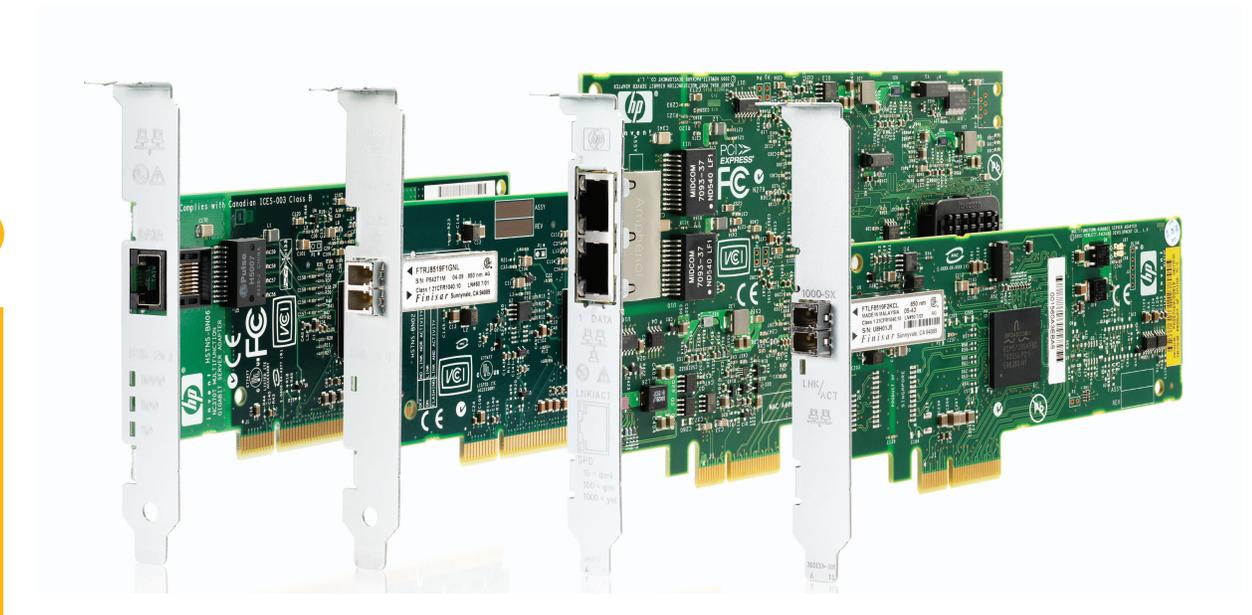# HP Multifunction Gigabit Server Adapters
Data sheet

In today's resource-constrained environments, organizations seek to simplify their infrastructure, improve manageability, optimize network performance, and lower the costs of enterprise computing over a unified IT fabric. The HP family of Multifunction Gigabit Server Adapters takes a bold step in realizing this vision.

Today, the typical server environment requires separate connectivity products for networking, storage, interconnects, and infrastructure management. Not so with these multi-function network adapters. Because the multifunction adapters present a single connection supporting multiple functions, they can assume any defined networking role, thereby allowing customers to manage their entire infrastructure as a single, unified fabric.

HP ships Multifunction Gigabit Server Adapters for both PCI-X and PCI Express bus architectures. The NC370F and NC370T support PCI-X buses, while the NC373F and NC380T work in the latest PCI Express buses.

All multifunction adapters combine accelerated networking, storage networking, and clustering—all in a single, high-performance network adapter. These multifunction network adapters support TOE (TCP/IP Offload Engine), iSCSI (Internet Small Computer Serial Interface), and RDMA (Remote Direct Memory Access) over a single network connection.

As a TCP/IP offload engine—The multifunction adapters shift processing of the communications protocol stack (TCP/IP) from the server CPU to the network adapter (also known as NIC), thereby freeing CPU cycles for other duties. With TOE, network communications are improved and server efficiency is increased.

As an iSCSI host bus adapter—The multifunction adapters combine two well-known technologies, SCSI and Ethernet, to give HP ProLiant servers ready access to storage boxes over the same wire used for networking. Accelerated iSCSI gives the NC370T block storage access over TCP/IP. iSCSI enables these network adapters to function as both a NIC and an HBA from a single connection. This capability is invaluable for consolidating resources and simplifying an infrastructure with a single I/O device.

As a high-speed, low-latency network adapter—The multifunction adapters deliver the fastest communication between two RDMA-capable systems by providing performance-optimized, memory-to-memory communications between servers. Data from the memory of one computer can communicate directly into the memory of another with minimal CPU and memory overhead.

Key features and benefits
- *Optimized server performance and improved network communication efficiency*
  - Redirects CPU cycle demands and increases application scalability by shifting the communications protocol stack (TCP/IP) processing from the server CPU to the network adapter
  - Provides the fastest and most efficient communication between two RDMA-capable systems by moving data from the memory of one computer directly into the memory of another, with minimal CPU and memory overhead
  - Radically improves price/performance for mainstream server environments with increased memory and CPU capacity to optimize application performance

- *Increased flexibility and simplified IT infrastructure*
  - Offers accelerated networking, storage networking, and clustering in a single, all-in-one adapter; provides the opportunity to consolidate ports, converge functions, and centralize IT management
  - Reduces the complexity of the infrastructure to lower costs, mitigate risk, and enable more responsive systems
  - Leverages the existing knowledge, experience, and proven tools of Ethernet; works across a broad range of servers, storage, and cluster systems

- *Standards-based architecture for fully scaleable connectivity and increased scale-out computing economics*
  - Offers flexible solutions to fit the performance, functions, and manageability needs of a data center infrastructure running over a unified fabric
  - Provides both performance and availability when connecting over a single networking device
  - Supports a unified fabric infrastructure, which can dramatically reduce costs, increase flexibility in business solution deployment, and simplify infrastructure management
  - Enables rapid, creative responses to changing customer demands and new market opportunities

HP Multifunction Gigabit Server Adapters

	HP NC370F PCI-X Multifunction Gigabit Server Adapter	HP NC370T PCI-X Multifunction Gigabit Server Adapter
Compliance	IEEE 802.3z, 802.3x, 802.3ad, 802.1p, 802.1Q	IEEE 802.3ab, 802.3u, 802.3x, 802.3ad, 802.1p, 802.1Q
Bus type	PCI-X	PCI-X
Data path	64-bit/133 MHz	64-bit/133 MHz
Onboard memory	92KB	92KB
Transfer rate	1000 Mbps	10/100/1000 Mbps
Ports and connector	One low-profile LC	One RJ-45
Cabling and distance	Up to 1,804 ft/550 m with multimode fiber (50μm/125μm) Up to 722 ft/220 m with multimode fiber (62.5μm/125μm)	CAT5e or better; 328 ft/100 m
Controller	Broadcom 5706	Broadcom 5706
LEDs	One: link and activity	Two: link, activity and speed
Power requirements	Operating voltage: +3.3V +/- 5% Maximum: 1.2A @3.3V (DC)	Operating voltage: +3.3V +/- 5% Maximum: 1.5A @3.3V (DC)
Environmental requirements	Operating: Temperature: 32° to 131°F (0° to 55°C) Humidity: 10% to 90% non-condensing Non-operating: Temperature: -40° to 185°F (-40° to 85°C) Humidity: 5% to 95% non-condensing	Operating: Temperature: 32° to 131°F (0° to 55°C) Humidity: 10% to 90% non-condensing Non-operating: Temperature: -40° to 185°F (-40° to 85°C) Humidity: 5% to 95% non-condensing
Emissions classifications	Class B	Class B

See product QuickSpecs for additional product information.

	HP NC373F PCI Express Multifunction Gigabit Server Adapter	HP NC380T PCI Express Multifunction Gigabit Server Adapter
Compliance	IEEE 802.3z, 802.3x, 802.3ad, 802.1p, 802.1Q	IEEE 802.3ab, 802.3u, 802.3x, 802.3ad, 802.1p, 802.1Q
Bus type	PCI Express	PCI Express
Data path	Four lanes (x4)	Four lanes (x4)
Onboard memory	92KB	184KB
Transfer rate	1000 Mbps	10/100/1000 Mbps
Ports and connector	One low-profile LC	Two RJ-45
Cabling and distance	Up to 1,804 ft/550 m with multimode fiber (50μm/125μm) Up to 722 ft/220 m with multimode fiber (62.5μm/125μm)	CAT5e or better; 328 ft/100 m
Controller	Broadcom 5708	Broadcom 5706 (two)
LEDs	One: link and activity	Two: link, activity and speed
Power requirements	Operating voltage: +3.3V +/- 5% Maximum: 2A @3.3V (DC)	Operating voltage: +12V +/- 8% Maximum: 1.05A @12V (DC)
Environmental requirements	Operating: Temperature: 32° to 131°F (0° to 55°C) Humidity: 10% to 90% non-condensing Non-operating: Temperature: -40° to 185°F (-40° to 85°C) Humidity: 5% to 95% non-condensing	Operating: Temperature: 32° to 131°F (0° to 55°C) Humidity: 10% to 90% non-condensing Non-operating: Temperature: -40° to 185°F (-40° to 85°C) Humidity: 5% to 95% non-condensing
Emissions classifications	Class B	Class B

See product QuickSpecs for additional product information.

HP Multifunction Gigabit Server Adapters

Advanced Redundancy and Security	Identify and diagnose network problems, optimize network connectivity, maximize network bandwidth and prevent the spread of viruses with the HP ProLiant Essentials Intelligent Networking Pack (INP) software. INP offers advanced redundancy and advanced load balancing by enhancing basic network adapter teaming by providing network aware intelligence to HP ProLiant servers. If you are experiencing network outages and have a need to operate 24x7, or need to get more throughput out of your Gigabit network, then INP can help you. By residing at the server nodes, INP is aware of your network infrastructure beyond the first tier of switches. Proactively adapting to your network infrastructure problems, it improves server availability and network performance while reducing virus threats before they spread to your entire network. Additionally, it detects and analyzes network bottlenecks or broken network linkages, steering your network traffic to the optimum route. To learn more about INP, visit the HP Server and Storage Expertise Center at **www.hp.com/servers/proliantessentials/inp**
Implementation and support services	HP services for HP ProLiant servers and options provide cost effective, continuous care and expertise, with committed response designed to meet your IT and business support needs. ProLiant Server maintenance HP Care Packs also provide maintenance coverage for qualified option such as HP Multifunction Gigabit Server Adapter at no extra charge. A full range of hardware and software support offerings are available ranging from installation services to 24x7, on-site repair coverage. HP recommends 4-hour, same-day response technical support to maximize uptime, improve system performance, and increase the productivity of system managers/operators. For customers requiring single-source hardware and software support, HP recommends Support Plus 24, providing an integrated approach to more complex interoperability problem resolution. For more information on HP support services, contact any of our world-class sales offices or resellers, or visit our worldwide websites listed below: • HP Care Pack Services: **www.hp.com/hps/carepack** • HP Software Support Services: **www.hp.com/hps/software** • HP Education and Training offerings: **www.hp.com/education** • HP Services offerings, customers, and resellers: **www.hp.com/hps**
Warranty	For more information on HP's worldwide limited warranty visit: **http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html**
Financial services	HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire, manage, and ultimately retire your HP solutions. For more information on these services, please contact your HP sales representative, or visit: **www.hp.com/go/hpfinancialservices**.
For more information	For more information on HP Multifunction Gigabit Server Adapters, contact any of our worldwide sales offices, or visit: **www.hp.com/servers/networking**.

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