



Avaya Solution & Interoperability Test Lab

Application Notes for configuring reportX from Oak Telecom with Avaya IP Office R8 - Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning Oak Telecom's reportX Call Detail Recording Solution to successfully interoperate with Avaya IP Office R8. The Oak Telecom solution consists of a Call Detail Recording server based on the logging of outgoing, incoming, internal and missed calls data reported by the PBX, to manage captured data and generate reports.

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

These Application Notes describe the configuration steps required for reportX from Oak Telecom to successfully collect call detail recording records from Avaya IP Office over TCP/IP. reportX Call Logging (reportX) is a call management and reporting software package designed to report on the phone activity of a business. reportX collects, stores and processes these Call Detail Recording (CDR) records to provide usage analysis, call costing and billing capabilities. Avaya IP Office R8 (IP Office) can generate call detail records for intra-switch calls, inbound trunk calls and outbound trunk calls. In addition, split records can be generated for transferred and conference calls. reportX can support any CDR format provided by IP Office. reportX creates a custom PBX configuration file to accurately parse the CDR data.

2. General Test Approach and Test Results

The general test approach was to manually place intra-switch calls, inbound trunk, outbound trunk calls, conference calls, transferred calls, and forwarded calls to and from telephones controlled by IP Office and verifies that reportX collects the CDR records and properly classifies and reports the attributes of the call. For serviceability testing, logical links such as Ethernet connections to the LAN were disabled/re-enabled.

2.1. Compliance Test Cases

The principle objective of Interoperability Compliance testing is to provide assurance to the potential customers that reportX operate as specified and can interoperate in an environment similar to the one that will be deployed at a customer's premises. Performance and load testing is outside the scope of the compliance testing. The compliance testing is concerned with verifying that the addition of reportX does not interfere with the operation of IP Office in any way.

2.1.1. Avaya feature Interaction Verification

This consists of the verification of the response of the reportX to IP Office for the following call types:

- **Inbound calls** – Verify CDR records for inbound calls to IP Office from PSTN callers.
- **Outbound calls** – Verify CDR records for outbound calls from IP Office to PSTN callers.
- **Hold/Transferred calls** – Verify CDR records for calls transferred to PSTN callers.
- **Conference calls** - Verify CDR records for calls in conference between IP Office users and PSTN callers.
- **Forwarded calls** – Verify CDR records for calls made to deskphones that are forwarded to the PSTN.
- **Failover of ReportX** – The behaviour of reportX under different failure conditions will also be observed.

2.2. Test Results

All tests passed successfully. No errors were observed on IP Office.

Note: Compliance testing consisted of calls being made to and from Avaya IP Office R8 using digital and H.323 deskphones.

Note: Information on internally transferred and conference calls were reported as internal calls.

2.3. Support

Support from Avaya is available at <http://support.avaya.com>. Technical support for reportX can be obtained as shown below.

Oak Telecom
Unit 7 Albany Park,
Cabot Lane, Poole,
Dorset BH17 &BX
United Kingdom
Tel: +441202607000
Email: support@oak.co.uk
Web Support: <http://help.oak.co.uk>

3. Reference Configuration

Figure 1 shows the network topology during compliance testing. Oak Telecom's reportX Server collects CDR records from Avaya IP Office and presents the information obtained to users on the LAN via Client/Server session.

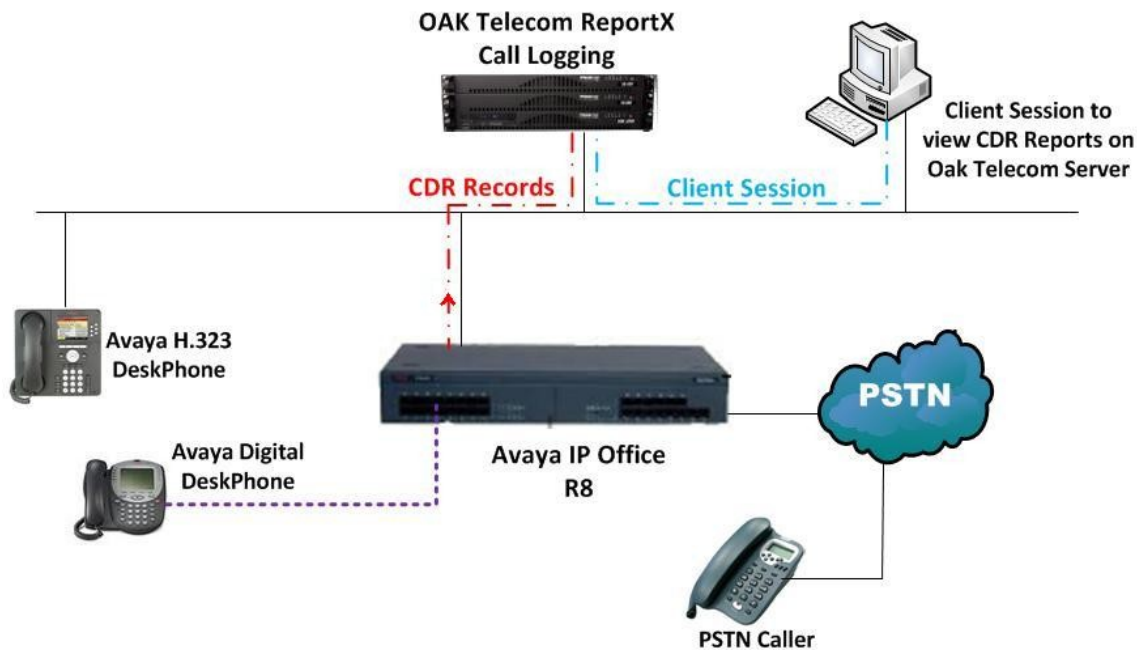


Figure 1: Connection of Oak Telecom reportX Call Logging and Avaya IP Office R8.

4. Equipment and Software Validated

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

Equipment Description	Software Release
Avaya IP Office 500	Avaya IP Office R8
Avaya 96xx Series H.323 Telephones	96xx H.323 Release 3.1 SP2
Avaya 24xx Series Digital Telephones	N/A
Oak Telecom reportX Call Logging	reportX Call Logging Release 9.0.8.0

5. Configuration of Avaya IP Office

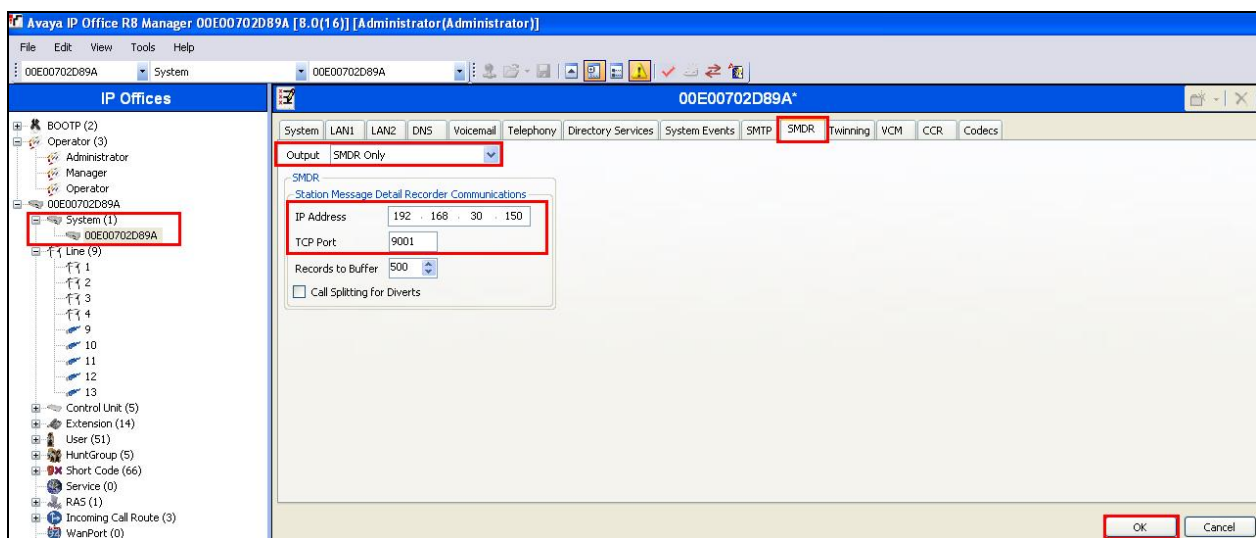
IP Office is administered using IP Office Manager R10.0.16 installed on a client PC. This section shows changes to the IP Office configuration required for reportX software to interoperate correctly.

Note: The configuration of IP Office for call routing is outside the scope of this document. It is assumed that a full working system is already installed. Included below are the changes necessary in order to ensure CDR records are being produced correctly by IP Office. For all other provisioning information, such as Administering Avaya IP Office, refer to product documentation in **Section 9** of these Application Notes.

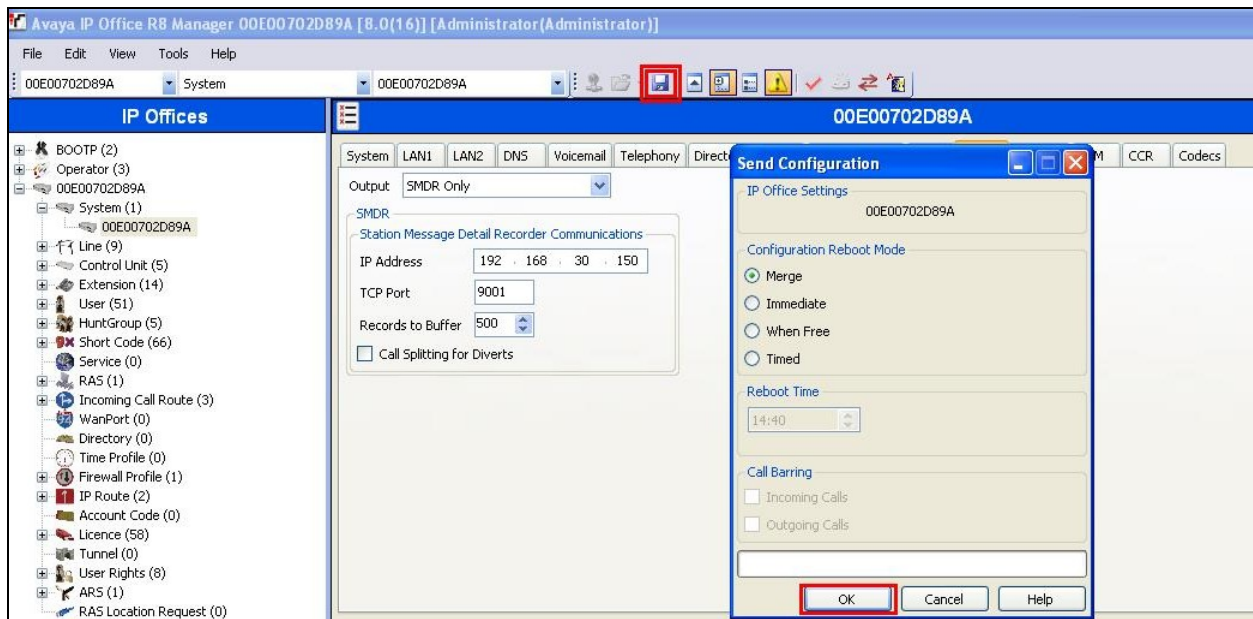
5.1. Configuration of SMDR on Avaya IP Office

Click on **System** on the left hand pane. Under the SMDR tab ensure that **Output** is set to **SMDR Only** and fill in the **IP Address** and **TCP Port** as shown below.

IP Address : IP Address of the OAK Telecom reportX server
TCP Port : Unused port number to be used by both the IP office and reportX server



Once this information is correctly inputted, the information is saved by clicking on the Save icon at the top of the screen which opens the **Send Configuration** window. Click **OK** as highlighted to complete the saving.

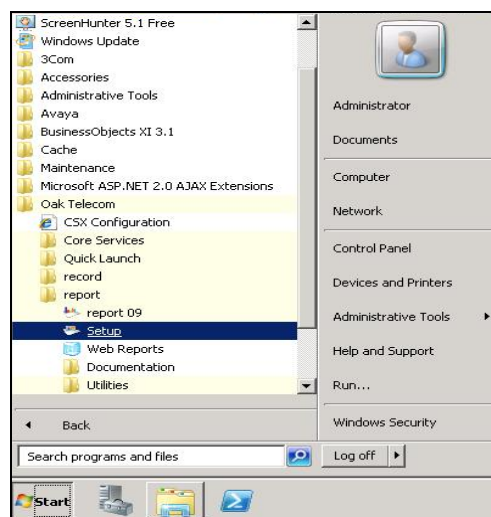


6. Configuration of Oak Telecom's reportX Server

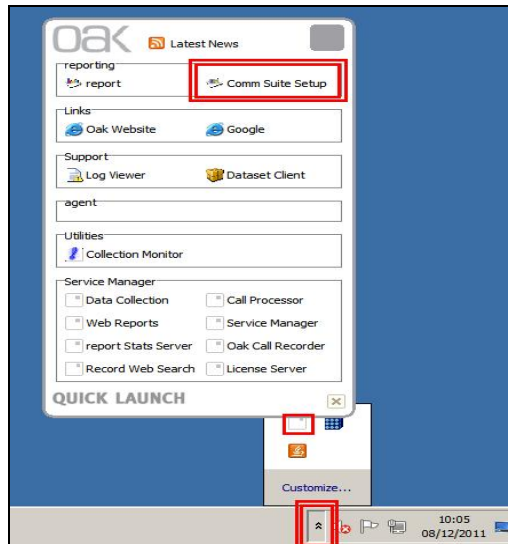
The configuration information provided in this section describes the steps required to set up reportX to collect CDR records generated over a TCP/IP link to IP Office. For all other provisioning information, such as reportX software installation, refer to Oak Telecom reportX product documentation in **Section 9** of these Application Notes.

6.1. Configuration of Oak Telecom's reportX software to correctly interoperate with Avaya IP Office

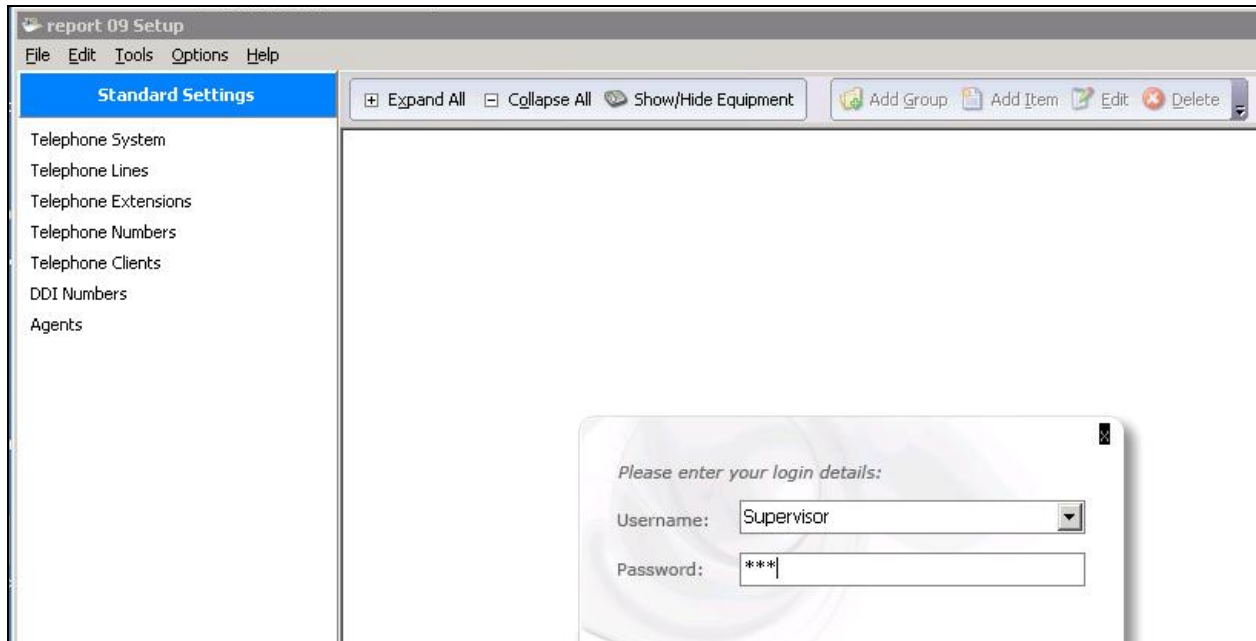
On the reportX PC navigate to **Start - Programs - Oak Telecom – report – Setup** as shown below.



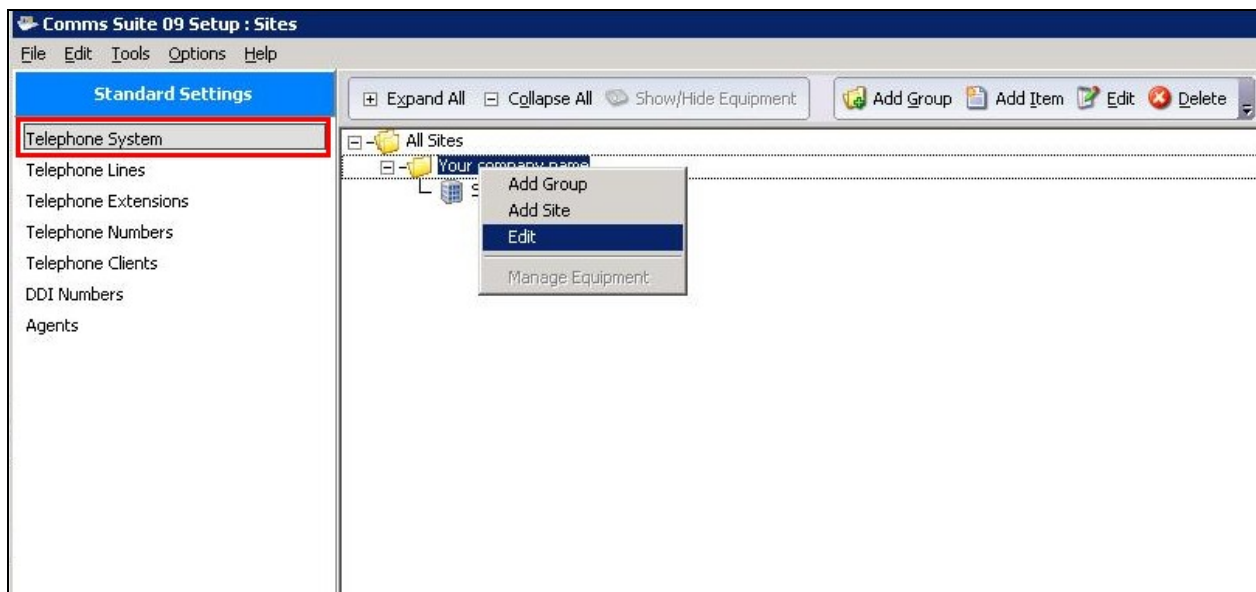
Alternatively this Setup can be launched from the Quick Launcher as shown below. Click on the blank icon in the **QUICK LAUNCH** and select **Comms Suite Setup**.



Select **Supervisor** for the **Username** and enter the appropriate **Password**. Click **OK**.



From the **Standard Settings** section in the left pane, select **Telephone System** to bring up the sites configured. All default installations will be provided with a default site for configuration. Right-Click on the default site and **Edit** this site as shown below.



Under **Call Management** tab, select the **Telephone System** tab and configure the site details as shown below.

- **Site No** : Will be set to **1** if this is the first site to be configured
- **Short Name** : Any value that describes the site being configured
- **Name** : The full name of the site being configured
- **Area Code** : Whatever the local area code is specific to the site

The screenshot displays the Avaya Site Details configuration interface. On the left, the 'Standard Settings' sidebar lists various configuration options, with 'Telephone System' highlighted. The main window features a 'Call Management' tab, which is also highlighted, and a 'Telephone System' sub-tab. The configuration fields are as follows:

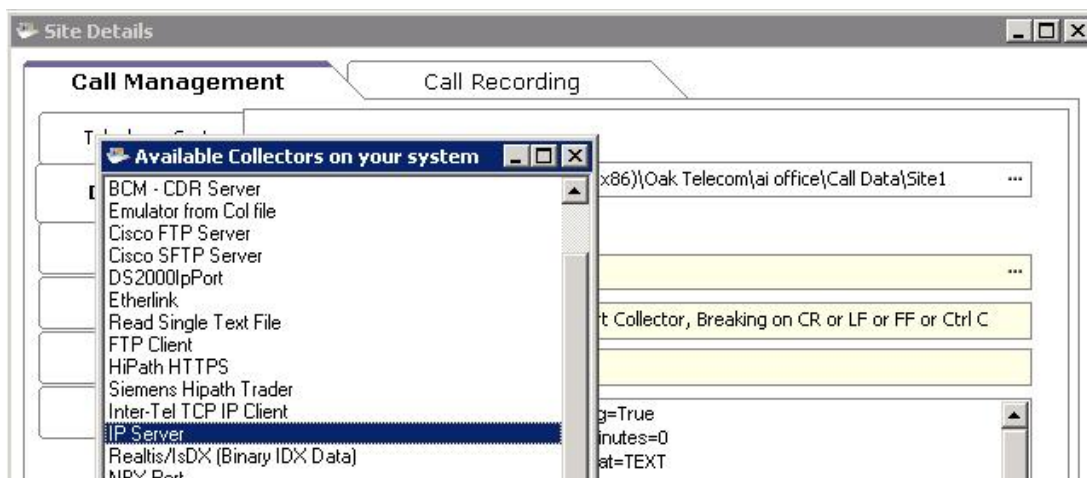
Field	Value
Site No	1
Short Name	IPO
Name	Main Site IP Office
Area Code	0
National	<input checked="" type="radio"/>

Under the **Data Collection** Tab change the **Collection Type** by clicking on the highlighted button below.

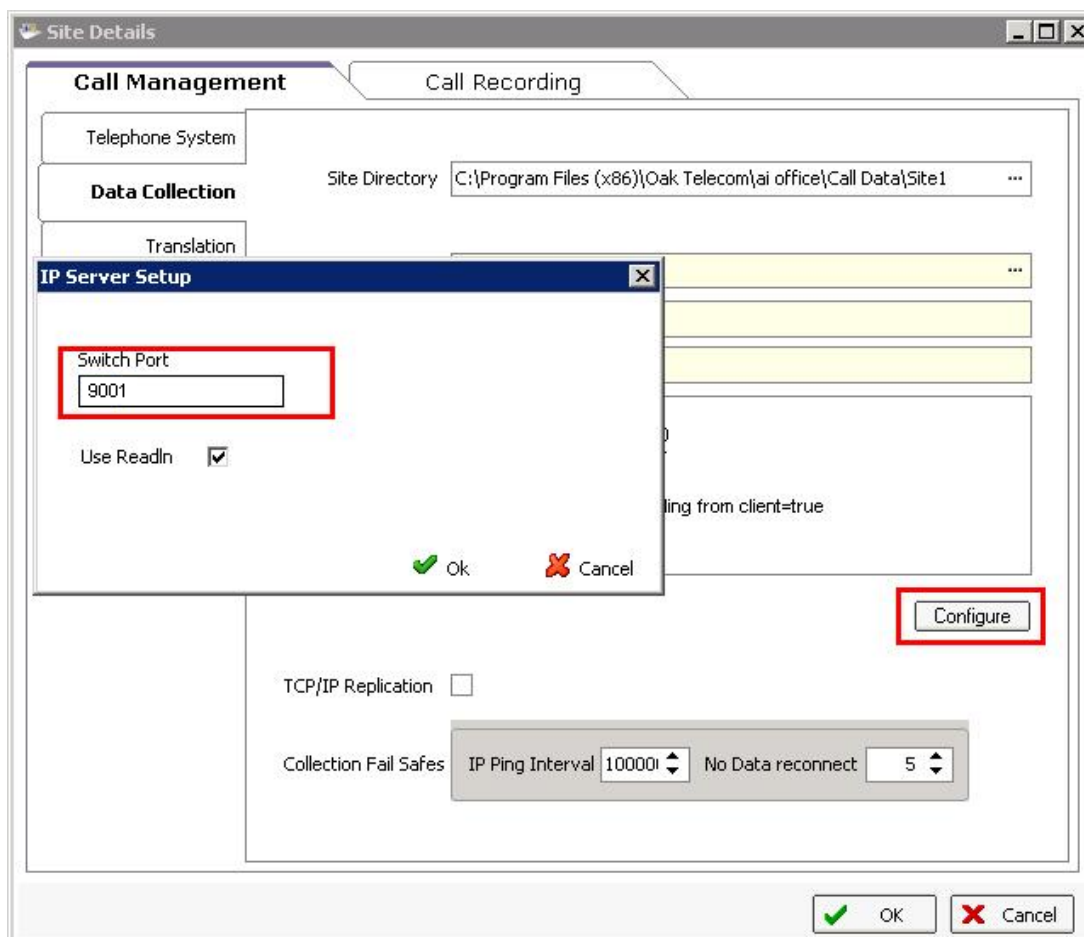
The screenshot shows the 'Site Details' dialog box with the 'Call Management' tab selected. The 'Data Collection' section is highlighted in the left sidebar. The main area shows the 'Collection Type' set to 'TIPServerPort', which is highlighted in yellow. A red box highlights the ellipsis button next to the 'Collection Type' field. Below this, the 'Description' is 'IP Server Port Collector' and the 'BPL Version' is '4.26.0.0'. The 'Settings' section lists: Enhanced Logging=False, Ticker Period in Minutes=0, Data Packet Format=TEXT, Switch Port=9001, and Use ReadIn Function reading from client=true. There is a 'Configure' button. At the bottom, there is a 'TCP/IP Replication' checkbox and a 'Collection Fail Safes' section with 'IP Ping Interval' set to 10000 and 'No Data reconnect' set to 5. The 'OK' and 'Cancel' buttons are at the bottom right.

Section	Field	Value
Data Collection	Site Directory	\\AACC6COR\aiOffice\Call Data\Site1\
	Collection Type	TIPServerPort
	Description	IP Server Port Collector
	BPL Version	4.26.0.0
	Settings	Enhanced Logging=False Ticker Period in Minutes=0 Data Packet Format=TEXT Switch Port=9001 Use ReadIn Function reading from client=true
Collection Fail Safes	IP Ping Interval	10000
	No Data reconnect	5

Select **IP Server** as the **Collector** and double-click **IP Server** to select it.



Press **Configure** as shown below in order to change the port to listen for CDR records. Note that this port number will be the same as the port number configured in **Section 5.1**.



Under the **Translation** tab change the following in order to connect to IP Office.

- **Manufacturer** : Select **AVAYA** from the drop down menu
- **Device** : Select **IP OFFICE** from the drop down menu
- **Translator (VCE)** : Select **AVAYA IP OFFICE ENHANCED (VIRTUAL)**

The screenshot shows a web application window titled "Site Details". It has two tabs: "Call Management" and "Call Recording". Under "Call Management", there is a sidebar with buttons for "Telephone System", "Data Collection", "Translation" (highlighted with a red box), "Costing", "PBX Integration", and "Other". The main area shows configuration fields for the selected tab. A red box highlights the "Manufacturer" (set to "AVAYA"), "Device" (set to "IP OFFICE"), and "Translator (VCE)" (set to "AVAYA IPOFFICE ENHANCED (VIRTUAL)") dropdown menus. Below these is a text area for "Translator Authors comments" with the text "No Description provided". A "Refresh VCE Library" button is at the bottom right.

Manufacturer	AVAYA
Device	IP OFFICE
Translator (VCE)	AVAYA IPOFFICE ENHANCED (VIRTUAL)
Translator Authors comments	No Description provided

Refresh VCE Library

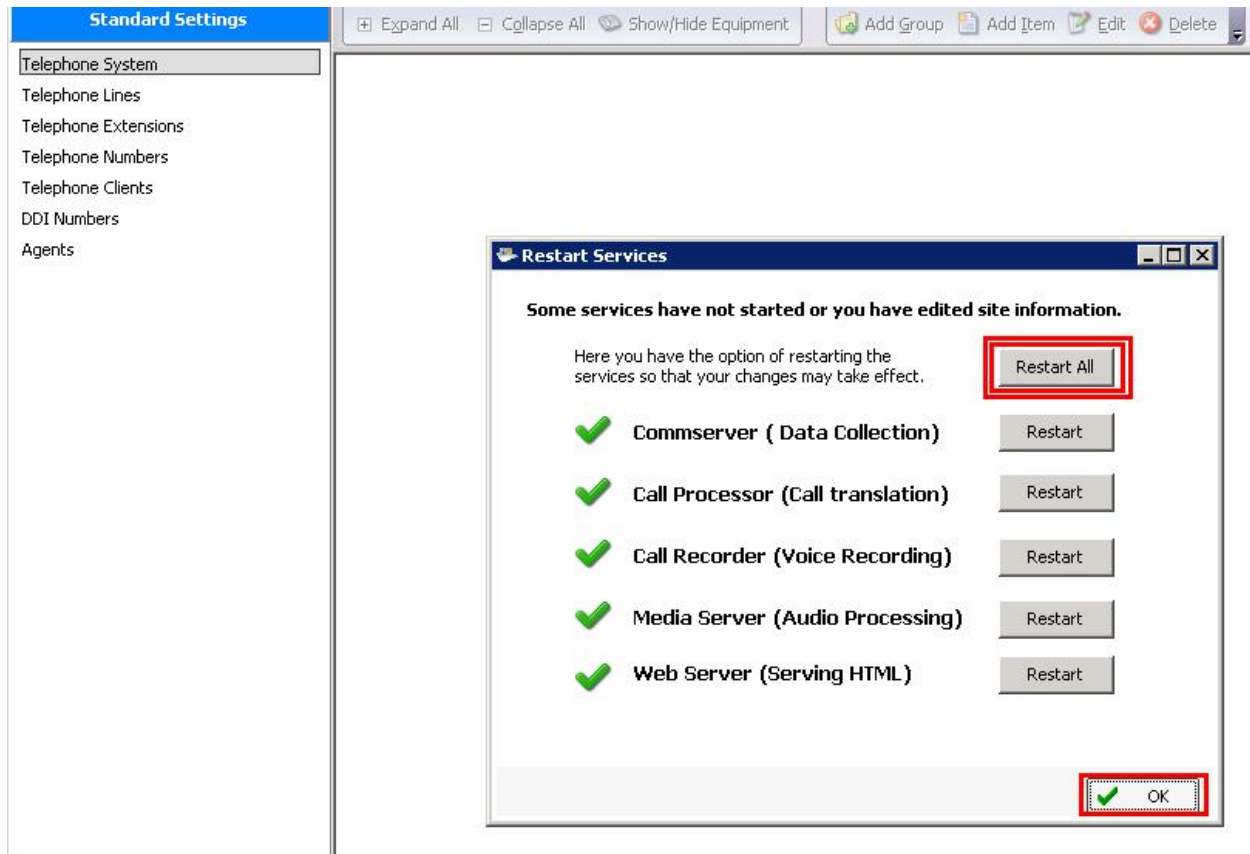
Once all the details above are filled in correctly, click **OK** at the bottom right of the screen as shown below. This will open a new window labeled **Confirm**, click **Yes** on this window.

The screenshot shows the 'Translation' section of the Avaya Aura Configuration Manager. The 'Manufacturer' is set to 'AVAYA', 'Device' is 'IP OFFICE', and 'Translator (VCE)' is 'AVAYA IPOFFICE ENHANCED (VIRTUAL)'. A 'Confirm' dialog box is open, asking 'Create Directory "\\AACC6COR\aiOffice\Call Data\Site1\" ?'. The 'Yes' button is highlighted with a red box. At the bottom right, the 'OK' button is also highlighted with a red box.

A system window opens prompting the user to save changes. Click **Yes** as highlighted below to save all changes made in this section.

The screenshot shows the 'Standard Settings' section of the Avaya Aura Configuration Manager. A 'Warning' dialog box is open, asking 'Save your changes ?'. The 'Yes' button is highlighted with a red box.

Once the changes are saved a window automatically opens prompting the restart of all reportX Services. Click on **Restart All** and then **OK** as highlighted below.

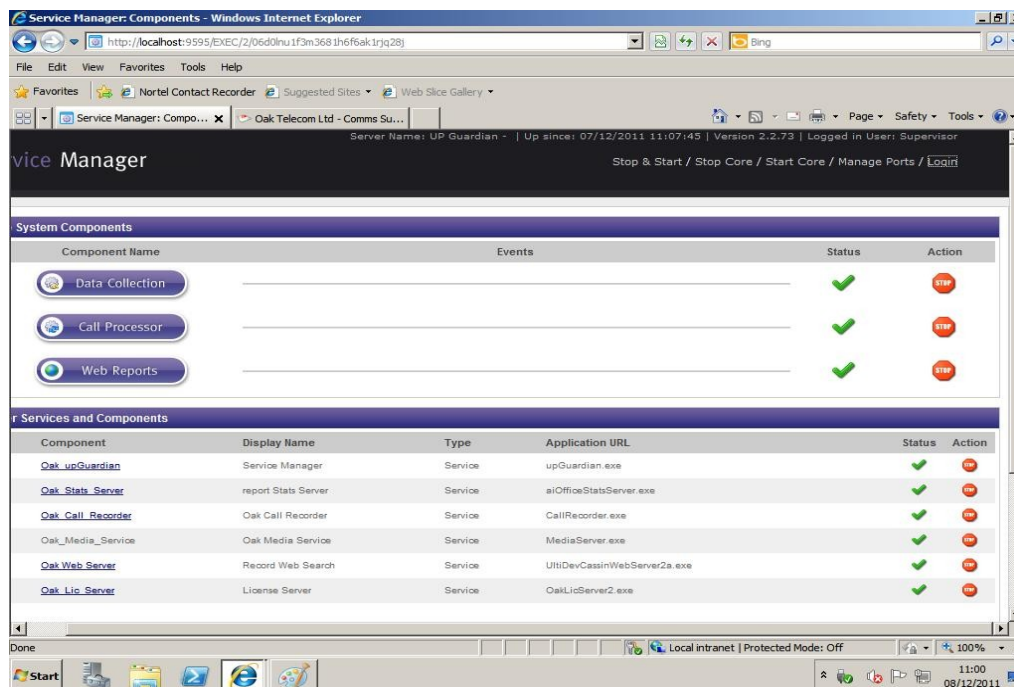


7. Verification Steps

The following steps can be taken to ensure that reportX server is receiving CDR data and processing it properly.

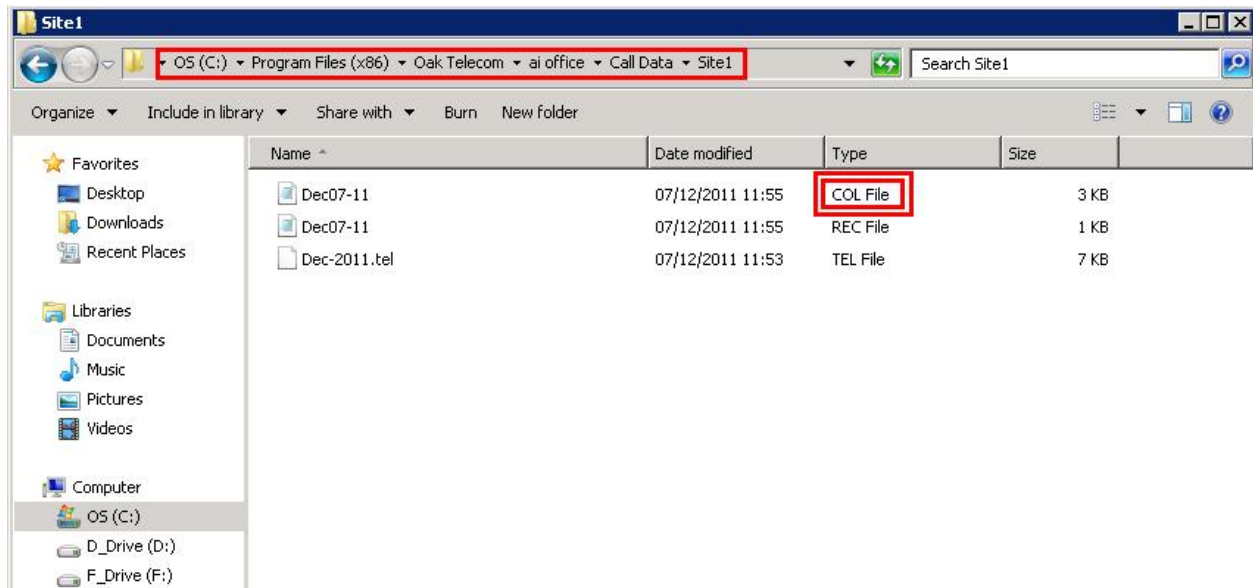
7.1. Verify Oak telecom reportX Services are running

Open a web session to <http://<servername>:9595>, where <servername> is the IP address or hostname of reportX server, in order to view the services as highlighted below.

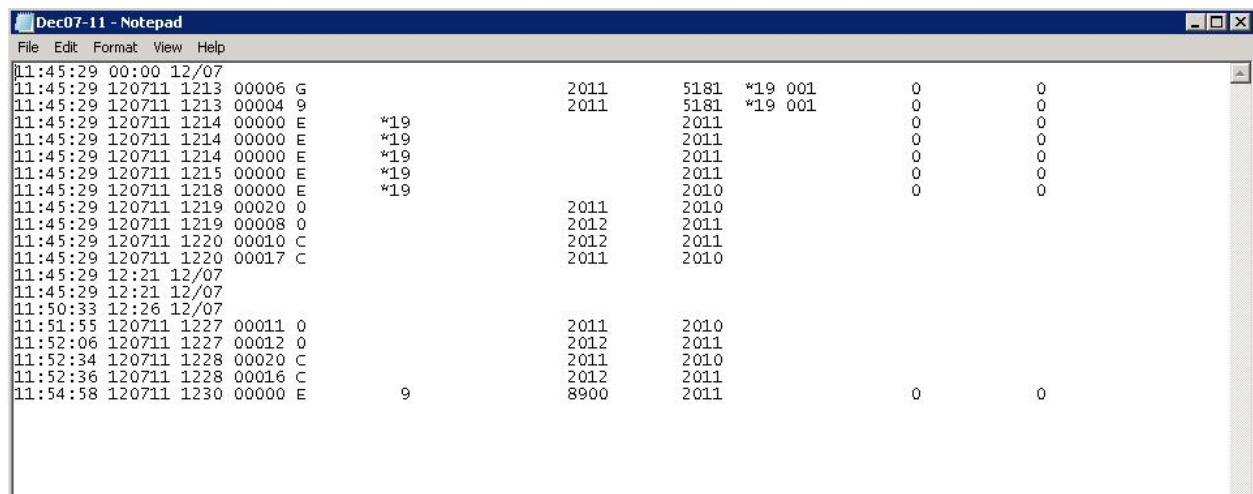


7.2. Verify that CDR data is being received by Oak Telecom's reportX Server

Log onto the reportX server and check that raw CDR data is being received into the Site1 Folder. Open the folder called Site1 located in **C:/Program Files(x86)/Oak Telecom/ aiOffice/Call Data**. This should contain a **COL File** as is highlighted below.

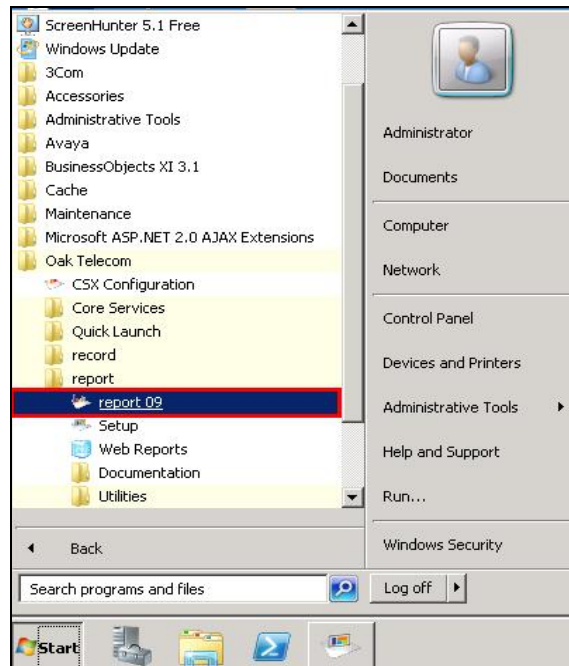


The COL File should contain information on recent calls as shown below. This will be in raw format and is not expected to be fully understandable.

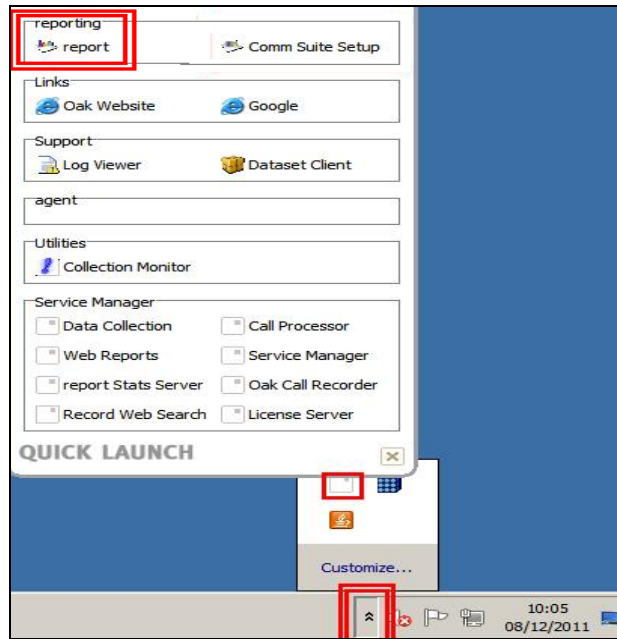


7.3. Verify that Oak Telecom's reportX is producing reports on CDR information correctly

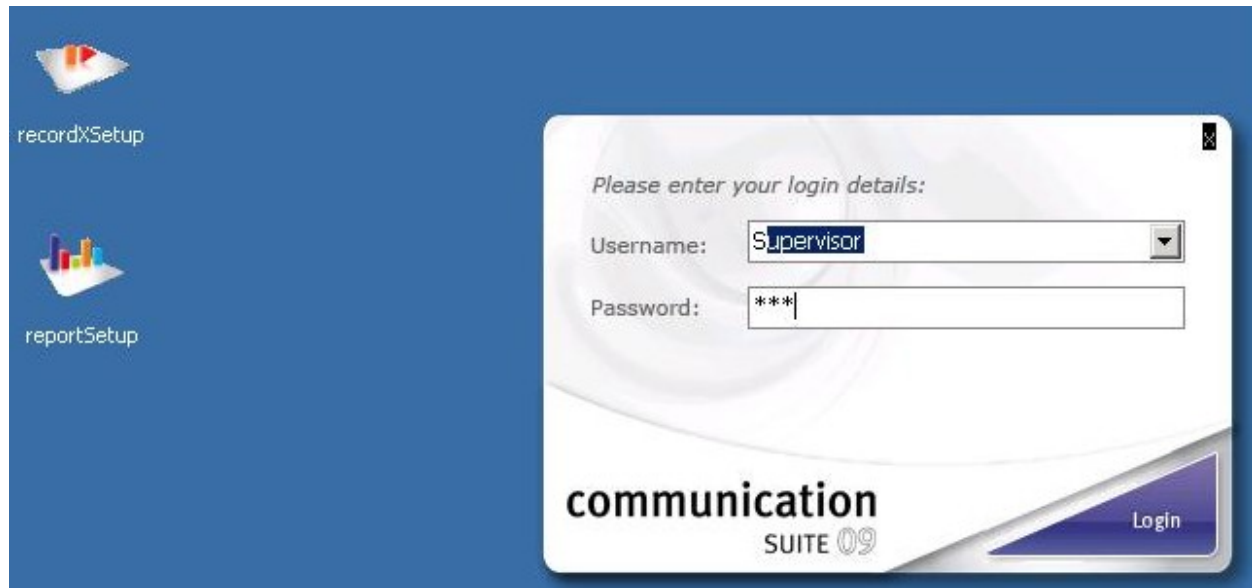
Open the reportX Client software Report09 in order to view reports. Navigate to **Start - Programs - Oak Telecom – report – report 09** as shown below.



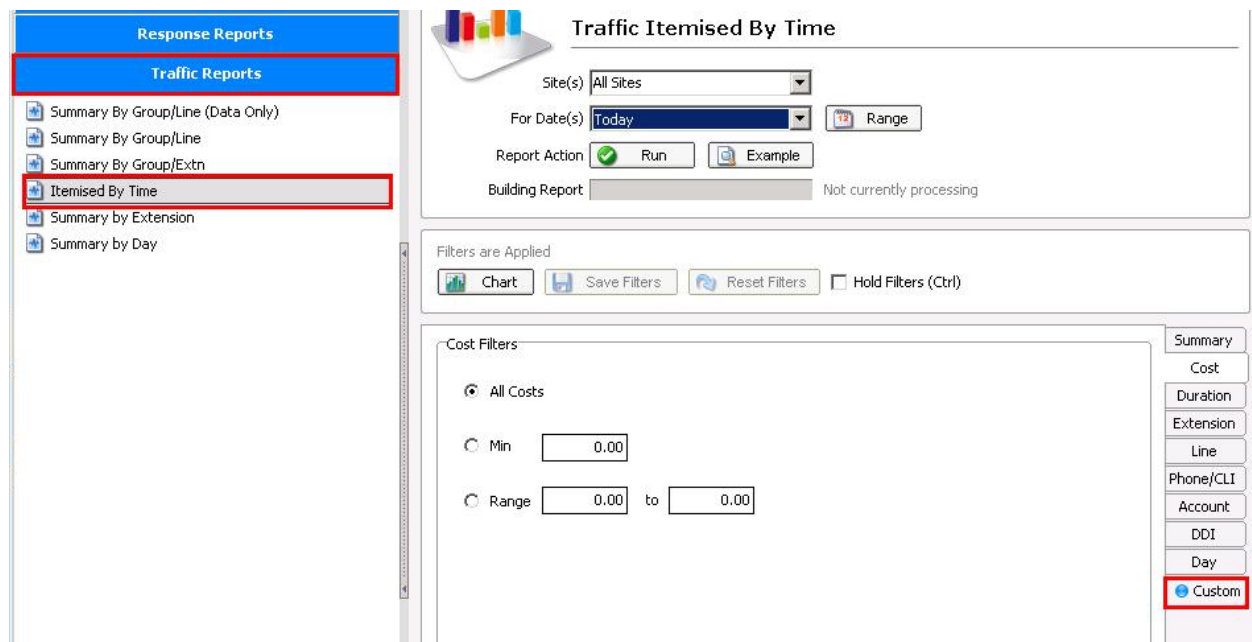
Alternatively they can be launched from the Quick Launcher as shown below. Click on the blank icon in the **QUICK LAUNCH** and select **report**.



Select **Supervisor** for the **Username** and enter the appropriate **Password**. Click **OK**.



Click on **Traffic Reports** and select **Itemised By Time** as highlighted below. Before the report is run, click on **Custom** to include internal calls in the report.



Type **int(o)** into the **Custom Criteria** window as shown below.

Custom

CURR(X)- Show only Currency X e.g. £,\$,€
CD(X) - Pre Cost Discount where 'X' is the required percentage discount.
CU(X) - Post Cost Uplift where 'X' is the required percentage uplift.
CU(X)H - Post Cost Uplift (Hide) where 'X' is the required percentage uplift.
AT(X) - Answer Time where 'X' is the minimum time in seconds.
LCR(x,X) - Lost Call Ring criteria where 'x' is the minimum and 'X' is max time in secs.
OUT(X) - Outgoing Call Types where 'X' is either 'N'-None, 'O'-Orig,
- or 'T'-Trns or '!' - Not Trans
- e.g. OUT(O) will report all original outgoing calls.
INC(X) - Incoming Call Types where 'X' is either 'N'-None or any
- combination of 'O'-Orig, 'L'-Lost, 'B'-Busy, 'A'-Answ, 'U'-Unans
- or 'T'-Trns, 'E' - Term or I/T, '!' - Not Trn Term
- e.g. INC(O,A) will report all original incoming answered calls.
INT(X) - Internal Call Types where...
'X' is either 'N'-None, 'O'-Orig or 'T'-Trns.
Extension reports must include F or R
- 'F'-From, 'R'-Received
- e.g. INT(T) will report all internal transfer initiated calls.

Available custom settings for this report type

Custom

Custom Criteria

int(o)

Click on **Run** to run the report as highlighted below.

report 09 - User : Supervisor

File Reports View Options Help

Login Configure Company Print Setup New Report Edit Report Delete Report Run Selected Report

Cost Reports

Response Reports

Traffic Reports

- Summary By Group/Line (Data Only)
- Summary By Group/Line
- Summary By Group/Extn
- Itemised By Time**
- Summary by Extension
- Summary by Day

Traffic Itemised By Time

Site(s) All Sites

For Date(s) Today Range


Report Action Example

Building Report Not currently processing

Filters are Applied

Chart Save Filters Reset Filters Hold Filters (Ctrl)

An example of such a report is shown below.

Run on: 7 December 2011 12:02:56 Page 1


Itemised By Time

Site : (1)Avaya Aura Communication Server. Calls from Wed Dec 07 2011 to Wed Dec 07 2011. Calls from 00:00 to 23:59 each day. Internal Calls: Original.

Date	Time	Site Code	Type Of Call	From Extn/Line	To Extn/Line	Duration HH:MM:SS	Ring Secs	Answ Call	Trans Call	Phone Number	Account Code	Cost €
Dec 07 11	12:18:00	ACM	Int	E 2011	E 2012	00:00:08	0	Yes	No			€ 0.00
Dec 07 11	12:18:00	ACM	Int	E 2010	E 2011	00:00:20	0	Yes	No			€ 0.00
Dec 07 11	12:19:00	ACM	Out	E 2010	L	00:00:17	0	---	No	2011		€ 0.00
Dec 07 11	12:19:00	ACM	Out	E 2011	L	00:00:10	0	---	No	2012		€ 0.00
Dec 07 11	12:26:00	ACM	Int	E 2011	E 2012	00:00:12	0	Yes	No			€ 0.00
Dec 07 11	12:26:00	ACM	Int	E 2010	E 2011	00:00:11	0	Yes	No			€ 0.00
Dec 07 11	12:27:00	ACM	Out	E 2011	L	00:00:16	0	---	No	2012		€ 0.00
Dec 07 11	12:27:00	ACM	Out	E 2010	L	00:00:20	0	---	No	2011		€ 0.00
Total Calls		8										

8. Conclusion

As illustrated in this Application Notes, Oak Telecom's reportX can be configured to successfully interoperate with Avaya IP Office R8. All call types that generated a CDR record was reported correctly by the reportX server.

9. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at <http://support.avaya.com> where the following documents can be obtained.

[1] *IP Office R8 Doc library*

All information on the product installation and configuration for Oak Telecom reportX can be found at <http://help.oak.co.uk>

This is an online help which contains documentation and video guides supporting all Oak Telecoms product range.

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