



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for Avaya IP Office Release 11.0 with Tri-Line TIM Enterprise to Collect Call Detailed Records - Issue 1.0**

### **Abstract**

These Application Notes contain configuration steps required for Tri-Line TIM Enterprise to interoperate with Avaya IP Office Release 11.0.

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

Tri-Line TIM Enterprise is accounting software which provides call classification and billing information gathered from Avaya IP Office Release 11.0. TIM Enterprise listens for connection from Avaya IP Office for the collection of Station Message Detail Reporting (SMDR) information.

## 2. General Test Approach and Test Results

Interoperability testing contained functional tests mentioned in **Section 2.1**. 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.

### 2.1. Interoperability Compliance Testing

During Interoperability Compliance testing, several call routing scenarios were testing to ensure that Tri-Line TIM Enterprise could capture SMDR data.

SMDR data collected included:

- Local internal call handling
- Local calls between Primary and Expansion over SCN trunk
- Handling of Incoming Network calls over PRI and SIP trunks
- Handling of External Calls
- Call Forwarding on busy or No Answer
- Transfers –Blind and Supervised
- Conference Calls
- Call Park and Call Pick Up
- Mobile Twining

- Account Codes
- Serviceability

## 2.2. Test Results

The testing was successful except for the following observations which were noted:

1. Mobile Twining – This is an issue with SMDR not displaying record with U MT cause for mobile twinning scenario. This issue is being investigated by Avaya.
2. Conference Calls – This is an issue with SMDR display no duration (00:00:00) for 1 Party in Conference. This issue is being investigated by Avaya.

## 2.3. Support

Support for Tri-Line TIM Enterprise 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 a sample configuration that consists of Avaya IP Office 11 and Tri-Line TIM Enterprise server. Tri-Line TIM Enterprise was installed on a VMware virtual appliance for Windows Server 2012.

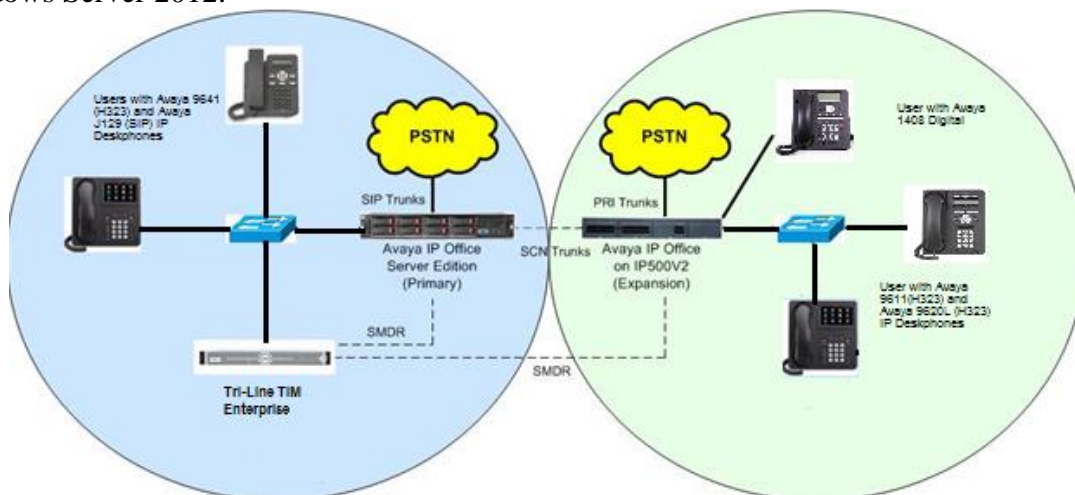


Figure 1: Test Configuration for Tri-Line TIM Enterprise

## 4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office 500v2 Expansion System	11.0.0.0 Build 849
Avaya IP Office Manager running on a Windows 7 PC	11.0.0.0 Build 849
Avaya IP Office Server Edition on VMware	11.0.0.0 Build 849
Avaya Digital 1408	Application R48
Avaya 9641 H323	6.5.0.06 V474
Avaya 9621 H323	6.5.0.06 V474
Avaya 9611 H323	6.5.0.06 V474
Avaya 9620 H323	3.2.2
Avaya J129	R2_0_0_0_45
Tri-Line TIM Enterprise running on Window Server2012	3.0.0.119
Avaya Communicator for Windows	2.1.4.0

## 5. Configure of Avaya IP Office

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 IP Office for this solution. It is implied that a working system is already in place with the necessary licensing. 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:

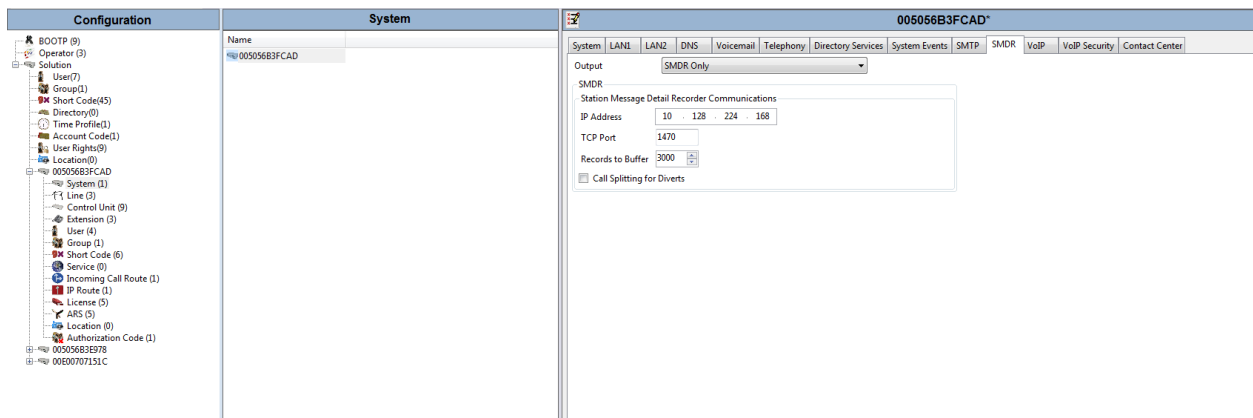
- Launch Avaya IP Office Manager (Administration)
- Configure SMDR
- Save Configuration

### 5.1. Launch Avaya IP Office Manager (Administration)

From the Avaya IP Office Manager PC, go to **Start > Program > IP Office > Manager** to launch the Manager application. Log into **Avaya IP Office** using the appropriate credentials to receive its configuration (Not Shown).

### 5.2. SMDR configuration on IPO Server Edition Primary

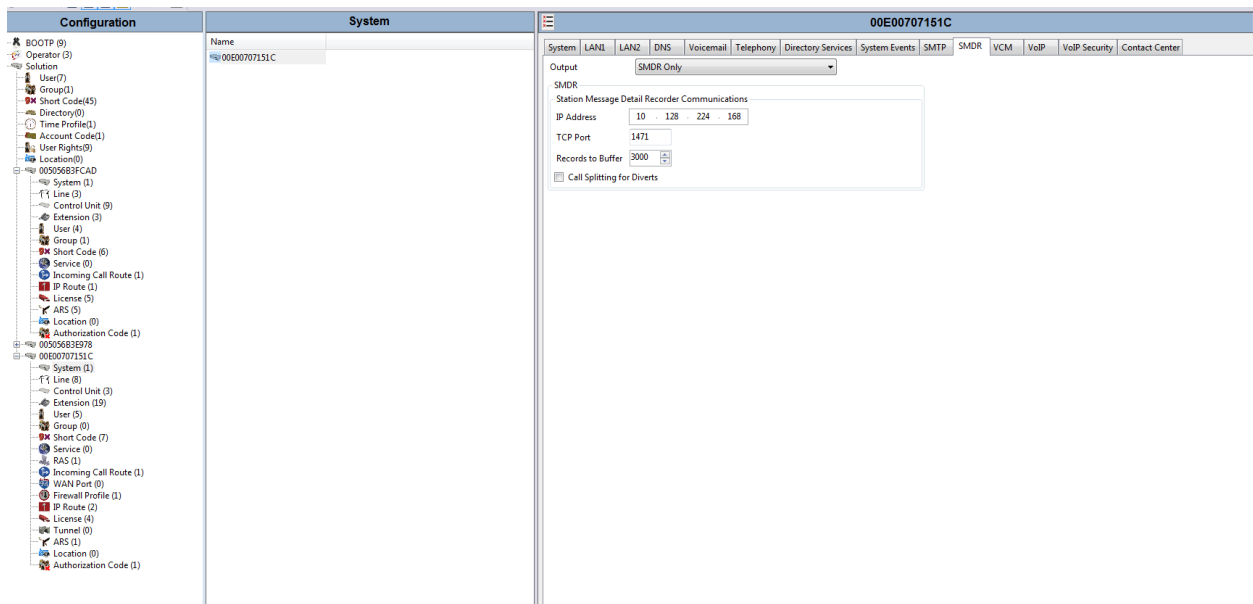
Select **IPO Server Edition (Primary) > System** followed by the **SMDR** tab and enter the following:



- For **Output** select **SMDR Only** from the drop box.
- **IP Address** Enter the IP Address of the TIM Enterprise Server.
- **TCP Port** Enter 1470.
- **Records to Buffer** Enter 3000. This is maximum available.
- Click the OK button to save (Not Shown).

### 5.3. SMDR Configuration on Avaya IP Office 500V2 (Expansion)

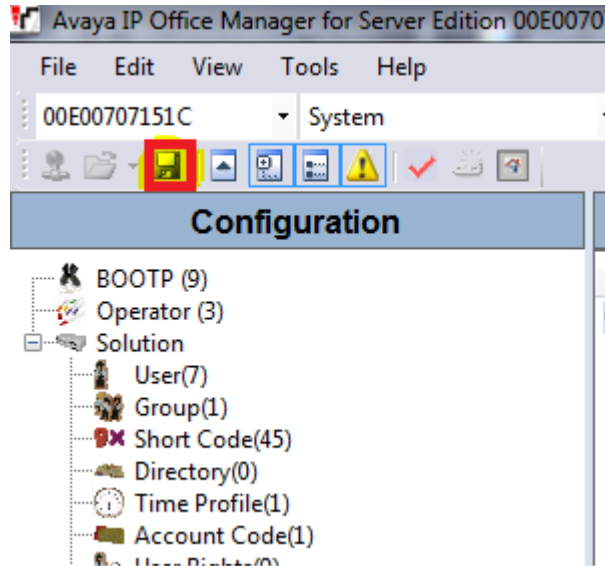
Select **IPO 500V2 (Expansion)** > System followed by the **SMDR** tab and enters the following:



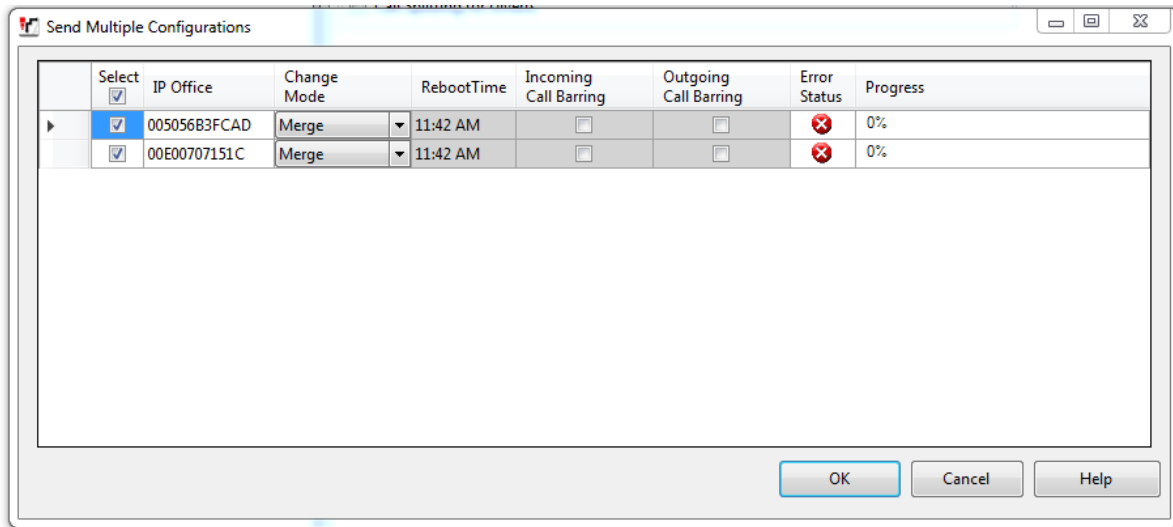
- For **Output** select **SMDR Only** from the drop box.
- **IP Address** Enter the IP Address of the TIM Enterprise Server.
- **TCP Port** Enter 1471.
- **Records to Buffer** Enter 3000. This is maximum available.
- Click the OK button to save (Not Shown).

## 5.4. Save Configuration

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

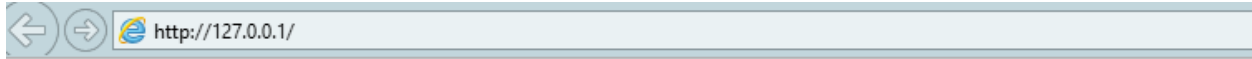


Once the Send Multiple Configurations Window opens, click the OK button:



## 6. Configure Tri-Line 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**.



### Internet Explorer Enhanced Security Configuration is enabled

Internet Explorer Enhanced Security Configuration is currently enabled on your server. This configures a n complete list of the security settings in this configuration, see [Effects of Internet Explorer Enhanced Securi](#)

This enhanced level of security can prevent Web sites from displaying correctly in Internet Explorer and re: can add the Web site to the inclusion lists in the Local intranet or Trusted sites zones. For more informatio





## 6.1. Database Configurations.

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 **MySQLServer** 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.

The screenshot shows the 'System settings' page for 'timenterprise'. The 'Database' section is active, with a 'Test settings...' button highlighted in red. The configuration fields are as follows:

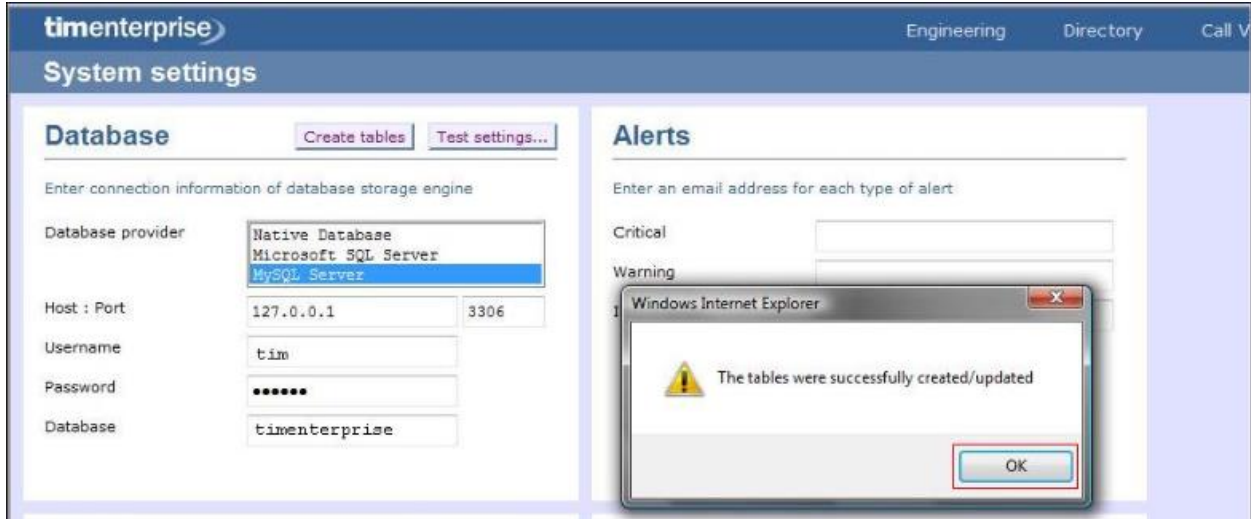
Field	Value
Database provider	MySQL Server
Host : Port	127.0.0.1 3306
Username	tim
Password	*****
Database	timenterprise

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

The screenshot shows the 'Database' configuration section with the 'Create tables' button highlighted in red and the 'Test settings...' button highlighted in green. The configuration fields are as follows:

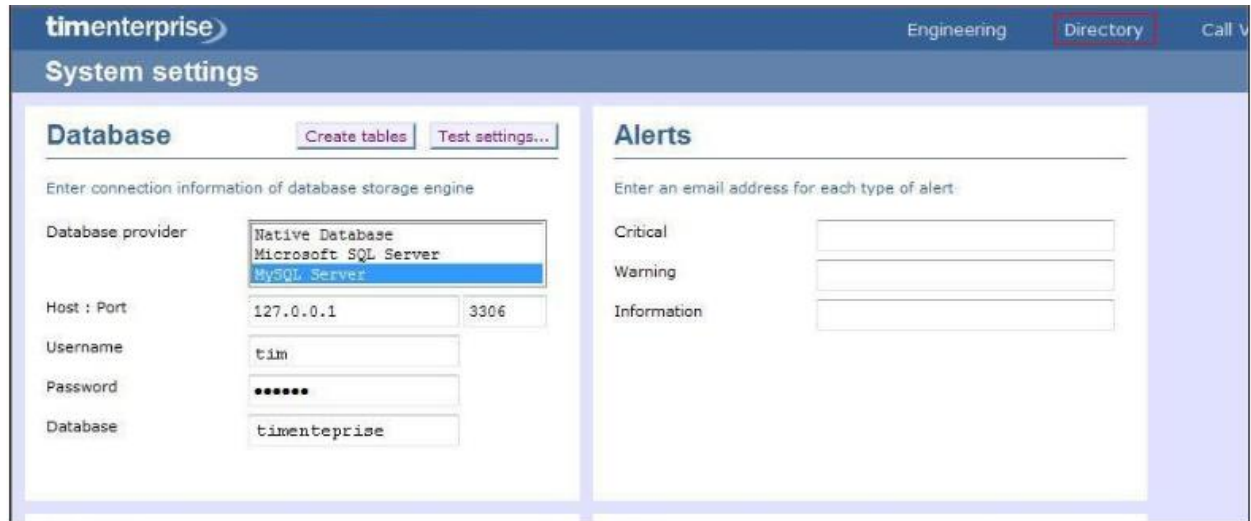
Field	Value
Database provider	MySQL Server
Host : Port	127.0.0.1 3306
Username	root
Password	*****
Database	timenterprise

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

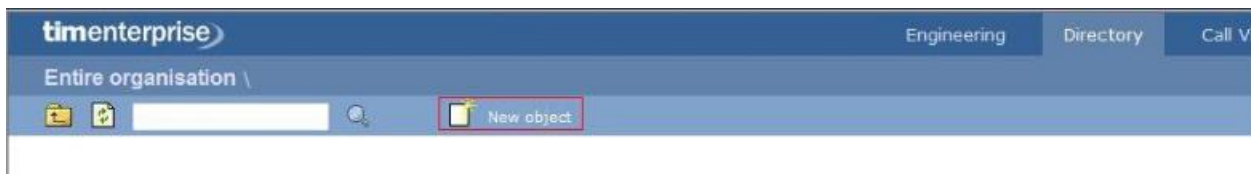


## 6.2. Directory Configurations.

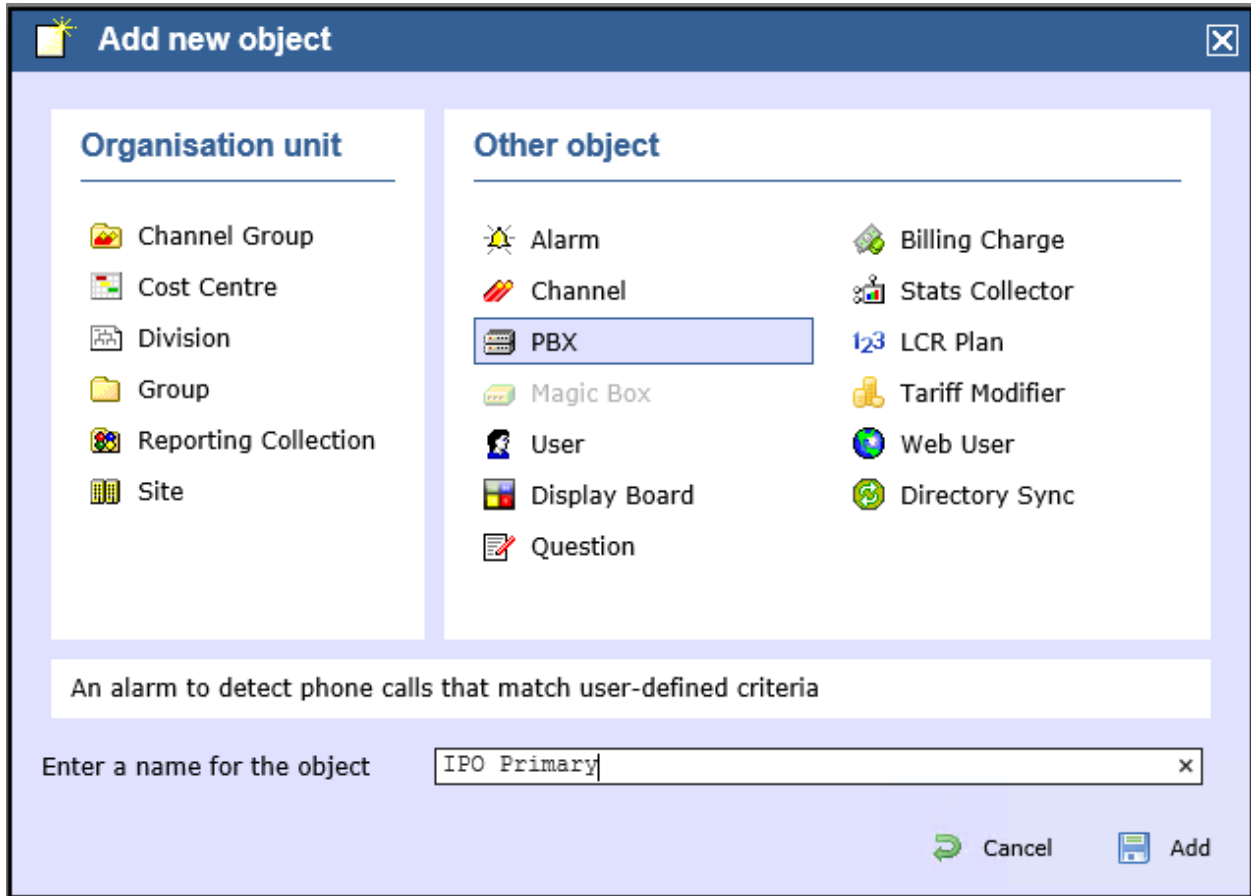
This completes the configuration of the Database settings on TIM Enterprise. To configure the Directory Settings, click on the **Directory** tab in the TIM Enterprise menu.



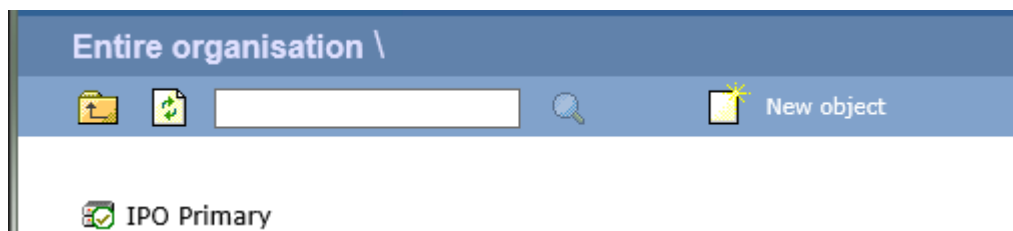
On the default Directory screen click on **New Object**.



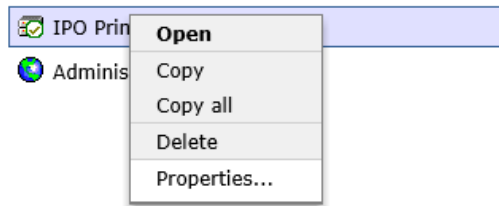
On the Add new object window that appears, select **PBX**, enter the name for IPO Server Edition Primary as **IPO Primary** and click the **Add** button as shown below.



The **IPO Primary** will appear in the **Directory** as shown below.

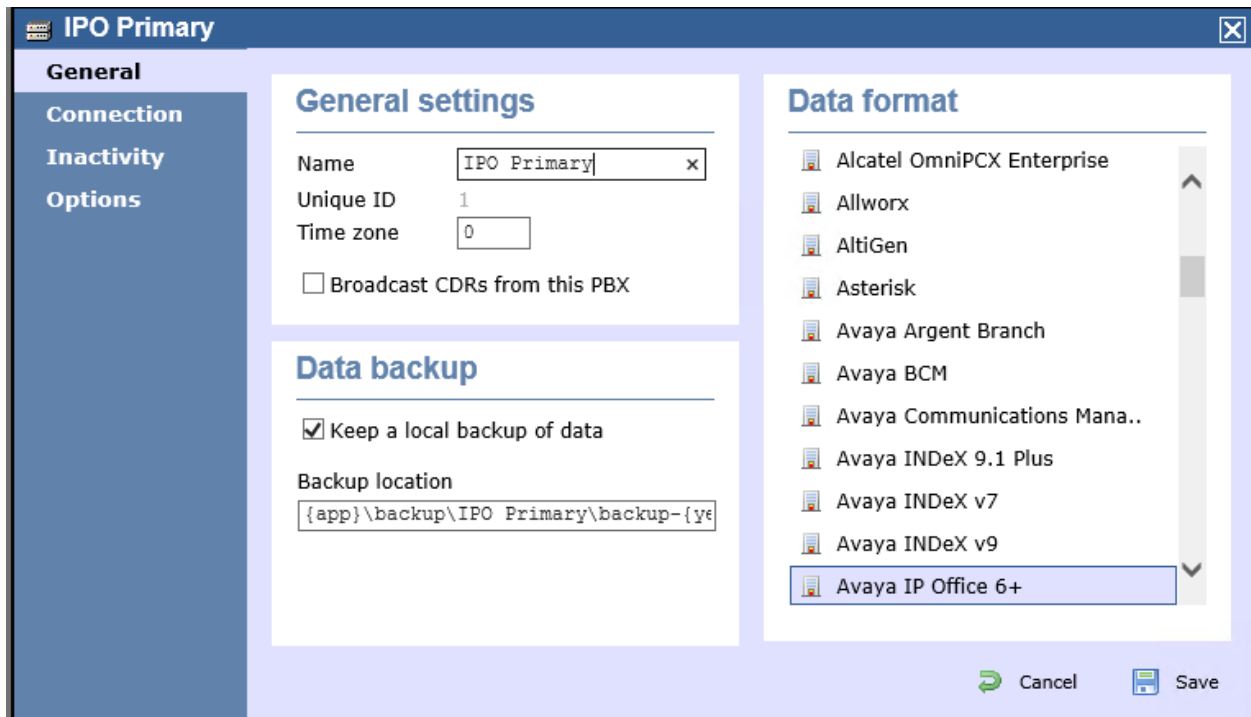


To configure the TIM Enterprise to receive the information from the **IPO Primary**, click on the **IPO Primary** and select **Properties**.

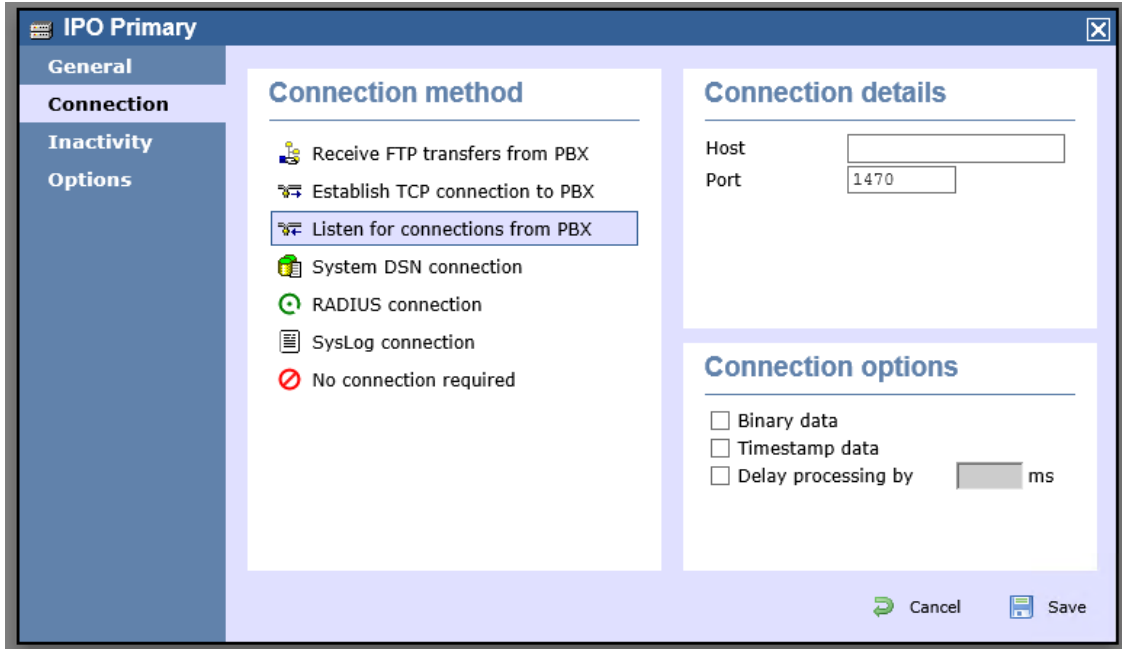


The new **IPO Primary** window will appear with default **General** tab displayed. Under the **Data format** section of the **General** tab, select **Avaya IP Office 6+**.

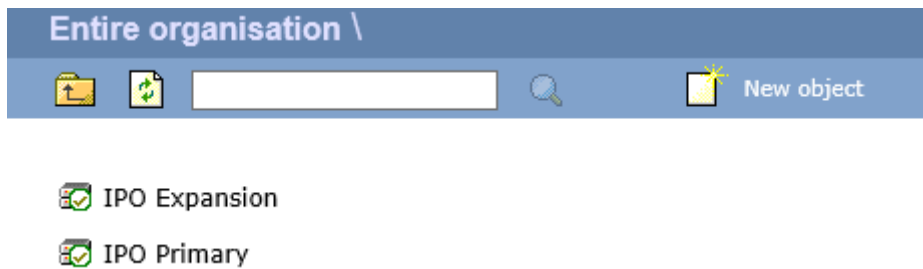
Enable the check box **Keep a local backup of data** and Select the folder, insert the output file name for SMDR backup file (**Ex: {app}\backup\IPO Primary\backup-{year}-{month}-{day}.{uiv}**)



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 **1470**, which is the SMDR TCP port configured on Avaya IP Office in **Section 5** and click **Save**.



Repeat the above steps to add a new **Directory** for the IP Office Expansion. In this case **Port** was configured as **1471**.



## 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 Tri-Line TIM Enterprise is listening port 1470 and 1471 by checking information log file (C:\...\Tri-Line\TIM Enterprise\logs\2018\yyyy-mm-dd-information.log)

```
7/19/2018 7:42:34 PM Data source "\ IPO Primary\" listening on port 1470
7/19/2018 7:42:34 PM Data source "\ IPO Expansion \" listening on port 1471
7/19/2018 7:42:34 PM Network beacon started successfully
```

- Make incoming, outgoing and abandoned calls. Select **Call view** tab on the **TIM Enterprise** menu and verify the accuracy of the call details in the **Call view**.

15:32 25 July	Ext56021 56021	VM Channel 0 56021	0s
15:28 25 July	Ext55001 55001	Ext56021 56021	4m 34s 1
15:27 25 July	Ext55001 55001	Ext56021 56021	4m 34s 1
15:27 25 July	Ext55001 55001	Ext56021 56021	0s
15:26 25 July	Ext55001 55001	Ext56021 56021	0s
19:29 23 July	Ext56002 56002	Service Charge Call 0904579110	5s 0.00

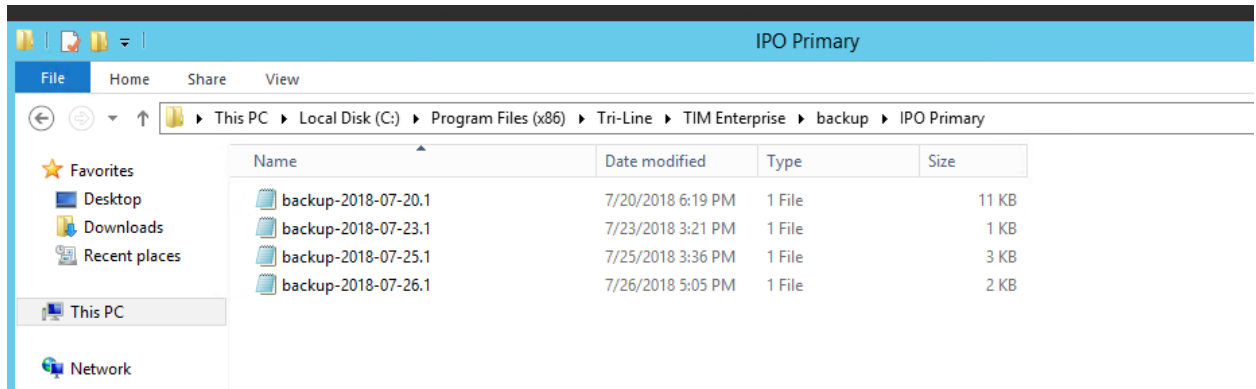
- Compare the values in Call info with the expected values and verify that they match

17:14 26 July	Ext56021 56021	Ext56001	
17:11 26 July	Ext56021 56021		
17:11 26 July	Ext56021 56021		
17:10 26 July	Ext56021 56021		
17:10 26 July	Ext56001 56001		
17:10 26 July	Ext56021 56021		
17:10 26 July	Ext56021 56021		

Audio	Notes	Scoring	Related	Call info
Date & time 2018-07-26 17:11:22				
Call type Internal				
Source Ext56021				
Destination Ext55001				
Response 4 seconds				
Duration 00:00:21				
Dialed number 55001				
Carrier IPO Host				
Charge band				
Cost 0				
LCR digits				
Data source \\				
Flags 0				
Account code n/a				
Voice location				
Voice file name				

- Check again the Call details with SMDR log backup at C:\...\Tri-Line\TIM Enterprise\backup\



## 8. Conclusion

These Application Notes describe the procedures for configuring Tri-line TIM Enterprise with Avaya IP Office Server Edition. Testing was successful with observations outlined in **Section 2.2**.

## 9. Additional References

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

- i. *Deploying IP Office Essential Edition (IP500 V2) IP Office™ Platform 11.0, Issue 33g, May 22, 2018*
- ii. *Deploying Avaya IP Office™ Server Edition Solution (English), Release 11, May 2018.*
- iii. *Administering Avaya IP Office with Manager (English), Release 11, May 2018.*
- iv. *Administering Avaya IP Office with Web Manager (English), Release 11, May 2018.*

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

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