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Avaya Solution & Interoperability Test Lab

Application Notes for configuring Scantalk TeamView® Unified BLF V2.5 with Avaya IP Office R10.1 using Centralized CTI Web Services for Presence Services - Issue 1.0

Abstract

These Application Notes describe the configuration steps for configuring Scantalk TeamView® Unified BLF with Avaya IP Office Server Edition R10.1 using the Telephony Centralized CTI Web Services API to give Presence information to the Unified BLF. Scantalk TeamView® Unified BLF 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 BLF with Avaya IP Office R10.1 using the Centralized CTI Web Services API to provide presence information to Unified BLF. The Avaya IP Office consists of a primary server which is the Avaya IP Office Server Edition and an expansion server that being the Avaya IP Office Server Edition Expansion (IP500 V2). Scantalk TeamView® Unified BLF integrates with Avaya IP Office using TAPI on IP Office.

Centralized CTI Web Services API was introduced on IP Office Server Edition R10.1 and will provide, along with other services, presence services to the third party. With previous versions of IP Office a TAPI connection to each IP Office node was required in order to provide 'Presence'. With the introduction of Centralized CTI Web Services API a single third party server is now the requirement which will provide presence for all IP Office nodes. Centralized CTI Web Services API has also been called "OpenAPI". Centralized CTI Web Services uses one-X® Portal, which is installed with IP Office Server edition by default and this must be configured along with some security settings on IP Office, (see **Section 5**).

TeamView® Unified BLF is an option that comes with Unified Operator as part of the TeamView® application suite, and 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, together with the current status of colleagues' availability, the ability to pick calls from the Queue and transfer by using Drag'n'Drop. 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 3 sub-processes:
- Identify an employee by means of ordering into Busy Lamp Fields.
- Observe the employee's availability with information such as status for fixed, calendar appointments and cause of absence.
- Serve the caller in this context, including directly or announced transfer to landline or mobile phone, 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 BLF is usually installed on a client PC which is part of the same domain as the TeamView® server. The client PC will also have installed an Avaya IP Office Telephony Application Programming Interface configured in Single User mode.

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2. General Test Approach and Test Results

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

IP Office Telephony Application Programming Interface (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. Centralized CTI Web Services API is used to provide presence information to Unified BLF, with one server connecting to the IP Office Server Edition. Note that some configuration of one-X® Portal is required on the Server Edition which is outlined in **Section 5.6**.

Unified BLF uses Microsoft SQL or PostGreSQL Server 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 BLF is usually installed on a client PC which is part of a domain. The Unified BLF is configured to connect to the TeamView® Status Server to get phone status information of all contacts in the database. Because Centralized CTI Web Services is used there is no need for any additional TeamView® servers on this occasion.

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 BLF 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 BLF 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 insure full interoperability between Unified BLF and IP Office. The tests were all functional in nature and performance testing was not included. All the test cases passed successfully with the following observation noted.

1. Any information or error message should be popped to the front of the Unified BLF screen so as the information is presented to the user is a clear and quick manner.

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 BLF 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 IP500 V2 were used as the switchboard phone. One TeamView® server was added to the network in order to get status information on the users on both the IP Office Server Edition and the IP500 V2 using Centralized CTI Web Services.

Note: On a typical customer site Unified BLF is installed on a client PC, which would be added to the same domain as the TeamView® Server. The Avaya IP Office TAPI driver can be configured in either 'Single User' mode or 'Third Party' mode and must also be installed on the same PC. On configurations with less than 200 endpoints and only one operator, it could altogether be installed on the client PC.
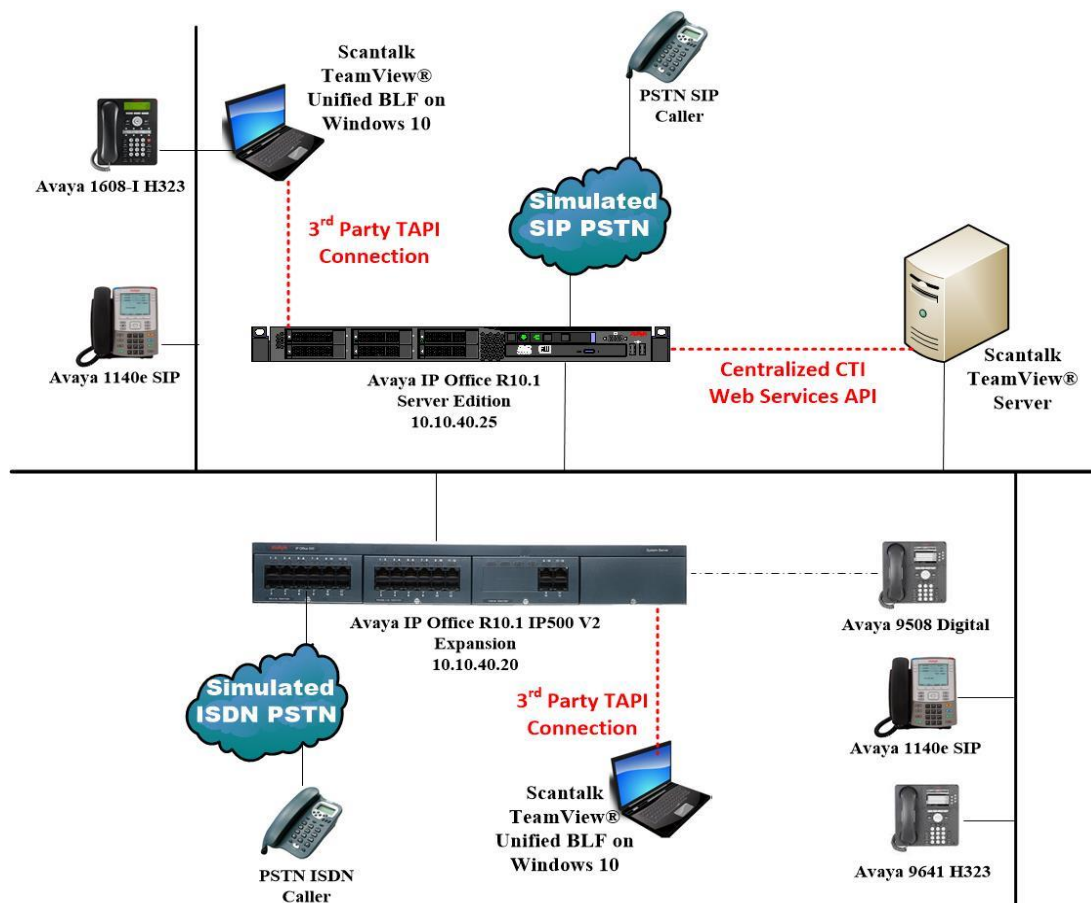
Figure 1: Scantalk TeamView® Unified BLF with Avaya IP Office Server Edition and IP Office IP500 V2

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	R10.1.0.1.0 Build 3
Avaya IP Office IP500 V2	R10.1.0.1.0 Build 3
Avaya IP Office Manager running on a Windows 7 PC	R10.1.0.1.0 Build 3
Avaya 1608-I H323 Deskphone	1608UA1_350B.bin
Avaya 9630 H323 Deskphone	R6.6115
Avaya 1140e SIP Deskphone	R04.04.28.00
Avaya 9508 Digital Deskphone	R0.60
Scantalk TeamView® Unified Operator running on a Windows 10 PC: TeamView® Unified BLF **Scantalk TeamView Server running on Windows 2016 server:** TeamView Unified Solutions 2017 with postGreSQL TeamView® AD LookUp TeamView® Calendar LookUp (optional) TeamView® Status Server PostGreSQL Microsoft .Net Framework Microsoft Windows Installer Microsoft PowerShell	 2.5.1.9 1.0.0.7 3.2.0.174 3.4.0.204 3.0.0.64 9.6.2 4.0 SP1 4.5 1.0

Note: Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office IP500 V2 and also when deployed with IP Office Server Edition in all configurations.

5. Configuration of Avaya IP Office

Configuration and verification operations on the 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
- Configure Centralized CTI Web Services

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 → Programs → IP Office → Manager** to launch the Manager application (not shown). Tick the required server to log in to, this will be the IP Office IP500 V2, then log in using the appropriate credentials to receive the configuration.

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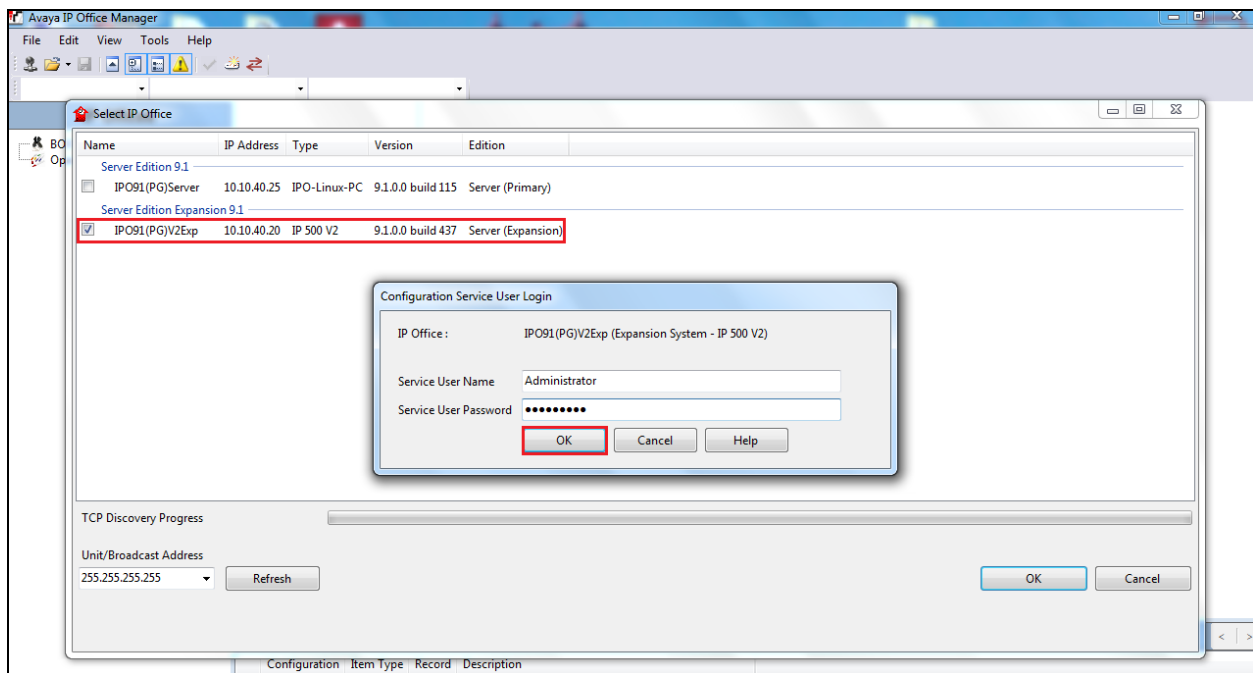
5.2 Enable TAPI/DevLink3

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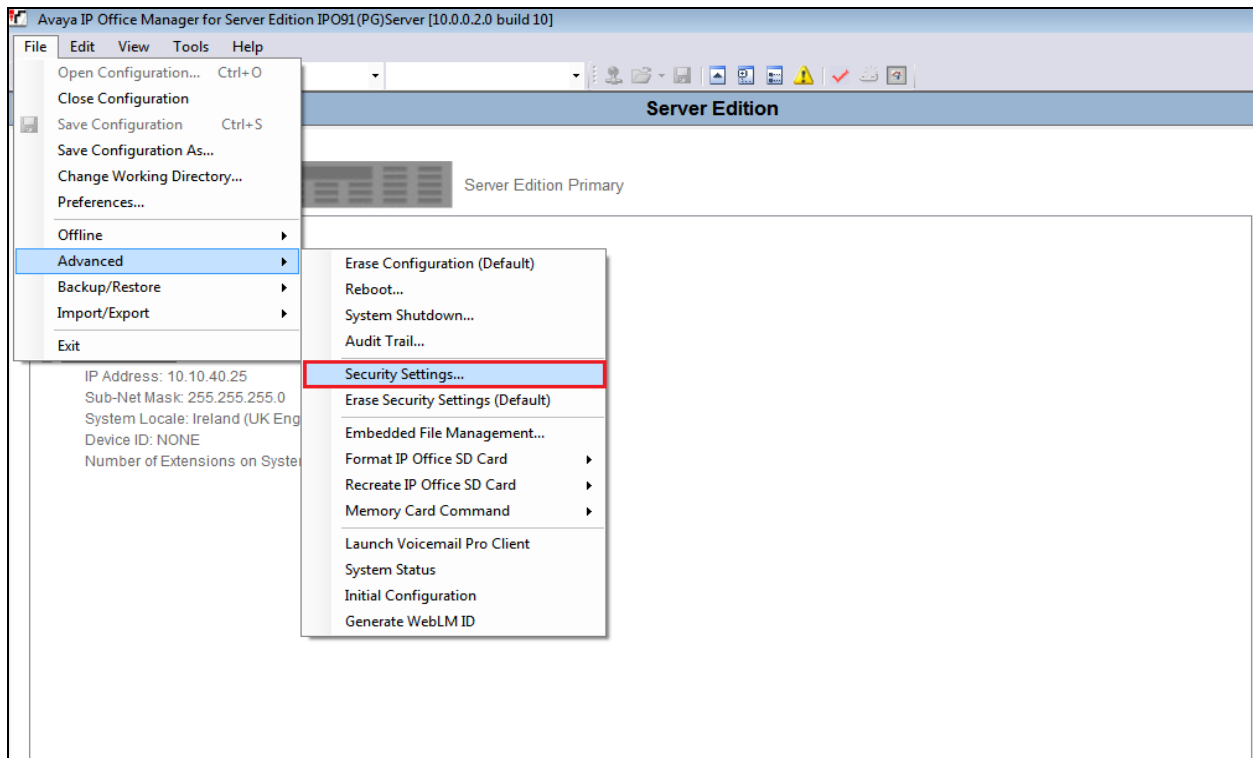
Click on **System** in the left window and in the main window ensure that **TAPI/DevLink3** is ticked as shown below. Click on **Save** (not shown) at the top of the screen once this is done.

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**.
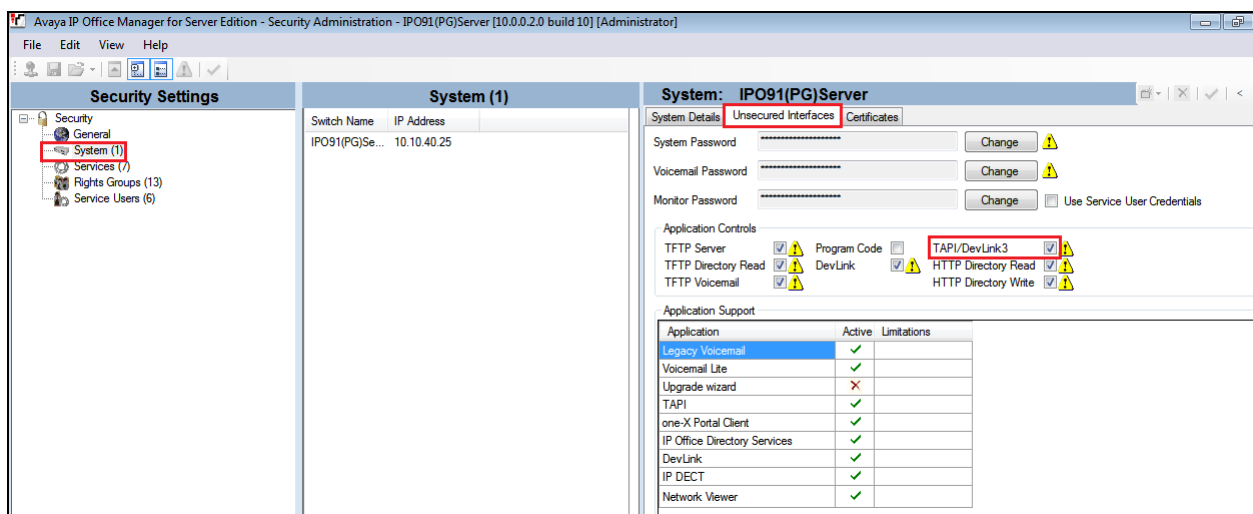
5.3 Check for CTI Pro Licenses

Click on **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.

A closer look at this **CTI Link Pro license** shows that there are 255 CTI Link Pro Licenses available and so in theory **255** simultaneous call recordings could be achieved.

Feature	License Key	Instances	Status	Expiry Date
Avaya IP endpoints	U4ul9VvmXds22dorkDubByqrS3LFXPF5	255	Valid	Never
Essential Edition Additional Voice...	It1N9PhLvvj04b3C5Qxwxl4VphdcOeVe	255	Obsolete	Never
Teleworker	nXD69yBrts_cUDh1wUewL2kcsk_OVfIe	255	Obsolete	Never
Mobile Worker	IAHz1WB_ASh0Z7FCCIe@HI4dMwL2NRZW	255	Obsolete	Never
Power User	IvBhsPheAdicS7nW5Mu9_q8rO3sEDuuc	255	Valid	Never
Advanced Edition	DXBhsy9cXUiNSz45Buer6tZ9MGZzOWb9	255	Obsolete	Never
Office Worker	IXHD9AdxXvFxFI2uJqcb114OV39OKMsx	255	Valid	Never
Essential Edition	AX@wchBCvd3Nb@axHiuG_Abdpwb9IuMB	255	Obsolete	Never
Office Worker Upgrade	4y@M9@vJtdsNqL29YYx1gk_9p6ZpKf@9	255	Valid	Never
VMPro TTS Professional	hha9cvhcvGbei7FuQIc3HBRVVwbuIW7Q	255	Obsolete	Never
R8+ Preferred Edition (VM Pro)	GhKY5AgcXiiCI73ufCxtxakVSgZpVR0B	255	Obsolete	Never
CTI Link Pro	OX0c55hxAUdKjdWMPCxsHvFrE39FDMrQ	255	Valid	Never
1600 Series Phones	dTBoV75MvUF2nD_6wWuxweRrNw__IeFz	255	Obsolete	Never
Avaya SIP Softphone	Virtual Avaya Legacy Softphone	254	Valid	Never
Avaya IP endpoints	Virtual Avaya IP Endpoints Local	12	Valid	Never
Server Edition for Russia R9.1	Virtual Server Edition for Russia R9.1	1	Valid	Never

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 IP500 V2, two hunt groups were created each containing a single user that was to be associated with the Unified BLF as the "Switchboard phone set".

5.4.1 Create a Hunt Group on the IP Office Server Edition

Expand the IP Office Server Edition system and right click on **Group** and select **New** as shown below.
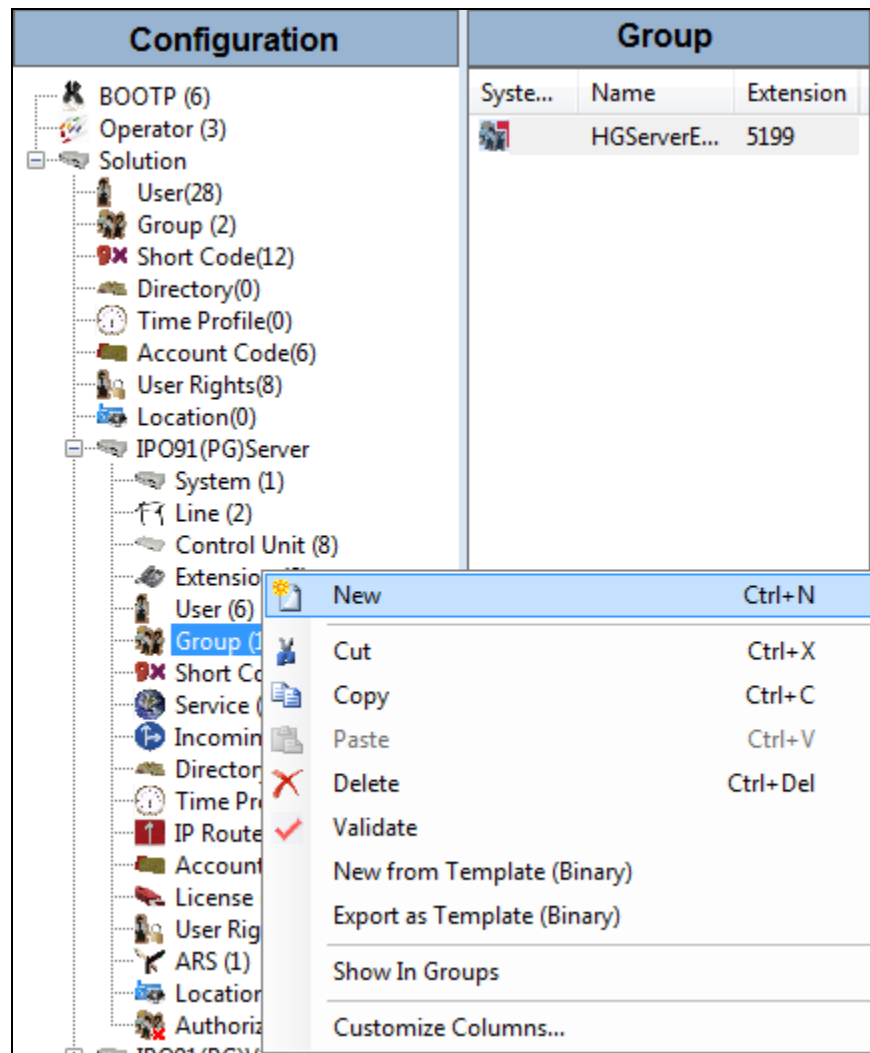
Within the Group tab enter the following information:

- **Name**   Enter an informative name (i.e., **HGServerEdition**).
- **Extension**   Enter the extension which will be dialled to reach the switchboard Operator. (i.e., **5199**).
- **Ring Mode**   Select **Sequential** from the dropdown box.

Scroll down the page. Click on the **Edit** button (not shown).

The following window appears allowing the addition of any IP Office extension into the group, for compliance testing extension **5101** was added. Click on **OK** to continue.

Click on **OK** again to save the new hunt group.
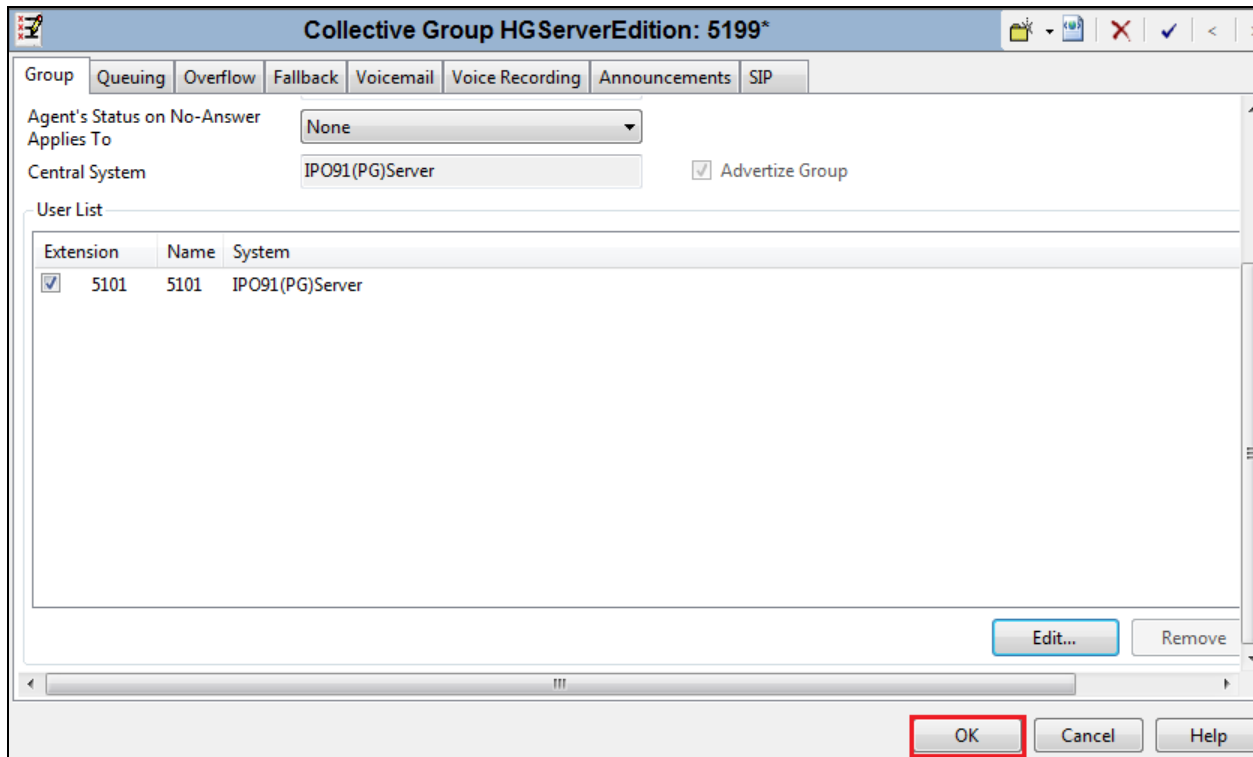
5.4.2 Create a Hunt Group on the Avaya IP Office IP500 V2 Expansion

The same procedure is used to create a hunt group on the IP Office IP500 V2. Expand the IP Office IP500 V2 system and right click on **Group** as shown below. Select **New**.

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Within the Group tab enter the following information:

- **Name**   Enter and informative name (i.e., **HG500V2**).
- **Extension**   Enter the extension which will be dialled to reach the switchboard Operator. (i.e., **5299**).
- **Ring Mode**   Select **Sequential** from the dropdown box.

Scroll down the page. Click on the **Edit** button (not shown).

On this occasion extension **5250** is associated with hunt group 5299.

With this hunt group created click on **OK** to submit these changes.
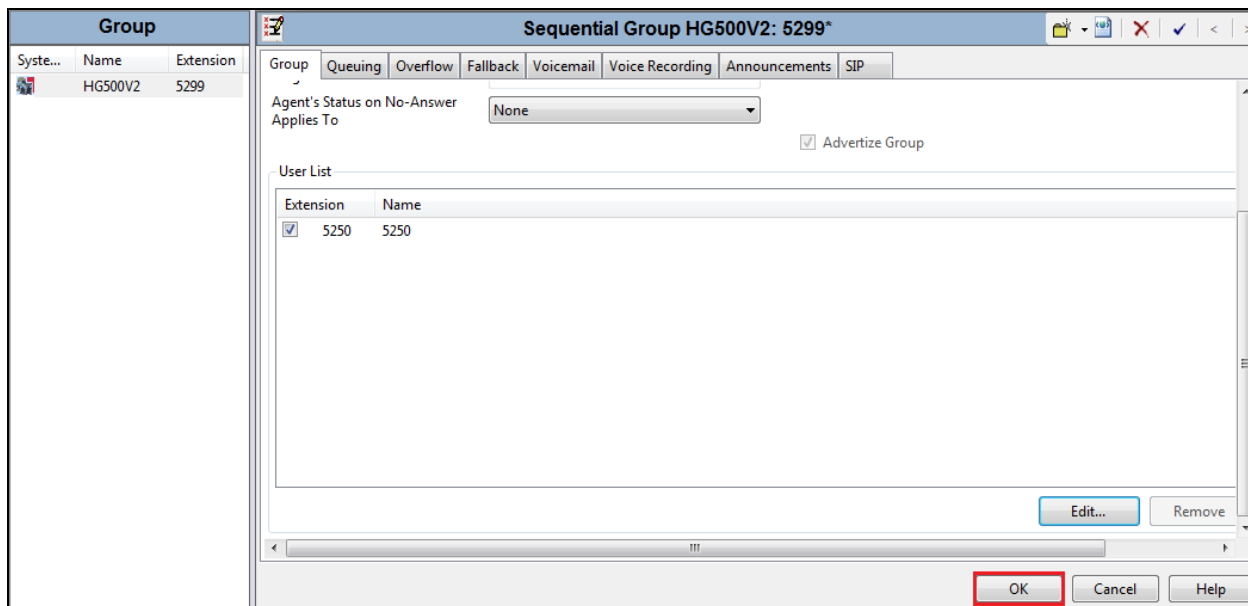
5.5 Save Configuration

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 and the IP Office IP500 V2. Click on **OK** at the bottom of the screen to complete this.
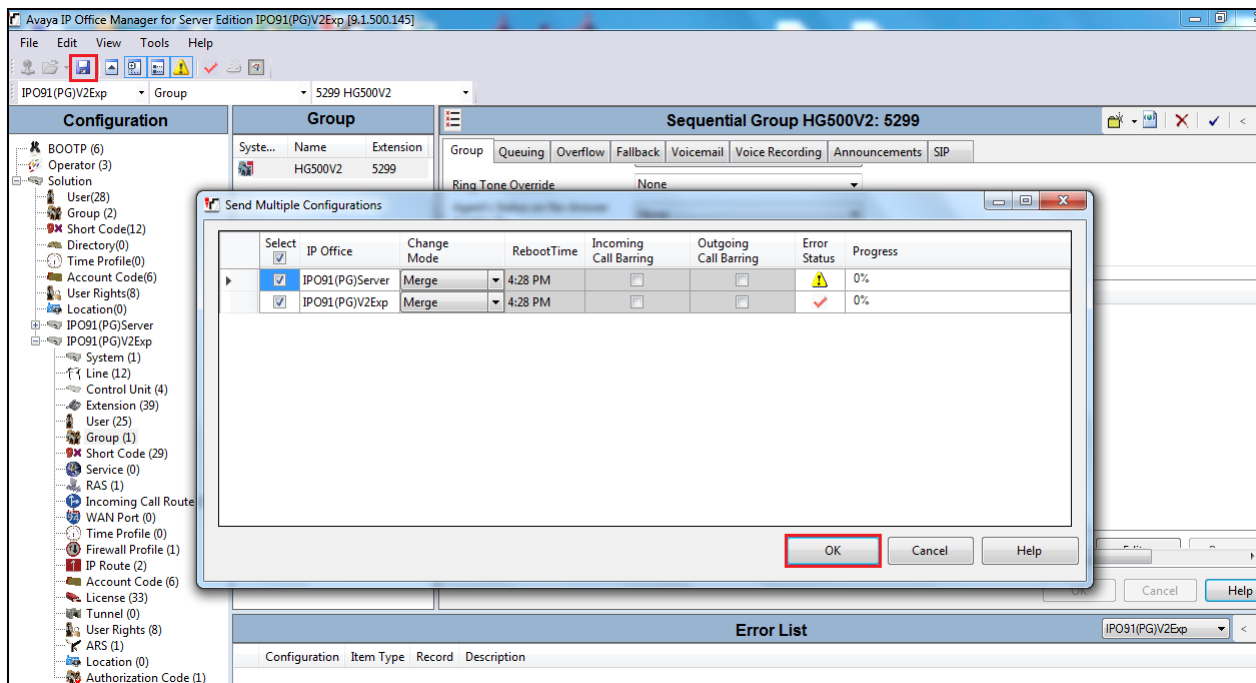
5.6 Configure Centralized CTI Web Services

This section goes through the steps required in order to setup Centralized CTI Web Services on IP Office in order to provide Presence information to Unified BLF via the TeamView® server.

5.6.1 Configure CTI Web Services on IP Office

To get access to CTI Web Services from the TeamView® server an application user must be created for this purpose. This user must not have the same name as an ordinary One-X® Portal user, so create a unique user group and user as shown in the following steps.

Open **Security Settings** in the IP Office Manager as shown.
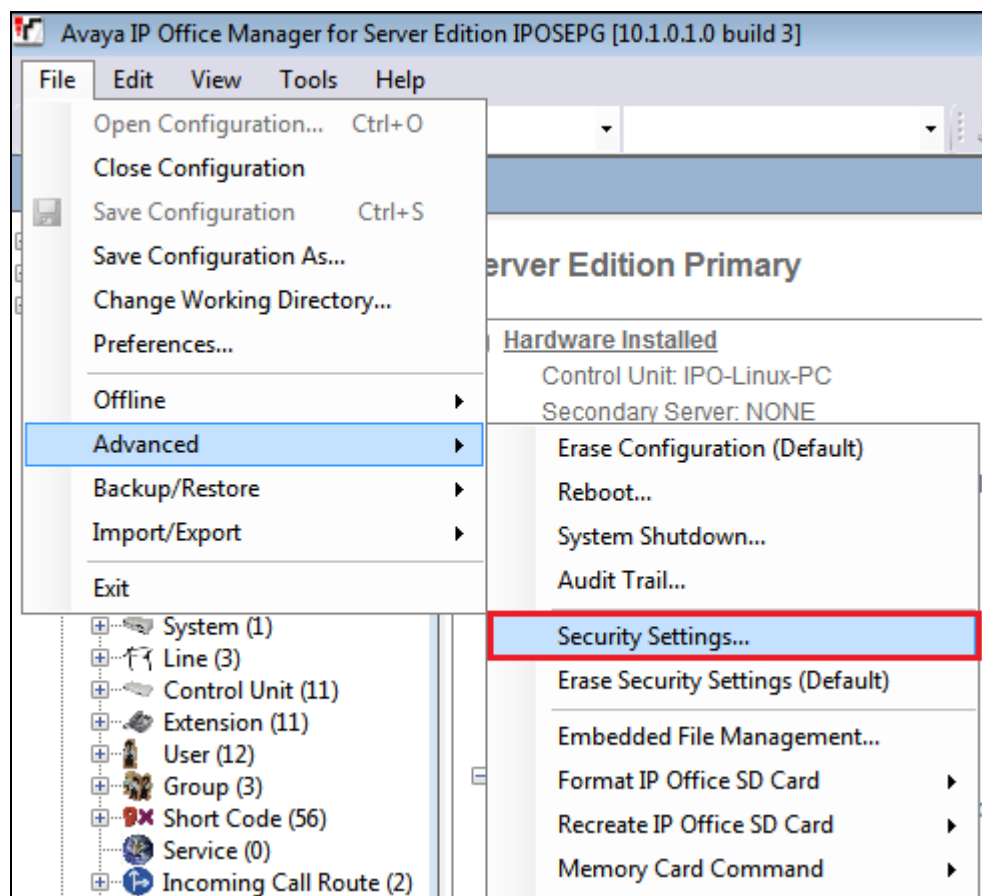
Create a new Rights Group and give that group rights to external interface one-X CTI API. Right-click on **Rights Groups** and select **New,** as shown below.
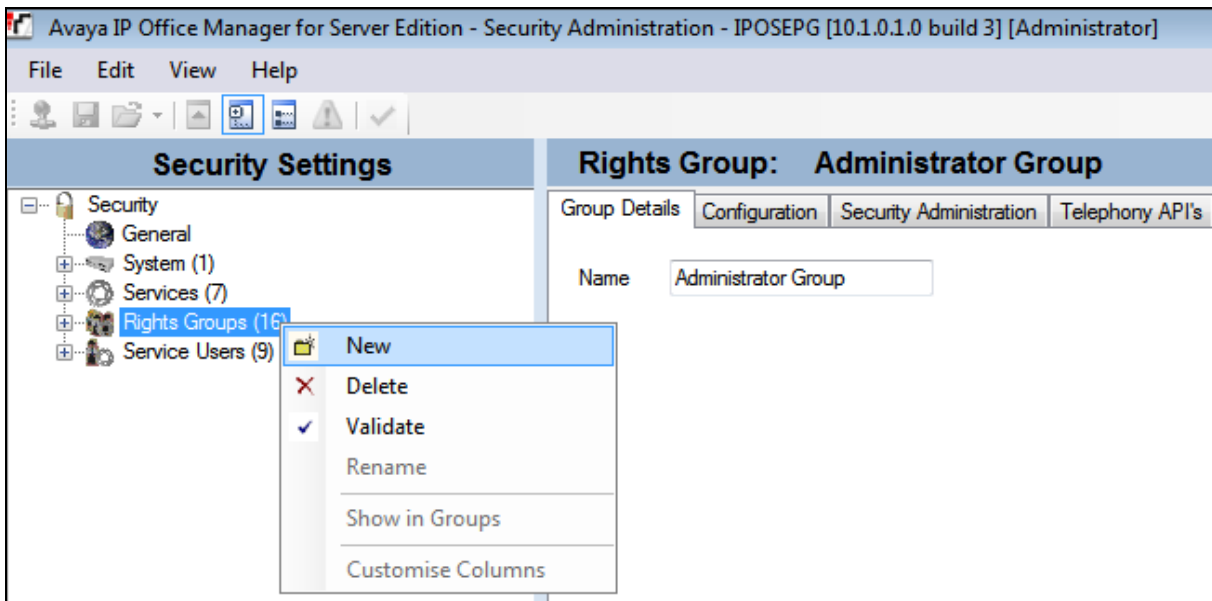
Give the new group a suitable **Group Name**.
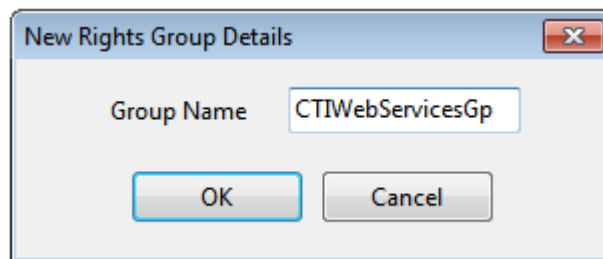
Click on the **External** tab and tick the **one-X CTI API** box as shown below.
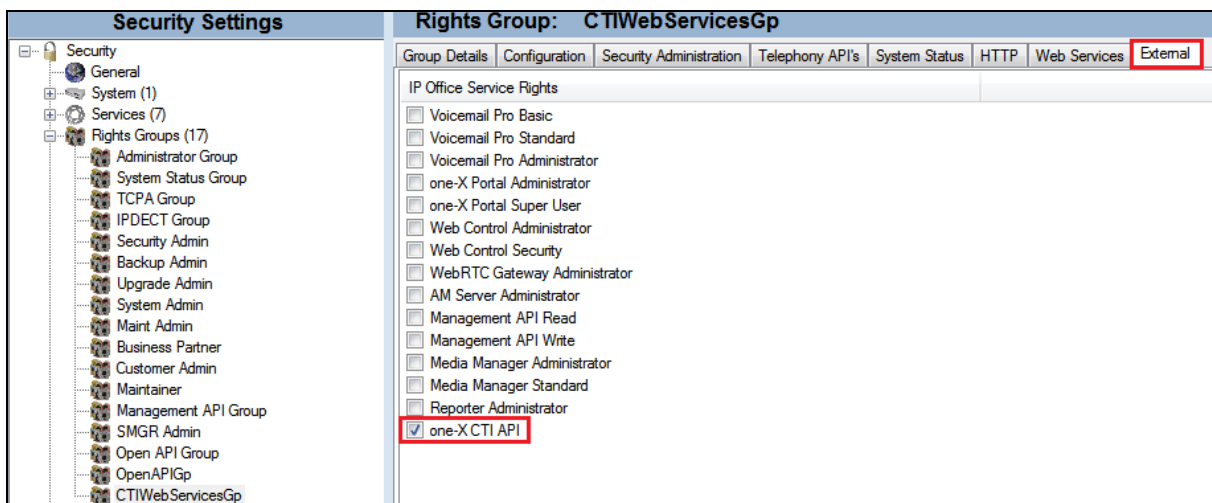
Right-click on **Service Users** and select **New**, as shown, this will create a new user that can be used by the TeamView® server as per **Section 6.1**
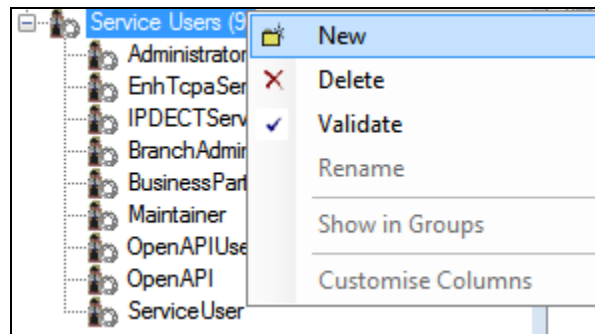
Enter a suitable name and password for the user as shown and click on **OK**.

Ensure that the user is part of the group that was configured previously and that **No Account Expiry** is ticked as shown. Click on **OK** at the bottom of the screen (not shown below).

Click on the **Save** icon at the top of the screen, as shown.
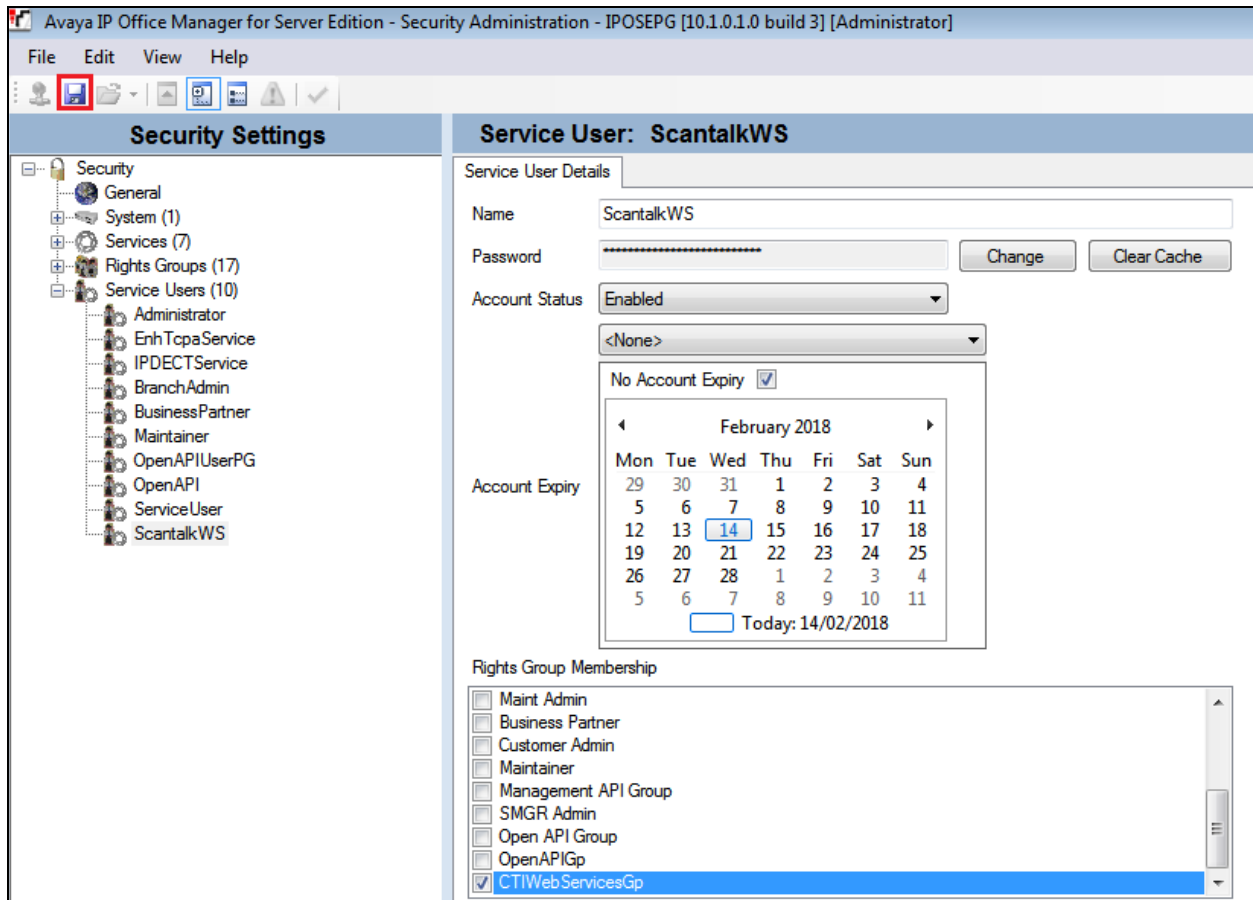
5.6.2 Configure one-X® Portal

As for now the interface is not using SSL and you must allow the service to accept HTTP on port 8080. This is done in the One-X Portal Administrator under security.

Open a web browser to the IP Office Server Edition specifically **https://<Server IP>:9443/onexportal-admin.html**. Enter the appropriate credentials and click on **Login.**


Click on **Security** in the left window and on **HTTP/HTTPS Protocol** and ensure that that **Unsecure and Secure (HTTP and HTTPS)** button is selected and click on **Save**.
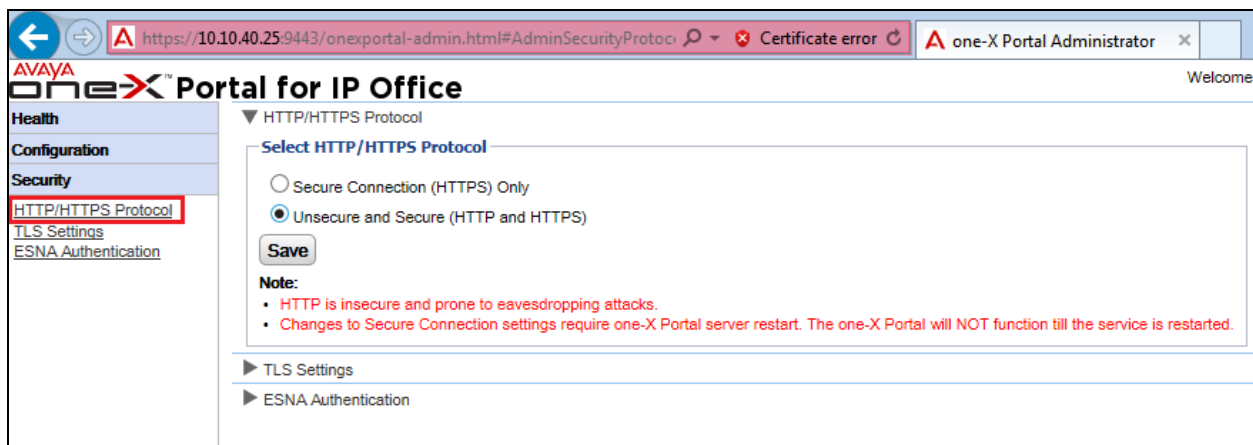
Once Save is pressed above the following message is displayed, click on **Yes**.
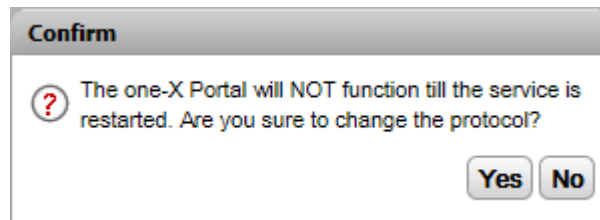
Once Yes is pressed above the following message is displayed, click on **Yes** again. The One-X® Portal will now restart and will log out the user automatically and will be offline for 2-3 mins.
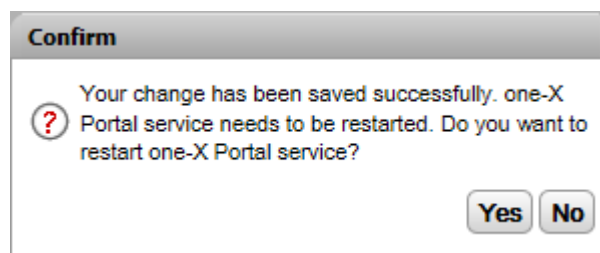
This concludes the setup on IP Office for both the TAPI and CTI Web Services connections.

6. Configure Scantalk TeamView® Unified BLF

This section describes the steps preformed to configure the Unified BLF. It is implied that the Unified BLF 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 BLF, one TeamView® server was installed connecting to the IP Office Server Edition using CTI Web Services. Unified BLF 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.
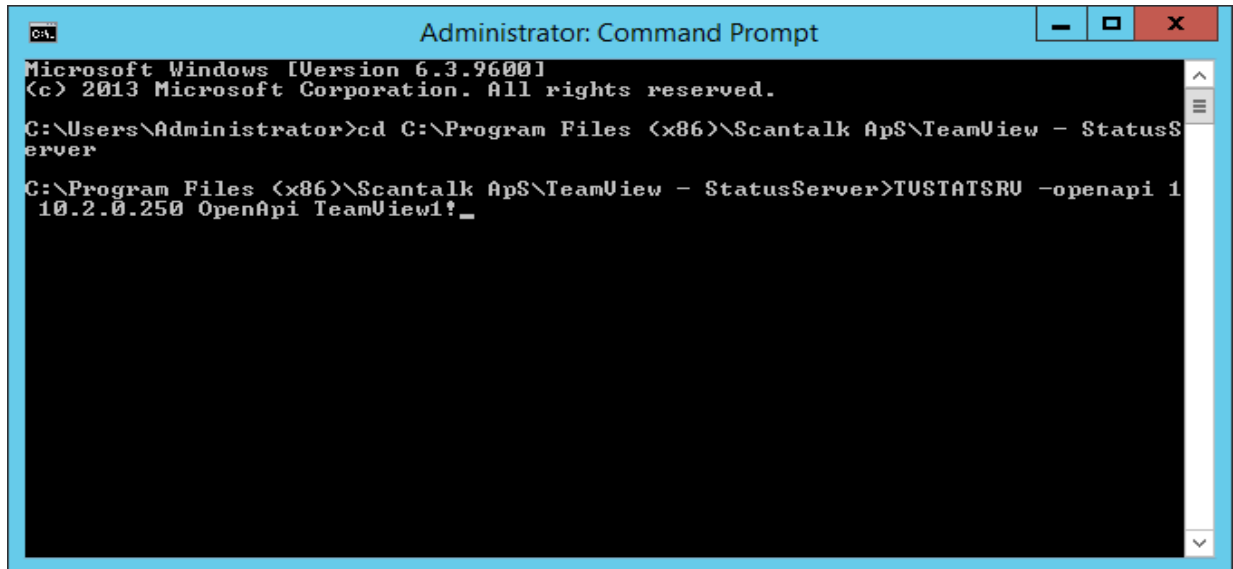
6.1 Configure TeamView® Server for connection to CTI Web Services

These are the steps required to configure the TeamView® Status server in order to use the OpenAPI function. Open up a windows command prompt as Administrator. Use the command **cd C:\Program Files (x86)\Scantalk ApS\TeamView – StatusServer** and hit enter.

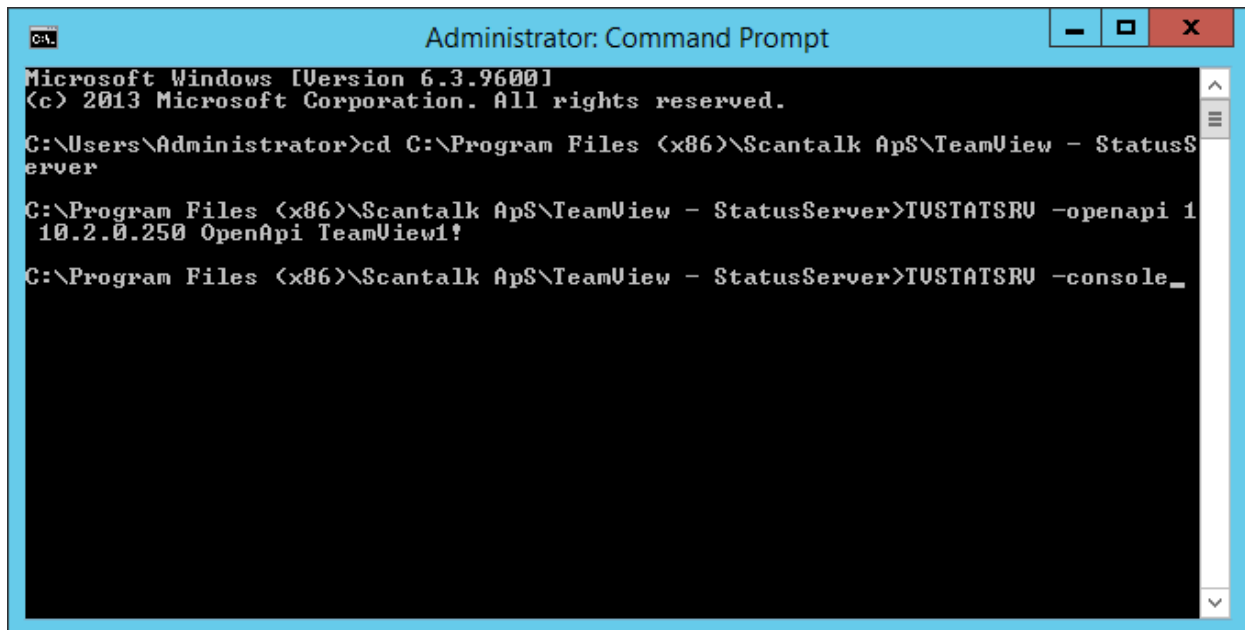**Note:** Centralized CTI Web Services API has also been called "OpenAPI".
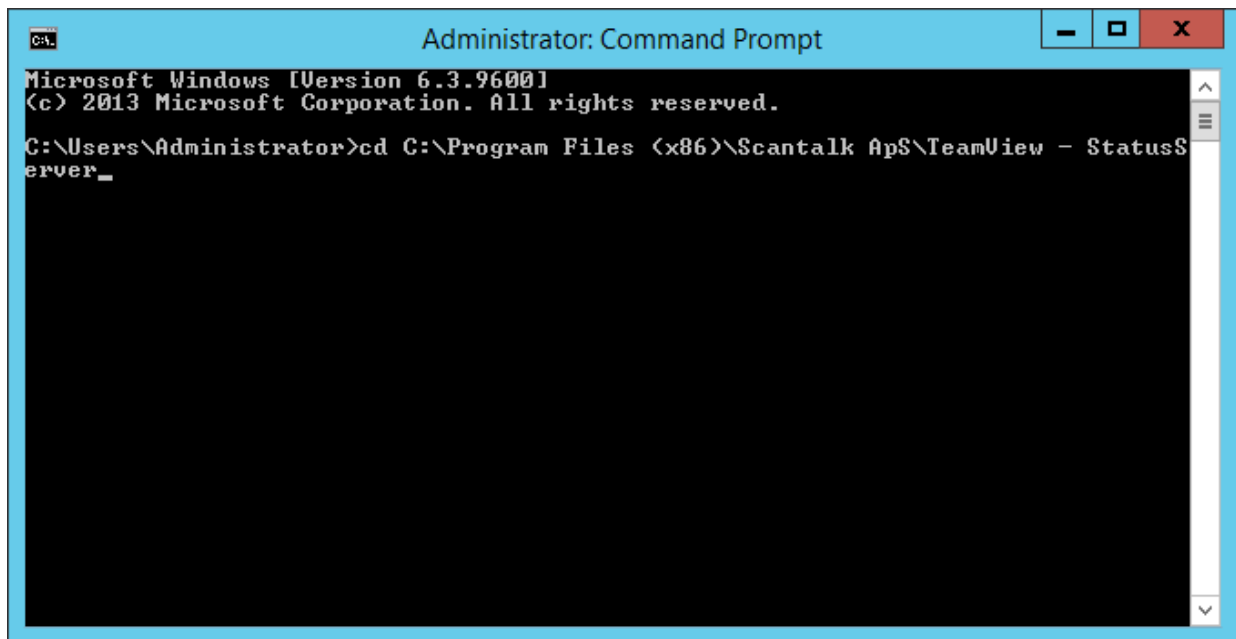
Type in **TVSTATSRV –openapi 1 xx.xx.xx.xx OpenApi password** where "xx.xx.xx" is the IP for the PBX and "password" is the password for the PBX and hit enter.
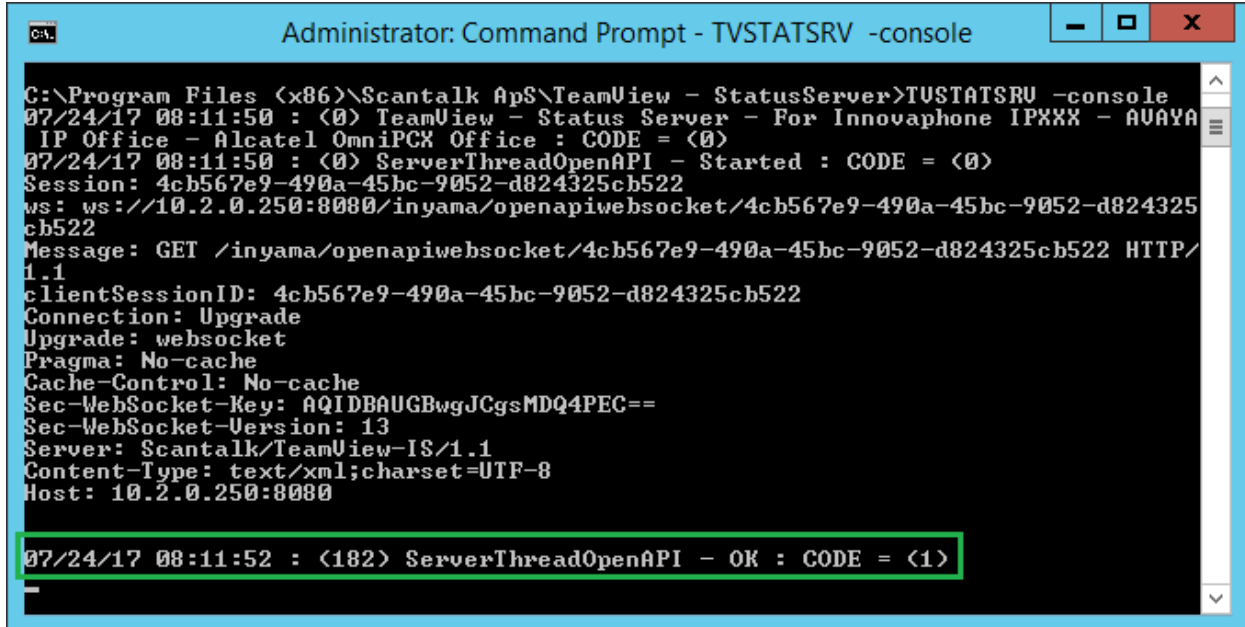
Type in **TVSTATSRV -console** and hit enter to run console.

Here we can see that the openAPI has a connection with IP Office.

The confirmation above proves the connection to use the Centralized CTI Web Services API also called "OpenAPI" has been setup correctly.

6.2 Configure TeamView® Unified BLF
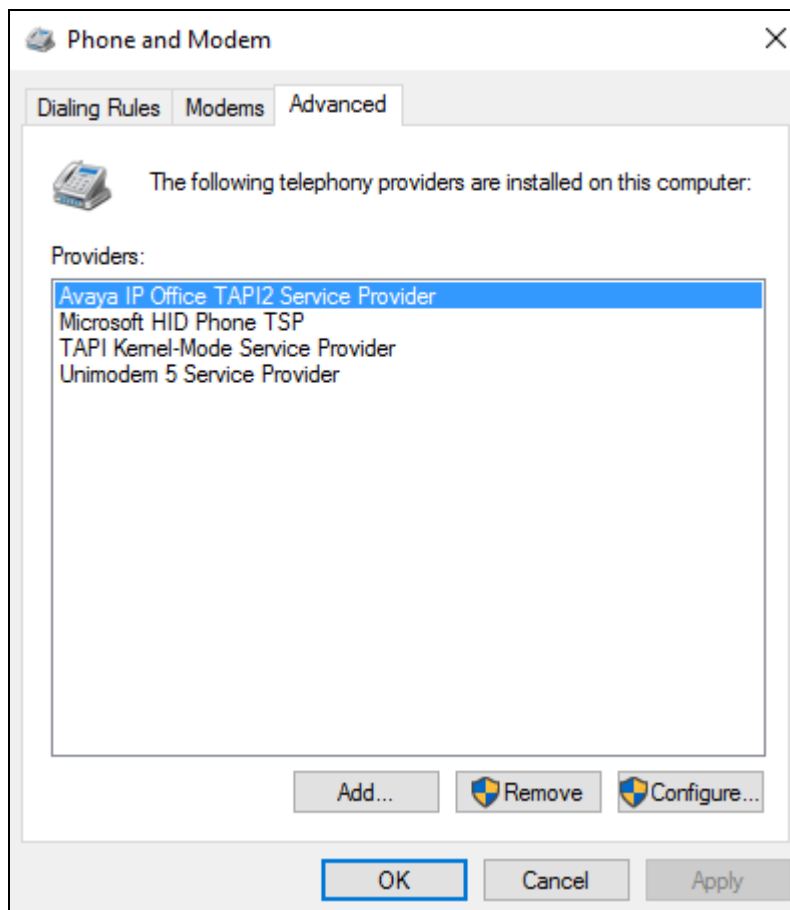
The configuration of the Unified BLF involves the configuration of the TAPI driver as well as some configuration of the Unified BLF application.

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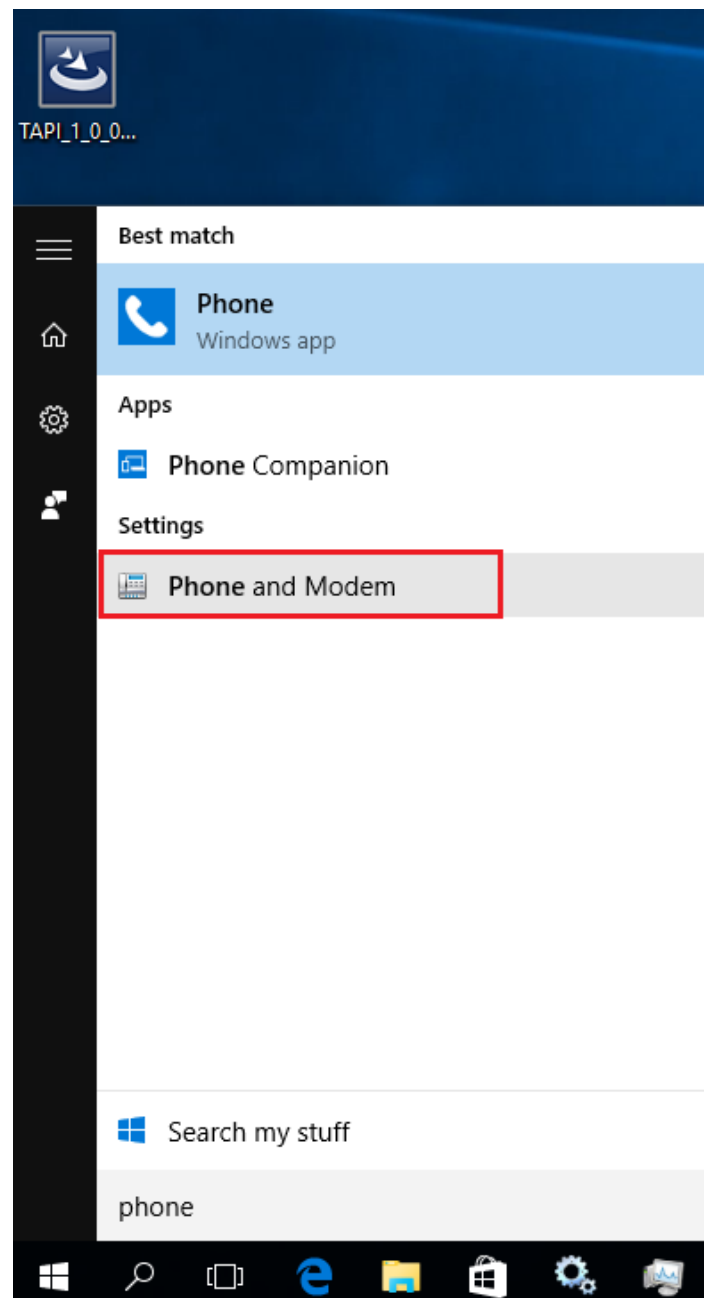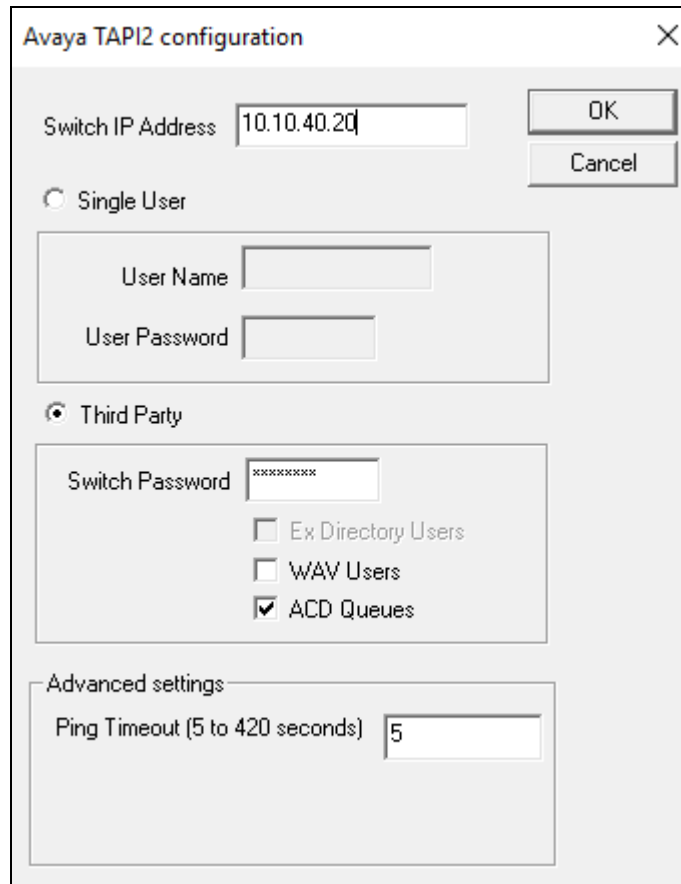
The TAPI driver must also be installed on the client PC. TAPI can be configured in Single User mode or Third Party mode and for compliance testing, Third Party mode was selected. Select the **Advanced** tab and click on **Configure**.

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Once the **Avaya TAPI2 configuration** window opens, enter the following:
- **Switch IP address**   Enter the IP address of the 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 BLF application

Open the Unified BLF application using the icon from the desktop which appears after installation (see **Section 7.1**). Once the Unified BLF window opens click on the **Configuration** icon that will open the **Configuration** window as shown below.
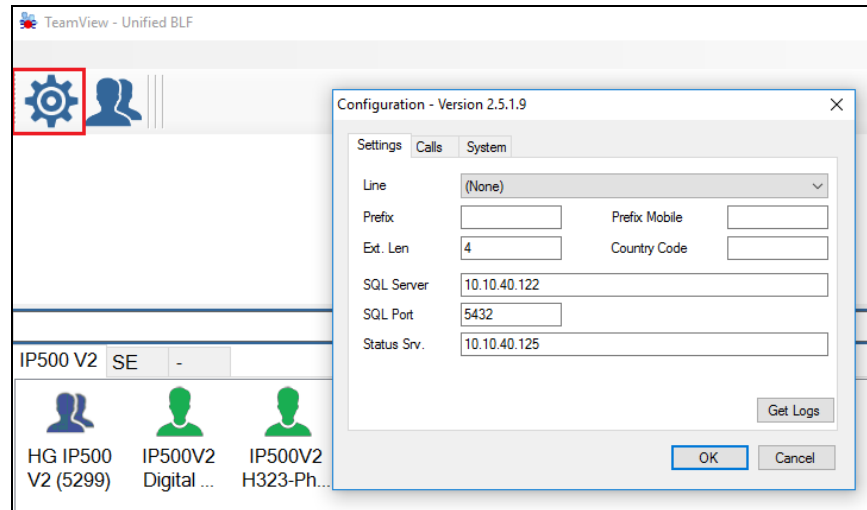
Once the **Configuration** window opens enter the following in the **Settings** tab:
- **Line**   Select the IP Office phone which is going to act as the switchboard from the dropdown box.
- **Prefix**   Enter the Prefix to dial to get an outside line, no prefix was used for compliance testing.
- **SQL Server** Enter the Server name hosting the SQL Express or PostGreSQL.
- **Status Srv.** Enter the IP address of the TeamView® Status Server.
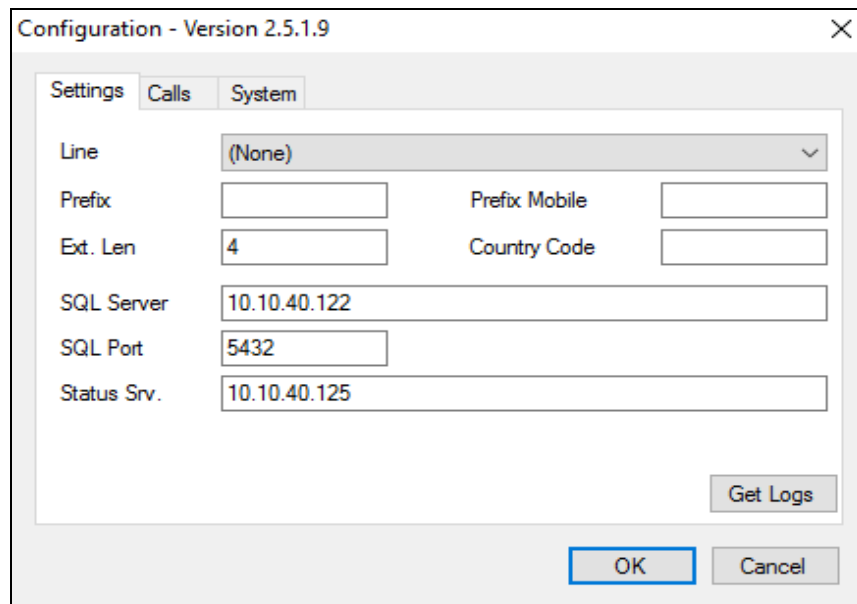
When third party mode is selected a number of lines may be visible to the user as is shown below, chose the line to be used by the Unified BLF.
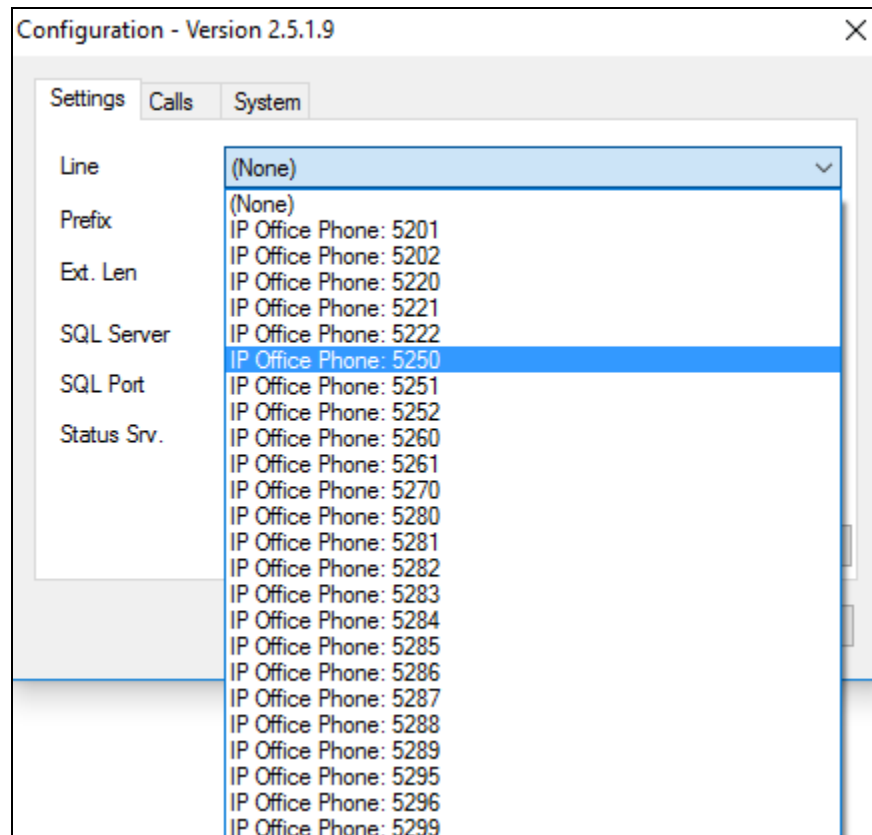
Line 5250 was chosen for compliance testing as shown below.
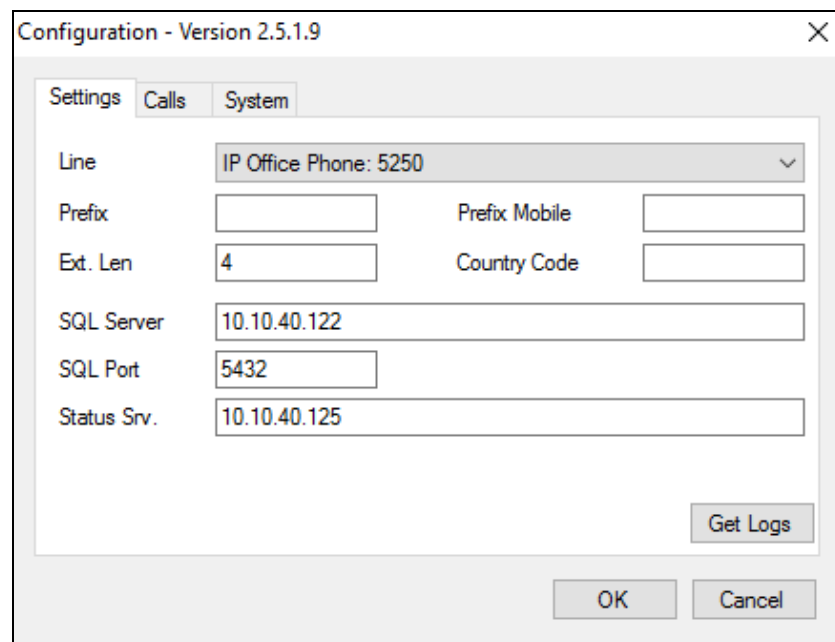
Click on the **Calls** tab the **Wait** button was selected for **on new call** for compliance testing.

Configuration - Version 2.5.1.9

Settings | Calls | System

on new call
- ◉ Wait
- ○ Popup
- ○ On top

OK   Cancel
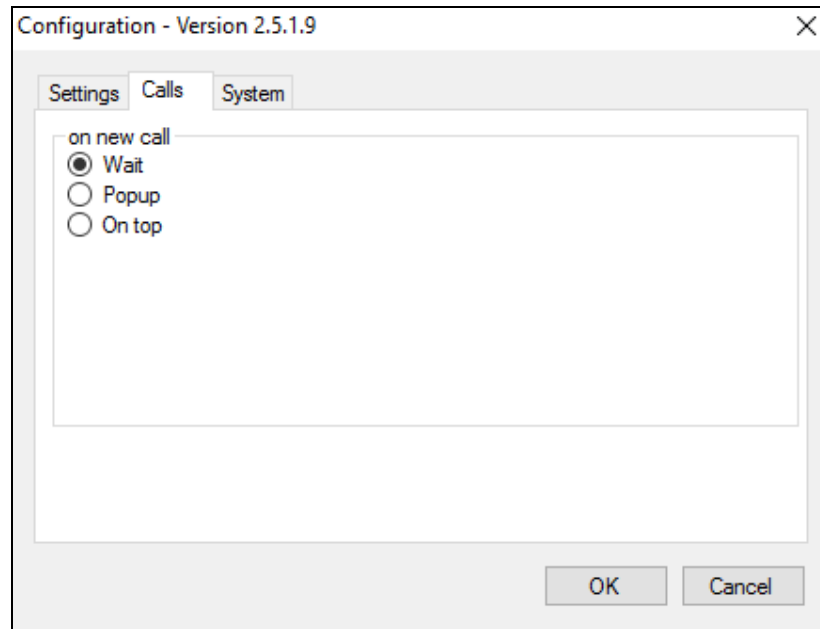
Click on the **System** tab, the **Default** language was chosen but this can be changed depending on the requirements. Under **Groups**, select the hunt group configured in **Section 5.4** (note in this case it is the hunt group configured in **Section 5.4.2**) from the dropdown box. Enter the **HuntGroup** numbers that were setup in **Section 5.4**. No **Camp on Shortcodes** are currently supported.

Configuration - Version 2.5.1.9

Settings | Calls | System

Language
(Default)

Groups
HG IP500 V2

HuntGroup   5199,5299

Shortcodes
Camp on   [   ]

OK   Cancel
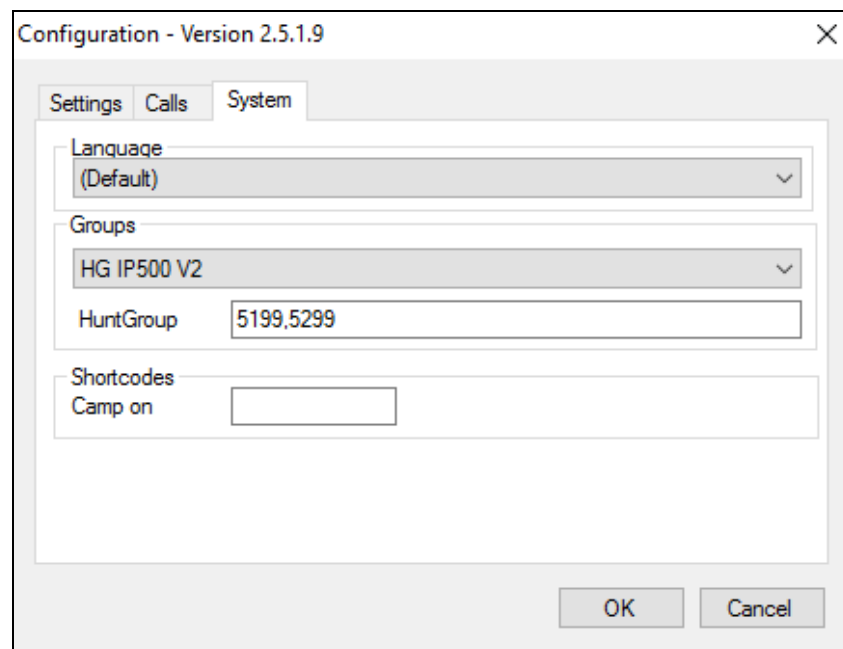
Restart Unified BLF to complete the process.

7. Verification Steps

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

7.1 Verify Scantalk TeamView® Unified BLF

From the Windows 10 PC that has Unified BLF installed open the application as shown below.

Once the Application is opened a screen something like the following appears. Please note that the contacts and group information shown below is that of the DevConnect lab and this will look different for different customer sites. The screen below shows an idle switchboard.

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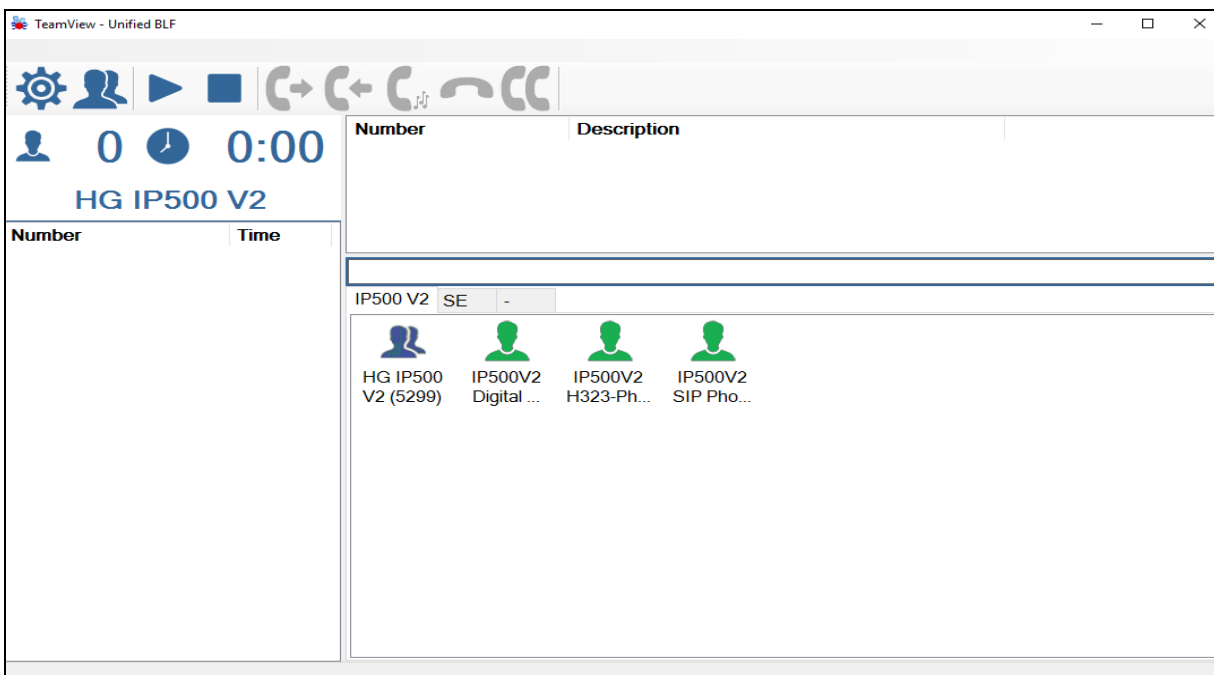
A number of calls were placed to the hunt group number associated with the switchboard for Unified BLF. The following should appear showing a call being presented to the switchboard and the other calls waiting. The call is answered using the icon highlighted. Note the waiting time of seven seconds on the group at the top left of the window.
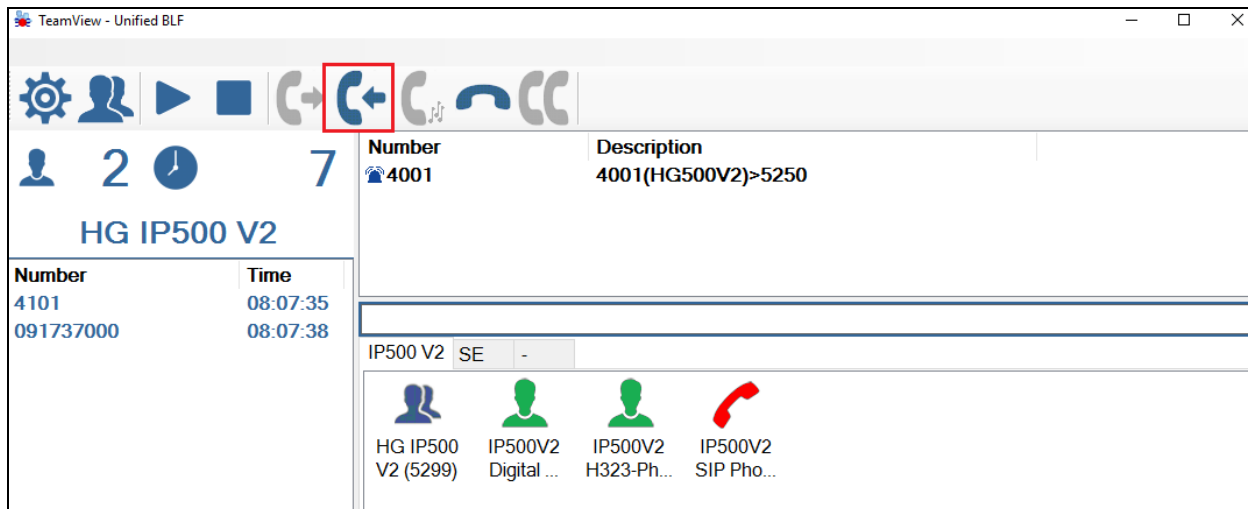
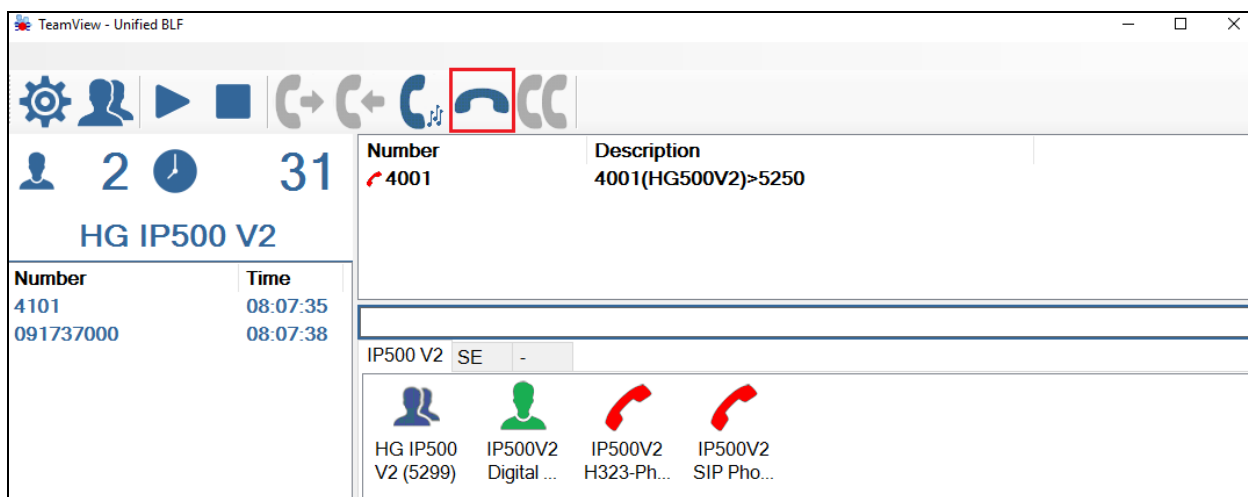Once the call is answered the call can be placed on hold, transferred or can then be disconnected again using the icon shown.

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8. Conclusion

These Application Notes describe the configuration steps for TeamView® Unified BLF from Scantalk to interoperate with Avaya IP Office R10.1 using the Centralized CTI Web Services API to provide presence information to Unified BLF. Unified BLF 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*
    [1] *Avaya IP Office R10.1 Manager 10.1, Document Number 15-601011*
    [2] *Avaya IP Office R10.1 Doc library*

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

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