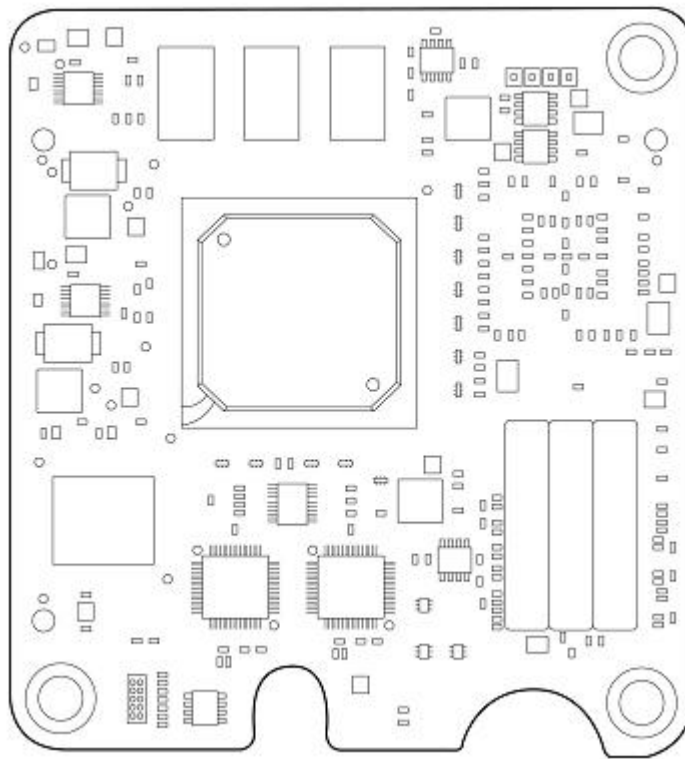


Overview

The QMH4062 is a dual port fully integrated Gigabit Ethernet iSCSI initiator mezzanine option optimized for iSCSI traffic from an HP BladeSystem c-Class ProLiant server. This iSCSI initiator is an alternative to less integrated Ethernet iSCSI offerings and often more costly non TCP/IP implementations. It is supported on HP ProLiant c-Class servers, all mezzanine slots; multiple adapters per sever.

Designed for ultimate performance, the QMH4062 provides offloading of iSCSI and TCP/IP traffic. The QMH4062 supports VMware allowing users the flexibility of ESX 4.0 and ESXi 4.0 host booting from an iSCSI SAN for both Microsoft Windows and Linux. The QMH4062 iSCSI initiator is IPv6 compliant card and can provide a c-Class end-to-end IPv6 solution when using either the Cisco Catalyst Blade Switch 3120 with IPv6 upgrade option or the Ethernet Pass-Thru.



QLogic QMH4062 1GbE iSCSI Adapter for HP BladeSystem c-Class

What's New

- Support for HP ProLiant Generation Server Blades

Overview

At A Glance

- High performance, full software and hardware integrated iSCSI initiator
- Dual Gigabit Ethernet ports
- Offloading of iSCSI and TCP/IP traffic
- Single step iSCSI SAN boot for both Microsoft Windows and Linux
- iSCSI boot certified for VMware Server ESX 4.0 and ESXi 4.0
- IPv6 compliant providing an end-to-end IPv6 solution when using either the Cisco Catalyst Blade Switch 3120 with IPv6 upgrade option or the Ethernet Pass-Thru
- Pre-certified iSCSI targets including the ProLiant Storage Server family, and All-in One (AiO) products, the HP EVA iSCSI Connectivity Option, and many 3rd party storage solutions listed in the iSCSI Target Pre-certification section
- Consistent web based and CLI management interfaces across all supported operating systems
- IEEE standard support including VLANs, link aggregation, flow control, and QoS
- 9kB jumbo frames
- Supported on ProLiant c-Class servers, in all mezzanine slots, multiple cards per server
- Supported on all HP Ethernet interconnects, including Virtual Connect Ethernet modules

Models

HP BLc QLogic iSCSI Dual Port Adapter with Virtual Connect Kit	488074-B22
QLogic QMH4062 1GbE iSCSI Adapter for HP BladeSystem c-Class	488074-B21

Kit Contents

- HP BLc QMH4062 1GbE iSCSI 2-Port Adapter w/ VC Kit
- Product warranty statement
- Drivers, user guide, and utilities via: <http://www.hp.com>



Standard Features

Server Support

- HP ProLiant BL685c G6
- HP ProLiant BL685c G5
- HP ProLiant BL680c G5
- HP ProLiant BL495c G5
- HP ProLiant BL490c G7
- HP ProLiant BL490c G6
- HP ProLiant BL465c G5
- HP ProLiant BL460c G7
- HP ProLiant BL460c G6
- HP ProLiant BL460c G5
- HP ProLiant BL460c
- HP ProLiant BL280c G6
- HP ProLiant BL260c G5
- HP ProLiant BL2x220c G5

Performance

Dual Gigabit Ethernet Throughput

An aggregate transfer rate of 4,000 Mbps full duplex (2,000 Mbps full duplex per port) delivers outstanding network performance that improves response time and removes bottlenecks across the entire network.
NOTE: Each port transmits data from the server at 2,000 Mbps full duplex only.

TCP/IP and iSCSI Offloading

Designed for ultimate performance, the QMH4062 iSCSI initiator provides offloading of iSCSI and TCP/IP traffic. The adapter removes the processing, interrupts, and bus accesses required to support protocols in the host software. The QMH4062 virtually eliminates the host CPU system processing required for iSCSI and TCP/IP, often delivering performance equivalent to direct attached storage (DAS) and Fibre Channel (FC) SANs.

iSCSI Boot

The iSCSI feature boot allows the c-Class ProLiant server to boot from a remote operating system image located on an Ethernet-based storage network. The QMH4062 appears as a SCSI device to an operating system making the remote disk drive appear as a local, bootable C: drive. The server can be configured to connect to and boot from the iSCSI target disk on the network and download the OS image from the iSCSI target disk.

To enable iSCSI boot, the adapter must be able to attached to the target LUNs and present those LUNs to the host server during the server's initial power-up. Due to the QMH4062's fully integrated iSCSI implementation, the iSCSI boot initialization can directly boot from a LUN on the storage device in a single step eliminating the need for an additional boot server. In contrast, software-based network adapter iSCSI initiator implementations often require a multi-step process utilizing an additional server to perform the iSCSI boot.

iSCSI Boot VMware Certification

The QMH4062 iSCSI boot is certificated on VMware Server ESX 4.0 and ESXi 4.0. The certification is supported in both a Microsoft Windows and Linux operating system environment.

IPv6 Compliance

The QMH4062 is IPv6 compliant, offloading and processing IPv6 packet traffic from the c-Class enclosure when using either a Cisco Catalyst Blade Switch 3120 with the IPv6 software option or the Ethernet Pass-Thru interconnect connected to an IPv6 compliant network.

IPv6 is the next generation IP protocol. As compared to IPv4, IPv6



Standard Features

iSCSI Target Pre-certification

advantages include additional network addressing from 32 bits to 128 bits, increase security, improved management, and more.

iSCSI is a standardized method for transferring blocked-based data across Ethernet. Any iSCSI target adhering to this standard would be compatible. However, to ensure best-in-class operation, the QMH4062 pre-certification program provides extensive SAN interoperability and compatibility testing on HP and third-party iSCSI targets, along with multiple software applications.

The QMH4062 has a comprehensive list of pre-certified iSCSI targets including:

- HP StorageWorks MSA200i product line
- HP StorageWorks All-in One (AiO) product line
- HP EVA iSCSI Connectivity Option
- HP ProLiant Storage Server family
- Many 3rd party storage including NetApp, EMC, IBM, Dell, Lefthand, LSI, Sun/StorageTek, Promise, Compellent, Quantum, AC&NC, SpectraLogic, StoneFly, iQstor, iStor, DNF, JetStor, Quantum, and Engenio

NOTE: For more information, please see the QLogic SAN interoperability Guide at: www.qlogic.com

Consistent Management

The management of iSCSI solutions based on initiator software can vary widely between the various operating systems. However, the QMH4062 approach provides consistent graphical and command line management interfaces across all supported operating systems simplifying the SAN administrator's tasks.

802.1Q VLANs with 802.1p QoS Tagging

The QMH4062 provides the IEEE 802.1Q virtual local area network (VLAN) protocol for Linux. 802.1Q allows each physical port of the QMH4062 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. 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.

Jumbo Frame Support

The QMH4062 support for Jumbo frames (also known as extended frames) permit an industry standard 9K byte transmission unit (MTU), which is six times the size of standard 1500 byte Ethernet frame. The use of jumbo frames are a way to achieve higher throughput and better CPU utilization. Jumbo frames are particularly useful for database transfers and tape backups.



Standard Features

High Availability	Dual port	The two ports on the QMH4062 provide port redundancy that can be routed to separate enclosure interconnects for additional availability.
	Redundant adapters	With multiple dual port adapters supported per server connected to up to two redundant pairs of interconnect modules per enclosure, a very wide variety of high availability I/O configurations are possible.
	Linux IEEE 802.3ad Link Aggregation	Link aggregation allows multiple physical ports to be bonded together to form a single logical link. This increases the network throughput of a single link and provides redundancy in case of a physical port failure. In case of a port failure, the surviving ports in the logical link (or team) continue to operate. The QMH4062 supports 802.3ad link aggregation within a Linux environment.

Warranty

HP branded hardware options qualified for BladeSystem c-Class and p-Class servers are covered by a global limited warranty and supported by HP Services and a worldwide network of Authorized HP Channel Partners. The HP branded hardware option diagnostic support and repair is available for one year from date of purchase, or the length of the server they are attached to, whichever is greater. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

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>



Service and Support

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>

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.pdf>



Service and Support

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.

<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>



Service and 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 StorageWorks 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/hps/storage>



Related Options

Supported c-Class BladeSystem Interconnect Modules	HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem	455880-B21
	HP 1/10Gb-F Virtual Connect Ethernet Module for c-Class BladeSystem	447047-B21
	HP 1/10Gb Virtual Connect Ethernet Module for c-Class BladeSystem	399593-B22
	HP 1:10 Gb Ethernet BL-c Switch	438031-B21
	Cisco Catalyst 3020 Blade Switch	410916-B21
	HP GbE2c Layer2/3 Ethernet Blade Switch for c-Class BladeSystem	438030-B21
	Cisco Catalyst Blade Switch 3120G for HP	451438-B21
	Cisco Catalyst Blade Switch 3120X for HP	451439-B21
	Ethernet Pass-Through Module for HP BladeSystem	406740-B21



Technical Specifications

General Specifications	Network Processor	QLogic ISP4032	
	Data rate	Two ports, each at 2 Gbps (full duplex, theoretical maximum). NOTE: The QMH4062 adapter transmits from the server at 2 Gbps full duplex per port only.	
	Bus type	x4 PCI Express	
	Form factor	Mezzanine card compatible with all ProLiant c-Class server mezzanine slots	
	IEEE Compliance	802.1p (QoS), 802.1Q (VLANs) (Linux only), 802.3 (Ethernet), 802.3ad Link aggregation) (Linux only), and 802.3x (Flow control)	
	iSCSI RFC Compliance	RFC3720 (iSCSI), RFC1994 (CHAP), RFC4171 (iSNS)	
	TCP/IP RFC Compliance	RFC791 (IPv4), RFC793 (TCP), RFC1122 (Requirements for internet hosts), RFC1323 (TCP Extensions for high performance), RFC2460 (IPv6), RFC2581 (TCP Congestion control)	
	iSCSI Target Pre-certification	HP: StorageWorks MSA200i product line, StorageWorks All-in One (AiO) product line, HP EVA iSCSI Connectivity Option, and the HP ProLiant Storage Server family 3rd party: NetApp, EMC, IBM, Dell, Lefthand, LSI, Sun/Storagetek, Promise, Compellent, Quantum, AC&NC, SpectraLogic, StoneFly, iQstor, iStor, DNF, JetStor, Quantum, and Engenio	
	Power and Environmental Specifications	Operating	Temperature
Humidity			10% to 90% non-condensing
Non-operating		Temperature	0° to 158° F (-40° to 70° C)
		Humidity	10% to 90% non-condensing
Power requirement		10.3 Watts typical, 12.0 Watts maximum	
Emissions classification		FCC Class A	
Agency approvals		USA	FCC (CFR 47 part 15)
		Canada	ICES-003 and CSA60950
		Japan	VCCI
		Korea	EMC Registration
		Australia	ACA, AS/NZS3548/EN55022:1998, EN55024:1998
		European Union	CE Mark, EN55022:1998 (CISPR 22), EN55024:1998, and IEC60950:1999 (EN60950:2000)
RoHS Compliance		6 of 6	
Safety	UL Mark (USA and Canada) EN 60590		
Operating System Support	<ul style="list-style-type: none">• Microsoft Windows 2003 and 2008 (32-bit and 64-bit)• Red Hat Enterprise Linux• SUSE Linux Enterprise Server• VMware ESX Server 4.0 and ESXi 4.0		

NOTE: For more operating system support & certification information, please visit <http://h10018.www1.hp.com/wwsolutions/index.html>.



Technical Specifications

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.

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