



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office 10.0 with Nu Technologies™ orbi-tel^{XPS} - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Avaya IP Office 10.0 to interoperate with Nu Technologies orbi-tel^{XPS}. orbi-tel^{XPS} is a Call Detail Recorder that collects SMDR information from Avaya IP Office for call billing

Readers should pay attention to Section 2, in particular the scope of testing as outlined in Section 2.1 as well as any 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

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 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 and Digital 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 and H323 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.

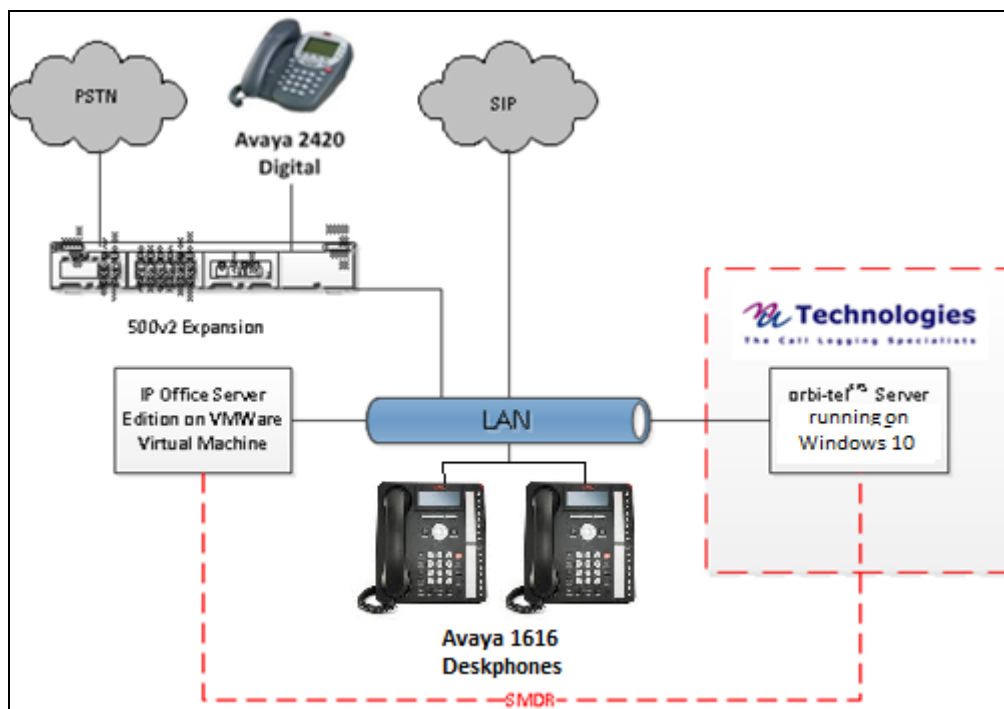


Figure 1: Avaya IP Office and Nu Technologies orbi-tel^{XPS} Reference Configuration

4. Equipment and Software Validated

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

Avaya Equipment	Software / Firmware Version
Avaya IP Office Server Edition	10.0.0.0.0 Build 550
Avaya IPO 500v2	10.0.0.0.0 Build 550
Avaya 1620 IP Telephone	H323 1.390A
Avaya 2420 Digital Telephones	--
Nu Technologies Equipment	Software / Firmware Version
orbi-tel ^{xps}	4.0.1000.0

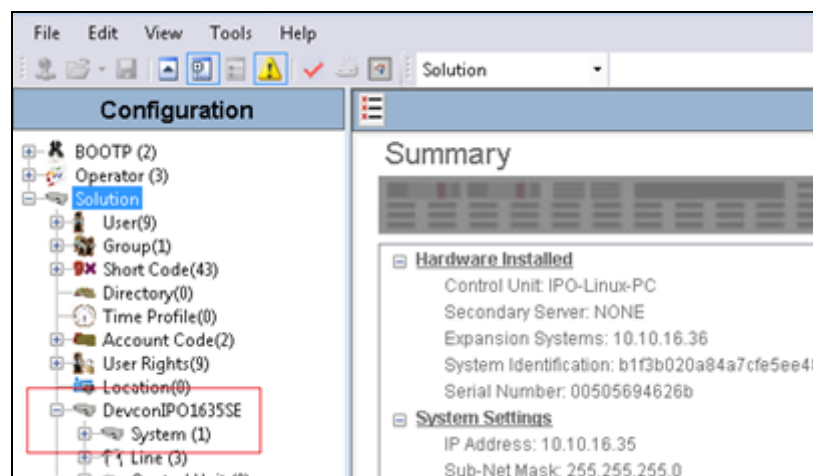
5. Avaya IP Office Configuration

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

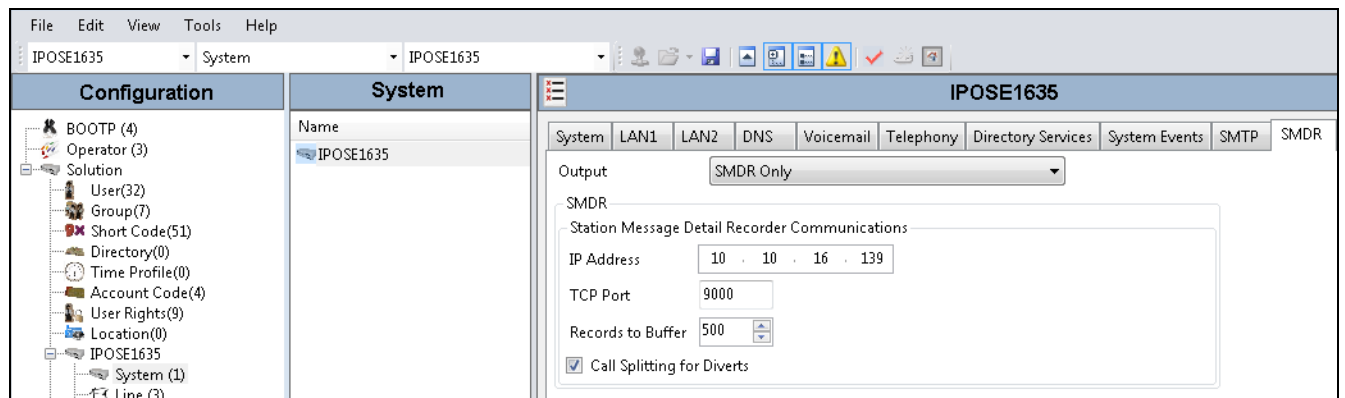
From the Avaya IP Office Manager PC, go to **Start→Programs→IP Office→Manager** to launch the Manager application. Log in to Avaya IP Office using the appropriate credentials to receive its configuration (Not shown). In the IP Offices window expand the Configuration Tree and double-click **System**. During compliance testing the System was called DevconIPO1635SE.



5.2. SMDR configuration

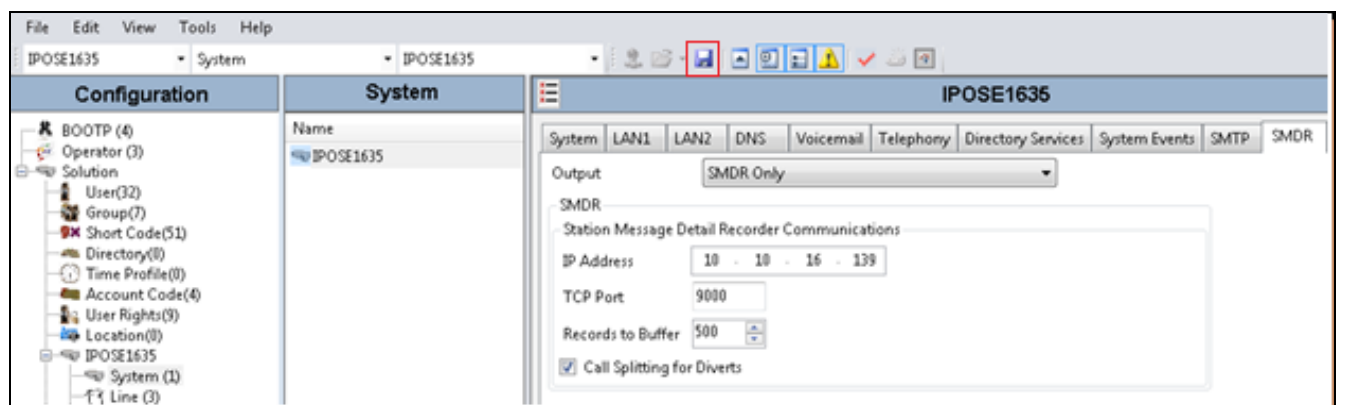
Select the **SMDR** tab and enter the following information:

- **Output** Select **SMDR Only** from the drop box
- **IP Address** Enter the IP Address of the orbi-tel^{xps} Server
- **TCP Port** Enter **9000**
- **Records to buffer** Can be left as the default.
- Check the **Call Splitting for Diverts** Check box
- Click the **OK** button to save(not shown).

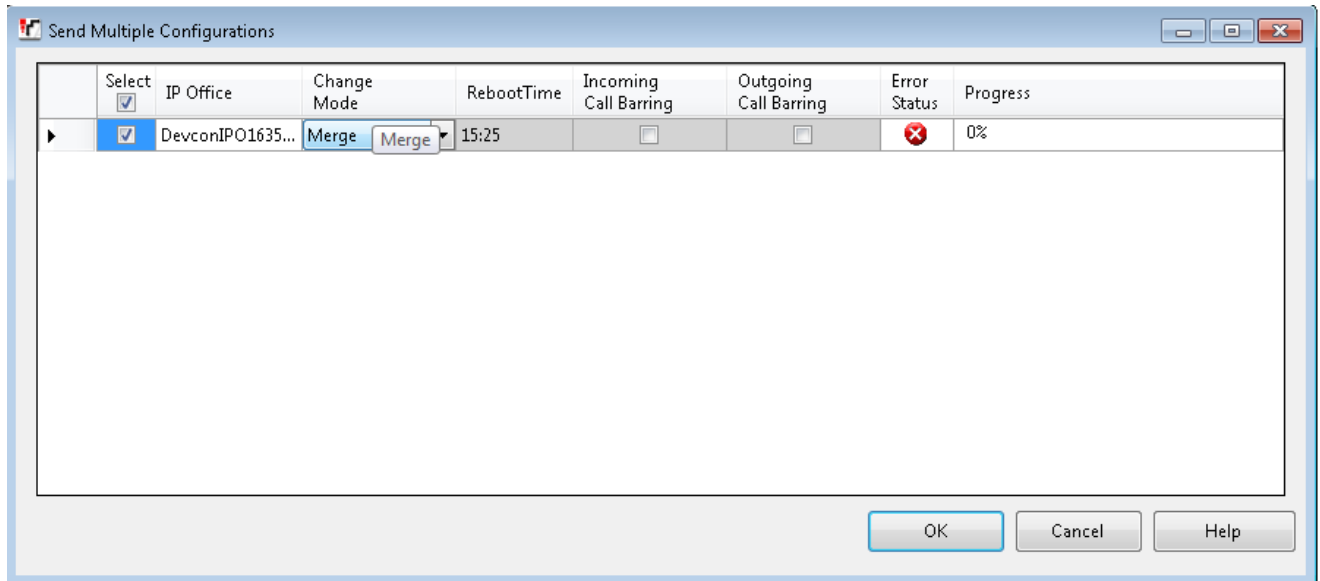


5.3. Save Configuration

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. 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} logging service.

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.



6.2. Add a new switch to manage

Once the orbi-tel^{xps} is opened select **System**. When the new window opens the Switches tab is selected. 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.

The screenshot shows a web browser window with the URL `localhost/orbi-tel%20xps/configuration/ManageSites.aspx?Screen_IC`. The page title is "orbi-tel xps" and the version is "4.0.1000.0". The main heading is "Manage Switches". On the left is a navigation menu with categories: Home, Reports, Configuration, Real Time Reports, and Manage Views. The "Configuration" category is expanded, showing options like Devices, Device Groups, Super Groups, Shifts, System, User Preferences, Users, Translator, Call Costing, and Real Time Reports. The "System" option is selected. The main content area has tabs for "Switches", "E-Mails", "Device Name Format", "Database Request Timeout", "Licence Admin", and "Service Stat". The "Switches" tab is active, displaying a table with one entry: "1 - IP Office". Below the table are "New", "Save", and "Delete" buttons. To the right of the table are input fields for "Switch Number" (value: 1), "Short Name" (value: IP Office), and "Long Name" (value: IP Office).

6.3. Configure Call Accounting

Select **Translator**. 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 10** from the **Translator Name** drop down box
- Select **TCP Client** from the **Connection Type** drop down box
- Check the **Switch Enabled** check box
- Enter the IP address of the **orbi-tel^{xps}** system 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 **Connection Debug** check box

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

The screenshot shows a web browser window with the URL `file:///C:/ASOURCE/Companies/AVAYA/Accreditation/V10%20IP%20Office%20V7%20CM%20QoS/XPS/screen/orbi-tel%20xps%20-%20Translator%20Configuration.htm`. The page title is "orbi-tel xps". The main heading is "Translator Config". On the left is a navigation menu with the following items: Home, Reports (Manage Reports, Create Report, Run Reports, Digit Search, Manage Alarms), Configuration (Devices, Device Groups, Super Groups, Shifts, System, User Preferences, Users, Translator, Call Costing), Real Time Reports, Manage Layouts, and Create Layout. The main content area has a tabbed interface with tabs: Device Auto Config, Translator Config (selected), Access Digits, Destination Names, Device Search, and SIP FQDN. The "Translator Config" tab contains the following fields:

Switch Name	1 - IP Office
Translator Name	IP Office 10
Connection Type	TCP Server
Switch Enabled	<input checked="" type="checkbox"/>
Translator Debug	<input type="checkbox"/>
Costing Debug	<input type="checkbox"/>
Call Acc. IP Address	10.10.16.139
SMDR Port Number	9000

6.4. Restart orbi-tel^{xps} logging service

Select **System** followed by the **Service Status** tab. Click on the **Restart** button to restart orbi-tel^{xps}.

The screenshot displays the 'orbi-tel xps' web interface. The top navigation bar includes the logo, version '4.0.1000.0', and a 'Logout admin' link. The left sidebar contains a menu with 'Home', 'Reports' (with sub-items: Manage Reports, Create Report, Run Reports, Digit Search, Manage Alarms), 'Configuration' (with sub-items: Devices, Device Groups, Super Groups, Shifts, System), and 'System'. The main content area is titled 'Service Status' and features a tabbed interface with 'Switches', 'E-Mails', 'Device Name Format', 'Database Request Timeout', 'Licence Admin', and 'Service Status'. The 'Service Status' tab is selected, showing a table with the following data:

Switches	E-Mails	Device Name Format	Database Request Timeout	Licence Admin	Service Status
			Call Acc. Log Port		Running
			Reporting Service (22616)		Running

Buttons for 'Restart' and 'Refresh' are located next to the 'Running' status for 'Reporting Service (22616)'.

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' interface. The left sidebar contains a menu with 'Home', 'Reports', 'Configuration', and 'System'. The 'Reports' section is expanded, showing 'Manage Reports', 'Create Report', 'Run Reports', 'Digit Search', and 'Manage Alarms'. The 'Configuration' section shows 'Devices', 'Device Groups', 'Super Groups', 'Shifts', and 'System'. The 'Service Status' tab is selected, showing a table with the following data:

Switches	E-Mails	Device Name Format	Database Request Timeout	Licence Admin	Service Status
					Running
					Running

Buttons: Restart, Refresh

7.2. Verify Reports

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

The screenshot shows the 'orbi-tel xps' interface. The left sidebar contains a menu with 'Home', 'Reports', 'Configuration', and 'System'. The 'Reports' section is expanded, showing 'Manage Reports', 'Create Report', 'Run Reports', 'Digit Search', and 'Manage Alarms'. The 'Run Reports' tab is selected, showing a table with the following data:

Account Code	DNIS	Extension	Extension Graph	General	Line	Line Graph	Favourite

Buttons: i, gear, Available

Once the **Run Reports** window opens, select the **Extension** tab and click on **Available**. (see above screen)

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

localhost/orbi-tel%20xps/Reports/ReportResult.aspx?reportfile=Default+Extension+Detailed+Call+List&username=admin&reportformat=HTML

From

09/10/16 00:00:00

To

13/10/16 14:49:32

Default Extension Detailed Call List

Working Week

Run 13/10/16

Time 14:49:33

Extension Detailed Call List

Date	Start Time	End Time	Source Device	Destn Device	Switch	Call Type	Call Time	Ring Time	Dialed Digits	Cost	Location Name
10/10/2016	10:11:53	10:11:59	Extension 8350001	Line 9010	IP Office	Outgoing	00:00:06	00:00	8270002	0.06	
10/10/2016	10:12:13	10:12:18	Line 9010	Extension 8350002	IP Office	Incoming	00:00:05	00:02	8270005	0.00	
11/10/2016	12:09:42	12:09:49	Line 9009	Extension 8350002	IP Office	Incoming	00:00:07	00:14	8270005	0.00	
Totals			3	Calls			00:00:18			0.06	

8. Conclusion

A full set of feature and functional test cases were performed during Compliance testing. orbi-tel^{xps} is considered compliant with Avaya IP Office 10.0.

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

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

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