



## **Avaya Solution & Interoperability Test Lab**

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### **Application Notes for Configuring Avaya IP Office 9.1 with Nu Technologies™ orbi-tel<sup>XPS</sup> - Issue 1.0**

#### **Abstract**

These Application Notes describe the configuration steps required for Avaya IP Office 9.0 to interoperate with Nu Technologies orbi-tel<sup>XPS</sup> 4.0.900.0.

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. orbi-tel<sup>XPS</sup> is a Call Detail Recorder that collects SMDR information from Avaya IP Office for call billing.

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<sup>XPS</sup> 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<sup>XPS</sup> 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<sup>XPS</sup> 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<sup>XPS</sup> 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<sup>XPS</sup> 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<sup>XPS</sup> 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<sup>XPS</sup> and IP Office. The tests were all functional in nature and performance testing was not included. All the test cases passed successfully with the following observation.

- When orbi-tel<sup>XPS</sup> loses connectivity to IP Office due to an IP Office disconnect, the service needs to be manually restarted before the connection is reinstated or records during this period will be lost. The same issue was not visible when the call disconnect is on the orbi-tel<sup>XPS</sup> side.

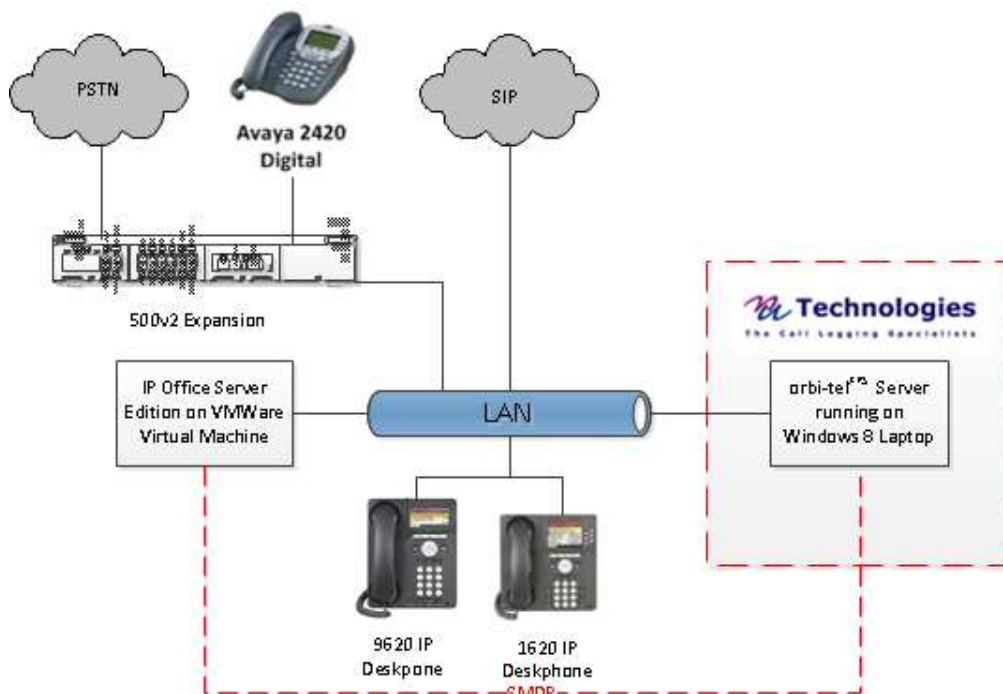
## 2.3. Support

Technical support from Nu Technologies can be obtained through the following:

Phone: +44 1582 814700  
E-mail: [support@nut.eu.com](mailto: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<sup>XPS</sup> server on port 9002. 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<sup>XPS</sup> 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 On Virtual Machine	9.1.4.0 Build 437
Avaya IPO 500v2	9.1.4.0 Build 437
Avaya 9620G IP Telephone	H323 s3.186a
Avaya 1620 IP Telephone	H323 s3.186a
Avaya 2420 Digital Telephones	--
Nu Technologies Equipment	Software / Firmware Version
orbi-tel <sup>xps</sup> on Windows 2012 server	4.0.900.0

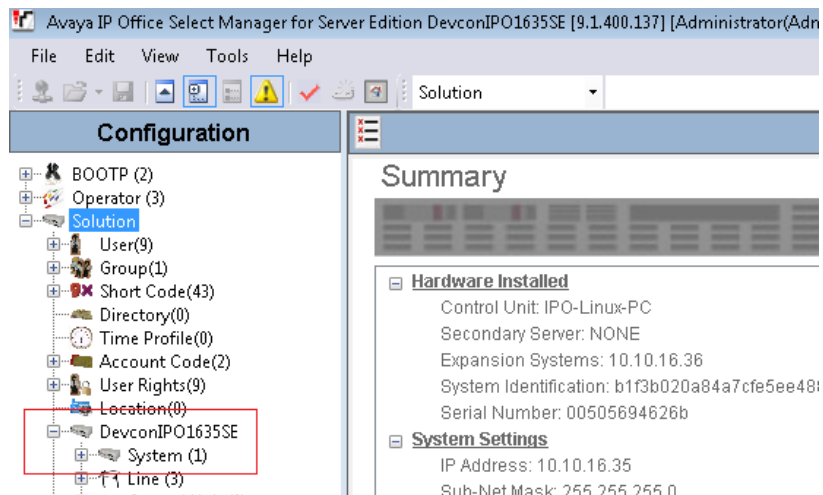
## 5. Avaya IP Office Configuration

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 8**. 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

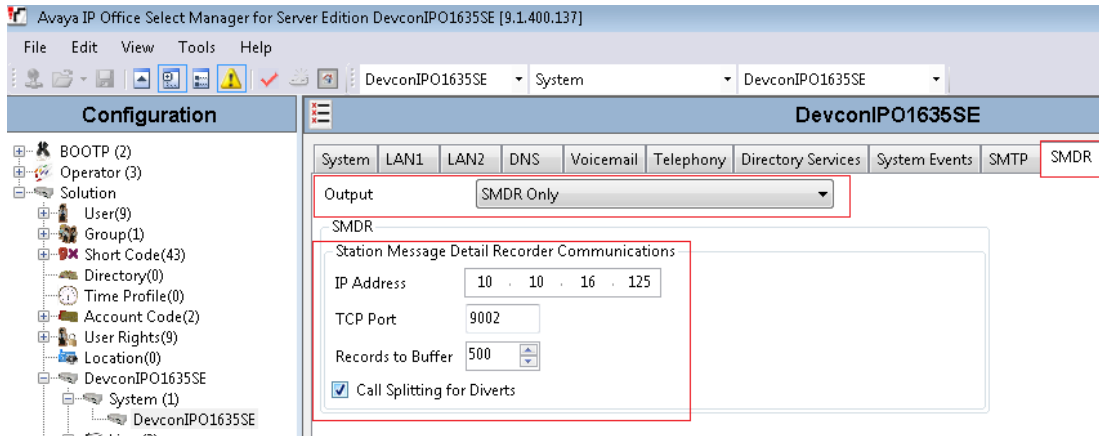
From the Avaya IP Office Manager PC, go to **Start**→**Programs**→**IP Office**→**Manager** to launch the Manager application. Log in to Avaya IP Office using the appropriate credentials to receive its configuration (Not shown). In the IP Offices window expand the Configuration Tree and double-click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



## 5.2. SMDR configuration

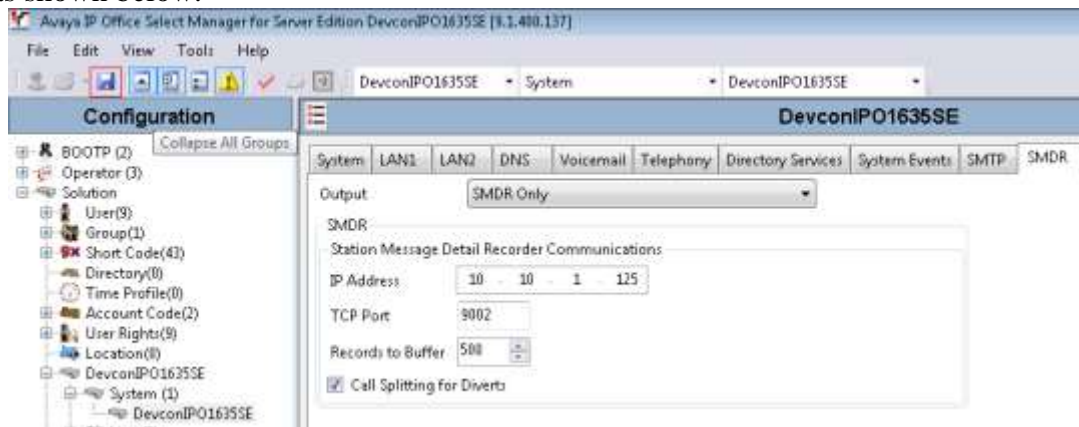
Select the **SMDR** tab and enter the following information:

- **Output** Select **SMDR Only** from the drop box
- **IP Address** Enter the IP Address of the orbi-tel<sup>XPS</sup> Server
- **TCP Port** Enter **9002**
- **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).

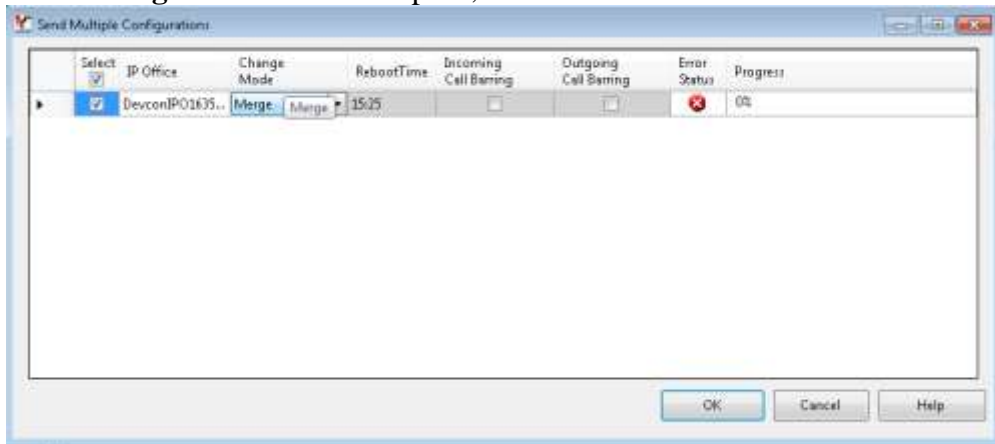


## 5.3. Save Configuration

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<sup>xps</sup> Server

This section describes the steps performed to configure the orbi-tel<sup>xps</sup> Server. It is implied that the orbi-tel<sup>xps</sup> Server software is already installed. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 10**. These configurations can be summarised as follows:

- Login to orbi-tel<sup>xps</sup> Server.
- Add a new switch to manage.
- Configure Call Accounting.
- Restart orbi-tel<sup>xps</sup> logging service.

### 6.1. Login to orbi-tel<sup>xps</sup> Server

To access the web-based interface of the orbi-tel<sup>xps</sup> server, use the URL <http://x.x.x.x>, where **x.x.x.x** is the selected IP address of the orbi-tel<sup>xps</sup> 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<sup>xps</sup> 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 **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 9.1** from the **Translator Name** drop down box
- Select **TCP Client** 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<sup>xps</sup>** system (Nu Technologies laptop) in the **Call Acc. IP Address** box
- Enter **9002** in the **SMDR Port Number** box. This is the port number as configured in **Section 5.2**
- Check the **Connection Debug** check box

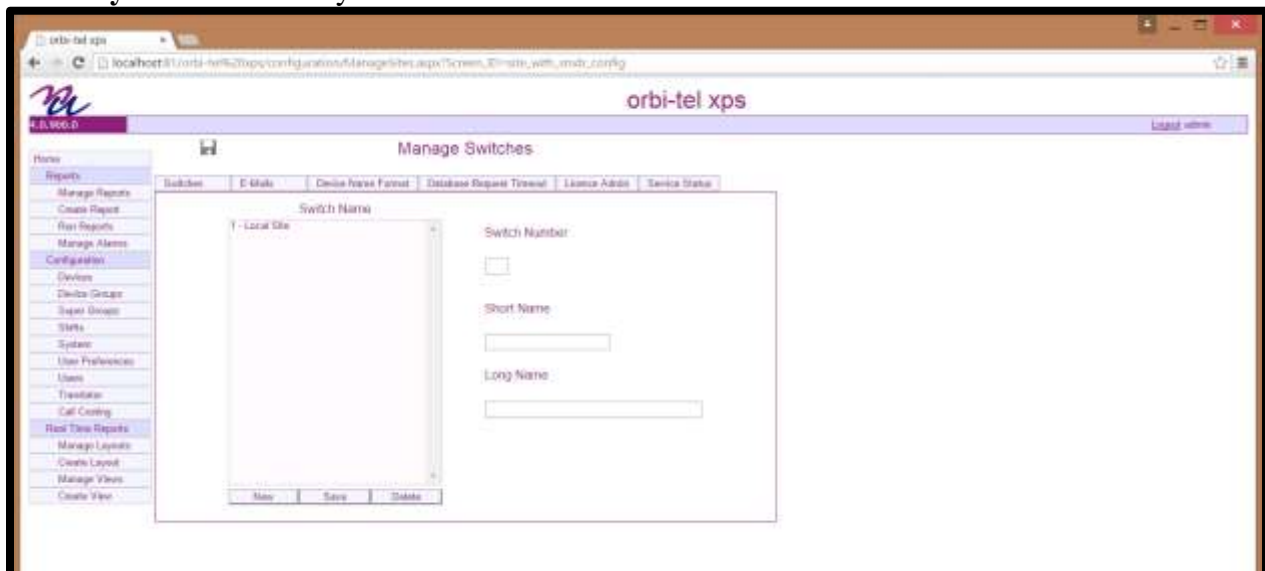
Click on the **Save Icon** to save the configuration.





## 6.4. Restart orbi-tel<sup>xps</sup> logging service

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



Click on the **Restart** button to restart orbi-tel<sup>xps</sup>.



## 7. Verification Steps

This section provides the tests that can be performed to verify correct configuration of the IP Office and orbi-tel<sup>xps</sup> solution.

### 7.1. Verify orbi-tel<sup>xps</sup> is running

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



### 7.2. Verify Reports

After logging into orbi-tel<sup>xps</sup> select **Run Reports**.



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.

Extension Detailed Call List											
From		03/11/15 00:00:00								Run 04/11/15	
To										Time 10:49:22	
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
04/11/2015	10:11:10	10:11:10	Extension 8350001	Line 8000	Local Site	Outgoing	00:00:00	00:00		0.00	
04/11/2015	10:11:21	10:11:21	Extension 8350000	Line 9012	Local Site	Outgoing	00:00:00	00:00	827	0.00	
04/11/2015	10:11:54	10:11:54	Extension 8350001	Line 8000	Local Site	Outgoing	00:00:00	00:00	7321	0.00	
04/11/2015	10:12:00	10:12:00	Extension 8350001	Line 8000	Local Site	Outgoing	00:00:00	00:00	4321	0.00	
04/11/2015	10:12:04	10:12:04	Extension 8350001	Line 8000	Local Site	Outgoing	00:00:00	00:00		0.00	
04/11/2015	10:12:12	10:12:12	Extension 8350001	Line 8000	Local Site	Outgoing	00:00:00	00:00		0.00	
04/11/2015	10:12:19	10:12:19	Extension 8350001	Line 8000	Local Site	Outgoing	00:00:00	00:00		0.00	
<b>Totals</b>			<b>7</b>	<b>Calls</b>			<b>00:00:00</b>			<b>0.00</b>	

## 8. Conclusion

A full set of feature and functional test cases were performed during Compliance testing. orbi-tel<sup>XPS</sup> 4.0.900.0 is considered compliant with Avaya IP Office 9.1.

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, Release 9. 1, Issue 10.29 October 2015*

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

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