Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Computer Instruments e-IVR, as a H.323 endpoint, with Avaya IP Office 500 V2 – Issue 1.0

Abstract

These Application Notes describe the procedure for configuring Computer Instruments e-IVR to interoperate with Avaya IP Office 500 V2

Computer Instruments e-IVR combines the power of IVR functions with Computer Telephony Integration (CTI), Web and Data integration, complex rules-based decision making, Unified Messaging, as well as custom integration with other customer applications.

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 e-IVR (herein referred to as e-IVR) to interoperate with Avaya IP Office.

Computer Instruments e-IVR combines the power of IVR functions with Computer Telephony Integration (CTI), Web and Data integration, complex rules-based decision making, Unified Messaging, as well as custom integration with other customer applications. e-IVR's integration with Avaya IP Office allows the software to scale easily to meet the needs of customer, and allows e-IVR to take full advantage of customer's phone system features.

These Application Notes assume that Avaya IP Office is already installed and basic configuration steps have been performed. Only steps relevant to this compliance test will be described in this document.

2. General Test Approach and Test Results

The general test approach was to place calls to and from e-IVR, using coverage paths or hunt groups. The main objectives were to verify the following:

- Inbound calls
- Outbound calls
- Hold / unHold
- Call termination (origination/destination)
- Transfer (blind)
- Trunk-to-trunk blind transfer
- MWI
- Voicemail
- DTMF
- ANI/DNIS
- IP Phone Paging

2.1. Interoperability Compliance Testing

The interoperability compliance testing included features and serviceability tests. The focus of the compliance testing was primarily on verifying the interoperability between e-IVR and Avaya IP Office.

2.2. Test Results

The test objectives were verified. For serviceability testing, e-IVR operated properly after recovering from failures such as cable disconnects, and resets of e-IVR and Avaya IP Office.

2.3. Support

Technical support for the e-IVR solution can be obtained by contacting Computer Instruments:

- URL – support@instruments.com

- Phone – (888) 451-0851 and option 2

3. Reference Configuration

Figure 1 illustrates the configuration used in these Application Notes. The sample configuration shows an enterprise with Avaya IP Office. Endpoints include Avaya 5610SW IP Telephone, Avaya 1616I IP Telephones, and an Avaya 1416 Digital Telephone.

Note: An Avaya S8300D Server and an Avaya G450 Media Gateway were included to simulate PSTN calls.

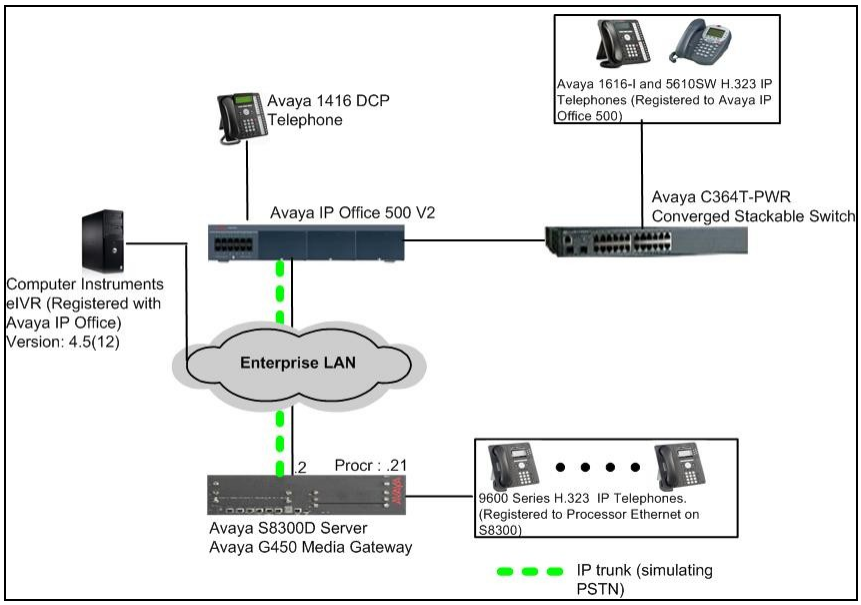


Figure 1: Test Configuration of e-IVR

4. Equipment and Software Validated

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

Equipment		Software/Firmware
Avaya IP Office 500 V2		7.0(3)
Avaya IP Office Manager on Windows XP Professional 2002 with SP3		9.0(3)
Avaya S8300D Server w/ G450 Media Gateway		
Avaya H.323 IP Telephones		
	5610 (H.323) 1616-I (H.323)	2.9.1 1.22
Avaya 1416 Digital Telephone		-
Computer Instruments on Windows 7 with SP 1		4.5(12)

5. Configure Avaya IP Office

This section describes the steps required for configuring Avaya IP Office. During the compliance test, a H.323 trunk was utilized between Avaya IP Office and Communication Manager. However, configuration of the Communication side is not included in these Application Notes, since the solution was a H.323 endpoint in Avaya IP Office.

The procedures include the following areas:
H323 trunk configuration – The H323 trunk, from the previous compliance test, was utilized. This simulates a PSTN calls to e-IVR either by directly or through a hunt group.

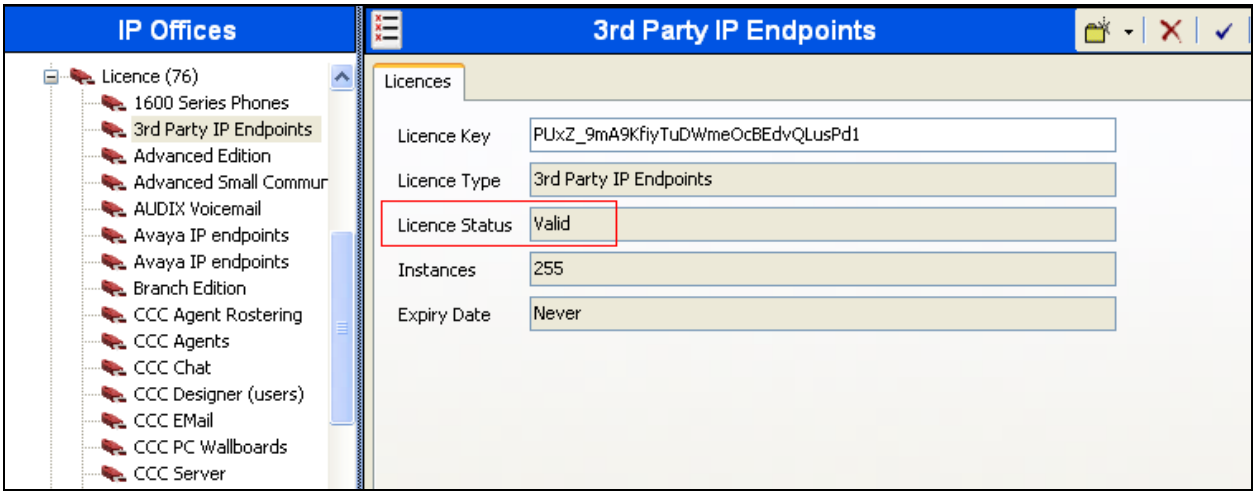
- Verify 3rd party IP endpoints License
- Configure LAN interface
- Enable H.323 Trunk
- Create H323 line
- Configure a short code to route calls through the H323 trunk
- Create a hunt group
- Administer extensions
- Administer users

These steps are performed from the Avaya IP Office Manager.

5.1. Verify 3rd party IP Endpoint License

From a PC running the Avaya IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the Manager application. Select the proper IP Office system if there are more than one IP Office system, and log in with the appropriate credentials.

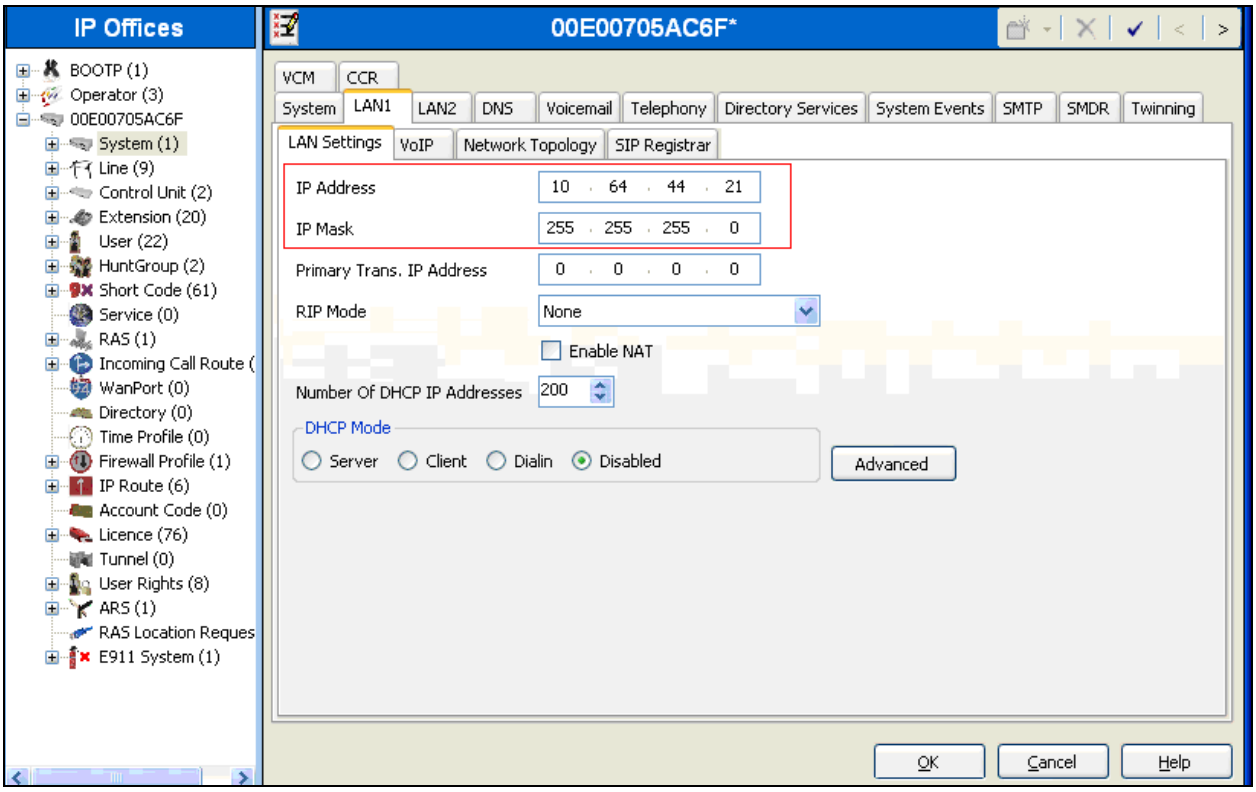
The Avaya IP Office Manager screen is displayed[not shown]. From the configuration tree in the left pane, select **License → 3rd Party IP endpoints** to display the Avaya IP endpoints screen in the right pane. Verify that the License Status field is set to **Valid**. e-IVR utilizes a 3rd party IP endpoint license.



5.2. Configure LAN interface

Select **Start → All Programs → IP Office → Manager** to launch the Manager application. Select the proper IP Office system if there are more than one IP Office system, and log in with the appropriate credentials.

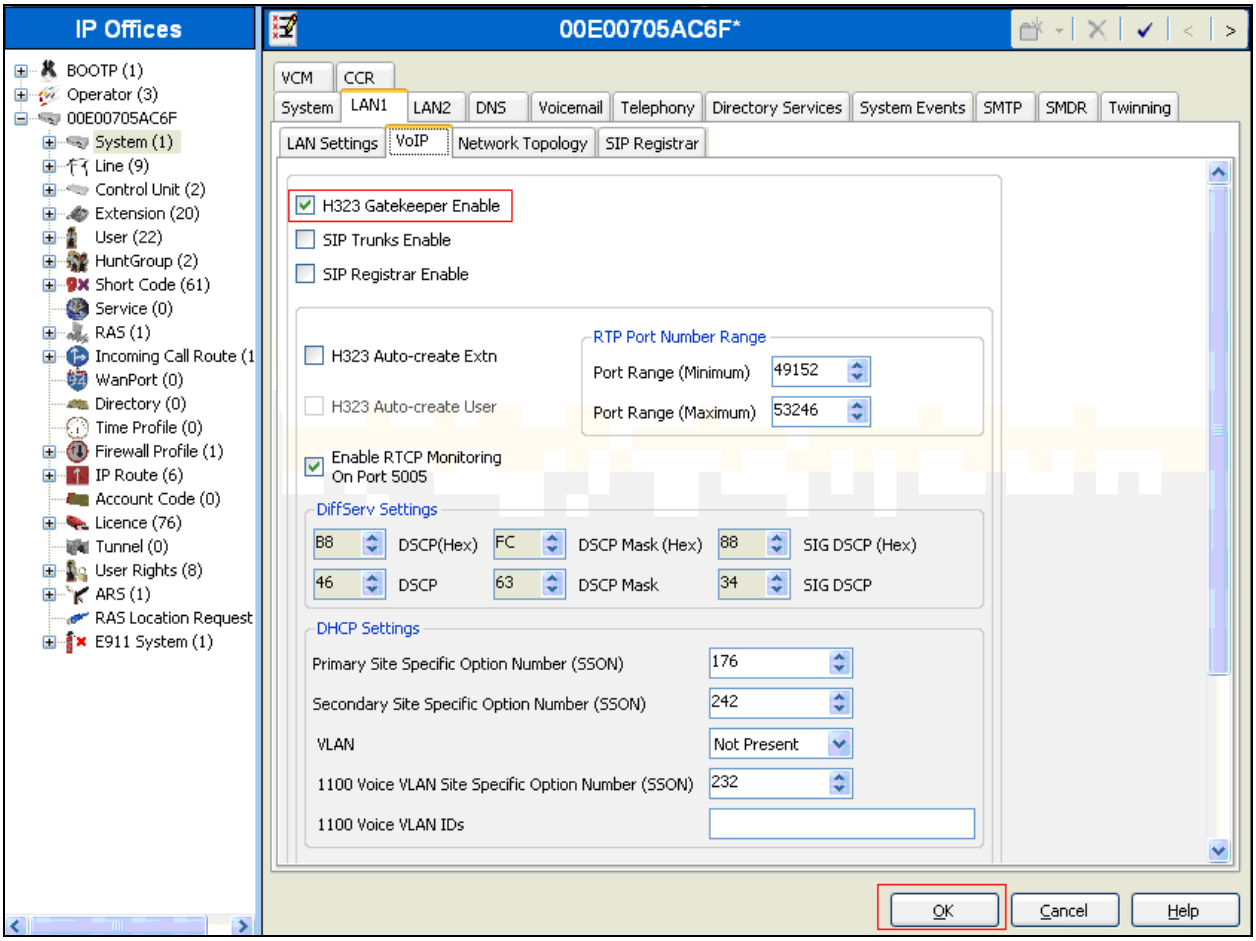
From the configuration tree in the left pane, select **System** to display the System screen in the right pane. Click the **LAN1** tab. Under the **LAN1** tab, select the **LAN Settings** sub-tab, and provide **IP Address** and **IP Mask**.



5.3. Enable H.323 Trunk

From the configuration tree in the left pane, select **System** to display the System screen in the right pane. Click the **LAN1** tab. Under the **LAN1** tab, select the **VoIP** sub-tab, and check the **H323 Gatekeeper Enabled** box. Click the **OK** button.

Note: During the initial configuration of Avaya IP Office, the LAN1 was configured as a private network (LAN) and the LAN2 was configured as a public network (WAN). Avaya IP Office can support H323 extensions on the LAN1 and/or LAN2 interfaces. However, the compliance test used the LAN1 interface for a H323 trunk termination.

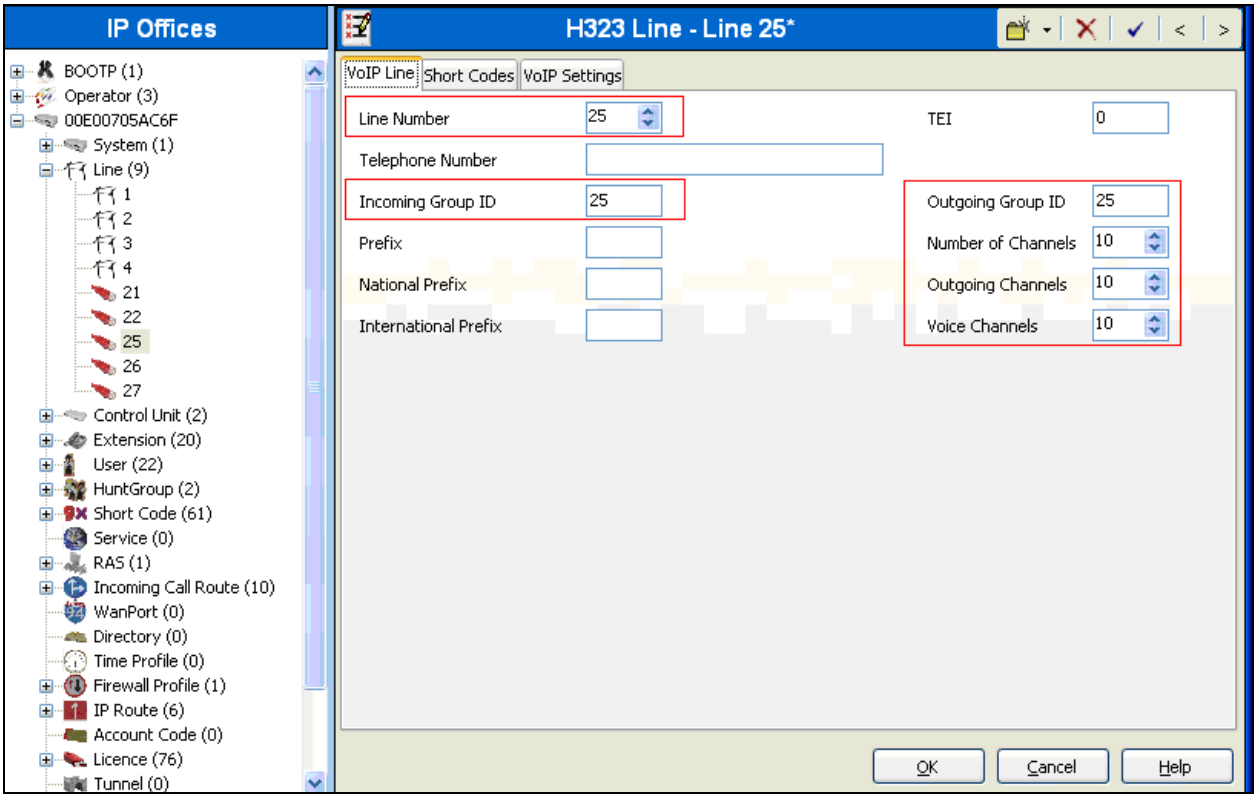


5.4. Create H323 Line for a H323 Trunk

Select **Line** in the left pane. Using the right mouse click, select **New** ➔ **H323 Line**[not shown], and create a new **Line Number** by configuring the following fields:

- **Incoming Group ID**
- **Outgoing Group ID**
- **Number of Channels**
- **Outgoing Channels**
- **Voice Channels**

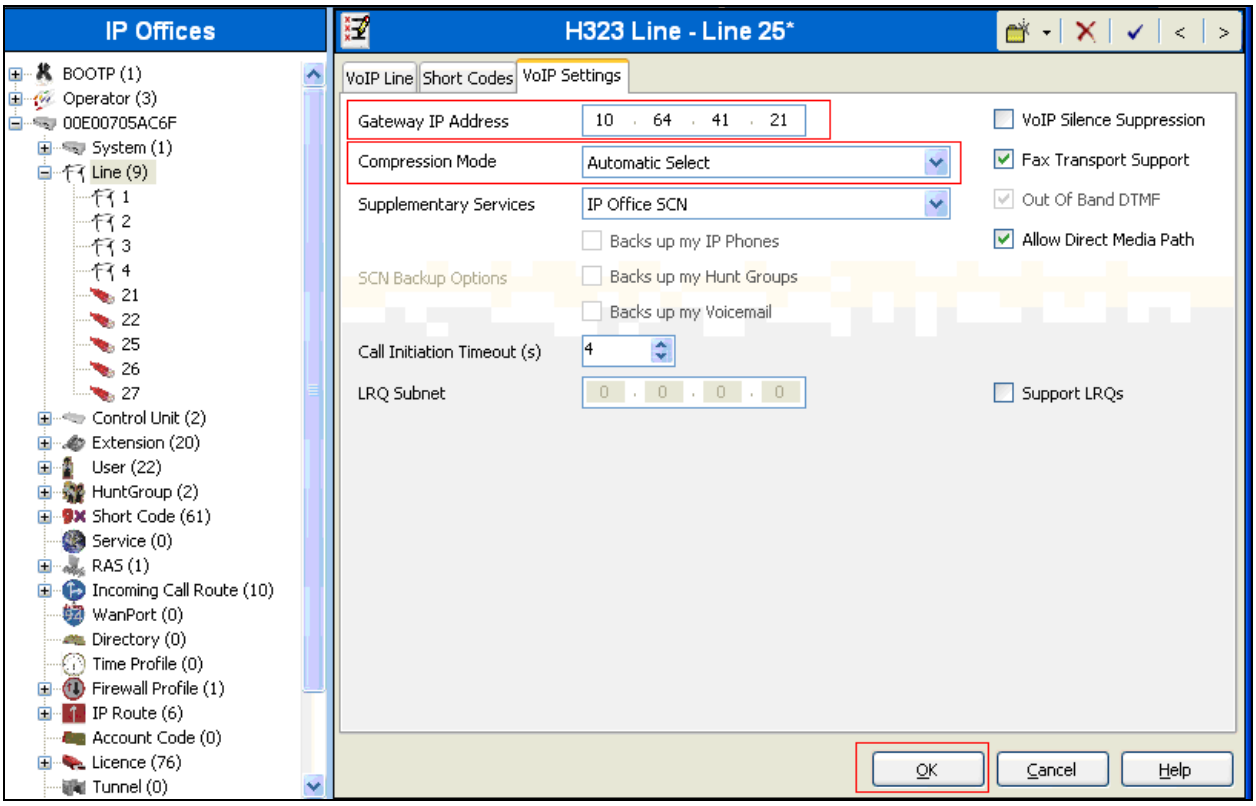
During the compliance test, a H323 line (25) was configured.



Select the **VoIP Settings** sub-tab, and provide the following information:

- **Gateway IP Address** – Enter the IP address of the far-end trunk termination point for Communication Manager.
- **Compression Mode** – Select **Automatic Select** (default).

Click on the **OK** button.



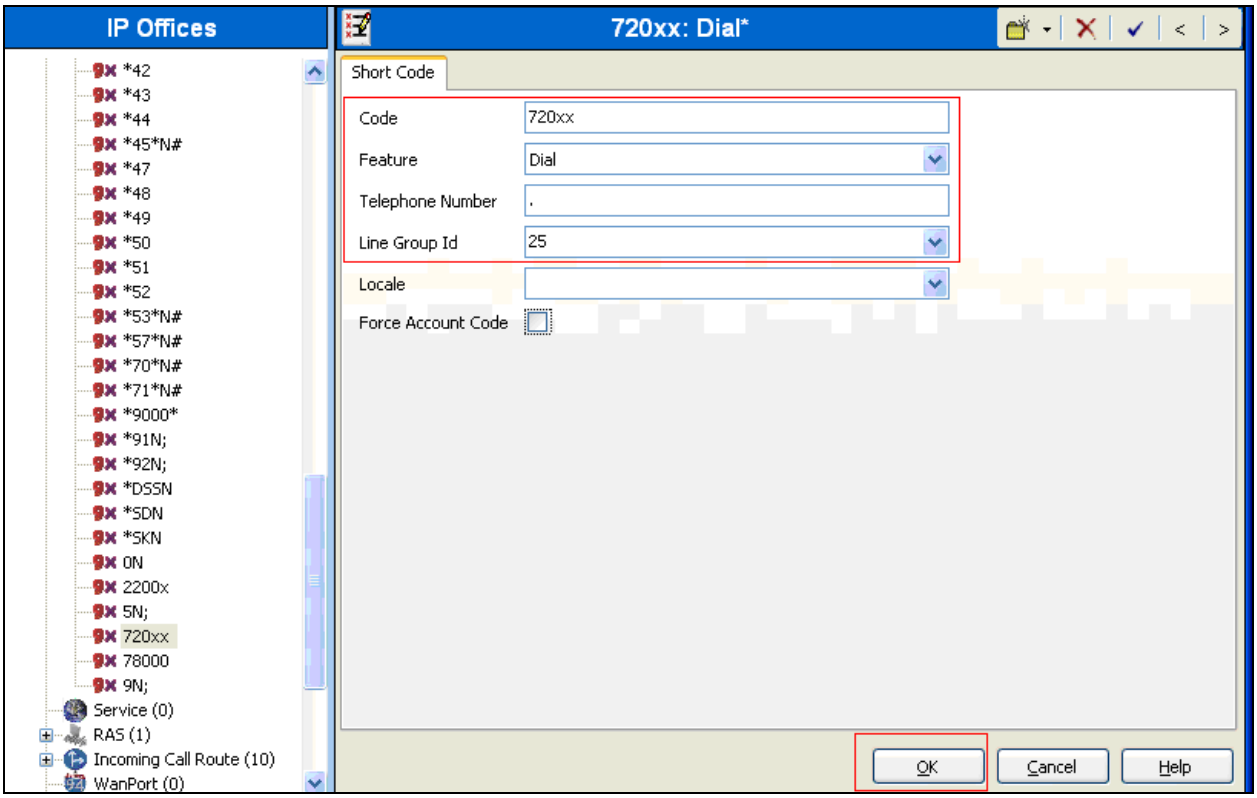
5.5. Configure a Short Code to Route Calls through the H323 trunk

Select **Short Code** in the left panel. Right click and select **Add**[not shown]. Enter **720xx;** where **[x]** is any number, in the **Code** text box.

Select **Dial** for the **Feature** field. Enter the **Outgoing Group** number created in **Section 5.4** for the **Line Group Id** field. Enter "**.**" for the **Telephone Number** field. Use default values for all other fields.

Click the **OK** button.

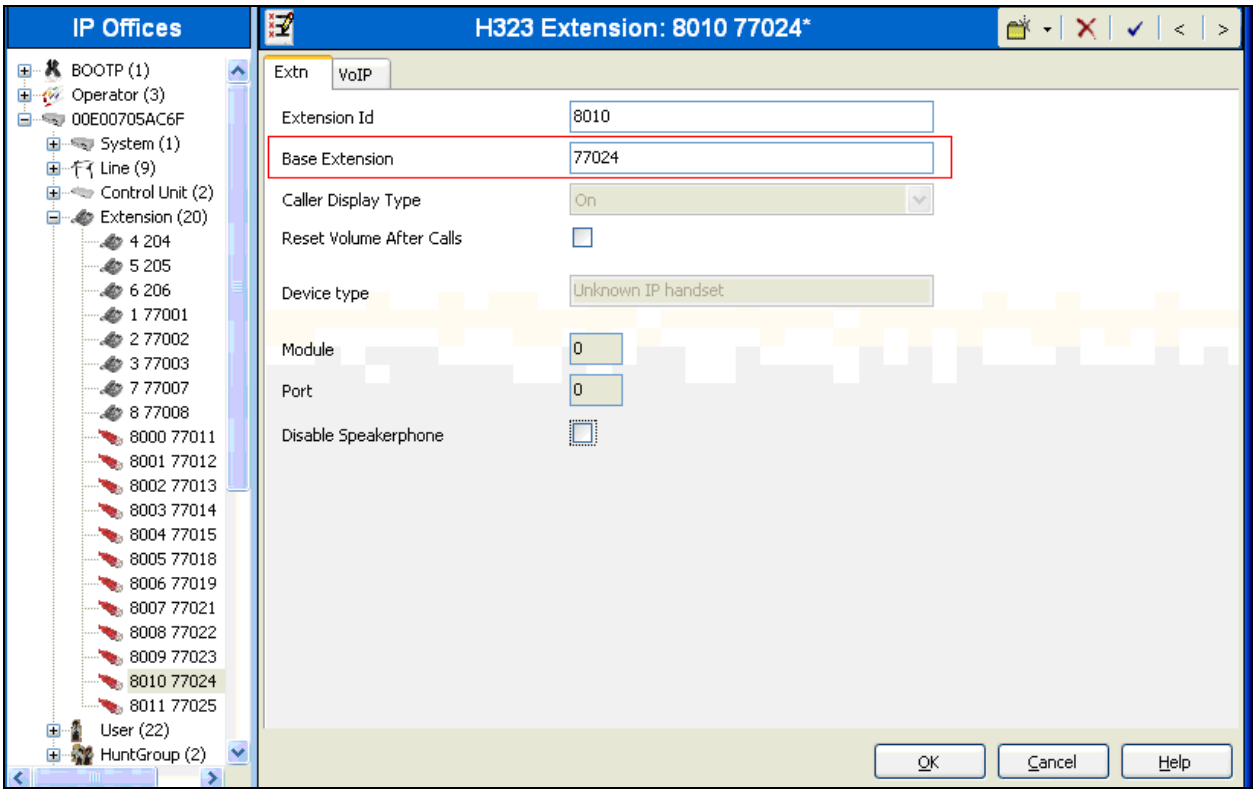
Note: When an extension in 720xx was dialed, the call will be routed thru the H323 trunk 25.



5.6. Administer H323 Extension for e-IVR

From the configuration tree in the left pane, right-click on **Extension**, and select **New → H323 Extension**[not shown] from the pop-up list to add a new H323 extension. Enter the desired digits for the **Base Extension** field.

Click the **OK** button.

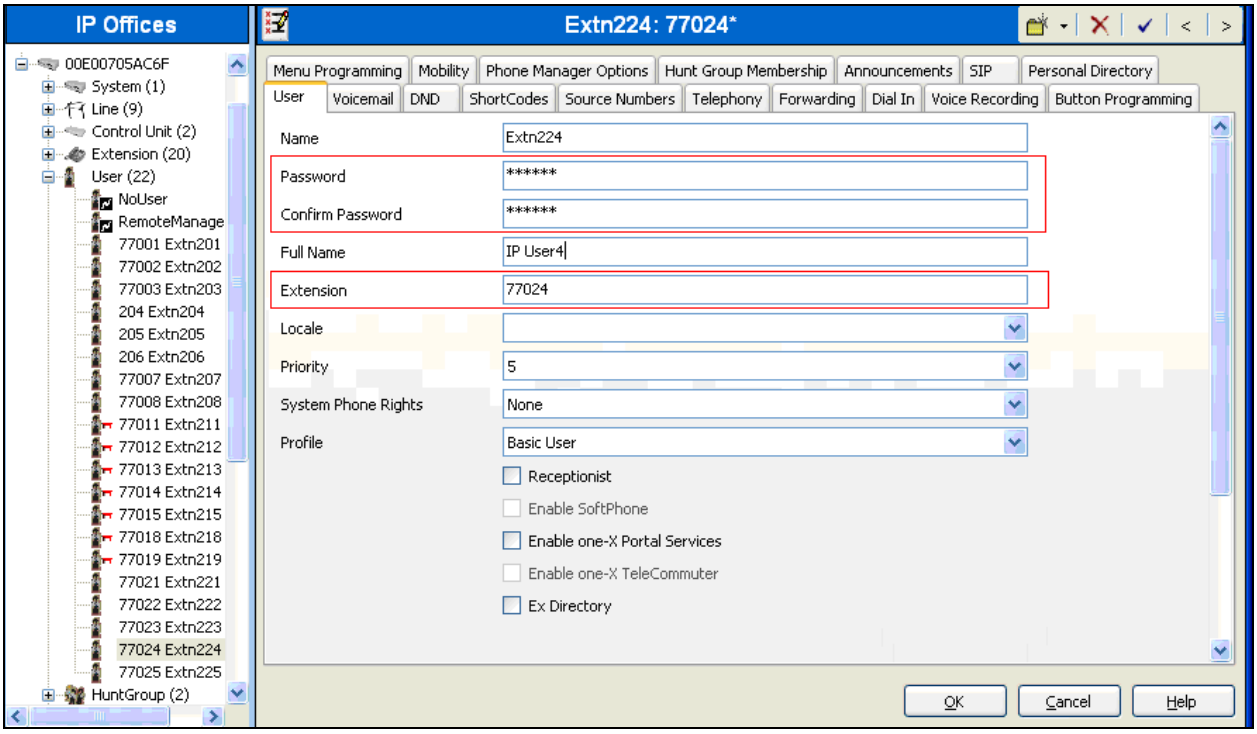


Repeat steps if multiple extensions are needed. During the compliance test, extensions 77024 and 77025 were used.

5.7. Administer User for e-IVR

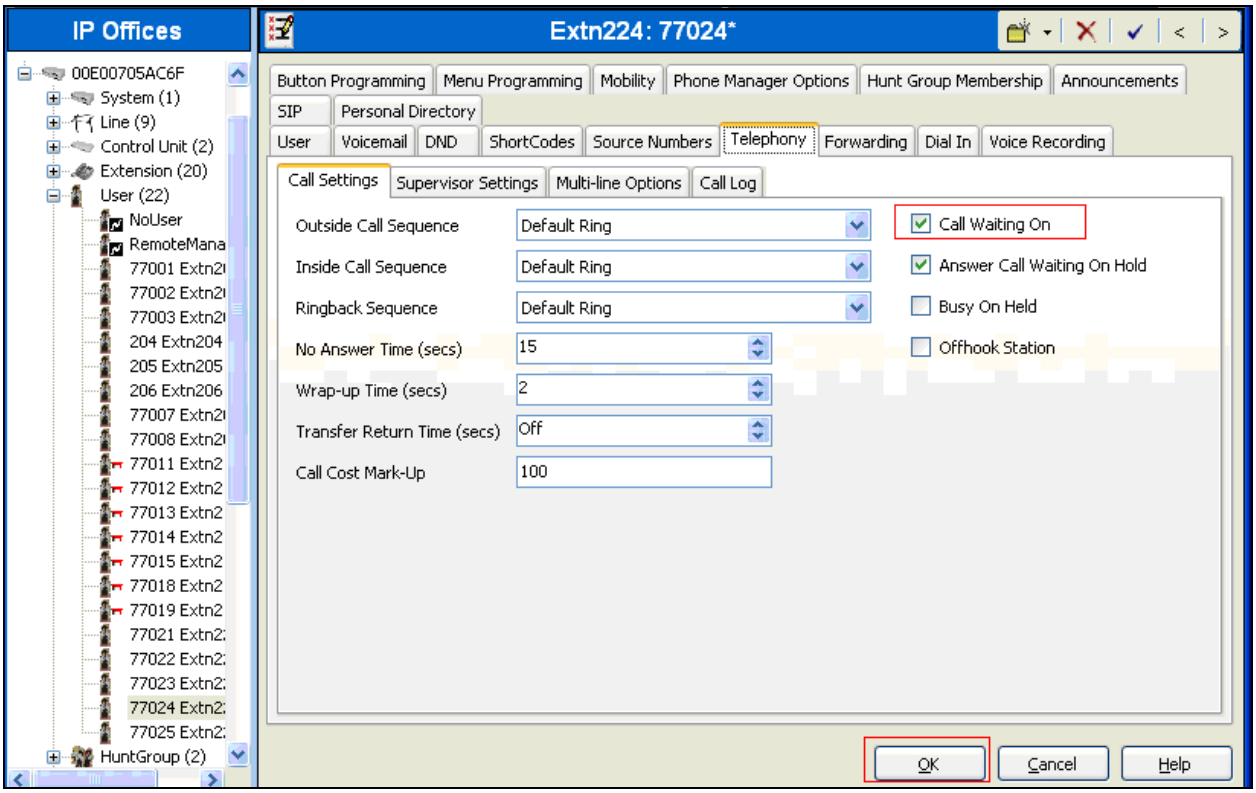
From the configuration tree in the left pane, right-click on **User**, and select **New**[not shown] from the pop-up list to add a new user. Provide the following information:

- **Password** – Enter the login password.
- **Confirm Password** – Re-enter the password.
- **Extension** – Enter the extension created in **Section 5.6**.



Select the **Telephony** tab, followed by the **Call Settings** sub-tab. Check the **Call Waiting On** field, as shown below.

Click on the **OK** button.



Repeat steps if multiple users are needed. During the compliance test, users 77024 and 77025 are used.

5.8. Create a Hunt Group

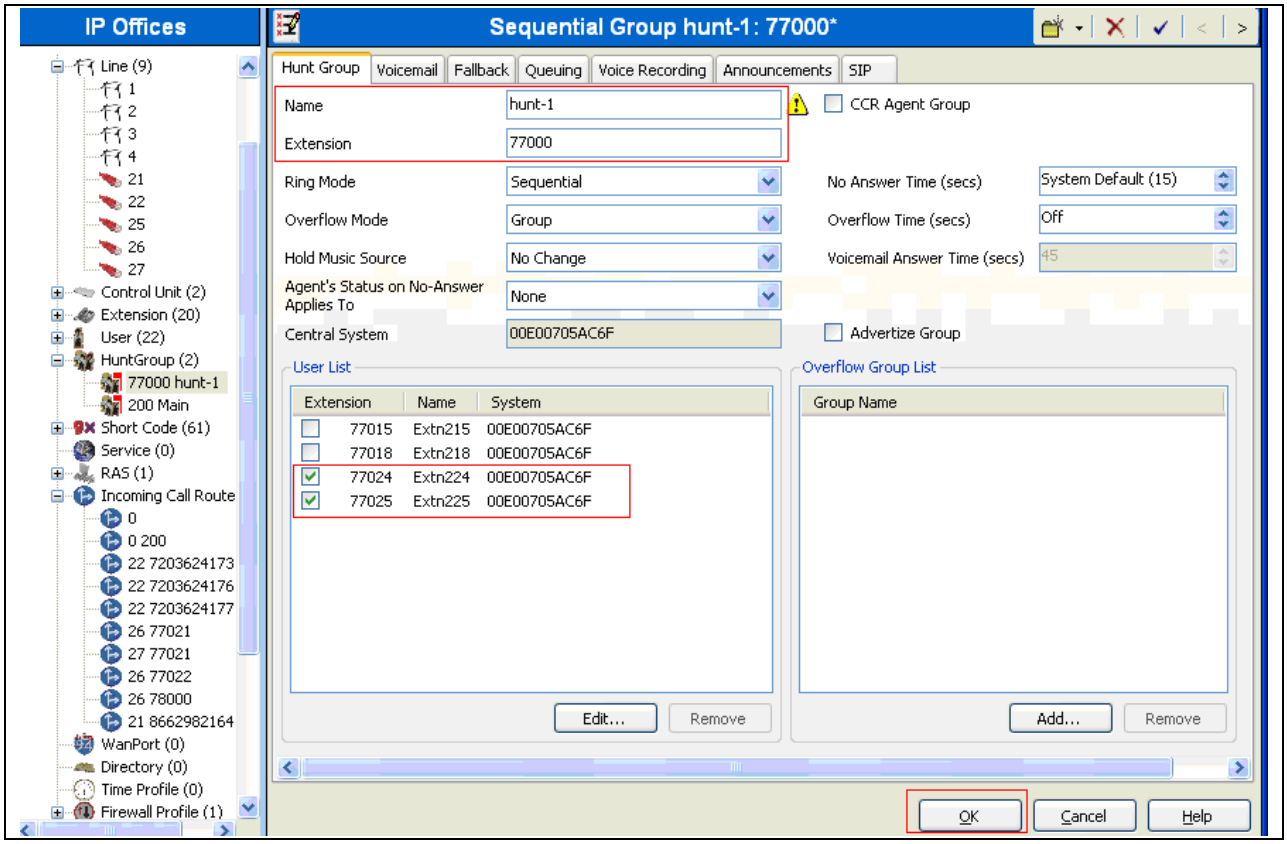
Select **HuntGroup** in the left pane. Right click and select **New** [not shown]. During the compliance test, the hunt group extension was utilized to forward calls to e-IVR extensions 77024 and 77025.

Provide the following information:

- **Name** – Enter a desired name for a hunt group.
- **Extension** – Enter the extension for the hunt group.
- Select e-IVR extensions from the User List.

Click on the **OK** button.

The following screen shows the corresponding hunt group.



After making the changes, click on the floppy disk icon (not shown) to push the changes to the IP Office system and have them take effect.

Note: *Changes will not take effect until this step is completed. This may cause a reboot of Avaya IP Office causing service disruption.*

6. Configure the Computer Instruments e-IVR

Computer Instruments installs, configures, and customizes the e-IVR application for their end customers. Thus, this section only describes the interface configuration, so that e-IVR can talk to Avaya IP Office.

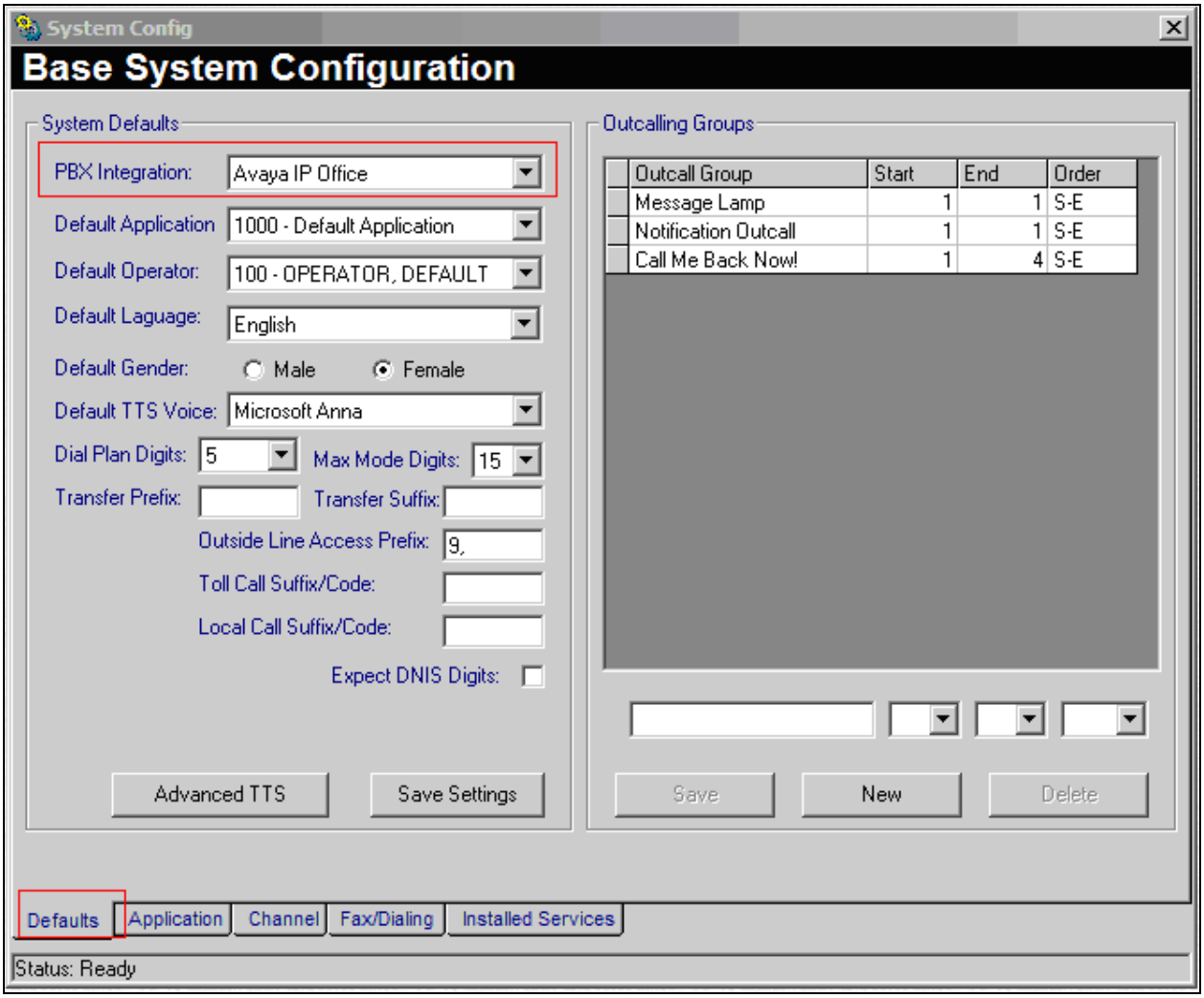
The procedures for setting up e-IVR include the following areas:

- Switch Configuration
- Configure EIVR.INI file

6.1. Modify Base System Configuration

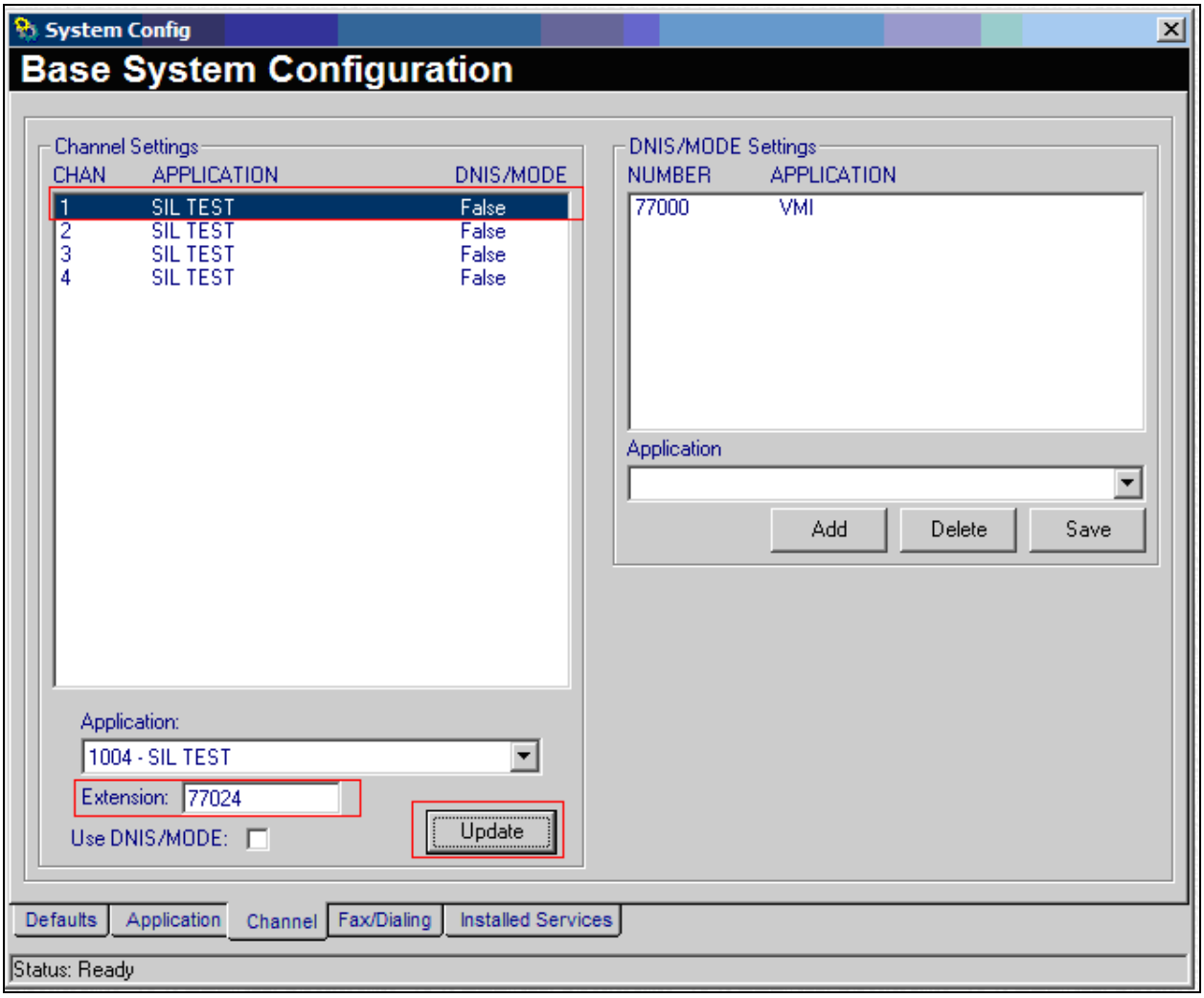
To modify the system configuration, navigate to **Start → Program → CII →Voice Administration.**

The following screen shows the Base System Configuration. Under **Defaults** tab at the bottom of the screen, select **Avaya IP Office**, using the drop-down list, for the **PBX Integration** field.



Click the **Channel** tab, and map each channel for e-IVR user. During the compliance test, four channel dialogic board was used. Also, channel 1 was mapped to 77024, and channel 2 was mapped to 77025. The following screen shows the mapping of channel 1 to the extension 77024.

Click the **Update** button.



6.2. Configure EIVR.ini file

To configure e-IVR, modify the EIVR.INI file in C:\windows directory. The following screen shows the EIVR.INI file, and modify as highlighted.

```
;   // e-IVR/e-CRM Fusion Control File //

[Server]
DBServerName=127.0.0.1
SysDir=C:\Program Files (x86)\CII\Voice Server\
VoxDir=C:\Program Files (x86)\CII\Voice Server\Speech
WebSite=http://127.0.0.1
WebRoot=C:\InetPub\WWWRoot
SMTPServerName=127.0.0.1
Release=1
SBIC=0
TTSVoice=Microsoft Anna
TTSVoiceUSEnglish.Female=Microsoft Anna

DialogicLevel=1

;;SIP End Points for IP Office
;IsSIP=1
;GateKeeper=10.64.44.21
;SIPDomain=avaya.com
;SIPDevPassword=123456
;SIPProxy=avaya.com
;SIPReferToDomain=10.64.44.21
;MaxHeaderSize=512
;SIPReInviteContactDomainRet=10.64.43.112
;SIPAllowReRegister=0
;;exts 77018  77015

;H323 End Points for IP Office
GateKeeper=10.64.44.21
H245Tunneling=0
OCH245Tunneling=1
;exts 77024 and 77025
```

7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and e-IVR.

7.1. Verify Avaya IP Office

From a PC running the Avaya IP Office Monitor application, select **Start → Programs → IP Office → Monitor** to launch the application. From the **Avaya IP Office R7 SysMonitor** screen, select **Status → H323 Phone Status** from the top menu and verify that there is an entry for each H323 extension configured in **Section 5.6.**

8. Conclusion

These Application Notes describe the procedures required to configure Computer Instruments e-IVR, as a H323 endpoint, to interoperate with Avaya IP Office. Computer Instruments e-IVR successfully passed compliance testing.

9. Additional References

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

[1]*IP Office 7.0 Standard Version Installation,* Issue 23k, May 2011, Document Number 15-601042

[2]*IP Office Release 7.0 Manager 9.0*, Issue 26h, May 2011, Document Number 15-601011

Computer Instruments product documentation can be requested at http://www.instruments.com/docsearch/public/index.jsp

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.