QuickSpecs
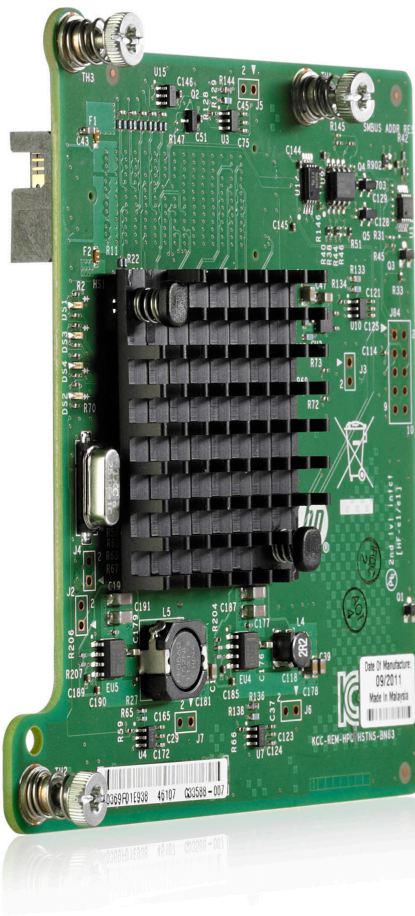
Overview

HPE Ethernet 1Gb 4-port 366M Adapter

Recommended SKU - This adapter is a recommended option that has been selected by HPE experts to provide the right technology for a range of workloads and market segments offering the best combination of performance, value and availability.

The HPE Ethernet 1Gb 4-port 366M Adapter is a HPE BladeSystem c-Class network adapter providing four Gigabit Ethernet ports on a single card saving valuable server mezzanine slots for other purposes. The x4 PCI Express 366M is supported on ProLiant c-Class servers in all mezzanine slots. For Gen8 ProLiant c-Class servers, the 366M is the first quad-port adapter option for c-Class with latest Intel® Ethernet I350 controller With the 366M, up to 96 Gigabit Ethernet ports per c7000 enclosure and 48 per c3000 enclosure are possible. The four ports provide the highest port density available for BladeSystem servers in a single adapter. The 366M is ideal for virtualization, security, server consolidation, network segmentation, and other server applications requiring maximum throughput and port density in a 1GbE infrastructure. The total aggregate throughput of 8 Gb/s full duplex also meets the needs for customers desiring high bandwidth but are not yet ready to move to 10 Gigabit Ethernet.

HPE Ethernet 1Gb 4-port 366M Adapter

Platform Information

Models

HPE Ethernet 1Gb 4-port 366M Adapter   615729-B21

Kit Contents	HPE Ethernet 1Gb 4-port 366M Adapter Quick install card Product warranty statement
Compatibility - Supported Servers	HPE ProLiant BL465c Gen8 HPE ProLiant BL460c Gen8 HPE ProLiant BL420c Gen8 HPE ProLiant BL660c Gen8 HPE ProLiant BL460c Gen9 HPE ProLiant BL660c Gen9 HPE ProLiant WS460c Gen9 **NOTE: This is a list of supported servers. Some may be discontinued.**
Compatibility - Supported Interconnect Modules	HPE GbE2c Ethernet Blade Switch for HP c-Class BladeSystem HPE 1GB Ethernet Pass-Thru Module for c-Class BladeSystem HPE 6120XG Blade Switch HPE 6125XLG Ethernet Blade Switch HPE 6127XLG Ethernet Blade Switch HPE Cisco B22HP Fabric Extender for BladeSystem c-Class HPE Cisco B22HP Fabric Extender with 16 FET for BladeSystem c-Class **NOTE: This is a list of supported servers. Some may be discontinued.**

Standard Features

At a Glance Features
- Four Gigabit Ethernet ports - The four ports on this adapter are transmitted to up to four separate enclosure interconnect bays providing redundant signal path.
- Supported on ProLiant Gen8 servers in all c-class enclosures, all server mezzanine slots (Mezzanine slot1 supports 2 ports & Mezzanine slot2 supports 4 ports); multiple cards per server.
- Intel® Ethernet I350 controllers
- Designed with server needs in mind
- IEEE 802.1p, 802.1Q, 802.3, 802.3ad, and 802.3x
- ProLiant Teaming including Network Fault Tolerance, Transmit Load Balancing, and Switch-Assisted Load Balancing
- 9.5K Jumbo frames
- Interrupt/DMA Coalescing
- IEEE 1588 (Precision Time Stamping) & 802.1AS (Hardware enabled Time Synchronization)
- TCP/IP checksum offload (TCO) and large send offload (LSO)
- Support for Preboot eXecution Environment (PXE)
- Intel® Integrated I/O and Data Direct I/O for increased performance and reduced latency
- Virtualization with VMDq
- IPv6 packet transmit and receive (excluding all offload capabilities); IPv6 aware SNMPv1 agent for Windows

Throughput-Theoretical Bandwidth
This adapter delivers 8 Gb/s bi-directional Ethernet transfer rate per port (32 Gb/s per adapter), providing the network performance needed to improve response times and alleviate bottlenecks.

802.1p QoS Tagging
IEEE quality of service (QoS) 802.1p tagging allows the adapter to mark or tag frames with a priority level across a QoS-aware network for improved traffic flow.

802.1Q VLANs
IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of this adapter to be separated into multiple virtual NICs for added network segmentation and enhanced security and performance. VLANs increase security by isolating traffic between users. Limiting the broadcast traffic to within the same VLAN domain also improves performance.

DMA Coalescing
Supports DMA Coalescing, the incoming data packets and interrupts associated with these DMA calls are intelligently batched to keep the system devices in lower power states.

HPE Sea Of Sensors 3D
Support for the HPE Sea of Sensors which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can initiate fans and make other adjustments to reduce energy usage. A significant improvement lies in the ability to apply fan speed increases only to the portion of the system that is rising in temperature, rather than all six fans in unison, which reduces the amount of energy used for cooling.

Standard Features

Interrupt Coalescing	Interrupt coalescing (interrupt moderation) groups multiple packets, thereby reducing the number of interrupts sent to the host. This process optimizes host efficiency, leaving the CPU available for other duties.
Intel Integrated I/O with Data Direct I/O	New on HPE ProLiant Gen8 servers, Intel® Integrated I/O features reduces memory access from I/O on local socket which speeds up CPU data transfer and accelerates inbound and outbound traffic flows. Together, Integrated I/O and Data Direct I/O technologies reduce system power, increases I/O performance and reduced I/O latency.
Jumbo Frames	This adapter supports Jumbo Frames (also known as extended frames), permitting up to a 9,500 byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over six times the size of a standard 1500-byte Ethernet frame. With Jumbo Frames, networks can achieve higher throughput performance and greater CPU utilization. These attributes are particularly useful for database transfer and tape backup operations.
Management Support	This adapter ships with agents that can be managed from HPE Systems Insight Manager or other management application that support SNMP.
Network Adapter Teaming	This adapter support for NIC teaming helps IT administrators increase network fault tolerance and increased network bandwidth, the team of adapters can work together as a single virtual adapter, providing support for several different types of teaming enabling IT administrators to optimize availability, improve performance and help reduce costs.
Optimized for Virtualization	I/O Virtualization support for VMware NetQueue and Microsoft VMQ helps meet the performance demands of consolidated virtual workloads.
Preboot eXecution Environment (PXE)	Support for PXE enables automatic deployment of computing resources remotely from anywhere. It allows a new or existing server to boot over the network and download software, including the operating system, from a management/ deployment server at another location on the network.Additionally, PXE enables decentralized software distribution and remote troubleshooting and repairs.
Single-Root I/O Virtualization	Single-Root I/O Virtualization (SR-IOV) provides a mechanism to bypass the host system hypervisor in virtual environments providing near metal performance and server efficiency. SR-IOV provides mechanism to create multiple Virtual Functions (VFs) to share single PCIe resources. The device is capable of SR-IOV, and requires Server BIOS support, controller firmware, and OS support.
TCP/UDP/IP	For overall improved system response, this adapter supports standard TCP/IP offloading techniques including: TCP/IP, UDP checksum offload (TCO) moves the TCP and IP checksum offloading from the CPU to the network adapter. Large send offload (LSO) or TCP segmentation offload (TSO) allows the TCP segmentation to be handled by the adapter rather than the CPU.

Standard Features

Precision Time Protocol (IEEE 1588 PTP)	Synchronization of system clocks throughout a network, achieving clock accuracy in the sub-microsecond range, making it suitable for measurement and control systems.
Warranty	Maximum: The remaining warranty of the HPE product in which it is installed (to a maximum three-year, limited warranty). Minimum: One year limited warranty. **NOTE:** Additional information regarding worldwide limited warranty and technical support is available at: **http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/index.aspx#.V4e3tPkrJhE**

Service and Support

Service and Support	**NOTE: This adapter is covered under HPE Support Services/ Service Contract applied to the HPE ProLiant Server or enclosure. No separate HPE Support Services# need to be purchased.**
	Most HPE branded options sourced from HPE that are compatible with your product will be covered under your main product support at the same level of coverage, allowing you to upgrade freely. Additional support is required on select workload accelerators, switches, racks and UPS options 12KVA and over. Coverage of the UPS battery is not included under HPE support services; standard warranty terms and conditions apply.
Warranty and Support Services	Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS options 12KVA and over. Coverage of the UPS battery is not included under TS support services; standard warranty terms and conditions apply.
Protect your business beyond warranty with HPE Support Services	HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HPE to help prevent problems and solve issues faster. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support you need for your IT and business. Protect your product, beyond warranty.
Parts and Materials	Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.
For more information	Visit the Hewlett Packard Enterprise Service and Support **website**.

Technical Specifications

General Specifications	Network Processor	Intel® Ethernet Controller I350
	Data Rate	Four ports, each at 1000 Mb/s bi-directional (theoretical maximum)
		NOTE: This adapter transmits from the server at only 2 Gbps aggregate full duplex per port.
	Onboard Memory	PCI Express 2.0 (Gen2.1 x4)
	Form Factor	Type I mezzanine card
		NOTE: If this adapter is installed in mezzanine slot 1 of a half-height server, connectivity will be provided on only 2 of the 4 ports.
	IEEE Compliance	802.1p, 802.1Q, 802.3, 802.3ad, and 802.3x, IEEE 1588, 802.1AS

Power and Environmental Specifications	Power	3.1W
	Temperature - Operating	10° - 35° C (50° - 95° F)
	Temperature - Non-Operating	-40° to 70° C (-40° to 158° F)
	Humidity - Operating	10% to 90% non-condensing
	Humidity - Non-operating	5% to 95% non-condensing
	Emissions Classification	FCC Class A
	Agency Approvals	USA: FCC (CFR 47 part 15) and UL 60950
		Canada: CSA60950
		Japan: VCCI
		International: EN55022:1998 (CISPR 22), EN55024:1998, and IEC60950:1999 (EN60950:2000)
		Taiwan: BSMI, CNS13438 (2006) Class A
		Australia: ACA, AS/NZS3548/EN55022:1998, EN55024:1998
		Korea: MIC (RRL), EMC Registration
	RoHS Compliance	6 of 6
	Safety	UL Mark (USA and Canada)
		CE Mark
		EN 60590

Operating System and Virtualization Support

- Microsoft Windows Server 2008
- Microsoft Windows HPC Server 2008
- Red Hat Enterprise Linux (RHEL) 5.7, 6.1
- SUSE Linux Enterprise Server (SLES)
- Solaris 10
- VMware ESX/ESXi 4.1u2, ESXi 5.0u1
- Citrix Xenserver 6.0
- Microsoft Windows Hyper-V

NOTE: For more operating system support and certification information, please visit: **http://h17007.www1.hpe.com/us/en/enterprise/servers/supportmatrix/ redhat_linux.aspx#.V4e8tPkrJD8**

Environment-friendly Products and Approach - End-of-

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

Technical Specifications

life Management and Recycling

The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
05-Feb-2018	Version 12	Changed	Overview Information was Updated
27-Mar-2017	Version 11	Changed	Related Options was updated.
20-May-2016	Version10	Changed	Sections updated in QuickSpecs
17-Dec-2015	Version 9	Removed	Obsolete SKUs deleted: 447047-B21, 438031-B21, 410916-B21, 438030-B21, 498358-B21, 451438-B21, 451439-B21.
18-Apr-2014	Version 8	Changed	Service and Support was revised and Recommended and Optional Services were removed.
21-Mar-2014	Version 7	Added	HPE 6125XLG Ethernet Blade System was added to Related Options.
10-Sep-2013	Version 6	Changed	Minor edit was made in HPE ProLiant Server Support.
12-Apr-2013	Version 5	Added	Related Options: Added new parts to c-Class BladeSystem Interconnect Modules section.
28-Dec-2012	Version 4	Changed	Service & Support: URL change was made in Additional Services Information section.
14-Dec-2012	Version 3	Removed	Removed At a Glance section. Standard Features: removed Product Features
		Added	Added Compatibility section Added Standard Features section Related Options: in c-Class Bladesystem Interconnect Modules added note.
24-Aug-2012	Version 2	Changed	Changes were made in Standard Features section.

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