# Using PortVision Plus to Update DeviceMaster Firmware

This manual contains the **basic** steps necessary to completely update NS-Link or SocketServer firmware and Bootloader in the DeviceMaster using PortVision Plus.

In the event a failure of these procedures is experienced, it is recommended that Comtrol Technical Support be contacted for additional assistance. This document does not include instructions for configuring security in the DeviceMaster.

This manual will show step-by-step instructions for this procedure when using the Microsoft Windows Operating Systems.

This manual contains no explanations for the procedures outlined here. For full information and details, please see the DeviceMaster user guide and the DeviceMaster NS-Link user guide.
DeviceMaster user guide: ftp://ftp.comtrol.com/dev_mstr/rts/docs/dev_mstr_install_guide.pdf
DeviceMaster NS-Link user guide: ftp://ftp.comtrol.com/dev_mstr/rts/docs/ns-link_user.pdf

For new installations see all of the chapters. For an update situation you may already have PortVision Plus installed and IP addresses assigned to the DeviceMaster. If that is the case, you may skip some of the chapters as desired, but it is recommended that you save your DeviceMaster configurations in any event.

***Please note:*** *Screen shots showing version numbers will not be correct and are shown as examples.*

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Begin by downloading the desired files by clicking on the links and saving to a convenient directory.
PortVision Plus: ftp://ftp.comtrol.com/legacy/dev_mstr/portvision_plus/pvplus_v4.08.msi
PortVision Plus Help and User Guides: ftp://ftp.comtrol.com/legacy/dev_mstr/portvision_plus/docs.exe
The current version of SocketServer may be downloaded using this link:
ftp://ftp.comtrol.com/dev_mstr/rts/software/socketserver/
You will see a file in this folder called socketserver-#.##.bin (replace #'s with numbers)
The current version of Bootloader may be downloaded using this link:
ftp://ftp.comtrol.com/dev_mstr/rts/software/bootloader/
You will see a file in this folder called bootloader-#.##.bin (replace #'s with numbers)*Please note: SocketServer and NS-Link have been incorporated into a single bin (binary) file. By default, once loaded, the file will show SocketServer in both the web page and PortVision Plus until a driver begins communication with this DeviceMaster. Once a driver establishes communications, the firmware will now indicate that it is NS-Link.*

Common Application Firmware files for the DeviceMaster UP are also available and may be downloaded from the Comtrol web site: www.comtrol.com

It will be necessary that the PC and the DeviceMaster both have static IP addresses assigned so as to allow full IP communications. Ideally this will be a direct connection between the PC and the DeviceMaster in which case DHCP will not be able to assign IP addresses to either the PC or DeviceMaster. If the update procedure fails, it ***will*** be necessary to have IP addresses assigned to both the PC and the DeviceMaster. If the DeviceMaster is to be updated while attached to a network, the Bootloader Timeout value may have to be modified which can only be done using IP communications.

Please note: It is mandatory that all security protocols on the DeviceMaster be ***disabled*** before beginning this procedure. If desired, after completion, the secure config option may be reselected from the DeviceMaster home page > Configure Security options. Do not select the 'Secure Data' mode as this is not compatible with the driver installed in the PC.

## PortVision Plus Installation

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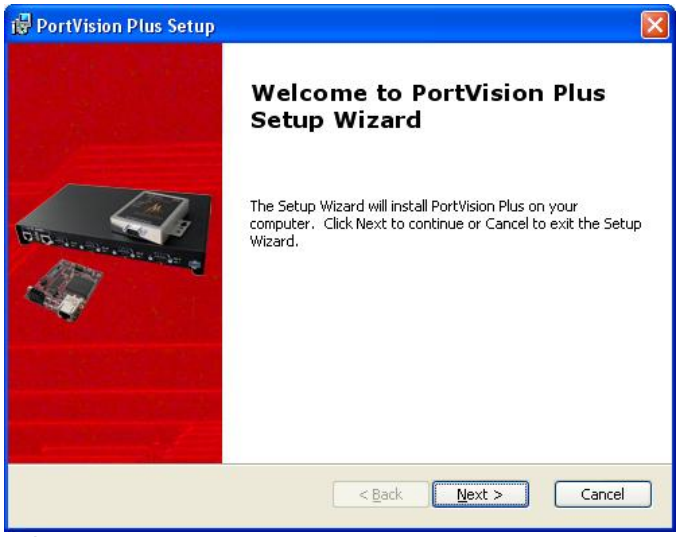
If a previous version of PortVision Plus is currently installed, uninstall it by going to Control Panel>Add or Remove Programs. Select PortVision from the list and click on 'Remove'.

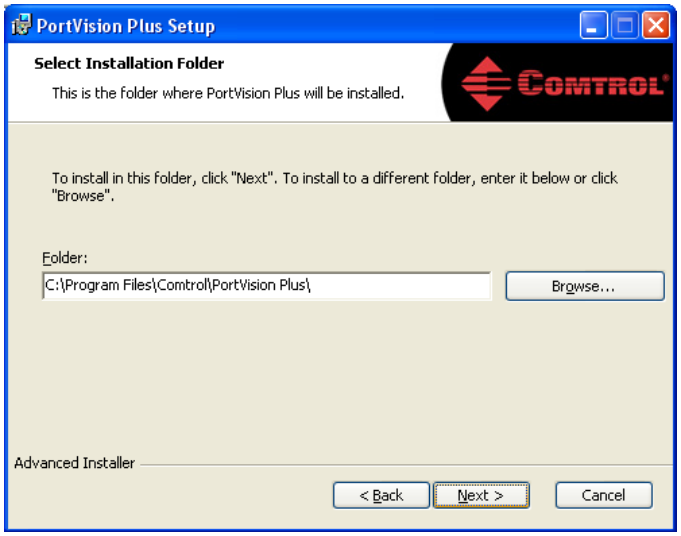
*Note: If running Windows 2000, current versions of PortVision Plus will not install. You must use this version (or earlier) of PortVision Plus in Windows 2000:*
ftp://ftp.comtrol.com/contribs/devicemaster/portvision/windows_2000_version/pvplus_v3.08.msi

Run the pvplus_v4.xx.msi file.

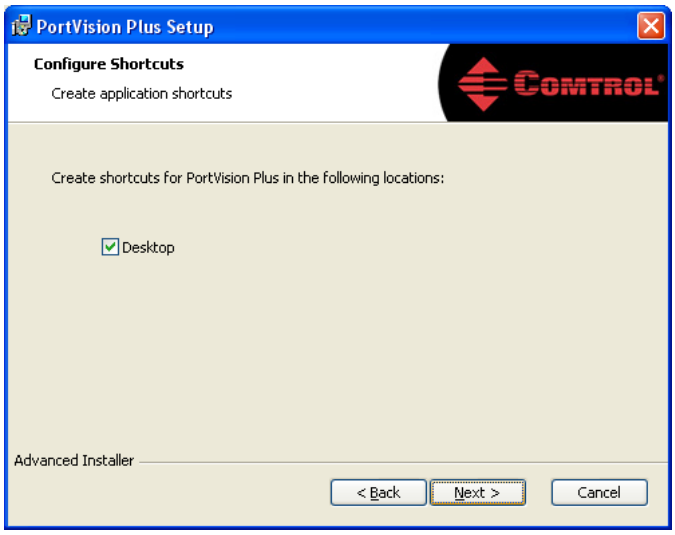



Select Next

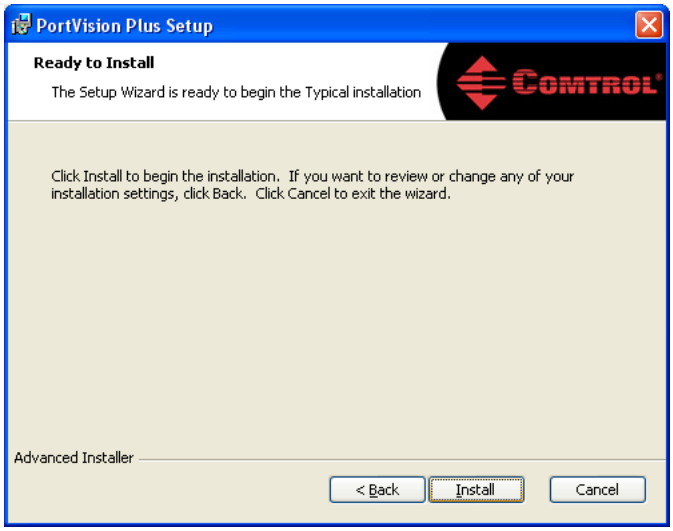
Select the "I accept…" and click 'Next'



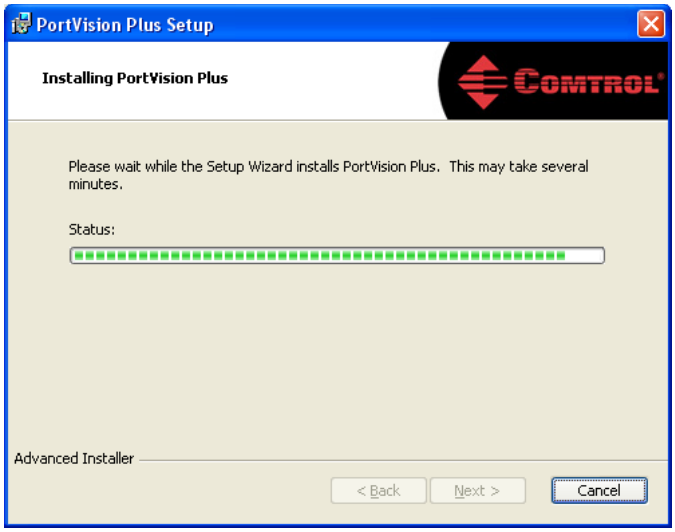

Accept the default and click 'Next'



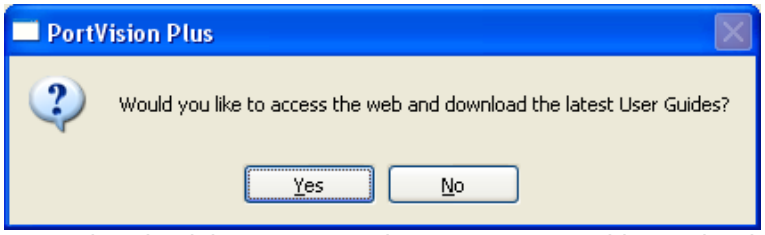

You will get the option to create a desktop shortcut. Select Next




Select Install

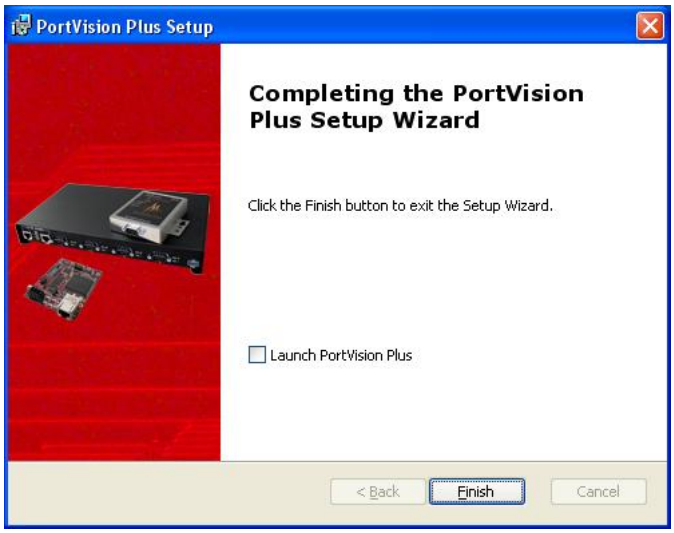



Files will now copy and the application will register itself to the system




Select No to download the current DeviceMaster User Guides and Help files.

The documentation files have already been downloaded. Install the Documentation manually to PortVision Plus by running the docs.exe file downloaded earlier. This file will extract the user guides and manuals to the default PortVision Plus destination directory of "C:\Program Files\Comtrol\PortVision Plus" and add a \Docs sub-directory to this directory. If you have changed the installation of PortVision Plus to a different location, the extraction path must be modified accordingly for the help files to display properly.




Click Finish

PortVision Plus.lnk

You will now have a PortVision Plus icon on the desktop

**PortVision Plus DeviceMaster Discovery**

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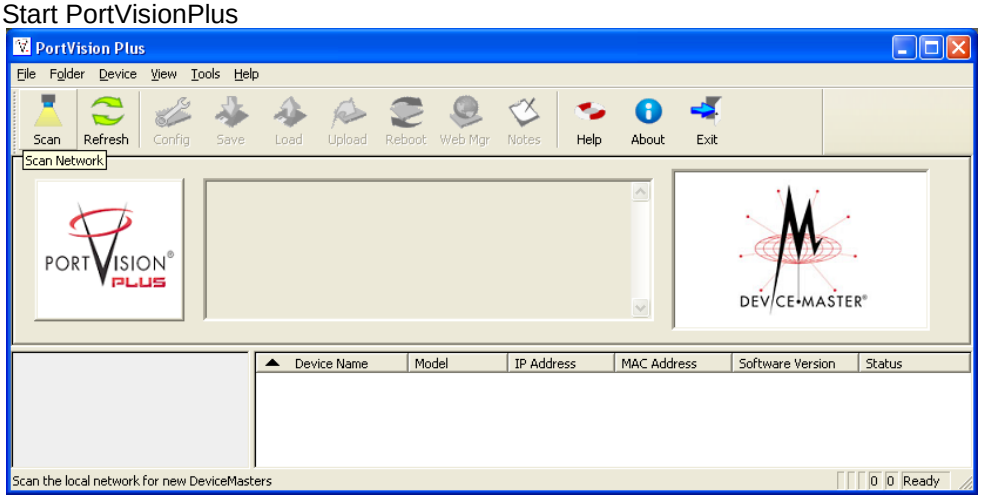
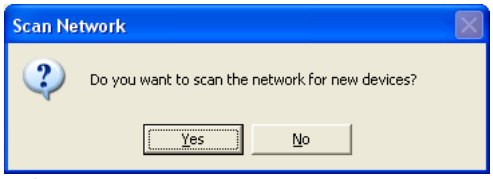
Connect an Ethernet patch cable directly from the NIC in the PC/laptop to the DeviceMaster.
If the DeviceMaster has both an UP and DOWN Ethernet port, connect the patch cable to the DOWN port.
If only a single Ethernet port is on the DeviceMaster, then it will auto sense the type of cable used. Do not have any routers, switches or hubs between the PC and the DeviceMaster. This will facilitate the safest and most reliable update process.

Please note: Do not set any security options on the DeviceMaster until scanned into PortVision Plus as doing so will prevent PortVision Plus from being able to discover that DeviceMaster.

Start PortVisionPlus

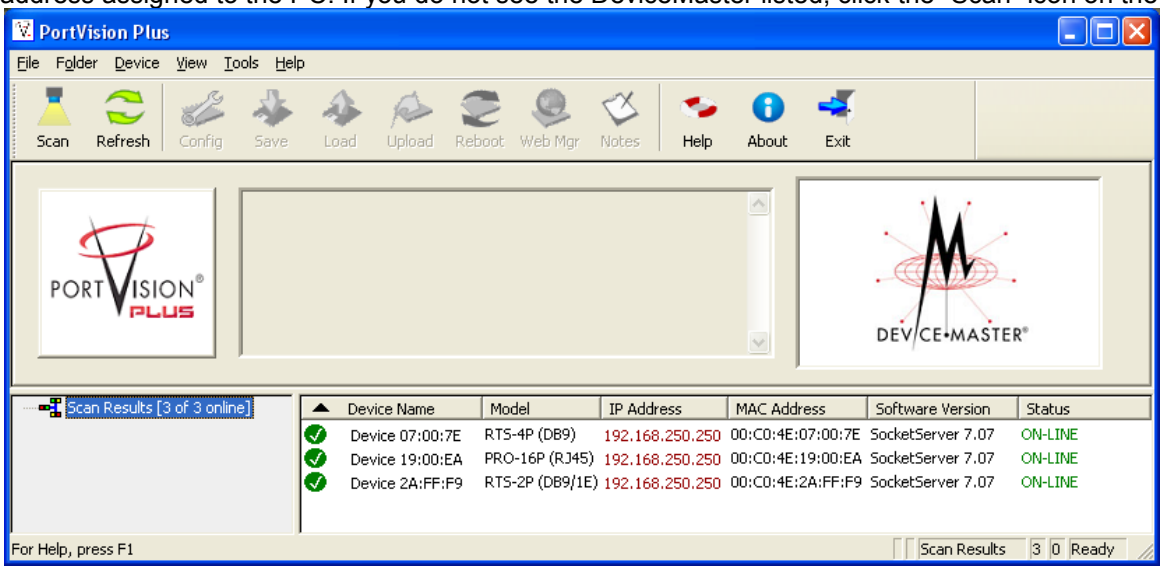



Select the “Scan” icon on launch bar.




Select Yes

Your line item(s) may be slightly different depending on the hardware, version of software, IP address assigned, etc. Note the IP address. You will be using IP to communicate to the DeviceMaster. The IP address must be compatible with the IP address assigned to the PC. If you do not see the DeviceMaster listed, click the “Scan” icon on the launch bar.



## Save the DeviceMaster Configuration to a File

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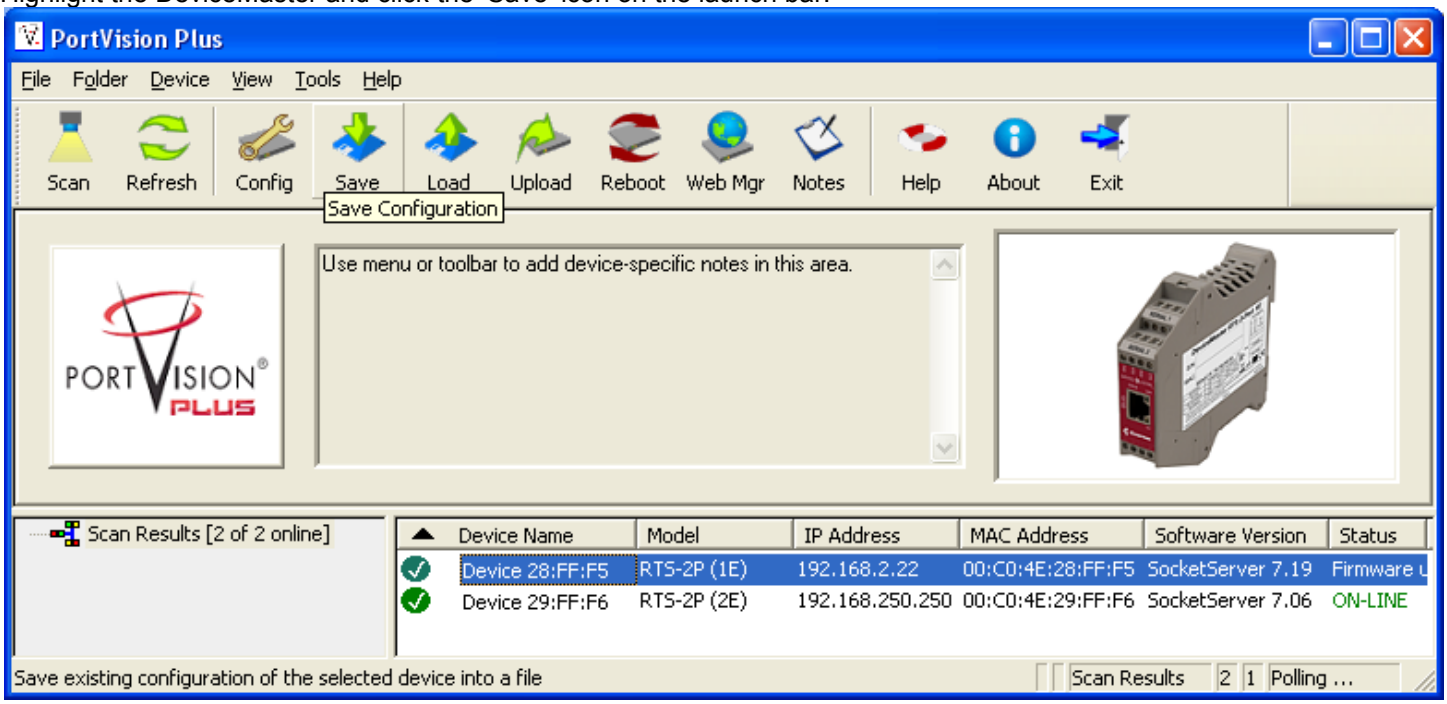
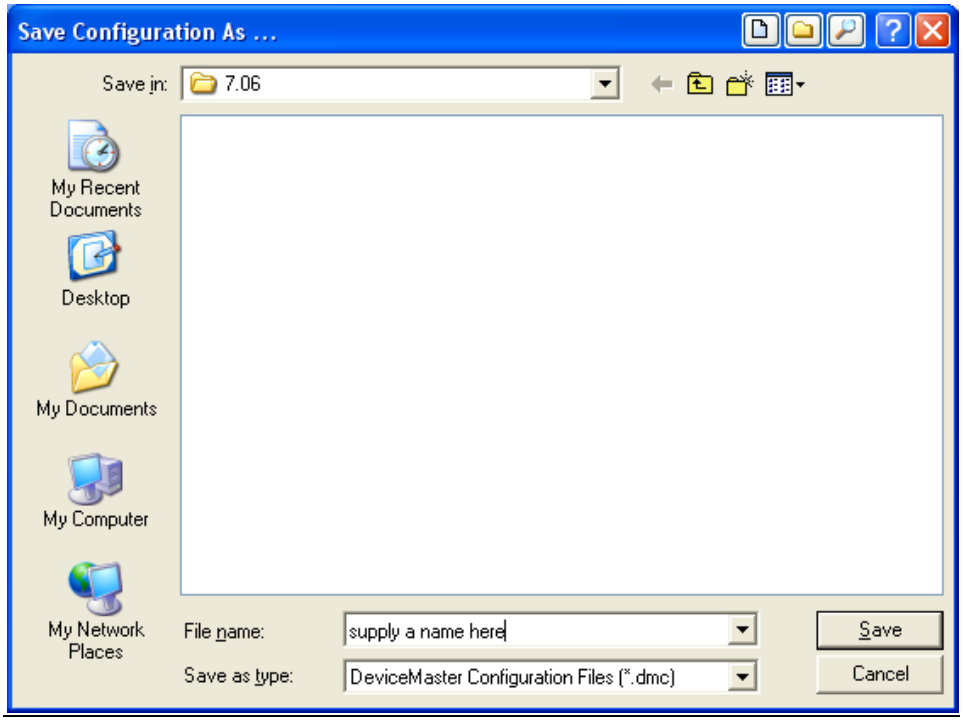
Saving the configuration is highly recommended. When uploading new firmware over earlier versions, the configuration information may be lost. If this is a new install and the DeviceMaster has never been configured, this chapter may be skipped and you should proceed to the next chapter.

**Please Note:** *PortVision Plus will not be able to save the DeviceMaster configuration file when the version number of SocketServer/NS-Link is greater than version 8.99. In this situation PortVision DX MUST be used.*

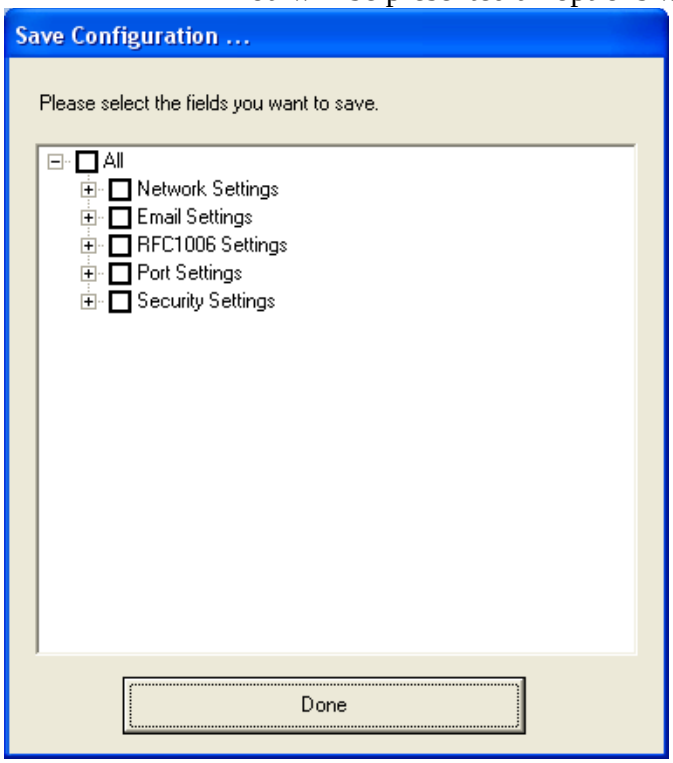
Highlight the DeviceMaster and click the 'Save' icon on the launch bar.



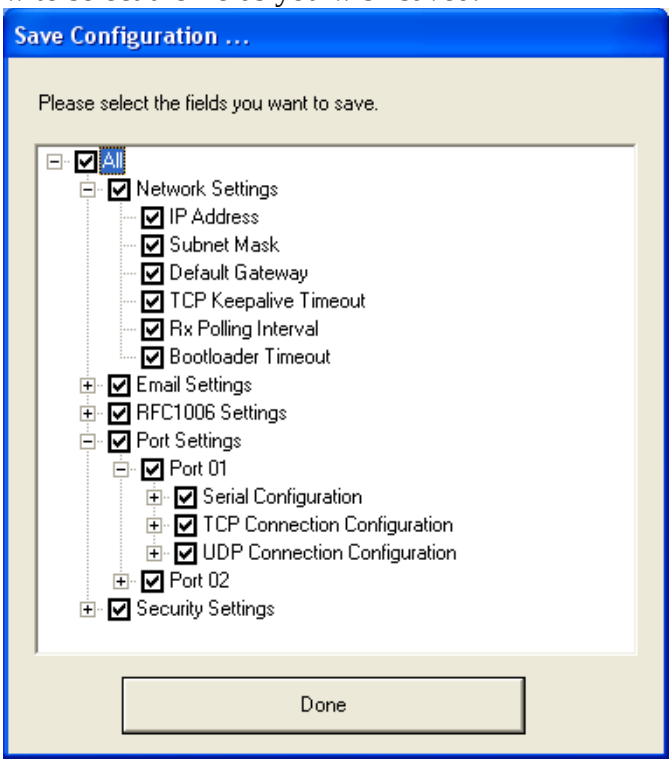




Input a file name and click Save

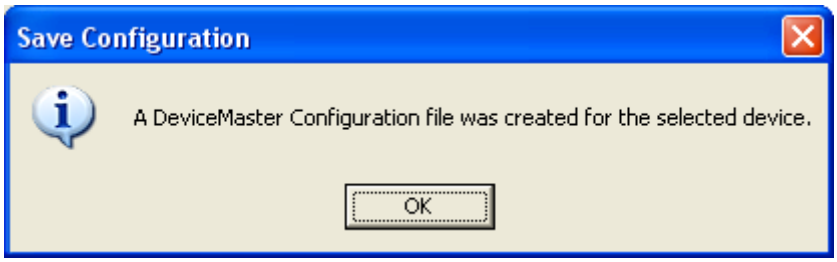
You will be presented an options window to select the fields you wish saved.




Selecting the 'All" option will save every field. When restoring or 'Loading' the configuration, the same options will be shown so you may select what fields to restore. Different options will be seen for different types of firmware, so your screen may not be as shown here.




This window displays some of the fields with the "All" option. selected. Click 'Done' when ready.




You should see this confirmation dialog.

This will be displayed if no field has been selected above

## Configure the DeviceMaster IP information

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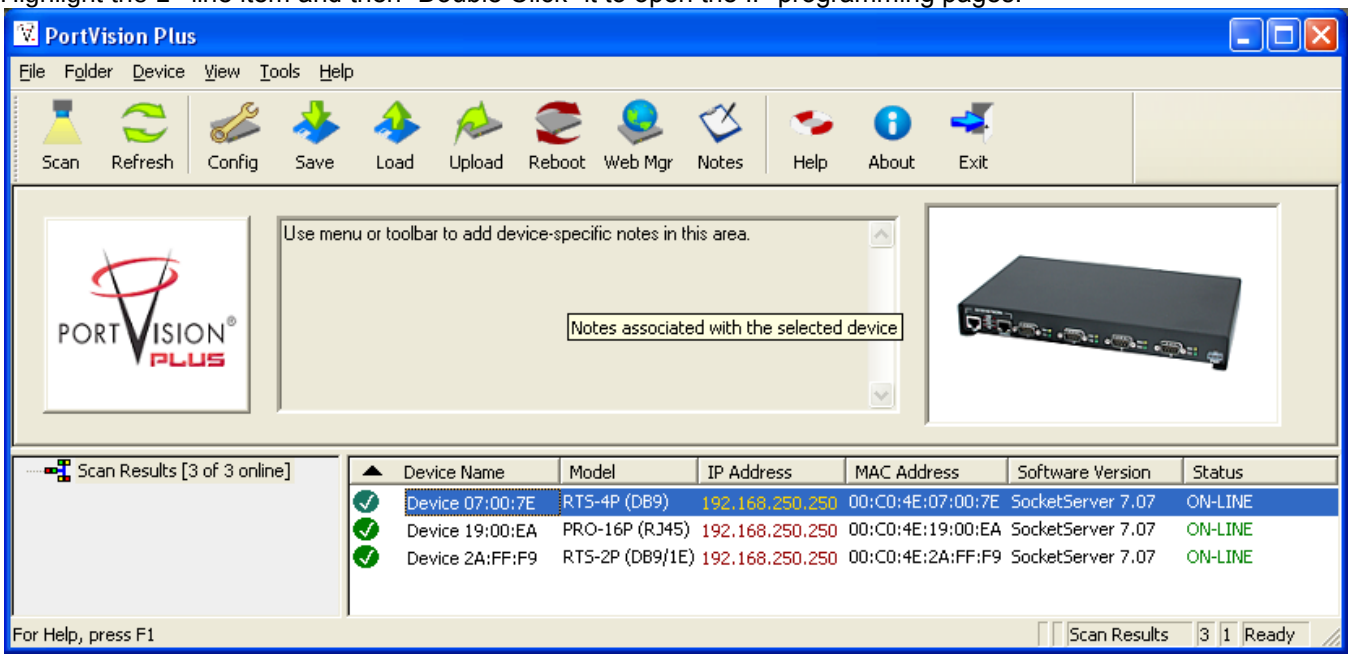
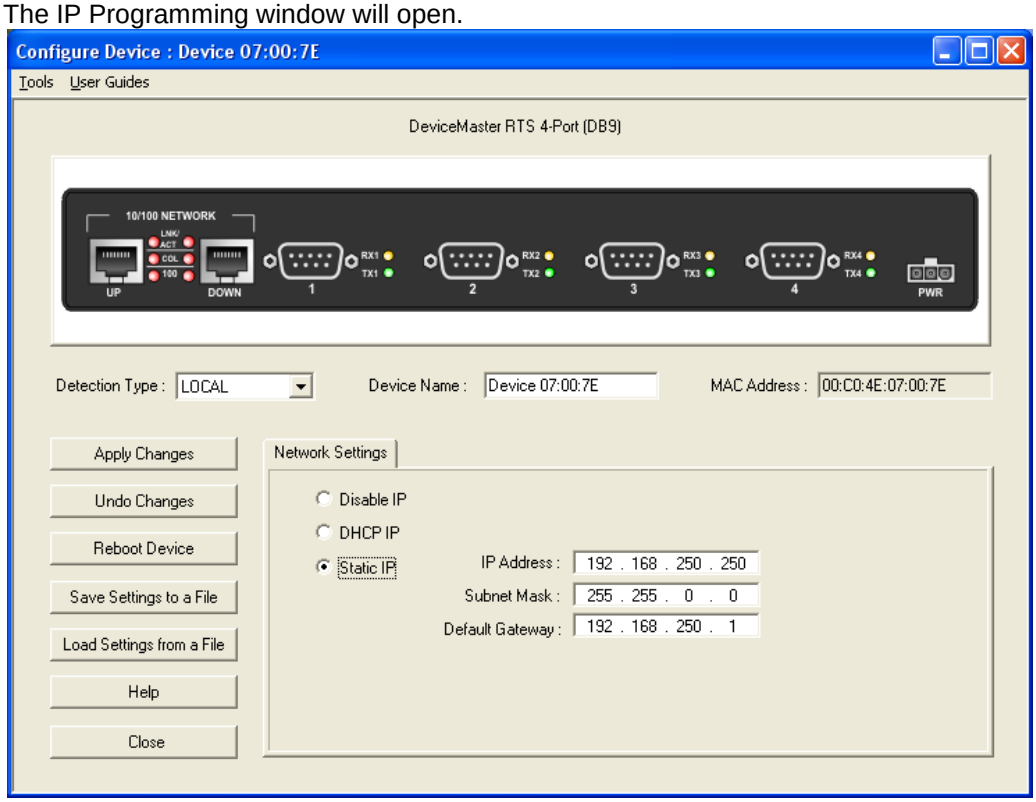
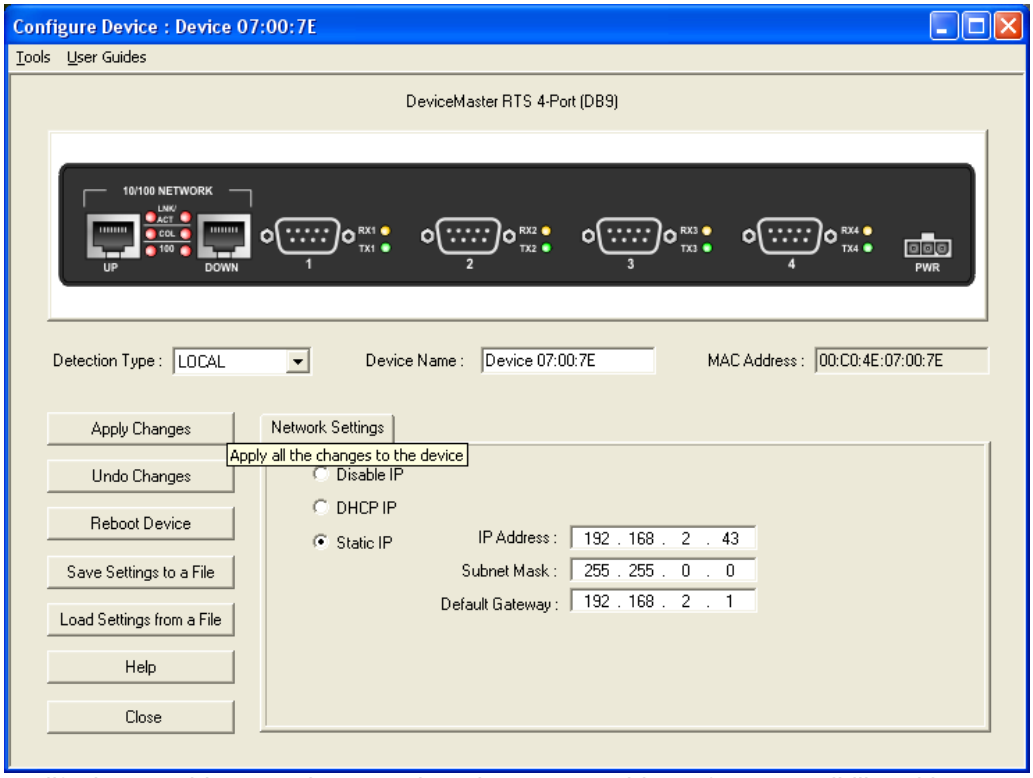
Highlight the 1st line item and then “Double Click” it to open the IP programming pages.




The IP Programming window will open.

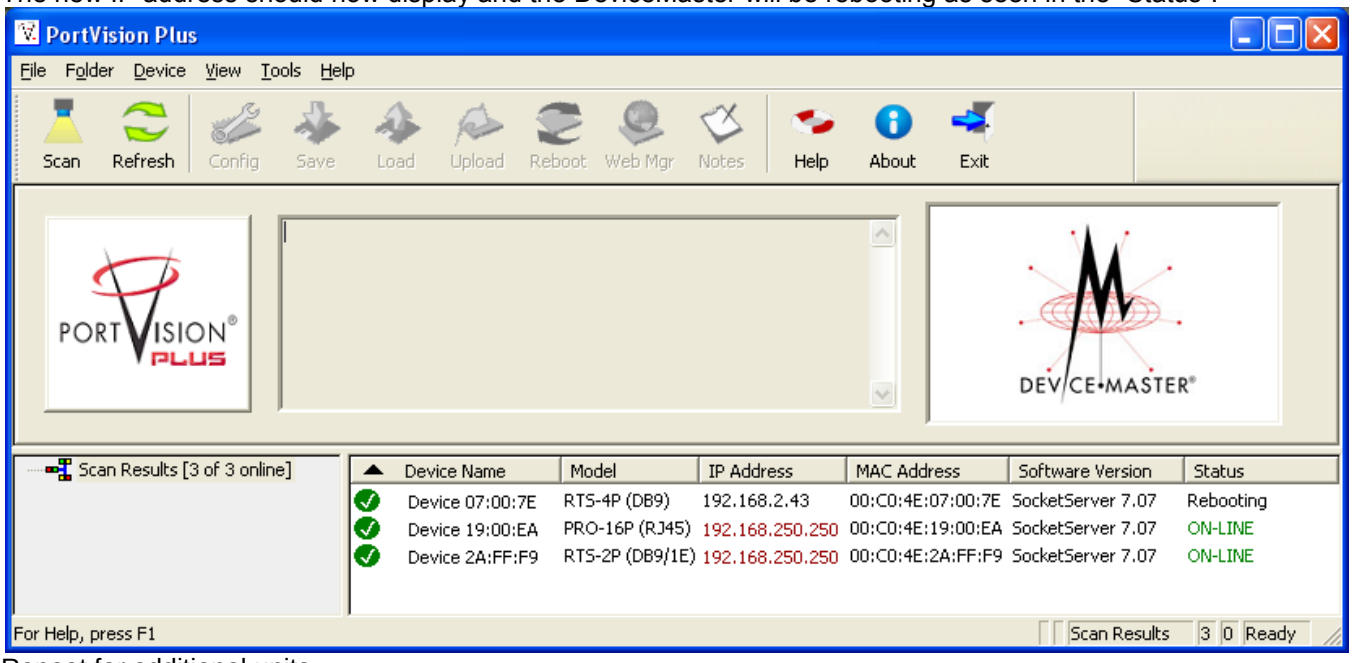



Change the IP information to match to the desired network. In this example, the network to be used will be 192.168.2.x.




Modify the IP Address, Subnet Mask and Gateway address for compatibility with your network. Once the values have been entered, select 'Apply Changes' and then select 'Close'. The DeviceMaster will now reboot to set the new IP information. This example uses a Network of 192.168.2.x addresses,

The new IP address should now display and the DeviceMaster will be rebooting as seen in the "Status".




Repeat for additional units.

## Setting the Timeout Value in the DeviceMaster

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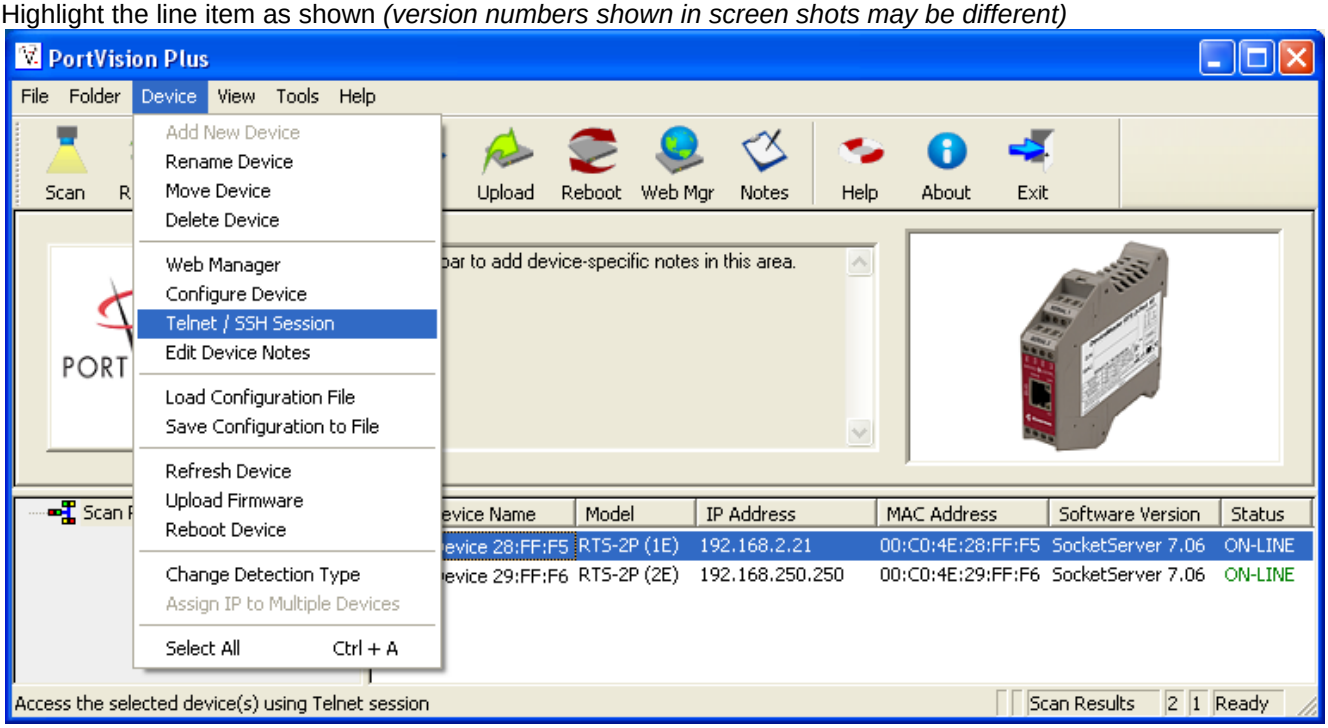
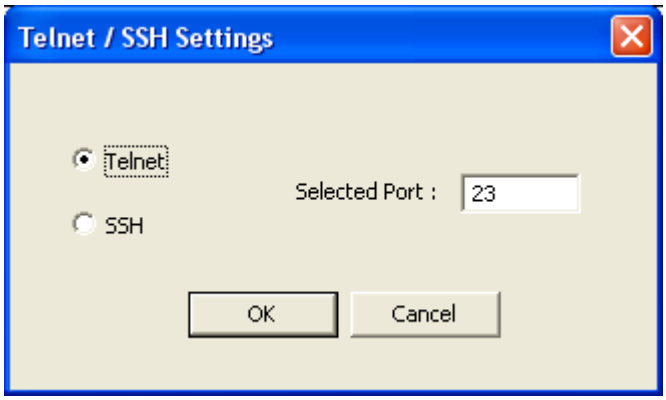
Highlight the line item as shown *(version numbers shown in screen shots may be different)*



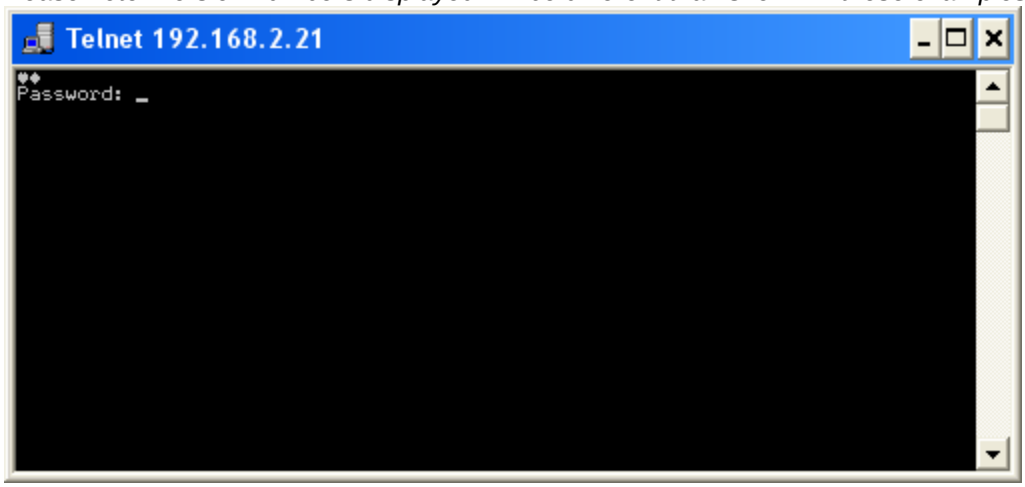

Using the Device drop down menu (or right click on the DeviceMaster) select Telnet / SSH Session.



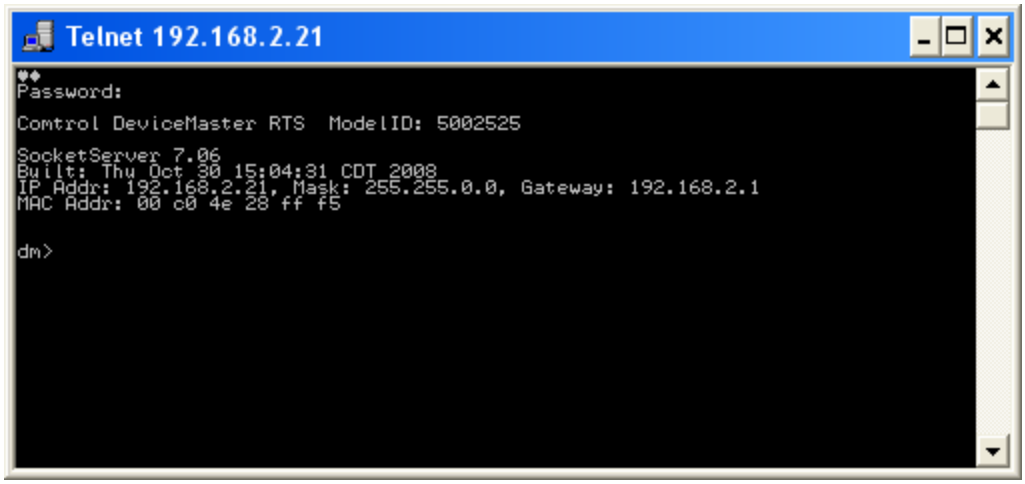

Click “OK” leaving the Selected Port set to the default 23.

A Telnet window will open to a Password prompt as shown on the next page.
Please note: The following screen shots are shown using the telnet application included in WindowsXP. PortVision Plus now includes PUTTY as the telnet application as there are now several versions of Windows that do not, by default, install the telnet application. This difference will not affect the text seen in the window.

*Please note: Version numbers displayed will be different than shown in these examples.*

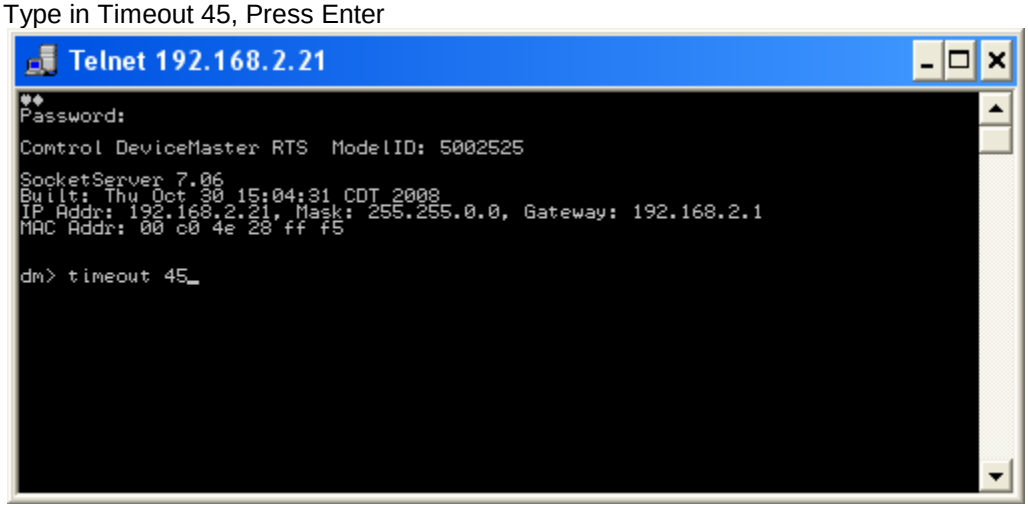



If no password has been assigned, press the ‘Enter’ key. If a password has been assigned to this DeviceMaster enter the password and press the ‘Enter’ key.

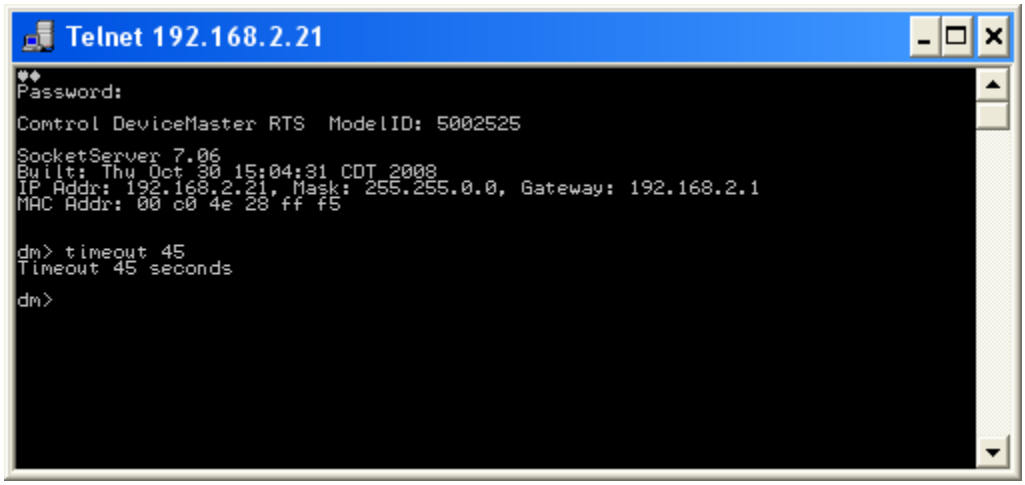



You should now see something like the screen above. The prompt may indicate dm> or RedBoot>. Either prompt is acceptable.

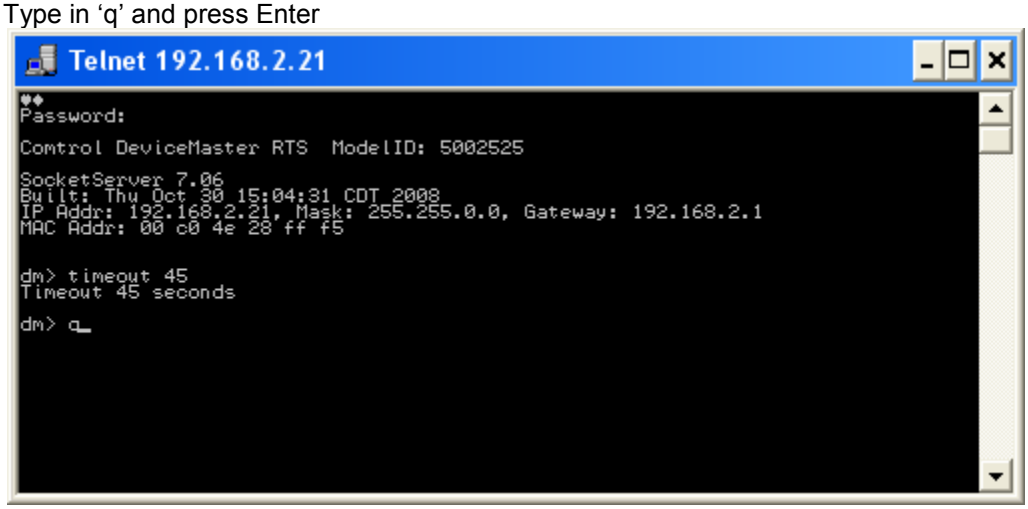
Type in Timeout 45, Press Enter



You should see the value confirmed




Type in ‘q’ and press Enter




The Telnet window will close.

**Please note:**
If you have installed the DeviceMaster driver in your system, you will want to disable the driver to prevent possible conflicts while using PortVision Plus to update the firmware.

Open Windows DeviceManager and expand the Multi-port serial adapters category .

Right click on the DeviceMaster that is having its firmware updated

From the pop-up menu, select “Disable”

Select OK in the pop-up dialog window.

Repeat for each DeviceMaster that is to have the firmware updated.

Close Windows DeviceManager. You will return later to enable the driver.

## Updating the Firmware

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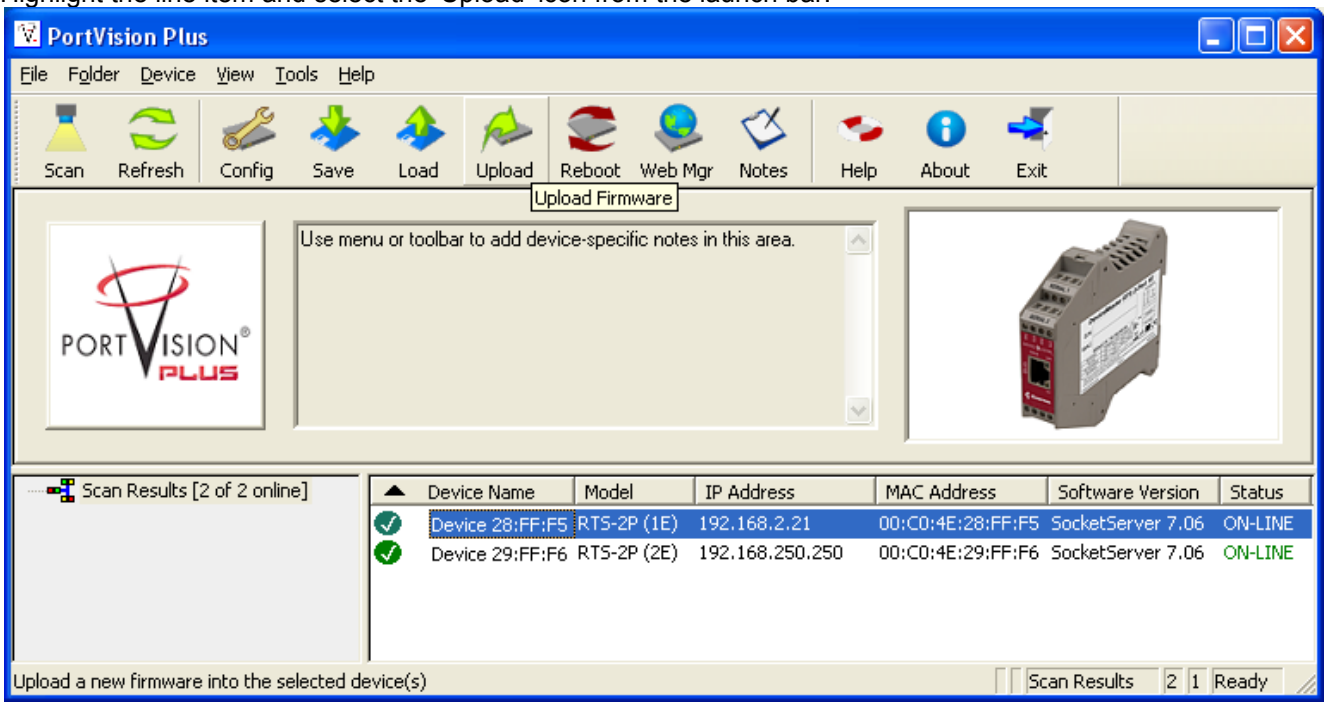
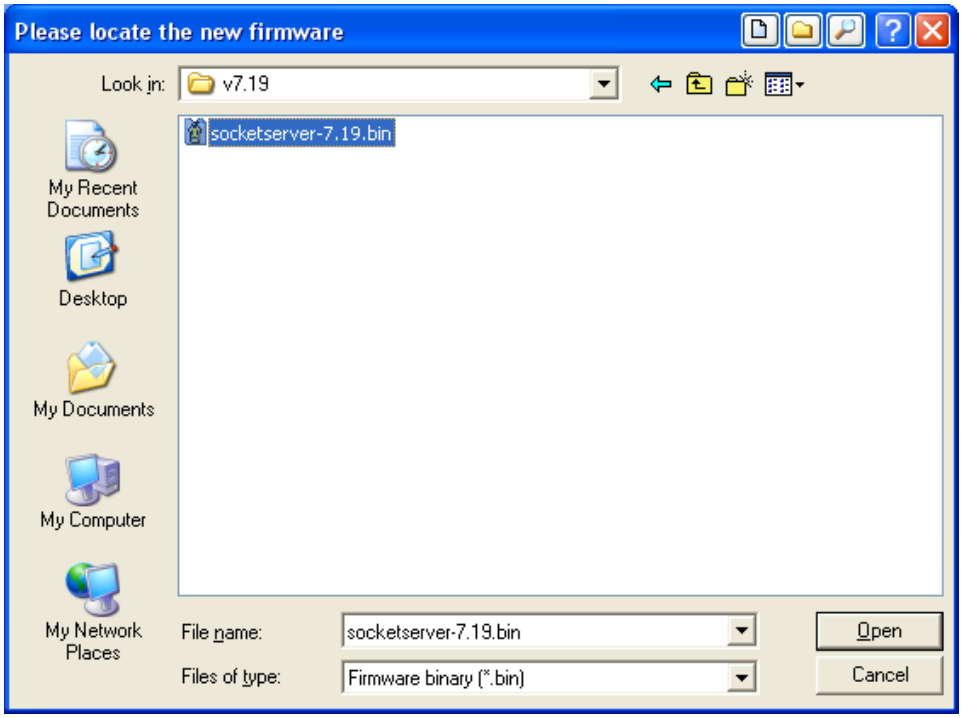
Your line item (highlighted entry) may be slightly different depending on the hardware, version of software, IP address assigned, etc.
Highlight the line item and select the 'Upload' icon from the launch bar.

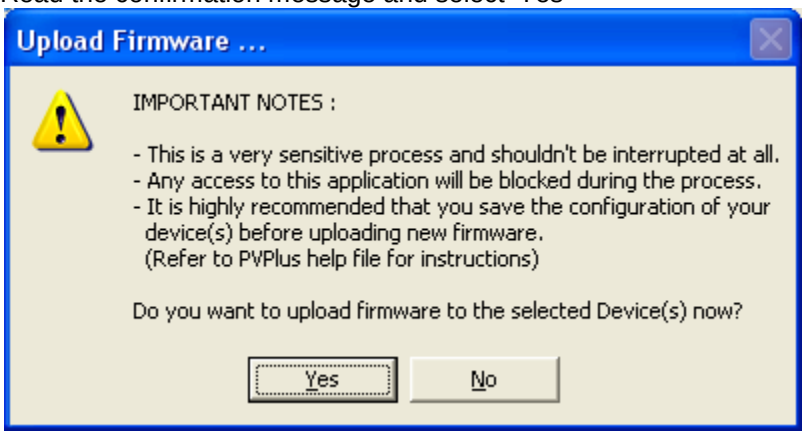



Path out to the firmwares' .bin file location
**NOTE: Upload the application firmware file FIRST! This is critical! Application firmware is all firmware files OTHER than Bootloader. Bootloader is NOT an application file.**
This example will use SocketServer, but it could also be NS-Link or EthernetIP for a DeviceMaster UP model.
Select 'Open'

*Screen shots do NOT show current versions.*




Read the confirmation message and select 'Yes'

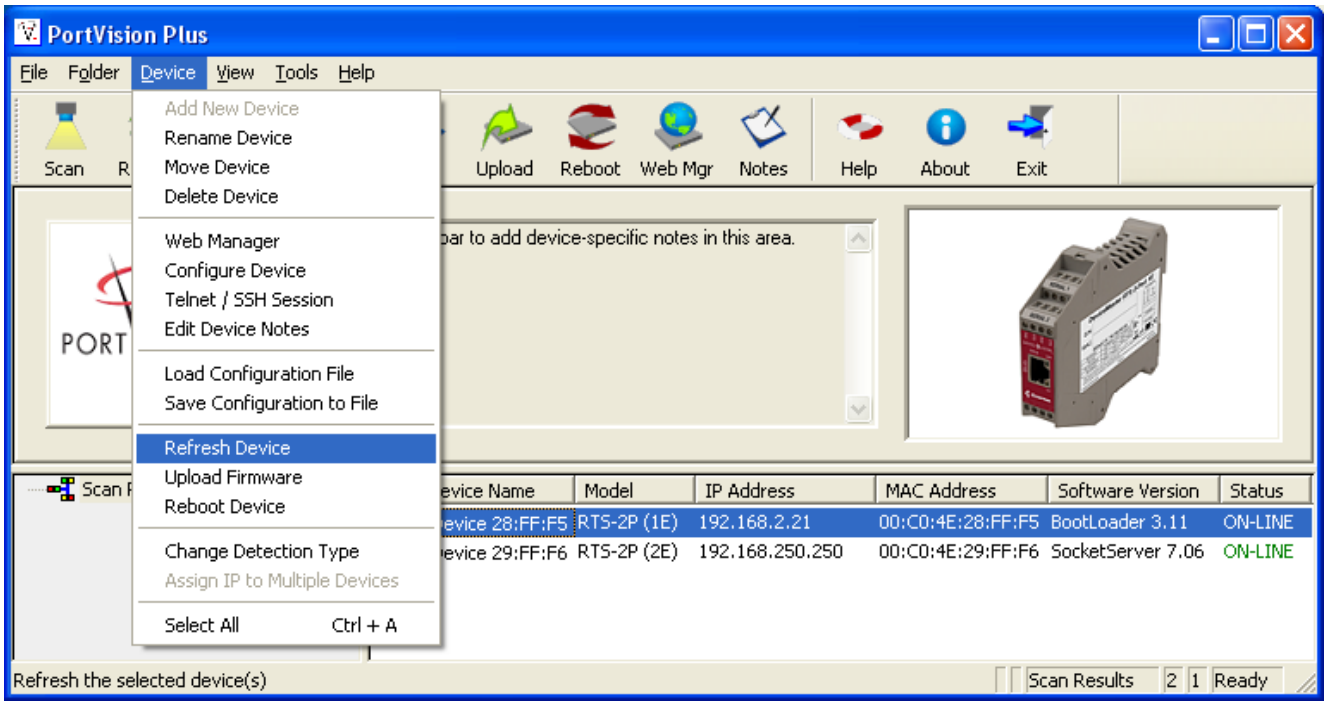



During this process you may receive notifications from the Windows Operating System that the Ethernet connection has been lost or that a network cable is unplugged.
This is normal and expected so please disregard these notices.

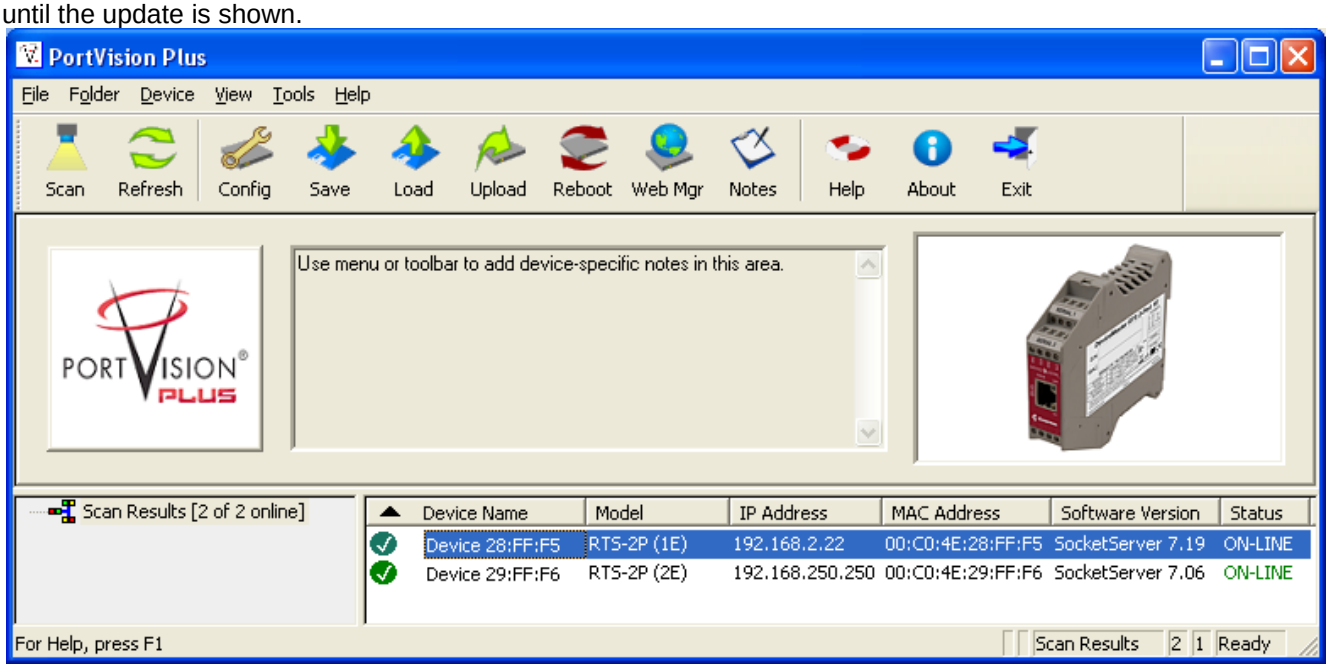
Once uploading has completed the following screen will show.

Click 'OK'

If you now refresh the DeviceMaster you may see the Software Version show a version of Bootloader.
If this version is prior to 3.16, then the Bootloader file will need to be updated.

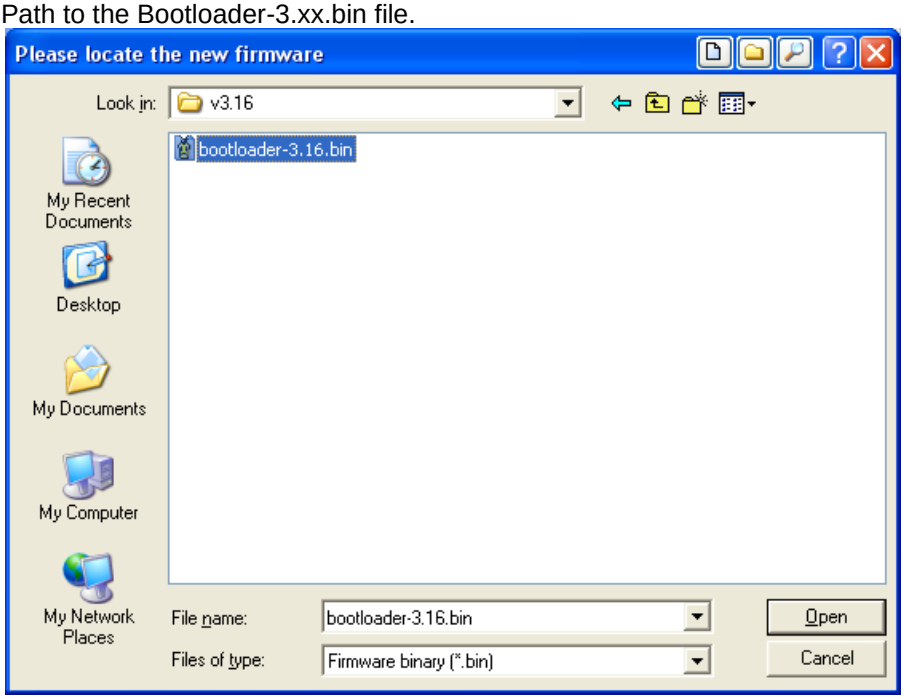

PortVision Plus
File
Folder
Device
View
Tools
Help
Add New Device
Rename Device
Move Device
Delete Device
Web Manager
Configure Device
Telnet / SSH Session
Edit Device Notes
Load Configuration File
Save Configuration to File
Refresh Device
Upload Firmware
Reboot Device
Change Detection Type
Assign IP to Multiple Devices
Select All Ctrl + A
Scan
Upload
Reboot
Web Mgr
Notes
Help
About
Exit
Model
IP Address
MAC Address
Software Version
Status
RTS-2P (1E) 192.168.2.21 00:C0:4E:28:FF:F5 BootLoader 3.11 ON-LINE
RTS-2P (2E) 192.168.250.250 00:C0:4E:29:FF:F6 SocketServer 7.06 ON-LINE
Refresh the selected device(s)
Scan Results
Ready

Once the socketserver-x.xx.bin is uploaded you should see this screen. Note the highlighted line item details. The Software Version should now indicate SocketServer x.xx.bin and the status should be ON-LINE. Refresh as necessary until the update is shown.



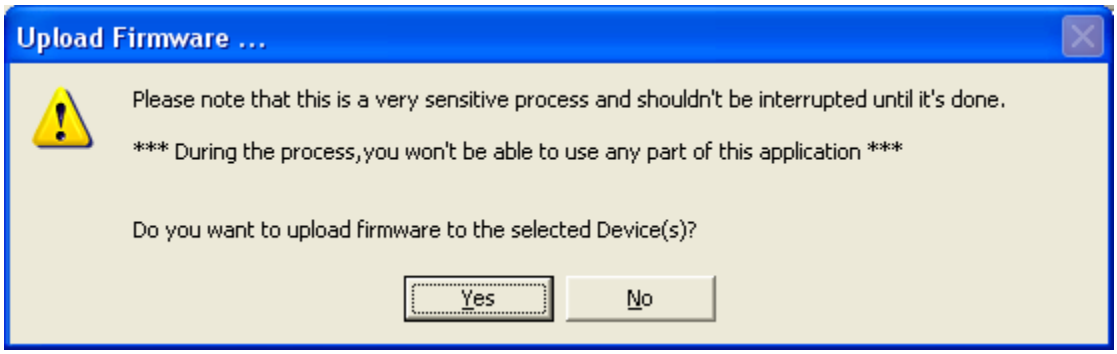

If the upload failed for any reason, repeat the process for socketserver-x.xx.bin until success is achieved.
**NOTE! If the socketserver-x.xx.bin upload failed for any reason DO NOT ATTEMPT TO LOAD BOOTLOADER!**
You may call Comtrol Technical Support at 763-957-6000 for instructions.
If the upload was successful, continue to the next step.

Highlight the line item in PortVision Plus and select 'Upload Firmware' from the option on the left.
Path to the Bootloader-3.xx.bin file.




Click 'Open'

Read the confirmation.

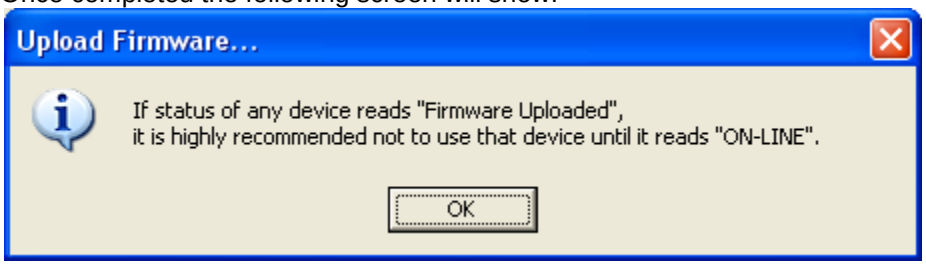



Click 'Yes'

During this process you may receive notifications from the Windows Operating System that the Ethernet connection has been lost or that a network cable is unplugged.
This is normal and expected so please disregard these notices.

You should see the status bar again in PortVision Plus proceeding.

Once completed the following screen will show.




Click 'OK'

Firmware Updates are now complete. Repeat as necessary for additional DeviceMaster units.

## Load the DeviceMaster Configuration from a File

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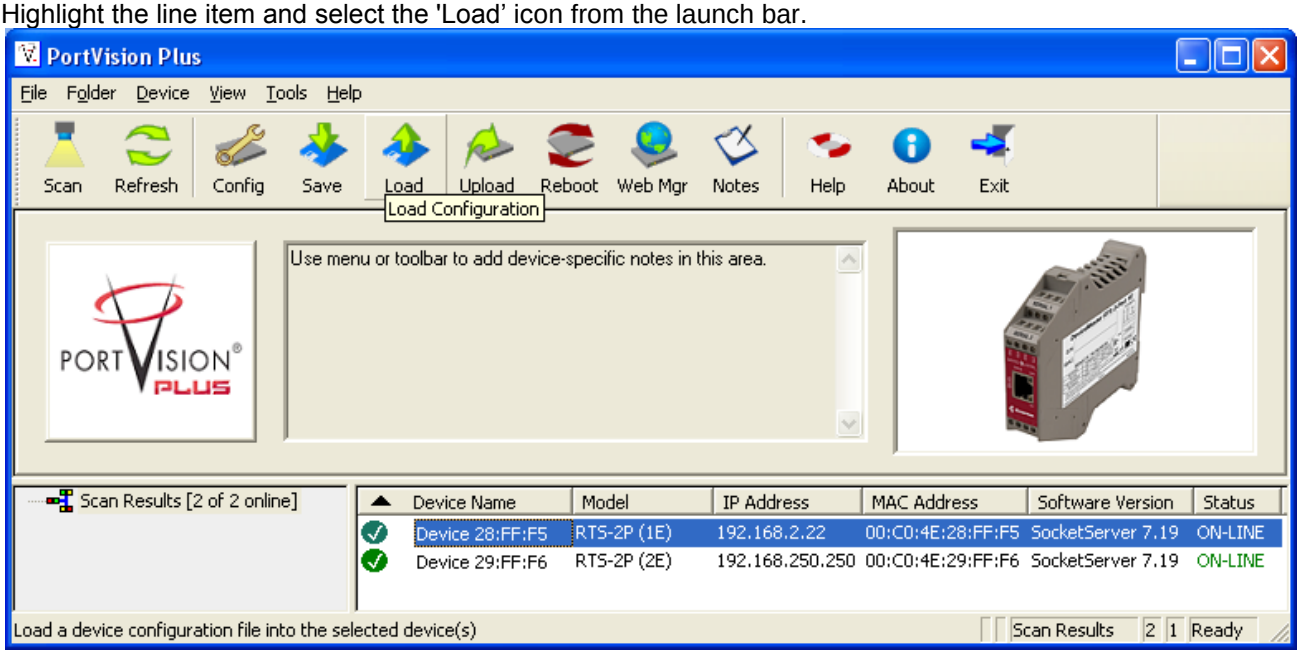
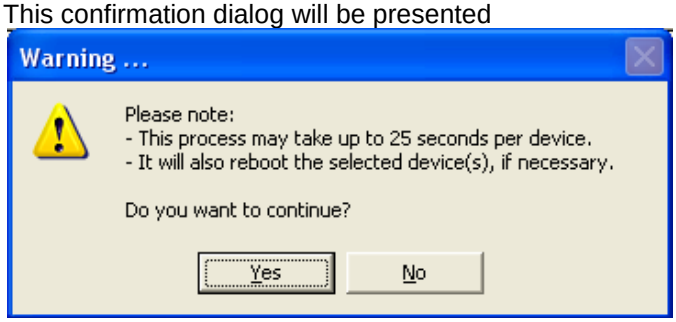
This chapter is optional. After updating the firmware, restore or 'Load' the configuration information previously saved. If no changes have been made to the default settings, you may skip this procedure.

Please be aware that the format of the configuration files has dramatically changed in the version 9.xx SocketServer firmware. You will NOT be able to load the configuration from an earlier version of SocketServer into the DeviceMaster. Once version 9.xx is installed, PortVision DX (ftp://ftp.comtrol.com/dev_mstr/portvision_dx/ ) must be used to save and load configuration files. For assistance with this, please contact your Comtrol Technical Support Representative.

Your line item (highlighted entry) may be different depending on the hardware, version, IP address assigned, etc. Highlight the line item and select the 'Load' icon from the launch bar.

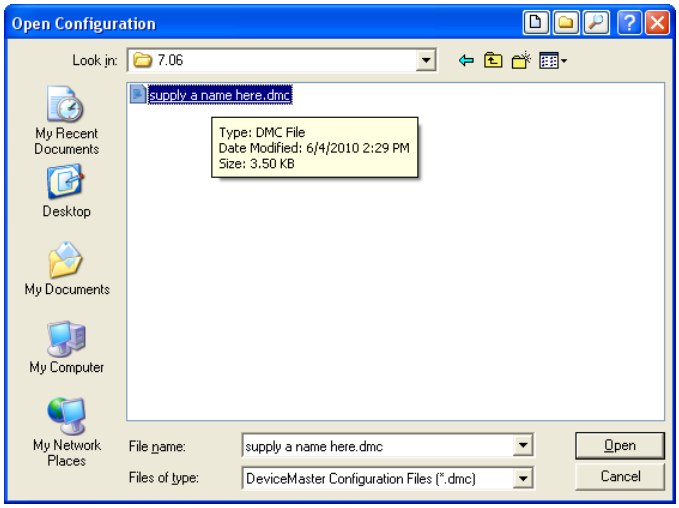



This confirmation dialog will be presented

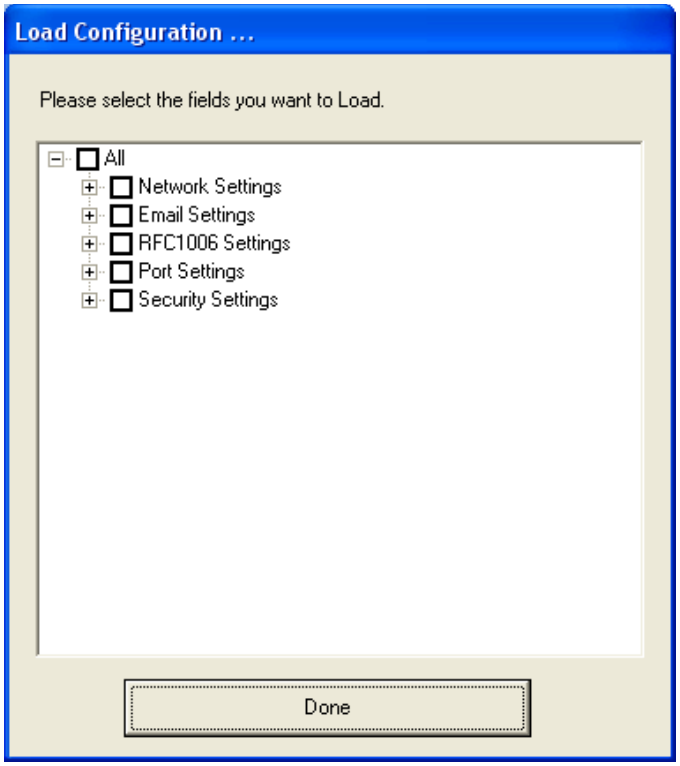



Select Yes

Path to the saved location

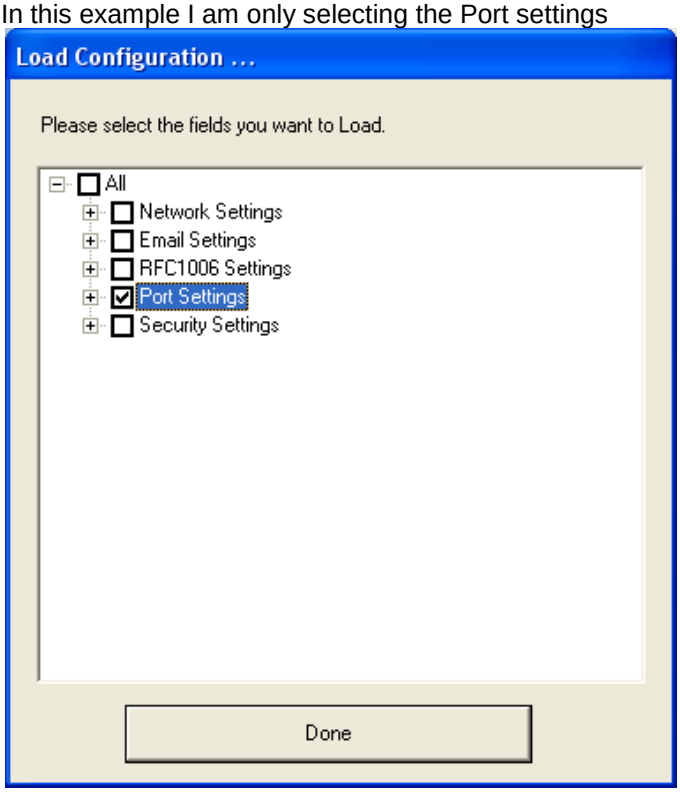



Highlight the name and select Open

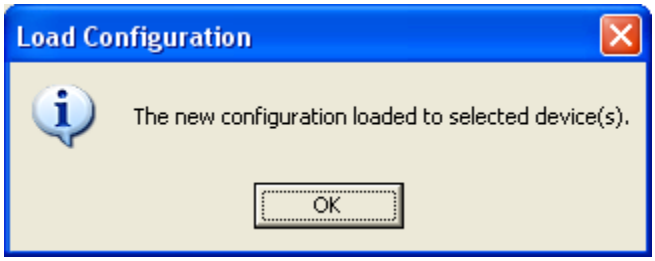



Select which fields to restore

In this example I am only selecting the Port settings




Click Done




A confirmation dialog will be presented

Repeat as necessary for additional DeviceMasters

**Reset the Timeout Value in the DeviceMaster**

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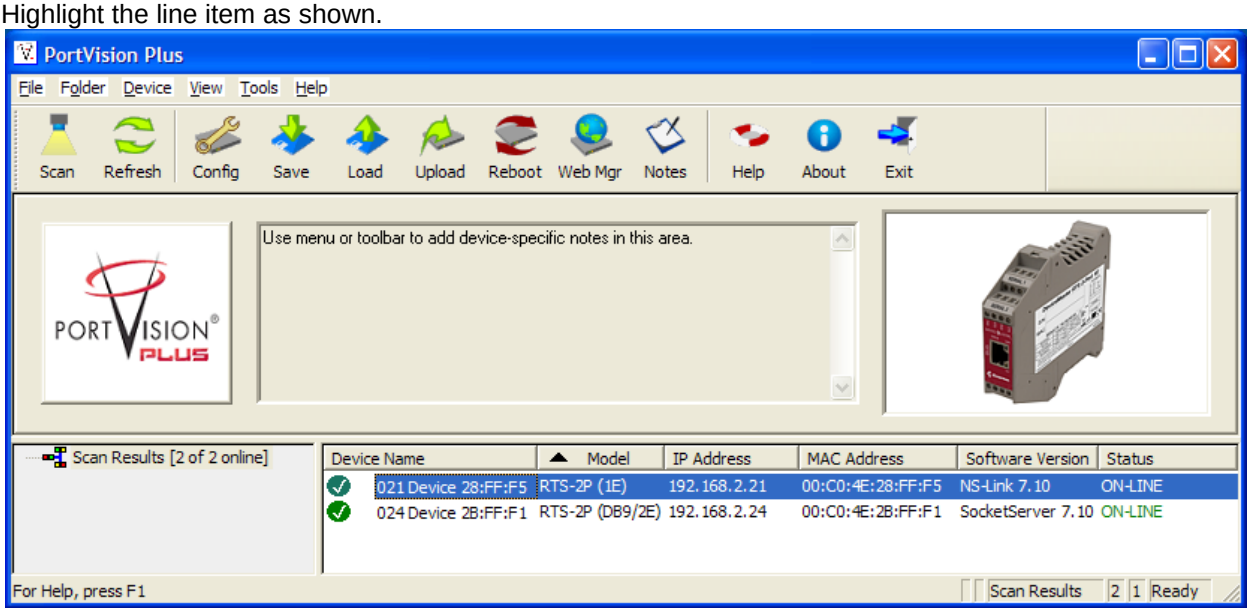
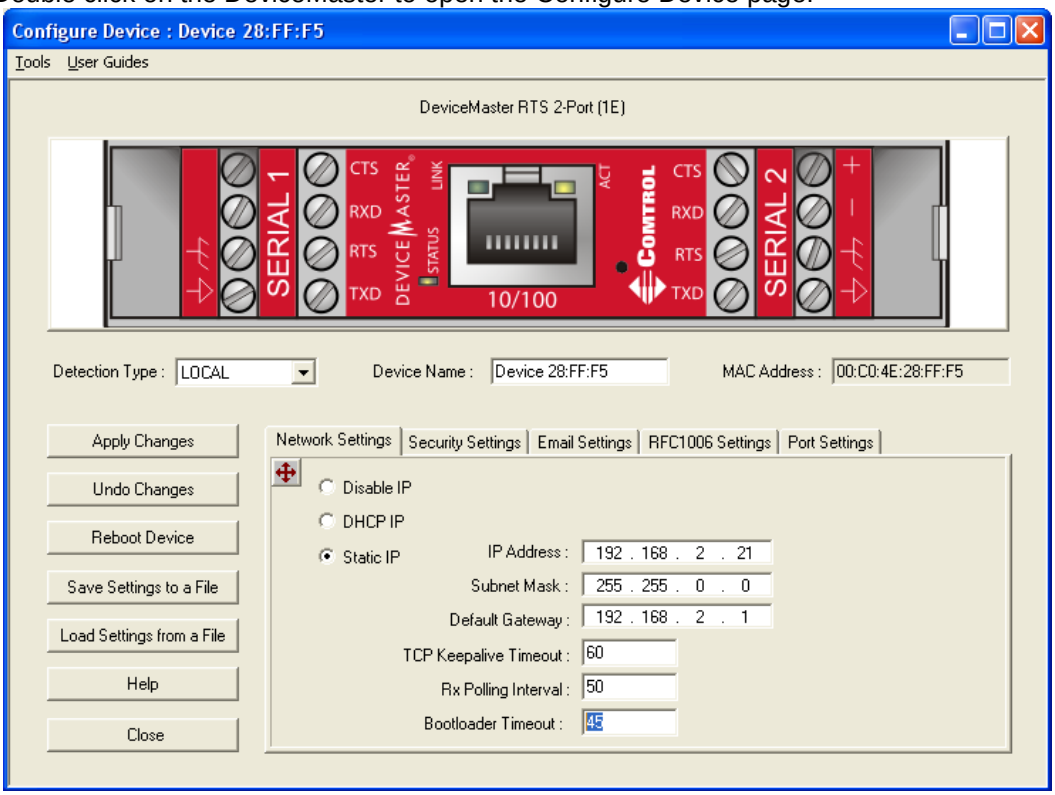
Highlight the line item as shown.




Double click on the DeviceMaster to open the Configure Device page.




Change the Bootloader Timeout value to 1 from the displayed 45.

Click “Apply Changes” and “Close”. The new Bootloader Timeout setting will take effect on the next reboot of the DeviceMaster.

Repeat for additional DeviceMasters as necessary.

Open Windows DeviceManager and enable the DeviceMaster(s) that has been disabled.

**Instructions Revision History**
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Revision history

Version 1.4
4/14/2014
Removed file names from links

Version 1.3
9/9/2013
Updated links to current revisions

Version 1.2
9/25/2012
Updated links to current revisions

Version 1.1
2/1/2012
Updated links to current revisions
Remove link to resident NS-Link

Version 1.1
8/1/2011
Updated links to current revisions
Added chapters
Replaced some screen shots

Version 1.0
Initial release 1/7/2011

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