



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office 9.0 with Nu Technologies™ orbi-tel^{XPS} - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Avaya IP Office 9.0 with Nu Technologies orbi-tel^{XPS} 4.0.800.0. orbi-tel^{XPS} collects Call Detail Records of inbound and outbound calls from 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

Nu Technologies orbi-tel^{XPS} call accounting software runs as a Windows Service and all of its functions, configuration, and call reports are accessible through a standard web browser. Nu Technologies orbi-tel^{XPS} collects Station Message Detail Reports data from the Avaya IP Office where they are converted into a common internal format. The web interface of the orbi-tel^{XPS} 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 including a full range of self customisable call list reports and full summarised reports for individuals, departments and a whole organisation.

2. General Test Approach and Test Results

The general test approach was to configure the orbi-tel^{XPS} to communicate with the Avaya IP Office (IP Office) as implemented on a customer's premises. Testing focused on verifying that Station Message Detail Reports (SMDR) are collected by the orbi-tel^{XPS} and received in the format as generated by the IP Office. Various call scenarios were performed to simulate real call types as would be observed on a customer premises. See **Figure 1** for a network diagram. The interoperability compliance test included both feature functionality and serviceability 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.

2.1. Interoperability Compliance Testing

The testing included:

- Verification of connectivity between orbi-tel^{XPS} and IP Office.
- Verification that SMDR was collected as output by the IP Office.
- Link Failure\Recovery was also tested to ensure successful reconnection after link failure.
- SMDR data collected included:
 - Local internal call handling from Avaya IP H323, Digital and Soft phones
 - 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
 - Call Park and Call Pick Up
 - Auto Call Back,
 - Account Codes
 - Conference Calls
- Daylight Savings
- Handling of calls over SIP and QSIG trunks
- Defence Tests to ensure recovery following LAN interruptions

2.2. Test Results

Tests were performed to insure full interoperability between orbi-tel^{XPS} and 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 from Nu Technologies can be obtained through the following:

Phone: +44 1582 814700
E-mail: support@nut.eu.com
Web: <http://www.nut.eu.com>

3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. The Avaya solution consists of an IP Office which is configured to output SMDR. The SMDR feature is configured on the IP Office to point to the orbi-tel^{XPS} server on port 9000. Digital, H323 and Soft phones were configured on the IP Office to generate intra-switch calls (calls between phones on the same system), and outbound/inbound calls to/from the PSTN. QSIG and SIP trunks were configured to connect to the PSTN.

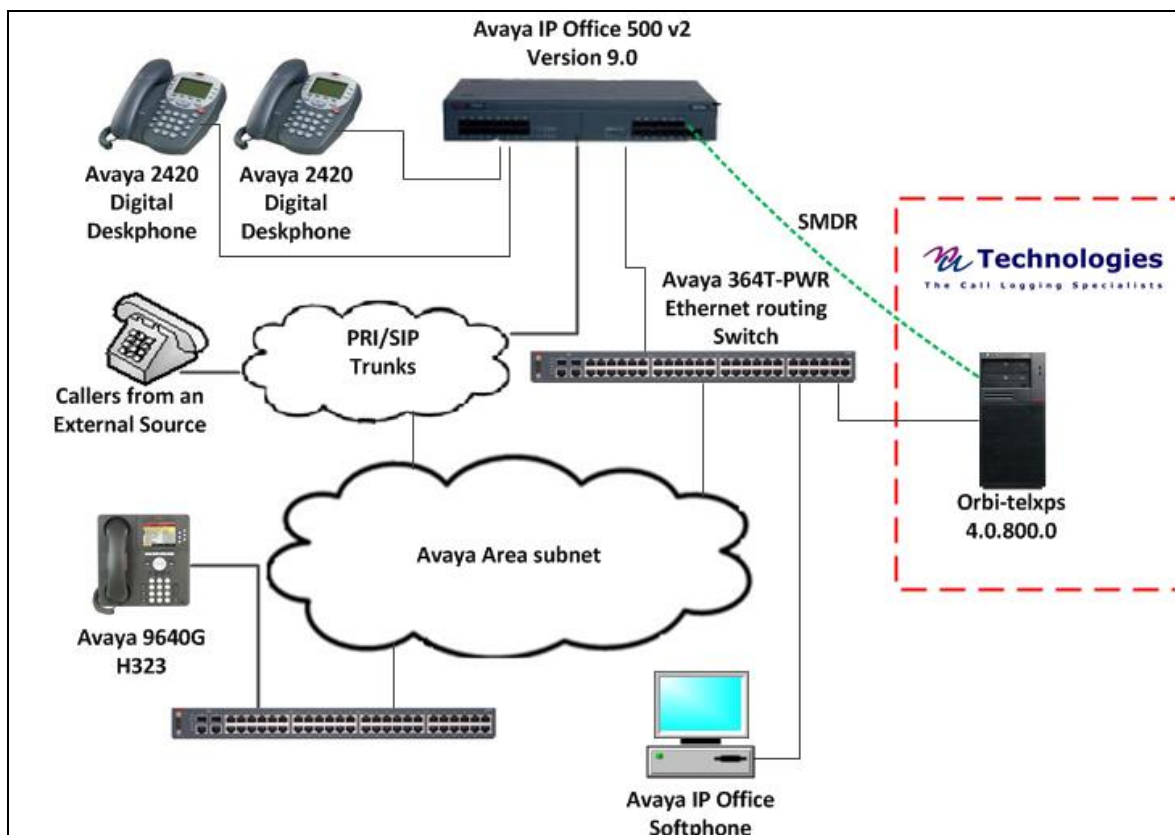


Figure 1: Avaya IP Office and Nu Technologies orbi-tel^{XPS} Reference Configuration

4. Equipment and Software Validated

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

Avaya Equipment	Software / Firmware Version
Avaya IPO 500v2	9.0 Build 829
Avaya 9640G IP Telephone	H323 S3.104S
Avaya 2420 Digital Telephones	--
Avaya IP Office softphone	3.2.3.49
Nu Technologies Equipment	Software / Firmware Version
orbi-tel ^{xps}	Version 4.0.800.0

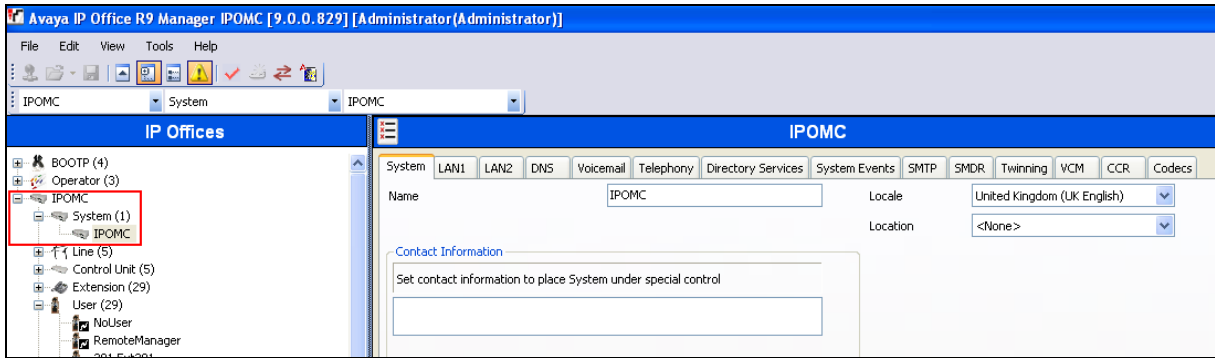
5. Avaya IP Office Configuration

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
- 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 IPOMC.

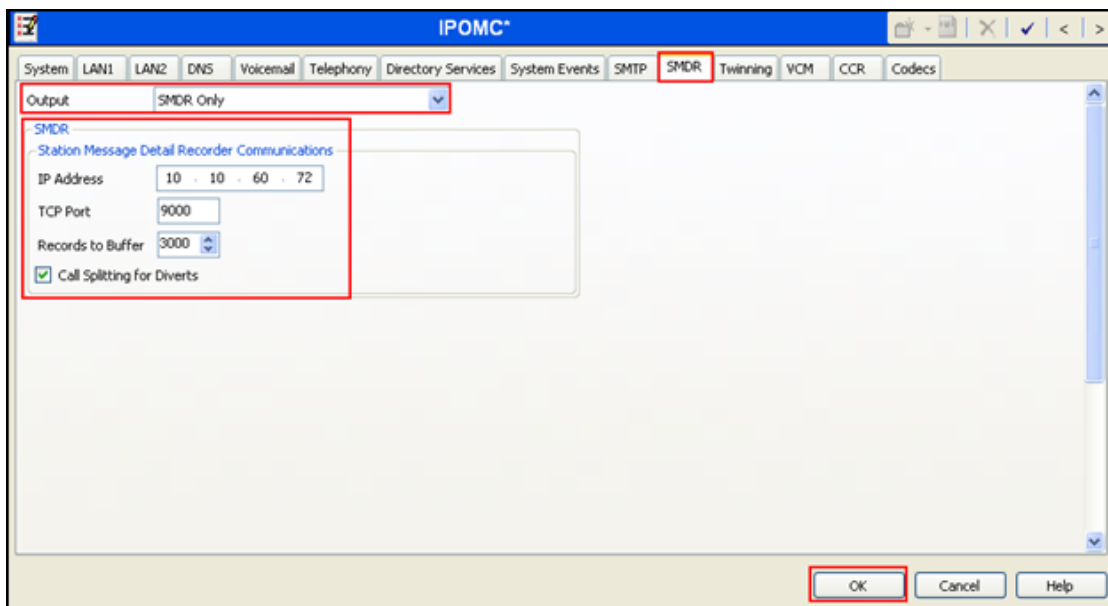


5.2. SMDR configuration

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

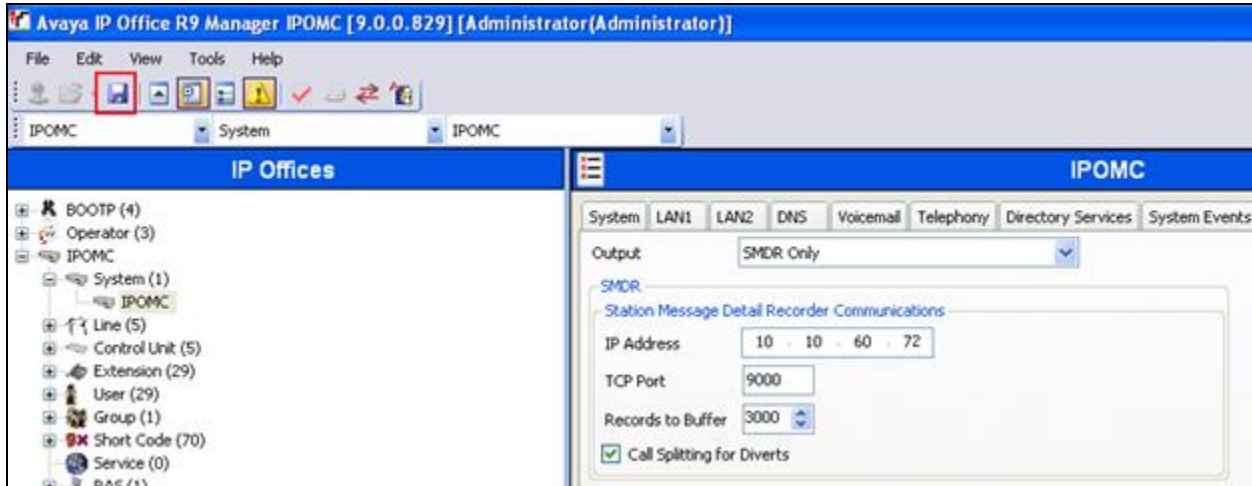
- **Output** Select **SMDR Only** from the drop box
- **IP Address** Enter the IP Address of the orbi-tel^{xps} Server
- **TCP Port** Enter **9000**
- **Records to buffer** Enter **3000**. This is maximum available.
- Check the **Call Splitting for Diverts** Check box

Click the **OK** button to save.

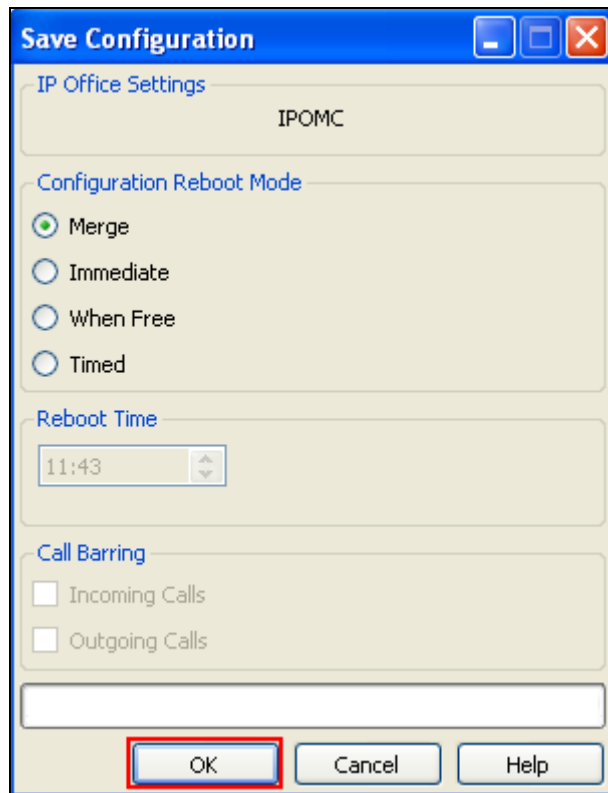


5.3. Save Configuration

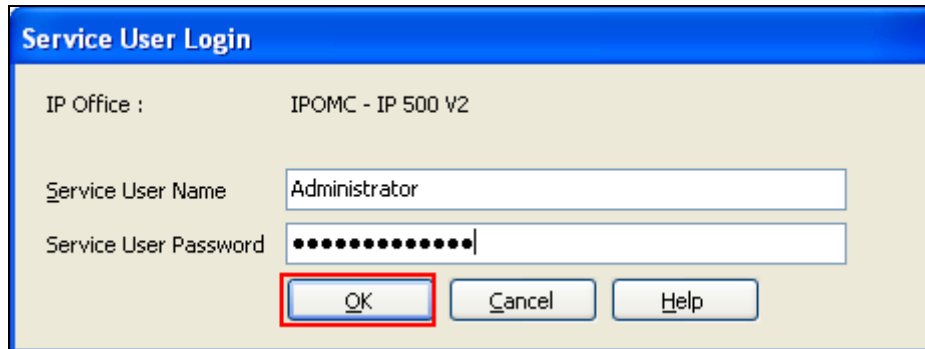
Once all the configurations have been made it must be sent to the IP Office. Click on the **Save** Icon as shown below.



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



When the **Service User Login** Window opens enter the appropriate credentials and click the **OK** button.



The image shows a 'Service User Login' dialog box. It has a blue title bar. The main area is light beige. It contains the following fields and buttons:

- IP Office : IPOMC - IP 500 V2
- Service User Name: Administrator
- Service User Password: A field with 12 dots representing a masked password.
- Buttons: OK (highlighted with a red box), Cancel, and Help.

6. Configure orbi-tel^{xps} Server

This section describes the steps performed to configure the orbi-tel^{xps} Server. It is implied that the orbi-tel^{xps} Server software is already installed. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 9**.

These configurations can be summarised as follows:

- Login to orbi-tel^{xps} Server
- Add a new switch to manage
- Configure Call Accounting
- Restart orbi-tel^{xps}

6.1. Login to orbi-tel^{xps} Server

To access the web-based interface of the orbi-tel^{xps} server, use the URL **<http://x.x.x.x>**, where **x.x.x.x** is the selected IP address of the orbi-tel^{xps} server. Enter the appropriate Login and Password credentials and then click on the **Log In** button.



The image shows the web-based interface of the orbi-tel^{xps} server. The page has a purple header with the 'orbi-tel xps' logo and the IP address '4.0.800.0'. On the left, there is a navigation menu with the following items: Home, Reports (Manage Reports, Create Report, Run Reports), Configuration (Devices, Device Groups, Super Groups, Shifts, System, User Preferences, Call Accounting), Real Time Reports (Manage Layouts, Create Layout, Manage Views, Create View). The main content area features a large 'orbi-tel^{xps}' logo and a login form with the following fields and buttons:

- Username: admin
- Password: (empty field)
- Log In button (highlighted with a red box)

6.2. Add a new switch to manage

Once the orbi-tel^{xps} is opened select **System**.

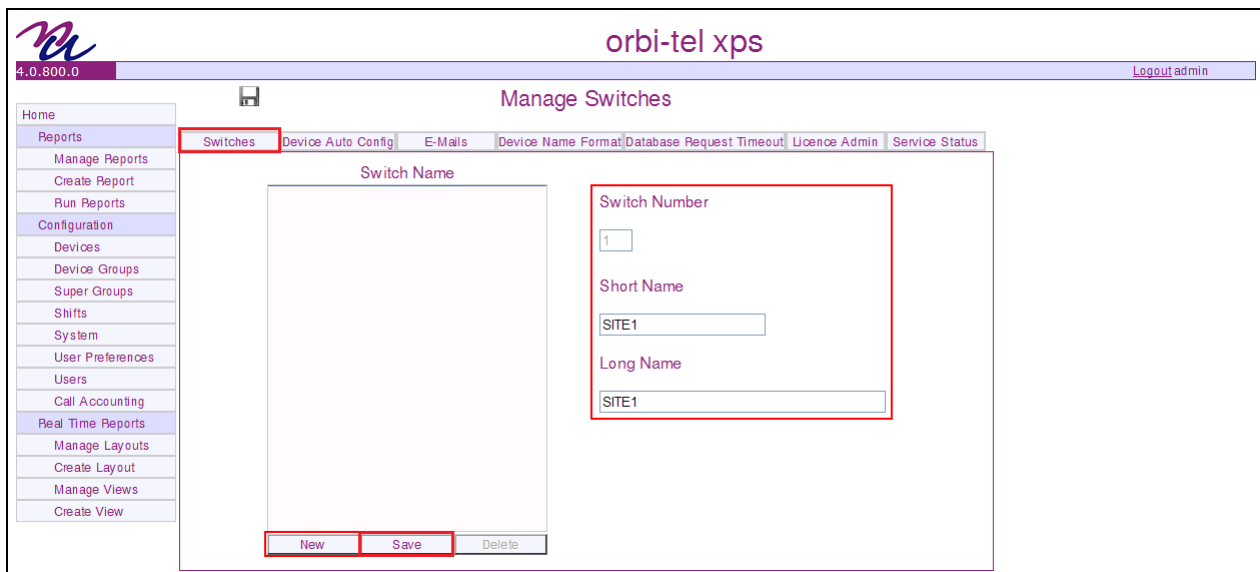


Once the new window opens select the **Switches** tab and click on the **New** button and enter the following:

- Enter a **Switch Number**
- Enter a **Short Name** for the switch
- Enter a **Long Name** for the switch.

Click on the **Save** button.

The screen shot below shows what was used during compliance testing.



6.3. Configure Call Accounting

Select **Call Accounting**.

The screenshot shows the 'orbi-tel xps' web interface. At the top, there is a logo on the left, the version '4.0.800.0', and the user 'admin' with a 'Logout' link. The main heading is 'Manage Switches'. Below this, there are several tabs: 'Switches', 'Device Auto Config', 'E-Mails', 'Device Name Format', 'Database Request Timeout', 'Licence Admin', and 'Service Status'. The 'Switches' tab is active. On the left, a navigation menu lists various options, with 'Call Accounting' highlighted in red. The main content area shows a table with one entry: '1 - SITE1'. To the right of the table are input fields for 'Switch Number', 'Short Name', and 'Long Name'. At the bottom of the table area are 'New', 'Save', and 'Delete' buttons.

Once the new window opens select the **Translator Config** tab and enter the following:

- Select **Site 1** from the **Switch Name** drop down box. This is the site configured in **Section 6.2**.
- Select **IP Office** from the **Translator Name** drop down box
- Select **TCP Server** from the **Connection Type** drop down box
- Check the **Switch Enabled** check box
- Check the **Translator Debug** check box
- Enter the IP address of the orbi-tel^{XPS} server in the **Call Acc. IP Address** box
- Enter **9000** in the **SMDR Port Number** box. This is the port number as configured in **Section 5.2**
- Check the **Costing Debug** check box

Click on the **Save** Icon to save the configuration.

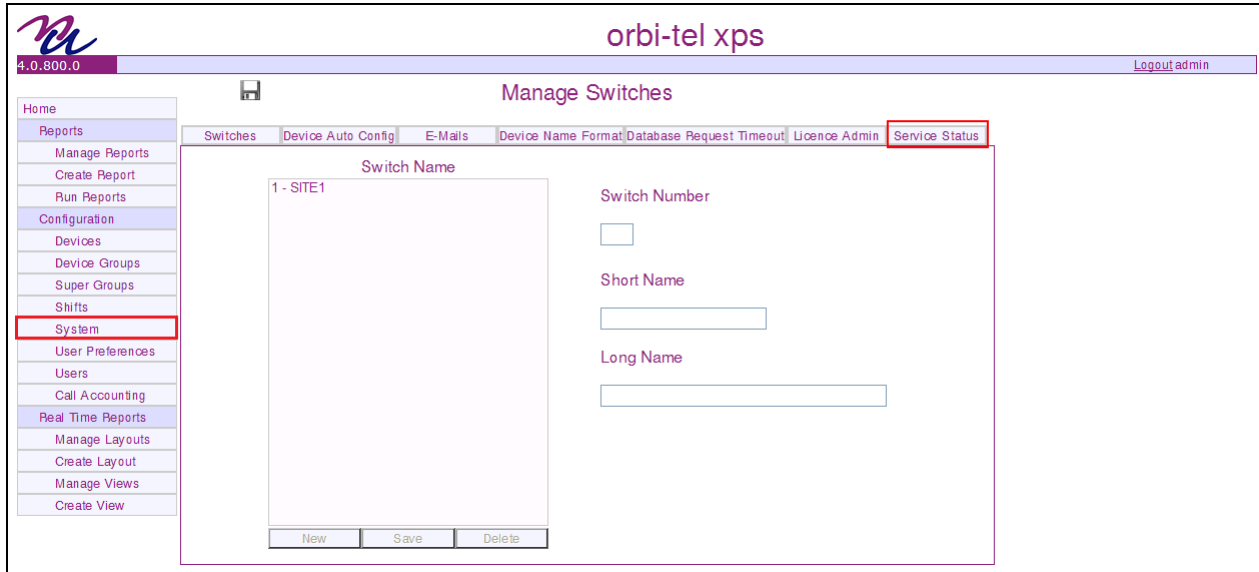
The screen shot below shows what was used during compliance testing.

The screenshot displays the 'orbi-tel xps' web interface. At the top, there is a logo and the text 'orbi-tel xps'. Below the logo, the version '4.0.800.0' is visible on the left and 'Logout admin' on the right. The main content area is titled 'Translator Config' and contains several tabs: 'Translator Config', 'Access Digits', 'Time Band', 'Charge Band', 'Rate Table', 'Cost Test', 'Cost Demo', and 'Call Generator'. The 'Translator Config' tab is active. On the left side, there is a navigation menu with categories: 'Home', 'Reports' (Manage Reports, Create Report, Run Reports), 'Configuration' (Devices, Device Groups, Super Groups, Shifts, System, User Preferences, Users, Call Accounting), and 'Real Time Reports' (Manage Layouts, Create Layout, Manage Views, Create View). The configuration form on the right contains the following fields:

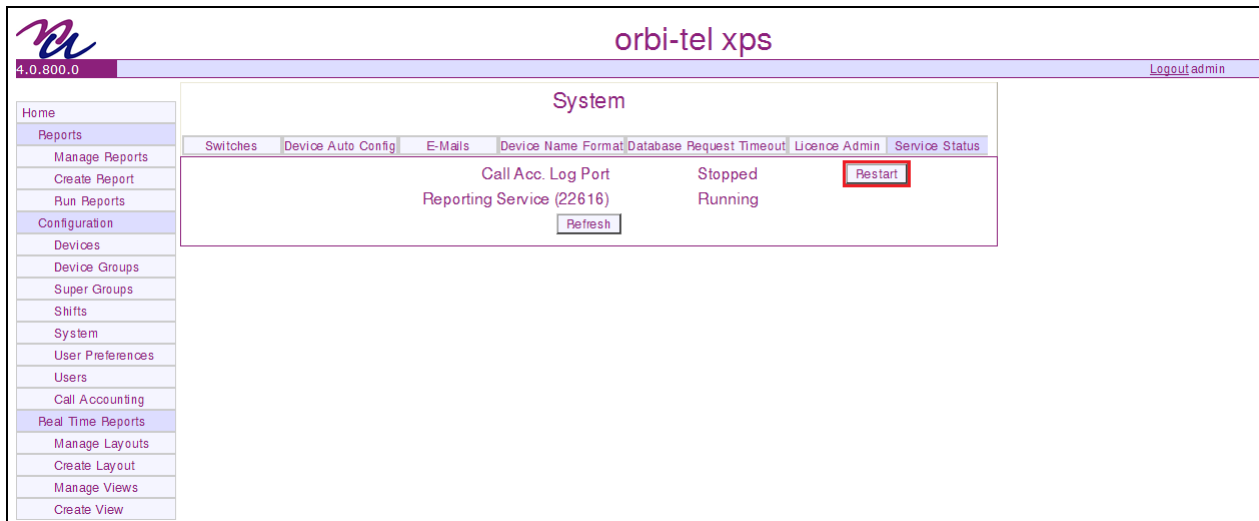
Switch Name	1 - SITE1
Translator Name	IP Office
Connection Type	TCP Server
Switch Enabled	<input checked="" type="checkbox"/>
Translator Debug	<input checked="" type="checkbox"/>
Costing Debug	<input checked="" type="checkbox"/>
Call Acc. IP Address	10.10.60.72
SMDR Port Number	9000

6.4. Restart orbi-tel^{xps}

Select **System** followed by the **Service Status** tab.



Click on the **Restart** button to restart orbi-tel^{xps}.

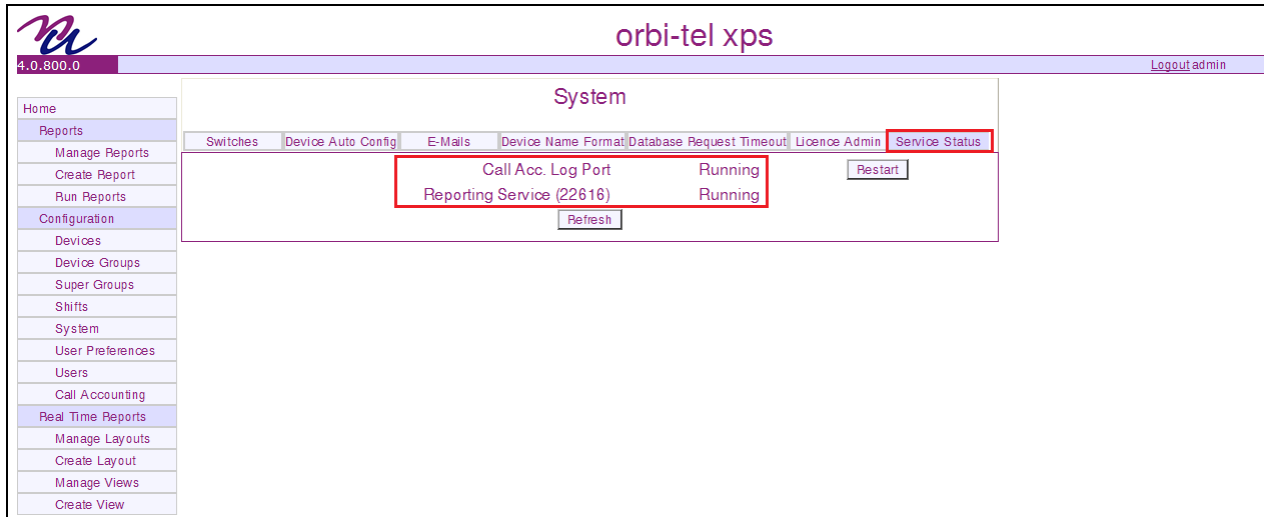


7. Verification Steps

This section provides the tests that can be performed to verify correct configuration of the IP Office and orbi-tel^{xps} solution.

7.1. Verify orbi-tel^{xps} is running

After logging into orbi-tel^{xps} select **System** followed by the **Service Status** tab, verify that **Call Acc. Log Port** and **Reporting Service** is Running.



The screenshot shows the orbi-tel xps web interface. The top navigation bar includes the logo, version 4.0.800.0, and a Logout admin link. The main content area is titled 'System' and contains several tabs: Switches, Device Auto Config, E-Mails, Device Name Format, Database Request Timeout, Licence Admin, and Service Status. The Service Status tab is active and displays a table with the following data:

Service Name	Status	Action
Call Acc. Log Port	Running	Restart
Reporting Service (22616)	Running	Refresh

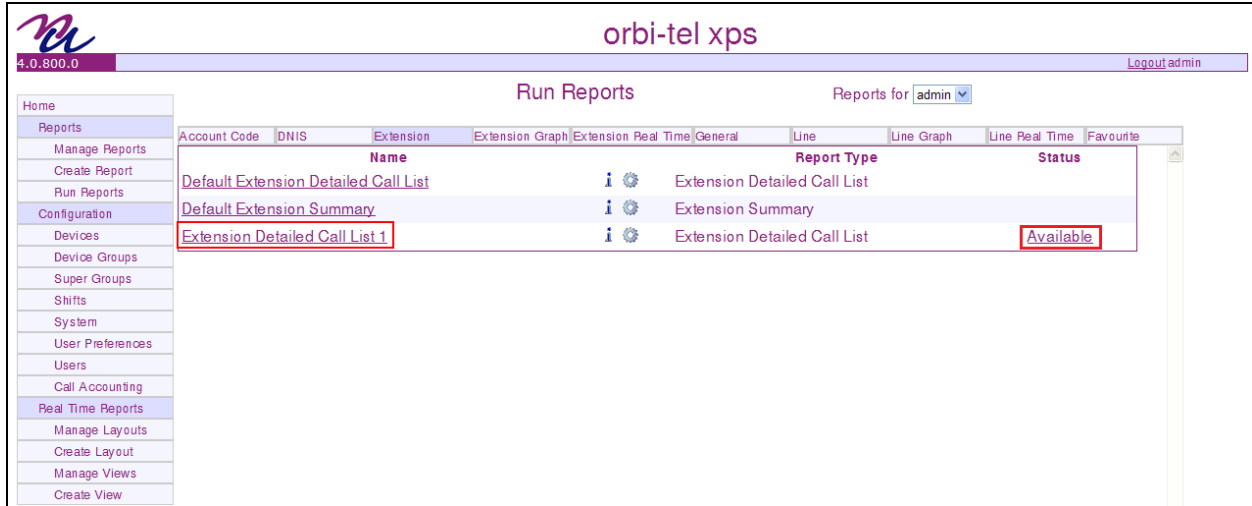
7.2. Verify Reports

After logging into orbi-tel^{xps} select **Run Reports**.

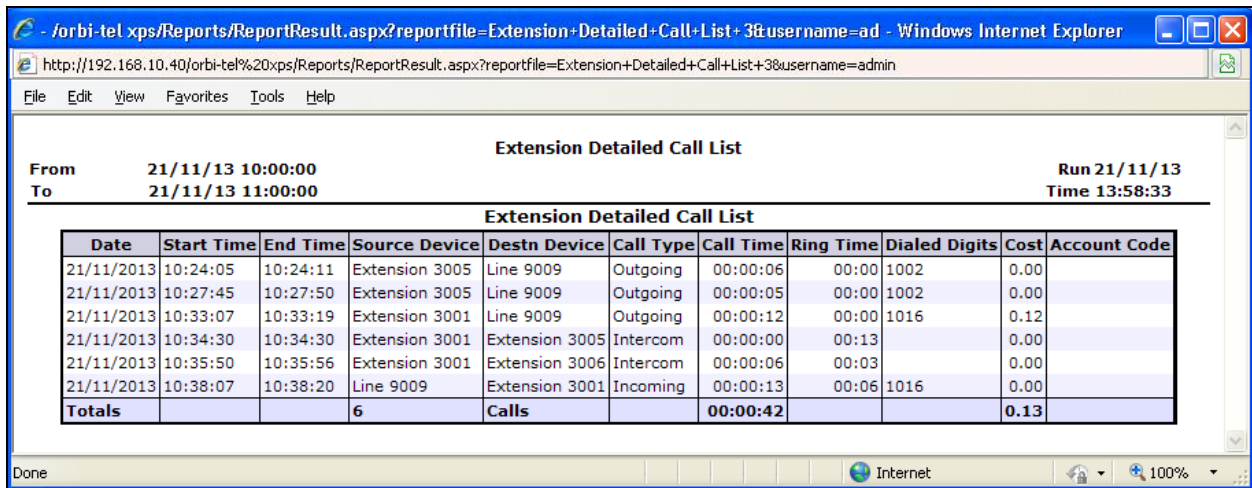


The screenshot shows the orbi-tel xps web interface. The top navigation bar includes the logo, version 4.0.800.0, and a Logout admin link. The main content area is titled 'orbi-tel^{xps}' and features a large watermark logo. The left-hand navigation menu is visible, with the 'Run Reports' option highlighted.

Once the **Run Reports** window opens, select the **Extension** tab and click on **Available**.



Once the **Extension Detailed Call List** report opens, something similar to the screen shot below should be seen.



8. Conclusion

A full and comprehensive set of feature and functional test cases were performed during Compliance testing. orbi-tel^{xps} 4.0.800.0 is considered compliant with Avaya IP Office 9.0. All test cases have passed and met the objectives 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.

[1] Avaya IP Office Manager 9.0, Document 15-601011, Issue 9.01, September 2013

Product Documentation for orbi-tel^{xps} can be obtained from Nu Technologies Ltd. or may be requested at <http://www.nut.eu.com/nutech/contactus.html>

©2014 Avaya Inc. All Rights Reserved.

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.