



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Tri-Line TIM Enterprise with Avaya IP Office Server Edition and 500v2 Expansion - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Avaya IP Office Server Edition with 500v2 Expansion to work with Tri-Line's TIM Enterprise. TIM Enterprise is a Windows-based call analysis software program that collects and reports on the Station Message Detail Reporting (SMDR) information generated by Avaya IP Office.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any 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

The objective of this compliance test is to verify that Tri-Line's TIM Enterprise 3.0.0.108 call accounting software can interoperate with Avaya IP Office Server Edition with 500v2 Expansion 10.0. TIM Enterprise listens for connection from Avaya IP Office for the collection of Station Message Detail Reporting (SMDR) information. TIM Enterprise processes the collected SMDR data and accurately bills them. It provides querying and reporting functionality on the billed data. The data can also be exported to various formats for processing.

2. General Test Approach and Test Results

The general test approach was to manually place intra-switch calls, inter-switch calls, inbound and outbound PSTN trunk calls to and from telephones attached to the Avaya IP Office Server Edition and 500v2 Expansion, and to verify that TIM Enterprise collects the SMDR records from the Avaya IP Office and properly classifies and reports the attributes of the call. For serviceability testing, logical links were disabled/re-enabled, and IP Office and TIM Enterprise servers were rebooted.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing evaluated the ability of the Tri-Line's TIM Enterprise to collect and process SMDR records for various types of calls: intra-switch calls (calls between phones on the same site), outbound/ inbound calls to/from the PSTN and outbound/inbound calls to/from the phones between the two sites via the IP trunk. The serviceability testing introduced failure scenarios to see if the TIM Enterprise can resume SMDR collection after failure recovery.

2.2. Test Results

All tests carried out passed successfully with the following observations

- Calls between the Server Edition and 500v2 produce 2 identical records but this is shown correctly as one call in The TIM Enterprise Call view and Reports.

2.3. Support

Technical support from the Tri-Line can be obtained through the following:

Phone: +44 20 7265 2626
E-mail: support@tri-line.com.
Web: <http://www.tri-line.com/>
Address: 9-10 Telfords Yard
The Highway
LONDON
E1W 2BS
England

3. Reference Configuration

Figure 1 illustrates the network configuration used to verify the Tri-Line's TIM Enterprise solution. An Avaya IP Office Server Edition with a 500v2 Expansion using Avaya 1616 and, Avaya 2420 Digital Telephone, a H.323 IP trunk and an E1 ISDN-PRI trunk to simulated PSTN. Tri-Line TIM Enterprise was installed on a server running Microsoft Windows 2012 Server.

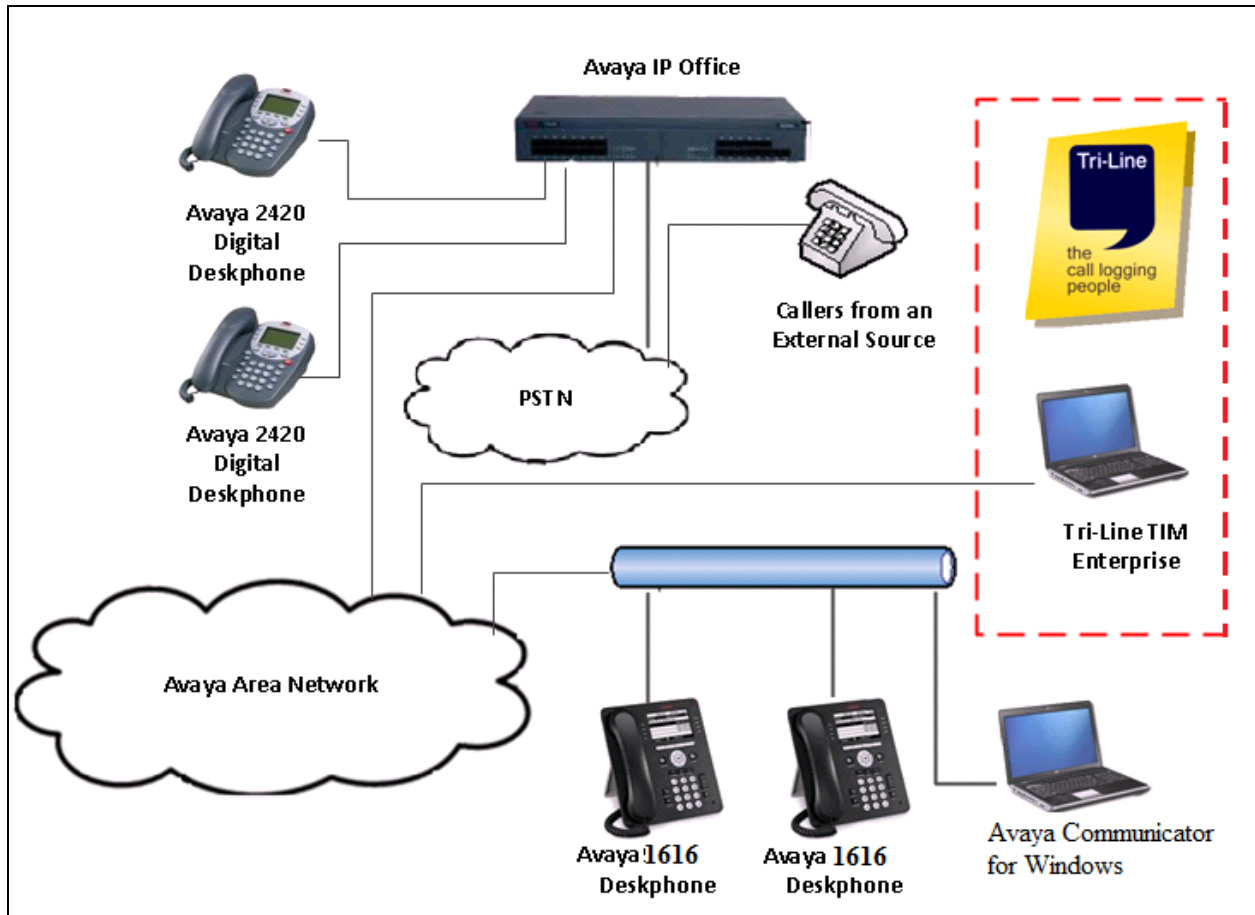


Figure 1: Tri-Line TIM Enterprise with Avaya IP Office

4. Equipment and Software Validated

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

Equipment	Software
Avaya IP Office Server Edition	10.0.0.0.0 Build 550
Avaya IP Office 500v2	10.0.0.0.0 Build 550
Avaya IP Office Manager on Windows PC	10.0.0.0.0 Build 550
Avaya 1616 IP Deskphones	1.390.0A (H.323)
Avaya 2420 Digital Telephones	-
Avaya Communicator for Windows	2.1.3.0
TIM Enterprise running on Microsoft Windows 2012 Server	3.0.0.108

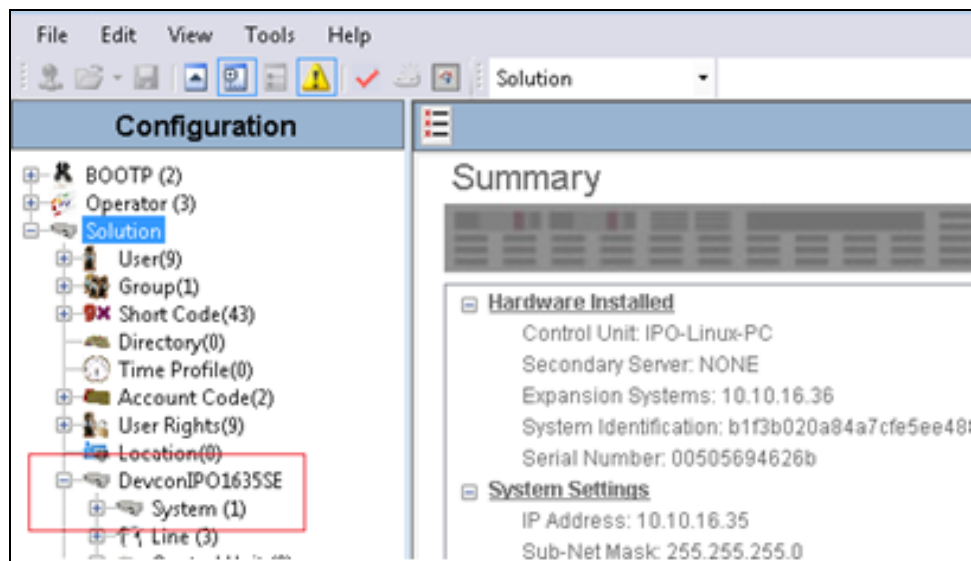
5. Avaya IP Office Configuration

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

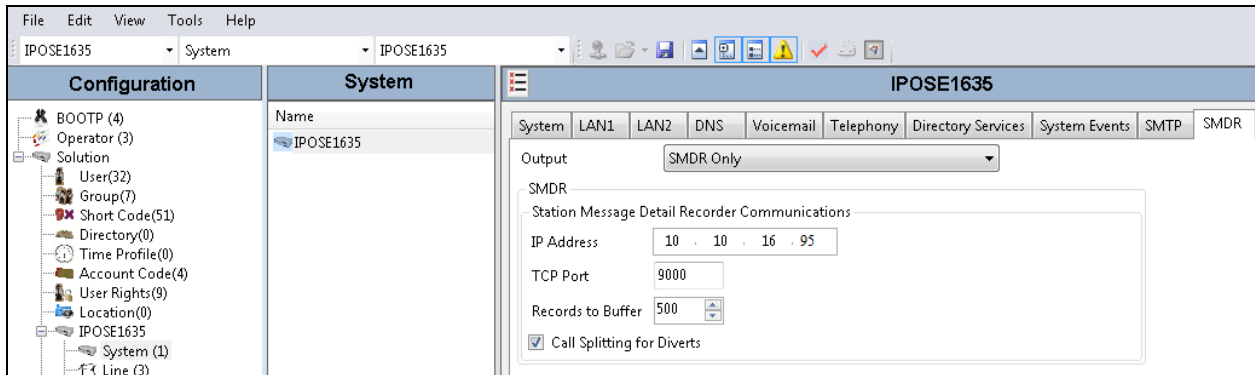
From the Avaya IP Office Manager PC, go to **Start→Programs→IP Office→Manager** to launch the Manager application. Log in to Avaya IP Office using the appropriate credentials to receive its configuration (Not shown). In the IP Offices window expand the Configuration Tree and double-click **System**. During compliance testing the System was called DevconIPO1635SE.



5.2. SMDR configuration

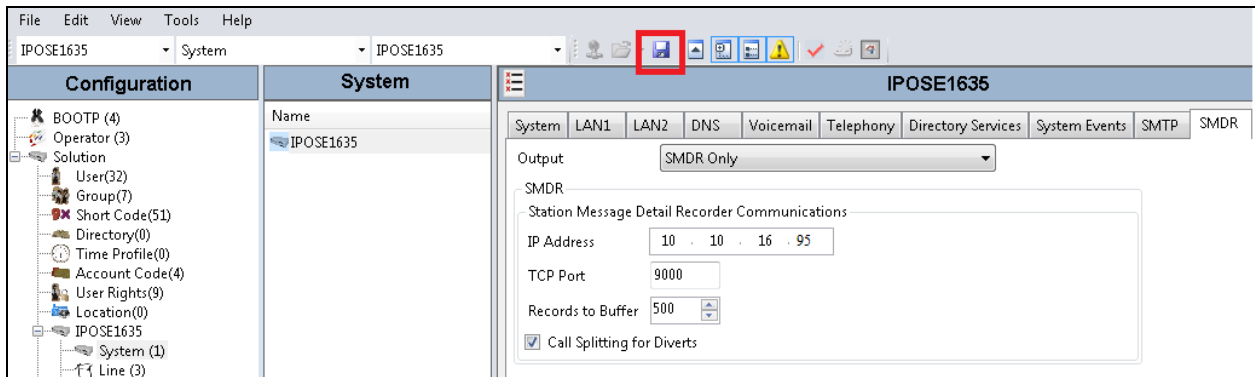
Select the **SMDR** tab and enter the following information:

- **Output** Select **SMDR Only** from the drop box
- **IP Address** Enter the IP Address of the TIM Enterprise Server
- **TCP Port** Enter **9000**
- **Records to buffer** Can be left as the default.
- Check the **Call Splitting for Diverts** Check box
- Click the **OK** button to save (not shown).

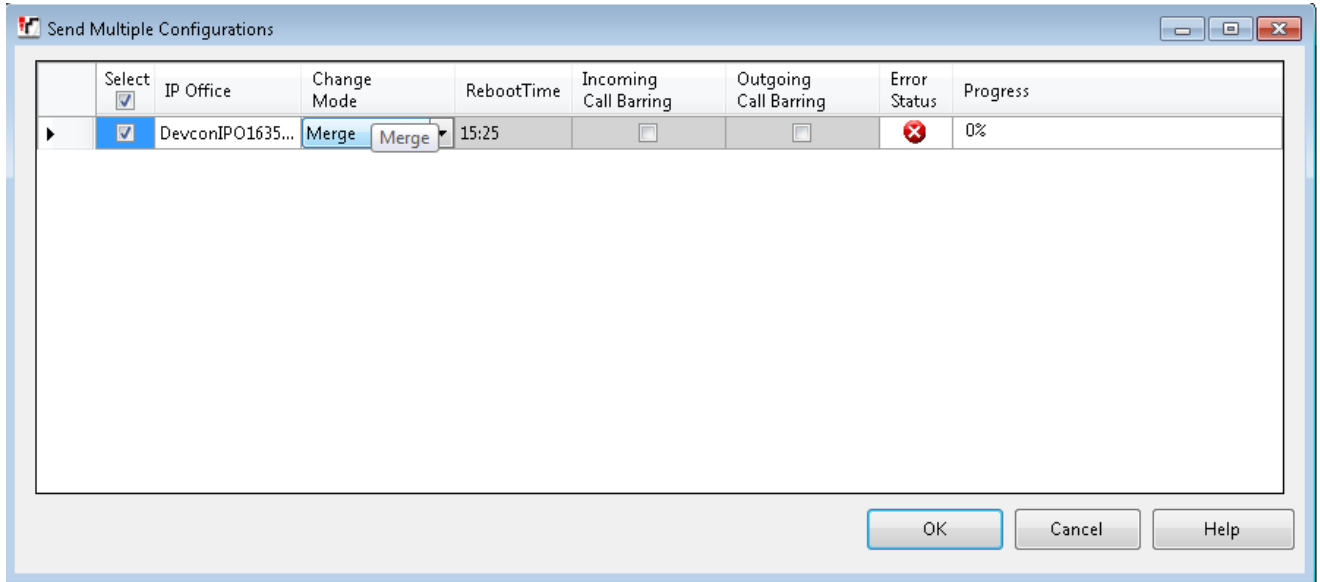


5.3. Save Configuration

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

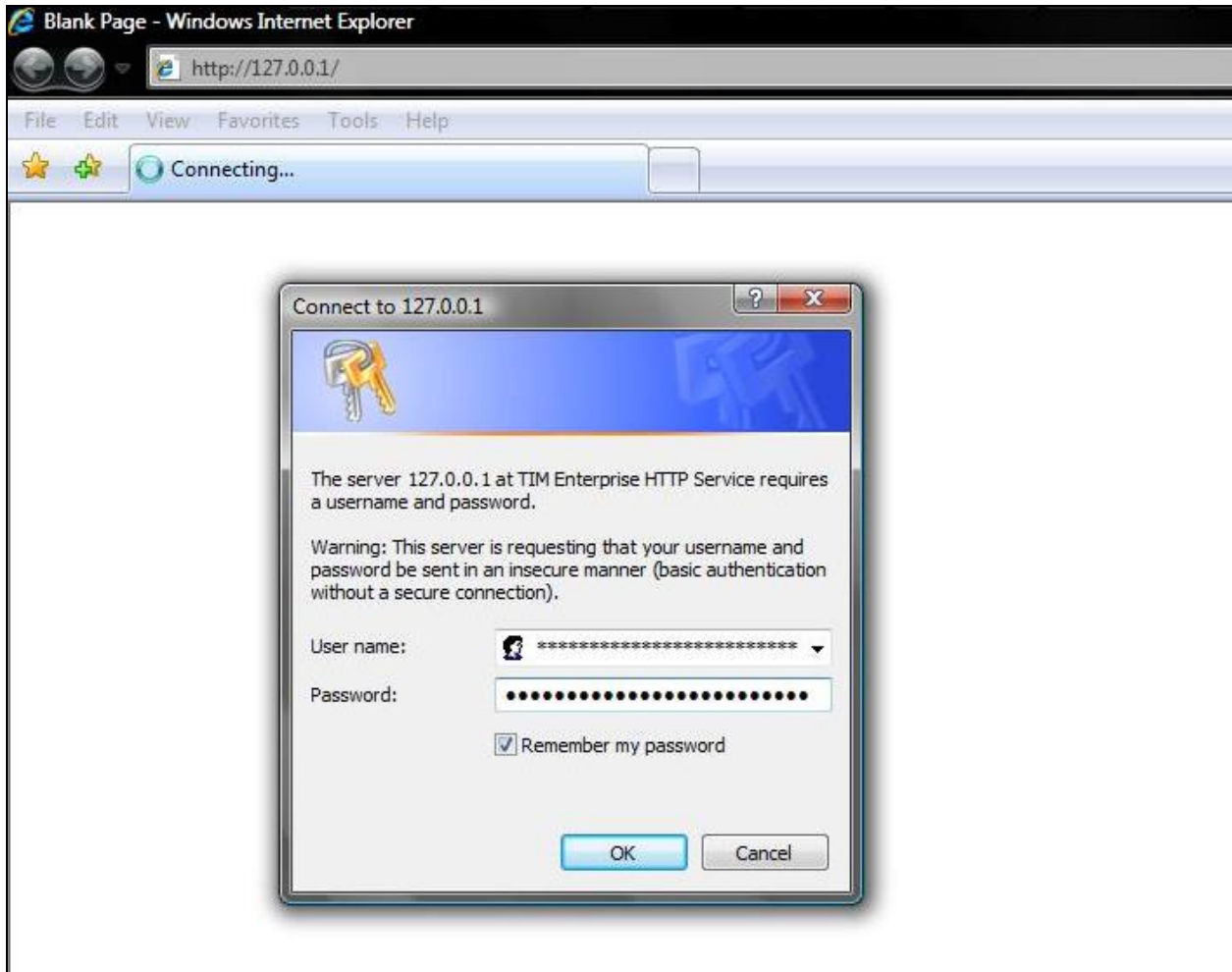


Once the **Save Configuration** Window opens, click the **OK** button.

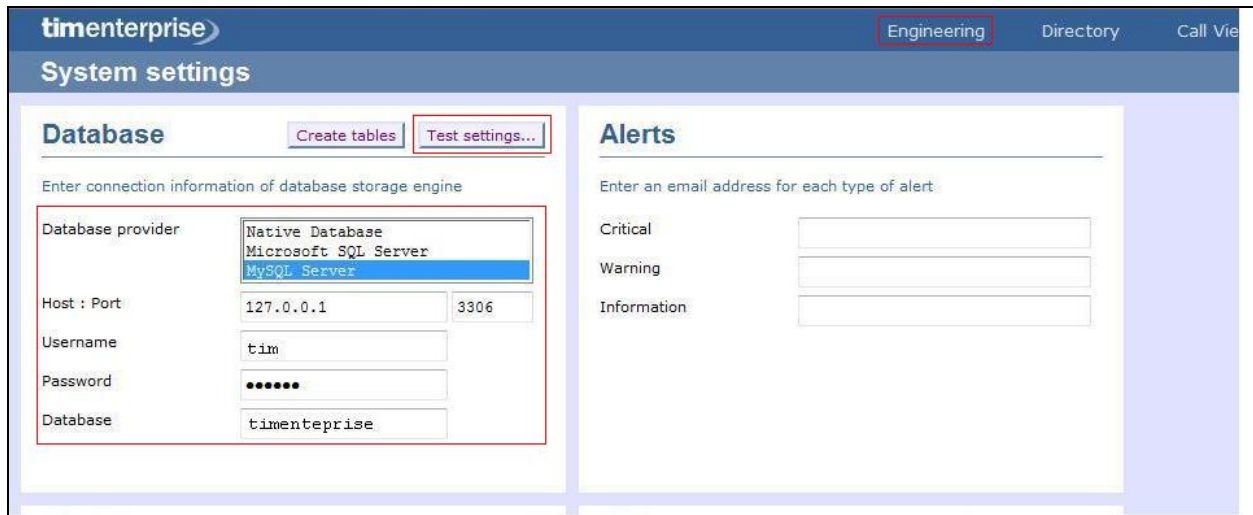


6. Configure the TIM Enterprise

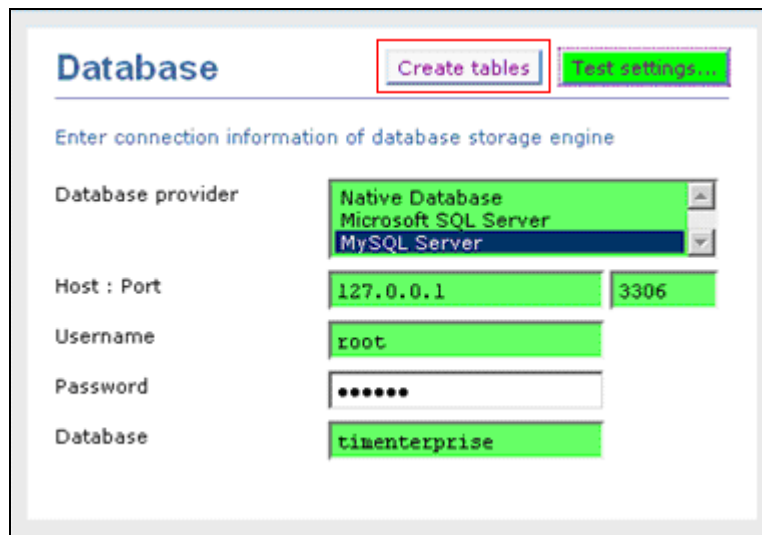
This section provides the procedures for configuring the TIM Enterprise to receive SMDR for various call types output by the Avaya IP Office. To access TIM Enterprise, open a web browser and enter the IP address of the TIM Enterprise server e.g. <http://x.x.x.x/> where x.x.x.x is the IP address of the machine running the TIM Enterprise. Enter a valid username and a password in the authentication window and select **OK**.



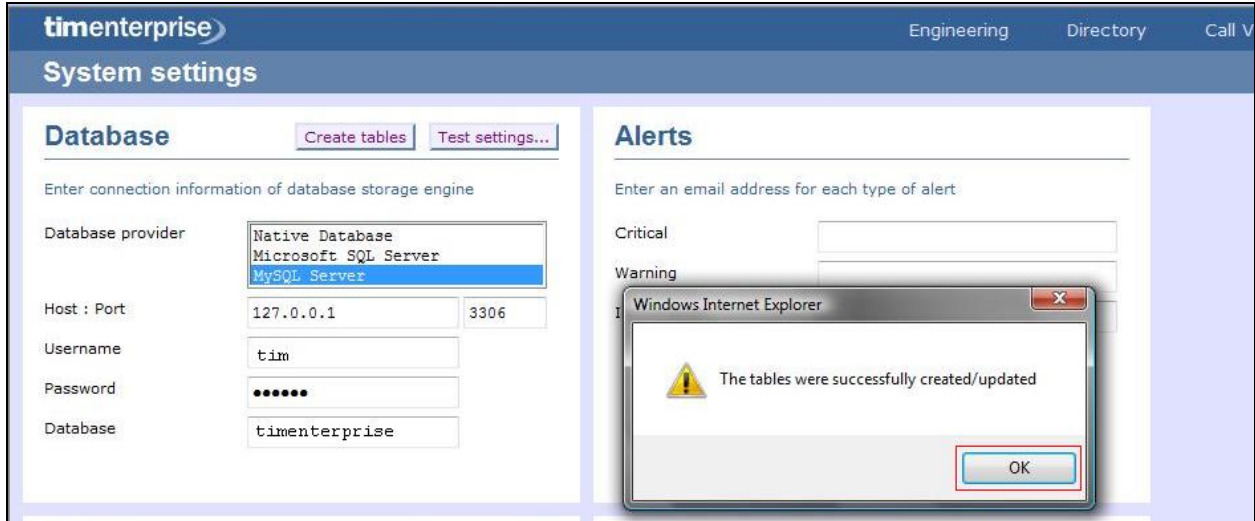
After successful login, the default **Engineering** screen is displayed as shown below. To configure the **Database** settings, select the **Database provider** from the drop-down list that will be used to store the call data on the TIM Enterprise server. In this case **MySQL Server** was specified. Type in the **Host** and **Port** number of the SQL server and enter the **Username** and **Password** for the SQL server connection. Type the name of the **Database** that needs to be connected to. For compliance testing, **timenterprise** was specified. Click on the **Test settings** button.



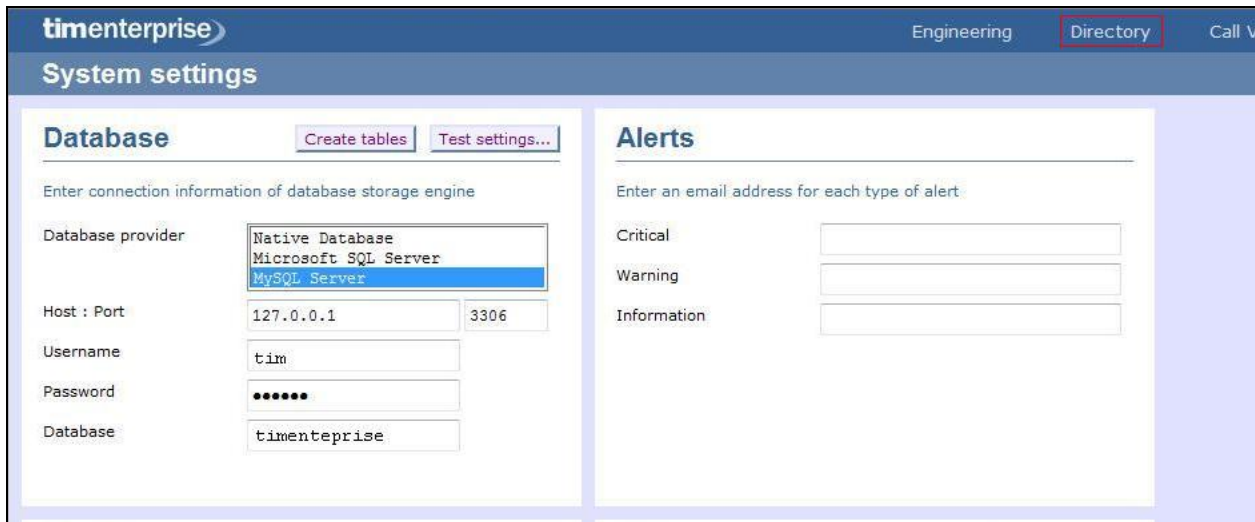
After the **Test settings** button comes back green, click **Create tables** button.



If the tables are created successfully, the alert will be displayed as shown below. Click **OK**.



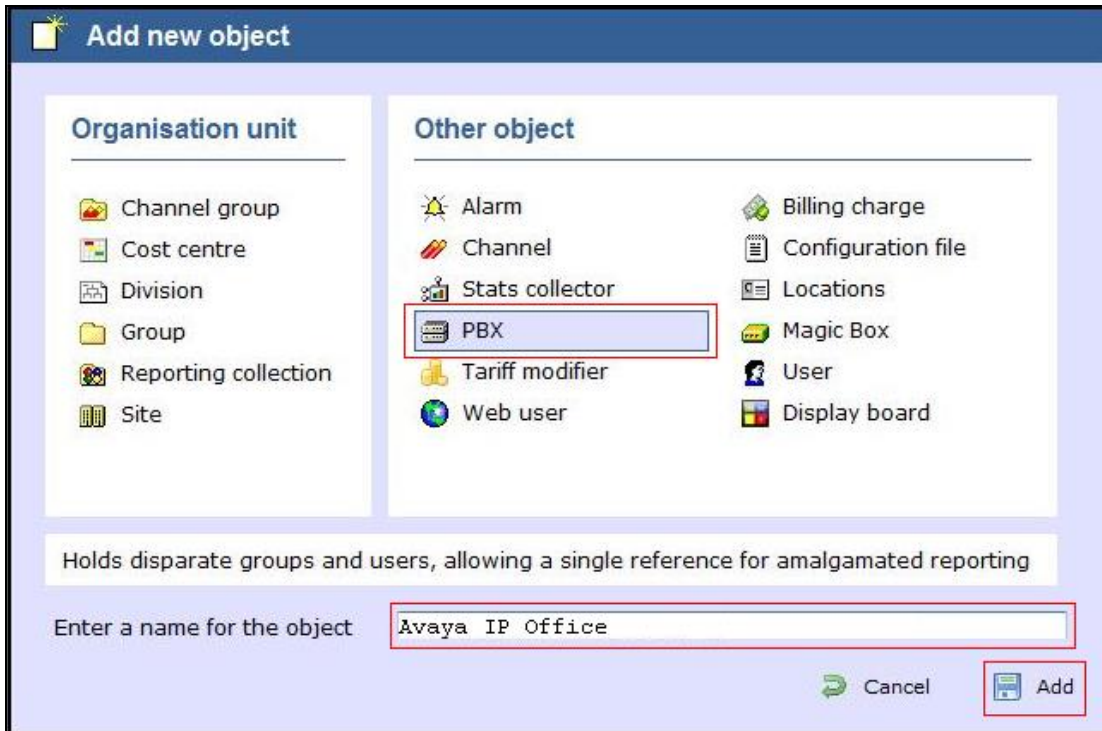
This completes the configuration of the Database settings on TIM Enterprise. To configure the Directory Settings, click on the **Directory** tab in the TIM Enterprise menu.



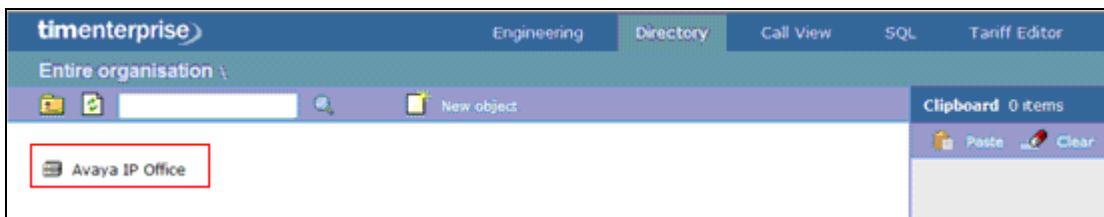
On the default Directory screen click on **New Object**.



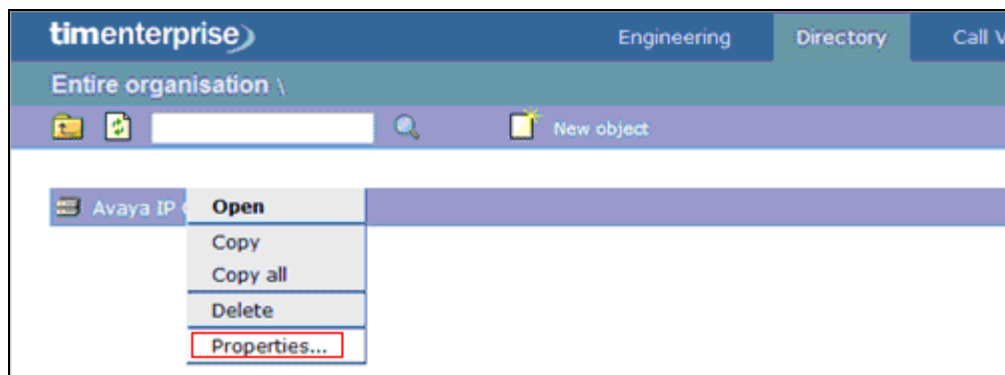
On the **Add new object** window that appears, select **PBX**, enter the name of the object as **Avaya IP Office** and click the **Add** button as shown below.



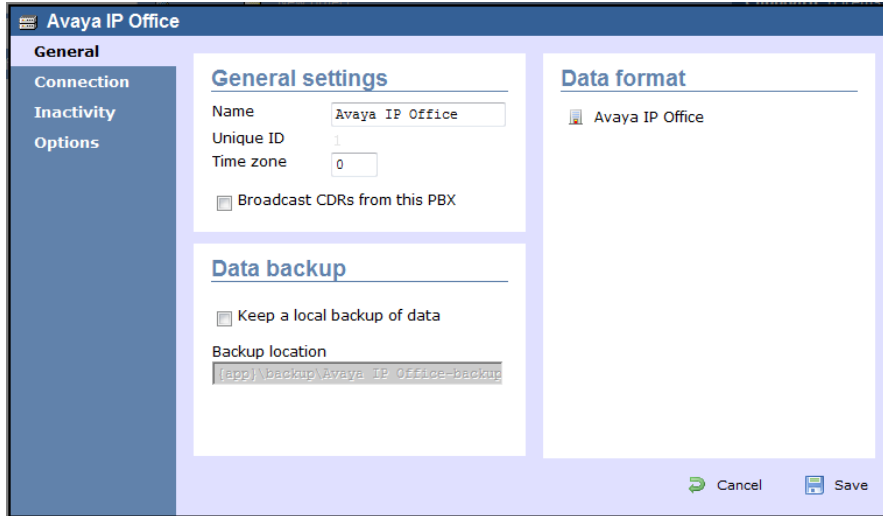
The **Avaya IP Office** will appear in the Directory as shown below.



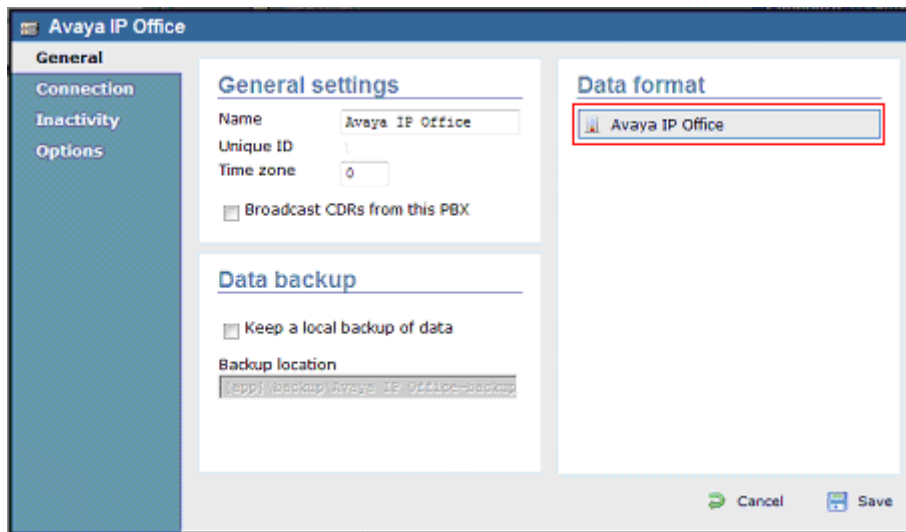
To configure the TIM Enterprise to receive the information from the Avaya IP Office, click on the Avaya IP Office and select **Properties**.



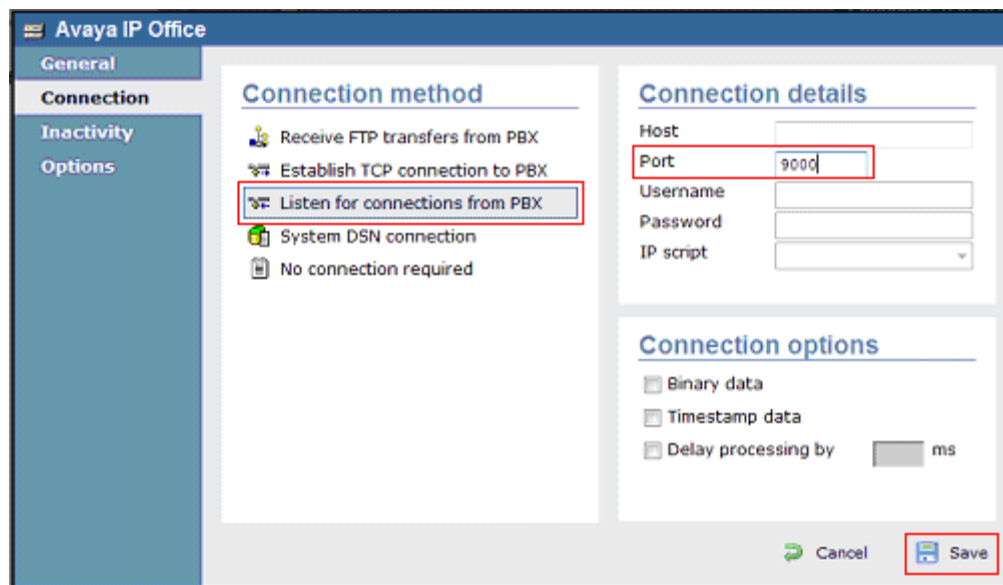
The new **Avaya IP Office** window will appear with default **General** tab displayed.



Under the **Data format** section of the General tab, select **Avaya IP Office**.



Click on the **Connection** tab on the left hand side. In the screen that appears select **Listen for connections from PBX**. Configure **Port** parameter as **9000**, which is the SMDR TCP port configured on Avaya IP Office in **Section 4** and click **Save**.



Repeat the above steps to add a new Directory for the Avaya IP Office in Site B. In this case **Port** was configured as **9001**.

7. Verification Steps

The following steps may be used to verify the configuration:

- Use the **ping** utility on the Tri-Line's TIM Enterprise server to verify the IP connectivity to the Avaya IP Office.
- Verify that TIM Enterprise receives the raw SMDR record for the call. Compare the values of data fields in the SMDR record with the expected values and verify that they match.
- Place internal, inbound trunk, outbound trunk and abandoned calls to and from various telephones. Select **Call view** tab on the TIM Enterprise menu and verify accuracy of the call details in the Call view. The screens shots below represent examples of the internal, inbound trunk, outbound trunk and abandoned calls respectively.

The following is an example of the Internal Call.

12:37	8270005	8270003	19s	🕒	📄
30 January	8270005	8270003	0	🕒	🔄 +

The following is an example of the Inbound Call.

12:42	711 002	8270005	3s	🕒	📄
30 January		8270005	2	🕒	🔄 +

The following is an example of the Outbound Call.

12:37	8270005	Cross-site	30s	🕒	📄
30 January	8270005	01418230001	0.00	🕒	🔄 +

The following is an example of the Abandoned Call.

11:07	Cross-site	H323Station3	4s	🕒	📄
30 January	08270005	08350003			🔄 +

8. Conclusion

These Application Notes describe the procedures for configuring the Tri-Line's TIM Enterprise to collect SMDR records from Avaya IP Office. The TIM Enterprise successfully passed all compliance testing.

9. Additional References

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

[1] *IP Office R10 Doc library*

The Tri-Line TIM Enterprise documentation can be provided by Tri-Line on request.

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