Use the Latest Drivers

Make sure you use the latest drivers for this adapter. Check Intel's support Web site for newer drivers:

http://support.intel.com

Intel PRO/100 S Dual Port Server Adapter

For information on this new adapter, see the Readme.txt file for this release.

Use Component Installer for Windows* 9x, Me, and 2000

For Windows users (except NT 4.0), after installing the network drivers, run the Component Installer to add advanced features:

- Intel® PROSet II (Graphical Interface Utility for Adapter and Advanced Features Setup)
- Desktop Management Interface (DMI-SNMP Support for WfM. For more information see the DMI-SNMP folder)
- Intel® PRO Network Adapters WMI Provider
- Intel® Priority Packet II
- Intel® PRO Quality of Service WMI Provider

For details, see the *User's Guide.* To start this utility, click **Install Advanced Features** on the Intel CD autorun screen or double click the SETUP.EXE icon in the \SETUP folder.

Updating Older Drivers in Windows 9x, Me, and 2000

Be sure to update both the base driver and Intel PROSet software for all Intel adapters in your computer. To update your drivers, use Device Manager. (From My Computer, choose Properties, click on Device Manager tab, select your network adapter and click on Properties, then from the Driver tab, click Update Driver.) When the "Update Device Driver Wizard" asks "What do you want Windows to do?" check the "Display a list of all the drivers in a specific location, so you can select the driver you want." Then select the "Have Disk" option on the next page, and specify the location of the newest driver on the Intel CD. Follow the directions provided by the Wizard. When done updating the driver, run the Intel Setup utility (see previous section in this document) to update your version of PROSet.

Updating Drivers in Windows 98SE

Per Microsoft Knowledge Base Article Q242150, you must take extra care in updating drivers for Windows 98SE. Microsoft suggests you remove the driver and then reinstall the new driver. You may accomplish the same upgrade by following the instructions under Updating Older Drivers (above). Just be sure to point to the newer driver on the Intel CD. (Specifically, the net82557.inf file must be the one on the Intel CD.) Then run the Intel Setup utility (from \Setup folder) to update your version of PROSet.

Updating Older Drivers in Windows NT 4.0 requires Service Pack 5 or Higher

For Windows NT 4.0, there is no need to run the Intel setup utility because when you update the driver, the new PROSet software is automatically installed. To update the driver, right click on Network Neighborhood and choose Properties. Click on the Adapters tab, highlight your adapter and click on Update. In the Windows NT Setup box, point to the location of the new Intel driver then click Continue. Windows will update the driver and the PROSet utility.

This paragraph applies ONLY if you are updating from the driver provided with NT 4.0 or if you have used a much older Intel Teaming/VLAN software (iaft.sys) and you're using TCP/IP or IPX/SPX. During driver upgrade you may lose any teaming or protocol settings, so you should make note of your existing configuration parameters. Remove (from Device Manager) the adapters, make sure you have SP5 installed, and reinstall the adapters pointing to the new software drivers on the Intel CD. Then reconfigure your protocols and VLANs/Teams using your noted information.

Adding an Adapter During Installation of Windows NT*

The Intel driver that ships with NT 4.0 is an older driver that does not support this adapter. Use the Intel driver that ships on the Intel CD instead. It is easiest to install the adapter using the Intel CD *after* the installation of Windows NT is complete. However you may install the adapter software while installing Windows NT from a CD, but you must use a floppy installation disk created from the Intel CD. (Use the MAKEDISK NT command from the \MAKEDISK folder of the Intel CD).

If Windows NT reports an error or you can't connect to the network, look at your computer's BIOS settings and make sure "Plug and Play OS" is set to NO. Also, check the *Windows NT Troubleshooting* section in the User's Guide.

Moving Adapters in Windows NT 4.0

If you're moving the PRO/100 adapter to a different slot in the same Windows NT system, remove the adapter in the Network control panel (thus removing the drivers). After you remove the drivers and move the adapter, reinstall the drivers.

Adding or Upgrading an Adapter in Windows Me

If you use the drivers that come with Windows Me, during an installation of Windows Me, the adapter may not function correctly. After Windows Me installs the default driver, you'll need to update all Intel adapters with the newer driver on the Intel CD. See the *User's Guide* for instructions.

If you use multiple Intel adapters with Windows Me, you must upgrade all Intel adapters for any to function properly.

Shutdown or Performance Issues with Windows 98/98SE

If you experience shutdown or performance issues with Windows 98 or 98SE, visit the Microsoft support site at http://support.microsoft.com and the Intel support site at http://support.intel.com.

Windows 98 Cannot Map to Network Drives

After you first install the adapter in a Windows 98 client PC, the adapter may not properly connect to mapped network drives. This is because there is a delay in establishing LINK with the switch/hub. After the PC restarts, the adapter port may not have LINK and therefore will not connect to mapped drives. To establish LINK, shut down Windows 98 completely and turn off the PC. When you power up the PC after this, the adapter port will establish LINK and map to your network drives.

This delayed link may also occur during subsequent restarts. If so, select the "Log off" option from the Start menu to renegotiate the log on script.

Triple DES (3DES) Encryption with Windows 2000

If you are using this adapter on a Windows 2000 system, and you want to implement 3DES encryption, you must download and install Microsoft's High-Encryption update from:

http://www.microsoft.com/windows2000/downloads/recommended/ encryption/default.asp

If your adapter supports hardware offloading (e.g., S-series adapters), they will automatically offload the encryption tasks. If your adapter is not capable of 3DES encryption in hardware, Windows handles the encryption task.

Windows NT 4.0 Device Installation

If you add a device to the PCI Bus, the devices will be re-numbered. Note: this may affect adapter settings.

Windows 2000 Safe Mode

To remove adapters in Safe Mode, first go to the Device Manager and disable all adapters, teams, and VLANs. Restart the computer. This should resolve any startup problems due to a disabled adapter.

To remove the Intel PROSet software in Safe Mode, first go to the Device Manager and disable all adapters, teams, and VLANs. Restart the computer in Normal mode and use the Add/Remove Software feature in Windows to uninstall Intel PROSet software.

Choosing FEC vs. 803.3ad Teaming Mode

We strongly suggest that 802.3ad be used in dynamic mode only. The FEC or GEC modes are preferred in most implementations.

Full Duplex Support

Full duplex and autonegotiation are optional settings that can improve adapter performance. You MUST match the speed/duplex (or autonegotiation) on both the adapter and switch ports. Refer to the *User's Guide* for complete instructions.

PCI Interrupts

Shared Interrupts

The PRO/100 adapter drivers support shared interrupts in most operating systems (except OS/2*). If you think you have another PCI device that doesn't support shared interrupts (for example, a SCSI controller), contact its manufacturer for a shared interrupt driver. Or, try running your computer's BIOS configuration program to assign a unique, non-shared interrupt to one of the PCI devices.

Configuring Interrupts

PCI computers automatically detect and configure PCI-compliant adapters while booting. The PRO/100 adapter interrupt and I/O address are automatically set by the BIOS each time you start your computer.

If you need to manually change the interrupt, refer to your computer user's guide for instructions. Intel PROSet cannot modify the interrupt setting.

Novell NetWare* (and DOS ODI)

NetWare support is limited to those OS using the C Spec driver - NetWare 3.12 and newer, 4.11 and newer, 5.x and Client 32. Make sure you are using the latest C Spec network NLMs. These NLMs are included in the Nwserver folder on the Intel CD for your convenience.

A DOS ODI driver (E100BODI.COM) is also provided. If you are using the NetWare VLM client with E100BODI.COM, make sure you're using VLM client version 1.21 or higher. Older VLMs may hang or lock your system.

The driver won't operate correctly unless the server's STARTUP.NCF includes:

SET MAXIMUM PHYSICAL RECEIVE PACKET SIZE = 2048
(this is memory page alignment, not data packet size)

Teaming and VLANs can be used simultaneously in NetWare 4.1x and 5.x using Intel Advanced Network Services driver (IANS.LAN) and requires the latest CE100b.lan driver included in the \nwserver folder. To set up your NetWare teams, refer to the *User's Guide* (don't use the NetWare Install program or the NWCONFIG utility for the ANS driver configuration).

Linux and UnixWare* Users

For Linux drivers, updates are posted to the Network Adapters section at http://support.intel.com. Support is through email only. Please use the address: linux.nics@intel.com.

Information on Advanced Networking Services (teaming and VLANs) for Unixware 7.1.x with the ddi8 driver is available on the CD and on the Intel support web site (http://support.intel.com). Support for the base driver is provided by SCO while support for the Advanced Network Services is provided by Intel via email only: unixteam.nic@intel.com.

VLANs in Windows NT 4.0/2000, NetWare 4.1x and higher, and UnixWare 7.x with ddi8

To set up VLAN membership, your adapter must be attached to a switch with IEEE 802.1Q VLAN capability. The Intel PRO/100 adapter communicates directly with the switch, allowing multiple VLANs on a single adapter.

VLANs require more resources than simply those allocated by the VLAN driver. The system considers each VLAN to be an additional physical adapter. Depending on your system configuration, you may experience system performance degradation as the number of VLANs is increased. This is because each protocol must maintain state for each VLAN. For more information on VLANs, see the *User's Guide*.

NOTE: If you configure multiple VLANs using the IPX protocol, each IPX client has the ability to see all IPX clients that the server can see, because IPX keeps one global browse list for all connections. However, even though the client can see all other clients, it can only talk to clients on the same VLAN.

NOTE: In Windows NT 4.0 there is a timer for each adapter (to prevent a non-working teamed adapter from holding up the install). If you are using mixed speed adapters (the PRO/100 with PRO/1000 or Intelligent Server Adapter) and using Teaming and/or a large number of VLANs, you may encounter a load time longer than the timer's limit. If this is encountered, disable the timer (for each adapter in the team) as follows:

In the registry under the DWORD BindTimerTimeout:

 <e100XbN>\parameters\iansprotocol\BindTimerTimeout value 0
(was 50000 default)

where N indicates the card instance. This must be done each time any changes to Teaming/VLANs are made in PROSet.

Use Caution When Enabling Wake On LAN

If you enable Wake On LAN (WOL) on more than two PRO/100 adapters in a system that can support WOL without use of a 3-pin connector, the WOL feature may overdraw your system's auxiliary power supply, resulting in the inability to boot the system and other unpredictable problems. For multiple adapters, it is recommended (in client systems) that you install one adapter at a time and use the BROW utility (brow.exe in \BootAgnt) to disable the WOL feature on every adapter that does not require WOL. On PRO/100 Server adapters, the WOL feature is disabled by default.

NOTE: When WOL is disabled, the auxiliary power draw for the adapter is reduced from about 200 mA down to 50 mA.

Intel Boot Agent Documentation

For documentation on the Intel Boot Agent, you can view a PDF manual and a BOOTAGNT.TXT file on the Intel CD in the \BOOTAGNT folder.

Disabling STP and Enabling PortFast

If you experience a high lag time when teamed adapters try to transfer the preferred primary status or in trying to pass traffic (login or reaching a PDC), you may resolve the problem by disabling the Spanning Tree Protocol (STP) or by setting Cisco switches to Port Fast. Note that you then have the possibility of an undetected routing loop.

Intel Packet Protect Notes

If you are using Intel Packet Protect with Windows NT, updating the network driver will prevent Packet Protect from starting. To resolve this, re-install the network driver again. If you update the base driver, you should also update Intel Packet Protect to the latest version. See the installation instructions in the Packet Protect User's Guide for details.

More Information

For additional information, visit http://support.intel.com