Product Brief

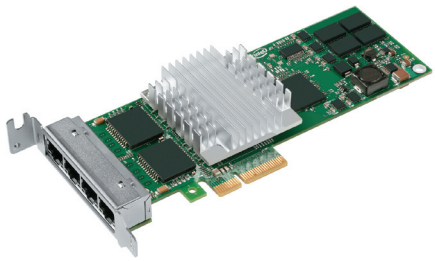
Intel® PRO/1000 PT Quad Port LP Server Adapter

Network Connectivity

Intel® PRO/1000 PT Quad Port LP Server Adapter

Low-Profile Quad Port Copper Gigabit Ethernet Server Adapter for PCI* Express Slots

- Four high-performance PCI Express* 10/100/1000 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-free[1] 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 PT Quad Port LP 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 Category-5 networks. The Intel PRO/1000 PT Quad Port LP Server Adapter improves performance in multi-processor systems by balancing network loads across multiple central processing units (CPUs). Additionally, the Intel PRO/1000 PT Quad Port LP Server Adapter supports Intel® I/O Acceleration Technology (Intel® I/OAT)[2] for faster I/O processing on the new Quad-Core and Dual-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 low-power use in two single, integrated, dual port PCI Express Gigabit Ethernet controller chips
Low-profile	Enables higher bandwidth and throughput from standard and low-profile PCIe slots and servers
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
Interrupt moderation	Delivers increased performance while significantly reducing CPU utilization
Compatible with x4, x8, and x16 standard and low-profile PCI Express* slots	Allows quad-port operation in almost any PCI Express server slot, except x1 slots, and allows each port to operate without interfering with the other
Support for most network operating systems (NOS)	Enables widespread deployment
Remote management support	Reduces support costs with remote management based on industry-wide standards
Category-5 unshielded twisted pair (UTP), 4-pair cabling	Uses existing 4-pair cabling and saves re-wiring costs
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 PT Quad Port LP Server Adapter's low-profile design, the industry's first server adapter to incorporate four Gigabit Ethernet connections in a low-profile PCI Express slot, improves server throughput and rack density at the same time.

The Intel PRO/1000 PT Quad Port LP Server Adapter represents the sixth generation of Intel® network adapters for Gigabit Ethernet, and features 10/100/1000 Mbps self-configuration for compatibility with mixed-speed network infrastructure. 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	EXPI9404PTL[4]
Connectors	Four RJ-45
EEE standards/network topology	10BASE-T, 100BASE-TX, 1000BASE-T
Wiring	Category-5, unshielded twisted pair (UTP), 4-pair

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 physical layer (PHY)	▪
Includes a full-height bracket	▪
RoHs[3]	▪
Cable distance	100 m in Category-5 for 100/1000 Mbps; and Category-3 for 10 Mbps

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)	▪
EEE 802.1Q* VLANs	▪
EEE 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	10, 100, and 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® 82571GB
Typical power consumption	12.096 W (12 V @ 1.008 A)
Operating temperature	0–55° C
LEDs	4 (1/port, link and speed) solid and blinking

Physical Dimensions

Length	16.77 cm (6.601 in)
Width	6.89 cm (2.713 in)
Height of end bracket	8.00 cm (3.153 in)

Order Code

Single Unit: EXPI9404PTL[4]
Bulk Pack: EXPI9404PTLBLK (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 Network Adapters for PCI Express,
visit www.intel.com/network/connectivity

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

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

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

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

[5] Available only when used with a capable switch.

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