Abstract

These Application Notes describe the configuration steps required for Telisma teliSpeech Automatic Speech Recognition (ASR) engine to successfully interoperate with Avaya Voice Portal.

Telisma teliSpeech is a carrier-grade Automatic Speech Recognition engine. Telisma teliSpeech and Avaya Voice Portal are connected using IETF Media Resource Control Protocol (MRCP).

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 for Telisma teliSpeech Automatic Speech Recognition (ASR) engine to interoperate with Avaya Voice Portal.

The Telisma teliSpeech ASR engine is a carrier-grade product which has been designed for small to very large deployments of speech-enabled applications in both enterprise and telecom markets. It is a standards-based speech recognizer that supports multiple languages and can perform speech recognition on audio data from any audio source.

Figure 1 illustrates the configuration used for testing. In this configuration, Avaya Voice Portal interfaces with Avaya Communication Manager via H.323 and to Telisma teliSpeech via Media Resource Control Protocol (MRCP). VoiceXML (VXML) scripts were run by Avaya Voice Portal and used the ASR engine in Telisma teliSpeech. The VXML scripts were hosted on a server running the Apache Tomcat web server application. Since Telisma teliSpeech does not support text-to-speech (TTS), an optional third-party TTS engine may be used if required by the application. A TTS engine was used during testing.
2. Equipment and Software Validated

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

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avaya S8500C Server</td>
<td>Avaya Voice Portal 4.1</td>
</tr>
<tr>
<td>Avaya S8720 Servers</td>
<td>Avaya Communication Manager 5.0 (Release 5.0.00.852.7)</td>
</tr>
<tr>
<td>Avaya G650 Media Gateway TN799DP C-LAN TN2602AP MEDPRO</td>
<td>N/A HW01 FW024 HW08 FW031</td>
</tr>
<tr>
<td>Avaya 4600 Series IP Telephones (H.323)</td>
<td>2.8</td>
</tr>
<tr>
<td>Avaya 9600 Series IP Telephones (H.323)</td>
<td>1.5</td>
</tr>
<tr>
<td>Dell PowerEdge 750E Server</td>
<td>Microsoft Windows Server 2003, Service Pack 1 Apache Tomcat 5-5.25</td>
</tr>
<tr>
<td>IBM X Series 3250 Server</td>
<td>Microsoft Windows Server 2003, Service Pack 1 IBM WebSphere Voice Server (Text-To-Speech)</td>
</tr>
<tr>
<td>Avaya S8500C Server</td>
<td>Microsoft Windows Server 2003, Service Pack 1 Telisma teliSpeech 2.0, Patch 1</td>
</tr>
</tbody>
</table>

3. Configure Avaya Voice Portal

This section provides the procedures for configuring Avaya Voice Portal. The procedures fall into the following areas.

- Verify the ASR licenses
- Configure the ASR server.
- Add the VoiceXML application.

Please note that it is expected that the installer is familiar with the basic configuration of Avaya Voice Portal as the focus of these Application Notes is on the configuration of the MRCP interface only. For all other provisioning information, such as software installation, installation of optional components, basic configuration of Avaya Voice Portal, etc., refer to the Avaya Voice Portal product documentation in reference [1].
3.1. Verify the ASR Licenses

Initialise the Avaya Voice Portal Management System (VPMS) web interface by browsing to https://x.x.x.x/VoicePortal and log in using a user name with administrative privileges.

In VPMS, select **System Configuration > Licensing**. Verify that there are enough ASR Connections licensed.

![VPMS Licensing Configuration](image)

3.2. Configure the ASR Server

In VPMS, select **System Configuration > Speech Servers**. On the **Speech Servers** screen, select the **ASR** tab and select **Add**.

![VPMS Speech Servers Configuration](image)
On the **Add ASR Server** screen, configure the fields as follows.

- **Name**: Enter a descriptive name.
- **Engine Type**: “IBM WVS”
- **Network Address**: Enter the IP address of the Telisma teliSpeech server.
- **Total Number of Licensed ASR Resources**: Enter the number of ports licensed for use on the Telisma teliSpeech server.
- **RTSP URL**: Enter “x.x.x.x/ASR”, where “x.x.x.x.” is the IP address of the Telisma teliSpeech server.
- **Languages**: Select one or more languages supported by Telisma teliSpeech from the drop down box. A list of languages supported by Telisma teliSpeech is available at: http://www.telisma.com/teliSpeech_languages.html

The rest of the fields may be left at their default values. Once completed, select **Save**.
3.3. Add the VXML Application

In VPMS, select System Configuration > Applications. On the Applications screen, select Add.

Configure the fields in the upper section of the Add Application screen as follows.

- **Name**: Enter a descriptive name.
- **VoiceXML URL**: Enter the URL of the VXML application. For the compliance-tested configuration, VXML scripts were hosted on a web server at 10.1.10.5.
Configure the fields in the middle section of the **Add Application** screen as follows.

- **ASR:** “IBM WVS”
- **Languages:** Select one or more languages supported by the ASR server.
- **Called Number:** Enter the number to be dialed to access the application. This number could be the extension number of the Avaya Voice Portal hunt group or a Vector Directory Number. Once the number is entered, select **Add** to confirm.

In the lower section of the **Add Application** screen, expand **Advanced Parameters** and select the **Yes** radio button next to **Support Remote DTMF Processing** (this allows Avaya Voice Portal to send DTMF tones for processing by Telisma teliSpeech). Once completed, select **Save**.
4. Configure Telisma teliSpeech

This section provides the procedures for configuring Telisma teliSpeech.

Please note that it is expected that the installer is familiar with the basic configuration of Telisma teliSpeech as the focus of these Application Notes is on the configuration of the MRCP interface only. For all other provisioning information, such as software installation, installation of optional components, basic configuration of Telisma teliSpeech, etc., refer to the Telisma teliSpeech product documentation in reference [2].

Telisma teliSpeech configuration is done by editing files within the “config” sub-directory of the Telisma teliSpeech installation root directory.

Edit the “mrcp_server.cfg” file:

The semantic format which must used by teliSpeech for Avaya VP 4.1 is Emma. Make sure that the semantic format is correctly set by checking that the following line is uncommented:

```
asr.semanticFormat = Emma
```

The xform prefix must be disabled since Avaya VP 4.1 does not expect it in the NLSML results returned by Telisma teliSpeech. Make sure the following line is uncommented:

```
mrcp.xformPrefix = false
```

Add the lines:

```
mrcp.xmlPrettyFormat = true
rtp.sdpType = avaya
```

at the bottom of the file.

Edit “mrcp_server_stack.xml” file, add the line:

```
<property name="setup-type" data="avaya"/>
```

after the line:

```
<sap name="localhost">
```
To initialize the changes made to the MRCP server configuration files “mrcp_server.cfg” and “mrcp_server_stack.xml” the Telisma teliSpeech services must be restarted. On the server running Telisma teliSpeech, select Start > Programs > Administrative Tools > Services. The service to be restarted are teliSpeech ASR Server, teliSpeech DGB Master, teliSpeech DGB Slave, teliSpeech LS Server, teliSpeech MRCP Server. To restart a service, select it in the Services (Local) pane, then select the button on the taskbar.

5. Interoperability Compliance Testing

This section describes the interoperability compliance testing used to verify Avaya Voice Portal VXML applications that use the Telisma teliSpeech ASR engine. This section covers the general test approach and the test results.

5.1. General Test Approach

The interoperability compliance test included feature and serviceability testing. The feature testing focused on placing calls to Avaya Voice Portal that ran VXML applications using the ASR engine in Telisma teliSpeech. The testing verified speech and DTMF tone recognition. The serviceability testing focused on verifying the ability of Telisma teliSpeech to recover from adverse conditions, such as power failures and disconnecting cables to the IP network.

5.2. Test Results

All test cases passed. Avaya Voice Portal was successful in running applications that use the ASR engine of Telisma teliSpeech.
6. Verification Steps

This section provides the verification steps that may be performed to verify that Avaya Voice Portal can run IVR applications that use Telisma teliSpeech.

From the VPMS web interface, select **System Maintenance > System Monitor**, and verify that the system is Online and Running. Click on the name of the MPP in the **Server Name** column (“MPP1” in the figure below).

On the Details page, select **Service Menu**.
From the Service Menu home page (not shown), select **Resources > Speech Servers**. On the row for the Telisma teliSpeech ASR server (“telispeech” in the figure below), verify that the **Status** column shows “Server is UP” and that the **Values** column reflects the expected number of ports.

![Avaya Voice Portal](image)

Place a call to an Avaya Voice Portal extension that runs a VXML script that uses the Telisma teliSpeech ASR Engine. Verify that the application answers the call and that the application is able to recognize the speech and DTMF tones input provided by the caller.

### 7. Support

Technical support can be obtained from Telisma through the following:

- **Email:**
  - support@telisma.com (EMEA and non APAC)
  - support-apac@telisma.com (APAC)

- **Web:** [http://www.telisma.com/support](http://www.telisma.com/support)

### 8. Conclusion

These Application Notes describe the configuration steps required for Telisma teliSpeech Automatic Speech Recognition engine to successfully interoperate with Avaya Voice Portal.
9. Additional References
This section references the product documentation relevant to these Application Notes.

[1] *Voice Portal 4.1 Documentation Library*,
April 2008, available at: 

The following product documentation for Telisma teliSpeech is available, on request, from http://www.telisma.com
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