



## Avaya Solution & Interoperability Test Lab

---

# Application Notes for Verbio ASR 9.XX with Avaya Experience Portal 8.0 using MRCP Version 2 - Issue 1.0

### Abstract

These application notes describe the configuration steps required for Verbio Automated Speech Recognition (ASR) 9.XX to successfully interoperate with Avaya Experience Portal 8.0 using Media Resource Control Protocol (MRCP) Version 2. Verbio ASR allows Voice XML applications to detect speech and DTMF entries.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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 Verbio ASR 9.XX to successfully interoperate with Avaya Experience Portal 8.0 using MRCP Version 2. Verbio ASR is added as a speech server on the Experience Portal Management Server.

## 2. General Test Approach and Test Results

The general test approach was to configure Verbio ASR to communicate with Experience Portal as implemented on a customer's premises. See **Figure 1** for a network diagram. The feature testing focused on placing calls to Experience Portal to invoke sample VXML applications that use Verbio ASR. Various grammar types were used by the VXML applications, including inline, built-in, menu, and external Speech Recognition Grammar Specification (SRGS) grammars. The serviceability testing introduced failure scenarios to see if Verbio can resume after a failure.

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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and Verbio ASR did not include use of any specific encryption features as requested by Verbio.

### 2.1. Interoperability Compliance Testing

The interoperability compliance testing covered the following features and functionality:

- Experience Portal and Verbio communicating via MRCP V2.
- Calls to Experience Portal that invoke sample VXML applications and utilize Verbio ASR.
- Sample VXML applications that use inline built-in, menu, and external SRGS grammars.
- DTMF processing performed by Experience Portal.
- Proper response from Verbio ASR when an invalid voice or DTMF entry was provided by the user based on the grammar.
- Proper response from Verbio ASR when no input was provided by the user.

- Verbio is not a standard option when configuring the speech server in Experience Portal. To allow Verbio to be displayed as an option in the Speech Engine drop-down box, the **languages.properties** files in Experience Portal were modified. This replaced one of the pre-existing speech engine options.
- Proper system recovery after a restart of the Verbio ASR server and loss of IP connectivity.

## 2.2. Test Results

Tests were performed to ensure interoperability between Verbio ASR and Experience Portal. The tests were all functional in nature and performance testing was not included. All the test cases passed successfully and only the following observations were noted.

- Currently, Verbio is not a type of ASR server that can be administered and there is a work around to add this functionality documented.
- Menu Grammars were not supported for Voice or DTMF detection. Verbio is investigating these issues.

## 2.3. Support

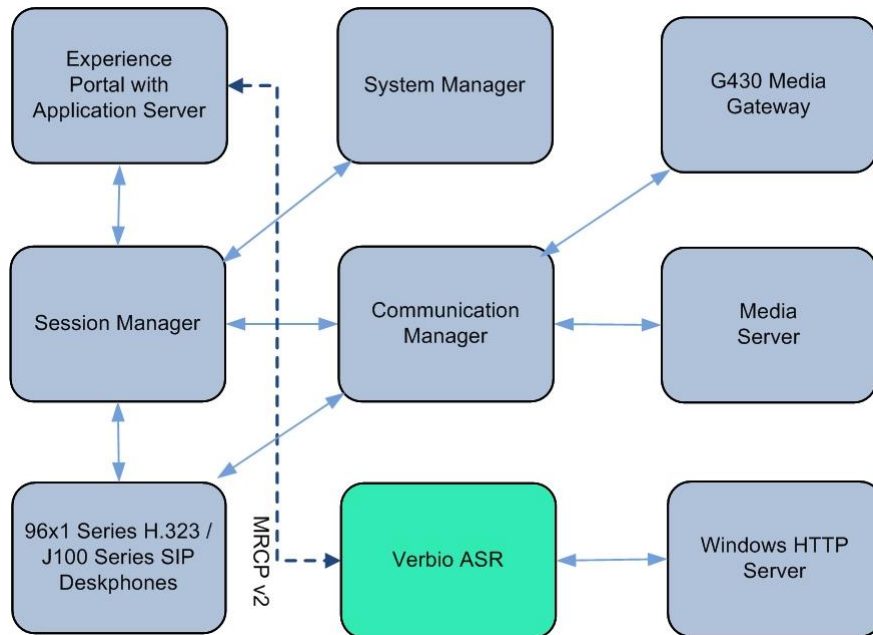
For technical support on Verbio ASR, contact **Verbio Technologies S.L.** at:

- Phone: +34 934 44 79 79
- Web: <https://verbio.com> (Click Support at bottom)
- Email: [support@verbio.com](mailto:support@verbio.com)

### 3. Reference Configuration

**Figure 1** illustrates the network topology used in the compliance testing. In the configuration, Experience Portal is connected to Session Manager via a SIP trunk and interfaced to the Verbio Server via MRCP V2. Sample VXML applications were hosted in an application server on a Windows Server.

Calls were placed from Avaya 96x1 Series H.323 and J100 Series SIP Deskphones to Experience Portal and routed through Communication Manager and Session Manager. The G430 Media Gateway and Media Server were used for media resources and System Manager was used to configure Session Manager and SIP users.



**Figure 1:** Avaya Experience Portal and Verbio ASR Reference Configuration

## 4. Equipment and Software Validated

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

| <b>Equipment/Software</b>          | <b>Release/Version</b>  |
|------------------------------------|---|
| Avaya Aura® Communication Manager  | 8.1.3.0.1-FP3P2<br>(8.1.3.2.0.890.26989)  |
| Avaya G430 Media Gateway           | FW 41.34.3  |
| Avaya Aura® Media Server           | v.8.0.2.200   |
| Avaya Aura® System Manager         | 8.1 Build 8.1.0.0.733078<br>Feature Pack 3 Service Pack 2<br>Latest Build 8.1.3.2.1012646 |
| Avaya Aura® Session Manager        | 8.1.3.2<br>(8.1.3.2.813207)   |
| Avaya Experience Portal            | 8.00.0.1497   |
| Avaya 96x1 Series H.323 Deskphones | 6.8502 (H.323)  |
| Avaya J100 Series SIP Deskphones   | 4.0.10.0.4  |
| Verbio ASR                         | 9.49  |

## 5. Configure Avaya Experience Portal

Configuration and verification operations on the Experience Portal illustrated in this section were all performed using either the Experience Portal Management (EPM) web interface or SSH connection to the server.

The information provided in this section describes the configuration of the Experience Portal for this solution. It is implied a working system is already in place, including Media Processing Platform, Apache Tomcat application Server and SIP routing via Session Manager. Installation of Voice XML applications is also outside the scope of this document. For all other provisioning information, such as initial installation and configuration, please refer to the product documentation in **Section 9**. The configuration operations described in this section can be summarized as follows:

- Update languages.properties Files
- Launch Experience Portal Manager
- Add Verbio ASR Server
- Add Application

### 5.1. Update language.properties Files

Verbio does not appear in the drop-down list of ASR server types when using Experience Portal 8.0. Therefore, two **languages.properties** files need to be updated on the Experience Portal on the EPM server. The files are available in the **Appendices** of these Application Notes.

Note: **\$CATALINA\_HOME** is the default Tomcat directory, /opt/Tomcat/tomcat.

- Copy the new language files on to the EPM server. The files will be named as:
  - languages.properties\_lib
  - languages.properties\_webapps
- Log into Experience portal with appropriate credentials.
- Switch user to a privileged administrator account with permissions to make these changes.
  - Use **cd \$CATALINA\_HOME/lib/config** to change to the appropriate directory.
  - Rename the current **languages.properties** file to save the original file (e.g., **mv languages.properties languages.properties.orig**).
  - Copy languages.properties\_lib to this directory and rename it as **languages.properties** (e.g., **mv languages.properties\_lib languages.properties**).
  - Use **chown avayavp languages.properties** to set the correct owner for this file.
  - Use **chgrp avayavpgroup languages.properties** to set the correct group for this file.
  - Use **chmod 750 languages.properties** to set the correct permissions.
- Next, use **cd \$CATALINA\_HOME/webapps/VoicePortal/WEB-INF/classes/messages/** to change the directory for the location of the next file.

- Rename the current **languages.properties** file (e.g., **mv languages.properties languages.properties.orig**).
- Copy **languages.properties\_webapps** to this directory and rename it as **languages.properties** (e.g., **mv languages.properties\_webapps languages.properties**).
- Use **chown avayavp languages.properties** to set the correct owner for this file.
- Use **chgrp avayavpgroup languages.properties** to set the correct group for this file.
- Use **chmod 750 languages.properties** to set the correct permissions.

Tomcat must now be restarted.

- Use **cd \$CATALINA\_HOME/bin** to change directory and enter:
  - **./shutdown.sh**
- Wait for the first command to complete, and then enter:
  - **./startup.sh**

## 5.2. Launch Experience Portal Manager

Experience Portal is configured via the Experience Portal Manager (EPM) web interface. To access the web interface, enter **https://<ip-addr>** as the URL in a web browser, where **<ip-addr>** is the IP address of EPM. Log in using the appropriate credentials.



The main page of the EPM web interface is displayed as shown below.

The screenshot shows the Avaya Experience Portal 8.0.0 (ExperiencePortal) main page. The header is red and contains the title and navigation links (Home, Help, Logout). The left sidebar is a navigation menu with categories like User Management, Real-time Monitoring, System Maintenance, System Management, System Configuration, Security, Reports, and Multi-Media Configuration. The main content area displays 'Avaya Experience Portal Manager' with a description, 'Installed Components' including Media Processing Platform, Email Service, HTML Service, and SMS Service, and a 'Legal Notice' section with global software license terms.

### 5.3. Add Verbio ASR Server

Verbio ASR must be added as a speech server using the EPM web interface. To add an ASR server, navigate to **System Configuration** → **Speech Servers** on the left pane. In the **Speech Servers** page (not shown), select the **ASR** tab and click **Add**. Configure the following parameters in the **Add ASR Server** page. Below screenshot shows a completed screen.

- **Name:** Provide a descriptive name (e.g., *Verbio*).
- **Enable:** Select *Yes* to enable the ASR server.
- **Engine Type:** Set to *Verbio*.
- **Network Address:** Set to Verbio IP Address (e.g., *10.1.10.125*).
- **\*Base Port:** This is auto populated as *5060* base on Verbio Engine Type.
- **Total Number of Licensed ASR Resources:** Set to number of ASR resources per license.
- **New Connection per Session** This does not apply to MRCP V2.
- **Selected Languages:** Select supported ASR languages.
- **Protocol:** Select *MRCP V2* from the drop-down menu.
- **Transport Protocol:** This is auto populated as *TCP*.
- **\*Listener Port:** This is auto populated as *5060*.

Leave the rest as default. Click **Save** below to complete.

*\*These parameters are auto-populated per languages.properties file in the Appendices and needs to match Verbio ASR.*



## Change ASR Server

Use this page to change the configuration of an ASR server.

|  |  |
|--|--|
| Name:  | Verbio   |
| Enable:  | <input checked="" type="radio"/> Yes <input type="radio"/> No      |
| Engine Type:   | Verbio <input type="text"/>  |
| Network Address:   | 10.1.10.125 <input type="text"/>                                   |
| Base Port:   | 5060 <input type="text"/>  |
| Total Number of Licensed ASR Resources:  | 10 <input type="text"/>  |
| New Connection per Session:  | <input checked="" type="radio"/> Yes <input type="radio"/> No      |
| <b>Languages</b>   | <b>Selected Languages</b>  |
| <ul style="list-style-type: none"><li>Basque(Spain) eu-ES</li><li>Catalan(Spain) ca-ES</li><li>French(France) fr-FR</li><li>Portuguese(Brazil) pt-BR</li><li>Portuguese(Portugal) pt-PT</li><li>Spanish(Argentina) es-AR</li><li>Spanish(Chile) es-CL</li><li>Spanish(Colombia) es-CO</li><li>Spanish(Latin_American) es-MX</li><li>Spanish(Spain) es-ES</li></ul> | <ul style="list-style-type: none"><li>English(USA) en-US</li></ul> |
| <b>MRCP</b>  |  |
| Ping Interval:   | 15 seconds <input type="text"/>                                    |
| Response Timeout:  | 4 seconds <input type="text"/>                                     |
| Protocol:  | MRCP V2 <input type="text"/>                                       |
| Enable Session XML:  | <input type="radio"/> Yes <input checked="" type="radio"/> No      |
| Transport Protocol:  | TCP <input type="text"/>   |
| Listener Port:   | 5060 <input type="text"/>  |
| <b>Save</b>  | <b>Apply</b> <b>Cancel</b> <b>Help</b>                             |

Navigate to **System Management** → **MPP Manager** to restart the MPP server. Select the MPP and then click **Restart**. After the MPP is started, the **Mode** of the MPP should be *Online* and the **State** should be *Running*.

**AVAYA**

Avaya Experience Portal 8.0.0 (ExperiencePortal)

Expand All | Collapse All

You are here: [Home](#) > System Management > MPP Manager

### MPP Manager (Dec 22, 2021 3:52:49 PM SGT)

This page displays the current state of each MPP in the Experience Portal system. To enable the state commands, the selected MPPs must also be stopped.

Last Poll: Dec 22, 2021 3:52:31 PM SGT

|                                     | Server Name | Mode   | State   | Config | Auto Restart | Restart Schedule |           | Active Calls |     |
|-------------------------------------|-------------|--------|---------|--------|--------------|------------------|-----------|--------------|-----|
|                                     |             |        |         |        |              | Today            | Recurring | In           | Out |
| <input checked="" type="checkbox"/> | aaep-mpp8   | Online | Running | OK     | No           | No               | None      | 0            | 0   |

**State Commands**

Start Stop Restart Reboot Halt Cancel

**Mode Commands**

Offline Test Online

**Restart/Reboot Options**

One server at a time  
 All servers

**Help**

## 5.4. Add Application

This section covers the configuration of a sample VXML application that uses ASR resources from Verbio.

On the left pane, navigate to **System Configuration** → **Applications**. The **Applications** page is displayed (not shown). For the compliance test, one of the sample VXML applications was configured as shown on next page.

- **Name:** Provide a descriptive name (e.g., *Verbio*).
- **Enable:** Set to *Yes* to enable the application.
- **Type:** Set to *VoiceXML*.
- **VoiceXML URL:** Specify the VXML application URL. For the compliance test, the application was located on application server in Windows server.

Expand the **ASR Speech Servers** section.

- **Selected ASR:** Select *Verbio*.

- **Selected Languages:** Select the language (e.g., *English(USA) en-US*).

In the **Application Launch** section, set the **Called Number** (e.g., *10393*) associated with the application and click **Add**. The called number will be added to the text below the field.

|  |   |                     |                              |        |                    |
|--|---|---------------------|------------------------------|--------|--------------------|
| Name:  | Verbio  |                     |                              |        |                    |
| Enable:  | <input checked="" type="radio"/> Yes <input type="radio"/> No   |                     |                              |        |                    |
| Type:  | VoiceXML  |                     |                              |        |                    |
| Reserved SIP Calls:  | <input checked="" type="radio"/> None <input type="radio"/> Minimum <input type="radio"/> Maximum   |                     |                              |        |                    |
| Requested:   | <input type="text"/>  |                     |                              |        |                    |
| <b>URI</b>   |   |                     |                              |        |                    |
| <input checked="" type="radio"/> Single <input type="radio"/> Fail Over <input type="radio"/> Load Balance |   |                     |                              |        |                    |
| VoiceXML URL:  | <input type="text" value="http://10.1.10.98/UPGRADE/Verbio/intro-eng.vxml"/> <b>Verify</b>  |                     |                              |        |                    |
| Mutual Certificate Authentication:   | <input type="radio"/> Yes <input checked="" type="radio"/> No   |                     |                              |        |                    |
| Basic Authentication:  | <input type="radio"/> Yes <input checked="" type="radio"/> No   |                     |                              |        |                    |
| <b>ASR Speech Servers</b>  |   |                     |                              |        |                    |
| <b>ASR:</b>  | <table border="1"><tr><td><b>Engine Types</b></td><td><b>Selected Engine Types</b></td></tr><tr><td>&lt;None&gt;</td><td>Verbio</td></tr></table>       | <b>Engine Types</b> | <b>Selected Engine Types</b> | <None> | Verbio             |
| <b>Engine Types</b>  | <b>Selected Engine Types</b>  |                     |                              |        |                    |
| <None>   | Verbio  |                     |                              |        |                    |
| <b>Verbio</b>  | <table border="1"><tr><td><b>Languages</b></td><td><b>Selected Languages</b></td></tr><tr><td>&lt;None&gt;</td><td>English(USA) en-US</td></tr></table> | <b>Languages</b>    | <b>Selected Languages</b>    | <None> | English(USA) en-US |
| <b>Languages</b>   | <b>Selected Languages</b>   |                     |                              |        |                    |
| <None>   | English(USA) en-US  |                     |                              |        |                    |
| Resources:   | Acquire on call start and retain  |                     |                              |        |                    |
| N Best List Length:  | <input type="text"/>  |                     |                              |        |                    |
| Speech Complete Timeout:   | <input type="text"/> milliseconds   |                     |                              |        |                    |
| Speech Incomplete Timeout:   | <input type="text"/> milliseconds   |                     |                              |        |                    |
| Vendor Parameters:   | <input type="text"/>  |                     |                              |        |                    |

In the **Advanced Parameters** section, select the **Support Remote DTMF Processing** to **No** to allow Experience Portal to perform DTMF processing. DTMF processing isn't supported by Verbio.

**Advanced Parameters** ▾

Support Remote DTMF Processing:  Yes  No

DTMF Type Ahead Enabled:  Yes  No

Converse-On:  Yes  No

Network Media Service:  Yes  No

Early Media:  Yes  No

Sync FROM and PAI Headers:  Yes  No

Dialog URL Pattern:

VoiceXML Event Handler:  ▾

CCXML Event Handler:  ▾

Generate UCID:  Yes  No

Operation Mode:  ▾

Transport UCID in Shared Mode:  Yes  No

Maximum UUI Length:

Fax Detection Enabled:  Yes  No

Fax Phone Number:

Video Enabled:  Yes  No

Video Screen Format:  ▾

Video Minimum Picture Interval:

**Save** **Apply** **Cancel** **Help**

## 6. Configure Verbio ASR

The following sections describe the steps required to configure the base configuration required to enable Verbio to interoperate with Experience Portal. It is implied a working system is already in place. For all other provisioning information, such as initial installation and configuration, please refer to the product documentation in **Section 9**. The sub-section below will be used to verify configuration of MRCP settings.

### 6.1. Verify MRCP Settings

In the Verbio ASR server, locate the MRCP config file “software-verbio-mrcp” in **/opt/Verbio/config** directory. The Platform Type must be set, IP Address configured, MRCP Version and the MRCP local port for connection set as below:

- **PLATFORM:** Set to *Avaya*.
- **IP ADDRESS:** Set to *10.1.10.125* for the server IP Address.
- **VERSION:** Set to 2 for MRCP Version 2.
- **LOCAL PORT:** Set to *5060* as configured on Experience Portal **Section 5.3**.

```
#
# == mrcp2d configuration file ==
#

string ASR_SERVER = "127.0.0.1";
string ASR_START = "verbio8k.en-us";
string ASR_LANG = "en-us";
string ASR_CONFS = "verbio8k.en-us";
string ASR_LANGS = "en-us";
string ASR_SERVER = "127.0.0.1";
string ASR_START = "en-us";
string PLATFORM = "Avaya";
string MRCPDIR = "/opt/verbio/mrcp";
string IP_ADDRESS = "10.1.10.125";
string EXTERNAL_IP_ADDRESS = "10.1.10.125";
int LOGGING_LEVEL = 7;
int LOGGING_DEST = 0;
int VERSION = 1;
int LOCAL_PORT = 5060;
int MRCP_PORT = 32416;
int RTP_PORT_MIN = 6000;
int RTP_PORT_MAX = 8000;
string ASR_SERVER_STATUS = "1";
string ASR_SERVER_STATUS = "1";
string NORMALIZATION = "/opt/verbio/mrcp/ASRcnf.kv";
string CLS_CONF = "";
string CLS_LANG = "";
string CLS_SERVER = "";
string CLS_RULES = "";
string NLP_DICTIONARY = "";
string NLP_TEMPLATE = "";
string NLP_SUBSTITUTIONS = "";
string CSR_MODEL = "";
int USE_INTENT_SERVICE = 0;
string INTENT_SERVICE_URI = "";
string MRCP_MASK_EXTENSIONS = "";
int MRCP_SET_SESSIONID = 0;
string EXPAND_RULES = "";
```

## 7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Experience Portal and Verbio ASR.

After performing the verification in this section, place a call to an Experience Portal number that would launch a VXML application that uses the Verbio ASR resources. Verify that the application answers the call and that the correct ASR response are heard.

### 7.1. Avaya Experience Portal

This section provides the verification steps that may be performed to verify that Experience Portal can run Verbio ASR server.

From the EPM web interface, verify that the MPP server is online by navigating to **System Management** → **MPP Manager**. The **Mode** of the MPP should be *Online* and the **State** should be *Running*.

**AVAYA**

Avaya Experience Portal 8.0.0 (ExperiencePortal)

Expand All | Collapse All

You are here: [Home](#) > System Management > MPP Manager

### MPP Manager (Dec 22, 2021 3:52:49 PM SGT)

This page displays the current state of each MPP in the Experience Portal system. To enable the state commands, the selected MPPs must also be stopped.

Last Poll: Dec 22, 2021 3:52:31 PM SGT

| <input checked="" type="checkbox"/> | Server Name | Mode   | State   | Config | Auto Restart | Restart Schedule |           | Active Calls |     |
|-------------------------------------|-------------|--------|---------|--------|--------------|------------------|-----------|--------------|-----|
|                                     |             |        |         |        |              | Today            | Recurring | In           | Out |
| <input checked="" type="checkbox"/> | aaep-mpp8   | Online | Running | OK     | No           | No               | None      | 0            | 0   |

**State Commands**

**Mode Commands**

**Restart/Reboot Options**

One server at a time  
 All servers

From the EPM web interface, verify that the ports on the MPP server are in service in the by navigating to **Real-time Monitoring → Port Distribution** and selecting the MPP in the **Port Distribution** page (not shown). Verify that the SIP Trunk is in *Online Mode* and *In service State*.

**AVAYA**  
Avaya Experience Portal 8.0.0 (ExperiencePortal)

Expand All | Collapse All

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

### Port Distribution Report (Dec 22, 2021 3:59:23 PM SGT)

This page displays information about how the telephony resources have been distributed to the MPP in the VoIP Connections page.

Servers: aaep-mpp8  
Total Ports: 15  
Last Poll: Dec 22, 2021 3:59:09 PM SGT

| Port  | Mode   | State      | Port Group | Protocol  | Current Allocation | Base Allocation |
|-------|--------|------------|------------|-----------|--------------------|-----------------|
| 10106 | Online | In service | DuplexCM   | H323      | aaep-mpp8          |                 |
| 10107 | Online | In service | DuplexCM   | H323      | aaep-mpp8          |                 |
| 10108 | Online | In service | DuplexCM   | H323      | aaep-mpp8          |                 |
| 10109 | Online | In service | DuplexCM   | H323      | aaep-mpp8          |                 |
| 10110 | Online | In service | DuplexCM   | H323      | aaep-mpp8          |                 |
| 10    | Online | In service | SM1        | SIP_Trunk | aaep-mpp8          |                 |

[Help](#)

Navigate to **Real-time Monitoring → System Monitor** and select the **ExperiencePortal Details** tab. Click on the MPP under the **Server Name** (not shown). In the **MPP Details** page, click **Service Menu** and a new tab will be presented. Finally, navigate to **Resources → Speech Servers** in the left pane to view the status of the speech servers as shown below. The **Status** of the speech servers should be *UP* for **Verbio ASR** as shown below.

**AVAYA**  
Avaya Experience Portal MPP 8.0.0.0.1497 on aaep-mpp8.sglab.com

Home  
You are here: [Home](#) > [Resources](#) > Speech Servers

### Speech Servers

| Name   | Type | Status       | Values                                | Ports                   | Errors                                   | Latency                                     |
|--------|------|--------------|---------------------------------------|-------------------------|--|---|
| Verbio | ASR  | Server is UP | H (Simultaneous): 10<br>M (Total): 10 | Active: 0<br>Reserve: 0 | Timeout: 0<br>Setup: 0<br>Application: 5 | Average: 220<br>Maximum: 5190<br>Minimum: 0 |
| Verbio | TTS  | Server is UP | H (Simultaneous): 10<br>M (Total): 10 | Active: 0<br>Reserve: 0 | Timeout: 4<br>Setup: 0<br>Application: 0 | Average: 501<br>Maximum: 4000<br>Minimum: 0 |

Wed Dec 22 16:00:53 2021

## 8. Conclusion

These Application Notes describe the compliance tested configuration used to validate Verbio ASR Server Version 9.XX with Avaya Experience Portal Version 8.0 using MRCP V2. Sample VXML applications that use various grammar types were used to verify Verbio ASR. All feature and serviceability test cases were completed successfully with observations noted in **Section** Error! Reference source not found..

## 9. Additional References

These documents form part of the Avaya official technical reference documentation suite. Further information may be had from <http://support.avaya.com> or from your Avaya representative.

[1] *Deploying Avaya Aura® Experience Portal in an Avaya Customer Experience Virtualized Environment*, Release 8.1, Issue 1 June 2021.

Verbio documentation can be obtained by using the contact details listed in **Section 2.3**.

[1] *Verbio 9.40 Installation Guide*, Version 1.9, October 2020.



## 10. APPENDIX 1: languages.properties\_lib

This file should replace **languages.properties** file in the **\$CATALINA\_HOME/lib/config** directory in the EPM server. Note that the text in **bold** were either added for Verbio ASR or commented out to remove a pre-existing speech engine.

```
#
# Engine Type options displayed on the page
#
asrEngines=Verbio,Loquendo,Google Speech,Dialogflow
#asrEngines=Loquendo,Nuance,Google Speech,Dialogflow
ttsEngines=Verbio,Loquendo
#ttsEngines=Loquendo,Nuance
asrEnginesAmsOnly=Nuance
ttsEnginesAmsOnly=Nuance

# Engine Type conversion from display to internal data in the database
IBMVWSASR=ibm wvs
IBMWVSTTS=ibm wvs
#NuanceASR=nuance osr
#NuanceTTS=nuance realspeak
LoquendoASR=loquendo
LoquendoTTS=loquendo
GoogleSpeechASR=googleasr
DialogflowASR=dialogflowasr
VerbioASR=nuance osr
VerbioTTS=nuance realspeak

# Engine Type conversion from internal data in the database to display
ibmwvs=IBM WVS
nuanceosr=Verbio
nuancerealspeak=Verbio
#nuanceosr=Nuance
#nuancerealspeak=Nuance
#nuancequantum=Nuance
loquendo=Loquendo
googleasr=Google Speech
dialogflowasr=Dialogflow

#
# Languages
#
NuanceASRlanguages=af-za,ar-jo,ar-ww,as-in,eu-ES,bn-bd,bn-in,bh-in,bg-bg,cn-HK,ca-ES,hr-HR,cs-
CZ,da-DK,nl-BE,nl-nl,en-au,en-gb,en-in,en-SG,en-ZA,en-us,fi-FI,fr-BE,fr-ca,fr-FR,gl-ES,gu-IN,de-
at,de-DE,de-CH,el-GR,he-IL,hi-IN,hu-HU,is-IS,id-ID,it-IT,ja-JP,kn-IN,ko-KR,ms-MY,ml-IN,zh-cn,zh-
tw,mr-IN,ne-NP,no-NO,or-IN,pl-PL,pt-br,pt-PT,pa-IN,ro-RO,ru-RU,sr-rs,sk-SK,sl-SL,es-ar,es-CO,es-
ES,es-us,sv-SE,sv-fi,ta-IN,te-IN,th-TH,tr-TR,uk-UA,ur-IN,ur-PK,va-ES,vi-VN,cy-gb
IBMVWSASRlanguages=zh-CN,en-GB,en-AU,en-US,fr-CA,de-DE,ja-JP,es-MX,es-ES
LoquendoASRlanguages=ca-ES,zh-CN,nl-NL,en-US,en-GB,fr-FR,de-DE,el-GR,it-IT,pl-PL,pt-BR,pt-PT,ru-
RU,es-AR,es-CL,es-CO,es-MX,es-ES,es-US,sv-SE
VerbioASRlanguages=es-ES,ca-ES,eu-ES,pt-PT,pt-BR,fr-FR,en-US,es-MX,es-AR,es-CL,es-VE,es-CO

# TTS LANGUAGE
NuanceTTSlanguages=ar-WW Laila F,ar-WW Maged M,ar-WW Tarik M,eu-ES Miren F,eu-ES Arantxa F,bg-BG
Daria F,ca-ES Jordi M,ca-ES Montserrat F,ca-ES Nuria F,zh-HK Sin-Ji F,zh-CN Li-li F,zh-CN Mei-
Ling F,zh-CN Tian-Tian F,zh-CN Ting-Ting F,cs-CZ Iveta F,cs-CZ Zuzana F,da-DK Ida F,da-DK Magnus
M,da-DK Sara F,da-DK Nanna F,nl-BE Ellen F,nl-NL Claire F,nl-NL Claire-ml F,nl-NL Xander M,en-AU
Karen F,en-AU Lee M,en-GB Daniel M,en-GB Emily F,en-GB Serena F,en-GB Kate F,en-GB Malcolm M,en-
GB Oliver M,en-GB Stephanie F,en-IN Sangeeta F,en-IN Rishi M,en-IN Veena F,en-IE Moira F,af-ZA
Tessa F,en-SC Fiona F,en-US Allison F,en-US Ava F,en-US Ava-ml F,en-US Ethan M,en-US Evelyn F,en-
US Nathan M,en-US Susan F,en-US Evan M,en-US Zoe F,en-US Donna F,en-US Erica F,en-US Jennifer
F,en-US Jill F,en-US Lisa F,en-US Samantha F,en-US Tom M,en-US Vicky F,fi-FI Onni F,fi-FI Satu
F,fi-FI Mikko F,fr-CA Amelie F,fr-CA Chantal F,fr-CA Nicolas M,fr-CA Felix M,fr-CA Julie F,fr-FR
Audrey-ml F,fr-FR Aurelie F,fr-FR Thomas M,fr-FR Audrey F,fr-FR Sebastien M,fr-FR Virginie F,gl-
```

```

ES Carmela F,de-DE Steffi F,de-DE Beate F,de-DE Yannick M,de-DE Viktor M,de-DE Petra F,de-DE
Petra-ml F,de-DE Markus M,de-DE Anna F,de-DE Anna-ml F,gr-GR Melina F,gr-GR Nikos M,gr-GR
Alexandros M,he-IS Carmit F,hi-IN Lekha F,hi-IN Neel M,hu-HU Mariska F,is-IS Ragga F,id-ID
Damayanti F,it-IT Alice F,it-IT Alice-ml F,it-IT Federica F,it-IT Federica-ml F,it-IT Luca M,it-
IT Paola F,it-IT Paolo M,it-IT Silvia F,ja-JP Otoya M,ja-JP Kyoko F,ko-KR Sora F,ko-KR Narae
F,zh-TW Mei-Ling F,zh-TW Mei-Jia F,zh-TW Ya-Ling F,no-NO Henrik M,no-NO Nora F,no-NO Stine F,pl-
PL Agata F,pl-PL Ewa F,pl-PL krzysztof M,pl-PL Zosia F,pt-BR Felipe M,pt-BR Luciana F,pt-BR
Raquel F,pt-PT Catarina F,pt-PT Joana F,pt-PT Joaquim M,pt-PT Madalena F,ro-RO Ioana F,ru-RU
Katya F,ru-RU Katya-ml F,ru-RU Katerina F,ru-RU Milena F,ru-RU Yuri M,en-ZA Tessa F,es-AR Diego
M,es-CO Carlos M,es-CO Soledad F,es-ES Jorge M,es-ES Marisol F,es-ES Monica-ml F,es-ES Diego
M,es-ES Isabel F,es-ES Monica F,es-MX Angelica F,es-MX Juan M,es-MX Javier M,es-MX Paulina F,sk-
SK Laura F,sv-SE Klara F,sv-SE Ingrid F,sv-SE Oskar M,sv-SE Alva F,th-TH Kanya F,th-TH Narisa
F,tr-TR Aylin F,tr-TR Cem M,tr-TR Cem-ml M,tr-TR Yelda F,va-ES Empar F
IBMWVSTSLanguages=zh-CN Zhou-Hong F,en-US Andrew M,en-US Allison F,en-US Julie F,en-US Lisa
F,en-US Tyler F,en-GB David M,en-GB Kate F,en-GB Sally F,en-GB Dawn F,fr-CA Pierre M,fr-CA Louise
F,de-DE Dieter M,de-DE Erika F,ja-JP Daichi M,ja-JP Shizuka F,es-MX Rafael M,es-MX Sofia F
LoquendoTTSlanguages=ca-ES Jordi M,ca-ES Montserrat F,zh-CN Linlin F,nl-NL Saskia F,nl-NL Willelm
M,en-GB Simon M,en-GB Kate F,en-GB Elizabeth F,en-US Allison F,en-US Dave M,en-US Susan F,en-US
Kenneth M,fr-FR Bernard M,fr-FR Juliette F,fr-FR Sophie F,de-DE Stefan M,de-DE Katrin F,de-DE
Ulrike F,el-GR Afroditi F,el-GR Artemis F,it-IT Giulia F,it-IT Luca M,it-IT Paola F,it-IT Fabio
M,it-IT Marcello M,it-IT Matteo M,it-IT Roberto M,it-IT Silvana F,pl-PL Zosia F,pt-PT Amalia
F,pt-PT Eusebio M,pt-BR Gabriela F,ru-RU Dmitri M,ru-RU Olga F,es-ES Jorge M,es-ES Carmen F,es-ES
Juan M,es-CO Carlos M,es-AR Diego M,es-CL Francisca F,es-MX Esperanza F,es-US Carlos M,es-US
Soledad F,es-US Ximena F,sv-SE Annika F
VerbioTTSlanguages=es-ES Laura F,es-ES Carlos M,es-ES Amaya F,es-MX Lucia F,es-MX Celia F,es-AR
Javier M, es-AR Silvana F,ca-ES Oriol M,ca-ES Meritxell F,eu-ES Amaia F,pt-PT Adriana F,pt-BR
Luma F,en-US Jane F,en-US Lucy F,fr-FR Brigitte F,es-VE Carmen F

#
# Language Default
#
#NuanceASRLanguagesDefault=en-us
IBMWVSASRLanguagesDefault=en-US
LoquendoASRLanguagesDefault=en-US
VerbioASRLanguagesDefault=es-ES

#
#NuanceTTSlanguagesDefault=en-US Jennifer F
IBMWVSTSLanguagesDefault=en-US Andrew M
LoquendoTTSlanguagesDefault=en-US Dave M
VerbioTTSlanguagesDefault=es-ES Carlos M

#
# default base port
#
#NuanceBasePort=4900
IBMWVSBBasePort=554
LoquendoBasePort=554
VerbioBasePort=5060
#
# default New Connection per Session
#
#NuancePerPort=No
IBMWVSPerPort=Yes
LoquendoPerPort=Yes
VerbioPerPort=Yes
#
# default URL
#
IBMWVSRtspUrlAsr=/media/recognizer
IBMWVSRtspUrlTts=/media/synthesizer
#NuanceRtspUrlAsr=/media/speechrecognizer
#NuanceRtspUrlTts=/media/speechsynthesizer
LoquendoRtspUrlAsr=/media/recognizer
LoquendoRtspUrlTts=/media/synthesizer
VerbioRtspUrlAsr=/recognizer
VerbioRtspUrlTts=/synthesizer
#

```

```

# Grammar Type
#
ibmwvsGrammarType=srgs
#nuanceosrGrammarType=srgs
#nuancequantumGrammarType=srgs
loquendoGrammarType=sisr
verbioasrTypeGrammar=srgs
#
# MRCP Protocol
#
IBMWVSMRCPValues=mrppv1
#NuanceMRCPValues=mrppv1,mrppv2
LoquendoMRCPValues=mrppv1
#NuanceMRCPAmsOnlyValues=mrppv1,mrppv2
VerbioMRCPValues=mrppv1,mrppv2

#
# Transport
#
IBMWVSTransportValues=tcp
#NuanceTransportValues=tcp,tls
LoquendoTransportValues=tcp
VerbioTransportValues=tcp

#
# Resources
#
#NuanceASRResourcesDefault=asrAcquireCallStartRetain
IBMWVSAASRResourcesDefault=asrAcquireCallStartRetain
LoquendoASRResourcesDefault=asrAcquireCallStartRetain
GoogleSpeechResourcesDefault=asrAcquireReleaseAsNeeded
DialogflowResourcesDefault=asrAcquireReleaseAsNeeded
VerbioASRResourcesDefault=asrAcquireCallStartRetain

#
# Google Speech Engine
#
configureGoogleSpeechNetworkAddress=false
configureGoogleSpeechBasePort=false
configureGoogleSpeechTotalLicensed=false
configureGoogleSpeechPerPort=false
configureGoogleSpeechLanguages=false
configureGoogleSpeechResources=false
configureGoogleSpeechNBestListLength=false
configureGoogleSpeechSpeechTimeouts=false
configureGoogleSpeechMRCP=false

configureGoogleSpeechCredentials=true
configureGoogleSpeechProfanity=true
configureGoogleSpeechLicense=true

#
# Google Dialogflow
#
configureDialogflowNetworkAddress=false
configureDialogflowBasePort=false
configureDialogflowTotalLicensed=false
configureDialogflowPerPort=false
configureDialogflowLanguages=false
configureDialogflowResources=false
configureDialogflowNBestListLength=false
configureDialogflowSpeechTimeouts=false
configureDialogflowMRCP=false

configureDialogflowCredentials=true
configureDialogflowProjectParameters=true

# AVB XML:Language

```

```
#
# Please follow the ASR LOCALIZATION INSTRUCTIONS mentioned above.
avbLanguageLabels=af-za,ar-jo,ar-ww,as-in,eu-ES,bn-bd,bn-in,bh-in,bg-bg,cn-HK,ca-ES,hr-HR,cs-
CZ,da-DK,nl-BE,nl-nl,en-au,en-gb,en-in,en-SG,en-ZA,en-us,fi-FI,fr-BE,fr-ca,fr-FR,gl-ES,gu-IN,de-
at,de-DE,de-CH,el-GR,he-IL,hi-IN,hu-HU,is-IS,id-ID,it-IT,ja-JP,kn-IN,ko-KR,ms-MY,ml-IN,zh-cn,zh-
tw,mr-IN,ne-NP,no-NO,or-IN,pl-PL,pt-br,pt-PT,pa-IN,ro-RO,ru-RU,sr-rs,sk-SK,sl-SL,es-ar,es-CO,es-
ES,es-us,sv-SE,sv-fi,ta-IN,te-IN,th-TH,tr-TR,uk-UA,ur-IN,ur-PK,va-ES,vi-VN,cy-gb

# The following is for internal software to decide which default value to use for Speech Complete
Timeout in application advanced parameters.
# If Nuance, the default value is "0", otherwise, the default is "";
IBM=ibm wvs
LOQUENDO=loquendo

#
#      Default engine type for speech servers
#
#defaultEngineType=Nuance
defaultEngineType=Verbio
```











---

**©2022 Avaya Inc. All Rights Reserved.**

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at [devconnect@avaya.com](mailto:devconnect@avaya.com).