



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring NMS Adaptive CTI with Avaya IP Office R8.0 using Avaya IP Office TAPI Service Provider – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for NMS Adaptive CTI module to interoperate with Avaya IP Office. NMS Adaptive CTI is one module of the NMS Adaptive Suite which allows a desktop user communicate by inbound and outbound phone calls by providing a link between the computer network and the telephone system.

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 used to validate the NMS Adaptive Computer Telephony Integration (CTI) module of the Adaptive Suite with Avaya IP Office using Avaya IP Office TAPI3 Service Provider. The Adaptive Suite interoperates with Avaya IP Office using Third Party Telephony Application Programming Interface (TAPI). The Adaptive CTI Gateway handles all communication between the Adaptive solution and Avaya IP Office.

NMS Adaptive is a Computer Telephony Integration platform that provides call control, media blending, progressive and predictive dialling and monitoring functionality to end users. Adaptive Desktop allows operators to control making and receiving calls via any Avaya Digital or IP deskphone registered to the Avaya IP Office. The Adaptive CTI module of the Adaptive Suite enables the agents take complete control of the Avaya IP Office deskphone using Adaptive Desktop to make, receive, hold and transfer calls.

2. General Test Approach and Test Results

The interoperability compliance testing included feature and serviceability testing. The feature testing focused on verifying NMS Adaptive handling of CTI messages in the areas of call control, event notification and routing. Various types of calls including intra-switch, PSTN, outgoing and incoming calls were tested. The serviceability testing focused on verifying the ability of NMS Adaptive CTI to recover from adverse conditions, disconnecting the Ethernet cable for the CTI link and the reboot of the Adaptive server under test.

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. Compliance testing

The compliance testing focused primarily on the following types of calls:

- Basic Inbound/Outbound Calls
- Hold/Transfer Functionality
- Using Busy Line Field (BLF) to monitor Users and Extensions
- Monitor Screen Pops on Adaptive Desktop
- Using Call-Back and Do Not Disturb functions
- Failover Testing

2.2. Test Results

The following observations were noted during testing:

- Adaptive Desktop does not log in a user as a part of the CTI functionality. Call Control is taken for a user already logged in to an extension.
- Only blind transfers are possible using Adaptive desktop.

2.3. Support

For technical support on NMS Adaptive products please contact the NMS Adaptive support team at:

Web address : <http://www.nms-adaptive.com/support-options.html>
Telephone : +44 845 612 4000
Email : support@nms-adaptive.com

3. Reference Configuration

Figure 1 shows the network topology for compliance testing. NMS Adaptive CTI which resides on a Windows 2003 Server with IP Office TAPI3 Service Provider to provide CTI connection to Avaya IP Office. Avaya 2400 Series digital deskphones are associated with Adaptive Desktop operators giving each Adaptive Desktop operator telephony functionality from the IP Office.

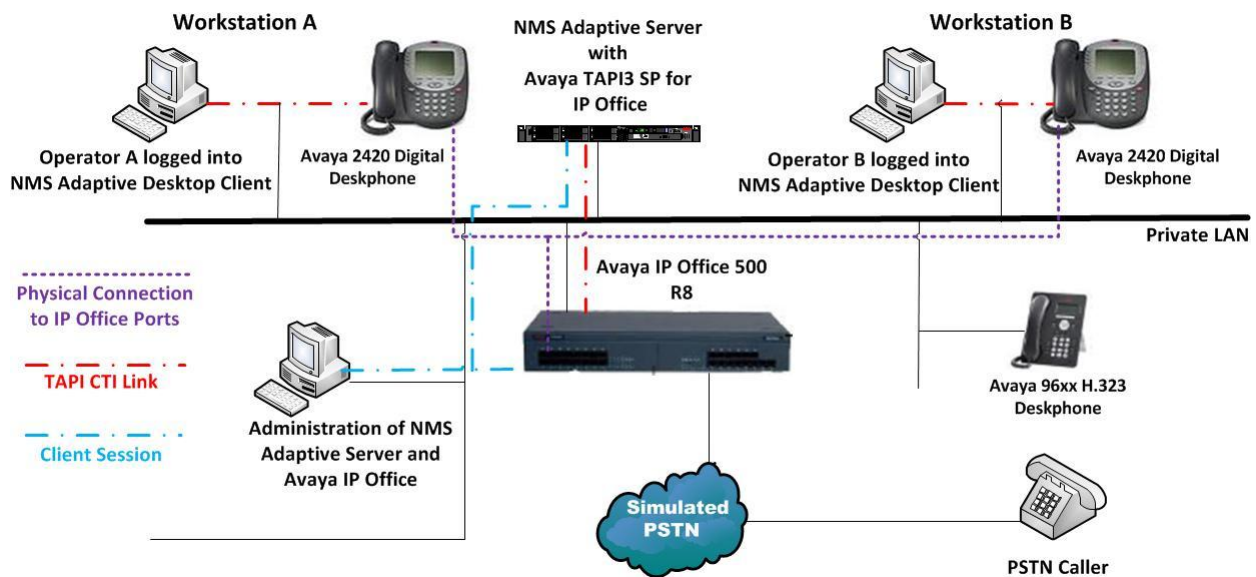


Figure 1: Connection of NMS Adaptive Suite with Avaya IP Office R8.0

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office 500	Avaya IP Office R8.0.16
Avaya 96xx H.323 Deskphone	Avaya H323 IP Office Firmware Ha96xxua3_Hbas.bin
Avaya 2420 Digital Extension	N/A
Avaya TAPI3 Telephony Service Provider Client for IP Office Installed on Adaptive Server.	Avaya TSPI3w.tsp 1.0.0.17
Platform Independent Server with Windows 2003 Server O/S and NMS Adaptive Server.	NMS Adaptive CTI Release 9.4
Client Workstation with Windows XP and NMS Adaptive Desktop	NMS Adaptive Desktop Release 9.4

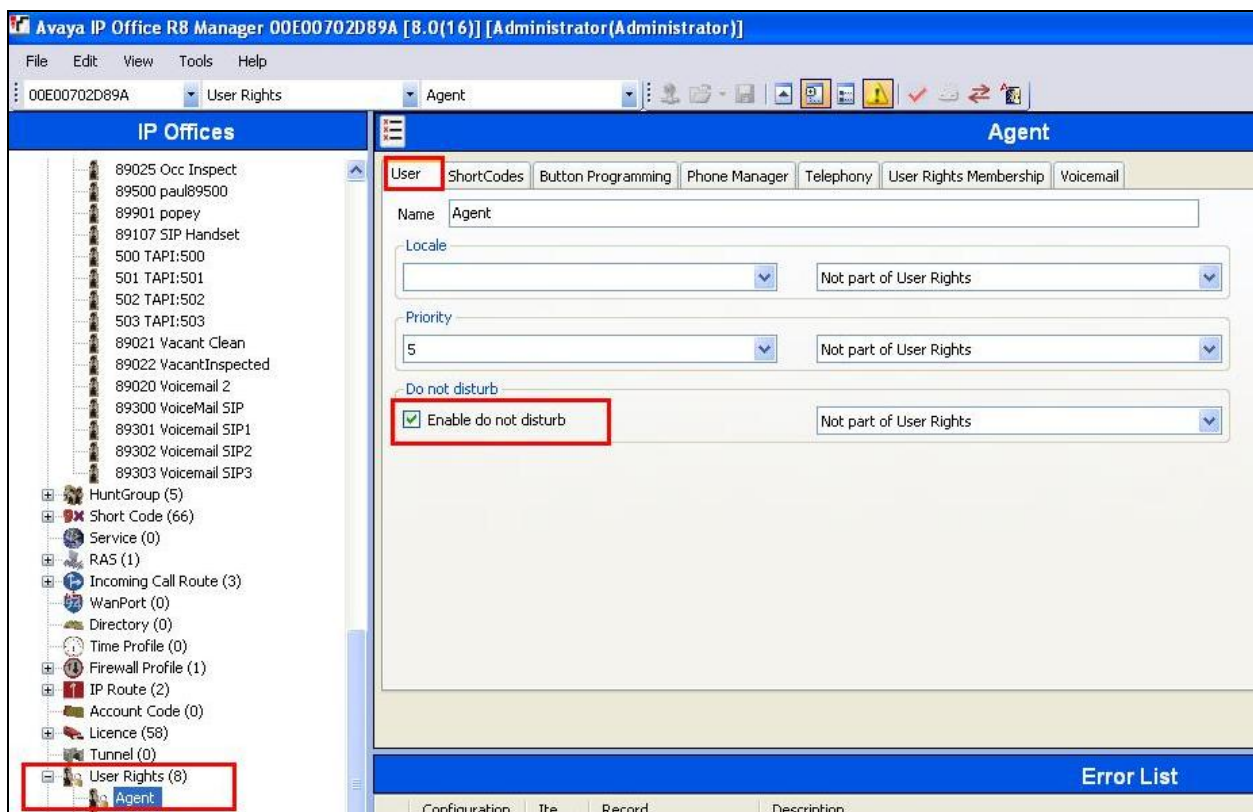
5. Configuration of Avaya IP Office

IP Office is administered using IP Office Manager installed on a PC. It is assumed that a working and fully configured IP Office is in place with extensions and users preconfigured. This section shows what changes to the IP Office configuration is required for NMS Adaptive CTI to interoperate correctly.

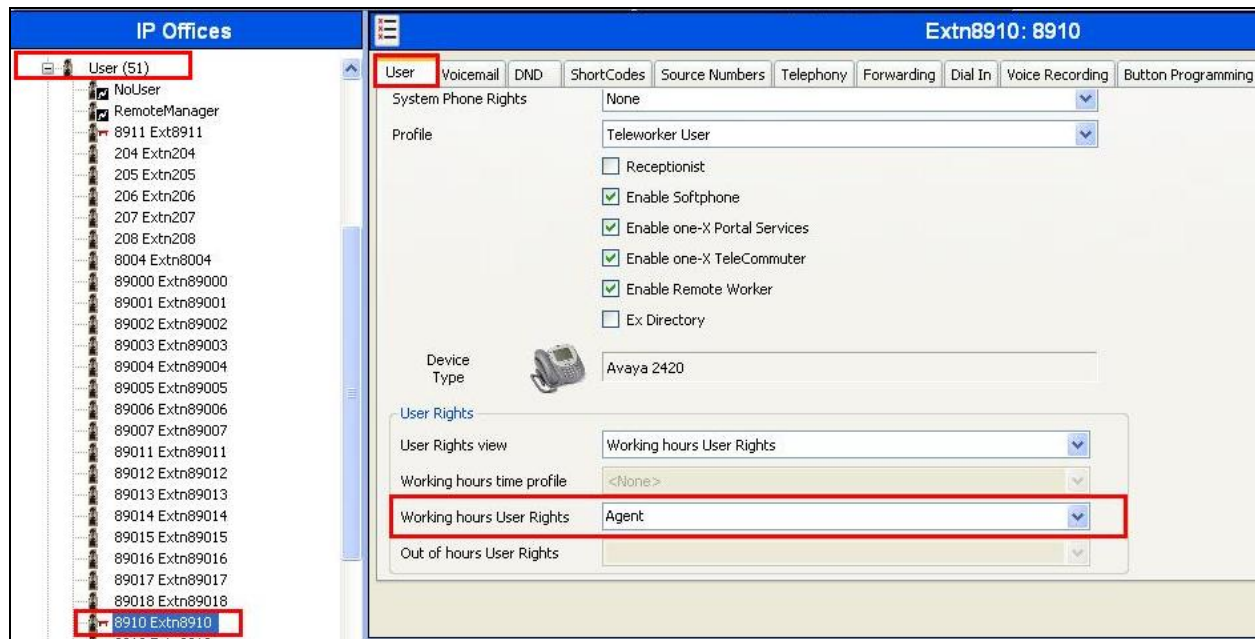
Note: A user must be logged into the extension before the Adaptive Desktop can assume control of the extension

5.1. Configuration of Avaya IP Office Users

Each user will need to be configured to allow the do not disturb feature. Click on **User Rights** in the left window select the user right associated with the users. In the example below this is called **Agent**. Under the **User** tab ensure **Enable do not disturb** is ticked as shown. Enter a suitable name for the User rights as this will be referenced in the User configuration to follow. Click **OK** once the information is entered correctly (Not shown).

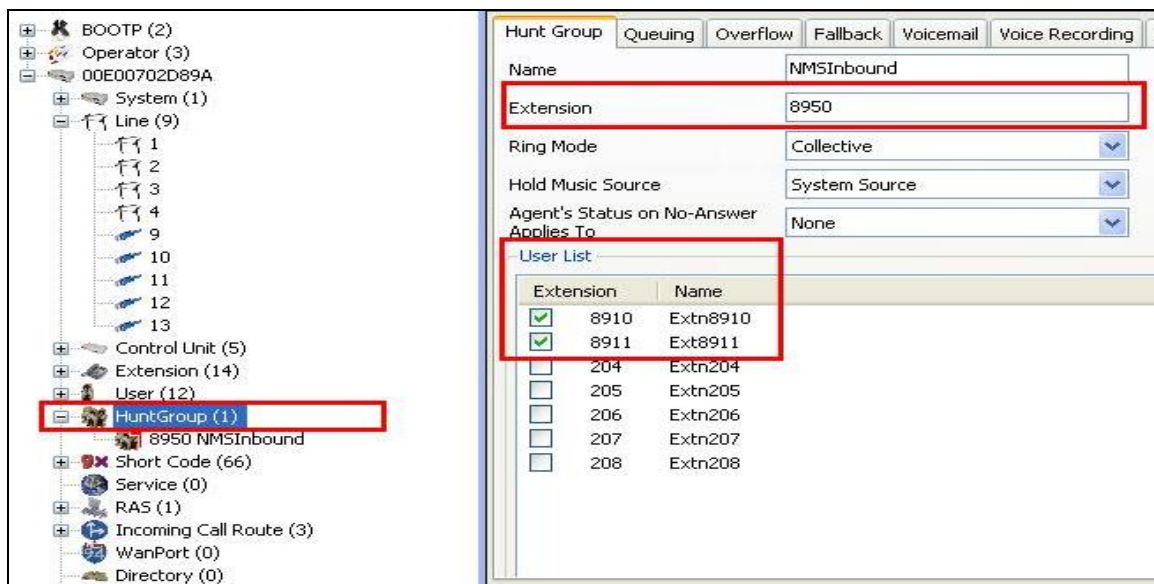


Expand on **User** in the left window and select the user to modify. Under the **User** tab in the right window ensure that **Working hours User Rights** is set to that user rights configured above.



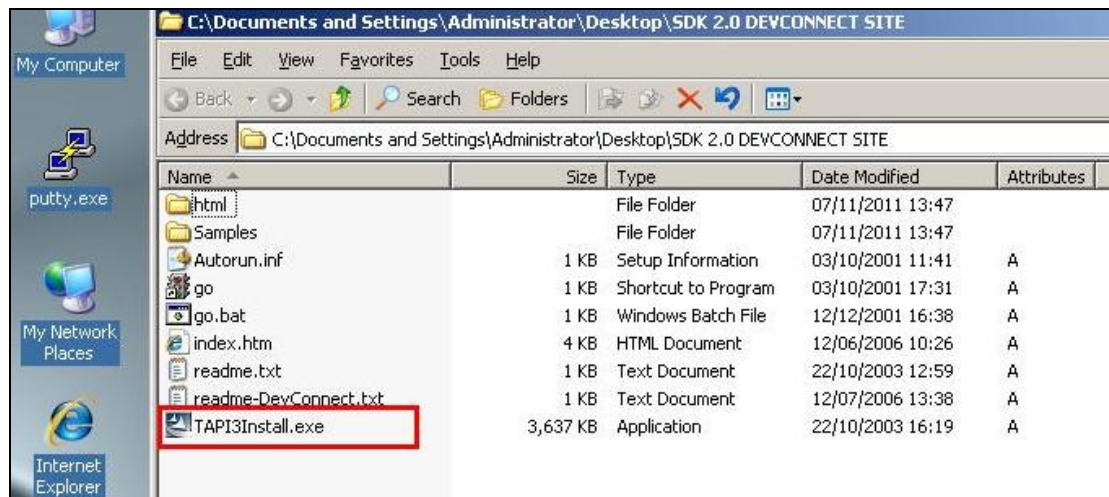
5.2. Configuration of Hunt Groups

Hunt Groups can be configured to associate agents with a service number. This is useful for inbound Contact Centre services. In the example below two users **8910** and **8911** are associated with HuntGroup **8950**. Right-click on **HuntGroup** in the left hand window highlighted below to add a new HuntGroup. Associate **users** to the HuntGroup by selecting each user in the **User List** highlighted below in the right hand window.



6. Installation and Configuration of Avaya IP Office TAPI3 Service Provider

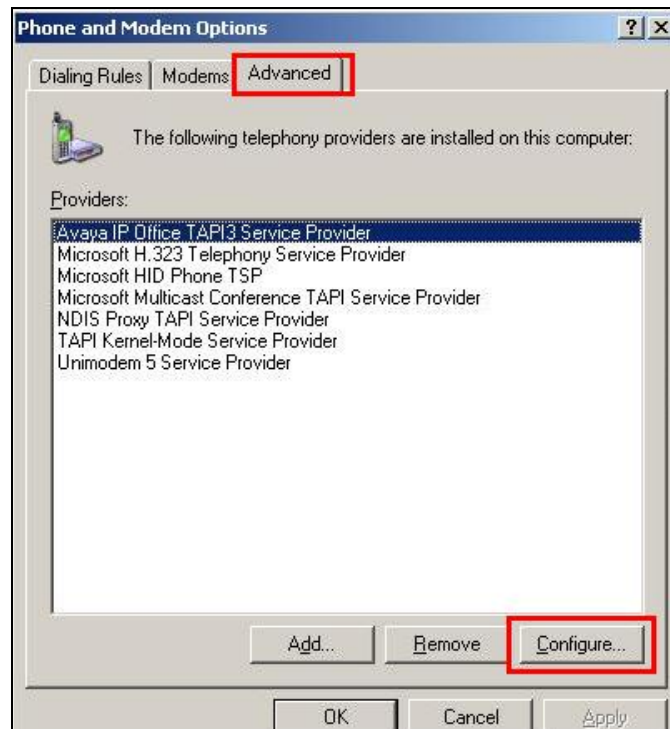
TAPI3 Service Provider is included in the IP Office CTI Link Software Development Kit (SDK) located on the DevConnect website (<http://www.avaya.com/gcm/master-usa/en-us/corporate/alliances/devconnect/index.htm>) under the product name IP Office. Once downloaded the install is initiated by running **TAPI3Install.exe** as shown below.



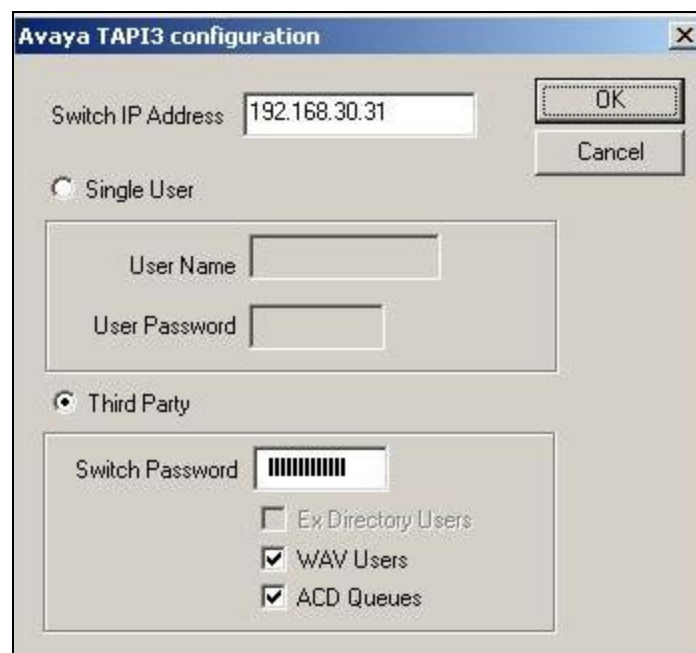
To configure the TAPI Service Provider, navigate to **Control Panel** and right click on **Phone and Modem Options** and properties as highlighted below.



Click on the **Advanced** tab and highlight **Avaya IP Office TAPI3 Service Provider** and click **Configure**.



Enter the IP Office IP address into the **Switch IP Address** box. Select **Third Party** and enter the IP Office Administrators password into the **Switch Password** box. Ensure **WAV Users** and **ACD Queues** are ticked as shown below.



7. Configuration of NMS Adaptive CTI

This section outlines the steps necessary to configure the NMS Adaptive CTI to enable the Adaptive Desktop users take control of the Avaya IP Office deskphones. All configuration changes on the Adaptive Server are done through Adaptive Management Console installed on the Adaptive Server.

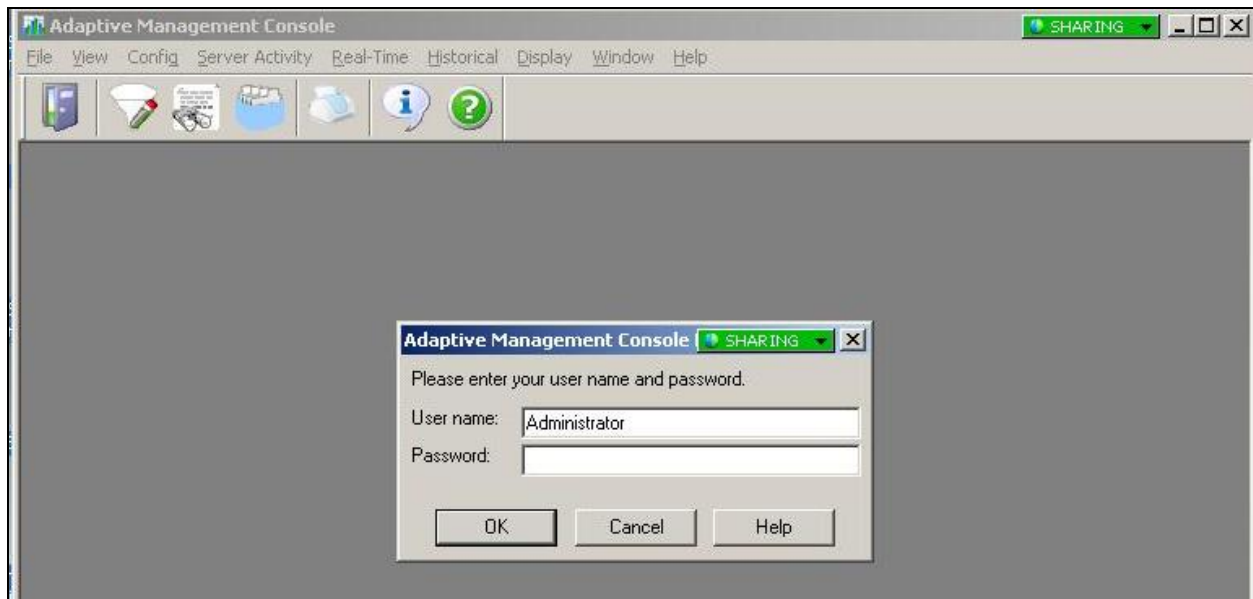
Note: Installation of the Adaptive CTI software is outside the scope of this document, for additional information regarding the installation please see **Section 10** of these Application Notes.

7.1. Configuration of NMS Adaptive CTI Gateway

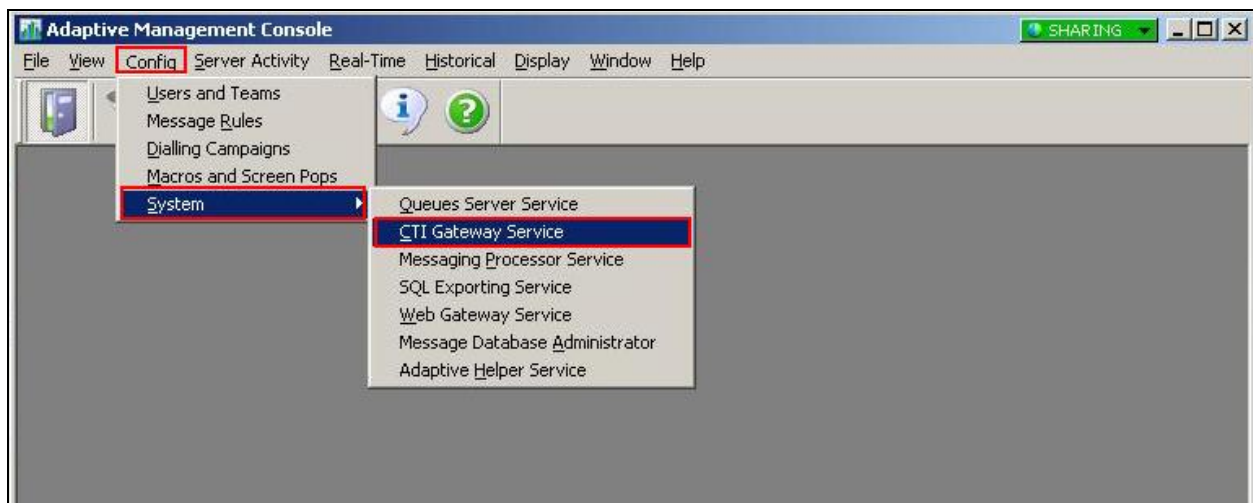
The steps below describe the configuration for Adaptive CTI Gateway. This configuration enables the Adaptive Suite to communicate with IP Office via TAPI. Open the program **Adaptive Management Console** as shown below.



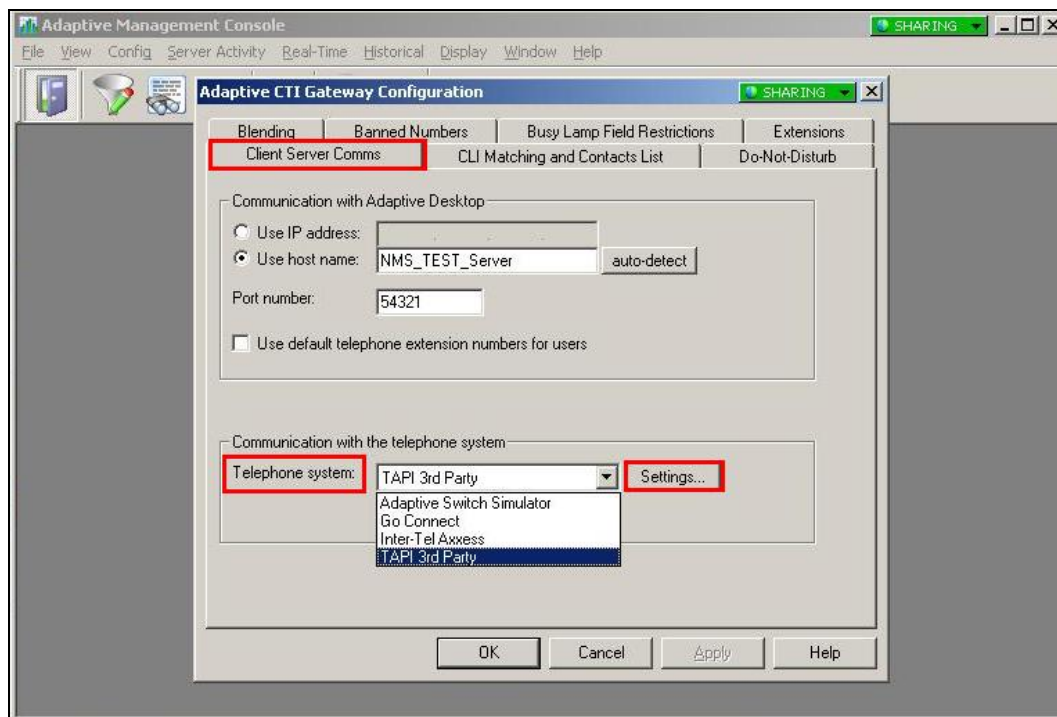
Enter the appropriate credentials into the **Adaptive Management Console** login screen as shown.



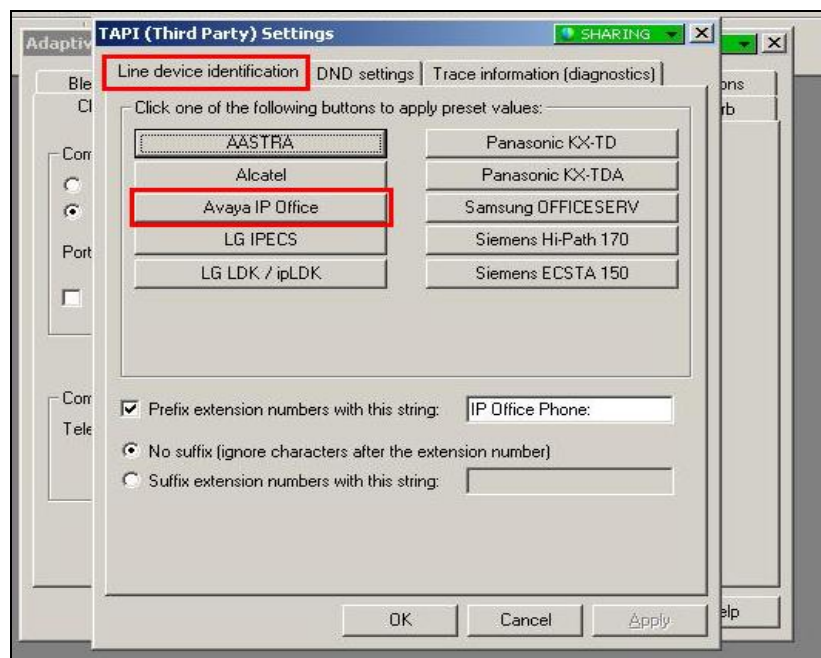
Once logged in configure the CTI Gateway Service by clicking on **Config** in the toolbar at the top of the screen and under **System** select **CTI Gateway Service** as shown below.



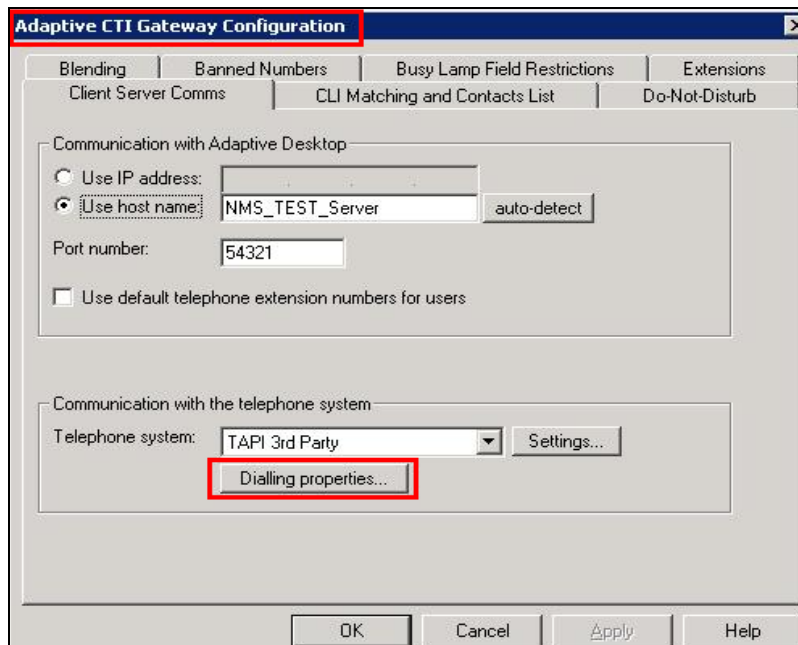
The **Adaptive CTI Gateway Configuration** window opens. Select **Client Server Comms** tab and select **TAPI 3rd Party** for the **Telephone system** as highlighted below. Click **Settings** to configure the TAPI Settings.



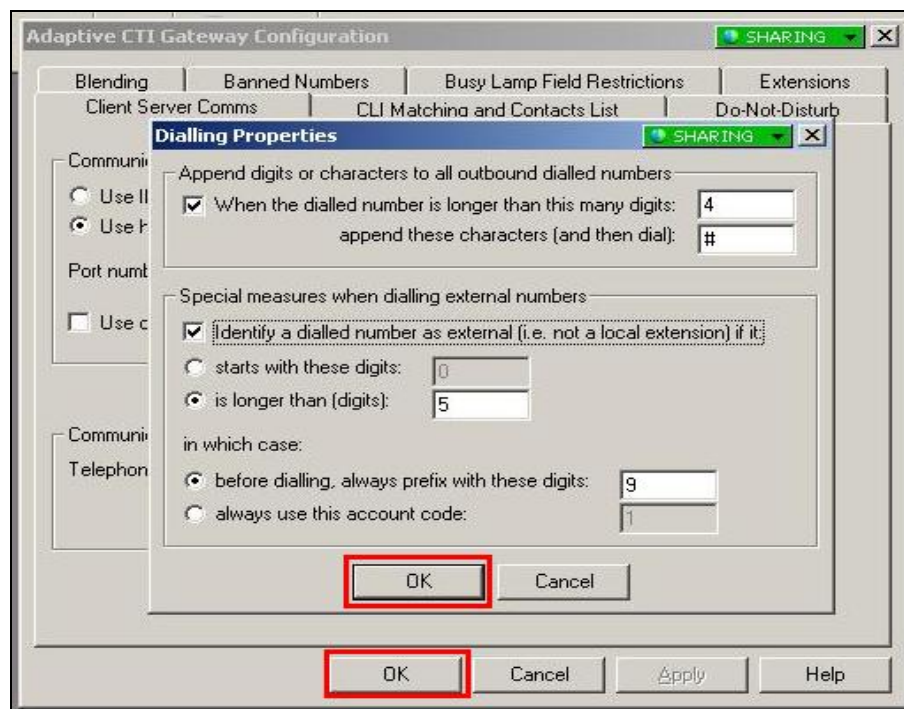
The **TAPI (Third Party) Settings** window opens. Click the **Avaya IP Office** button under the **Line device identification** tab and click **OK** to submit. All other entries are default.



Click on **Dialling properties** on the **Adaptive CTI Gateway Configuration** window as shown below.

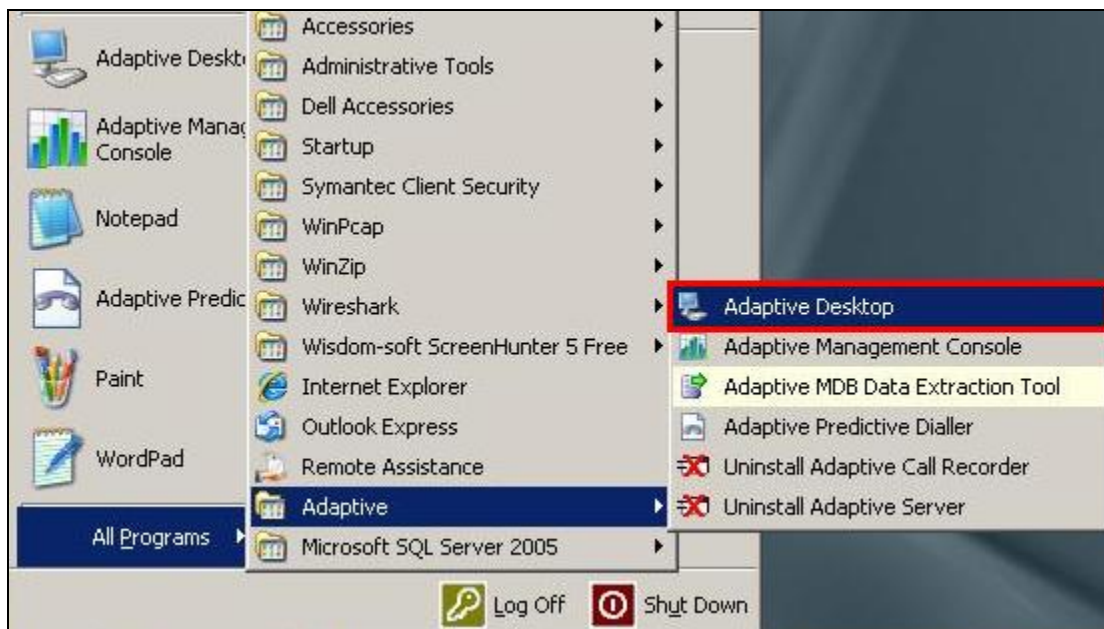


Prefix numbers for outside lines and appended numbers are added for the system on this screen. The information added here is non-specific as it is unique for each site. Once the relevant information is added, click **OK** and **OK** on the **Adaptive CTI Gateway Configuration** window, as shown.

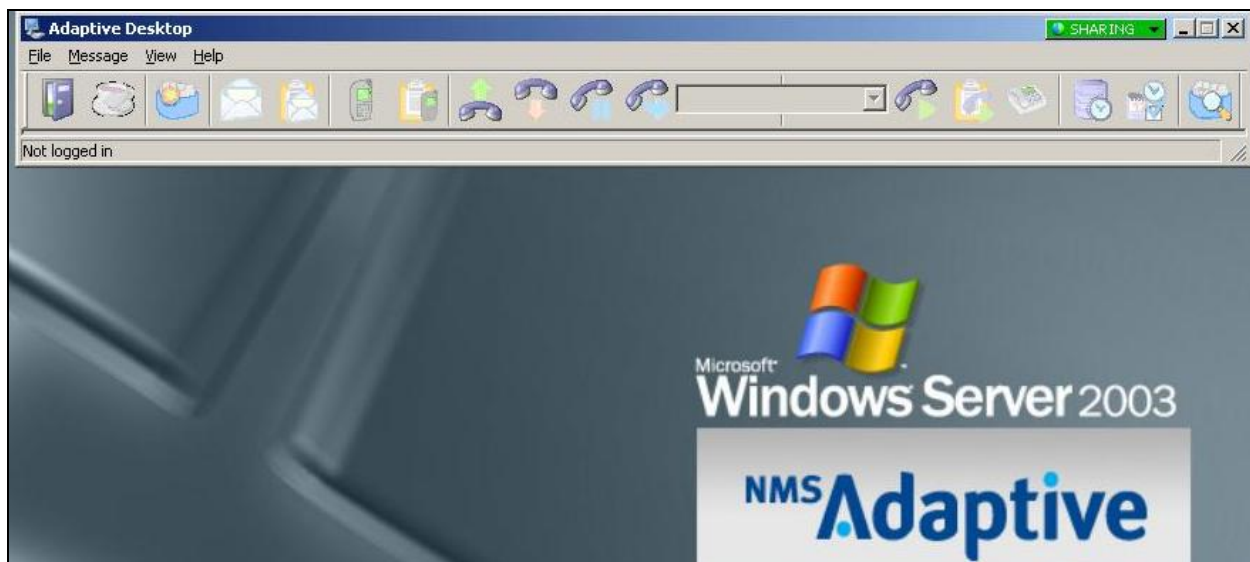


7.2. Configure Adaptive Desktop

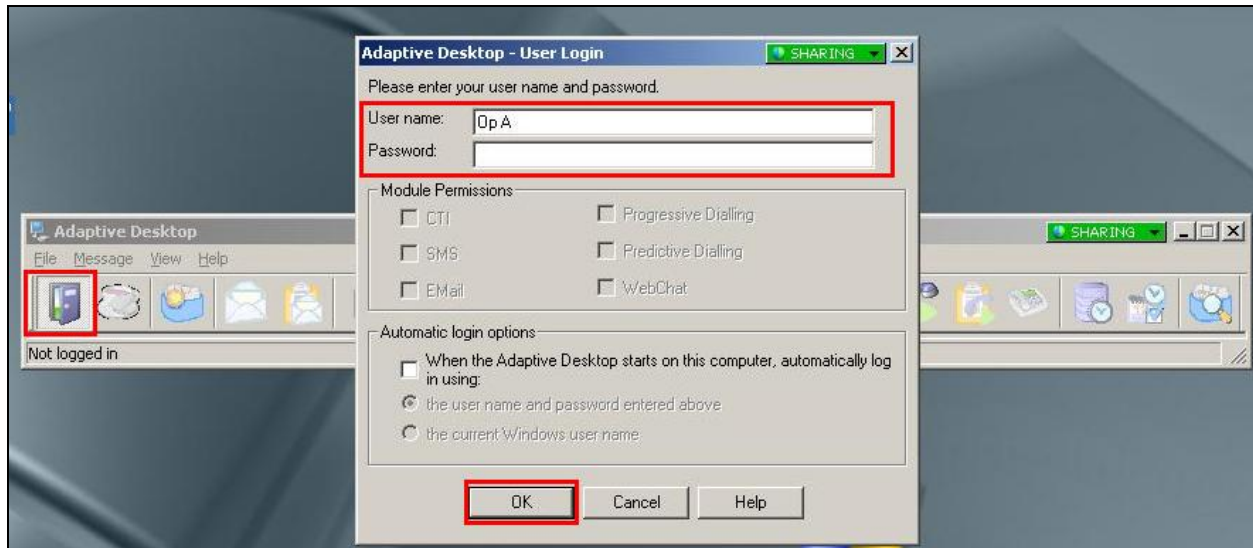
Open **Adaptive Desktop** as shown below.



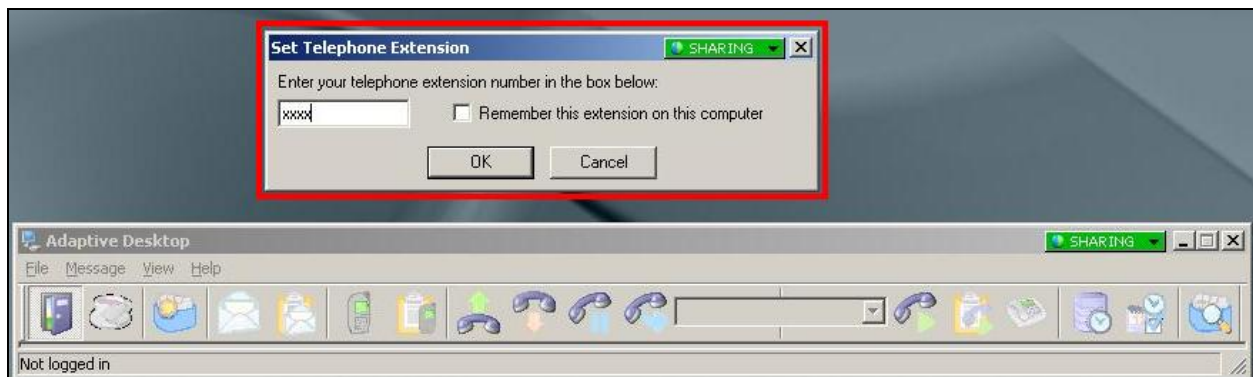
This opens the **Adaptive Desktop** window as shown.



Click on the Login Icon highlighted. This opens the **Adaptive Desktop – User Login** window, Enter the required **User name** and **Password** and click **OK**.



Once **OK** is clicked above the **Set Telephone Extension** window opens. Enter the IP Office extension that is to be associated with the Adaptive Desktop operator and click **OK**.



Once logged in information on **messages**, **calls**, and **Call Queue** is displayed as highlighted below.

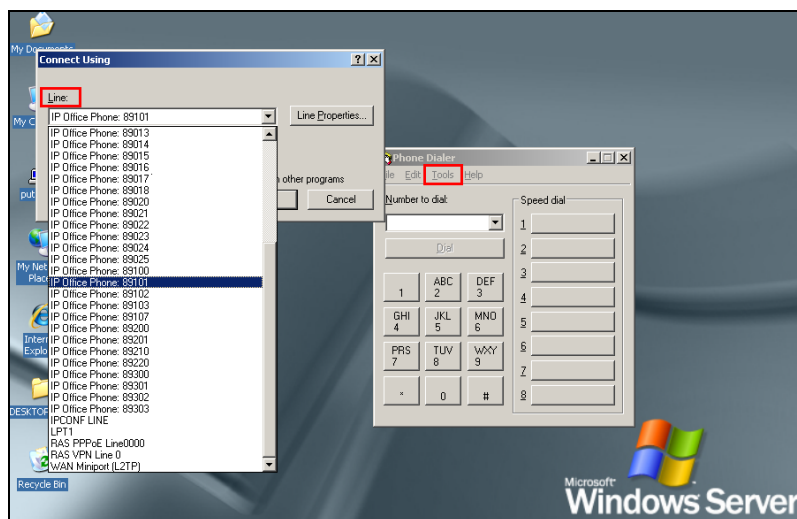


8. Verification Steps

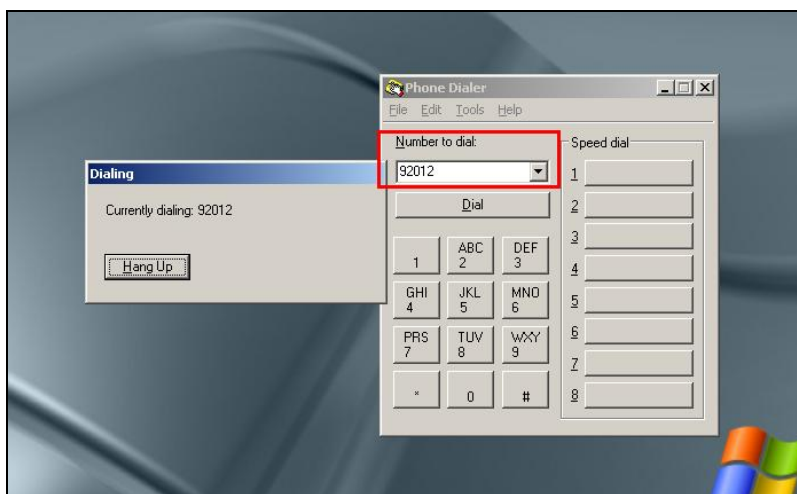
This section illustrates the steps necessary to verify that the NMS Adaptive CTI is connected to IP Office correctly.

8.1. Verify that Avaya IP Office TAPI Service Provider is running correctly

Open **Phone Dialer** (Windows program installed on all Windows platforms) on the Evolution Server where TAPI is installed. Click on the Tools menu and select **Connect Using**. Another box opens as shown below. Open the **Line** dropdown box and all the IP Office users should here as an available line to use.



Choose any line and in the box **Number to dial** enter a valid IP Office extension number as shown below and click **Dial**. The **Phone Dialer** should successfully call the chosen extension number.

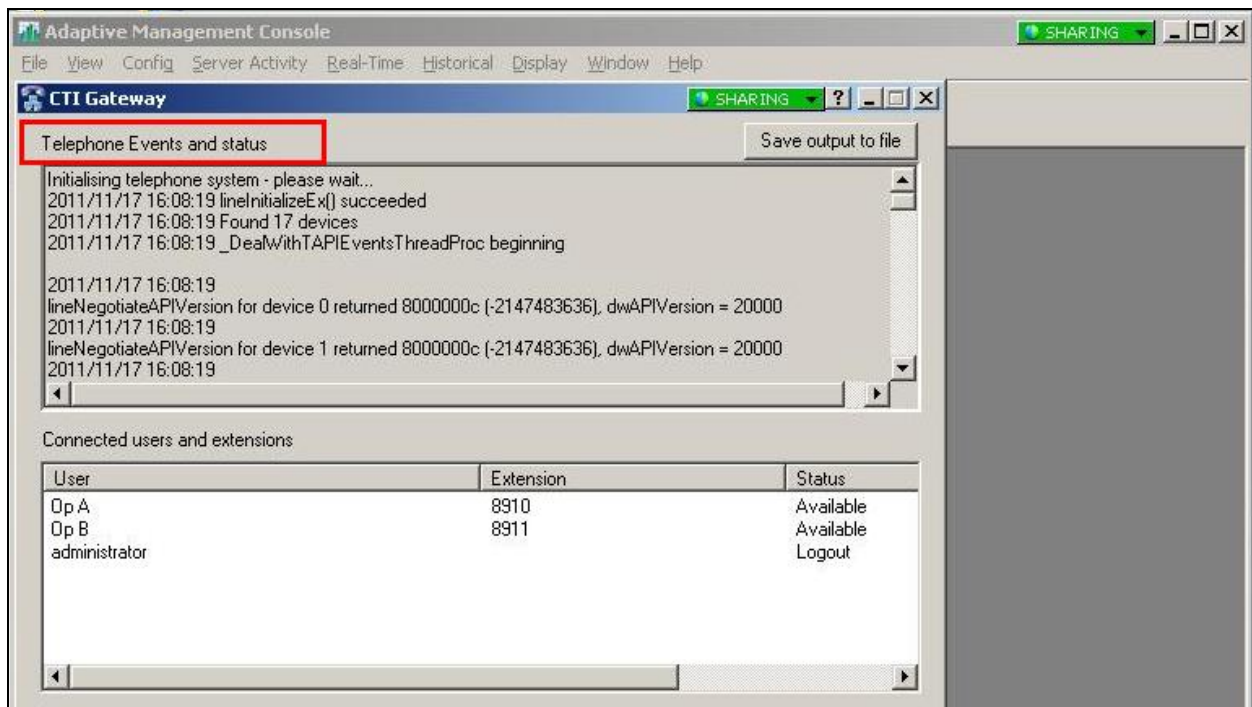


8.2. Verify that NMS Adaptive Server has CTI functionality

Open Adaptive Management Console as shown in **Section 7.1**. Click on **Server Activity** in the top menu and **Telephone Events** as shown below.



Telephone Events and status are displayed in the **CTI Gateway** window as shown below.



9. Conclusion

As illustrated in these Application Notes the procedures for configuring NMS Adaptive CTI to interoperate with Avaya IP Office R8.0. In the configuration described in these Application Notes, various types of calls including intra-switch, PSTN, outgoing and incoming calls were tested. During compliance testing, all test cases were completed successfully all other observations are noted in **Section 2.2**.

10. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at <http://support.avaya.com>.

- [1] *TAPI Link installation Doc # 15-601034 Issue 11d*
- [2] *TAPI Link Doc # 15-601035 Issue 11f*
- [3] *IP Office R8 Doc library*

The following NMS Adaptive product documentation can be found at <http://nms-adaptive.com/downloads/>

- [1] *Adaptive Software Suite – User Guide*

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