

Intel EtherExpress™
PRO/100 ISA
LAN Adapter
Installation Guide



intel®

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Where to go for more information

Intel Fast Ethernet Networking Solutions



Intel offers a complete line of Fast Ethernet products, including adapters, hubs, switches, and management software. For more information, data sheets, white papers, or demos, visit our networking website:

<http://www.intel.com/comm-net/sns>

README files



For detailed information about the adapter, see the README files. To view them, insert the Intel Configuration and Drivers disk in a floppy drive, switch to that drive, and type

README

Topics include:

- Installing adapter drivers
- Latest news and general adapter information
- Hardware specifications and cabling information
- Adapter installation and special configurations
- Running diagnostics

World Wide Web and Online Services



You can use your modem or Internet connection to download drivers, troubleshooting tips, and more. (When downloading new drivers, make sure the archive is for the **PRO/100 ISA** adapter. Online services include:

- World Wide Web
- Internet FTP server
- Intel BBS

See the inside back cover for details.

Late Breaking News



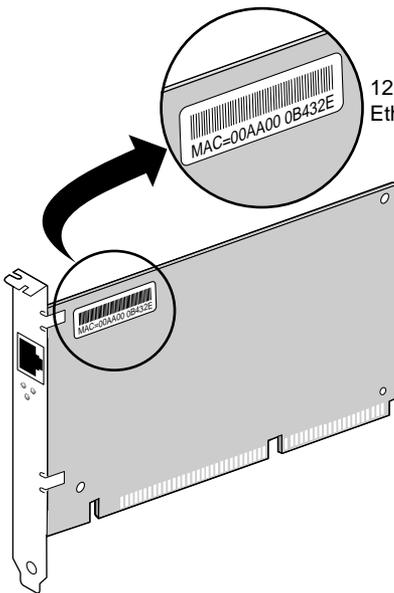
This printed document provides useful information about adapter compatibility and gives special installation release notes. Look for the *Late Breaking News* document in your shipping container.

1

Use the Correct Wiring

To reliably operate your network at 100 Mbps, you must use Twisted Pair Ethernet (TPE) category 5 data grade wire and category 5 RJ-45 connectors with this adapter. While category 3 or 4 wire and connectors may initially seem to work, they will soon cause data loss. See page 18 for more information on wiring.

For your reference, we've also printed the adapter's Ethernet address on a sticker on the back of the adapter. The Ethernet address is sometimes called the Node address or the MAC address. Use the Ethernet address to identify the adapter when configuring multiple adapters.



12-digit
Ethernet Address

Use last six digits in multiple
adapter installations; see
page 7.

Always use **category 5** (CAT5)
cabling when operating at 100
Mbps. Use category 3, 4, or 5 at 10
Mbps.

2

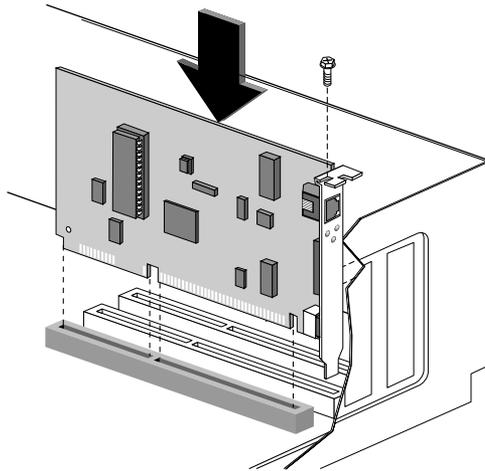
Put the Adapter in the Computer

- 1 Turn off and unplug your computer. Then remove its cover.



Warning: Turn off the power before removing the computer cover. Failure to do so could shock you and damage the adapter or computer.

- 2 Remove the cover bracket from a 16-bit ISA slot.
- 3 Push the adapter in the slot until the adapter is seated firmly. Then, secure the adapter bracket with the screw you removed in step 2.



- 4 If you are installing multiple adapters, insert one adapter at a time and then run CONFIG for each new adapter, as described in the appropriate section on pages 5 - 11.
- 5 Replace the computer cover and plug in the power cord.
- 6 Connect a twisted-pair Ethernet (TPE) **category 5 (CAT 5)** cable to the adapter. If you're in a residential environment, make sure the cable is shielded.

Configure the Adapter

Standard ISA Computers (not Plug & Play)

If you don't have a Plug and Play computer, you need to manually configure the PRO/100 ISA adapter. On most computers, CONFIG.EXE will try to assign an available interrupt and I/O address to the adapter. However, you may need to change the assigned values if your computer will not boot or run properly following the configuration process.

The next step in the process depends on your operating system and network type. Windows 3.1 and Windows NT users configure and test the adapter before starting the operating system. Windows 95 users start the operating system Windows 95 first and then configure and test the adapter. Choose your operating system and proceed as shown here:

- DOS, Windows 3.1, NetWare users: go to page 5
- Windows NT users: go to page 8
- Windows 95 users: go to page 10
- All others: go to page 12

Plug and Play computers

Plug and Play computers automatically detect and configure add-in boards. You do not have to run the Intel CONFIG utility to configure the Intel EtherExpress PRO/100 ISA adapter if your computer is Plug and Play. However, you may need to configure your computer's CMOS setup utility to allocate an IRQ and I/O address for the adapter. For more information about Plug and Play resources, read your computer user's guide.

To start the automatic configuration, turn your computer on. It automatically configures the PRO/100 ISA adapter while it boots. Configuration is complete when the DOS prompt appears.

The next step in the process depends on your operating system and network type:

- DOS, Windows 3.1, NetWare* users: go to page 5
- Windows NT users: go to page 8
- Windows 95 users: go to page 10
- All others: go to page 12



The CONFIG program you run in the following procedures works best with a mouse. Load your mouse driver from DOS before starting CONFIG. If you don't use a mouse, you can move around in CONFIG by using the **Tab** key. To access a menu or close a window, press **Alt** and use the arrow keys.

4

Run the Config Program

DOS and Windows 3.1

Connecting to NetWare networks

1

Run CONFIG.EXE to test and configure the adapter

The CONFIG program lets you test the adapter to see if there are any problems with adapter hardware, cabling, or the network connection. CONFIG works better with a mouse, however you can use it without a mouse. To move, use the **(Tab)** key. To close a window, press **(Alt)** to get a menu.

- 1 If your computer already has network drivers installed, restart the computer without loading them. For example, if your computer has version 6.0 of DOS or newer, press **(F5)** during DOS startup to bypass the regular boot files. Or, edit your startup files, typing REM in front of each line that loads a network driver.
- 2 Insert the Intel PRO/100 ISA Configuration and Driver disk in a floppy drive, switch to that drive, and at the DOS prompt, type

```
CONFIG (Enter)
```

- 3 The CONFIG program indicates if it found a Plug and Play manager in your computer. Choose the next step accordingly.

For Plug and Play computers, run Express and exit CONFIG. If you want to check adapter IRQ and I/O address settings, click Custom after Express is done.

For non-Plug and Play computers, run Express and exit CONFIG. If your computer locks-up after installing the adapter and running Express, you may need to manually configure the adapter. Follow the instructions in the **Custom Config** section below.

If you want to test the adapter with another PRO/100 ISA adapter on the network (ping-pong test), see the Test procedure on the next page before continuing.

CONFIG runs a series of diagnostic tests that makes sure the adapter and network are functioning properly. If CONFIG finds a problem, it displays the results and some possible solutions.

If you put more than one Intel PRO/100 ISA adapter in your computer, click the Custom button on the bottom of the screen. A separate window for each installed adapter appears.

- 4 When CONFIG finishes the tests, click Exit.

Custom Config (optional for most computers)

On some computers, you may need to run Custom Config. If you need to know what resources were assigned to your adapter, or if you need to

manually assign a resource to the adapter, run Custom Config.

- 1 Start CONFIG as described above.
- 2 When the main menu appears, click Custom.
- 3 The window that appears shows the I/O address and IRQ assigned to the adapter. On non-Plug and Play computers, the Lock Resources box may be checked if you ran Express prior to Custom. If it is not, click it at this time. A list of I/O address and IRQ choices are available from the pull down menus. Save any changes by clicking on the Adapter menu and clicking Save Setting.
- 4 The Ethernet ID for the adapter, current speed and duplex mode are displayed in this window. See page 13 for Duplex and Speed information.



Install NetWare* client drivers.

Use your NetWare disks to run the VLM Client Installation program. Refer to your NetWare documentation and our README files for more information. All NetWare drivers are located in the `\netware` directory.

Test the adapter with a responder on the network (optional)

CONFIG can test the network more thoroughly if you run a Ping-Pong test.

- 1 Go to another computer on the network that has a PRO/100 ISA adapter installed. (The other adapter must be the same model. For example, the test will not work with a PRO/100 PCI adapter.)
- 2 Run the CONFIG utility and select Custom. From there, choose Diagnostics from the menu bar and then Ping-Pong. Set this adapter up as a Slave.
- 3 Return to the first computer and use CONFIG to set it up as a Master.
- 4 In the panel that appears, enter the number of repetitions you want to run (such as 1000). Click OK to start the test.
- 5 When the test finishes, the pass or fail results appear. Click OK on both computers to return to the main window.



Troubleshooting

✓ Make sure:

- On non-Plug and Play computers, I/O address and IRQ do not conflict with another add-in card.
- You run the Diagnostics, via Express or Diag. buttons.
- You use the drivers that come with this adapter.
- You use category 5 wiring and connectors when operating at 100 Mbps.

- The adapter is seated firmly in its slot.
 - The network cable is securely attached.
- ✓ Check the link statement in your NET.CFG file. For example, the link statement for a NetWare client should be similar to:

```
LINK DRIVER E100ISA
      Frame Ethernet_802.2
```

- ✓ Test the adapter (see the test procedure on the previous page).
- ✓ Check with your LAN administrator. You may need to install supplemental networking software.

Installing multiple adapters in a server or workstation

Run CONFIG for each adapter you want to install. While the CONFIG program can detect all the PRO/100 ISA adapters in your computer, you still need to perform the installation process above before you can use the adapter.



When installing more than one adapter in a NetWare client workstation, you must add the following line to each NET.CFG file you use:

```
SERIAL XXXXXX
```

where XXXXXX are the last six digits of the adapter's Ethernet MAC address. The address is printed on a label on the back of the adapter. See the illustration on page 2 and refer to the README files for more information.

Client example:

```
LINK DRIVER E100ISA
      Frame Ethernet_802.2
      Serial 4A67C1
```

Server example:

```
LOAD E100ISA FRAME=ethernet_802.2 SERIAL 4A67C1
```

Windows NT

1

Test and configure the adapter

- 1 Restart your computer in MS-DOS mode. (Do not use an MS-DOS window.)
- 2 Insert the Intel PRO/100 ISA Configuration and Drivers disk in a floppy drive, switch to that drive, and type:

CONFIG  Enter

- 3 The CONFIG program indicates if it found a Plug and Play manager in your computer. Choose the next step accordingly.

For Plug and Play computers, run Express and then check adapter IRQ and I/O address settings by clicking Custom after Express is done. Click the “Lock Resources and Activate” box to freeze the values. Save the configuration and exit Config.

For non-Plug and Play computers, run Custom. Select an IRQ and I/O address that does not conflict with another device. Click the “Lock Resources and Activate” box to freeze the values. Save the configuration and exit Config.

- 4 If you put more than one Intel PRO/100 ISA adapter in your computer, click the Custom button on the bottom of the screen. A separate window for each installed adapter appears. Pull down the Diagnostics menu to test each adapter separately. To check or change adapter IRQ and I/O address settings, modify each adapter window as necessary. If you make any changes, pull down the Adapter menu and save your configuration for each adapter. Exit CONFIG when done.
- 5 Restart your computer and start Windows NT.

2

Install and configure network drivers

After putting the adapter in the computer and restarting Windows NT, you must configure it in Windows NT.

Windows NT 4.0 procedure:

- 1 Double-click the Network icon in the Control Panel.
- 2 Click the Adapters tab in the window that appears.
- 3 Click Add. A list of adapter appears. Do not select an adapter from this list.
- 4 Insert the Intel Configuration and Drivers disk in drive A and Click the Have Disk button. The Insert Disk window appears. Click OK.
- 5 The PRO/100 ISA adapter name appears in the Select OEM Option window. Click OK.
- 6 A window appears requesting the adapter serial number. Follow the instructions on the screen for single or multiple adapter installations.

Click OK to continue.

- 7 Click Close to complete driver installation.
- 8 Restart Windows NT when prompted.

To install multiple adapters, repeat this procedure for each new adapter. See page 10 for specific information.

Windows NT 3.51 procedure:

- 1 Double-click the Network icon in the Control Panel.
- 2 Click the Add Adapter button.
- 3 **Don't select an Intel adapter from the list.** Instead, scroll to the end of the list and select
<Other> Requires disk from manufacturer
Click Continue.
- 4 The Insert Disk window appears. Insert the Intel Configuration and Drivers disk in drive A and click OK.
- 5 The PRO/100 ISA adapter name appears in the Select OEM Option window. Click OK.
- 6 A window appears requesting the adapter serial number. Follow the instructions on the screen for single or multiple adapter installations. Click OK to continue.
- 7 Click OK in the Network Settings dialog box. When prompted, restart Windows NT.



Troubleshooting

✓ Make sure:

- On non-Plug and Play computers, make sure the I/O address and IRQ do not conflict with resources used by another card.
- On Plug and Play computers, make sure the I/O address and IRQ do not conflict with resources used by non-Plug and Play cards.
- You run the Diagnostics, via Express or Diag. buttons
- You use the drivers that come with this adapter.
- The driver is loaded and the protocols are bound. Check the Network Bindings dialog box by double-clicking the Network icon in the Control Panel to make sure.
- You use category 5 wiring when operating at 100 Mbps.
- The adapter is seated firmly in its slot.
- The network cable is securely attached.

- ✓ Test the adapter (see the test procedure on the previous page).
- ✓ Check with your LAN administrator. You may need to install supplemental networking software.

Installing multiple adapters

Repeat the procedure under *Install and configure network drivers* above for each adapter you want to install. While the CONFIG program can detect all the PRO/100 ISA adapters in your computer, you still need to perform the installation process above before you can use the adapter.

Windows 95

1 Add the adapter to Windows 95

After putting the adapter in the computer, start Windows 95. Keep your Windows 95 disks or CD-ROM nearby, as you will need them during this procedure.

- 1 The New Hardware Found dialog box should appear. Select *Driver from disk provided by hardware manufacturer*.



If the New Hardware Found dialog box doesn't appear, configure the adapter using the Network icon in the Control Panel. See the procedure at the end of this section.

- 2 Insert the Intel Configuration and Drivers disk in drive A and click OK. Windows 95 displays Intel EtherExpress PRO/100 ISA Adapter. Click OK to copy the driver files to your computer. Insert the Windows 95 media as prompted.
- 3 Restart your computer when prompted. After Windows 95 restarts, try connecting to your network or accessing a network drive.
- 4 If you can connect to the network after Windows 95 restarts, configuration is complete.

If you can't connect to the network

If you can't connect, run the DOS-based CONFIG utility. To run CONFIG, first restart your computer in MS-DOS mode, insert the Intel Configuration and Drivers disk in drive A, switch to that drive, and at the DOS prompt, type:

CONFIG Enter

- 1 For single adapter installations, click Express.
- 2 For standard ISA Bus computers (not Plug and Play or EISA), you can check the values that CONFIG assigned to the PRO/100 ISA adapter by clicking Custom. Modify any settings if necessary.
- 3 If you have more than one PRO/100 ISA adapter in your computer, click the Custom button. A window opens for each installed adapter. The window on top is the active window.
- 4 Choose Diagnostics from the pull-down menu for each adapter. If diagnostics fail, read all the troubleshooting material here and on page 15.
- 5 To leave the CONFIG program, click Exit.
- 6 Restart your computer and Windows 95. Double-click on the Network Neighborhood icon to see if you're connected to the network. If you can't connect, you may need to change network protocols.



Troubleshooting

- ✓ Make sure:
 - You use the drivers that come with this adapter.
 - You run CONFIG after installing drivers.
 - You use category 5 wiring when operating at 100 Mbps.
 - The adapter is seated firmly in its slot.
 - The network cable is securely attached.
- ✓ Test the adapter (run CONFIG and click Diag.).
- ✓ Check with your LAN administrator. You may need to install supplemental networking software.

Installing multiple adapters

Repeat the procedure under *Configure the adapter and install network drivers* above for each adapter you want to install. While the CONFIG program can detect all the PRO/100 ISA adapters in your computer, you still need to perform the installation process above before you can use the adapter.

Manually adding the adapter (optional method)

You won't need to follow this if Windows 95 already detected your new PRO/100 ISA adapter.

- 1 Double-click the Network icon in Control Panel. The Network window appears.
- 2 Click the Add button. Click Adapter on the list that appears. Then click Add.
- 3 Click Have Disk in the Select Device window. Insert the Intel Configuration and Drivers disk in a drive A and click OK.

Windows 95 displays Intel EtherExpress PRO/100 ISA Adapter name. Click OK to copy the driver files to your computer. Insert your Windows 95 disks or CDROM when prompted.

- 4 Click OK when the Network window reappears. Restart your computer when prompted.

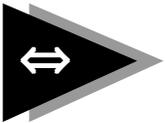
Other Operating Systems

See the README files on the Intel PRO/100 ISA Configuration and Drivers disk for instructions on configuring with other operating systems not covered in this guide.

To view the help files, insert the Intel Configuration and Drivers disk in a DOS computer floppy drive, switch to that drive, and type

README

Then choose the item of interest from the list.



Duplex Mode and Speed Selection (optional)

Duplexing is a performance option that lets you choose how the adapter sends and receives packets over the network. The speed setting refers to either 10 or 100 Mbps. *Running the adapter at full duplex requires a full duplex switch.*

In its default mode, the PRO/100 ISA adapter automatically senses the speed and duplex mode of your network. If you want to run in full duplex mode and you have a switch that doesn't support auto-negotiation, you'll need to manually configure for full duplex. If you are installing the PRO/100 ISA adapter in a NetWare server, refer to the README files for complete configuration information.

Manually configuring duplex mode and speed

To manually set duplex mode and speed, use the MEDIATYPE keyword. For Windows 95 and NT, you can select the keyword from within the operating system. For NetWare drivers, you'll need to edit the NET.CFG file. The following steps summarize each method. See the README files for complete information.

Windows 95 or NT 3.51

- 1 Double-click the Network icon in the Control Panel.
- 2 Select the Intel PRO/100 ISA Adapter and click Properties in Windows 95 or Configure in Windows NT.
- 3 Click Advanced. Select MediaType in the window that appears.
- 4 From the pull-down menu, choose the correct duplex/speed mode.
- 5 Click OK on any open windows and then click Close (Windows 95 only)

to complete configuration.

- 6 Restart the computer when prompted.

Windows NT 4.0

- 1 Double-click the Network icon in the Control Panel.
- 2 Click the Adapters tab.
- 3 Select the Intel PRO/100 ISA Adapter and click Properties.
- 4 Click Advanced. Select MediaType in the window that appears.
- 5 From the pull-down menu, choose the correct duplex/speed mode.
- 6 Click OK on any open windows and then click Close to complete configuration.
- 7 Restart the computer when prompted.

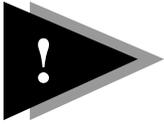
NetWare

If you are using Novell NetWare server or client software you'll need to modify specific configuration files for full duplex. In particular, you must specify the speed/duplex mode with the MEDIATYPE keyword. See the README file for your driver for information and examples. Here is a basic summary of the MEDIATYPE choices:

Keyword: MEDIATYPE = String

This keyword's "string" value specifies the requested media type and media speed to use, according to the following table:

<u>String</u>	<u>E-Net</u>	<u>Duplex</u>	<u>Cable/wiring</u>
AUTO	10 or 100	Either	See below
HALF10	10BASE-T	Half	Cat. 3, 4, 5
FULL10	10BASE-T	Full	Cat. 3, 4, 5
HALF100	100BASE-T	Half	Cat. 5
FULL100	100BASE-T	Full	Cat. 5



Troubleshooting

If the adapter can't connect to the network

Make sure the cable is installed properly

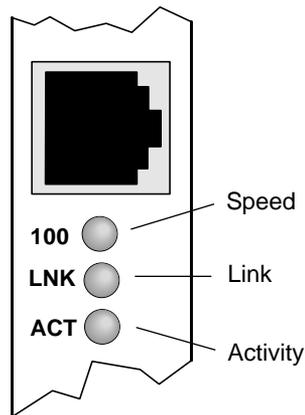
The network cable must be securely attached at all connections. If the cable is attached but the problem persists, try a different cable.

If you're operating at 100 Mbps, you must use TPE category 5 wiring. See the *100 Mbps Cabling Specifications* README file for a list of recommended cables and information on how to install the cabling properly.

If you're directly connecting two workstations (no hub), you can use a crossover cable. See the *100 Mbps Cabling Specifications* README file for information on crossover cables.

Check the LED lights on the adapter

The PRO/100 ISA adapter has three diagnostic LEDs below the cable connector. These lights indicate if there's a problem with the connector, cable, or hub. The figure below identifies each LED. The table describes LED meanings.



PC-3708

LED	Indication	Meaning
ACT (Activity)	On or Flashing	The adapter is sending or receiving network data. The frequency of the flashes varies according to the amount of network traffic.
	Off	The adapter is not sending or receiving network data.
LNK (Link)	On	The adapter and the hub port are receiving power; the cable connection between the hub and adapter is good.
	Off	The adapter and/or hub port is not receiving power or the cabling between the adapter and hub is faulty.
100 (Speed)	On	The adapter is operating at 100 Mbps.
	Off	The adapter is operating at 10 Mbps.

Make sure you're using the correct drivers

You must use the drivers that come with this PRO/100 ISA adapter. Refer to the README files on the driver disk for more detailed installation instructions. See page 1 for instructions on viewing the README files.

Test the adapter

Test the adapter by running the diagnostics. Run diagnostics from the DOS prompt after restarting your computer. Don't load network drivers. Refer to the specific instructions in this guide for each operating system.

Check the README files

The README files on the Intel PRO/100 ISA Installation Disk may assist you in solving a problem. To view the README files, insert the disk into a floppy drive, switch to that drive and type:

README

Then choose the topic of interest from the list of choices.

Common problems and possible solutions

I'm using a Plug and Play computer and need to change the I/O address or interrupt values of the PRO/100 ISA adapter.

- Manually override the automatic configuration values by running CONFIG and clicking Custom. Click the Lock Resources and Activate box to change values. Save the configuration before exiting.

While starting, my computer reports a resource conflict.

- Run Express CONFIG and restart your computer.

The Ethernet address is 'unknown' when I select Custom Config.

- This is normal on some computers. After making your IRQ and I/O address settings, save your configuration file. Go back to the main CONFIG window and click Custom again. Ethernet address now displays.

In multi-adapter computers, the adapters fail to keep their I/O and address settings.

- Run CONFIG and choose Custom. For each installed adapter, click the Lock Resources and Activate box. Set the IRQ and I/O addresses again if necessary. Save the settings before exiting.

Diagnostics pass, but the connection fails.

- Make sure the network cable is securely attached.
- Make sure you're using category 5 cabling/connectors when operating at 100 Mbps.
- Check duplex setting for possible mis-match.

Link LED does not light.

- Check all connections at the adapter and hub.
- Make sure speed and duplex modes are correct for hub. See page 13 for details.

Activity LED does not light.

- Make sure you've loaded the network drivers.
- The network may be idle; try sending data from this workstation.
- Try another cable.
- The adapter isn't transmitting or receiving data; try another adapter.

Data is corrupted or sporadic.

- Make sure you're using category 5 cabling/connectors when operating at 100 Mbps.
- Try another port on the hub and/or another cable.

The adapter stopped working after adding a second adapter.

- Run CONFIG to check for conflicting interrupts or I/O addresses.
- Try reseating the adapter.
- For multiple adapters, add serial parameter for each adapter. See page 7.

The adapter stopped working without apparent cause.

- Try reseating the adapter or try a different slot.
- The network driver files may be corrupt or deleted. Reinstall the drivers.
- Try a different PRO/100 ISA adapter.
- Try another port on the hub and/or another cable.



Technical information

Fast Ethernet Wiring

100BASE-TX Specification: The 100BASE-TX specification supports 100 Mbps transmission over two pairs of twisted pair Ethernet (TPE) wiring. In two-pair wiring, one pair of wires is used for transmission, and the second is used for collision detection and receive.

Because a 125 MHz frequency is used on the wire, 100BASE-TX calls for category 5 (CAT 5) wiring. Segment lengths are limited to 100 meters with 100BASE-TX for signal timing reasons.

Refer to the *100 Mbps Cabling Information* README file for more information.

Fast Ethernet hubs

New hubs and switches, such as Intel's Express 100BASE-T Fast Ethernet Stakable Hub and Express 100BASE-TX Switching Hub, are becoming available to support a variety of configurations. These hubs are divided into two basic types: *shared* and *switching*. You can use EtherExpress PRO/100 adapters with either a hub or a switch for 10 Mbps or 100 Mbps operation. For the latest information on Intel hubs and switches, visit our website at <http://www.intel.com>.

Shared hubs (also called repeaters or concentrators)

In a shared hub network environment, computers are connected to hubs. All ports share a fixed amount of bandwidth, or data capacity. A 100 Mbps hub means that all nodes on the hub must share the 100 Mbps of bandwidth. As stations are added to the hub, the effective bandwidth available to any individual station gets smaller. With an Intel Stackable hub, all ports in the entire stack share the 100 Mbps of bandwidth.

Think of this hub as a single-lane highway that everyone shares. As the number of vehicles on the highway increases, the traffic becomes congested and transit time for individual cars increases.

On the shared hub, all nodes must operate at the same speed, either 10 Mbps or 100 Mbps. Fast Ethernet hubs provide 100 Mbps of available bandwidth, ten times more than what's available with a 10BASE-T hub.

Hubs, such as Intel's, use a well-established, uncomplicated design, making them highly cost-effective for connecting computers within a workgroup. Shared hubs are the most common type of Ethernet hubs in the installed base.

Switching hubs (switches)

In a switching hub network environment, each port gets a fixed, dedicated amount of bandwidth. In the highway scenario, each car has its own lane on a multi-lane highway and there is no sharing.

In a switching hub environment, data is sent only to the port which leads to the proper destination station. Network bandwidth is not shared among all stations and each new station added to the switching hub gets access to the full bandwidth of the network.

If a new user is added to a 100 Mbps switching hub, the new computer receives its own dedicated 100 Mbps link and doesn't impact the 100 Mbps bandwidth of other users. Switching hubs can effectively increase the overall bandwidth available on the network, significantly improving performance.

Adapter Configuration Notes

Manual configuration

If you install your new PRO/100 ISA in a non-Plug and Play computer you can manually assign an I/O Address and IRQ to the adapter using Custom Config in the CONFIG program. Check the "Lock Resources and Activate" box to choose an available IRQ and address. When done, save the configuration before exiting the CONFIG program.

Moving the adapter to another computer

If you move a PRO/100 ISA adapter from a non-Plug and Play computer to a Plug and Play one, you must run the CONFIG program again and follow the instructions exactly. The CONFIG program first deactivates the Lock Resources feature. Then it prompts you to restart your computer. When the computer starts again, the Plug and Play resources are properly assigned to the PRO/100 ISA adapter.

Adapter defaults

The PRO/100 ISA adapter default settings for speed and duplex mode are "Automatic." However, when attaching to a device that is not auto-negotiating, the defaults are half duplex and 10 Mbps. To manually change speed or duplex settings, use the driver keywords for your operating system. See page 13 for details.

Overriding adapter settings

On some networks you may need to override or specifically identify the speed and duplex settings on the PRO/100 ISA adapter. All network drivers allow you to do this with the MEDIATYPE keyword. Refer to page 14.

Network Software License Agreement

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From North America:

Before returning any product, contact Intel Customer Support and obtain a Return Material Authorization (RMA) number by calling +1 503 264-7000.

If the Customer Support Group verifies that the product is defective, they will have the RMA department issue you an RMA number to place on the outer package of the product. Intel cannot accept any product without an RMA number on the package.

All other locations:

Return the product to the place of purchase for a refund or replacement.

INTEL ADAPTER MONEY-BACK GUARANTEE (North America Only)

Intel wants you to be completely satisfied with the Intel adapter product that you have purchased. Any time within ninety (90) days of purchase, you may return your **Intel adapter** to the original place of purchase for a full refund of the purchase price from your dealer. Resellers and Distributors, respectively, accepting returns and refunding money back to their customers may return Intel adapters to their original place of purchase. Intel guarantees that it will accept returns under this policy and refund the original purchase price to customers purchasing directly from Intel.

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Software provided with the hardware product is not covered under the hardware warranty described above. See the applicable software license agreement which shipped with the adapter product for details on any software warranty.

FCC Compliance Statement

This product has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Installed correctly, it probably will not interfere with radio or TV reception. However we do not guarantee the absence of interference.

This product generates and uses energy of about the same frequency as radio and TV broadcasts. Installed incorrectly, it may interfere with reception of radio and TV broadcasts.

If you suspect this product is causing interference, turn your computer on and off while the radio or TV is showing interference. If the interference disappears when you turn the computer off and reappears when you turn the computer on, something in the computer is causing interference.

To reduce interference, try these suggestions:

- Change the direction of the radio or TV antenna.
- Move the computer, radio or TV. For example, if the computer is to the right of the TV, move it to the left of the TV. Or move them farther apart.
- Plug the computer into a different electrical outlet than the radio or TV.
- Ensure that all expansion slots (on the back or side of the computer) are covered. Also ensure that all metal retaining brackets are tightly attached to the computer.

NOTE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

If the device is changed or modified without permission from Intel, the user may void his or her authority to operate the equipment.

Canadian Compliance (Industry Canada)

When tested in at least one intended host:

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Canadian Department of Communications.

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Class B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministre Canadien des Communications.

Manufacturer Declaration

This certifies that EtherExpress PRO/100 adapters comply with the EU Directive, 89/336/EEC, using the EMC standards EN55022 (Class B) and EN50082-1. This product also meets or exceeds EN60950 safety requirements.

This product has been tested and verified to meet CISPR 22 Class B requirements.

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