Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office 500v2 9.1 with Soft-ex Optimiser/RingMaster 5.5 to collect Call Detailed Records - 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.

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.

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1. Introduction

Optimiser/RingMaster from Soft-ex is a telephone call accounting system that processes Station Message Detail Records (SMDR) information from the Avaya IP Office 500 v2 Release 9.1 and produces management reports. RingMaster was the original product supplied by Soft-ex to process SMDR records and Optimiser is an additional product/service built onto RingMaster which is an alerting system for calls that meet specific requirements, for instance that may indicate telephone fraud.

2. General Test Approach and Test Results

The interoperability compliance testing was concerned with verifying that the addition of Soft-ex's Optimiser/RingMaster did not interfere with the operation of the IP Office. SMDR information is transferred via TCP/IP, so RingMaster is listening on a port awaiting CDR output. RingMaster also operates in multisite environments, where CDR 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 TCP/IP, FTP or email. Essentially however for each PBX the interface has the same characteristics: one way data flow from the PBX. During compliance the SMDR was output to a Scannex IP Buffer were it was collected by RingMaster. See **Figure 1** for a network diagram. The interoperability compliance test also 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.

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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:

- Verification of connectivity between Optimiser/RingMaster /IP buffer and IP Office using a TCP connection.
- Verification that CDR data was collected as output by the Communication Manager.
- Link Failure\Recovery was also tested to ensure successful reconnection after link failure.
- CDR data collected included:
  - Local internal call handling
  - 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
  - Account Codes
- Handling of calls to and from Avaya Deskphones.
- Handling of calls to/from the PSTN.

2.2. Test Results

Tests were performed to insure full interoperability of IP Office 500v2 9.1 with Soft-ex Optimiser/RingMaster 5.5. Performance and load testing is outside the scope of the compliance testing. 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

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3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. The Avaya solution consists of an IP Office 500v2. The IP Office is configured to output SMDR over a TCP/IP port to the Scannex IP buffer. SMDR is stored in the buffer and retrieved by RingMaster. A variety of Avaya telephones were used to generate intra-switch calls (calls between phones on the same system), and outbound/inbound calls to/from the PSTN.

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

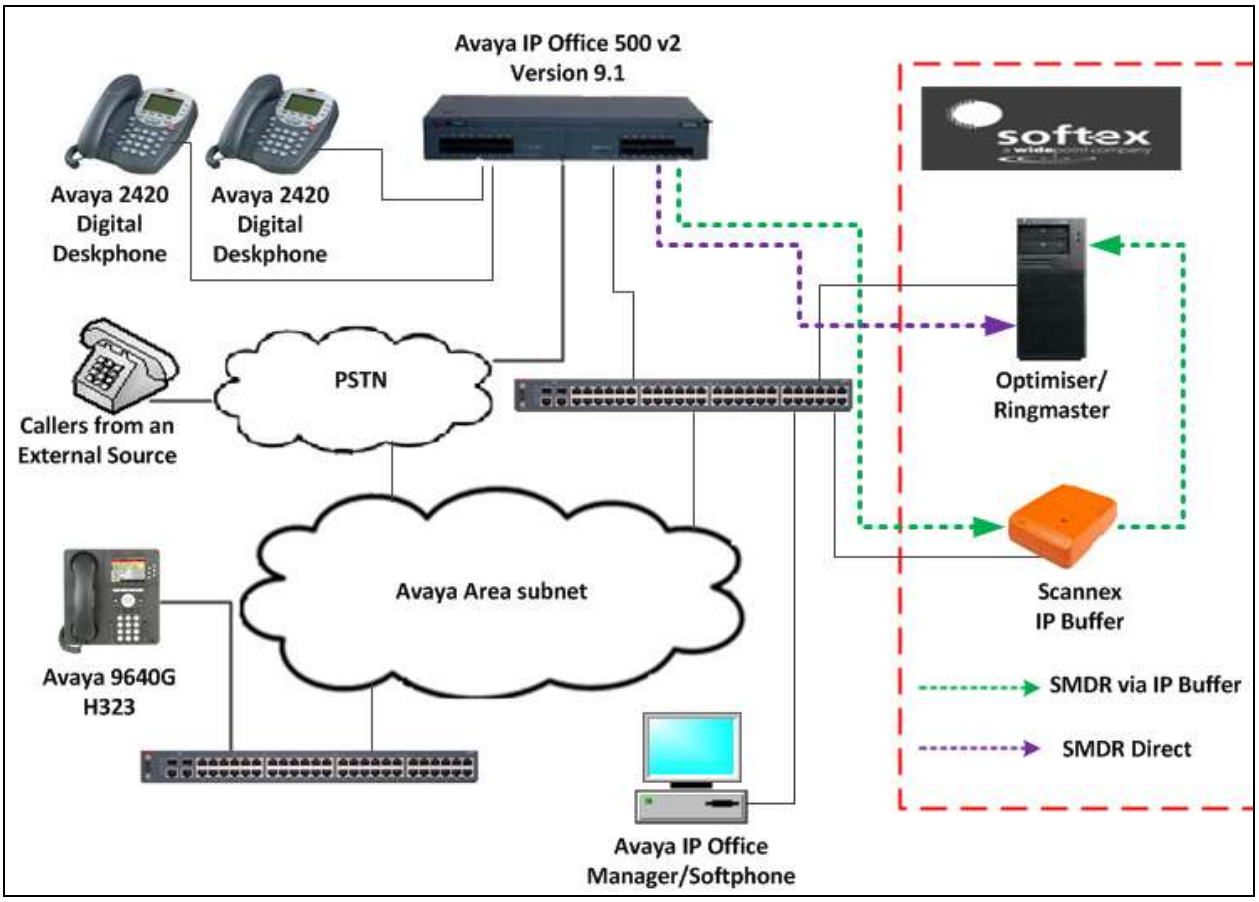

Figure 1: Avaya IP Office and Soft-ex Reference Configuration

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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	R9.1.0.437
Avaya IP Office Manager	R9.1 Build 437
Avaya one-X® Deskphone Edition for 9600 Series IP Telephones	Release 3.2
Avaya IP Office softphone	3.2.3.49 68975
Avaya Digital 2420	F/W 6
Avaya Analog 98309	N/A
Soft-ex Equipment/Software	**Release/Version**
Optimiser/RingMaster running on a PC with Windows 7	Version 5.5
Scannex IP Buffer	Release 2.91

Note: Testing was completed with IP Office 500 V2 R9.1. Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 only.

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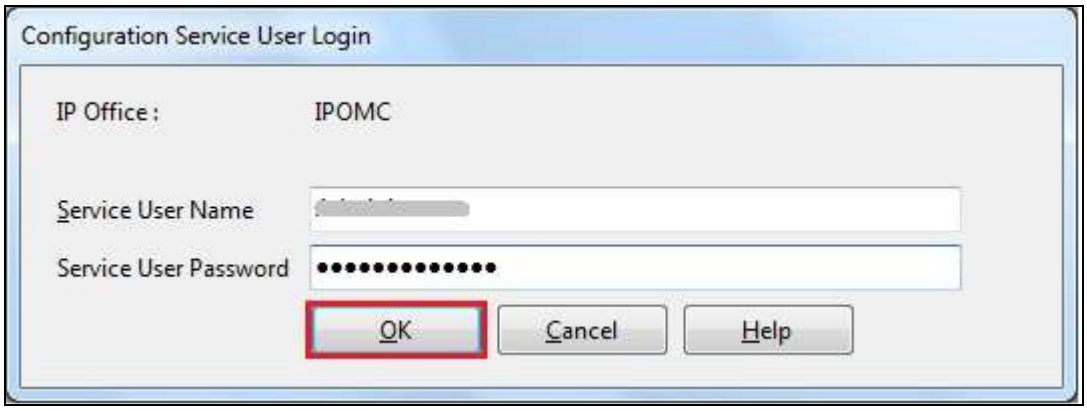
5. Configuration of Avaya IP Office

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 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 10**.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→Programs→IP Office→Manager** to launch the Manager application. Log in to Avaya IP Office using the appropriate credentials to receive its configuration.



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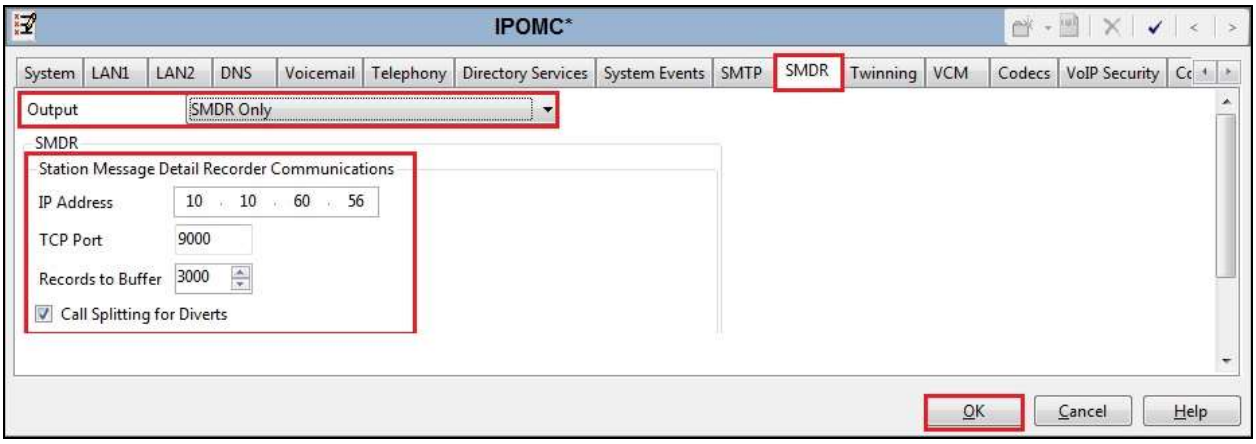
5.2. SMDR configuration

Select **System** (not shown) followed by the **SMDR** tab and enter the following:

- **Output** Select **SMDR Only** from the drop box
- **IP Address** Enter the IP Address of the orbi-tel^{xps} Server
- **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.



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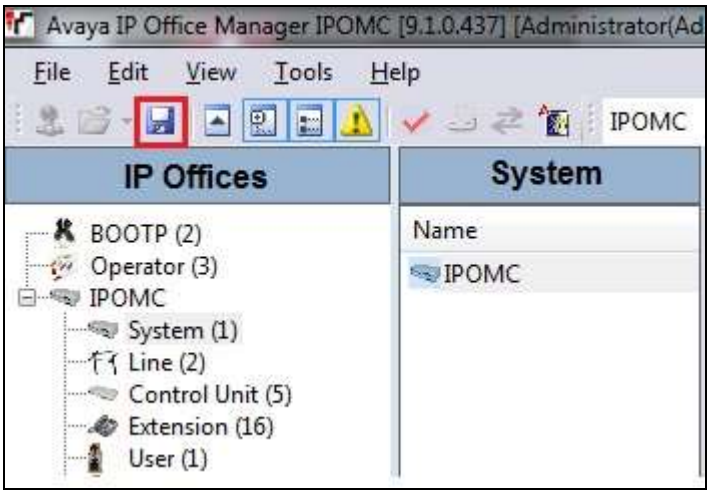
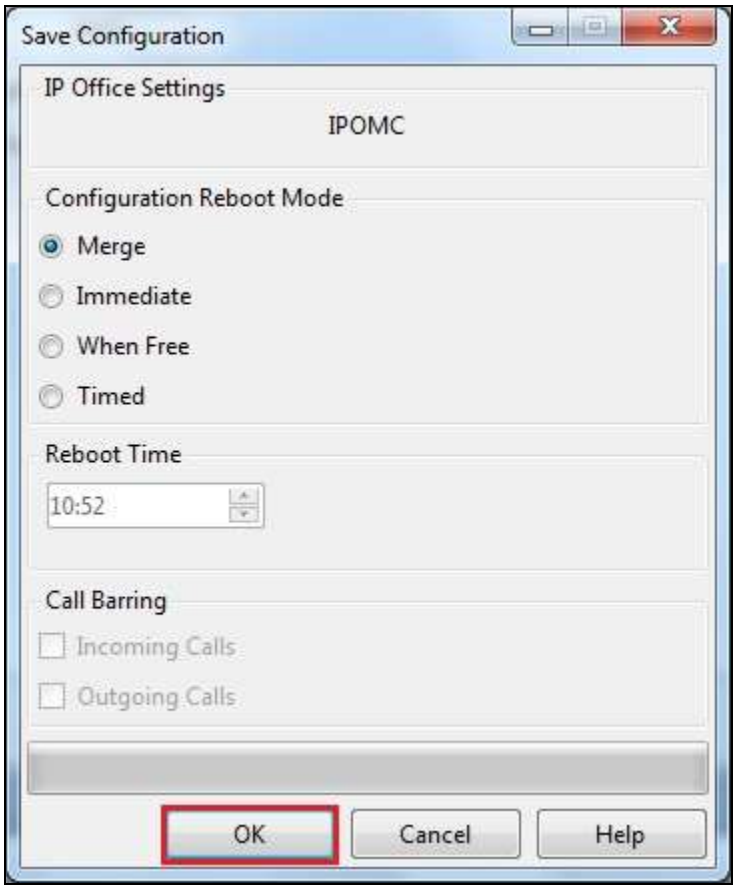
5.3. Save Configuration

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



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



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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**.

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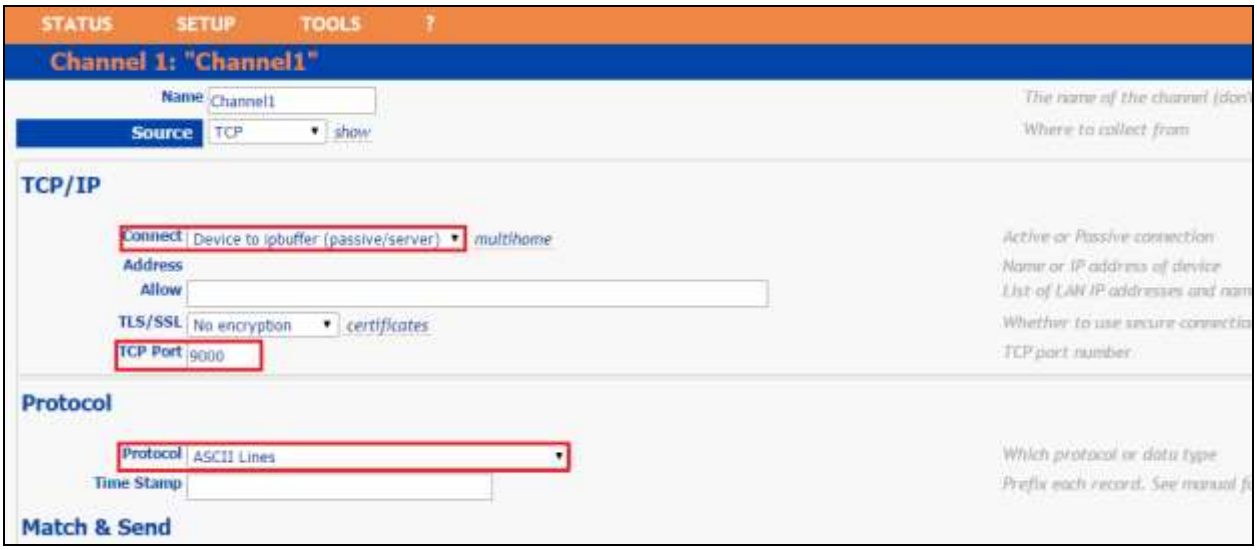
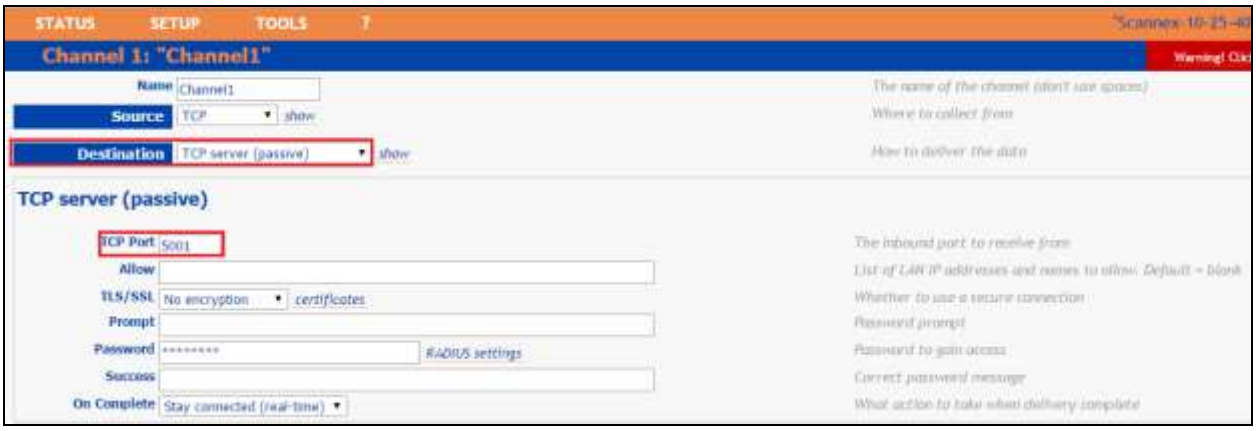
Once the next page opens, enter the following:

- **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.



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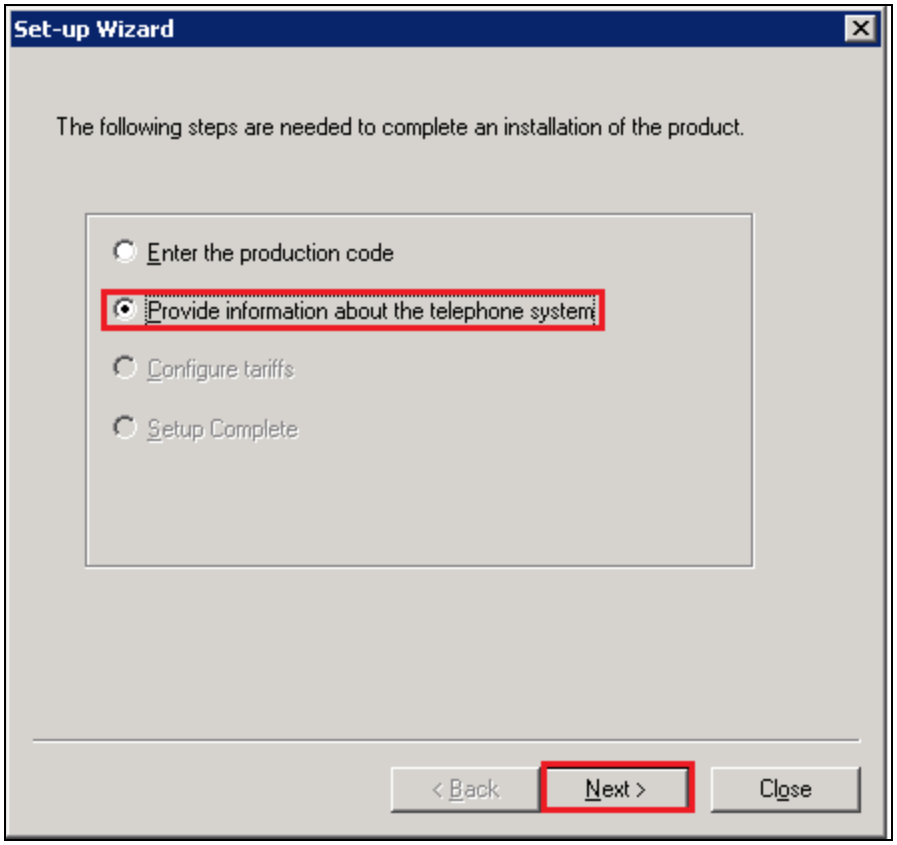
7. Configuration of Soft-ex Optimiser/RingMaster

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 a wizard is opened which automatically prompts for some configuration details to complete the installation. This includes 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.



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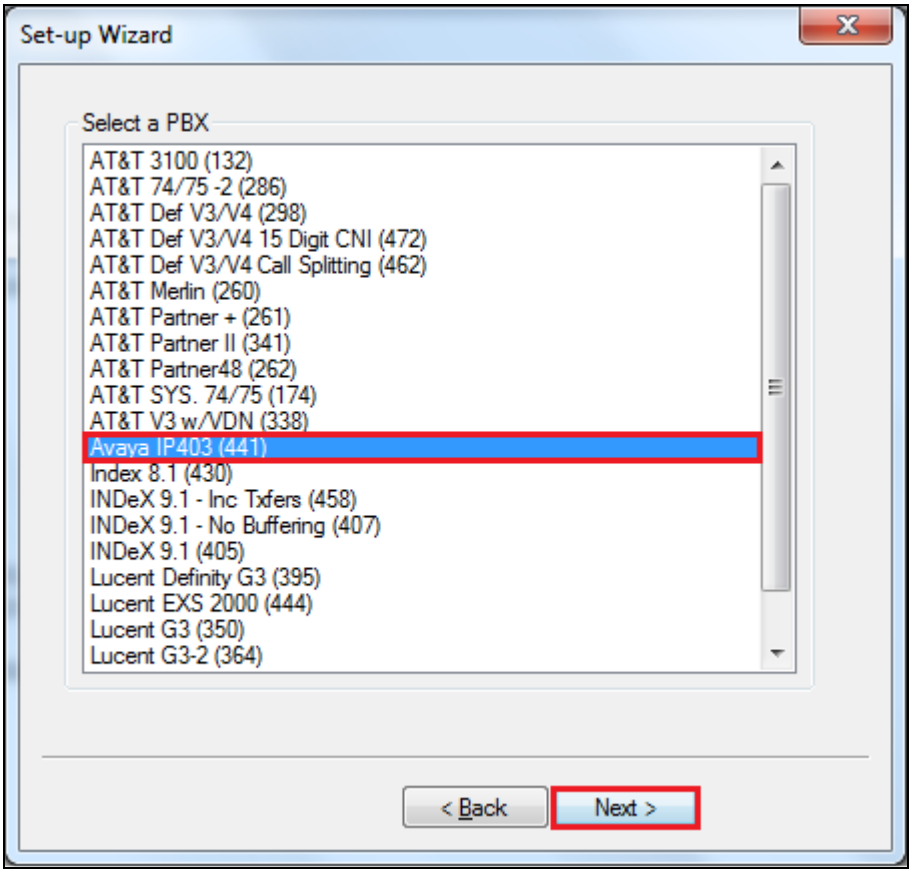
Select the PBX that is being connected to from the **PBX Group** as shown below. For a connection to IP Office choose **Avaya IP403 (411)** from the list. Click the **Next** button followed by the **Finish** button (not shown).



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7.1. Configuration of Soft-ex Optimiser/RingMaster connection to Avaya IP Office 500v2

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 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.

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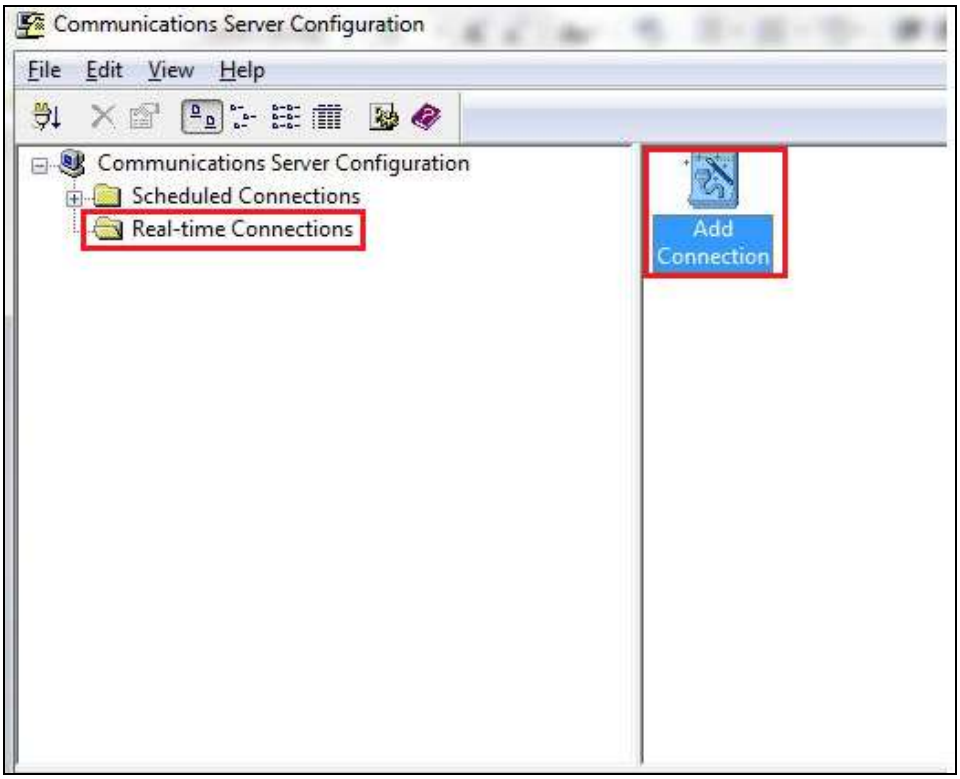
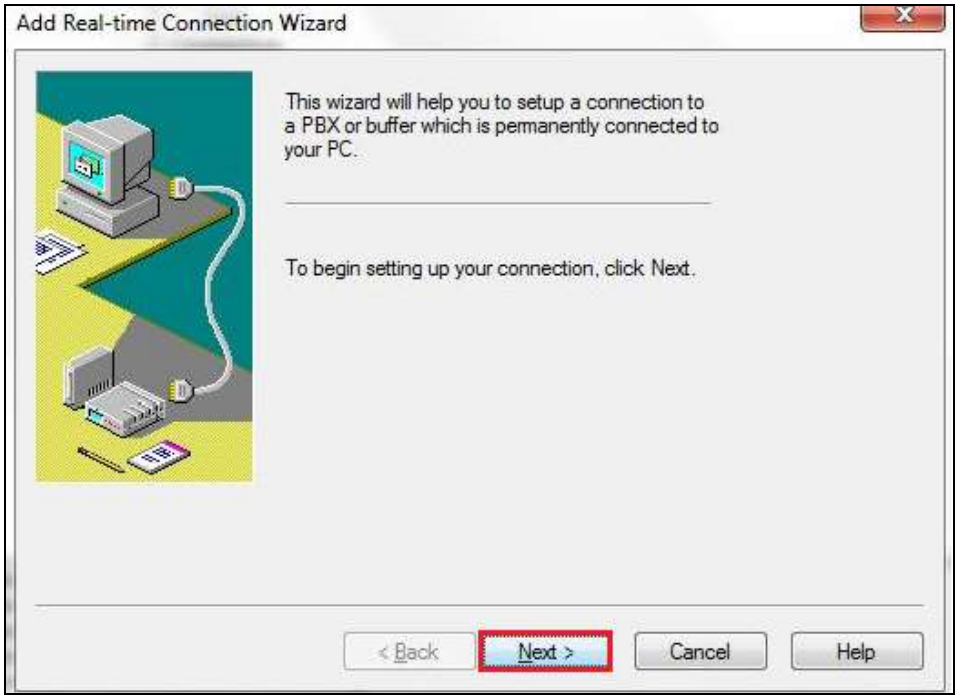
Select the **Real-time Connections** folder in the left hand pane and double click on **Add Connection** as highlighted below.



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



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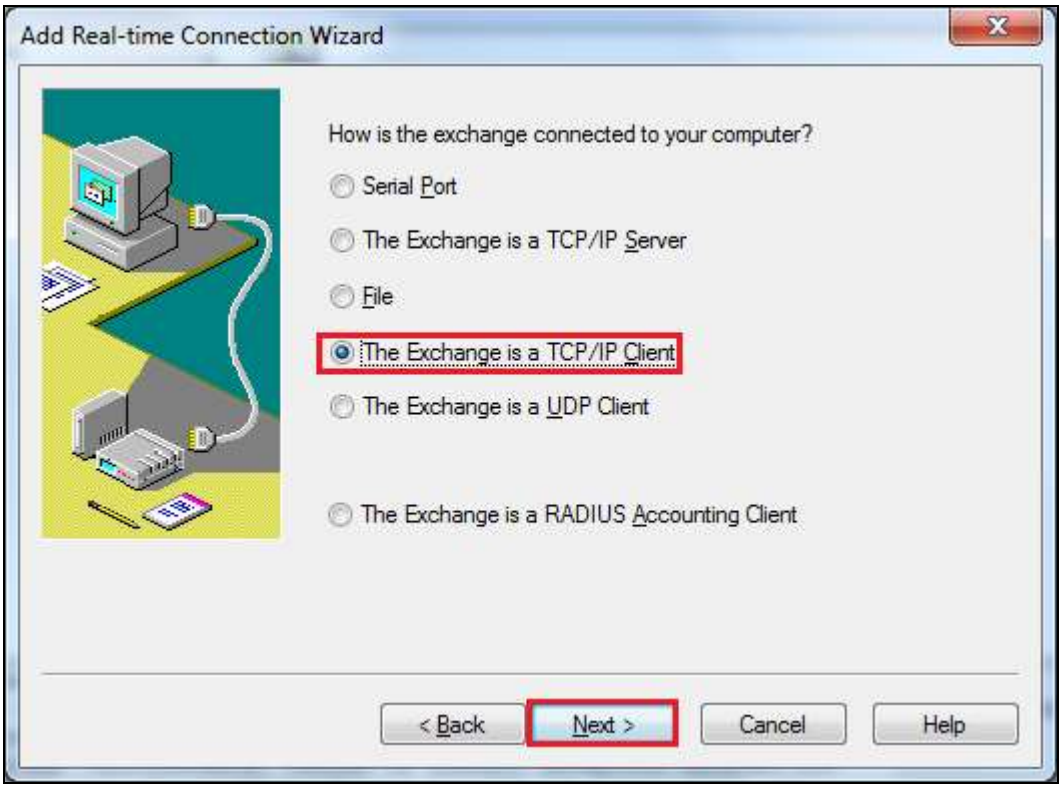
On the subsequent screen select **The Exchange is a TCP/IP Client** radio button, followed by the **Next** button.



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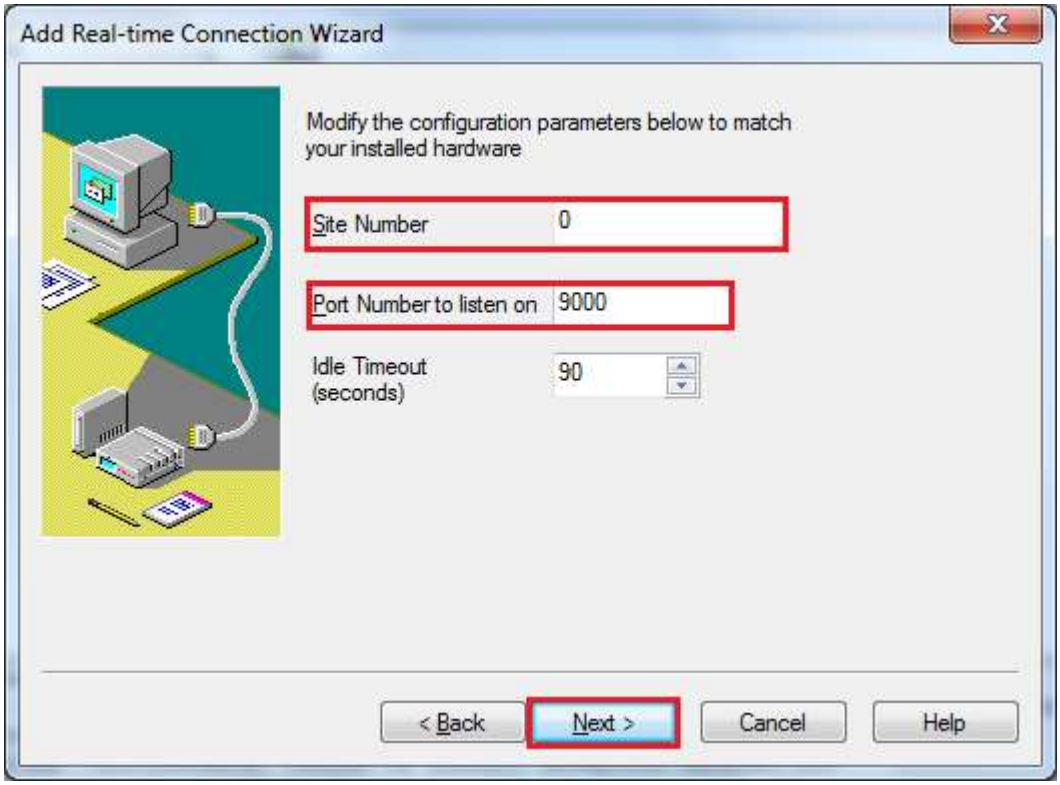
On the subsequent screen enter the following:

- **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.



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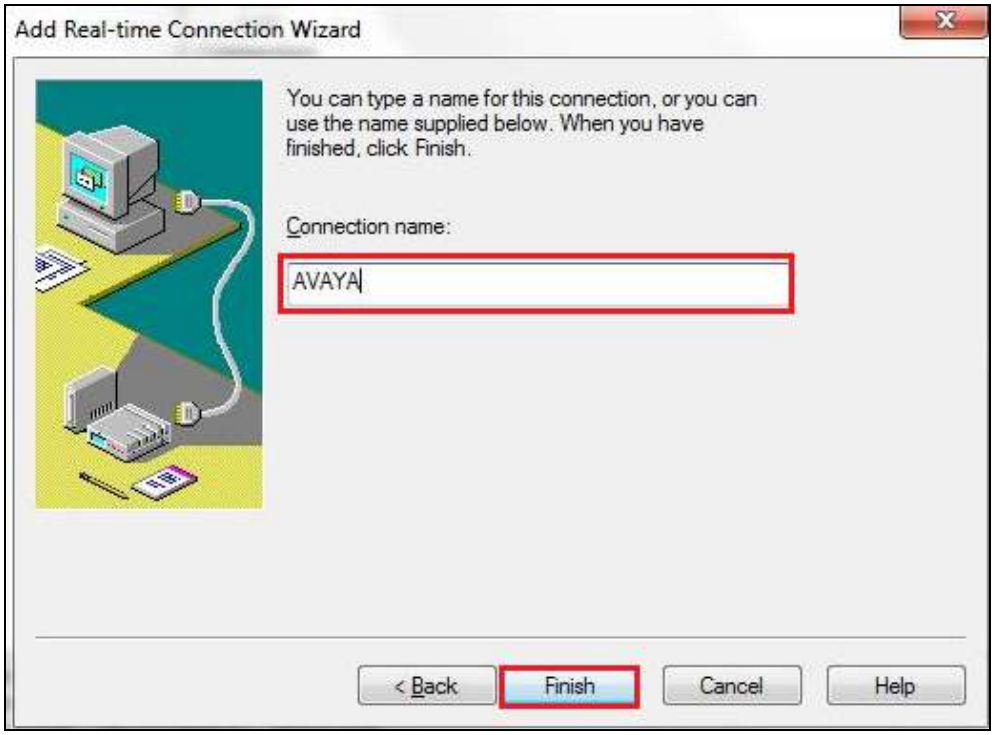
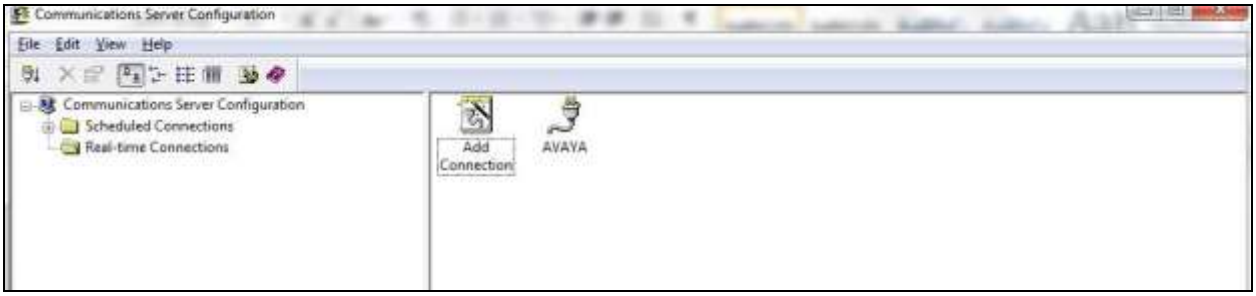
On the subsequent screen choose a **Connection name** for the new connection and click on the **Finish** button.



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



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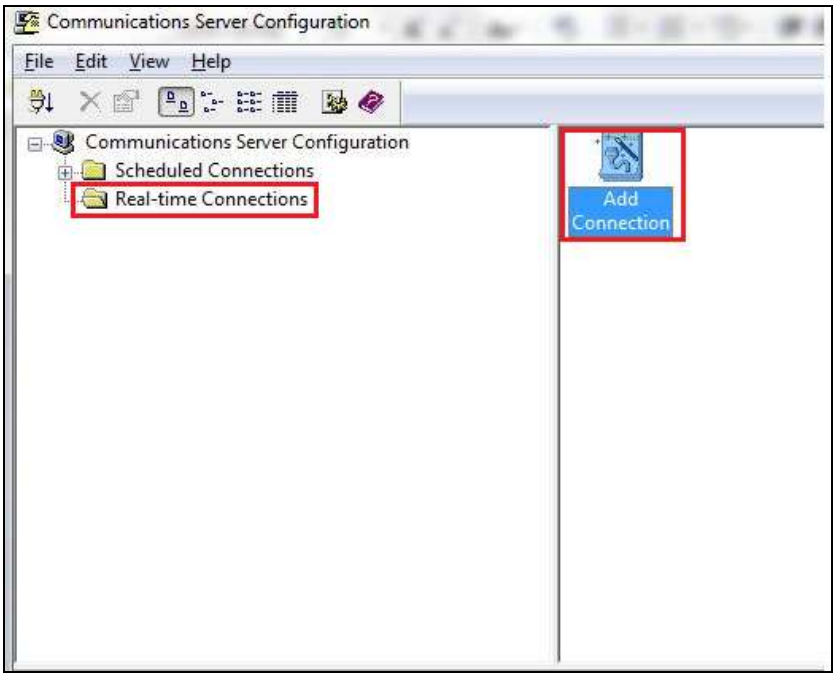
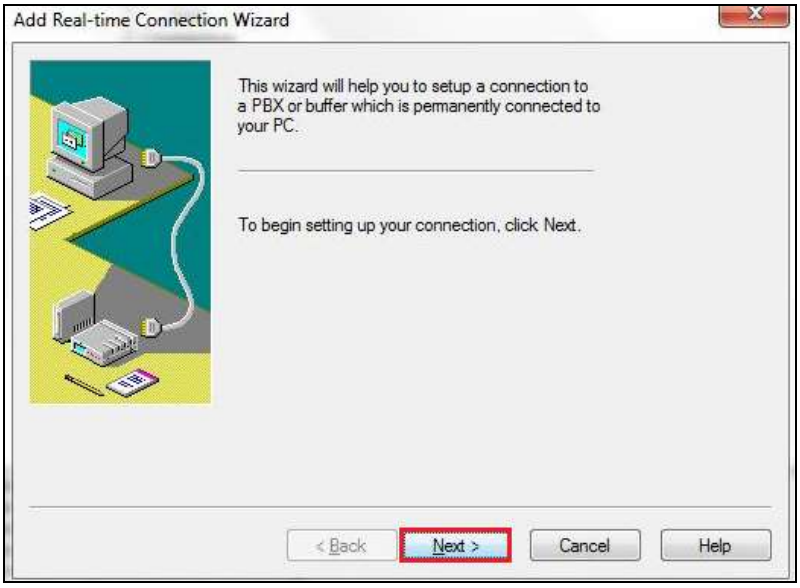
7.2. Configuration of Soft-ex Optimiser/RingMaster connection to the IP Buffer

Open the Communications Server Configuration as shown 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.



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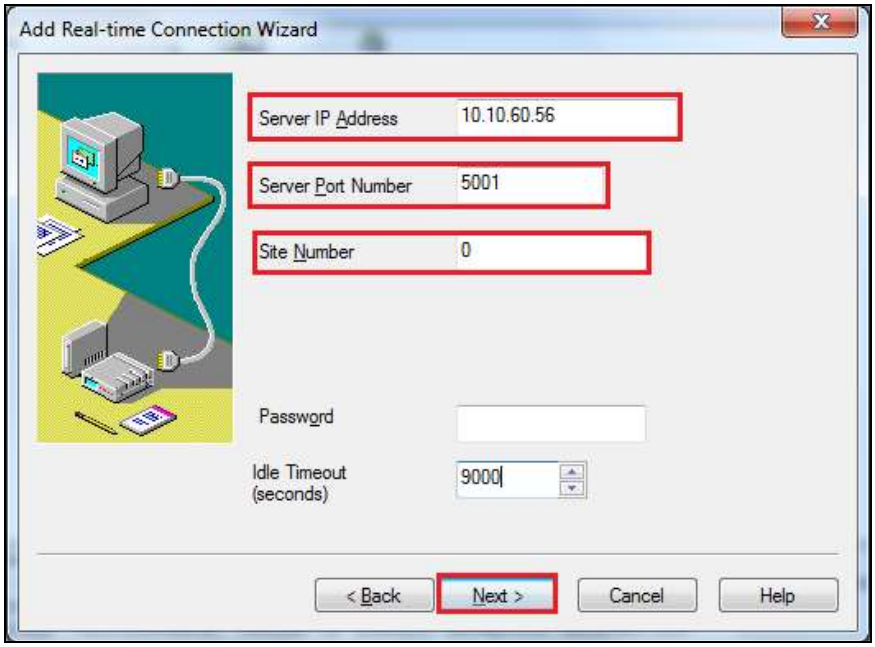
On the subsequent screen select **The Exchange is a TCP/IP Server** radio button, followed by the **Next** button.

On the subsequent screen enter the following:

- **Server IP Address** Enter the IP address of the IP Buffer.
- **Port Number** Enter the port number to listen on (this is the Destination TCT 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.



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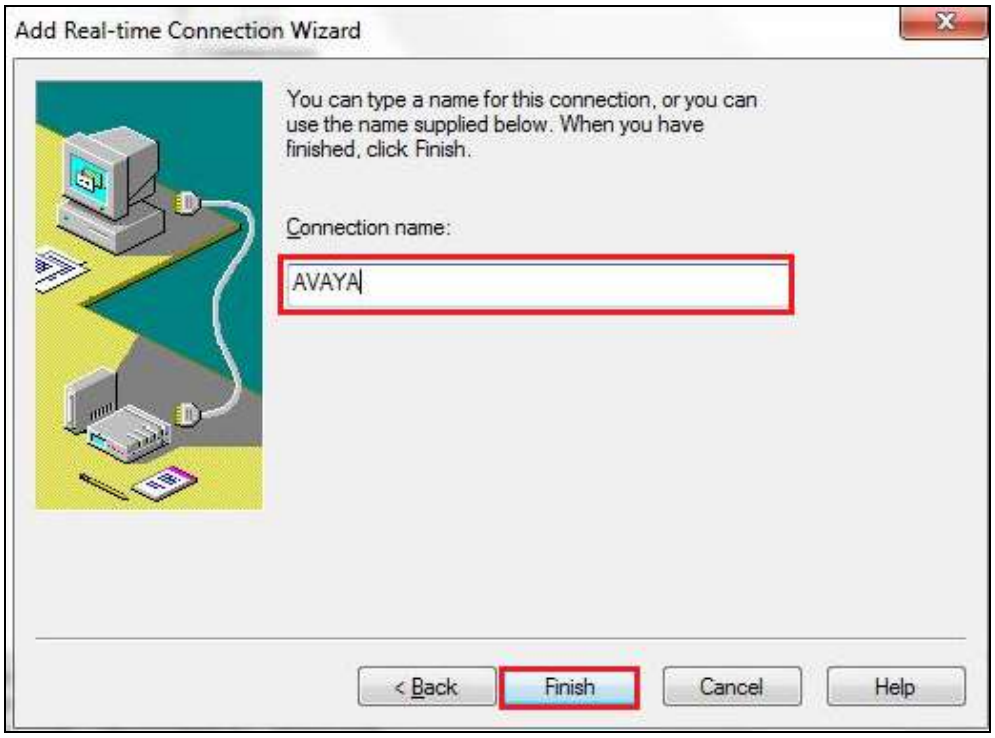
On the subsequent screen choose a **Connection name** for the new connection and click on the **Finish** button.



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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.

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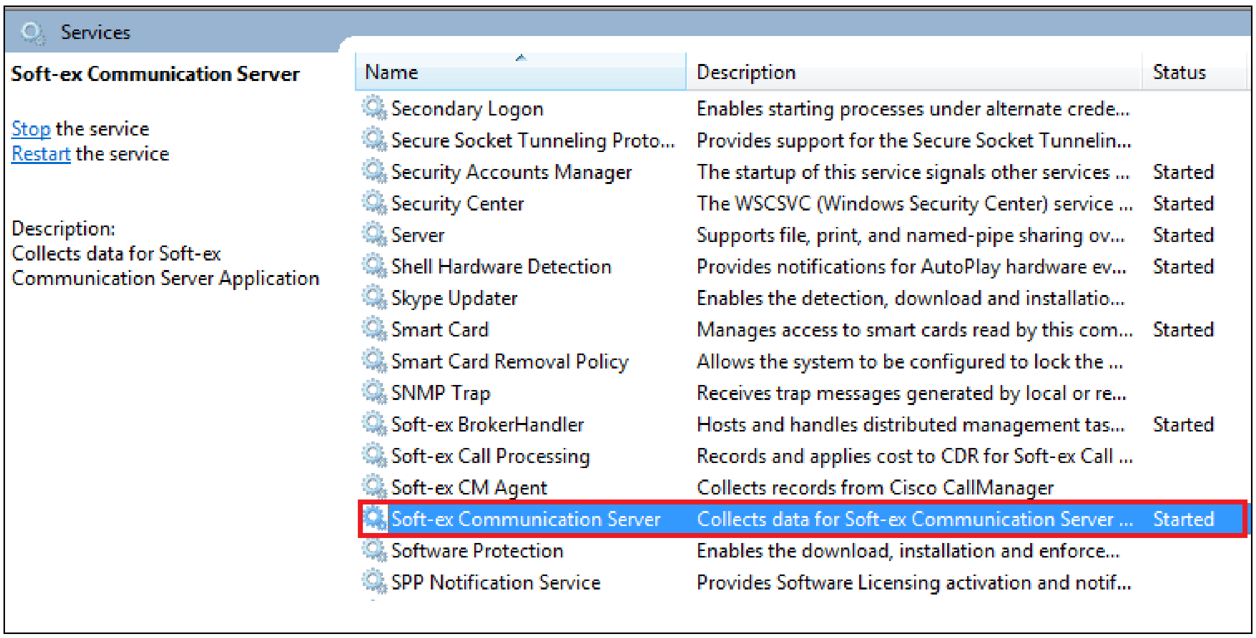
8.2. Verify CDR data is being sent from Avaya IP Office

Setup a port listening tool on a PC and set it to listen on port 9000 (as per **Section 5.2**). 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.

```
2015/01/27 12:13:39,00:00:08,3,3005,O,81026#,81026#,,0,1000022,0,E3005,Extn3005,T9009,Line 9.15,0,0,,,,,,,,,,,U,Extn3005,,10.10.60.30,1062,10.10.60.30,1064
2015/01/27 12:14:31,00:00:06,2,3005,O,3002,3002,,1,1000023,0,E3005,Extn3005,E3002,Ext3002 H323,0,0,,,,,,,,,,,,,10.10.60.30,1065,10.10.60.30,1069
2015/01/27 12:31:42,00:00:04,4,1026,I,3002,3002,,0,1000025,0,E3002,Ext3002 H323,T9009,Line 9.10,0,0,,,,,,,,,,,,,10.10.60.30,14,10.10.60.30,1072
2015/01/27 12:32:07,00:00:04,4,1016,I,3002,3002,,0,1000026,0,E3002,Ext3002 H323,T9009,Line 9.11,0,0,,,,,,,,,,,,,10.10.60.30,15,10.10.60.30,1075
2015/01/27 12:32:32,00:00:04,4,3005,O,3002,3002,,1,1000027,0,E3005,Extn3005,E3002,Ext3002 H323,0,0,,,,,,,,,,,,,10.10.60.30,1076,10.10.60.30,1078
2015/01/27 12:32:51,00:00:00,0,3002,O,1016,1016,,0,1000028,0,E3002,Ext3002 H323,T9018,Line 18.1,0,0,,,,,,,,,,,U,Ext3002 H323,,10.10.60.30,1079,10.10.60.30,1081
2015/01/27 12:32:57,00:00:00,0,3005,O,1016,1016,,0,1000029,0,E3005,Extn3005,T9018,Line 18.1,0,0,,,,,,,,,,,U,Extn3005,,10.10.60.30,1082,10.10.60.30,1084
2015/01/27 13:21:21,00:00:08,3,1016,I,3005,3005,,0,1000030,0,E3005,Extn3005,T9009,Line 9.12,0,0,,,,,,,,,,,,,10.10.60.30,16,10.10.60.30,1087
2015/01/27 13:25:52,00:00:07,3,3005,O,3002,3002,,1,1000031,0,E3005,Extn3005,E3002,Ext3002 H323,0,0,,,,,,,,,,,,,10.10.60.30,1088,10.10.60.30,1090
2015/01/27 13:26:53,00:00:05,3,3005,O,81015#,81015#,,0,1000033,0,E3005,Extn3005,T9009,Line 9.15,0,0,,,,,,,,,,,U,Extn3005,,10.10.60.30,1093,10.10.60.30,1095
2015/01/27 13:28:01,00:00:04,4,1016,I,3005,3005,,0,1000034,0,E3005,Extn3005,T9009,Line 9.13,0,0,,,,,,,,,,,,,10.10.60.30,18,10.10.60.30,1098
```

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.



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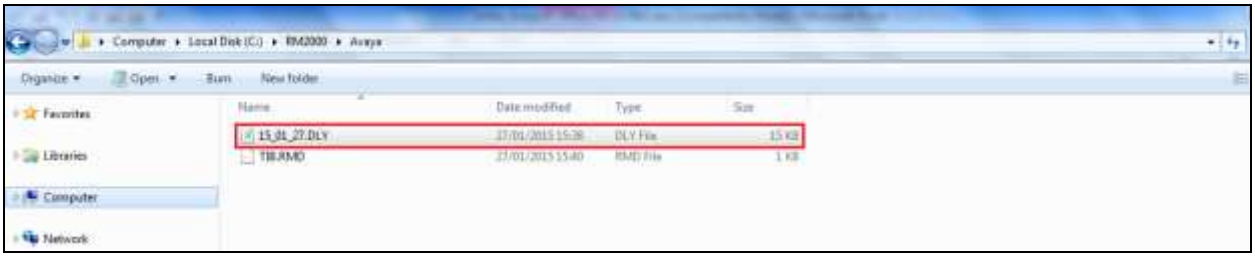
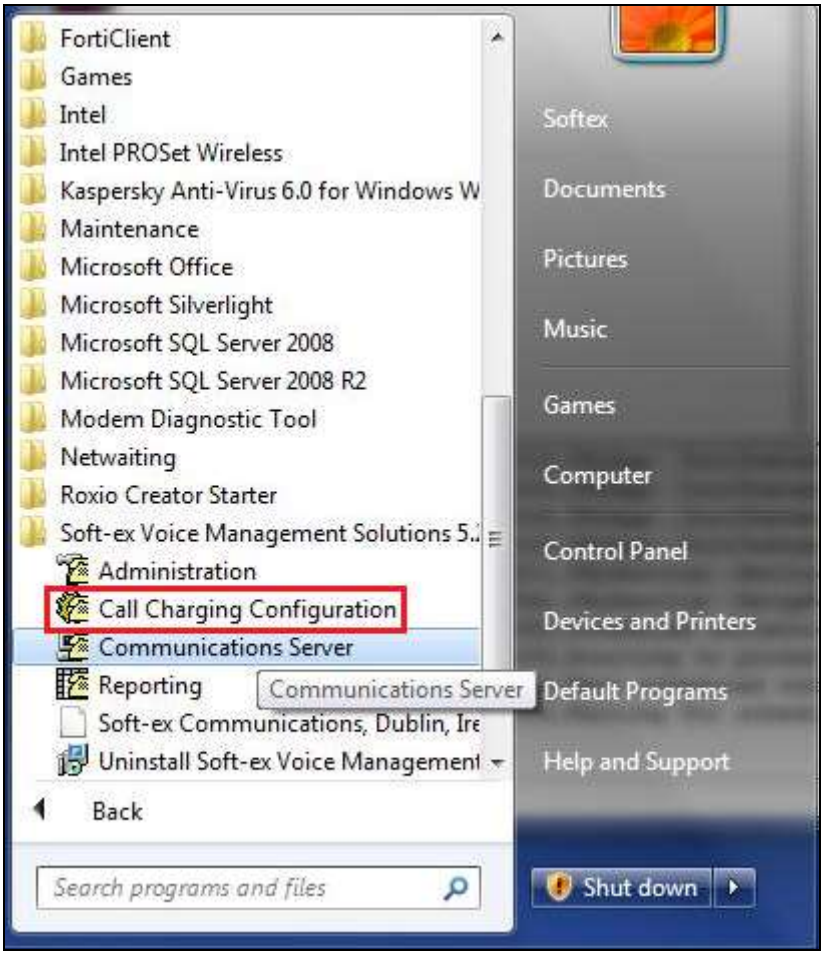
Check to see that a CDR file is created in the location **C\:RM2000\<Sitename>** as shown below.



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

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



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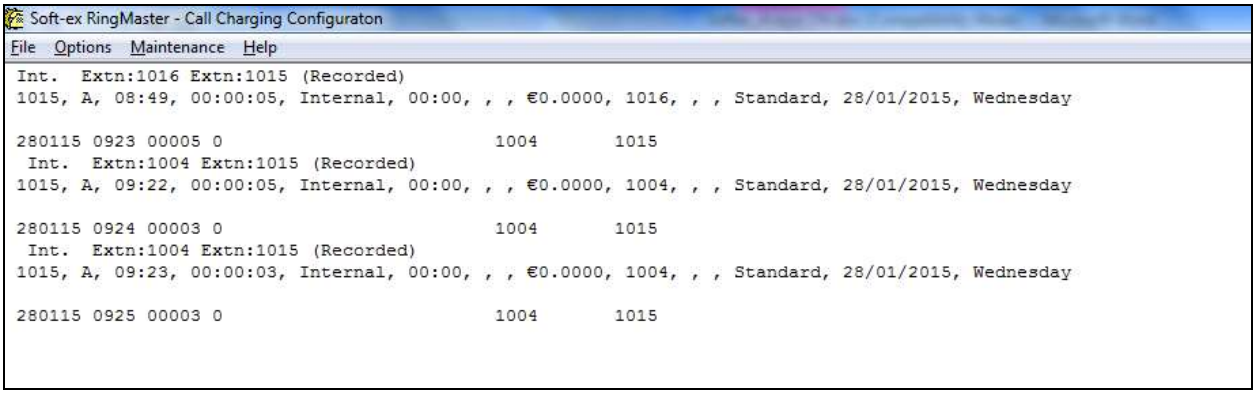
An example is shown below.



9. Conclusion

A full and comprehensive set of feature functional test cases were performed during compliance testing. Soft-ex Optimiser/Ringmaster 5.5 is considered compliant with Avaya IP Office 500 v2 9.1.

10. 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.

[1] *Administering Avaya IP Office™ Platform with Manager Release 9.1 10.01 December 2014*

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.

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