

### Overview

#### HPE Integrity Blades I/O Adapters

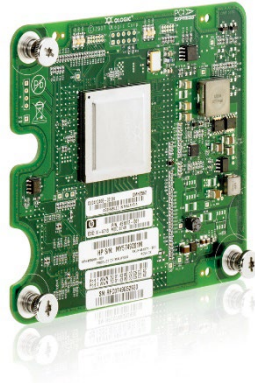
The HPE Integrity Blades servers use the below list of I/O adapters:

- Fibre-channel Storage adapters
    - QLogic QMH2562 8Gb FC HBA for HPE c-Class BladeSystem
    - Emulex LPe1205-HP 8Gb FC HBA for HP c-Class BladeSystem
  - Network adapters
    - NC532m Dual Port Flex-10 10GbE Multifunction BL-c Adapter
  - SAS adapters
    - HPE Smart Array P711m Controller
-

## Standard Features

### QLogic QMH2562 8Gb FC HBA for HPE c-Class BladeSystem

The QLogic QMH2562 8Gb FC HBA is a dual channel PCI Express Fibre Channel mezzanine card that provides reliable, high-performance connectivity at up to 8Gb/s. It is optimized for HPE and is also supported by third-party SAN vendors.



### QLogic QMH2562 8Gb FC HBA for HPE c-Class BladeSystem

#### Models

QLogic QMH2562 8Gb Fibre Channel Host Bus Adapter for HPE BladeSystem c-Class

B9F53A

#### Kit Contents

- QLogic QMH2562 8Gb FC HBA for HPE c-Class BladeSystem
- QMH 2562 FC HBA
- Quick install card
- Product warranty statement

Drivers, user guide, and utilities via: <http://www.hpe.com>

#### Key Features

- Advanced embedded support for virtualized environments
  - Supports virtualized servers for overall effective server utilization
  - Allows multiple logical (virtual) connections to share the same physical ports
  - 256 queue pairs for intensive virtualization
  - Prioritization of queues prevents conflicts between multiple queues
- Fault tolerant 8Gb HBA Architecture
- Reduced power consumption
  - Latest generation technology saves power
  - Reduced number of components on each FC HBA reduces overall power consumption
  - Lower power consumption means HBA requires lower airflow
- PCI Express Bus: Gen I (x8), Gen II (x4)
- Two 8Gb/s Fibre Channel ports
- 8/4/2 automatic speed negotiation without throttling down to the lowest target speed on the network
- Multi-Path support for redundant HBAs and paths including Linux driver failover.



## Standard Features

- Superior performance capable of sustaining up to 200,000 I/Os per second per channel
- RoHS compliance
- QLogic SANsurfer Manager for centralized management and remote control of distributed HBAs.
- Operating Systems and Virtualization Software Supported: HP-UX 11i v3, OpenVMS

## Features and Benefits

- Performance Optimized
  - Reduces response time of mission critical Datacenter applications and backup windows
  - 2X throughput of 4Gb
- Virtualization Optimized
  - Delivers enhanced security, Quality-of-Service and Dynamic Provisioning during live migration
- Power Optimized
  - Adaptive power management techniques to ensure lowest power & cooling enabled by QLogic StarPower™ Technology
- RAS Optimized
  - Highest Data Integrity; Overlapping Protection Domains (OPD) extended for control and data paths
- Security Optimized
  - SAN-level authentication (FC-SP), fabric-level isolation (NPIV and end-to-end data integrity (T10)
- Management Optimized
  - Unified driver model eliminates potential interop issues between firmware and driver versions and cuts upgrade time in half
- Common drivers for 8Gb, 4Gb and 2Gb

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## Emulex LPe1205-HP 8Gb FC HBA for HP c-Class BladeSystem

The Emulex LPe1205-HP dual port Fibre Channel HBA provides reliable, high-performance up to 8Gb/s connectivity. In addition to providing greater bandwidth, the LPe1205-HP also provides features such as data integrity, security and virtualization which are all complimentary to initiatives important to the enterprise data center. For greater system up time, the LPe1205-HP dual port design is the ideal Fibre Channel connectivity solution for applications that rely on high-availability for business continuity. The LPe1205-HP leverages over eight generations of Fibre Channel design to provide the greatest level of performance, scalability and manageability. Using Emulex's exclusive firmware and driver architecture, the Emulex LPe1205-HP is designed to be fully driver compatible with all Emulex HBAs. Furthermore, this architecture allows firmware to be upgraded without taking the server off-line or re-booting, and without the need to upgrade the driver. This provides hardware investment protection and ensures maximizes system uptime. As with all Emulex LightPulse Fibre Channel HBAs, the LPe1205-HP is managed with Emulex HBAnyware™ HBA management application. HBAnyware provides a secure, centralized administration console to discover, and manage Emulex Fibre Channel HBAs on local and remote hosts. Powerful diagnostic tools and flexible interface options (GUI, CLI and Browser) provide the greatest level of manageability. Fibre Channel is the de-facto standard for virtual server storage connectivity and Emulex HBAs are fully qualified for virtual server environments.

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## Standard Features

### Models

#### Key Features

- Comprehensive virtualization capabilities with support for N-Port ID Virtualization (NPIV) and Virtual Fabric
  - Support for up to 255 VPorts improves server consolidation capabilities and asset utilization
- Superior performance capable of sustaining up to 200,000 I/Os per second per channel
  - Delivers the performance needed for high transaction data base environments (ie: Oracle, SQL Server, etc)
- Host to Fabric FC-SP authentication
  - Provides advanced security protecting the SAN from potential threats such as WWN spoofing, compromised servers etc.
- BlockGuard™ ready (T10-DIF) - ensures end-to-end data integrity
- Common driver model allows a single driver to support all Emulex HBAs on a given OS
- Easy deployment of new firmware with minimal server reboots
- Efficient centralized administration of Emulex HBAs via powerful management tools
- 8, 4, 2 Gb/s Fibre Channel link speed support
- Full fabric support with automatic topology and auto-negotiation
- Message Signaled Interrupts eXtended (MSI-X) Support for Greater Host CPU Utilization
  - Streamlines interrupt routing to improve overall server efficiency
- PCI Express Bus: Gen I (x8), Gen II (x4)
  - PCIe 2.0 provides 5Gb/s lanes (double the 2.5Gb/s data rate of PCIe 1.0)
  - Support for the faster bit rate as well as retaining backward compatibility with existing PCIe 1.0 blade servers enables greater flexibility and reliability for subsequent generations of servers
- Multi-Path support for redundant HBAs and paths
- Support FC-Tape devices.
- Operating Systems and Virtualization Software Supported: HP-UX 11i v3, OpenVMS

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## HPE Smart Array P711m Controller

The HPE Smart Array P711m is a PCI-Express (PCIE) mezzanine card supporting shared and direct attached SAS Storage. It is one of the highest performing controllers in the HPE 6Gb/s SAS portfolio and provides new levels of reliability, connectivity, and storage performance for HPE Blade servers through its support of the latest SCSI technology and advanced RAID capabilities. Supports up to 108 zoned direct attached SAS or SATA hard drives per HPE Smart Array P711m Controller

### Dual-port 10 Gigabit Ethernet Throughput

The 20,000 Mbps full duplex Ethernet transfer rate per port (40 Gbps aggregate full duplex) delivers outstanding network performance that improves response time and removes bottlenecks required for the next generation data center. Ten Gigabit Ethernet bandwidth is ideal for high performance computing, database clusters, iSCSI storage, storage backups, grid systems, virtualization, server and I/O consolidation, fabric consolidation, and more.

### HP Virtual Connect Flex10 10Gb Ethernet Module for the c-Class BladeSystem

Evolve 10Gb at your own speed! When paired with the HP Virtual Connect Flex-10 10Gb Ethernet Modules, take advantage of the Flex Nics, which are PCI Physical Function devices that are OS independent. Server ROM recognizes them as individual NICs. Speeds can be set per NIC from 100Mb to 10Gbps in 100Mb increments. Three fold increase in number of network connections per port. Up to four physical function NICs per port

### 802.1p QoS Tagging

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.



## Standard Features

### TCP/IP Stateless Offloading

For overall improved system response, the NC532m supports standard TCP/IP stateless offloading techniques including:

- TCP/IP checksum offload (TCO) moves the TCP and IP checksum offloading from the CPU to the network adapter.

Large send offload (LSO), also known as TCP segmentation offload (TSO), allows TCP segmentation to be handled by the adapter rather than the CPU.

### Interrupt Coalescence

Interrupt coalescing (interrupt moderation) groups multiple packets, thereby reducing the number of interrupts sent to the host. This process optimizes host efficiency, leaving the CPU available for other duties.

## Models

The servers supported are:

- BL860c i4
  - BL860c i6
  - BL870c i4
  - BL870c i6
  - BL890c i4
  - BL890c i6
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## Service and Support

### HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

<https://www.hpe.com/services>

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### Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.

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### HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

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### Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.

<https://www.hpe.com/services/operational>

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### HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

<https://www.hpe.com/services/completecure>

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### HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.

<https://www.hpe.com/services/techcare>

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## Service and Support

### HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

**Notes:** To review the list of Lifecycle Services available for your product go to:

<https://www.hpe.com/services/lifecycle>

For a list of the most frequently purchased services using service credits, see the [HPE Service Credits Menu](#)

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### Other Related Services from HPE Services:

#### HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.

<https://www.hpe.com/services/training>

#### Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

### Parts and Materials

HPE 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.

### How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at <https://ssc.hpe.com/portal/site/ssc/>



## Service and Support

### AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.

<https://support.hpe.com/hpesc/public/home/signin>

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### Consume IT On Your Terms

**HPE GreenLake** edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE"

<https://www.hpe.com/us/en/contact-hpe.html>

For more information

[www.hpe.com/services](http://www.hpe.com/services)

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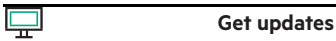
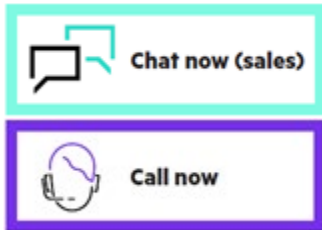
## Summary of Changes

| Date        | Version History | Action  | Description of Change                                                         |
|-------------|-----------------|---------|-------------------------------------------------------------------------------|
| 04-Dec-2023 | Version 3       | Changed | Service and Support section was updated                                       |
| 15-Nov-2021 | Version 2       | Changed | Service and Support Pointnext Tech Care and Complete Care information updated |
| 05-Feb 2018 | Version 1       | Created | New QuickSpecs                                                                |



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