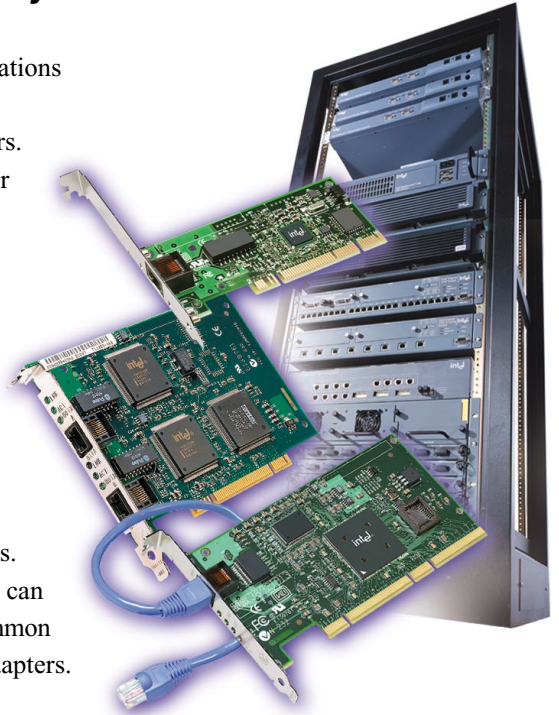# Intel® Server Adapters

Enhanced scalability and availability for network servers

Intel is the first to give your servers and workstations fast, reliable, more secure network connections with an award-winning family of server adapters. These Fast Ethernet and Gigabit Ethernet server adapters help reduce bottlenecks and improve availability with industry-leading performance and advanced server features. From simple file servers to transaction-oriented e-Commerce database servers and enterprise-wide application servers, Intel connections are more secure and reliable. You can aggregate bandwidth for higher throughput, establish redundant network links, and enhance online serviceability through hot-swapping capabilities. And, with Intel® SingleDriver™ technology, you can simplify installation and maintenance with a common suite of drivers for Intel® PRO/100 Network Adapters.

The Intelligent Way to Connect

Intel® SingleDriver™ technology offers a single suite of drivers for Intel® PRO/100 Network Adapters, adopted by many of the world's leading PC and server suppliers, simplifying installation and maintenance. In addition, these adapters are compatible with all major network operating systems. From SingleDriver™ technology to standards-based security and management features, Intel® Network Adapters really are *the intelligent way to connect*.

Features	Benefits
A Complete Family of Server Adapters	Industry-leading performance, scalability, and uptime in a variety of server environments
Widespread Compatibility	Compatible with all major network operating systems, and offered by the world's top server manufacturers
■ Intel® SingleDriver™ Technology	A common driver set across Intel PRO/100 adapters simplifies installation and maintenance, and decreases driver conflicts among new and legacy systems
Scalable Bandwidth	Alleviate bottlenecks by balancing traffic among multiple adapters:
■ Adaptive Load Balancing ■ Fast EtherChannel*, Intel Link Aggregation or IEEE 802.3ad ■ Gigabit EtherChannel*, Intel Link Aggregation or IEEE 802.3ad	■ Up to 800Mbps ■ Up to 1.6Gbps at full-duplex with Intel® PRO/100 Server Adapters ■ Up to 16Gbps at full-duplex with Intel® PRO/1000 Server Adapters
Adapter Fault Tolerance ■ Mixed-adapter Teaming/Mixed-speed Teaming	Increase uptime with automatic redundant links: ■ Team any combination of Intel® PRO/100 and PRO/1000 Server Adapters or LAN-on-motherboard components for increased flexibility in failover situations
■ Preferred Primary	■ Specify one adapter per team as the primary adapter
PCI Hot Plug and Active PCI*	Minimize downtime by installing, upgrading, or 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

intel®

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

NEW Intel® PRO/100 S Server Adapter
IPSec encryption offloading preserves performance for IPSec-enabled networks. Featuring the new Intel® 82550 integrated network controller/security co-processor plus advanced management features.

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

NEW Intel® PRO/1000 T Server Adapter
Gigabit connectivity over Category 5 copper cabling makes the most of your existing infrastructure.

Intel® PRO/1000 F Server Adapter
Industry-leading Gigabit performance for connecting servers and workstations via fiber cabling.

Which server adapter is right for you?

	Intel® PRO/100 S Server Adapter	Intel® PRO/100+ Dual Port Server Adapter	Intel® PRO/1000 F Server Adapter	Intel® PRO/1000 T Server Adapter
Need to ensure 24x7 server availability.	■	■	■	■
Reduce server bottlenecks.	■	■	■	■
Manage your network remotely.	■	■	■	■
Ease installation and maintenance of network adapters throughout the enterprise.	■	■	■	■
Help secure data traveling on the LAN; safeguard against internal security breaches.	■			
Add security while migrating from Windows* 98 or NT to Windows 2000.	■			
Overcome PCI slot constraints.		■	■	■
Upgrading desktops to Fast Ethernet and want to maintain server performance.			■	■
Achieve a higher-performance server connection for long-distance connectivity.			■	
Achieve Gigabit connectivity for servers over an existing copper infrastructure.				■

Intel® PRO/100 Network Adapters

Boost networking performance and availability for your servers with optimal protection for data traveling on the LAN using Intel® PRO/100 Server Adapters.

Intel® SingleDriver™ technology
A single suite of drivers across Intel® PRO/100 connections simplifies installation and lowers cost of maintenance.

Advanced remote management
Supports WfM 2.0, SNMP, DMI 2.0, and Wake on LAN. Includes Intel® Boot Agent and PXE/BIS.

Intelligent controller
Intel® Adaptive Technology dynamically tunes performance to reduce collisions.

Online serviceability
Swap out adapters with the server online using PCI Hot Plug and Active PCI.*

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

Intel® PRO/1000 Network Adapters

Combine Gigabit connectivity with the flexibility of fiber or copper cabling to meet the bandwidth demands of a busy network.

Industry-leading Gigabit performance
Featuring the second-generation Intel® 82543GC Gigabit Controller, for maximum performance from servers and workstations with 64-bit/66MHz PCI slots.

Scalable throughput
Aggregate bandwidth up to 16Gbps using Adaptive Load Balancing, Gigabit EtherChannel, Intel® Link Aggregation or IEEE802.3ad.*

High availability, online serviceability
PCI Hot Plug and Active PCI let you replace a failed adapter online – traffic diverts to other adapters. Adapter Fault Tolerance provides redundant protection should a link fail.*

Broad interoperability
Supports IEEE 802.3z Gigabit Ethernet.

Reduced support costs
Supports WfM 2.0, SNMP and DMI 2.0.

Intel® PRO/100 S Server Adapter

Fast, managed server connections with accelerated LAN security

The new Intel® PRO/100 S Server Adapter helps protect sensitive data traveling on the LAN while preserving network performance and reducing server bottlenecks with fast, managed connections, and IPSec encryption offloading.
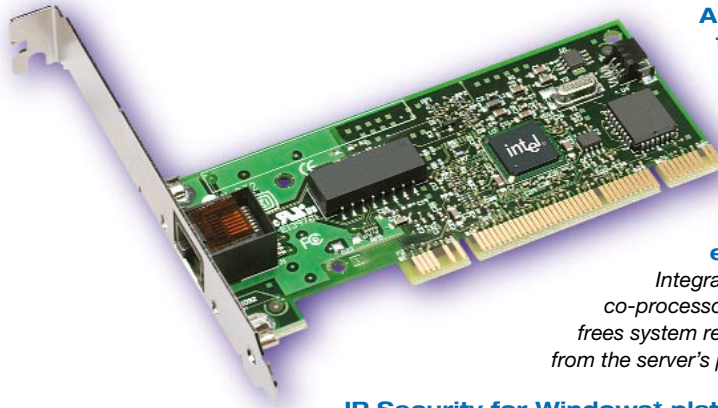
A member of the industry's first complete family of security adapters
Intel® PRO/100 S Desktop, Mobile and Server Adapters.

NEW! Intel® 82550 Fast Ethernet Controller with integrated encryption co-processor
Integrated LAN silicon and encryption co-processor boosts network performance and frees system resources by offloading encryption from the server's processor.

IP Security for Windows* platforms
Optimized for security on Windows 2000, with IPSec functionality extended to Windows NT* using Intel® Packet Protect software.*

Scalable throughput and high availability
Aggregate bandwidth up to 1.6Gbps, and establish automatic redundant connections using any combination of Intel® Server Adapters or LOM connections.

3DES encryption algorithms
The highest level of security widely available to protect data travelling on the LAN.

Intel® PRO/1000 F Server Adapter

The Fiber Gigabit connection for your most demanding servers and workstations

Intel's second-generation Gigabit solution eliminates server bottlenecks with industry-leading Gigabit performance in a 64-bit/66MHz PCI adapter that easily integrates into your existing Ethernet infrastructure.
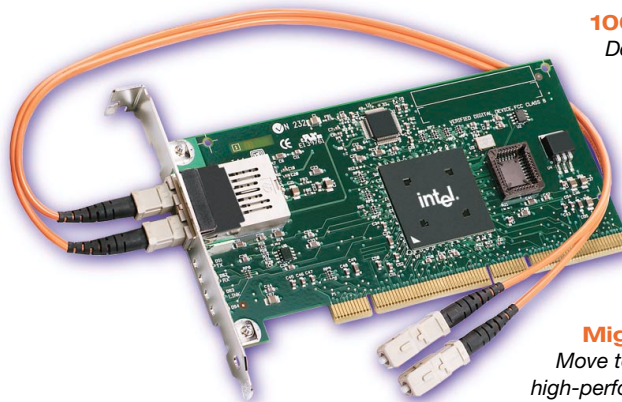
1000BASE-SX Fiber connectivity
Deliver data further and with less noise over fiber cabling.

Cover distances up to 275 meters
Connect campus buildings and department floors with fast, Gigabit networking.

Low-noise networking
Fiber networking is immune to interference in electro-magnetically noisy environments.

Migrate from ATM or FDDI
Move to Gigabit Ethernet for widely deployed, high-performance networking – the most deployed networking environment.

Intel® PRO/100+ Dual Port Server Adapter

Two 10/100Mbps ports for added server flexibility

Scale bandwidth and increase availability for servers with limited PCI slots. With two 10/100 ports, each adapter delivers up to 400Mbps for twice the bandwidth per server slot.

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

Scalable throughput
Aggregate bandwidth up to 800Mbps with two adapters, up to 1.6Gbps with four. Automatic redundant connections promote availability.

Simultaneous 10Mbps and 100Mbps
Run each port independently to support network segments at different speeds.
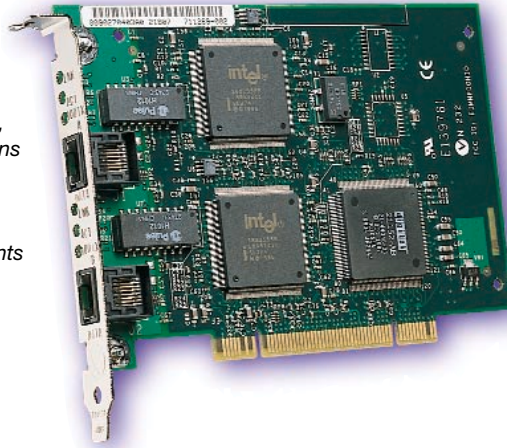
Intel® PRO/1000 T Server Adapter

The 10/100/1000 Copper Gigabit connection for your most demanding servers and workstations

Migrate servers and workstations to Gigabit performance easily and cost-effectively over existing Category 5 copper cabling. Alleviate server bottlenecks with 1000Mbps throughput while delivering 10/100 performance to desktops and other network devices that need it for flexible connectivity in mixed network environments.

1000BASE-T Gigabit Ethernet over copper
Fight server bottlenecks with Gigabit connectivity using existing Category 5 copper cabling.

Flexible 10/100/1000 connectivity
Deliver Ethernet, Fast Ethernet and Gigabit connectivity to match the devices in an evolving network environment.

Easily migrate to Gigabit Ethernet
Use existing Category 5 copper cabling for the fastest Ethernet speeds at distances up to 100 meters.

Reduce multiple network media types
Make Ethernet the standard in the enterprise – for desktops, servers, and the backbone.

Minimize IT training costs
Leverage existing Ethernet knowledge and skills for the entire enterprise.

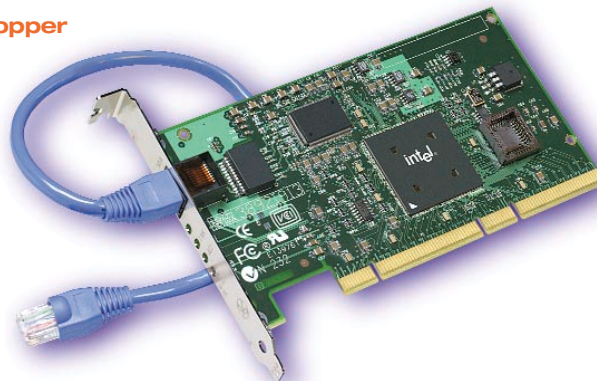| SPECIFICATIONS	Intel® Server Adapters			
	Intel® PRO/100 S Server Adapter	Intel® PRO/100+ Dual Port Server Adapter	Intel® PRO/1000 F Server Adapter	Intel® PRO/1000 T Server Adapter
IEEE STANDARD/ NETWORK TOPOLOGY	10BASE-T, 100BASE-TX	10BASE-T, 100BASE-TX	1000BASE-SX	10BASE-T, 100BASE-TX 1000BASE-T
WIRING AND CONNECTORS	Cat-5, 2 pair; RJ-45	Cat-5, 2 pair; Two RJ-45	Multi-mode Fiber (62.5-50µm); SC connector	Cat-5, 4 pair; RJ-45
PRODUCT CODE	PILA8470C3	PILA8472	PWLA8490SX	PWLA8490T
ADAPTER PRODUCT FEATURES				
Intel® SingleDriver™ technology	■	■		
Intel® Adaptive Technology	■	■		
Plug and Play Specification Support	Standard	Standard	Standard	Standard
Easy Installation, Intel® PROSet II Utility	■	■	■	■
Auto-negotiation, Full-duplex Capable	■	■	■	■
PCI Buses Supported	32/33	32/33	64/66, 64/33, 32/66, 32/33	64/66, 64/33, 32/66, 32/33
NETWORK MANAGEMENT				
Wired for Management (WfM) Baseline v2.0 Enabled for Servers	■	■	■	■
DMI 2.0 Support, WMI & SNMP-manageable	■	■	■	■
Offline Diagnostics	■	■	■	■
Intel® Boot Agent	■			
ACPI Power Management	■	■	■	■
Wake on LAN*	■			
NOS SOFTWARE SUPPORT††				
Microsoft Windows* 2000	■	■	■	■
Microsoft Windows NT* 3.51, 4.0	■	■	■	■
Microsoft Windows 95, 98	■	■		
Novell NetWare* 3.x, 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	■	■	■	■
Linux* 2.2.5 or Later	■	■	■	■
ADVANCED SOFTWARE FEATURES¹				
Adapter Fault Tolerance	■	■	■	■
Adaptive Load Balancing	■	■	■	■
Fast EtherChannel* (when used with a capable switch)	■	■		
Gigabit EtherChannel* (when used with a capable switch)			■	■
Intel® Link Aggregation (when used with a capable switch)	■	■	■	■
IEEE 802.3ad (when used with a capable switch)	■	■	■	■
PCI Hot Plug and Active PCI*	■	■	■	■
802.1Q VLANs	■	■	■	■
802.3x Flow Control	■	■	■	■
TCP Checksum Offload	■			
802.1p, Intel® Priority Packet	■	■	802.1p	802.1p
Adaptive Performance Tuning	■	■		
TECHNICAL FEATURES				
Data Rate(s) Supported Per Port	10 & 100Mbps	10 & 100Mbps	1000Mbps	10, 100 & 1000Mbps
Onboard Memory	18KB	12KB	64KB	64KB
Interrupt Levels	INTA	INTA & INTB	INTA	INTA
IEEE Support	802.2 & 802.3	802.2 & 802.3	802.2 & 802.3z	802.2 & 802.3z & 802.3ab
Data Path Width	32-bit PCI	32-bit PCI	32-bit and 64-bit PCI	32-bit and 64-bit PCI
Hardware Certifications	FCC B, CE	FCC B, CE	FCC B, CE	FCC B, CE
Data Transfer Mode	Bus-master DMA	Bus-master DMA	Bus-master DMA	Bus-master DMA
Controller - Processor	Intel® 82550EY	two, Intel® 82558	Intel® 82543GC	Intel® 82543GC
Typical Power Consumption	250mA @+5VDC	1.3A @+5VDC	1A @+5VDC	1A @+5VDC
Operating Temperature	0-55°C	0-55°C	0-55°C	0-55°C
Operating Humidity	85% at +55°C	85% at +55°C	85% at +55°C	85% at +55°C
SECURITY FEATURES††				
IPSec Standard (Windows 2000)	■	■	■	■
IPSec Standard (Windows NT 4.0, 98) with Intel® Packet Protect	■	■		
Intel® 82550EY Controller with Integrated Encryption Co-processor	■			
Encryption² DES (56 bit) / 3DES (168 bit) Encryption	Hardware offload	Software only	Software only	Software only
Authentication Algorithms SHA-1	Hardware offload	Software only	Software only	Software only
MD5	Hardware offload	Software only	Software only	Software only
Authentication Method Preshared Key	■	■	■	■
Entrust/PKI*	■	■		
INTEL BACKING				
Limited Lifetime Warranty (U.S. and Canada)	■	■	■	■
90-day Money-back Guarantee	■	■	■	■

FOR PRODUCT INFORMATION

To speak to a customer service representative regarding Intel products, please call 1-800-538-3373 (U.S. and Canada) or visit www.intel.com/support/9089.htm for the telephone number in your area. For additional product information on the Intel Networking and Communication products, visit www.intel.com/network

ON-LINE DOCUMENTS

For the latest product information, visit us on the World Wide Web at www.intel.com/network

For more detailed information on Wired for Management (WfM), visit www.intel.com/eBusiness

NETWORK READY PCs

Top PC and server manufacturers offer Intel® adapters in their new products. Specify or ask for Intel® PRO Network Connections with your next PC, server or mobile PC purchase. For a list of preferred suppliers, visit us on the World Wide Web: www.intel.com/network/how_to_buy/oem.htm

ORDER CODES

Intel® PRO/100 S Server Adapter	PILA8470C3
Intel® PRO/100 Dual Port Server Adapter	PILA8472
Intel® PRO/1000 F Server Adapter	PWLA8490SX
Intel® PRO/1000 T Server Adapter	PWLA8490T

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

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 support.intel.com/support/network. Service and availability may vary by country.

COMPANION PRODUCTS

Consider these related Intel products in your network planning:

- Intel® PRO/100 Desktop Adapters
- Intel® PRO/100 Mobile Adapters
- Intel® Server Boards
- Intel® NetStructure™ Switches
- Intel® Express Switches
- Intel® Express Hubs

†† Go to www.intel.com/network/os for latest OS/NOS support.

1 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

2 Unlawful to export encryption outside the U.S. or Canada except under an approved Department of Commerce export license or applicable license exception. For more information on export restrictions, visit www.bxa.doc.gov/encryption

* Third-party trademarks are the property of their respective owners.

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