Avaya Solution & Interoperability Test Lab

Application Notes for Phybridge PoLRE with Avaya IP Office 9.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Phybridge PoLRE to interoperate with Avaya IP Office 9.0. In the compliance testing, the Phybridge PoLRE leveraged the existing single-pair telephony wiring to provide dedicated Ethernet voice path and Power over Ethernet to Avaya SIP and H.323 IP telephones registered to 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

These Application Notes describe a compliance-tested configuration consisting of Phybridge PoLRE, Phybridge Phylink adapters, Avaya IP Office and Avaya IP phones (H.323 and SIP) .

The Phybridge PoLRE is a LAN appliance that leverages the existing single-pair telephony wiring to provide dedicated Ethernet and Power over Ethernet to Avaya IP phones (H.323 and SIP) .

2. General Test Approach and Test Results

The compliance testing focused on the interoperability between Phybridge PoLRE and Avaya IP telephones to ensure that the phones work as expected. Serviceability testing was also performed.

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

Testing consisted of typical call scenarios involving Avaya endpoints connected to PoLRE. External call scenarios were also tested with a simulated PSTN connection. All tests were performed manually and the focus was on verifying interoperability compliance.

Feature testing included, registration, audio codec, basic calls, hold/reconnect, conference, transfer, display, DTMF, Speaker Phone and message waiting indicator (MWI) scenarios.

The serviceability testing focused on verifying the ability of Phybridge PoLRE to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet cables to the Phybridge PoLRE and to the Avaya IP telephones. Reboots and power cycling of Phybridge PoLRE were also tested.

2.2. Test Results

All applicable test cases were executed and passed with the following observations:

The Avaya B179 Conference Phone was powered with its local power supply and connected to the Phylink adapter with an Ethernet cable as per **Reference 4** in **Section 9**. This configuration was used because the B179 phone required more PoE power than could be supplied by PoLRE. Other Class 3 endpoints my also require this configuration. PoLRE Switches can power Class 1, Class 2 and some Class 3 IEEE 802.3 compliant IP devices.

2.3. Support

Technical support on the Phybridge PoLRE can be obtained through the following:

- **Phone:** (888) 901-3633
- **Email:** Support@Phybridge.com

3. Reference Configuration

In the test configuration shown in **Figure 1** Avaya IP telephones are connected to the network via the Phybridge PoLRE leveraging the existing CAT3 cabling that was previously used for Analog and Digital phones. For each station user, one end of the CAT3 cable is changed to connect to the Phybridge PoLRE instead of the Analog or Digital Line circuit pack on IP Office. The other end of the CAT3 cable connects to a Phybridge Phylink adapter with an RJ11 connector. Each Phylink adapter is connected using a standard CAT5 Ethernet cable to an Avaya IP telephone.

In the sample configuration Avaya H.323 and SIP IP telephones register to IP Office.

The Phybridge PoLRE provides power to the Avaya IP telephones, and is transparent to the telephones in terms of the telephones' network settings.

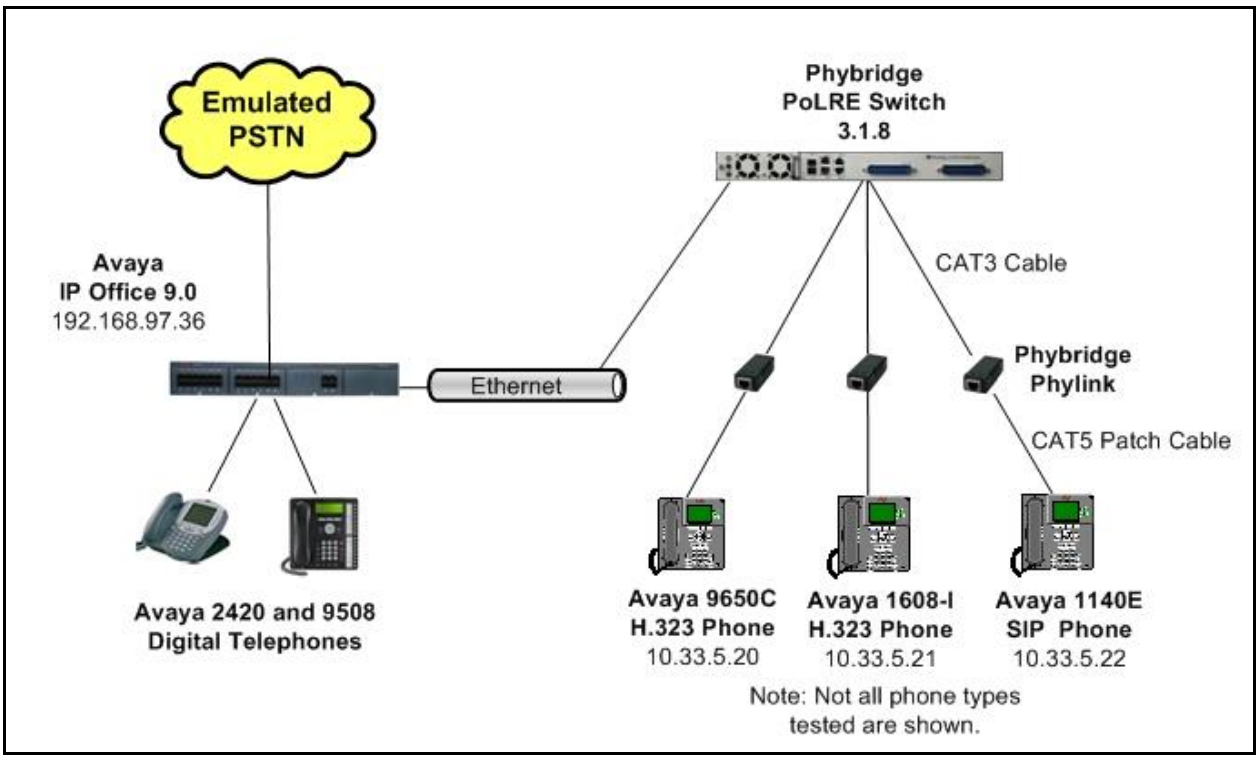


Figure 1: Phybridge PoLRE with Avaya IP Office

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office	9.0.0.829
Avaya 1608-I IP Deskphone (H.323)	1.330D
Avaya 9621 IP Deskphone (H.323)	6.3037
Avaya 9640 IP Deskphone (H.323)	3.200
Avaya 9650C IP Deskphone (H.323)	3.200
Avaya 1140E IP Deskphone (SIP)	04.03.18.00
Avaya 1220 IP Deskphone (SIP)	04.03.18.00
Avaya B179 Conference Phone (SIP)	2.3.8
Phybridge Phylink	PL-PA011
Phybridge PoLRE Switch PL-048/024	3.1.8

Testing was performed with IP Office 500 R9.0, but it also applies to IP Office Server Edition R9.0. Note that IP Office Server Edition requires an Expansion IP Office 500 v2 R9.0 to support analog or digital endpoints or trunks.

5. Configure Avaya IP Phones on Avaya IP Office

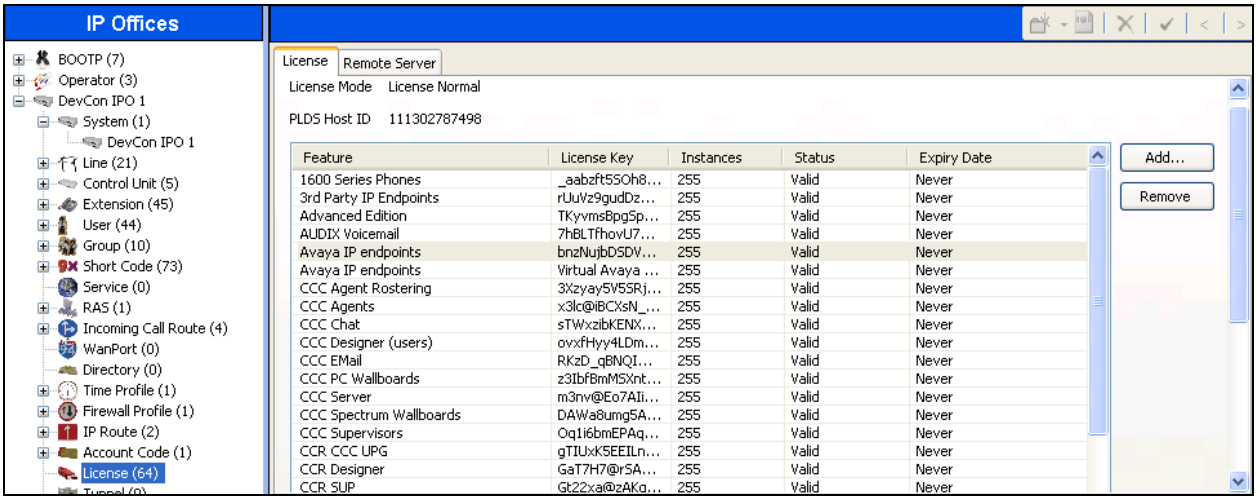
No special configuration is required for Avaya H.323 and SIP IP phones to interoperate with PoLRE. For completeness this section provides the procedures for configuring Avaya H.323 and SIP IP phones on IP Office. It is assumed that IP Office has already been installed and is functioning.

In a typical installation of Phybridge PoLRE, analog and digital telephones using existing CAT3 cabling would be replaced with new IP telephones as described in **Section 3**. This section shows examples of modifying an existing station and configuring a new Avaya H.323 or SIP IP telephone, and allows the user to retain the same extension number.

5.1. Verify IP Office License

This section explains the steps to verify if the license status for Avaya IP endpoints is valid. Open the IP Office Manager by navigating to **Start → Programs → IP Office → Manager** on the server IP Office Manager is installed on. Log in with the appropriate credentials (not shown).

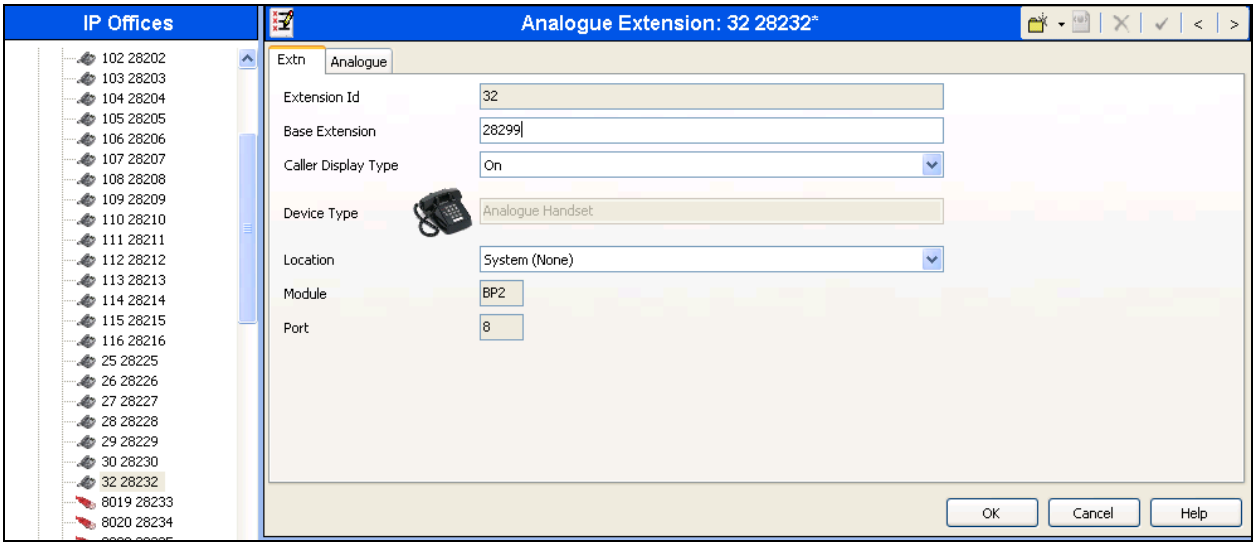
From the configuration tree in the left pane, select **License** to display the License screen in the right pane. Verify that the License **Status** is **Valid** for **Avaya IP endpoints**.



5.2. Changing Existing Extension

In this section an existing analog extension will be modified to allow the old extension number to be used for a new IP phone. This would also apply to changing an existing digital extension.

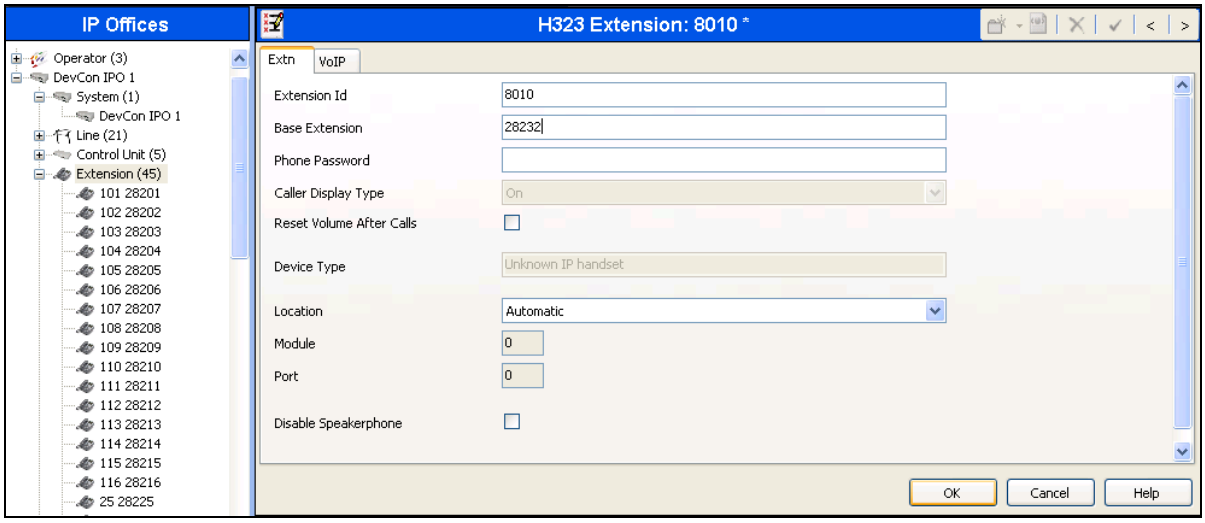
From the configuration tree in the left pane, select **Extension** followed by the specific extension that will be changed to an IP phone. Change the **Base Extension** to an available extension. In this example it was changed to "28299", so that the old extension "28232" can be reused with the new Avaya IP telephone. Click on **OK** when finished.



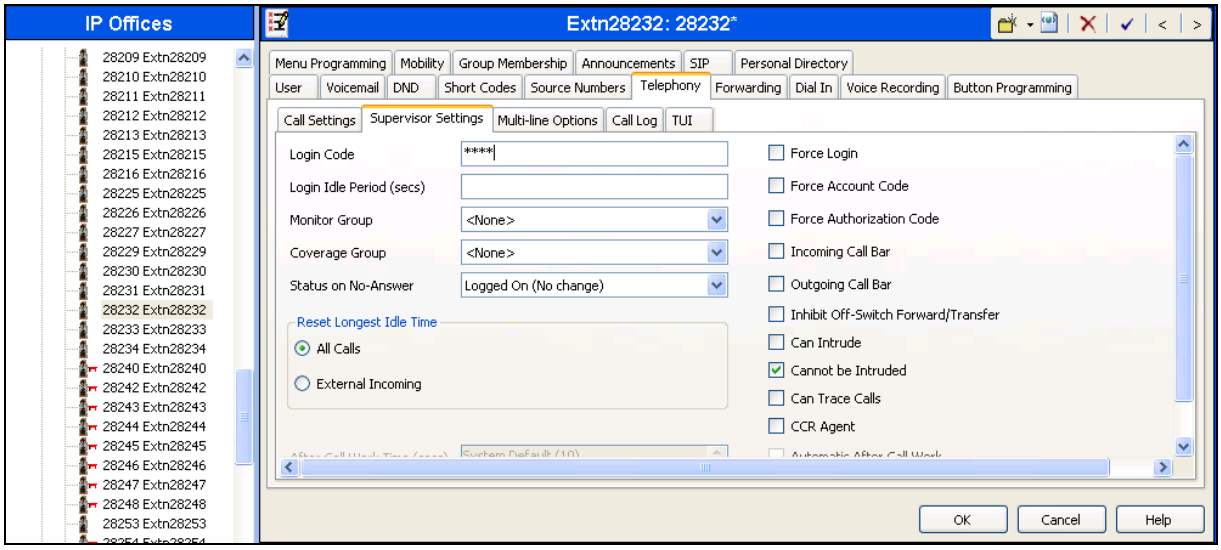
5.3. Configure an Avaya H.323 Phone

In this section a new H.323 IP telephone will be configured to replace the extension that was removed in **Section 5.2**.

From the configuration tree in the left pane, right-click on **Extension** and select **New → H323 Extension** from the pop-up list to add a new H.323 extension (not shown). Enter the original extension "**28232**" from **Section 5.2**into the **Base Extension** field, as shown below. Defaults can be used for the remaining fields. Click on **OK** when finished.



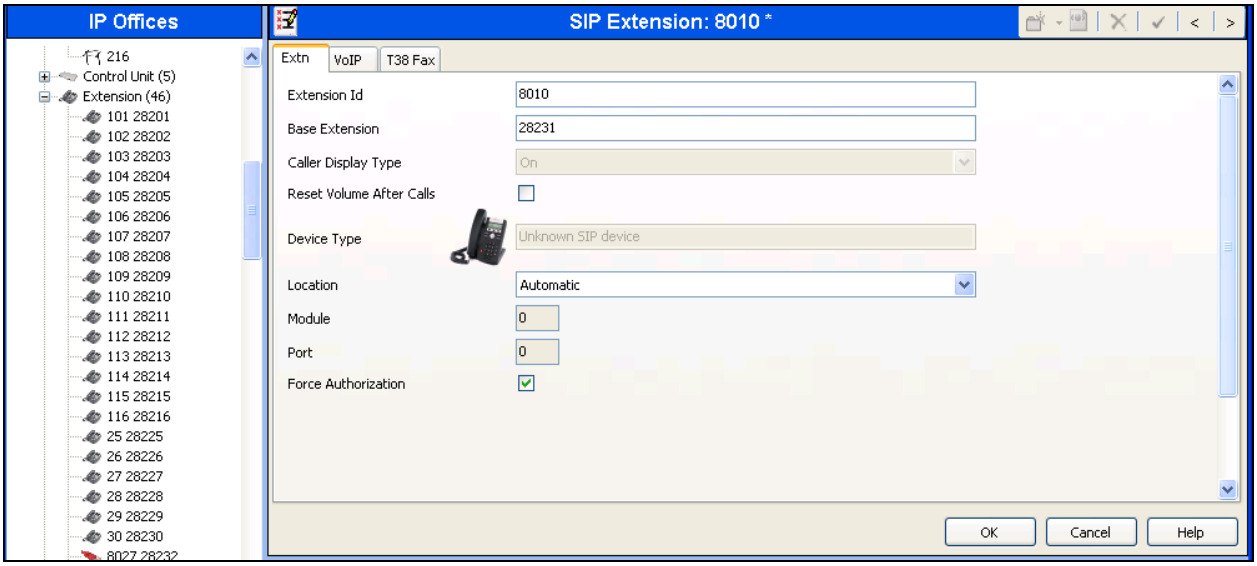
For security H.323 IP phones can have a password assigned to register with IP Office. To add the password, navigate the configuration tree in the left pane. Click on **User** and then select the user to change. In this example "**28232**" is used. Now select the **Telephony** tab and the **Supervisor Settings** sub tab. In the **Login Code** field enter a password to be used at log in of the H.323 phone. Click on **OK** when finished.



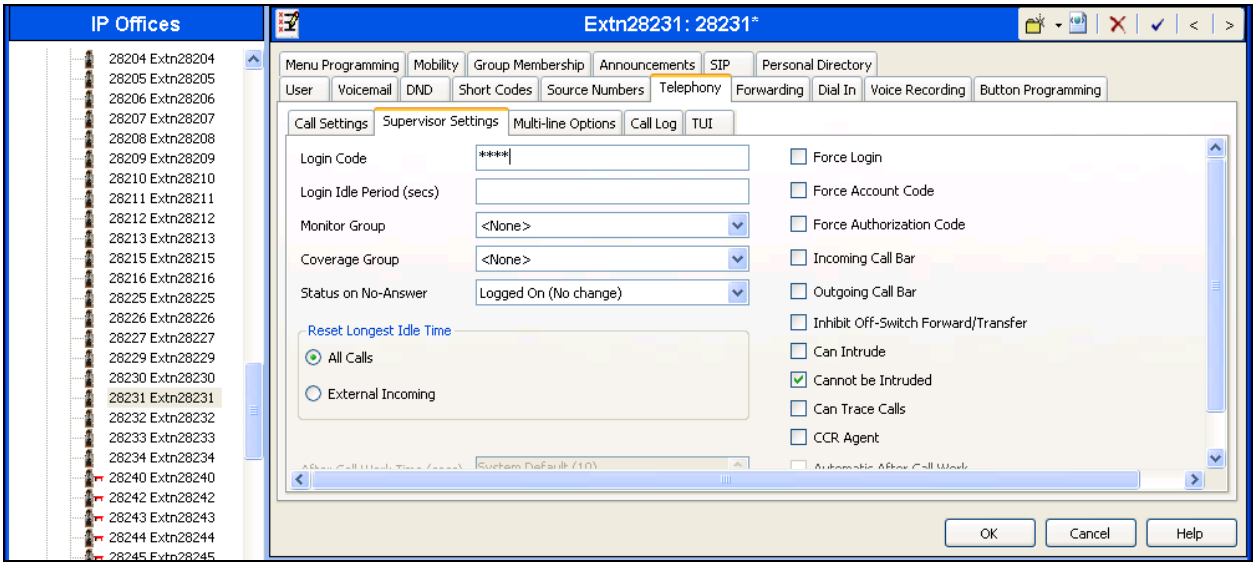
5.4. Configure an Avaya SIP Phone

In this section a new SIP IP telephone will be configured to replace extension 28231 that was removed the same as extension 28232 in **Section 5.2**.

From the configuration tree in the left pane, right-click on **Extension** and select **New → SIP Extension** from the pop-up list to add a new SIP extension (not shown). In the **Base Extension** field Enter extension "**28231**". Click on **OK** when finished.



For security SIP IP phones require a password to register with IP Office. To add the password, navigate the configuration tree in the left pane. Click on **User** and then select the user to change. In this example "**28231**" is used. Now select the **Telephony** tab and the **Supervisor Settings** sub tab. In the **Login Code** field enter a password to be used at log in of the SIP phone. Click on **OK** when finished.



6. Configure Phybridge PoLRE

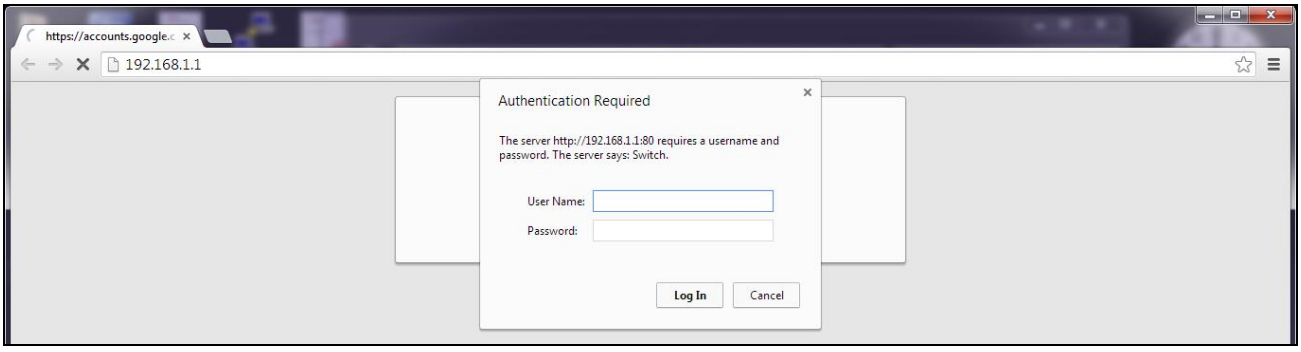
This section provides the procedures for configuring PoLRE. The procedures fall into the following areas:

- Launch web interface
- Administer Phybridge PoLRE IP Address

All remaining configuration settings on PoLRE were left as default in this sample configuration.

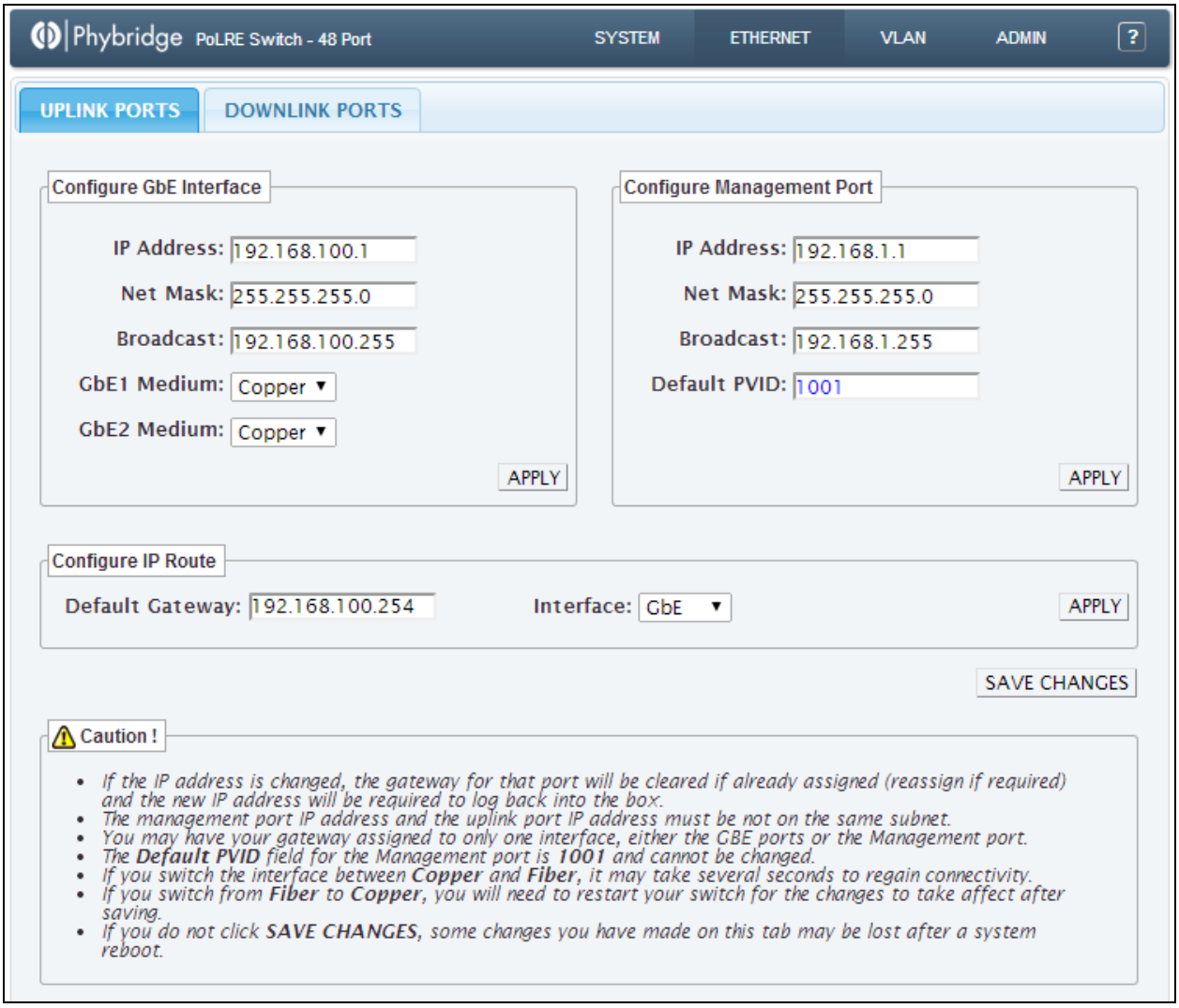
6.1. Launch Web Interface

Access the PoLRE web interface by using the URL "http://ip-address" in an Internet browser window (Chrome and Firefox supported), where "ip-address" is a valid IP address of the PoLRE switch. The default IP address of the PoLRE management port is "192.168.1.1" and the default IP address of the PoLRE GBE ports is "192.168.100.1". In this example the web interface of the PoLRE switch was accessed by the management port. The **Web Interface Login** screen is displayed as shown below. Log in using the appropriate credentials.



6.2. Administer Phybridge PoLRE IP Address

In the subsequent screen, select **ETHERNET** from the options at the top of the screen, then select the **UPLINK PORTS** tab. On this page the IP Address configuration of the PoLRE switch can be changed if required to match a given network. In this sample configuration the default values were used as below.

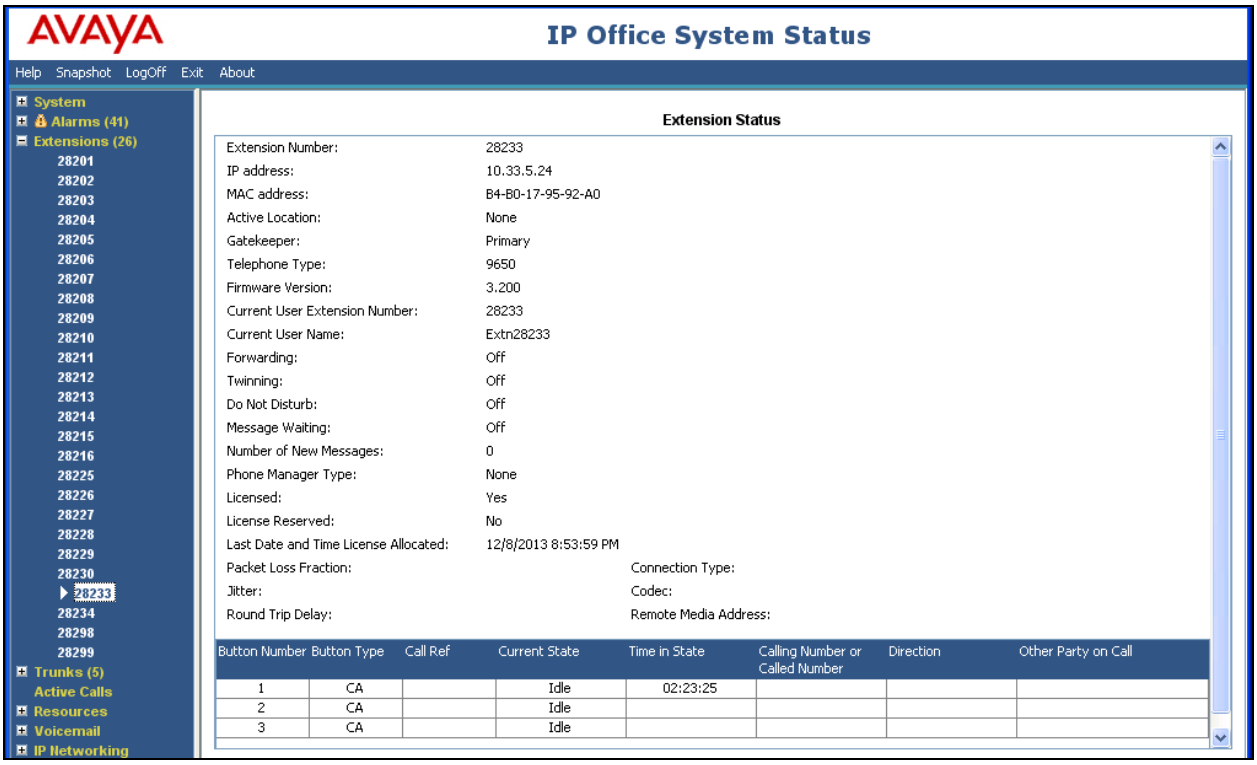


7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of IP Office and PoLRE.

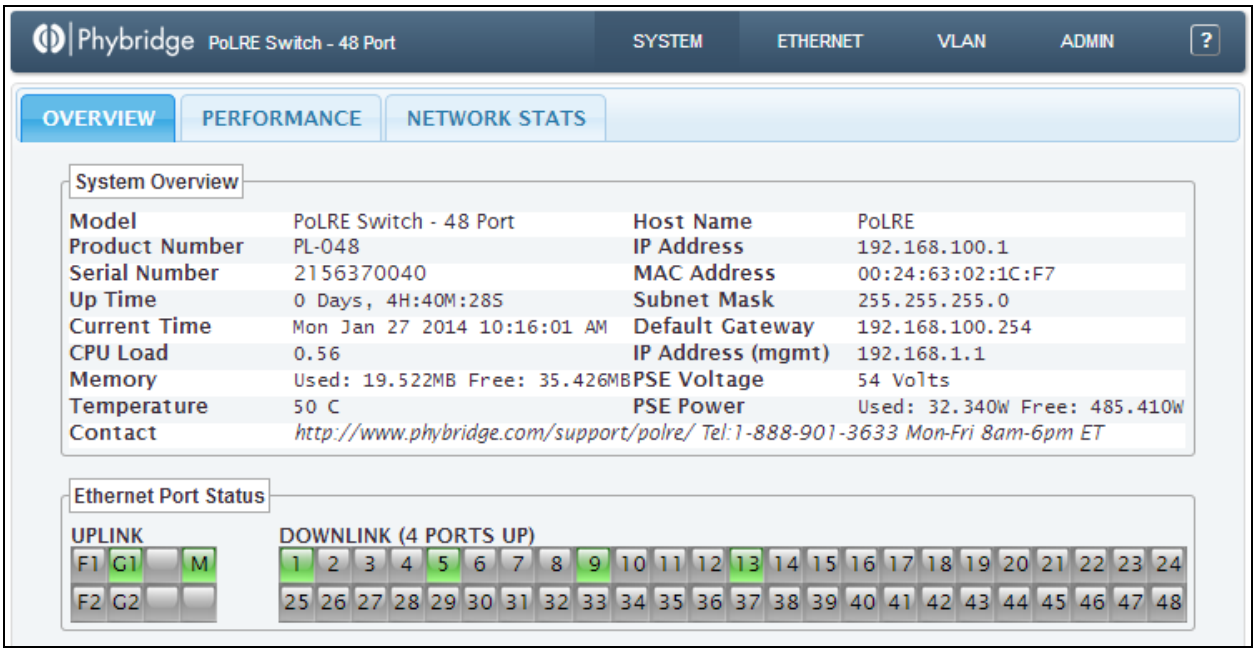
7.1. Verify Avaya IP Office

The status of the new IP phones can be verified as follows. From a PC running the IP Office Manager application, select **Start → Programs → IP Office → System Status** to launch the application. The **Avaya IP Office System Status Logon** screen is displayed (not shown). Enter the appropriate credentials. From the left panel expand **Extensions** and then select the appropriate **extension number**. The status of the selected extension can now be viewed in the right panel.



7.2. Verify Phybridge PoLRE

From the PoLRE web interface, select **SYSTEM** from the options at the top of the screen, then select the **OVERVIEW** tab. The **System Overview** screen is displayed. Verify in the **Ethernet Port Status** section of the page that all **DOWNLINK** ports are up that have physically connected IP Phones, as shown below for ports 1, 5, 9 and 13.



8. Conclusion

These Application Notes describe the configuration steps required for Phybridge PoLRE to interoperate with Avaya H.323 and SIP IP telephones registered to Avaya IP Office. All feature and serviceability test cases were completed and passed as per **Section 2** with observations explained in **Section 2.2**.

9. Additional References

This section references the product documentation relevant to these Application Notes.

Documentation for Avaya IP Office can be found at http://support.avaya.com.

Avaya IP Office

1) *Avaya IP Office Installing IP Office Basic Edition – Quick Mode*, document 15-601042 Issue 28l, 23 January 20

2) *Power over Ethernet Calculator,* document NN48500-520 Version 7.2, March 2011

Documentation for Phybridge products may be found at http://phybridge.com**.**

Phybridge PoLRE Switch

3) *Phybridge PoLRE Switch and Phylink Adapter Hardware Installation Guide*, Document No. 8005.01.05, Issue 5, July 2012

4) *NON POE devices on a PhyAdater or PhyLink, document* 009-011 TS – 017 Version 002, 27 December 2012

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.