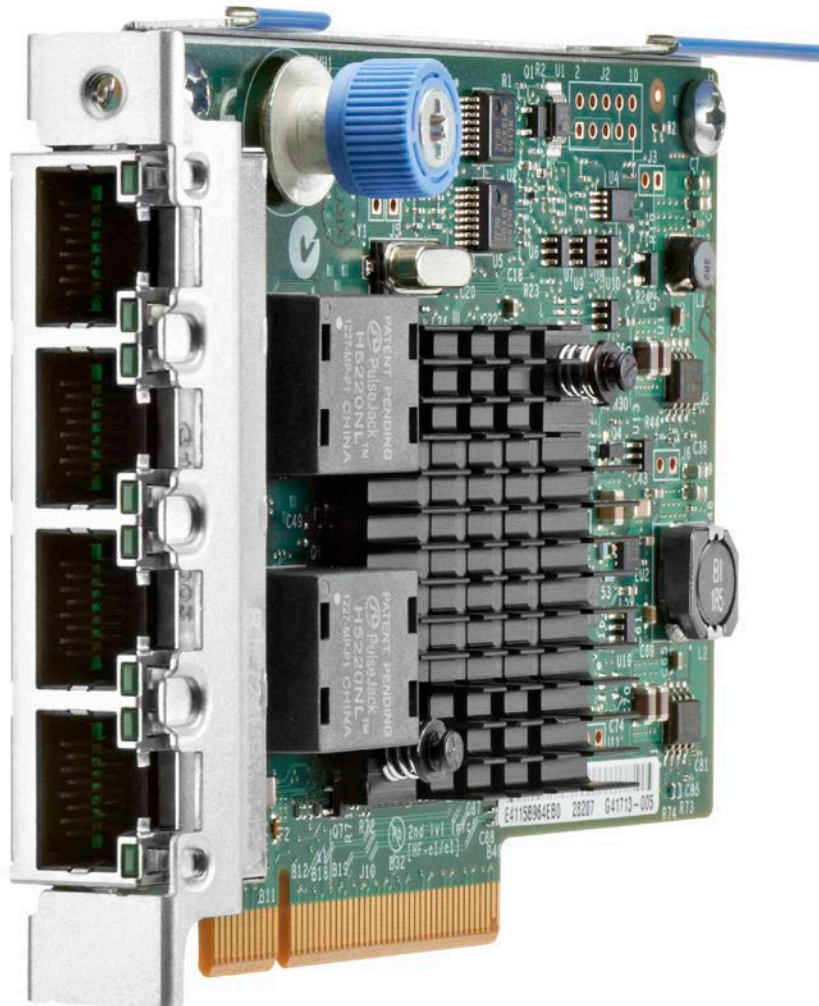# QuickSpecs

Overview

HPE Ethernet 1Gb 4-port 366FLR Adapter

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 1Gb Ethernet. The HPE 366FLR is the PCI Express 2.1 x4 based on the latest Intel® Ethernet Controller I350 designed for use with select HPE ProLiant Gen8 rack and scalable 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.

Models

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

Overview

Kit contents
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- Quick install card
- Product warranty statement

Compatibility

Servers   **ProLiant DL (rack-optimized)**:
- HPE ProLiant DL160 Gen8
- HPE ProLiant DL360p Gen8
- HPE ProLiant DL380p Gen8
- HPE ProLiant DL385p Gen8
- HPE ProLiant DL560 Gen8

ProLiant SL (scalable):
- HPE ProLiant SL210t Gen8
- HPE ProLiant SL230 Gen8
- HPE ProLiant SL250 Gen8
- HPE ProLiant SL270 Gen8

NOTE: This is a list of supported servers. Some servers may be discontinued.

Standard Features

Performance

Product Features	• FlexibleLOM for select HPE Gen8 Rack servers • Industry-leading hardware integration for low power • Quad-port 1GbE provides up to 8Gb/s full duplex throughput per adapter • Energy Efficient Ethernet (EEE) support • Optimized for virtual servers • Improved small packet performance • Support for Preboot eXecution Environment (PXE)

Quad-port 1 Gigabit Ethernet Throughput	The HPE 366FLR adapter provides 8 Gbps aggregate full duplex, delivering outstanding network performance that improves response time and removes bottlenecks. Four ports on a single adapter are ideal for high density, I/O slot constrained servers, virtualization, security, applications, server consolidation, and increased network segmentation. The 8Gbps full-duplex aggregate throughput meets the needs for customers desiring high bandwidth but are not yet ready to move to 10 Gigabit Ethernet. **NOTE:** Port enumeration on the 366FLR is from the bottom up, i.e. the port closest to the gold teeth is port #1 and the port near the top of the adapter is port #4.

Jumbo Frames	The HPE 366FLR FlexibleLOM supports jumbo frames, permits up to a 9.5K byte (KB) transmission unit (MTU) when running Ethernet, which is over five times the size of standard 1500-byte Ethernet frame. Jumbo frames can help achieve higher throughput and better CPU utilization and are particularly useful for database transfer and tape backup operations.

MSI and MSI-X	Up to 25 Message Signaled Interrupt (Extended) vectors per port provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.

802.1Q VLANs	IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HPE 366FLR 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.

TCP/IP Stateless Offloading	For overall improved system response, the HPE 366FLR supports TCP, IPv4, UDP checksum offload, Large Send Offload (LSO), and Segmentation Offload (TSO). These features optimize host efficiency, leaving the CPU available for other duties.

Time synchronization (IEEE 1588)	Hardware assist for IEEE 1588 and IEEE 802.1AS time synchronization implementations for time sensitive applications.

Optimized for Virtualization	Intel Virtualization Technology for Connectivity provides I/O Virtualization support for VMware NetQueue and Microsoft VMQ help meet the performance demands of consolidated virtual workloads.

Energy Efficient Ethernet	Compliant with IEEE 802.3az, featuring advanced power savings by throttling power usage with network load activity (with compatible link partner).

Standard Features

HPE Sea of Sensors 3D	Support for HPE Sea of Sensors 3D which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can kick on fans and make other adjustments to reduce energy usage. What makes it better is the upgrade from all six fans kicking on at one time to a new system where only one kicks on - the one in proximity of the area that started heating up - thus reducing the amount of energy used for cooling.
HPE 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.

Versatility

10/100/1000T Twisted Pair Networks	In addition to Gigabit Ethernet, the 366FLR adapter supports both 10Mbps and 100Mbps providing compatibility with Ethernet and Fast Ethernet twisted pair networks.
FlexibleLOM slot Compatibility	The HPE 366FLR is compatible only with HPE FlexibleLOM slot available on select HPE ProLiant Gen8 rack and scale-out servers.

High Availability

Network Adapter Teaming	ProLiant Network Adapter Teaming provides fault tolerance and load balancing across a team of two or more network adapters. The team of adapters works together as a single virtual adapter. The HPE 366FLR FlexibleLOM provides support for several different types of teaming. The teaming options offer IT professionals an easy, efficient, and cost-effective way to provide network fault tolerance and increased network bandwidth. For more information, refer to the ProLiant Network Adapter Teaming Whitepaper available at: **http://bizsupport.austin.hp.com/bc/docs/support/SupportManual/c01415139/c01415139.pdf**

Network Management

Auto-negotiation	The HPE 366FLR automatically senses the speed of the device to which it is attached. It also automatically configures for full duplex, depending on the duplex mode of the switch, hub, or router connected to the adapter.
Management Support	Like all HPE server adapters, the HPE 366FLR ships with drivers and agents that can be managed from HPE Systems Insight Manager, as well as using any other management application that supports SNMP. HPE Systems Insight Manager can recognize the 366FLR individually or in teams, and can collect and report SNMP statistics on the adapter events.
Server Integration	The HPE 366FLR is a completely integrated, tested, and qualified solution that is optimized for Hewlett Packard Enterprise servers. Hewlett Packard Enterprise validates a wide variety of major operating systems drivers with the network drivers plus provides central interface to simplify network management.
Configuration Utilities	Each HPE 366FLR 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

Standard Features

environment allow for unattended OS installations.

LED Indicators	Per port LED indicators show link integrity, network activity, and network speed for easy troubleshooting. Colored LEDs on each port of the HPE 366FLR adapter indicate network activity, and network link speed. Green link LED indicates 10/100/1000Mb speed.
PXE	Support for pre-boot execution environment (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. The HPE 366FLR supports PXE.
Warranty	Additional information regarding worldwide limited warranty and technical support is available at: **http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html**

Service and Support

Service and Support	**HPE Technology Services** HPE Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability and avoid downtime.

Protect your business beyond warranty with HPE Care Pack Services
When you buy HPE Options, it's also a good time to think about what level of service you may need. HPE Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need.

HPE Foundation Care services deliver scalable support-packages for Hewlett Packard Enterprise industry-standard servers and software. You can choose the type and level of service that is most suitable for your business needs. New to this portfolio is HPE Collaborative Support. If you are running business critical environments, Hewlett Packard Enterprise offers Proactive Care or Critical Advantage. These services help you deliver high levels of application availability through proactive service management and advanced technical response.

Here is the support service recommendation from the Foundation Care and Proactive Care portfolio. For customized support service solution, Hewlett Packard Enterprise can work with you to tailor a service solution for your unique support requirements using broader services portfolio of Foundation Care and Proactive Care.

Recommended HPE Care Pack Services for optimal satisfaction with your HPE product

Recommended Services

3-Year HPE 24x7 4 hour Response, Hardware Support Onsite Service
Provides you with rapid remote support and if required an Hewlett Packard Enterprise Authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.
https://www.hpe.com/h20195/v2/getpdf.aspx/5982-6547eee.pdf

OR
3-Year HPE 24x7 4 hour Response, HPE Collaborative Support
Offers customers a single point of contact for server problem diagnosis, hardware problem resolution, and basic software problem diagnosis, fault isolation, and resolution if available to HPE. If the problem is with HPE HW, the representative will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. In case, the issue is with HPE or supported third-party software product and cannot be resolved by applying known fixes, Hewlett Packard Enterprise will contact the third-party vendor and create a problem incident on your behalf.

HPE ProLiant Server Hardware Installation
Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

Related HPE Care Pack Services to enhance your HPE product experience

Related Services

3-Year HPE 24x7 4 hour Response, Proactive Care or Critical Advantage
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you.

Service and Support

https://www.hpe.com/h20195/v2/getpdf.aspx/4aa3-2140enw.pdf

OR
3-Year HPE 6-hour Onsite Call-to-Repair, HPE Collaborative Support
Offers customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HPE Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HPE. In case, the issue is with HPE or supported third-party software product and cannot be resolved by applying known fixes, Hewlett Packard Enterprise will contact the third-party vendor and create a problem incident on your behalf.

HPE Proactive Select Service
Provides a flexible way to purchase HPE best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months.
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf

Insight Remote Support	Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more **http://www.hp.com/go/insightremotesupport**
HPE Support Center	Personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers. Learn more **http://www.hp.com/go/hpsc** The HPE Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Care Pack or Hewlett Packard Enterprise contractual support agreement. **NOTE:** The Hewlett Packard Enterprise Support Center Mobile App is subject to local availability.
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. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.
Warranty / Service Coverage	For ProLiant servers and storage systems, this service covers HPE-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HPE as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.
For more	To learn more on services for HPE ESSN Options, please contact your Hewlett Packard Enterprise sales

Service and Support

information   representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit:
                        http://www.hp.com/services/proliant or **http://www.hp.com/services/bladesystem**

Related Options

Gigabit Server Adapters	HPE NC365T 4-port Ethernet Server Adapter	593722-B21
	HPE Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HPE Ethernet 1Gb 2-port 361T Adapter	652497-B21
	HPE Ethernet 1Gb 2-port 332T Adapter	615732-B21

10 Gigabit Server Adapters	**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
	HPE Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
	HPE Ethernet 10Gb 2-port 530T Adapter	656596-B21
	HPE Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
	HPE Ethernet 10Gb 2-port 561T Adapter	716591-B21
	HPE Ethernet 10Gb 2-port 570SFP+ Adapter	718904-B21

FlexibleLOM Adapters	**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
	Ethernet Adapters	
	HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
	HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
	HPE Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
	HPE Ethernet 10Gb 2-port 570FLR-SFP+ Adapter	717491-B21
	FlexFabric Adapters	
	HPE FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
	HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://www.hp.com/go/ProLiantNICs

Technical Specifications

General Specifications		
Network processor	Intel® Ethernet Controller I350	
Data rate	Four 1GbE ports, each at 2 Gbps full duplex; 8 Gbps aggregate full duplex 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 v2.0 (Gen2.1 x4) (FlexibleLOM slot)	
Connector	RJ-45 (Four)	
Cable distance	Up to 328 ft (100 m)	
Wiring	Category 5e (CAT-5e) or better twisted-pair cabling	
Dimensions	11.75 cm x 7.62 cm [4.626 in x 3.0 in (L x W)] (without bracket)	
IEEE Compliance	802.3, 802.3ab, 802.3u, 802.3x, 802.3ad, 802.1q, 802.3az, 1588, 802.1as	
Form factor	FlexibleLOM	

Power and Environmental Specifications		
Operating	**Temperature**	32° to 131° F (0° to 55° C)
	Humidity	10% to 90% non-condensing
Non-operating	**Temperature**	-85° to 185° F (-65° to 85° C)
	Humidity	5% to 95% non-condensing
Power requirement	5.5W Maximum	
Emissions classification	Class A	
Agency Approvals	**USA**	FCC Part 15 Class A
	Canada	ICES=--3, Issue 4
	Japan	VCCI V3 (2010.04) Class A
	Korea	KN22 Class B, KN24
	Australia	EN55022:2006+A12007 class A
	International	EN55022:2006 + A1:2007 Class A EN55024:1998+A1:2011+A2; EN61000-3-2:2006, EN61000-3-3:2008
RoHS Compliance	6 of 6	
Safety	UL Mark (USA and Canada) CE Mark EN 60590-1	

Operating System Support

- Microsoft Windows Server 2008 (32/64), Enterprise, Server 2012
- Web, Embedded, and R2
- Microsoft Windows HPC Server 2008
- Microsoft Windows 2008 Standard (32 and x64)
- Microsoft Windows 2008 Enterprise (32 and x64)
- Microsoft Windows Small Business Server 2011 (SBS V7) - base
- Microsoft Windows Small Business Server 2011 Essentials
- RHEL 5.7 x86 and AMD 64 & EM 64T
- RHEL 6.1 x86 and AMD 64 & EM 64T
- SLES10: x86 and AMD 64 & EM 64T
- SLES 11: x86 and AMD 64 & EM64T
- Solaris 10
- VMWare vSphere 4.1 and 5.0

Technical Specifications

- Citrix
- HyperV (Windows Server 2008 32 and 64)

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: **http://www.hpe.com/info/recycle.** To recycle your product, please go to: **http://www.hpe.com/info/recycle.** or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) 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 at: **http://www.hpe.com/info/recycle**. 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
26-Oct-2016	From Version 2 to 3	Changed	Rebranding edition.
10-Sep-2011	From Version 1 to 2	Changed	Compatibility, 10 Gigabit Server Adapters, and FlexibleLOM Servers were revised.

f 𝕏 in ✉
Sign up for updates

Hewlett Packard Enterprise

c04111405 - 14480 - Worldwide - V3 - 26-October-2016