Avaya Solution & Interoperability Test Lab

Application Notes for Valcom PagePro IP with Avaya Aura® Communication Manager and Avaya Aura® Session Manager – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Valcom PagePro IP to successfully interoperate with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. The Valcom PagePro IP is a SIP-based paging device that integrates with Avaya Aura® Communication Manager and Avaya Aura® Session Manager as SIP endpoints.

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 the Valcom PagePro IP to successfully interoperate with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. The Valcom PagePro IP is a SIP-based paging device that integrates with Avaya Aura® Communication Manager and Avaya Aura® Session Manager as SIP endpoints.

1.1. Interoperability Compliance Testing

The interoperability compliance test plan included feature and serviceability test cases.

The feature testing covered SIP registration, basic calls, simultaneous calls, display verification, media shuffling, and audio codec negotiation. Various SIP access numbers for the Valcom PagePro IP device were dialed to test connection to the proper speaker groups.

The serviceability testing focused on verifying the ability of the Valcom PagePro IP to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet cable to the device, rebooting Communication Manager, and rebooting Session Manager.

1.2. Support

Technical support for Valcom can be obtained through the following:

- **Phone:** (800) VALCOM1
- **Email:** support@valcom.com

2. Reference Configuration

The Valcom PagePro IP can register with Avaya Aura® Session Manager as eight separate SIP endpoints (access numbers), providing up to eight zones of SIP-based paging. When a call is placed to one of the access numbers, the device answers the call and automatically establishes a one-way communication path with a preconfigured group of IP speakers, and/or analog speakers/gateways associated with the access number. During compliance testing, the following Valcom Talkback IP Speakers were used as the preconfigured destinations for the access numbers:

- VIP-148L
- VIP-160
- VIP-172L
- VIP-422
- VIP-431-DS

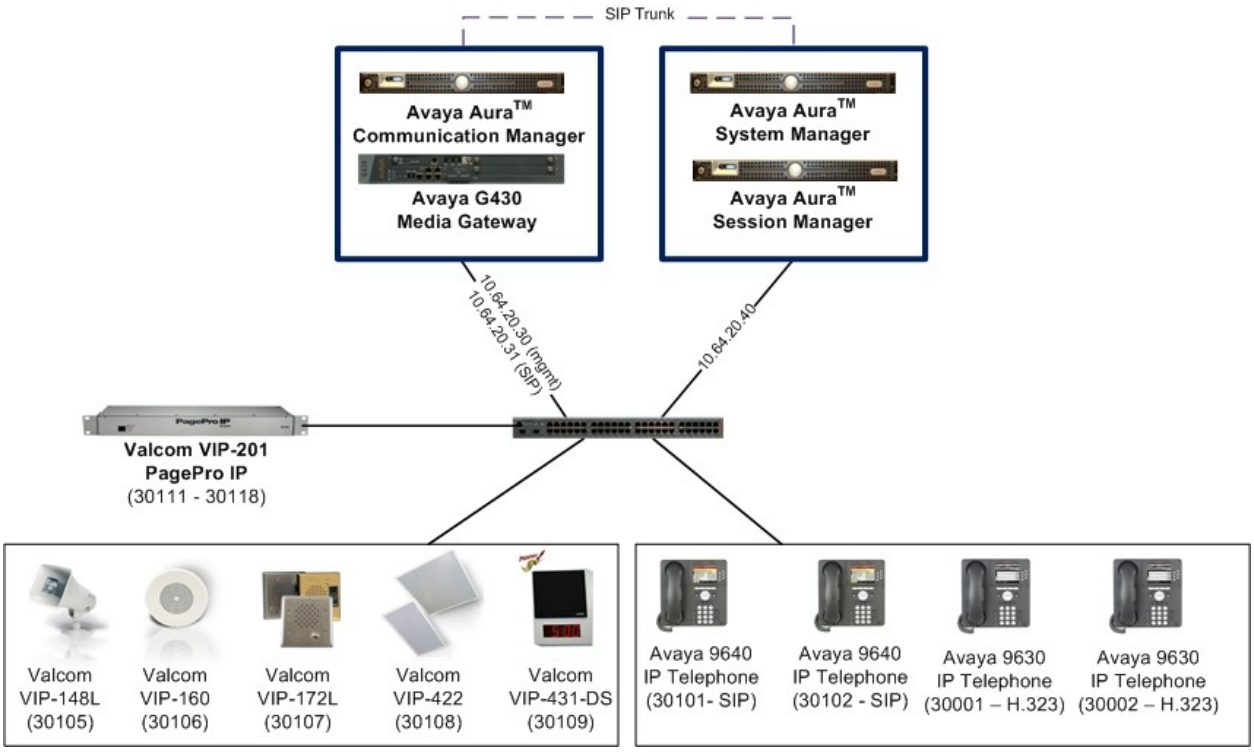


Figure 1: Valcom PagePro IP with Avaya Aura® Communication Manager and Avaya Aura® Session Manager

3. Equipment and Software Validated

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

Equipment	Software
Avaya S8800 Server with a Avaya G430 Media Gateway	Avaya Aura® Communication Manager 6.0, R016x.00.0.345.0, Update 18444 (Avaya Aura® System Platform: 6.0.1.0.5)
Avaya S8800 Server	Avaya Aura® System Platform: 6.0.1.0.5 Avaya Aura® System Manager: 6.0.7.0
Avaya S8800 Server	Avaya Aura® System Platform: 6.0.1.0.5 Avaya Aura® Session Manager 6.0.0.0.600020
Avaya 9600 Series IP Telephones • H.323 • SIP	 3.1.1 2.6.2
Valcom PagePro IP • VIP-201	 2.17
Valcom Talkback IP Speakers • VIP-148L • VIP-160 • VIP-172L • VIP-422 • VIP-431-DS	2.17

4. Configure Avaya Communication Manager

The detailed administration of basic connectivity between Avaya Aura® Communication Manager and Avaya Aura® Session Manager is not the focus of these Application Notes and will not be described. For administration of basic connectivity between Avaya Aura® Communication Manager and Avaya Aura® Session Manager, refer to the appropriate documentation listed in **Section 10**. Note coded G.711MU was configured on Avaya Aura® Communication Manager. This section provides the procedures for the following:

- Verify Avaya Aura® Communication Manager License

4.1. Verify Communication Manager License

Log into the System Access Terminal (SAT) to verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the "display system-parameters customer-options" command to verify that there is sufficient capacity for SIP stations by comparing the **Maximum Off-PBX Telephones - OPS** field value with the corresponding value in the **USED** column. The difference between the two values needs to be greater than or equal to the number of access numbers required for the Valcom PagePro IP device.

```
display system-parameters customer-options                    Page   1 of  11
                              OPTIONAL FEATURES

    G3 Version: V16                              Software Package: Enterprise
      Location: 2                                 System ID (SID): 1
      Platform: 28                                Module ID (MID): 1

                                                          USED
                                Platform Maximum Ports: 65000 90
                                     Maximum Stations: 41000 24
                                Maximum XMOBILE Stations: 41000 0
                    Maximum Off-PBX Telephones - EC500: 41000 0
                    Maximum Off-PBX Telephones -   OPS: 41000 18
                    Maximum Off-PBX Telephones - PBFMC: 41000 0
                    Maximum Off-PBX Telephones - PVFMC: 41000 0
                    Maximum Off-PBX Telephones - SCCAN: 0     0
                         Maximum Survivable Processors: 313   1



       (NOTE: You must logoff & login to effect the permission changes.)
```

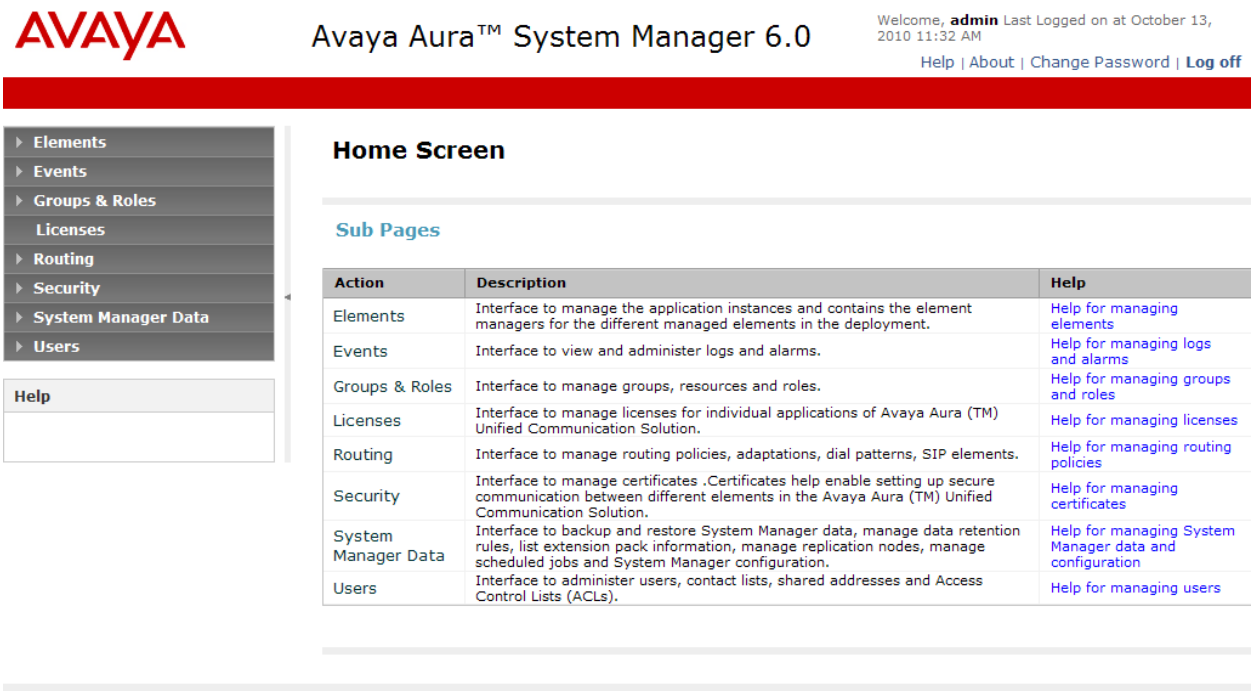
5. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Avaya Aura® Session Manager. The procedures include the following areas:

- Launch Session Manager administration interface
- Administer endpoints
- Administer users

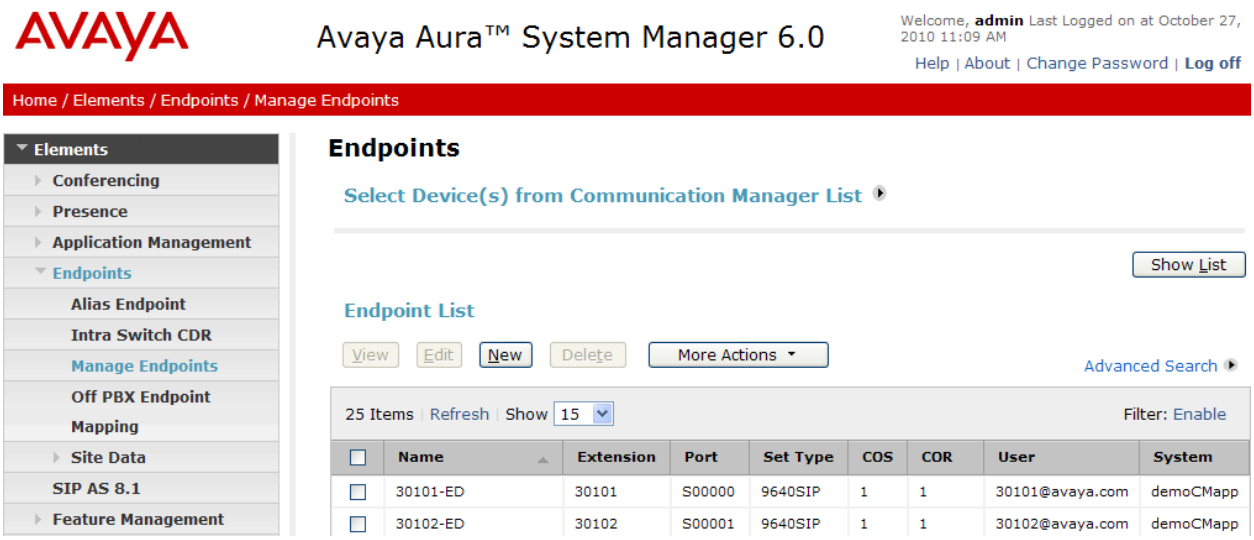
5.1. Launch Session Manager Administration Interface

Configuration of Session Manager is accomplished by accessing the browser-based GUI of Avaya Aura™ System Manager, using the URL "https://<ip-address>/SMGR", where "<ip-address>" is the IP address of System Manager. Log in using the appropriate credentials. The screen shown below is displayed.



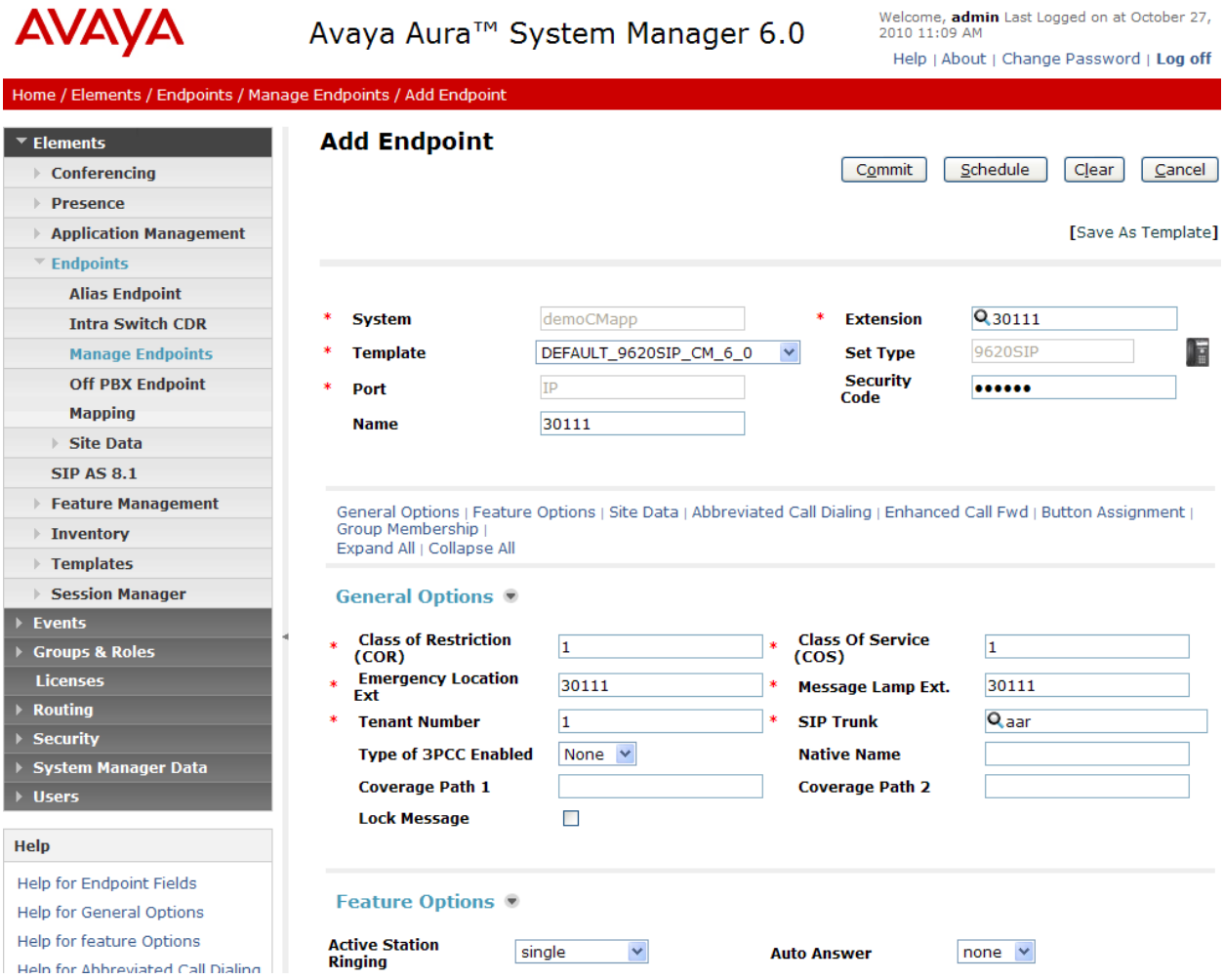
5.2. Administer Endpoints

From the menu in the left pane, navigate to **Elements → Endpoints → Manage Endpoints** as shown below. Select the **New** button from the right pane.



The Valcom endpoints were defined using the template for the Avaya 9620 SIP phone during compliance testing. Enter the following values for the specified fields, and retain the default values in the remaining fields.

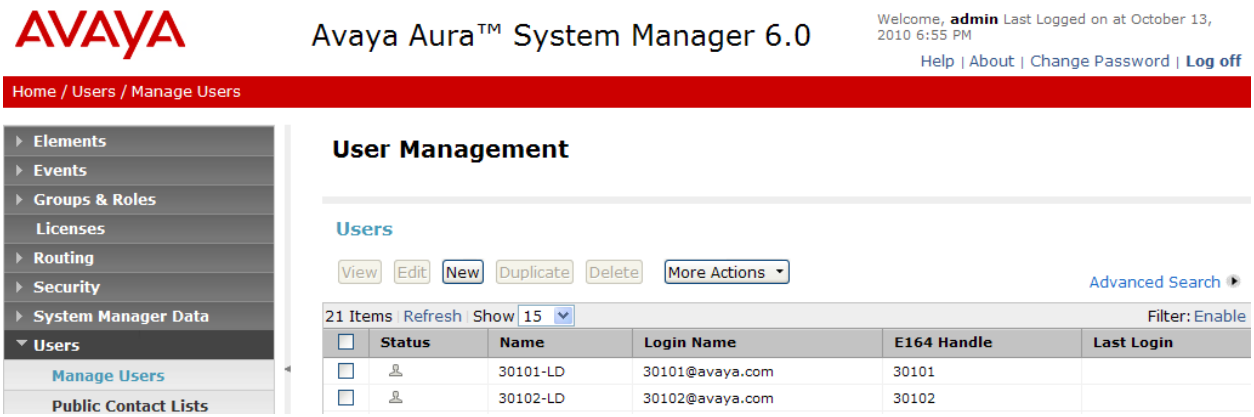
- **Template** Enter "DEFAULT_9620SIP_CM_6_0".
- **Name** Enter a descriptive name.
- **Extension** Enter a valid available extension for this endpoint.
- **Security Code** Enter the desired security code for this endpoint.



Click **Commit**. Repeat this procedure for each of the Valcom PagePro IP access numbers.

5.3. Administer Users

Users must be added to Session Manager that correspond to the SIP endpoints added in **Section 5.2**. From the menu in the left pane, navigate to **Users → Manage Users**. Select the **New** button from the right pane.



Enter the following values for the specified fields, and retain the default values in the remaining fields.

Under *General*:

- **Last** Enter the last name of the user.
- **First** Enter the first name of the user.

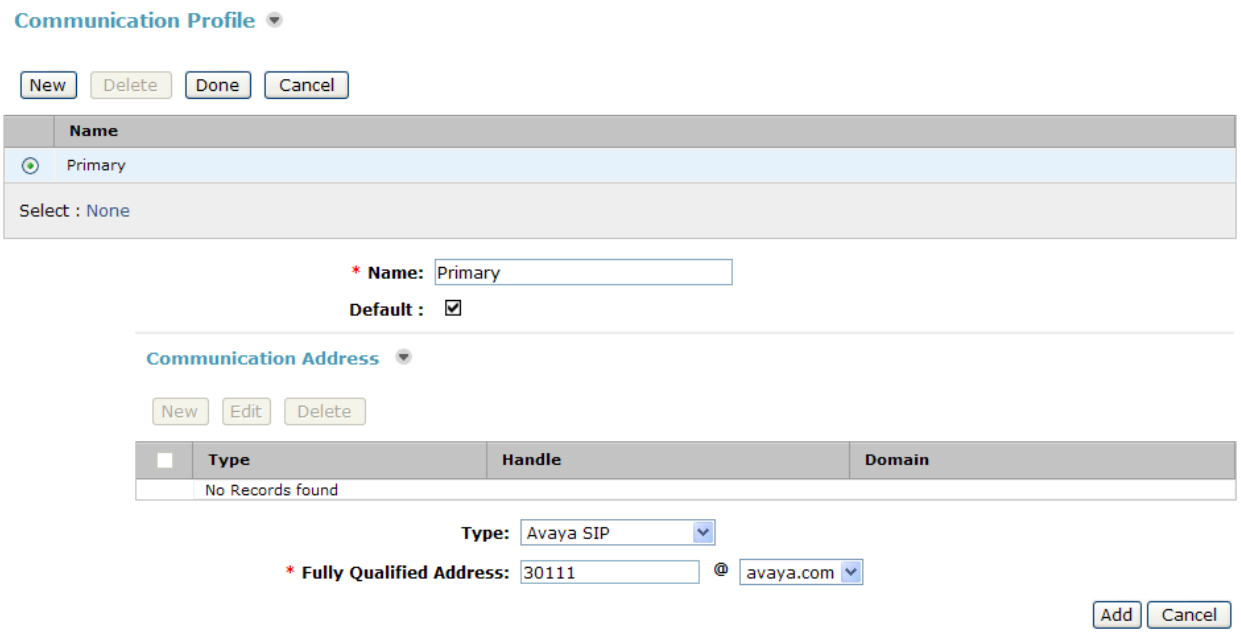
Under *Identity*:

- **Login Name**: Using the extension from **Section 5.2**, enter the unique system login given to the user. It takes of form of *username@domain* (e.g. "30111@avaya.com") and it is used to create the user's primary handle.
- **Authentication Type:** Select **"**Basic" to have the user's login authenticated by an Avaya Authentication Server.
- **SMGR Login Password:** Enter the password used to log into System Manger.
- **Shared Communication Profile Password:** Enter the password used to log into the Valcom endpoint (the Security Code from **Section 5.2**).
- **Localized Display Name**: Enter the localized display name of the user.
- **Endpoint Display Name**: Enter the full text name of the user represented in ASCII to support displays that cannot handle localized text.
- **Language Preference**: Select the user's preferred written or spoken language
- **Time Zone:** Select the preferred time zone of the user.

Under *Communication Profile* → *Communication Address*:

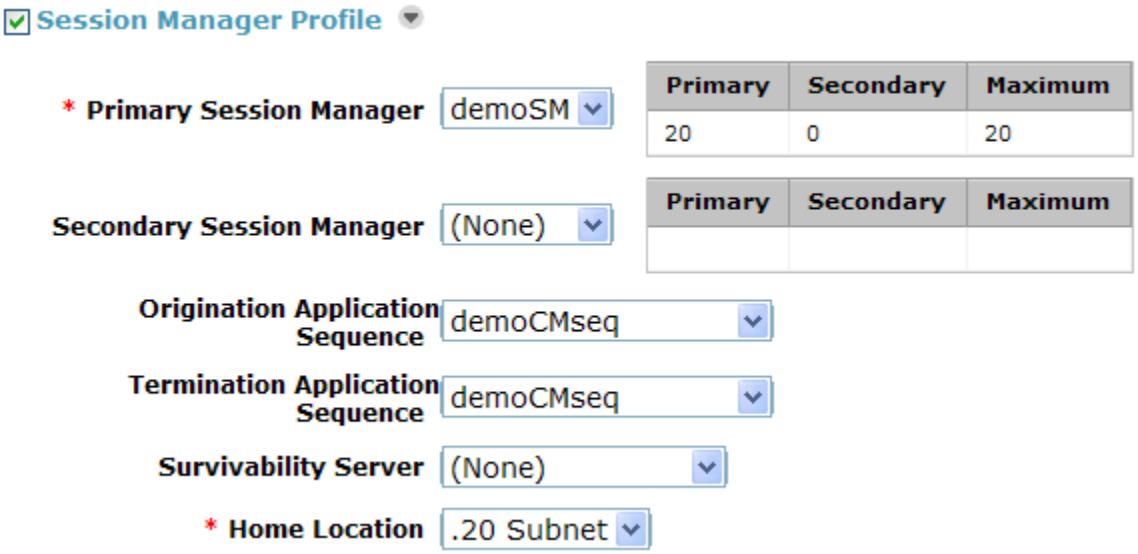
- **Type**: Select "Avaya SIP".
- **Fully Qualified Address**: Enter the extension and select the appropriate domain for the user.

Click the **Add** button.



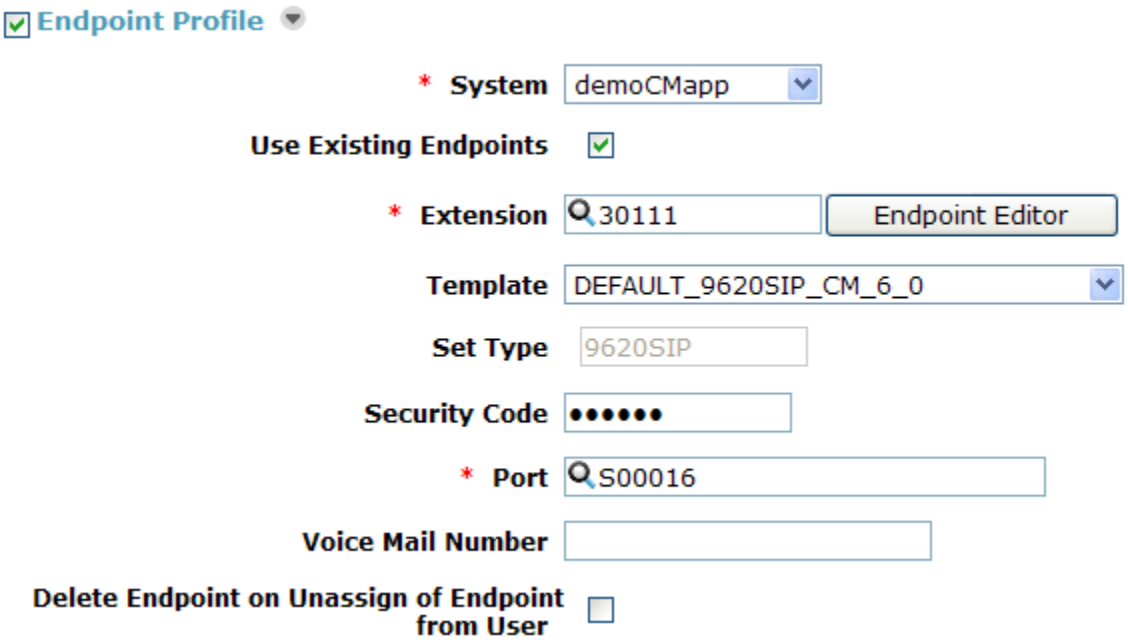
Under *Communication Profile* → *Session Manager*:

- **Primary Session Manager** — Select the Session Manager instance that should be used as the home server for the currently displayed Communication Profile.
- **Origination Application Sequence** — Select an Application Sequence that will be invoked when calls are routed *from* this user.
- **Termination Application Sequence** — Select an Application Sequence that will be invoked when calls are routed *to* this user.
- **Home Location** — Select the Home Location of this user.



Under *Communication Profile* → *Endpoint Profile*:

- **System**: Select the Communication Manager on which the endpoint exists.
- **Use Existing Endpoints** Check this box to use an endpoint administered in **Section 5.2**.
- **Extension**: Enter the extension of the endpoint from **Section 5.2** that you want to associate with this user.
- **Template**: Select an appropriate template matching the template configured in **Section 5.2**.
- **Security Code**: Enter the security code to be used by the Valcom endpoint when registering to the Session Manager, as administered in **Section 5.2**.
- **Port**: The Port field is automatically filled in.



Click the **Commit** button. Repeat the procedures in this section to add a user for each endpoint administered in **Section 5.2**.

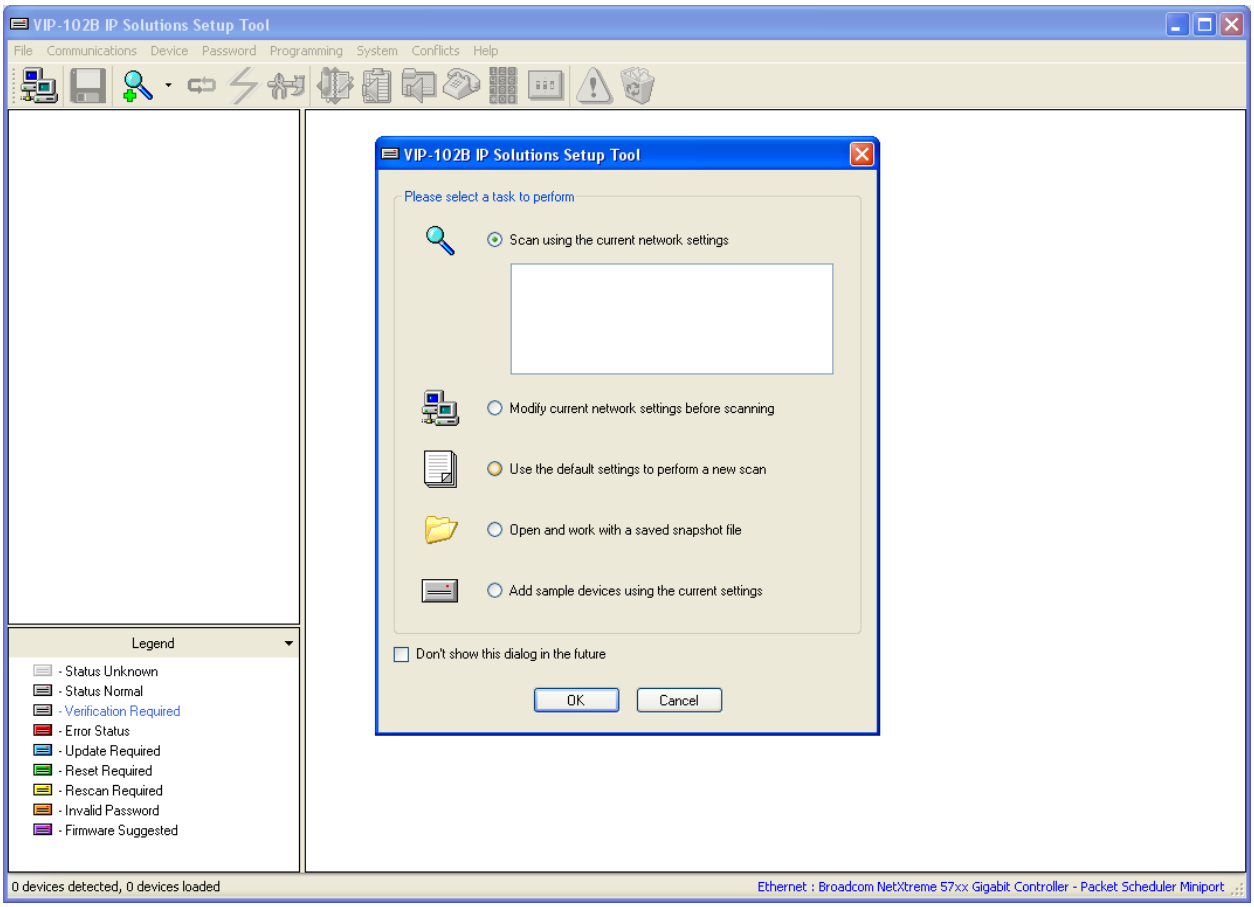
6. Configure Valcom PagePro IP

This section provides the procedures for configuring Valcom PagePro IP. The information shown is the minimum for configuring the Valcom device. Complete configuration details may be found in the Valcom documentation listed in **Section 10**. The procedures include the following areas:

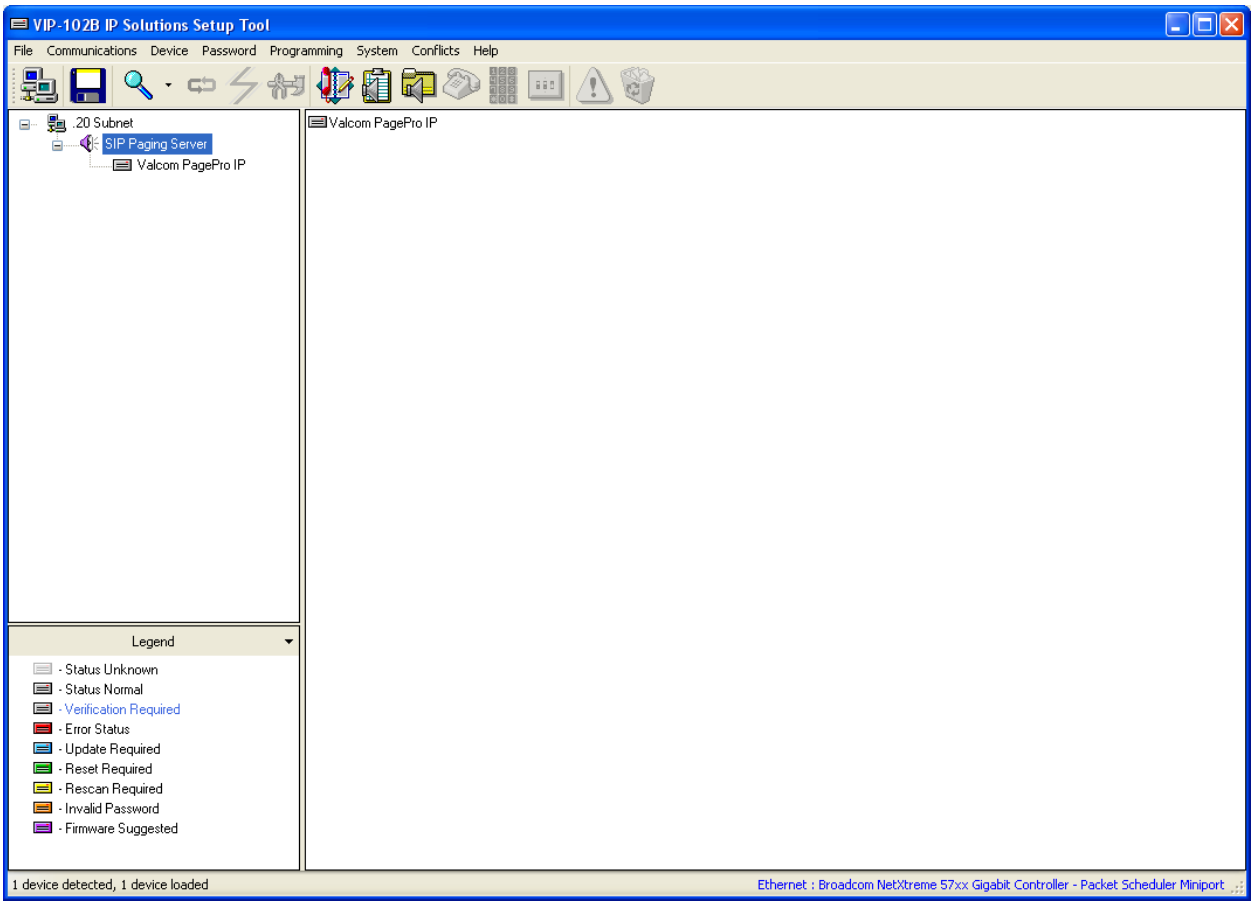
- Launch setup tool
- Administer properties
- Administer network
- Administer group membership
- Administer SIP

6.1. Launch Setup Tool

From a PC running the Valcom VIP-102B IP Solutions Setup Tool application, select **Start → All Programs → Valcom IP Solutions → VIP-102B IP Solutions Setup Tool**. The **VIP-102B IP Solutions Setup Tool** screen is displayed. Retain the default values and click **OK** to scan for Valcom devices.

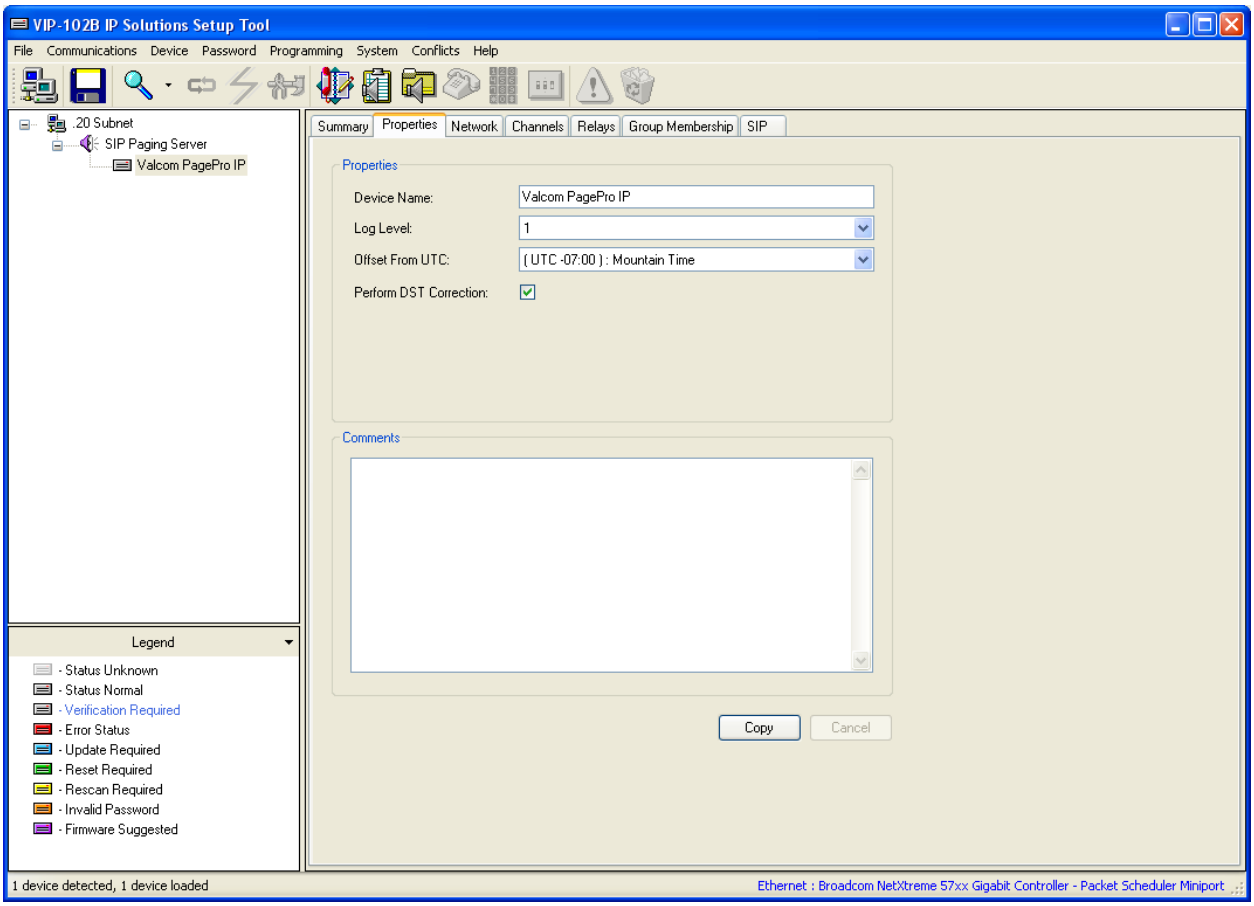


At the conclusion of the scan, the **VIP-102B IP Solutions Setup Tool** screen is updated with the discovered Valcom PagePro IP as shown below.



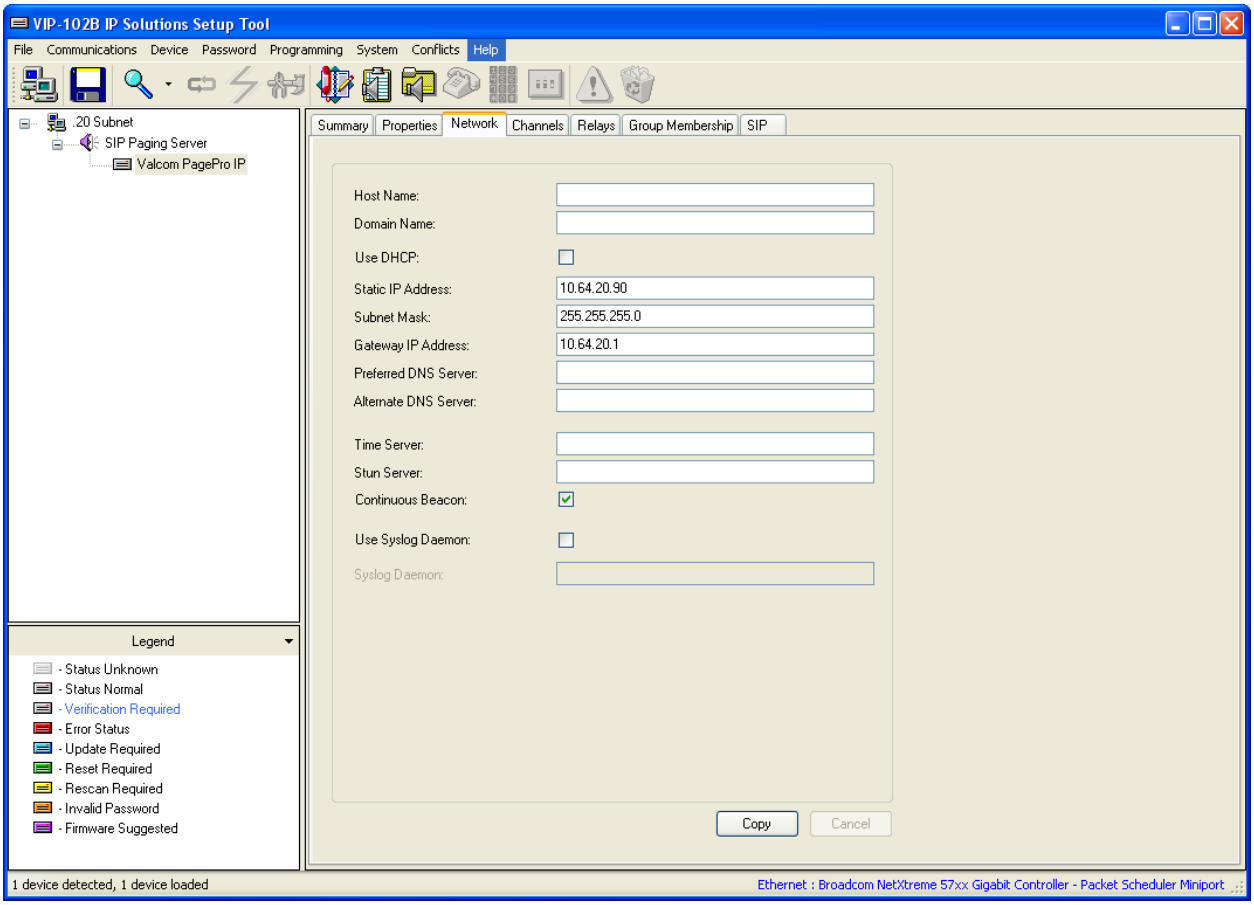
6.2. Administer Properties

Select the Valcom PagePro IP from the left pane to display the configuration tabs in the right pane. Select the **Properties** tab, and enter a descriptive **Device Name**. Select the appropriate time zone in the **Offset From UTC** field, and enter any desired **Comments**.



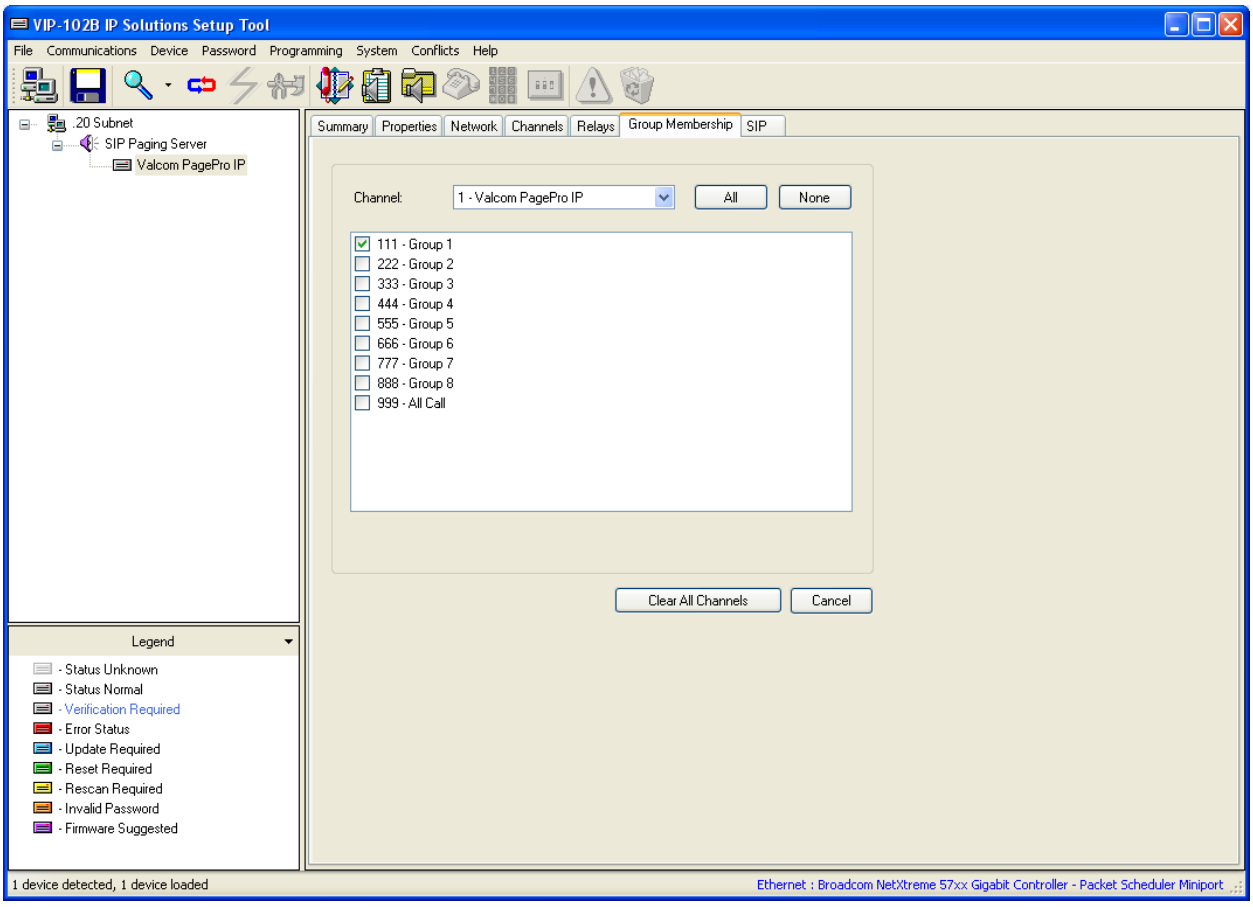
6.3. Administer Network

Select the **Network** tab and enter the appropriate values. During compliance testing, a **Static IP Address**, **Subnet Mask**, and **Gateway IP Address** were populated for the network configuration. The default values in the remaining fields may be retained.



6.4. Administer Group Membership

Select the **Group Membership** tab. Follow the appropriate documentation in **Section 10** to create the applicable speaker groups.

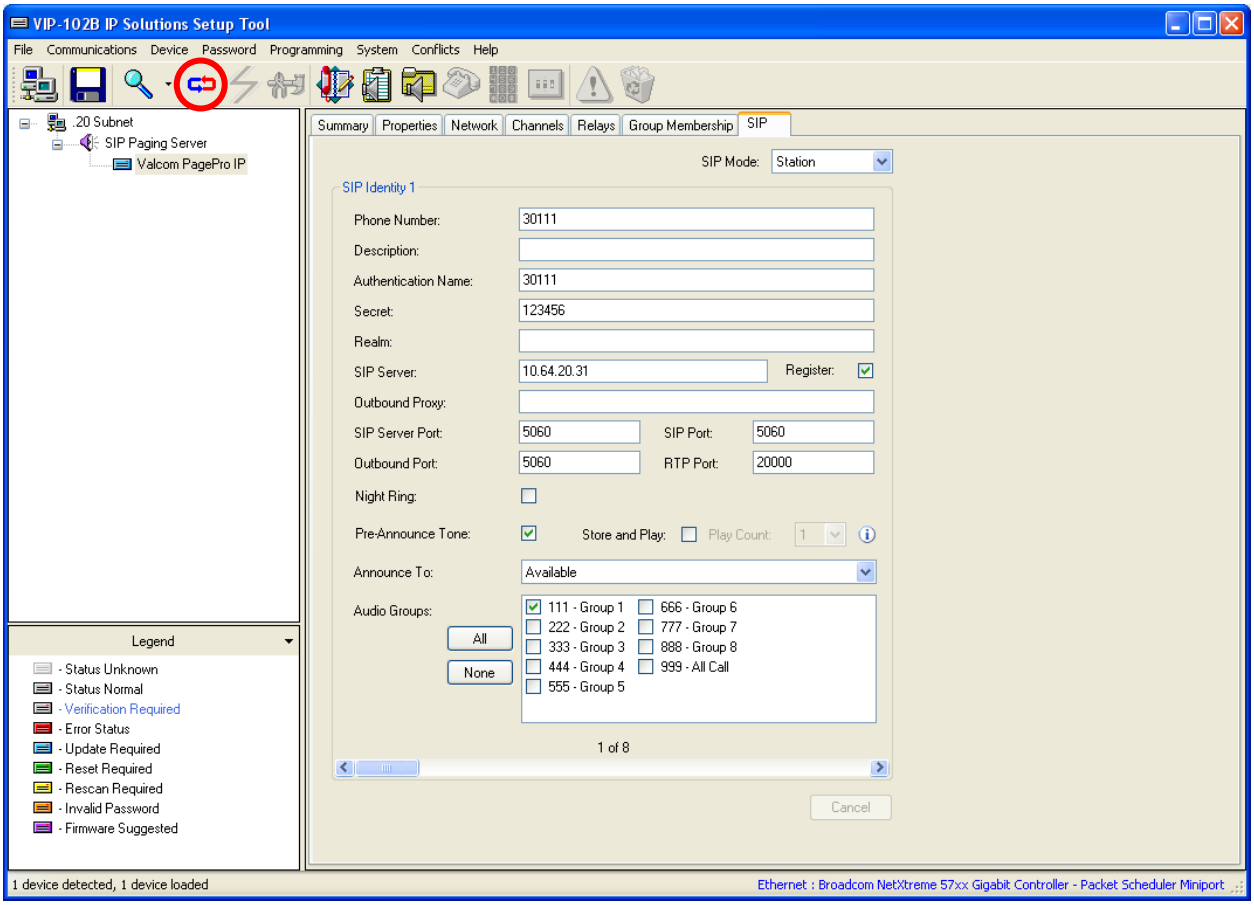


6.5. Administer SIP

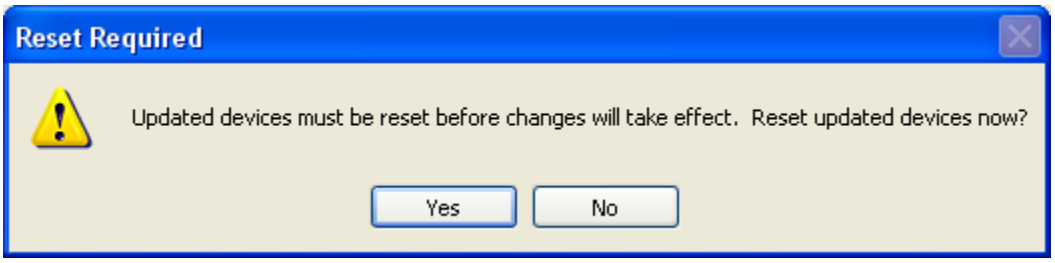
Select the **SIP** tab. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Phone Number:** Enter the user extension from **Section 5.3**.
- **Authentication Name:** Enter the user handle from **Section 5.3**.
- **Secret:** Enter the user Security Code from **Section 5.3**.
- **SIP Server:** Enter the IP address of Session Manager.
- **Register:** Check this field.
- **Store and Play:** Check this field if desired (shown below as unchecked).
- **Audio Groups:** Select the desired group(s) of speakers to connect.

Move the slide toward the bottom of the screen to the right to administer **SIP Identity 2** (not shown), and use the credentials for the second SIP user from **Section 5.3**. Repeat this section to administer all eight SIP identities.



Click on the **Update Changed Devices** icon circled above. The **Reset Required** dialog box will appear as shown below. Click **Yes** to reset the updated devices.



7. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing.

The feature testing covered SIP registration, basic calls, simultaneous calls, display verification, media shuffling, and audio codec negotiation. The feature test cases were performed manually. Various access numbers for the Valcom PagePro IP device were dialed to test connection to the proper speaker groups.

The serviceability testing focused on verifying the ability of the Valcom PagePro IP device to recover from adverse conditions, such as disconnecting and reconnecting the LAN cable to the Valcom PagePro IP. Additionally, the Communication Manager and Session Manager servers were each individually rebooted to verify the Valcom PagePro IP device was able to properly register and function normally after each server recovered.

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

- When shuffling (Direct IP-IP Audio) was enabled on Communication Manager, calls involving the Valcom devices did not shuffle.

8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Aura® Communication Manager, Avaya Aura® Session Manager, and the Valcom PagePro IP.

8.1. Verify User Registrations

On Session Manager, verify the registration status of the Valcom PagePro IP device by navigating to **Elements → Session Manager → System Status → User Registrations**. Verify that all the users administered in **Section 5.3** are listed as registered users.

8.2. Verify Valcom PagePro IP

Make a call to one of the access numbers for the Valcom PagePro IP device. Verify that the caller hears a pre-announce tone, and is connected to the appropriate speaker group from **Section 6.5** with a one-way talk path.

9. Conclusion

These Application Notes describe the configuration steps required for Valcom PagePro IP to successfully interoperate with Avaya Aura® Communication Manager and Avaya Aura® Session Manager.

All feature and serviceability test cases were completed with observations listed in **Section 7**.

10. Additional References

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

1. *Administering Avaya Aura™ Communication Manager*, Document 03-300509, Issue 6.0, Release 6.0, August 2010, available at http://support.avaya.com

2. *Administering Avaya Aura™ Communication Manager Server Options*, Document 03-603479, Issue 2, Release 6.0, June 2010, available at http://support.avaya.com

3. *Administering Avaya Aura™ Session Manager*, Document 03-603324, Issue 3, Release 6.0, August 2010, available at http://support.avaya.com

4. PagePro IP SIP Based Paging Server documentation is available at http://www.valcom.com

5. Valcom Talkback IP Speaker documentation is available at http://www.valcom.com

6. Valcom VIP-102B IP Solutions Setup Tool Reference Manual is available at http://www.valcom.com

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.