POLAR

POWER DISTRIBUTION UNIT

Polar PDU
Firmware Upgrader
User's Manual

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SUBZERO
ENGINEERING

support@subzeroeng.com
www.subzeroeng.com

Table of Contents

INTRODUCTION

This document is the User's Manual for Subzero's Polar PDU Firmware Upgrader Software.

Polar PDU Firmware Upgrader Software User Manual

Legal Information

The information contained in this guide is subject to change without notice. Subzero Engineering shall not be liable for technical or editorial errors or omissions contained herein; nor is it liable for any injury, loss, or incidental or consequential damages resulting from the furnishing, performance, or use of this material and equipment.

Warranty

Subzero Engineering guarantees manufactured products and each part or component thereof against all defects in material and/or workmanship. Subzero agrees to remedy any manufacturing defect either through replacement or repair at no charge provided that the defective unit is returned, transportation prepaid, to the Subzero factory.

The warranty extends for a period of one year from the date of installation or initial use, provided that this period shall not exceed 18 months from the original date of shipment from the factory.

Any product that has been repaired or replaced shall be similarly warranted on its repair or replacement for the remaining product warranty period or 90 days from the date of repair or replacement, whichever expires last.

This warranty does not extend to products that have been subjected to neglect, accident or improper use, nor to units that have been altered by non-Subzero personnel.

No warranties other than those set forth in this section are given or implied with respect to the products furnished. Subzero shall, in no event, be liable for consequential damages, for loss, damage or expense directly or indirectly arising from the use of the products, for any inability to use materials or from any other cause.

Nomenclature

PDU: Polar Power Distribution Unit product
Socket/Receptacle/Outlet: Electrical output port
Primary PDU: PDUs can be linked to share one network connection. When PDUs are linked together, the Primary Role indicates the PDU that is attached to the monitoring computer and is the beginning of a daisy chain of up to 20 linked PDUs
Secondary PDU: Role assigned to a PDU that is 1) part of a PDU daisy chain – a linked PDU – attached to a primary PDU, or 2) a stand-alone operating PDU.

SOFTWARE OVERVIEW

The Polar PDU Firmware Upgrader application is a Microsoft Windows based application that can be used to manage firmware upgrades over a LAN for a single or multiple linked Polar PDUs.

The Polar PDU Firmware Upgrader application is available for download on the Subzero Website.

Polar PDU Firmware Upgrader Software Features:
*   Scan the network and identify all networked and linked Polar PDUs. Each networked (Primary) PDU can attach up to 19 linked (Secondary) PDUs.
*   Manage firmware upgrades for all networked and linked Polar PDUs.
*   Transfer and install firmware from a USB flash drive, a TFTP server or an HTP/FTP site/server to any networked Polar PDU.
*   Automate upgrades for all linked PDUs – firmware is transferred and installed over the serial connections that link PDUs saving you time when updating firmware for multiple PDUs.

Application Notes:

*   The Polar PDU Firmware Upgrader application is only for upgrading firmware on Subzero Polar PDUs. It does not monitor, configure or control PDUs.
*   All Polar PDUs that will be managed using Polar PDU Firmware Upgrader must have firmware version 1.22.1 or later. PDUs with earlier versions of the firmware must be upgraded manually, first.
*   The networked primary PDU must have network access to the computer running the Polar PDU Firmware Upgrader application and the network file location of the firmware. This may require some changes to Firewall settings on some networks.
*   The linked secondary PDUs are upgraded over the serial connection between PDUs. This process does not have to be monitored, but it may take 90 minutes or more. During the upgrade, linked PDUs will be accessible remotely for monitoring or control using the built-in web software.

INSTALLATION

The Polar PDU Firmware Upgrader software application is available on the Subzero website and link below:

http://www.subzeroeng.com/PolarPDUs/Downloads

1. Select the Polar PDU Firmware Upgrader Application for download
2. Download the Polar PDU Firmware Upgrader.zip
3. Unzip to C:/SUBZERO-app folder
4. Create a shortcut for Polar PDU Firmware Upgrader.exe and place it on the desktop.
5. Before using the application, be sure that the computer and PDU are attached to the same network and that you have downloaded the most current Polar PDU Firmware from the website and link above. See Appendix A for more details.

Running Polar PDU Firmware Upgrader application:

Double click the Polar PDU Firmware Upgrader Icon on the Desktop

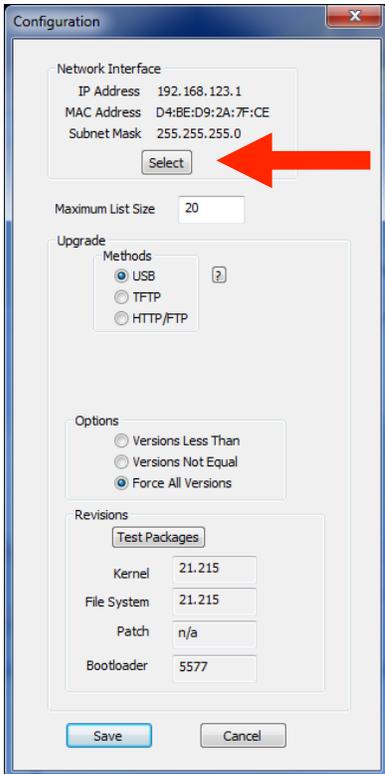The application will open to the main screen (below).
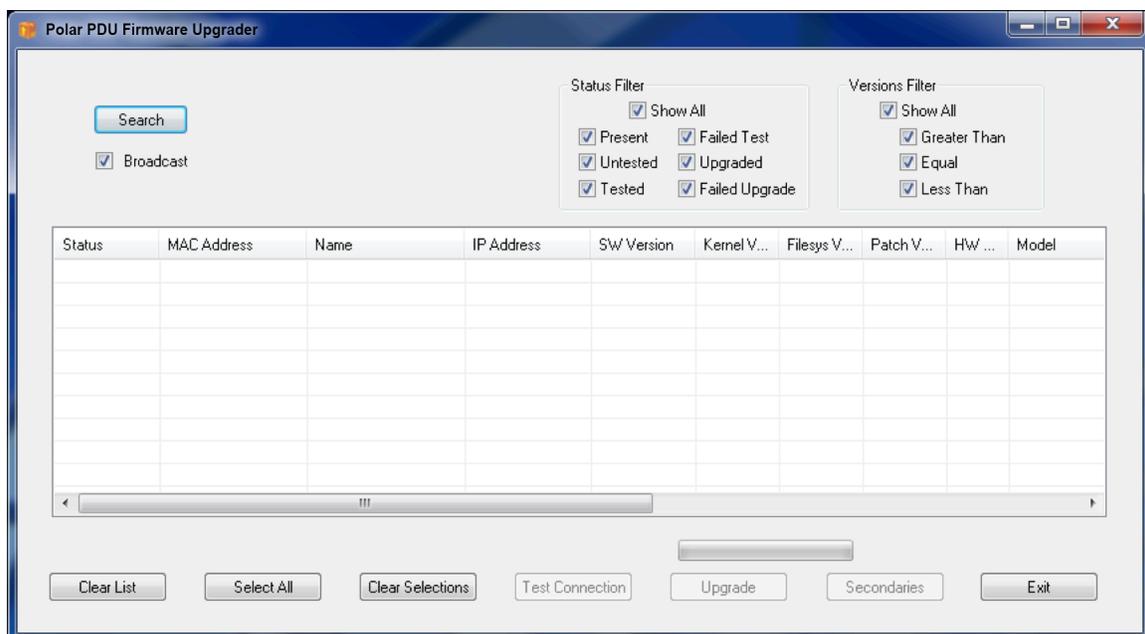
Configure Network Connections

Move the mouse to the upper left corner of the main screen over the icon in the blue header. Click and hold the left mouse button to open the main menu.
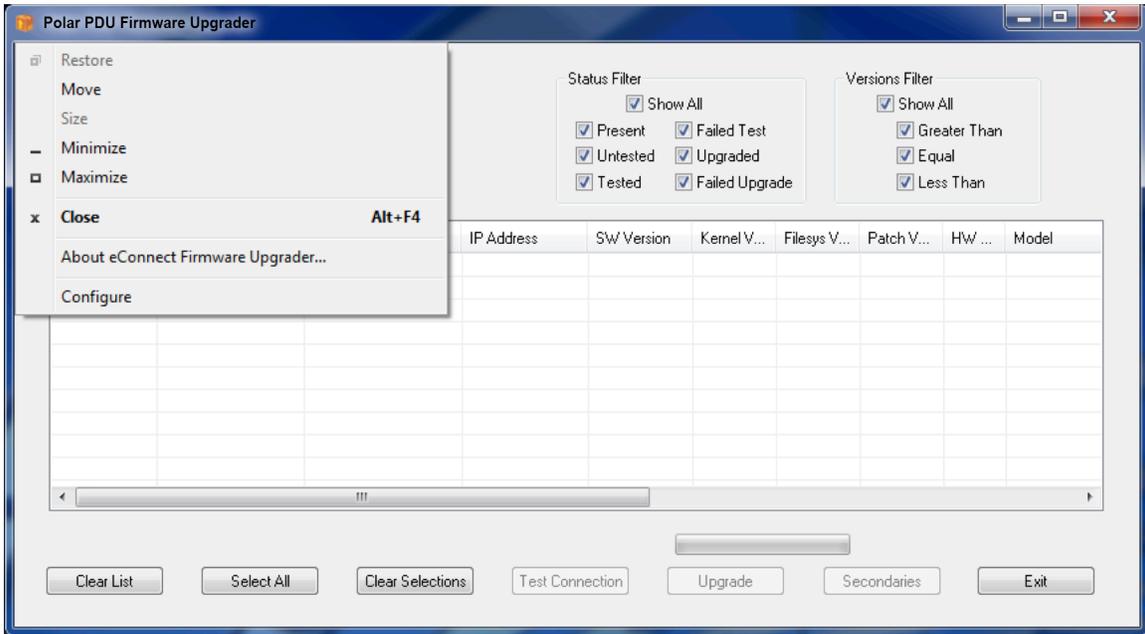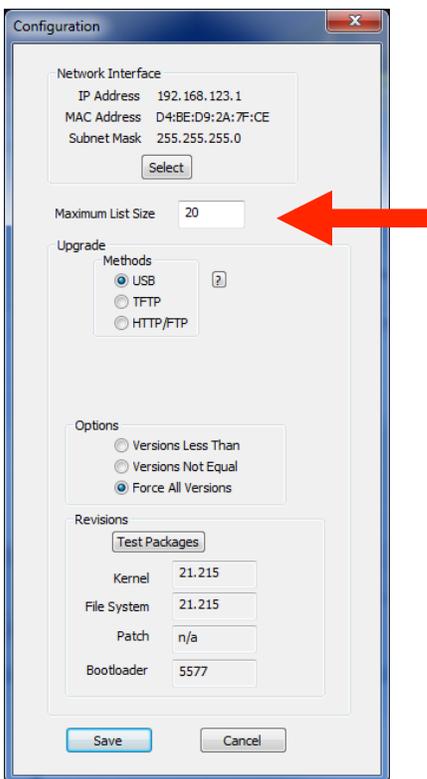

Select Configure to display the Configuration menu (below).

Check the Network Interface information. The computer may have multiple network adapters. Click the Select button, and select the appropriate adapter (see below).
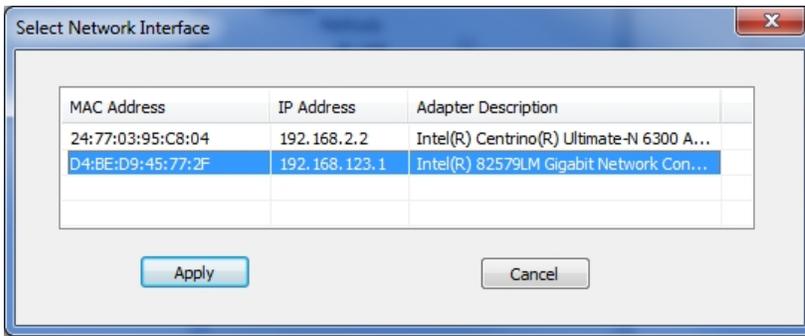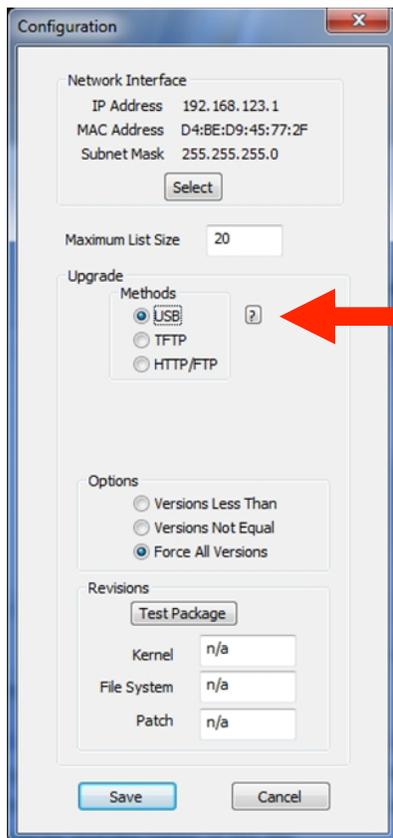
Enter the Maximum List Size – the number of PDUs to be listed on the main screen.

Select the upgrade method – the location of the firmware file:
- USB
- TFTP
- HTTP/FTP

Firmware on USB Flash Drive

If USB is selected, firmware will transfer from a USB Flash Drive attached to the computer running the Polar PDU Firmware Upgrader software.
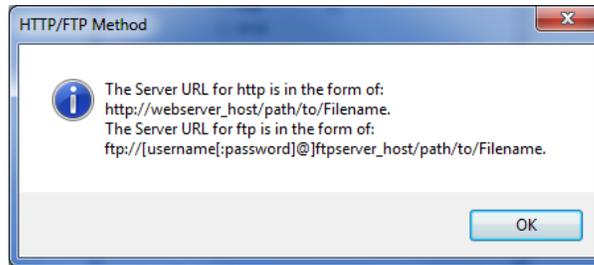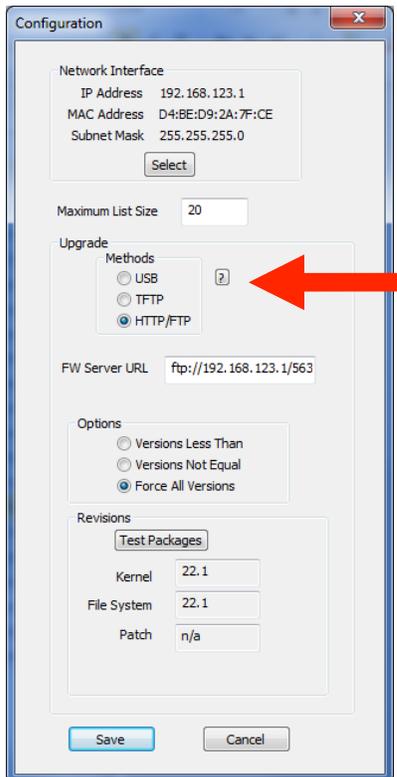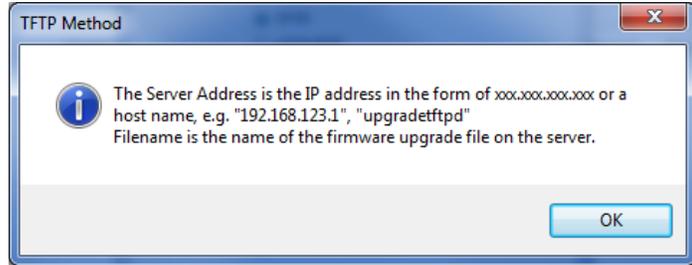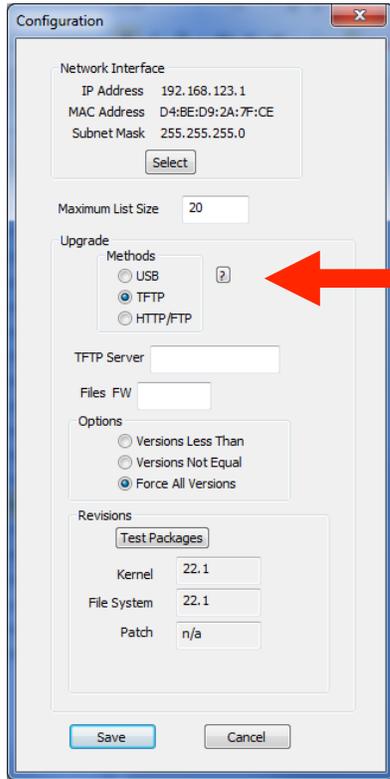
Click on the "?" button and note the special USB flash drive requirements –the firmware needs to be on the flash drive's root directory and only one firmware file, the latest revision, should be on the root directory:
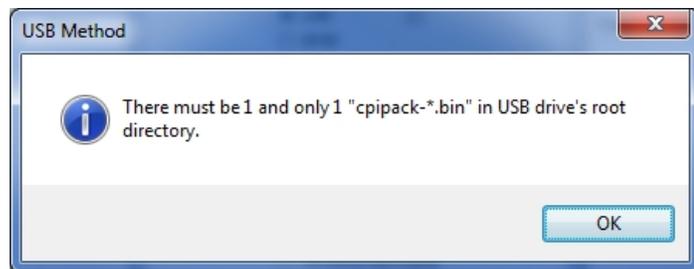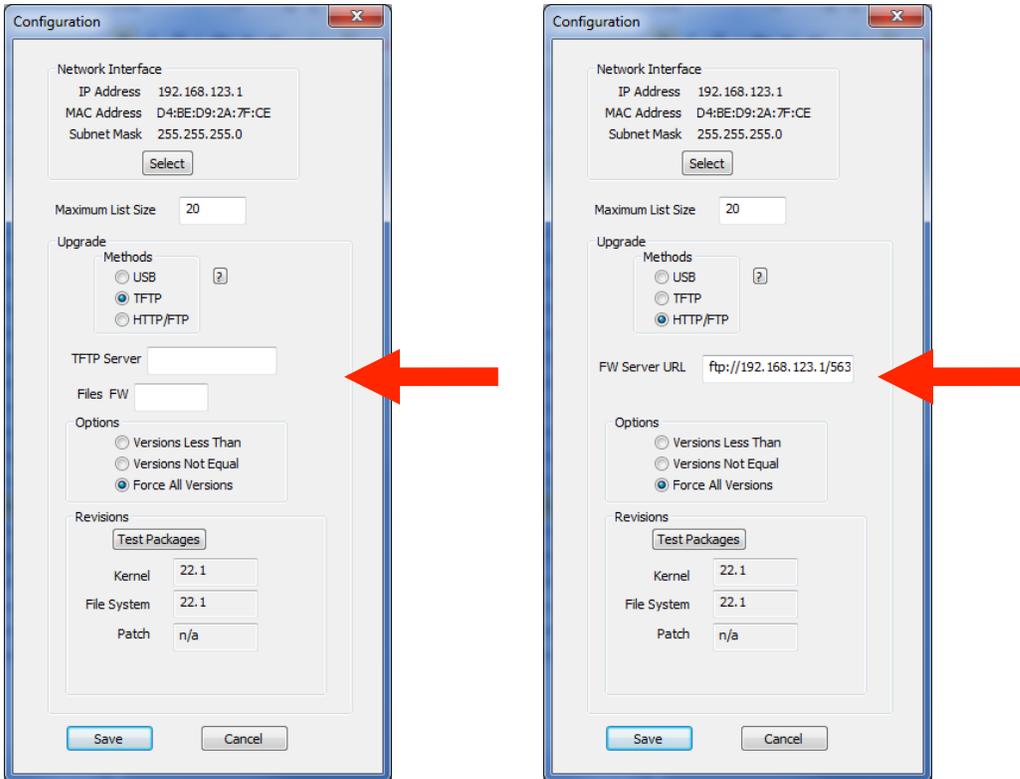
Firmware on TFTP/FTP Server

If HTTP/FTP is selected, software will transfer from a HTTP or FTP Server.

Firmware on HTTP or FTP Server

If HTTP/FTP is selected, firmware will be transferred from a HTTP or FTP Server.

Enter the address of the TFTP Server. The TFTP Server must be accessible to the PDU over the network. When mouse-over the full file name will be displayed.

Enter the Server URL of the HTTP or FTP Server. The FTP Server must be accessible to the PDU over the network. When mouse-over the full file name will be displayed.

Under Options, select which PDUs will be updated.
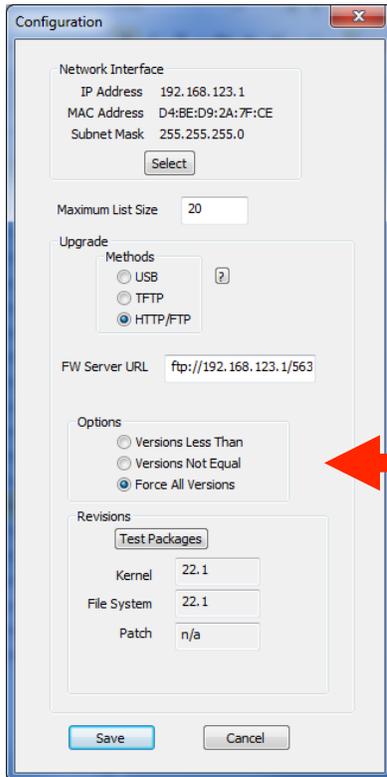
Versions Less Than – only updates PDUs with firmware versions that are older than upgrade version.

Versions Not Equal – updates PDUs with firmware versions that are different than upgrade version.

Force All Versions – updates all PDUs, regardless of version.

Select Test Package under Revisions to verify that the firmware is located on the USB, TFTP or HTTP/FTP location. When prompted (below), click on the Yes button.
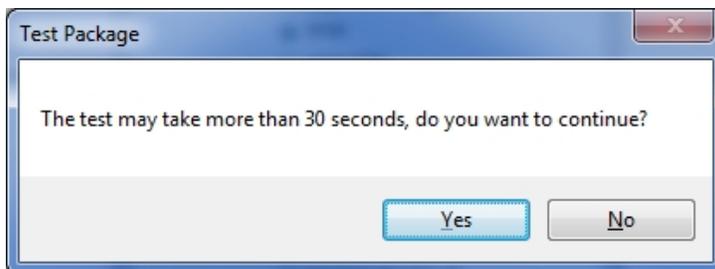
Test Package will check for the firmware file at the designated location.
If not found, you will receive an error message.

Check the following and then retest:
- Name of the firmware file is listed correctly in the Configuration menu.
- If using a USB Flash Drive, the drive is attached directly to the computer that is running the Polar PDU Firmware Upgrader software.
- The firmware file is saved in the correct directory.
- The IP address of the TFTP server or URL of the HTTP or FTP server is correct.
- Firewall settings are not blocking communications between the computer or server (see Appendix B for more information.)
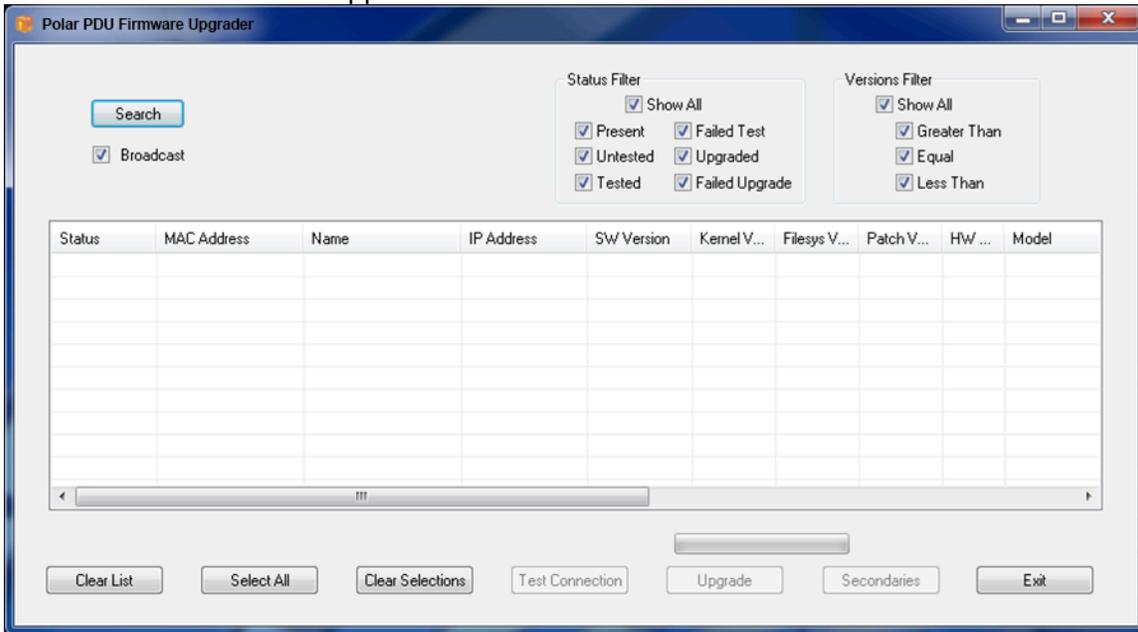
When found, you will receive a success message. Click OK.
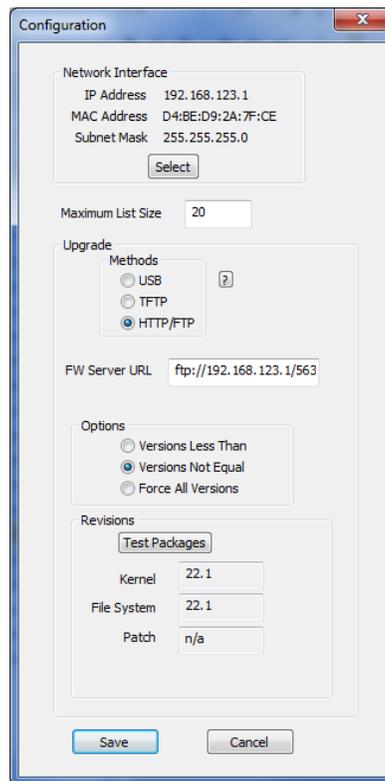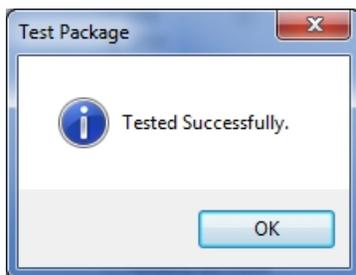
Click Save to Save the Configuration.

Search the Network for PDUs

On the upper right side of the main screen, select Status and Version Filters, then click the Search button on the upper left side of the screen.


Polar PDU Firmware Upgrader will search the network and return a list of all primary Polar PDUs that are attached to the same network and meet filter criteria.
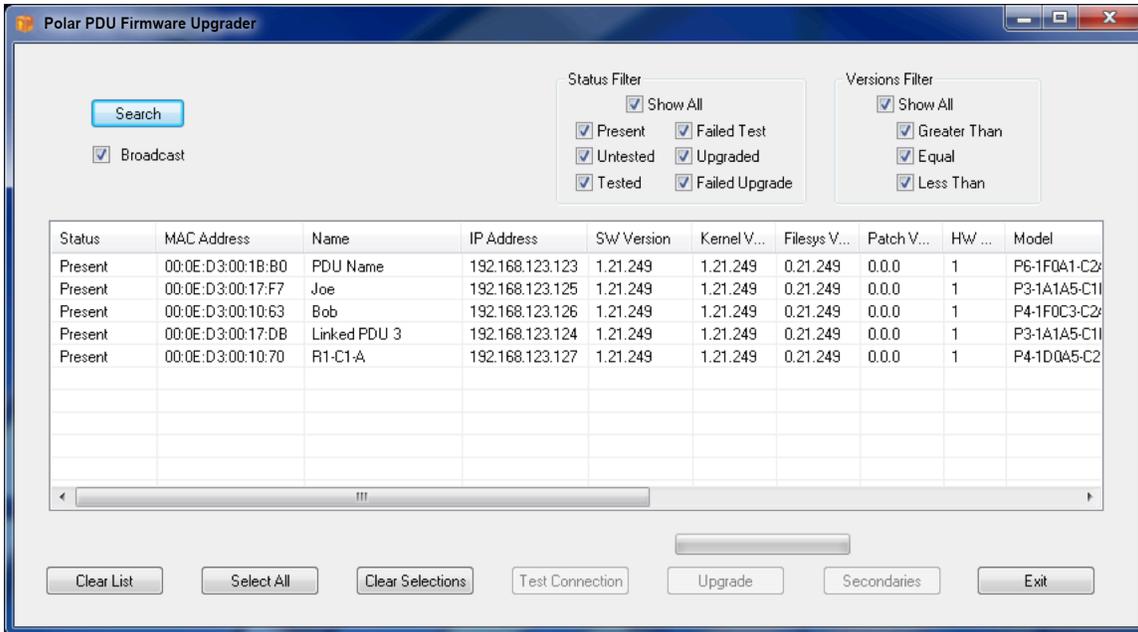

Click on a specific PDU to select the PDU for test or upgrade.
The **Clear List** button will remove all items from the search.
The **Select All** button will select all PDUs in the list for test or upgrade.
The **Clear Selections** button will unselect a PDU or group of PDUs.

Upgrade a Primary PDU

Select a PDU and click the Test Connection button. The Polar PDU Firmware Upgrader application will test the network connection to the PDU and report the firmware information of the PDU and how many linked secondary PDUs are attached to the PDU. Scroll across to see details.
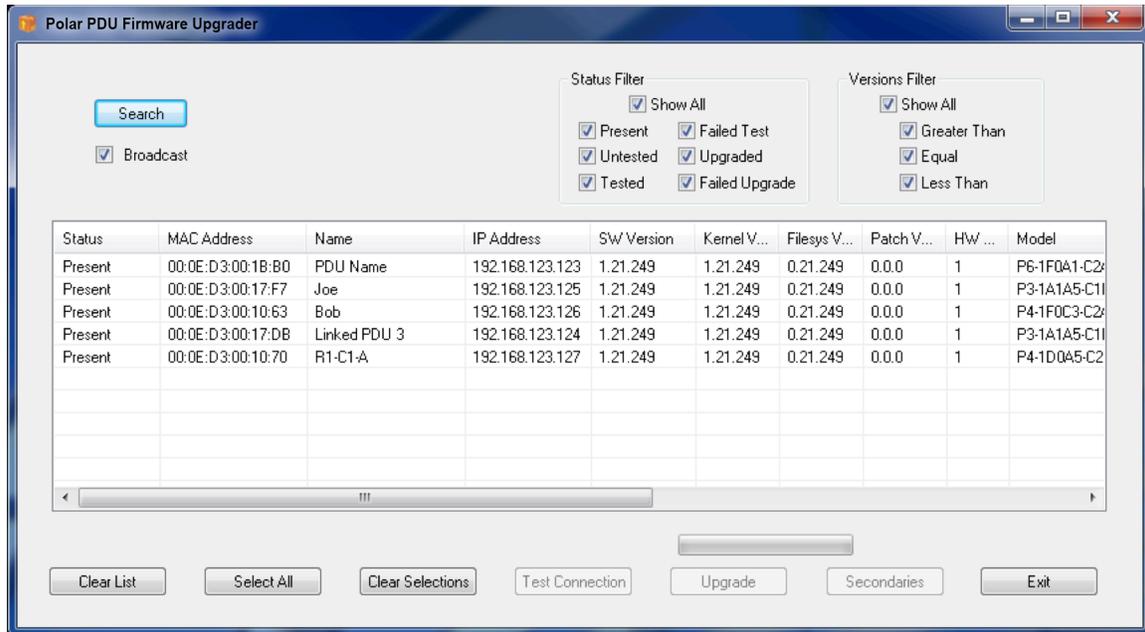

To upgrade the PDU firmware, select the PDU again and click the Upgrade button. The system will prompt you to confirm. The system will prompt you to confirm   Select Yes.
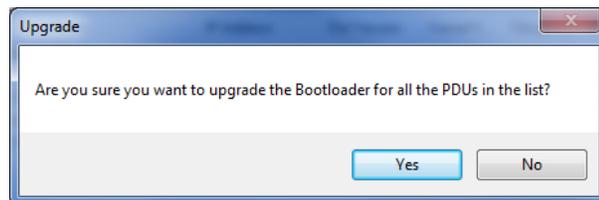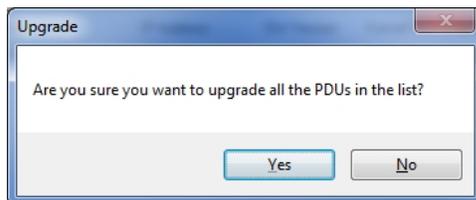
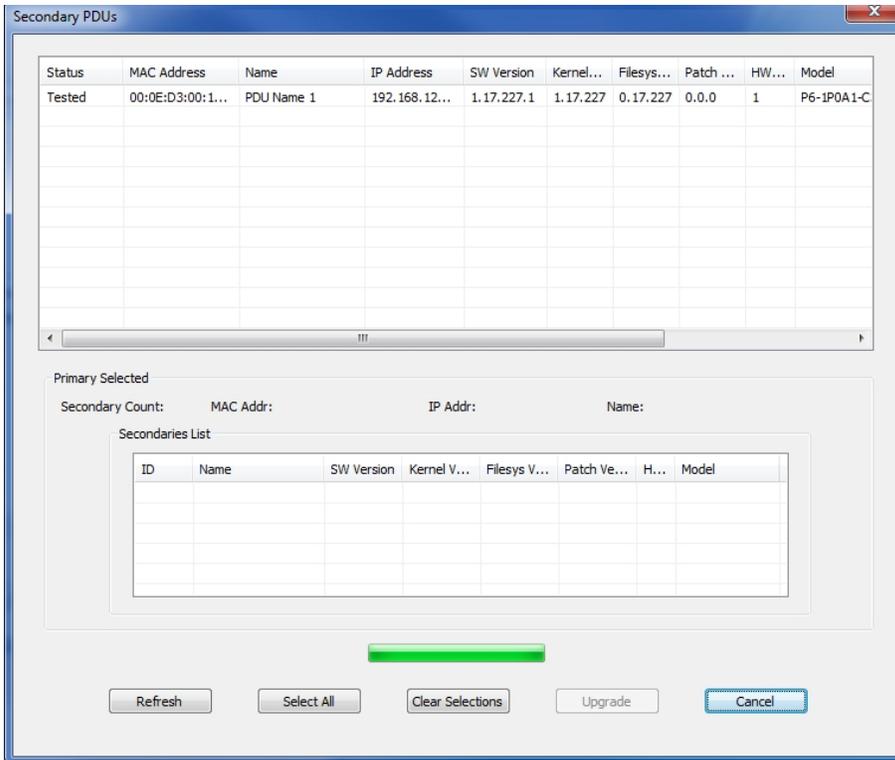The firmware upgrade will take about seven minutes. The firmware upgrade will not interfere with PDU operation. The PDU will not be accessible for remote monitoring or control during the firmware upgrade. Additionally, the green LED on the PDU will flash and the home icon on the PDU's LCD screen will turn 🏠 (purple) during the firmware upgrade process. PDU will be rebooted after the upgrade is done.

The status of the PDU will change to Upgraded on the Polar PDU Firmware Upgrader main screen.
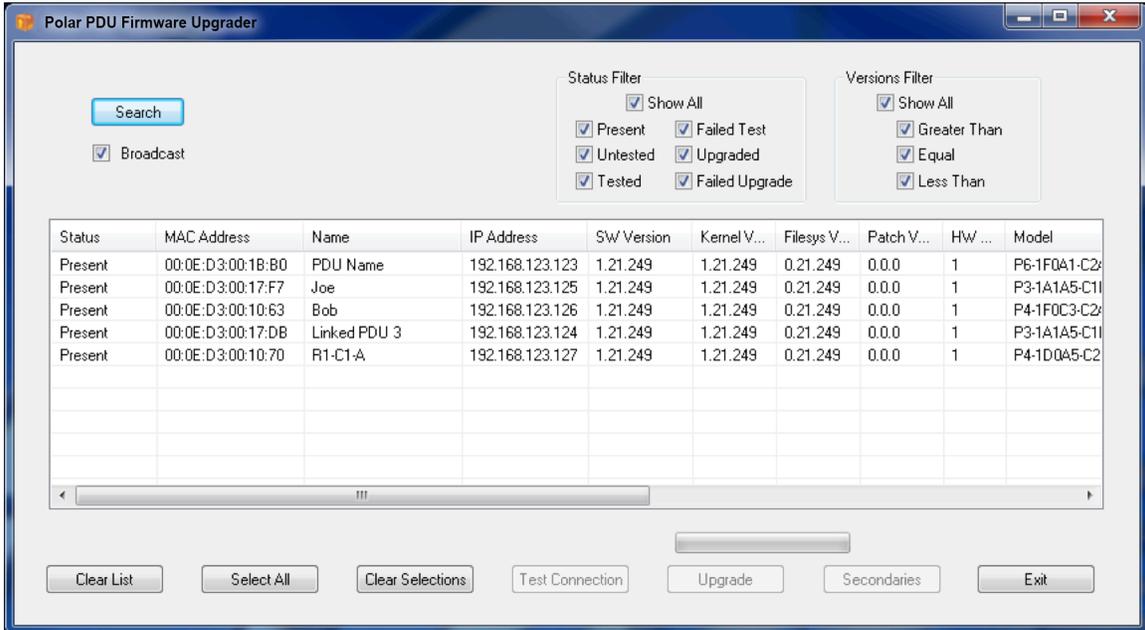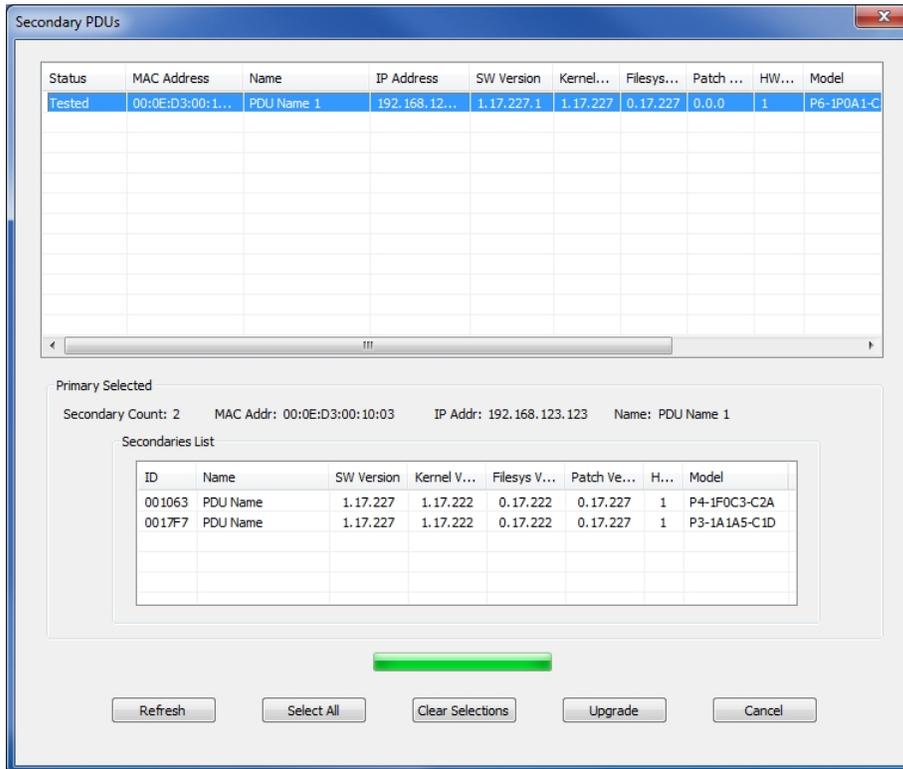

Upgrade a Linked Secondary PDU

Click on the Secondaries button to view linked secondary PDUs.

Select the Primary PDU from the list at the top of the screen to display all linked secondary PDUs in the list at the bottom of the screen.


To upgrade secondary PDU firmware click on a specific PDU in the list to select it or click the Select All button. Then click the Upgrade button.

The firmware upgrade will take about 80 minutes. The firmware upgrade will not interfere with PDU operation. The secondary PDUs will be accessible for remote monitoring or control during the firmware upgrade. Additionally, the green LED on the PDU will flash and the home icon on the PDU's LCD screen will turn 🏠 (purple) during the firmware upgrade process. PDUs will be rebooted after the upgrades are done.

Note: As a reminder, all PDUs must have firmware version 1.22.1 or later to be upgraded using Polar PDU Firmware Upgrader software. Secondary PDUs that do not have firmware version 1.22.1 may be displayed in the list, but will not be Upgraded. Upgrade these models manually on the PDUs using a USB drive.

APPENDIX A: CONNECTING AND LINKING PDUS

Connect the primary PDU's Ethernet Port to a network switch using a Cat 5/6 4-pair network patch cable with RJ45 connectors on both ends. The computer with the Polar PDU Firmware Upgrader application must be on the same network as the PDU and be able to access the PDU.
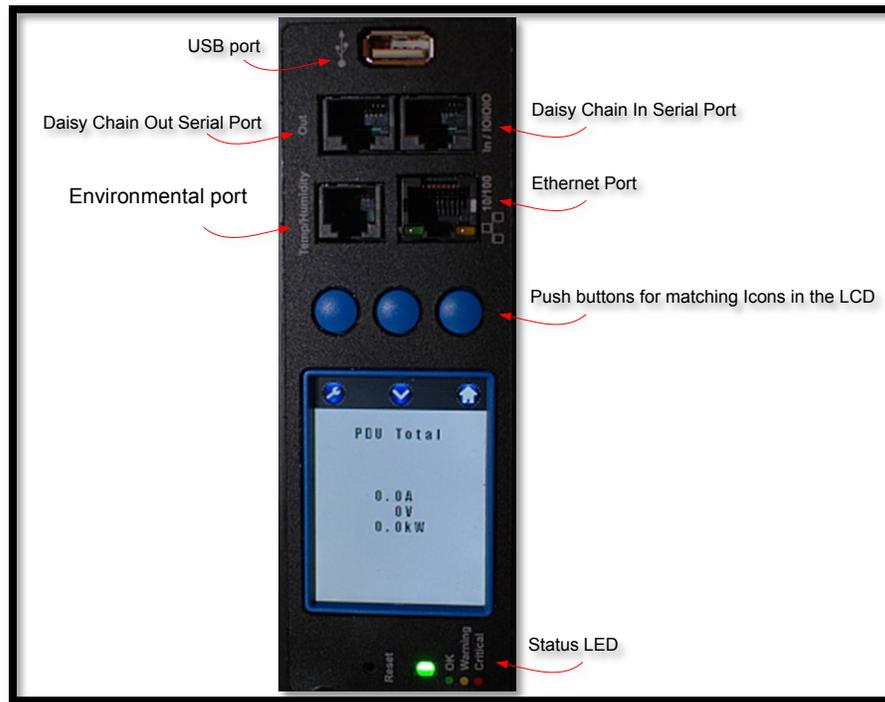

You can link (daisy chain) up to 20 PDUs together (1 Primary and 19 Secondary or 1 Primary, 1 Alternate, and 18 Secondary) and access all of the PDUs from a single Ethernet network connection to the Primary PDU.

To link PDUs:
- Connect a standard Cat 5/6 four-pair network patch cord or network cable with RJ45 connectors from the Primary PDU's Daisy Chain Out Serial Port to the next PDU's Daisy Chain In Serial Port.

- Continue this process linking the Out Port to the In Port for additional PDUs; linking up to 20 PDUs.
- Using the setup buttons on the local display, change the Role of the primary PDU from secondary (the default) to Primary in order to view the linked PDUs using the Serial Software. All linked PDUs remain in the Secondary Role.
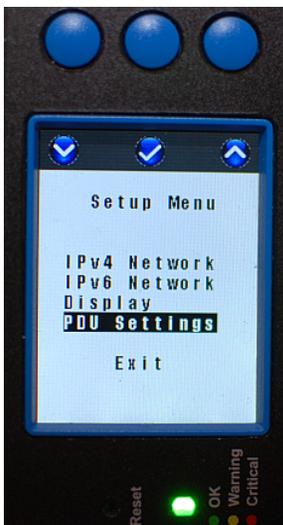

- To access linked PDUs using the built in web interface, refer to the Polar PDU User Manual **Polar PDU User Manual** available for download on http://www.subzeroeng.com/PolarPDUs/Downloads.
- For additional assistance, contact Support: 801-810-3500 • support@subzeroeng.com.

APPENDIX B: WINDOWS FIREWALL SETTINGS

When firmware will be downloaded from a TFTP or HTTP/FTP Server, specific settings are required on the computer that runs the Polar PDU Firmware Upgrader application and possibly other network equipment to prevent Firewalls from blocking access between the software, computer, server and PDUs.

Work with your Network Administrator if access is blocked.

• If the computer runs Microsoft Windows 7, in Windows Firewall settings, under Allowed programs and features, select Centralized Upgrade Application and TFTP Server and designate Public networks.
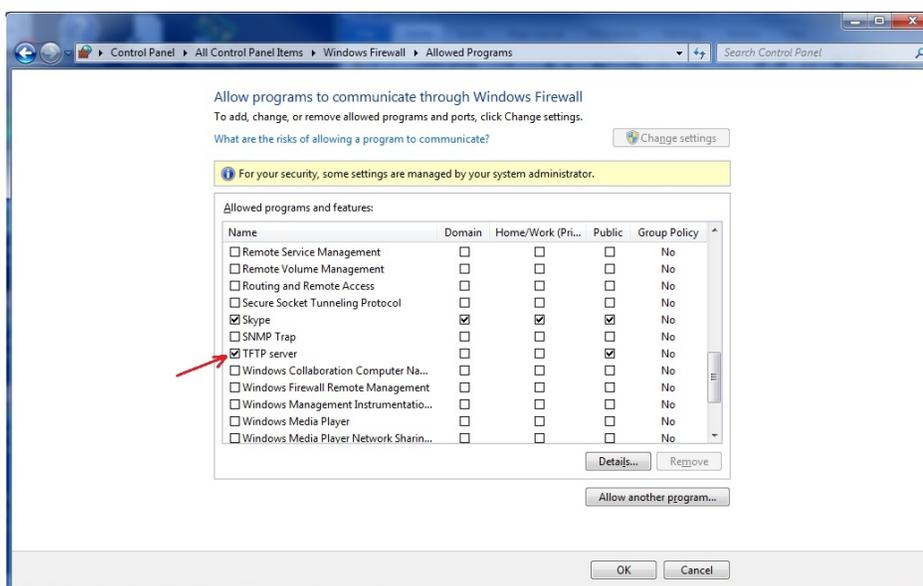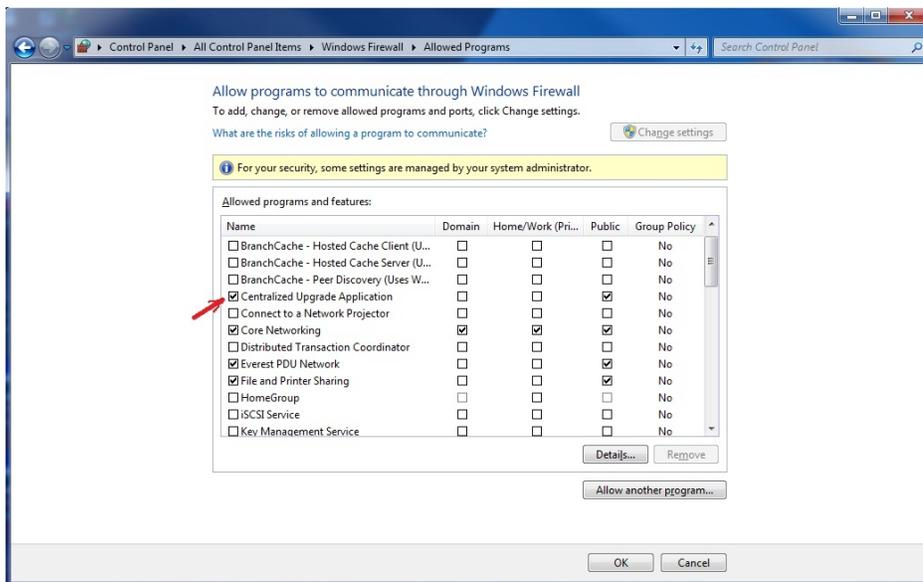
- If the computer runs Windows XP Pro, in Windows Firewall settings, under the Exceptions tab, under Programs and Services, select TFTP Server.