



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office 500 R8.1 with TigerTMS InnLine VoIPLink- Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Avaya IP Office 8.1 with TigerTMS InnLine VoIPLink 1.4.8.1.

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 compliance-tested configuration using a TigerTMS InnLine VoIPLink SIP Voicemail server and IP Office. TigerTMS InnLine VoIPLink SIP Voicemail is part of a hospitality system that provides a hotel with voicemail functionality. The voicemail feature is delivered via SIP and is connected to the IP Office as a SIP endpoint.

2. General Test Approach and Test Results

The general test approach was to configure the TigerTMS InnLine VoIPLink (InnLine VoIPLink) to communicate with the Avaya IP Office (IP Office) as implemented on a customer's premises. Feature functionality testing was performed manually. Call coverage was verified when there was no answer on a dialled extension and when dialled extension was busy. Direct access to the Voicemail system was verified with message retrieval from the extension which had message waiting. Voicemail integration with hospitality features like check-in, room transfer and check-out was verified using TigerTMS Hotel Pro. As a result of check-in, voicemail box was setup for the extension and the Message Waiting Indication (MWI) lamp was turned off. As a result of check-out, station MWI lamp was turned off and voicemail box is emptied. As a result of room transfer, the old extension's MWI lamp was turned off and voicemail was purged and new extension's MWI lamp was on and voicemail has been moved to the new extension.

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 testing included typical voicemail functions including call coverage in the following scenarios:

- Recording messages on the voicemail system
- Retrieving messages by making a direct call to the voicemail system
- MWI lamp
- Voicemail integration with hospitality features like check-in, check-out and room transfer
- Link Failure and Recovery of the IP connection.

2.2. Test Results

Tests were performed to insure full interoperability between TigerTMS InnLine VoIPLink and IP Office. The tests were all functional in nature and performance testing was not included. All the test cases passed successfully.

2.3. Support

Technical support from TigerTMS can be obtained through the following:

Phone: Technical Support Department
 +44 1425 891 090

E-mail: support@tigertms.com

3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. The InnLine VoIPLink was configured to connect to the IP Office as a SIP Endpoint. A hunt Group was configured on the IP Office so that busy and unanswered calls were diverted to the InnLine VoIPLink. The Tiger Hotel Pro package was also installed during compliance testing so as to test the MWI on/off feature of the InnLine VoIPLink when room changes were made. Digital, H323 and Soft phones were configured on the IP Office to generate intra-switch calls (calls between phones on the same system), and outbound/inbound calls to/from the PSTN. QSIG and SIP trunks were configured to connect to the PSTN.

Note: The configuration of the Tiger Hotel Pro package is outside the scope of this Application note. A separate application is available for Tiger Hotel Pro.

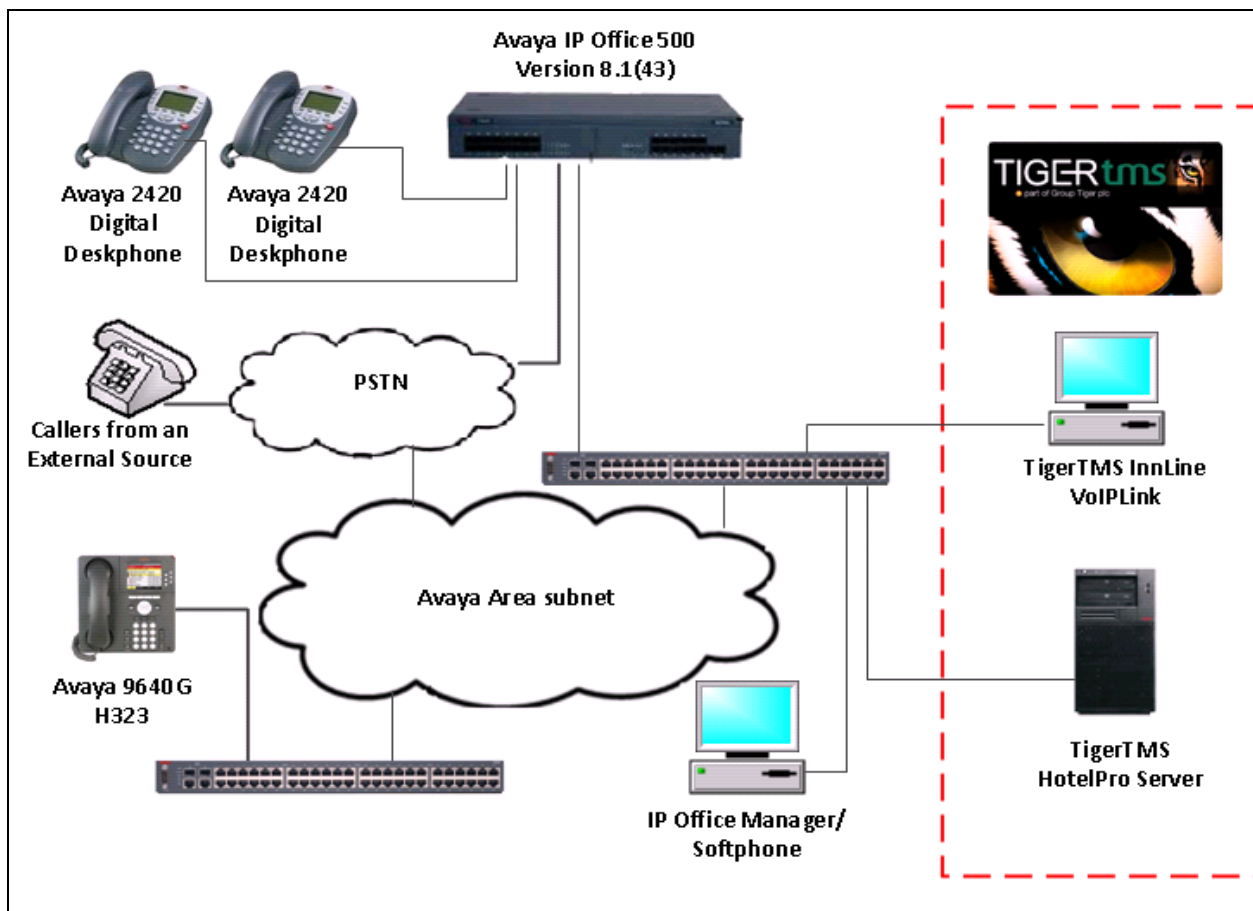


Figure 1: Avaya IP Office and TigerTMS InnLine VoIPLink Reference Configuration

4. Equipment and Software Validated

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

Avaya Equipment	Software / Firmware Version
Avaya IP Office 500	8.1(43)
Avaya 9640G IP Telephone	H323 S3.104S
Avaya 2420 Digital Telephones	--
Avaya IP Office Softphone	3.2.3.48
TigerTMS Equipment	Software / Firmware Version
TigerTMS InnLine VoIPLink running on Windows 7 Professional SP1	v1.4.8.1

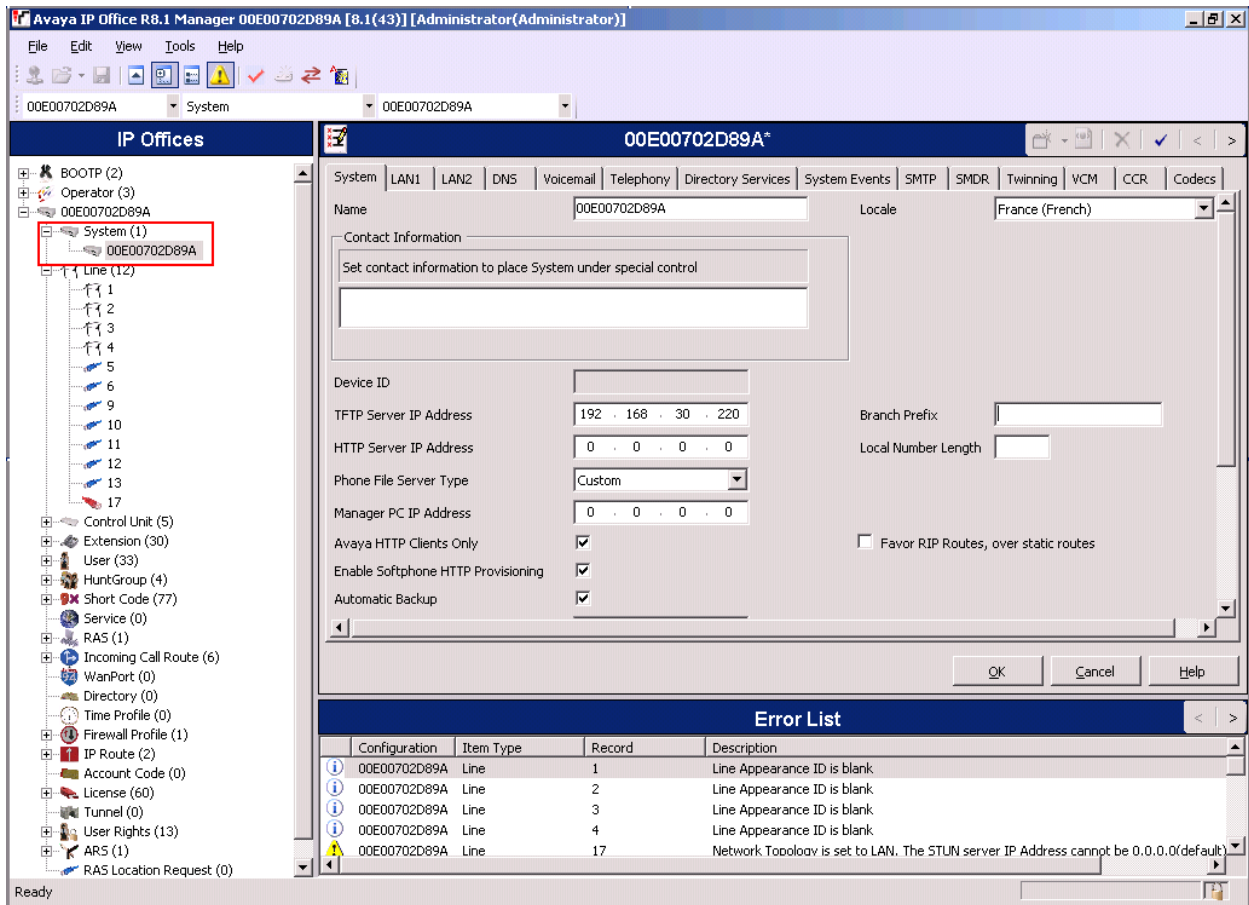
5. Avaya IP Office Configuration

Configuration and verification operations on the Avaya IP Office illustrated in this section were all performed using Avaya IP Office Manager. The information provided in this section describes the configuration of the Avaya IP Office for this solution. It is implied a working system is already in place. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 9**. The configuration operations described in this section can be summarized as follows:

- Launch Avaya IP Office Manager
- Configure UDP for LAN1
- Configure SIP Users for Voicemail
- Configure Hunt group
- Set Voicemail type
- Save Configuration

5.1. Launch Avaya IP Office Manager

From the Avaya IP Office Manager PC, go to **Start**→**Programs**→**IP Office**→**Manager** to launch the Manager application. Log in to Avaya IP Office using the appropriate credentials to receive its configuration (Not shown). In the IP Offices window expand the Configuration Tree and double-click **System**. For this compliance test the IP Office System was called 00E00702D89A



5.2. Configure UDP for LAN1

To configure UDP for LAN1 select **System**. Click on the **LAN1** tab and then **SIP Registrar** tab and enter the following:

- **Domain Name** Enter the domain (i.e., avaya.com)
- **Layer 4 protocol** Select **Both TCP and UDP** from the dropdown box.
- **TCP Port** Enter **5060**
- **UDP Port** Enter **5060**
- **Auto-create Extn/User** Check the check box

Click the **OK** button to save.

The screenshot shows a configuration window titled "00E00702D89A". The "LAN1" tab is selected, and the "SIP Registrar" sub-tab is active. The configuration fields are:

- Domain Name: avaya.com
- Layer 4 Protocol: Both TCP & UDP
- TCP Port: 5060
- UDP Port: 5060
- Challenge Expiry Time (secs): 10
- Auto-create Extn/User:

The "OK" button is highlighted with a red box.

5.3. Configure SIP Users for Voicemail

A SIP user for each voicemail extension on InnLine VoIPLink needs to be configured. This section shows the configuration for user 7001. Users 7002-7004 were also configured during compliance testing. In the Manager window, go to the Configuration Tree, right-click **User** and select **New** (Not shown) in the popup that appears enter the following:

- **Name** Enter an informative name (i.e., VoiceMail SIP)
- **Password** Enter a password used for logging in. (Required in **Section 6.1**)
- **Confirm Password** Confirm the password
- **Extension** Enter **7001**

Click the **OK** button to save.

The screenshot shows the configuration window for a SIP user named 'VoiceMail SIP: 7001'. The window has a menu bar with options: User, Voicemail, DND, ShortCodes, Source Numbers, Telephony, Forwarding, Dial In, Voice Recording, and Button Prog. The main configuration area includes the following fields and options:

- Name:** VoiceMail SIP
- Password:** (empty)
- Confirm Password:** (empty)
- Full Name:** Voicemail
- Extension:** 7001
- Locale:** (dropdown menu)
- Priority:** 5
- System Phone Rights:** None
- Profile:** Basic User
- Device Type:** Unknown SIP device

Additional options include several unchecked checkboxes: Receptionist, Enable Softphone, Enable one-X Portal Services, Enable one-X TeleCommuter, Enable Remote Worker, Enable Flare, and Ex Directory. The Flare Mode is set to Standalone. The OK button is highlighted with a red box.

5.4. Configure Hunt Group

In the Manager window, go to the Configuration Tree, right click **Hunt Group** and select **New** (Not shown) in the popup that appears and enter the Following:

- **Name** Enter an informative name (i.e., SIP VoiceMail)
- **Extension** Enter the extension of the InnLine VoIPLink (i.e., 7000)
- **Ring Mode** Select **Sequential** from the dropdown box

Click on the **Edit** button.

The screenshot shows a configuration window titled "Sequential Group SIP Voicemail: 7000". The window has several tabs: "Hunt Group", "Queuing", "Overflow", "Fallback", "Voicemail", "Voice Recording", "Announcements", and "SIP". The "Voicemail" tab is selected. The configuration fields are as follows:

- Name:** SIP Voicemail
- Extension:** 7000
- Ring Mode:** Sequential
- CCR Agent Group:**
- No Answer Time (secs):** System Default (15)
- Hold Music Source:** No Change
- Agent's Status on No-Answer Applies To:** None

Below the configuration fields is a "User List" table with columns "Extension" and "Name". The table is currently empty. At the bottom right of the window, there are two buttons: "Edit..." and "Remove". At the very bottom of the window, there are three buttons: "OK", "Cancel", and "Help".

Once the **Sequential HuntGroup Select Members** opens select the Users in the **Available Users** frame and click on the **Append** button. Repeat this for each user. Click the **OK** button.

The dialog box is titled "Sequential HuntGroup 7000 SIP Voicemail Select Members". It features a "Filters" section at the top with input fields for "Extn Name" and "Extn Number". Below this, there are two main panels: "Available Users (31/31)" and "Members (0/0)".

The "Available Users" panel contains a table with the following data:

Name	Extn
Extn79112	79112
Extn8003	8003
Extn8004	8004
IVR89125	89125
IVR89126	89126
IVR89127	89127
IVR89128	89128
Smith	8000
TAPI:500	500
TAPI:501	501
TAPI:502	502
TAPI:503	503
User 89121	89121
User 89122	89122
User 89123	89123
User 89124	89124
VoiceMail SIP	7001
Voicemail SIP1	7002
Voicemail SIP2	7003
Voicemail SIP3	7004

The "Members" panel is currently empty. Between the two panels are four buttons: "Add Before", "Add After", "Append", and "Remove". The "Append" button is highlighted with a red box. At the bottom of the dialog are three buttons: "OK", "Cancel", and "Help". The "OK" button is also highlighted with a red box.

Click on the **Queuing** tab.

Sequential Group SIP Voicemail: 7000*

Hunt Group: **Queuing** | Overflow | Fallback | Voicemail | Voice Recording | Announcements | SIP

Name: SIP Voicemail CCR Agent Group

Extension: 7000

Ring Mode: Sequential | No Answer Time (secs): System Default (15)

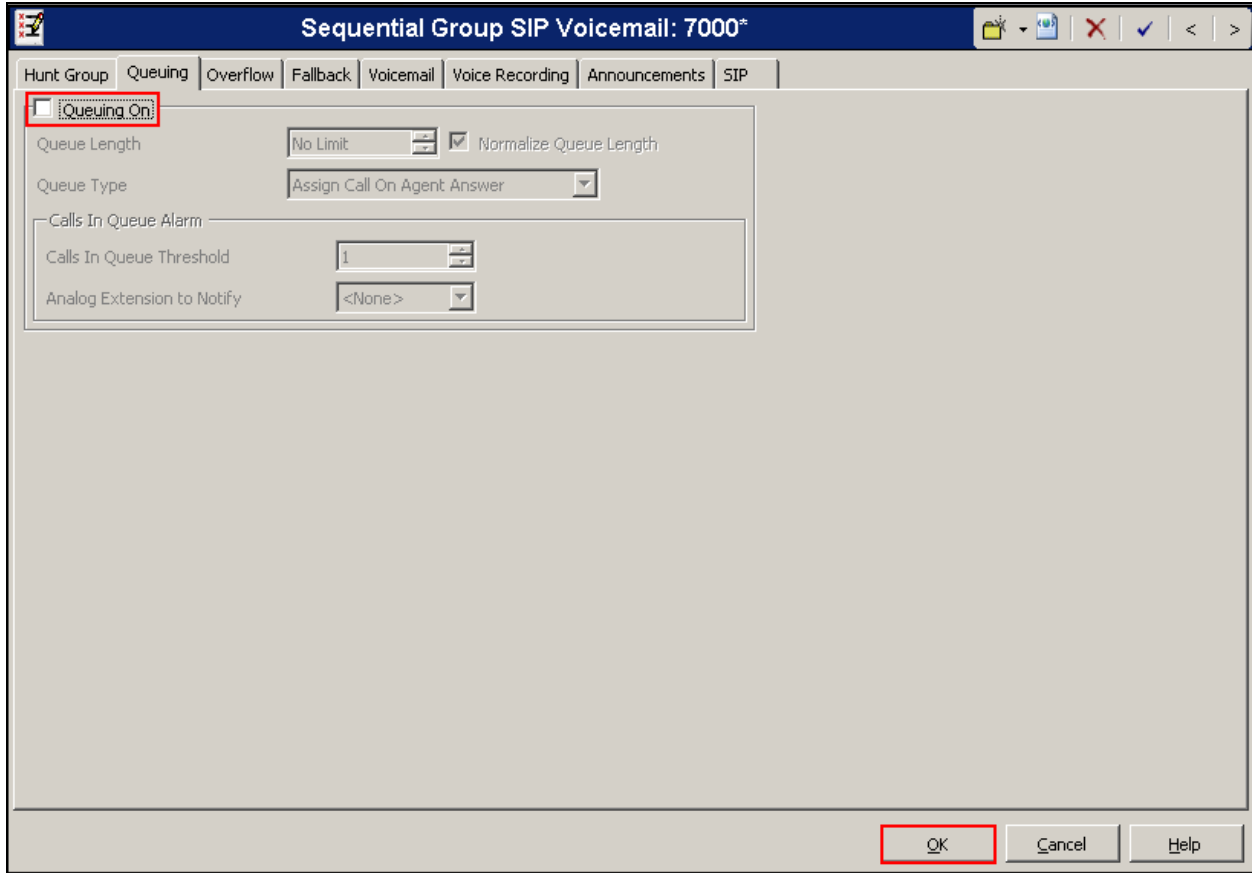
Hold Music Source: No Change

Agent's Status on No-Answer Applies To: None

User List

Extension	Name
<input checked="" type="checkbox"/> 7001	VoiceMail SIP
<input checked="" type="checkbox"/> 7002	Voicemail SIP1
<input checked="" type="checkbox"/> 7003	Voicemail SIP2
<input checked="" type="checkbox"/> 7004	Voicemail SIP3

Once the Queuing tab window opens, uncheck the **Queuing On** checkbox. Click the **OK** button.



5.5. Set Voicemail Type

In the Manager window, go to the Configuration Tree and double click **System**. Select the **Voicemail** tab and enter the following:

- **Voicemail Type** Select **Group Voicemail** from the dropdown box
- **Voicemail Destination** Select **SIP Voicemail** from the dropdown box

Click the **OK** button.

00E00702D89A*

System LAN1 LAN2 DNS **Voicemail** Telephony Directory Services System Events SMTP SMDR Twinning VCM CCR Codecs

Voicemail Type Group Voicemail Messages Button Goes To Visual Voice

Voicemail Destination SIP Voicemail

Voicemail IP Address 255 . 255 . 255 . 255

Backup Voicemail IP Address 0 . 0 . 0 . 0

Voicemail Channel Reservation

Unreserved Channels 259

Auto-Attendant 0 Voice Recording 0 Mandatory Voice Recording 0

Announcements 0 Mailbox Access 0

SIP Settings

SIP Name

SIP Display Name (Alias)

Contact

Anonymous

Call Recording

Auto Restart Paused Recording (secs) 15

Hide Auto Recording

OK Cancel Help

5.6. Create Short Codes

Create a Short Code used for set the MWI Lamp Off. In the Manager window, go to the Configuration Tree, right-click **Short Code** and select **New** (Not shown) and enter the following:

- **Code** Enter ***60*N***
- **Feature** Select **Display Msg** from the dropdown box
- **Telephone Number** Enter **N";MWL Msgs=0 OLD=0 Sav=0"**

Click **OK** button

The screenshot shows a configuration window titled "*60*N*: Display Msg". The window contains the following fields and values:

Field	Value
Code	*60*N*
Feature	Display Msg
Telephone Number	N";MWL Msgs=0 OLD=0 Sav=0"
Line Group ID	0
Locale	
Force Account Code	<input type="checkbox"/>

The "OK" button at the bottom right is highlighted with a red box.

Create a Short Code used for set the MWI Lamp On. In the Manager window, go to the Configuration Tree, right-click **Short Code** and select **New** (Not shown) and enter the following:

- **Code** Enter ***61*N***
- **Feature** Select **Display Msg** from the dropdown box
- **Telephone Number** Enter **N";MWL Msgs=1 OLD=0 Sav=0"**

Click **OK** button

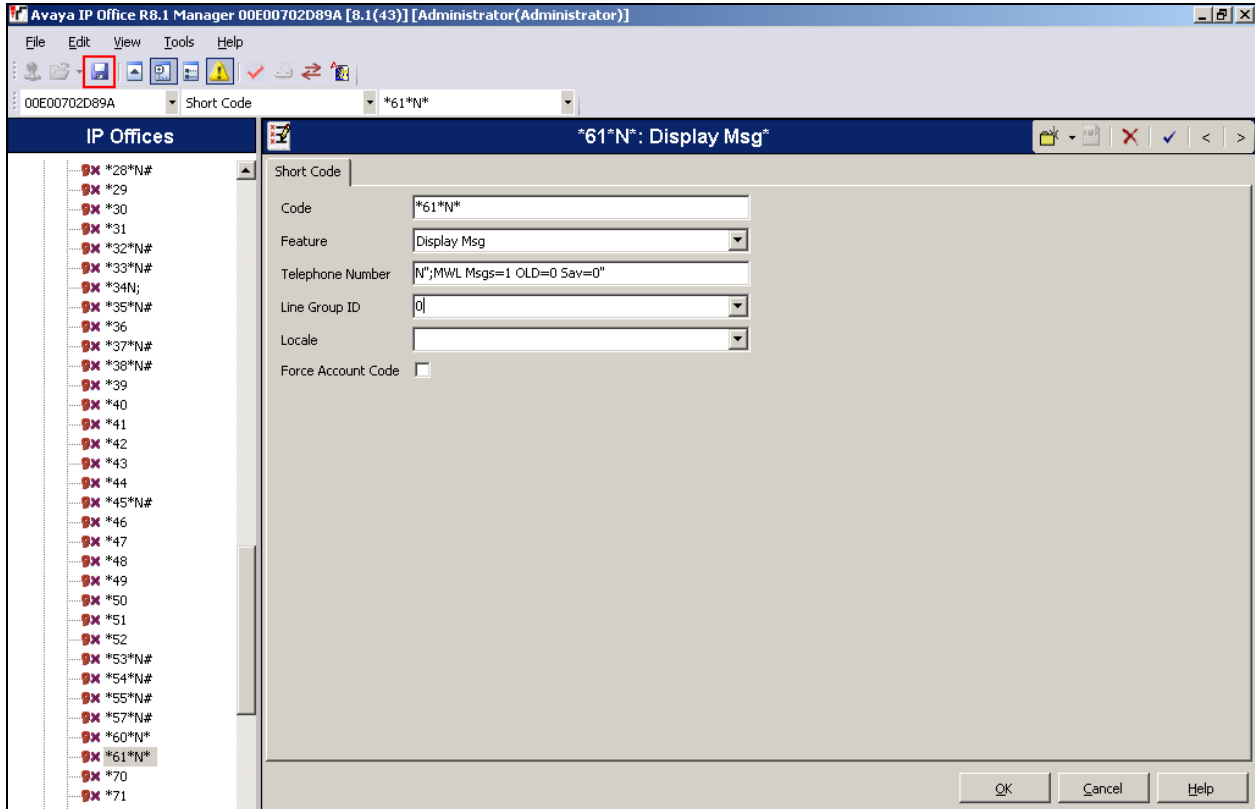
The screenshot shows a configuration window titled "*61*N*: Display Msg". The window contains the following fields and controls:

- Code:** *61*N*
- Feature:** Display Msg (selected from a dropdown menu)
- Telephone Number:** N";MWL Msgs=1 OLD=0 Sav=0"
- Line Group ID:** 0 (selected from a dropdown menu)
- Locale:** (empty dropdown menu)
- Force Account Code:**

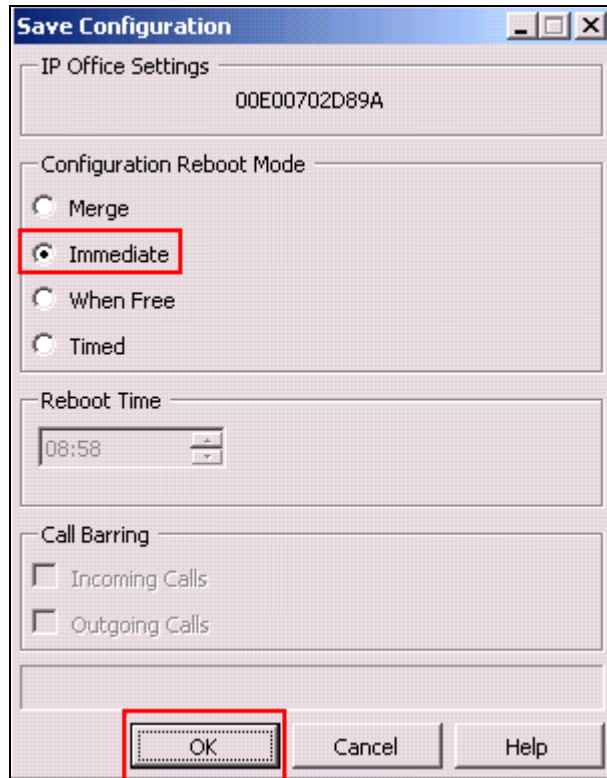
At the bottom right of the window, there are three buttons: **OK** (highlighted with a red box), **Cancel**, and **Help**.

5.7. Save Configuration

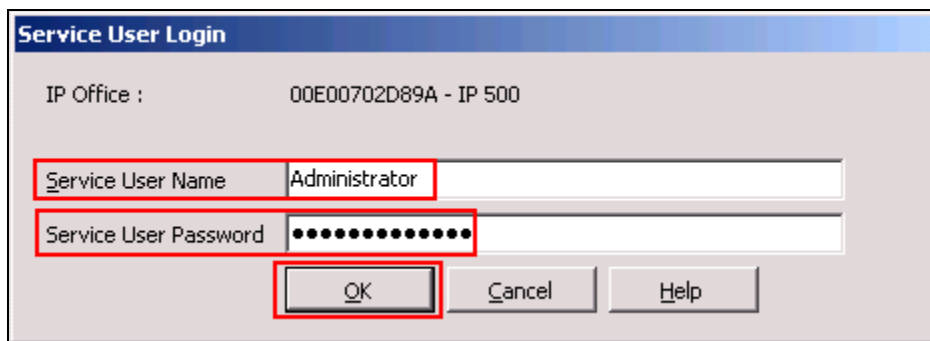
Once all the configurations have been made it must be sent to the IP Office. Click on the Save Icon as shown below.



Once the **Save Configuration** Window opens, click on the **Immediate** radio button and click the **OK** button.



When the **Service User Login** Window opens, enter the appropriate credentials and click the **OK** button.



6. Configure TigerTMS InnLine VoIPLink

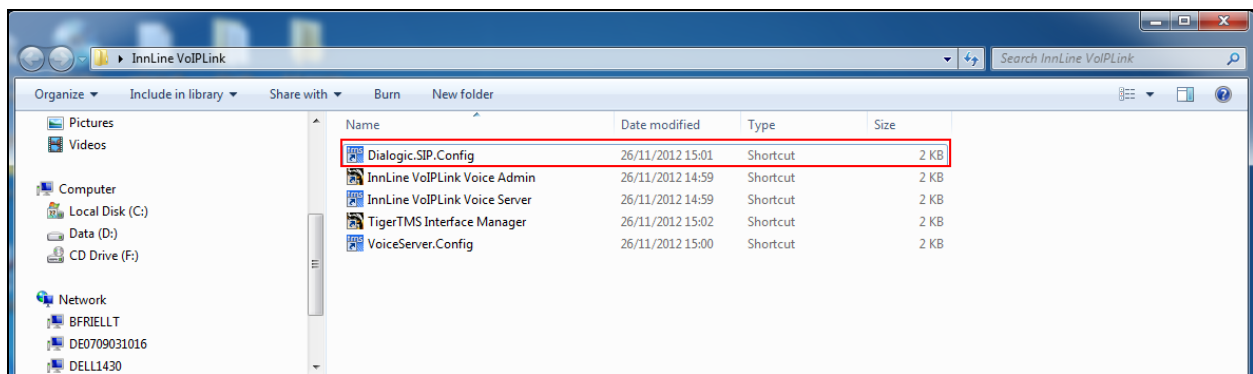
This section describes the steps performed to configure the InnLine VoIPLink. It is implied that the InnLine VoIPLink software is already installed. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 9**.

The configuration can be summarised as follows:

- Configure SIP Settings for Voicemail Server
- Configure Application Settings

6.1. Configure SIP Settings for Voicemail Server

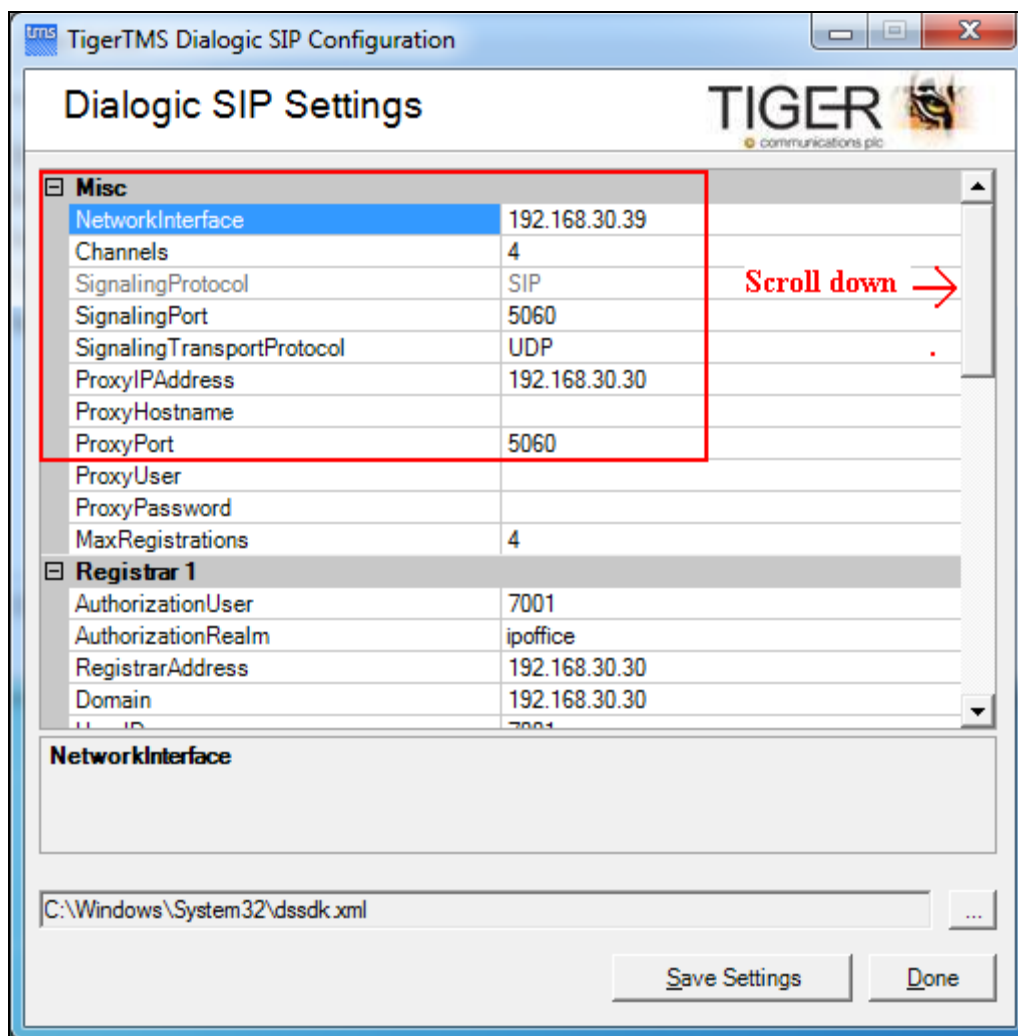
Open the **InnLine VoIPLink** folder (Not Shown) on the desktop of the server and double-click on the **Dialogic.SIP.Config** file.



Once the **Dialogic SIP Settings** window opens enter the following:

- **Network Interface** Enter the local IP address of the server on which InnLine VoIPLink resides in. (During compliance testing the server IP address was 192.168.30.39)
- **Channels** Enter **4** as the number of licensed channels
- **SignalingPort** Enter **5060**
- **SignalingTransportProtocol** Enter **UDP**
- **ProxyIPAddress** Enter the IP address of the IP Office. (During compliance testing the IP Office IP address was 192.168.30.30)
- **ProxyPort** Enter **5060**

Scroll down using the vertical scroll bar on the right side of the page to **Registrar 1**.

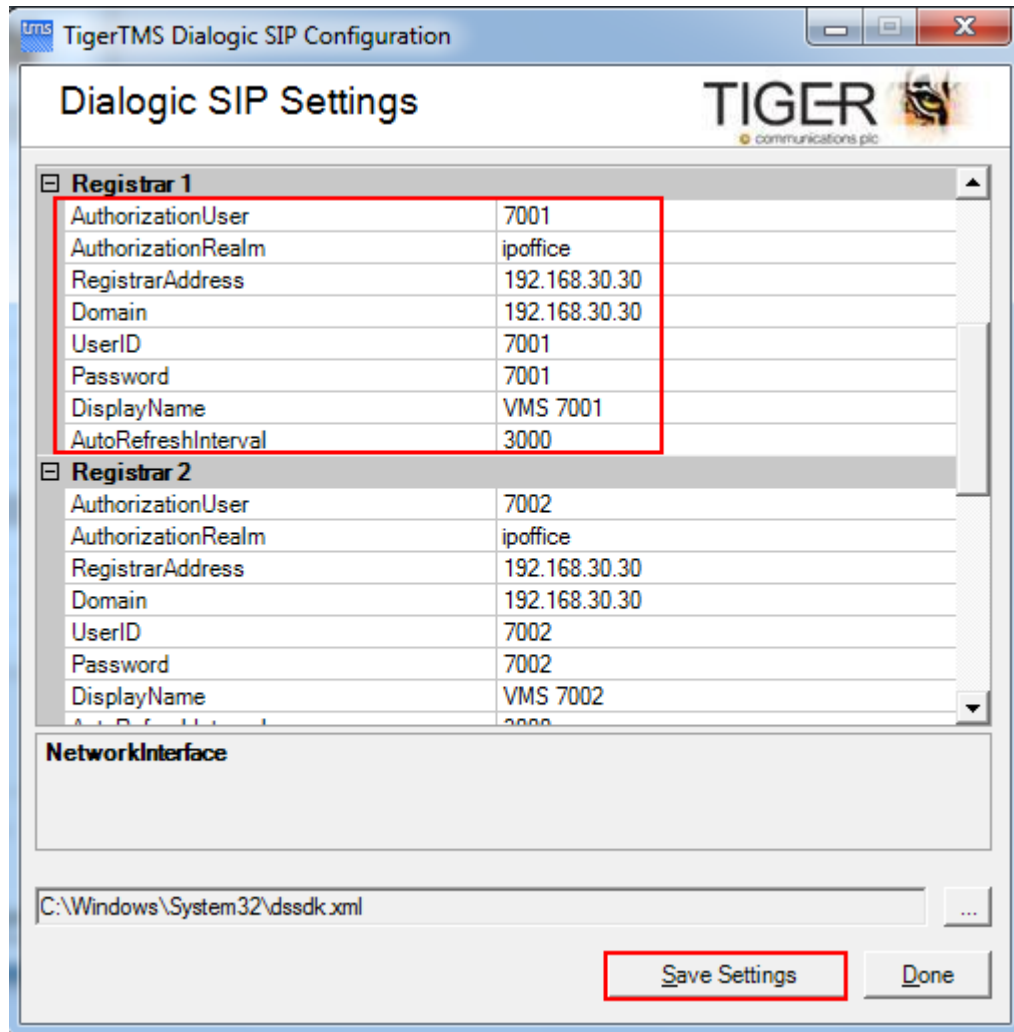


For this compliance test 4 SIP extensions were configured for InnLine VoIPLink. The example below shows the information for the first extension. Each subsequent extension needs also to be configured. The range of extension used in testing was from 7001 to 7004. For the first extension enter the following:

- **AuthorizationUser** Enter **7001**
- **AuthorizationRealm** Enter **ipoffice**
- **RegistrarAddress** Enter the IP address of the IP Office
- **Domain** Enter the IP address of the IP Office
- **UserID** Enter **7001** (configured on IPO Section 5.3)
- **Password** Enter **7001** (configured on IPO Section 5.3)
- **DisplayName** Enter **VMS 7001**
- **AutoRefreshInterval** Enter **3000**

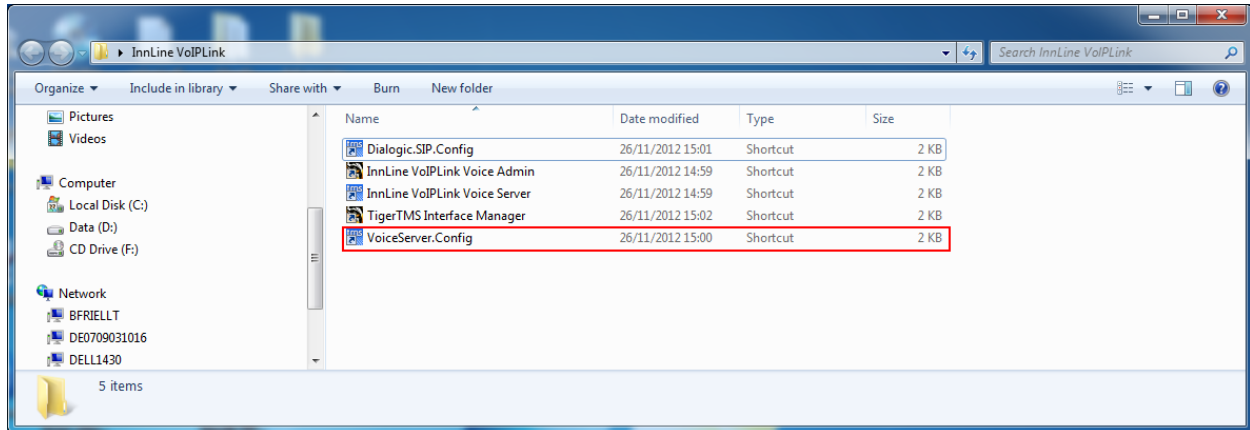
The subsequent extensions need to be similarly configured.

Click on the **Save Settings** button.

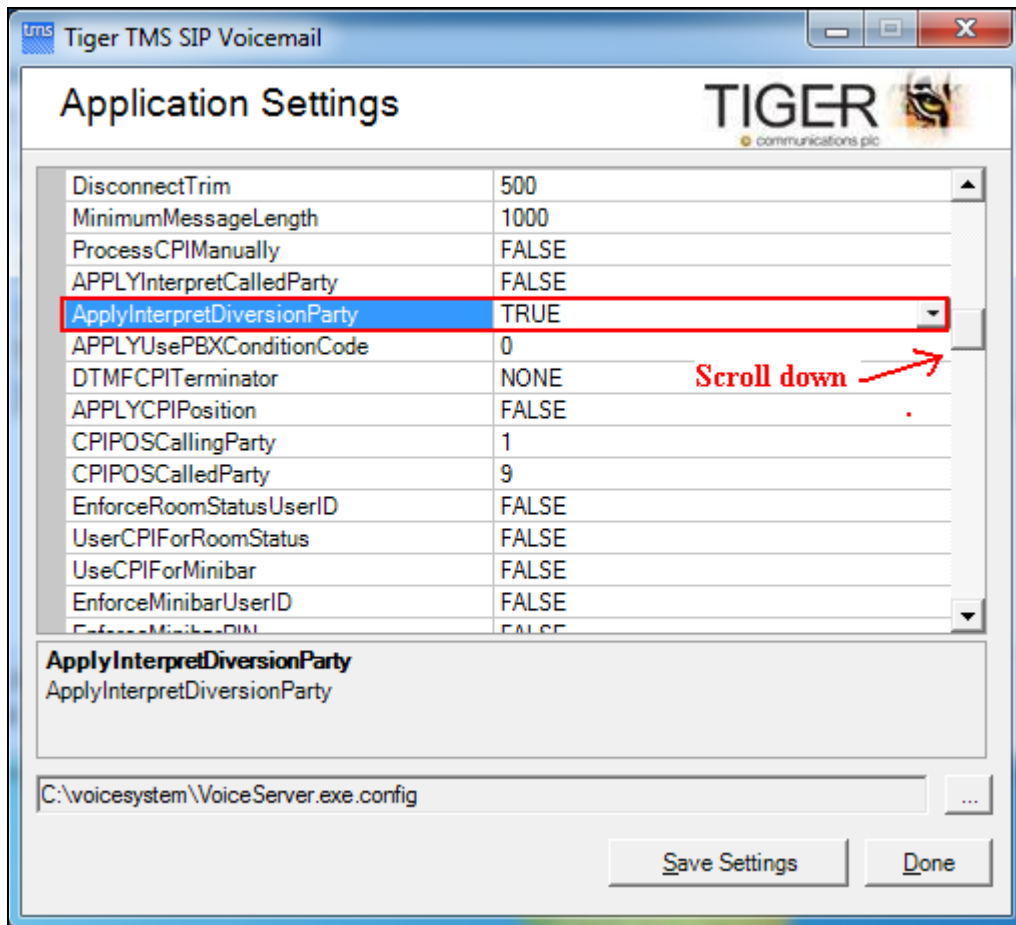


6.2. Configure Application Settings

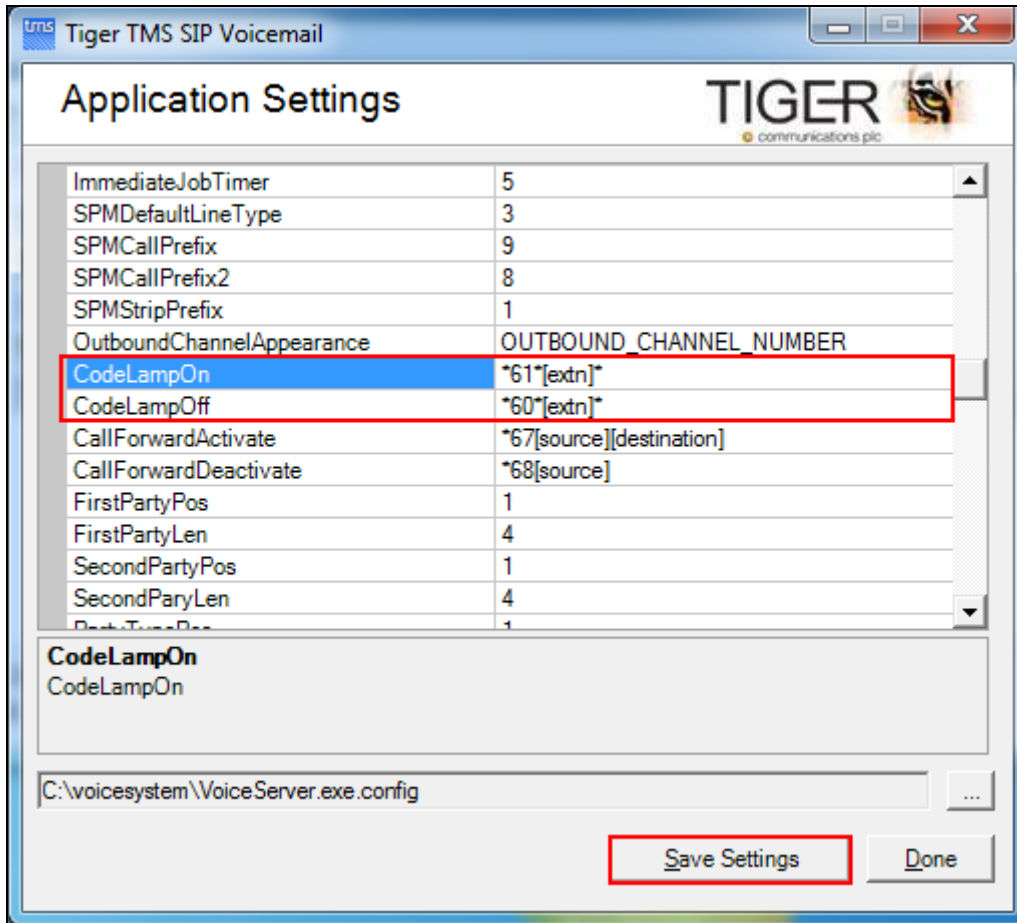
Open the InnLine VoIPLink folder (Not shown) on the desktop of the server and double-click on the **VoiceServer.Config** file.



Once the **Application Settings** have opened, select **TRUE** from the **ApplyInterpretDiversionParty** dropdown box. Scroll down using the vertical scroll bar on the right side of the page to **CodeLampOn**.



Enter the **CodeLampOn** and **CodeLampOff** to match short codes configured in **Section 5.6**. Note that [extn] is a keyword and should not be changed. Click on the **Save Settings** button.



7. Verification Steps

This section provides the tests that can be performed to verify correct configuration of the IP Office and TigerTMS InnLine VoIPLink solution.

7.1. Verify Correct Operation TigerTMS InnLine VoIPLink and MWI SIP Notify Server

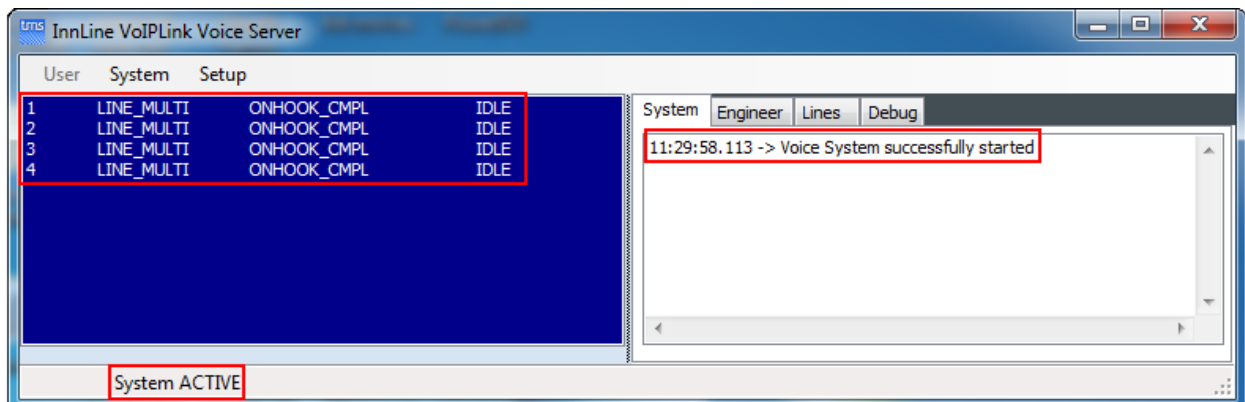
Place a call to an administered extension and allow it to go to coverage.

- Verify the InnLine VoIPLink greeting answers and leave a message
- Verify that the MWI lamp of the dialled station is turned ON

Dial the InnLine VoIPLink voicemail pilot number from an extension administered with voicemail, verify successful login, listen to voicemails and delete voicemails, verify MWI is extinguished accordingly.

7.2. Verify InnLine VoIPLink SIP Channel Status

From the InnLine VoIPLink server run the **VoiceServer.exe** and verify that the administered number of channels display an accurate status according to actual current usage. Confirm the status bar displays **System ACTIVE** and the **System** tab displays **Voice System successfully started**.



8. Conclusion

A full and comprehensive set of feature and functional test cases were performed during Compliance testing. Tiger InnLine VoIPLink 1.4.8.1 is considered compliant with Avaya IP Office 8.1. All test cases have passed and met the objectives outlined in **Section 2.2**

9. Additional References

These documents form part of the Avaya official technical reference documentation suite. Further information may be had from <http://support.avaya.com> or from your Avaya representative.

[1] Avaya IP Office R8.1 Manager 10.1, August 3rd 2012, Issue 290, Document Number 15-601011

Product Documentation for TigerTMS InnLine VoIPLink can be obtained at:

<http://www.tigertms.com>

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