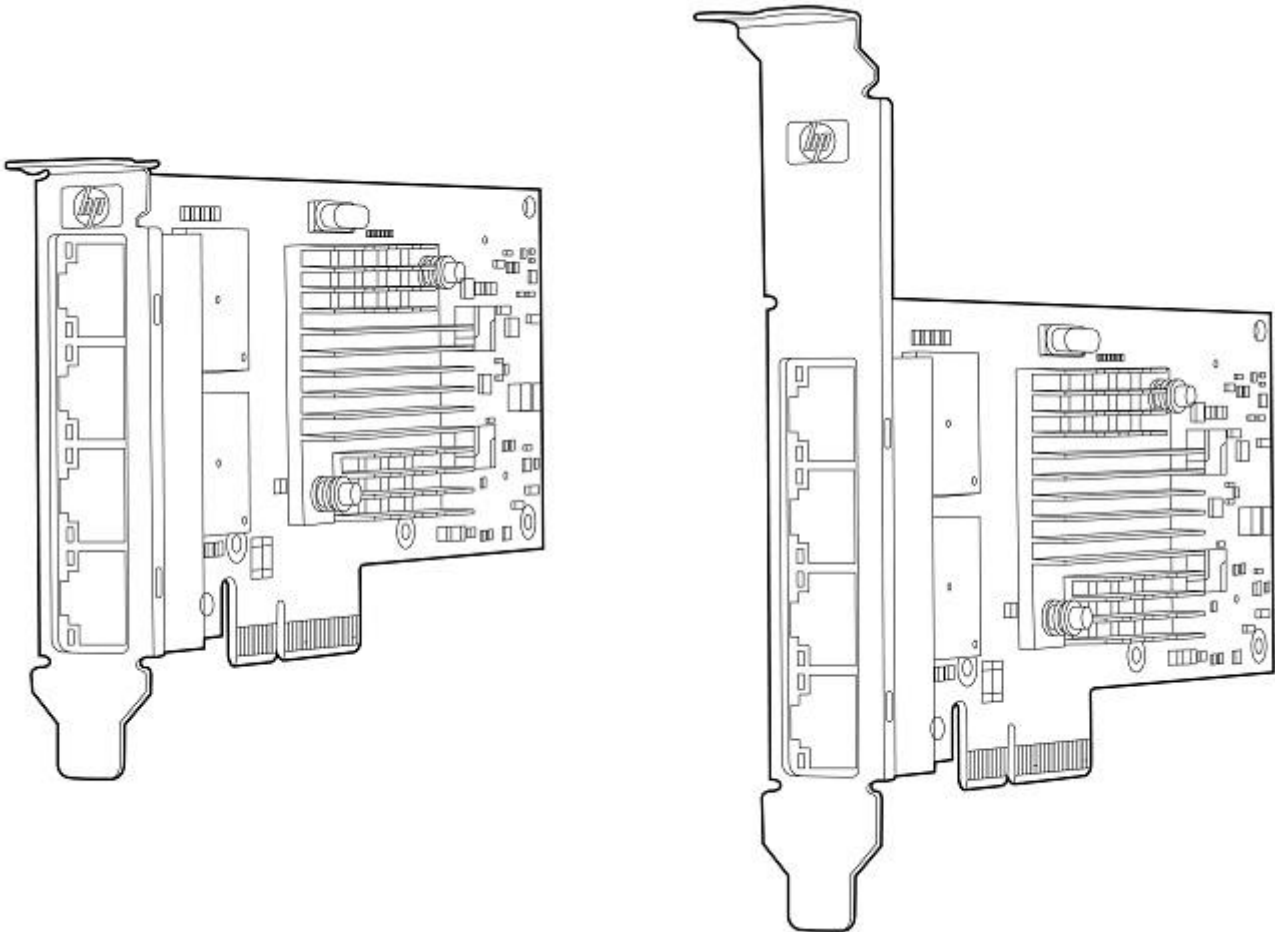# QuickSpecs

Overview

HP Ethernet 1Gb 4-port 366T Adapter

The HP Ethernet 1Gb 4-port 366T features the next generation of Ethernet integration offering in a single chip solution, further reducing power requirements for 4 ports of 1Gb Ethernet. The HP 366T is the PCI Express 2.1 x4 based on the latest Intel® Ethernet Controller I350 designed for use with select HP ProLiant Gen9 rack and tower servers.

The HP 366T adapter supports advanced features such as Large Send offload capability, TCP checksum and segmentation, VLANtagging, 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

HP Ethernet 1Gb 4-port 366T Adapter	811546-B21

Kit Contents	
	• HP Ethernet 1Gb 4-port 366T Adapter
	• Full height and half height brackets; the full height bracket is pre-installed on the card
	• Quick install card inclusive of instructions on changing to the half height bracket (if needed)
	• Product warranty statement

Compatibility

Servers

ProLiant DL (rack-optimized):

- HP ProLiant DL60 Gen9
- HP ProLiant DL80 Gen9
- HP ProLiant DL120 Gen9
- HP ProLiant DL160 Gen9
- HP ProLiant DL180 Gen9
- HP ProLiant DL360 Gen9
- HP ProLiant DL380 Gen9
- HP ProLiant DL560 Gen9
- HP ProLiant DL580 Gen9

ProLiant ML (expansion-optimized):

- HP ProLiant ML110 Gen9
- HP ProLiant ML150 Gen9
- HP ProLiant ML350 Gen9

NOTE: Some servers may be discontinued.

QuickSpecs

Standard Features

Performance

Quad-port Gigabit Ethernet Throughput	The HP 366T 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 meetsthe needs for customers desiring high bandwidth but are not yet ready to move to 10 Gigabit Ethernet. **NOTE:** Port enumeration on the 366T 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.
Jumbo Frames	The HP 366T adapter 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.
802.1Q VLANs with 802.1p QoS Tagging	IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HP 366T 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 HP 366T 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.
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.
Message Signal Interrupt Extension (MSI-X)	Up to 25 Message Signaled Interrupt (Extended) vectors per port provides performance benefits for multicore servers by load balancing interrupts between CPUs/cores.
Time synchronization (IEEE 1588)	Hardware assist for IEEE 1588 and IEEE 802.1AS time synchronization implementations for time sensitive applications.
Energy Efficient Ethernet	Compliant with IEEE 802.3az, featuring advanced power savings by throttling power usage with networkload activity (with compatible link partner).
HP Sea of Sensors 3D	Support for HP 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.
HP Active Health System	Supports HP 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 366T adapter supports both 10Mbps and 100Mbps providing compatibility with Ethernet and Fast Ethernet twisted pair networks.
Full and Half Height Brackets	The 366T is a low-profile card supporting both full height and half height PCI Express slots. A full height bracket is pre-installed on the card with the half height bracket in the box. The quick install card includes instructions on how to change brackets if needed.
x4/x8/x16 PCI Express Compatibility	The x4 PCI Express interface on the 366T is compatible with x4, x8, and x16 PCI slots. If installed in a x8 or x16 slot, the adapter will operate at the x4 speed.

Standard Features

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. Support for several different types of teaming is included. 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 366T 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.
Management Support	Like all HP server adapters, the 366T ships with drivers and agents that can be managed from HP Systems Insight Manager, as well as using any other management application that supports SNMP. HP Systems Insight Manager can recognize the NC365T individually or in teams, and can collect and report SNMP statistics on the adapter events.
Server Integration	The 366T is a completely integrated, tested, and qualified solution that is optimized for HP ProLiant servers. HP validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including SmartStart and HP Systems Insight Manager that simplify network management. Integrated Management Log (IML) support is provided by the NC365T for critical event logging on HP servers. This approach provides a more robust and reliable networking solution than offerings from other venders and provides users with a single point of contact for both their servers and their network adapters.
LED Indicators	Per port bracket LED indicators show link integrity, network activity, and network speed for easy troubleshooting.
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.

Warranty

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	**HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI**

When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage.

Protect your business beyond warranty
When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively
HP Care Pack Services offer a standard reactive hardware and software support services suite sold separately, or combined with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.

HP server and storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.

Learn more: www.hp.com/services/servers and www.hp.com/services/storage

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:
- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at http://www.hp.com/go/lookuptool

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

Recommended Services	**Hardware Options Support**

HP Care Packs provide support for all HP-branded hardware options qualified for inclusion in your server or storage solution. Any additional HP-qualified options installed within the server are covered at the same service level and for the same period as the server and no additional cost.

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

Service and Support

3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7
Provides you with rapid remote support and if required an HP 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.

This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

HP Installation and Startup of HP ProLiant Servers
Provides for the installation of your new HP ProLiant server and operating system to assist you in bringing your new HP ProLiant server and operating system into operation in a timely and professional manner.

This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:
- Delivery of the service at a mutually scheduled time convenient to your organization
- Availability of an HP service specialist to answer basic questions during the onsite delivery of this service
- Custom installation as detailed in "Delivery specifications" or in a Statement of Work (SOW)
- Verification prior to installation that all service prerequisites are met

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982?7572ENN

Optional HP Care Pack Services that will enhance your HP product experience

Optional Services

3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service, 6- or 24-hour
As an alternative to our recommended support level, for customers who need committed call-to-repair for server hardware.

Provides your IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 or 24 hours of the initial service request to the HP Global Solution Center.

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf

3-Year HP Support Plus 24
As an alternative to our recommended support level, for customers who need access to responsive 24x7 hardware and software support plus software updates on HP and selected third party products:

For a higher return on your server and storage technology, our 3-year combined reactive support service delivers integrated onsite hardware/software support services available 24x7x365, including access to HP technical resources, 4-hour response onsite hardware support and software updates.

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EEE

HP Proactive Select Service
Customer needs on demand access to consulting, technical proactive services and education courses

Provides a flexible way to purchase HP 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.

Service and Support

http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN

eSupport	HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center. **Support Portal** The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment. **Features include**: • Access to self-solve tools (including search technical knowledge base) • Efficient logging and tracking of support cases • Collaboration with other business and IT professionals • Download of patches and drivers • Access to diagnostic tools • Proactive notification of relevant information Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: http://www.hp.com/support HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.
Customer Technical Training	In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.
HP Services Awards	HP Technology Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.
Additional Services Information	To learn more on HP ProLiant servers, HP BladeSystem servers and HP storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: www.hp.com/services/proliant or www.hp.com/services/bladesystem or http://www.hp.com/services/storage

Related Options

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

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

FlexibleLOM Adapters	**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
	Ethernet Adapters	
	HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
	HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
	HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
	HP Ethernet 10Gb 2-port 570FLR-SFP+ Adapter	717491-B21
	FlexFabric Adapters	
	HP FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	629138-B21
	HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
	HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	

Technical Specifications

General Specifications	**Communications 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 compatible with x1, x4, x8, and x16 PCI Express slots	
	Bus type	PCI Express v2.0 (Gen2.1 x4)	
	Connector	RJ-45 (Four)	
	Cable distance	Up to 328 ft (100 m)	
	Wiring	Category 5 (CAT-5) or better twisted-pair cabling	
	Form factor	Low profile card with both full height (pre-installed) and half height brackets included in kit	
	Dimensions	13.46 cm x 6.86 cm [5.3 in x 2.7 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		
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
		European Union	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	

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)**NOTE:** For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hplinuxcert.html

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP 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 web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.