Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office 500v2 with Soft-ex Optimiser/RingMaster 5.6b to collect SMDR - Issue 1.0

Abstract

These Application Notes describe the configuration steps necessary for provisioning Soft-ex's product Optimiser/RingMaster to successfully interoperate with Avaya IP Office 500v2

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

Optimiser/RingMaster from Soft-ex is a telephone call accounting system that collects Station Message Detail Records (SMDR) information from the Avaya IP Office 500v2 and produces management reports. RingMaster was the original product supplied by Soft-ex to process SMDR and Optimiser is an additional product/service built onto RingMaster which is an alerting system for calls that meet specific requirements; for instance calls that may indicate telephone fraud.

2. General Test Approach and Test Results

The compatibility testing is concerned with verifying that the addition of Soft-ex's Optimiser/RingMaster does not interfere with the operation of the IP Office. SMDR information is transferred via TCP/IP stream, so RingMaster is listening on a port awaiting SMDR output. RingMaster also operates in multisite environments, where SMDR data from more than one site is collected and forwarded to a central site. In these cases, the data is collected by buffering devices supplied by Soft-ex and transferred by a variety of methods such as via TCP/IP, FTP or email. Essentially, each PBX the interface has the same characteristics; one way data flow from the PBX. During compliance testing, SMDR was output to a Scannex IP Buffer where it was collected by RingMaster. See **Figure 1** for a network diagram. The interoperability compliance test included feature functionality and defence tests.

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.

Note: In some Soft-ex literature the Optimiser/RingMaster product is referred to as Call Management Software or just Optimiser to avoid confusion the product name in this document will be referred to as Optimiser/RingMaster.

2.1. Interoperability Compliance Testing

The principle objective of Interoperability Compliance testing is to provide assurance to the potential customers that the tested products operate as specified and can interoperate in an environment similar to the one that will be encountered at a customer's premises. The interoperability compliance testing includes the following connection types.

- Real-Time TCP/IP connection listening on a port awaiting SMDR data from IP Office.
- Real-Time TCP/IP connection using an IP Buffer which is listening on a port awaiting SMDR data from IP Office.

Tests were performed to insure full interoperability of IP Office 500v2 with Soft-ex Optimiser/ RingMaster 5.6b. Performance and load testing is outside the scope of the compliance testing.

2.2. Test Results

All the test cases passed successfully.

2.3. Support

Information on Soft-ex and product support can be obtained through the following:

Phone: +353 1 241 6600
Fax: +353 1 295 6290
E-mail: sales@soft-ex.net
Web: http://www.soft-ex.net

3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. The Avaya solution consists of a Communication Manager, System Manager, Session Manager and a G430 Gateway. The IP Office is configured to output SMDR over a TCP/IP port. A Node is configured on the IP Office to point to the Scannex IP buffer. SMDR are sent in customized format, stored in the buffer and retrieved by RingMaster. A variety of Avaya Deskphones were used to generate intra-switch calls (calls between phones on the same system), and outbound/inbound calls to/from the PSTN. The Session and System Manager are shown in the diagram as they are required for the SIP telephones.

Note: RingMaster can also connect directly to IP Office using a direct TCP/IP connection.

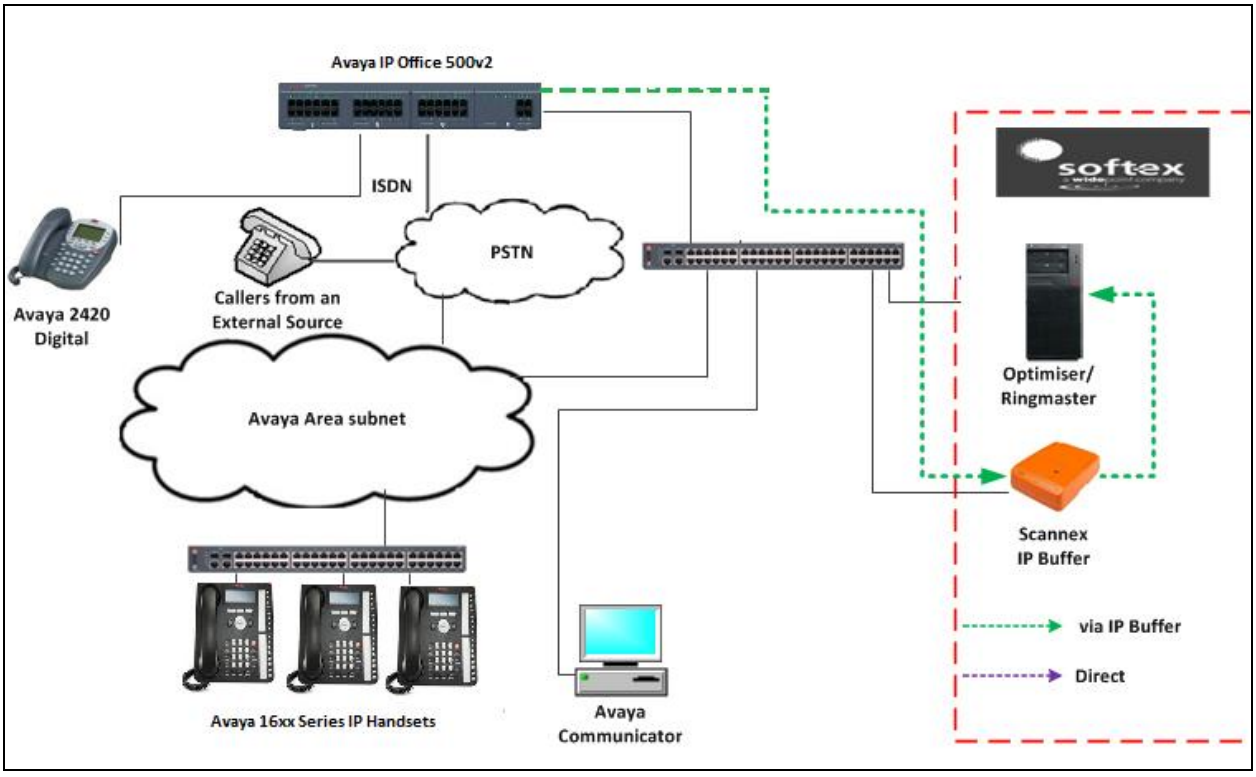


Figure 1: Avaya IP Office and Soft-ex Reference Configuration

4. Equipment and Software Validated

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

Avaya Equipment/Software	**Release/ Version**
Avaya IP Office 500v2	R10.0 Version 10.0.0.0.0 Build 550
Avaya 16xx Series IP Deskphones H.323	1.390A
Avaya Communicator for Windows	2.1.3.0
Avaya Digital 2420	NA
Soft-ex Equipment/Software	**Release/Version**
Optimiser/RingMaster running on a PC Windows 7	R5.6b
Scannex IP Buffer	Revision 2.92.295

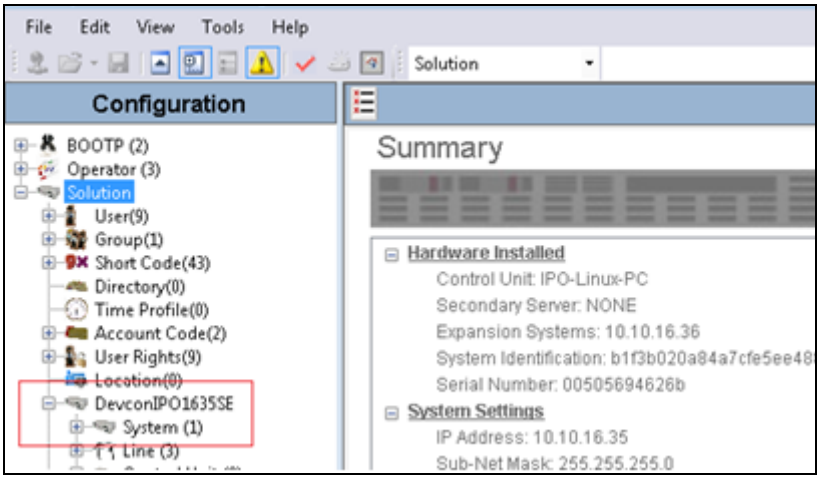
5. Avaya IP Office Configuration

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 10**. 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**.

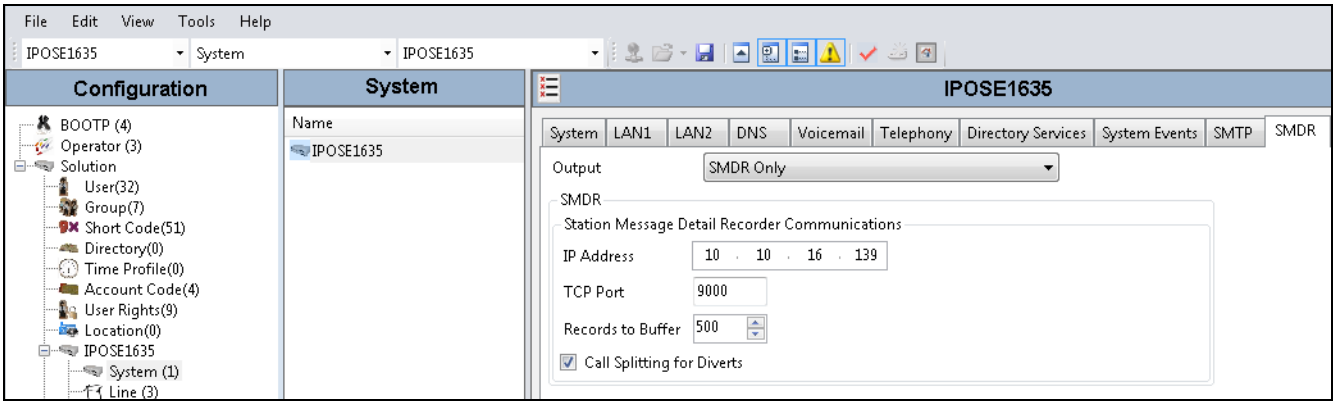


5.2. SMDR configuration

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

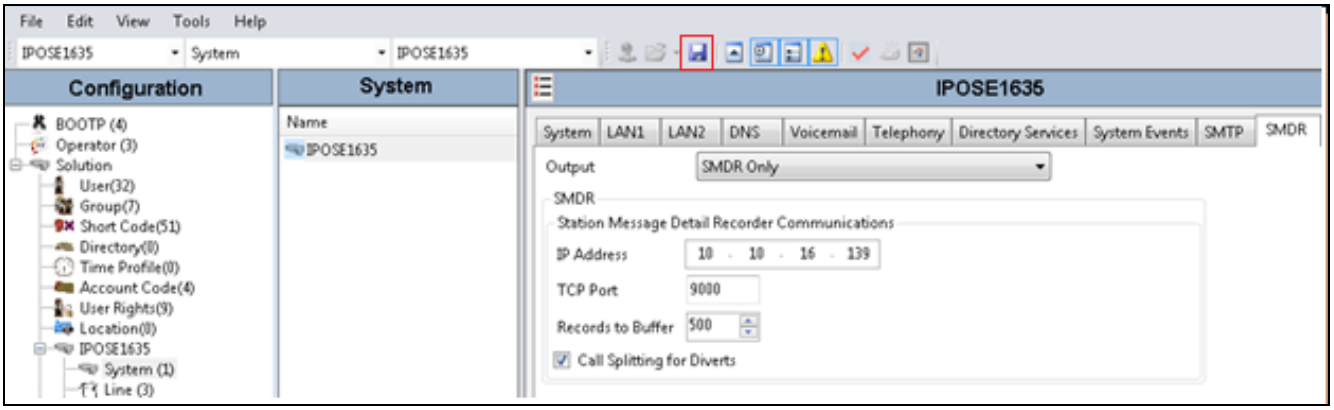
- **Output** Select **SMDR Only** from the drop box
- **IP Address** Enter the IP Address of the Scannex IP Buffer
- **TCP Port** Enter **9000**
- **Records to buffer** Can be left as the default
- **Call Splitting for Diverts** Check the box

Click the **OK** button to save (not shown).

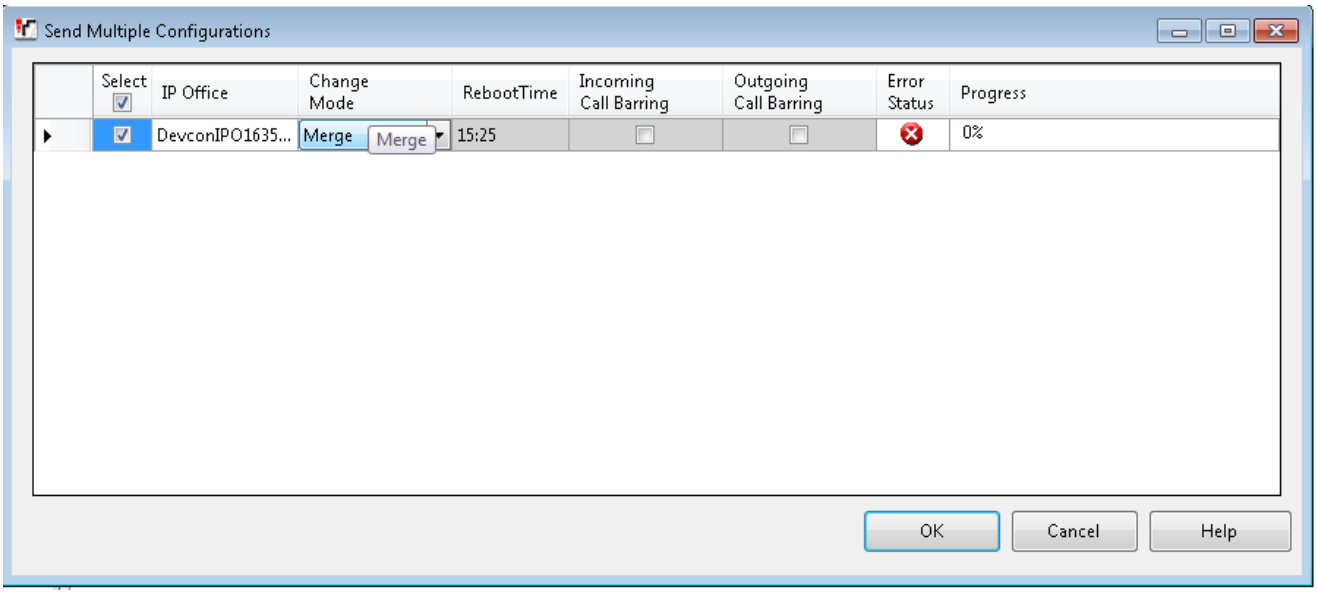


5.3. Save Configuration

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. Configuration of Scannex IP buffer

This section provides the procedures to configure the Scannex IP buffer. It is implied that the Scannex IP buffer is already in place and configured with an IP address on the same subnet as the IP Office. For all other provisioning information, such as initial installation and configuration, please refer to the product documentation in **Section 10**.

Note: The procedures described below are normally carried out by a Soft-ex or partner engineer during installation and subsequent re-configuration.

6.1. Setup Scannex IP Buffer

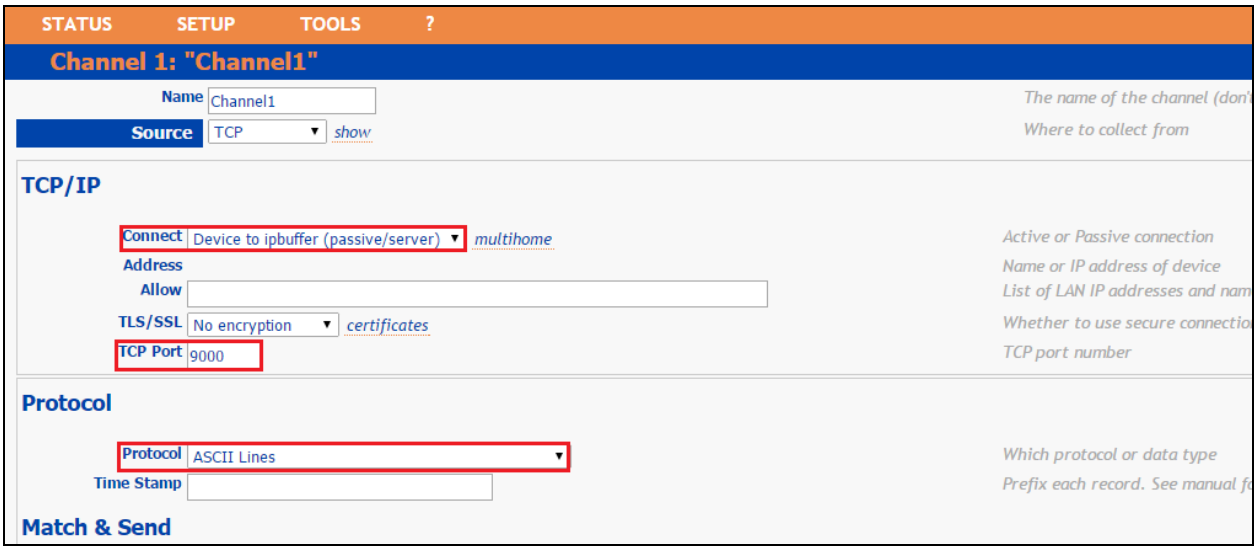
After logging in, the **Status** page is displayed. Select **SETUP** followed by **Channel 1** (not shown)**.**

Once the **Channel 1** page is opened, select **TCP** from the **Source** dropdown box, and then select **show**.

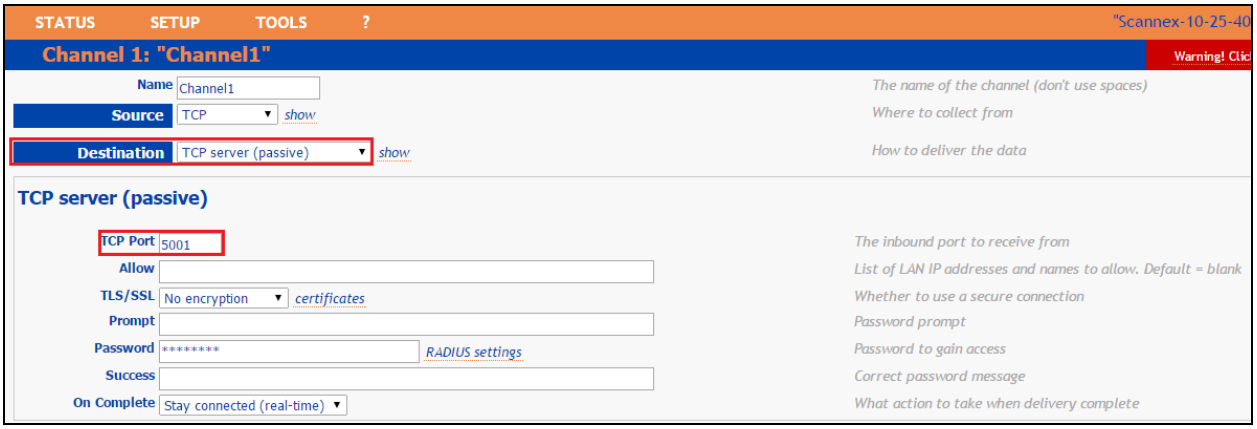
Once the next page opens, enter the following:

- **Connect** Select **Device to ipbuffer** from the drop down box
- **TCP Port** Enter **9000**. The port number used should match the **Remote Port** configured on the IP Office in **Section 5.2**.
- **Protocol** Enter **ASCII Lines** from the drop down box,

Use the scroll bar on the right side of the page and scroll down to **Destination** (not shown).



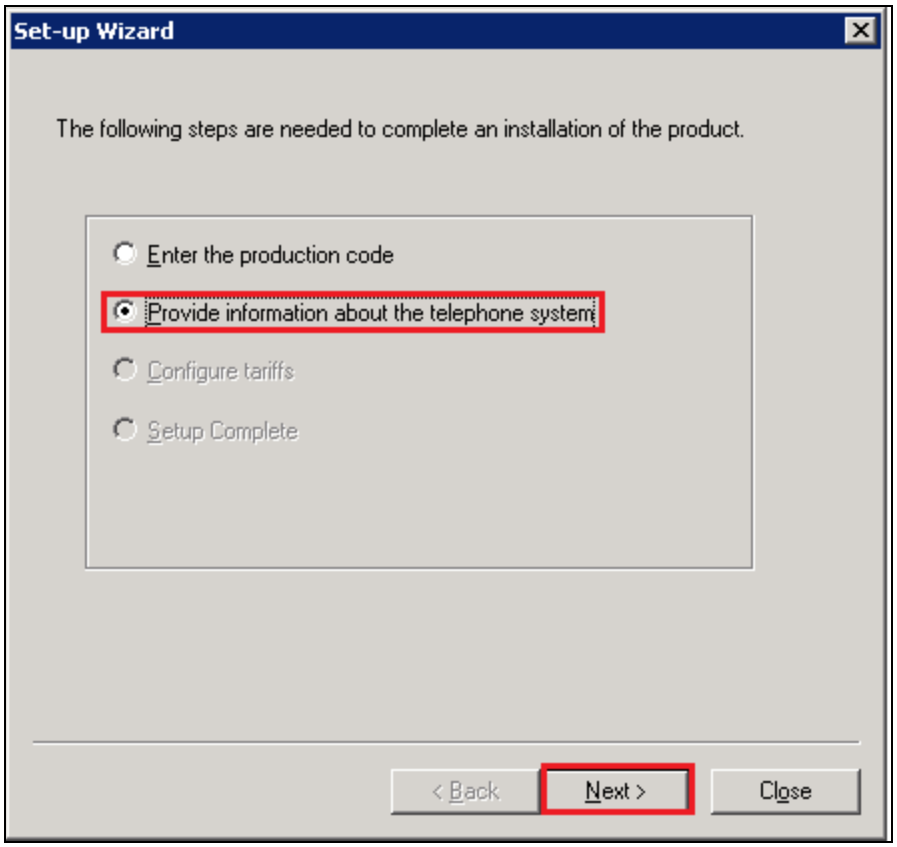
From the **Destination** dropdown box, select **TCP Server** and enter **5001** in the **TCP port** field. Click on the **Save** button on the bottom of the page (not shown) when the configuration is complete.



7. Configuration of Soft-ex Optimiser/RingMaster

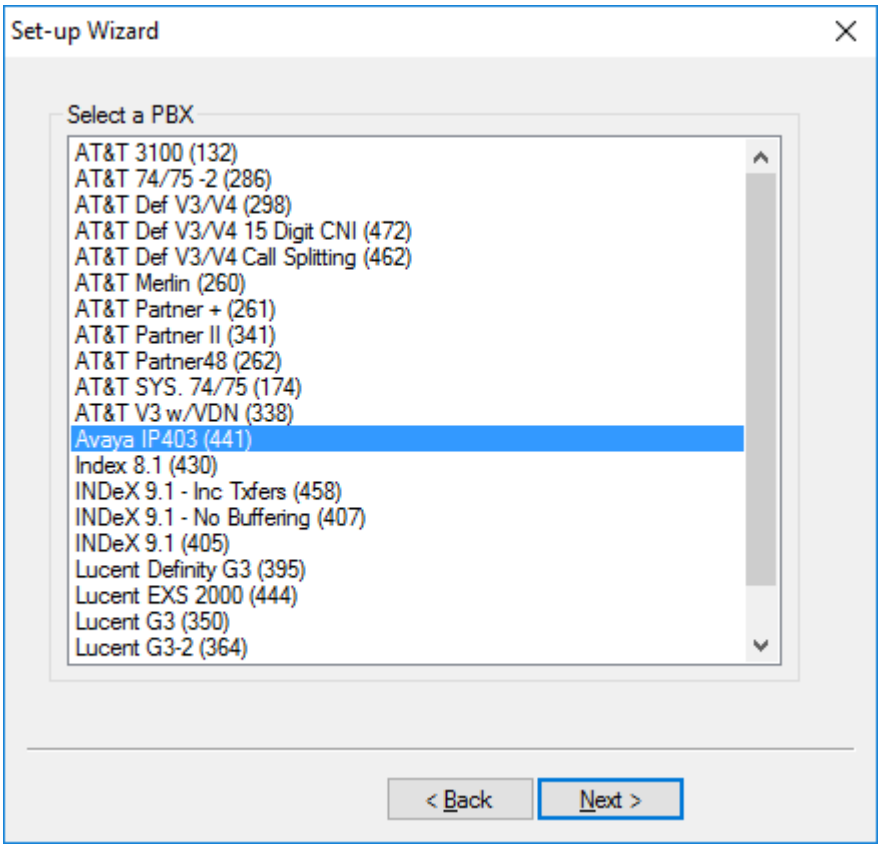
This section outlines the steps to configure the RingMaster/Optimiser from Soft-ex in order to correctly collect SMDR data. RingMaster/Optimiser is installed on a server or PC from a program on CD/DVD. Installation instructions are outside the scope of this document but information on installation of Optimiser/ RingMaster can be found in **Section 10** of this document. Once the software is correctly installed it automatically prompts for some configuration details to complete the installation. These include information on the PBX that it is connecting to.

When the wizard opens, click on the **Provide information about the telephone system** radio button. Click the **Next** button to continue.



Select the PBX that is being connected to from the **PBX Group** as shown below. For a connection to IP Office, choose **Avaya IP403 (441).**

Click the **Next** button to continue.

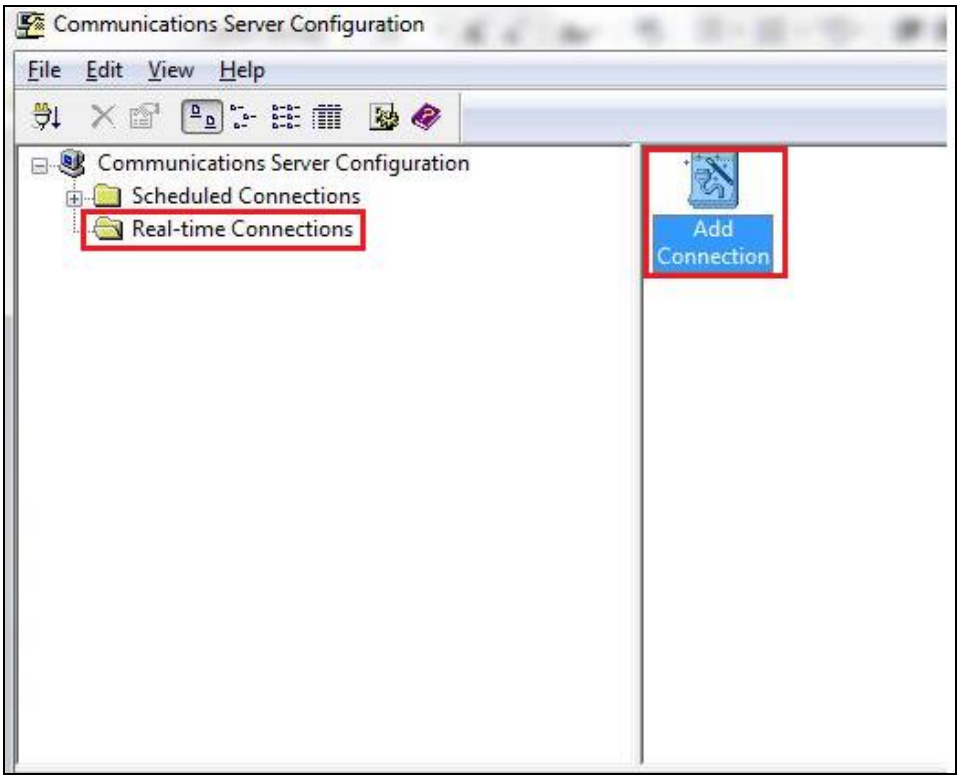


7.1. Configuration of Soft-ex Optimiser/RingMaster connection to Avaya IP Office

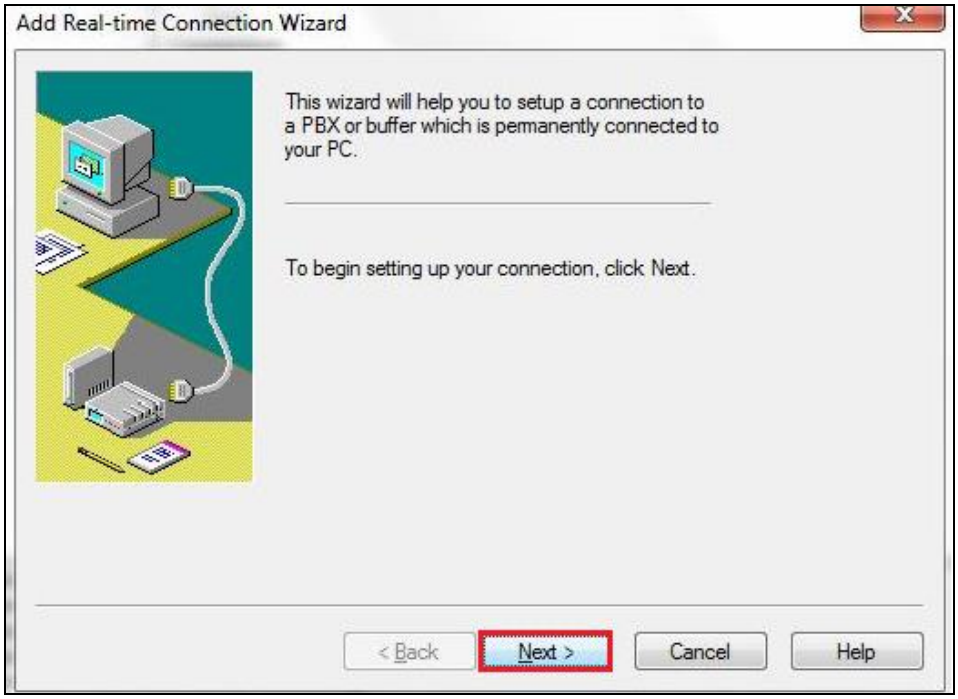
Once the application is successfully installed a connection must be setup to collect SMDR data. This section shows the setup of a Real-time TCP/IP connection to the IP Office. This uses a port to listen for SMDR data being sent from the IP Office.

Open the Communication Server configuration in order to configure the new Real-time connection by clicking on **Communications Server** as shown below.

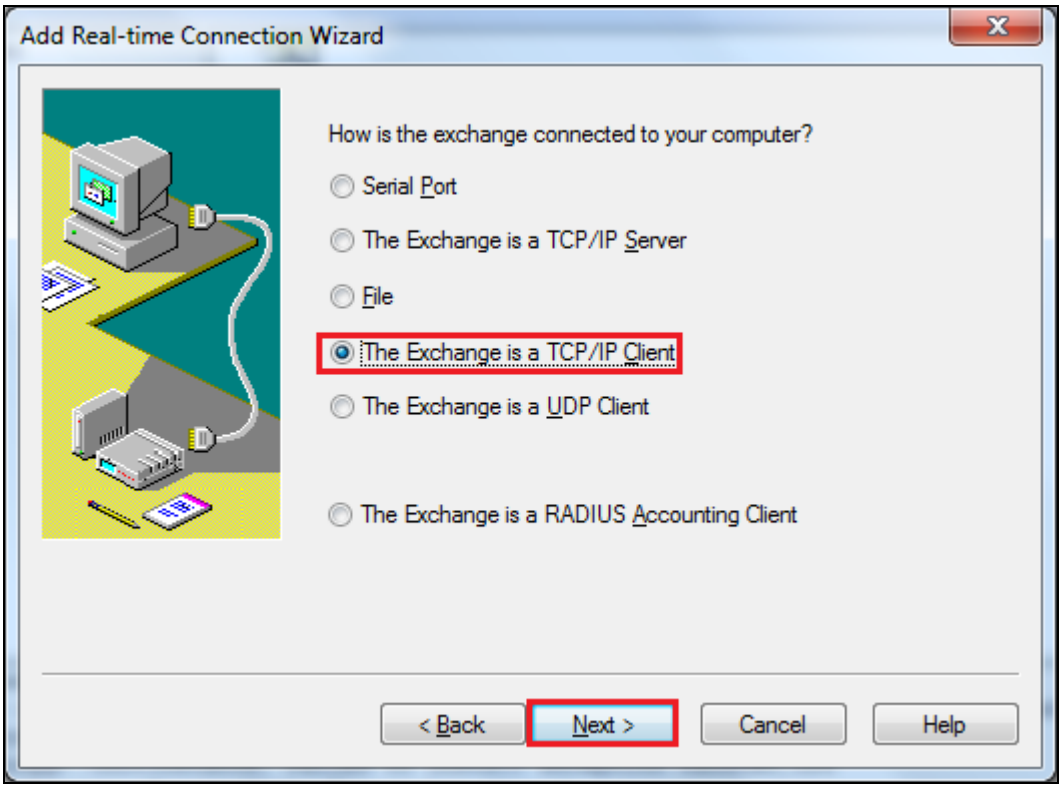
Select the **Real-time Connections** folder in the left hand pane and double click on **Add Connection** as highlighted below.



When the "**Add Real-time Connection"** wizard opens, click the "**Next"** button to continue.



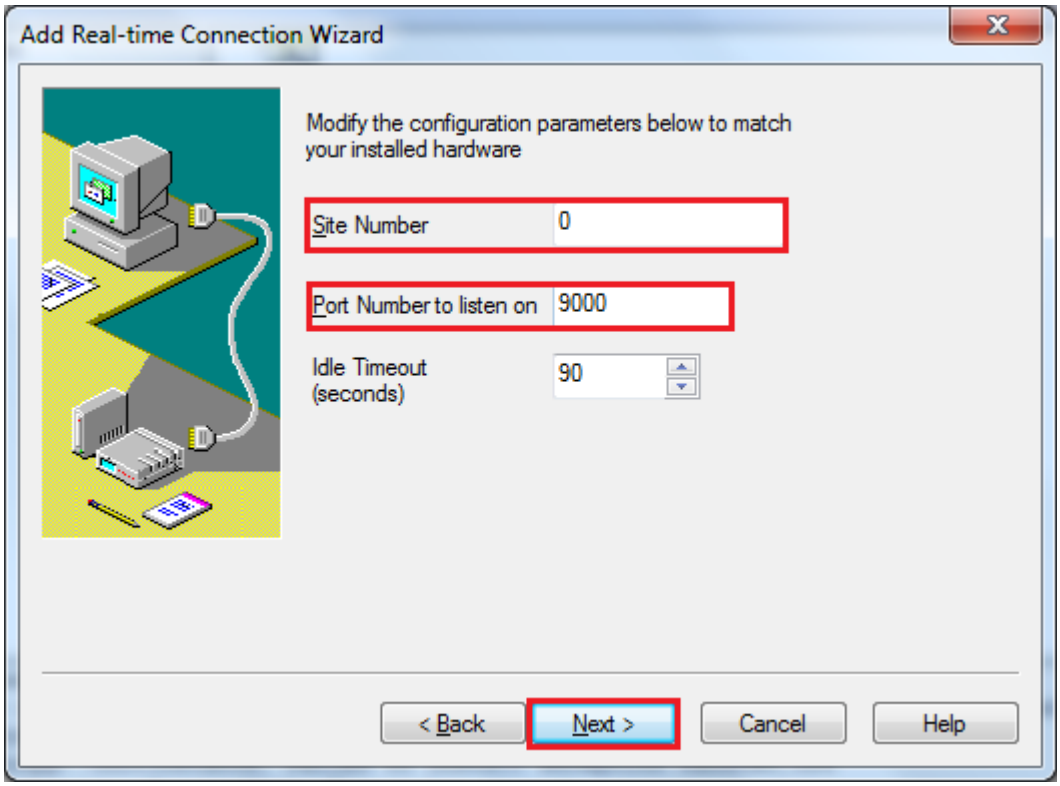
On the subsequent screen, select **The Exchange is a TCP/IP Client** radio button, followed by the **Next** button.



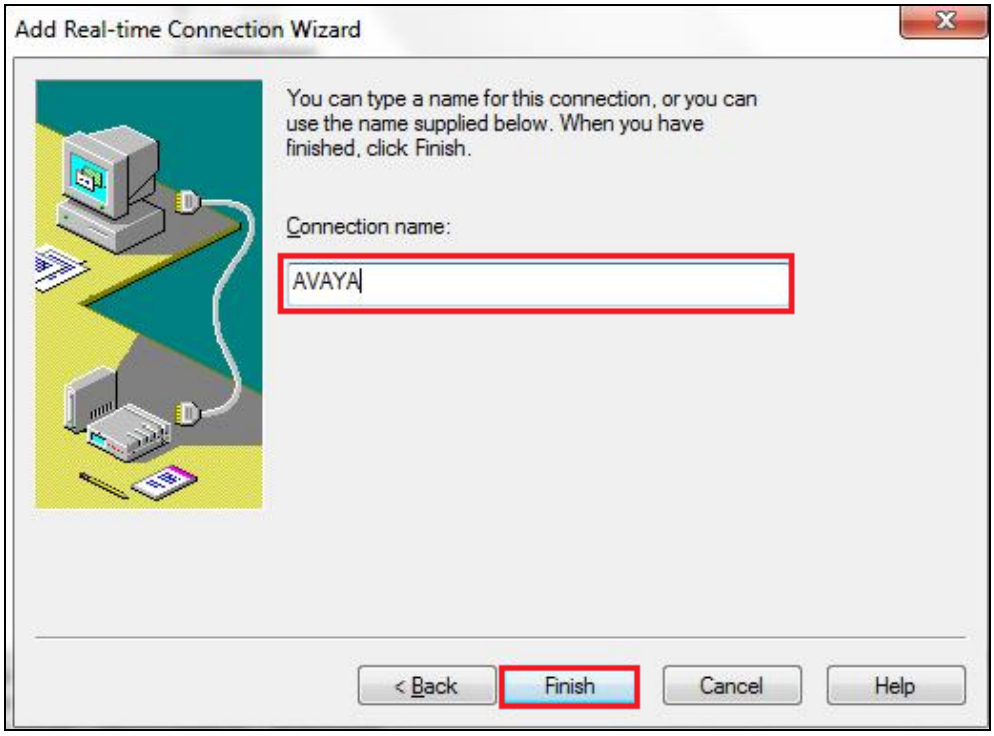
On the subsequent screen enter the following:

- **Site Number** Select the site number (When there is only one site the site number will always be **0**)
- **Port Number** Enter the port number to listen on (this is the port number as configured in **Section 5.2**)

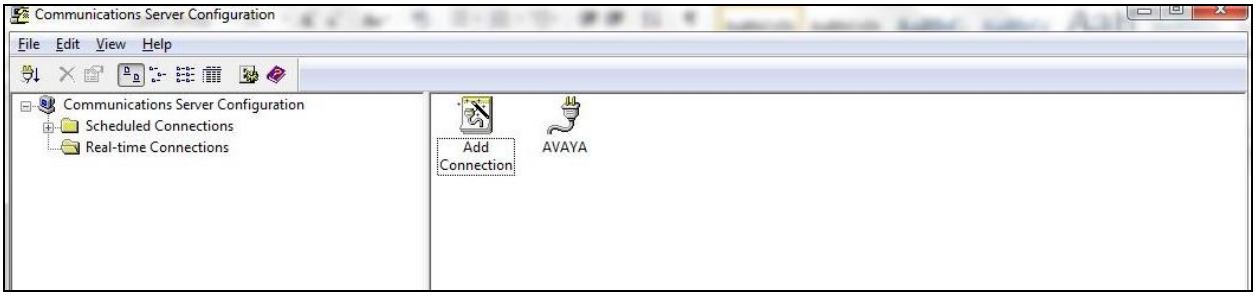
Click the **Next** button to continue.



On the subsequent screen, choose a **Connection name** for the new connection and click on the **Finish** button.

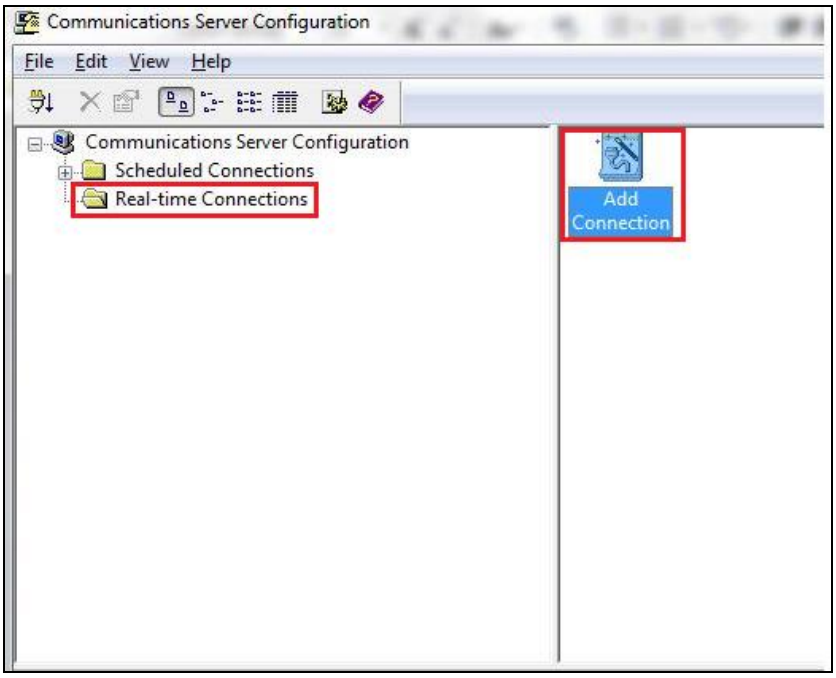


This new connection is shown under **Real-time Connections**.

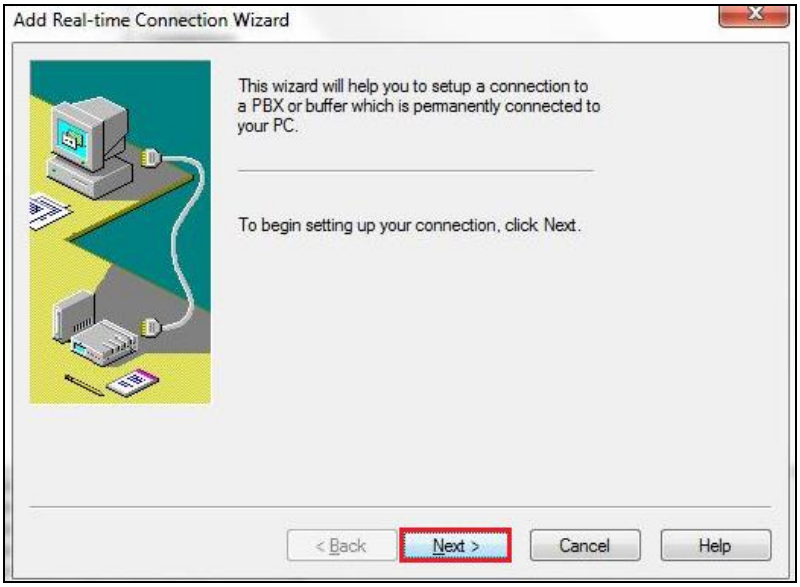


7.2. Configuration of Soft-ex Optimiser/RingMaster connection to the IP Buffer

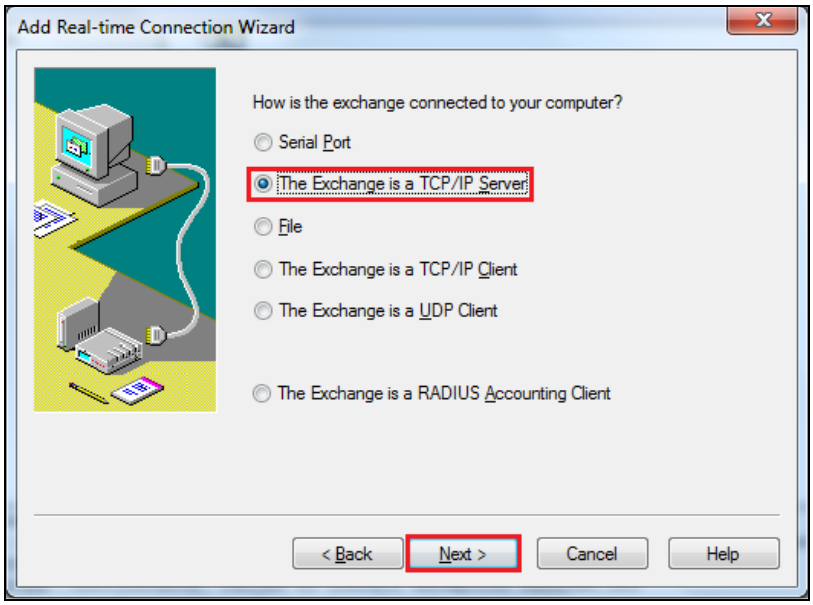
Open the Communications Server Configuration as in **Section 7.1** and select the **Real-time Connections** folder in the left hand pane and double click on **Add Connection** as highlighted below.



On the subsequent screen choose the **Add Real-time Connection Wizard** and, click the **Next** button to continue.



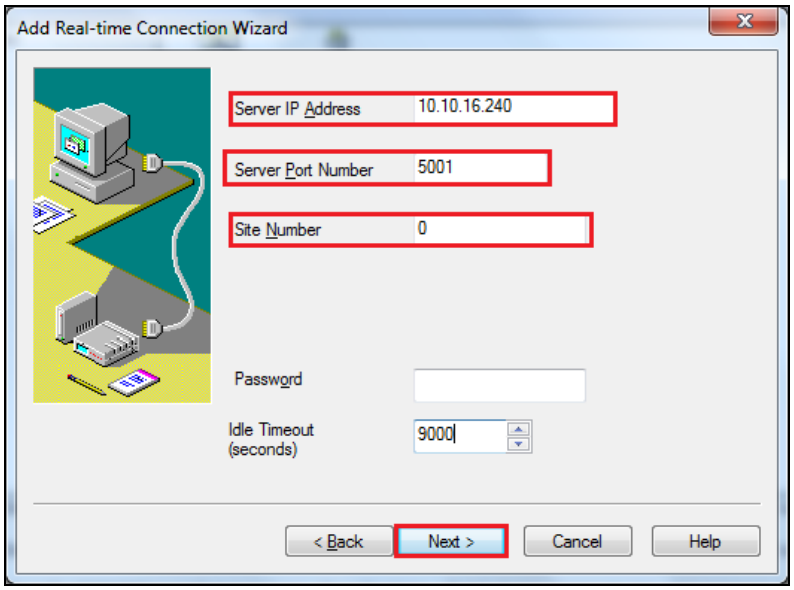
On the subsequent screen, select **The Exchange is a TCP/IP Server** radio button, followed by the **Next** button.



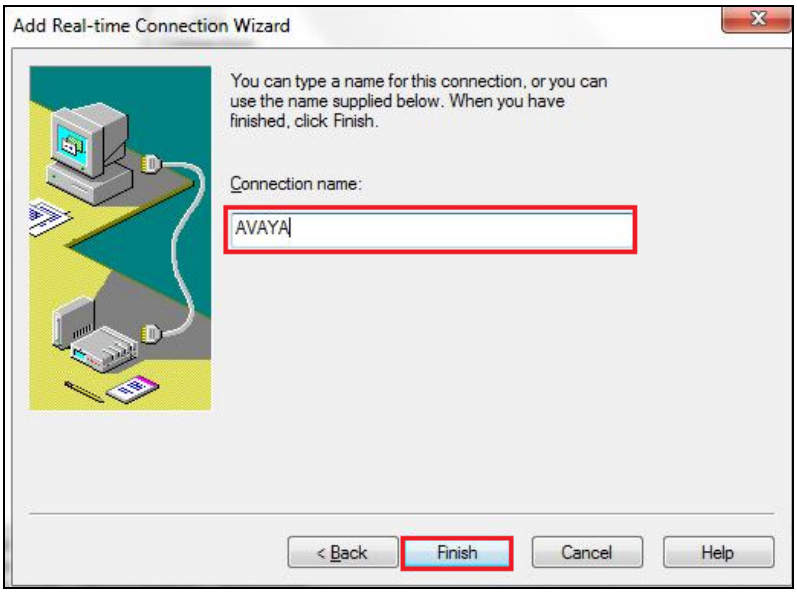
On the subsequent screen, enter the following:

- **Server IP Address** Enter the IP address of the IP Buffer
- **Server Port Number** Enter the port number to listen on (this is the Destination TCP port number as configured in **Section 6.1**)
- **Site Number** Select the site number (When there is only one site the site number will always be **0**)

Click the **Next** button to continue.



On the subsequent screen, choose a **Connection name** for the new connection and click on the **Finish** button.



8. Verification Steps

This section provides tests that can be performed to verify correct configuration of the Avaya and Soft-ex solution.

8.1. Verify the connection between Scannex IP buffer and Avaya IP Office

On the IP Buffer select **Status**, the completed **Status** screen is displayed. The **TCP Source** displays in green indicating that the IP Buffer has successfully connected to the Avaya solution.

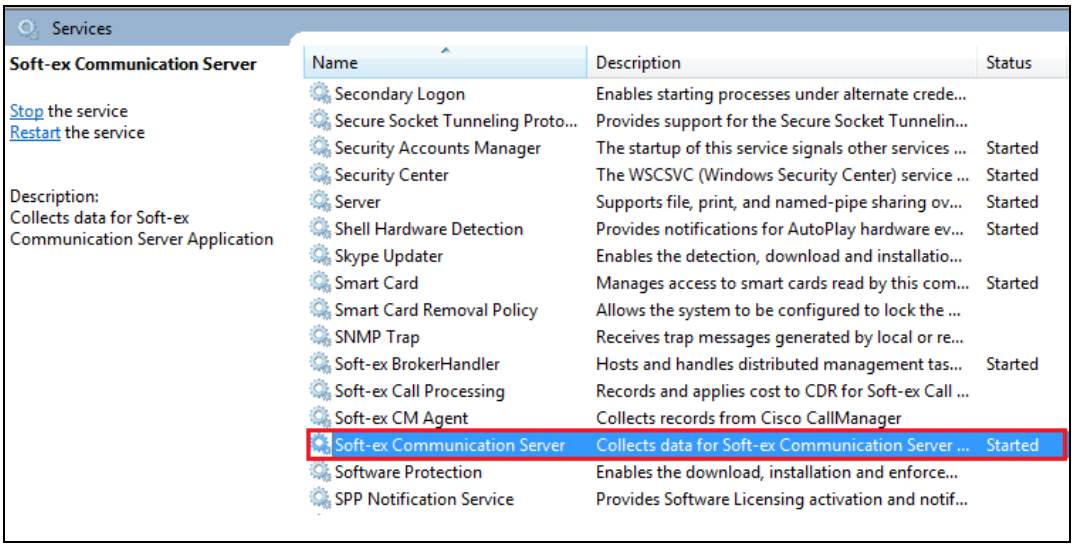
8.2. Verify SMDR data is being sent from Avaya IP Office

Setup a port listening tool on a PC and set it to listen on port 9000. Once connected make an incoming and outgoing call and on completion of the calls SMDR data should be visible on the port listening tool. An example is shown below.

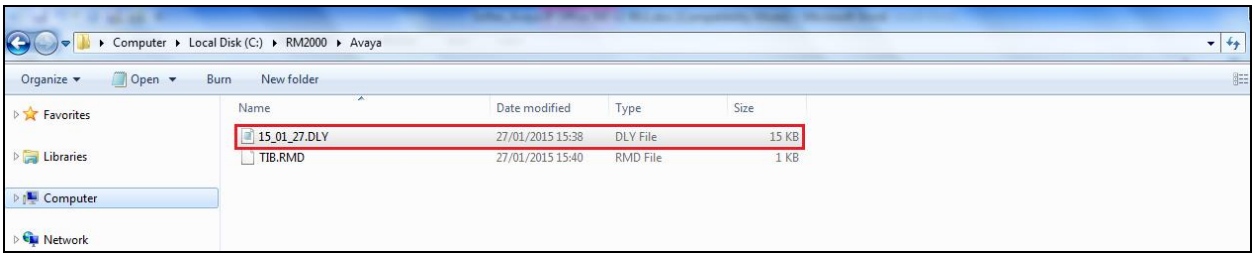
```
2000/11/22 00:16:41,00:00:20,4,8357500,O,8357001,8357001,,1,1000004,0,E8357500,H323500Station,E8357001,Digital 2,0,0,0,n/a,,,,,,,,,,,10.10.16.36
2000/11/22 00:27:33,00:00:12,2,8357500,O,8270001#,8270001#,,0,1000005,0,E8357500,H323500Station,T9010,Line 10.1,0,0,0,n/a,,,,,,,,,,,10.10.16.36,
2000/11/22 00:28:19,00:00:00,4,8270005,I,8350001,018350001,,0,1000006,0,E8350001,H323Station,T9005,Line 5.3,0,0,0,n/a,,,,,,,,,,,10.10.16.36,1020
2000/11/22 00:28:47,00:00:00,2,8270005,I,8357500,018357500,,0,1000007,0,E8357500,H323500Station,T9005,Line 5.4,0,0,0,n/a,,,,,,,,,,,10.10.16.36,1
2000/11/22 00:29:46,00:00:10,2,8270005@devconnect.local,I,8357500,8357500,,0,1000008,0,E8357500,H323500Station,T9009,Line 9.1,0,0,0,n/a,,,,,,,,,
2000/11/22 00:30:32,00:00:00,2,8270005@devconnect.local,I,8357500,8357500,,0,1000010,0,E8357500,H323500Station,T9009,Line 9.1,0,0,0,n/a,,,,,,,,,
2000/11/22 00:30:57,00:00:22,5,8270001@devconnect.local,I,8357500,8357500,,0,1000012,0,E8357500,H323500Station,T9009,Line 9.2,0,0,0,n/a,,,,,,,,,
2000/11/22 00:31:19,00:00:01,6,8270002@devconnect.local,I,8357500,8357500,,0,1000013,0,V9500,VM Channel 0,T9009,Line 9.3,0,0,0,n/a,,,,,,,,,,10.
2000/11/22 00:30:40,00:00:17,6,8270005@devconnect.local,I,8357500,8357500,,0,1000011,0,E8357500,H323500Station,T9009,Line 9.1,31,0,0,n/a,,,,,,,,
2000/11/22 00:30:24,00:00:20,2,8350001,I,8357500,8357500,,1,1000009,0,E8350001,H323Station,E8357500,H323500Station,51,0,0,n/a,,,,,,,,,,,10.10.16
2000/11/22 00:32:41,00:00:01,5,8350003,I,8357001,8357001,,1,1000017,0,E8350003,H323Station3,E8357001,Digital 2,0,0,0,n/a,,,,,,,,,,,10.10.16.35,1
2000/11/22 00:33:02,00:00:07,6,8357500,O,8357001,8357001,,1,1000019,0,E8357500,H323500Station,V9500,VM Channel 0,0,0,0,n/a,,,,,,,,,,,10.10.16.36
2000/11/22 00:32:10,00:00:16,4,8350001,I,8357001,8357001,,1,1000015,0,E8350001,H323Station,E8357001,Digital 2,51,0,0,n/a,,,,,,,,,,,10.10.16.35,1
2000/11/22 00:32:25,00:00:17,5,8350002,I,8357001,8357001,,1,1000016,0,E8350002,H323Station2,E8357001,Digital 2,35,0,0,n/a,,,,,,,,,,,10.10.16.35,
2000/11/22 00:34:29,00:00:00,0,8350002,I,8357500,8357500,,1,1000022,0,E8350002,H323Station2,,,0,0,0,n/a,,,,,,,,,,,10.10.16.35,1295,0.0.0.0,0,200
2000/11/22 00:34:23,00:00:12,2,8350001,I,8357500,8357500,,1,1000021,0,E8350001,H323Station,E8357500,H323500Station,0,0,0,n/a,,,,,,,,,,,10.10.16.
2000/11/22 00:35:15,00:00:00,0,8357500,O,8350008#,,,0,1000023,0,E8357500,H323500Station,V8000,U1 0.0,0,0,0,n/a,,,,,,,,,,,10.10.16.36,1067,10.10.
```

8.3. Verify SMDR data is being received by the Optimiser/RingMaster

Check that the Soft-ex Communications Server service is running as shown below.

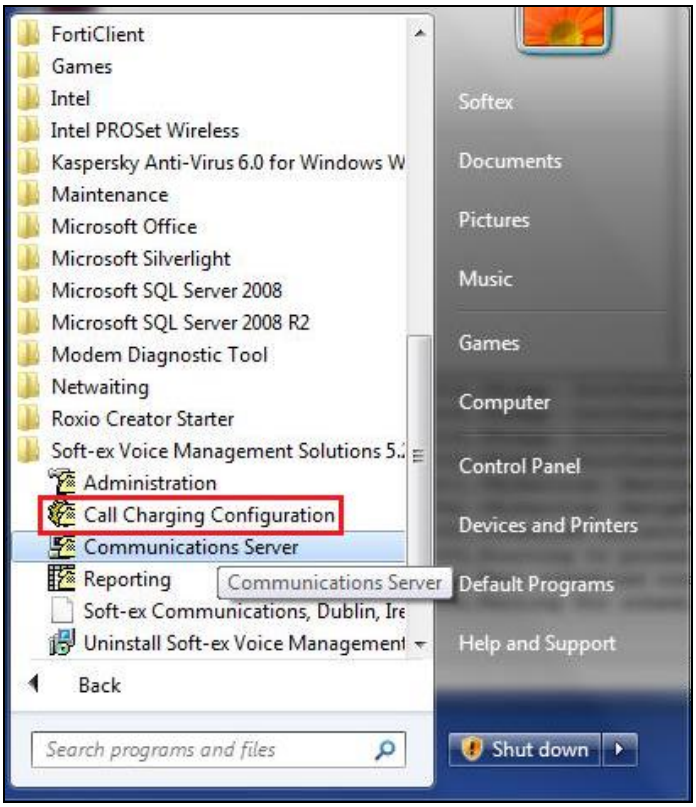


Check to see that a SMDR file is created in the location **C\:RM2000\<Sitename>** as shown below.

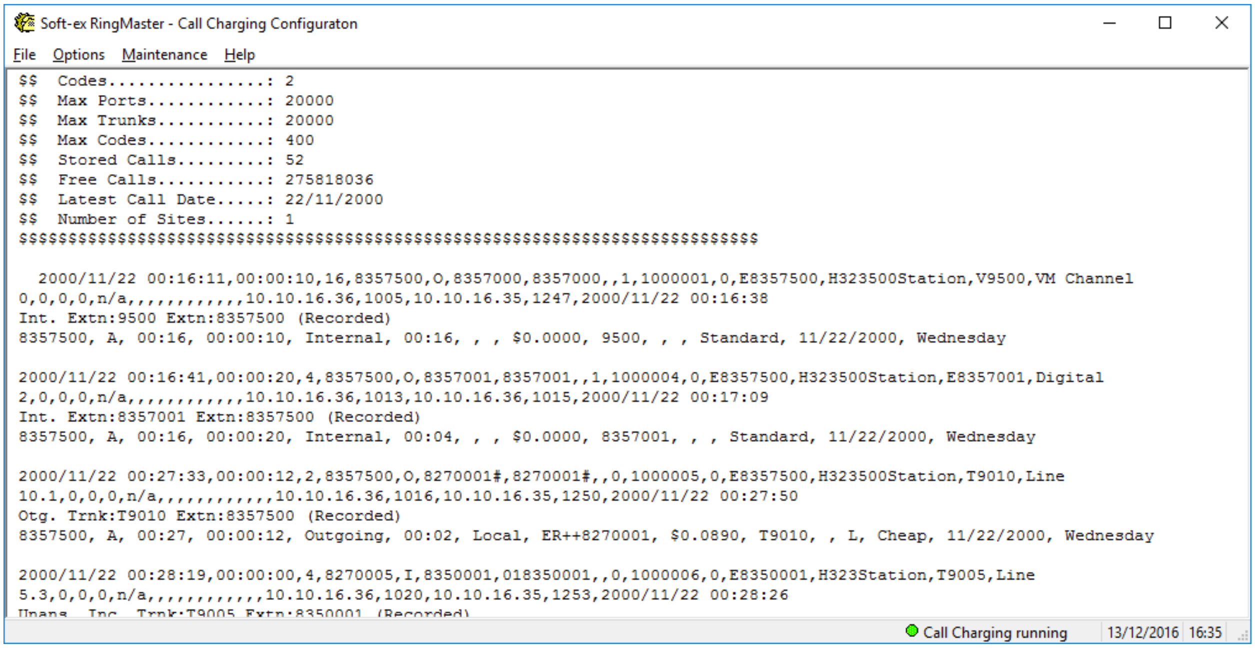


Check using the Soft-ex Call Charging Configuration tool, that SMDR data is being processed correctly.

This will show the SMDR data as it was sent from the IP Office.



An example is shown below.



9. Conclusion

A set of feature functional test cases were performed during compliance testing. Soft-ex Optimiser/Ringmaster 5.6b is considered compliant with Avaya IP Office 500v2 version 10.0. All test cases have passed and met the objectives outlined in **Section 2.2**.

10. 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] *Administering Avaya IP Office™ Platform with Manager, Document 101005673.*

Information on the installation and configuration of Optimiser/RingMaster can be found at *http://www.soft-ex.net* website. Information on the install and configuration of the IP Buffer from Scannex can be found at http://www.scannex.co.uk.