



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office 7.0 with Tri-Line TIM Enterprise 3.0.0.78 using TCP - Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning Avaya IP Office 7.0 with Tri-Line TIM Enterprise 3.0.0.78. The Tri-Line TIM Enterprise will collect Station Message Detail Reports by listening to a TCP port configured on to 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 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 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 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 for 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 testing included:

- Verification of connectivity between the TIM Enterprise and Avaya IP Office using a TCP connection.
- Verification that SMDR was collected as output by the Avaya IP Office.
- Link Failure\Recovery was also tested to ensure successful reconnection on link failure.

2.2. Test Results

Tests were performed to insure full interoperability between the Tri-Line 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 TIM Enterprise and Avaya IP Office. From the Avaya IP Office, SMDR data are sent to a specified port number 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. Avaya 2420 Digital and Avaya 9630 IP Deskphones were used to generate calls to the Avaya IP Office. External calls to the Avaya IP Office used a simulated PSTN.

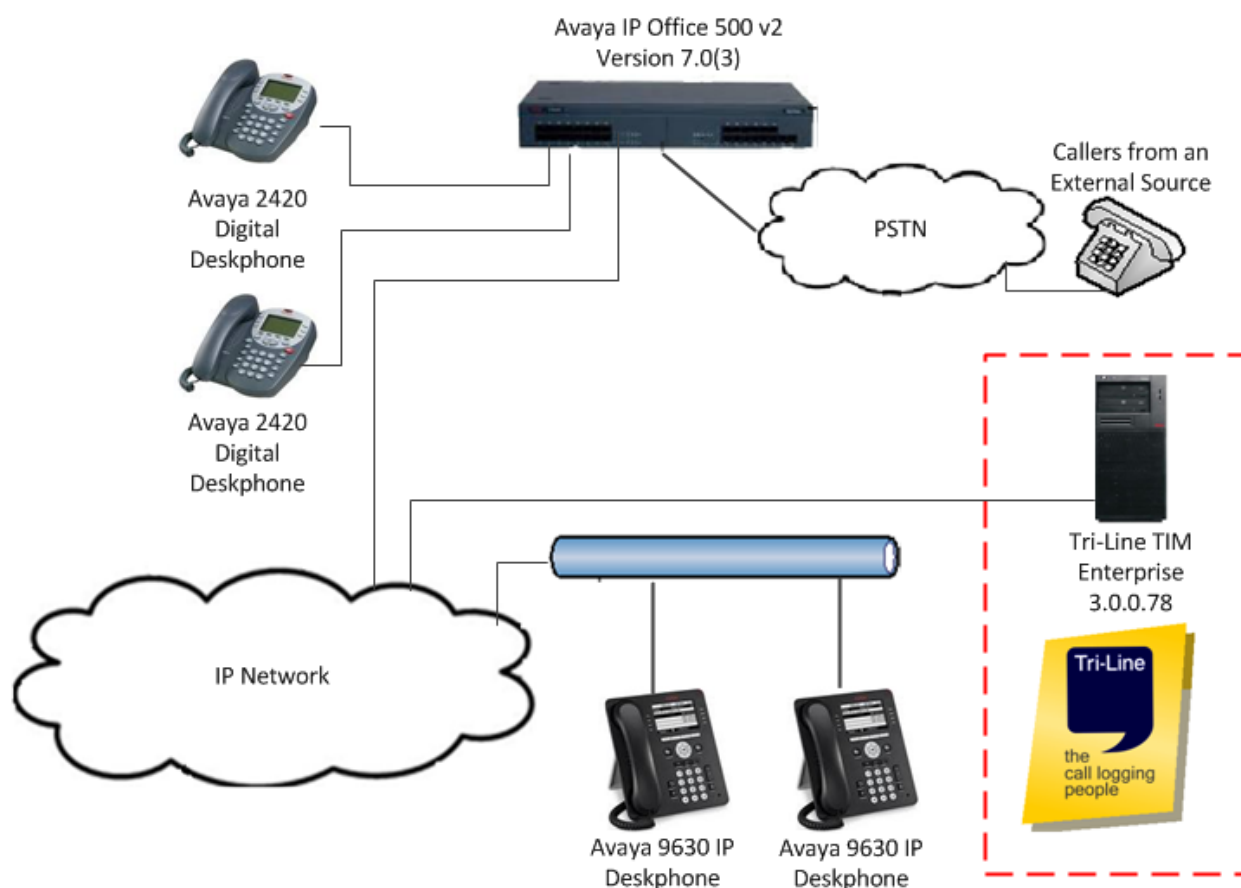


Figure 1: Avaya IP Office 7.0 with Tri-Line TIM Enterprise Reference Configuration

4. Equipment and Software Validated

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

Equipment	Software Version
Avaya IP Office 500v2 700417462 PRI Card 700417330 DS1 Card	Avaya IP Office 7.0(3) Avaya IP Office Manager 9.0(3)
Avaya 9630 IP Telephones	96xx H.323 Release 3.1 SP2
Avaya 2420 Digital Telephones	N/A
Tri-Line TIM Enterprise	TIM Enterprise Version 3.0 .0.78

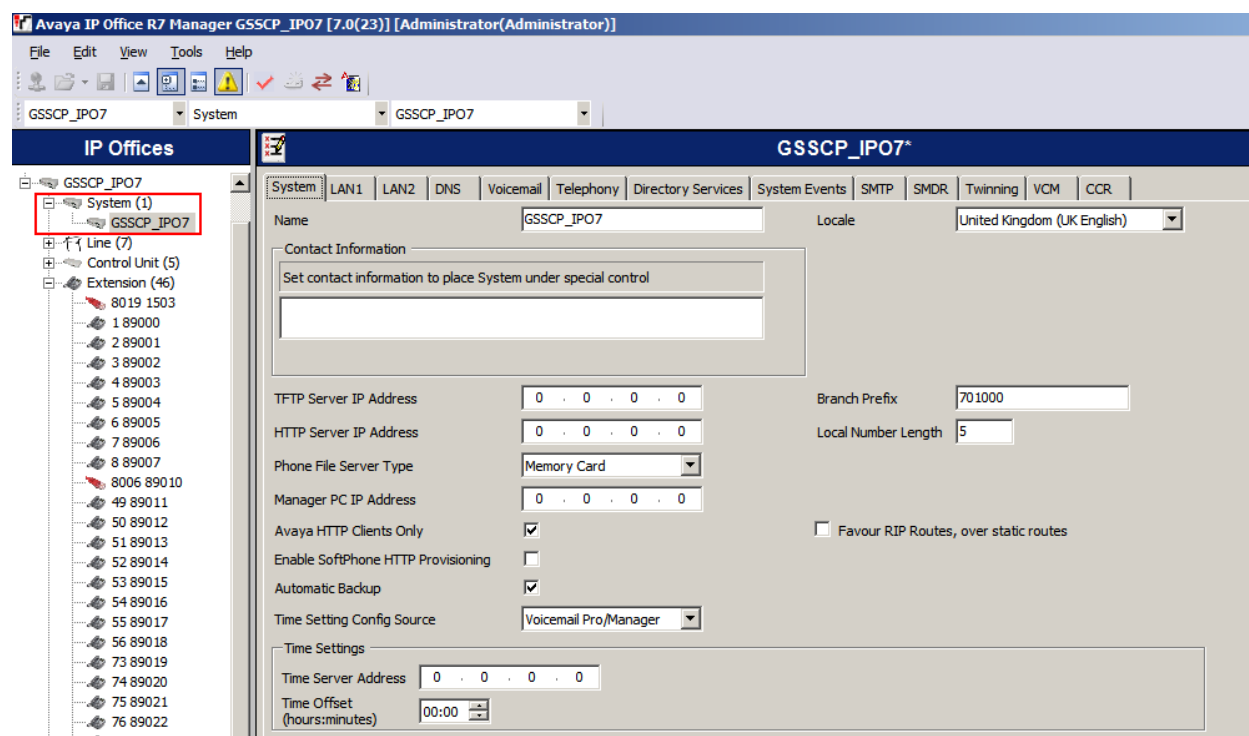
5. Avaya IP Office Configuration

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
- Push Configuration to Avaya IP Office

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. In the IP Offices window expand the Configuration Tree and double-click **System**. During compliance testing the System was called **GSSCP_IPO7**.

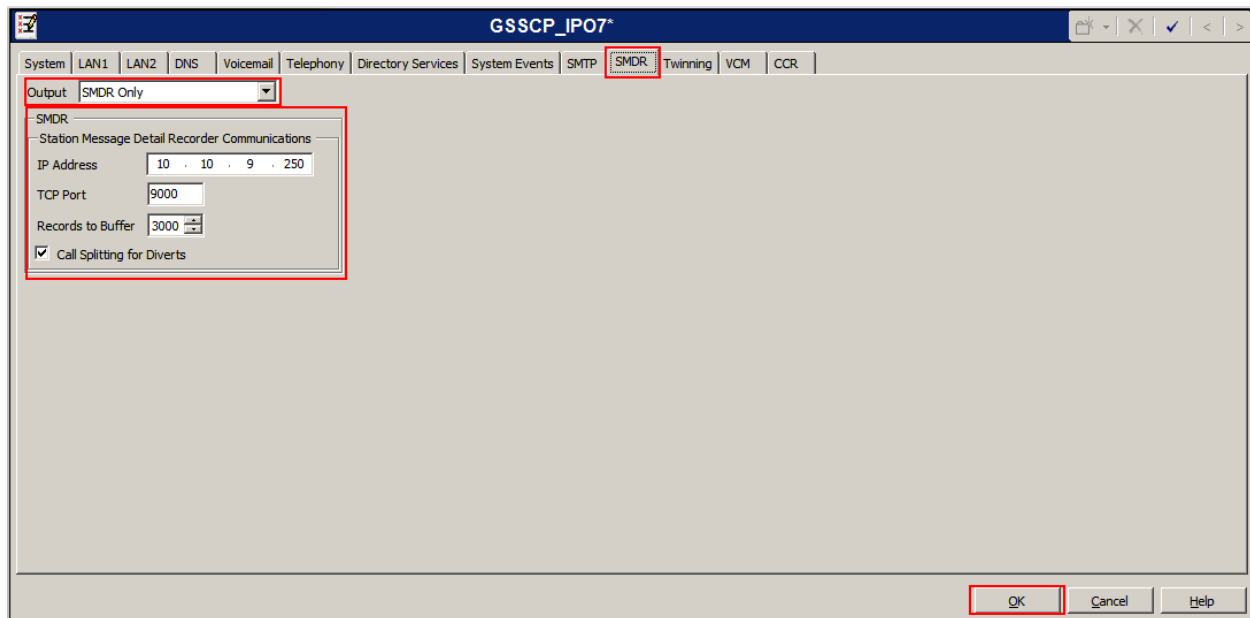


5.2. SMDR Configuration

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

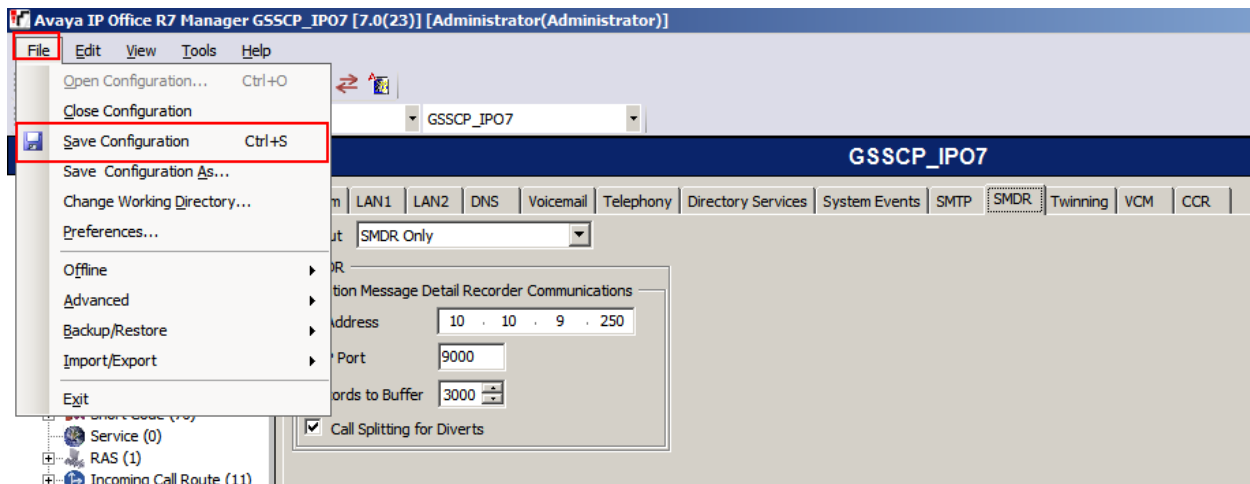
- **Output** Select **SMDR** from the drop box
- **IP Address** Enter the IP Address of the PC that the TIM Enterprise is installed
- **TCP Port** Enter **9000**
- **Records to buffer** Enter **3000**. This is maximum available.
- Check the **Call Splitting for Diverts** Check box

Click the **OK** button to save.



5.3. Push Configuration to Avaya IP Office

After the configuration is saved it must be pushed to the Avaya IP Office. Select **File→Save** to push the configuration to Avaya IP Office and wait for the system to update.



6. Configuring Tri-Line TIM Enterprise

A number of steps are required to Configure TIM Enterprise to interoperate with Avaya IP Office. The TIM Enterprise Call Logger uses a TCP port to collect CDR 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 will also download a template file which matches the PBX type which 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:

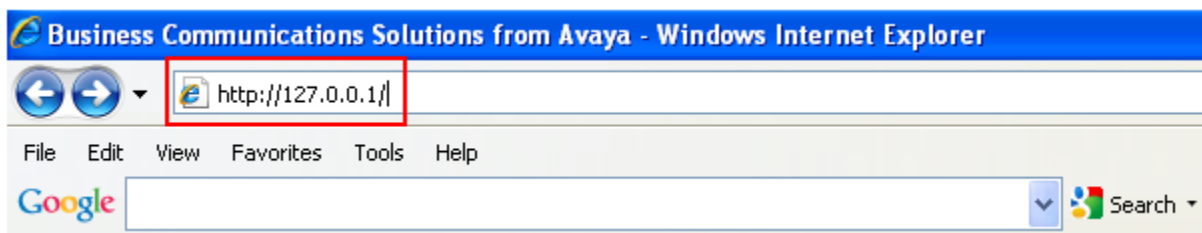
- Downloading Avaya IP Office template.
- Accessing TIM Enterprise
- Add new object
- Configuring Properties

6.1. Downloading Avaya IP Office Template

As part of configuration an Avaya IP Office template is required. This template is used as the **Data format** in **Section 6.4**. Once the end customer has a registered account with Tri-Line the template is available for download as a ZIP file. Download the Avaya IP Office template ZIP file. During compliance testing the template used was called **Avaya IP Office 6+.tdt**. Unzip the template file to the directory **C:\Program Files\Tri-Line\TIM Enterprise\config**.

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.

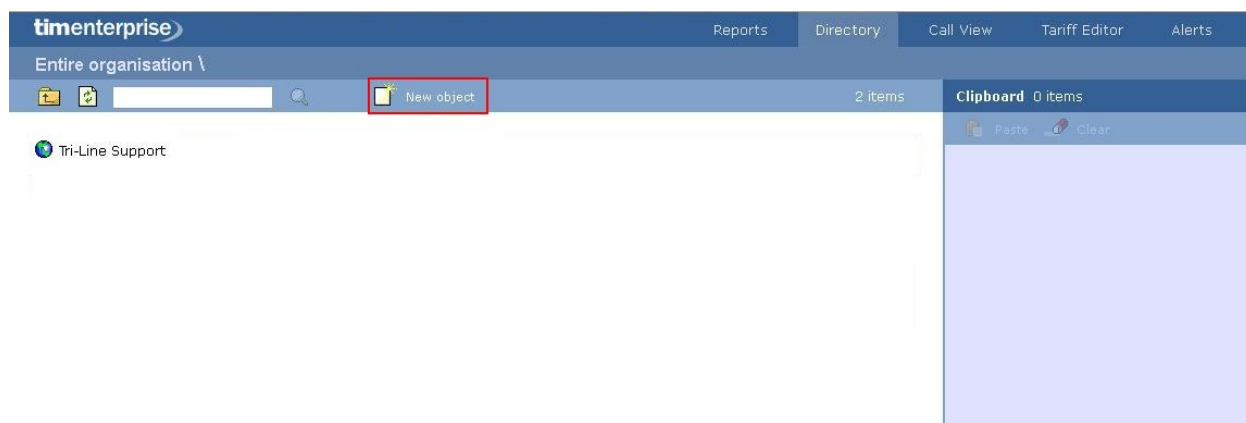


Authentication is required to log into TIM Enterprise. Enter **User name** and **Password** followed by clicking the **OK** button.

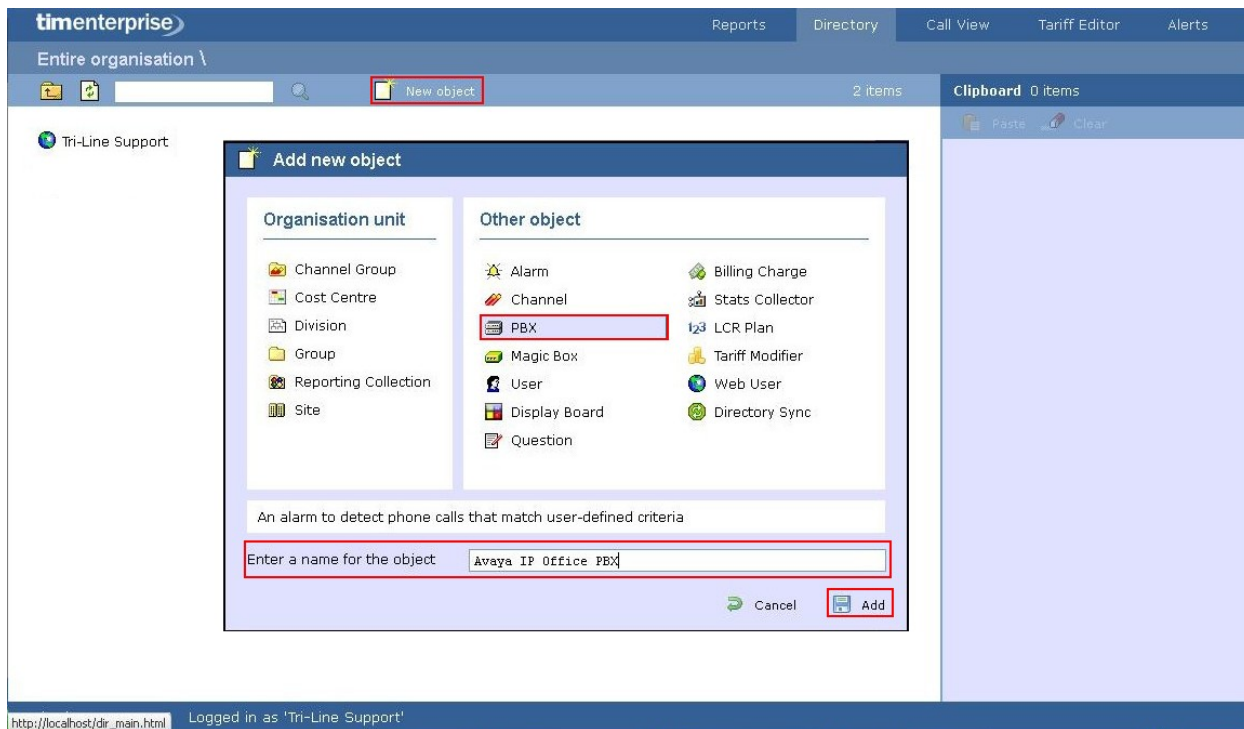


6.3. Add New Object

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.



On the **Add new object** window that appears, select **PBX**. In the **Enter a name for the object** field, 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** window.

The screenshot shows the 'Avaya IP Office PBX' Properties window with the 'General' tab selected. The left sidebar contains 'General', 'Connection', 'Inactivity', and 'Options'. The main area is divided into two sections: 'General settings' and 'Data backup'. In 'General settings', the 'Name' field 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' field containing '{app}\backup\Avaya IP Office PBX\{y'. On the right, the 'Data format' section shows a list with 'Avaya IP Office 6+' selected and highlighted with a red rectangle. At the bottom right are 'Cancel' and 'Save' buttons.

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.

Avaya IP Office PBX

General
Connection
Inactivity
Options

Connection method

- Receive FTP transfers from PBX
- Establish TCP connection to PBX
- Listen for connections from PBX**
- System DSN connection
- RADIUS connection
- SysLog connection
- No connection required

Connection details

Host

Port

Connection options

- ☐ Binary data
- ☐ Timestamp data
- ☐ Delay processing by ms

Cancel Save

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 that Tri-Line TIM Enterprise Call Logger retrieves SMDR data

To ensure that 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	
13 December 2011	16:52:49	Extn89011	89103	89103	0	00:00:09	0.00	
13 December 2011	16:52:44	89103	89103	89103	0	00:00:00	0.00	
13 December 2011	16:52:44	Extn89011	89103	89103	2	00:00:02	0.00	
13 December 2011	16:52:37	Extn89013	89011	Extn89011	0	00:00:12	0.00	
13 December 2011	16:52:37	Extn89013	89011	Extn89011	2	00:00:09	0.00	
13 December 2011	16:50:58	Extn89011	89103	89103	0	00:00:15	0.00	
13 December 2011	16:50:49	89103	89103	89103	0	00:00:00	0.00	
13 December 2011	16:50:49	Extn89011	89103	89103	3	00:00:03	0.00	
13 December 2011	16:50:32	Extn89013	89011	Extn89011	0	00:00:17	0.00	
13 December 2011	16:50:32	Extn89013	89011	Extn89011	3	00:00:20	0.00	
13 December 2011	16:47:37	89103	89011	Extn89011	5	00:00:01	0.00	
13 December 2011	16:38:55	89103	02085551000	London	4	00:00:08	0.03	
13 December 2011	16:36:57	Extn89013	89103	89103	6	00:00:17	0.00	
13 December 2011	16:36:57	Extn89013	89011	Extn89011	5	00:00:16	0.00	
13 December 2011	16:35:45	Extn89011	89103	89103	2	00:00:04	0.00	
13 December 2011	16:35:40	Extn89013	89103	89103	0	00:00:10	0.00	
13 December 2011	16:35:40	Extn89013	89011	Extn89011	2	00:00:12	0.00	
13 December 2011	16:33:56	Extn89013	89103	89103	3	00:00:09	0.00	
13 December 2011	16:33:56	Extn89013	89011	Extn89011	3	00:00:16	0.00	
13 December 2011	16:32:36	Extn89011	89013	Extn89013	2	00:00:07	0.00	
13 December 2011	16:32:30	Unknown	1601	Extn89013	0	00:00:10	0.00	
13 December 2011	16:32:30	Unknown	1601	Extn89011	3	00:00:16	0.00	

8. Conclusion

These Application Notes describe the configuration steps required for Avaya IP Office version 7.0 to successfully interoperate with Tri-Line TIM Enterprise 3.0.0.78 using a TCP connection. Tri-line TIM Enterprise 3.0.0.78 is considered compliant with the Avaya IP Office version 7.0. All of the executed test cases have passed and met the objectives outlined in **Section 2.1**.

9. Additional References

This section references the Avaya and Tri-Line documentation that is relevant to these Application Notes.

Product documentation for Avaya products is available at <http://support.avaya.com>

[1] Avaya IP Office Release 7.0 Manager 9.0, Document No: 15-601011, 17th March 2011

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

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