

Intel® PRO Server Adapters

Enhanced scalability and availability for network servers

Prepare for your Next Generation Network, get ahead of network traffic and add more flexibility, performance, and reliability to your busy servers with Intel® PRO Server Adapters. Choose the right server adapter for your needs from our family of Intel® PRO/100 Server Adapters or Intel® PRO/1000 Server Adapters. Our latest line of Intel® PRO/1000 Server Adapters are PCI-X capable with advanced offloading to give you the highest server throughput available while minimizing CPU utilization. And, when you team single- and dual-port Intel® PRO Server Adapters in the same servers, you can easily create more reliable and scalable server connections. Maintain high server availability, add multi-Gigabit scalability and ease your IT management burden with advanced server features and Intel® SingleDriver™ technology. Whether your data center serves up files, e-Commerce transactions, or application services, you can quickly reduce traffic bottlenecks and provide more secure and reliable connections with Intel® PRO Server Adapters.



Intel® PRO
Network Connections

- **Server Adapters**
- **Desktop Adapters**
- **Mobile Adapters**

[www.intel.com/
network/connectivity](http://www.intel.com/network/connectivity)

The Intelligent Way to Connect

Intel® SingleDriver™ technology offers a single suite of drivers for Intel PRO 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 Intel® SingleDriver™ technology to standards-based security, advanced server and management features, Intel PRO Network Adapters really are *the intelligent way to connect*.

Features

A Complete Family of Server Adapters

Widespread Compatibility

- Intel® SingleDriver™ technology

Scalable Bandwidth

- Adaptive Load Balancing
- Intel® Link Aggregation
- Fast EtherChannel*
- Gigabit EtherChannel*
- IEEE 802.3ad

Adapter Fault Tolerance

- Mixed-adapter Teaming/Mixed-speed Teaming
- Preferred Primary

PCI Hot Plug* and Active PCI*

Standards-based Management

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

Benefits

Industry-leading performance, scalability, and uptime in a variety of server environments

Compatible with all major network operating systems, and offered by the world's top server manufacturers

A common driver set across Intel® PRO Network Adapters simplifies installation and maintenance, and decreases driver conflicts among new and legacy systems

Alleviate bottlenecks by balancing traffic among multiple adapters to deliver multi-Gigabit scalability

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 reliability in failover situations
- Specify one adapter per team as the primary adapter

Minimize downtime by installing, upgrading, or replacing an adapter with the server running

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:

Intel® PRO/100 S Server Adapter

Advanced server features alleviate server bottlenecks and increase uptime, while accelerated LAN security preserves network performance on IPSec-enabled networks.

Intel® PRO/100 S Dual Port Server Adapter

The industry's first dual port server adapter with accelerated LAN security, offers all the functionality of the Intel® PRO/100 S Server Adapter, with the added benefit of an extra port. Ideal for servers with limited PCI slots.

NEW! Intel® PRO/1000 XT Server Adapter

Gigabit connectivity over widely deployed Cat-5 copper cabling makes the most of your existing infrastructure. Available with a standard PCI or low-profile PCI bracket.

NEW! Intel® PRO/1000 XF Server Adapter

Industry-leading Gigabit performance for connecting servers and workstations via fiber-optic cabling.

Which server adapter is right for you?

	Intel® PRO/100 S Server Adapter	Intel® PRO/100 S Dual Port Server Adapter	Intel® PRO/1000 XF Server Adapter	Intel® PRO/1000 XT 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 NT* to Windows* 2000 or Windows XP	■	■		
Overcome PCI slot constraints		■	■	■
Upgrading desktops to Fast Ethernet or Gigabit Ethernet and want to maintain server performance			■	■
Achieve a higher-performance server connection for long-distance connectivity			■	
Achieve Gigabit connectivity for servers over existing Cat-5 copper infrastructure				■
64-bit/133MHz interface for maximum scalability of servers			■	■
Achieve 10/100/1000Mbps connectivity in a low-profile PCI slot				■

Intel® PRO/100 S Server Adapters

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

Intel® SingleDriver™ technology

A single suite of drivers across Intel® PRO Network connections simplifies installation and lowers cost of maintenance.

IP security for Windows* platforms at no additional cost

Designed for security on Windows* 2000 and XP, with IPSec functionality extended to Windows NT* using Intel® Packet Protect II software.

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 Server Adapters

Combine Gigabit connectivity and the flexibility of fiber or copper cabling to meet the demands of a next-generation network.

Industry-leading Gigabit performance

Featuring the third-generation Intel® 82544 Gigabit Controller with advanced offloading for maximum performance from servers and workstations with 64-bit/133MHz PCI-X slots.

Scalable throughput

Team adapters and aggregate multi-Gigabit bandwidth using Adaptive Load Balancing, Gigabit EtherChannel*, Intel® Link Aggregation or IEEE 802.3ad.

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 and IEEE 802.3ab Gigabit Ethernet.

Reduced support costs

Supports WfM 2.0, SNMP and DMI 2.0.

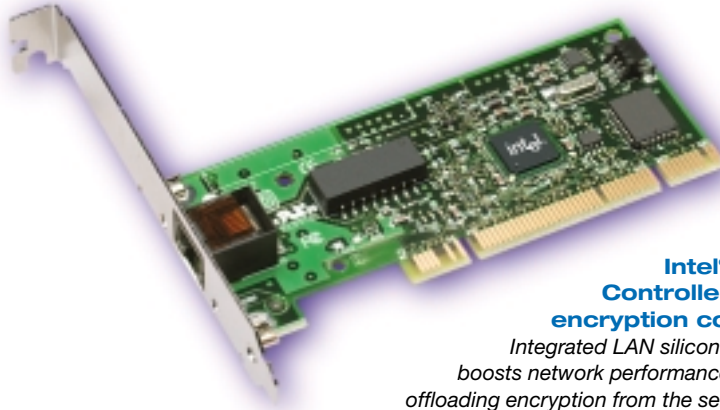
Intel® PRO/100 S Server Adapter

Fast, managed server connections with accelerated LAN security

KEY FEATURES

- **Advanced features alleviate server bottlenecks while increasing uptime**
- **Integrated security co-processor increases network performance**
- **Intel® SingleDriver™ technology simplifies installation and maintenance**

The Intel® PRO/100 S Server Adapter represents the next generation of Fast Ethernet server connections. Advanced server features alleviate server bottlenecks and increase uptime, while accelerated LAN security preserves performance on IPSec-enabled networks.



A member of the industry's first complete family of adapters with security
Intel® PRO/100 S Desktop, Mobile and Server Adapters.

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.

Scalable throughput and high availability

Aggregate bandwidth 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 IPSec-enabled networks.

Intel® PRO/1000 XF Server Adapter

PCI-X fiber Gigabit connection for your next-generation network

KEY FEATURES

- **Greater distances and noise resistance enabled through fiber-optic connection**
- **High network performance and flexibility via PCI-X bus at 64-bit/133MHz**
- **Alleviate server bottlenecks while increasing uptime through advanced server features**

Intel's third-generation Gigabit fiber adapter eliminates server bottlenecks with industry-leading Gigabit performance in a PCI-X bus in 64-bit/133MHz and easily integrates into your existing Ethernet infrastructure.



1000BASE-SX-fiber connectivity

Deliver data further and with less susceptibility to noise over fiber-optic cabling.

Cover distances up to 275 meters

Connect campus buildings and department floors with fast, Gigabit networking.

Noise-resistant 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.

Deliver high throughput and lower CPU utilization

Intel® PCI-X Server Adapters are designed to allow you to get the maximum performance from your servers while minimizing CPU utilization. With advanced network services you can scale to multi-Gigabit bandwidth while increasing server availability.

Intel® PRO/100 S Dual Port Server Adapter

Two 10/100Mbps ports for added server flexibility, plus accelerated LAN security

Introducing the industry's first dual port server adapter with accelerated LAN security. With two 10/100 ports, each adapter delivers up to 400Mbps for twice the bandwidth per server slot.

NEW! Integrated LAN silicon and encryption co-processor

Boosts network performance and frees system resources by offloading encryption from the server's processor.

Up to three connections per PCI slot

Team with the Intel® 82550, 82559 or 82558 Onboard LAN controller for an additional resilient connection.

Scalable throughput

Aggregate bandwidth while providing automatic redundant connections to remove network bottlenecks and promote server availability.

Simultaneous 10Mbps and 100Mbps

Run each port independently to support network segments at different speeds.



KEY FEATURES

- Two 10/100Mbps ports on one card
- Advanced features alleviate server bottlenecks while increasing uptime
- Intel® SingleDriver™ technology simplifies installation and maintenance
- High link availability through Adapter Fault Tolerance, PCI Hot Plug*, and Active PCI*

Intel® PRO/1000 XT Server Adapter

PCI-X 10/100/1000Mbps copper connection for your next-generation network

Alleviate server bottlenecks with easy-to-scale Gigabit connectivity, using your existing Cat-5 cabling. Benefit from the reliable, high-performance Intel® PRO/1000 XT Server Adapter, which will automatically sense infrastructure upgrades, and begin running at Gigabit speeds – without reconfiguration. Choose from standard PCI or a low-profile PCI version.

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, laptops, servers and the backbone.

Lower IT training costs

Leverage existing Ethernet knowledge and skills for the entire enterprise.



KEY FEATURES

- Easy, cost-effective migration to Gigabit Ethernet over Category-5 cabling
- High network performance and flexibility via PCI-X bus at 64-bit/133MHz
- Alleviate server bottlenecks while increasing uptime through advanced server features
- Low-profile bracket option available – ideal for high-density, rack-mount servers

SPECIFICATIONS		Intel® Server Adapters			
	Intel® PRO/100 S Server Adapter	Intel® PRO/100 S Dual Port Server Adapter	Intel® PRO/1000 XF Server Adapter	Intel® PRO/1000 XT 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	Multimode fiber (62.5-50µm); SC connector	Cat-5, 4 pair; RJ-45	
PRODUCT CODE	PILA8470C3	PILA8472C3	PWLA8490XF	PWLA8490XT, PWLA8490XTL	
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	64/133, 64/100, 64/66, 64/33, 32/66, 32/33	64/133, 64/100, 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, XP	■	■	■	■	
Microsoft Windows NT® 4.0	■	■	■	■	
Microsoft Windows 95, 98, SE, ME	■	■	■	■	
Novell NetWare® 3.x, 4.11, 4.2 & 5, 5.1, 6.1	■	■	■	■	
SunSoft Solaris® 7, 8	■	■	■	■	
SCO UnixWare® 7.x, OpenUNIX 8	■	■	■	■	
Linux® 2.2.5 or Later	■	■	■	■	
FreeBSD v4.0 or Later	■	■	■	■	
ADVANCED SOFTWARE FEATURES*					
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-X	32-bit and 64-bit PCI-X	
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® 82550GY	Intel® 82544EI	Intel 82544EI	
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) with Intel® Packet Protect	■	■	■	■	
Intel® 82550 Controller with Integrated Encryption Co-processor	■	■	■	■	
Encryption†					
3DES (168 bit) Encryption in software	Hardware offload	Hardware offload	Software only	Software only	
Authentication Algorithms in software					
SHA-1	Hardware offload	Hardware offload	Software only	Software only	
MD5	Hardware offload	Hardware offload	Software only	Software only	
Authentication Method					
Preshared Key	■	■	■	■	
Entrust/PKI*	■	■	■	■	
INTEL® BACKING					
Limited Lifetime Warranty	■	■	■	■	
90-day Money-back Guarantee (U.S. and Canada)	■	■	■	■	

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/connectivity

ONLINE DOCUMENTS

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

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/connectivity/how_to_buy/index.htm

ORDER CODES

Intel® PRO/100 S Server Adapter	PILA8470C3
Intel® PRO/100 S Dual Port Server Adapter	PILA8472C3
Intel® PRO/1000 XF Server Adapter	PWLA8490XF
Intel® PRO/1000 XT Server Adapter	PWLA8490XT
Intel® PRO/1000 XT (Low-Profile) Server Adapter	PWLA8490XTL

5-packs also available, 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/1000 Desktop Adapters
- Intel® PRO/100 Mobile Adapters
- Intel® PRO/Wireless Adapters
- Intel® Server Boards

[†] 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, Windows* 2000, Windows XP, NetWare* 4.1 (and above) and Linux SCO UnixWare 7. 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

³ Actual throughput may be limited by constraints of the system platform

* Other names and brands may be claimed as the property of others.

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