Avaya Solution & Interoperability Test Lab

Application Notes for Scantalk TeamView® Unified Operator 2.5 with Avaya IP Office 11.0 using TAPI for Presence Services - Issue 1.0

Abstract

These Application Notes describe the configuration steps for configuring Scantalk TeamView® Unified Operator 2.5 with Avaya IP Office 11.0 using the Telephony Application Programming Interface (TAPI) to give Presence information to Unified Operator. Scantalk TeamView® Unified Operator integrates with Avaya IP Office using the TAPI interface.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as the observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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 configuration steps for configuring Scantalk TeamView® Unified Operator 2.5 with Avaya IP Office 11.0 using the Telephony Application Programming Interface (TAPI) to provide presence information to Unified Operator. Avaya IP Office consists of a primary server, which is the Avaya IP Office Server Edition, and a secondary server being the Avaya IP Office IP500 V2 Expansion. Scantalk TeamView® Unified Operator integrates with Avaya IP Office using TAPI.

TeamView® Unified Operator as part of the TeamView® application suite is a dedicated application for employees in the company's reception/switchboard function, where it is used to manage all communications. The application provides the user with a complete organizational overview, advanced search functions, together with the current status of colleagues' availability. Finally, it takes care of relevant telephone functions and integrated information services so that customers see the organization as service-oriented, efficient and professional.

The many features can be categorized within the following three sub-processes:

- Identify an employee by means of comprehensive advanced search function with phonetic search, free text search and partial search in many flavours.
- Observe the employee's availability with information such as status for fixed and mobile phone, PC status (login/out and screensaver), physical presence (from in/out system), calendar appointments and cause of absence.
- Serve the caller in this context, including directly or announced transfer to landline or mobile phone, call waiting on busy station, call on hold, or transfer call to vacant department colleague (all dept. colleagues can readily be observed when an employee is identified, including their current phone status). Alternatively, send message to staff via e-mail or SMS, or paste text message on employees for the information of colleagues (not tested).

TeamView® Unified Operator is usually installed on a client PC, which is part of the same domain as the TeamView® server. The client PC has installed an Avaya IP Office Telephony Application Programming Interface (TAPI) configured in 'Third Party' mode.

2. General Test Approach and Test Results

This section describes the compliance testing used to verify interoperability of Scantalk TeamView® Unified Operator (Unified Operator) with IP Office and covers the general test approach and the test results. The general test approach was to configure the Unified Operator to communicate with IP Office as implemented on a typical customer's premises.

IP Office TAPI is used to control an Avaya deskphone (used as the switchboard). A Hunt Group is configured on IP Office, which contains the extension of the deskphone to be used as the switchboard, and a short code for Call Queue configured to allow Unified Operator to display the queue information.

Unified Operator uses Microsoft SQL Express via a direct connection or ODBC. TeamView® AD LookUp acquires user information from Microsoft Active Directory; TeamView® Calendar LookUp acquires calendar information from Microsoft Exchange/Notes and puts both into the SQL Server. Unified Operator is usually installed on a client PC which is part of a domain. The Unified Operator is configured to connect to the TeamView® Status Server to get phone status information of all contacts in the database. Because the Avaya IP Office was a Server Edition with an IP Office 500 V2 expansion, there were two TeamView® servers installed, one connecting to the Server Edition and the other connecting to IP Office 500 V2 expansion, with both connections using 3rd party TAPI connections.

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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and TeamView® Unified Operator did not include use of any specific encryption features as requested by Scantalk.

2.1 Interoperability Compliance Testing

The interoperability compliance testing evaluates the ability of Unified Operator to control Avaya endpoints on IP Office using the TAPI interface. The testing included typical functions including:

- Answer internal/external calls
- Make calls using TeamView® AD LookUp
- Transfers, Blind/Supervised
- Transfers to External/Mobile numbers
- Calls to busy numbers
- Hold/Unhold
- Set/Cancel Call Forwards
- Serviceability/simulated LAN failures

2.2 Test Results

Tests were performed to verify interoperability between Unified Operator and IP Office. The tests were all functional in nature and performance testing was not included. All the test cases passed.

2.3 Support

Technical support from Scantalk can be obtained through the following:

Web: www.scantalk.com
Phone: Sales: +45 48 10 49 10 or Support: +45 48 10 49 11
E-mail: Sales@scantalk.com or Support@scantalk.com

3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. Unified Operator was configured to connect to either IP Office Server Edition or the IP Office IP500 V2 expansion using Avaya IP Office TAPI configured in third party mode. Two hunt groups were configured on IP Office to route calls to the switchboard but more importantly to give information on the calls being presented using the "Call Queue" short code. Both SIP and H.323 phones registered to both the Server Edition and the IP Office 500 V2 were used as the switchboard phone. Two TeamView® servers were added to the network in order to get status information on the users on both the IP Office Server Edition and the IP Office 500 V2 using third party TAPI connections.

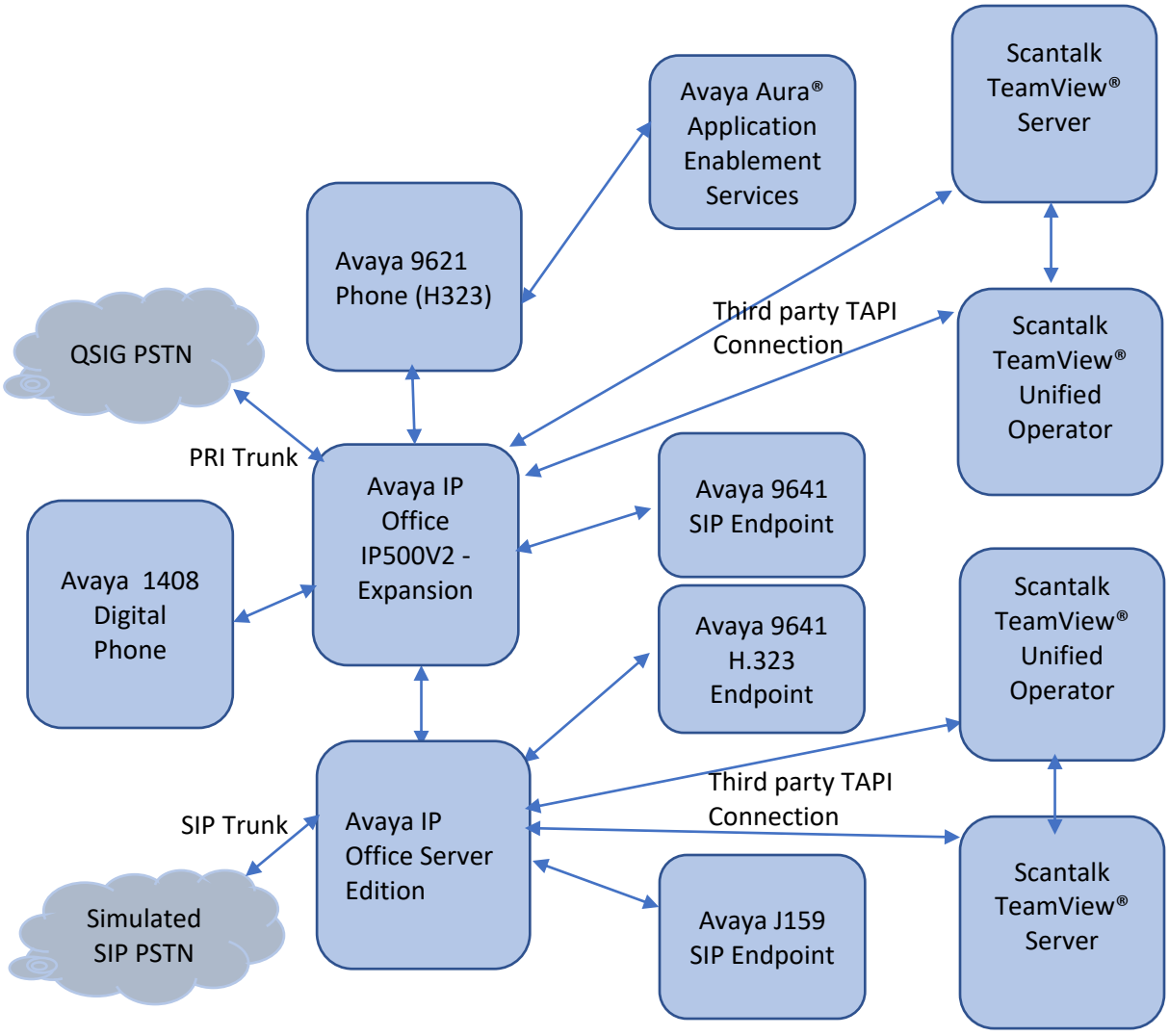


Figure 1: Scantalk TeamView® Unified Operator with Avaya IP Office Server Edition and IP Office IP500 V2

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office Server Edition running on a Virtual Platform	11.0.4.2.0
Avaya IP Office 500 V2	11.0.4.2.0
Avaya IP Office Manager running on a Windows 7 PC	11.0.4.2.0
Avaya 9621 H.323 Deskphone	6.8.3
Avaya 9641 H.323 Deskphone	6.8.3
Avaya J159 SIP Deskphone	4.0.4
Avaya 9641 SIP Deskphone	7.1.8
Avaya 1408 Digital Deskphone	4.0.10
Scantalk TeamView® Unified Operator running on a Windows 10 PC: TeamView® Unified Operator **Scantalk TeamView® Server running on Windows Server 2019** TeamView Unified Solutions TeamView® Status Server	 2.5.14.576 1.1.0.29 3.1.0.75

Note: Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 and when deployed with IP Office Server Edition in all configurations.

5. Configure Avaya IP Office

Configuration and verification operations on 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 IP Office for this solution. It is implied that 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
- Enable TAPI/DevLink3
- Check for CTI Pro Licenses
- Create Hunt Groups
- Add Short Code
- Save Configuration

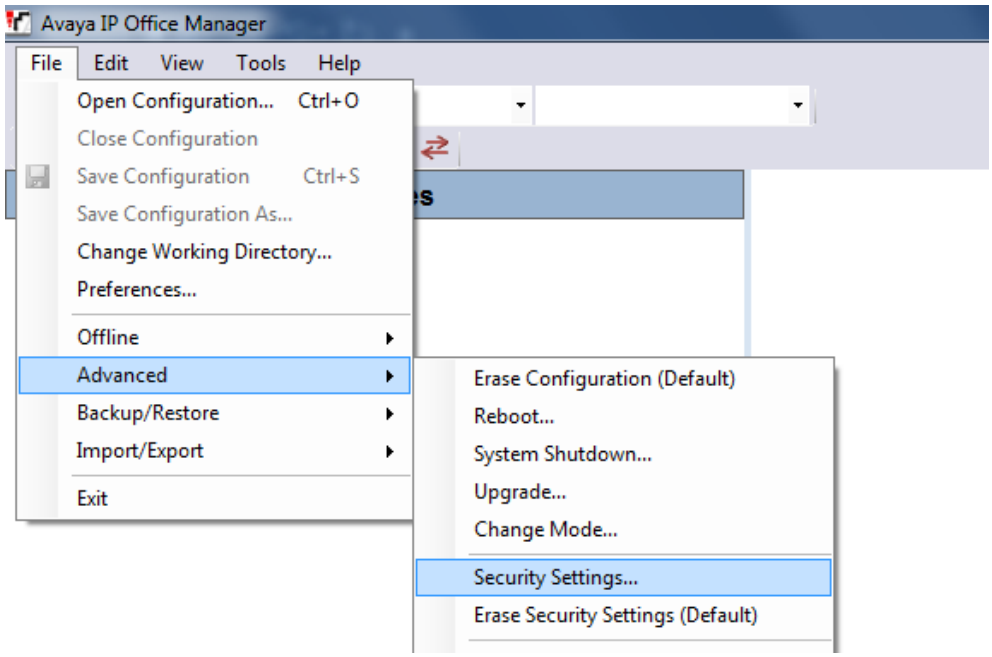
Note: TAPI may need to be enabled under Security. This procedure should be carried out by the IP Office Administrator. It is outlined here in **Section 5.2**.

5.1 Launch Avaya IP Office Manager

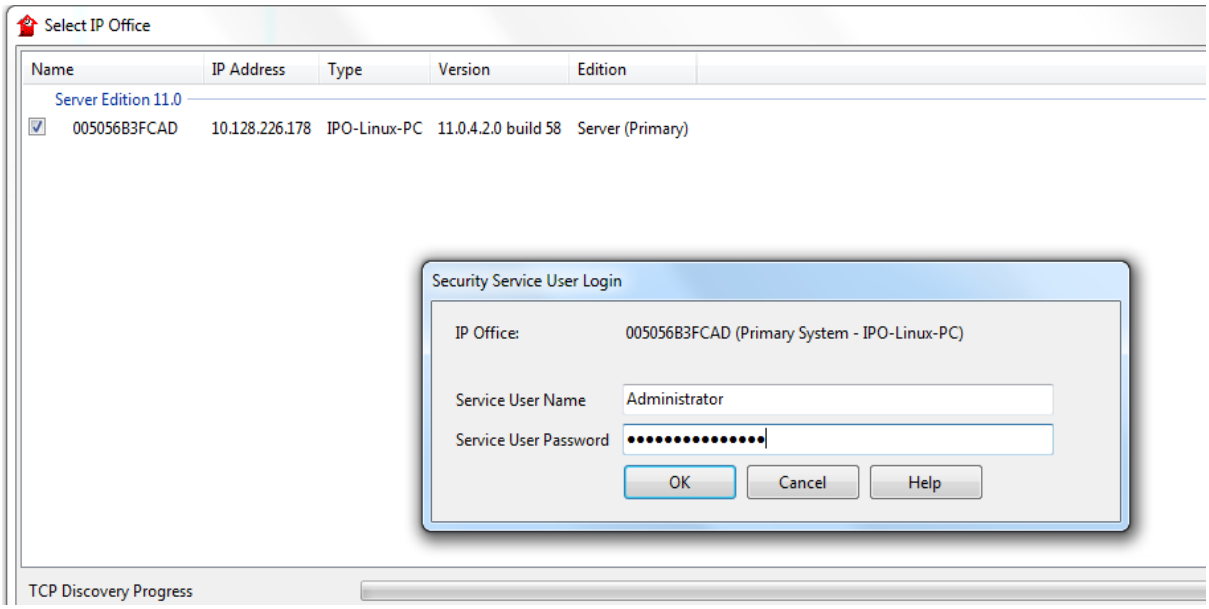
From the Avaya IP Office Manager PC, go to **Start → Program → IP Office → Manager** to launch the Manager application (not shown).

5.2 Enable TAPI/DevLink3

Once **Manager** is launched, click on **File → Advanced → Security Settings**.

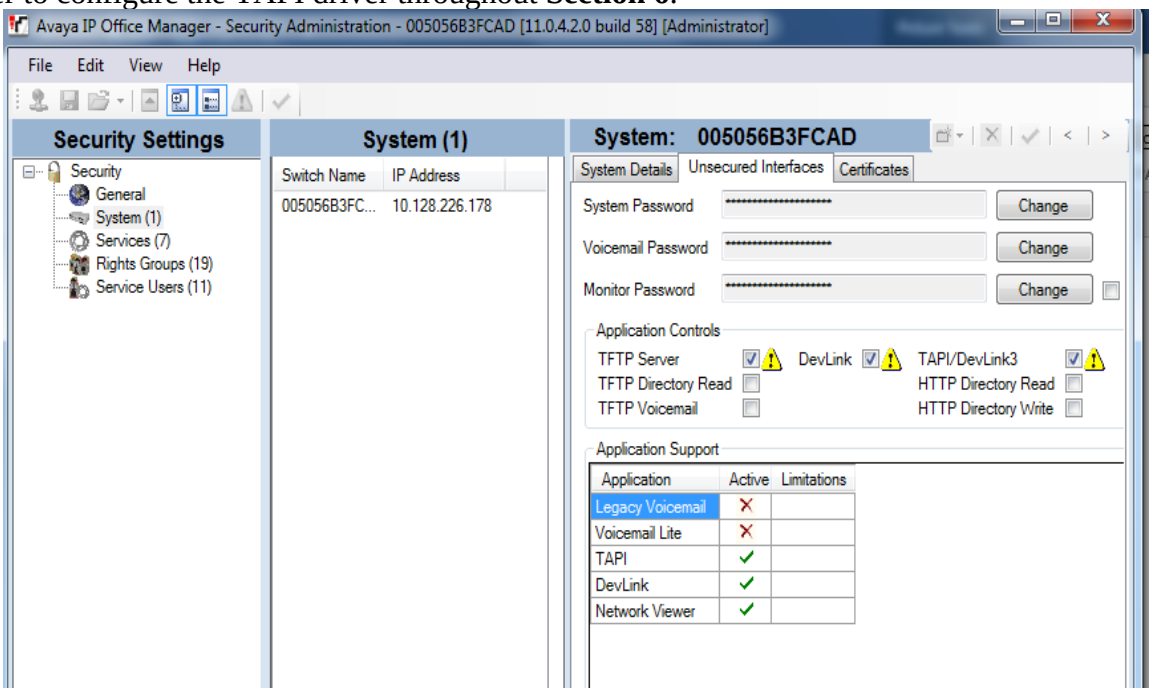


Log into Avaya IP Office Server Edition using the appropriate credentials to receive its configuration.



Click on **System** in the left window and in the main window ensure that **TAPI/DevLink3** is ticked as shown below. Click on **Save** (not shown) at the top of the screen once this is done.

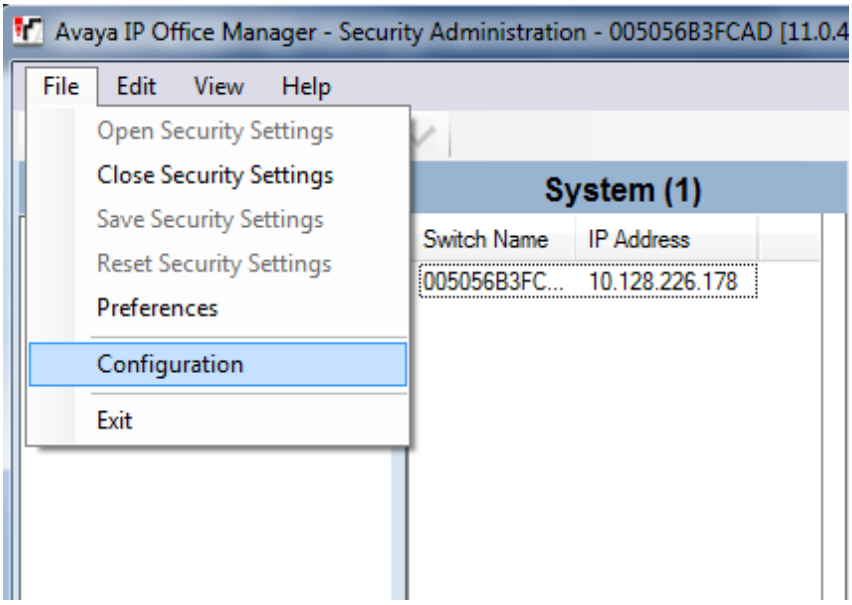
Note: The **System Password** can be set here if required, as this password will be required in order to configure the TAPI driver throughout **Section 6**.



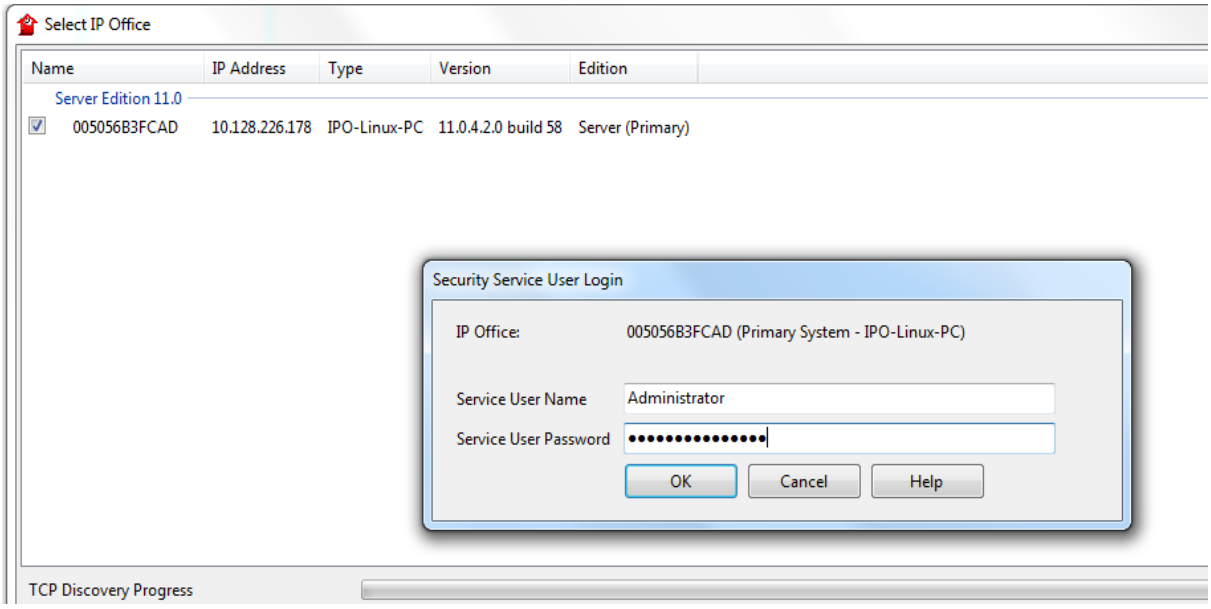
Repeat this section to **enable** TAPI/DevLink3 **for IP Office 500 V2.**

5.3 Check for CTI Pro Licenses

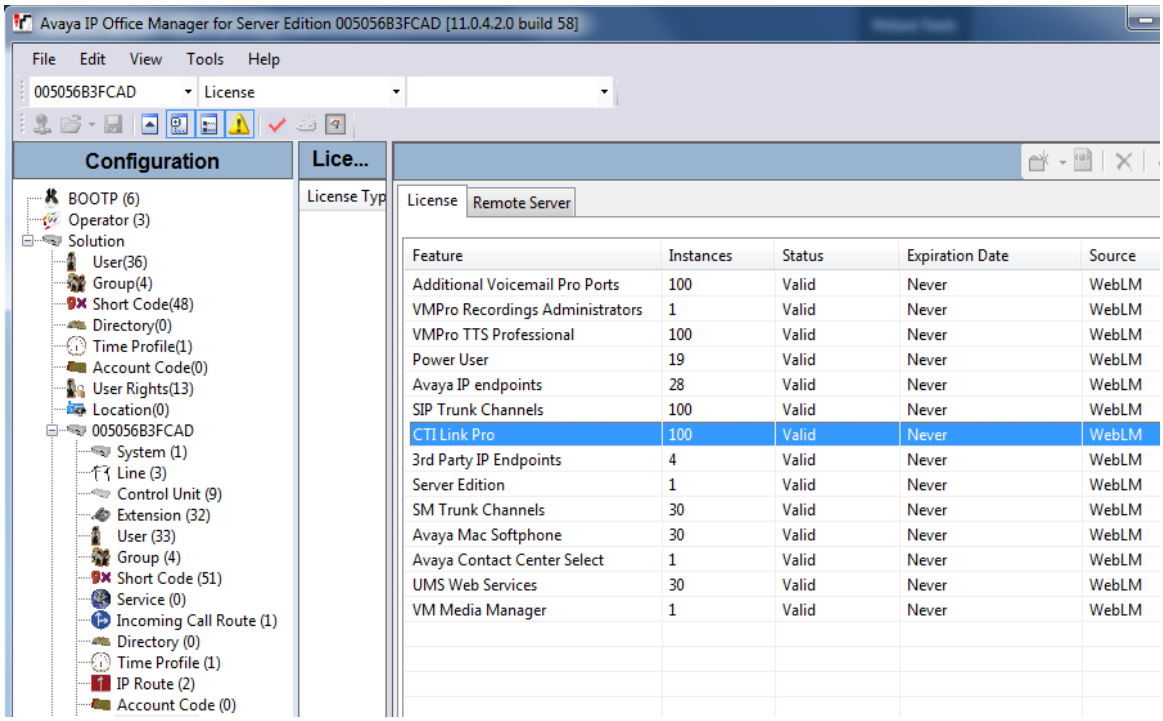
Click on **File → Configuration.**



Log into Avaya IP Office Server Edition using the appropriate credentials to receive its configuration.



Click on **005056B3FCAD → License** in the left window and ensure that the **License** tab is selected in the main window. All the licenses should be displayed as shown below. **CTI Link Pro license** shows that there are 100 CTI Link Pro Licenses available and so in theory **100** simultaneous calls monitoring could be achieved.

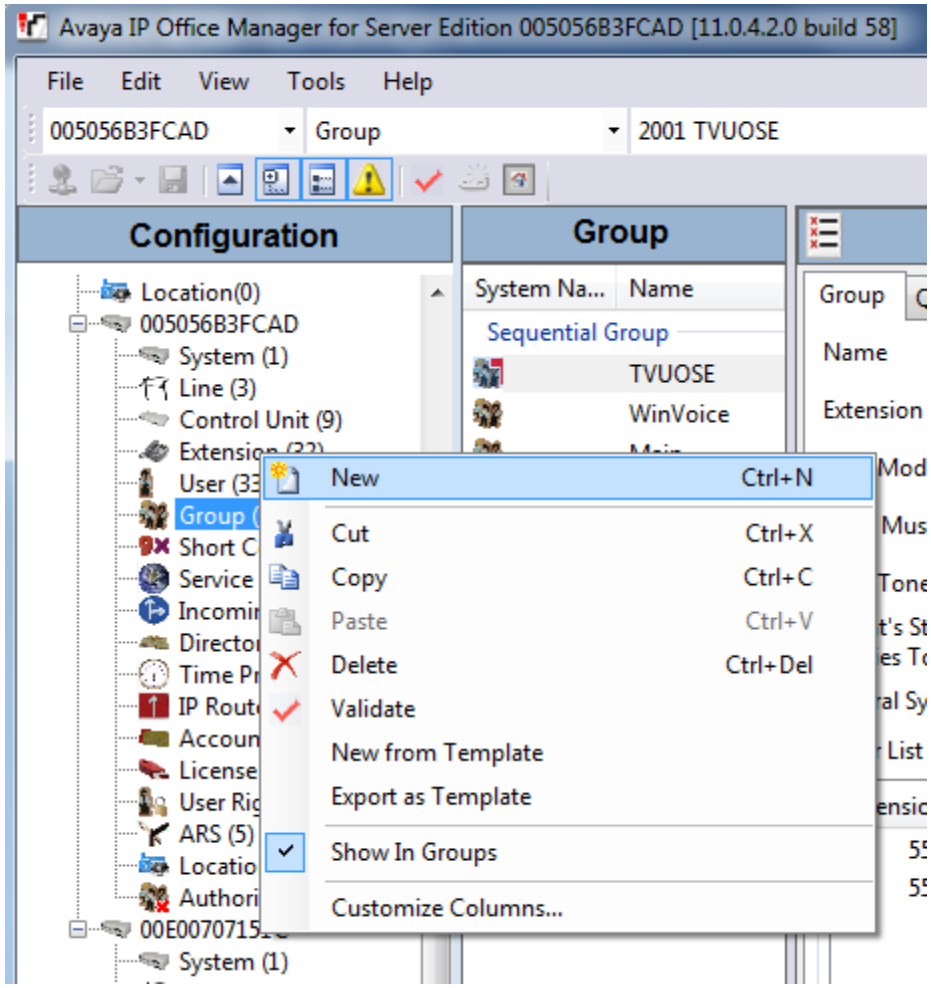


5.4 Create Hunt Groups on Avaya IP Office

A hunt group is created with a single user added so that calls can be queued to the single user. Because compliance testing included both the Server Edition and the IP Office 500 V2, two hunt groups were created each containing a single user that was to be associated with the Unified Operator as the "Switchboard phone set".

5.4.1 Create a Hunt Group on the IP Office Server Edition

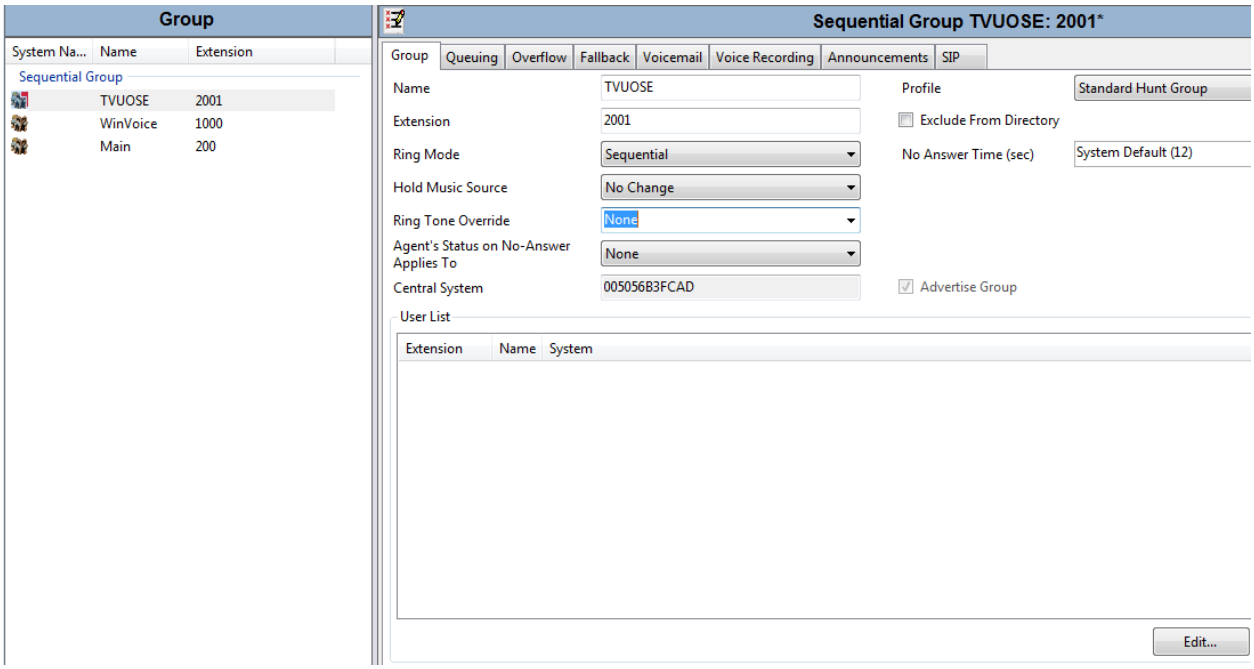
Expand IP Office Server Edition **005056B3FCAD** in the left window, right click on **Group** and select **New** as shown below.



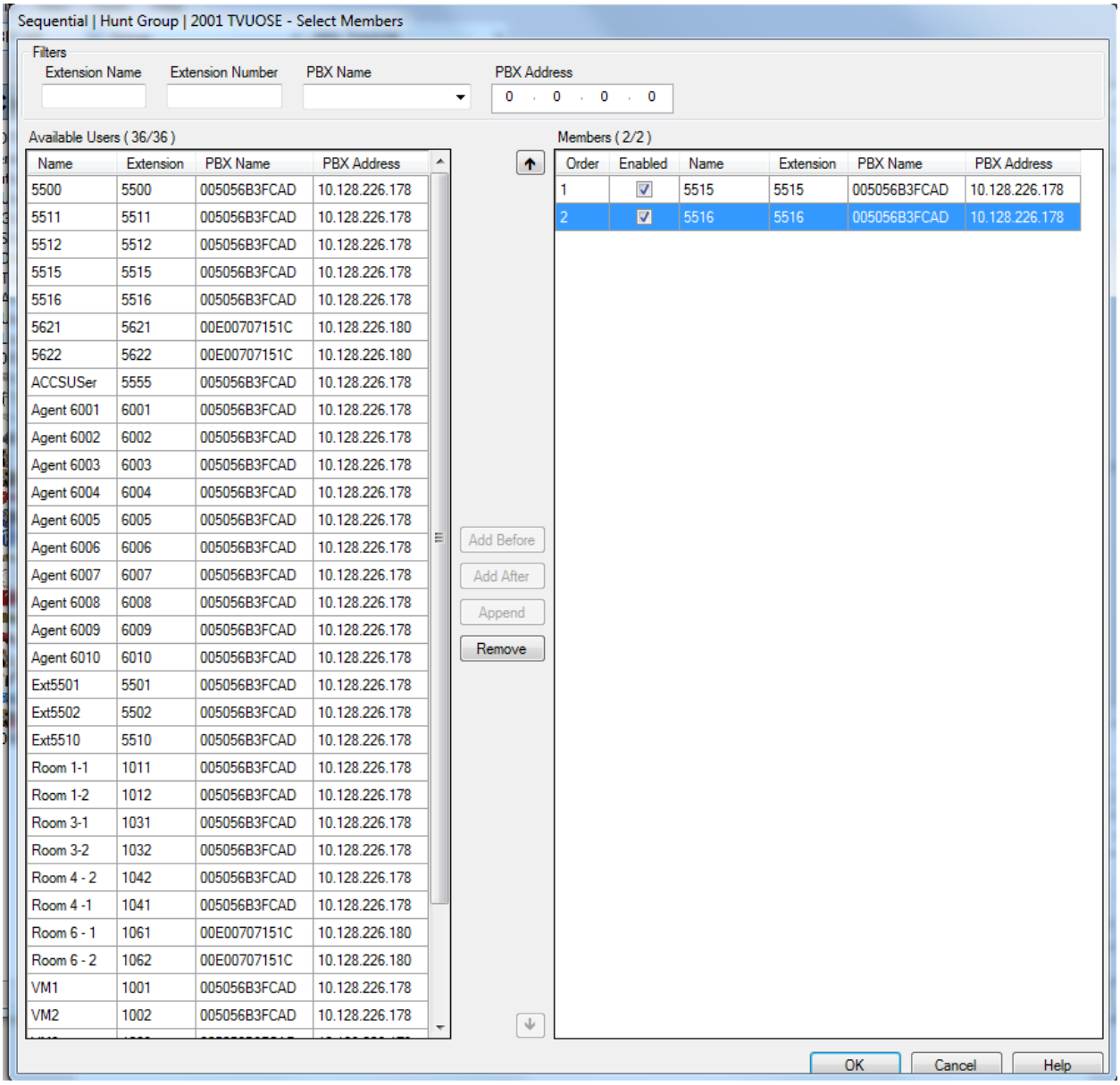
Within the Group tab enter the following information:

- **Name** Enter an informative name (i.e., **TVUOSE**).
- **Extension** Enter the extension which will be dialled to reach the switchboard Operator. (i.e., **2001**).
- **Ring Mode** Select **Sequential** from the dropdown box.

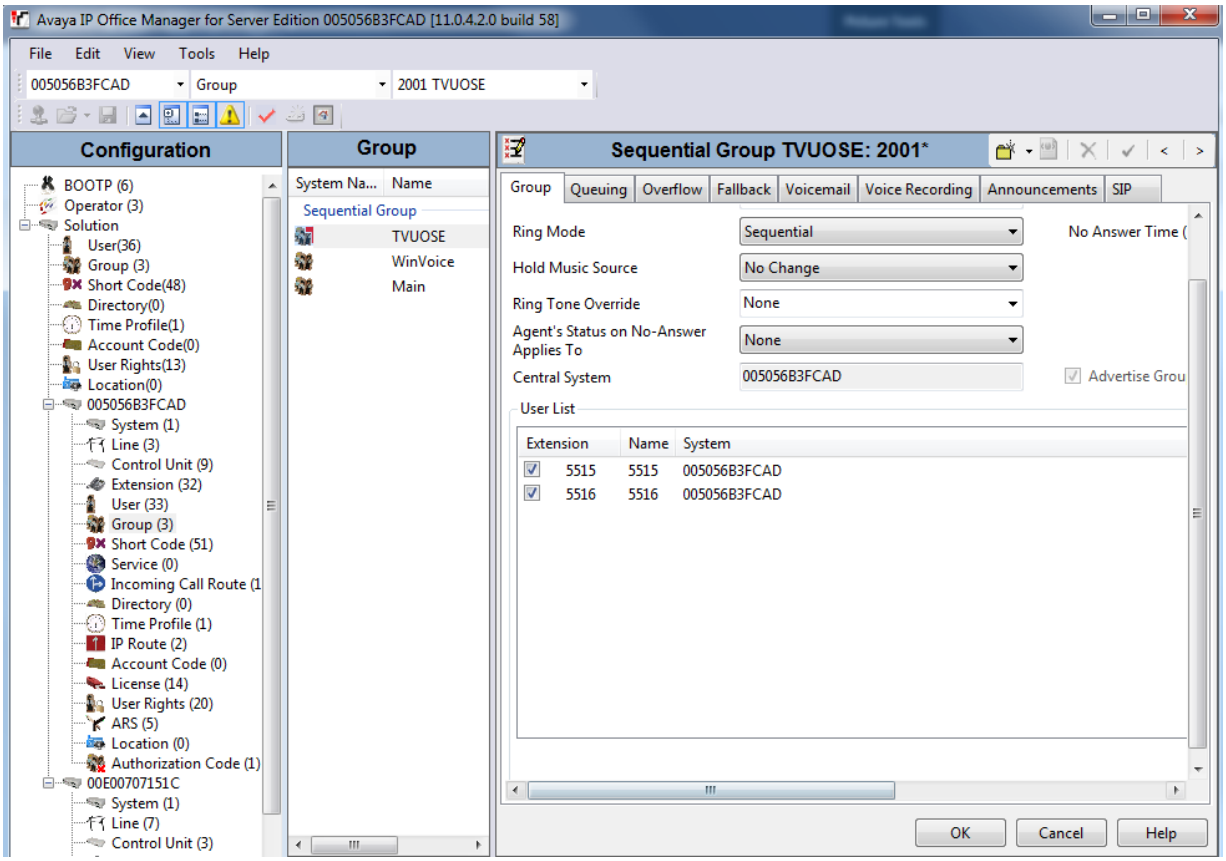
Scroll down the page. Click on the **Edit** button



The following window appears allowing the addition of any IP Office extension into the group, for compliance testing extensions **5515, 5516** were added. Click on **OK** to continue.

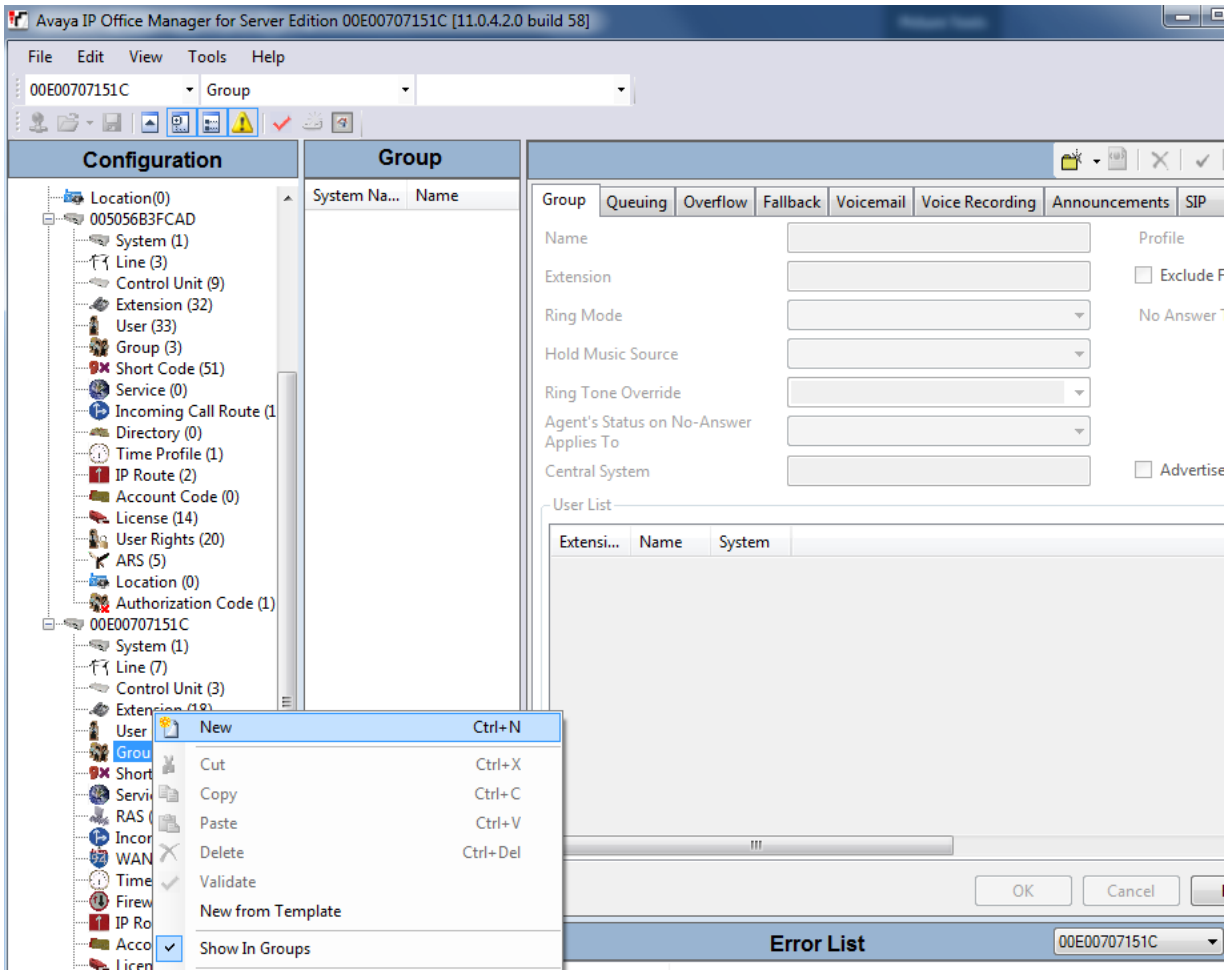


Click on **OK** again to save the new hunt group.



5.4.2 Create a Hunt Group on the Avaya IP Office IP500 V2 Expansion

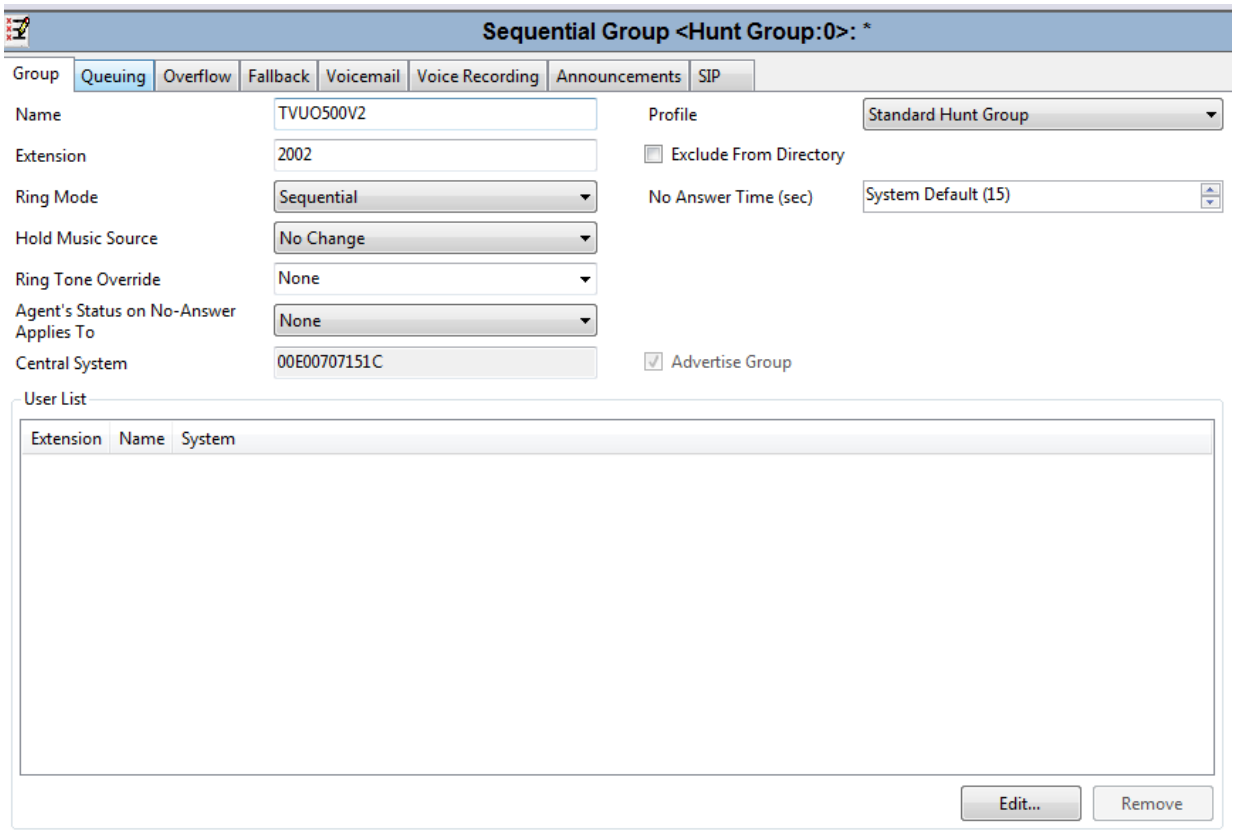
The same procedure is used to create a hunt group on the IP Office 500 V2. Expand the IP Office 500 V2 **00E00707151C** system and right click on **Group** as shown below. Select **New**.



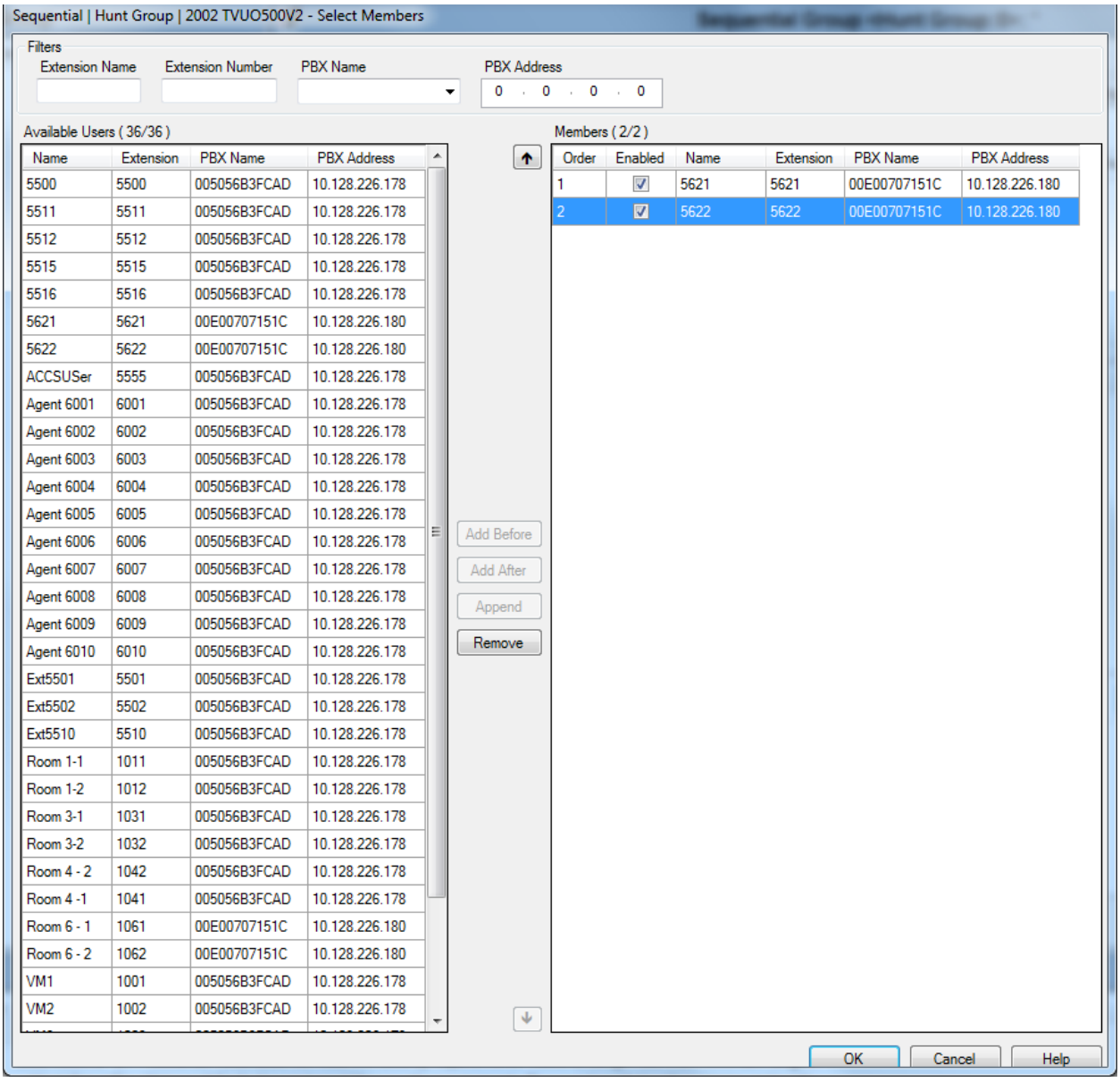
Within the Group tab, enter the following information:

- **Name** Enter and informative name (i.e., **TVUO500V2**).
- **Extension** Enter the extension which will be dialled to reach the switchboard Operator. (i.e., **2002**).
- **Ring Mode** Select **Sequential** from the dropdown box.

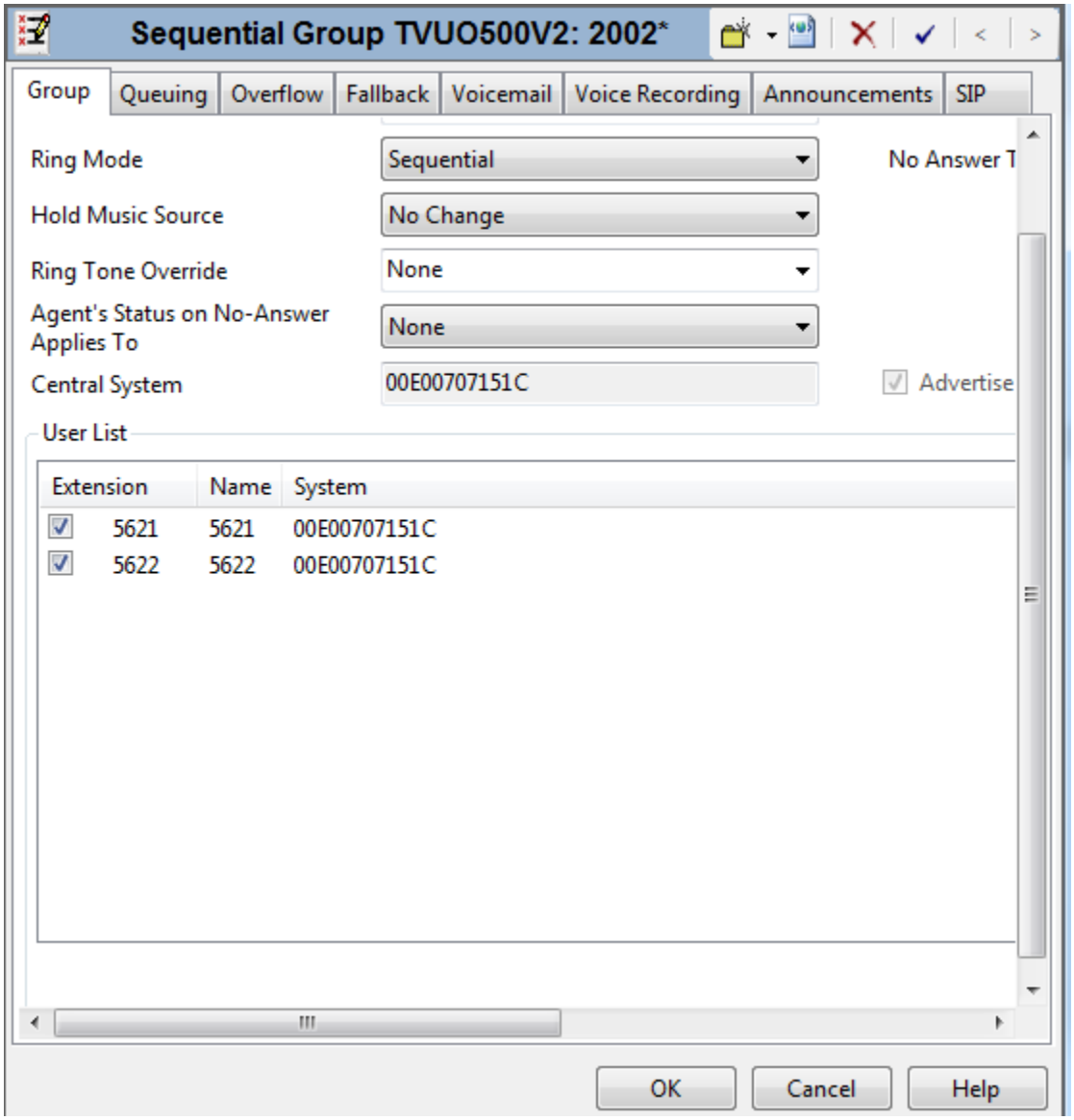
Scroll down the page. Click on the **Edit** button.



On this occasion, extensions **5621, 5622** are associated with hunt group 2002.

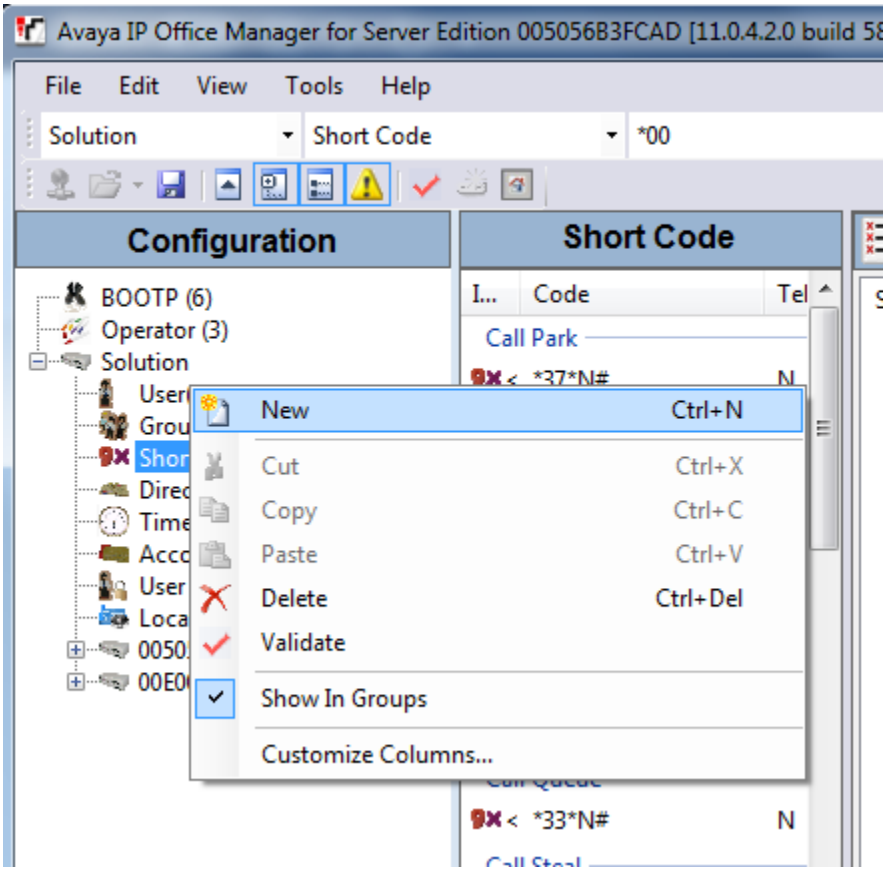


With this hunt group created, click on **OK** to submit these changes.



5.5 Add Short Code for Call Queue

A short code needs to be created in order for Unified Operator to use the "Call Queue" function in order to show the waiting time while queuing on the switchboard. In the Manager window, go to the Configuration Tree, right-click **Short Code** and select **New**.

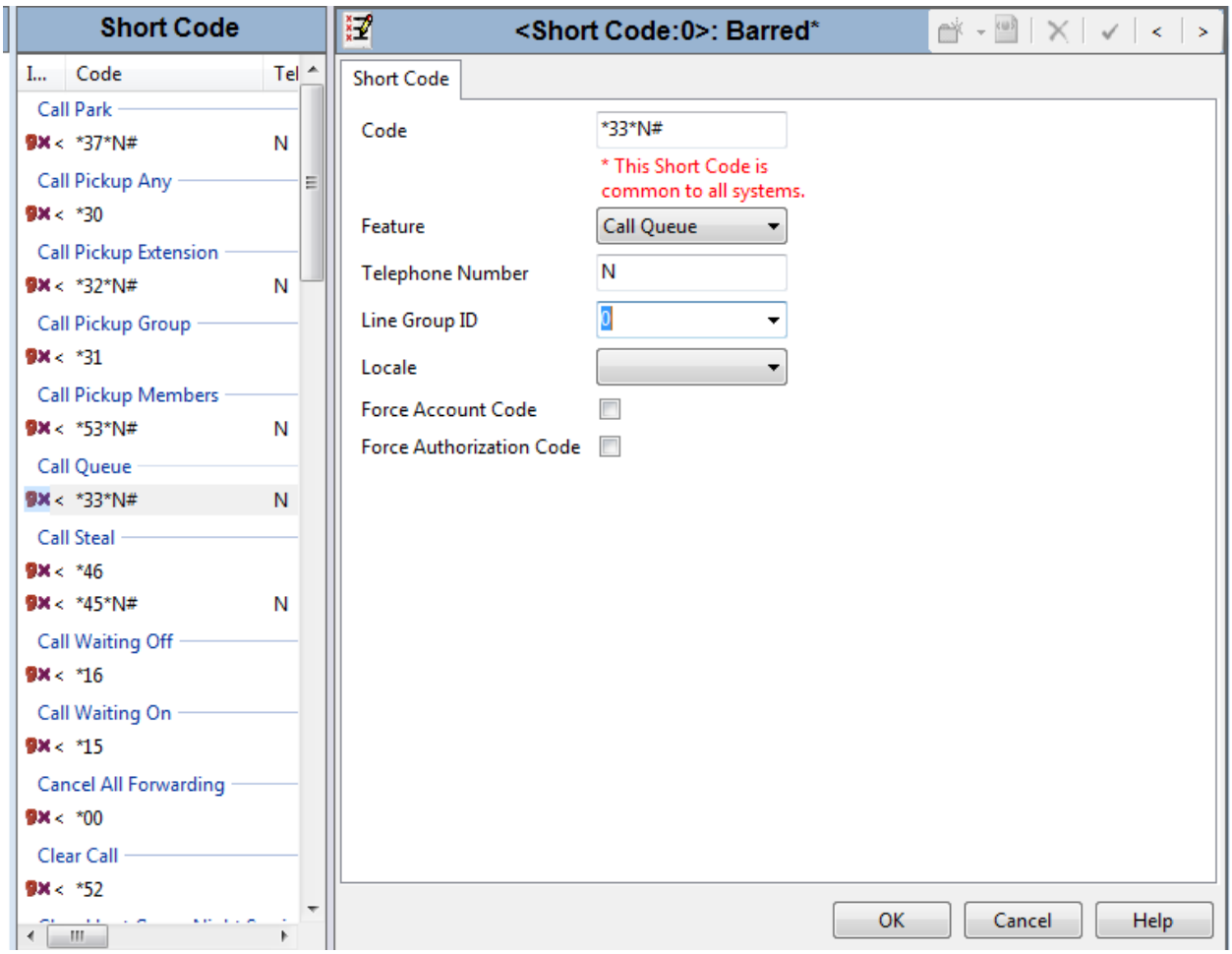


Enter the following:

- **Code** Enter ***33*N#**
- **Feature** Select **Call Queue** from the dropdown box
- **Telephone Number** Enter **N**
- **Line Group ID** Enter **0**

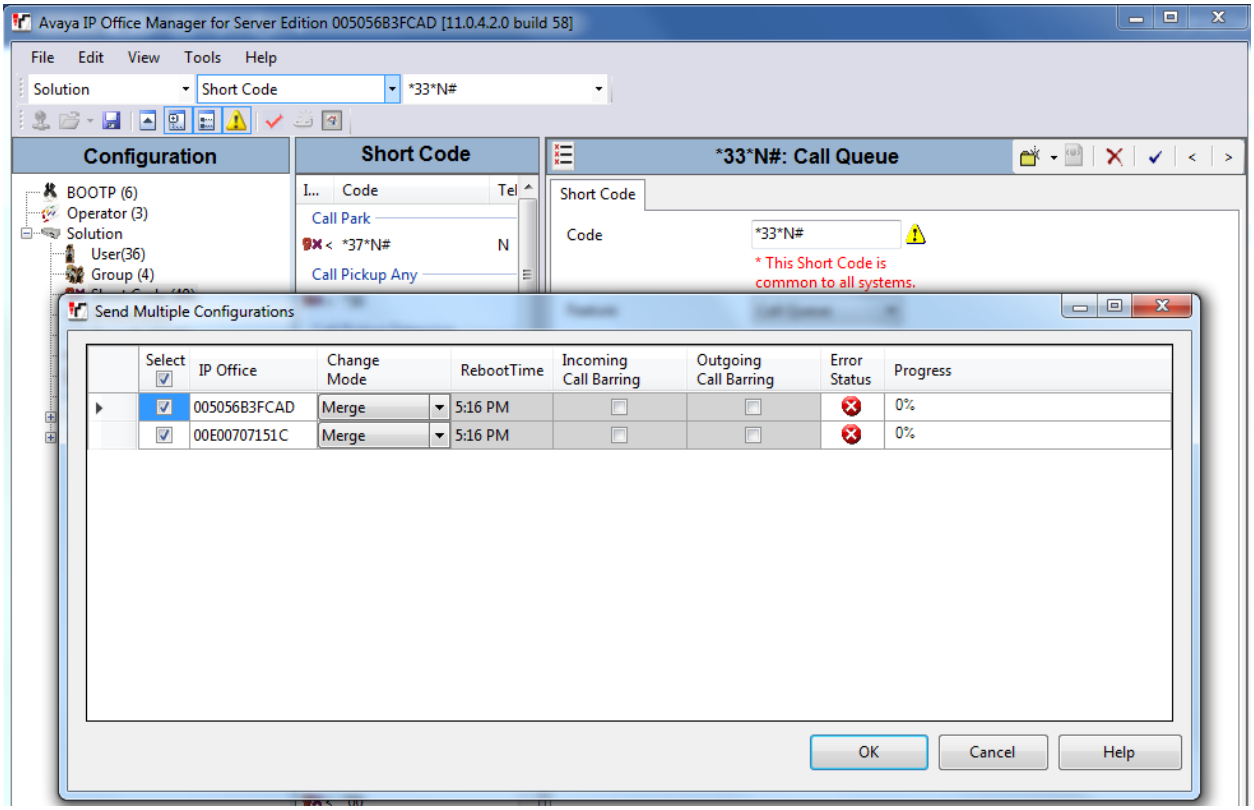
Click **OK** button.

Note: The Code ***33*N#** is used as the **Camp on** short code in **Section 6.2.2** (System tab).



5.6 Save Configuration

Click on the **Save** icon at the top left of the screen and this will save the configurations to both the IP Office Server Edition **005056B3FCAD** and the IP Office 500 V2 **00E00707151C**. Click on **OK** at the bottom of the screen to complete this.



6. Configure Scantalk TeamView® Unified Operator

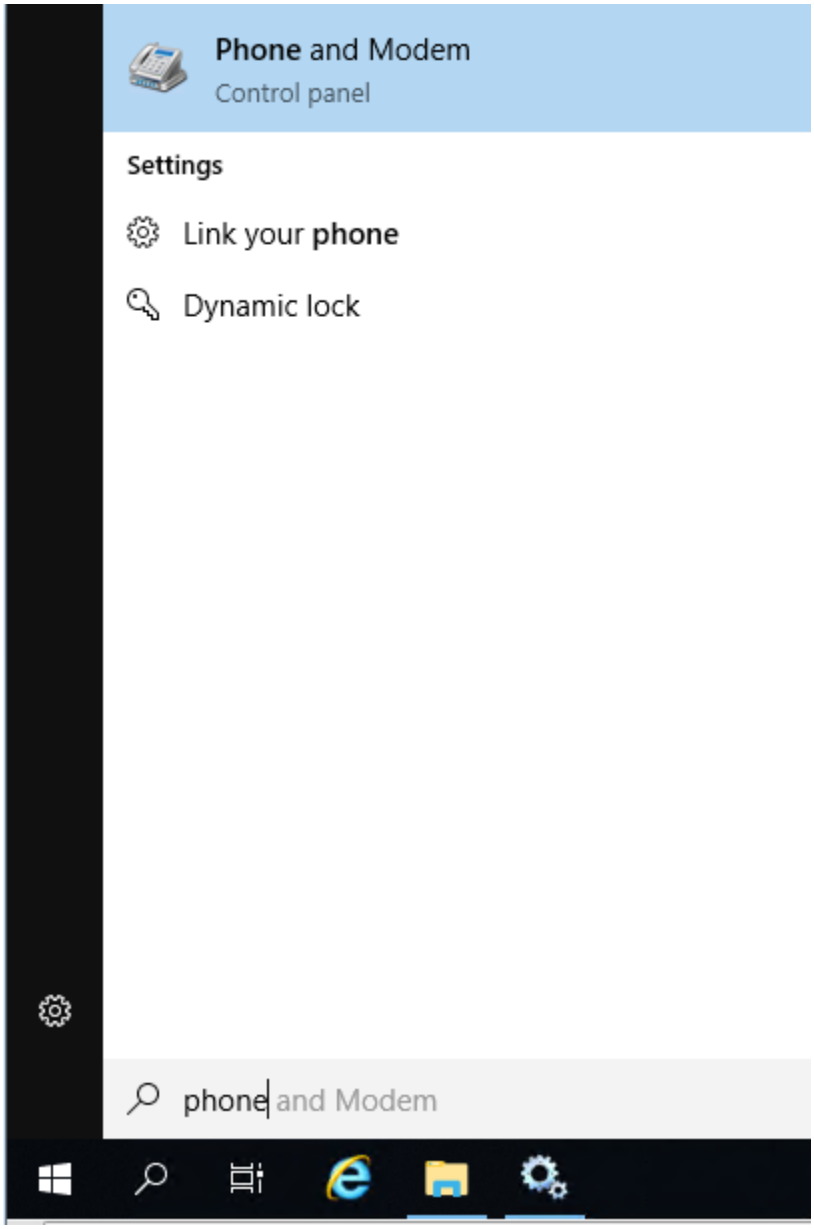
This section describes the steps preformed to configure the Unified Operator. It is implied that the Unified Operator software is already installed. It is also implied that the TeamView® AD LookUp application and prerequisite software is installed and configured. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 9**. These configurations can be summarised as follows:

Note: In order to provide Presence Services to the Unified Operator, two TeamView® servers were installed, one connecting to the IP Office Server Edition and the other to the IP Office 500 V2 using third party TAPI. Unified Operator was installed on a Windows 10 client PC connected separately to both the IP Office Server Edition and the IP Office IP500 V2 also using third party TAPI.

6.1 Configure TeamView® Server

The configuration of TeamView® server involves the configuration of the Avaya TAPI driver installed on that server in order to connect to the Avaya IP Office in question.

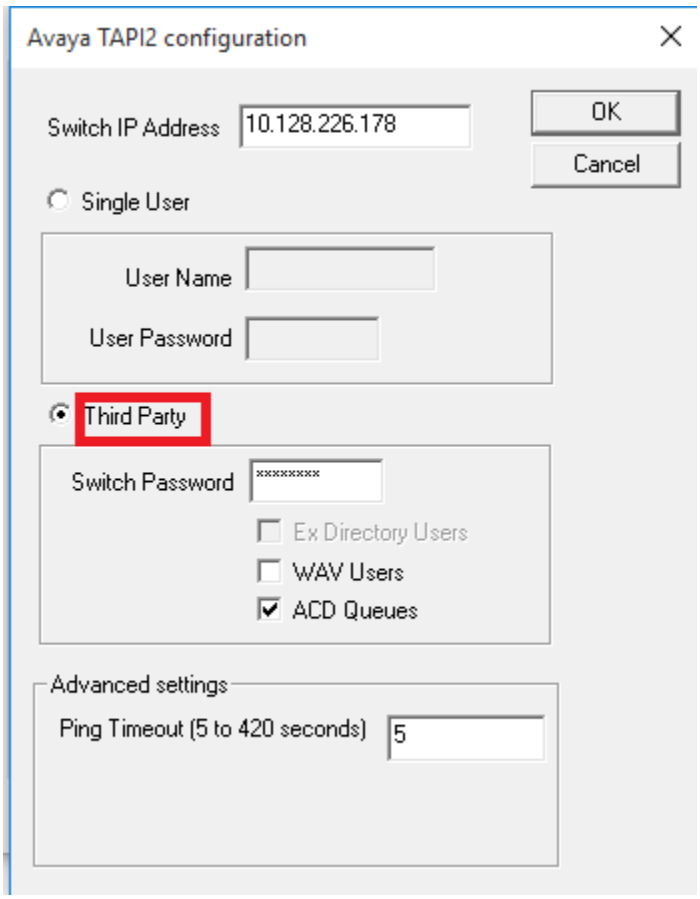
Click on the Windows icon at the bottom left of the screen and type **phone** and the following should appear showing the various phone settings. Click on **Phone and Modem**, highlighted below.



Once the **Avaya TAPI2 configuration** window opens, enter the following:

- **Switch IP address** Enter the IP address of IP Office.
- **Third Party** Click on the **Third Party** radio button.
- **Switch Password** Enter the **System Password** of IP Office in **Section 5.2**.
- **ACD Queues** Check the **ACD Queues** check box.

Click the **OK** button.



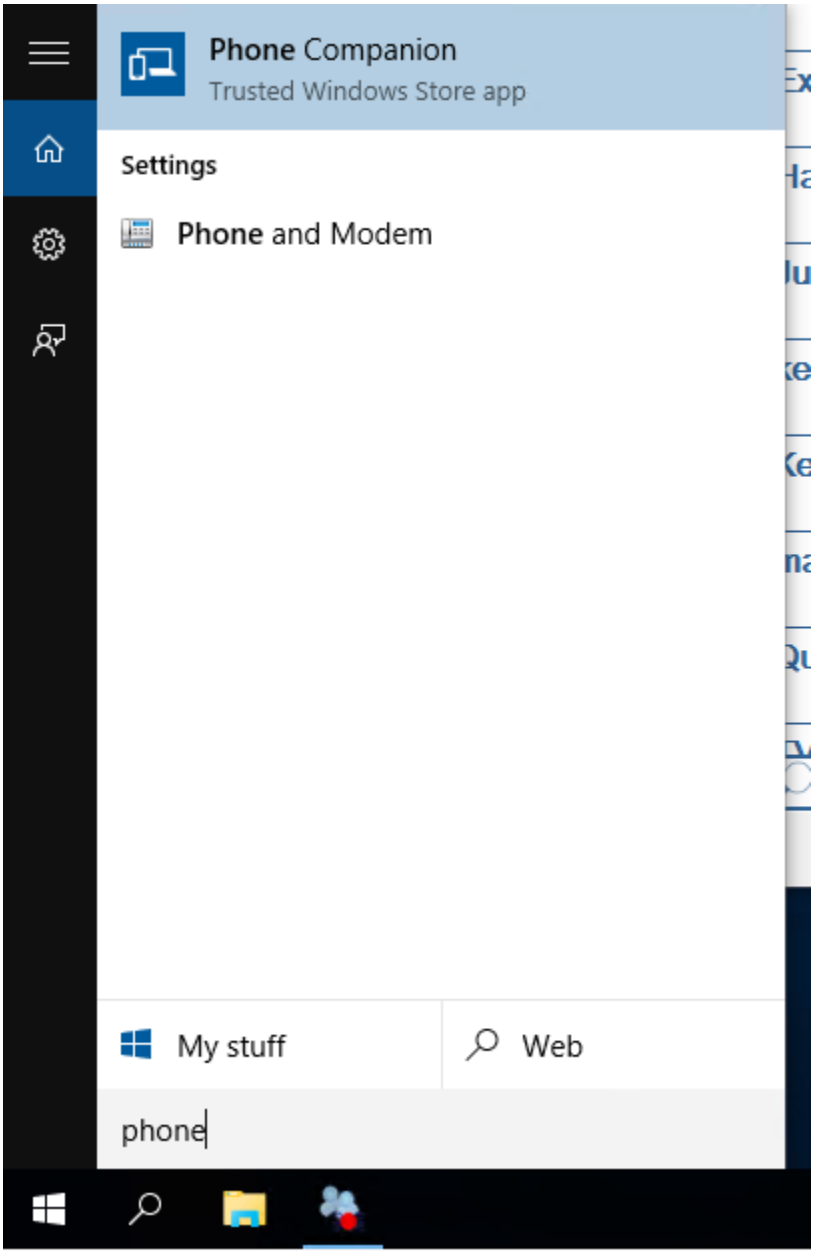
Note: The second TeamView® server was set up in the same way to connect to the other IP Office.

6.2 Configure TeamView® Unified Operator

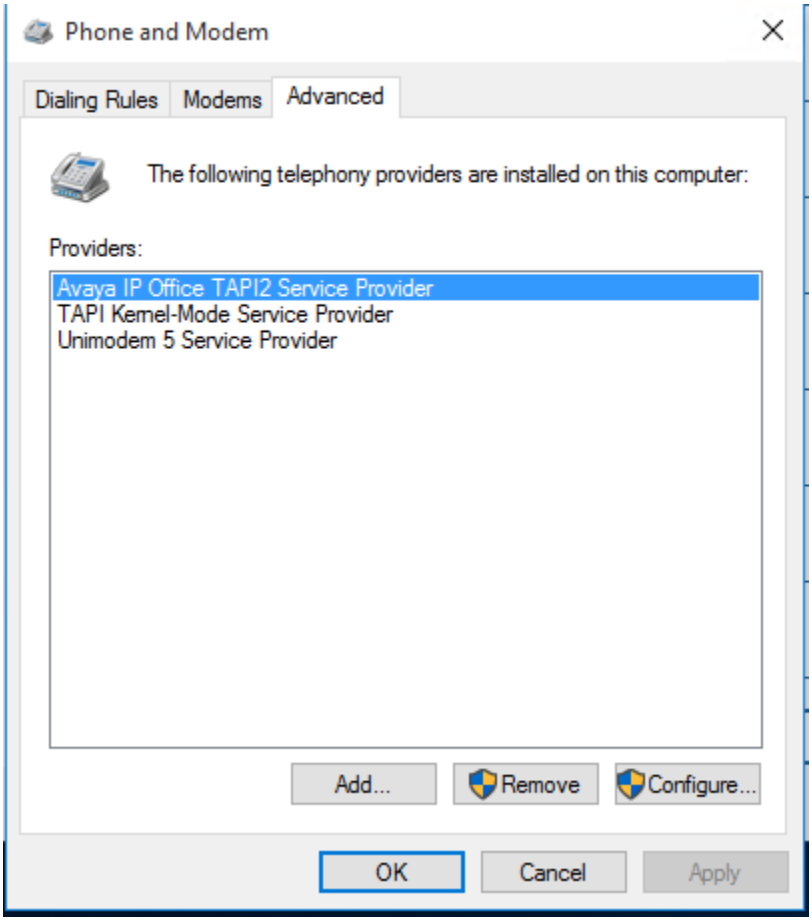
The configuration of the Unified Operator involves the configuration of the TAPI driver as well as some configuration of the Unified Operator application.

6.2.1 Configure the TAPI Driver

Click on the Windows icon at the bottom left of the screen and type **phone** and the following should appear showing the various phone settings. Click on **Phone and Modem**, highlighted below.

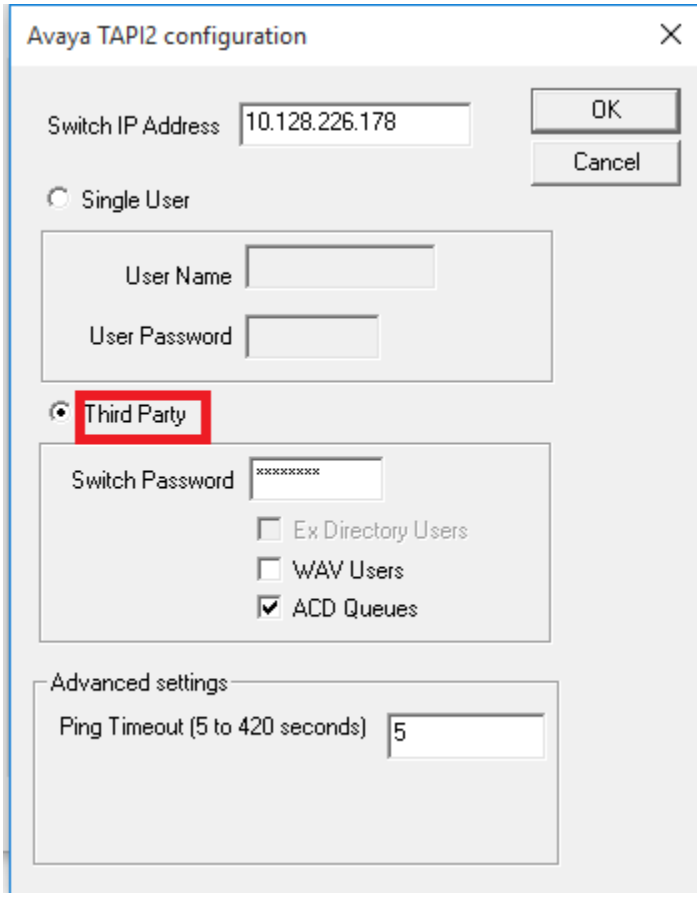


The TAPI driver must also be installed on the client PC. TAPI can be configured in Single User mode or Third Party mode and for compliance testing, Third Party mode was selected. Select the **Advanced** tab and click on **Configure**.



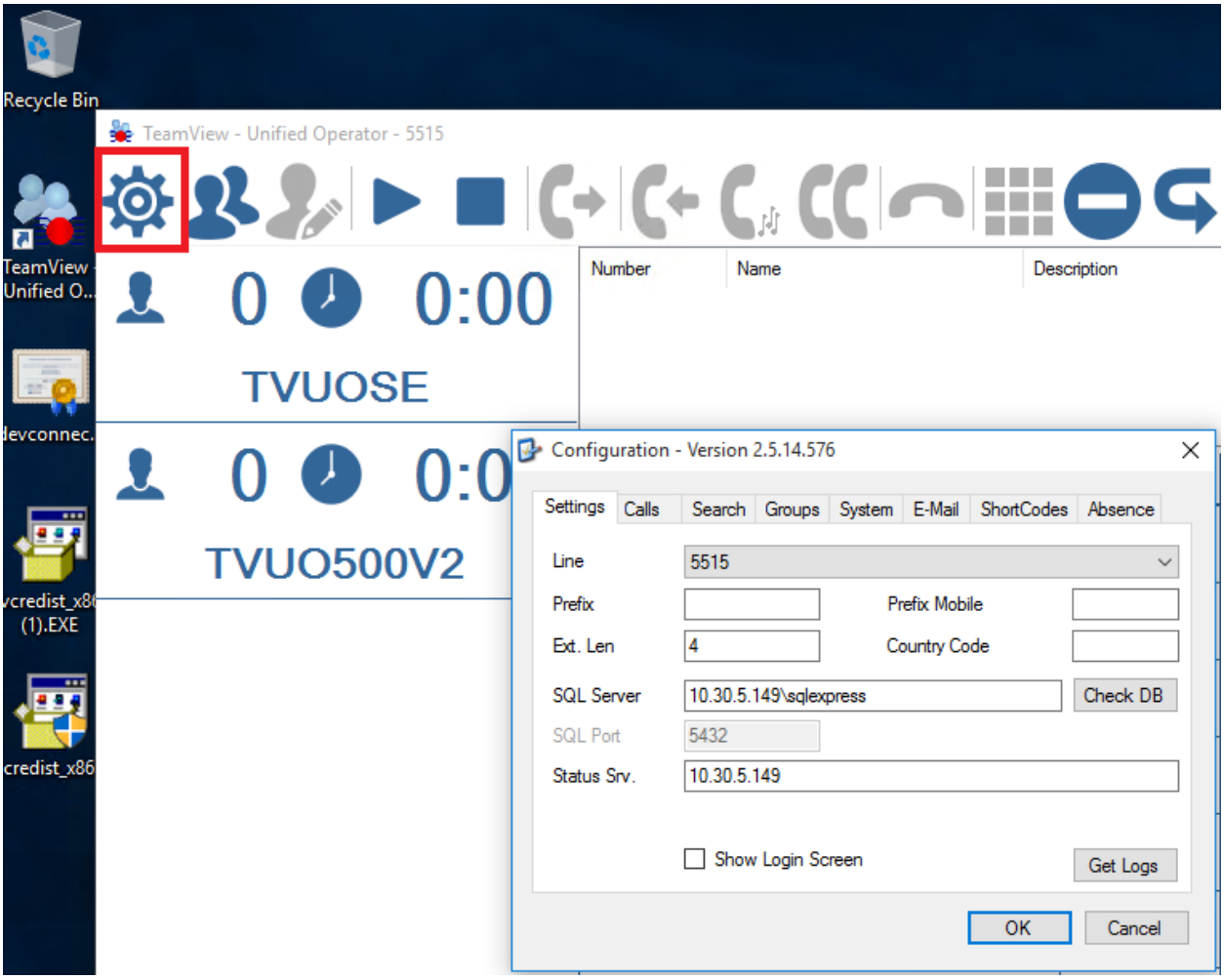
Once the **Avaya TAPI2 configuration** window opens, enter the following:

- **Switch IP address** Enter the IP address of IP Office.
- **Third Party** Click on the **Third Party** radio button.
- **Switch Password** Enter the IP Office System Password (this can be found in **Section 5.2**).
- **ACD Queues** Ensure that **ACD Queues** is ticked.



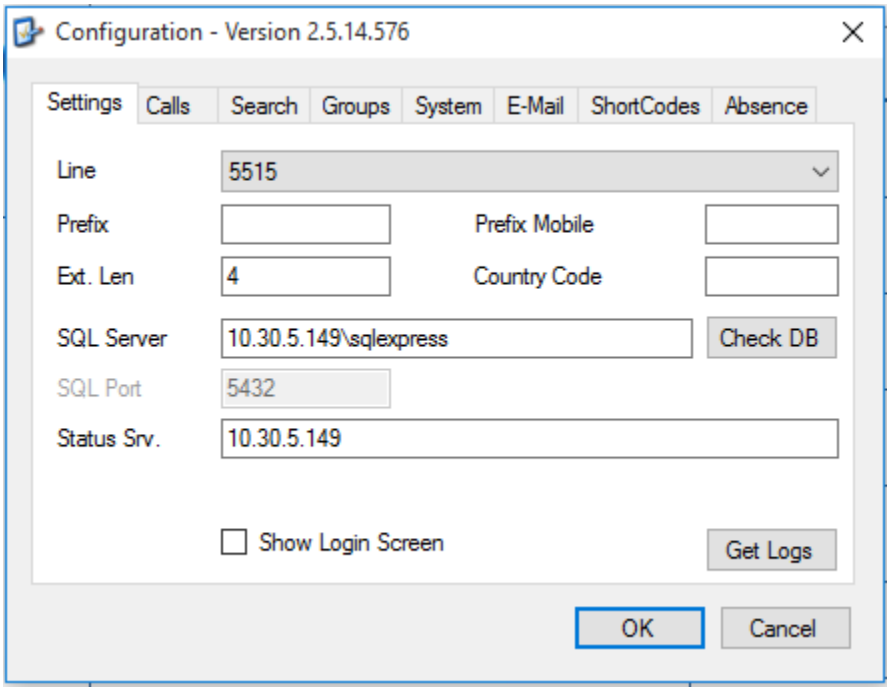
6.2.2 Configure the Unified Operator application

Open the Unified Operator application using the icon from the desktop which appears after installation. Once the Unified Operator window opens click on the **Configuration** icon at the top left of the screen which will open the Configuration window as shown below.

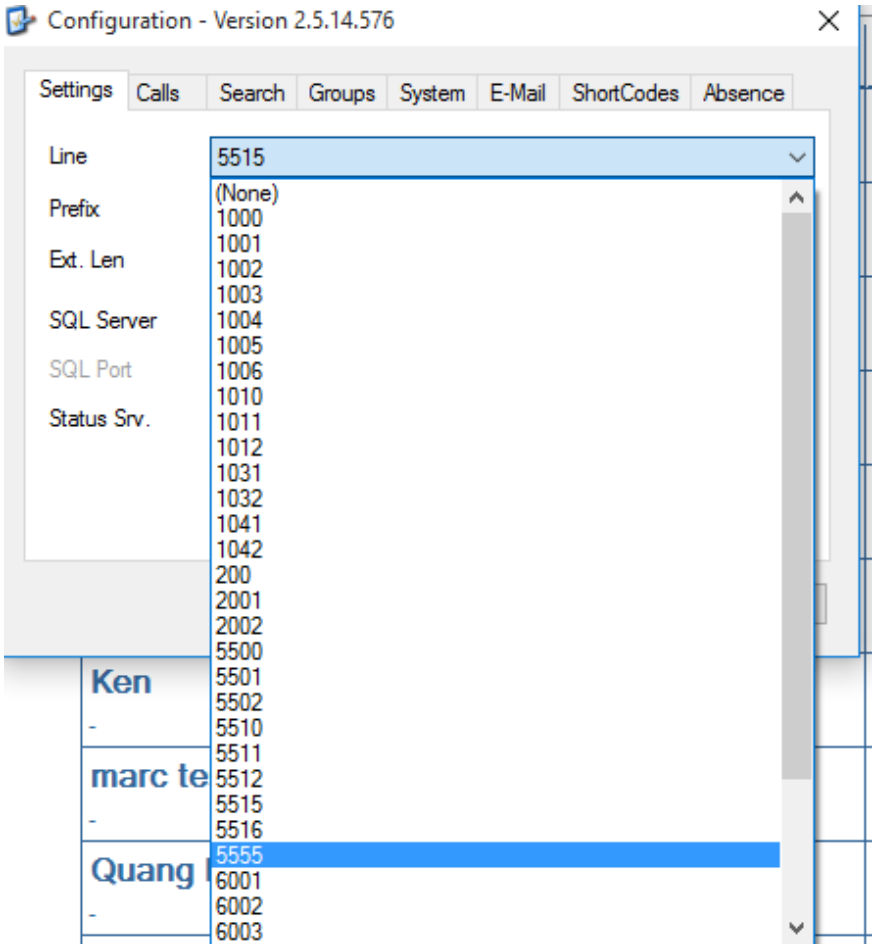


Once the **Configuration** window opens enter the following in the **Settings** tab:

- **Line** Select the IP Office phone which is going to act as the switchboard from the dropdown box.
- **Prefix** Enter the Prefix to dial to get an outside line (this was left blank for compliance testing.
- **SQL Server** Enter the Server name hosting the SQL Express .
- **Status Srv.** Enter the IP address of the TeamView® Status Server.



When third party mode is selected a number of lines may be visible to the user as is shown below, chose the line to be used by the Unified Operator.



Line 5515 was chosen for compliance testing.

Click on the **Calls** tab and enter the following.
In the **on new call** frame,

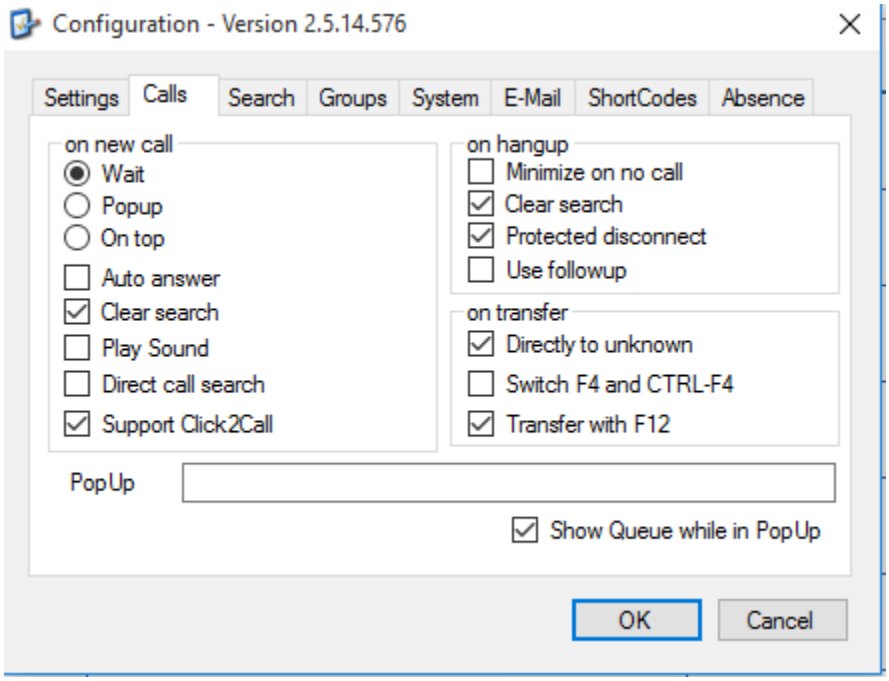
- Select the **Wait** radio button
- Check the **Clear search** check box
- Check the **Support Click2Call** check box

In the **on hangup** frame,

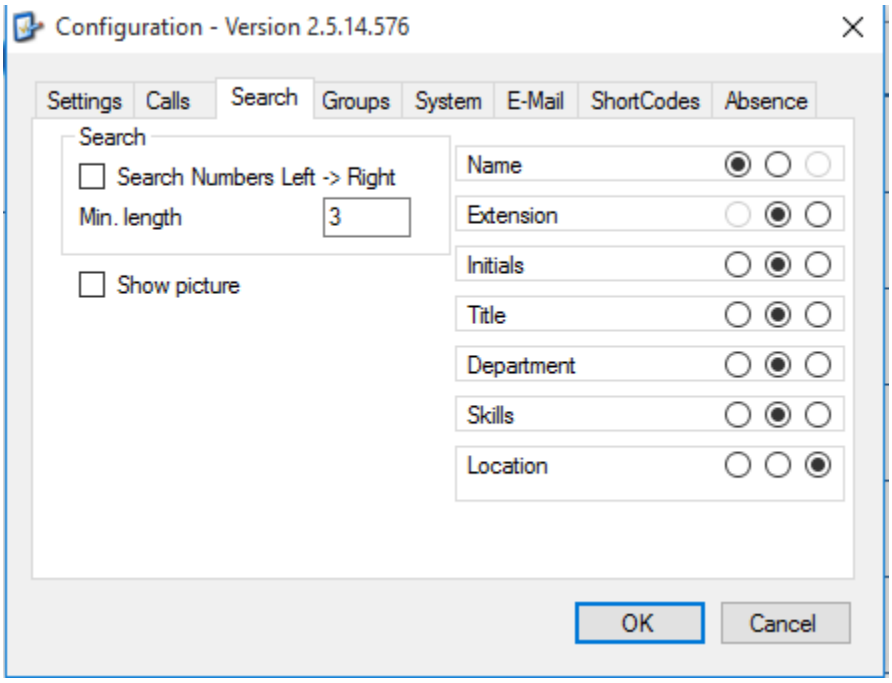
- Check the **Clear search** check box
- Check the **Protected disconnect** check box

In the **on-transfer** frame,

- Check the **Transfer with F12** check box
- **Directly to unknown** was checked to allow Blind transfers to the PSTN

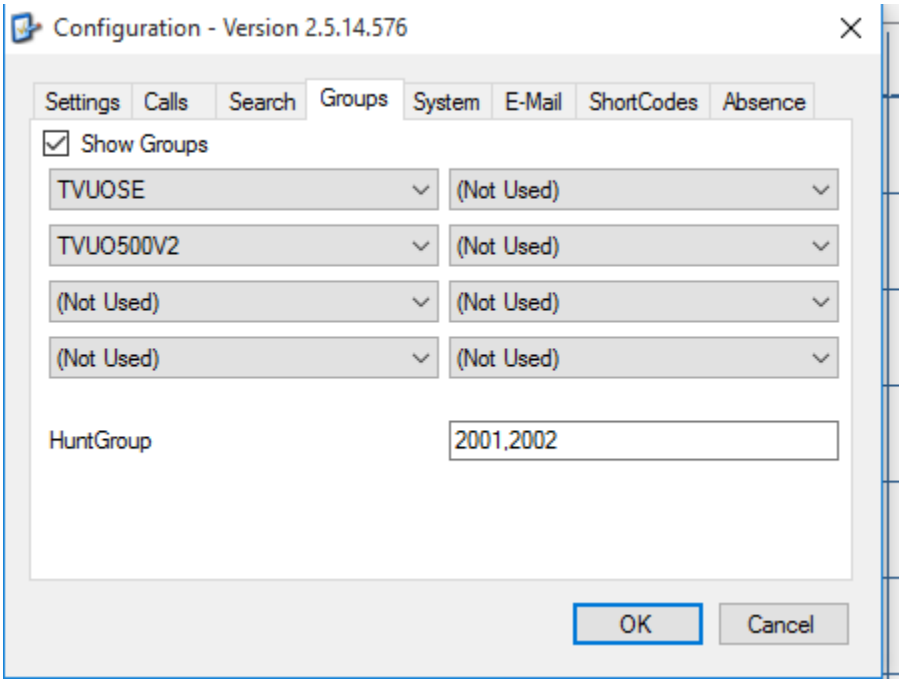


Click on the **Search** tab and enter the following as shown below. These are the settings that were put in place by the Scantalk engineer.



Click on the **Groups** tab and enter the following:

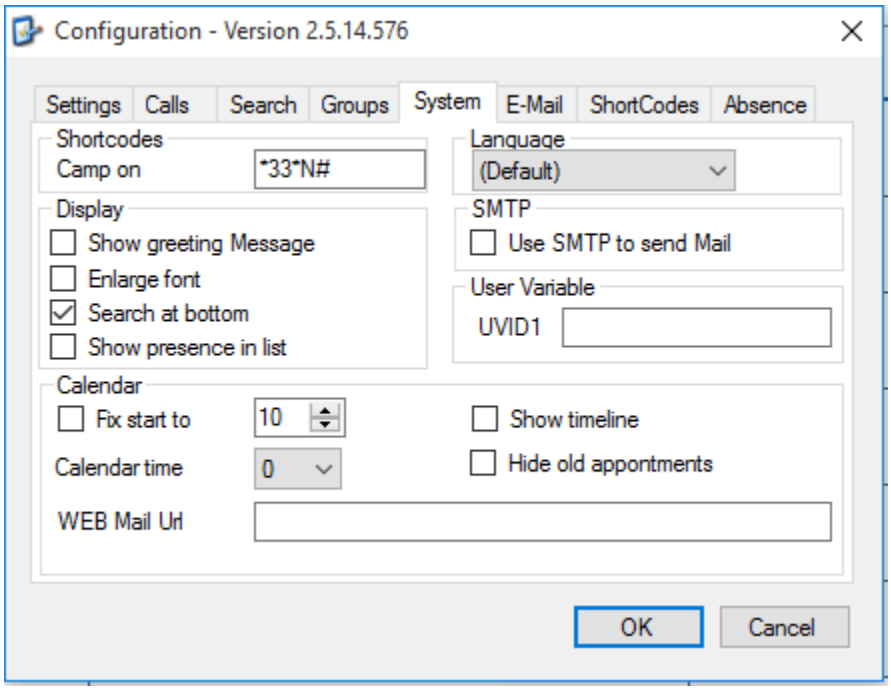
- Select the appropriate hunt groups from the dropdown box. (These are the groups configured by Scantalk to monitor the hunt groups configured in **Section 5.4**)
- Enter the **HuntGroup** numbers that were setup in **Section 5.4**



Click on the **System** tab and enter the following.

- **Camp on** Enter ***33*N#** (this is the Short code for Call Queue as configured in **Section 5.5**)
- Check the **search at bottom** check box

Click the **OK** button to save the configuration.



6.3 Restart Unified Operator

In order to complete the configuration, the Unified Operator needs to be restarted, click on the Unified Operator icon from the Desktop (see **Section 7.1**). Once the Unified Operator window opens, the following two icons should appear on the bottom left corner to signify that the Unified Operator is connected to SQL server (first icon) and that the TAPI is functioning correctly.

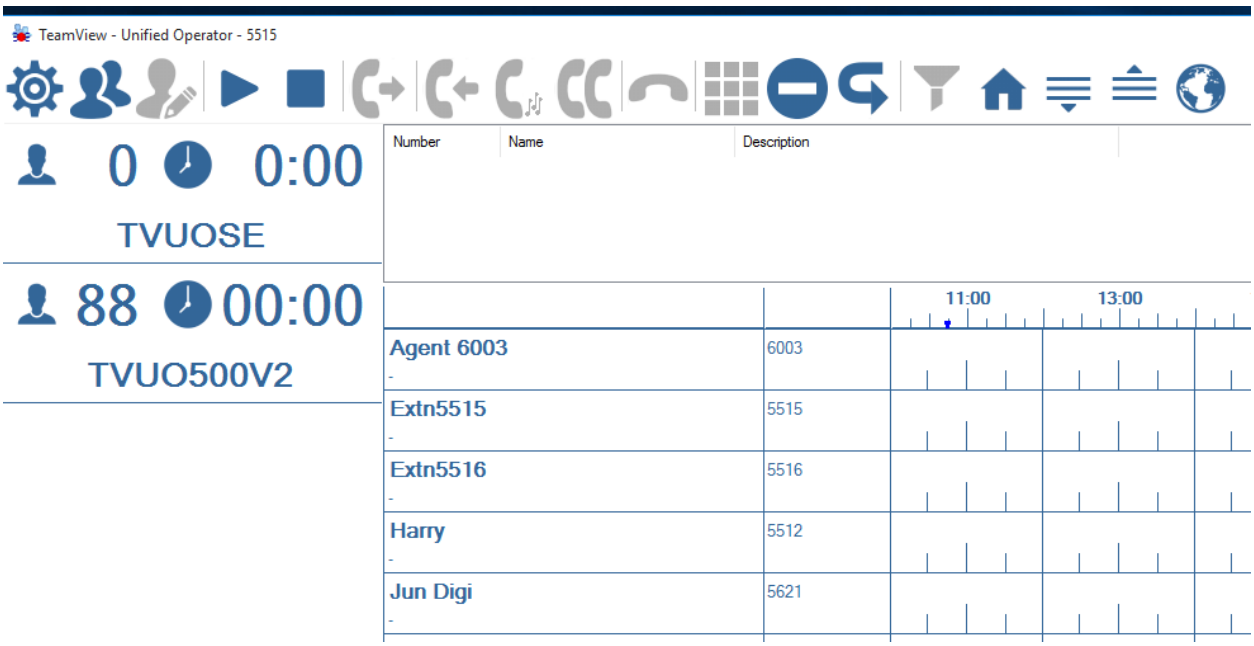
7. Verification Steps

This section illustrates the steps necessary to verify that the TeamView® Unified Operator is configured correctly to connect to IP Office.

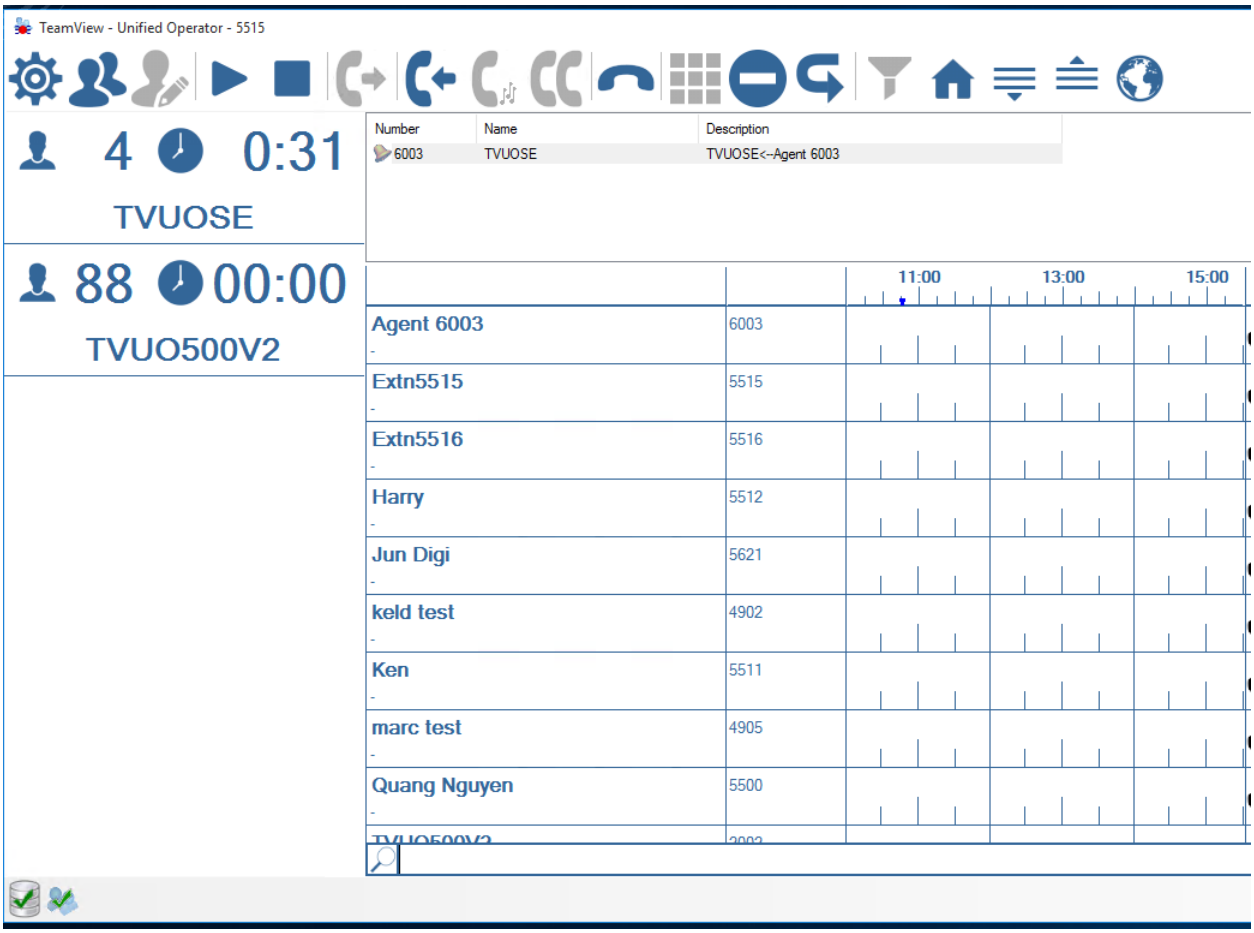
7.1 Verify Scantalk TeamView® Unified Operator

From the PC that has Unified Operator installed, open the application as shown below.

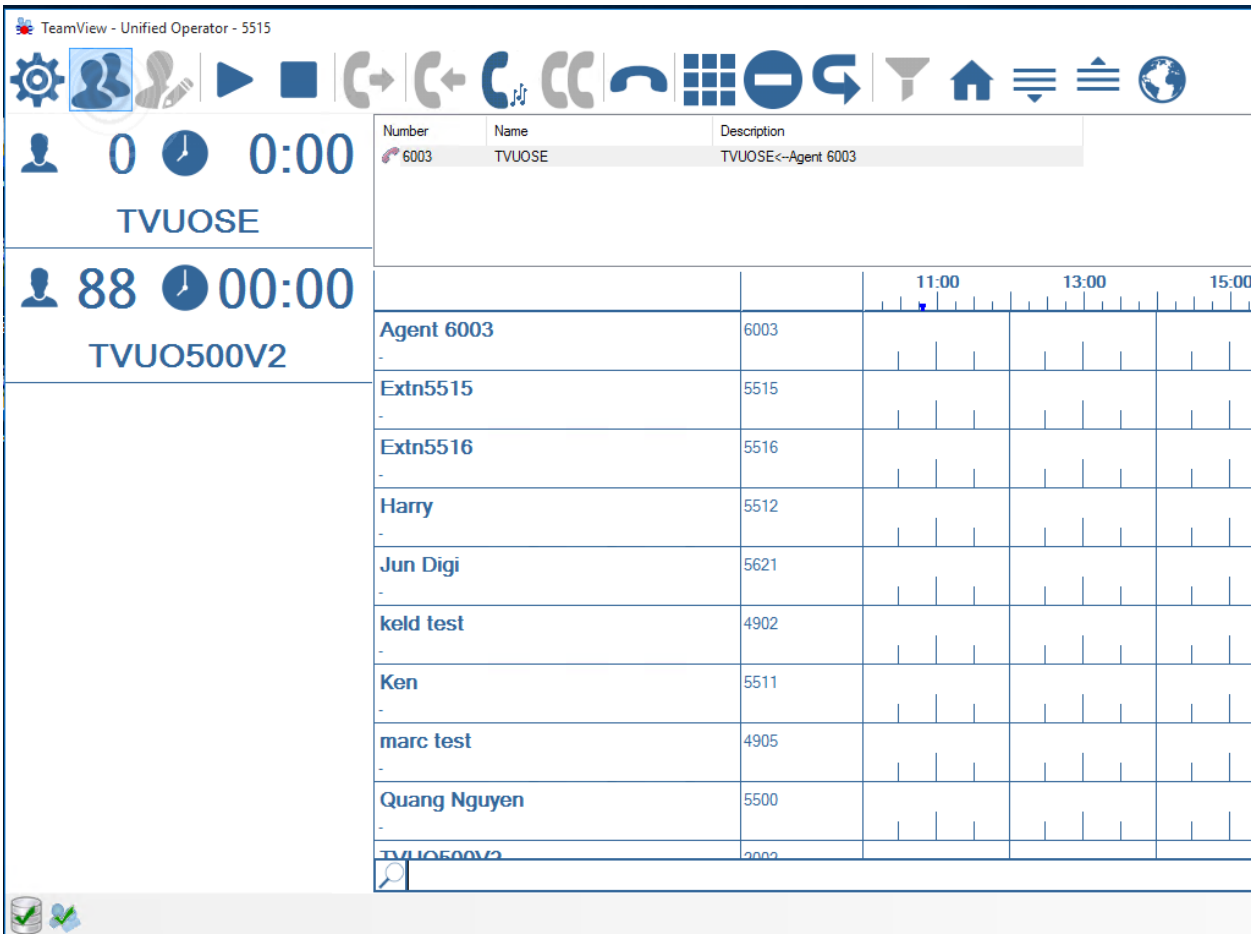
Once the application is opened, a screen similar to the following appears.



Place a call to the hunt group number associated with the switchboard for Unified Operator. The following should appear showing a call being presented to the switchboard and the call is answered using the icon highlighted. Note the waiting time of 31 seconds on the group at the top left of the window.



Once the call is answered, the group time reverts to zero and the call can then be disconnected again using the icon shown.



8. Conclusion

These Application Notes describe the configuration steps for TeamView® Unified Operator 2.5 from Scantalk to interoperate with Avaya IP Office 11.0 using the Telephony Application Programming Interface (TAPI) to provide presence information to Unified Operator. Unified Operator integrates with Avaya IP Office using the IP Office TAPI interface. All feature functionality test cases were completed successfully with any issues and observations noted in **Section 2.2**.

9. Additional References

This section references the Avaya and Scantalk product documentation that are relevant to these Application Notes.

Product documentation for Avaya products may be found at http://support.avaya.com

i. *Administering Avaya IP Office with Manager (English)*, Release 11, February 2019.
ii. *Administering Avaya IP Office with Web Manager (English)*, Release 11, February 2019.

Product Documentation for Scantalk can be obtained at http://www.scantalk.com

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.