High-performance, feature-packed adapters

IBM Ethernet LAN Adapter Family

Highlights

Gigabit performance

Revolutionary Wake on LAN function

Support for 802.1p packet prioritization and 802.1Q VLANs

Plug and Play capability

10/100 operation for smooth migration to Fast Ethernet

Full-duplex capability for shared or switched LANs

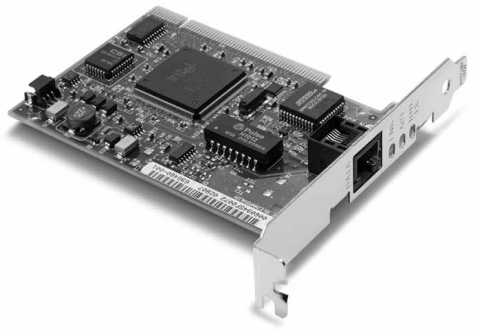
Support for ACPI power management

IEEE 802.3 hardware auto-negotiation support

Limited lifetime warranty and IBM HelpCenter support

You can have it all

IBM is on the leading edge of Ethernet technology with its high-performance, feature-packed LAN adapter family. Whether you're part of a small business, a department, a workgroup or a large enterprise, you can't afford to compromise on the performance, quality, reliability and manageability of your Ethernet network. To meet all your networking needs, IBM adapters provide exceptional performance, a rich set of features and functions, and outstanding value in a variety of adapter offerings for desktop systems, servers and mobile PCs.



10/100 EtherJet PCI Management Adapter

Ease of installation

Installing the IBM EtherJet™ and Netfinity® adapters is simple, thanks to their Plug and Play support in Windows®-based systems and easy-to-use installation utility in other environments. The PC98-compliant adapters ship with device drivers for all leading operating systems.



10/100 EtherJet CardBus Ready Port Adapter with 56K Modem

Support for all leading network operating systems

An IBM Ethernet adapter will connect your desktop running any major operating system to the Ethernet LAN. Device drivers are included with most adapters that will allow you to use them in Windows 95, Windows 98, IBM OS/2® or DOS workstations or in servers using OS/2 LAN Server, Novell NetWare and Windows NT® operating environments. With IBM's certified device drivers, your network connection is reliable and worry-free.



Netfinity Gigabit Ethernet SX Adapter

Protect your investments—current and future

All IBM Ethernet adapters feature LEDs that provide a visual indication of the adapter status. In addition, they have diagnostic utilities to troubleshoot any problems that arise. These capabilities help you minimize downtime and maintenance costs. All IBM Ethernet adapters meet IBM's rigorous quality and reliability standards. EtherJet adapters are backed by a lifetime, limited warranty for as long as you own them; the Netfinity adapters have a lifetime or 3-year warranty. And support assistance from the IBM HelpCenter® (1 800 772-2227) is available 24 hours a day, 7 days a week (24x7) at no additional charge during the warranty period.

Compliant with industry specifications

The adapters support Ethernet wiring environments and protocols conforming to IEEE 802.3 Ethernet and PCI 2.1/2.2 bus specifications. All EtherJet and Netfinity adapters comply with FCC Class B, CISPR B and VCCI Class B for electronic emissions.

They also support the ACPI specification, which defines a standard way to integrate power management features throughout a PC system, including hardware, operating system and application software. This enables the PC to automatically turn on and off peripherals such as CD-ROMs, network cards, hard disk drives and printers.

Portable PC users can count on IBM for the latest industry power management specifications including CardBus Power Management and PC98.

Support for half-duplex and full-duplex operation

The EtherJet 10/100 adapters support half-duplex and full-duplex operation at 10 Mbps and 100 Mbps. When plugged into the network, they auto-negotiate to set the speed and duplex mode, enabling an easy connection to shared or switched Ethernet running at either speed. This enables you to get the most out of your upgrade to a switched Ethernet environment.

A key advantage of IBM full-duplex-enabled adapters is that they allow simultaneous transmission and reception, doubling the potential bandwidth. This allows the transmission of up to 20 Mbps for 10-Mbps adapters or 200 Mbps for the 10/100 adapters. What's more, no hardware changes are required to connect your IBM or non-IBM computer to a full-duplex switch such as one of the IBM 8275 Ethernet Switch family of desktop and workgroup switches. In full-duplex mode, a server with a full-duplex-enabled adapter can receive a spreadsheet from one workstation while it downloads an application to another.

Mobile adapters

Ethernet adapters for mobile systems

- 10/100 EtherJet CardBus Adapter
- 10/100 EtherJet CardBus Adapter with 56K Modem
- 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem
- EtherJet PC Card (10BASE-T)
- EtherJet PC Card Combo (10BASE-T and 10BASE2)

Fast Ethernet high-performance LAN connection for laptops

The IBM 10/100 EtherJet CardBus Adapter, the IBM 10/100 EtherJet CardBus Adapter with 56K Modem, and the IBM 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem offer an array of choices for connecting today's powerful mobile computers to an Ethernet LAN or to a wide area network.

All three EtherJet CardBus adapters attach to 10BASE-T and 100BASE-TX Ethernet networks through their single RJ-45 connector. The adapters employ a high-performance 32-bit bus master CardBus interface, enabling mobile computers to take advantage of the full bandwidth of 100-Mbps Fast Ethernet. The CardBus interface provides greater system bus access and higher data-transfer speeds than the 16-bit PCMCIA bus found on lower-performance laptops. Half-duplex and full-duplex modes are both supported, and auto-negotiation selects the right mode and speed for the hub or switch on the other end of the network link. Convenient LEDs on the adapters indicate link integrity and transmit/receive activity.

LAN and modem in one convenient adapter

The IBM 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem and the IBM 10/100 EtherJet CardBus Adapter with 56K Modem are ideal for the mobile computer user who requires high-speed connectivity both in the office and on the road. These adapters deliver the convenience of LAN and modem in one PC Card, offered in either a traditional Type II or a cableless Type III PC Card format. The IBM 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem is a Type III PC Card that has RJ-45 and RJ-11 connectors built right into the PC Card, so there are no cables to lose or break. This innovative package offers the ultimate in adapter convenience, robustness and reliability.

Mobile Adapters, such as the 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem, are supported by IBM ThinkPad® and non-IBM systems



The IBM 10/100 EtherJet CardBus Adapter with 56K Modem offers the same outstanding features and convenience in a Type II PC Card with conventional LAN and modem cables for users who only have one available Type II card slot in their laptops.

Worldwide modem connectivity
Both the IBM 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem and the IBM 10/100 EtherJet CardBus Adapter with 56K Modem offer a V.90-compliant 56K worldwide modem enabling the fastest-possible 56-kbps modem connections. With easy-to-use country selector software that automatically configures the modem for local dialing conventions, and approvals in many countries around the world, you can connect to information from points all over the world. The modem senses and protects itself from high-current digital phone lines.

The EtherJet adapter's simultaneous operation of 10BASE-T or 100BASE-TX LAN and modem functions make it possible to dial out with your modem while logged on to your network.

The EtherJet modem supports analog cellular attachment for the Motorola StarTac Phone, as well as digital Global Systems for Mobile Communications (GSM) and Personal Communications Systems (PCS) 1900 wireless attachment for a variety of popular phones, with optional kits.

Low power consumption
The 10/100 EtherJet CardBus Adapter, 10/100 EtherJet CardBus Adapter with 56K Modem, and the 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem are designed for 3.3-volt operation and very low power consumption, minimizing the computer's battery drain. These adapters do not consume power while inserted in the computer with the LAN and modem cables disconnected.

PC Card Adapters
The IBM EtherJet PC Card delivers high performance and advanced functions for 10-Mbps Ethernet connectivity in a PC Card for laptop computers with a PCMCIA bus. It features device drivers for the latest operating environments, including Windows 98 and 95, Windows NT and Novell NetWare. It offers a combo media-access module for connection to 10BASE-T and 10BASE2 networks in a single compact package. It's easy to install and is full-duplex-capable. In short, it offers everything you need in an Ethernet PC Card Adapter.

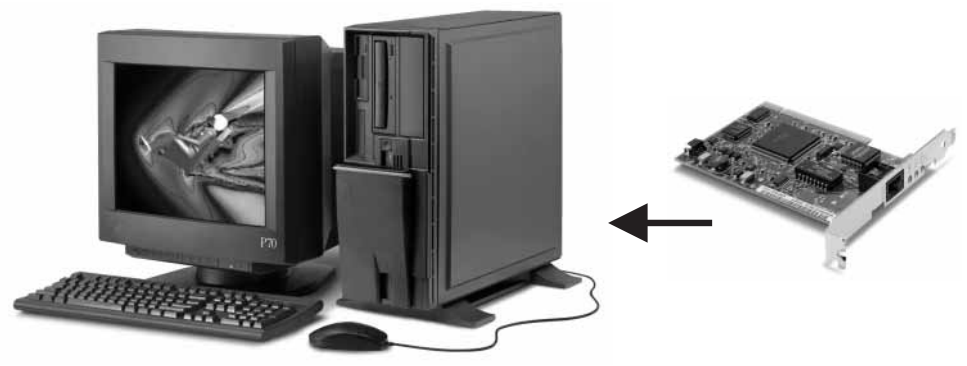
Desktop adapter
Ethernet adapter for desktop PC systems
- 10/100 EtherJet PCI Management Adapter

The new IBM 10/100 EtherJet PCI Management Adapter boasts industry-leading performance, with higher throughput and dramatically lower power consumption than previous versions of the card. It replaces the IBM 10/100 EtherJet PCI Adapter and the IBM 10/100 EtherJet PCI Adapter with Wake on LAN®. The 10/100 EtherJet PCI Management Adapter's utilization of the host PC's CPU is significantly reduced, freeing up the PC for other tasks. With support for packet prioritization (IEEE 802.1p) and virtual LANs (IEEE 802.1Q), this adapter also speeds throughput of data for critical applications.

The adapter has such manageability features as Wake on LAN support, a PXE-compliant remote boot flash EPROM, Desktop Management Interface, and a Tivoli® Management Agent. The 10/100 EtherJet PCI Management Adapter provides 10BASE-T Ethernet and 100BASE-TX Fast Ethernet LAN attachment for IBM and non-IBM Intel® architecture PCs with a PCI bus, and supports all leading operating systems and network operating systems. The adapter is ideal for Fast Ethernet customers who need high performance and the latest features.

Improved PC manageability and simplified network administration
IBM's LAN Client Control Manager (LCCM) V2.0 is a Windows NT 4.0-based application that works with Wake on LAN-enabled PCs and adapters to cost-effectively configure and manage PC installations. The LCCM management software works with the 10/100 EtherJet PCI Management Adapter to enable the PC to be awakened from a powered-off state and booted up from a remote server over the LAN. This enables a network administrator to set up and configure PCs remotely from a central location. LCCM V2.0 uses the industry-defined pre-boot execution environment (PXE) extension of DHCP to carry out low-level maintenance tasks like formatting a hard drive, installing or reinstalling an operating system and updating the BIOS. The combination of LCCM software, Wake on LAN enabled PCs and EtherJet Wake on LAN adapters creates a solution providing significant manageability and cost-of-ownership advantages.

Desktop Adapters, such as the 10/100 EtherJet PCI Management Adapter, are supported by IBM Commercial Desktop and non-IBM systems



Features	*Benefits*
Wake on LAN	Enables PC manageability and lower cost of ownership
RPL or PXE	Enables the workstation to boot remotely over the LAN
Adapter fault tolerance	Protects mission-critical applications against cable, connector or adapter failure
Adapter load balancing	Balances outgoing traffic across multiple adapters
Hot pluggability	Allows adapters to be swapped while the server is powered on
Full-duplex capability	Maximizes throughput benefits of switched Ethernet environments
Plug and Play	Fast and easy automatic configuration
Device drivers	Support leading operating and network operating systems
Status LEDs	Quick and easy troubleshooting without disrupting network operation
Lifetime limited warranty	High reliability, worry-free operation

Server adapters

Ethernet adapters for PC servers

- Netfinity Gigabit Ethernet SX Adapter
- Netfinity 10/100 Ethernet Adapter
- Netfinity 10/100 Fault Tolerant Adapter

Robust performance and reliability for critical applications

The Netfinity Gigabit Ethernet SX Adapter, Netfinity 10/100 Ethernet Adapter, and the Netfinity 10/100 Fault Tolerant Adapter are powerful workhorse adapters with features geared specifically for PC servers. Designed for high speed and reliability, these feature-rich adapters ensure that your mission-critical office, intranet and multimedia applications will run dependably under the strain of a growing network. The 32-bit PCI architecture performs in demanding high-traffic server environments with minimal demand on the CPU's processor, and operates in both uniprocessor and symmetrical multiprocessor (SMP) machines.

High-performing Gigabit Ethernet

The Netfinity Gigabit Ethernet SX Adapter provides breakthrough Gigabit Ethernet performance that can dramatically improve server bottlenecks in high-traffic environments. Its 1000-Mbps data rate and 32- or 64-bit PCI bus mastering architecture enable the highest Ethernet bandwidth available in an adapter. This adapter provides 1000BASE-SX connectivity over a 50- or 62.5-micron multimode fiber-optic link. It is fully compliant with the IEEE 802.3z Gigabit Ethernet standard, ensuring an easy integration with existing Ethernet and Fast Ethernet networks.

Adapter fault tolerance

All three of the Netfinity server adapters support adapter fault tolerance (AFT), allowing two adapters to be paired inside a PC in a primary-backup mode. If there is a failure of the cable, connector or primary adapter, then the backup adapter is automatically brought online to handle the traffic. This failover typically occurs in a fraction of a second, minimizing lost data and virtually eliminating downtime due to adapter or cable failures. This fault-tolerance feature also works between a Netfinity adapter and the 10/100 Ethernet technology on the planar of many models of IBM PCs and servers. Netfinity adapters are ideal if you cannot afford your network to be down.

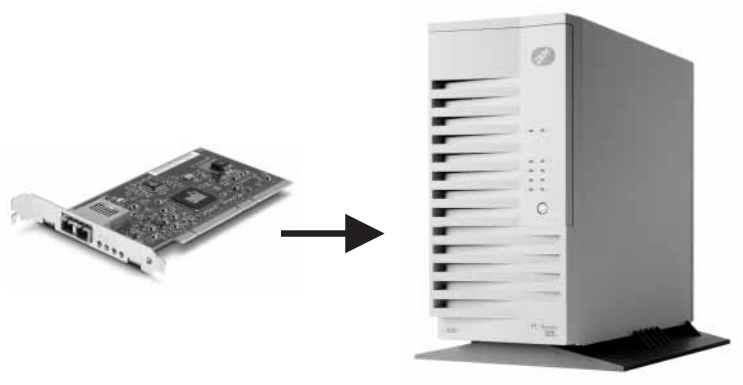
Hot pluggability

All Netfinity adapters offer unparalleled reliability and maintainability in mission-critical situations on IBM Netfinity and PC servers supporting PCI HotPlug. The hot pluggability feature in the Netfinity 5500 and 7000 MT10 servers allows you to swap adapters while the server is in operation and perform necessary repairs without down time for critical applications in Novell intraNetWare 4.11 or NetWare 5.0 and Windows NT 4.0 environments.

Load balancing

The Netfinity 10/100 Ethernet Adapter supports adapter load balancing, enabling the server to add scalable bandwidth as traffic demands grow. This feature balances outgoing server traffic across up to four adapters of the same type, enabling server bandwidth to scale up to 800 Mbps in a full-duplex switched environment. This allows you to add bandwidth to your server as you need it using proven, cost-effective Fast Ethernet technology.

Server Adapters, such as the Netfinity Gigabit Ethernet SX Adapter, are supported by IBM Netfinity and non-IBM servers



IBM Ethernet Adapters for Mobile Systems at a glance

	EtherJet PC Card (10BASE-T)	**EtherJet Combo PC Card (10BASE-T and 10BASE2)**	**10/100 EtherJet CardBus Adapter**	**10/100 EtherJet CardBus Adapter with 56K Modem**	**10/100 EtherJet CardBus Ready Port Adapter with 56K Modem**
Part numbers					
Single	72H4533	72H4534	08L3147	08L3167	34L1301
Card pack	34L1910	34L2010	34L1810	34L1710	34L1310
Significant features					
Bus architecture	PCMCIA	PCMCIA	CardBus	CardBus	CardBus
Data and address width	16-bit	16-bit	32-bit	32-bit	32-bit
Network topology	10BASE-T	10BASE-T, 10BASE2	10BASE-T, 100BASE-TX	10BASE-T, 100BASE-TX	10BASE-T, 100BASE-TX
Full-duplex-capable	yes	yes	yes	yes	yes
Auto-negotiation	no	no	yes	yes	yes
Plug and Play support	yes	yes	yes	yes	yes
Interrupt levels	3-7, 9-2, 14, 15	3-7, 9-12, 14, 15	3-15	3-15	3-15
Maximum number per machine	2	2	2	2	1
Software support					
Microsoft Windows 95, 98	yes	yes	yes	yes	yes
Microsoft Windows NT 3.51, 4.0	yes	yes	yes	yes	yes
Novell intraNetWare 3.12, 4.1x, NetWare 5.0	3.12, 4.1x	3.12, 4.1x	yes	yes	yes
OS/2 2.11 or later	yes	yes	yes	yes	yes
Physical characteristics					
Height	5 mm (0.2 in.)	5 mm (0.2 in.)	5 mm (0.2 in.)	5 mm (0.2 in.)	10.5 mm (0.41in.)
Width	54 mm (2.1 in.)	54 mm (2.1 in.)	54 mm (2.1 in.)	54 mm (2.1 in.)	54 mm (2.1 in.)
Depth	85.6 mm (3.4 in.)	85.6 mm (3.4 in.)	85.6 mm (3.4 in.)	85.6 mm (3.4 in.)	86 mm (3.4 in.)
Weight	0.05 kg (0.1 lb)	0.05 kg (0.1 lb)	0.024 kg (0.05 lb)	0.042 kg (0.09 lb)	0.036 kg (0.08 lb)
Operating environment					
Temperature	0° to 55° C (32° to 131° F)	0° to 55° C (32° to 131° F)	0° to 65° C (32° to 149°F)	0° to 65° C (32° to 149°F)	0° to 65° C (32° to 149°F)
Relative Humidity	5% to 95%	5% to 95%	10% to 95%	10% to 95%	10% to 95%
Maximum wet-bulb temperature	23° C (73° F)	23° C (73° F)	27° C (80.6° F)	27° C (80.6° F)	27° C (80.6° F)
Maximum electrical power	1.2 W	1.2 W	0.43 W	1.3 W	1.3W
Ports and connectors	RJ-45 (male)	RJ-45, BNC	RJ-45	RJ-45 for LAN, RJ-11 for modem	RJ-45 for LAN, RJ-11 for modem
Certification	IEEE 802.3 FCC Class B, CISPR B and VCCI Class B for radiated emissions	IEEE 802.3 FCC Class B, CISPR B and VCCI Class B for radiated emissions	IEEE 802.3 FCC Class B, CISPR B and VCCI Class B for radiated emissions	IEEE 802.3 FCC Class B, CISPR B and VCCI Class B for radiated emissions	IEEE 802.3 FCC Class B, CISPR B and VCCI Class B for radiated emissions
Warranty	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime
Country of origin	U.S.A.	U.S.A.	U.S.A.	U.S.A.	U.S.A.

IBM Ethernet Adapters for Desktop Systems at a glance

	10/100 EtherJet PCI Management Adapter
Part Number	
Single	34L1201
Card Pack	34L1210
Significant features	
Bus architecture	PCI
Data and address width	32-bit
Network topology	10BASE-T, 100BASE-TX
Full-duplex capable	yes
Auto-Negotiation	yes
Plug and Play support	yes
Wake on LAN	yes
Remote boot with PXE/DHCP or RPL	yes
IEEE 802.1p packet prioritization	yes
IEEE 802.1Q VLAN support	yes
ACPI support	yes
DMI 2.0, SNMP-manageable	yes
Tivoli Management Agent	yes
Interrupt levels supported	3-5, 9-11, 15
Maximum configuration	4
Software support	
Microsoft Windows 95, 98	yes
Microsoft Windows NT 3.51, 4.0, 2000 beta	yes
Novell intraNetWare 3.12, 4.1x, NetWare 5.0	yes
OS/2, 2.11 or later	yes
SCO UnixWare 2.1	yes
Physical characteristics	
Length	5.2 in (132 mm)
Thickness	0.8 in (20 mm)
Width	4.7 in (120 mm)
Weight	0.13 lb (0.07 kg)
Operating environment	
Temperature	0° to 55° C
Relative humidity	8% to 80%
Maximum wet-bulb temperature	27° C (80.6° F)
Electrical requirements	5 V/ 3.3 V
Ports and connectors	RJ-45
Certification	IEEE 802.3 FCC Class B and CISPR B for radiated emissions
Warranty	Limited lifetime
Country of origin	U.S.A.

IBM Ethernet Adapters for PC Servers at a glance

	Netfinity 10/100 Fault Tolerant Adapter	**Netfinity 10/100 Ethernet Adapter**	**Netfinity Gigabit Ethernet SX Adapter**
Part Number			
Single	08L3341	34L0901	34L0301
Card pack	N/A	34L0910	34L0310
Significant features			
Bus architecture	PCI	PCI	PCI
Data and address width	32-bit	32-bit	32/64-bit
Network topology	10BASE-T, 100BASE-TX	10BASE-T, 100BASE-TX	1000BASE-SX
Full-duplex capable	yes	yes	yes
Auto-Negotiation	yes	yes	yes
Plug and Play support	yes	yes	yes
Adapter fault tolerance	yes	yes	yes
PCI HotPlug	yes	yes	yes
Adaptive load balancing	no	yes	no
DMI 2.0, SNMP-manageable	yes	yes	yes
Interrupt levels supported	3-5, 9-10, 11, 15	3-5, 9-10, 11, 15	3-5, 9-10, 11, 15
Maximum configuration	4	4	4
Software support			
Microsoft Windows NT 3.51, 4.0	yes	yes	4.0
Novell intraNetWare 3.12, 4.1x, NetWare 5.0	yes	yes	yes
OS/2 server 2.11 or later	yes	yes	no
SCO UnixWare 2.1	yes	yes	yes
Physical characteristics			
Height	87 mm (3.4 in.)	87 mm (3.4 in.)	83 mm (3.25 in.)
Width	120 mm (4.7 in.)	120 mm (4.7 in.)	164 mm (6.4 in.)
Depth	20 mm (0.8 in.)	20 mm (0.8 in.)	20 mm (0.8 in.)
Weight	0.07 kg (0.15 lb)	0.07 kg (0.15 lb)	0.09 kg(0.20 lb)
Operating Environment			
Temperature	0° to 55° C (32° to 131° F)	0° to 55° C (32° to 131° F)	0° to 55° C (32° to 131° F)
Relative humidity	8% to 80%	8% to 80%	8% to 80%
Maximum wet-bulb temperature	27° C (80.6° F)	27° C (80.6° F)	27° C (80.6° F)
Electrical requirements	5 V dc	5 V dc	5 V dc
Ports and connectors	RJ-45	RJ-45	Duplex SC connector
Certification	IEEE 802.3 FCC Class B and CISPR B for radiated emissions	IEEE 802.3 FCC Class B and CISPR B for radiated emissions	IEEE 802.3 FCC Class B and CISPR B for radiated emissions
Warranty	3 years	Limited lifetime	Limited lifetime
Country of origin	U.S.A.	U.S.A.	U.S.A.

Installation information

Hardware requirements

Mobile	Any PCMCIA or CardBus slot-equipped, Intel processor 80486 or higher, IBM or non-IBM PC
Desktop/Servers	Any PCI-slot-equipped, Intel processor 80486 or later, IBM or non-IBM PC

Software and operating systems

- Microsoft Windows 95 and Windows 98
- Microsoft Windows NT 3.51 or later
- Microsoft LAN Manager
- Microsoft Windows for Workgroups Version 3.11
- Novell intraNetware 3.12 or later
- OS/2 Warp, OS/2 Warp Connect, OS/2 Version 2.11 or later, OS/2 SMP Version 2.11 or later
- SCO 5.0, SCO 3.0, Unixware 2.x or later

Refer to product literature for operating system support on individual products

Cables and connectors

A network adapter cable is not included with these adapters. The appropriate cable must be ordered to connect the adapter to an Ethernet network:

- UTP-5 cable with RJ-45 connectors for 100BASE-TX networks
- UTP-3, -4 or -5 cable with RJ-45 connectors for 10BASE-T networks
- RG-58 standard coaxial cable (10BASE2) with BNC terminators and the BNC T-type connector shipped with the adapter for use with thin coaxial cable in a 10BASE2 network
- 50- or 62.5-micron multimode fiber-optic cable for 1000BASE-SX networks

Wake on LAN power cables are included with appropriate adapters.

For more information

To find out more about the IBM Ethernet LAN Adapter family and other high-performance IBM communications and networking products, contact your IBM representative or call IBM Direct at 1 800 IBM-CALL (1 800 426-2255). You can also access the IBM Networking Home Page at:
www.networking.ibm.com

© International Business Machines Corporation 1999

IBM Corporation
Department TYCA
PO Box 12195
Research Triangle Park NC 27709
U.S.A.

Printed in the United States of America
5-99
All Rights Reserved

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.

IBM, EtherJet, Netfinity, HelpCenter, OS/2, ThinkPad and Wake on LAN are trademarks of International Business Machines Corporation.

Microsoft, Windows, Windows NT and the Windows logo are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.

Intel is a trademark of Intel Corporation in the United States and/or other countries.

Tivoli is a trademark of Tivoli Systems, Inc. in the United States or other countries or both.

Other company, product and service names may be trademarks or service marks of other companies.

Printed on recycled paper

For Position Only

G221-4074-09