Avaya Solution & Interoperability Test Lab

Application Notes for InteractCRM CallBackConnect 1.3 with Avaya Voice Portal 5.1 and Avaya Aura® Communication Manager 6.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for InteractCRM CallBackConnect 1.3 to interoperate with Avaya Voice Portal 5.1 and Avaya Aura® Communication Manager 6.0. InteractCRM CallBackConnect is a queue management solution which gives callers a choice to receive a return phone call when agents are busy. As agents become available, CallBackConnect calls the customers back and connects them with an available agent. CallBackConnect was developed using Avaya Dialog Designer and runs on a separate server. It uses the Voice Portal Web Services to initiate the outbound calls during callback.

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 InteractCRM CallBackConnect to interoperate with Avaya Voice Portal and Avaya Aura® Communication Manager. InteractCRM CallBackConnect is a queue management solution which gives callers a choice to receive a return phone call when agents are busy. As agents become available, CallBackConnect calls the customers back and connects them with an available agent. CallBackConnect was developed using Avaya Dialog Designer and runs on a separate server. It uses the Voice Portal Web Services to initiate the outbound calls during callback.

Using the call vectoring functionality available on Avaya Aura® Communication Manager, InteractCRM CallBackConnect can be incorporated into existing call routing strategies. These Application Notes describe the minimum call vector requirements for InteractCRM CallBackConnect. Details on vector programming can be found in [3], [4] and [5].

2. General Test Approach and Test Results

The feature test cases were performed manually. Calls were placed to the Vector Directory Number (VDN) and in the associated vector steps, the customer was given a choice to request a callback. If the customer chose this option, the call is then routed to the CallBackConnect Voice XML (VXML) application running on the Voice Portal, where he or she provided the callback number and optionally, the date and time for a scheduled callback.

At the scheduled time, CallBackConnect launched a call to a pre-configured VDN to find an available agent, and then puts the agent on hold while making a call to the customer. When the customer answers, CallBackConnect will transfer the call to the agent to complete the callback.

Both the CallBackConnect call flows - to leave the callback number and to launch the callback - were tested. During callback, call scenarios such as all agents busy, customer phone busy or no answer and invalid callback number were tested.

The serviceability test cases were performed manually by disconnecting the Ethernet cables on the CallBackConnect server and Voice Portal servers and rebooting of CallBackConnect servers and Voice Portal server.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying InteractCRM CallBackConnect for the following:

- Requesting an immediate or a scheduled callback.
- Performing a successful callback under normal conditions.
- Performing a callback under various call scenarios such as all agents busy, customer phone busy or no answer and invalid callback number.
- Callback rescheduled when not successful.

The serviceability testing focused on verifying the ability of InteractCRM CallBackConnect to recover from adverse conditions, such as disconnecting the Ethernet cables on the CallBackConnect server and Voice Portal servers, and rebooting CallBackConnect and Voice Portal.

2.2. Test Results

All feature and serviceability test cases were executed and passed.

2.3. Support

Technical support on InteractCRM CallBackConnect can be obtained through the following:

- Phone: +91-22-40553055
- Email: tcsupport@interactcrm.com

3. Reference Configuration

Figure 1 illustrates a sample configuration consisting of an Avaya S8800 Server running Avaya Aura® Communication Manager, an Avaya G650 Media Gateway, Avaya Voice Portal running on 2 servers and Avaya 9640 IP Telephones. InteractCRM CallBackConnect is installed on a Windows 2003 Server together with Microsoft SQL Server 2005 for database support. CallBackConnect voice application uses Nuance RealSpeak 4.5 to provide play back text-to-speech prompts. The Avaya C364T-PWR Converged Stackable Switch provides Ethernet connectivity to the servers and IP telephones.

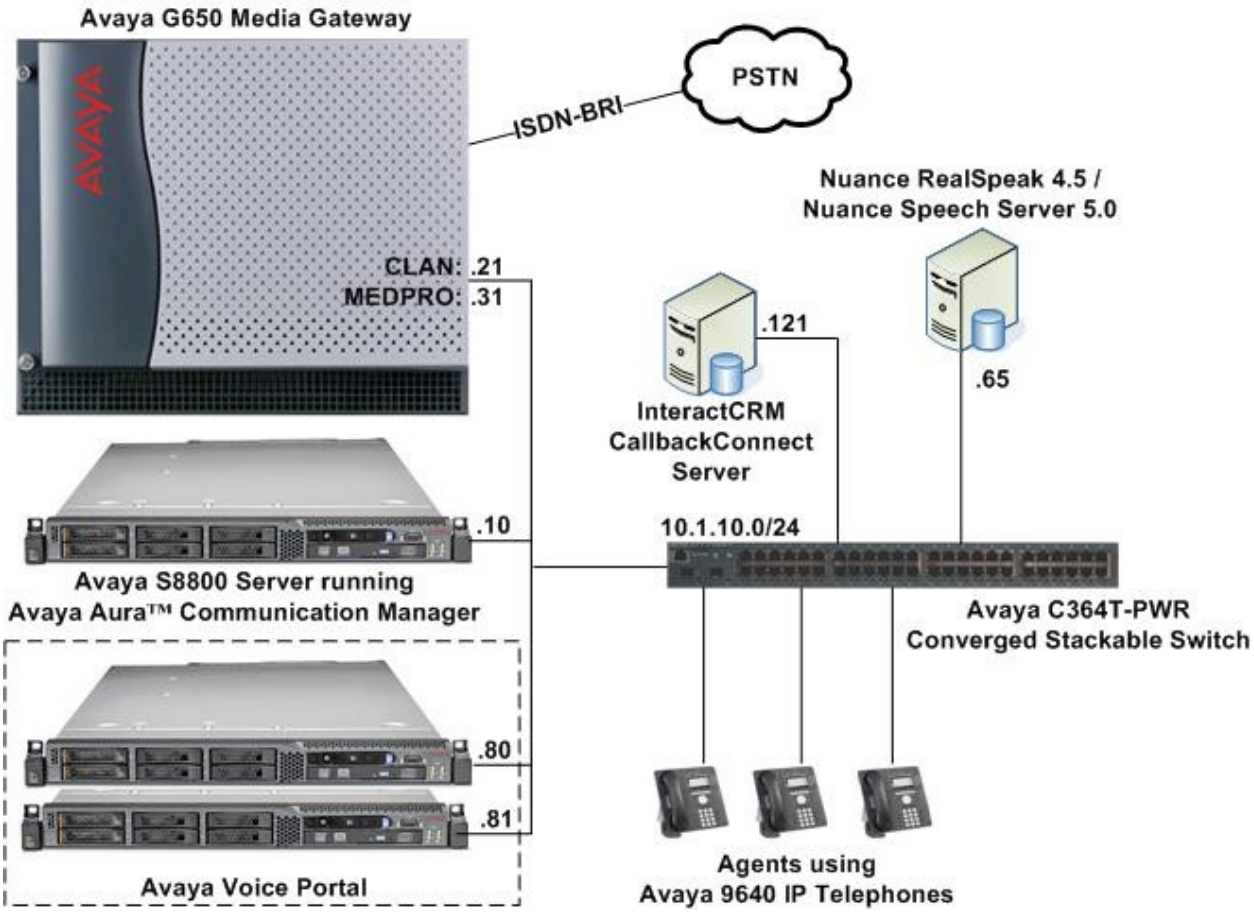


Figure 1: Test Configuration

4. Equipment and Software Validated

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

Equipment/Software	Version
Avaya S8800 Server	Avaya Aura® Communication Manager 6.0 (Service Pack 00.0.345.0-18567)
Avaya G650 Media Gateway • TN2312BP IP Server Interface • TN799DP C-LAN Interface • TN2302AP IP Media Processor • TN2185B BRI Trunk	- HW07, FW049 HW01, FW034 HW20, FW120 000004
Avaya Voice Portal	5.1 Service Pack 1
Avaya C364T-PWR Converged Stackable Switch	4.5.18
Avaya 9640 IP Telephones	3.1.1 (H.323)
InteractCRM CallBackConnect on Dell PowerEdge 1950 • Microsoft SQL Server • Sun Java SE Development Kit (JDK) • Apache Tomcat	1.3 Microsoft Windows Server 2003, SP2 Microsoft SQL Server 2005, SP3 Version 6 Update 22 5.5.17

5. Configure Avaya Aura® Communication Manager

These Application Notes assume that Communication Manager is installed and operational. This section describes the steps for configuring Communication Manager to work with InteractCRM CallBackConnect as well as the integration steps for Voice Portal. All configurations in the section are administered using the System Access Terminal (SAT). The procedures covered include the following:

- Configure Avaya Voice Portal H.323 Stations
- Configure Avaya Voice Portal Hunt Group
- Configure Vectors and VDNs

5.1. Configure Avaya Voice Portal H.323 Stations

For these Application Notes, H.323 stations will provide the integration between Communication Manager and Voice Portal. Calls to these stations will be routed to Voice Portal which will run a VXML application from the CallBackConnect server. Enter the **add station n** command. In the station form, set the **Type** to **7434ND**, set **Port** to **IP** and provide a descriptive **Name**. Specify a **Security Code**, which will be used in **Section 6.1 Step 2** when configuring Voice Portal and set the **Display Module** and **IP SoftPhone** fields to **y**.

```
add station 10201                                          Page   1 of   6
                                  STATION

Extension: 10201                      Lock Messages? n               BCC: 0
     Type: 7434ND                     Security Code: 1234             TN: 1
     Port: IP                       Coverage Path 1:                 COR: 1
     Name: VP #1                    Coverage Path 2:                 COS: 1
                                    Hunt-to Station:
STATION OPTIONS
                                         Time of Day Lock Table:
             Loss Group: 2          Personalized Ringing Pattern: 1
           Data Module? n                     Message Lamp Ext: 10201
         Display Module? y
       Display Language: english                Coverage Module? n

         Survivable COR: internal             Media Complex Ext:
  Survivable Trunk Dest? y                          IP SoftPhone? y
                                                Remote Office Phone? n
                                                IP Video Softphone? n
                              Short/Prefixed Registration Allowed: default
```

On Page 2 set **MultiMedia Mode** to **enhanced**.

```
add station 10201                                          Page   2 of   6
                                  STATION
FEATURE OPTIONS
          LWC Reception: spe              Auto Select Any Idle Appearance? n
         LWC Activation? y                      Coverage Msg Retrieval? y
  LWC Log External Calls? n                               Auto Answer: none
            CDR Privacy? n                          Data Restriction? n
   Redirect Notification? y                   Idle Appearance Preference? n
 Per Button Ring Control? n                 Bridged Idle Line Preference? n
   Bridged Call Alerting? n                     Restrict Last Appearance? y
  Active Station Ringing: single

       H.320 Conversion? n          Per Station CPN - Send Calling Number?
      Service Link Mode: as-needed                   EC500 State: disabled
        Multimedia Mode: enhanced
    MWI Served User Type:                      Display Client Redirection? n
            AUDIX Name:                       Select Last Used Appearance? n
                                                Coverage After Forwarding? s

 Remote Softphone Emergency Calls: as-on-local Direct IP-IP Audio Connections? y
  Emergency Location Ext: 10201         Always Use? n IP Audio Hairpinning? y
```

On **Page 6** add a **normal** button to the station.

```
add station 10201                                              Page   6 of   6
                                    STATION

DISPLAY BUTTON ASSIGNMENTS

 1: normal
 2:
```

Repeat the above steps for each Voice Portal station. In this configuration, ten Voice Portal stations were configured with an extension range of 10201-10210.

5.2. Configure Avaya Voice Portal Hunt Group

To route the calls to Voice Portal, a hunt group is created to include all the Voice Portal stations configured in the steps above. To add a hunt group, use the command **add hunt-group n**. Enter a descriptive name for **Group Name**, set **Group Extension** to an available extension number and set **Group Type** to **ucd-mia**.

```
add hunt-group 200                                             Page   1 of  60
                                  HUNT GROUP

           Group Number: 200                                 ACD? n
             Group Name: Voice Portal                      Queue? n
        Group Extension: 10200                           Vector? n
             Group Type: ucd-mia                  Coverage Path:
                     TN: 1           Night Service Destination:
                    COR: 1                     MM Early Answer? n
          Security Code:                 Local Agent Preference? n
 ISDN/SIP Caller Display: grp-name
```

On **Page 3**, add the Voice Portal stations configured in **Section 5.1** to the hunt group.

```
add hunt-group 200                                             Page   3 of  60
                                  HUNT GROUP
         Group Number: 200  Group Extension: 10200         Group Type: ucd-mia
  Member Range Allowed: 1 - 1500       Administered Members (min/max): 1   /10
                                          Total Administered Members: 10
GROUP MEMBER ASSIGNMENTS
      Ext           Name(19 characters)       Ext           Name(19 characters)
   1: 10201         VP #1                  14:
   2: 10202         VP #2                  15:
   3: 10203         VP #3                  16:
   4: 10204         VP #4                  17:
   5: 10205         VP #5                  18:
   6: 10206         VP #6                  19:
   7: 10207         VP #7                  20:
   8: 10208         VP #8                  21:
   9: 10209         VP #9                  22:
  10: 10210         VP #10                 23:
  11:                                      24:
  12:                                      25:
  13:                                      26:
```

5.3. Configure Vectors and VDNs

5.3.1. Configure Vector to Integrate CallBackConnect

To add CallBackConnect functionality to an existing call centre ACD, the vectors and VDNs that queued the calls to the agents can be modified as shown below. A brief explanation of the relevant vector steps are as follows:

- **Step 04** prompts the customer to press 1 if they wish to schedule a callback.
- **Step 05** evaluates if the caller pressed 1, and if yes, jumps to **Step 07**.
- **Step 06** jumps back to **Step 03** if the caller chooses not to do callback.
- **Step 07** routes the call to the Voice Portal hunt group configured in **Section 5.2** and the CallBackConnect application will prompt the caller for callback details.

Note: This is a sample vector. It is possible to provide additional call treatment within the vector such as queue announcements, expected-wait-time evaluation and time of day routing, please see [3], [4] and [5] for further information.

```
change vector 11                                              Page   1 of   6
                                CALL VECTOR

    Number: 11              Name: CBCon Eg-Q2Agts
                                        Meet-me Conf? n           Lock? n
     Basic? y   EAS? y   G3V4 Enhanced? y   ANI/II-Digits? y   ASAI Routing? y
 Prompting? y   LAI? y  G3V4 Adv Route? y   CINFO? y   BSR? y   Holidays? y
 Variables? y   3.0 Enhanced? y
01 wait-time    1   secs hearing ringback
02 queue-to     skill 5    pri m
03 wait-time    30  secs hearing music
04 collect      1    digits after announcement 19962    for none
05 goto step    7             if digits           =      1
06 goto step    3             if unconditionally
07 route-to     number 10200            with cov n if unconditionally
08 stop
09
```

5.3.2. Configure VDN to Queue to Agents

The VDN to queue to the agents was created already prior to the integration with CallBackConnect. It is included here for reference.

```
change vdn 14011                                              Page   1 of   3
                          VECTOR DIRECTORY NUMBER

                           Extension: 14011
                               Name*: VDN: CBCon Eg-Q2Agts
                         Destination: Vector Number        11

                 Meet-me Conferencing? n
                   Allow VDN Override? n
                                 COR: 1
                                 TN*: 1
                            Measured: none
```

5.3.3. Configure CallBackConnect Vector

This vector was used exclusively by CallBackConnect to reserve agents to handle a customer callback. CallBackConnect used the Voice Portal Web Services to initiate the outbound calls from the Voice Portal H.323 stations to this VDN/vector. When agents answered such a callback call, they were placed on hold while CallBackConnect made another call to the customer.

Note: This is a sample vector. It is possible to provide additional call treatment within the vector such as placing callback to a different agent skill performing callback, queuing the callback with higher priority and time of day routing, please see [3], [4] and [5] for further information.

```
change vector 12                                              Page   1 of   6
                                CALL VECTOR

    Number: 12              Name: CBCon-ResrvAgts
                                        Meet-me Conf? n           Lock? n
     Basic? y   EAS? y   G3V4 Enhanced? y   ANI/II-Digits? y   ASAI Routing? y
 Prompting? y   LAI? y  G3V4 Adv Route? y   CINFO? y   BSR? y   Holidays? y
 Variables? y   3.0 Enhanced? y
01 wait-time    1   secs hearing silence
02 queue-to     skill 5    pri m
03 wait-time    300 secs hearing silence
```

5.3.4. Configure VDN for CallBackConnect Vector

Use the command **add vdn n**, where **n** is an available extension. Enter a descriptive name for Name and enter vector 12 that was configured in the previous section as the **Destination: Vector Number**.

```
change vdn 14012                                              Page   1 of   3
                           VECTOR DIRECTORY NUMBER

                             Extension: 14012
                                 Name*: CBConnect Callback2Agt
                           Destination: Vector Number        12

                  Meet-me Conferencing? n
                    Allow VDN Override? n
                                   COR: 1
                                   TN*: 1
                              Measured: none
```

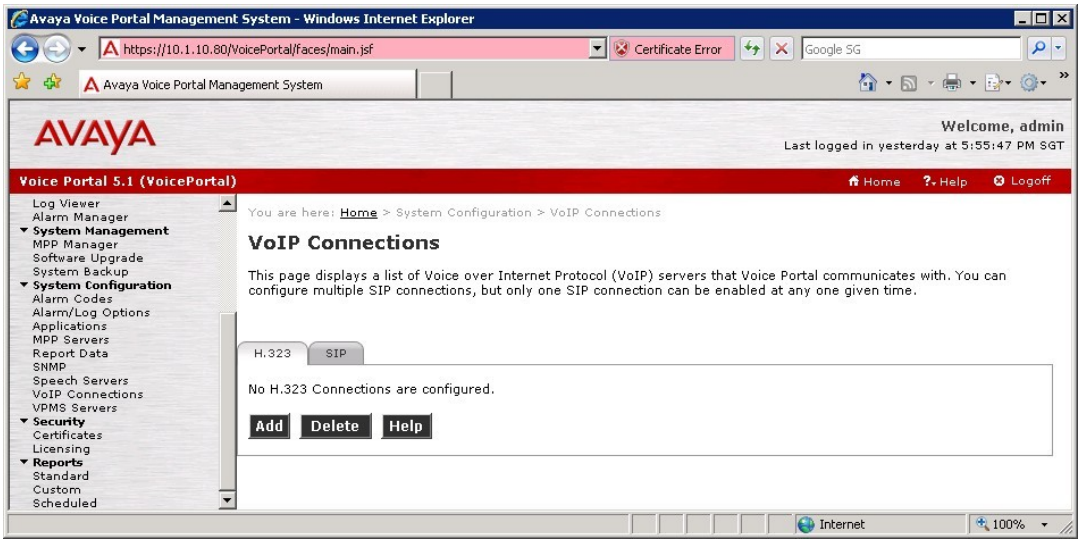
6. Configure Avaya Voice Portal

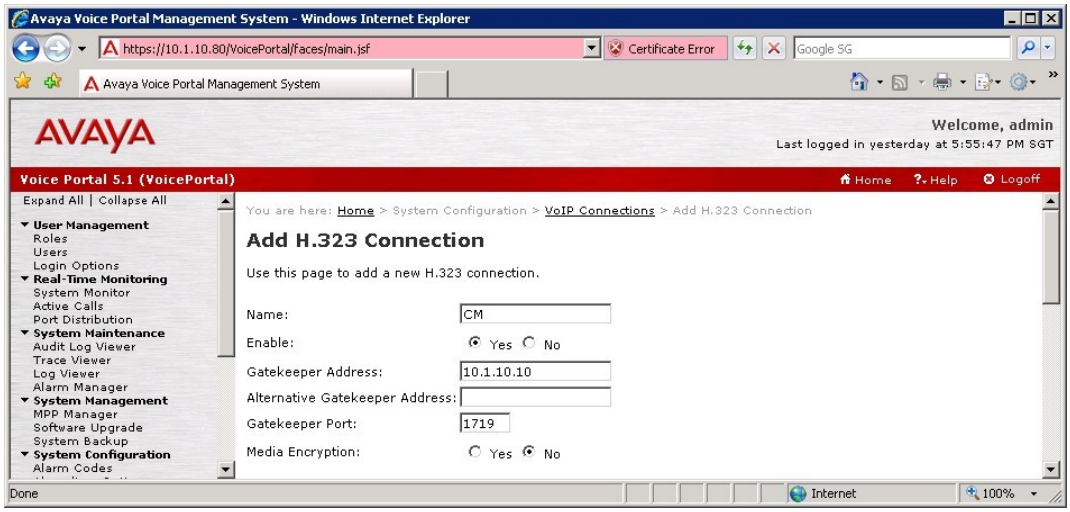
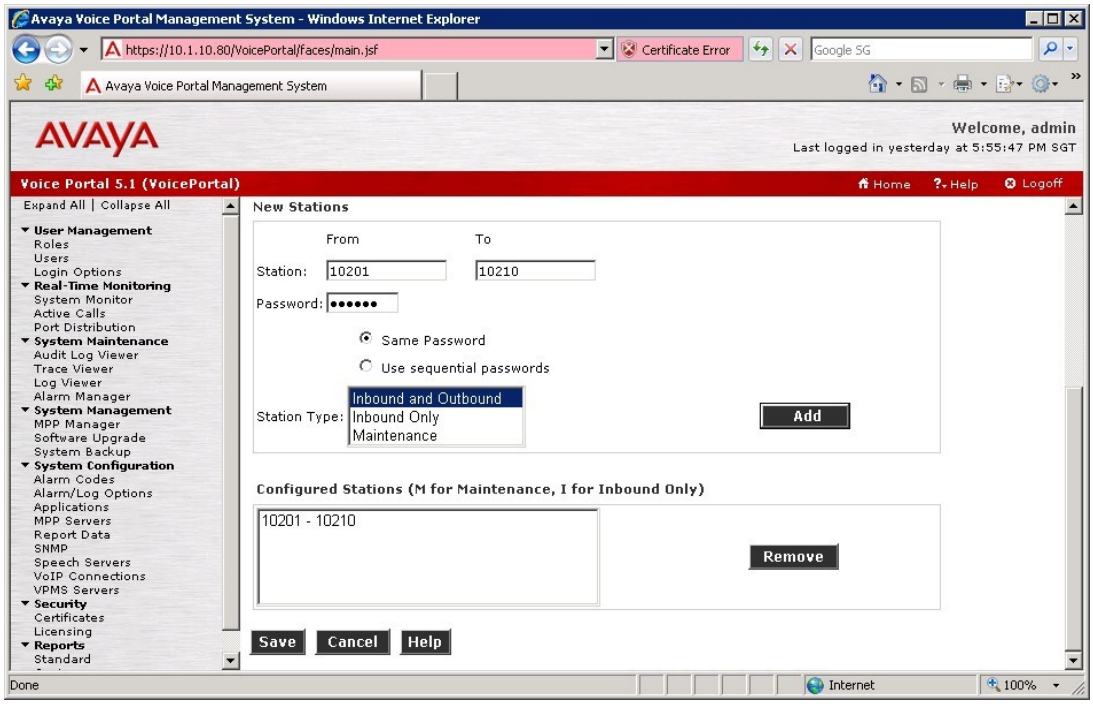
This section provides the procedures for configuring Voice Portal. Voice Portal is configured via an Internet browser using Voice Portal Management System (VPMS) web interface. It is assumed that Voice Portal and the WebLM license file have already been installed. In this configuration, Voice Portal is connected to Communication Manager using H.323 VoIP Connection.The procedures fall into the following areas:

- Configuring H.323 Connection to Avaya Aura® Communication Manager
- Add Applications
- Configure Web Service Authentication

6.1. Configuring H.323 Connection to Avaya Aura® Communication Manager

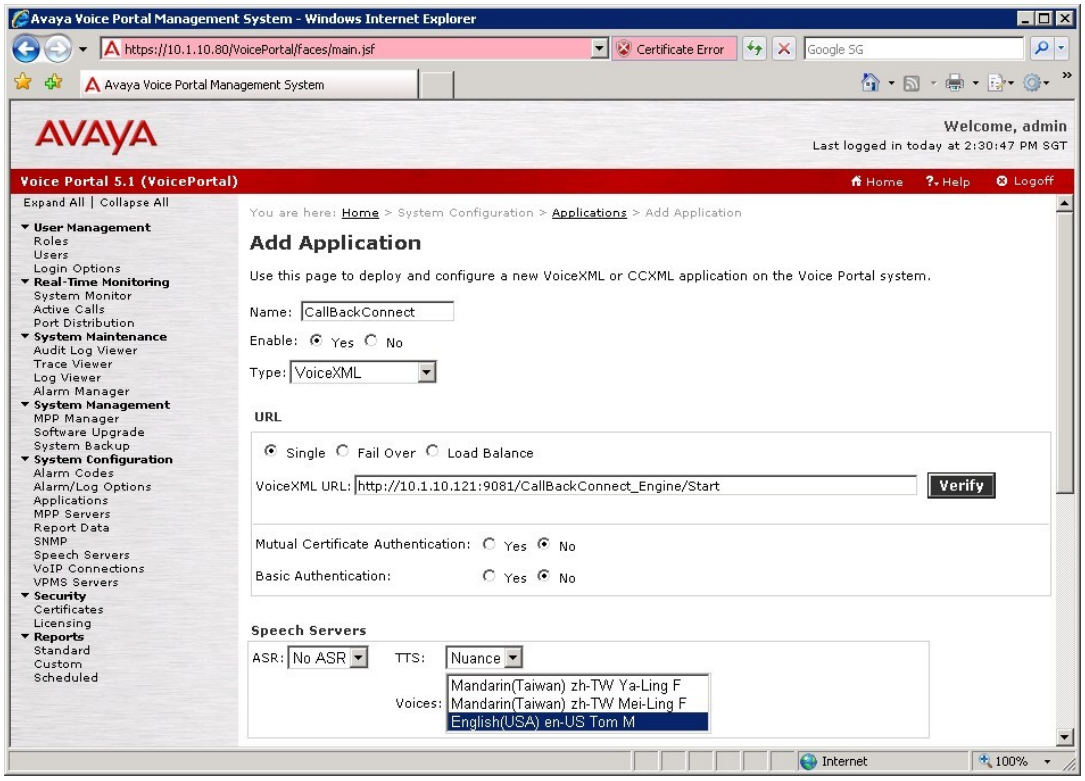
Step	Description
1.	Using a web browser, browse to **http://<IP Address of VPMS>/** and log in using an account with administrative privileges. Click **VoIP Connections** from the left menu and click **Add** from the **H.323** tab.

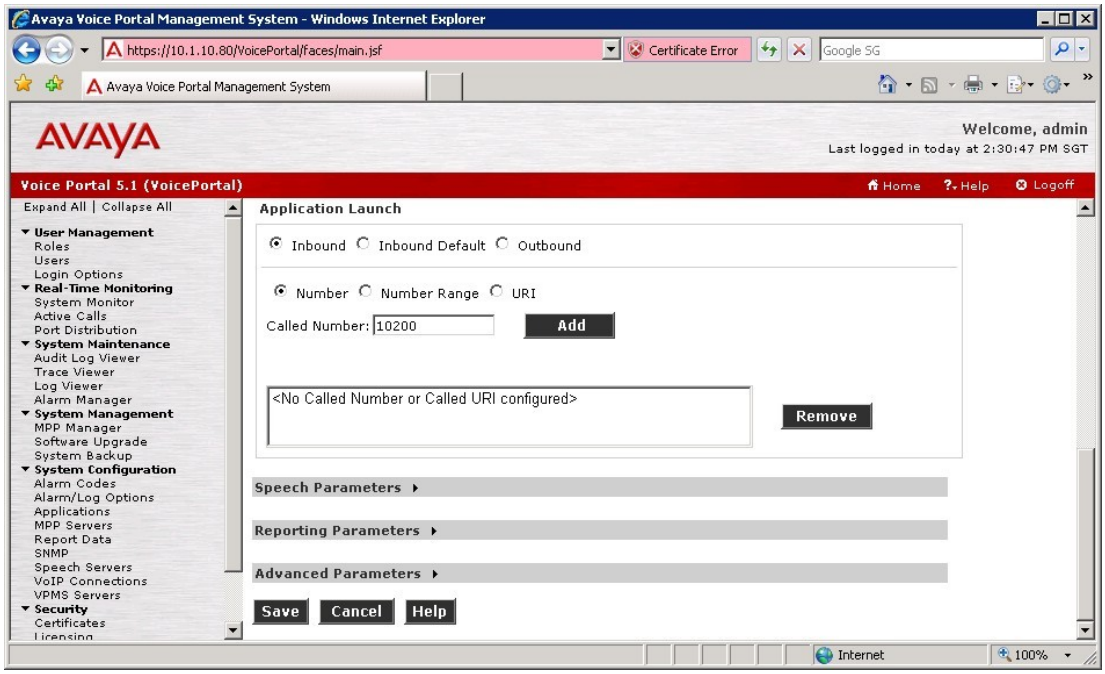


Step	Description
2.	In the Add H.323 Connection screen, specify a **Name** and enter the IP address of the Avaya S8800 Server in the **Gatekeeper Address** field. Set **Media Encryption** to **No** as it was not configured on Communication Manager for this testing.  In the New Stations section, set the **Station From**, **To** and **Password** fields according to the stations configured in **Section 5.1**. Highlight **Inbound and Outbound** for **Station Type** and click **Add**. Accept the default values for the other fields and click **Save**. 

6.2. Add Applications

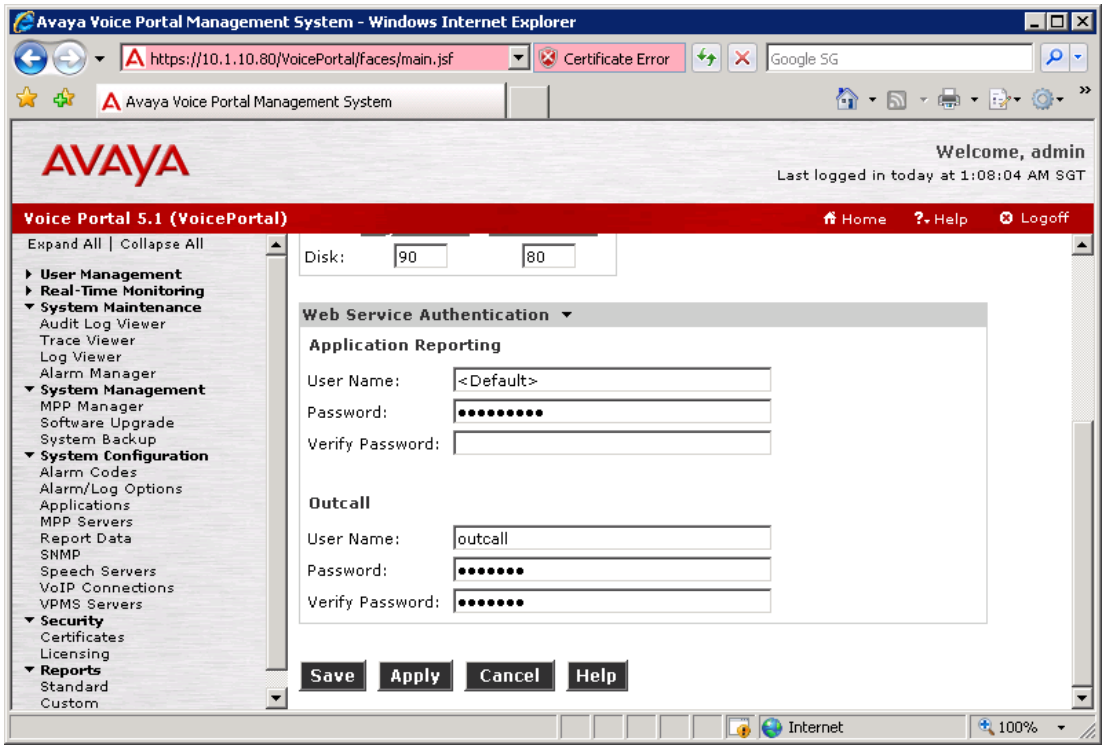
Step	Description
1.	Navigate to **System Configuration > Applications** and click **Add** (not shown). On the Add Application page, specify a **Name** for the application, set the **Type** field to **VoiceXML**, and set the **VoiceXML URL** field to a URL provided by CallBackConnect that will point to an application hosted on the CallBackConnect server. In the Speech Servers section, select **Nuance** for **TTS** and select a suitable TTS voice. For this testing, Nuance TTS was already configured for Voice Portal with the **English(USA) en-US Tom M** voice installed.



Step	Description
	Voice Portal launched an application based on the called number. Scroll down to the Application Launch section, and select **Inbound**. In the **Called Number** field, enter the Voice Portal Hunt **Group Extension** configured in **Section 5.2** and click **Add**. Click **Save**. Note: The Voice Portal H.323 Stations configured in **Section 5.1** can also be added in the list of **Called Number** to test the CallBackConnect application when dialing to the individual stations. 

6.3. Configure Web Service Authentication

Step	Description
1.	Navigate to **System Configuration > VPMS Servers** and click **VPMS Settings** (not shown). On the VPMS Settings page, scroll down to the Web Service Authentication section. For Outcall, specify a **User Name** and **Password** for CallBackConnect to instruct Voice Portal to make outbound calls. Click **Save**.

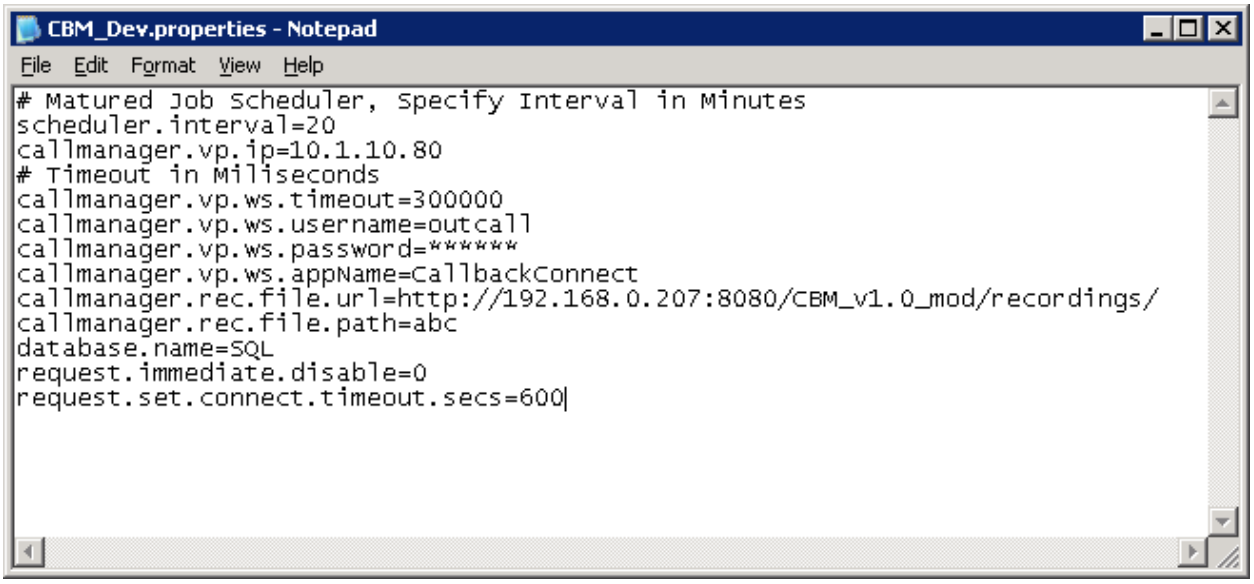


7. Configure InteractCRM CallBackConnect

This section provides the procedures to configure InteractCRM CallBackConnect. InteractCRM CallBackConnect Server was deployed on a Windows 2003 Server running Apache Tomcat 5.5.17.

From the InteractCRM CallBackConnect server, edit the file **CBM_Dev.properties** located in the folder **<CallBackConnect Home>\configuration\config** using Notepad. Configure the following parameters.

Parameter	Value
callmanager.vp.ip	IP address of Voice Portal Management System
callmanager.vp.ws.username	**User Name** for Outcall configured in **Section 6.3**.
callmanager.vp.ws.password	**Password** for Outcall configured in **Section 6.3**.



8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager, Voice Portal and CallBackConnect.

8.1. Verify Communication Manager

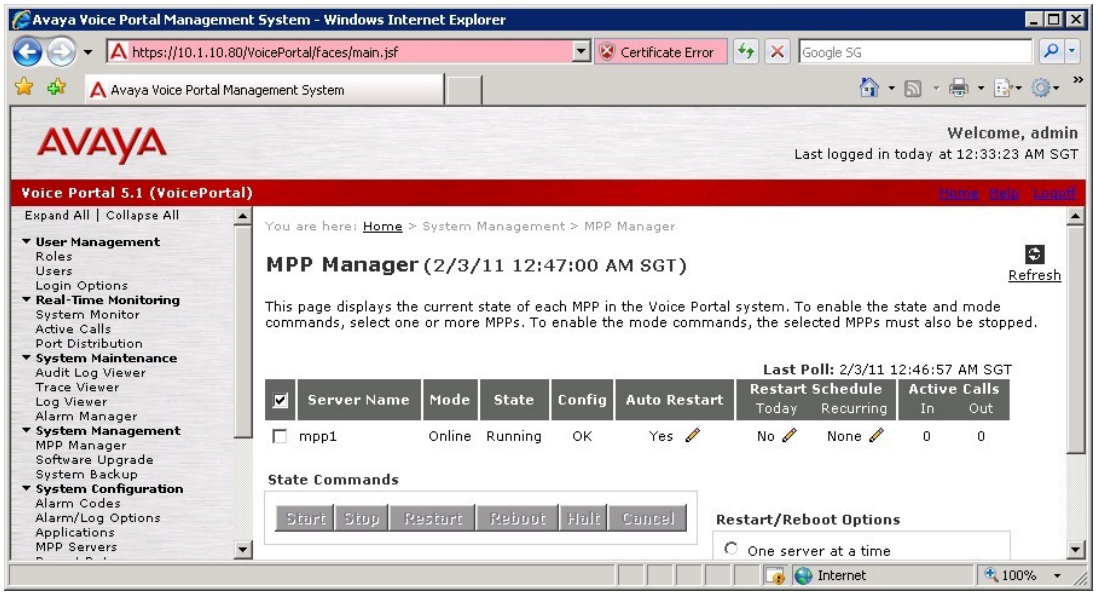
Verify the status of the administered Voice Portal H.323 stations by using the **status station n** command, where **n** is a H.323 station created in **Section 5.1**. The **Service State** field should display **in-service/on-hook** or **in-service/active**.

```
status station 10201                                          Page   1 of   7
                            GENERAL STATUS
     Administered Type: 7434ND            Service State: in-service/on-hook
        Connected Type: N/A             TCP Signal Status: connected
             Extension: 10201
                  Port: S00099         Parameter Download: not-applicable
           Call Parked? no                SAC Activated? no
      Ring Cut Off Act? no
Active Coverage Option: 1             one-X Server Status: N/A
          EC500 Status: N/A         Off-PBX Service State: N/A
   Message Waiting:
   Connected Ports:
  Limit Incoming Calls? no

 User Cntrl Restr: none                       HOSPITALITY STATUS
Group Cntrl Restr: none                     Awaken at:
                                             User DND: not activated
                                            Group DND: not activated
                                          Room Status: occupied
```

8.2. Verify Voice Portal

From the VPMS web interface, click **System Management > MPP Manager**. On the MPP Manager page, verify that the MPP server is **Online** and **Running**.



8.3. Verify InteractCRM CallBackConnect

Place a call to the Voice Portal hunt group extension to verify that a callback can be scheduled using the CallBackConnect voice application. Verify that the callback is received at the desired time and phone number.

9. Conclusion

These Application Notes describe the configuration steps required for InteractCRM CallBackConnect to interoperate with Avaya Aura® Communication Manager 6.0 and Avaya Voice Portal 5.1. All feature and serviceability test cases were completed successfully.

10. Additional References

This section references the Avaya and InteractCRM documentations that are relevant to these Application Notes.

The following Avaya product documentations can be found at http://support.avaya.com.

[1] *Administering Avaya Aura™ Communication Manager*, Release 6.0, Document No. 03-300509, August 2010.
[2] *Avaya Aura™ Communication Manager Feature Description and Implementation*, Release 6.0, Issue 8.0, June 2010, Document No. 555-245-205.
[3] *Administering Avaya Aura™ Call Center Features*, Release 6.0, November 2010.
[4] *Programming Call Vectors in Avaya Aura™ Call Center*, Release 6.0, June 2010.
[5] *Avaya Aura™ Call Center Feature Reference*, Release 6.0, November 2010.

The following product documentations are available from InteractCRM.

[6] *InteractCRM CallBackConnect Installation Guide*, Release 1.3, September 2010.
[7] *InteractCRM CallBackConnect Administrator Manual*, Release 1.3, September 2010.

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.