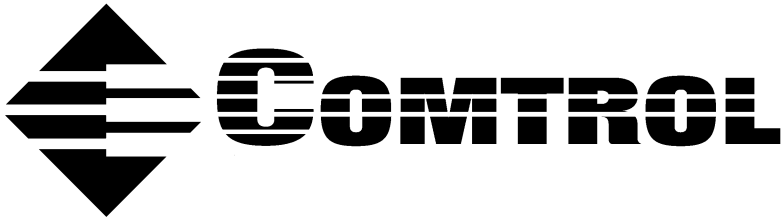

DeviceMaster® Primo
Serial Port Server Device Driver
Installation for Windows® 2000

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URL References

All URLs in this document worked at the time of publication. Due to the nature of web sites, some links may not work, and you may need to search their site to locate the referenced information.

Third Edition, December 19, 2002

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Document Number: 2000245 Rev. C

Table of Contents

Overview

In this document, we explain how to configure the DeviceMaster Primo to operate under the Windows 2000 operating system.

The following topics are discussed:

- Windows 2000 Driver Installation
  - Installing DeviceMaster
  - Installing DeviceMaster's Serial Port
- DeviceMaster Properties
  - General
  - Configuration
    - DeviceMaster Server
    - Port Status
  - Driver
- Telnet Console

Two other documents related to this one are:

- DeviceMaster Primo Serial Port Server Hardware Installation (p1porthw.pdf).
- DeviceMaster Primo Using Pair Connect and Raw Connect (raw_pair.pdf).

Red, underscored items are links to URLs. Blue, underscored items are links within this document or to another document on the media.

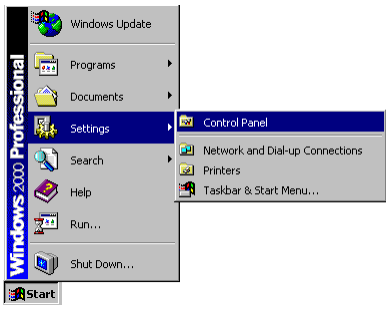
Note: *If you copy this document from the ftp/Web or CD and do not use the procedure discussed on the CD, you will get an error message when selecting hyperlinks outside of this document.*

Windows 2000 Driver Installation

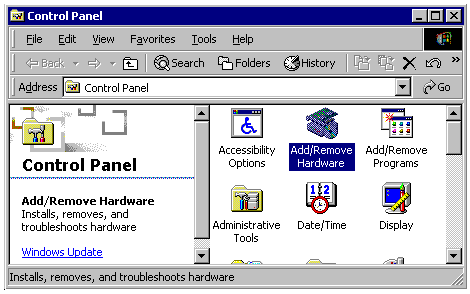
Installing DeviceMaster Primo to run under Windows 2000 involves installing the drivers that are used to operate DeviceMaster and its port. This is done by running the Windows 2000 "Add/Remove Hardware Wizard." In fact, unless you have previously installed and then uninstalled an DeviceMaster on your system, the "Add/Remove Hardware Wizard" will run twice—once to install DeviceMaster itself, and then once to install the DeviceMaster port.

Installing DeviceMaster

1. From the Windows 2000 desktop, select the **Start** button, point to **Settings**, and then select **Control Panel**.

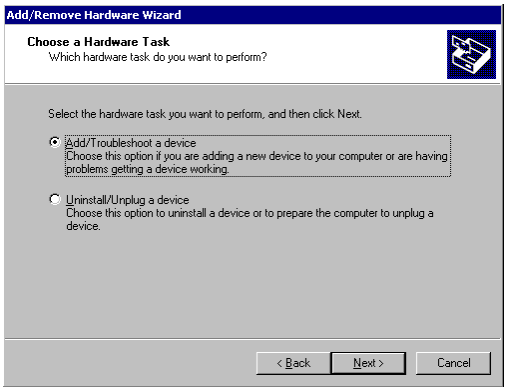


2. Double-click on the **Add/Remove Hardware** icon.

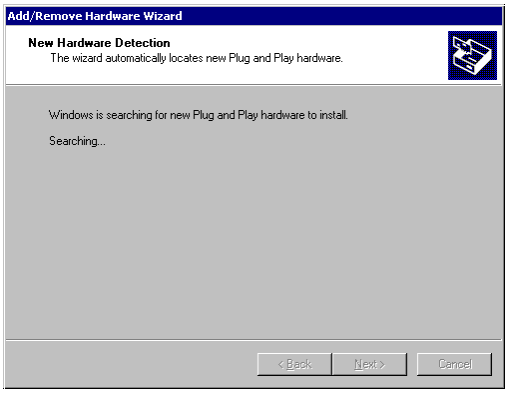


3. When the **Welcome to the Add/Remove Hardware Wizard** window appears, select the **Next** button to continue with the installation process.

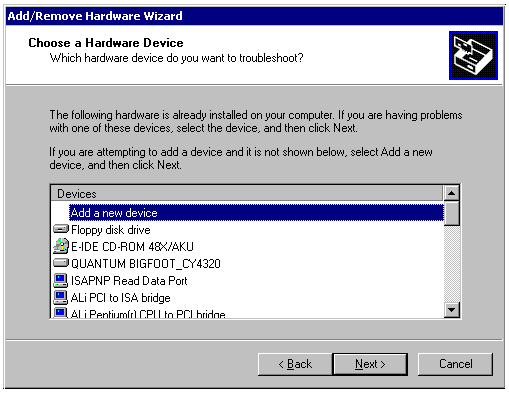
4. Select the **Add/Troubleshoot a device** option, and then select the **Next** button.



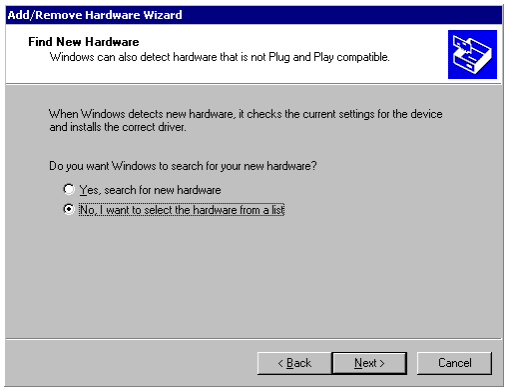
5. Windows 2000 will spend some searching for a device that is connected directly to your computer. Keep in mind, however, that this procedure does not detect devices that are connected over a network.



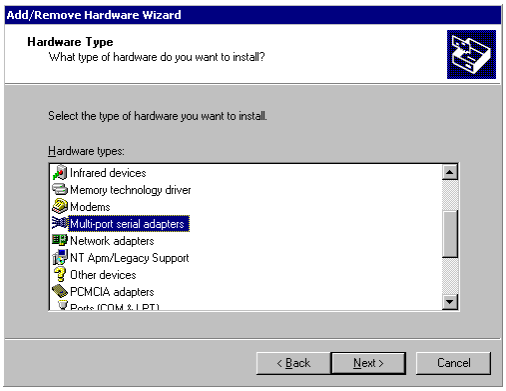
6. Select **Add a new device** from the list, and select the **Next** button.



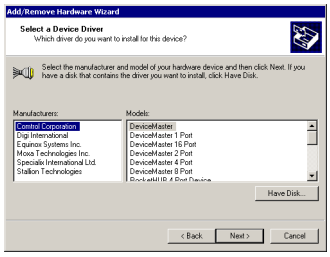
7. Choose the **No, I want to select the hardware from a list** option, and select the **Next** button.



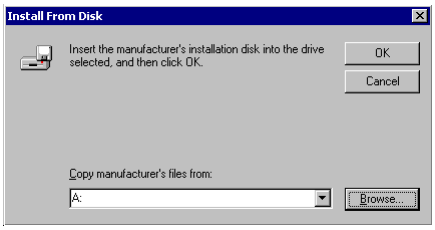
8. Select **Multi-port serial adapters,** and select the **Next** button.



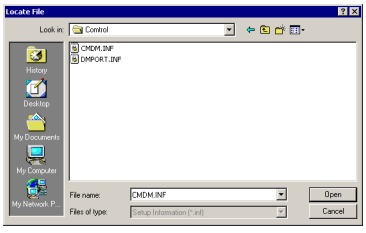
9. A list of manufacturers appears. Select the **Have Disk...** button, and then select the DeviceMaster driver from a diskette, CD, or from your hard drive.



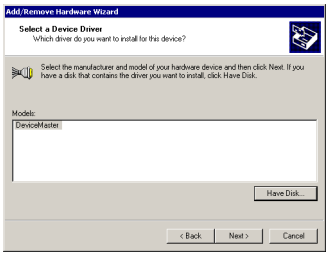
10. If necessary, select the **Browse...** button to locate the directory that contains the DeviceMaster driver. During the installation shown here, the driver is located on the C: drive.



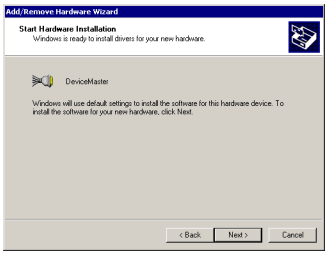
11. Note from the following figure that the driver name is CMDM.INF. Select the desired file, and select the **Open** button.

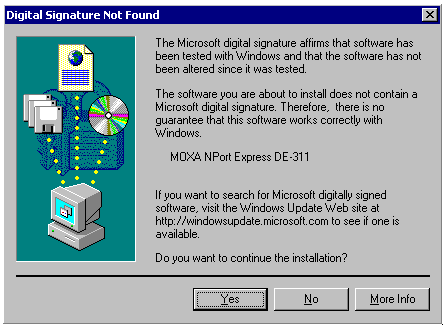


12. The previous window appears. Select the **OK** button.
13. Select **DeviceMaster** from the list, and then select the **Next** button.

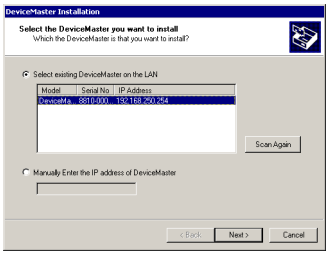


14. The **Start Hardware Installation** window should verify that you have chosen the correct driver. Select the **Next** button.
15. You may safely ignore any dialog boxes such as **Digital Signature Not Found**. Select the **Yes** button.

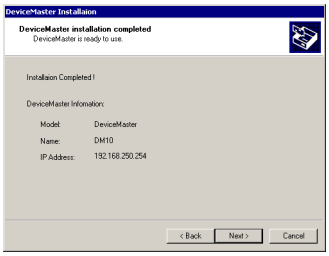




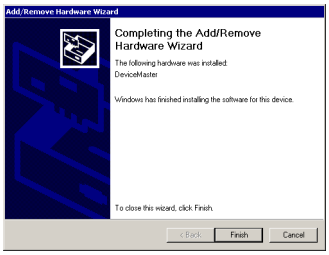
16. Select the DeviceMaster that you wish to install, or manually enter the IP address of your server if it does not show up in the list. Select the **Next** button.



17. When the **Installation Completed!** window appears, check to make sure that the information displayed is correct. Select the **Next** button.



18. Select the **Finish** button to complete the installation of the DeviceMaster. Keep in mind, however, that you may still need to install the port.

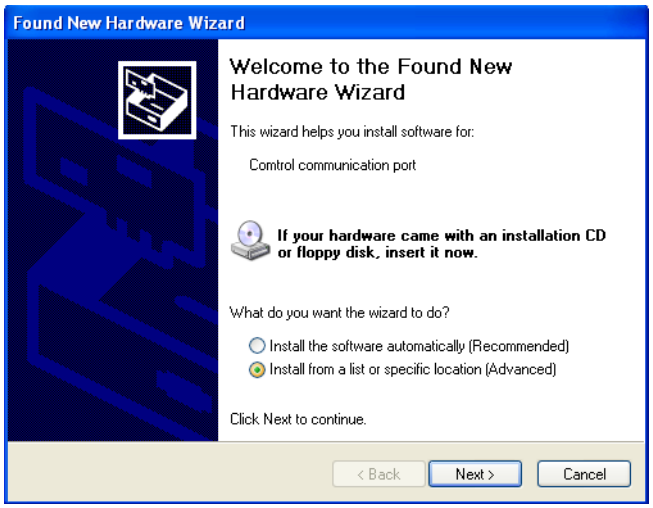


Installing DeviceMaster's Serial Port

If you or someone else has previously installed an DeviceMaster Primo on your system, then the DeviceMaster unit's serial port should be installed automatically. In this case, you may skip this section and continue to the section *DeviceMaster Properties*.

If this is the first time that anyone has installed an DeviceMaster on your system, the following window should appear automatically.

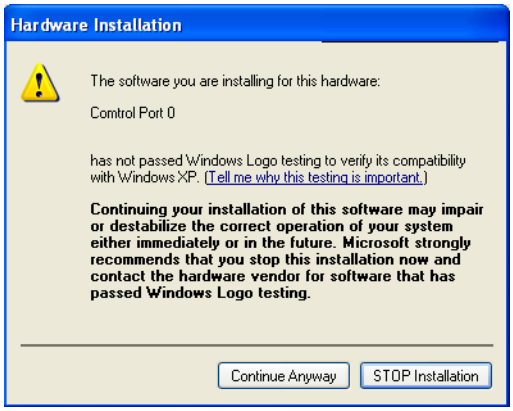
1. When the **Found New Hardware Wizard** appears, select the **Search for a suitable driver for my device (recommended)** option, and select the **Next** button.



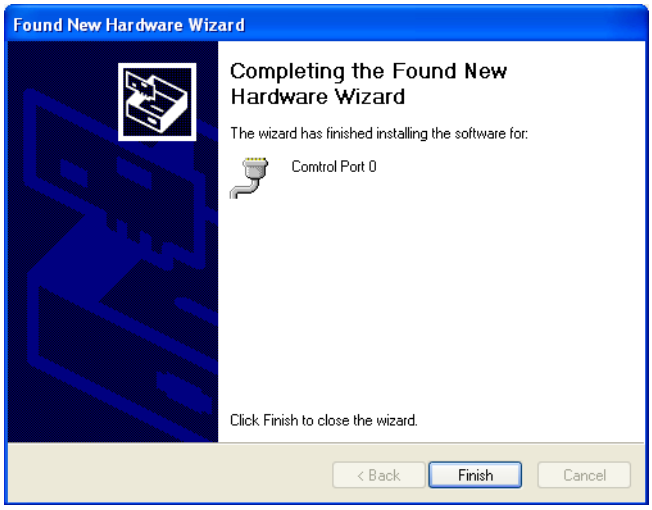
   The **Locate Driver Files** window appears.

2. Select the **Specify a location** option. Select the **Next** button. The next window appears.
3. If necessary, select the **Browse...** button to locate the directory that contains the DeviceMaster driver. After locating the driver, select the **OK** button. The **Driver Files Search Results window** appears.

4. You may safely ignore any dialog boxes such as **Digital Signature Not Found**. Select the **Yes** button.



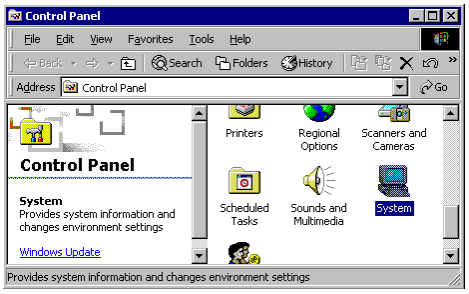
5. This window verifies that a **DeviceMaster communication port** will be installed, and the correct driver will be used for the installation. Select the **Next** button.
   The next window appears.
6. Select the **Finish** button to complete the installation procedure.



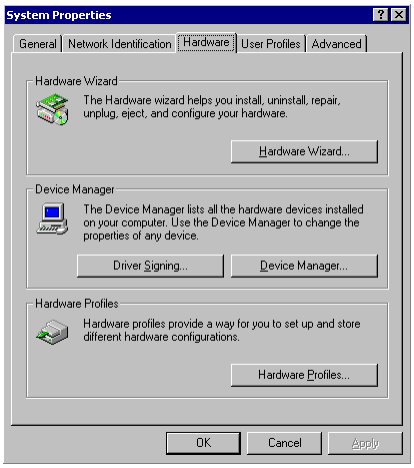
DeviceMaster Properties

You can change DeviceMaster's configuration parameters, such as IP address, COM port number, and so on, from within the Windows 2000 system's device manager.

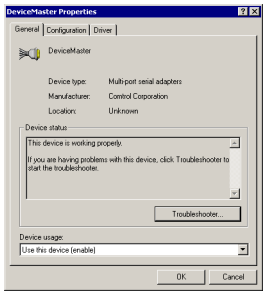
1. To display the device manager, double-click on the **System** icon from the **Control Panel** window.



2. Select the **Hardware** tab, and then select the **Device Manager...** button.

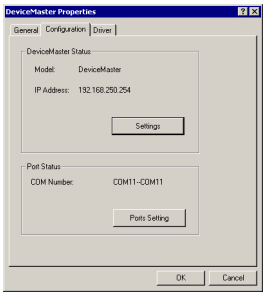


3. Select the plus sign to the left of **Multi-port serial adapters** and then double-click on **DeviceMaster** to open the **Properties** window.



Configuration

Select the **Configuration** tab to change parameter settings for your DeviceMaster. Most of the system settings are accessed by selecting the **Settings** button (see the following *DeviceMaster Server* discussion). You can change the COM port number by selecting the **Ports Setting** button (see the following *Port Status* discussion).

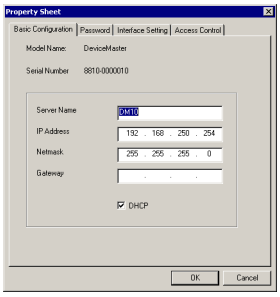


DeviceMaster Server

On the **Properties** dialog box, select **Settings** in the **Properties** tab to display the DeviceMaster's **Property Sheet**. If prompted, enter the DeviceMaster unit's password, and then select the **OK** button to continue.

Basic Configuration

The **Basic Configuration** tab appears, enabling you to make changes to the following items.



Server Name — Choose an appropriate name for the DeviceMaster. The default name is simply "DM" followed by the serial number.

IP Address — Check with your network administrator.

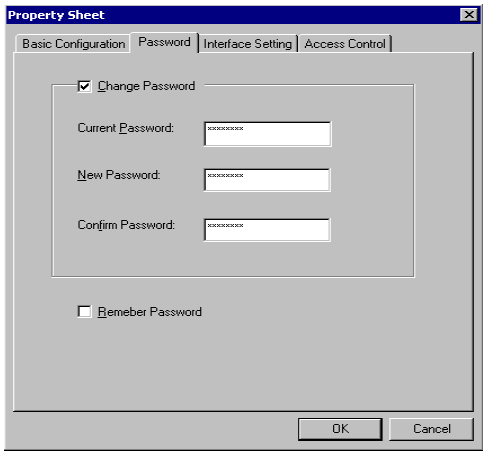
Netmask — 255.255.0.0 is for Class B networks.
255.255.255.0 is for Class C networks.

Gateway — This is the IP address of the router connecting your LAN to the Internet.

DHCP — Select on the DHCP check box to allow the DeviceMaster unit's IP address to be chosen automatically by a DHCP server connected to your LAN.

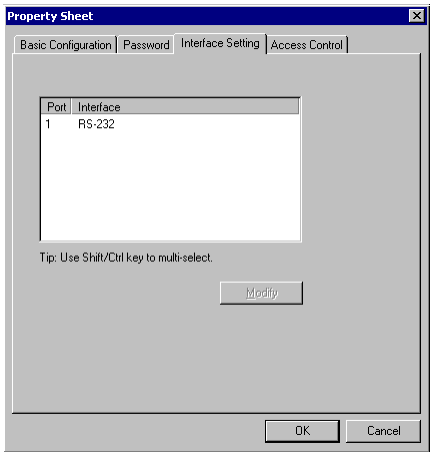
Password

The **Password** tab allows you to change the password. Select the **Remember Password** check box to have the password automatically stored by your operating system.



Interface Setting

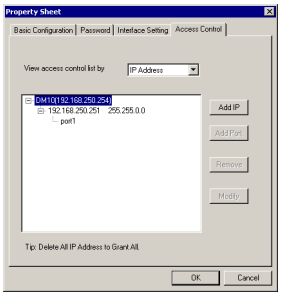
The **Interface Setting** page shows the current Serial Port interface setting. You must use the DIP switch settings on the DeviceMaster unit's front panel to make any changes. To see changes in the setting, select the **OK** button at the bottom of the **Property Sheet** window to close the window, and then follow the instructions given above to reopen the window.



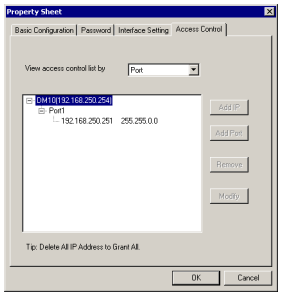
Access Control

You can use the **Access Control** tab to enable access to the DeviceMaster unit's serial port. Note the following comments:

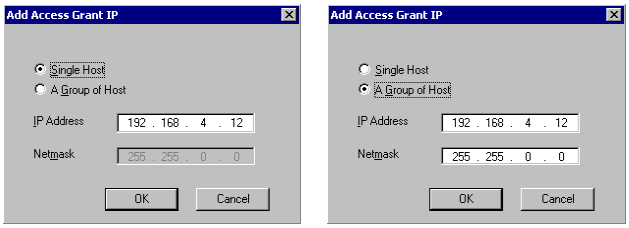
- You may add access by **IP Address** as shown here.



- You may add access by **Port** as shown here.

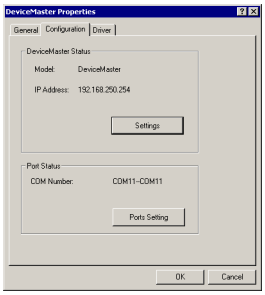


- There are two options to choose from when adding access. Choose **Single Host** to only allow access to the computer with the given IP Address. Choose **A Group of Host** to allow access to a group of computers. In the example shown here, computers connected to the same LAN as DeviceMaster, and with IP addresses of the form 192.168.*xxx*.*xxx*, will all be given access. More specific types of (limited or wider) access can be granted by considering the bit-by-bit versions of both the IP Address and Netmask.

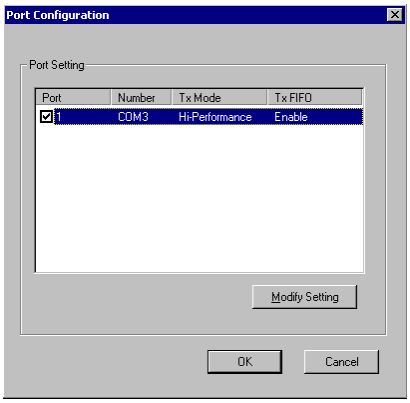


Port Status

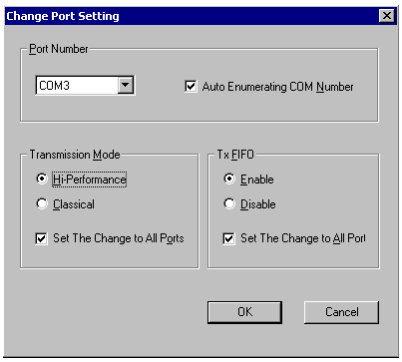
To change the DeviceMaster unit's serial port's COM number, select the **Ports Setting** button.



Select the **Modify Setting** button. The **Change Port Settings** window appears.

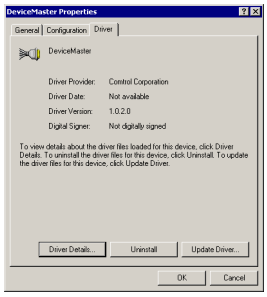


Change the **Port Number**, **Transmission Mode**, and **TxFIFO** as desired.



Driver

The **Driver** tab displays important information about the driver. Use the buttons at the bottom of the window to get **Driver Details**, or to **Uninstall**, or **Update Driver**s.

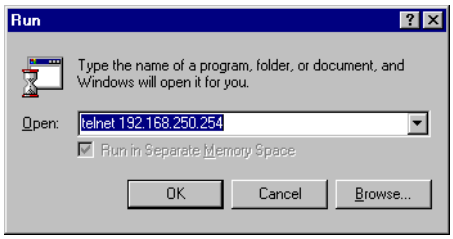


Telnet Console

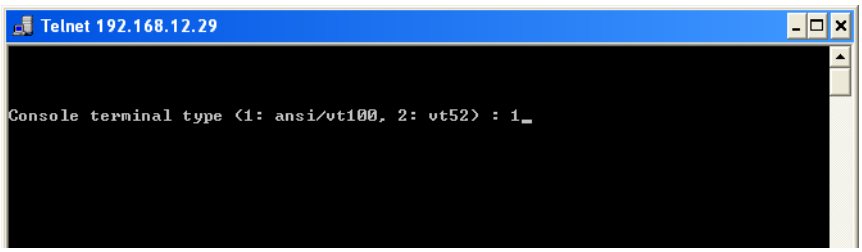
This section contains instructions that explain how to use the Telnet Console Interface. The following discussion and examples were generated by running Telnet from a Windows NT host, although they apply equally well to all other Windows operating systems.

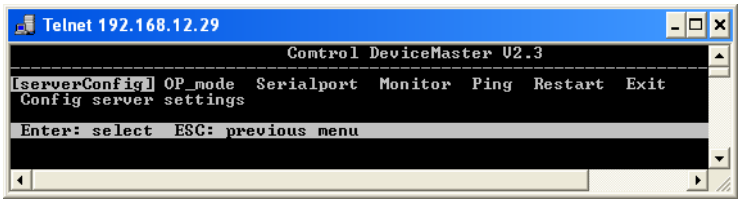
Starting Telnet

1. From the Windows desktop toolbar, select the **Start** button and then select **Run**. Type telnet 192.168.127.254 in the **Open** text box (change the IP address if it is different from the default address shown here). Select the **OK** button to begin the Telnet session.



2. Select option 1 for ansi/vt100, and press the **Enter** key.
   This starts the Telnet Console Interface utility program, and displays the console's main menu.





Navigating the Telnet Console

After activating the Telnet Console, use the keyboard keys to maneuver about the vt100 window.

- While in the main menu, the left and right **arrow keys** move the cursor between menu headings, and pressing the **Enter** key activates whichever menu heading that is currently selected.
- After pressing the **Enter** key when you are in the main menu, use the **Tab** key, and the up and down **arrow keys**, to move between configurable options. Use the left and right **arrow keys** to move through certain configurable settings without making any changes. To modify a setting, such as a device name or IP address, use the appropriate letter and number keys on the keyboard.
  Use the **Enter** key to open a menu containing a small number of options (for example, Yes and No) for configurable settings which have only a limited number of possible settings. The up and down **arrow keys** move the cursor between options, and the **Enter** key is used to select the option that is highlighted.
- Use the **Esc** key to maneuver backwards. For example, if you have made modifications to the settings listed under the **serverConfig** menu, press the **Esc** key to return to the main menu.

Telnet Console Menu Functions

In this discussion, we outline the six main menu categories: **serverConfig**, **Serialport**, **Monitor**, **Ping**, **Restart**, and **Exit**. Note that the setting names are listed in the left column, with the current settings given to the right of each name.

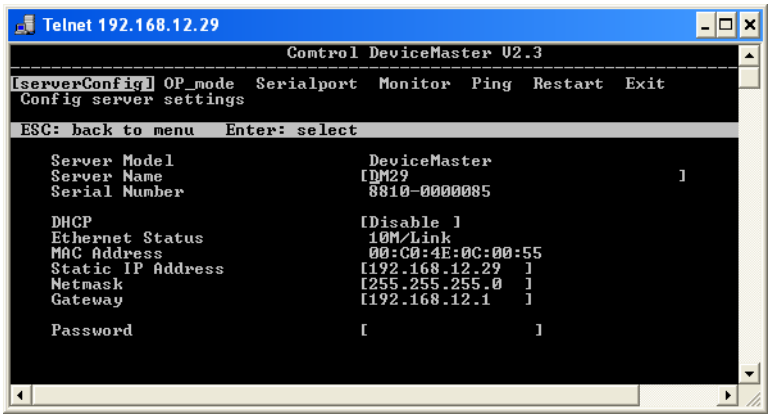
Settings that can be edited are enclosed in square brackets, and those that can not be edited are not enclosed in brackets.

serverConfig Options

Using the **arrow keys**, maneuver the cursor so that **serverConfig** is selected, and press the **Enter** key to display the DeviceMaster attributes.

Use **Server Name** to change the name of your DeviceMaster. Use the **arrow keys** to select the first character of the current name, and type in the new name.

Then use the **arrow keys** to move to the next configurable setting.

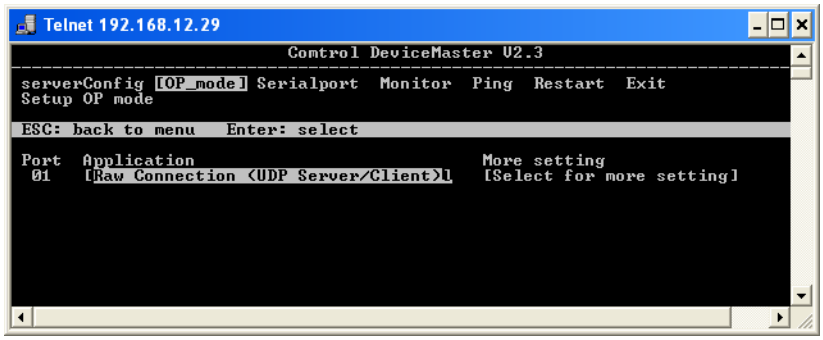


If you find that you have chosen the wrong setting, simply press the Enter key again to reactivate the short-cut menu, and select the correct setting.

When all the settings are correct, press the **Esc** key to return to the main menu.

Op_mode

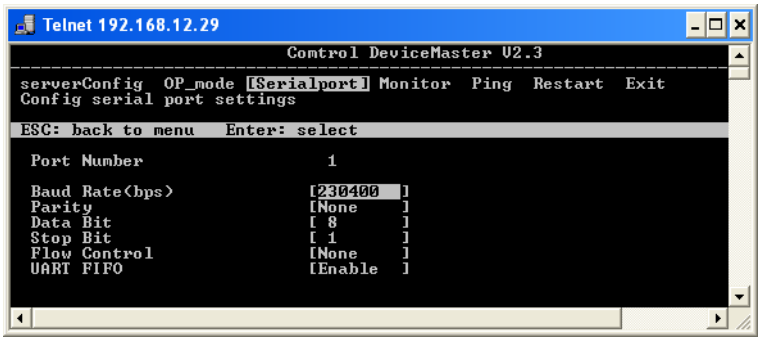
Use the **Operating Mode** category to move between the four operating options. Use the **arrow keys** and position the cursor so that the current **Operating Mode** is selected; for example, **Host Based Mode**.



Press the **Enter** key to activate the short-cut menu that displays the four **Operating Mode** options: **Host Based**, **Pair Connection (Master)**, **Pair Connection (Slave)**, and **Raw Connection**. Use the up and down **arrow keys** to select the desired setting, and then press the **Enter** key. The new setting, enclosed in square brackets will appear to the right of the **Operating Mode** category.

Serialport Options

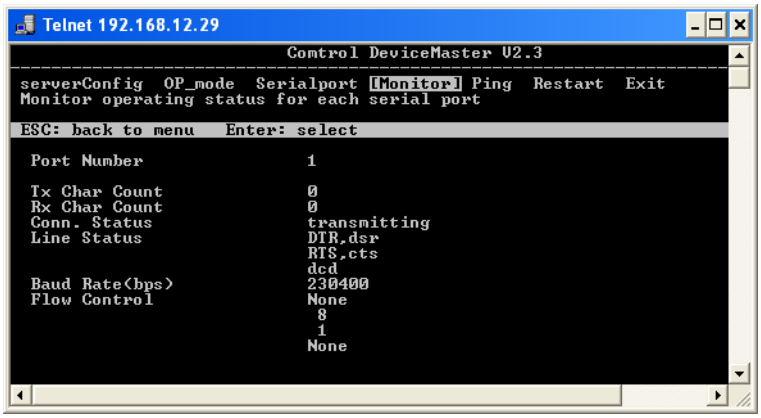
Using the left and right **arrow keys**, maneuver the cursor so that **Serialport** is selected, and press the **Enter** key to display the options **Port Number**, **Baud Rate (bps)**, **Parity**, **Data Bit**, **Stop Bit**, **Flow Control**, **Alive timeout (0-99 min)**, and **Tx FIFO**.



Note that the **Serialport** window displays additional settings if the **Operating Mode** is set to **Raw Connection** in the **Op_mode** window.

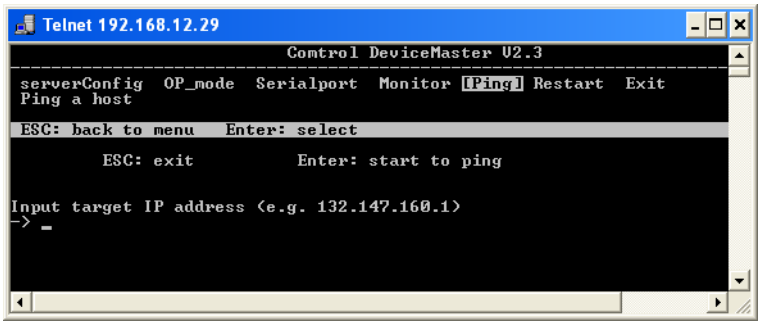
Monitor

The Monitor window displays the following information.



Ping

Ping is a standard network testing function that checks to see if a computer with a particular IP address is logged into the network.



Restart and Exit

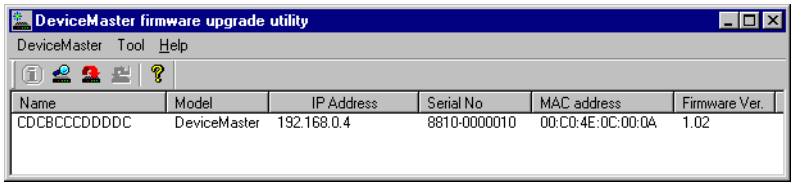
When you are sure that all of your settings are correct, return to the main menu, and select **Restart**. You will be prompted with a warning that your settings are going to change. Press the **Enter** key to confirm your changes.

If you decide to reject all of your modifications which you have made, return to the main menu and select **Exit**.

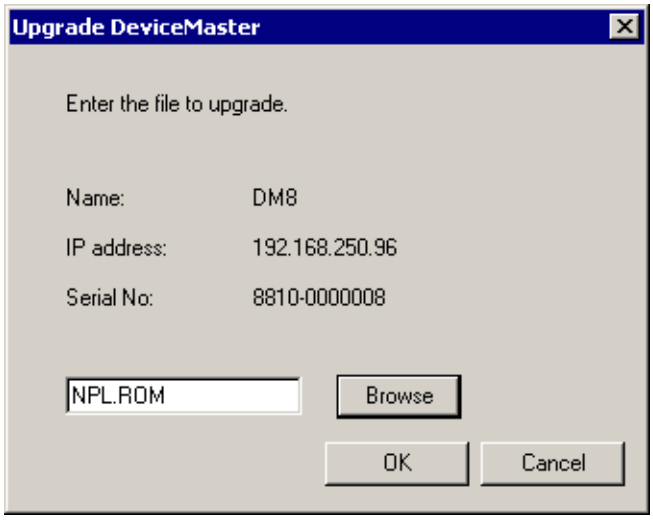
Upgrading Firmware

Comtrol continually upgrades its driver software and DeviceMaster firmware to keep pace with the ever-expanding world of computing. You can use the DeviceMaster firmware upgrade utility included in the *setup.exe*. Please access Comtrol's Web site at www.comtrol.com to download the necessary file (contact our technical service department if you need assistance with this), and then follow the following instructions.

1. Stop all programs associated with the DeviceMaster Primo's COM port. You will lose the connection when you upgrade the firmware.
2. On the Window's desktop toolbar, select the **Start** button, then select **Programs**, **DeviceMaster**, and select **Firmware Utility**.
   The **DeviceMaster firmware upgrade utility** window appears.



3. Select a DeviceMaster from the list
4. On the **Tool** menu, select **Upgrade Firmware**.
   The **Upgrade DeviceMaster** dialog box appears.



5. Enter the directory and file for this upgrade, or use the **Browse** button to search for the file.
6. Select the **OK** button. Wait until you see an "upgrade completed" message. The DeviceMaster will restart automatically.

Connectivity Requirements

Your system requires an Ethernet connection, either to an Ethernet hub or to a network interface card (NIC) in the host server. For more information, see the Hardware Installation document.

Note: *If you are connecting the DeviceMaster Primo directly to the server NIC card, an Ethernet crossover cable is required.*

IP and MAC Addressing Issues

This is an overview of IP and MAC addressing issues that may affect how you configure the DeviceMaster, with a brief discussion of advantages of either method.

The IP addressing method has the following advantages:

- Uses an industry standard protocol.
- Allows you to configure servers that are outside of the host server's Ethernet segment to use ports on the DeviceMaster.

Note: *This IP address must be a unique reserved IP address. Do not use an address from a dynamic address pool. If necessary, ask your system administrator for an IP address.*

The MAC method has the following advantages:

- Simplifies implementation and ongoing support by eliminating the address administration issues inherent in network protocols. Comtrol predefines MAC addresses which eliminates potential address conflicts during setup.
- Is isolated from foreign LAN segments, minimizing potential security issues.