



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office 8.1 with Tri-Line TIM Enterprise 3.0.0.86 using TCP - Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning Avaya IP Office 8.1 with Tri-Line TIM Enterprise 3.0.0.86. The Tri-Line TIM Enterprise will collect Station Message Detail Reports by listening to a TCP port configured on the Avaya IP Office

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

Tri-Line's TIM Enterprise is a call logger which runs as a Windows Service and all of its functions, configuration, and call reports are accessible through a standard web browser. Tri-Line's TIM Enterprise collects Station Message Detail Reports (SMDR) data from the Avaya IP Office by listening for connections on a specific TCP port and it uses a Microsoft SQL or MySQL database for storing and processing data. Tri-Line's TIM Enterprise provides a web interface which can be used for configuration with Avaya IP Office. This web interface also allows the system to be updated to add additional Avaya IP Offices and for general maintenance. Users can use this web interface for reporting purposes and access can be restricted by username and password and directory position.

2. General Test Approach and Test Results

The interoperability compliance test included both feature and functionality testing. The feature and functionality testing focused on verifying that SMDR is collected by TIM Enterprise and received in the format as generated by the Avaya IP Office. The TIM Enterprise Call Logger collects SMDR data by listening on a TCP port configured on the Avaya IP Office.

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. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing. The feature testing evaluated processing of SMDR data obtained from the Avaya IP Office via a TCP-IP link. The serviceability testing introduced failure scenarios to see if Tri-Line TIM Enterprise could resume after a link failure with the Avaya IP Office.

The testing included:

- Local internal call handling
- Handling of incoming network calls
- Handling of external calls to network
- Call Forwarding
- Transfers – Blind and Supervised
- Conference calls
- Call Pick Up
- Bridged Appearances
- Calls to hunt groups
- Handling of calls to and from Avaya Digital, H323 and SIP phones

2.2. Test Results

Tests were performed to insure full interoperability between Tri-Line's TIM Enterprise and the Avaya IP Office. The tests were all functional in nature and performance testing was not included. All the test cases passed successfully.

2.3. Support

Technical support can be obtained for TRI-Line products as follows:

- Web Portal <http://www.tri-line.com/en/support/>
- E-mail: support@tri-line.com
- Telephone +44 (0)20 7265 2626

3. Reference Configuration

Figure 1 illustrates the network diagram of the configuration used during compliance testing. The Avaya IP Office is configured to output call records. A TCP link is established between Tri-Line's TIM Enterprise and the Avaya IP Office. From the Avaya IP Office, SMDR data is sent to a specified port for collection and processing. The Tri-Line TIM Enterprise Call Logger is connected on the same LAN as the Avaya IP Office and will collect SMDR. A variety of Avaya 96XX H323, SIP Softphones and Digital phones were used to generate intra-switch calls (calls between phones on the same system), and outbound/inbound calls to/from the PSTN.

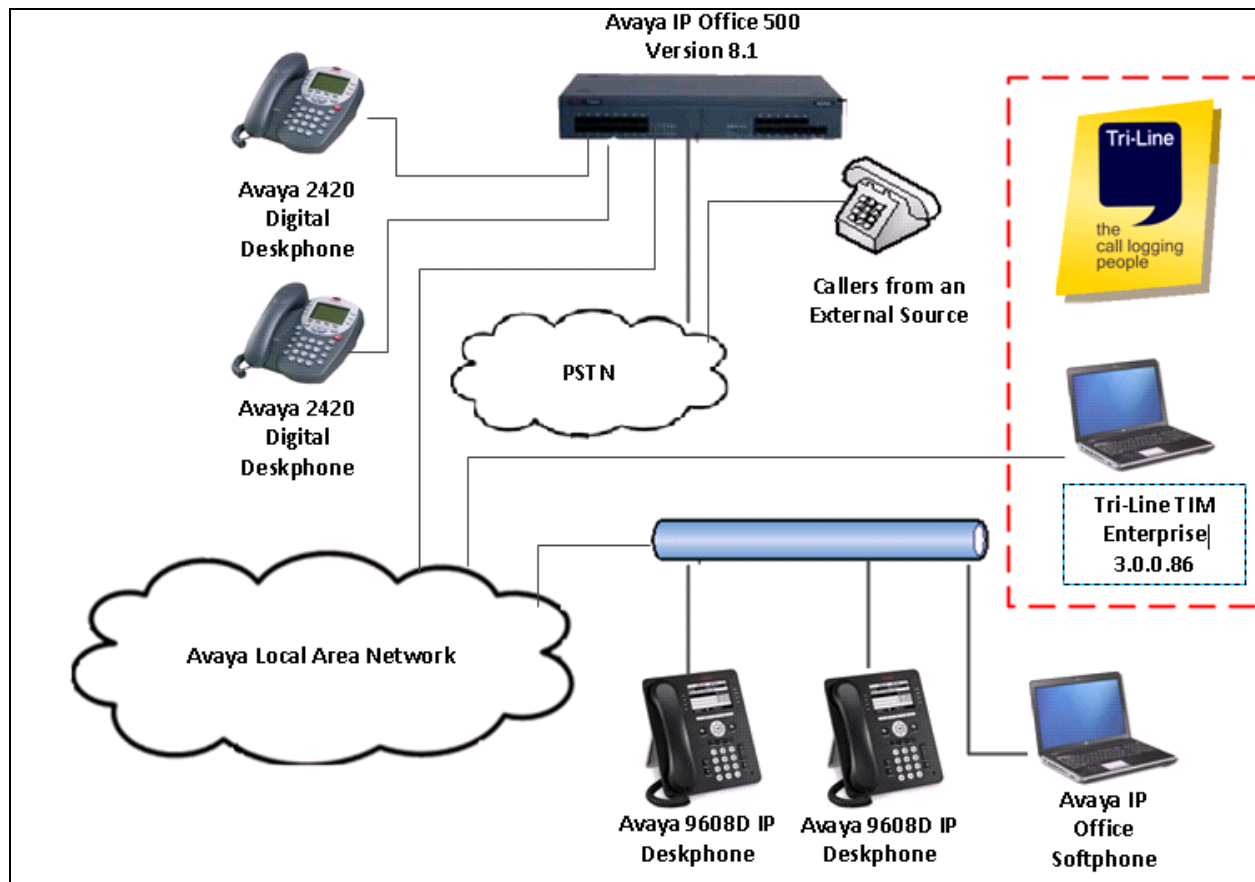


Figure 1: Avaya IP Office R8.1 with Tri-Line TIM Enterprise 3.0.0.86 Reference Configuration

4. Equipment and Software Validated

The hardware and associated software used in the compliance testing is listed below.

Avaya Equipment	Software Version
IP Office 500	Avaya IP Office R8.1
Avaya 9608D IP Telephone	HALBR6_2_0_09_V452
Avaya 2420 Digital Telephones	NA
Avaya IP Office Softphone	3.2.3.48 67009
Tri-Line Equipment	Software Version
TIM Enterprise running on a Dell Latitude E5400 with Windows 7 Professional SP1	Version 3.0.0.86

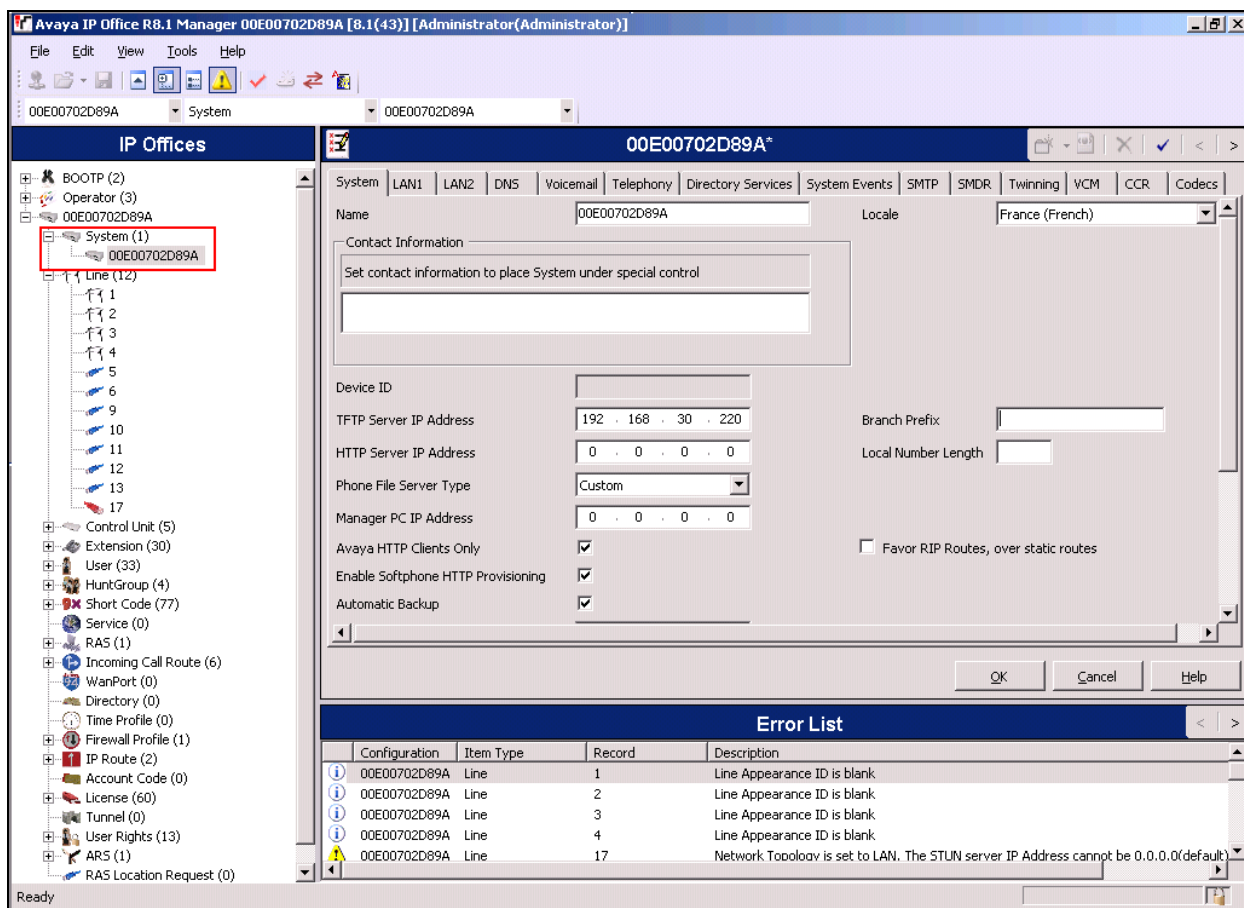
5. Avaya IP Office Configuration

Configuration and verification operations on the Avaya 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 Avaya IP Office for this solution. It is implied 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
- SMDR Configuration
- Save Configuration

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. Log in to Avaya IP Office using the appropriate credentials to receive its configuration (not shown). In the IP Offices window expand the configuration tree in the left panel and double-click **System**. During compliance testing the System was called 00E00702D89A



5.2. SMDR Configuration

Select the **SMDR** tab and enter the following information:

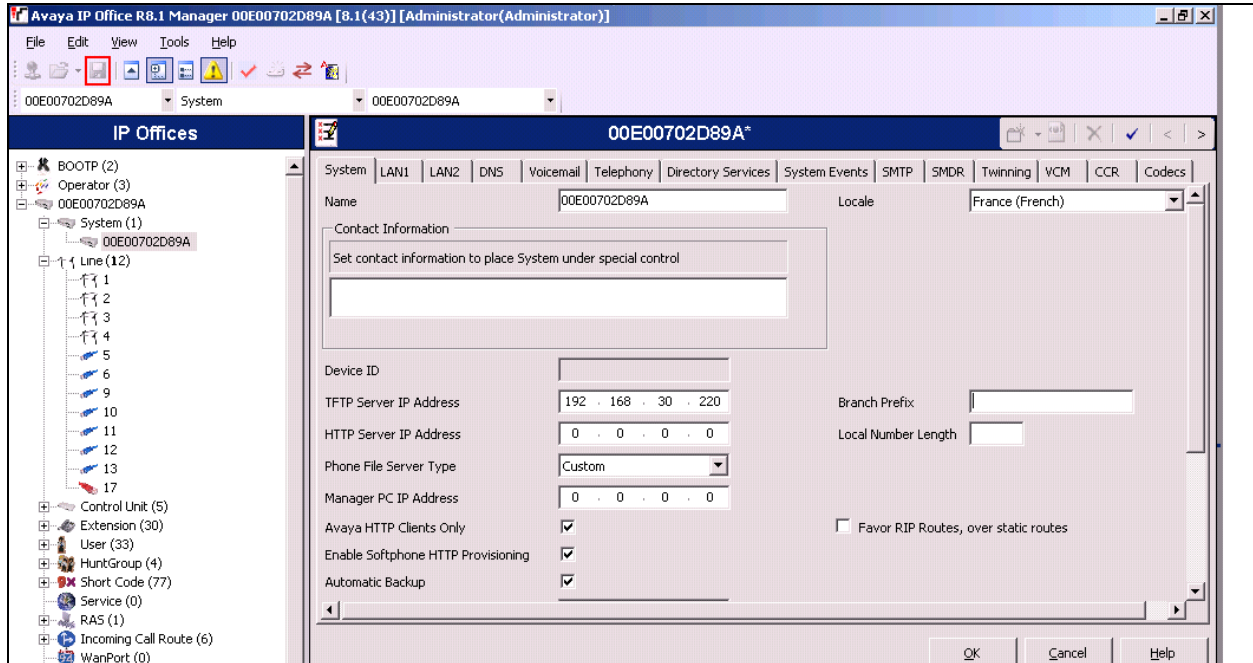
- **Output** Select **SMDR** from the drop box
- **IP Address** Enter the IP Address of the PC where TIM Enterprise is installed
- **TCP Port** Enter **9000**
- **Records to buffer** Enter **3000**. This is maximum available.
- Check the **Call Splitting for Diverts** check box

Click the **OK** button to save.

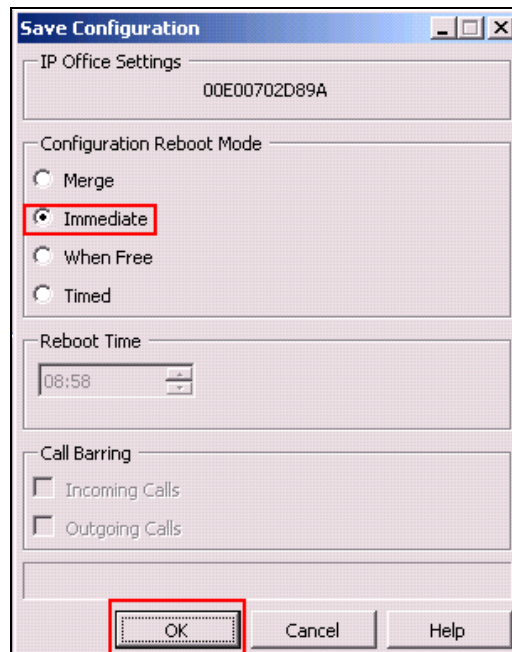
The screenshot shows the GSSCP_IP07* configuration window. The 'SMDR' tab is selected and highlighted with a red box. The 'Output' dropdown menu is set to 'SMDR Only' and is also highlighted with a red box. The 'SMDR' configuration panel is expanded, showing the following settings: IP Address (10 . 10 . 9 . 250), TCP Port (9000), Records to Buffer (3000), and the 'Call Splitting for Diverts' checkbox is checked. The 'OK' button at the bottom right is also highlighted with a red box.

5.3. Save Configuration

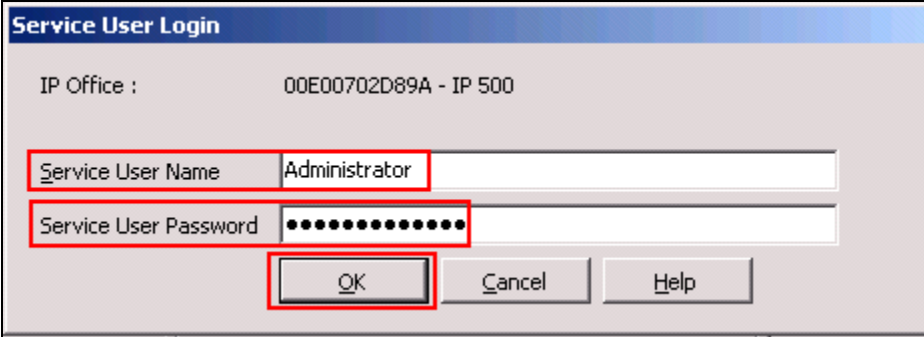
Once the configuration has been made it must be sent to the IP Office. Click on the **Save** Icon as shown below.



Once the **Save Configuration** window opens, click on the **Immediate** radio button followed by the **OK** button.



Once the **Service User Login** Window opens, enter the appropriate credentials and click the **OK** button.

A screenshot of the 'Service User Login' dialog box. The title bar is blue with the text 'Service User Login'. The main area is light gray. It displays 'IP Office : 00E00702D89A - IP 500'. Below this are two input fields: 'Service User Name' with the text 'Administrator' and 'Service User Password' with masked characters (dots). Both input fields and the 'OK' button below them are highlighted with red rectangular boxes. At the bottom right are 'Cancel' and 'Help' buttons.

6. Configuring Tri-Line TIM Enterprise

A number of steps are required to Configure TIM Enterprise to interoperate with the Avaya IP Office. The TIM Enterprise Call Logger uses a TCP port to collect SMDR data from the Avaya IP Office. The TIM Enterprise application is downloaded from the Tri-Line Web Site once the end customer has a registered account. The end customer can also download a template file which matches the PBX type (although this is supplied by default with the download of the installation package). This template file is required during configuration.

It is implied that TIM Enterprise software is already installed. The configuration operations described in this section can be summarized as follows:

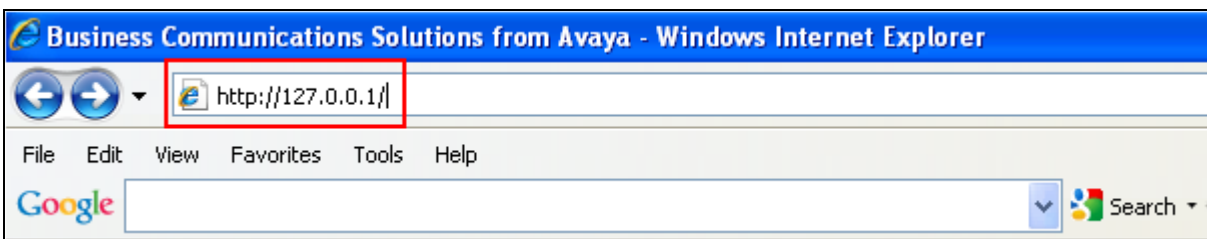
- Downloading Avaya IP Office template.
- Accessing TIM Enterprise
- Add new object
- Configuring Properties

6.1. Downloading Avaya IP Office Template

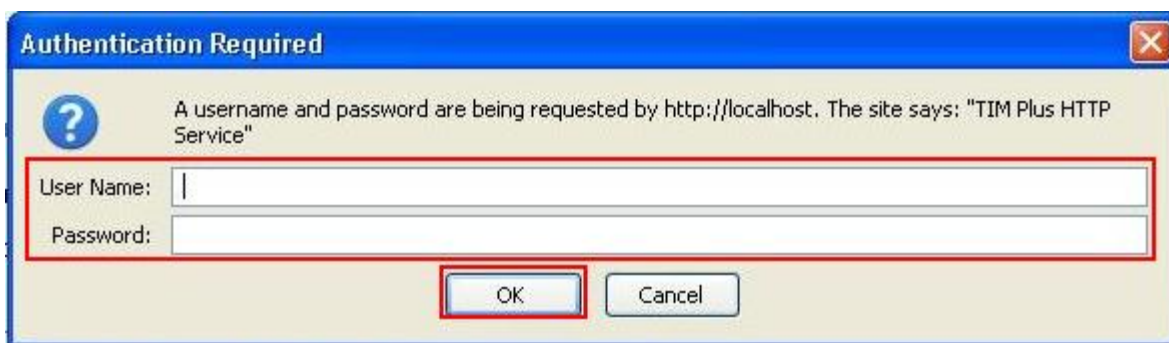
As part of configuration an Avaya IP Office template is required. This template is provided as standard with the installation package. During compliance testing the template used was called **Avaya IP Office 6+.tdt**.

6.2. Accessing Tri-Line TIM Enterprise

During compliance testing access to TIM Enterprise was via a web browser on the same PC as the TIM Enterprise service was installed. The loopback address **http://127.0.0.1** was used.

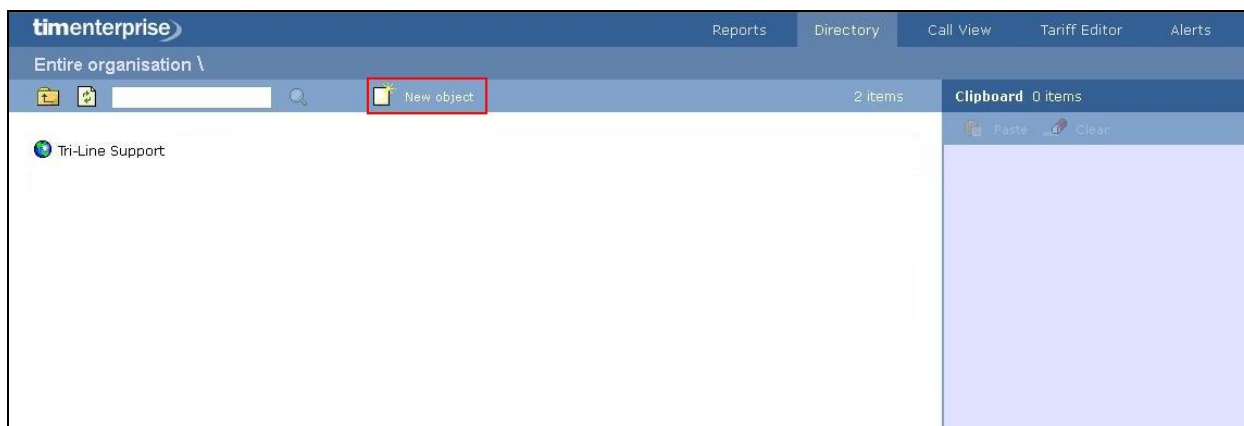


Authentication is required to log into TIM Enterprise. Enter **User Name** and **Password** followed by clicking the **OK** button.

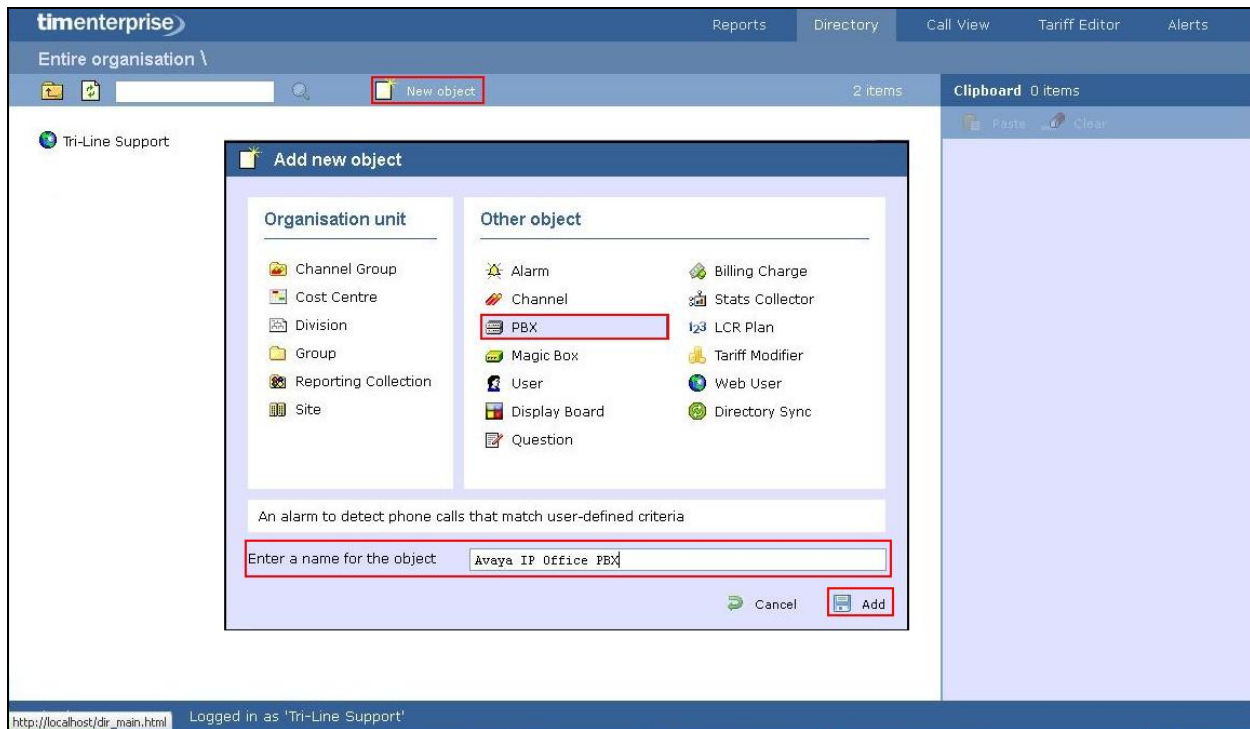


6.3. Add New Object

The first time after logging into TIM Enterprise the default window will appear. A new object needs to be added. Click on the **New object** Icon.



In the Add new object window that appears, select **PBX**. In the field **Enter a name for the object**, enter an informative name. During compliance testing **Avaya IP Office PBX** was used. Click the Add icon as shown below.



6.4. Configuring Properties

Once the new object is added **Avaya IP Office PBX** appears in the directory. To configure TIM Enterprise to receive information from Avaya IP Office, click on the Avaya IP Office PBX object and select **Properties** as shown below.



Once the Properties window opens select the **General** tab and select **Avaya IP Office 6+** in the **Data format** pane.

The screenshot shows the 'Avaya IP Office PBX' Properties window with the 'General' tab selected. The left sidebar contains links for 'General', 'Connection', 'Inactivity', and 'Options'. The main area is divided into three sections: 'General settings', 'Data backup', and 'Data format'. In the 'General settings' section, the 'Name' is 'Avaya IP Office PBX', 'Unique ID' is '2', and 'Time zone' is '0'. There is an unchecked checkbox for 'Broadcast CDRs from this PBX'. The 'Data backup' section has a checked checkbox for 'Keep a local backup of data' and a 'Backup location' text box containing '{app}\backup\Avaya IP Office PBX\{y'. The 'Data format' section on the right shows a list with 'Avaya IP Office 6+' selected and highlighted with a red rectangle. At the bottom right are 'Cancel' and 'Save' buttons.

Avaya IP Office PBX	
General	
General settings	
Name	Avaya IP Office PBX
Unique ID	2
Time zone	0
<input type="checkbox"/> Broadcast CDRs from this PBX	
Data backup	
<input checked="" type="checkbox"/> Keep a local backup of data	
Backup location	{app}\backup\Avaya IP Office PBX\{y
Data format	
Avaya IP Office 6+	
Cancel Save	

Select the **Connection** tab, and select **Listen for connections from PBX** and enter the **Port** number **9000** as configured for the **TCP Port** in **Section 5.2**. Click the **Save** icon as shown below.

7. Verification Steps

This section provides the tests that can be performed to verify correct configuration of the Avaya IP Office and TIM Enterprise.

7.1. Verify Tri-Line TIM Enterprise Call Logger Retrieving SMDR data

To ensure that the TIM Enterprise Call Logger is retrieving SMDR data make some calls on the Avaya IP Office. Verify that something similar to the following is presented.

timenterprise								
Call View								
Date	Time	Source	Route	Destination	Response	Duration	Cost	
21 March 2013	14:06:28	Local Call	89112	2017	0	00:00:00	0.00	
21 March 2013	14:06:28	Local Call	89112	2017	0	00:00:00	0.00	
21 March 2013	14:06:28	Local Call	89112	2017	0	00:00:00	0.00	
21 March 2013	14:06:28	Local Call	89112	2017	0	00:00:00	0.00	
21 March 2013	14:06:28	Local Call	89112	2017	0	00:00:00	0.00	
21 March 2013	14:06:28	Local Call	89111	2017	0	00:00:00	0.00	
21 March 2013	14:06:27	109	89112	Local Call	0	00:00:01	0.03	
21 March 2013	14:06:26	109	89112	Local Call	0	00:00:02	0.03	
21 March 2013	14:06:26	2017	89111	Local Call	0	00:00:02	0.03	
21 March 2013	14:06:25	2017	89112	Local Call	0	00:00:03	0.03	
21 March 2013	14:06:24	Local Call	89112	3015	0	00:00:04	0.00	
21 March 2013	14:06:24	Local Call	89112	3017	2	00:00:02	0.00	
21 March 2013	14:06:24	Local Call	89112	3017	2	00:00:02	0.00	
21 March 2013	14:06:23	2017	89123	Local Call	0	00:00:05	0.03	

8. Conclusion

These Application Notes describe the configuration steps required for Avaya IP Office R8.1 to successfully interoperate with Tri-Line's TIM Enterprise 3.0.0.86 using a TCP connection. Tri-line's TIM Enterprise 3.0.0.86 is considered compliant with the Avaya IP Office R8.1. All of the executed test cases have passed and met the objectives outlined in **Section 2.2**.

9. Additional References

These documents form part of the Avaya official technical reference documentation suite. Further information may be obtained from <http://support.avaya.com> or from your Avaya representative.

[1] Avaya IP Office R8.1 Manager 10.1, August 3rd 2012, Issue 29o, Document Number 15-601011

Product Documentation for Tri-Line can be obtained at <http://gateway.tri-line.com>. Login required.

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