



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

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# **Application Notes for NMS Adaptive Contact Centre with Avaya IP Office - Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for NMS Adaptive Contact Centre to interoperate with Avaya IP Office. The Adaptive Contact Centre allows a user to communicate by inbound and outbound phone calls, email, text messaging, web call back and web chat. The objective of the test was to evaluate interoperability of the above products in a contact centre, handling progressive and predictive outbound calling campaigns.

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 NMS Adaptive Contact Centre 8.65 and Avaya IP Office 4.0.

The Adaptive Contact Centre solution interoperates with Avaya IP Office using Third Party Telephony Application Programming Interface (TAPI). As part of the Adaptive Contact Centre server installation, a program called the Adaptive CTI Gateway is installed. The Adaptive CTI Gateway handles all communication between the Adaptive Contact Centre solution and Avaya IP Office.

Each user of the Adaptive Contact Centre will have installed on their PC desktop the Adaptive Desktop application. As each user logs into the Adaptive Desktop software, it requests the Adaptive CTI Gateway to open up a TAPI monitor on the relevant user.

Only the following modules of the Adaptive Contact Centre were compliance tested.

- Adaptive CTI
- Adaptive Progressive and Predictive Dialers
- Adaptive Messaging
- Adaptive Web Assist

The Adaptive CTI module of the Adaptive Contact Centre enables users to make calls, hold / retrieve calls and blind transfer calls using the Adaptive Desktop. Adaptive CTI is also made aware of the Direct Dial-In (DDI) and Caller Line Identification (CLI) of inbound calls and can provide screen-pops based on these fields of data.

The Adaptive Progressive Dialer module of the Adaptive Contact Centre enables progressive dialed outbound telephone calls to be queued and automatically distributed to the next available user. The Adaptive Predictive Dialer module of the Adaptive Contact Centre enables predictive dialed outbound telephone calls to be queued and automatically distributed to the next available user.

The Adaptive Messaging module of the Adaptive Contact Centre enables email, SMS and (when used with a fax-to-email gateway) faxes to be intelligently queued and routed to users. The Adaptive Web Assist module of the Adaptive Contact Centre enables call back messages to be generated on a website and these messages automatically queue until the requested time. At the appropriate time, the call-back request is presented to the next available user and the call back is made. Adaptive Web Assist also provides a Web Chat facility. This enables visitors to a website to request a Web Chat. The Web Chat request is queued and routed to the next available user. The agent phone is set to “do not disturb” mode via TAPI when an email or SMS is received, similar to that of when an agent is on an inbound or outbound call, so no additional calls can be routed to that agent.

Depending on the environment separate servers would be used for email and web services. For convenience during compliance testing, the email and web server were installed on the same physical server as the NMS Adaptive Contact Centre server.

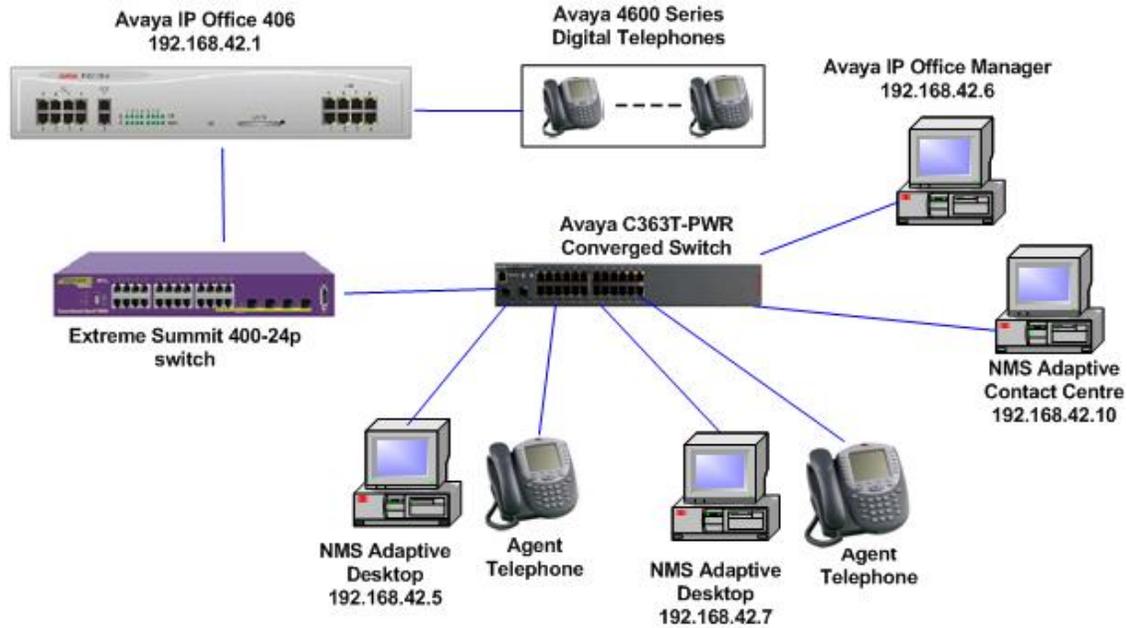


Figure 1: Tested Avaya IP Office 406 with NMS Adaptive Contact Centre

## 2. Equipment and Software Validated

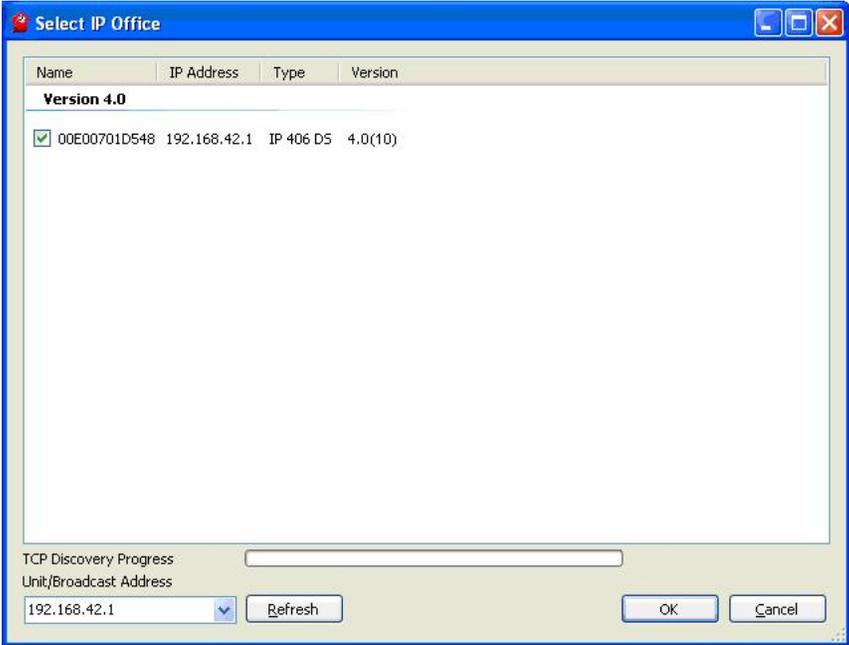
Below is a list of the equipment and software versions used within the compliance-tested network.

Equipment	Software
Avaya IP Office 406 Control Unit	4.0(10)
Avaya IP Office Manager	6.0(10)
Extreme Summit 400-24p Switch	Extremeware 7.5e.2.8
Avaya C363T-PWR Converged Stackable Switch	4.3.12
Avaya 46XX IP Telephones (H.323)	2.3
NMS Adaptive Contact Centre	8.65
▪ Adaptive CTI Gateway	1.61
▪ Adaptive Server Launch pad	1.01
▪ Adaptive Desktop	3.39
▪ Adaptive Web Gateway	1.14
▪ Adaptive Management Console	3.20
▪ Adaptive Campaign Editor	2.11
▪ Adaptive Predictive Dialer	1.59

### 3. Configure Avaya IP Office

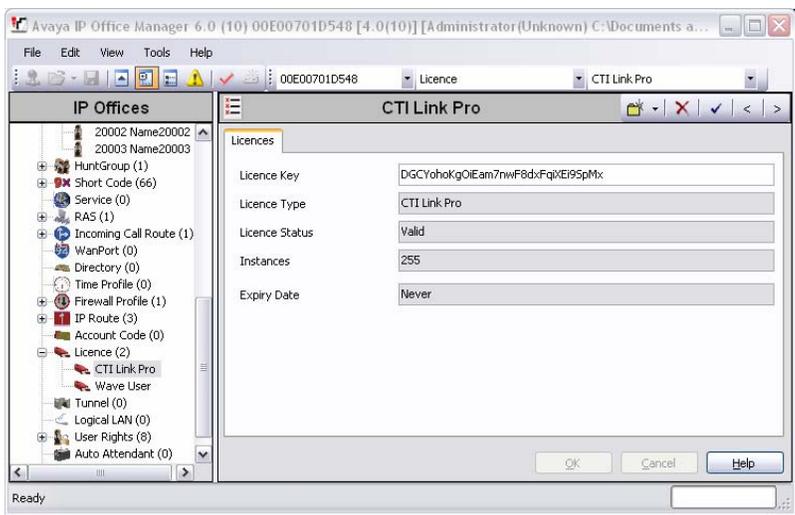
The configuration information provided in this section describes the steps required to set up Avaya IP Office for this solution. For all other provisioning information, such as Avaya IP Office installation and configuration, etc., refer to Avaya IP Office product documentation in Section 9.

#### 3.1. IP Office CTI License and Digital DCP Extensions

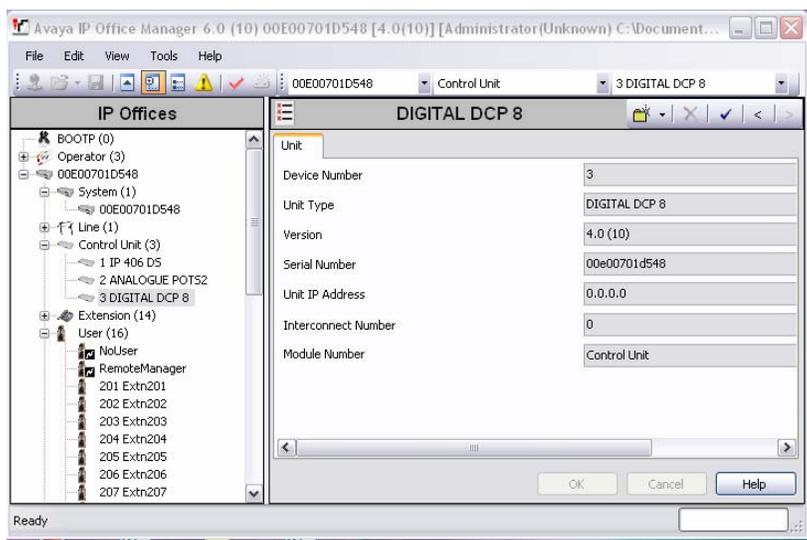
Step	Description
1.	<p>Log into the IP Office Manager PC and go to <b>Start → Programs → IP Office → Manager</b> to launch the Manager application. In the Manager window, select <b>File → Open Configuration</b> to search for IP Office in the network. Select the IP Office system by checking the system name as seen below. Log into IP Office using the appropriate login credentials to receive its configuration.</p> 

Step	Description
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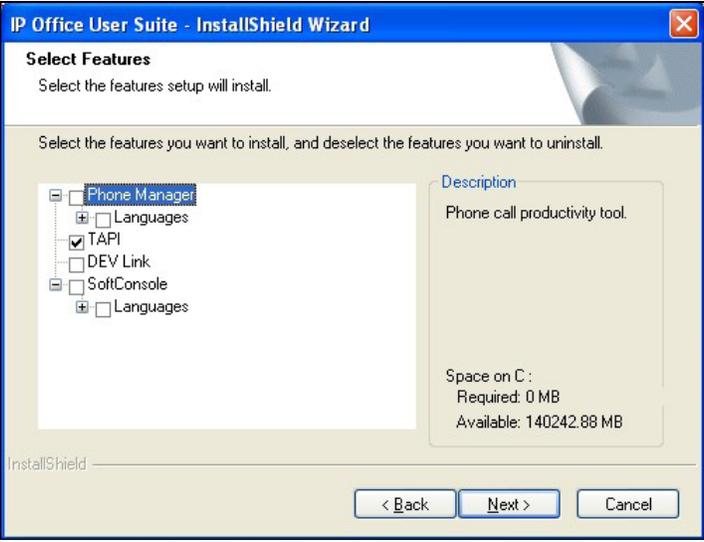
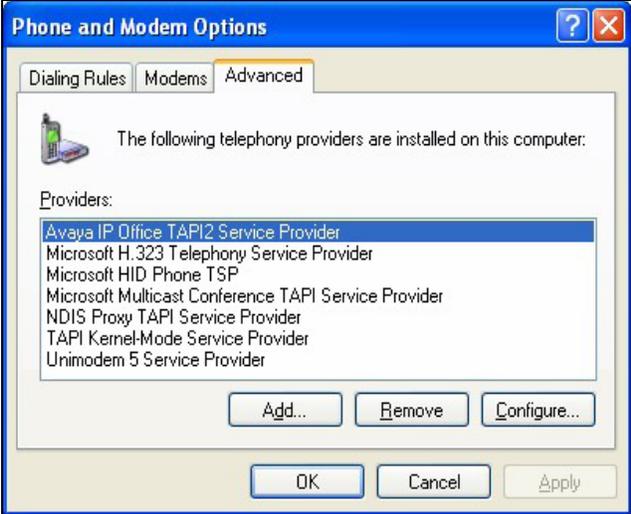
- Ensure that the Avaya IP Office serial license dongle is connected to the Avaya IP Office Manager PC. In the Manager window, go to the Configuration Tree and click on **License** → **CTI Link Pro** and verify the **License Status** is valid. If a license is needed right click on license and select **New** from the drop-down menu. Enter the license code for the CTI Link Pro license into the **License Key** field and click **OK**. In the Manager window, select **File** → **Save Configuration**. The configuration to Avaya IP Office is saved and the user is prompted to reboot Avaya IP Office.

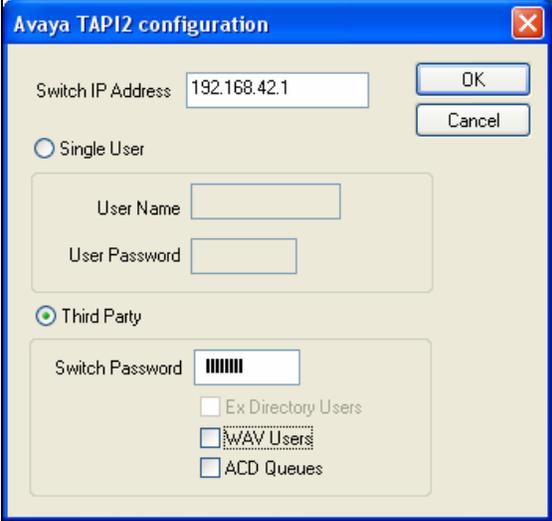


- The Adaptive Predictive Dialer module uses IP Office digital extensions to make outbound calls and then transfers the calls to agent phones. The number of digital extensions needed is dependent on the environment; no physical digital phones are needed to be plugged into the IP Office. During testing, the IP Office 406 control unit was used which has 8 built in digital ports. In the left configuration menu select **Control Unit** → **Digital DCP 8** and verify the digital extension numbers.



### 3.2. Install Avaya TAPI Driver

Step	Description
<p>1.</p>	<p>Log into an Adaptive Desktop client PC using an account with administrative privileges. Using the Avaya IP Office User CD, start the IP Office User Suite installation. The automatic process displays the screen below. Check <b>TAPI</b> to install the Avaya IP Office TAPI driver on the PC. Click <b>Next</b> to complete the installation of the Avaya IP Office User Suite. At the InstallShield Wizard Complete window, click <b>Finish</b>.</p> 
<p>2.</p>	<p>Go to the Windows Control Panel and open <b>Phone and Modem Options</b>. Click the <b>Advanced</b> tab, select <b>Avaya IP Office TAPI2 Service Provider</b> and click <b>Configure....</b></p> 

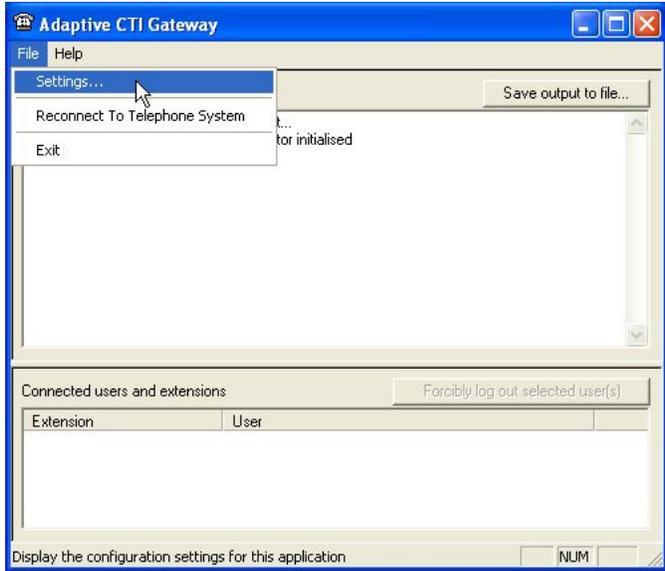
Step	Description
3.	<p>In the Avaya TAPI2 configuration window that is displayed, set <b>Switch IP Address</b> to the IP address of Avaya IP Office, select <b>Third Party</b> and set <b>Switch Password</b> to the IP Office password. Leave all other parameters with their default values. Click <b>OK</b>. In the Phone and Modem Options window, click <b>OK</b>. Reboot the PC for the new changes to take effect.</p> 

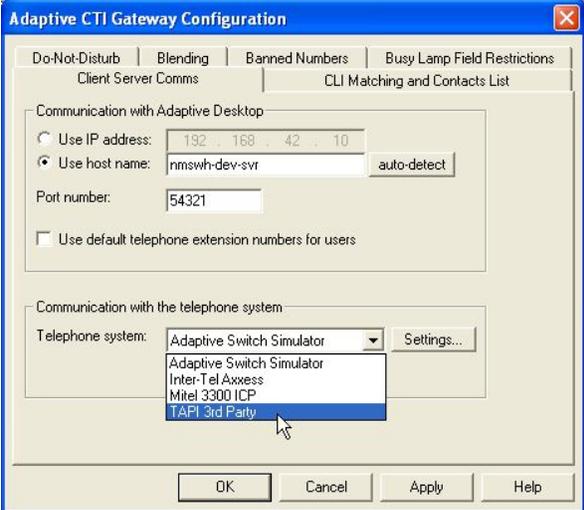
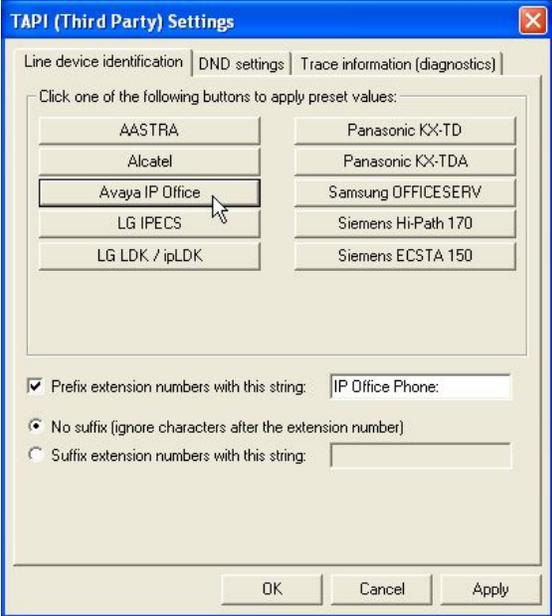
## 4. Configure NMS Adaptive Contact Centre

The configuration information provided in this section describes the steps required to set up Adaptive Contact Centre to communicate with the IP Office via TAPI. Note that it is expected that the installer is familiar with the configuration of the Adaptive Contact Centre as the focus of these Application Notes is on the configuration of the TAPI interface only. For all other provisioning information refer to the NMS Adaptive Contact Centre product documentation in Section 9.

### 4.1. Configure Adaptive CTI Gateway

The steps below describe the configuration for Adaptive CTI Gateway. This configuration enables the Adaptive Contact Centre to communicate with IP Office via TAPI.

Step	Description
1.	<p>On the Adaptive Contact Centre server. Click on <b>Start</b> → <b>Programs</b> → <b>Adaptive</b> → <b>Adaptive CTI Gateway</b>. In the Adaptive CTI Gateway screen click on <b>File</b> → <b>Settings</b>.</p> 

Step	Description
2.	<p>Select the <b>Client Server Comms</b> tab. Select the radio button to use either the host name or the IP address of the Adaptive Contact Centre server. The Adaptive Contact Centre IP address or hostname will be required by the Adaptive Client machine to map a network drive to the Adaptive Contact Centre server. From the <b>Telephone system</b> drop down list select <b>TAPI 3<sup>rd</sup> Party</b>. Click on the <b>Settings</b> button.</p> 
3.	<p>Select the <b>Line device identification</b> tab and click on <b>Avaya IP Office</b>. The other fields can be left with default values. Click on <b>OK</b>. As shown in Section 6, Step 2, the Adaptive CTI Gateway shows the configuration has been completed and has found all available IP Office phones.</p> 

## 4.2. Configure Adaptive Server

Email accounts, users, teams and queues necessary for outbound dialing are created on the Adaptive Server. Click on **Start → Programs → Adaptive → Adaptive Server Launch**. The following screen will be displayed. For information on creating mail accounts, users, teams and queues refer to the NMS Adaptive User Guide in Section 9.

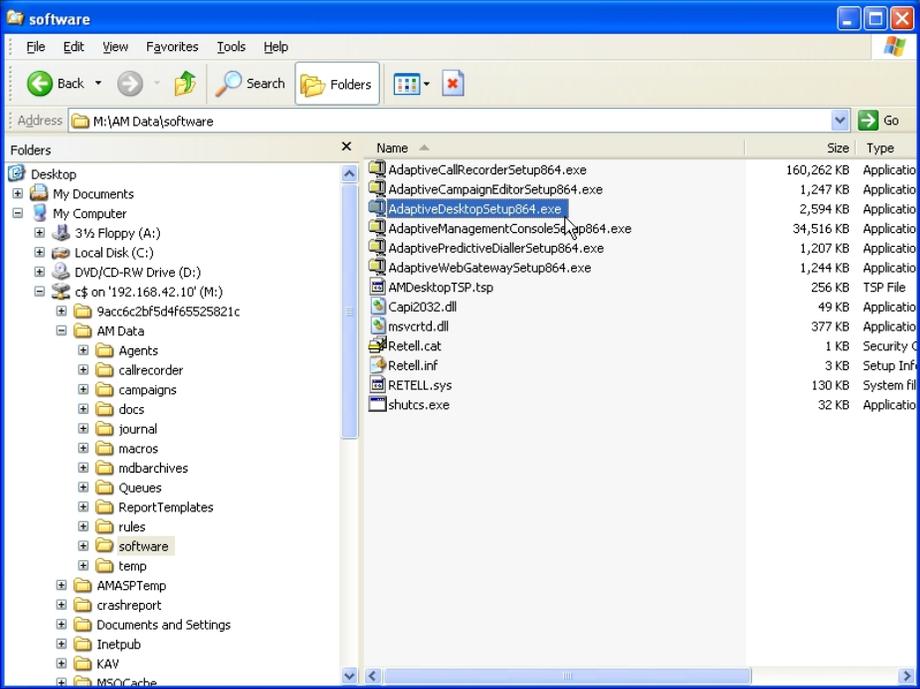


The following services were configured and were tested during compliance tested. Please refer to Section 9 for detailed configuration of the following services.

- Adaptive Messaging
- Adaptive Web Assist
- Adaptive SMS (text messaging)
- Adaptive Progressive and Predictive Dialing

### 4.3. Configure Adaptive Desktop

This section describes the steps for configuring the Adaptive Desktop that communicates to the Adaptive Server.

Step	Description
<p>1.</p>	<p>To install the Adaptive Desktop application, map a network drive to the AM Data folder on the Adaptive server. Navigate to the <b>\Software</b> folder and double click the <b>AdaptivedesktopSetup.exe</b> to start the Adaptive Desktop set-up wizard. All client machines require a mapped drive to the AM Data folder as all queue and campaign information is stored centrally on the Adaptive server.</p>  <p>The screenshot shows a Windows Explorer window titled 'software' with the address bar set to 'M:\AM Data\software'. The left pane shows a tree view of folders including 'AM Data', 'Agents', 'callrecorder', 'campaigns', 'docs', 'journal', 'macros', 'mdbarchives', 'Queues', 'ReportTemplates', 'rules', 'software', and 'temp'. The right pane displays a list of files and folders with columns for Name, Size, and Type. The file 'AdaptiveDesktopSetup864.exe' is selected and highlighted in blue. Other files include 'AdaptiveCallRecorderSetup864.exe', 'AdaptiveCampaignEditorSetup864.exe', 'AdaptiveManagementConsole54p864.exe', 'AdaptivePredictiveDialerSetup864.exe', 'AdaptiveWebGatewaySetup864.exe', 'AMDesktopTSP.tsp', 'Capi2032.dll', 'msvcrt.dll', 'Retell.cat', 'Retell.inf', 'RETELL.sys', and 'shutcs.exe'.</p>
<p>2.</p>	<p>On the Adaptive Desktop tool bar click on <b>File → Set Telephone Extension</b>.</p>  <p>The screenshot shows the 'Adaptive Desktop - not logged in' application window. The 'File' menu is open, displaying several options: 'Log In/Out...' (Ctrl+L), 'Available/Unavailable...' (Ctrl+U), 'Change Password...', 'Select Preferred Queue...' (Ctrl+Q), 'Configure Grab + Dial...', 'Message Database Browser', 'Set Telephone Extension...' (highlighted with a mouse cursor), and 'Exit'. The application toolbar is visible above the menu, containing various icons for navigation and actions.</p>

Step	Description
3.	<p>In the Set Telephone Extension dialog box enter an IP Office telephone extension. If the same extension is to be used every time with the PC tick the <b>Remember this extension on this computer</b> check box. Click <b>OK</b>.</p> 
4.	<p>Click on <b>File → Log In/Out</b> and enter the username and password created in Section 4.2. Click <b>OK</b>.</p> 

## 5. Interoperability Compliance Testing

The interoperability compliance test included both feature and serviceability testing. The feature testing focused on verifying Adaptive CTI Gateway module handling of TAPI messages to request and respond to Avaya IP Office features. The features tested include using the Adaptive Desktop application for initiating, receiving and controlling calls and handling progressive and predictive outbound campaigns. Adaptive Messaging module was tested by sending emails, SMS and web requests and the ability of the Adaptive Contact Centre to correctly distribute and queue the requests to the agents. The serviceability testing focused on verifying the Adaptive server's ability to recover from an outage condition, such as busying out the CTI link and disconnecting the Ethernet cable for the CTI link. Performance of Adaptive Contact Centre under load was not tested.

### 5.1. General Test Approach

All feature and serviceability test cases were performed manually. The following features were tested:

Call control:

- Make and Answer a call
- Hold and Retrieve a call/Hold and make another call
- Attended Transfer a call (not supported)
- Blind transfer a call
- Screen-pop with CLI / Screen-pop with DDI
- Set Do Not Disturb (DND) / Clear DND

Email, SMS, web assist call backs and web chats:

- Messages automatically routed and queued
- Blend messaging (including setting and clearing DND so that calls do not arrive when processing the message)

Progressive Dialing and Predictive Dialing:

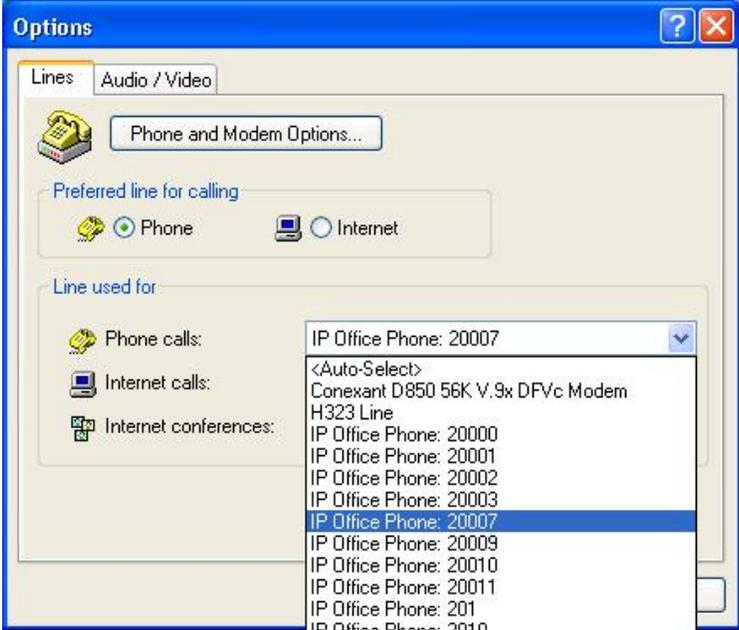
- Making outbound Progressive and Predictive calls
- Call back and Agent owned call back
- Transfer of answered call to user

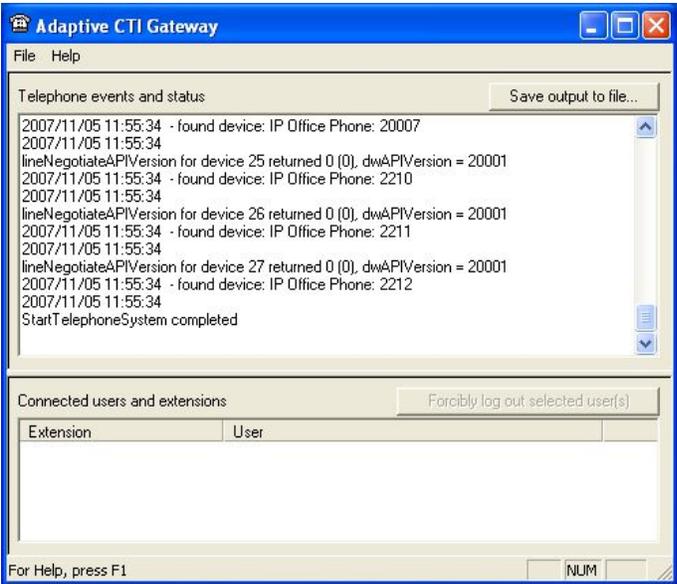
### 5.2. Test Results

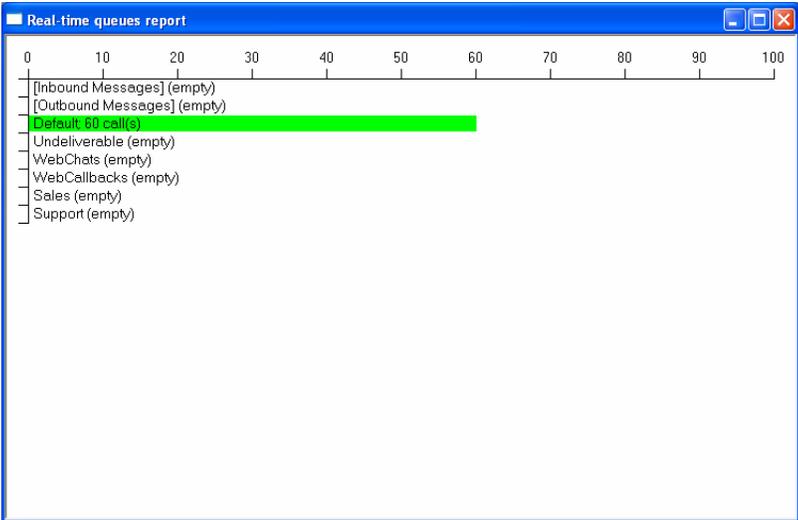
Attended transfer is not supported on the current version of Adaptive Desktop; however it is possible to execute the attended transfer function via the agent Avaya IP Office phone. All other test cases passed successfully.

## 6. Verification Steps

The following steps may be used to verify the configuration

Step	Description
1.	<p>Go to <b>Start</b> → <b>Run</b> and enter dialer.exe in the run dialog box to open the Windows phone dialer application. In the phone dialer tool bar click on <b>Edit</b> → <b>Options</b>. In the <b>Lines</b> tab, select the <b>Phone Calls</b> 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.</p>  <p>The screenshot shows the 'Options' dialog box with the 'Lines' tab selected. Under 'Preferred line for calling', the 'Phone' radio button is selected. In the 'Line used for' section, the 'Phone calls' dropdown menu is open, displaying a list of entries including '&lt;Auto-Select&gt;', 'Conexant D850 56K V.9x DFVc Modem', 'H323 Line', and several 'IP Office Phone: XXX' entries. The entry 'IP Office Phone: 20007' is highlighted in blue.</p>

Step	Description
2.	<p>After Section 4.1, Step 3, once the Adaptive CTI Gateway has been configured the Telephone events and status box will be displayed showing all the IP Office phones found by the Adaptive CTI Gateway and the event Start Telephone System completed will be displayed.</p> 
3.	<p>Log into an Adaptive Desktop agent as shown in Section 4.3, Step 4. Make the agent available by clicking on <b>File</b> → <b>Available</b> (not shown). Start a progressive outbound campaign. The screen below displays an outbound call made from the Adaptive Desktop application.</p> 

Step	Description
4.	<p>To monitor the real time queue reports. Click on <b>Start → Programs → Adaptive → Adaptive Management Console</b>. Enter the appropriate username and password. In the Adaptive Management Console tool bar, click on <b>Real-Time → Queues → All Queues</b>. The screen below show that there are 60 calls waiting to be made by the Adaptive progressive dialer.</p>  

## 7. Support

If technical support is required for NMS Adaptive Contact Centre server, contact their Technical Support Department.

Email: [support@nms-adaptive.com](mailto:support@nms-adaptive.com)

Phone: +44 845 612 4000

## 8. Conclusion

These Application Notes describe the steps for configuring NMS Adaptive Contact Centre 8.65 to interoperate with Avaya IP Office 4.0. NMS Adaptive Contact Centre 8.65 was successfully compliance tested with Avaya IP Office 4.0.

## 9. Additional References

This section references the product documentations that are relevant to these Application Notes.

Avaya product documentation can be found at <http://support.avaya.com>.

- *IP Office 4.0 Installation Manual*, Document ID 15-601042, Issue 15e, January 2007.

The following documentation is available on request from New Media Software:

- NMS Adaptive Contact Centre
- Adaptive User Guide

Additional information is available for NMS Adaptive Contact Centre at [www.nms-adaptive.com/downloads](http://www.nms-adaptive.com/downloads)

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