Overview

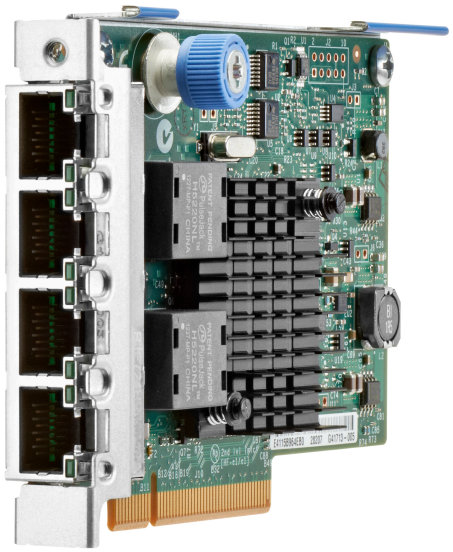
For latest information on this product please use HPE Ethernet 1Gb Adapters QuickSpecs

HPE Ethernet 1Gb 4-port 366FLR 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 366FLR features the next generation of Ethernet integration offering in a single chip solution on a FlexibleLOM form factor, further reducing power requirements for 4 ports of 1 Gb Ethernet. The HP 366FLR is the PCI Express 2.1 x4 based on the latest Intel® Ethernet Controller I350 designed for use with select HPE ProLiant servers. Its FlexibleLOM form factor means customers now have choice to meet growing infrastructure needs.

The HPE 366FLR adapter supports advanced features such as Large Send offload capability, TCP checksum and segmentation, VLAN tagging, MSI-X, Jumbo frames, IEEE 1588, and virtualization features such as Intel Virtualization Technology for Connectivity, VMware NetQueue, Microsoft VMQ and WOL, and power management technologies like Energy Efficient Ethernet.



HPE Ethernet 1Gb 4-port 366FLR Adapter

Platform Information

Models

HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21

Kit Contents	HP Ethernet 1Gb 4-port 366FLR Adapter Quick install card Product warranty statement
Compatibility - Supported Servers	HPE ProLiant DL20 Gen9 Server HPE ProLiant DL60 Gen9 Server HPE ProLiant DL80 Gen9 Server HPE ProLiant DL120 Gen9 Server HPE ProLiant DL160 Gen9 Server HPE ProLiant DL180 Gen9 Server HPE ProLiant DL360 Gen9 Server HPE ProLiant DL360 Gen10 Server HPE ProLiant DL380 Gen9 Server HPE ProLiant DL380 Gen10 Server HPE ProLiant DL385 Gen10 Server HPE ProLiant DL560 Gen9 Server HPE ProLiant DL580 Gen9 Server HPE ProLiant DL560 Gen10 Server HPE ProLiant DL580 Gen10 Server HPE Apollo 2000 - XL1x0r Gen9 Server HPE Apollo 4200 Gen9 Server HPE Apollo 4500 – XL450 Gen9 Server HPE Apollo 6000 – XL230b Gen9 Server HPE Apollo 6000 – XL250a Gen9 Server. **NOTE:** This is a list of supported servers. Some may be discontinued

Standard Features

At a Glance Features	• FlexibleLOM for select HP Gen8 Rack servers • Energy Efficient Ethernet (EEE) support • Industry-leading hardware integration for low power • Quad-port 1GbE provides up to 8 Gb/s full duplex throughput per adapter • Optimized for virtual servers • Improved small packet performance • This adapter is compatible only with HPE FlexibleLOM slots available on select HPE ProLiant Gen8 rack and scale-out servers. • Support for Preboot eXecution Environment (PXE)
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. **NOTE: Port enumeration on this adapter is from the bottom up, i.e. the port near the top of the adapter is port #4 and the port closest to the gold finger is port #1.**
10/100/1000T Twisted Pair Networks	In addition to Gigabit Ethernet, this adapter supports both 10 Mbps and 100 Mbps providing compatibility with Ethernet and Fast Ethernet twisted pair networks.
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.
Active Health System	Supports HPE Active Health System - monitors and records changes in the server hardware and configuration enabling customers to have accurate information that will assist in diagnosing problems and delivering rapid resolution when server failures occur.
Auto-negotiation	This adapter automatically senses the speed of the device to which it is attached. It also automatically configures for half or full duplex, depending on the duplex mode of the switch, hub, or router connected to the adapter.
Configuration Utilities	This adapter ships with a suite of operating system-tailored configuration utilities that allow the user to enable initial diagnostics and configure adapter teaming. This includes a patented teaming GUI for Microsoft Windows operating systems. Additionally, support for scripted installations of teams in a Microsoft Windows environment allow for unattended OS installations.
Energy Efficient Ethernet	Compliant with IEEE 802.3az, featuring advanced power savings features throttles power usage with network load activity.

Standard Features

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.
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.
LED Indicators	LED indicators show link integrity and network activity for easy troubleshooting.
Management Support	This adapter ships with agents that can be managed from HPE Systems Insight Manager or other management application that support SNMP.
Message Signaled Interrupt (Extended) (MSI-X)	Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.
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.
Server Integration	This adapter is a validated, tested, and qualified solution that is optimized for HPE ProLiant servers. Hewlett Packard Enterprise validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including HPE Intelligent Provisioning and HPE Systems Insight Manager that simplify network management. This approach provides a more robust and reliable networking solution than offerings from other vendors and provides users with a single point of contact for both their servers and their network adapters.
TCP/UDP/IP	For overall improved system response, this adapter supports standard TCP/IP offloading techniques including:

Standard Features

	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.
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

System Unit	**Dimensions (L x W)**	11.75 x 7.62 cm 4.63 x 3.0 in **NOTE:** without bracket
General Specifications	**Network Processor**	Intel® Ethernet Controller I350
	Data Rate	Four 1GbE ports, each at 2 Gb/s bi-directional; 8 Gb/s aggregate bi-directional theoretical bandwidth. 10/100/1000 Mbps, Full-duplex.
	Data Path	Four lane (x4) PCI Express, mechanically compatible with x8 and x16 FlexibleLOM slots
	Bus type	PCI Express 2.0 (Gen2.1 x4)
	Form Factor	FlexibleLOM
	IEEE Compliance	802.3, 802.3ab, 802.3u, 802.3x, 802.3ad, 802.1q, 802.3az, 1588, 802.1as
	Connector	RJ-45 (Four)
	Wiring	Category 5e (CAT-5e) or better twisted-pair cabling
	Cable Distance	Up to 328 ft (100 m)
Power and Environmental Specifications	**Power**	5.5W maximum
	Temperature - Operating	0° to 55°C (32° to 131°F)
	Temperature - Non-Operating	-65° to 85° C (-85° to 185° F)
	Humidity - Operating	10% to 90% non-condensing
	Humidity - Non-operating	5% to 95% non-condensing
	Emissions Classification	Class A
	Agency Approvals	USA: FCC Part 15 Class A Canada: ICES-003, Issue 4 Japan: VCCI V3 (2010.04) Class A International: EN55022:2006 + A1:2007 Class A; EN55024:1998+A1:2011+A2; EN61000-3-2:2006, EN61000-3-3:2008 Australia/New Zealand (AS/NZS): EN55022:2006+A12007 class A Korea: KN22 Class A, KN24
	RoHS Compliance	6 of 6
	Safety	UL Mark (USA and Canada) CE Mark EN 60590
Operating System and Virtualization Support		
Environment-friendly Products and Approach - End-of-life Management and Recycling		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. 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
07-May-2018	Version 8	Changed	Compatibility section was updated
05-Feb-2018	Version 7	Changed	Overview section was updated
18-Dec-2017	Version 6	Changed	Product Information- Compatibility was updated
16-Oct-2017	Version 5	Changed	Overview, Technical Specification- OS were updated.
11-Jul-2017	Version 4	Changed	Compatibility section was updated.
26-Oct-2016	Version 3	Changed	Re-branding edition.
10-Sep-2013	Version 2	Changed	Compatibility, 10 Gigabit Server Adapters, and FlexibleLOM Servers were revised.
19-Feb-2013	Version 1	New	QuickSpecs was created.

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