



SPEED Serial Adaptors

User guide

Part number: 5500034-20 Date: 10 September 2008

Navigating around this manual

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CE



FCC Note

The products described in this manual have been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this Guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

EN 55022: 1998, Class A Note

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Caution: The products described in this manual are approved for commercial use only.





About this manual

Purpose of this manual

This manual tells you how to install, configure and use the Perle SPEED PCI serial adaptor cards, associated drivers and utilities.

Who this manual is for

This manual is aimed at users who want to add extra serial ports to their system using SPEED PCI serial adaptor cards. This manual requires a working knowledge of using personal computers and associated operating systems, as well as experience in installing host cards.



Warning

Dangerous voltages exist inside computer systems. Before installing host cards in your system, turn off the power supply and disconnect the mains lead.





Using this on-line manual

The following is a brief guide to using this manual on-line.

Document navigation

This manual features document navigation hypertext buttons in the header area as shown in the next picture;

Į	Č <)]]	A	?	
					Jump to Using this on-line manual
					Jump to Index
					Jump to Quick Reference
					Jump to previous location
					Jump to front of current chapter
					Jump to Contents
					Jump to Fast contents

Hypertext jumps

You can also navigate around this manual by clicking on any cross reference or text in blue for example, Hypertext jumps.



The **Fast Contents**, **Contents** and **Index** entries are all hypertext jumps into this manual.





Revision history

Date	Part number	Description
October 1999	5500034-10	First issue of new SPEED user manual. Includes details of drivers, utilities and installation under the SCO OpenServer and Windows NT operating systems.
November 1999	5500034-11	Minor content update to include details of MODEM ports.
December 1999	5500034-12	Content update to include details of drivers, utilities and installation under the Windows 95 and 98 operating systems.
January 2000	5500034-13	Content update to include details of drivers, utilities and installation under the Windows 2000 operating system.
March 2000	5500034-14	Update of driver installation section for Windows 95 and 98 operating systems.
May 2000	5500034-15	Update of manual to include installation under the SCO UnixWare operating system.
August 2000	5500034-16	Update of manual to include installation under the Linux operating system and some additional SCO UnixWare error messages.
November 2001	5500034-17	Update to include new contact page and re-branding.
October 2005	5500034-18	Added support information for SCO Openserver 6.
March 2007	5500034-19	Added instructions for a new Windows 2000/XP/Server 2003/Vista installation process. There are now three Windows drivers to support 32-bit, 64-bit x64, and 64-bit Itanium operating systems/processors.
September 2008	5500034-20	Updated the Windows sections to include Windows Server 2008.





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Chapter 1 Introduction

You need to read this chapter if you want to...

You need to read this chapter if you want an introduction to the Perle SPEED serial adaptor cards, driver software and utilities.

This chapter provides introductory information about the Perle SPEED PCI serial adaptor cards, driver software and configuration utilities.

This chapter includes the following sections;

About the SPEED serial adaptor card on page 15





About the SPEED serial adaptor card

The SPEED product range are high performance, serial adaptor cards for PCI based host machines. Each card features four RJ45 ports, removing the need for spider or octopus cables. You can use up to four cards per host thus providing 16 ports per host.

The SPEED4 variant supports a full compliment of eight signal lines per port. The SPEED4+ includes enhanced modem support and significantly higher maximum port speeds.

Each serial port has three device nodes associated with it. Each node takes the form of a **special file** which you can access in the normal manner from operating system utilities and user applications. See also **Appendix A Serial Port Device Names** and your operating system manual for details of **special files**.

You use the SPEED when you want a robust entry level solution for the small office or point of sale applications. Typically you use SPEED because you want to add extra serial ports to an existing computer system rather than replacing it with the considerable cost that entails. Higher data rates and ESD protection in the SPEED4+ make it suitable for any modem or ISDN TA application.

Note

To use the SPEED serial adaptor cards you must first install the drivers supplied with the card and then configure each card as required prior to mechanical installation. The installation procedure varies for different operating systems. Please read **Before you start** on page **18** in **Chapter 2 Installing drivers and host cards** before commencing installation.











Chapter 2 Installing drivers and host cards

You need to read this chapter if you want to... You need to read this chapter if you want to install SPEED serial adaptor cards and associated software.

This chapter provides information about installing and configuring SPEED serial adaptor cards in PCI format.

Note

The procedure for installing and configuring SPEED serial adaptor cards varies for different operating systems. Please read **Before you start** on page **18** before commencing installation.

This chapter includes the following sections;

- Before you start on page 18
- Down loading SPEED drivers from the Perle web site on page 19
- Installing under SCO OpenServer on page 20
- Installing under SCO UnixWare on page 35
- Installing under Windows 95 and 98 on page 47
- Installing under Windows NT on page 57
- Installing under Windows 2000/XP/Server 2003/Vista/Server 2008 on page 58
- Installing under Linux on page 64
- Installing a PCI host card on page 69
- Removing host cards on page 70.





Before you start

Before you install your SPEED host cards and software, note that the procedure for installing and configuring SPEED serial adaptor cards varies for different operating systems.

To install under a particular operating system, please refer to one of the operating system specific installation procedures listed below;

- Installing under SCO OpenServer on page 20.
- Installing under SCO UnixWare on page 35
- Installing under Windows 95 and 98 on page 47
- Installing under Windows NT on page 57
- Installing under Windows 2000/XP/Server 2003/Vista/Server 2008 on page 58
- Installing under Linux on page 64.





Down loading SPEED drivers from the Perle web site

You can install the SPEED driver and utility software from the Perle web site. To do this proceed as follows;

- 1. On your PC, start the Internet browser or FTP Client you want to use (for example, Netscape).
- 2. Within your Internet browser window or FTP client, select the software directory using the following URL;

http://www.perle.com/downloads

Note

In the event of any problems contact your System Administrator or Internet Service provider for assistance.

3. Change to the software directory.

The software directory is now displayed.

- 4. Download the zip files in this directory to a suitable location on your PC for example, *I*tmp.
- 5. Uncompress the files using a suitable utility.
- 6. You can now install the driver software using the correct procedure for your operating system. See **Before you start** on page **18**.





Installing under SCO OpenServer

This section tells you how to install host cards, software drivers and utilities under the SCO OpenServer operating system and includes the following;

- General installation procedure for SCO OpenServer on page 21
- Installing device drivers and utilities on page 22
- Configuring SPEED serial ports on page 28
- Removing SPEED drivers and utilities from your system on page 33.





General installation procedure for SCO OpenServer

The general procedure for installing and configuring host cards, drivers software and associated utilities for the SCO OpenServer operating system is as follows:

- 1. Install any PCI host cards you require into your system. See Installing a PCI host card on page 69
- 2. Install the SPEED SCO OpenServer drivers and utilities onto your system using the procedures described in Installing device drivers and utilities on page 22.
- 3. If required, remove any host cards you want from your system. See Removing host cards on page 70.
- 4. Using the **Port Configuration tool**, configure the serial ports you have added to the system. See **Configuring SPEED serial ports** on page **28**.

Your system can now use the serial adaptor cards you have installed. If required, you can reconfigure serial ports following initial installation.





Installing device drivers and utilities

To install the SPEED device drivers and utilities for the SCO OpenServer operating system proceed as follows;

- 1. Login to your system as super user.
- 2. Load the CDROM into your system CD drive.
- At the command prompt, make a directory for your installation by typing: mkdir /cdrom
- 4. Mount the CDROM file system using the following commands:

mount -f ISO9660 -r/dev/cd0 /cdrom

Note

The example above shows the directory name as **/cdrom**, You can either use this name or use another directory name to suit your requirements. For example, **/mnt**.

- In the SCO OpenServer desktop, double click on the System Administration folder. The System Administration window is now displayed.
- In the System Administration window, double click on the software manager icon. The Software Manager window is now displayed.







7. In the Software Manager menu, click on **Software > Install New**.

The Begin Installation window is now displayed as shown in the next picture.



8. In the Begin Installation window, select the local host as the machine to install from by clicking on the **From localhostname** button and then click on **Continue**.

The Select Media window is now displayed.

Select Media		×
Insert media, ai	nd select media device.	
Media Device:	CD-ROM Drive O	4
Continue	Cancel	Help

9. In the Select Media window, using the **Media Device** selector choose the **Media Images** option then click on **Continue**.

The Enter Image Directory window is now displayed.

📲 Enter Image Directo	ry	×
Enter the full path	n to the directory containing media images.	4
Image Directory:	/cdrom/drivers/speed/openserver]	
Note: media imag	es must follow the naming convention VOL.0	00.000, etc.
ОК	Cancel	Help





10. In the Enter Image Directory window, enter the following in the Image directory field;

/cdrom/drivers/speed/openserver (SCO OpenServer 5)

/cdrom/drivers/speed/openserver6 (SCO OpenServer 6)

Note

The example and picture above show a directory name including **/cdrom**, You can either include this name in the path or use another directory name to suit your requirements. For example, **/mnt**.

11. In the Enter Image Directory window, click on **OK**.

The Install Selection window is now displayed.

- Install Select	ion on scosysv
Source Host : scosysv Media Device : Media Images	
Select software to install	
Perie Speed (ver 1.0.0)	
	Total T Selected T
Install More Options	Cancel Help





- 12. In the Install Selection window, click on the Install button.
- 13. In the pop-up window, click on the **Continue** button to continue the installation process The following progress message is now displayed.

-	Installation Progress on scosysv
Installing Installation Phase Installation Status	 Perle Speed Driver (ver 1.0.0) Configuring the component parameters Executing ccs script /opt/K/Perle/SPD_Drive

The Speed Installation Options window is now displayed.

Speed Installation Options	- 🗆 ×	
Options Help		
 ✓ Re-Link kernel ✓ Retain Configuration Data 		Option Only available if you are performing an upgrade on SCO OpenServer 5

14.If required, in the Speed Installation Options window, select the Re-Link kernel option.



15.(SCO OpenServer 5 only) If you wish to retain the existing configuration from a previous device driver installation, in the Speed Installation Options window, select **Retain Configuration Data**.





16.In the Speed Window Installation menu, click on **Options > Close** to close the window and continue the installation process.

If you select **Re-link kernel**, a message window is displayed at the end of the driver installation prompting you to re-boot the system.

ten In	oformation 🔀
Ĩ	During this installation, the kernel was relinked. You must reboot your system to make this kernel effective.
	ΟΚ

17. In the message window click on **OK** to continue the installation process.

The following message is now displayed upon completion of the installation process.

📲 Message	X
Installation complete	
ок	

18.In the message window, click on OK to close the window.

The software manager window is now updated to show the driver you have installed as shown in the next picture.

- Software Manager (custom) on scosysv	
Hos <u>t S</u> oftware <u>V</u> iew <u>O</u> ptions	Help
All software on scosysv	
 Perle Speed (ver 1.0.0) SCO OpenServer Release 6.0.0 (ver 6.0.0Ni) OSS702A: pkgadd Supplement (ver 1.0.0) SCO OpenServer Release 6.0.0 Maintenance Pack 1 (ver 1.0.0Bk) 	
View All Total 4 Selecte	ed 1
The selected software is fully installed. SC	Oadmin





19.In the Software Manager window, click on the **Host > Exit** menu option to close the window.

20.Shut down your system and turn the power off.

You can now continue with the rest of the installation process see **General installation** procedure for SCO OpenServer on page 21.

Serial port naming conventions

Each serial port has three device nodes associated with it. Each node takes the form of a file which you can access from operating system utilities and user applications. Details of these nodes are shown in the next table.

Device name	Function	Description	Location
ttyz1	Normal communications port for local "tty" devices.	Indicates normal communica- tions port behaviour.	/dev
ttyZ1	Modem port.	Indicates that a port open will not complete unless DCD is present.	/dev
ttyz1p	Transparent print port.	Indicates that device should only be used for transparent print.	/dev





Configuring SPEED serial ports

The Port Configuration utility allows you to configure the extra SPEED serial ports you have added to your system. To do this proceed as follows;

If you want to perform transparent printing from any of the terminals attached to your system, you need to check the contents of the **printcap.spd** file to see if the terminal type you are using is supported. To do this proceed as follows;

- 1. Using a text editor, go to the **/etc** directory and open the file called **printcap.spd**
- Check the contents of the printcap.spd file to see if the terminal type you are using is supported. See page 94 in Appendix B Transparent Printing for the syntax of the entries in this file.
- 3. If the terminal type you are using is not supported, add an entry for the new terminal type (including the type, transparent print ON and transparent print OFF strings) to the **printcap.spd** file (**page 94**). See the user guide for your terminal for details of the entries required.

You can now configure the ports you want using the Port Configuration utility.

Starting the Port 1. In the command prompt, type **spdpcfg** and press the **Enter** key. Alternatively use the SCO OpenServer desktop as follows;

- a. In the SCO OpenServer desktop, open the **System Administration** folder. The System Administration window is now displayed.
- b. In the System Administration window, click on the Speed folder in SCO OpenServer 5 or the Perle-Serial folder in SCO OpenServer 6 to open it. The Speed window is now displayed
- c. In the Speed window, click on the Speed Port Configuration Icon.





The Port Configuration window is now displayed as shown in the next picture.







Selecting ports 2. In the Port Configuration window, select the ports you want you want to configure by clicking on one or more items in the list of ports (example in next picture).

Hint

To select multiple items which follow each other in the list, hold down the **Shift** key and click on all the items you want.

To select multiple items from anywhere in the list, hold down the **Ctrl** key and click on all the items you want.



Selecting a getty 3. In the Port Configuration window, select the getty definition you want by double clicking on an item in the **Available gettydefs** list. Alternatively, click on the **Set** button.



The list of currently selected ports is now updated to show the new getty definition.







Selecting terminal type

4. In the Terminal type list, double click on the terminal type you want for the currently selected ports. Alternatively, single click on the item you want in the Terminal type list and press the Set button.

The list of ports is now updated to show the new terminal type



Enabling and disabling flow control

login

Note

5. If required, in the Port Configuration window, click on the ixon button to enable flow control for Transparent printing.

For information about transparent printing, see Appendix B Transparent Printing.

- 6. If required, in the Port Configuration window, click on the ixany button to enable sending of data on receipt of the next character (when flow control is enabled on the transparent print port).
- Setting up a port 7. In the Port Configuration window, click on one of the menu options shown in the next table to display the ports with the login status you want to change. For example, ports without logins enabled.

These options allow you to filter on the type of ports you are looking for. This facility is helpful when you have a large number of ports installed.

To Display	Click menu option
All ports with logins enabled	Ports > Logins
All ports without logins enabled	Ports > Unconfigured
Display all ports	Ports > All





8. If required, in the Port Configuration window, select the ports whose logins status you want to change, then click on one of the following to change the login status;

Тс	Click on
Enable logins for a port	Enable button
Disable logins for a port	Disable button

The selected ports in the list now are updated show their new login status. For example if you enable the login for a port, a tick is displayed along side the port as shown in the next picture.

Specialix Speed Port Configuration					_ 🗆 ×	
Ρ	Ports Help					
	Port	Login	gettydef	Terminal Type	Forced flow control	
	1	 Image: A second s	m	vt220		
	2		m	unknown		
	3		m	<u>unknown</u>		

9. Repeat steps 2. to 8. until you have configured all the ports you want.

Exiting the Port10.In the Port Configuration menu, click on Ports > Save & Exit.Configuration tool

Note
To quit the Port Configuration tool without saving changes,
 In the Port Configuration menu, click on Ports > Quit.

The Port Configuration tool now closes and saves any changes you have made.





Removing SPEED drivers and utilities from your system

To remove the SPEED device drivers and utilities for the SCO OpenServer operating system proceed as follows;

- 1. In the SCO OpenServer desktop, double click on the System Administration folder. The System Administration window is now displayed.
- In the System Administration window, double click on the software manager icon. The Software Manager window is now displayed.

🗱 Software Manager (custom) on sco5serv	- 🗆 ×
Host Software View Options	Help
All software on sco5serv.specialix.co.uk	
 Netscape Communicator (ver 4.0.5b) SCO OpenServer Development System (ver 5.1.1A) SCO OpenServer Enterprise System (ver 5.0.5m) SCO Optimizing C Compiler (ver 2.1.4d) Specialix Speed (ver 1.0.0.1) UDK Compatibility Module for OpenServer 5.0.5 (ver 5.0.5A) 	
View All Total 6 Select	ed 1
The selected software is fully installed. SCO	admin

- 3. In the Software Manager window select the driver you want to remove.
- 4. In the Software Manager menu, click on **Software > Remove software**.

A confirmation window is now displayed prompting you to confirm removal





5. In the confirmation window, click on the **Remove** button.

The software is now removed and the following Kernel re-link message is now displayed as shown in the next picture.

🕅 Information 🔀	
i	During this removal, the kernel was relinked. You must reboot your system to make this kernel effective.
	ΟΚ

The Kernel re-link message window now closes and the removal continues. A message is displayed upon completion.

6. In the message window, click on **OK** to close the window.

The software manager window is now updated to show the remaining software.





Installing under SCO UnixWare

This section tells you how to install host cards, software drivers and utilities under the SCO UnixWare operating system and includes the following;

- General installation procedure for SCO UnixWare on page 36
- Installing drivers and utilities onto your system on page 37
- Configuring serial ports on page 40
- Configuring serial ports under SCO UnixWare 2 on page 45
- Removing SPEED drivers and utilities from your system on page 46.





General installation procedure for SCO UnixWare

The general procedure for installing and configuring host cards, drivers software and associated utilities for the SCO UnixWare operating system is as follows:

1. Install any PCI host cards you require into your system. See Installing a PCI host card on page 69

Note

Once you have installed the SPEED drivers, if you add or remove any host cards the operating system will update the kernel accordingly using the **spdconf** program.

spdconf is run automatically during boot up and checks to see if any host cards have been added or removed since the last time the system was powered up. If anything has changed the files which identify the ports, terminals and transparent printing are updated.

- If required, install the SPEED SCO UnixWare drivers and utilities onto your system using the procedures described in Installing drivers and utilities onto your system on page 37.
- 3. If required, remove any host cards you want from your system. See Removing host cards on page 70.
- 4. Using the **Serial Manager** utility, configure the serial ports you have added to the system. See **Configuring serial ports** on page **40**.

Note

If you are running version 2 of the SCO UnixWare operating system you need to use the procedures described in **Configuring serial ports under SCO UnixWare 2** on page **45** to configure your serial ports.

Your system can now use the serial adaptor cards you have installed. If required, you can reconfigure serial ports following initial installation.




Installing drivers and utilities onto your system

To install the SPEED device drivers and utilities for the SCO UnixWare operating system proceed as follows;

- 1. Login to your system as super user.
- 2. Load the CDROM into your system CD drive.
- 3. At the command prompt, type **scoadmin**.

The System Administration window is now displayed.

t <mark>ta</mark> Sys	stem Administration on hpnetserve40	
File	<u>View</u> Options	<u>H</u> elp
4	Account Manager	8
41	Filesystem Manager	
4	License Manager	
2	Login Session Viewer	
2	Mail Manager	X
	Í	
lusr/l	ib/scoadmin/desktop/filesyster	n.obj
		SCOadmin

 In the System Administration window, double click on the Filesystem Manager folder. The Filesystem Manager window is now displayed.

🐮 🛱 Fil	🛱 Filesystem Manager on hpnetserve40			
Hos	Hos <u>t</u> Mount Share View Options			
		Mount Status of Filesystems on hpnetserve40.specialix.co.uk		
	Filesystem	Mount Point	Access Mode	
=	/dev/root	/	Read-write	
8	/dev/_tcp	/dev/_tcp	Read-write	
8	/dev/fd	/dev/fd	Read-write	
	/dev/dsk/f0t	/install	Read-write	
8	/proc	/proc	Read-write	
			V	
			Total: 11 items	
			SCO admin	





 In the Filesystem Manager menu, click on Mount > Add Mount Configuration >Local. The Add Local Mount Configuration window is now displayed.

📲 Add Local Mount Configurati	on on hpnetserve40 🛛 🗙
Device File:	[/dev/cdrom/c1b0t0l0 ▼
Mount Point:	/cdrom
Description (optional):	
Filesystem Type:	CDFS
Access Mode:	Read-only 🖃
When to Mount:	Now
	☐ At System Startup
Advanced Options:	Set More Options
ОК	Cancel Help

6. In the Add Local Mount Configuration window, set only the options detailed in the next table:

Option	Set to or enter
Device File	Select cdrom or string containing cdrom
Mount Point	/cdrom
Access Mode	Select Read-only
When to Mount	Enable Now
	Disable At System Startup





7. In the Add Local Mount Configuration window, click on **OK** to accept the settings and close the window.

The Filesystem Manager window is now updated to show the new mount as shown in the next picture.

ta Fil	# Filesystem Manager on hpnetserve40			
Hos	Hos <u>t</u> Mount Share View Options			
	Mount Stat	/e40.specialix.co.uk		
	Filesystem	Mount Point	Access Mode	
8	/processorfs	/system/processor	Read-write	
8	/tmp	/tmp	Read-write	
	patch.specialix.co.uk:/u	/u	Read-write	
8	/var/tmp	/var/tmp	Read-write	
	/dev/cdrom/c1b0t0l0	/cdrom	Read-only	
			Z	
			Total: 12 items	
			SCOadmin	

- 8. Filesystem Manager menu, click on **Host > Exit** to close the window.
- 9. At the command prompt, type: pkgadd -d /cdrom/drivers/speed/unixware/spd.pkg spd
- 10.Press the Enter key.

The system now installs the driver and displays a series of messages ending with a successful installation message.

Upon installation of the drivers, your SPEED cards are ready to use.

Note

A re-boot of your system is not necessary as the drivers for your SPEED card are dynamically loadable and will be loaded as soon as any software attempts to access the associated devices.





Configuring serial ports

The software provided with the SCO UnixWare operating system includes a utility called Serial Manager which allows you to configure the extra serial ports you have added to your system.

Note

If you are running version 2 of the SCO UnixWare operating system you need to use the procedures described in **Configuring serial ports under SCO UnixWare 2** on page **45** to configure your serial ports.

Note

On UnixWare 7.0, you must apply a patch file called **ptf7053** before using the Serial Manager. You can find the patch on the SCO web site at;

http://www.sco.com

To configure serial ports with Serial Manager proceed as follows;

Note

If you want to perform transparent printing from any of the terminals attached to your system, you need to check the contents of the **printcap.spd** file to see if the terminal type you are using is supported. To do this proceed as follows;

- 1. Using a text editor, go to the **/etc** directory and open the file called **printcap.spd**
- Check the contents of the printcap.spd file to see if the terminal type you are using is supported. See page 94 in Appendix B Transparent Printingfor the syntax of the entries in this file.
- 3. If the terminal type you are using is not supported, add an entry for the new terminal type (including the type, transparent print ON and transparent print OFF strings) to the **printcap.spd** file (**page 94**). See the user guide for your terminal for details of the entries required.
- 4. If you have made any changes then type **spdconf** in order to re-configure the print port settings.

You can now configure the ports you want using the Serial Manager utility.





1. At the command prompt, type **scoadmin**

The System Administration window is now displayed as shown in the next picture.

👷 🖪 System /	Administration on hpnetserve40	_ 🗆 🗵
<u>File</u> <u>Vie</u>	w Options	<u>H</u> elp
Р н -21 -21 -21	ardware Audio Configuration Manager Device Configuration Utility (DCU) Hotplug Manager Modem Manager	
	Serial Manager Video Configuration Manager	- -
lusr/lib/so	coadmin/desktop/Hardware/serial.	obj

2. In the System Administration tool window, click on the Hardware folder and then select **Serial Manager**

The Serial Manager window is now displayed showing the host cards (including SPEED) currently present on the system.

191	Serial Manager on	hpnetserve40		
ł	los <u>t P</u> ort <u>V</u> iew			<u>H</u> elp
	Configured seri	al boards on hp	onetserve40:	
	Port	Descript	ion	
	iasy	0	sco	A
	spd	0	Specialix SPEED Host Card	
				3
Ī	⊴			
				SCOadmin





3. In the Serial Manager window, select the host card you want. Then in the Serial Manager menu, click on **View > Ports**.

The Serial Manager window now displays the ports available for the selected host card as shown in the next picture.

t:	Serial Manager on I	hpnetserve40			- 🗆 ×
	Hos <u>t</u> Port <u>V</u> iew				Help
	Configured seria	l ports (for io8) or	hpnetse	rve40:	
	Port	Logins	Speed	Description	
	term/z1	disabled		Port 0 Software Flow Control	\square
	term/z2	disabled		Port 1 Software Flow Control	
	term/z3	disabled		Port 2 Software Flow Control	- 111
	term/z4	disabled		Port 3 Software Flow Control	- 111
					- 111
					- 111
					- 111
	M				
F				SCO;	Amin
				0001	





4. In the Serial Manager menu, click on **Ports > Modify**.

The Modify Serial Port window is now displayed.

Modify Serial Port:	term/i03	×
Port type:	Port 2 Software Flow Control	γ
Configure port:	 ◆ outgoing only ◆ incoming only 	
	\diamond incoming and outgoing	
Speed (bps):	auto 🗸	
Advanced opti	ons:	
Port settings.	Receive buffer	
ОК	Cancel Help	>

5. In the Modify Serial Port window, set the parameters shown in the next table

Parameter	Set to
Port Type	No change, should already be set to software flow control
Configure port	incoming only
Speed	the speed value you require





 In the Modify Serial Port window, click on the **Port settings** button. The Port settings window is now displayed.

R Port settings 🗙				
8 7				
None V				
Cancel Help				

- 7. In the Port settings window, select the **Data bits** and **Parity** values you require and click on **OK**.
- 8. In the Modify Serial Port window, click on OK to accept the changes you have made and close the window.
- 9. Repeat steps 3. to 8. until you have configured the serial ports for all the host cards you require.
- 10.In the Serial Manager menu click on **Host > Quit** to quit Serial Manager and close the window.





Configuring serial ports under SCO UnixWare 2

spxadmport SCO UnixWare 2 does not include the graphical user interface based Serial Manager utility. If you are running SCO UnixWare 2 on your computer, you need to run the **spxadmport** script from the command line to configure SPEED serial ports. You use this by typing a single line command which contains the information required for a given configuration task using the following syntax;

Syntax /etc/spxadmport command svctag [label] [owner]

where;

ltem	Description	Example
command	add, enable, disable, remove or list.	remove
svctag	device number from /dev/term.	z1
label	/etc/ttydefs entry (optional).	9600
owner	user ID assigned to the port (optional).	root

Procedure

To use the **spxadmport** script to configure your SPEED serial ports proceed as follows;

1. At the command prompt, type one of the commands detailed in the next table using the following syntax;

/etc/spxadmport [command] [svctag] [label] [owner]

Command	Description	Example command
Add	Adds a serial port to the service monitor (spdmon) and enables the port for monitoring logins.	/etc/spxadmport add z1 9600 root
Enable	Enables a previously disabled port for monitoring.	/etc/spxadmport enable
Disable	Disables a port. Has the effect of disabling all further logins on this port.	/etc/spxadmport disable z1
Remove	Removes the selected serial port from the service monitor (spdmon).	/etc/spxadmport remove z1
List	Lists the currently defined services and/or port monitors.	/etc/spxadmport list
List p	Lists all logins configured.	/etc/spxadmport list p
List s	Lists all port services configured.	/etc/spxadmport list s





2. Press the Enter key.

The revised SPEED port configuration is now adopted by the system.

Removing SPEED drivers and utilities from your system

To remove the software drivers from your system under the SCO UnixWare operating system proceed as follows;

1. At the command prompt, type pkgrm spd and press Enter

The SPEED driver and associated utilities are now removed from your system.





Installing under Windows 95 and 98

This section tells you how to install host cards, software drivers and utilities under the Windows 95 and Windows 98 operating systems and includes the following;

- General installation procedure for Windows 95 and 98 on page 48
- Installing device drivers and utilities on page 49
- Configuring SPEED serial ports on page 51
- Removing SPEED drivers and utilities from your system on page 55.





General installation procedure for Windows 95 and 98

The general procedure for installing and configuring host cards, drivers software and associated utilities for the Windows 95 and 98 operating systems is as follows:

- 1. Down load the SPEED driver files into your PC from the CDROM or the Perle website. See **Down loading SPEED drivers from the Perle web site** on page **19**.
- 2. Install any PCI host cards you require into your system. See Installing a PCI host card on page 69.
- 3. Install the SPEED Windows 95 and 98 drivers and utilities onto your system using the procedures described in Installing device drivers and utilities on page 49.
- 4. If required, remove any host cards you want from your system. See Removing host cards on page 70.

Your system can now use the serial adaptor cards you have installed. If required, you can reconfigure serial ports following initial installation. See **Configuring SPEED serial ports** on page **51**.

Ν	ote

To remove the SPEED Windows 95 and 98 drivers and utilities from your system, see page 55.





Installing device drivers and utilities

To install the SPEED device drivers and utilities for the Windows 95 or 98 operating systems proceed as follows;

1. Load the CDROM into your PC.

The web browser window is now displayed automatically showing a virtual website for your Perle product (the browser application depend on your system).

2. From the \drivers\speed\win9x directory, run the setup.exe file.

A welcome window is now displayed

₩elcome	×
	Welcome to the Specialix Speed Windows 95/98 Drivers Setup program. This program will install Specialix Speed Windows 95/98 Drivers on your computer.
	It is strongly recommended that you exit all Windows programs before running this Setup program.
	Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
	WARNING: This program is protected by copyright law and international treaties.
	Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
	<u>Next</u> > Cancel

3. In the Welcome window, click on the Next > button.

A progress message is displayed while installed devices are upgraded to use the new drivers, followed by the Setup Complete window as shown in the next pictures.

×	Please wait while installed devices are updated to use the new drivers.
	Updating devices





Setup Complete	
	Setup has finished installing Specialix Speed Windows 95/98 Drivers on your computer. Before you can use the devices, you must restart your computer.
	 Yes, I want to restart my computer now. No, I will restart my computer later.
	Remove any disks from their drives, and then click Finish to complete setup.
	< <u>B</u> ack Finish

4. In the Setup Complete window click select the **Yes**, **I want to restart my computer now** option then click on **Finish** button to confirm your selection.

Hint

After the machine restarts, if windows cannot find a file whilst trying to install a device, a pop-up window is displayed asking you for the location of missing file. To remedy this;

 In the popup window, select the windows system directory for example, c:\windows\system.

Device installation should then be able to continue.

Installation of device drivers and utilities is now complete.





Configuring SPEED serial ports

Note

SPEED ports are normally configured as part of the installation process described in **Installing device drivers and utilities** on page **49**. The procedures described in this section are provided for information only.

To configure SPEED serial ports proceed as follows;

 In the windows desktop, click on the Start button and select Settings > Control panel. The control panel window is now displayed.

🐼 Control Panel						- 🗆 🗵
∫ <u>F</u> ile <u>E</u> dit <u>V</u> iew <u>G</u> o F <u>a</u>	vorites <u>H</u> elp					11
Back Forward	Up Cut	Copy	Paste	い) Undo	Delete	»
Address 🐼 Control Panel						_
	Multimedia	Network	ODBC Dat Sources (32	a Passi bit)	words	Power 📥 Management
Control	Printere	Bagianal	Soundo	<u> </u>		Salashanu 🖃
Panel	Finters	Settings	Sounds	598	aem	relephony
Use the settings in Control Panel to personalize your	.					
			🛄 My (Computer		





2. In the control panel window, double click on the **System** icon.

The System Properties tabbed window is now displayed as shown in the next picture.

Hint

You can also display the **System Properties** tabbed window by right clicking on the **My Computer** icon on your desktop and selecting the **Properties** menu option.



- In the System Properties tabbed window, click on the Device Manager tab. The Device Manager page is now displayed.
- 4. In the Device Manager page, double click on the device whose properties you wish to view.

The properties tabbed window for the selected device is now displayed.





In the properties window, click on the Settings tab.
 The Settings page is now displayed.

Specialix SPEED4+ Serial Port	(COM5) Properties 🛛 🛛 🔀
General Settings Advanced	Driver Resources
Speed 4+ Multi-Port I/O PERLE Specialix	<u>R</u> estore Defaults
Standard Port Settings	
Baud Rate:	9600 💌
Number of <u>D</u> ata bits:	8
Type of <u>P</u> arity:	None
Number of <u>S</u> top bits:	1
Elow Control Type:	Xon / Xoff
	OK Cancel

6. In the Settings page, select the configuration values you want and either click on the **OK** button or click on the **Advanced** tab to display details of the device driver.





7. The Advanced page is now displayed as shown in the next picture:

Specialix SPEED4+ Serial Port (COM	(5) Properties	?×	
General Settings Advanced Driver	Resources	1	
Speed 4+ Multi-Port I/O	COM5 <u>R</u> estore [Defaults	Selects the port name for a given device.
PERLE Specialix			Allows you to select the default port name or change it to any unused port name.
FIFO Interrupt Trigger Levels Transmitter:		4 64	Default display is the currently assigned port name.
	ОК	Cancel	



Re-configuration of ports is now complete.





Removing SPEED drivers and utilities from your system

To remove SPEED drivers and utilities from your system proceed as follows;

 In the windows desktop, click on the Start button and select Settings > Control panel. The control panel window is now displayed.

💀 Control Panel					_ 🗆 ×
∫ <u>F</u> ile <u>E</u> dit <u>V</u> iew <u>G</u> o F <u>a</u>	vorites <u>H</u> elp				
Back Forward	Up Cut	L Copy	Paste U	ndo Dela	ete >>>
Address 🐼 Control Panel					•
िन्दा	Multimedia	Network	ODBC Data Sources (32bit)	Passwords	Power 🔺 Management
Control		3	1		2
Panel	Printers	Regional Settings	Sounds	System	Telephony
Use the settings in Control Panel to personalize your	2				
			🛄 My Com	iputer	





2. In the control panel window, double click on the System icon.

The System Properties tabbed window is now displayed as shown in the next picture.

System Properties ? 🗙
General Device Manager Hardware Profiles Performance
View devices by type View devices by connection E Keyboard Monitors
i ⊕
Multi-function adapters Specialix SPEED4+ PCI Adapter Specialix SPEED4+ PCI Adapter
🖶 💆 Ports (COM & LPT)
Communications Port (COM1)
Communications Port (CUM2) Printer Port (LPT1)
Specialix SPEED4+ Serial Port (COM5)
Specialix SPEED4+ Serial Port (COM7)
Specialix SPEED4+ Serial Port (CUM8)
Properties Refresh Remove Print
OK Cancel

- 3. In the System Properties tabbed window, click on the **Device Manager** tab The Device Manager page is now displayed.
- 4. In the Device Manager page, click on the $\ensuremath{\textit{View devices by type}}$ button.

The display is now updated to show installed devices by type.

5. In the Device Manager page, click on the device you wish to remove, highlighting it then press the **Remove** button.

The selected device is now removed from the system.







Installing under Windows NT

The procedure for installing and configuring host cards, drivers software and associated utilities for the Windows NT operating system is as follows:

Note

The Perle PortDirector software contains drivers for the SPEED host cards.

You will need to install the PortDirector for WIndows NT on your system in order to use the SPEED host cards.

See Chapter 5 Adding and deleting host cards in the PortDirector User guide part number 5500028 for further details.

- 1. Install any PCI host cards you require into your system. See Installing a PCI host card on page 69
- 2. If required, remove any host cards you want from your system. See Removing host cards on page 70.
- 3. Use the PortDirector software to update your system with the revised number and type of host cards. See The PortDirector user guide part number 5500028 for further details.

Your system can now use the serial adaptor cards you have installed.





Installing under Windows 2000/XP/Server 2003/Vista/ Server 2008

This section describes how to install the SPEED device driver software under Microsoft Windows 2000/XP/Server 2003/Vista/Server 2008.

This section includes the following;

- General setup procedure for Windows 2000/XP/Server 2003/Vista/Server 2008 on page 59
- Installing device drivers and utilities onto your system on page 60
- Adding additional cards and/or updating drivers on page 62
- Configuring serial ports on page 62.





General setup procedure for Windows 2000/XP/Server 2003/Vista/Server 2008

The general procedure for installing SPEED cards under the Windows 2000, XP, Server 2003, Vista. or Server 2008 operating systems is as follows;

- 1. Install or remove any PCI host cards you require on your system. See Installing a PCI host card on page 69 and Removing host cards on page 70.
- Install the SPEED device driver software. See Installing device drivers and utilities onto your system on page 60
- 3. If you add new SPEED cards, you should run Update Driver to make sure the new cards have the latest driver. See Adding additional cards and/or updating drivers on page 62.
- 4. If required, remove any host cards you want from your system. See Removing host cards on page 70.
- 5. Using the Windows 2000 **Device Manager**, configure the serial ports you have added to the system. See **Configuring serial ports** on page **62**.





Installing device drivers and utilities onto your system

To install or enable the SPEED device drivers on your system proceed as follows;

1. Turn on your PC and if required, log in.

If you have installed any new host cards a Found New Hardware message is briefly shown followed by the Found New Hardware wizard as shown in the pictures.

ound Nev	w Hardware	
	PCI Serial Port	
Installing	Found New Hardware Wizard	
		Welcome to the Found New Hardware Wizard This wizard helps you install a device driver for a hardware device.
		l o continue, click Next.
		< Back, Next > Cancel

- 2. In the Found New Hardware wizard click on the **Cancel** button.
- 3. Download the lastest SPEED driver zip file from the Perle website for your operating system:

pserial-x86.zip for 32-bit Windows operating systems.

pserial-amd64.zip for 64-bit Windows operating systems.

pserial-ia64.zip for 64-bit Windows Itanium operating systems.

 Unzip the driver zip file to a local directory. We recommend that you use the pserial-setup-<arch>.exe file, which will launch the installation wizard, to install the SPEED driver.





5. Double-click the **pserial-setup-**<*arch*>.exe installation executable and follow the installation wizard steps:



6. During the installation, you may get a Windows Logo message. Click **Continue Anyway** when these appear.

	1	The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (<u>Tell me why</u> this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and
--	---	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Note

If you are installing an unsigned driver, you may have to click through the Found New Hardware wizard for every SPEED port on your system.

Your SPEED driver installation is now finished.





Adding additional cards and/or updating drivers

Whenever you add any additional SPEED hardware to your system, Windows might install the latest digitally signed driver in its database (depending on your Windows operating system and settings). To ensure you have the latest driver installed after you add new hardware, you can either:

• Click Start > All Programs > Perle > Perle-Serial > Update Driver

or

Reinstall the drivers as described in **Installing device drivers and utilities onto your** system on page 60.

Configuring serial ports

To configure SPEED serial ports under Windows 2000/XP/Server 2003/Vista/Server 2008, proceed as follows;

1. In the Windows desktop, click on the Start button and select Settings > Control Panel



The control panel window is now displayed.

2. In the Control Panel window, click on the **System** icon.

The System Properties tabbed window is now displayed.

- In the System Properties window, click on the Hardware tab. The hardware page is now displayed.
- 4. In the Hardware page, click on the Device Manager Button.

The Device Manager window is now displayed.



- 5. In the Device Manager window, click on the Multiport serial adapters icon to display the currently installed devices.
- 6. In the Device Manager window, double click on the device whose properties you want to view or change

The device Properties tabbed window is now displayed.





7. In the device Properties window, click on the **Port Settings** tab to display the Port Settings page.

General Port Settings	FIFO Settings Driver Details	_
Port Number:	СОМЗ	
Baud Rate:	9600	
Data Bits:	8	
Parity:	None	
Stop Bits:	1	
Flow Control:	None	
Port Type: Perle S	About PEED4 Serial Port	
		OK Car

8. In the Port Settings page, set the **Port Number**, **Baud Rate** and other configuration parameters you require and then click on the **OK** button to save changes and close the window.

The configuration process is now complete.





Installing under Linux

This section tells you how to install host cards, software drivers and utilities under the Linux operating system and includes the following;

Note

As of version 2.4.x of Linux, support for the SPEED driver is built into the operating system and does not require download of the patch file from our FTP site.

- General installation procedure for Linux on page 65
- Installing drivers onto your system on page 66
- Creating devices for the attached ports on page 67.





General installation procedure for Linux

The general procedure for installing and configuring host cards, drivers software and associated utilities for the Linux operating system is as follows:

- 1. Install any PCI host cards you require into your system. See Installing a PCI host card on page 69.
- 2. Install the SPEED Linux drivers onto your system using the procedures described in **Installing drivers onto your system** on page **66**.
- 3. Create devices for the required ports using the procedures detailed in **Creating devices** for the attached ports on page 67.

Your system can now use the SPEED serial adaptor cards you have installed.





Installing drivers onto your system

To install the device driver proceed as follows:

		Note
		When installing SPEED drivers under Linux versions 2.2.x , you will need to apply a patch file to the kernel before enabling the drivers (step 6 . of this procedure).
		You can find a kernel patch file on either of the following;
		• The CDROM (in the /drivers/speed/linux directory) supplied with your Perle product.
		The Perle website http://www.perle.com.
		As of Linux version 2.4.x , you do not need to apply a patch on this or later kernels, you can proceed straight to enabling the driver using step 6. of this procedure.
Using the kernel patch file	1.	Make sure you have an up to date Linux kernel source directory installed. This can be obtained from ftp://ftp.linux.org or other major Linux web sites, along with instructions on how to install and build.
	2.	Copy the driver patch file onto your system in a temporary directory. For example, <i>I</i> tmp.
		The patch file will be named speed.patch-<driver vers="">-<kernel vers="">.gz</kernel></driver> For example, speed.patch-6-2.2.13.gz
	3.	At the command prompt, uncompress the driver patch file by typing gunzip /tmp speed.patch-6-2.2.13.gz and pressing the Enter key.
	4.	At the command prompt, change directory to the kernel source directory by typing cd /usr/src/linux and pressing the Enter key.
	5.	At the command prompt, apply the kernel patch by typing patch -p1
Enabling the driver	6.	Enable the driver using the make config or make xconfig kernel utility. The SPEED driver appears in the Character devices section and is labelled SPEED system support . Set this to m for modules
	7.	Within either the make config or the make xconfig kernel utility, set the Support more than 4 serial ports and Support special multiport boards options to Y and enable Support for sharing serial interrupts .
	8.	Now rebuild and install the kernel and modules. See your Linux distribution documentation on how to rebuild and install a new kernel and modules. We recommend reading the Kernel-HOWTO available in /usr/doc/HOWTO .





Creating devices for the attached ports

After you have installed the new kernel & hardware, and have rebooted the machine. you need to create devices for the added ports. To do this proceed as follows;

1. At the command prompt, type grep ttyS /var/log/messages and press the Enter key to determine how many on board devices are present.

The devices present on the system are now displayed as shown in the next example.



You now need to create four more nodes to support of the SPEED4 card, **ttyS2**, **ttyS3**, **ttyS4**, and **ttyS5**. To do this proceed as follows;

2. At the command prompt, type Is -I /dev/ttyS[0-9]* and press the Enter key to determine the major and minor node numbers.

The major and minor node numbers are now displayed as shown in the next example.

crw-rw-rw- 1 root tty 4, 64 May 5 1998 /dev/ttyS0 crw----- 1 root tty 4, 65 Nov 12 14:12 /dev/ttyS1

3. At the command prompt, enter the following commands (pressing the **Enter** key after each one) to create the next 4 nodes which must follow on from the ones already defined.

For example, if **S0** and **S1** are already defined, then the next available serial port will be **S2** (Note that the major node number will be the same as any existing device, but the minor node must be the next available).







If you require callout devices as well as tty devices, at the command prompt, type Is -I / dev/cua[0-9]* and press the Enter key to determine the major and minor node numbers for callout devices.

The major and minor node numbers are now displayed as shown in the next example.

crw-rw-rw- 1 root tty 4, 64 May 5 1998 /dev/cua0 crw----- 1 root tty 4, 65 Nov 12 14:12 /dev/cua1

5. At the command prompt, type the following (pressing the Enter key after each one):



Your system can now use the SPEED serial adaptor cards you have installed.





Installing a PCI host card

To install a PCI host card proceed as follows;

Note

The exact location of host card slots varies for different systems, for exact mechanical details of your system, refer to your system documentation.



Dangerous voltages exist inside computer systems. Before installing host cards in your system, turn off the power supply and disconnect the mains lead.

- 1. Turn off the power to your system and disconnect the mains supply.
- 2. Remove the system cover to expose the inside of the connector panel for host cards.
- 3. Insert the PCI card you want to install into a vacant host card slot and secure in place as shown in the next picture.



- 4. Repeat step 3. until you have installed all the PCI cards you want.
- 5. Replace and secure the system cover.

Installation of PCI host cards is now complete. For further details about installing host cards including other types, see **Before you start** on page **18**.





Removing host cards

To remove a host card from your system proceed as follows;

Note

The exact location of host card slots varies for different systems, for exact mechanical details of your system, refer to your system documentation.



- 1. Turn off the power to your system and disconnect the mains supply.
- 2. Remove the system cover to expose the inside of the connector panel for host cards.
- 3. Remove all cables plugged into the host card.
- 4. Undo the securing screw for the host card you want to remove then lift the card out of its slot as shown in the next picture.





- 5. Repeat step 4. until you have removed all the host cards you want.
- 6. Replace and secure the system cover.
- 7. Plug in the mains lead and turn on the power.

Removal of host cards is now complete. For further details about installation of host cards including other types, see **Before you start** on page **18**.









Chapter 3 SPEED Cabling Information

You need to read this chapter if you want to...

You need to read this chapter if you want cabling information for the Perle SPEED serial adaptor cards.

This chapter provides cabling and connector pinout information for the Perle SPEED serial adaptor cards. Included are details of standard cables for use with SPEED products available from Perle.

This chapter includes the following sections;

- SPEED cabling guide on page 73
- RJ45 socket pinouts on SPEED host cards on page 74
- SPEED cables available from Perle on page 76.




SPEED cabling guide

The type of cable and edge connectors used by the SPEED product range is shown in the next table.

Product	Card edge connector	Cabling information
SPEED4	RJ45 8pin female.	RJ45 (8 pin) to DB9 male cable on page 77.
	See page 74	RJ45 (8pin) to DB25 male cable on page 78.
		RJ45 (8pin) to DB25 female cable on page 79.
SPEED4+	RJ45 10 pin female See page 75	RJ45 (10 pin) to DB9 male cable on page 80.
		RJ45 (10pin) to DB25 male cable on page 81.
		RJ45 (10pin) to DB25 female cable on page 82.





RJ45 socket pinouts on SPEED host cards

SPEED4 cards

The connector pinout for each RJ45 socket fitted to the SPEED4 PCI host card is as follows;



RJ45 pin	Signal	Direction	Description
1	DCD	In	Data Carrier Detect
2	DTR	Out	Data Terminal Ready
3	DSR	In	Data Set Ready
4	GND		Ground
5	TXD	Out	Transmit Data
6	RXD	In	Receive Data
7	RTS	Out	Request to send
8	CTS	In	Clear to Send





SPEED4+ cards

The connector pinout for each RJ45 socket fitted to the SPEED4+ PCI host card is as follows;



RJ45 pin	Signal	Direction	Description
1	RI	In	Ring Indicator
2	DCD	In	Data Carrier Detect
3	DTR	Out	Data Terminal Ready
4	DSR	In	Data Set Ready
5	GND		Ground
6	TXD	Out	Transmit Data
7	RXD	In	Receive Data
8	RTS	Out	Request To Send
9	CTS	In	Clear To Send
10	N/C	-	Not connected





SPEED cables available from Perle

This section provides connector pinout information for the following standard cables available from Perle:

Hint

To see which cables are used by a given SPEED product, see **SPEED cabling guide** on page **73**.

- RJ45 (8 pin) to DB9 male cable on page 77
- RJ45 (8pin) to DB25 male cable on page 78
- RJ45 (8pin) to DB25 female cable on page 79
- RJ45 (10 pin) to DB9 male cable on page 80
- RJ45 (10pin) to DB25 male cable on page 81
- RJ45 (10pin) to DB25 male cable on page 81





RJ45 (8 pin) to DB9 male cable

Cable diagram



RJ45 pin	DB9 Pin	Signal	Direction	Description
1	1	DCD	In	Data Carrier Detect
2	4	DTR	Out	Data Terminal Ready
3	6	DSR	In	Data Set Ready
4	5	GND		Ground
5	3	TXD	Out	Transmit Data
6	2	RXD	In	Receive Data
7	7	RTS	Out	Request to send
8	8	CTS	In	Clear to Send
Shell	Shell	Chassis		Chassis ground.





RJ45 (8pin) to DB25 male cable

Cable diagram



RJ45 pin	DB25 Pin	Signal	Direction	Description
1	8	DCD	In	Data Carrier Detect
2	20	DTR	Out	Data Terminal Ready
3	6	DSR	In	Data Set Ready
4	7	GND		Ground
5	2	TXD	Out	Transmit Data
6	3	RXD	In	Receive Data
7	4	RTS	Out	Request to send
8	5	CTS	In	Clear to Send
Shell	Shell	Chassis		Chassis ground.





RJ45 (8pin) to DB25 female cable

Cable diagram



RJ45 pin	DB25 Pin	Signal	Direction	Description
1	8	DCD	In	Data Carrier Detect
2	6	DTR	Out	Data Terminal Ready
3	20	DSR	In	Data Set Ready
4	7	GND		Ground
5	3	TXD	Out	Transmit Data
6	2	RXD	In	Receive Data
7	5	RTS	Out	Request to send
8	4	CTS	In	Clear to Send
Shell	Shell	Chassis		Chassis ground.





RJ45 (10 pin) to DB9 male cable

Cable diagram



RJ45 pin	DB9 pin	Signal	Direction	Description
1	9	RI	In	Ring Indicator
2	1	DCD	In	Data Carrier Detect
3	4	DTR	Out	Data Terminal Ready
4	6	DSR	In	Data Set Ready
5	5	GND		Ground
6	3	TXD	Out	Transmit Data
7	2	RXD	In	Receive Data
8	7	RTS	Out	Request To Send
9	8	CTS	In	Clear To Send
10	N/C	N/C	-	Not connected
Shell	Shell	Chassis		Chassis





RJ45 (10pin) to DB25 male cable

Cable diagram



RJ45 pin	DB25 pin	Signal	Direction	Description
1	22	RI	In	Ring Indicator
2	8	DCD	In	Data Carrier Detect
3	20	DTR	Out	Data Terminal Ready
4	6	DSR	In	Data Set Ready
5	7	GND		Ground
6	2	TXD	Out	Transmit Data
7	3	RXD	In	Receive Data
8	4	RTS	Out	Request To Send
9	5	CTS	In	Clear To Send
10	N/C	N/C		Not connected
Shell	Shell	Chassis		Chassis





RJ45 (10pin) to DB25 female cable

Cable diagram



RJ45 pin	DB25 pin	Signal	Direction	Description
1	22	RI	In	Ring Indicator
2	8	DCD	In	Data Carrier Detect
3	6	DTR	Out	Data Terminal Ready
4	20	DSR	In	Data Set Ready
5	7	GND		Ground
6	3	TXD	Out	Transmit Data
7	2	RXD	In	Receive Data
8	5	RTS	Out	Request To Send
9	4	CTS	In	Clear To Send
10	N/C	N/C		Not connected
Shell	Shell	Chassis		Chassis









Chapter 4 Quick Reference

You need to read this chapter if you want to...

You need to read this chapter if you want information in quick reference form about the utilities provided with the SPEED Serial adaptor cards.

This chapter provides a quick reference guide to the software utilities provided with the SPEED Serial adaptor cards. The utilities are grouped under operating system and include main windows and menus. In addition, cross references are provided for further information about each area.

This chapter includes the following sections;

- SCO OpenServer utilities on page 85
- SCO UnixWare utilities on page 87





SCO OpenServer utilities

The following utilities are provided for use with the SCO OpenServer operating system.

Port Configuration utility on page 85

Port Configuration utility

Main window

The main window for the Port Configuration table is shown in the next picture. See **Menu map** on page **86** for details of menus.







Menu map

The Port Configuration tool menu is as follows;

Menu o	ption		Description		
Ports	>	Quit	Quit Port Configuration tool without saving changes.		
			See page 32		
	Logins		Display all ports with logins enabled.		
			See page 31		
		Unconfigured	Display all ports without logins enabled.		
			See page 31		
		All	Display all ports.		
			See page 31		
		Save & Exit	Exit the Port Configuration tool and save changes.		
			See page 32		





SCO UnixWare utilities

Serial Manager

Main window The main window for the Serial Manager is shown in the next picture. You can display this window in one of two views, Board view and Ports view. See page 88 for menu maps.

🗱 Serial Manager on	hpnetserve40		
Host Port View			Boards view
Configured seria Port	al boards on hp i Descripti	netserve40: on	Displays the host cards present on the system. To obtain this view, click on the View > Boards menu
iasy	0	SCO	option.
spd	0	Specialix SPEED Host Card	T I
M			SCOadmin

	Serial Manager on hpnetserve40				
	Hos <u>t</u> Port View				<u>H</u> elp
	Configured serial p	orts (for io8) or	n hpnetserv	e40:	
	Port	Logins	Speed	Description	
	term/z1	disabled		Port 0 Software Flow Control	
	term/z2	disabled		Port 1 Software Flow Control	
	term/z3	disabled		Port 2 Software Flow Control	
	term/z4	disabled		Port 3 Software Flow Control	
Ports view Displays the se the system. To on the View >	erial ports present on obtain this view, click Ports menu option.				N.
				sco	admin





Menu map

The Serial Manager menu is as follows;

Menu option			Description
Host	>	Open Host	Selects a host machine.
			See your SCO UnixWare documentation for further details.
		Exit	Exit Serial Manager.
Port	>	Modify	Modifies serial port settings.
			See page 40.
View	>	Ports	Show serial ports available for the currently selected host card.
			See page 40.
		Boards	Show host cards present on the system.
			See page 40.





Appendix A Serial Port Device Names

You need to read want to ...

You need to read this appendix if you want information about device names for the Perle this appendix if you SPEED serial adaptor cards.

> This appendix provides information about the device nodes associated with each serial port for the Perle SPEED serial adaptor cards. Included are naming conventions, functions, file locations and some additional information about the Data terminal ready and Ready to send signals.

This chapter includes the following sections;

- Under SCO UnixWare on page 90
- Under SCO UnixWare on page 91
- Linux Device node details on page 91.





Under SCO UnixWare

Device node details

Each serial port has three device nodes associated with it. Each node takes the form of a file which you can access from operating system utilities and user applications. Details of these nodes are shown in the next table.

Device name	Function	Description	Location
ttyz1	Normal communications port for local "tty" devices.	Indicates normal communications port behaviour.	/dev
ttyZ1	Modem port	Indicates that a port open will not complete unless DCD is present	/dev
ttyz1p	Transparent print port.	Indicates that device should only be used for transparent print.	/dev





Under SCO UnixWare

Device node details

Each serial port has three device nodes associated with it. Each node takes the form of a file which you can access from operating system utilities and user applications. Details of these nodes are shown in the next table.

Device name	Function	Description	Location
z1	Normal communications port for local "tty" devices.	Indicates normal communications port behaviour.	/dev/term
Z1	Modem port	Indicates that a port open will not complete unless DCD is present	/dev/term
z1p	Transparent print port.	Indicates that device should only be used for transparent print.	/dev/term

Linux Device node details

Each serial port has two device nodes associated with it. Each node takes the form of a file which you can access from operating system utilities and user applications. Details of these nodes are shown in the next table.

Device name	Function	Description	Location
ttyS0	Normal communications port	Indicates normal communications port behaviour.	/dev
cua0	Modem communications port wait for DCD on open	This device is used when connecting modems to the serial port.	/dev





Appendix B Transparent Printing

You need to read this appendix if you want to...

You need to read this appendix if you want background information on transparent printing.

This appendix gives an overview of the transparent printing feature offered for the SCO OpenServer operating systems and includes details of configuration files associated with transparent printing.

This appendix includes the following sections;

- What is transparent printing? on page 93
- Problems with printer output on page 94
- The printcap.spd configuration file on page 94
- The print.spd configuration file on page 95





What is transparent printing?

Most terminals have an auxiliary (AUX) port which can be connected to a serial printer. Data can then be output to the terminal or the printer via the same serial line. This is called **transparent print** (or xprint) and is designed for printing simple ASCII text. A separate xprint device node (ttyinp where **n** is device number) is created for each port. This device is enabled automatically if either the local or modem device is enabled for the port.



When a host card receives data addressed to the transparent print device it prefixes it with the transparent print mode ON string and appends it with the transparent mode OFF string. The ON and OFF strings for each terminal type available are defined by the **printcap.spd** file. See **The printcap.spd configuration file** on page **94** for more details.

When the host card receives data addressed to the transparent print device, it prefixes it with the Transparent Print Mode ON string and appends it with the Transparent Print Mode OFF string. Terminal I/O has absolute priority over printer output. Transparent print data will only be sent when there is a break in output to the terminal (for more than a tenth of a second)

For each port, the transparent printing parameters are controlled by an entry in the **print.spd** file found in the /etc/ directory on your system. The entry for each port includes definitions of the terminal type, transparent print throughput rate and device name. See **The print.spd configuration file** on page **95** for further details.





Problems with printer output

When you use transparent printing you may obtain incorrect printer output due to the following reasons;

Graphics printers may misinterpret some characters output through transparent print. This problem is more likely if the terminal is in 7-bit mode, because 8-bit characters will not be printed.

Some terminals suppress the output of certain characters to their printer or AUX ports. Such terminals can prevent essential control characters from reaching the printer thus generating incorrect printer output. This occurrence is extremely unpredictable because of the large number of potential hardware configurations.

The printcap.spd configuration file

The printcap.spd file defines the transparent print ON and OFF strings for each terminal type available. When a host card receives data addressed to the transparent print device it prefixes it with the transparent print mode ON string and appends it with the transparent mode OFF string.



If you don't configure a specific terminal type printcap.spd will use the default type which is "unknown"





The print.spd configuration file

For each port, transparent printing is controlled by an entry in the **print.spd** file. The **print.spd** file is found in the /etc/ directory on your system. The entry for each port includes definitions of the terminal type, transparent print throughput rate, device name. The content of the **print.spd** file is normally controlled automatically by either the Port Configuration utility (SCO OpenServer). A sample entry from a typical print.spd file is shown in the next example.



Terminal type of terminal to which your printer is attached defined in the printcap.spd file.

100 unknown ttyz1 -ixany -ixon

Device name

Enables flow control for Transparent printing.

Enables sending of data on receipt of the next character (when flow control is enabled on the transparent print port).





Appendix C Troubleshooting

You need to read You need to read this appendix if you want information on troubleshooting problems with *this appendix if you* SPEED serial adaptor cards. *want to...*

This appendix provides examples of normal boot up messages and a table of error messages, their meaning and corrective action required for the all the currently supported operating systems.

This appendix includes the following sections;

- SCO OpenServer 5 on page 97.
- SCO UnixWare/SCO OpenServer 6 on page 100
- Windows 95 and 98 on page 104
- Windows NT on page 104
- Windows 2000/XP/Server 2003/Vista/Server 2008 on page 105





SCO OpenServer 5

Example of normal SPEED driver boot messages

This example shows one SPEED4+ and one SPEED4 successfully detected and initialised by the driver.







Additional card warning messages

If you install more than one SPEED host card, or install additional cards at a later date, the following warning messages will be displayed (they appear immediately following the driver initialisation messages shown on page 97).

Note

Display of these messages and update of **Speed Node** and **Init** files only occurs once after installation of additional cards. This takes place during system start-up.

Message	This message tells you that
WARNING: Speed Node file updated - old file moved to /etc/conf/node.d/spd_nnnnnnn	The speed node file has been updated to include the revised number of ports.
	Your old Speed node file is retained with the file name shown in the message. ' nnnnnnn ' is a unique number so that previous Speed node files are not lost on updating.
WARNING: New Speed ports detected - /etc/conf/node.d/spd being updated	You now have additional entries in the Speed init file, existing entries are retained unchanged. The automatic init file update is necessary to make any additional nodes available in the Speed Port Configuration tool.

Hint

If you have modified your Speed node file, (for example you may have changed the default permission for security reasons), you may wish to re-instate the previous node set-up for existing Speed ports.

If you have not modified your Speed node file or do not require to retain the old settings you may safely delete the file shown in the first message.





SCO OpenServer 5 error messages

Error message	Reason	Action required
ERROR: unit @0xnnnnnnn has bad resource(s)	Incorrectly installed or faulty card. Incorrect BIOS settings.	 Ensure that you have followed the installation procedure correctly. See page 21.
		2. Check BIOS settings.
		 If the problem persists try another card. See page 21 and page 69.
ERROR: unit @0xnnnnnnn not mapped	Insufficient memory available to kernel.	Reconfigure system/kernel memory parameters.
ERROR: unit @0xnnnnnnn not initialised	Incorrectly installed or faulty card.	 Ensure that you have followed the installation procedure correctly. See page 21.
		 If the problem persists try another card. See page 21 and page 69.
WARNING: unit @0xnnnnnnn not configured	System error.	 Uninstall the driver and remove all Speed cards from the system. See page 33
		 Re-install the driver and cards taking care to follow the correct procedure. See page 21 and page 69.
WARNING: No Speed ports	No cards installed.	1. Install cards. See page 69.
contigured	Installed cards suffer from one or more of above symptoms.	2. Resolve any above listed faults.





SCO UnixWare/SCO OpenServer 6

There are no messages displayed on the system at startup. Messages from the SPEED driver are sent to the **syslog** file in the /var/adm directory. Each entry in the **syslog** file is date and time stamped (You can review the content of the syslog file using a suitable text editor). Each time the driver is loaded, entries similar to those shown below indicate successful SPEED card detection.







Additional card warning messages

If you install more than one SPEED host card, or install additional cards at a later date, the following warning messages will be displayed during system start-up.

Note

Display of these messages and update of **Speed Node** and **Init** files only occurs once after installation of additional cards. This takes place during system start-up.

Message	This message tells you that
WARNING: Speed Node file updated - old file moved to /etc/conf/node.d/spd_nnnnnnn	The speed node file has been updated to include the revised number of ports.
	Your old Speed node file is retained with the file name shown in the message. ' nnnnnnn ' is a unique number so that previous Speed node files are not lost on updating.
WARNING: New Speed ports detected - /etc/conf/node.d/spd being updated	You now have additional entries in the Speed init file, existing entries are retained unchanged. The automatic init file update is necessary to make any additional nodes available in the Speed Port Configuration tool.

Hint

If you have modified your Speed node file, (for example you may have changed the default permission for security reasons), you may wish to re-instate the previous node set-up for existing Speed ports.

If you have not modified your Speed node file or do not require to retain the old settings you may safely delete the file shown in the first message.





SCO UnixWare error messages

Error message	Reason	Action required
ERROR: unit @0xnnnnnnn has bad resource(s)	Incorrectly installed or faulty card. Incorrect BIOS settings.	 Ensure that you have followed the installation procedure correctly. See page 36.
		2. Check BIOS settings.
		 If the problem persists try another card. See page 36 and page 69.
ERROR: unit @0xnnnnnnn not mapped	Insufficient memory available to kernel.	Reconfigure system/kernel memory parameters.
ERROR: unit @0xnnnnnnn not initialised	Incorrectly installed or faulty card.	 Ensure that you have followed the installation procedure correctly. See page 36.
		 If the problem persists try another card. See page 36 and page 69.
WARNING: unit @0xnnnnnnn not configured	System error.	 Uninstall the driver and remove all Speed cards from the system. See page 46
		 Re-install the driver and cards taking care to follow the correct procedure. See page 36 and page 69.
Error: could not register interrupt handler for unit @0xnnnnnnn	System error	 Uninstall the driver and remove all Speed cards from the system. See page 46
		 Re-install the driver and cards taking care to follow the correct procedure. See page 36 and page 69.
WARNING: No Speed ports	No cards installed.	1. Install cards. See page 69.
configured	Installed cards suffer from one or more of above symptoms.	2. Resolve any above listed faults.





Error message	Reason	Action required
UX: sh (sh): ERROR: telinit: Not found (Note this error occurs on UnixWare 2 systems only)	telinit command not found	None. The installation process takes care of configuring the kernel and ensures that SPEED ports are ready for use when the installation process is complete.
Unable to open device /dev/spd : No such device	No SPEED cards installed during driver installation.	 Install cards. See page 69. Note that there is no need to uninstall and re-install the driver. When the system is rebooted, your SPEED cards will be detected and configured into the kernel.





Windows 95 and 98

Windows 95 and 98 general troubleshooting

In the event of any problems, open the **System Properties** tabbed window and display the **Device Manager** page. In the Device Manager page, check for warning icons on the installed hardware. See your Windows 95 or 98 user documentation or help system for further details.

Windows NT

Windows NT general troubleshooting

In the event of any problems, open the **Devices** window to view the status of any installed hardware. For further details of troubleshooting under Windows NT, see your Windows NT user documentation or help system.





Windows 2000/XP/Server 2003/Vista/Server 2008

This section describes troubleshooting SPEED products under the Windows 2000/XP/ Server 2003/Vista/Server 2008 operating system and includes the following sections;

Note

To contact Perle for technical support. see Appendix D Contacting Perle.

- General troubleshooting under Windows 2000/XP/Server 2003/Vista/Server 2008 on page 106.
- Windows error messages on page 107.





General troubleshooting under Windows 2000/XP/Server 2003/Vista/Server 2008

Problem	Action required
Machine fails to boot.	 Turn off your machine, remove SPEED card(s) and reboot. See page 70.
	2. Try installing a different host card in case the one currently installed is faulty. See page 69.
Windows operating system fails while loading and the system hangs.	 Reboot machine and then switch to the last known good configuration.
	2. Check for resource conflicts or faulty hardware.
	 Turn off machine, remove any SPEED cards fitted (page 70) and then reboot your system.
	4. Once the machine boots properly, change the configuration settings of the SPEED card to match those in the BIOS setup. See page 69.
Windows operating system fails while loading and displays a blue screen.	1. Note the five hexadecimal numbers at the top line of the screen
	2. Reboot your machine and then switch to the last known good configuration.
	3. Check for resource conflicts or faulty hardware.
	 Turn off machine, remove any SPEED cards fitted (page 70) and then reboot your system.
	5. Once the machine boots properly, change the configuration settings of the SPEED card to match those in the BIOS setup. See page 69 .
Operating system loads OK, but SPEED driver or another driver fails to boot	 Run Windows Device Manager to find available IRQ and memory addresses.
SPEED ports do not work after installation.	 Check the Windows Event Log and follow the suggested actions.





Problem	Action required
SPEED Windows driver fails during normal operation, symptom: blue screen	 Note the five hexadecimal numbers displayed at the top line of the screen.
	Reboot your machine and then switch to the last known good configuration.
	3. Check for resource conflicts or faulty hardware.
	 Turn off machine, remove any SPEED cards fitted (page 70) and then reboot your system.
	 Once the machine boots properly, change the configuration settings of the SPEED card to match those in the BIOS setup. See page 69.
SPEED Windows driver fails during normal operation, symptoms either: black screen, machine reboots, or system hangs	 Contact Technical Support. See Appendix D Contacting Perle.

Windows error messages

In the event of any error messages, check the **Windows Event Log**. Also open the Windows Device Manager and check for warming icons on the installed hardware. See your Windows user documentation or help system for details.

For general problems, see General troubleshooting under Windows 2000/XP/Server 2003/Vista/Server 2008 on page 106.





Appendix D Contacting Perle

You need to read You need to read this appendix if you want to contact Perle for technical support or any other *this appendix if you* queries about this product. *want to...*

This appendix includes the following sections;

- Making a technical Support Query on page 109
- Repair procedure on page 112
- Feedback about this manual on page 112
- Contacting Perle technical support on page 113

Internet access

Click here to access the our website at the following URL:

http://www.perle.com

Email

Click here to email Perle at the following address; Email: ptac@perle.com




Making a technical Support Query

This section contains the following information about making a query;

- Who to contact on page 109
- Information needed when making a query on page 110
- Making a support query via the Perle web page on page 111

Who to contact

If you bought your product from a registered Perle supplier, you must contact their Technical Support department; they are qualified to deal with your problem.

If you are a registered Perle supplier, and bought your product from Perle, contact Perle Technical Support using the details given in **Contacting Perle technical support** on page **113**.





Information needed when making a query

When you make a technical support enquiry please have the following information ready;

Hint

Print out this page and fill in the table provided with the basic information you need.

Item	Write details here
Product name and version	
Problem description	
Operating system version	
Driver version	
Details of any other cards installed in your system	
Your name	
Company Name	
Country	
Phone number	
Fax number	
Email address (if available)	





Making a support query via the Perle web page

If you have an internet connection, please send details of your problem to Technical Support using the email links provided on the Perle web site in the 'Support' area.

See also **Contacting Perle technical support** on page **113** for email links and other contact details for the Perle technical support centres.

Click here to access our website at the following URL: http://www.perle.com





Repair procedure

Before sending a unit for repair, you must contact your Perle supplier. If, however, you bought your product directly from Perle you can contact directly. See **Contacting Perle technical support** on page **113** for contact information.

Customers who are in Europe, Africa or Middle East can submit repair details via a website form shown in the next picture. This form is on the Perle website, **www.perle.com**, in the **Support** area.

Click here to access our web site at the following URL: http://www.perle.com/support_services/rma_form.asp

In the USA and Asia contact the office shown in the Technical Support section.

Feedback about this manual

If you have any comments or suggestions for improving this manual please email Perle using the following address;

Email: ptac@perle.com

Please include the **title**, **part number** and **date** of the manual (you can find these on the title page at the front of this manual).





Contacting Perle technical support

Note

Perle offers free technical support to Perle Authorised Distributors and Registered Perle Resellers.

To access technical support please visit the Perle website at www.perle.com/support_services/index.shtml.

If you are unable to find the information you require, please feel free to contact our technical support teams by email using the addresses shown in the next table.

Region	Address	Email
North America	Perle Systems Ltd. 60 Renfrew Drive Markham Ontario Canada L3R OE1	Email: ptac@perle.com
Europe	Perle Systems Europe Ltd. 3 Wintersells Road Byfleet Surrey KT14 7LF UK	Email: ptac@perle.com
Asia	Perle Asia Pacific (Pte) Ltd. 190 Middle Road #19-05 Fortune Centre Singapore 188979	Email: ptac@perle.com
Worldwide	Perle Systems Ltd. 60 Renfrew Drive Markham Ontario Canada L3R OE1	Email: ptac@perle.com





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