Overview

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

HPE Ethernet 1Gb 2-port 332T Adapter

Extended SKU - This adapter is part of an extended catalog of products tailored for customers in specific markets or with specific workloads, requiring the utmost in performance or value, but typically have a longer lead-time .

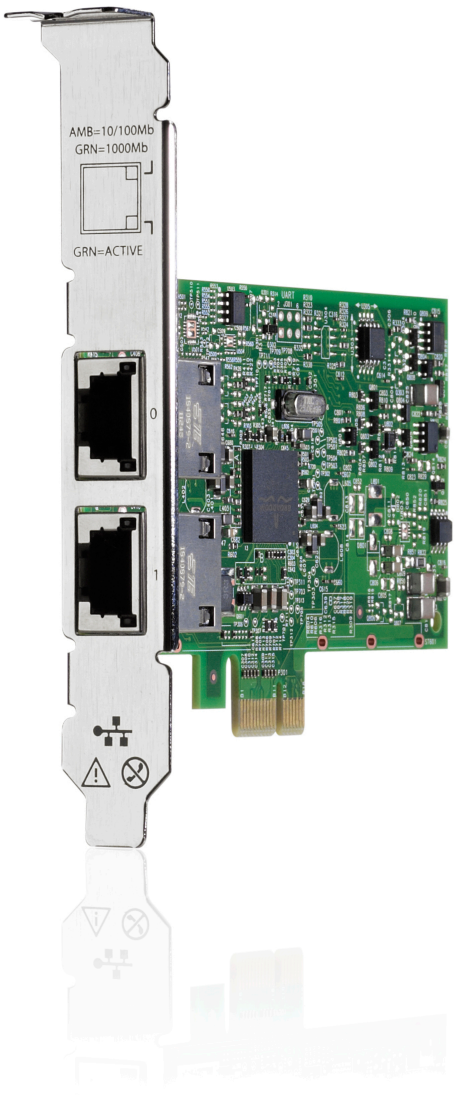
The HPE 332T is a dual-port, low-cost, low profile 1Gb adapter featuring the BCM5720 Broadcom single-chip solution in a PCIe 2.0 compliant form factor designed for select HPE ProLiant servers.

It delivers full line-rate performance across all ports with low power consumption, providing Ethernet connectivity ideal for virtualization, security, server consolidation, and network segmentation.

Supported advanced features include Large Send and Receive offload capability, TCP checksum and segmentation, VLAN tagging, MSI-X, jumbo frames, IEEE 1588 (Precision Time Protocol - PTP), and virtualization features such as VMware NetQueue and Microsoft Virtual Machine Queue (VMQ).

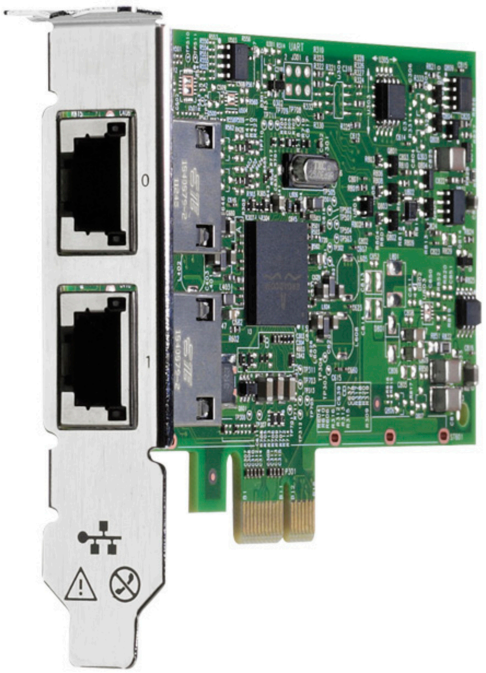
Support for HPE Sea of Sensors 3D Technology enhances server performance while reducing energy use and expense.

Overview



HPE Ethernet 1Gb 2-port 332T Adapter, with full-height bracket

Overview



HPE Ethernet 1Gb 2-port 332T Adapter, with half-height bracket

Platform Information

Models

HPE Ethernet 1Gb 2-port 332T Adapter	615732-B21

Kit Contents	HPE Ethernet 1Gb 2-port 332T Adapter Low profile bracket 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 ML30 Gen9 Server HPE ProLiant ML110 Gen9 Server HPE ProLiant ML150 Gen9 Server HPE ProLiant ML350 Gen9 Server HPE Apollo 2000 - XL1x0r Gen9 Server HPE Apollo 4200 Gen9 Server HPE Apollo 6000 – XL260a Gen9 Server HPE Apollo 6500 - XL270d Gen9 Server **NOTE:** This is a list of supported servers. Some may be discontinued.

Standard Features

At a Glance Features

- Industry-leading hardware integration for low power
- Dual-port, PCI Express 2.0 1Gb Ethernet adapter for HPE ProLiant servers
- Dual-port 1GbE provide up to 4 Gb full duplex aggregate throughput per adapter
- Energy Efficient Ethernet (EEE) support
- Optimized for virtual servers
- Improved small packet performance
- Supports the Preboot eXecution Environment (PXE)
- IEEE 1588, IEEE 802.1as (hardware assisted)
- In addition to Gigabit Ethernet, this adapter supports both 10 Mbps and 100 Mbps providing compatibility with Ethernet and Fast Ethernet twisted pair networks.
- This adapter ships with a pre-installed full height bracket and a half height bracket is also supplied to ensure trouble free installation. The included quick install card guides the user in the bracket exchange process.

Throughput-Theoretical Bandwidth	This adapter delivers 2 Gb/s bi-directional Ethernet transfer rate per port (4 Gb/s per adapter), providing the network performance needed to improve response times and alleviate bottlenecks.
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.
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.
Jumbo Frames	This adapter supports Jumbo Frames (also known as extended frames), permitting up to a 9,000 byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over five 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.

Standard Features

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.
PCI Express Interface	The x1 PCI Express interface on this adapter is compatible with x1, x4, x8, and x16 PCI slots. If installed in a x4, x8 or x16 slot, the adapter will operate at the x1 speed.
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: 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.

Standard Features

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)**	11.18 x 5.59 cm 4.4 x 2.2 in **NOTE:** without bracket
General Specifications	**Network Processor**	Broadcom NetXtreme BCM5720 chipset
	Data Rate	Two ports, each at 1 Gb/s bi-directional (2 Gb/s aggregate per port); 4 Gb/s aggregate bi-directional theoretical bandwidth.
	Data Path	One lane (x1) PCI Express compatible with x1, x4, x8, and x16 PCI Express slots
	Bus type	PCI Express 2.0
	Form Factor	Low profile card with both full height (pre-installed) and half height brackets included in kit
	Bus Speed	Gen 2 x1
	IEEE Compliance	802.3,802.3u,802.3ab,802.3x,802.3ad,802.1p, 802.1q, 802.3az, 1588, 802.1as
	Connector	RJ-45 (Two)
	Wiring	Category 5/ (CAT-5) or better twisted-pair cabling
	Cable Distance	Up to 328 ft (100 m)
	Interrupt Levels	Automatically configured
Power and Environmental Specifications	**Power**	2.1 W (1000Base-T, both ports, idle, without EEE link partner) 1.7 W (1000Base-T, both ports, idle, EEE link partner) 2.2 W (1000Base-T, both ports, maximum traffic) 0.6 W (AUX power with WoL)
	Temperature - Operating	0° to 55°C (32° to 131°F)
	Humidity - Operating	10% to 90% non-condensing
	Emissions Classification	Class B
	Agency Approvals	USA: FCC Part 15 Class B Canada: ICES-003, Issue 4 Japan: VCCI V3 (2010.04) Class B Korea: KN22 Class B, KN24 Australia: EN55022:2006+A12007 class B European Union: EN55024:1998+A1:2011+A2; EN61000-3- 2:2006, EN61000-3-3:2008 International: EN55022:2006 + A1:2007 Class B
	RoHS Compliance	6 of 6
	Safety	UL Mark (USA and Canada) CE Mark EN 60590
Operating System and Virtualization Support	The Operating Systems supported by this adapter are based on the server OS support. Please refer to the OS Support Matrix at: **https://www.hpe.com/us/en/servers/server-operating-systems.html**	
Environment-friendly Products and	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

Approach - End-of-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 10	Changed	Overview section was updated
18-Dec-2017	Version 9	Changed	Product Information- Compatibility was updated
16-Oct-2017	Version 8	Changed	Overview, Standard Features-At a Glance Features and Technical Specification- OS were updated.
11-Jul-2017	Version 7	Changed	Compatibility section was updated.
10-Sep-2013	Version 6	Changed	Servers, 10 Gigabit Server Adapters, and FlexibleLOM Servers were revised.
19-Feb-2013	Version 5	Changed	Changes were made in the Overview Section and Related Options Section.
10-Oct-2012	Version 4	Changed	Changes made in the Compatibility section.
24-Sep-2012	Version 3	Changed	Changes made in the Compatibility section.
20-Aug-2012	Version 2	Changed	Changes made in the Compatibility section.
04-Jun-2012	Version 1	New	New QuickSpecs.

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