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Avaya Solution & Interoperability Test Lab

Application Notes for eWings Technologies Communication Assistant 1.3.0 with Avaya IP Office 3.0 - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring eWings Technologies Communication Assistant (ComAssistant) to successfully interoperate with Avaya IP Office 3.0.

ComAssistant is a value-added total solution providing multiple speech-based services in one box. It enhances users' business efficiency and productivity by self-service and automation.

In the configuration described in these Application Notes, ComAssistant used Microsoft TAPI3 to communication with IP Office 3.0. During compliance testing, ComAssistant features – Auto Attendant, Auto Dialer, Personal Dialer and Voice Mail – were verified to be working.

Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe a compliance-tested configuration comprised of Avaya IP Office IP403 with the Digital Station Module, and eWings Technologies ComAssistant.

ComAssistant 1.3.0 is a Windows 2000-based voice application providing enterprise-wide comprehensive voice applications. It uses speech-recognition technology to provide Auto Dialer, Personal Dialer, Auto Attendant and Voice Mail services.

For the Auto Attendant service, the IP Office is configured to route incoming calls to a hunt group that consists of the "virtual" TAPI Wave extensions configured on the ComAssistant. When ComAssistant receives a call, it determines the destination through speech-recognition or DTMF digits entered. It then transfers the call to the destination extension by performing a TAPI-based transfer. More hunt groups are configured in the same way for the other ComAssistant services such as Auto Dialer, Personal Dialer and Voice Mail.

The Interoperability Compliance Testing included basic TAPI interworking and feature functionality testing only. For Voice Mail service, the ComAssistant was tested for dial in voice recording/playback only (no voicemail call coverage testing or message waiting lamp update).
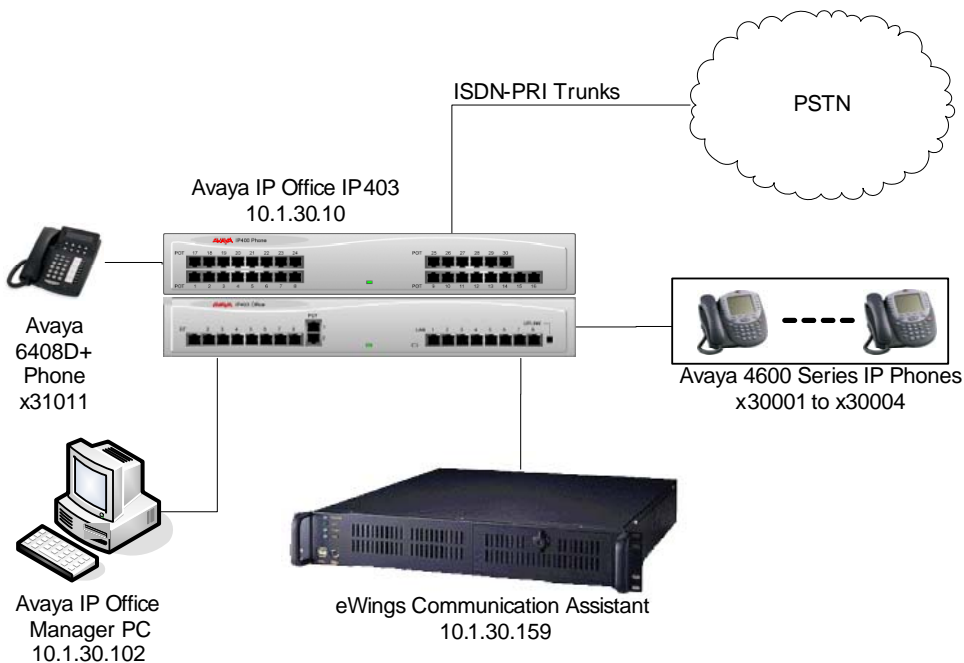

Figure 1: eWings ComAssistant Compliance Test Sample Configuration

2. Equipment and Software Validated

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

| Equipment	Software
Avaya IP 403 Office System	3.0 (59)
Avaya IP 400 Phone 30 Expansion Module	5.0 (59)
Avaya 6408D+	-
Avaya 4610SW, 4620SW IP Telephones	2.2.3
Avaya IP Office Manager PC	Windows XP Professional
eWings ComAssistant Server	1.3.0

3. Configure the Avaya IP Office

These Application Notes address provisioning of the IP Office as it relates to integration of the eWings ComAssistant. For all other provisioning information such as provisioning of the trunks for inbound routing, outbound dialing, call coverage, extensions, etc., please refer to the IP Office documentation.

| Step	Description
	IP Office License Key Physical Installation
1.	Plug in the red Avaya Software Sentinel key into the parallel port of the IP Office Manager PC.
	Configure License Key Server IP Address
2.	Log in to the IP Office Manager PC and go to **Start → Programs → IP Office → Manager** to launch the Manager application. Log in to the Manager application using the appropriate credentials.
3.	In the Manager window that appears, select **File → Open** to search for the IP Office system in the network.
4.	Log in to the IP Office system using the appropriate login credentials to receive its configuration.

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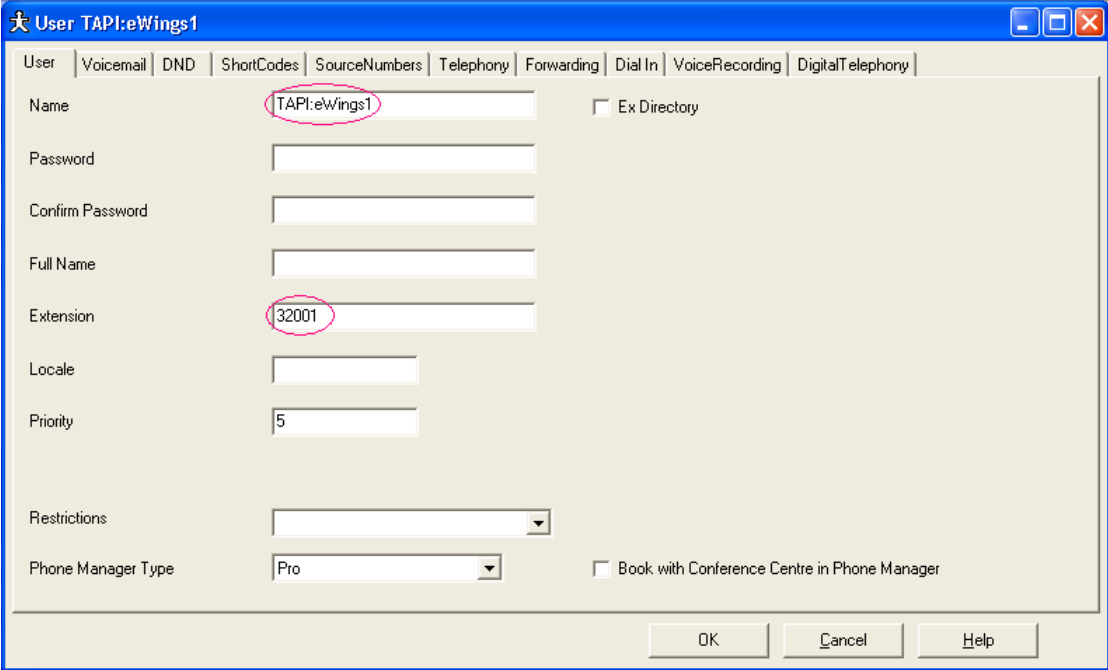| Step	Description
5.	In the Manager window, go to the Configuration Tree and double-click System. In the System Configuration window that appears, select the **System** tab and set *License Server IP Address* to the IP address of the machine to which the red Avaya Software Sentinel key is connected. This is typically the IP Office Manager PC. Click **OK**.
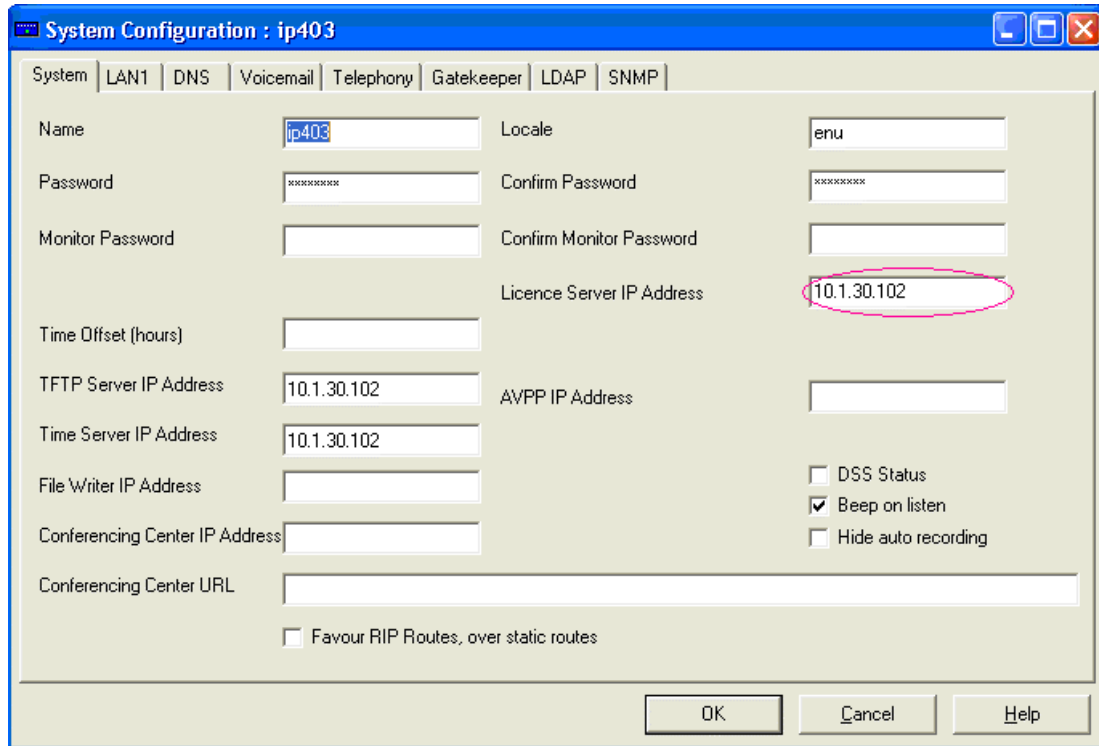
	Install Licenses
6.	In the Manager window, go to the Configuration Tree and double-click **License** to open the list of licenses installed in the IP Office system.
7.	Right click in the license list window and select New. In the License window that appears, enter the CTI Link Pro License Key and click **OK**.
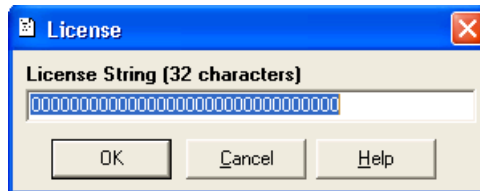
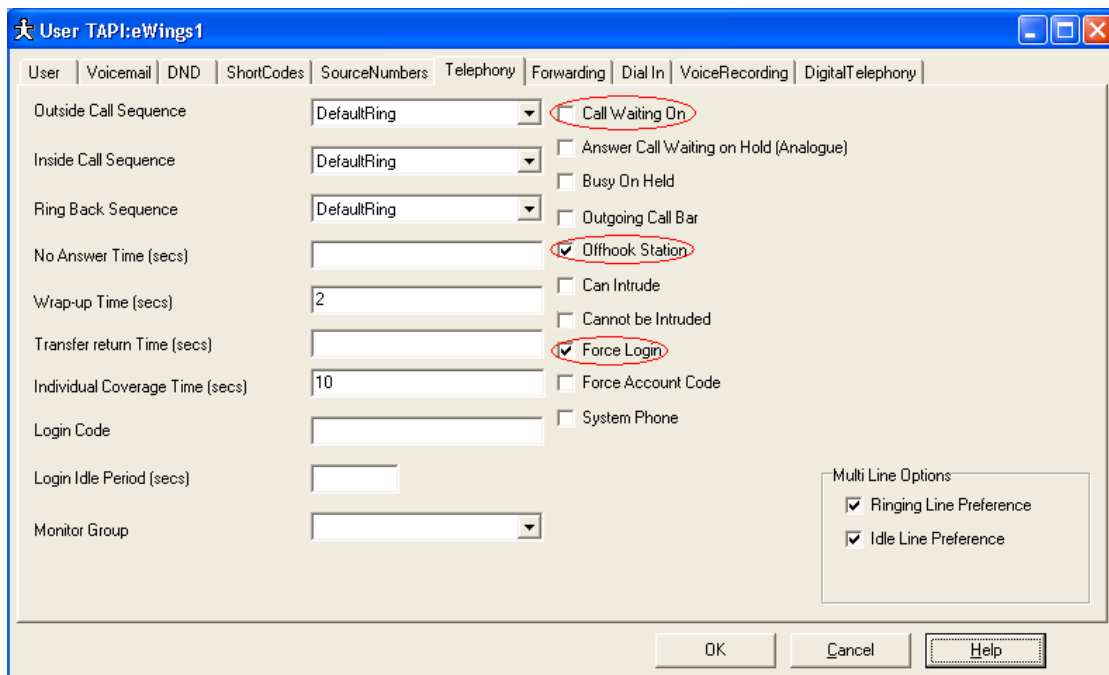| 8.	Repeat Step 7 to install the Wave User license.
9.	In the Manager window, select **File → Save** to save the licenses to the IP Office system and wait for the system to update. **Note 1**: Before the system reloads, the new licenses will be listed with an Unknown status. After the system reloads, the new licenses will list as Valid.

Step	Description
	Configure TAPI Extensions
10.	In the Manager window, select **File → Open** to search for the IP Office system in the network.
11.	Log in to the IP Office system using the appropriate login credentials to receive its configuration.
12.	In the Manager window, go to the Configuration Tree and double-click **User** to open the list of users on the IP Office system.
13.	Right click in the User list window and select **New**. In the User window that appears, set *Name* to **TAPI:eWingsX** where **X** is the number of the TAPI Wave extension desired, (e.g., 1, 2). and *Extension* to the extension number to be used.
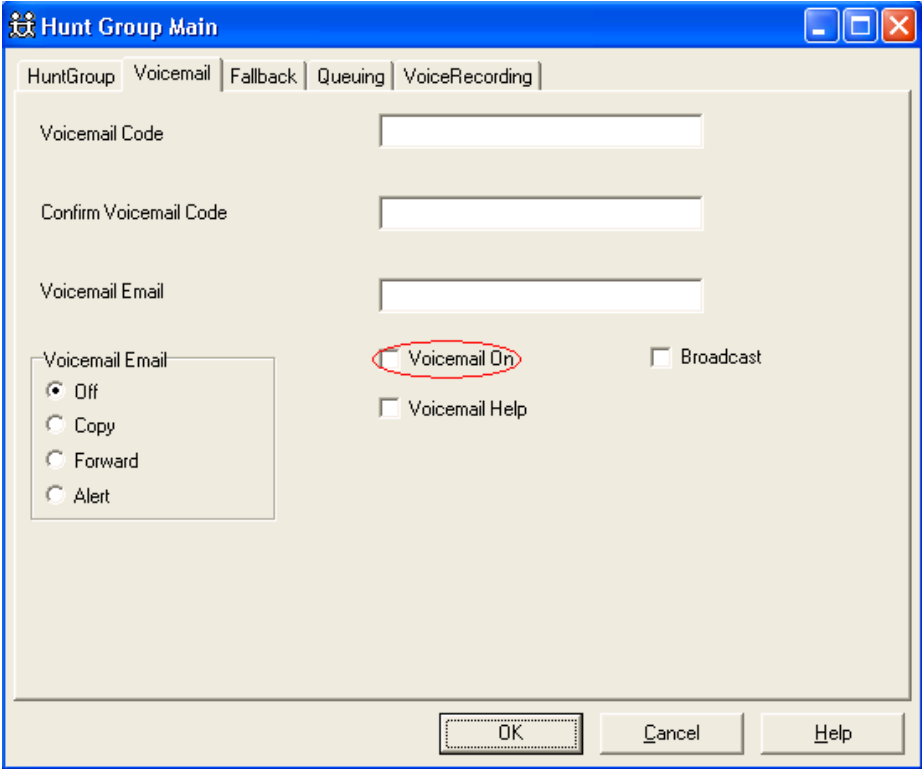
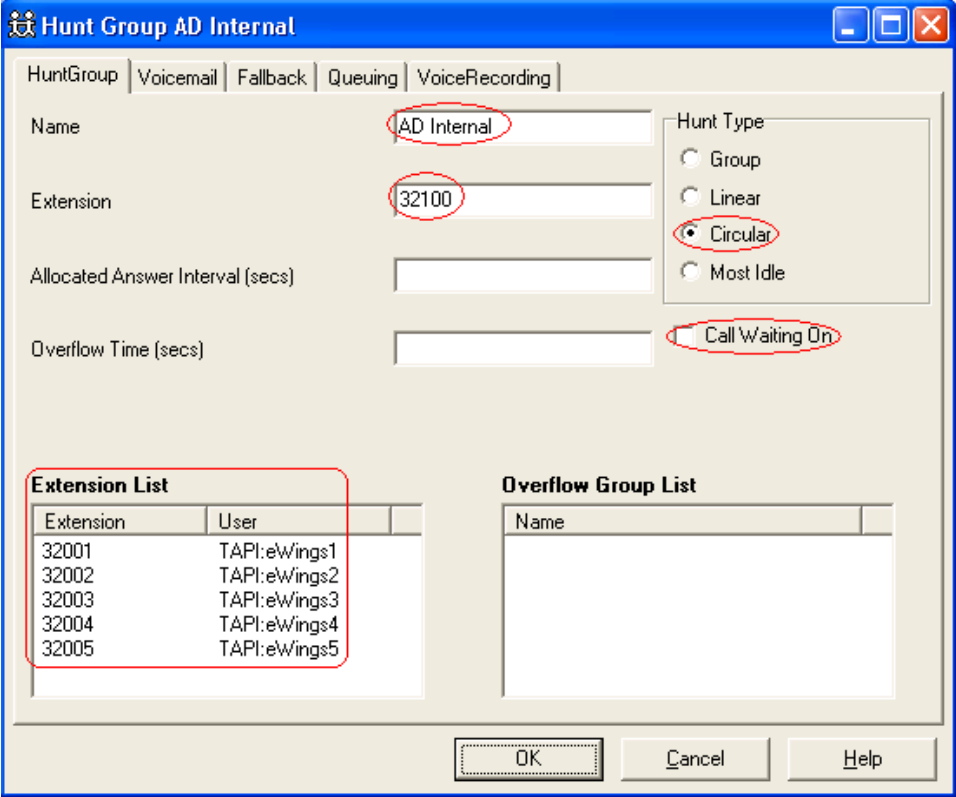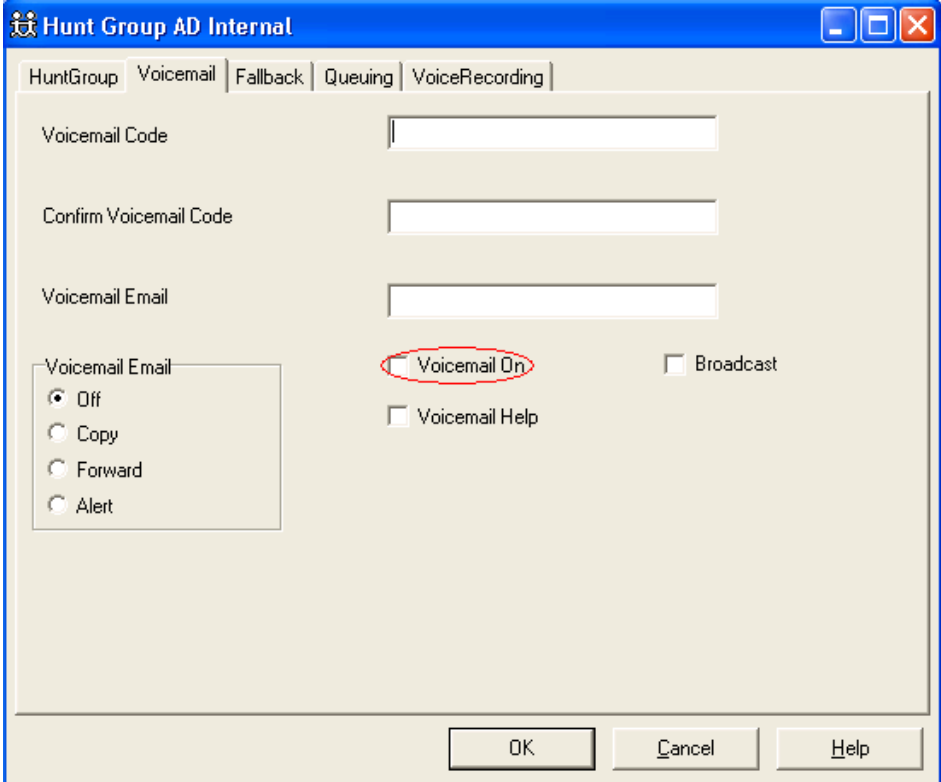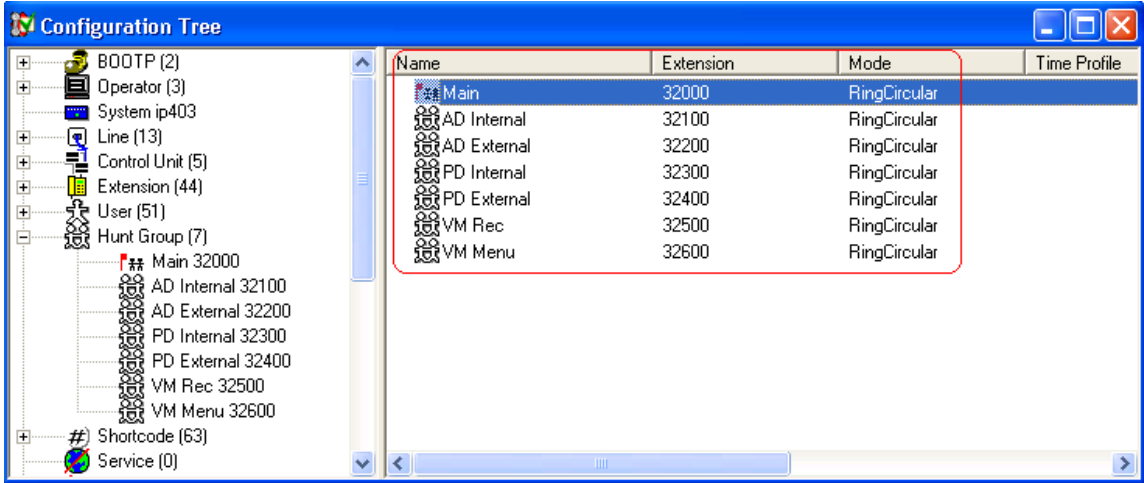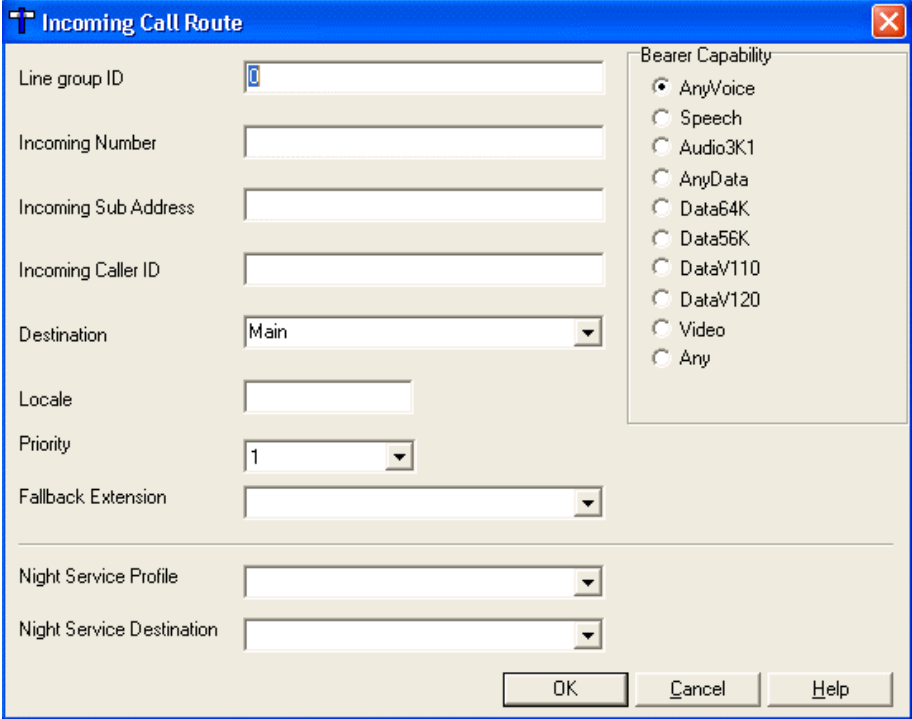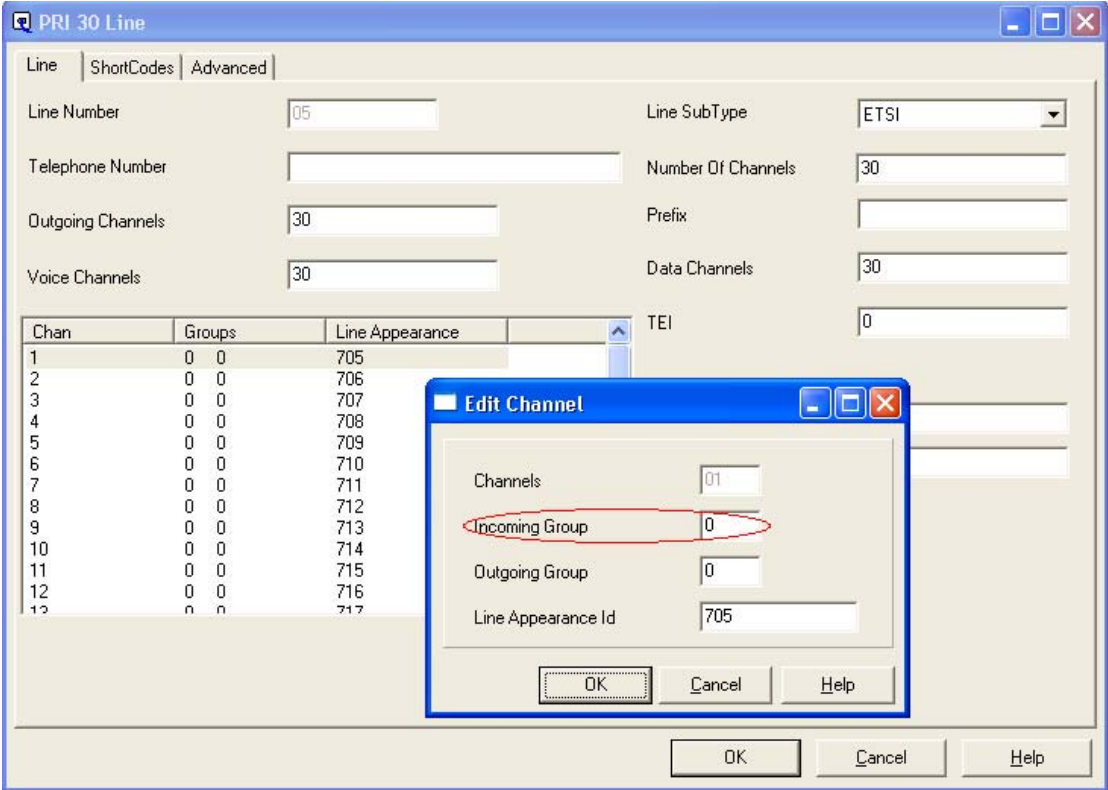| Step	Description
14.	In the Voicemail tab of the User window, verify that *Voicemail On* and *Voicemail Ringback* are not checked.
15.	In the Telephony tab of the User window, verify *Call Waiting On* is unchecked, *Offhook Station* and *Forced Login* are checked and click **OK**.
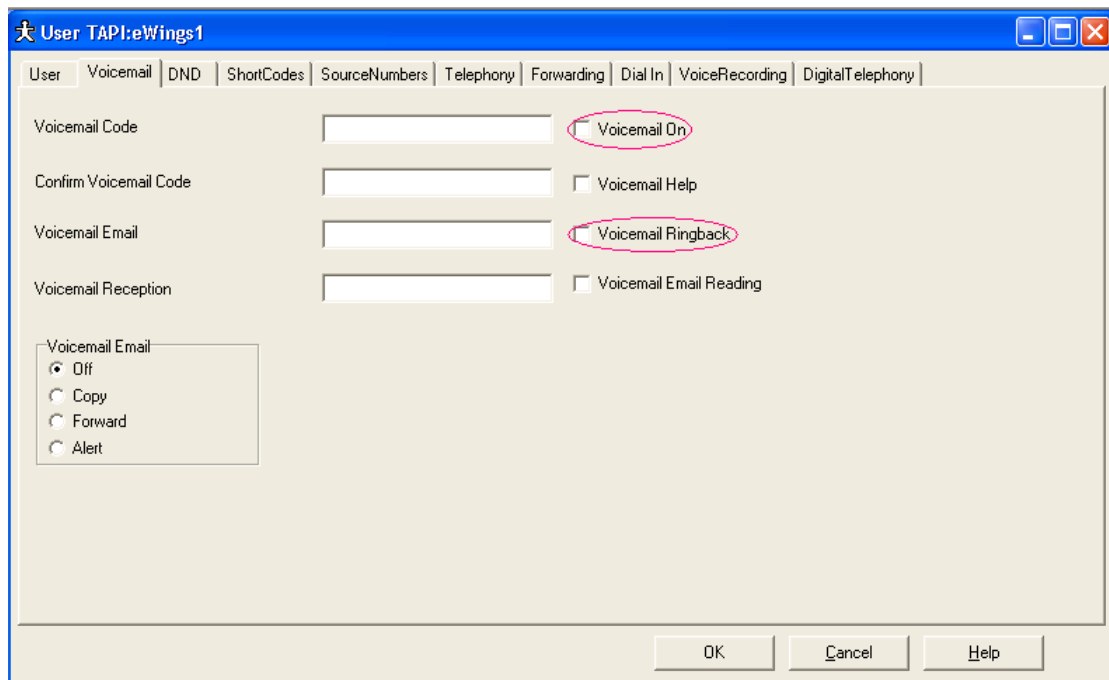
Step	Description
16.	In the Manager popup that appears, click **No**.
17.	Repeat Steps 13 - 16 for each TAPI Wave extension needed. For the purposes of these Application Notes, five TAPI Wave extensions were created (extensions 32001 – 32005). The number of eWings licenses and Avaya TAPI Wave licenses purchased limits the number of TAPI extensions that can be created.
	Configure Main Hunt Group for Auto Attendant
18.	In the Manager window, go to the Configuration Tree and double-click **Hunt Group** to open the list of hunt groups on the IP Office system.
19.	Select the Main hunt group by double-clicking.
20.	In the Hunt Group window that appears, add the TAPI extensions created in Steps 13 to 17 to the Extension List by right-clicking in the *Extension List* section and selecting **Add**. Then, set *Extension* to **32000** (or the extension number desired for the hunt group), *Hunt Type* to **Circular**, and *Call Waiting On* to unchecked.

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Step	Description
21.	In the Voicemail tab of the Hunt Group window, verify *Voicemail On* is not checked.

Step	Description
	Create New Hunt Groups for Other ComAssistant Services
22.	Right click in the Hunt Group list window and select **New**. In the Hunt Group window that appears, set *Name* to **AD Internal** and *Extension* to the extension number to be used. Add the TAPI extensions created in Steps 13 to 17 to the Extension List by right-clicking in the *Extension List* section and selecting **Add**. Then, set *Hunt Type* to **Circular**, and *Call Waiting On* to unchecked.

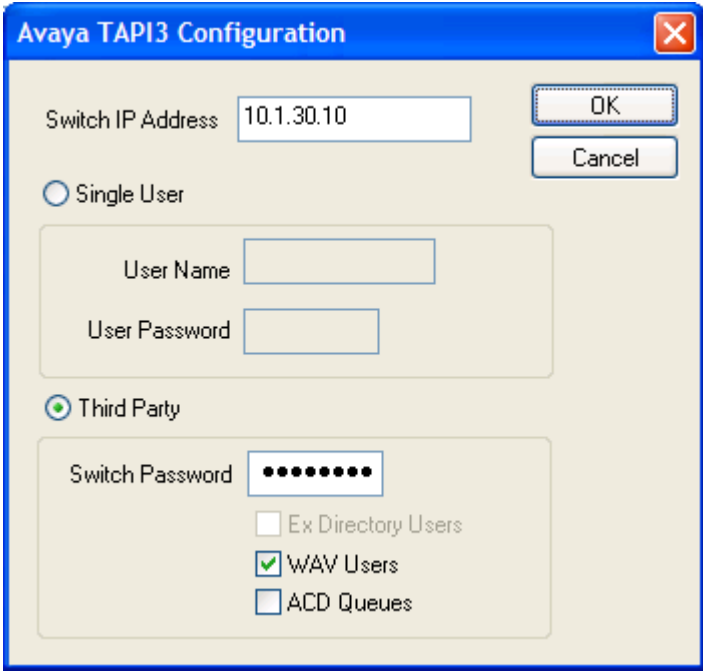| Step	Description
23.	In the Voicemail tab of the HuntGroup window, verify *Voicemail On* is not checked.
24.	Repeat Steps 22 - 23 for each Hunt Group needed. Altogether, six Hunt Groups were created (extensions 32100, 32200, 32300, 32400, 32500, 32600), corresponding to the different services of ComAssistant.
25.	In the Manager window, select **File → Save** to save the configuration to the IP Office system and wait for the unit to reboot with the saved configuration.

Step	Description
26.	Log in to the IP Office system using the appropriate login credentials to receive its configuration.
	Select Inbound Call Route
27.	In the Manager window, go to the Configuration Tree and double-click **Incoming Call Route** to open the list of incoming call routes on the IP Office system. Select the route with the destination set to Main and double-click. In the Incoming Call Route window that appears, record the *Line group ID*. Click **OK**.

	Assign Trunks to the Incoming Call Route
28.	In the Manager window, go to the Configuration Tree and double-click **Line** to open the list of lines (trunks) available on the IP Office system. Double-click the **PRI 30 Line** whose incoming calls are to be routed to the ComAssistant.

Step	Description
29.	In the Line window that appears, double-click on every channel and edit the *Incoming Group* field in the Edit Channel pop up that appears. Click **OK**.
30.	In the Manager window, select **File → Save** to push the configuration to the IP Office system and wait for the unit to reboot.
31.	Verify the incoming call route is properly operating by temporarily assigning a telephone extension to the hunt group and placing calls through the selected inbound line (trunk). The telephone extension assigned to the hunt group will ring. The TAPI Wave extensions will not answer until ComAssistant is configured.

4. Configure the eWings ComAssistant

These Application Notes address provisioning of the eWings ComAssistant as it relates to TAPI3 integration with the Avaya IP Office System. For all other provisioning information such as eWings ComAssistant software installation, Speech Recognition assignment, Telephone Directory creation and License Key installation, please refer to the eWings ComAssistant Administrator Guide available on the eWings Software Installation CD.
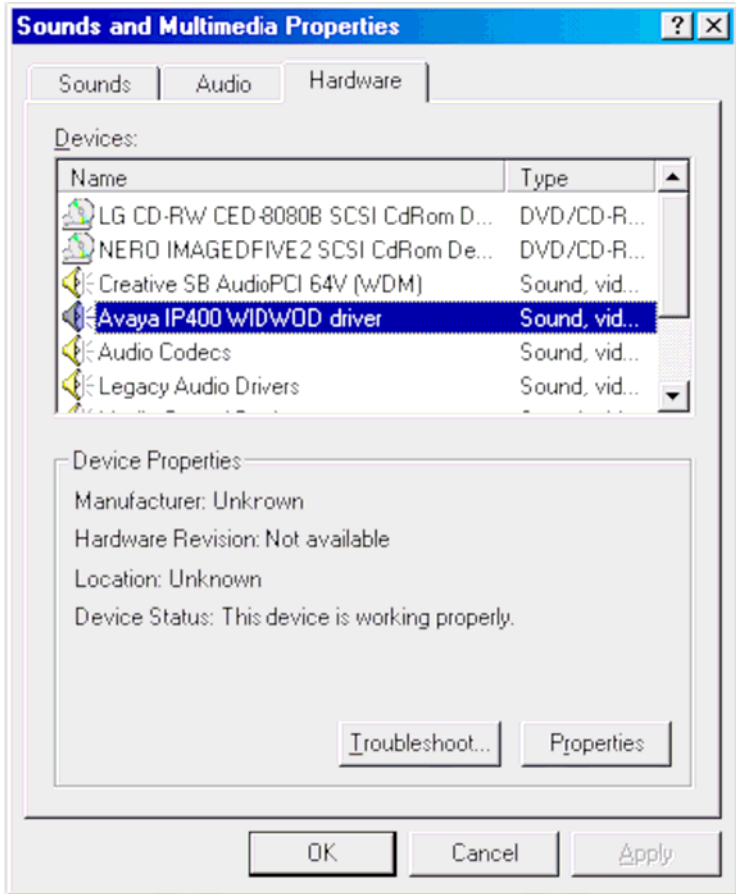
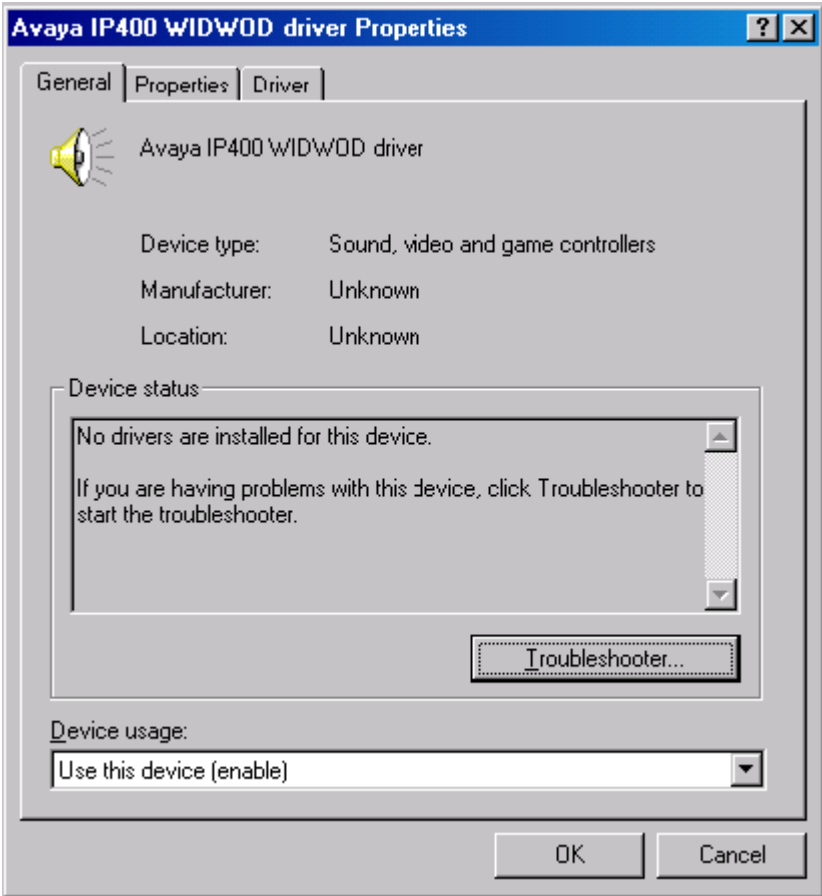## 4.1. Installing and Configuring Avaya IP Office TAPI3 Service Provider

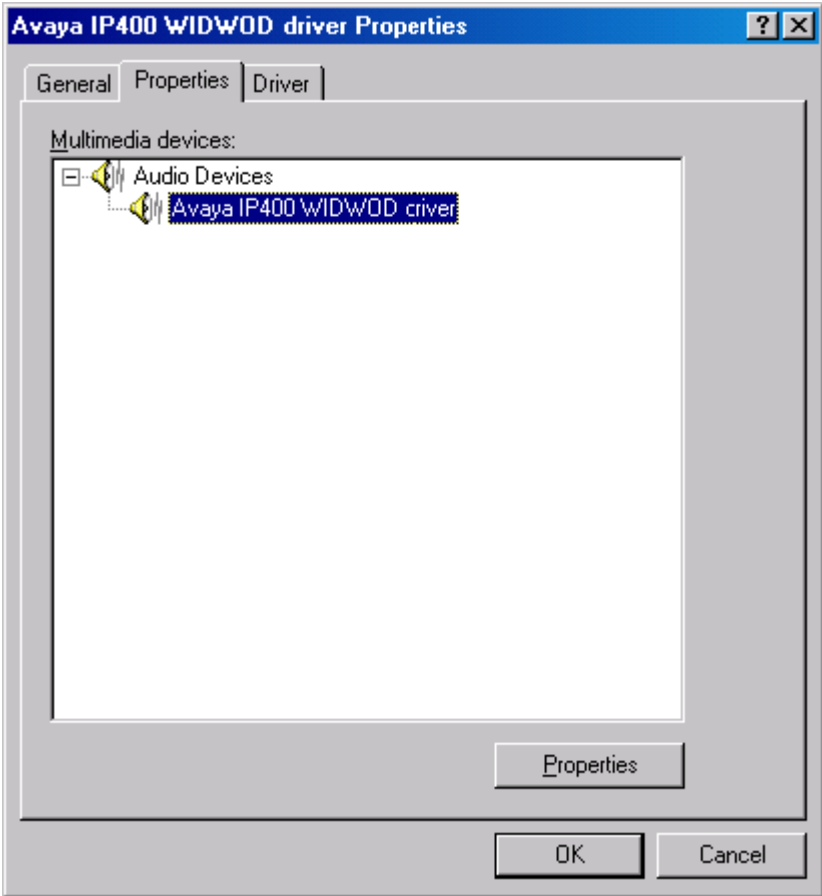| Step	Description
1.	From the Avaya IP Office CTI SDK 2.0.1 CDROM, run the program **TAPI3Install.exe** to install the Avaya IP Office TAPI3 Service Provider driver on the ComAssistant Server.
2.	After the system reboots, log in to the system again as administrator and go to **Start → Settings → Control Panel**. In the Control Panel window that appears, double-click **Phone and Modem Options**.
3.	In the Advanced tab of the Phone and Modem Options window, double-click **Avaya IP Office TAPI3 Service Provider**.
4.	In the Avaya TAPI3 configuration window that appears, set *Switch IP Address* to the IP Address of the IP Office System, check *Third Party*, set *Switch Password* to the IP Office System password, check *WAV Users*, and click **OK**.
5.	Reboot the system.
	Verify Connectivity with the IP Office
6.	After the system reboots, log in to the system and go to **Start → Programs → Accessories → Communications → Phone Dialer**.
7.	In the Phone Dialer Window that appears, select **Edit → Options**.
8.	In the Lines tab of the Options window that appears, select the **Phone Calls:** drop-down list. If one or more "IP Office Phone: XXX" (where XXX is an extension number) entries appear, then the IP Office TAPI Driver is installed and working properly.

4.2. Installing and Configuring Avaya IP Office TAPI Wave Driver

The steps that follow are for a Windows 2000 installation; please refer to the Avaya IP Office CTI Link Installation Manual, 40DHB0002UKAB – Issue 5 (28th October 2003) for additional information.

Step	Description
	Install TAPI Wave Driver
1.	Log in to the ComAssistant server as administrator and go to **Start → Settings → Control Panel**. In the Control Panel window that appears, double-click **Add/Remove Hardware**.
2.	In the Add/Remove Hardware Wizard Welcome window that appears, click **Next**.
3.	In the Choose a Hardware Task window that appears, select 'Add/Troubleshoot a device' and click **Next**.
4.	In the New Hardware Detection window that appears, wait while the PC searches for a new device.
5.	In the Choose a Hardware Device window, select 'Add a new device' and click **Next**.
6.	In the Find New Hardware window, select 'No, I want to select the hardware from a list' and click **Next**.
7.	In the Hardware Type window that appears, select 'Sound, video and game controllers' and click **Next**.
8.	In the Select a Device Driver window that appears, click **Have Disk…**.
9.	In the Install from Disk popup that appears, click **Browse…** to navigate to the Wave32 directory on the Avaya IP Office User Applications CD, select the oemsetup.inf file, and click **Open**.
10.	In the Install From Disk popup that appears, verify the pull-down field lists the path to the Wave32 directory on the CD and click **OK**.
11.	In the Select a Device Driver window that appears, verify *Avaya IP400 WIDWOD driver* is listed in the Models field and click **Next**.
12.	In the Start Hardware Installation window that appears, click **Next**.
13.	In the Completing the Add/Remove Hardware Wizard window that appears, click **Finish**.
14.	In the Systems Settings Change popup that appears, click **Yes** to reboot the system.
	Ensure Avaya TAPI Wave Driver is only used by TAPI
15.	Login to the ComAssistant server as administrator and go to **Start → Settings → Control Panel**. In the Control Panel window that appears, double-click **Sounds and Multimedia Properties**.

Step	Description
16.	In the Hardware tab of the Sounds and Multimedia Properties window, double-click **Avaya IP400 WIDWOD driver**.
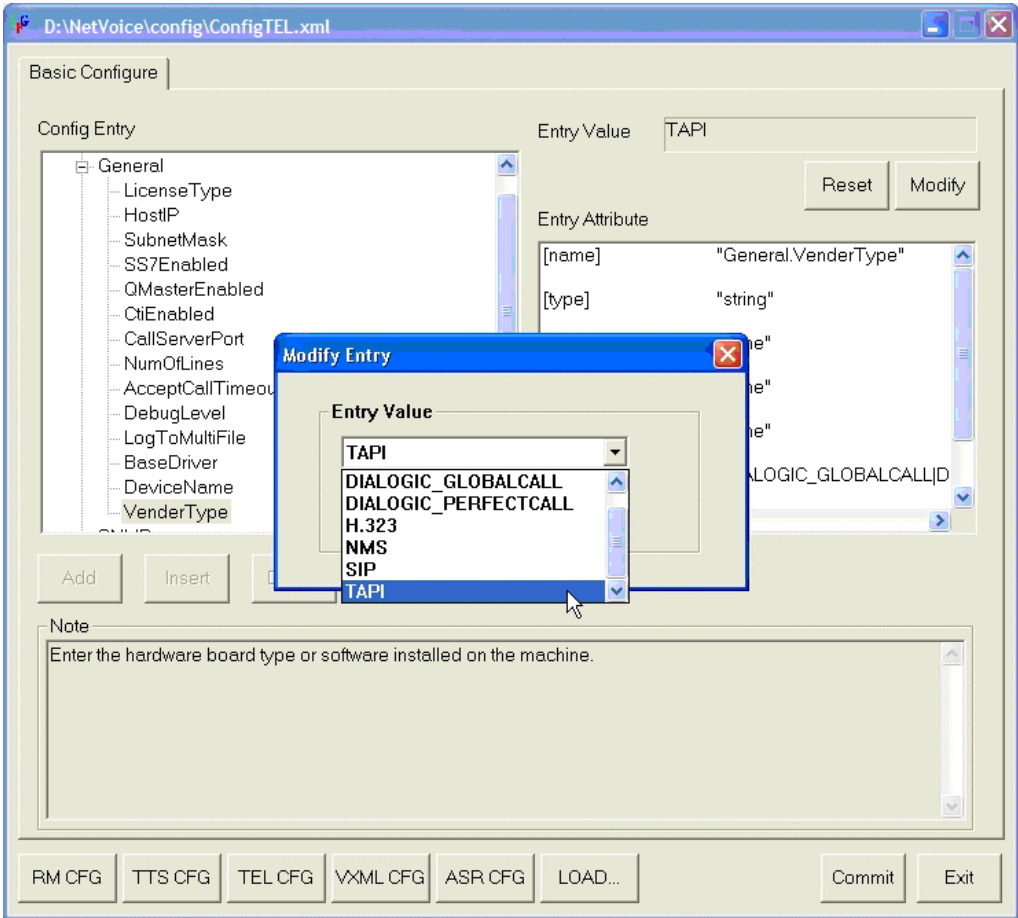
Step	Description
17.	In the Avaya IP400 WIDWOD driver Properties window that appears, click the **Properties** tab.

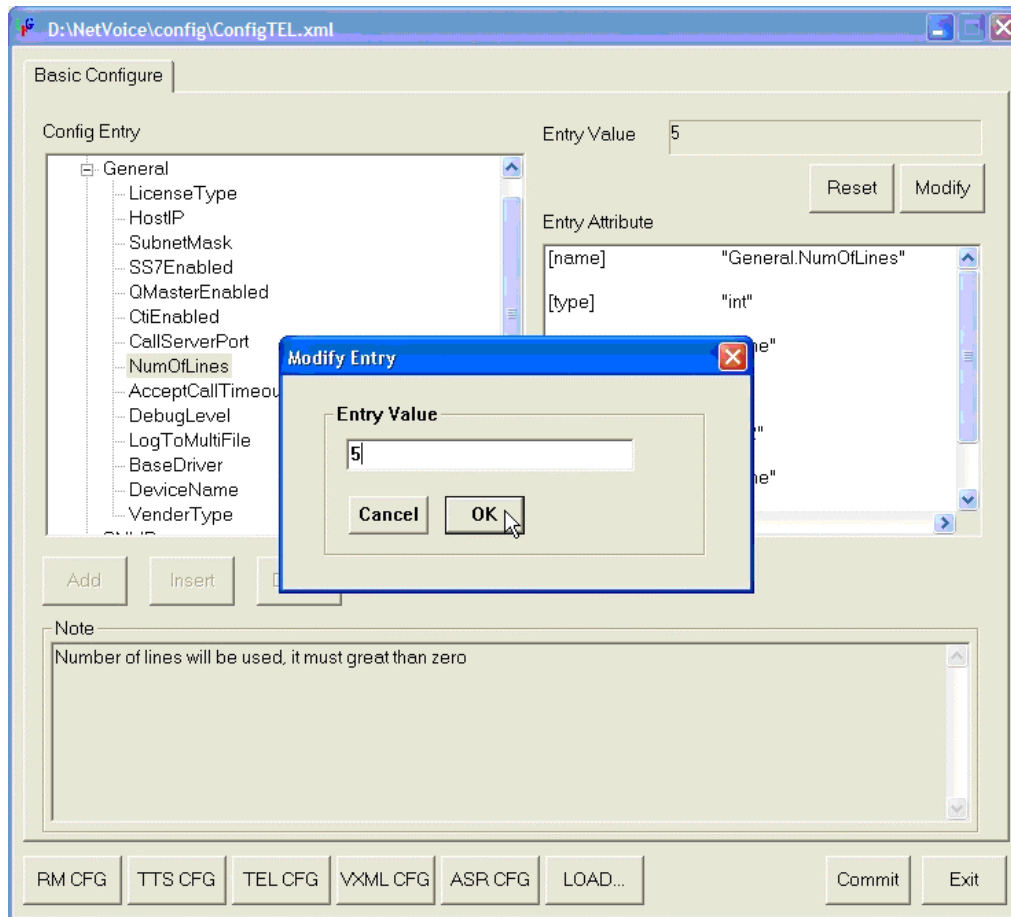| Step	Description
18.	In the Properties tab of the Avaya IP400 WIDWOD driver Properties window, double-click **Audio Devices** to reveal the Avaya IP400 WIDWOD driver and double-click **Avaya IP400 WIDWOD driver**.

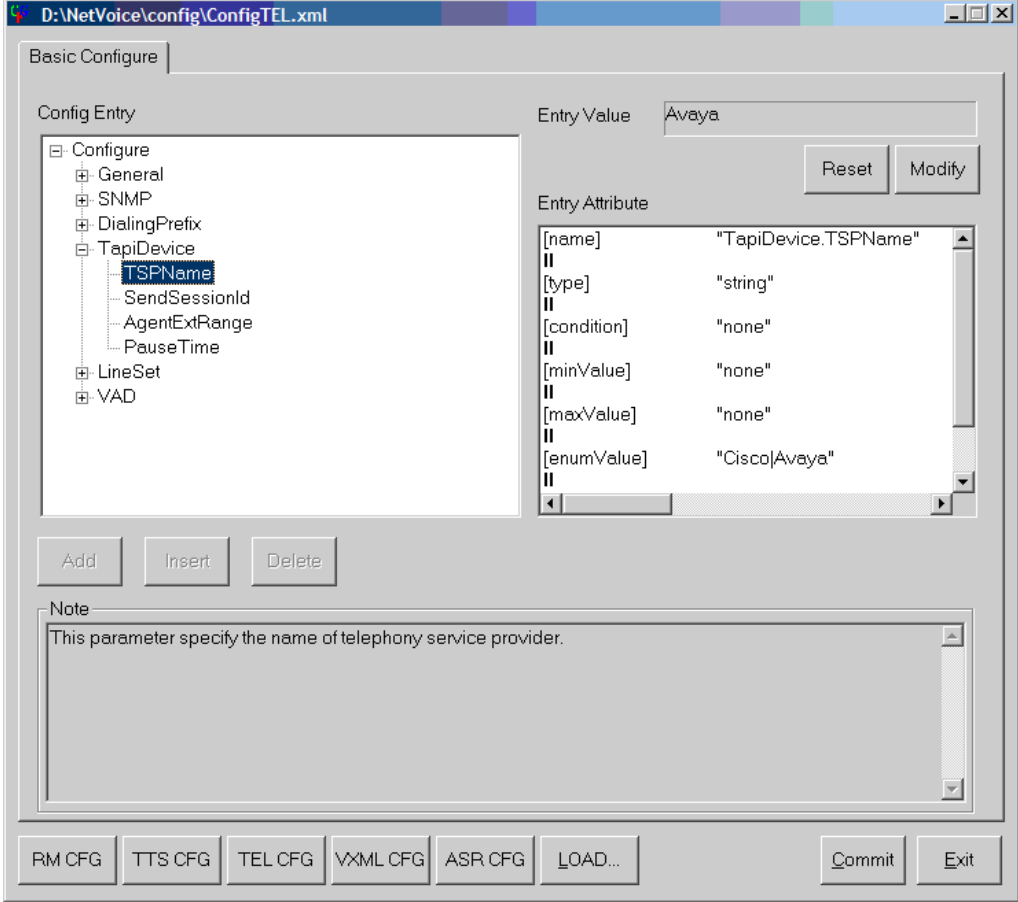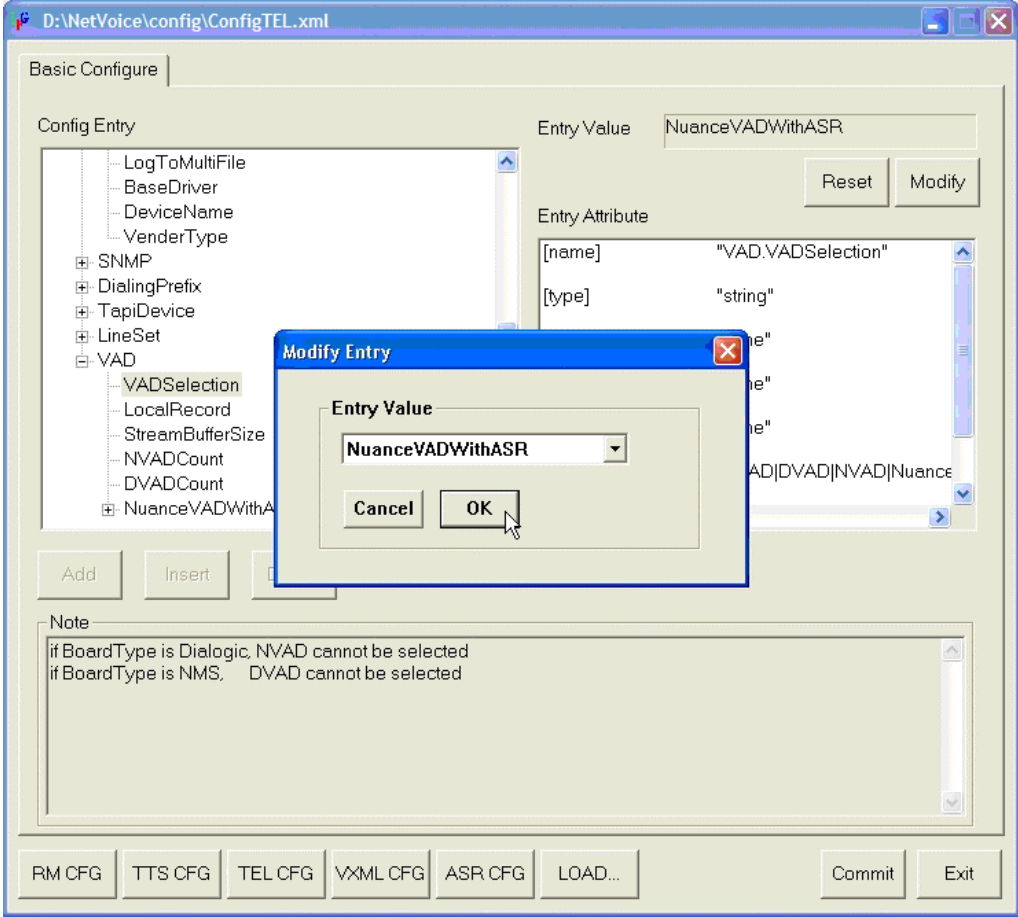| Step	Description
19.	In the Avaya IP400 WIDWOD driver Properties window that appears, check *Do not map through this device* and click **OK**.
20.	In the Changes Saved popup that appears, click **OK** and reboot the ComAssistant server so that the changes can take effect.

4.3. Configuring the eWings ComAssistant

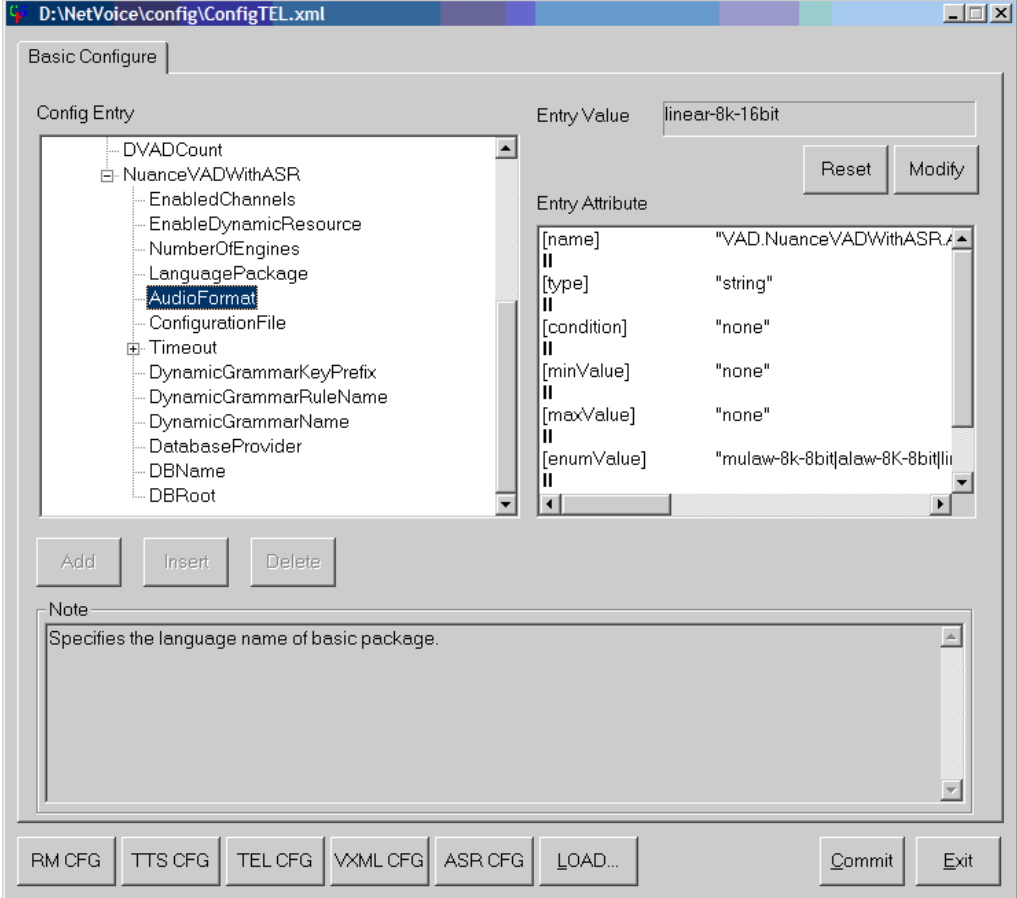| Step	Description
	Configuring PBX Connection
1.	Log in to the ComAssistant server as administrator and go to **Start → Run**. In the Run window that appears, type **D:\NetVoice\ConfigTool.exe** to execute the configuration tool.
2.	Click on **TEL CFG** and expand the node **Configure**.

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Step	Description
3.	Expand the node **General** and click on **VenderType**. Click **Modify** to set PBX connection interface. In the Modify Entry window that appears, select **TAPI** from the drop-down list and click **OK**.

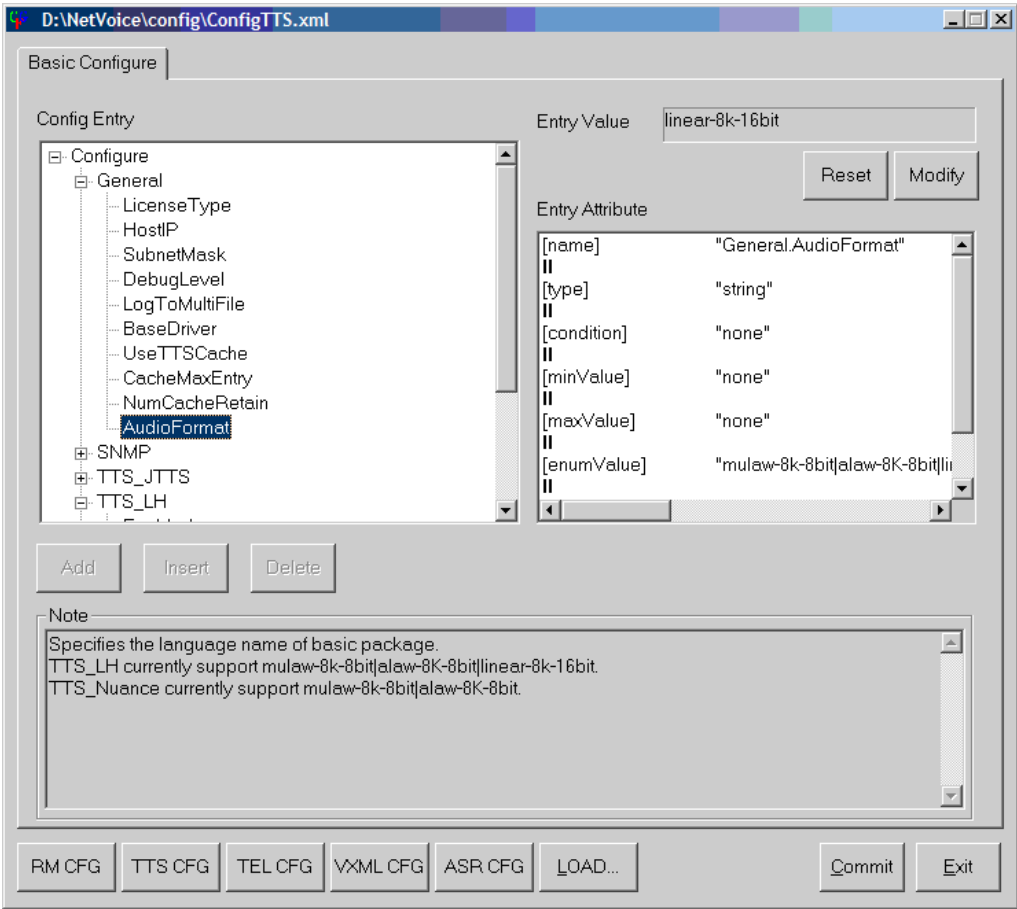| Step	Description
4.	To set the number of ports that ComAssistant will use, expand the node **General** and click on **NumOfLines**. Click **Modify** and in the Modify Entry window that appears, enter **5** (or a number corresponding to the number of TAPI Wave Extensions used by ComAssistant) and click **OK**.

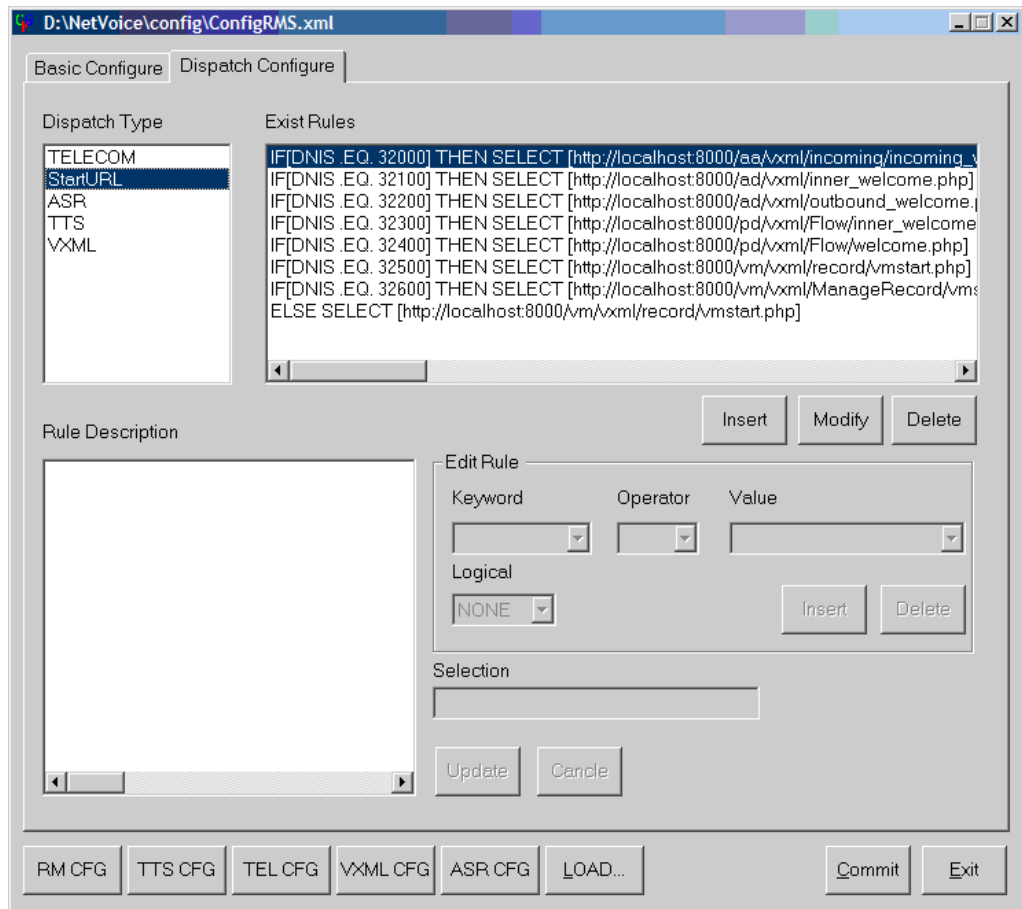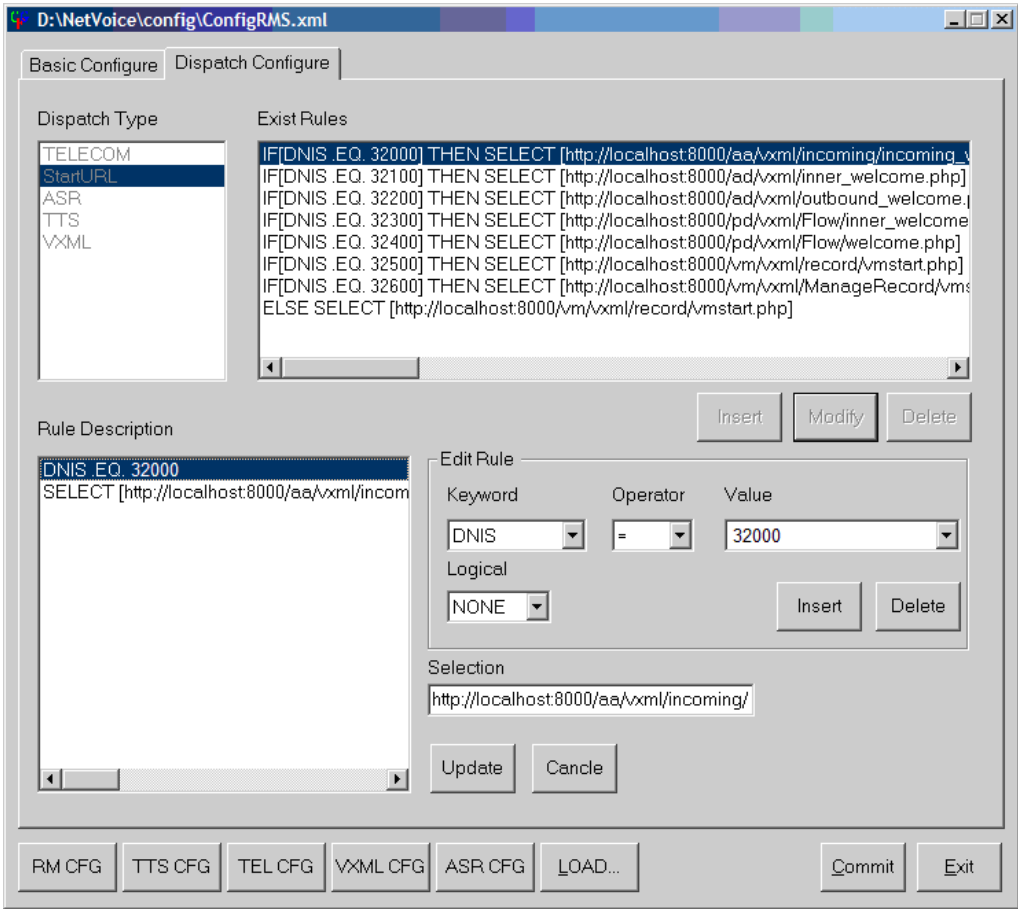| Step	Description
5.	Expand the node **TapiDevice** and click on **TSPName**. Click **Modify** and in the Modify Entry window that appears, select **Avaya** from the drop-down list and click **OK**. In the same way, set **SendSessionId** to **FALSE** and **PauseTime** to **100**. Set **AgentExtRange** to **32001-32005**, which is the range of TAPI Wave Extensions created on IP Office.

Step	Description
	Configuring TTS and ASR Audio Format
6.	Expand **VAD** to set voice activity detection and speech recognition parameters.
7.	Click **VADSelection** and then click **Modify**. In the Modify Entry window that appears, select **NuanceVADWithASR** from the drop-down list and click **OK**.
8.	Expand the node **NuanceVADWithASR** and click on **EnableDynamicResource**. Click **Modify** and select **TRUE**.
9.	Click on **NumberOfEngines**. Click **Modify** and type the number of ASR port purchased for the system.

Step	Description
10.	Click on **AudioFormat**. Click **Modify** and in the Modify Entry window that appears, select **linear-8k-16bit** from the drop-down list and click **OK**.

Note 2: IP Office supports only linear-8k-16bit audio format.

Step	Description
11.	Click on **TTS CFG** and expand the node **Configure**. Expand the node **General** and click on **AudioFormat**. Click **Modify** and in the Modify Entry window that appears, select **linear-8k-16bit** from the drop-down list and click **OK**. ![TTS Config window screenshot showing ConfigTTS.xml Basic Configure tab with Config Entry tree, Entry Value linear-8k-16bit, and Entry Attributes] **Note 3**: IP Office supports only linear-8k-16bit audio format.
12.	Click **Commit** to apply and save all configurations. Restart the ComAssistant system services to activate the changes.
	Configuring Call Route Rules
13.	Log in to the ComAssistant server as administrator and go to **Start → Run**. In the Run window that appears, type **D:\NetVoice\ConfigTool.exe** to execute configuration tool.

Step	Description
14.	Click on **RM CFG** and click on the tab **Dispatch Configure**. Select **StartURL** in the *Dispatch Type* list. eWings ComAssistant is a VoiceXML platform and uses the web technology to provide service. The VoiceXML start URL for each service is as follows: • Auto Attendant Service URL http://localhost:8000/aa/vxml/incoming/incoming_welcome.php • Auto Dialer Internal Service URL http://localhost:8000/ad/vxml/inner_welcome.php • Auto Dialer External Service URL http://localhost:8000/ad/vxml/outbound_welcome.php • Personal Dialer Internal Service URL http://localhost:8000/pd/vxml/flow/inner_welcome.php • Personal Dialer External Service URL http://localhost:8000/pd/vxml/flow/welcome.php • Voice Message Recording Service URL http://localhost:8000/vm/vxml/Record/vmstart.php • Voice Message Retrieval Service URL http://localhost:8000/vm/vxml/ManageRecord/vmstart.php

Step	Description
15.	In the *Exist Rules* list, select the rule for Auto Attendant Service and click **Modify**. Set *Keyword* to **DNIS**, *Operator* to = and *Value* to **32000**. This must correspond to the extension assigned to the Hunt Group **Main** on IP Office. Then click on **Update**.
16.	Repeat Step 15 for the rest of the ComAssistant services.
17.	Click **Commit** to apply and save all configurations.
18.	Click **Basic Configure** to check the DNIS number table. Expand the node **DNIS1** and select **Callee**. Click **Modify** to change the value to *** (star)** and click **Commit** to save the setting.

Step	Description
19.	Using Internet Explorer, login to the ComAssistant Administration Interface. Set **Integration PBX Type** to **Avaya Media Server**. Set the **Transfer Type** to **Supervised Transfer**. Click **Submit**.

5. Interoperability Compliance Testing

The Interoperability Compliance Testing included basic TAPI interworking and feature functionality testing only. Performance load testing was not performed. Feature functionality testing examined the ComAssistant's ability to properly transfer inbound and internal calls to the appropriate destination extension (digital, IP Telephone). For Voice Mail service, the ComAssistant was tested for dial in voice recording/playback only (no voicemail call coverage testing or message waiting lamp update).

5.1. General Test Approach

Feature functionality testing was performed manually. Inbound calls were made to the IP Office system from ISDN-PRI trunks connected to the central office as well as internal extensions. The following call scenarios were tested using the test configuration diagram shown in Figure 1:

- Auto Dialer service - ability to make calls to other user extensions using speech and DTMF.
- Personal Dialer service - ability to make calls to other user extensions using speech and DTMF.
- Auto Attendant service - ability to serve incoming calls and transfer them to user extensions using speech and DTMF.
- Voice Mail service - ability to record and play back voice messages.

Results were tabulated based on whether the call was being transferred successfully to the correct extension. Voice Mail service was tested by leaving voice messages on different voice mailboxes. The voice messages were then played back and verified if they were correct.

5.2. Test Results

All test cases passed successfully.

6. Verification Steps

The following steps can be used to verify system operation after a field installation:

- Place a call to the Auto Attendant service hunt group from an IP Office extension. Verify that the Auto Attendant Welcome greeting plays and either speak a name or department, or enter a valid extension number on the IP Office system. Verify the call is transferred to the correct extension.
- Place a call to the Auto Dialer service hunt group from an IP Office extension. Verify that the Auto Dialer Welcome greeting plays and either speak a name or department, or enter a valid extension number on the IP Office system. Verify the call is transferred to the correct extension.
- Place a call to the Voice Message Recording service hunt group from an IP Office extension. Verify that the Voice Message Recording Welcome greeting plays and enter a valid mailbox extension to leave a voice message.
- Place a call to the Voice Message Retrieval service hunt group from an IP Office extension. Verify that the Voice Message Retrieval Welcome greeting plays and follow the prompts to retrieve the voice message.

7. Support

For technical support on eWings ComAssistant, contact eWings Support Team at:

- Phone: +886 (2) 27973088 Extension 1133
- Fax: +886 (2) 27973800
- Email: etac@ewingstech.com

8. Conclusion

These Application Notes describe the required configuration steps for eWings Communication Assistant to successfully interoperate with Avaya IP Office System. All test cases were completed successfully.

9. Additional References

The following documents can be found at http://support.avaya.com:

- Avaya IP Office CTI Link Installation Manual, 40DHB0002UKAB – Issue 5 (28th October 2003)
- Avaya IP Office 3.0 Installation Manual, 40DHB0002UKCL Issue 12c (24th February 2005)
- Avaya IP Office Manager 3.0 Manual, Issue 16f (8th February 2005)

The following documents are available from eWings:

- eWings ComAssistant 1.3 Installation Guide
- eWings ComAssistant 1.3 Administration Guide
- eWings ComAssistant 1.3 User Guide

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