Name: CompTestEN</p> <p>Enable: <input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Type: VoiceXML</p> </div> <h3>URI</h3> <p> <input checked="" type="radio"/> Single     <input type="radio"/> Fail Over     <input type="radio"/> Load Balance   </p> <p>VoiceXML URL: <input type="text" value="http://10.1.10.98/VXMLEN/intro-eng.vxml"/> <a href="#">Verify</a></p> <p>Mutual Certificate Authentication: <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>Basic Authentication: <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <h3>Speech Servers</h3> <p>ASR: <input type="text" value="InfoTalk"/> TTS: <input type="text" value="No TTS"/></p> <p>Languages: <input type="text" value="Chinese(Cantonese) zh-HK"/>  <input type="text" value="English(USA) en-US"/>  <input type="text" value="Mandarin(Taiwan) zh-TW"/></p> <h3>Application Launch</h3> <p> <input checked="" type="radio"/> Inbound     <input type="radio"/> Inbound Default     <input type="radio"/> Outbound   </p> <p> <input checked="" type="radio"/> Number     <input type="radio"/> Number Range     <input type="radio"/> URI   </p> <p>Called Number: <input type="text" value="10391"/> <a href="#">Add</a></p> <p><input type="text" value="10391"/> <a href="#">Remove</a></p> <p><a href="#">Speech Parameters</a></p> </div>

## 7. Configure InfoTalk-Recognizer and InfoTalk MRCP Server

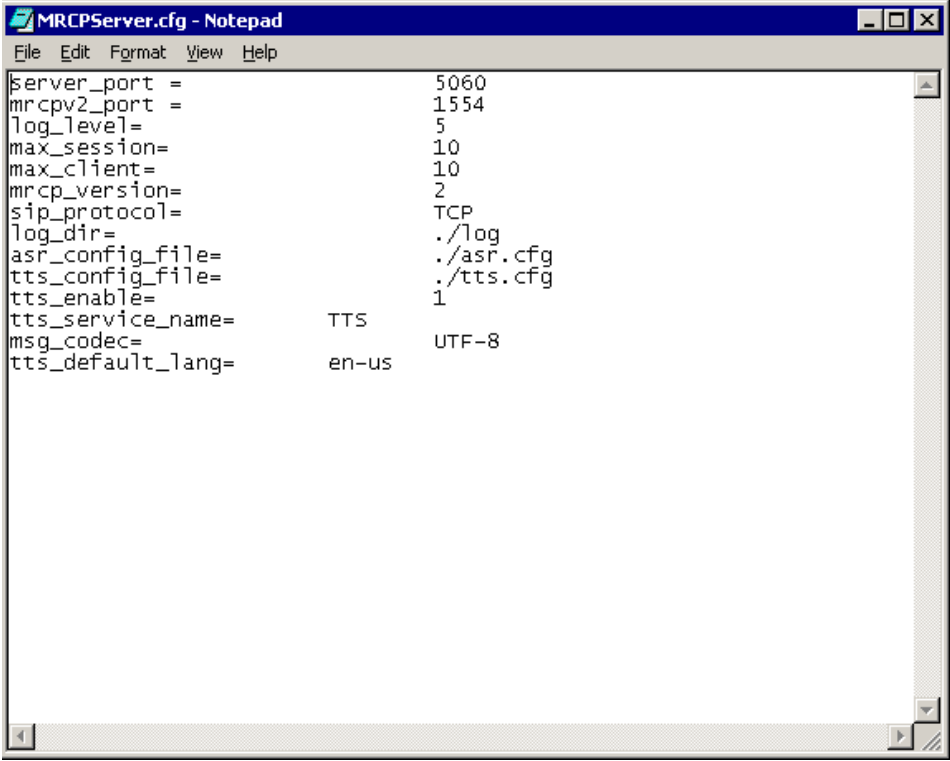
InfoTalk-Recognizer and InfoTalk MRCP Server were installed on an IBM Server with Intel Xeon E5410, 2.33 GHz with 2 GB of memory running Microsoft Windows 2003 Standard Edition with Service Pack 2. As all communication between the InfoTalk server and Avaya Experience Portal is via TCP/IP, it is strongly suggested that both systems be placed on the same IP subnet with minimal network traffic in order to minimize network latency.

The sections that follow detail the InfoTalk-Recognizer setup:

- Install software
- Install License
- Start up InfoTalk MRCP server


### 7.1. Install software

Step	Description
<b>Installing InfoTalk-Recognizer software</b>	
1	<p>The InfoTalk-Recognizer software is distributed on a DVD-ROM. To install, place the DVD-ROM into the drive and run the file <b>Setup.exe</b>. The installation runs through the following steps:</p> <ol style="list-style-type: none"><li>A welcome window will be displayed. Click <b>Next</b> to continue.</li><li>Read and accept the license agreement and click <b>Next</b>.</li><li>Select <b>Complete</b> for <b>Setup Type</b> and click <b>Next</b>.</li><li>Select the destination folder and click <b>Next</b>. The default installation path is <b>C:\Program Files\InfoTalk</b>.</li><li>Check the option <b>Install JRE after Installation?</b> and click <b>Install</b>.</li><li>The installation wizard will install the product.</li><li>At the end of installation process click on the “<b>Finish</b>” button.</li><li>Restart the server after the installation.</li></ol>
<b>Installing InfoTalk-MRCP Server software</b>	
2	<p>Insert the DVD-ROM containing InfoTalk-MRCP Server software into the drive and copy the folder “<b>MRCPServer</b>” to the installation directory, e.g. <b>C:\InfoTalk</b>.</p>

Step	Description
	<b>Configuring InfoTalk-MRCP Server software</b>
3	<p>Modify the file <b>MRCPServer.cfg</b> found at <b>C:\InfoTalk\MRCPServer\</b>.</p> <p>a. The line shown below determines the location of the configuration file for the InfoTalk-Recognizer ASR engine.</p> <p style="padding-left: 40px;"><b>asr_config_file=           ./asr.cfg</b></p> <p>b. The line below determines the maximum instances of the ASR engine. The value must correspond to the number of licenses purchased for InfoTalk-Recognizer.</p> <p style="padding-left: 40px;"><b>max_session=               10</b></p> 
4	<p>Modify the file <b>asr.cfg</b> found at <b>C:\InfoTalk\MRCPServer\</b>.</p> <p>Locate lines shown below. The variable <b>client_server</b> should be set to 0. The MRCP Server loads the ASR engine internally as both software packages are installed on the same server.</p> <p style="padding-left: 40px;"><b>[rec-client]</b></p> <p style="padding-left: 40px;"><b>client_server = 0</b></p>

## 7.2. Install License

After installing the SDK, the next step is to install the license file.

Step	Description
<b>Installing InfoTalk licenses</b>	
1	<p>Register InfoTalk License following the instructions below:</p> <ol style="list-style-type: none"> <li>1. Connect the dongle (if any) to the USB port.</li> <li>2. Click <b>Start → Programs → InfoTalk → License Registration Tool</b></li> <li>3. Click to choose <b>has its own license file, or is a network license server</b>.</li> <li>4. Click <b>Browse</b> to select the license file</li> <li>5. Click <b>Setup</b></li> <li>6. A dialog box appears confirming that the license setup has finished successfully.</li> </ol> 
<b>Verify the licenses installed</b>	
2	<p>Open the license server log file at <b>C:\Program Files\InfoTalk\License\License.log</b> and check all the license features installed. E.g.:</p> <pre> 13:19:19 (infotalk) Server started on w2003r2svr for:   CDB 13:19:19 (infotalk) TTSEng1                        TTSEng        TTSEng 13:19:19 (infotalk) TTSPut                          TTSCan        GDLTool 13:19:19 (infotalk) GDLC                          AsrClient     VoiceTouch 13:19:19 (lmgrd) infotalk using TCP-port 4122 </pre>
3	<p>Open the license file at <b>C:\Program Files\InfoTalk\License\License.dat</b> using Notepad and check the number of licenses available E.g.:</p> <p><b>FEATURE VoiceTouch infotalk 1.0 permanent 10</b></p> <p>which means it support 10 instances of “VoiceTouch” - InfoTalk-Recognizer</p>



### 7.3. Start Up InfoTalk MRCP Server

Console Mode:


Step	Description
	<b>Start up InfoTalk MRCP Server – Console Mode</b>
1	Run the batch file “ <b>start_MRCP_Server.bat</b> ” at <b>C:\InfoTalk\MRCPServer\</b> to start up the InfoTalk MRCP Server.

Windows Service Mode:

Step	Description
	<b>Start up InfoTalk MRCP Server – Windows Service Mode</b>
1	Run the batch file “ <b>register_MRCP_Server.bat</b> ” at <b>C:\InfoTalk\MRCPServer\</b> to register the InfoTalk MRCP Server as a Windows service.
2	Go to Windows Services and start the service “ <b>InfoTalk MRCP Server</b> ”

## 8. Verification Steps

This section provides the verification steps that may be performed to verify that Avaya Experience Portal can run VoiceXML applications that use the InfoTalk-Recognizer for ASR speech detection.

Step	Description
1.	<p>From the EPM web interface, click <b>MPP Manager</b> on the left pane. On the MPP Manager page, verify that the MPP server is <b>Online</b> and <b>Running</b>.</p> 

Step	Description
2.	From the EPM web interface, click <b>Port Distribution</b> on the left pane. On the <b>Port Distribution</b> page, verify that the <b>State</b> of the ports on the MPP server is <b>In service</b> .

AVAYA

Avaya Aura® Experience Portal 6.0 (ExperiencePortal)

Expand All | Collapse All

▼ User Management

Roles

Users

Login Options

▼ Real-Time Monitoring

System Monitor

Active Calls

Port Distribution

▼ System Maintenance

Audit Log Viewer

Trace Viewer

Log Viewer

Alarm Manager

▼ System Management

MPP Manager

Software Upgrade

System Backup

▼ System Configuration

Alarm Codes

Alarm/Log Options

Applications

EPM Servers

MPP Servers

Report Data

SNMP

Speech Servers

VoIP Connections

▼ Security

Certificates

Licensing

▼ Reports

Standard

Custom

Scheduled

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

## Port Distribution (Nov 30, 2012 3:58:23 PM SGT)

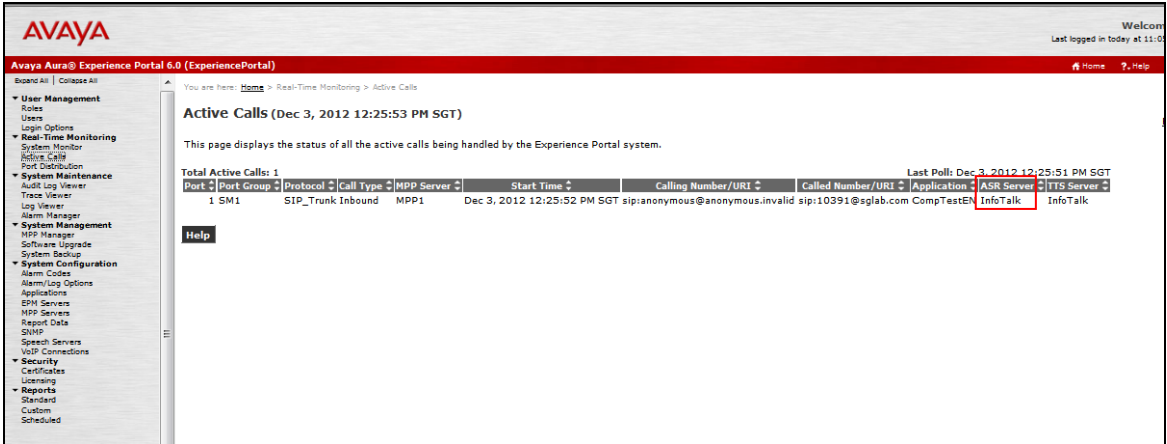
This page displays information about how the telephony resources have been distributed to the MPPs.

Total Ports: 10

Last Poll: Nov 30, 2012 3:58:14 PM SGT

Port	Mode	State	Port Group	Protocol	Current Allocation	Base Allocation
1	Online	In service	SM1	SIP_Trunk	MPP1	
2	Online	In service	SM1	SIP_Trunk	MPP1	
3	Online	In service	SM1	SIP_Trunk	MPP1	
4	Online	In service	SM1	SIP_Trunk	MPP1	
5	Online	In service	SM1	SIP_Trunk	MPP1	
6	Online	In service	SM1	SIP_Trunk	MPP1	
7	Online	In service	SM1	SIP_Trunk	MPP1	
8	Online	In service	SM1	SIP_Trunk	MPP1	
9	Online	In service	SM1	SIP_Trunk	MPP1	
10	Online	In service	SM1	SIP_Trunk	MPP1	

Help

Step	Description
3.	<p>Place some calls to Avaya Experience Portal that runs a VoiceXML script which uses the InfoTalk-Recognizer for speech detection. Verify that the application answers the calls and that the application is able to announce the ASR synthesized prompts to the caller. From the Avaya Experience Portal web interface, click <b>Active Calls</b> on the left pane and verify that the <b>ASR Server</b> in use is <b>InfoTalk</b>.</p> 

## 9. Conclusion

These Application Notes describe the compliance-tested configuration used to validate Avaya Aura® Experience Portal 6.0 with InfoTalk-Recognizer 9.0 and InfoTalk MRCP Server 2.0. All test cases were completed successfully with a note indicated in **Section 2.2**.

## 10. Additional References

The following documents are available at <http://support.avaya.com>.

- [1] *Administering Avaya Aura® Communication Manager*, Release 6.2, Feb 2012, Document ID 03-300509.
- [2] *Administering Avaya Aura® Experience Portal*, Aug 2011.

The following documents are available from InfoTalk:

- [3] *InfoTalk-Recognizer Installation Guide*, Version 9.0
- [4] *InfoTalk-RecognizerService Developer's Guide*, Version 9.0
- [5] *Configuration Notes for Avaya Voice Portal*, Jul 2012

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