

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

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URL References

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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).

<u>Red</u>, underscored items are links to URLs. <u>Blue</u>, 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.

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



Installing DeviceMaster 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.

dd/Remove Hardware Wizard
Choose a Hardware Task Which hardware task do you want to perform?
Select the hardware task you want to perform, and then click Next.
 Add/Troubleshoot a device Choose this option if you are adding a new device to your computer or are having problems getting a device working.
C Uninstall/Unplug a device Choose this option to uninstall a device or to prepare the computer to unplug a device.
< <u>B</u> ack <u>N</u> ext> Cancel

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.

New Hardward The wizard	e Detection automatically locat	es new Plug	and Play hardwa	are.	<u>EXI</u>
Windows is	searching for new	Plug and Pla	y hardware to in:	stall.	
Searching					

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

Which hardware device do you want to	roubleshoot?	RV9
The following hardware is already installe	d on your computer. If you are hav	ing problems
with one of these devices, select the de	ice, and then click Next.	ing problomo
If you are attempting to add a device an	it is not shown below, select Add	a new
device, and then click Next.		
Devices		
Add a new device		
Floppy disk drive		
A E-IDE CD-ROM 48X/AKU		
ISAPNP Read Data Port		
ISAPNP Read Data Port		
ISAPNP Read Data Port		-

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

d/Remove Hardware Wizard
Find New Hardware Windows can also detect hardware that is not Plug and Play compatible.
When Windows detects new hardware, it checks the current settings for the device and installs the correct driver.
Do you want Windows to search for your new hardware?
C Yes, search for new hardware
No, I want to select the hardware from a list
< <u>B</u> ack <u>N</u> ext> Cancel

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.

Select a Device Driver Which driver do you war	t to install for this device?	Exon
Select the manufactur have a disk that conta	er and model of your hardware device and th ins the driver you want to install, click Have	ten click Next. If you Disk.
Manufacturers:	Models:	
Control Corporation	DeviceMaster	2
Equinov Systems Inc.	DeviceMaster 1 Port	
Мока Technologies Inc.	DeviceMaster 2 Port	
Specialix International Ltd.	DeviceMaster 4 Port	
	Liewcemaster a Polt	
Stallion Technologies	RocketHLID & Post Davise	
Stallion Technologies	RocketHIR & Post Davine	Have Disk
Stallion Technologies	RocketkillR & Post Davise	Have Disk
Stallion Technologies	BookatkillB & Dot Davina	Have Disk
Stallion Technologies	Rockelli II / Port Denice	Have Disk

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.

Install Fro	om Disk	×
_	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel
	Copy manufacturer's files from:	Browse

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

Locate File					? ×
Look in:	Comtrol		*	🗢 🗈 💣 🗊-	
History Desktop My Documents	B CMDM.INF				
1	File name:	CMDM.INF	_	•	Open
Phy INSNIGR P	Files of type:	Setup Information (*.inf)	_	Ψ.	Cancel

- 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.



ve Hardware Wizard

Select a Device Driver Which driver do you want to install for this device?

Select the manufacturer and model of your hardware device and then click Next. If y have a disk that contains the driver you want to install, click Have Disk.





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.

System Properties ?	×			
General Network Identification Hardware User Profiles Advanced				
Hardware Wizard The Hardware wizard helps you install, uninstall, repair, unplug, eject, and configure your hardware.				
Hardware Wizard				
Device Manager				
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.				
Driver Signing Device Manager				
Hardware Profiles				
Hardware profiles provide a way for you to set up and store different hardware configurations.				
Hardware <u>P</u> rofiles				
OK Cancel Apply				

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

🖳 Device Manager 📃 🔳 🗙	DeviceMaster Properties
Action Mew ← → E II 3	General Configuration Driver
Image: Second	Device Matter Device type: Multiport serial adapters Mandathere: Centred Capparation Location: Unit Annon The device anithus The device evolving procedu (Up on the hosp devices) Treableshooter. Device susget Use the device (reable) **
	OKCancel

Select the **Configuration** tab to change parameter settings for your DeviceMaster. Most of the system Configuration ? × meral Configuration Driver á a Marcia settings are accessed by selecting the **Settings** button Model: DeviceMaster (see the following *DeviceMaster Server* discussion). You can change the COM port number by selecting the 192.168.250.254 Settings **Ports Setting** button (see the following *Port Status* discussion). COM11-COM11 Ports Setting DK Cancel **DeviceMaster** 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** Server Password Protection X Please input the server's password : button to continue. OK Cancel **Basic Configuration** The Basic Configuration tab appears, enabling you to make changes to the following items. ic Configuration | Password | Interface Setting | Access Control Model Name: DeviceMaster Serial Number 8810-0000010



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.

Property Sheet			×
Basic Configuration Pas	sword Interface Set	tting Access Control	
🔽 Change Pa	issword		
Current <u>P</u> assw	ord:		
New Password			
Con <u>f</u> irm Passw	ord: xxxxxxxx		
Eemeber F	'assword		
		OK Cano	el

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.

Property Sheet 🔀
Basic Configuration Password Interface Setting Access Control
Port Interface
1 R5-232
Tip: Use Shift/Ctrl key to multi-select.
Modiy
OK Cancel

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.

Add Access Grant IP 🛛 🔀	Add Access Grant IP
 Single Host C A Group of Host 	C Single Host C A Group of Host
IP Address 192 . 168 . 4 . 12	IP Address 192 . 168 . 4 . 12
Netmask 255 . 255 . 0 . 0	Netmask 255 . 255 . 0 . 0
0K Cancel	OK Cancel



General Cordi	uration Driver	
	wown priver 1	
DeviceMas	er Status	
Model:	DeviceMaster	
IP Addres	s: 192.168.250.254	
	Settings	1
		-
Port Status		
CUM Num	xer: CUM11-CUM11	
	Ports Setting	
		av. 1. a. i
		JK Lancel

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

ort Configurati	on		
- Port Setting-			
Port	Number	Tx Mode	TxFIED
	COM3	Hi-Performance	Enable
	0000	The choimened	Endoio
			Modify Setting
		OK	Conser
		UK	Lancel

Change the Port Number, Transmission Change Port Setting Mode, and TxFIFO as desired. Port Numbe СОМЗ • Auto Enumerating COM Number Transmission Mode Tx EIFO • Hi-Performance • Enable O <u>C</u>lassical ○ <u>D</u>isable Set The Change to All Ports Set The Change to All Port OK Cancel Driver The Driver tab displays important information about the driver. Use the buttons at the bottom of the window ral Configuration Driver to get Driver Details, or to Uninstall, or Update DeviceMaster Drivers. Control Corporation Not available 1.0.2.0 Not digitally signed Driver Late: Digital Signer: To view details about the driver files loaded for this device, click Driver Details. To uninstall the driver files for this device, click Uninstall. To up the driver files for this device, click Update Driver. Driver Details... Uninstall Update Driver 0K Cancel

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
 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.

Run	? ×
5	Type the name of a program, folder, or document, and Windows will open it for you.
<u>O</u> pen:	telnet 192.168.250.254
	🕅 Run in Separate Memory Space
	OK Cancel Browse

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.



Enter: select ESC: previous menu
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.
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.
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.

	Comtrol	DeviceMast	ter V2	.3		
erverConfig] OP_mode onfig server settings	Serialport	Monitor	Ping	Restart	Exit	
SC: back to menu Ent	er: select					
Server Model Server Name Serial Number	I	DeviceMast [<u>D</u> M29 8810-0000	ter 085]
DHCP Ethernet Status MAC Address Static IP Address Netmask Gateway		Disable] 10M/Link 00:C0:4E:(192.168.12 255.255.2! 192.168.12	0C:00: 2.29 55.0 2.1	55]]]		
Password]		

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**.

🛃 Telnet 192.168.12.29					- 🗆 🗙
	Comtrol DeviceMas	ter V2	.3		_
serverConfig OP_mo Config serial port :	de <mark>[Serialport]</mark> Monitor settings	Ping	Restart	Exit	
ESC: back to menu	Enter: select				
Port Number	1				
Baud Rate(bps) Parity Data Bit Stop Bit Flow Control UART FIFO	[230400]] [None] [8] [1] [None] [Enable]				- -
•					• //

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.

🛃 Telnet 192.168.12.29		- 🗆 🗙
	Comtrol DeviceMaster V2.3	•
serverConfig OP_mode Monitor operating stat	Serialport [Monitor] Ping Restart Ex us for each serial port	it
ESC: back to menu En	ter: select	
Port Number	1	
Tx Char Count Rx Char Count Conn. Status Line Status	0 0 transmitting DIR,dsr RIS,cts ded	
Baud Rate(bps) Flow Control	230400 None 8 1 None	•
•		▶ <i>I</i> .

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.

🛃 Telnet 192.168.12.29	- 🗆	×
Comtrol DeviceMaster U2.3		-
serverConfig OP_mode Serialport Monitor [Ping] Restart Exit Ping a host		
ESC: back to menu Enter: select		
ESC: exit Enter: start to ping		
Input target IP address (e.g. 132.147.160.1) ->		•
	►	//

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.

灆 DeviceMaster firm	nware upgrade	utility			_ 🗆 ×
DeviceMaster Tool <u>H</u>	<u>H</u> elp				
1 🖆 🔮 🔮 🔋	•				
Name	Model	IP Address	Serial No	MAC address	Firmware Ver.
CDCBCCCDDDDC	DeviceMaster	192.168.0.4	8810-0000010	00:C0:4E:0C:00:0A	1.02

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

Upgrade DeviceMa	ster	×
Enter the file to u	ıpgrade.	
Name:	DM8	
IP address:	192.168.250.96	
Serial No:	8810-0000008	
NPL.ROM	Browse	
	OK Cance	

- 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 <u>Hardware Installation</u> 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.