



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for Configuring Sonexis ConferenceManager with Avaya IP Office using an H323 Trunk – Issue 1.0**

### **Abstract**

These Application Notes describe the procedure for configuring Sonexis ConferenceManager to interoperate with Avaya IP Office using a H323 trunk.

Sonexis ConferenceManager is an in-house audio conferencing bridge that eliminates the costly pay-as-you-go fees of subscription-based services. Sonexis ConferenceManager is designed to work within existing voice and data networks — and available with a fully integrated Web conferencing option

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 Sonexis ConferenceManager (herein referred to as ConferenceManager) to interoperate with Avaya IP Office.

ConferenceManager is an in-house audio conferencing bridge that eliminates the costly pay-as-you-go fees of subscription-based services. ConferenceManager is designed to work within existing voice and data networks, and ConferenceManager is available with a fully integrated Web conferencing option.

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.

- H323 trunk configuration in IP Office
- Short Code for call route
- Incoming Call Route

## 2. General Test Approach and Test Results

The general test approach was to place calls to and from ConferenceManager. The main objectives were to verify the following:

- Inbound calls
- Outbound calls
- Hold / Resume
- Call termination (origination/destination)
- Transfer (blind/consult)
- Conference (client initiated/host initiated)
- DTMF
- ANI/DNIS

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.

### 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 ConferenceManager and Avaya IP Office.

## 2.2. Test Results

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

## 2.3. Support

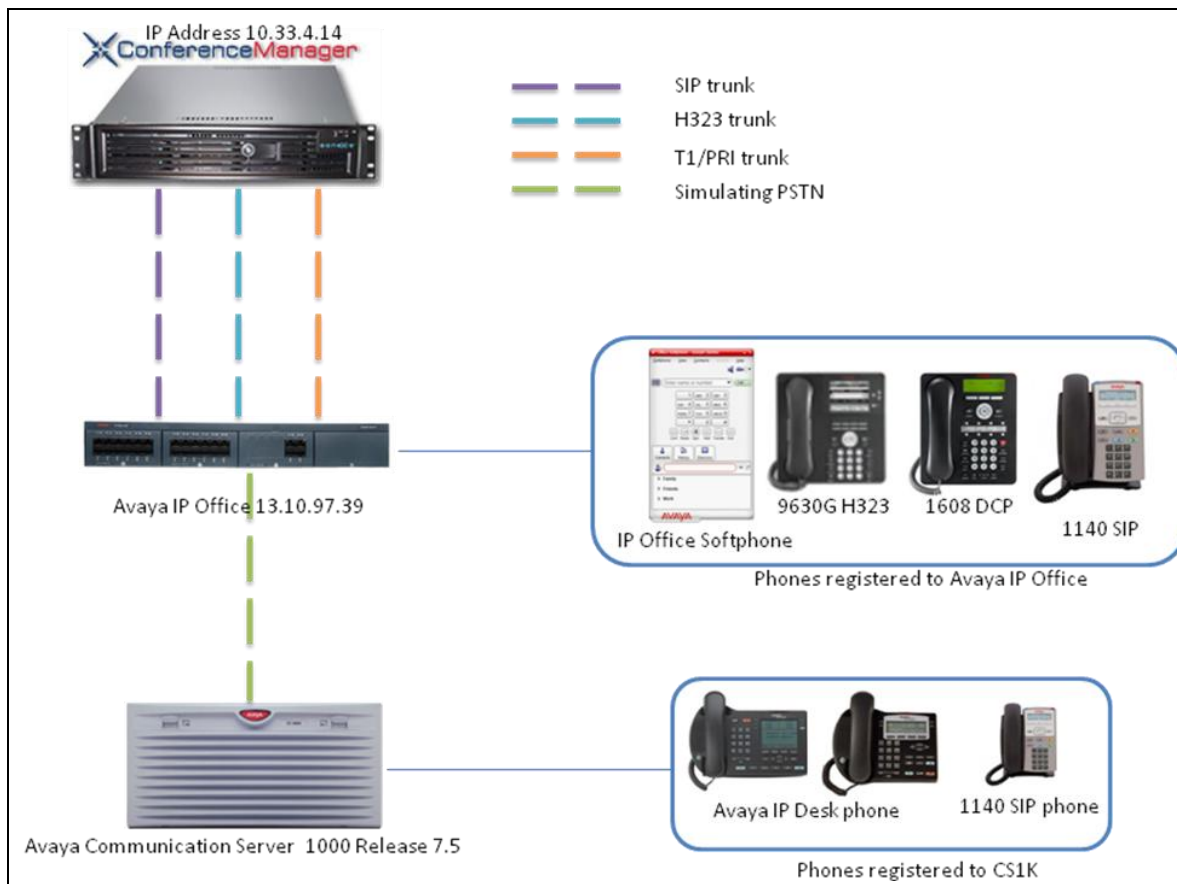
Technical support for the ConferenceManager solution can be obtained by contacting Sonexis:

- URL – [CustomerCare@sonexis.com](mailto:CustomerCare@sonexis.com)
- Phone – (866) 676-6394

## 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 an Avaya 9630G H323, 1608 DCP, 1140E SIP and IP Office Softphone on IP Office.

*Note: An Avaya Call Server 1000 Release 7.5 was included to simulate the PSTN call.*



**Figure 1: Test Configuration of Sonexis ConferenceManager**

## 4. Equipment and Software Validated

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

Equipment		Software/Firmware
Avaya IP Office 500 V2		8.1(63)
Avaya IP Office Manager on Windows XP Professional 2002 with SP3		9.0(3)
Avaya Call Server 1000 Release 7.5		7.5
Avaya Telephones on IP Office		
	9630G H323	3.1.05
	1140E SIP	04.03.12
	IP Office Softphone on IP Office	
Avaya 1608 Digital Telephone		-
Avaya Phones (simulating PSTN phones)		
	1140E (SIP)	04.03.12
	i2004 IP	0602B76
Sonexis on Windows Server 2008 with SP 2		10.1.35.0

## 5. Configure Avaya IP Office

This section describes the steps required for configuring Avaya IP Office. During the compliance test, a H323 trunk was utilized between Avaya IP Office and ConferenceManager.

The procedures include the following areas:

- Configure LAN interface
- Enable H323 Gatekeeper
- Create the static H323 line
- Configure a short code to route calls through the H323 trunk
- Create an Incoming Call Route for the Inbound calls

These steps are performed from the Avaya IP Office Manager.

## 5.1. Configure LAN interface

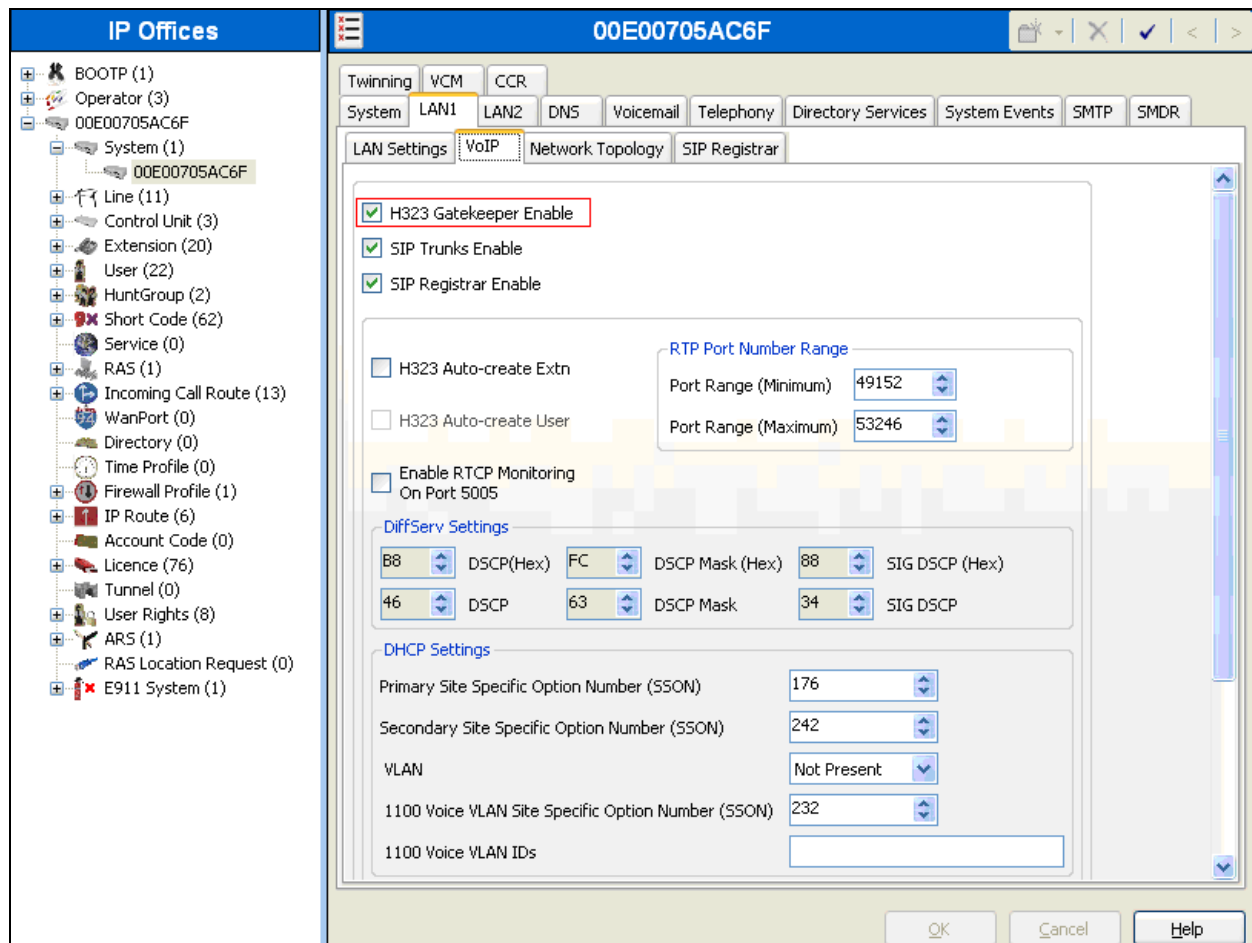
From the configuration tree in the left pane, select **System** to display the System screen in the right pane. Click the **LAN1** tab. Under the **LAN1** tab, select the **LAN Settings** sub-tab, and provide **IP Address** and **IP Mask**.

The screenshot displays the Avaya configuration interface. On the left, the 'IP Offices' tree shows a hierarchy starting with 'System (1)'. The main window is titled '00E00705AC6F\*' and contains several tabs: 'VCM', 'CCR', 'System', 'LAN1', 'LAN2', 'DNS', 'Voicemail', 'Telephony', 'Directory Services', 'System Events', 'SMTP', 'SMDR', and 'Twinning'. The 'LAN1' tab is selected, and within it, the 'LAN Settings' sub-tab is active. The 'IP Address' field is set to '10 . 64 . 44 . 21' and the 'IP Mask' field is set to '255 . 255 . 255 . 0'. Other fields include 'Primary Trans. IP Address' (0 . 0 . 0 . 0), 'RIP Mode' (None), 'Enable NAT' (unchecked), and 'Number Of DHCP IP Addresses' (200). The 'DHCP Mode' section has four radio buttons: 'Server', 'Client', 'Dialin', and 'Disabled' (which is selected). An 'Advanced' button is located to the right of the DHCP Mode section. At the bottom right, there are 'OK', 'Cancel', and 'Help' buttons.

## 5.2. Enable H323 Gatekeeper

Under the **LAN1** tab, select the **VoIP** sub-tab and verify the **H323 Gatekeeper Enable** 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.



### 5.3. Create a 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**, using the drop-down menu. Enter an appropriate **Incoming Group ID**, **Outgoing Group ID**, **Number of Channels**, **Outgoing Channels**, and **Voice Channels**.

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

The screenshot shows the 'H323 Line - Line 25' configuration window. The left pane, titled 'IP Offices', shows a tree structure with 'Line (11)' expanded, listing lines 1 through 27. Line 25 is highlighted. The main pane has tabs for 'VoIP Line', 'Short Codes', and 'VoIP Settings'. The 'VoIP Line' tab is active, showing fields for 'Line Number' (25), 'TEI' (0), 'Telephone Number', 'Incoming Group ID' (25), 'Prefix', 'National Prefix', 'International Prefix', 'Outgoing Group ID' (25), 'Number of Channels' (24), 'Outgoing Channels' (24), and 'Voice Channels' (24). Red boxes highlight the 'Line Number', 'Incoming Group ID', and the 'Outgoing' fields. The 'OK', 'Cancel', and 'Help' buttons are at the bottom right.

Field	Value
Line Number	25
TEI	0
Telephone Number	
Incoming Group ID	25
Prefix	
National Prefix	
International Prefix	
Outgoing Group ID	25
Number of Channels	24
Outgoing Channels	24
Voice Channels	24

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

- **Gateway IP Address** – Enter the IP address of the far-end H323 termination point.
- **Compression Mode** – Select **G.711 ULAW 64K**, using the drop-down menu.
- **Supplementary Services**– Select **H450**, using the drop-down menu. To work with ConferenceManager, IP Office should select **H450** as a **Supplementary Services** to enable the fast start option.
- Check the following check boxes
  - **Enable Fast Start**
  - **Out of Band DTMF**
- Make sure the **Allow Direct Media Path** field is not checked. For the H323 trunk solution, ConferenceManager only supports **Shuffling Off** (no direct media path).

Click on the **OK** button.

The screenshot displays the IP Office configuration window for 'H323 Line - Line 25'. The left sidebar shows a tree view of the system configuration, including IP Offices, BOOTP, Operator, System, Line, Control Unit, Extension, User, HuntGroup, Short Code, Service, RAS, Incoming Call Route, WanPort, Directory, and Time Profile. The main window is divided into three tabs: 'VoIP Line', 'Short Codes', and 'VoIP Settings'. The 'VoIP Settings' tab is selected, and the following settings are visible:

- Gateway IP Address:** 10 . 64 . 43 . 254
- Compression Mode:** G.711 ULAW 64K
- Supplementary Services:** H450
- Enable Fast Start:** ☒
- Out Of Band DTMF:** ☒
- Allow Direct Media Path:** ☐
- VoIP Silence Suppression:** ☐
- Fax Transport Support:** ☐
- Local Tones:** ☐
- Default Name From Display:** ☐
- Support LRQs:** ☐
- SCN Backup Options:**
  - ☐ Backs up my IP Phones
  - ☐ Backs up my Hunt Groups
  - ☐ Backs up my Voicemail
- Call Initiation Timeout (s):** 4
- LRQ Subnet:** 0 . 0 . 0 . 0

The **OK** button is highlighted with a red box at the bottom right of the window.



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

Select **Short Code** in the left panel. Right click and select **Add**. Enter **77301** in the **Code** field; where extension **77301** will be routed to ConferneceManager. Select **Dial** for the **Feature** field. Enter **.** for the **Telephone Number** field. Enter the **Outgoing Group** number created in **Section 5.3** for the **Line Group Id** field. Use default values for all other fields.

Click on the **OK** button.

*Note: When extension 77031 was dialed, the call routed thru the H323 trunk 25.*

## 5.5. Create an Incoming Call Route for the Inbound H323 Calls

Select **Incoming Call Route** in the left pane. Right-click and select **New**.

Enter the following:

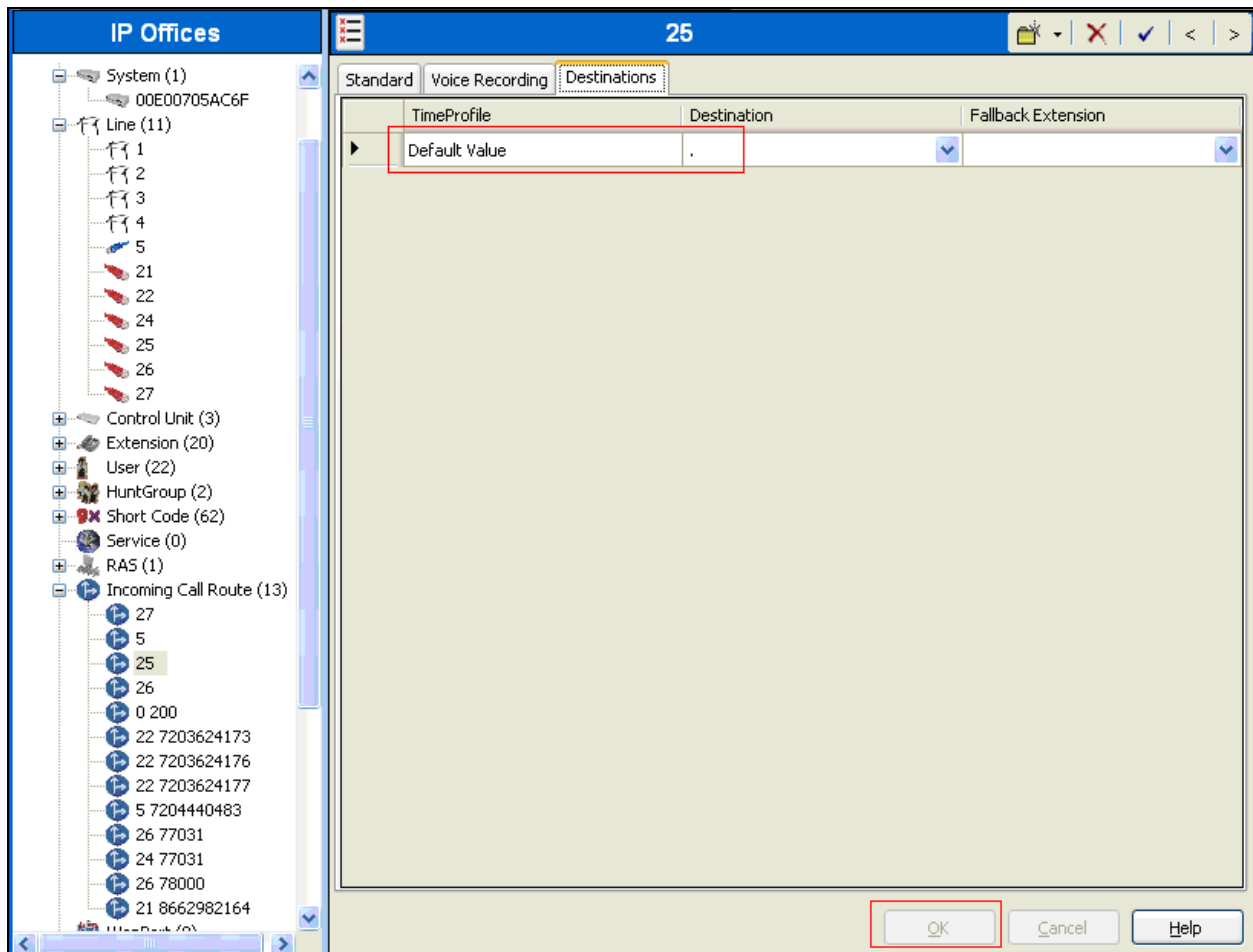
- **Any Voice** for the **Bearer Capability** field.
- Enter the **Incoming Group** number created for the URI in **Section 5.3** in the **Incoming Group Id** field.
- Use default values for all other fields.

The screenshot displays the Avaya System Manager configuration window for an Incoming Call Route. The left pane shows the system hierarchy: IP Offices > System (1) > Line (11) > Incoming Call Route (13). The right pane shows the configuration for route 25. The 'Bearer Capability' is set to 'Any Voice' and 'Line Group Id' is set to '25'. Other fields like 'Incoming Number', 'Incoming Sub Address', 'Incoming CLI', 'Locale', 'Priority' (1 - Low), 'Tag', and 'Hold Music Source' (System Source) are also visible.

Field	Value
Bearer Capability	Any Voice
Line Group Id	25
Incoming Number	
Incoming Sub Address	
Incoming CLI	
Locale	
Priority	1 - Low
Tag	
Hold Music Source	System Source

Next, navigate to the **Destinations** tab and enter “.” under the **Destination** field.

Click on the **OK** button.



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 Sonexis ConferenceManager

Sonexis installs, configures, and customizes the ConferenceManager application for their end customers. Thus, this section only describes the interface configuration, so that ConferenceManager can talk to Avaya IP Office. By the request of Sonexis, the only codec tested during the compliance test was G.711MU.

The procedures for setting up ConferenceManager for a H323 trunk include the following areas:

- Installing License
- Configure Telephony

### 6.1. Install H323 Trunk license

Launch a web browser, enter <https://<IP address of ConferenceManager>:8097> in the URL, and log in with the appropriate credentials. Navigate to the **License** menu. Enter an appropriate license for H323 trunk in the **New License Key** field.

Click on the **apply** button.

*Note: During the test, Sonexis provided the licenses for SIP, H323 and PRI trunks.*

The screenshot shows the Sonexis ConferenceManager Administrator web interface in a Windows Internet Explorer browser window. The address bar shows <http://localhost:8097/>. The page title is "Sonexis ConferenceManager Administrator - ::1". The interface has a navigation bar with the following tabs: Status, Conference, Telephony, System, Network, SMTP, Alert, Date/Time, Password, **License**, Backup/Restore, Update, Logs, and Help. The main content area displays the following configuration options:

- Audio Ports Enabled: 24
- Web Ports Enabled: 24
- Audio Recording Enabled: No
- Blast Dial Enabled: No
- Multi-Language Enabled: No
- Multilevel Precedence and Preemption: No
- Current License Key: A3K4MA-APP7U3-MAAKU4P-AAJTX-LAJ333
- New License Key:
- Current Port Utilization Alert Level: 100%
- Enter the percent utilization of audio and/or web ports that will trigger an alert e-mail to the administrator.

An **apply** button is located at the bottom right of the form. The footer of the page reads: "Copyright © 2000-2011 Sonexis Technology, Inc., All rights reserved." The browser status bar at the bottom shows "Local intranet | Protected Mode: Off" and a zoom level of "100%".

## 6.2. Configure Telephony

Select the **Telephony** tab and provide the following information:

- **Dialout Gateway IP:** Enter the far-end H323 trunk termination point. During the compliance test, it should be the IP Office LAN1 IP address.
- **H.323 Type:** Set the type to **Definity**, using the drop-down menu.

Click on the **restart telephony** button.

The screenshot shows the 'Administration' section of the 'ConferenceManager' web interface, specifically the 'Telephony' tab. The interface includes a navigation bar with links: Status, Conference, Telephony, System, Network, SMTP, Alert, Date/Time, Password, License, Backup/Restore, Update, Logs, and Help. The main configuration area contains the following fields and options:

- Dialout Gateway IP:** A text input field containing '10.64.44.21'. A red box highlights this field and its description: '(Enter the IP address of your dialout gateway in order to use the dial out feature.)'
- H.323 Type:** A dropdown menu set to 'Definity'. A red box highlights this field and its description: '(Enter the prefix, if any, that must be dialed in order to get an outside line if your system is installed behind a PBX.)'
- PBX Dial-out Prefix:** An empty text input field.
- Internal Dial Length:** A text input field containing '5'. A description below it says: '(Specify the maximum number of digits for internal dialing.)'
- Dialing Plan:** A dropdown menu set to 'None'. A description below it says: '(Choose the dialing plan to format dialed numbers for outside calls.)'
- 10-digit NPAs:** An empty text input field. A description below it says: '(Specify the Area Codes for 10-digit dialing, separated with a space.)'
- 7-digit NPA:** An empty text input field. A description below it says: '(Specify the Area Code for completing 7-digit numbers.)'
- Test Dialout String:** An empty text input field.
- Display number/extension:** A checkbox that is currently unchecked. A description below it says: '(Display the dial string and extension the system would use for this dialout. The character "x" defines the start of an extension.)'

At the bottom of the page, there are two buttons: 'channel status' and 'restart telephony'. The 'restart telephony' button is highlighted with a red box. Below the buttons, the copyright notice reads: 'Copyright © 2000-2011 Sonexis Technology, Inc., All rights reserved.'

## 7. Verification Steps

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

### 7.1. Verify Avaya IP Office

From a PC running the Avaya IP Office Monitor application, select **Start → All Programs → IP Office → System Status** to launch the application. From the **Avaya IP Office System Status** screen, select **Trunks → Line 25** from the left pane and verify the trunk is **Idle** under the **Current State** field.

## 8. Conclusion

These Application Notes describe the procedures required to configure Sonexis ConferenceManager to interoperate with Avaya IP Office through a H323 trunk. Sonexis ConferenceManager successfully passed compliance testing.

## 9. Additional References

The following Avaya product documentation can be found at <http://support.avaya.com>  
[1] *IP Office R8.1 Manager 10.1*, 15-601011 Issue 29o – (03 August 2012)

Sonexis product documentation can be requested at the following site:  
<http://www.sonexis.com/access/index.asp?id=40&Program=DevConnect>

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