



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Computer Instruments eONE, with Avaya Aura® Experience Portal – Issue 1.0

Abstract

These Application Notes describe the procedure for configuring Computer Instruments' eONE product to interoperate with Avaya Aura® Experience Portal.

Computer Instruments eONE is a point and click graphical interface for rapidly developing call flow experience. It provides a simple solution for managing IVR application development by enabling the ability to change caller experiences in real time without restarting services. These Application Notes focus on eONE's integration with Avaya Aura® Experience Portal in support of inbound and outbound Interactive Voice Response (IVR) calls.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as the 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 procedure for configuring Computer Instruments' eONE product to interoperate with Avaya Aura® Experience Portal.

Computer Instruments eONE is a point and click graphical interface for rapidly developing call flow experience. It provides a simple solution for managing IVR application development by enabling the ability to change caller experiences in real time without restarting services. These Application Notes focus on eONE's integration with Avaya Aura® Experience Portal in support of inbound and outbound Interactive Voice Response (IVR) calls.

2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability tests. Both the feature test cases and serviceability test cases were performed manually. The feature test verified the feature interoperability between eONE and Experience Portal and the serviceability test verified the ability of eONE to recover under adverse conditions.

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 for 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 general test approach included verification of a successful integration of the eONE application with Experience Portal. IVR call flows were created using CII Voice Administrator, an element of eONE, and verified by placing inbound calls to an Experience Portal inbound application and outbound calls that invoked an Experience Portal outbound application. Both the inbound and outbound applications were developed by Computer Instruments and worked with the eONE software. Once the inbound or outbound application was connected, the eONE software worked in conjunction with Experience Portal to play a menu and the user can select various menu options using DTMF or speech recognition.

During the compliance test, the following call scenarios and call flow elements were used to verify eONE functionality.

- Inbound calls
- Outbound calls
- Play prompt using recording
- Play prompt using TTS
- User input using DTMF
- Call termination by originator
- Call termination by destination party
- Blind transfer

- Simultaneous calls

During Compliance Test, eONE was also configured to interface with Avaya Aura[®] Session Manager and Avaya IP Office. Application Notes for those are available separately.

2.2. Test Results

Computer Instruments eONE successfully passed the compliance testing.

2.3. Support

Technical support for the eONE solution can be obtained by contacting Computer Instruments at:

- Email – support@instruments.com
- Phone – (888) 451-0851

3. Reference Configuration

Figure 1 illustrates the reference configuration used during testing. In the reference configuration, the eONE server has an Apache Tomcat server installed to facilitate integration with Experience Portal. An incoming call from PSTN to eONE is first received by Session Manager which routes the call to Experience Portal via SIP trunks. Experience Portal then invokes an inbound application deployed in the Apache Tomcat server. An outgoing call from eONE is initiated by eONE through the Experience Portal web services interface. Upon received the request, Experience Portal makes a call via SIP trunks to Communication Manager which routes the call to PSTN. When the call is answered, Experience Portal invokes an outbound application on the Apache Tomcat server. For calls that require speech recognition or text to speech resources, resources on a Nuance speech server are used.

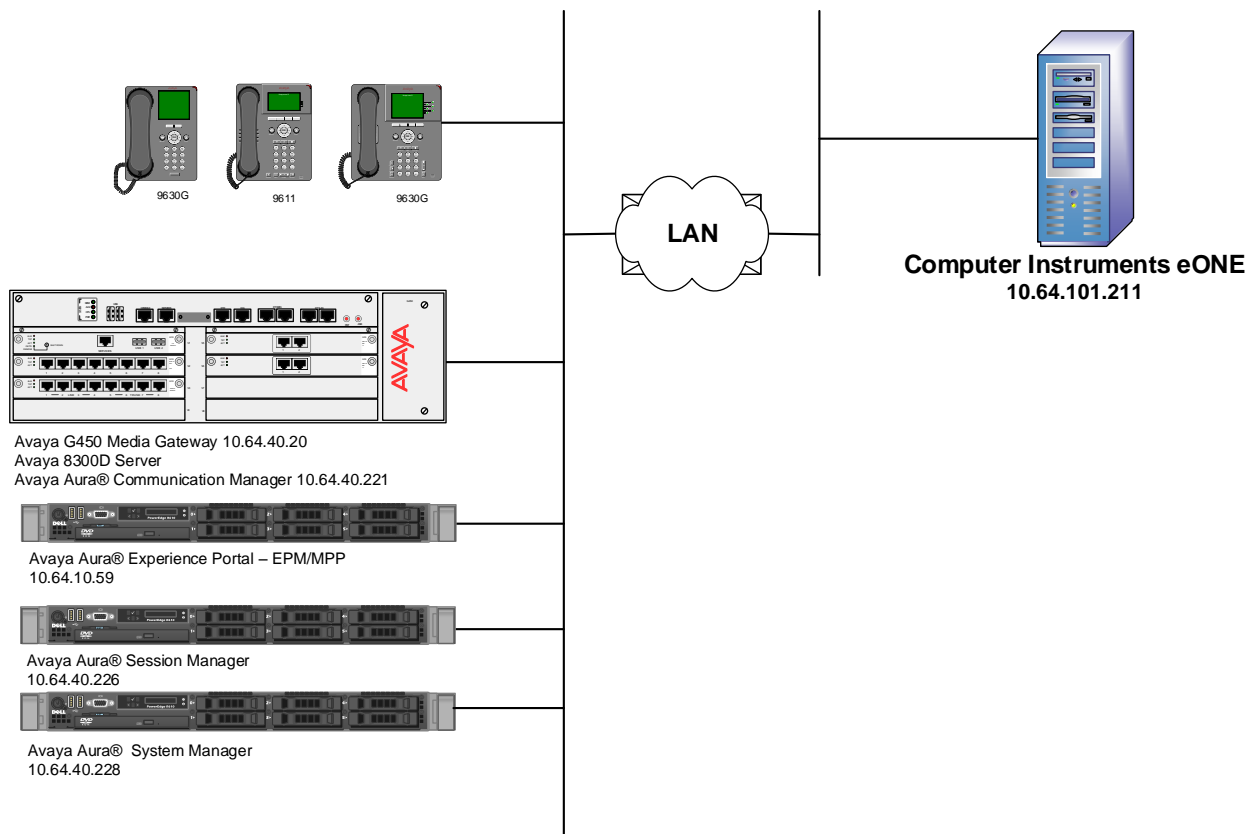


Figure 1: Test Configuration of eONE

4. Equipment and Software Validated

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

Equipment/Software	Version
Avaya Aura® Experience Portal running on HP Proliant DL360 G7 Server	7.0 Service Pack 2
Avaya Aura® Communication Manager running on Avaya S8300 Server	7.0 (R017x.00.0.441.0)
Avaya G450 Media Gateway MGP MM710 T1 Module	HW 1 FW 37.19.0 HW 01 FW 013
Avaya Aura® Session Manager running on HP Proliant DL360 G7 Server	7.0.0.0.700007
Avaya Aura® System Manager running on a VMWare virtual machine	7.0.0.0
Computer Instruments eONE on Windows Server 2008 R2	6.1.1

5. Configure Avaya Aura® Experience Portal

This section describes the Experience Portal configuration to support the network shown in **Figure 1**. The configuration of Experience Portal was performed using a web browser.

The Experience Portal configuration includes the following:

- Launch Experience Portal
- Add eONE inbound application
- Add eONE outbound application

5.1. Launch Avaya Aura® Experience Portal

From a PC, open a web browser and enter the URL for Experience Portal. Log in with the proper credentials. The **Avaya Aura® Experience Portal Manager** page is displayed.

The screenshot shows the Avaya Aura® Experience Portal Manager web interface. At the top left is the AVAYA logo. At the top right, it says "Welcome, admin" and "Last logged in Nov 19, 2015 at 8:52:33 AM MST". Below the logo is a red navigation bar with "Avaya Aura® Experience Portal 7.0.2 (ExperiencePortal)" and links for Home, Help, and Logoff. A left sidebar contains a navigation menu with categories like User Management, Real-time Monitoring, System Maintenance, System Management, System Configuration, and Security. The main content area shows "You are here: Home" and the title "Avaya Aura® Experience Portal Manager". Below the title is a description of the EPM interface. Under "Installed Components", there are sections for Media Processing Platform, Email Service, Proactive Outreach Manager, and Short Message Server, each with a brief description.

5.2. Add Inbound Application

From the left pane, select **System Configuration** → **Applications**. The **Applications** page is displayed (not shown). Click **Add**.

The **Add Application** screen is displayed. Complete the fields as follows:

- Enter a descriptive name in the **Name** field. In the compliance test **eCI_Inbound** was used.
- For the **Type** field, select **VoiceXML** from the drop down menu.
- In the **URI** box, fill in the **VoiceXML URL** field:
http://10.64.101.211:8080/eCI_IB_OD/Start, where **10.64.101.211** and **8080** are the IP Address and Tomcat Port of the eONE Server
- In the **Speech Servers** box, select **Nuance** for the **TTS** field.
- In the **Application Launch** box, select the **Inbound** radio button and the **Number** radio button. Enter the **Called Number** and select **Add**.

The screenshot displays the 'Add Application' configuration page in the Avaya Aura Experience Portal. The page is titled 'Add Application' and includes a breadcrumb trail: 'Home > System Configuration > Applications > Add Application'. The main content area is divided into several sections:

- Start With:** A dropdown menu set to '<None>'.
Name: A text input field containing 'eCI_Inbound'.
Enable: Radio buttons for 'Yes' (selected) and 'No'.
Type: A dropdown menu set to 'VoiceXML'.
Reserved SIP Calls: Radio buttons for 'None' (selected), 'Minimum', and 'Maximum'.
Requested: An empty text input field.
- URI:** Radio buttons for 'Single' (selected), 'Fail Over', and 'Load Balance'.
VoiceXML URL: A text input field containing 'http://10.64.101.211:8080/eCI_IB_OD/Start' with a 'Verify' button to its right.
Mutual Certificate Authentication: Radio buttons for 'Yes' and 'No' (selected).
Basic Authentication: Radio buttons for 'Yes' and 'No' (selected).
- Speech Servers:** A section with 'ASR' set to 'No ASR', 'TTS' set to 'Nuance', and a 'Voices' dropdown menu showing 'English(USA) en-US_Jennifer F...'.
Application Launch: Radio buttons for 'Inbound' (selected), 'Inbound Default', and 'Outbound'. Below this, radio buttons for 'Number' (selected), 'Number Range', and 'URI'. A 'Called Number' text input field contains '77011', followed by an 'Add' button. Below the input field is a list box containing '77011' and a 'Remove' button.

After entering the URL information, click the **Verify** button to make sure the application is accessible. The following page should be displayed:



Event :error - [CheckError](#)

Starting application : eCI_IB_OD

Application Startup Parameters

AAI	<input type="text"/>
ANI	<input type="text"/>
DNIS	<input type="text"/>
Protocol Name	<input type="text"/>
Protocol Version	<input type="text"/>
UUI	<input type="text"/>
Call Tag	<input type="text"/>
Channel	<input type="text"/>
VP-Called Extension	<input type="text"/>
VP-Coverage Reason	<input type="text"/>
VP-Coverage Type	<input type="text"/>
VP-RDNIS	<input type="text"/>
Redirect URI	<input type="text"/>
Redirect Presentation Info	<input type="text"/>
Redirect Screening Info	<input type="text"/>
Redirect Reason	<input type="text"/>
Shared Mode	<input type="text"/>
Shared UUI ID	<input type="text"/>
Shared UUI Value	<input type="text"/>
Session Label	<input type="text"/>
SIPCallID	<input type="text"/>
Media Type	<input type="text"/>

After a successful verification, click **Save**.

5.3. Configure Inbound properties file

On the server running eONE, modify the following file:

\$TOMCAT_HOME\webapps\DDHome\InboundAppConfig.properties

- InboundVxmlUrlIP=**[IP Address of eONE server]**
- DB_DriverClassName=com.microsoft.sqlserver.jdbc.SQLServerDriver
- DB_IP=**[IP Address of eONE server]**
- DB_Port=1433
- DB_Name=VTSystem
- DB_Url=jdbc:sqlserver:// **[IP Address of eONE server]**:1433;databaseName=VTSystem
- DB_Username=VTSystem
- DB_Password=***** (Contact CI for password)
- DB_ValidationQuery=SELECT 1
- DB_TestOnBorrow=true

5.4. Add Outbound Application

From the **Applications** page, click **Add**. The **Add Application** screen is displayed. Complete the fields as follows:

- Enter a descriptive name in the **Name** field. In the compliance test **eCI_Outbound** was used.
- For the **Type** field, select **CCXML** from the drop down menu.
- In the **URI** box, fill in the **VoiceXML URL** field:
http://10.64.101.211:8080/OutCall/Start, where **10.64.101.211** and **8080** are the IP Address and Tomcat Port of the eONE Server
- In the **Application Launch** box, select the **Outbound** radio button.

Use the **Verify** button to make sure the application is accessible and then click **Save**.

The screenshot displays the 'Add Application' configuration page in the Avaya Aura Experience Portal 7.0.2. The page is titled 'Add Application' and includes a breadcrumb trail: 'Home > System Configuration > Applications > Add Application'. The main content area contains the following fields and options:

- Start With:** A dropdown menu set to '<None>'.
Name: A text input field containing 'eCI_Outbound'.
Enable: Radio buttons for 'Yes' (selected) and 'No'.
Type: A dropdown menu set to 'VoiceXML'.
Reserved SIP Calls: Radio buttons for 'None' (selected), 'Minimum', and 'Maximum'.
Requested: A text input field.
- URI:** A section with radio buttons for 'Single' (selected), 'Fail Over', and 'Load Balance'. Below this is a 'VoiceXML URL' field containing 'http://10.64.101.211:8080/OutCall/Start' and a 'Verify' button. Below the URL field are radio buttons for 'Mutual Certificate Authentication' (Yes/No) and 'Basic Authentication' (Yes/No).
- Speech Servers:** A section with 'ASR' set to 'No ASR', 'TTS' set to 'Nuance', and a 'Voices' dropdown menu showing 'English(USA) en-US Jennifer F'.
- Application Launch:** Radio buttons for 'Inbound', 'Inbound Default', and 'Outbound' (selected).
- Parameters:** Three expandable sections: 'Speech Parameters', 'Reporting Parameters', and 'Advanced Parameters'.
- Buttons:** 'Save', 'Save & Add Next', 'Cancel', and 'Help' buttons are located at the bottom of the form.

5.5. Configure Outbound Call Parameters

On the server running eONE, modify the following:

- Key for OBJSPURL=http://10.64.101.211:8080/OutCall/jsp/run.jsp should be added in registry path:
"Computer\HEKY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\CII\VoiceService\Settings"
- eCIOBService should be running.

5.6. Configure Outbound properties file

On the server running eONE, modify the following files:

\$TOMCAT_HOME\webapps\DDHome\OutCallDriverAppConfig.properties

- Set following parameters in properties file residing in \$TOMCAT_HOME\webapps\DDHome\
 - OBResultPageUrl=http://[IP Address of eONE server]/eCI/Outbound/OBResult.ashx
 - OutcallAppName=<Outcall application name setup on AEP>
 - VoicePortalIP=[IP Address of Experience Portal]
 - VoicePortalOutcallUserName=[Experience Portal Outcall Username]
 - VoicePortalOutcallPassword=[Experience Portal Outcall Password]
 - VxmlAppUrl=http:// [IP Address of eONE server]:8080/eCI_OB_OD/Start
 - ANITobeDisplayed=123456

\$TOMCAT_HOME\webapps\DDHome\OutboundAppConfig.properties


- OBResultPageUrl=http:// [IP Address of eONE server]/eCI/Outbound/OBResult.ashx
- DB_DriverClassName=com.microsoft.sqlserver.jdbc.SQLServerDriver
- DB_IP=[IP Address of eONE server]
- DB_Port=1433
- DB_Name=VTSystem
- DB_Url=jdbc:sqlserver:// [IP Address of eONE server]:1433;databaseName=VTSystem
- DB_Username=VTSystem
- DB_Password= ***** (Contact CI for password)
- DB_ValidationQuery=SELECT 1
- DB_TestOnBorrow=true

6. Configure Computer Instruments eONE

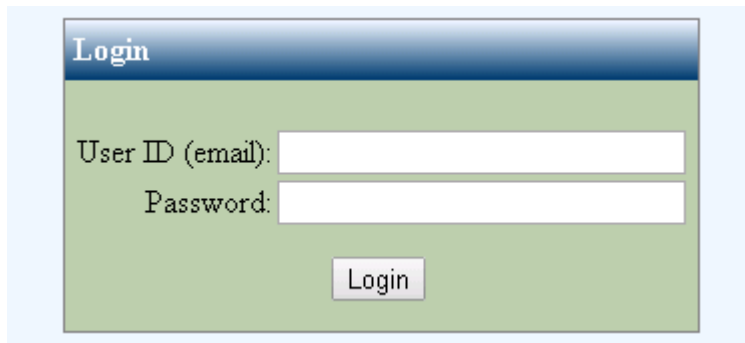
This section provides the procedures for configuring eONE.

Note: Prior to the actual test, a Computer Instruments engineer remotely connected to the server and installed/licensed/configured eONE. This section shows what was configured by the Computer Instruments engineer. For more information, please contact the Computer Instruments support, mentioned in **Section 2.3**.

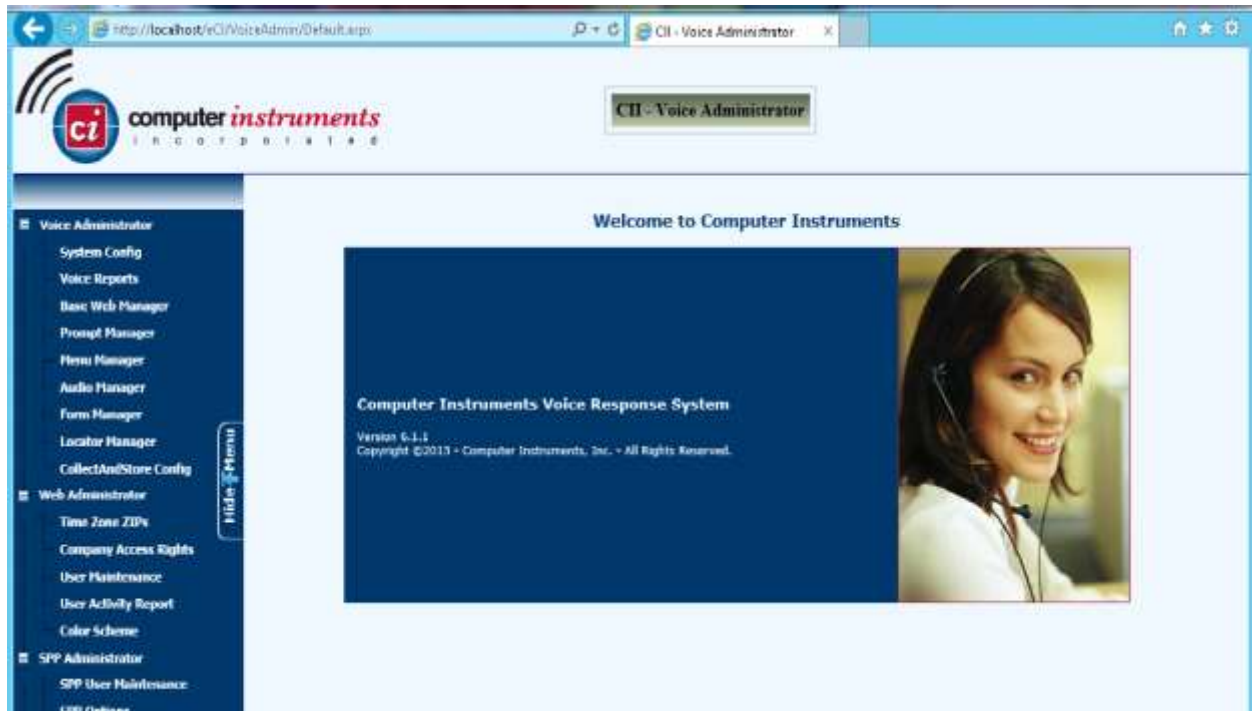
To access the System Config page, <http://localhost/eCI/VoiceAdmin/Default.aspx> or click the

shortcut icon created, .

Provide appropriate credentials in the Login page.



In the **CII-Voice Administrator** page, select **Voice Administrator** → **System Config** in the left pane to display the **Base System Configuration** screen.



Select the **Defaults** tab from the top of the **Base System Configuration** pop-up screen. Select “**Avaya Definity**” for **PBX Integration**. For **Dial Plan Digits**, enter the maximum length of internal extensions on Communication Manager. For **Outside Line Access Prefix**, enter the applicable prefix for calls to the PSTN, as required by Communication Manager. For outbound calls to the PSTN, based on INI setting eONE will prepend the **Outside Line Access Prefix** value defined below, plus the digit “1” (as per setup).



Select the **Channel** tab from the top of the **Base System Configuration** pop-up screen.

In the **Channel Setting** sub-section, select the first channel entry. For **Extension**, enter the applicable extension used for the inbound application, in this case “77011”. By default, all third party channel resources are used for inbound applications unless otherwise specified. Note that the compliance testing used five channel resources, which is governed by the Dialogic license.

In the compliance testing, only one inbound application was used, and therefore only the Extension “77011” on channel number, “5” resource needs the extension mapping.



6.1. Verification Steps

The following steps may be used to verify proper configuration for Experience Portal

6.2. Verify Avaya Aura® Experience Portal

From an **Experience Portal Manager** page, click **Real Time Monitoring** → **System Monitor** in the left pane. The **System Monitor** screen is displayed, as shown below. Verify that the **Mode**, **State**, and **Config** fields of the MPP being used (MPPLocal in the compliant test) shows **Online**, **Running**, and **OK**. Also review any alarms if they are present.

AVAYA Welcome, admin
Last logged in Nov 19, 2015 at 8:52:33 AM MST

Avaya Aura® Experience Portal 7.0.2 (ExperiencePortal) Home Help Logoff

Expand All | Collapse All

You are here: [Home](#) > [Real-Time Monitoring](#) > [System Monitor](#)

System Monitor (Nov 23, 2015 4:58:12 AM MST) [Refresh](#)

This page displays the current state of the local Experience Portal system plus any remote Experience Portal systems that you have configured. For information about the colored alarm symbols, click [Help](#).

Summary | ExperiencePortal Details

Last Poll: Nov 23, 2015 4:57:54 AM MST

Server Name	Type	Mode	State	Config	Call Capacity			Active Calls		Calls Today	Alarms
					Current	Licensed	Maximum	In	Out		
EPM / MPPLocal	EPM/MPP	Online	Running	OK	5	5	100	0	0	0	
Summary					5	5	100			0	

[Help](#)

7. Conclusion

Computer Instruments eONE passed compliance testing. These Application Notes describe the procedures required to configure Computer Instruments eONE to interoperate with Avaya Aura® Experience Portal to support the reference configuration shown in **Figure 1**.

8. Additional References

The following Avaya product documentation can be found at <http://support.avaya.com>

[1] *Administering Avaya Aura® Experience Portal*, April 2015.

The following CII product documentation can be found at <http://www.instruments.com/doclib/index.html>

[2] *eONE User's Manual*, June 2015.

[3] *eONE User's Tutorial*, June 2015.

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