



Avaya Solution & Interoperability Test Lab

Application Notes for iQ NetSolutions VistaPoint Enterprise with Avaya IP Office - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for the iQ NetSolutions VistaPoint Enterprise to successfully interoperate with Avaya IP Office. The iQ NetSolutions VistaPoint Enterprise is a complete client/server suite of computer telephony applications providing desktop call control for users. Features and functionality were validated and performance testing was conducted in order to verify operation under load. Information in these Application Notes has been obtained through interoperability compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the compliance-tested configuration utilizing Avaya IP Office 2.1(24) and iQ NetSolutions VistaPoint Enterprise 3.4.1.5.

iQ NetSolutions VistaPoint (VP) Enterprise is a complete client/server suite of computer telephony applications designed to provide end-users with desktop call control. The following VP Enterprise suite components are part of this solution:

VistaPoint Enterprise Server – a Windows based software server application connecting to the IP Office through TAPI 3rd party call control and providing IP Office connectivity to the VistaPoint companion client software.

VistaPoint Desktop Companion – a Windows based software application providing desktop call control. VP Desktop Companion provides desktop call control, desktop-to-desktop instant messaging, system-wide notes, enterprise-wide busy lamp fields (BLFs), calling party information, and much more. With VP Desktop Companion, users can see the real-time enterprise-wide BLF status of other IP Office extensions. When another user is on the phone, simply “pop” an instant message to their computer screen to get a message to them.

VistaPoint Console Companion – an application including all the capabilities of VP Desktop Companion with additional features designed specifically for system operators and supervisors.

VistaPoint Companion for Outlook – an optional application plug-in for the professional who uses Microsoft Outlook as a key tool for conducting day-to-day business. It provides the ability to seamlessly navigate between VP Companion’s functions and Outlook. A telephony call control toolbar within Outlook makes it easy to place calls, transfer, conference, and perform a variety of other call control functions from within Outlook. Users can also configure screen pops and place calls from within Outlook Contacts.

The tested configuration is shown in **Figure 1**.

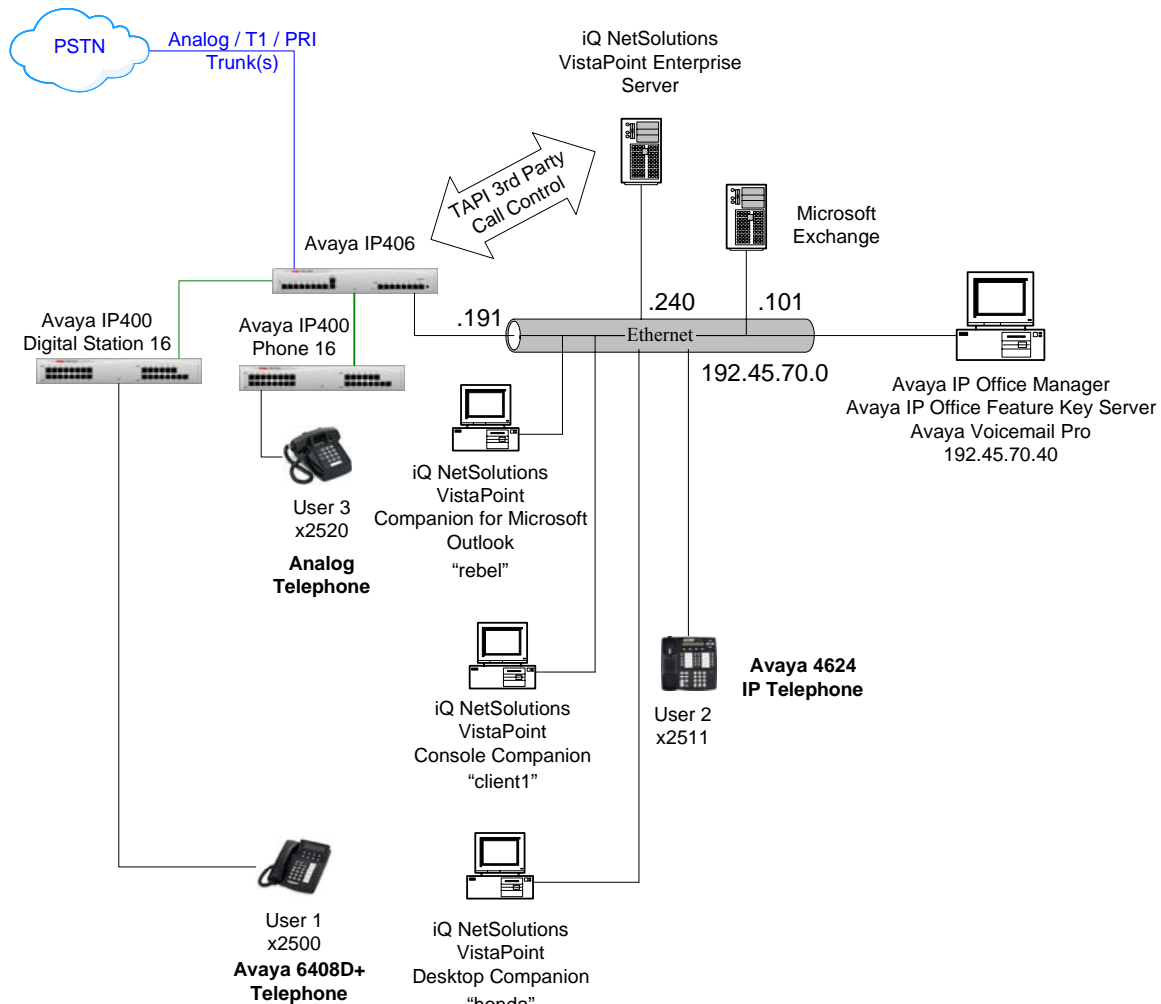


Figure 1: iQ NetSolutions VistaPoint Enterprise and Avaya IP Office Configuration

2. Equipment and Software Validated

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

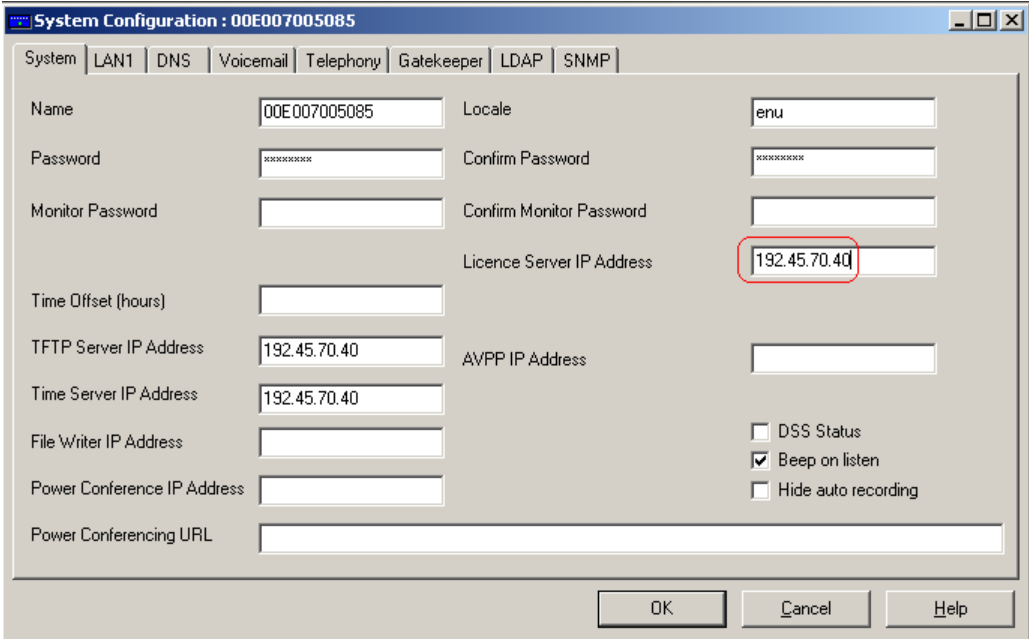
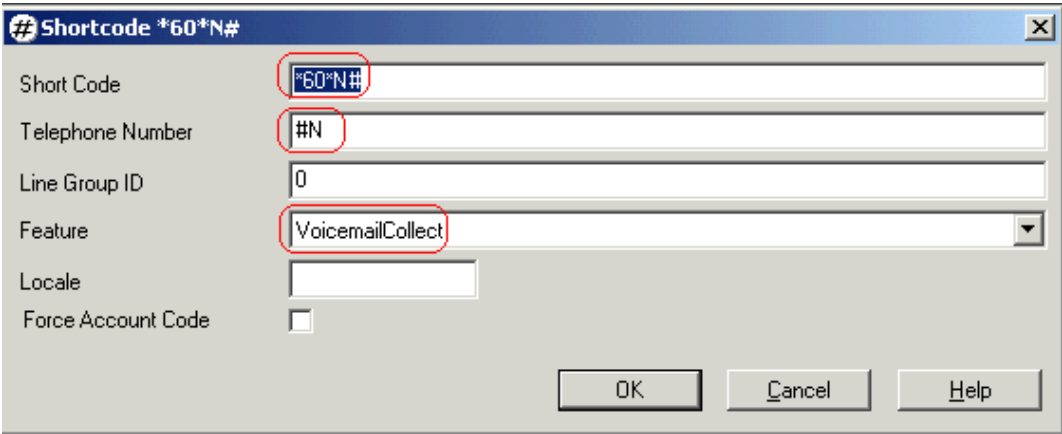
Equipment	Software
Avaya IP 406 System	2.1(24)
Avaya IP Office Manager	4.1(15)
Avaya IP Office Feature Key Server	1.0
Avaya IP Office Voicemail Pro	2.1(10)
Avaya IP Office TAPI2 Service Provider	1.0.0.21
Avaya IP Office CTI Link Pro License	-
Avaya 4624 IP Telephones	1.82
Avaya 6408D+ Telephones	-
iQ NetSolutions VistaPoint Enterprise Server	3.4.1.5

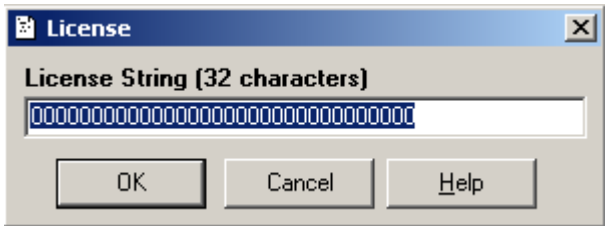
Equipment	Software
iQ NetSolutions VistaPoint Desktop Companion	3.4.1.5
iQ NetSolutions VistaPoint Console Companion	3.4.1.5
iQ NetSolutions VistaPoint Companion for MS Outlook	3.4.1.5
Analog telephones	-
PC for use as Microsoft Exchange Server	Windows 2000 Server Service Pack 4
PC for Avaya IP Office Manager, Avaya IP Office Feature Key Server, and Avaya IP Office Voicemail Pro	Windows 2000 Professional Service Pack 4
Generic PC for use with iQ NetSolutions VistaPoint Server	Windows 2000 Server Service Pack 4
Generic PCs for use with iQ NetSolutions VistaPoint Clients	Windows 2000 Professional Service Pack 4

3. Configure Avaya IP Office

These Application Notes address provisioning of the IP Office as it relates to integration of the VistaPoint Server. For all other provisioning information, such as provisioning of the trunks, call coverage, extensions, voicemail, etc. please refer to the IP Office documentation.

Step	Description
	IP Office Feature Key Physical Installation
1.	Plug the Avaya feature key into the appropriate port (e.g., serial, parallel, USB) on the Avaya IP Office Feature Key Server 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 into the IP Office system using the appropriate login credentials to receive its configuration.

Step	Description
5.	<p>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 <i>License Server IP Address</i> to the IP address of the machine to which the red Avaya Software Sentinel key is connected, e.g., 192.45.70.40. This is typically the IP Office Manager PC. Click OK.</p> 
	<p>Setup 'send to voicemail' short code</p>
6.	<p>In the Manager window, go to the Configuration Tree and double-click Shortcode to open the list of short codes installed in the IP Office system.</p>
7.	<p>Right click in the short code list window and select New. In the Shortcode window that appears, set <i>Short Code</i> to *60*N#, <i>Telephone Number</i> to #N, <i>Feature</i> to VoicemailCollect, and click OK.</p> 

Step	Description
Install CTI Link Pro License Key	
8.	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.
9.	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 .
	
10.	In the Manager window, select File → Save to save the licenses to the IP Office system and wait for the system to update. The system reload validates the new license.

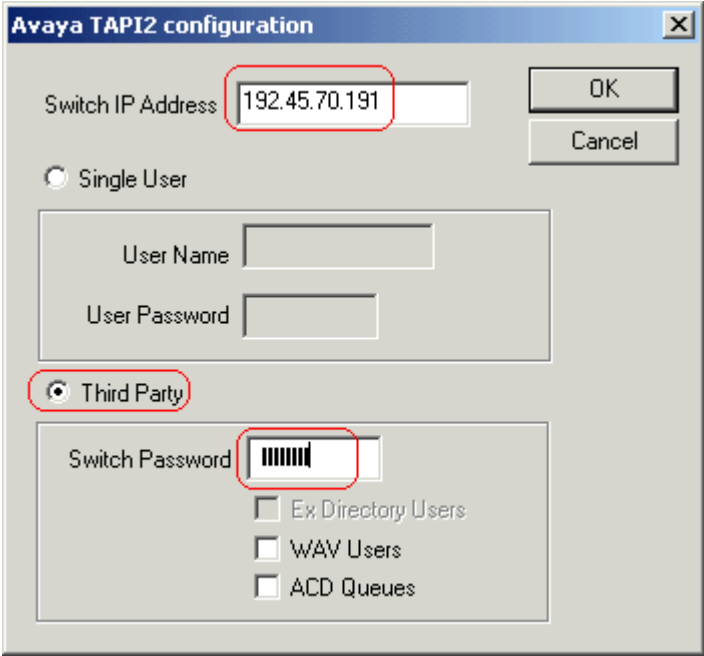
4. Configure iQ NetSolutions VistaPoint Enterprise Server

These Application Notes address provisioning of the VP Server as it relates to the Avaya IP Office. For all other provisioning information, please refer to the iQ NetSolutions System Guide available on the Installation CD.

4.1. Install and Configure Avaya IP Office TAPI2 Service Provider

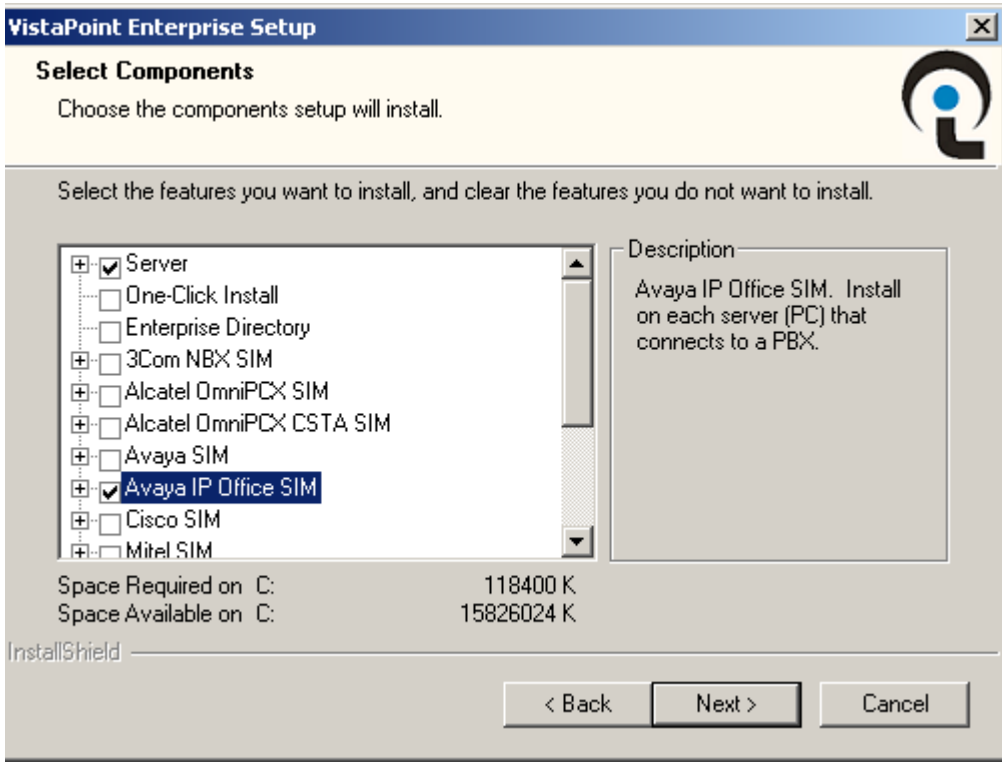
Please refer to the Avaya IP Office CTI Link Installation Manual, 40DHB0002UKAB – Issue 5 (10/28/2003) for additional information.

Step	Description
1.	Using the Avaya IP Office User CD, install the Avaya IP Office TAPI2 Service Provider driver on the VistaPoint server. Make sure to uncheck all the other installation options listed in the Installation Wizard, as they are not required.
2.	After the system reboots, log into 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 TAPI2 Service Provider .

Step	Description
4.	<p>In the Avaya TAPI2 configuration window that appears, set <i>Switch IP Address</i> to the IP address of the IP Office, e.g., 192.45.70.191, select <i>Third Party</i>, set <i>Switch Password</i> to the password of the IP Office, verify <i>WAV Users</i> and <i>ACD Queues</i> are unchecked, and click OK.</p> 
5.	Reboot the VistaPoint server.
Verify Connectivity with the IP Office	
6.	After the system reboots, log into 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 TAPI2 Service Provider Driver is installed and working properly.

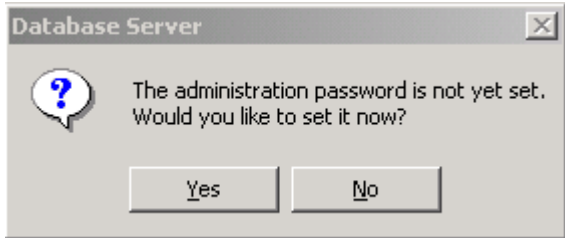


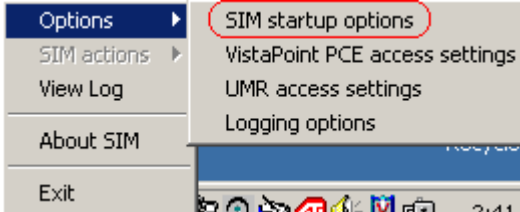
4.2. Install iQ NetSolutions VistaPoint Enterprise Server

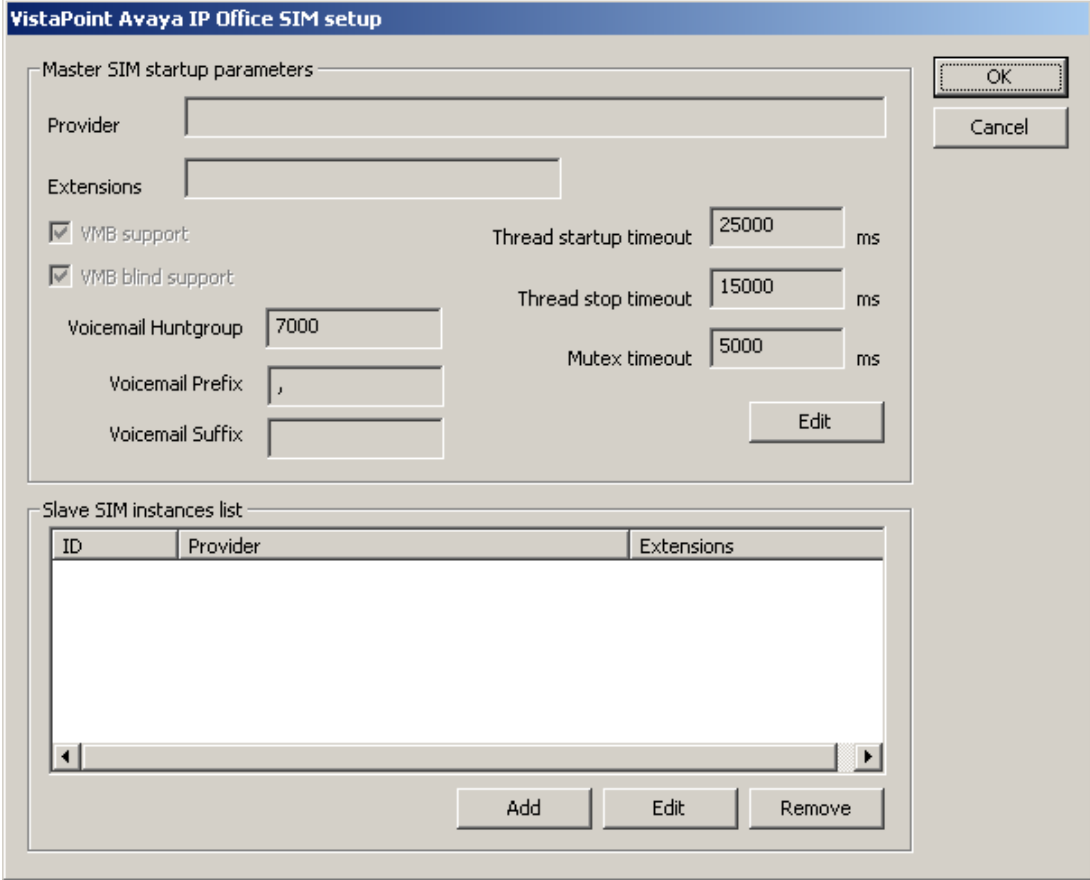
Step	Description
1.	Insert the VistaPoint Enterprise Installation CD into the VistaPoint server, browse to the CD-ROM and run setup.exe.
2.	In the VistaPoint Enterprise Setup window that appears, click Next .
3.	In the License Agreement window that appears, review the license agreement. To accept the terms and proceed with the installation, click Yes .
4.	In the Choose Destination Location window that appears, click Next .

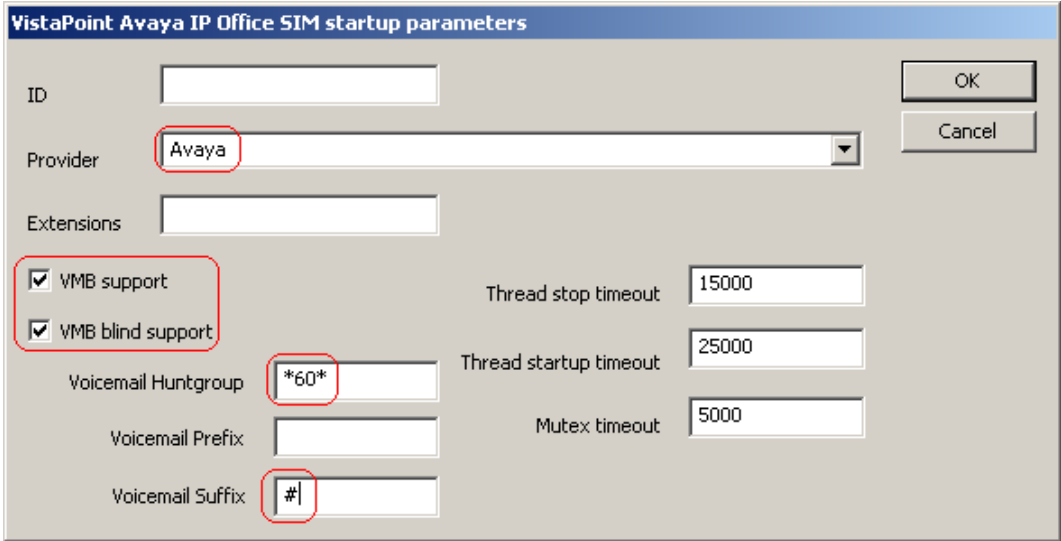
Step	Description
5.	<p>In the Select Components window that appears, check Server, Avaya IP Office SIM and click Next.</p> 
6.	In the Review settings before copying files window that appears, click Next .
7.	In the VistaPoint License Retrieval window that appears, click Cancel . For the purposes of these Application Notes, the thirty-day trial license was used. This trial license can be upgraded later to a permanent license.
8.	In the VPLicenseAdmin popup that appears, click OK .
9.	In the VP License Administrator window that appears, click Exit .
10.	In the VistaPoint Enterprise Setup window that appears, select Yes, I want to restart my computer now. and click Finish .
11.	Remove the installation CD from the server.

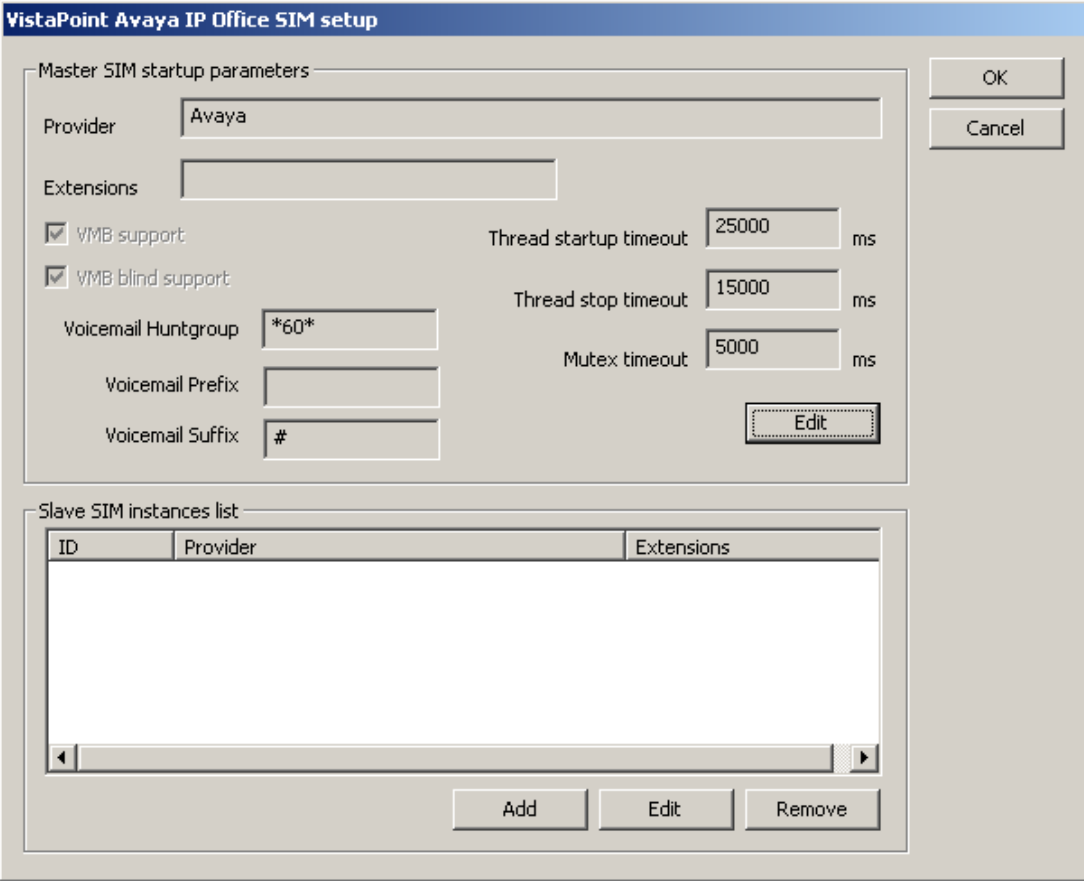
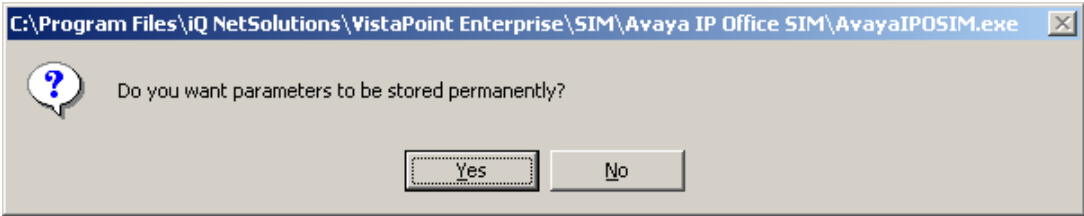
4.3. Configure VistaPoint Server Components

Step	Description
1.	Following installation reboot, log into the VistaPoint server using administrative privileges.

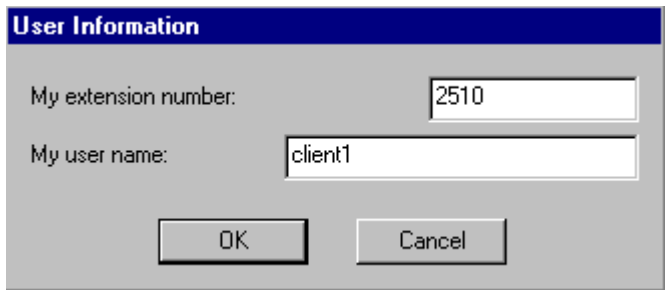
Step	Description
2.	<p>In the Database Server popup that appears, click Yes.</p> 
3.	<p>In the System Administrator Password popup that appears, set <i>New password</i> and <i>Re-enter new password</i> to the password that will be used for accessing VistaPoint Enterprise administrator features from VistaPoint Enterprise clients. Click OK.</p> 
4.	<p>Verify the Avaya IP Office SIM is running by finding the Avaya IP Office SIM icon in the Windows System Tray of the VistaPoint server.</p> 
5.	<p>Right-click the Avaya IP Office SIM icon and choose Options → SIM startup options.</p> 

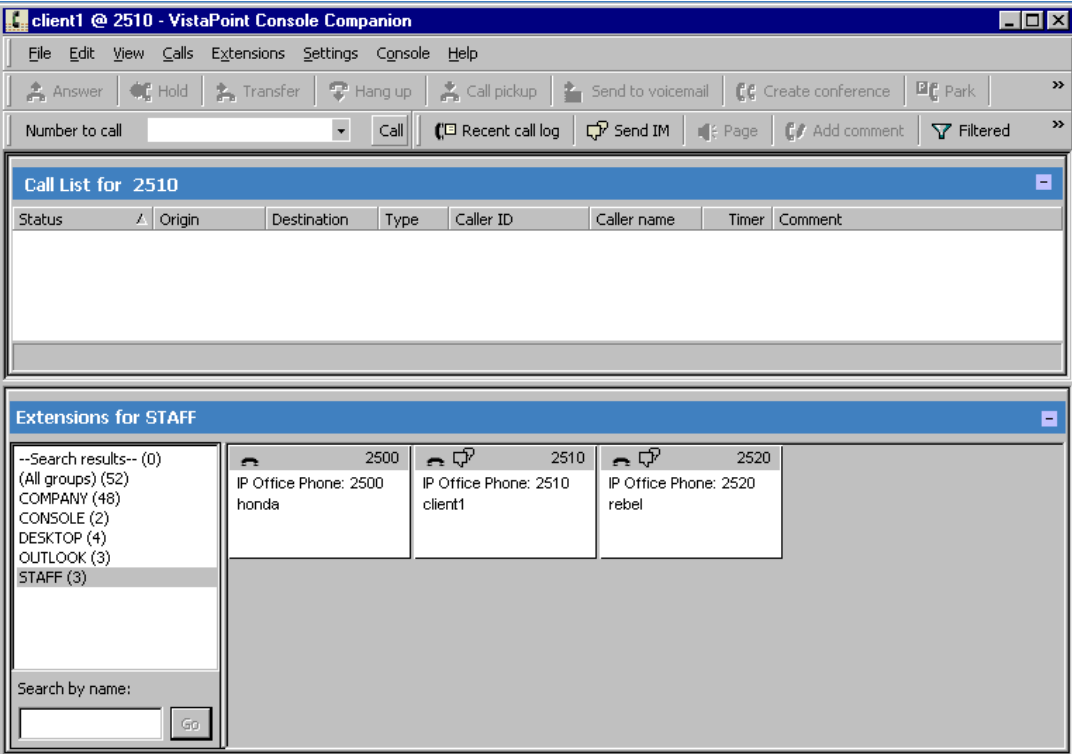
Step	Description
6.	<p>In the VistaPoint Avaya IP Office SIM setup window that appears, click Edit.</p> 

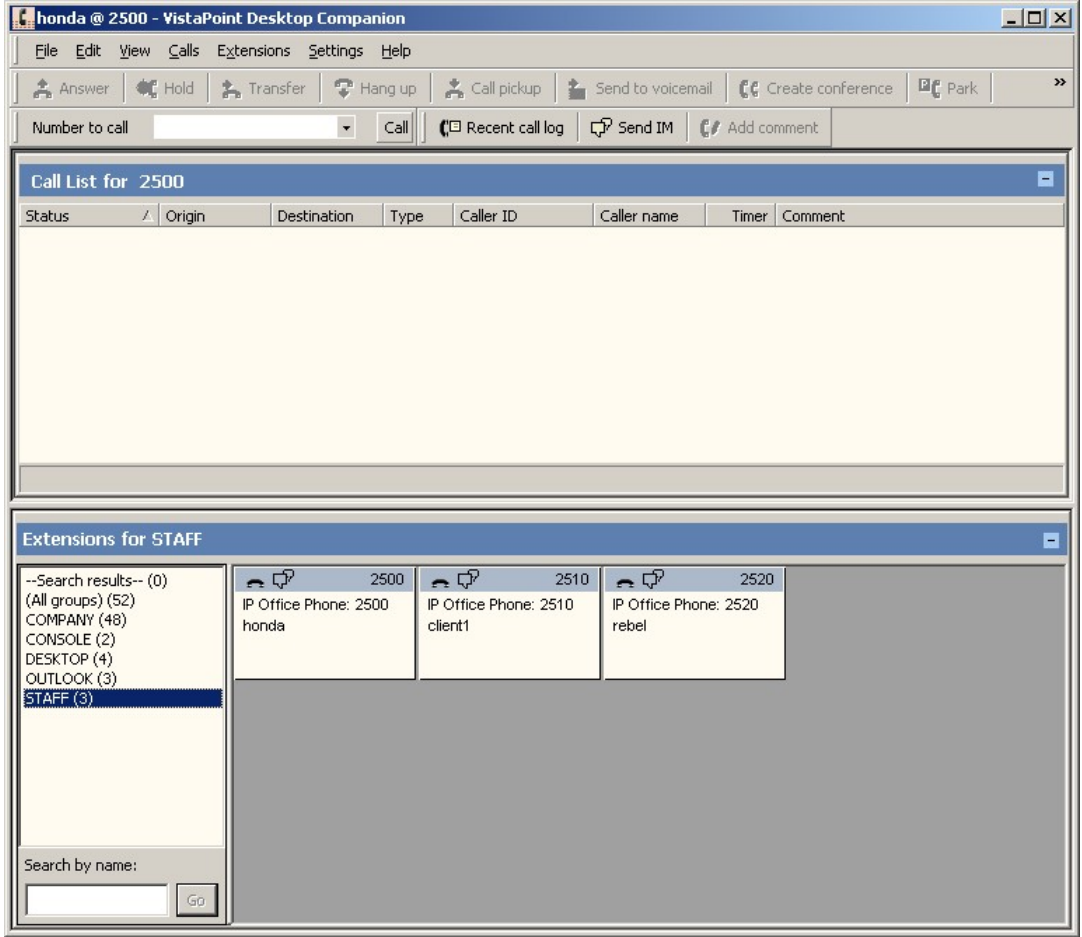
Step	Description
7.	<p>In the VistaPoint Avaya IP Office SIM startup parameters window that appears, set <i>Provider</i> to Avaya, check VMB support and VMB blind support, set <i>Voicemail Huntgroup</i> to *60*, clear <i>Voicemail Prefix</i>, set <i>Voicemail Suffix</i> to # and click OK.</p>  <p>NOTE: If the Avaya IP Office CTI Link Pro license is not installed in the Avaya IP Office or detected by the Avaya IP Office Feature Key Server, then Avaya will not appear as an option in the Provider pull down list. If this occurs, install the license and verify it is properly detected before returning to this window.</p>

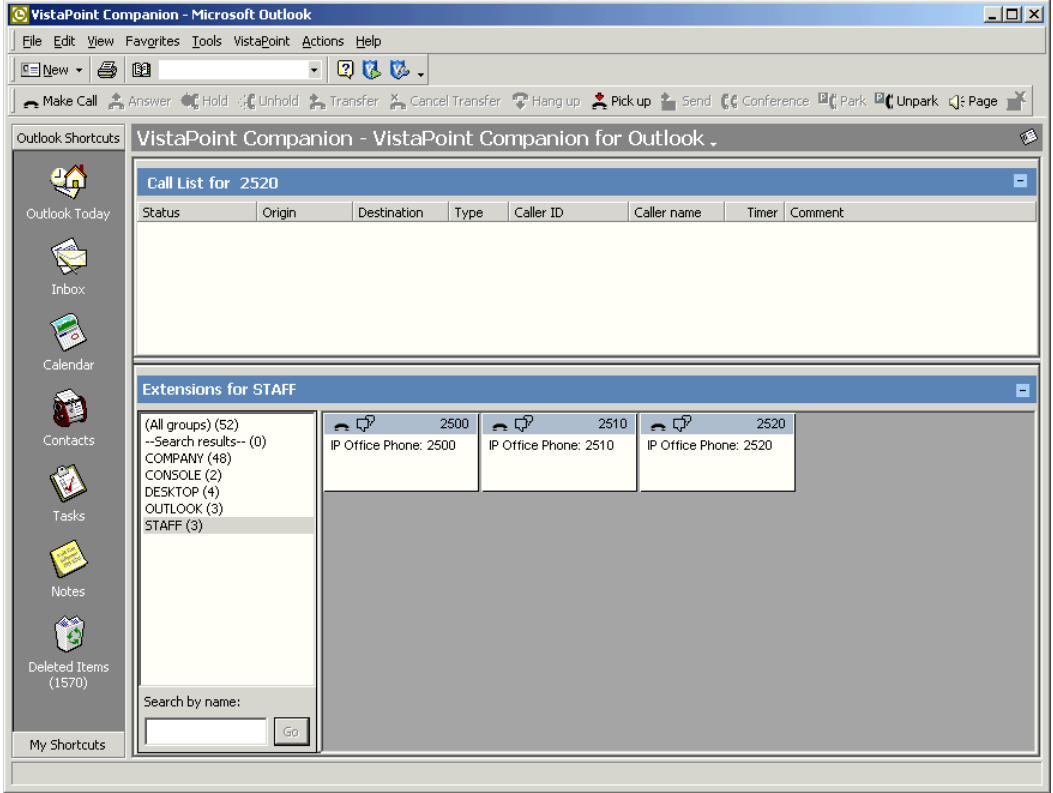
Step	Description
8.	<p>In the VistaPoint Avaya IP Office SIM setup window, click OK.</p> 
9.	<p>In the AvayaIPOSIM.exe popup that appears, click Yes.</p> 
10.	<p>Reboot the VistaPoint server. This completes the configuration of the VistaPoint Enterprise Server.</p>

5. Install and configure iQ NetSolutions VistaPoint Enterprise Client(s)

Step	Description
Install Client Software	
1.	Log into the client PC using administrative privileges.
2.	Insert the VistaPoint Enterprise Installation CD into the client PC, browse to the CD-ROM and run setup.exe.
3.	In the VistaPoint Enterprise Setup window that appears, click Next .
4.	In the License Agreement window that appears, review the license agreement. To accept the terms and proceed with the installation, click Yes .
5.	In the Choose Destination Location window that appears, click Next .
6.	In the Select Components window that appears, select the VistaPoint Companion client desired, e.g., Desktop Companion , Console Companion or Companion for Outlook , and click Next .
7.	In the Review settings before copying files window that appears, click Next .
8.	In the VistaPoint License Retrieval window that appears, click Cancel . For the purposes of these Application Notes, the thirty-day trial license was used. This trial license can be upgraded later to a permanent license.
9.	In the VPLicenseAdmin popup that appears, click OK .
10.	In the VP License Administrator window that appears, click Exit .
11.	In the VistaPoint Enterprise Setup window that appears, select Yes, I want to restart my computer now. and click Finish .
12.	Remove the installation CD from the computer.
Configure VistaPoint Console Companion	
13.	Following installation reboot, log into the client PC.
14.	Go to Start → Programs → VistaPoint Enterprise → VistaPoint Console Companion to launch the VistaPoint Console Companion client.
15.	<p>In the User Information popup that appears, set <i>My extension number</i> to the extension number to be controlled/used from the client PC, e.g., 2510, set <i>My user name</i> to the name to be associated with the extension controlled from the client PC, e.g., client1.</p> 

Step	Description
16.	<p>Once configured, the VistaPoint Console Companion appears as follows.</p> 

Step	Description
Configure VistaPoint Desktop Companion	
17.	Repeat Steps 1 – 12 to install the VP Desktop Companion client software.
18.	Following installation reboot, log into the client PC.
19.	<p>Go to Start → Programs → VistaPoint Enterprise → VistaPoint Desktop Companion to launch VistaPoint Desktop Companion. Set <i>My extension number</i> to 2500 and <i>My user name</i> to honda to configure the VistaPoint Desktop Companion. Once provisioned, the client appears as follows:</p> 
Configure VistaPoint Companion for Outlook	
20.	Repeat Steps 1 – 12 to install the VP Companion for Outlook client software.
21.	Following installation reboot, log into the client PC.
22.	Go to Start → Programs → Microsoft Outlook to launch the Microsoft Outlook client and log in as usual.
23.	In the My extension popup that appears, set <i>My extension number</i> to the extension number to be controlled/used from the client PC, e.g., 2520 , set <i>My user name</i> to the name to be associated with the extension controlled from the client PC, e.g., rebel .

Step	Description
24.	<p>Once configured, the VistaPoint Companion for Outlook appears as follows within Microsoft Outlook:</p> 

6. Interoperability Compliance Testing

This interoperability compliance test included feature, functionality and performance load testing¹. Feature and functionality testing examined the ability of iQ NetSolutions VistaPoint Enterprise suite (VistaPoint Enterprise Server, VistaPoint Desktop Companion, VistaPoint Console Companion, and VistaPoint Companion for Outlook) to work with Avaya IP Office. Call control (internal, inbound and outbound calls, supervised transfer, forward, conference, drop, hold, park, and send to voicemail) from the VistaPoint Enterprise Clients was verified. Performance load tests verified the configuration continued operating under load.

¹ Feature and functionality testing was conducted at iQ NetSolutions Test labs and verified during compliance testing conducted at the Avaya Solution and Interoperability Test Lab.

6.1. General Test Approach

Feature and functionality testing was performed manually. Analog loop start and T1/PRI trunks from the central office were connected to the IP Office.

Inbound calls were made to the IP Office from analog, T1 and PRI trunks as well as internal extensions. The IP Office routed inbound calls either directly to an extension or to the Main hunt group, which was configured to ring all extensions as a group. Calls received at extensions configured with VistaPoint clients (VistaPoint Console Companion, VistaPoint Desktop Companion, VistaPoint Companion for Outlook) were answered via the client software. VistaPoint clients were used to answer inbound calls, place outbound calls, perform supervised transfers, forward calls, park calls, send calls to voicemail, and perform conference calls, call hold and call drop.

Performance testing was accomplished by utilizing a call generation tool for placing calls from a PRI trunk to the IP Office. The PRI trunk port on the call generation tool was connected to the PRI trunk port on the IP Office using a T1 crossover cable. A call generation tool script was written to place inbound calls to the IP Office, play .wav files then pause for the call recipient to hang up. The IP Office dial plan routing was set up to route the inbound calls to the appropriate destination extensions. Automated scripts were written to drive the VistaPoint clients on the client PCs used for load testing to answer incoming calls, pause a few moments then hang up the calls.

6.2. Test Notes

- **VistaPoint clients will not install if Microsoft .NET Framework is installed.** If Microsoft .NET Framework was already installed on the client PC or if it was an option selected during the VistaPoint client software installation, the VistaPoint client software would not install. To workaroud this issue, uninstall Microsoft .NET Framework and reboot the PC. The VistaPoint client software can then be installed. iQ NetSolutions reports a fix will be forthcoming.
- **Support for non-speakerphone devices such as analog phones is limited to call monitoring by VistaPoint clients.** When an inbound call rings at an analog station, the call can only be answered by lifting the handset. It cannot be answered from the VistaPoint client software. Additionally, if an outbound call is placed from a VistaPoint client associated with an analog station, the analog station will ring because the handset must still be lifted for the call to be connected.
- **Inbound CallerID not properly displayed for hunt group recipients by VistaPoint clients.** Incoming calls to hunt group Main, which was setup to ring as a group, would initially appear in the VistaPoint client display with the hunt group number/name and incoming CallerID information for the call. However, the VistaPoint client display would very quickly switch to displaying the incoming call as if it was coming from one of the extensions belonging to the hunt group. When the call was answered, it would again properly display the CallerID information about the call. If the call recipient missed the initial information display, there would be no way of knowing the call originator before the call is answered. iQ NetSolutions reports a fix will be forthcoming.

- **Conference call initiator dropping out of conference calls involving outside caller affects VistaPoint client conference display of extensions remaining in call.** VistaPoint client extensions involved in a multi-party conference call with an outside caller lose the outside caller from the conference display if the initiating extension drops from the call. iQ NetSolutions is aware of this problem and a fix will be forthcoming.
- **Instructions for use of the Cpark button on the telephone display in conjunction with VistaPoint client.** Calls parked using the *Cpark* button on the telephone display of an IP office extension, e.g., x2500 can be retrieved from the VistaPoint client of another extension, e.g., x2510, by entering '*extension_number + 0*' and clicking *unpark* on the VistaPoint client.
- **Call transfer from VistaPoint clients associated with analog extensions not behaving properly.** If a call is transferred from an analog extension, e.g., x2520, through VistaPoint client to another extension, e.g., x2500, the receiving extension (x2500) rings once and is automatically answered. This is not the proper behavior for a transfer. The call should ring at x2500 until the recipient answers it. iQ NetSolutions reports a fix will be forthcoming.
- **Conference button provided by VistaPoint Companion for Outlook is permanently grayed out.** The conference button on the VistaPoint Companion for Outlook remains grayed out while on a call. The only way available to initiate a conference from this client is to right click on the call in the window and choose conference in the popup that appears. iQ NetSolutions reports a fix will be forthcoming.

6.3. Test Results

Feature, functionality, and performance testing was successful. Any issues and/or observations noted during testing were presented in Section 6.2. Overnight performance testing at a rate of 1489 BHCA (Busy Hour Call Attempts) over eight PRI channels as reported by the call generation tool and answered by eight VistaPoint client PCs was conducted. Performance statistics were captured on the VistaPoint server to ensure that it was able to handle the call volume.

7. Verification Steps

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

- Verify the Avaya IP Office CTI Link Pro license is properly installed and detected (see Section 3).
- Verify the Avaya IP Office TAPI2 Service Provider is properly installed and IP Office extensions can be viewed from the VistaPoint server Phone Dialer application (see Section 4.1).
- Verify the VistaPoint Avaya IP Office SIM is running on the VistaPoint server (see Section 4.3).
- Verify the VistaPoint clients can display the monitored extensions (see Section 5).
- Place a test call from one VistaPoint client extension to another, e.g., x2500 to x2511. Verify the call rings at the destination extension and there is call connectivity when the call is answered at the VistaPoint client of the destination extension.

- Place an inbound trunk call to one of the VistaPoint client extensions. Verify call connectivity when the call is answered at the VistaPoint client.

8. Support

Customers should call the iQ NetSolutions Inc. Customer Service Center when having problems related to the VistaPoint Enterprise. iQ NetSolutions will determine the nature of the problem and recommend the best plan to the customer, whether it is to:

- Fix the problem through remote access.
- Dispatch, at iQ NetSolutions' discretion, on-site technical support.

For technical support on VistaPoint Enterprise, contact the iQ NetSolutions Inc. Customer Service Center at (508) 870-3228 or support@iqnsi.com.

9. Conclusion

These Application Notes describe the required configuration steps for iQ NetSolutions VistaPoint Enterprise to successfully interoperate with Avaya IP Office. Features, functionality, and performance were validated, subject to the items documented in Section 6.2.

10. Additional References

Avaya IP Office (R2.1) Installation Manual, 40DHB0002UKCL, Issue 11, 3rd November 2004.

Avaya IP Office CTI Link Installation Manual, 40DHB0002UKAB, Issue 5, (10/28/2003).

iQ NetSolutions VistaPoint Enterprise Install-Admin Guide, Release 3.4.1.5.

iQ NetSolutions VistaPoint Enterprise User Guide, Release 3.4.1.5.

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