IP Phone Configuration and Troubleshooting Guide

NetVanta 7000 Series and IP 700 Series Phones

Overview

The purpose of this guide:
- Explain the default configuration.
- Explain how to configure the NetVanta 7000 Series products for an IP 700 Series 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 IP 700 Series phones ship with the following default configuration.
- Setup Password: "1234"
- Layer 2 Tagging: Disabled
- VLAN ID: Not set

Once the phone downloads "adtran_boot.txt" or "adtran_boot_remote.txt", the Setup Password is set to "456".

The NetVanta 7000 Series product ships with the following default configuration for phones:
- DHCP server
  - Enabled
  - Option 157 defines the boot server as ftp://10.10.20.1/ADTRAN, File Transfer Protocol (FTP) user name and password, enables Layer 2 Tagging and sets the VLAN ID to 2
- FTP server
  - Enabled
  - Pointing to CompactFlash® filesystem

Special Note about AOS Versions

The configuration portion of this guide is divided into two sections. Select the appropriate link below for your ADTRAN Operating System (AOS) version.
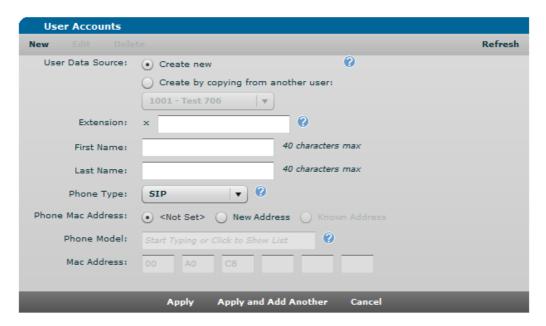- [AOS A2.04.00 and above](#)
- [AOS A2.03.00.SC and below](#)

Configuring the NetVanta 7000 Series Product in AOS A2.04.00 and Above

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.
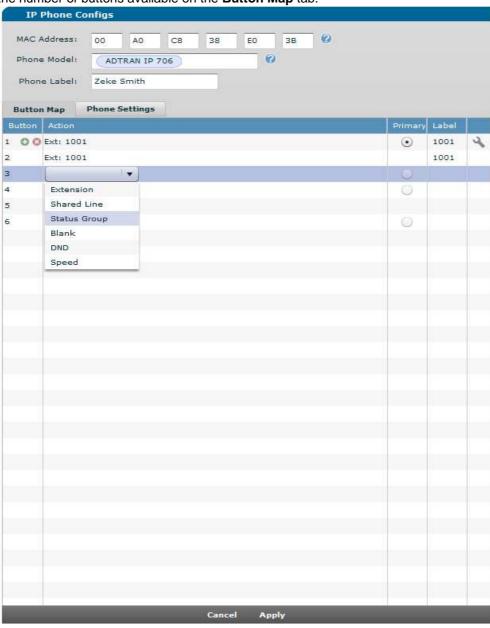
Creating a New User Account

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

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.

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. Click in the **Action** field and select **Status Group** from the drop-down list.
9. Select a status group.
10. Select **Apply** to save the changes.

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.
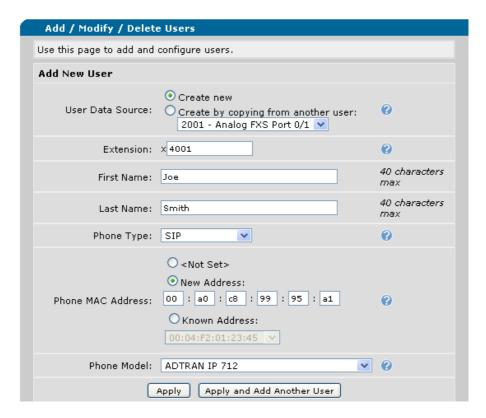1. Select **Download Template.csv** (file name **Download configTemplate.csv)** and save it on your computer. It is important to remember to save the file with a **.csv** file extension because most browsers default to **.htm** or **.html**.
2. Open the **Template.csv** file, add the MAC address, extension, 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.

   *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.

Configuring the NetVanta 7000 Series Product in AOS A2.03.00.SC and Below
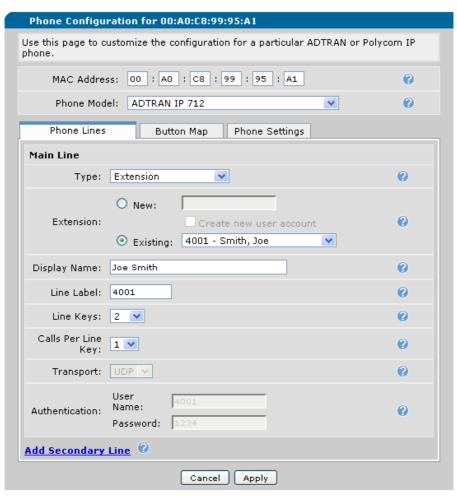
Creating a New User Account

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

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**.

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. Select a status group from the **Display Status Group** drop-down list.
16. 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.

IP 700 Series Phone Boot Process

During the IP 700 Series phone boot process, several things happen.
1. The phone boots and requests Dynamic Host Configuration Protocol (DHCP) parameters.
2. The NetVanta 7000 Series product responds with these parameters:
    a. IP address, subnet mask, and gateway in VLAN 1 (10.10.10.0).
    b. DHCP Option 157 defines the boot server (ftp://10.10.20.1/ADTRAN), the FTP user name and password, and a VLAN ID (2).
3. The phone then reboots and requests DHCP parameters in VLAN 2 (10.10.20.0).
4. The phone attempts to download the following files using FTP:

File Name	Purpose	Notes
adtran_*mac*.txt	Contains Session Initiation Protocol (SIP) registration information.	
adtran_firmware_7*xx*.txt	Tells the phone which firmware version to use.	This file is empty by default on NetVanta 7000 Series products with AOS A1.xx.xx.
adtran_boot.txt	Stores and allows the change of the admin password.	Values contained in this file are controlled by the **Boot Settings** tab on the **IP Phone Globals** menu.
adtran_boot_remote.txt	Same as adtran_boot.txt	
adtran_global.txt	Configures the date format for the phone. This file is not to be edited.	
adtran_customer.txt	Contains customized configurations for all IP 700 Series phones on the system.	
Language_English.xml	Contains the phone language file.	
adtran_phonebook.csv	Contains the system directory for the IP 700 Series phones stored in CSV format.	This is not present by default.
iconpixmap.bmp	Contains the icons used on the phone.	

5. Once the files are downloaded, the phone will attempt to register to the NetVanta 7000 Series product based on the information in adtran_*mac*.txt.

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
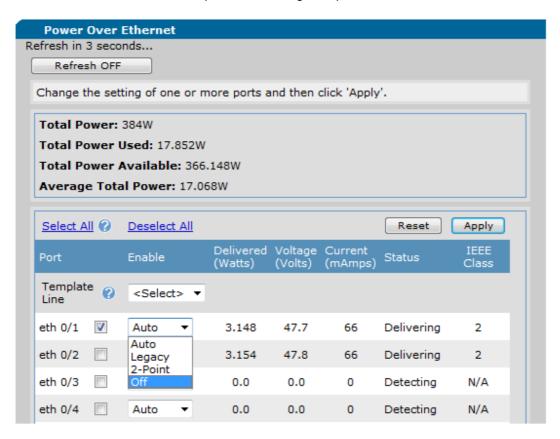3. Select **Sync Phones**.

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 **Data** > **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**.

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**.

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.

#debug ip ftp-server

FTP: USER command - Password required for 'polycomftp'.
FTP: USER command - User 'polycomftp' logged in.
FTP: TYPE command - Type is set to I.
FTP: CWD command - directory changed to 'ADTRAN'.
FTP: PORT command - opening port from 10.10.20.3.
FTP: BINARY data connection for ls (10.10.20.3,1025).
FTP: NLST command - 'adtran_00a0c8009a64.txt' transfer complete.
FTP: PORT command - opening port from 10.10.20.3.
FTP: BINARY data connection for **adtran_00a0c8009a64.txt** (10.10.20.3,1026).
FTP: RETR command - BINARY transfer complete.
IP.FTP SERVER (RETR) **Transfer of file '/ADTRAN/adtran_00a0c8009a64.txt' complete** for remote host '10.10.20.3'.

FTP: USER command - Password required for 'polycomftp'.
FTP: USER command - User 'polycomftp' logged in.
FTP: TYPE command - Type is set to I.
FTP: CWD command - directory changed to 'ADTRAN'.
FTP: PORT command - opening port from 10.10.20.3.
FTP: BINARY data connection for ls (10.10.20.3,1028).
FTP: NLST command - 'adtran_firmware_712.txt' transfer complete.
FTP: PORT command - opening port from 10.10.20.3.
FTP: BINARY data connection for **adtran_firmware_712.txt** (10.10.20.3,1029).
FTP: RETR command - BINARY transfer complete.
IP.FTP SERVER (RETR) **Transfer of file '/ADTRAN/adtran_firmware_712.txt' complete** for remote host '10.10.20.3'.

*Note: The **adtran_firmware_7xx.txt** file tells the phone what application and boot version of the software to download. If the version contained in the phone is the same one listed in the file, the phone will not download the application or boot version.*

FTP: USER command - Password required for 'polycomftp'.
FTP: USER command - User 'polycomftp' logged in.
FTP: TYPE command - Type is set to I.
FTP: CWD command - directory changed to 'ADTRAN'.
FTP: PORT command - opening port from 10.10.20.3.
FTP: BINARY data connection for ls (10.10.20.3,1031).
FTP: NLST command - 'adtran_boot.txt' transfer complete.
FTP: PORT command - opening port from 10.10.20.3.
FTP: BINARY data connection for **adtran_boot.txt** (10.10.20.3,1032).
FTP: RETR command - BINARY transfer complete.
IP.FTP SERVER (RETR) **Transfer of file '/ADTRAN/adtran_boot.txt' complete** for remote host '10.10.20.3'.

Note: The remainder of the file transfers has been removed from this debug example. 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. With IP 700 Series phones, this is accomplished by using the menu on a phone while it is idle. The steps below outline this process.

From the idle screen of a registered phone:
1. Press the **Menu** key.
2. Select **Phone Settings**.
3. Select **Reset**.
4. Press the **Edit** softkey.
5. Press the **Factory** softkey.

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
IP 700 Series Admin Guide (v1.3.16 and below) - https://supportforums.adtran.com/docs/DOC-2320
IP 700 Series Admin Guide (v2.1.0 and above) - https://supportforums.adtran.com/docs/DOC-3483
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
Setting the Time Zone Offset for the IP 700 Series Phones - https://supportforums.adtran.com/docs/DOC-2938
Updating the Global Phone Directory - https://supportforums.adtran.com/docs/DOC-2940