



IP Phone Configuration and Troubleshooting Guide

NetVanta 7000 Series and ADTRAN-approved Polycom Phones

Overview

The purpose of this guide:

- Explain the default configuration.
- Explain how to configure the NetVanta 7000 Series products for a Polycom phone.
- Explain how the phone acquires the configuration from the NetVanta 7000 Series product.
- Provide guidance for troubleshooting phones that will not fully boot, register, etc.
- Explain how to restore a phone to the factory defaults.

Default Configuration

The NetVanta 7000 Series product ships with the following default configuration for phones:

- DHCP server
 - Enabled
 - Option 66 pointing to tftp://10.10.20.1 for a boot server for Polycom phones
NOTE - "tftp://" must prepend the IP address in the ascii string for DHCP option 66
ex: tftp-server tftp://10.10.20.1
- FTP server
 - Enabled
 - Pointing to CompactFlash[®] filesystem
- Polycom Phone Default Configuration ("polycomboot.cfg")
 - Phone VLAN is 2
 - Boot Server contact method is FTP
 - Default Boot Server is 10.10.20.1/Polycom
 - FTP username and password are "polycomftp" and "password"

Contacting the Boot Server

Polycom phones initially boot and learn from DHCP Option 66 to use TFTP to contact the boot server. This is because TFTP does not require a Username and Password. This will allow a phone to download a file called "polycomboot.cfg" from Flash memory. This file contains the boot parameters listed above and will statically configure these values on the phone so that when it reboots it will retain the newly learned boot parameters.

Special Note about AOS Versions

The configuration portion of this guide is divided into three sections. Select the appropriate link below for your ADTRAN Operating System (AOS) version.

- [AOS R10.1.0 and above](#)
- [AOS A2.04.00 to A5.03](#)
- [AOS A2.03.00.SC and below](#)

Configuring the NetVanta 7000 Series Product in AOS R10.1.0 and Above

Creating a New User Account

The screenshot shows the 'User Accounts' configuration interface. At the top, there are tabs for 'New', 'Edit', and 'Delete', and a 'Refresh' button. The 'User Data Source' section has two radio buttons: 'Create new' (selected) and 'Create by copying from another user:'. Below this is a dropdown menu showing '1111 -'. The 'Extension' field is labeled 'x' and has a text input field. The 'First Name' and 'Last Name' fields are text inputs with a '40 characters max' limit. The 'Phone Type' dropdown is set to 'SIP'. The 'Phone Mac Address' section has three radio buttons: '<Not Set>' (selected), 'New Address', and 'Known Address'. The 'Phone Model' field is a text input with the placeholder 'Start Typing or Click to Show List'. The 'Mac Address' field consists of six input boxes, with the first three containing '00', 'A0', and 'C8'. At the bottom, there are three buttons: 'Apply', 'Apply and Add Another', and 'Cancel'.

1. Navigate to **Voice > User Accounts** and select **New**.
2. Enter the **Extension**.
3. Enter the **First Name** and **Last Name**.
4. Select **SIP** for the **Phone Type** and enter the **Phone MAC Address**.
5. Select the **Phone Model** from the drop-down list.
6. Select **Apply**. The user account and associated phone configuration will be generated, and you will be taken to the new user account's configuration menu.
7. Navigate through the tabs and customize any settings needed on the new user account.

Viewing/Editing the Phone Configuration

IP Phone Configs				
New	Edit	Delete	Refresh	Other Actions
<input type="checkbox"/>	MAC Address	Associated Account	Registered IP	Phone Model
<input type="checkbox"/>	00:01:02:03:04:05	1234	<Not Registered>	ADTRAN IP 706
<input type="checkbox"/>	00:04:F2:10:D3:9E	1332	10.10.20.2	Polycom SoundPoint-IP 430

1. Navigate to **Voice > IP Phone Configs**. Select the configuration you wish to edit using the check box and then select **Edit**. You can also double-click the row in the table or select **Edit Config** on the **General** tab of the user accounts menu.
2. Click in the **Action** field to assign the action for a specific button. The previously selected phone model determines the number of buttons available on the **Button Map** tab.

IP Phone Configs

MAC Address: [?](#)

Phone Model: [?](#)

Phone Label:

Button Map | **Phone Settings**

Button	Action	Primary	Label	
1	<input type="button" value="+"/> <input type="button" value="x"/> Ext: 1234	<input checked="" type="radio"/>	1234	<input type="button" value="wrench"/>
2	Ext: 1234	<input type="radio"/>	1234	
3	<input type="button" value="v"/>	<input type="radio"/>		
4	Extension	<input type="radio"/>		
5	Shared Line	<input type="radio"/>		
6	Status Group	<input type="radio"/>		
	Blank	<input type="radio"/>		
	DND	<input type="radio"/>		
	Speed	<input type="radio"/>		

Cancel Apply

Adding an Extension

3. Click in the **Action** field and select **Extension** from the drop-down list.
4. Select an existing extension from the drop-down list or select **New** to create a new one.
5. Select the number of line keys.

Adding a Shared Line

6. Click in the **Action** field and select **Shared Line** from the drop-down list.
7. Select a shared line from the drop-down list.

Adding a Status Group

8. Enter the number of **Expansion Modules** just below the **Display Name** (if needed for the status group).
9. Click in the **Action** field and select **Status Group** from the drop-down list.
10. Select a status group.
11. Select **Apply** to save the changes.

For Polycom IP 600 Series phones using a Status Group larger than 5 members, you may be prompted with an additional selection to allow the Transport method to be changed to TCP automatically to support large Status Groups.

Creating Phone Configurations – Manual

In addition to creating phone configurations when creating user accounts, you can enter the MAC addresses in the **MAC Address List** field and assign them to user accounts. A bar code scanner can be used here to input the addresses.

1. Navigate to **Voice > IP Phone Configs** and select **New**.
2. On the **Manual Input** tab, check the box beside **Phone Model** and select the desired phone model from the drop-down list.
3. For nonexistent extensions, check the box beside **Starting Extension**, select **New**, enter the extension, and check the box beside **Create New User Account**.
4. For existing extensions, check the box beside **Starting Extension** and choose the extension from the drop-down list.
5. Enter the MAC addresses of the phones. The MAC addresses can be entered all on one line separated by a space or on separate lines.
6. Select **Add**. At this point the configurations have been staged, but not saved.
7. Make any corrections necessary and select **Continue**. You will be returned to the main **Phone Configs** menu and have the choice of saving the configurations or editing them.

Creating Phone Configurations – Bulk (using template)

Creating phone configurations with a CSV template will save time in generation by allowing you to download a template CSV file (save it as a CSV and open with Microsoft® Excel® or other editor), add the phone MAC address, extension, and phone model and then upload it to the unit.

1. Select **Download Template.csv** (file name **Download configTemplate.csv**) and save it on your computer. It is important to remember to save the file with a **.csv** file extension because most browsers default to **.htm** or **.html**.
2. Open the **Template.csv** file, add the MAC address, extension, and phone model. To ensure that you enter the phone model correctly, refer to the list under **View Phone Models** on the **CSV Import** tab or see the list below.

*Note: The phone model must be entered into the CSV file exactly as shown in **View Phone Models** on the **CSV Import** tab.*

3. Save the file locally using a **.csv** extension.
4. Select **Upload CSV** and browse to the file you just saved.
5. Select **Open**, and then select **Import**. At this point the configurations have been staged, but not saved.
6. Make any corrections necessary and select **Continue**. You will be returned to the main **Phone Configs** menu and have the choice of saving the configurations or editing them.

CSV File Field Descriptions

MAC Address:

Description: Associate a phone's unique mac-address with this entry

What It Does: Allows the phone with this mac to register with the system.

Acceptable Formatting: hexadecimal digits only; should be twelve digits in length; must be uniquely assigned

Extension:

Description: Associate an new unique extension with this entry

What It Does: Creates a new voice user with this value; allows a phone to register with the system using this value

Acceptable Formatting: Numeric digits

Phone Model:

Description: The type of the phone associated with this entry

What It Does: Tells the system how many line keys the phone has that are usable

Acceptable Formatting: Only these precise values are acceptable:

ADTRAN IP 706

ADTRAN IP 712

Polycom SoundPoint-IP 301

Polycom SoundPoint-IP 320

Polycom SoundPoint-IP 330

ADTRAN/Polycom IP 321

Polycom SoundPoint-IP 331

ADTRAN/Polycom IP 335

Polycom SoundPoint-IP 430

Polycom SoundPoint-IP 450

Polycom SoundPoint-IP 501

ADTRAN/Polycom IP 550

Polycom SoundPoint-IP 560

Polycom SoundPoint-IP 601

ADTRAN/Polycom IP 650

Polycom SoundPoint-IP 670

Polycom SoundStation-IP 4000

Polycom SoundStation-IP 5000

Polycom SoundStation-IP 6000

Polycom SoundStation-IP 7000

ADTRAN/Polycom VVX 300

ADTRAN/Polycom VVX 310

ADTRAN/Polycom VVX 400

ADTRAN/Polycom VVX 410

ADTRAN/Polycom VVX 500

ADTRAN/Polycom VVX 600

Polycom Wifi SpectraLink 8440

Polycom Wifi SpectraLink 8450

Polycom Wifi SpectraLink 8452

First Name:

Description: The desired first name of the person who will use this phone

What It Does: Help to label the phone, provides callerID info, etc...

Acceptable Formatting: Only printable ASCII characters

Last Name:

Description: The desired last name of the person who will use this phone

What It Does: Help to label the phone, provides callerID info, etc...

Acceptable Formatting: Only printable ASCII characters

Sip Authentication Password:

Description: The desired plain-text password used for the IP phone to register to the NV7100

What It Does: Provides the system with a way for validating the IP phone

Acceptable Formatting: Alphanumeric characters, from one to sixteen characters in length

DID:

Description: A desired Direct Inward Dial for the system to direct to this extension

What It Does: Allows DIDs to be mapped to an extension

Acceptable Formatting: Numeric digits

Email Address:

Description: The desired email address to associate with this extension

What It Does: This is used for voicemail-to-email capabilities

Acceptable Formatting: A valid email address

Coverage:

Description: The desired coverage to associate with this SIP endpoint

What It Does: Used to direct what happens to a call after the set number of rings has been reached

Acceptable Formatting: String for the name of a global call coverage list (e.g. "go_to_voicemail")

Cos:

Description: The desired class of service to associate with this extension

What It Does: Used to limit/restrict what services this SIP endpoint will be able to perform/use

Acceptable Formatting: String for a configured voice class of service (e.g. "normal_users")

Voicemail Cos:

Description: The desired voicemail system class of service to associate with this extension

What It Does: Used to limit/restrict what services the voicemail system will provide for this extensions VM box

Acceptable Formatting: String for a configured voicemail class of service (e.g. "normal_voicemail")

Alias:

Description: A desired SIP alias to associate with this extension

What It Does: Allows a SIP alias to point to this extension

Acceptable Formatting: Numeric digits

Managing Multiple Firmware Versions

A new addition as of R10.1.0 is the ability to manage multiple firmware versions corresponding to Polycom phones. It is important to ensure that the firmware files for the version you select are loaded in the Polycom directory on the 7100 CFLASH.

1. Navigate to **Voice > IP Phone Globals**.
2. Click the **Default Settings** tab, then the **Default Firmware** sub-tab.
3. Select the appropriate version of firmware for your phone models and click **Apply**.

IP Phone Globals

From this page you can create and manage configuration files and settings for your IP phones.

Global Directory **Boot Settings** Default Settings Global Files

The configuration values on this tab affect how IP phones boot and register with the system.

Local Phones Remote Phones **Default Firmware**

IP 706 Firmware

AppName: [?](#)

BootName: [?](#)

IP 712 Firmware

AppName: [?](#)

BootName: [?](#)

If the Polycom firmware versions are modified, existing config files for affected models will be automatically updated to the new firmware selection. **Please ensure the correct firmware is loaded on the file-system.**

Polycom SoundPoint IP 301 Firmware

Version: [?](#)

Polycom SoundPoint IP 320 Firmware

Version: [?](#)

Polycom SoundPoint IP 330 Firmware

Version: [?](#)

ADTRAN/Polycom IP 321 Firmware

Version: [?](#)

Polycom SoundPoint IP 331 Firmware

Version: [?](#)

ADTRAN/Polycom IP 335 Firmware

Version: [?](#)

Polycom SoundPoint IP 430 Firmware

Version: [?](#)

Polycom SoundPoint IP 450 Firmware

Version: [?](#)

Polycom SoundPoint IP 501 Firmware

Version: [?](#)

ADTRAN/Polycom IP 550 Firmware

Version: [?](#)

Polycom SoundPoint IP 560 Firmware

Version: [?](#)

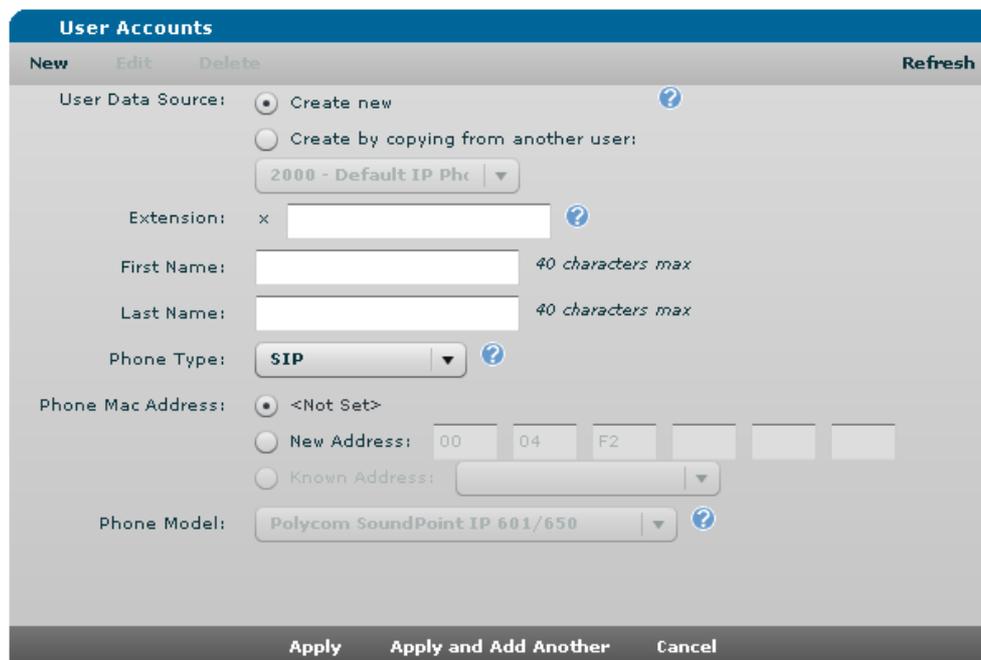
Configuring the NetVanta 7000 Series Product in AOS A2.04.00 through A5.03

With AOS A2.04.00, the **User Accounts** and **IP Phone Configs** menus of the NetVanta 7000 Series have changed considerably to accommodate configuring larger numbers of users and phones. Note the following changes:

- The **User Accounts** menu has been updated, but the content is basically the same.
- When new user accounts are created, the default global call coverage list named **go_to_voicemail** is applied and the default voicemail class of service (CoS) named **normal_voicemail** is assigned.
- The **Phone Configs** tab of the **IP Phone Configs** menu has been fully redesigned with additional features, such as comma separated value (CSV) template import for bulk configuration generation.
- The remaining tabs on the **IP Phone Configs** menu have been moved to a new menu called **IP Phone Globals** since all of these settings are global to all or a group of phones.

Note: The updated pages will likely require an additional plug-in (Adobe Flash Player version 10 or higher) for your Web browser to view the Adobe Flash Player-based content. Most browsers will prompt you for this and allow you to download it automatically.

Creating a New User Account



8. Navigate to **Voice > User Accounts** and select **New**.
9. Enter the **Extension**.
10. Enter the **First Name** and **Last Name**.
11. Select **SIP** for the **Phone Type** and enter the **Phone MAC Address**.
12. Select the **Phone Model** from the drop-down list.
13. Select **Apply**. The user account and associated phone configuration will be generated, and you will be taken to the new user account's configuration menu.
14. Navigate through the tabs and customize any settings needed on the new user account.

Viewing/Editing the Phone Configuration

IP Phone Configs				
New	Edit	Delete	Refresh	▼ Other Actions
<input type="checkbox"/>	MAC Address	Associated Accounts ▲	Registered IP	Phone Model
<input type="checkbox"/>	00:A0:C8:99:95:A1	4001	10.10.20.2	ADTRAN IP 712
<input type="checkbox"/>	00:A0:C8:00:99:98	4002	10.10.20.3	ADTRAN IP 706
<input type="checkbox"/>	00:04:F2:05:D4:55	4003	10.10.20.4	Polycom SoundPoint IP 501
<input checked="" type="checkbox"/>	00:04:F2:01:23:45	4004	<Not Registered>	Polycom SoundPoint IP 601/650

- Navigate to **Voice > IP Phone Configs**. Select the configuration you wish to edit using the check box and then select **Edit**. You can also double-click the row in the table or select **Edit Config** on the **General** tab of the user accounts menu.
- Click in the **Action** field to assign the action for a specific button. The previously selected phone model determines the number of buttons available on the **Button Map** tab.

IP Phone Configs

MAC Address: ?

Phone Model: ?

Display Name:

Expansion Modules: ?

Button Map | Phone Settings | Other Directory Entries

Button	Action	Label	
1	Ext: 4004	4004	
2	Ext: 4004	4004	
3	<input type="text"/>		
4	Extension		
5	Shared Line		
6	Status Group		
7	Blank		
8	Speed		
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Cancel Apply

Adding an Extension

14. Click in the **Action** field and select **Extension** from the drop-down list.
15. Select an existing extension from the drop-down list or select **New** to create a new one.
16. Select the number of line keys.

Adding a Shared Line

17. Click in the **Action** field and select **Shared Line** from the drop-down list.
18. Select a shared line from the drop-down list.

Adding a Status Group

19. Enter the number of **Expansion Modules** just below the **Display Name** (if needed for the status group).
20. Click in the **Action** field and select **Status Group** from the drop-down list.
21. Select a status group.
22. Select **Apply** to save the changes.

For Polycom IP 600 Series phones using a Status Group larger than 5 members, you may be prompted with an additional selection to allow the Transport method to be changed to TCP automatically to support large Status Groups.

Creating Phone Configurations – Manual

In addition to creating phone configurations when creating user accounts, you can enter the MAC addresses in the **MAC Address List** field and assign them to user accounts. A bar code scanner can be used here to input the addresses.

8. Navigate to **Voice > IP Phone Configs** and select **New**.
9. On the **Manual Input** tab, check the box beside **Phone Model** and select the desired phone model from the drop-down list.
10. For nonexistent extensions, check the box beside **Starting Extension**, select **New**, enter the extension, and check the box beside **Create New User Account**.
11. For existing extensions, check the box beside **Starting Extension** and choose the extension from the drop-down list.
12. Enter the MAC addresses of the phones. The MAC addresses can be entered all on one line separated by a space or on separate lines.
13. Select **Add**. At this point the configurations have been staged, but not saved.
14. Make any corrections necessary and select **Continue**. You will be returned to the main **Phone Configs** menu and have the choice of saving the configurations or editing them.

Creating Phone Configurations – Bulk (using template)

Creating phone configurations with a CSV template will save time in generation by allowing you to download a template CSV file (save it as a CSV and open with Microsoft® Excel® or other editor), add the phone MAC address, extension, and phone model and then upload it to the unit.

7. Select **Download Template.csv** (file name **Download configTemplate.csv**) and save it on your computer. It is important to remember to save the file with a **.csv** file extension because most browsers default to **.htm** or **.html**.
8. Open the **Template.csv** file, add the MAC address, extension, and phone model. To ensure that you enter the phone model correctly, refer to the list under **View Phone Models** on the **CSV Import** tab or see the list below.

*Note: The phone model must be entered into the CSV file exactly as shown in **View Phone Models** on the **CSV Import** tab.*

9. Save the file locally using a **.csv** extension.
10. Select **Upload CSV** and browse to the file you just saved.
11. Select **Open**, and then select **Import**. At this point the configurations have been staged, but not saved.
12. Make any corrections necessary and select **Continue**. You will be returned to the main **Phone Configs** menu and have the choice of saving the configurations or editing them.

CSV File Field Descriptions

MAC Address:

Description: Associate a phone's unique mac-address with this entry

What It Does: Allows the phone with this mac to register with the system.

Acceptable Formatting: hexadecimal digits only; should be twelve digits in length; must be uniquely assigned

Extension:

Description: Associate an new unique extension with this entry

What It Does: Creates a new voice user with this value; allows a phone to register with the system using this value

Acceptable Formatting: Numeric digits

Phone Model:

Description: The type of the phone associated with this entry

What It Does: Tells the system how many line keys the phone has that are usable

Acceptable Formatting: Only these precise values are acceptable:

ADTRAN IP 706

ADTRAN IP 712

Polycom SoundPoint IP 32x/33x

Polycom SoundPoint IP 430

Polycom SoundPoint IP 450

Polycom SoundPoint IP 501

Polycom SoundPoint IP 550/560

Polycom SoundPoint IP 601/650/670

Polycom SoundStation IP 4000/6000/7000

First Name:

Description: The desired first name of the person who will use this phone

What It Does: Help to label the phone, provides callerID info, etc...

Acceptable Formatting: Only printable ASCII characters

Last Name:

Description: The desired last name of the person who will use this phone

What It Does: Help to label the phone, provides callerID info, etc...

Acceptable Formatting: Only printable ASCII characters

Sip Authentication Password:

Description: The desired plain-text password used for the IP phone to register to the NV7100

What It Does: Provides the system with a way for validating the IP phone

Acceptable Formatting: Alphanumeric characters, from one to sixteen characters in length

DID (added as of AOS A5.01):

Description: A desired Direct Inward Dial for the system to direct to this extension

What It Does: Allows DIDs to be mapped to an extension

Acceptable Formatting: Numeric digits

Email Address (added as of AOS A5.01):

Description: The desired email address to associate with this extension

What It Does: This is used for voicemail-to-email capabilities

Acceptable Formatting: A valid email address

Coverage (added as of AOS A5.01):

Description: The desired coverage to associate with this SIP endpoint

What It Does: Used to direct what happens to a call after the set number of rings has been reached

Acceptable Formatting: String for the name of a global call coverage list (e.g. "go_to_voicemail")

Cos (added as of AOS A5.01):

Description: The desired class of service to associate with this extension

What It Does: Used to limit/restrict what services this SIP endpoint will be able to perform/use

Acceptable Formatting: String for a configured voice class of service (e.g. "normal_users")

Voicemail Cos (added as of AOS A5.01):

Description: The desired voicemail system class of service to associate with this extension
What It Does: Used to limit/restrict what services the voicemail system will provide for this extensions VM box
Acceptable Formatting: String for a configured voicemail class of service (e.g. "normal_voicemail")

Alias (added as of AOS A5.01):

Description: A desired SIP alias to associate with this extension
What It Does: Allows a SIP alias to point to this extension
Acceptable Formatting: Numeric digits

Configuring the NetVanta 7000 Series Product in AOS A2.03.00.SC and Below

Creating a New User Account

Add / Modify / Delete Users

Use this page to add and configure users.

Add New User

User Data Source: Create new
 Create by copying from another user: 2001 - Analog FXS Port 0/1

Extension: x 4003

First Name: Annette 40 characters max

Last Name: Vanta 40 characters max

Phone Type: SIP

Phone MAC Address: <Not Set>
 New Address: 00 : 04 : f2 : 05 : d4 : 55
 Known Address: 00:04:F2:01:23:45

Phone Model: ADTRAN/Polycom SoundPoint IP 501

Apply Apply and Add Another User

1. Navigate to **Voice > User Accounts**.
2. Enter the **Extension**.
3. Enter the **First Name** and **Last Name**.
4. Select **SIP** for the **Phone Type** and enter the **Phone MAC Address**.
5. Select the **Phone Model** from the drop-down list.
6. Select **Apply**. The user account and associated phone configuration will be generated, and you will be taken to the new user account's configuration menu.
7. Navigate through the tabs and customize any settings needed on the new user account.

Viewing/Editing the Phone Configuration

IP Phone Configs

From this page you can create and manage configuration files and settings for your IP phones.

Phone Configs | Global Directory | Boot Settings | Default Settings | Global Files

Add New Phone Config

Add New Phone Config... Add Configs in Batch...

View/Delete Phone Configs ?

<input type="checkbox"/>	MAC Address	Associated Accounts	Registered IP	Phone Model
<input type="checkbox"/>	00:04:F2:01:23:45	4004	<Not Registered>	ADTRAN/Polycom SoundPoint IP 6xx
<input type="checkbox"/>	00:04:F2:04:9C:58	4001	<Not Registered>	ADTRAN/Polycom SoundPoint IP 501
<input type="checkbox"/>	00:04:F2:05:D4:55	4003	<Not Registered>	ADTRAN/Polycom SoundPoint IP 501
<input type="checkbox"/>	00:A0:C8:00:99:98	4002	<Not Registered>	<Unknown>

Sync Phones Update Directories Delete Configs Rebuild Config Files

1. Navigate to **Voice > IP Phone Configs** and select the **Phone Configs** tab. You may also select **Edit Config** from the **General** tab on the user accounts menu.
2. Select the MAC address for the phone configuration you wish to edit using the check box and then select **Edit**.

Phone Configuration for 00:04:F2:05:D4:55

Use this page to customize the configuration for a particular ADTRAN or Polycom IP phone.

MAC Address: 00 : 04 : F2 : 05 : D4 : 55 ?

Phone Model: ADTRAN/Polycom SoundPoint IP 501 ?

Phone Lines | Button Map | Phone Settings

Main Line

Type: Extension ?

Extension: New: Create new user account ?
 Existing: 4003 - Vanta, Annette ?

Display Name: Annette Vanta ?

Line Label: 4003 ?

Line Keys: 2 ?

Calls Per Line Key: 2 ?

Transport: UDP ?

Authentication: User Name: 4003 ?
 Password: 1234 ?

[Add Secondary Line](#) ?

Cancel Apply

3. On the **Phone Lines** tab, the **Extension** should be selected automatically as the User Account that was just created.

4. Select the number of **Line Keys** (2 by default for all phone models)

Adding an Extension

5. Select **Add Secondary Line**.
6. Select **Extension** for the **Type**.
7. Select an existing extension from the drop-down list or create a new one.
8. Confirm the number of line keys needed.
9. Enter the **Password** (default password is **1234**) under **Authentication**.

Adding a Shared Line

10. Select **Add Secondary Line**.
11. Select **Shared Line Account** for the **Type**.
12. Select the **Shared Line Account** by trunk account.
13. Confirm desired **Line Label**.
14. Enter the **Password** (default password is **1234**) under **Authentication**.

Adding a Status Group

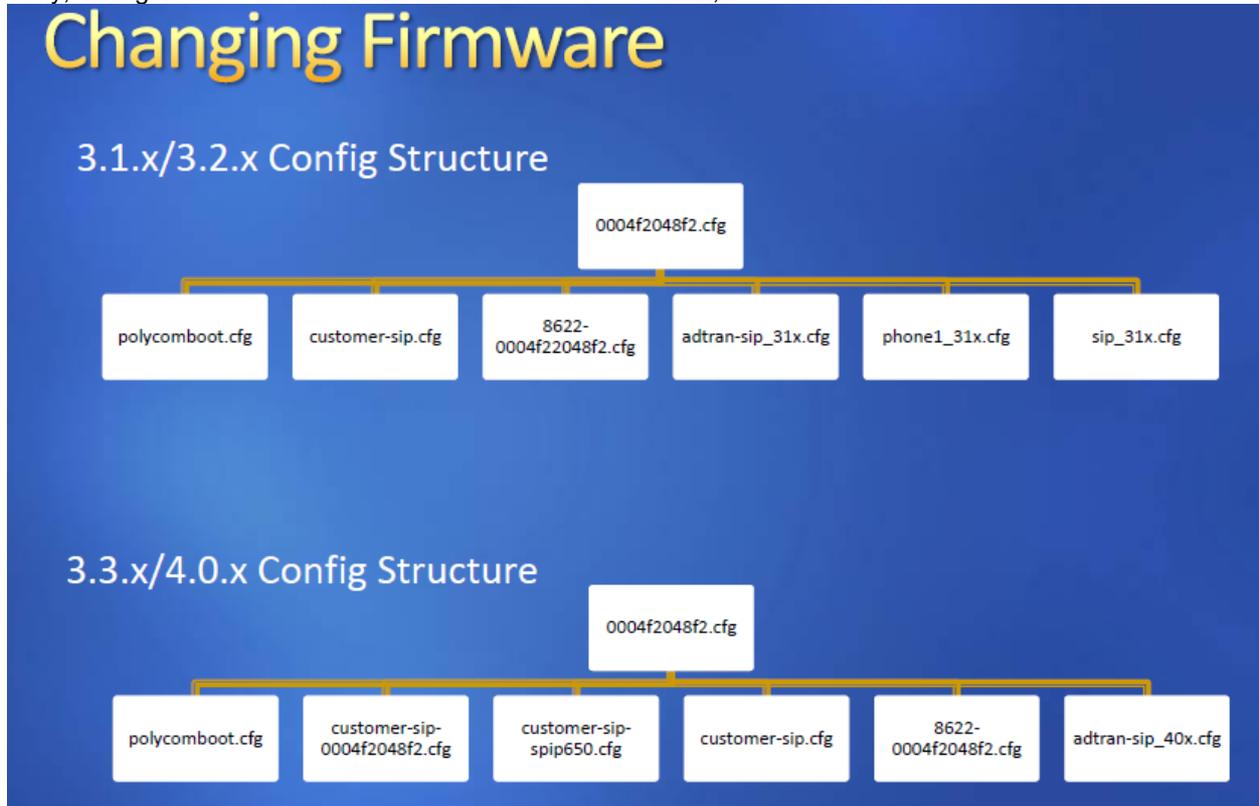
15. On the **Button Map** tab, select **Add Expansion Module** as necessary.
16. Select a status group from the **Display Status Group** drop-down list.
17. Select **Apply** to save the changes.

You may be prompted by the Web interface to reboot the phone. If you choose not to reboot at this time, the configuration will be saved and you will be returned to the **User Accounts** menu.

Polycom Phone Boot Process

As of R10.1.0, the Netvanta 7100 added the capability to support different firmware images per phone mode. This necessitated changes in the structure of files downloaded by Polycom phones. To accommodate the multiple firmware images, many of the files are broken up by phone model and by firmware version. Each file listed in the table below also contains examples of the R10.1.0 changes.

Additionally, changes were made from version 3.2.x to version 3.3.x, detailed below.



During the Polycom phone boot process, several things happen.

1. Phone boots and requests Dynamic Host Configuration Protocol (DHCP) parameters
2. NetVanta 7000 Series Product responds with these parameters:
 - a. IP address, subnet mask, and gateway in VLAN 1 (10.10.10.0)
 - b. TFTP server address (tftp://10.10.10.1)
3. The phone then attempts to download the following files (in this order) via TFTP:

Note that since TFTP is used on the initial boot, a username and password is not required for the phone to download its file on first boot.

Filename	Purpose	Notes
bootrom.ld	Polycom bootrom file	Required to upgrade any new or replacement phones.
mac.cfg	<p>Tells the phone which app file, config files, and misc. files to download from the boot server.</p> <p>By default it contains a reference to:</p> <ul style="list-style-type: none"> • sip.ld • polycomboot.cfg • customer-sip.cfg • extension-mac.cfg • adtran-sip.cfg • sip.cfg 	<ul style="list-style-type: none"> • This file is created on CompactFlash® in the Polycom folder when a new user account is created. • Not present on flash by default. • If not found by the phone, the phone will download 000000000000.cfg instead.

000000000000.cfg	Tells the phone which app file, config files, and misc. files to download from the boot server. By default it contains a reference to: <ul style="list-style-type: none"> • sip.ld • polycomboot.cfg • customer-sip.cfg • defaultpolycom.cfg • adtran-sip.cfg • sip.cfg 	Used only if <i>mac.cfg</i> is not present.
sip.ld	Polycom application firmware file	Required to upgrade any new or replacement phones.
polycomboot.cfg	Programs these parameters on the phone: <ul style="list-style-type: none"> • VLAN ID • CDP enable/disable • DHCP enable/disable • Boot server "name"(IP or domain name) • Boot Server Type (FTP by default) • Boot server username/password • Local phone username/password 	

4. If the VLAN ID is different than the one currently in use (always the case for new phones), the phone will reboot with the new VLAN ID and begin the process again. The phone will now have the boot server type and login so it will use FTP to download the files.

5. The phone will then download the files listed below (in this order):

Filename	Purpose	Notes
bootrom.ld	Polycom bootrom file	Required to upgrade any new or replacement phones.
<i>mac.cfg</i>	Tells the phone which app file, config files, and misc. files to download from the boot server. By default it contains a reference to: <ul style="list-style-type: none"> • sip.ld • customer-sip.cfg • extension-mac.cfg • adtran-sip.cfg • sip.cfg • polycomboot.cfg 	This file is created when a new user account is created.
sip.ld	Polycom application firmware file	Required to upgrade any new or replacement phones.
polycomboot.cfg	Programs these parameters on the phone: <ul style="list-style-type: none"> • VLAN ID • CDP enable/disable • DHCP enable/disable • Boot server "name"(IP or domain name) 	

	<ul style="list-style-type: none"> • Boot Server Type (FTP by default) • Boot server username/password • Local phone username/password 	
customer-sip.cfg R10.1.0 Versions (By Model) customer-sip-spip320.cfg customer-sip-spip321.cfg customer-sip-spip330.cfg customer-sip-spip331.cfg customer-sip-spip335.cfg	Contains custom configuration changes for all phones.	Example features that can be enabled or disabled with the contents of this file are: Missed Call notification, On-Hold Reminder, etc.
extension-mac.cfg	Contains the SIP configuration of the phone as well as any user/phone specific configurations (ringtones, etc).	Created when new user account is created
adtran-sip.cfg R10.1.0 Versions (By Firmware) adtran-sip_31x.cfg adtran-sip_32x.cfg adtran-sip_33x.cfg adtran-sip_40x.cfg adtran-sip_41x.cfg	Contains the ADTRAN recommended changes to the original Polycom sip.cfg file.	This file is contained in the AOS firmware image and will thus be updated with each AOS upgrade.
sip.cfg R10.1.0 Versions (By Firmware) sip.cfg (3.3.x and up) sip_31x.cfg sip_32x.cfg	Polycom factory phone configuration parameters (gains, tones, buttons, etc).	This file changes with each new Polycom firmware version.
mac-phone.cfg	Contains saved configuration items changed by the user on the phone directly.	Not required to be present on flash or CompactFlash®.
mac-directory.xml	Contains the phone's local, system, and speed dial directories.	Created when a new user account is created.
adtranXXXXlogo.bmp	Logo file for display on the 430, 501, 601, and 4000 phones.	
SoundPointIPWelcome.wav	Welcome sound played when the phone successfully boots.	
Doorbell-1-Hi.wav	Audible alert for notification of an incoming doorphone call.	

6. Once the files are downloaded, the phone will attempt to register to the NetVanta 7000 Series Product based on the information in extension-mac.cfg.

Troubleshooting

Synchronizing a Phone

If you have modified the configuration of a phone, you can resynchronize the phone. The synchronization process sends a message to the phone and tells it to download all its files and check them for updates. If the files have changed, then the phone will reboot, download the updated files, and apply them.

AOS A2.03.00.SC and below:

1. Navigate to **Voice > IP Phone Configs**.
2. On the **Phone Configs** tab, select the MAC address of the phone(s) using the check box
3. Select **Sync Phones**.

AOS A2.04.00 and above:

1. Navigate to **Voice > IP Phone Configs**.
2. Select the MAC address of the phone(s) using the check box
3. Select **Other Actions > Sync Phones**.

Rebooting a Phone

If you have not changed the configuration of a phone but wish to reboot it, the easiest method is to remove Power over Ethernet (PoE) from the port where it is connected on the NetVanta 7000 Series product and then restore PoE. Follow these steps to reboot the phone:

1. Navigate to **Voice > Power over Ethernet**.
2. Check the box beside the interface you wish to change.
3. Confirm its status is **Delivering**.
4. Select **Off** and then select **Apply**.
5. Wait 5 seconds and then use the same process to change the port back to **Auto**.

Port	Enable	Delivered (Watts)	Voltage (Volts)	Current (mAmps)	Status	IEEE Class
eth 0/1	<input checked="" type="checkbox"/>	3.11	47.8	63	Delivering	2
eth 0/2	<input type="checkbox"/>	0.0	0.0	0	Detecting	0
eth 0/3	<input type="checkbox"/>	0.0	0.0	0	Detecting	0
eth 0/4	<input type="checkbox"/>	0.0	0.0	0	Detecting	0

Optionally, PoE can be disabled using a command line interface (CLI) session by the process below.

1. Enter the Enable mode by typing **enable** at the **>** prompt. Enter the Enable mode password.
2. Enter the Global Configuration mode by typing **config t** at the **#** prompt.
3. Enter the configuration mode for the specific interface or range of interfaces by typing **interface ethernet 0/x** or **interface range ethernet 0/x-y**.
4. Disable PoE with the command **power inline never** (you should see the status of the port change from **Delivering** to **Disabled**).
5. Wait 5 seconds and re-enable PoE with the command **power inline auto**.

Switching From TFTP to FTP for Config Download

In certain cases, whether due to network issues or other configuration problems, a phone may not be able to pull its configuration from TFTP and will need to be directly pointed to the FTP server on the unit.

These examples assume that the default configuration exists on the 7100. If any of these parameters have been changed, the statements will have to be adjusted accordingly:

Data VLAN: 10.10.10.1

Voice VLAN: 10.10.10.2

Phone FTP Username: polycomftp

Phone FTP Password: password

GUI Interface

By default, the tftp-server option in the DHCP configuration is set to **tftp://10.10.10.1** on the data VLAN and **tftp://10.10.20.1** on the voice VLAN.

DHCP Server Pool "LAN_pool"

Required Configuration Optional Configuration Numbered Options

Use this tab to configure values for DHCP named options.

Domain Name:	<input type="text"/>	?
Primary DNS:	10 . 10 . 10 . 1	?
Second DNS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Third DNS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Fourth DNS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Primary WINS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Secondary WINS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
TFTP Server:	tftp://10.10.20.1	?
NTP Server:	10 . 10 . 10 . 1	?
Timezone offset:	-6	?
NAP:	<input type="checkbox"/>	?

Cancel Apply

To have the phone pull its configuration directly via FTP, the TFTP Server option needs to be changed to:

Data VLAN DHCP Pool: <ftp://polycomftp:password@10.10.10.1/Polycom/>

Voice VLAN DHCP Pool: <ftp://polycomftp:password@10.10.10.2/Polycom/>

DHCP Server Pool "LAN_pool"

Required Configuration Optional Configuration Numbered Options

Use this tab to configure values for DHCP named options.

Domain Name:	<input type="text"/>	?
Primary DNS:	10 . 10 . 10 . 1	?
Second DNS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Third DNS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Fourth DNS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Primary WINS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
Secondary WINS:	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	?
TFTP Server:	ftp://polycomftp:pas	?
NTP Server:	10 . 10 . 10 . 1	?
Timezone offset:	-6	?
NAP:	<input type="checkbox"/>	?

Cancel Apply

CLI Interface

Default Configuration:

```
ip dhcp pool "LAN_pool"  
  tftp-server tftp://10.10.20.1
```

```
ip dhcp pool "VoIP_pool"  
  tftp-server tftp://10.10.20.1
```

Modified Configuration:

```
ip dhcp pool "LAN_pool"  
  tftp-server ftp://polycomftp:password@10.10.10.1/Polycom
```

```
ip dhcp pool "VoIP_pool"  
  tftp-server ftp://polycomftp:password@10.10.20.1/Polycom
```

Enabling the Debug Commands

On occasion, debug commands may need to be used in order to determine why a phone did not receive an IP address, or download its configuration files.

1. Log into the NetVanta 7000 CLI using Telnet, secure shell (SSH), or the Console port.
2. Log into the CLI using the proper user name/password and/or enable password.
3. Enter **debug ip tftp server events** and **debug ip ftp-server** to view Trivial File Transfer Protocol (TFTP) and FTP events.
4. Plug in the phone and monitor the debug output to see which files the phone is downloading.
5. If the phone fails to download a file, note the file name and verify it exists on the NetVanta 7000 Series product.

Interpreting the Debug Output

Verify a phone is requesting and able to receive an IP address.

```
#debug ip dhcp-server
```

```
2008.05.15 23:50:43 DHCP.SERVER Processing Discover Message (Xid = 443f4c02) on  
10.10.10.0/255.255.255.0 from 00:A0:C8:00:9a:63  
2008.05.15 23:50:43 DHCP.SERVER Offering IP Address 10.10.10.2 to 00:A0:C8:00:9a:63  
2008.05.15 23:50:43 DHCP.SERVER Server sent an Offer to the client  
2008.05.15 23:50:48 DHCP.SERVER Processing Request Message (Xid = 353f4c02) on  
10.10.10.0/255.255.255.0 from 00:A0:C8:00:9a:63  
2008.05.15 23:50:48 DHCP.SERVER Server sent an Ack to the client
```

```
2008.05.15 23:52:26 DHCP.SERVER Processing Discover Message (Xid = c6394c02) on  
10.10.20.0/255.255.255.0 from 00:A0:C8:00:9a:63  
2008.05.15 23:52:26 DHCP.SERVER Offering IP Address 10.10.20.3 to 00:A0:C8:00:9a:63  
2008.05.15 23:52:26 DHCP.SERVER Server sent an Offer to the client  
2008.05.15 23:52:31 DHCP.SERVER Processing Request Message (Xid = b9394c02) on  
10.10.20.0/255.255.255.0 from 00:A0:C8:00:9a:63  
2008.05.15 23:52:31 DHCP.SERVER Server sent an Ack to the client
```

Verify the correct files are being requested.

```
NV7100# debug ip tftp-server events (date and timestamps removed)
```

Note that TFTP is only used on the initial boot of a new phone and during the initial boot. The phone learns to use FTP and download its files from a folder on CFLASH.

```
TFTP.SERVER EVENTS Read Request for "bootrom.ld" from 10.10.10.3:1025 failed. File does not exist  
TFTP.SERVER EVENTS Read Request for "0004f210dfae.cfg" from 10.10.10.3:1026 failed. File does not exist  
TFTP.SERVER EVENTS Successfully transmitted "000000000000.cfg" to 10.10.10.3:1027, 462 bytes transferred
```

TFTP.SERVER EVENTS Read Request for "sip.ld" from 10.10.10.3:1028 failed. File does not exist
TFTP.SERVER EVENTS Write Request for "0004f210dfae-boot.log" from 10.10.10.3:1029 failed. File already exists
TFTP.SERVER EVENTS Read Request for "bootrom.ld" from 10.10.10.3:1025 failed. File does not exist
TFTP.SERVER EVENTS Read Request for "0004f210dfae.cfg" from 10.10.10.3:1026 failed. File does not exist
TFTP.SERVER EVENTS **Successfully transmitted "000000000000.cfg"** to 10.10.10.3:1027, 462 bytes transferred
TFTP.SERVER EVENTS Read Request for "sip.ld" from 10.10.10.3:1028 failed. File does not exist
TFTP.SERVER EVENTS **Successfully transmitted "polycomboot.cfg"** to 10.10.10.3:1029, 749 bytes transferred
TFTP.SERVER EVENTS **Successfully transmitted "customer-sip.cfg"** to 10.10.10.3:1030, 119 bytes transferred
TFTP.SERVER EVENTS **Successfully transmitted "defaultpolycom.cfg"** to 10.10.10.3:1031, 7890 bytes transferred
TFTP.SERVER EVENTS **Successfully transmitted "adtran-sip.cfg"** to 10.10.10.3:1032, 20280 bytes transferred
TFTP.SERVER EVENTS **Successfully transmitted "sip.cfg"** to 10.10.10.3:1033, 129665 bytes transferred
TFTP.SERVER EVENTS **Successfully transmitted "000000000000-directory.xml"** to 10.10.10.3:1034, 158 bytes transferred

NV7100# debug ip ftp-server (date and timestamps removed)

After a phone has downloaded "polycomboot.cfg", it knows to use FTP to download its files and that those files are stored in the Polycom folder on CFLASH.

FTP: USER command - Password required for 'polycomftp'.
FTP: USER command - **User 'polycomftp' logged in .**
FTP: PWD command - '/' is current directory.
FTP: CWD command - **directory changed to 'Polycom'.**
FTP: PASV command success - Entering Passive Mode (10,10,20,1,19,237).
FTP: TYPE command - Type is set to I.
FTP: SIZE command successful, 3719841.

If the SIZE command fails, the file is not present on CFLASH.

FTP: BINARY data connection for **bootrom.ld**.
FTP: RETR command - BINARY transfer failed.
IP.FTP SERVER (RETR) **Transfer of file '/Polycom/bootrom.ld' failed** for remote host '10.10.20.2'.

If the SIZE command did not fail, but the transfer shows that it failed the phone has downloaded the file, compared the checksum to the file already on the phone and determined that the file is the same as the one stored on the phone. It then cancels the FTP transfer for that file.

FTP: USER command - Password required for 'polycomftp'.
FTP: USER command - User 'polycomftp' logged in .
FTP: PWD command - '/' is current directory.
FTP: CWD command - directory changed to 'Polycom'.
FTP: PASV command success - Entering Passive Mode (10,10,20,1,20,81).
FTP: TYPE command - Type is set to I.
FTP: SIZE command successful, 332.
FTP: BINARY data connection for **0004f210dfae.cfg**.
FTP: RETR command - BINARY transfer complete.
IP.FTP SERVER (RETR) **Transfer of file '/Polycom/0004f210dfae.cfg' complete** for remote host '10.10.20.2'.
FTP: USER command - Password required for 'polycomftp'.
FTP: USER command - User 'polycomftp' logged in .
FTP: PWD command - '/' is current directory.
FTP: CWD command - directory changed to 'Polycom'.
FTP: PASV command success - Entering Passive Mode (10,10,20,1,20,81).
FTP: TYPE command - Type is set to I.
FTP: SIZE command successful, 332.
FTP: BINARY data connection for **0004f210dfae.cfg**.
FTP: RETR command - BINARY transfer complete.
IP.FTP SERVER (RETR) **Transfer of file '/Polycom/0004f210dfae.cfg' complete** for remote host '10.10.20.2'.

FTP: USER command - Password required for 'polycomftp'.
 FTP: USER command - User 'polycomftp' logged in .
 FTP: PWD command - '/' is current directory.
 FTP: CWD command - directory changed to 'Polycom'.
 FTP: PASV command success - Entering Passive Mode (10,10,20,1,19,237).
 FTP: TYPE command - Type is set to I.
 FTP: SIZE command successful, 17805275.
 FTP: BINARY data connection for **sip.ld**.
 FTP: RETR command - BINARY transfer failed.
 IP.FTP SERVER (RETR) **Transfer of file '/Polycom/sip.ld' failed** for remote host '10.10.20.2'.

SIZE command worked, but the file transfer failed. This means that the sip.ld file is the same as the one stored on the phone already.

The rest of the file transfers have been removed from this debug. Confirm that all files listed earlier in this document are downloaded.

Restoring a Phone to the Factory Default

At times it may be necessary to clear a phone of its current configuration.

To reset a phone while it is booting:

1. While at this screen, hold down the model-specific key sequence (in table below) until prompted for the Admin Password.
2. Enter the password (456) and press Enter.

Reset Key Sequences for Polycom Phones

Phone Model	Key Sequence
IP 301, 501, 550, 600, 601, 650, 670	4,6,8,*
IP 320, 321, 330, 331, 335, 430, 450, 560, 7000	1,3,5,7
IP 4000, 5000, 6000	6,8,*
VVX 300, 310, 400, 410, 500, 600	1,3,5

Note: The contrast, headset switch hook, personal phonebook, and any other options configured directly on the phone will be cleared to default during the factory default process.

Related Documentation

User Account Configuration Guide - <https://supportforums.adtran.com/docs/DOC-3454>
 Polycom Admin Guide Version 2.0 - <https://supportforums.adtran.com/docs/DOC-2318>
 Configuring Status Groups - <https://supportforums.adtran.com/docs/DOC-2260>
 Configuring Shared Line Accounts - <https://supportforums.adtran.com/docs/DOC-3464>
 Configuring Shared Call Appearances - <https://supportforums.adtran.com/docs/DOC-2333>
 Configuring Handset Paging Groups - <https://supportforums.adtran.com/docs/DOC-2334>
 Updating the Global Phone Directory - <https://supportforums.adtran.com/docs/DOC-2940>