

ADAPTER
FAMILY

■ SERVER ADAPTERS

www.intel.com/network/products/server_adapters.htm

■ DESKTOP ADAPTERS

www.intel.com/network/products/desktop_adapters.htm

■ MOBILE ADAPTERS

www.intel.com/network/products/mobile_adapters.htm

Intel® Server Adapters

Enhanced scalability and availability for network servers

Give your servers faster and more reliable network connections with Intel's award-winning line of server adapters. These Fast Ethernet and Gigabit Ethernet Server Adapters offer industry-leading performance plus advanced features to reduce server bottlenecks and improve availability. Whether you're using a simple file server, a transaction-oriented database server, a corporate intranet server or an enterprise-wide application server, you can aggregate bandwidth for higher throughput, establish redundant network links and enhance online serviceability through hot-swap capabilities.

Choose from a variety of Intel® Server Adapters to best fit your network environment:

Intel® PRO/1000 Gigabit Server Adapter – Industry-leading performance for connecting high-end corporate servers

Intel® PRO/100 Intelligent Server Adapter – A boost for overloaded web and file servers

NEW Intel® PRO/100+ Server Adapter – Enhanced scalability and availability for virtually all server environments, plus new management features for reducing support costs

Intel® PRO/100+ Dual Port Server Adapter – Increased flexibility and scalable bandwidth for workgroup and departmental servers with limited PCI slots



Widespread compatibility

Intel Server Adapters are compatible with all major network operating systems and are now available in network-ready servers from the world's top server manufacturers. The new Intel® PRO/100+ Server Adapter adds another dimension of compatibility. Based on the powerful new Intel® 82559 controller, it provides cross-platform driver compatibility with Intel's new generation of desktop and mobile adapters. So you can save time and money with uniform installation and administration for all your network connections.

Features

Benefits

An Award-winning Family of Server Adapters

Top performance, scalability and maximized uptime for a variety of server environments, from small workgroup servers to high-end corporate servers

Widespread Compatibility

Compatible with all major network operating systems, and offered by the world's top server manufacturers in their network-ready servers

Scalable Bandwidth

Adaptive Load Balancing
Fast EtherChannel* or
Intel Link Aggregation
Gigabit EtherChannel† or
Intel Link Aggregation

Alleviate server bottlenecks by balancing traffic among multiple adapters:

- Up to 400Mbps
- Up to 800Mbps at full-duplex
- Up to 8Gbps at full-duplex

Adapter Fault Tolerance
Mixed adapter teaming†

Increase uptime with automatic redundant links:

Preferred primary

- Team any combination of Intel Server Adapters for increased flexibility
- Specify one adapter per team as the primary adapter

PCI Hotplug*†

Minimize downtime by replacing an adapter with the server running

Standards-Based Management

Wired for Management (WfM) 2.0
Desktop Management Interface (DMI) 2.0
SNMP

Reduce support costs with remote management based on industry-wide standards



† Will be available April '99 via Web release

Intel® PRO/1000 Gigabit Server Adapter

Key Features

- **Industry-leading performance with a highly integrated Intel® controller**
- **Increased server availability through Adapter Fault Tolerance and PCI Hotplug¹**
- **Scalable throughput with Adaptive Load Balancing and Gigabit EtherChannel***



September 1998

The high-performance Gigabit Server Adapter

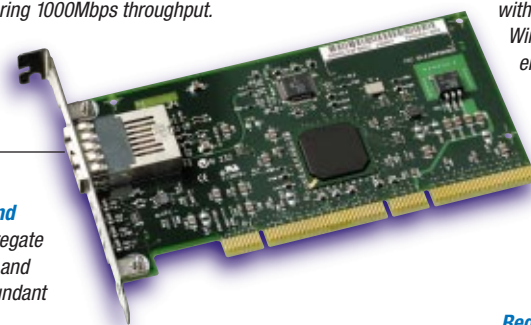
As Fast Ethernet migrates to the desktop, a higher bandwidth link is needed to handle increasing demands on high-end corporate servers. Along with the Intel® Express Gigabit Switch, this 32- or 64-bit PCI adapter provides a next-generation, high-speed Gigabit solution that can eliminate bottlenecks and integrate easily with your Ethernet and Fast Ethernet infrastructure.

Top performing Gigabit adapter – No other adapter comes as close to delivering 1000Mbps throughput.

– LANQuest Labs Report
August, 1998

SC Fiber connector for 1000BASE-SX

Scalable throughput and high availability – Aggregate bandwidth up to 8Gbps, and establish automatic redundant connections using any combination of Intel® Server Adapters.



On-line serviceability – PCI Hotplug¹ technology complements Adapter Fault Tolerance, enabling a failed adapter to be replaced without interrupting server operation.

Broad interoperability – Compatible with industry-standard switches in Windows NT,* Novell and UNIX* environments.

Supports industry standards –
– 802.3z Gigabit Ethernet
– 802.1Q VLANs and 802.3x flow control for advanced traffic management

Reduce support costs with remote management – Supports Wired for Management (WfM) 2.0, SNMP and DMI 2.0

“If speed is what you need, look no further. The Intel PRO/1000 Gigabit Server Adapter is leaps and bounds ahead of the competition.” – Network Computing, September, 1998

Intel® PRO/100 Intelligent Server Adapter

Key Features

- **On-board i960® processor delivers low CPU utilization**
- **Server bandwidth scales up to 800Mbps**
- **High-link availability through Adapter Fault Tolerance**



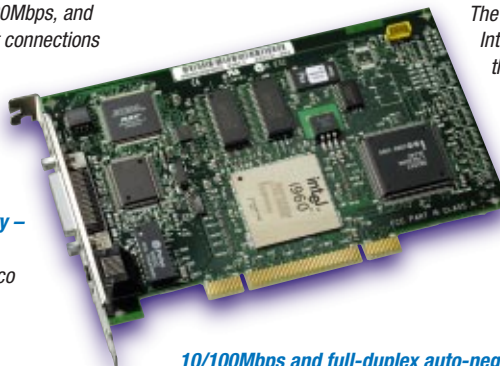
April 1998

The 10/100Mbps adapter optimized for servers

This adapter can significantly improve performance and scale bandwidth for high-demand servers operating in NetWare,* UNIX or Windows NT environments. Busy web servers will benefit most from the added power of the on-board i960® processor.

Scalable throughput and high availability – Aggregate bandwidth up to 800Mbps, and establish automatic redundant connections using any combination of Intel Server Adapters.

Reallocate server resources for greater network flexibility – Improve network performance and security with up to 63 Cisco ISL* Virtual LANs (VLANs).



Free your server for faster processing – The on-board i960® processor offloads Interrupt Service Routines (ISRs) so the server CPU can handle more transactions per second.

Adaptive Technology – Dynamically tunes transmission rate to reduce collisions, and enables software upgrades to the adapter microcode.

10/100Mbps and full-duplex auto-negotiation – Supports the easiest possible migration to high-performance network environments.

“If you’re aiming to build the fastest, most scalable BorderManager* server, Novell recommends the Intel PRO/100 [Intelligent] Server Adapter...”††

††From A Quick Guide to Web Server Acceleration on the Novell Web site at www.novell.com/bordermanager/prpt1.html

Intel® PRO/100+ Server Adapter

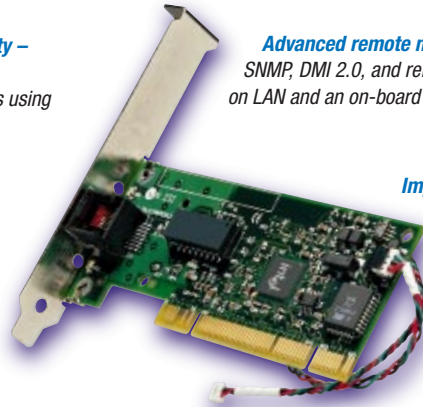
The fast, manageable 10/100 adapter optimized for server uptime

The new Intel® PRO/100+ Server Adapter can alleviate server bottlenecks and increase uptime in a wide variety of server environments. Based on Intel's powerful new 82559 controller, it incorporates a variety of new features for even faster throughput, increased flexibility and reduced support costs.

Scalable throughput and high availability – Aggregate bandwidth up to 800Mbps, and establish automatic redundant connections using any combination of Intel Server Adapters.

Wide compatibility – Compatible with all major network and server operating systems. Also uses the same core driver suite as Intel's newest desktop and mobile adapters, for uniform installation and administration throughout the network.

Get up to two connections per PCI slot – Team with the Intel® 82559 or 82558 Onboard LAN controller² for an additional redundant connection.



Advanced remote management – Supports WfM[®] 2.0, SNMP, DMI 2.0, and remote server configuration via Wake on LAN and an on-board PRO/100 Boot Agent.

Improved server efficiency – Intel's Adaptive Technology, TCP checksum offloading, and Adaptive Performance Tuning work together to optimize server performance.

On-line serviceability – PCI Hotplug¹ lets you swap out an adapter with the server online.

High performance and flexibility – 10/100 and full-duplex auto-negotiation, 802.1Q VLANs, 802.3x flow control.

"Intel has gone even further with its server adapter line, offering great performance and advanced bonding capabilities that can literally rock your world." – *InternetWeek*, April, 1998

Key Features

- Scalable performance (up to 800Mbps) reduces server bottlenecks
- Redundant connections maximize server uptime
- Remote Server Management increases IT staff efficiency

Intel's new-generation server adapter is built on proven, award-winning technology:

September 1998



Product of the Year Award 1998



Intel® PRO/100+ Dual Port Server Adapter

Two 10/100Mbps ports for added server flexibility

Scale bandwidth and increase availability for your departmental and workgroup servers that don't have PCI slots to spare. With two 10/100 ports, each adapter delivers up to 400Mbps, so you get twice the bandwidth per server slot.

Scalable throughput and high availability – Aggregate bandwidth up to 400Mbps with one adapter, up to 800Mbps with two; and establish automatic redundant connections to increase availability.

Simultaneous 10Mbps and 100Mbps – Run each port independently to support network segments at different speeds.

Up to three connections per PCI slot – Team with the Intel® 82559 or 82558 Onboard LAN controller for an additional resilient connection.



Advanced remote management – Supports WfM 2.0, SNMP, DMI 2.0 and remote server configuration.

Adaptive Technology – Dynamically tunes transmission rate to reduce collisions. Also enables software upgrades to the adapter microcode.

High performance and flexibility – 10/100 and full-duplex auto-negotiation, 802.1Q VLANs, 802.3x flow control.

On-line serviceability – PCI Hotplug¹ lets you swap out an adapter with the server online.

Key Features

- Two 10/100Mbps ports on one card
- Server bandwidth scales to 800Mbps
- High-link availability through Adapter Fault Tolerance

¹ Hotplug technology was developed by Compaq and is a result of the Compaq-Intel Alliance. Both the adapter and server must support Hotplug technology.

² Intel® 82558 Onboard LAN controller is available on Intel® T440BX and Intel® N440BX Server Boards. Check with your server vendor or reseller for other server boards that specify the Intel 82559 and 82558 controllers.

TECHNICAL SPECIFICATIONS: INTEL® SERVER ADAPTERS

	PRO/100+ SERVER ADAPTER	PRO/100+ DUAL PORT SERVER ADAPTER	PRO/100 INTELLIGENT SERVER ADAPTER	PRO/1000 GIGABIT SERVER ADAPTER
IEEE Standard/Network Topology	10BASE-T, 100BASE-TX	10BASE-T, 100BASE-TX	10BASE-T, 100BASE-TX, 100BASE-FX	1000BASE-SX
Bus architecture	PCI	PCI	PCI	PCI
Wiring	Cat5, 2pr	Cat5, 2pr	Cat5, 2pr	Multi-mode Fiber (62.5-50µm)
Product code: Connectors	PILA8470B: RJ-45	PILA8472: two, RJ-45	PILA8480: RJ-45, MII	PWLA8490: SC connector
ADAPTER PRODUCT FEATURES				
Adaptive Technology	■	■	■	■
Switchless board configuration	■	■	■	■
Plug 'n Play specification support	Standard	Standard	Standard	Standard
Easy Installation Intel® PROSet Utility	■	■	■	■
Auto-negotiation, Full-duplex capable	■	■	■	■
NETWORK MANAGEMENT				
WfM baseline v2.0 enabled for servers	■	■	■	■
DMI 2.0 support, SNMP-manageable	■	■	■	■
Board and network diagnostics	■	■	■	■
Intel® PRO/100 Boot Agent	■	■	■	■
ACPI Support	■	■	■	■
Wake on LAN*	■	■	■	■
NOS SOFTWARE SUPPORT³				
Microsoft Windows® 2000 Beta ⁴	■	■	■	■
Microsoft Windows NT® 3.51, 4.0	■	■	■	■
Microsoft Windows 95, 98	■	■	■	■
Novell NetWare® 3.11, 3.12, 3.2, 4.11, 4.2 & 5	■	■	■ (except 3.11)	■ (except 3.11)
SunSoft Solaris® 2.6, 7.0	■	■	■	■
SCO UnixWare® 2.1.2, 2.1.3, 7	■	■	■	■
ADVANCED SOFTWARE FEATURES³				
Adapter Fault Tolerance	■	■	■	■
Adaptive Load Balancing	■	■	■	■
Fast EtherChannel® (when used with a Fast EtherChannel-enabled switch)	■	■	■	■
Gigabit EtherChannel® (when used with a Gigabit EtherChannel-enabled switch)	■	■	■	■
Intel Link Aggregation (when used with Intel® Express Switches)	■	■	■	■
PCI Hotplug	■	■	■	■
802.1Q VLANs	■	■	■	■
Cisco ISL® VLANs	■	■	■	■
802.3x Flow Control	■	■	■	■
TCP Checksum Offload	■	■	■	■
Intel® Priority Packet, 802.1p	■	■	■	802.1p
Adaptive Performance Tuning	■	■	■	■
TECHNICAL FEATURES				
Data rate(s) supported per port	10 & 100Mbps	10 & 100Mbps	10 & 100Mbps	1000Mbps
On-board memory	6K cache	12K cache	1MB	64KB
Interrupt levels	INTA	INTA & INTB	INTA	INTA
IEEE support	802.2 & 802.3	802.2 & 802.3	802.2 & 802.3	802.2 & 802.3z
Data path width	32-bit	32-bit	32-bit	32-bit and 64-bit
Hardware certifications	FCC B, CE	FCC B, CE	FCC A, CE	FCC B, CE
Data transfer mode	Bus-master DMA	Bus-master DMA	Bus-master DMA	Bus-master DMA
Controller or processor	Intel® 82559	two, Intel® 82558	Intel® 82557 & i960 RD processor	Intel® 82542
Power requirement	.67Watts @+5VDC	6.5Watts @+5VDC	15Watts @+5VDC	5watts @+5VDC
Operating temperature	0-55°C	0-55°C	+10-55°C	0-55°C
Operating humidity	85% at +55°C	85% at +55°C	85% at +55°C	85% at +55°C
INTEL BACKING				
Limited lifetime warranty	■	■	■	■
90-day money-back guarantee	■	■	■	■
PCI compatibility guarantee	■	■	■	■

CUSTOMER SUPPORT

Intel Customer Support Services offers a broad selection of programs including extended phone support, upgrades, parts replacement, on-site services and installation. For more information, contact us on the World Wide Web at <http://support.intel.com/services> or call **800-538-3373, option 1, 3, ext. 276**. Service and availability may vary by country.

ORDER CODES

Intel® PRO/1000 Gigabit Server Adapter	PWLA8490
Intel® PRO/100 Intelligent Server Adapter	PILA8480
Intel® PRO/100+ Dual Port Server Adapter	PILA8472
Intel® PRO/100+ Server Adapter	PILA8470B

Also available in 5-packs, add PAK5 to Order Code

TO CONTACT INTEL

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Europe	+44-1793-431-155
Japan	+81-298-47-0800
Hong Kong, Taiwan, Korea, Singapore and ASEAN	+65-735-3811
Australia	+61-2-9937-5800

ON-LINE DOCUMENTS

For the latest product information, visit us on the World Wide Web: <http://www.intel.com/network>

For more detailed information on WfM, visit <http://www.intel.com/businesscomputing/tech/work>

COMPANION PRODUCTS

Consider these related Intel products as a factor in your network planning:

- Intel® Express Gigabit Switch
- Intel® PRO/100 Desktop Adapters
- Intel® PRO/100 Mobile Adapters
- Intel® Server Boards

NETWORK READY SERVERS

Top PC and server manufacturers offer Intel® adapters in their new products. Specify or ask for Intel networking technology with your next PC, server or notebook purchase.

For a list of preferred suppliers, visit us on the World Wide Web: http://www.intel.com/network/how_to_buy/oem.htm

³ Note: Advanced Server Adapter features are supported by Windows NT 4.0 (and above) and NetWare 4.1 (and above). See web for details http://www.intel.com/network/products/server_adapters.htm

⁴ Available on Microsoft Beta CD

