

Product Brief

Intel® PRO/1000 PF Quad Port Server Adapter

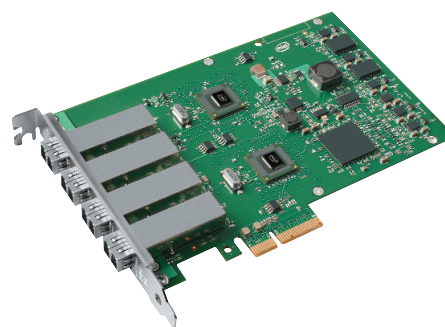
Network Connectivity



Intel® PRO/1000 PF Quad Port Server Adapter

Quad Port Fiber Gigabit Ethernet Server Adapter for PCI* Express Slots

- Four high-performance PCI Express* 1000 Mbps connections for slot-constrained servers requiring high bandwidth
- Multi-Gigabit Ethernet Scalability enhances and increases uptime through advanced server features
- Built on Intel® lead-free¹ technology



Connectivity You Can Count On

Conserve valuable PCI Express (PCIe*) server slots while adding multi-port Gigabit Ethernet capability with the Intel® PRO/1000 PF Quad Port Server Adapter. The dedicated input/output (I/O) bandwidth of PCIe ensures priority performance on each port – without bus sharing – for Gigabit Ethernet connectivity in fiber optic networks. The Intel PRO/1000 PF Quad Port Server Adapter improves

performance in multi-processor systems by balancing network loads across multiple central processing units (CPUs). Additionally, the Intel PRO/1000 PF Quad Port Server Adapter enables Intel® I/O Acceleration Technology (Intel® I/OAT)² for faster I/O processing on the new Dual-Core and Quad-Core Intel® Xeon® processor-based servers.

Features

Benefits

| | |
|---|---|
| Two Intel® 82571GB Gigabit Controllers | Enables four Gigabit Ethernet connections on a single adapter, delivering increased bandwidth for slot-constrained servers and providing high performance, reliability, and two low-power integrated, dual port PCI Express Gigabit Ethernet controller chips |
| Load balancing on multiple CPUs | Increases performance on multi-processor systems by efficiently balancing network loads across CPU cores when used with Receive-Side Scaling from Microsoft or Scalable I/O on Linux* |
| Intel® I/OAT ² | Accelerates I/O with higher throughput and lower CPU utilization by offloading processing overhead |
| Virtualization | Multi-port cards provide the platform with the port density required for virtualized environments |
| LC connectors | Small connector design is compatible with the latest fiber-optic cabling standards |
| 1000BASE-SX multi-mode fiber | Ensures compatibility with fiber-optic cable lengths up to 275 meters |
| Support for most network operating systems (NOS) | Enables widespread deployment |
| Remote management support | Reduces support costs with remote management based on industry-wide standards |
| RoHS compliant ³ , lead-free ¹ technology | Compliant with the European Union directive (effective as of July 2006) to reduce the use of hazardous materials |
| Intel® PROSet Utility for Windows* | Provides point-and-click power over individual adapters, advanced adapter features, connection teaming, and Device Manager virtual local area network (VLAN) configuration |
| Advanced cable diagnostics | Dynamically tests and reports network problems (error rate, cable length) and automatically compensates for cable issues (cross-over cable, wrong pin-out/polarity) |
| Intel backing | Backed by an Intel® limited lifetime warranty, 90-day money-back guarantee (U.S. and Canada), and worldwide support |

The Intel PRO/1000 PF Quad Port Server Adapter represents the sixth generation of Intel® network adapters for Gigabit Ethernet over fiber optic cabling. For easy installation and management, all Intel® PRO Network Connections are supported by Intel® PRO

Intelligent Install and the new Intel® PROSet Utility for Windows* Device Manager. Intel PROSet simplifies adapter installation and gives you point-and-click power to configure and manage all your Intel PRO Network Connections for connectivity you can count on.

Specifications

General

| | |
|---------------------------------|-------------------------------------|
| Product code | EXPI9404PF ⁴ |
| Connectors | Four LC Fiber optic connectors |
| IEEE standards/network topology | 1000BASE-SX |
| Wiring | Multi-mode fiber (62.5 µm or 50 µm) |

Adapter Product Features

| | |
|--|----------------------------------|
| Intel® PROSet Utility and Intel® PRO Intelligent Install for easy installation | • |
| Intel® lead-free ¹ technology | • |
| Plug and play specification support | Standard |
| Auto-negotiation, full-duplex capable | • |
| Intel® I/OAT ² | • |
| Integrated media access control (MAC) and serdes | • |
| Includes a full-height bracket | • |
| RoHS ³ | • |
| Cable distance | 275 m at 62.5 µm; 550 m at 50 µm |

Network Management

| | |
|---|---|
| Wired for Management (WfM) baseline v2.0 enabled for servers | • |
| DMI 2.0 support, Windows Management Instrumentation (WMI) and SNMP-manageable SMBus support | • |
| Remote Installation Services (RIS) | • |
| Diagnostics (loopback, testability, PHY register access) | • |
| Advanced configuration and power interface (ACPI) 1.0 power management | • |
| Wake on LAN* support over PCI Express* | • |
| PXE 2.0 enabled through boot read-only memory (ROM) | • |

Network Operating Systems (NOS) Software Support

| | |
|---|---|
| Microsoft Windows* Server 2003, Enterprise, Datacenter (32- and 64-bit) | • |
| Microsoft Windows 2000 | • |
| Red Hat Linux* 2.4x or later (32- and 64-bit) | • |
| FreeBSD* 4.x or later | • |
| Novell Netware* | • |
| Sun Solaris* x86, OS 8 and later | • |
| SCO Open Server 5, OpenUNIX 8* | • |

Intel Backing

| | |
|--|---|
| Limited lifetime warranty | • |
| 90-day, money-back guarantee (U.S. and Canada) | • |

Advanced Software Features

| | |
|--|--|
| Adapter fault tolerance (AFT) | • |
| Switch fault tolerance (SFT) | • |
| Adaptive load balancing (ALB) | • |
| Fast EtherChannel* ⁵ (FEC) | • |
| Gigabit EtherChannel* ⁵ (GEC) | • |
| Teaming support | Scales up to 8 connections |
| Multiple teams | Supports 4 separate teams, maximum |
| IEEE 802.3ad* (link aggregation control protocol) ⁵ | • |
| Test switch configuration | Tested with major switch original equipment manufacturers (OEMs) |
| PCIe Hot Plug*/Active peripheral component interconnect (PCI) | • |
| IEEE 802.1Q* VLANs | • |
| IEEE 802.3* (z, ab, u, x) flow control support | • |
| TCP checksum offload – transmission control protocol (TCP), user datagram protocol (UDP), Internet protocol (IP) | • |
| IEEE 802.1p* | • |
| TCP segmentation/large send offload | • |
| Interrupt moderation | • |

Technical Features

| | |
|--------------------------------------|--|
| Data rate(s) supported per port | 1000 Mbps |
| Bus type | PCI Express 1.0a |
| Bus width | x4 lane PCI Express, operable in x4, x8, x16 slots |
| Bus speed (x4, encoded rate) | 10 Gbps uni-directional; 20 Gbps bi-directional |
| EEPROM-SPI and single EEPROM support | • |
| Interrupt levels | INTA, INTB, INTC, INTD |
| IEEE support | 802.3ab* |
| Hardware certifications | FCC B, UL, CE, VCCI, BSMI, CTICK, MIC |
| Controller-processor | Intel® 82571 GB |
| Typical power consumption | 4.95 W (3.3 V @ 1.5 A) |
| Operating temperature | 0–55° C |
| LEDs | 4 (1/port, link and speed) solid and blinking |

Physical Dimensions

| | |
|-----------------------|-------------------|
| Length | 16.76 cm (6.6 in) |
| Width | 1.91 cm (0.75 in) |
| Height of end bracket | 5.97 cm (2.35 in) |

Order Code

Single Unit: EXPI9404PF⁴

Bulk Pack: EXPI9404PFBLK (order 5, get 5)

Companion Products

Consider these Intel® products in your server and network planning:

- Intel® PRO/1000 Server Adapters
 - Copper or fiber-optic network connectivity, up to four ports per card
 - Solutions for PCI Express, PCI-X*, and PCI interfaces
- Intel® PRO/10GbE Server Adapters
 - CX4 offering for cost-effective 10 Gigabit-over-copper connections
 - Short-range and long-range connectivity solutions for fiber-optic cabling
- Intel® PRO/1000 Desktop Adapters for PCI Express and PCI interfaces
- Other Intel® PRO Desktop and Server Adapters
- Intel® Xeon® processors
- Intel® Server Boards

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 at: www.intel.com/network/connectivity/how_to_buy/index.htm.

Customer Support

Intel® Customer Support Services offers a broad selection of programs including phone support and warranty service. For more information, contact us at <http://support.intel.com/support/network>. Service and availability may vary by country.

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 <http://www.intel.com/support/9089.htm> for the telephone number in your area. For additional product information on Intel® Networking Connectivity products, visit <http://www.intel.com/network/connectivity>.

To see the full line of Intel® PRO/1000 Network Adapters for PCI Express,
visit www.intel.com/network/connectivity

¹Lead has not been intentionally added, but lead may still exist as an impurity below 1000 ppm, or an approved RoHS exemption applies.

²Intel® I/O Acceleration Technology (Intel® I/OAT) requires an operating system that supports Intel I/OAT.

³Lead and other materials banned in RoHS Directive are either (1) below all applicable substance thresholds as proposed by the EU and China, or (2) an approved/pending exemption applies.

⁴Bulk packs also available for minimum order quantities of five adapters. One driver CD per order of five units.

⁵Available only when used with a capable switch.

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