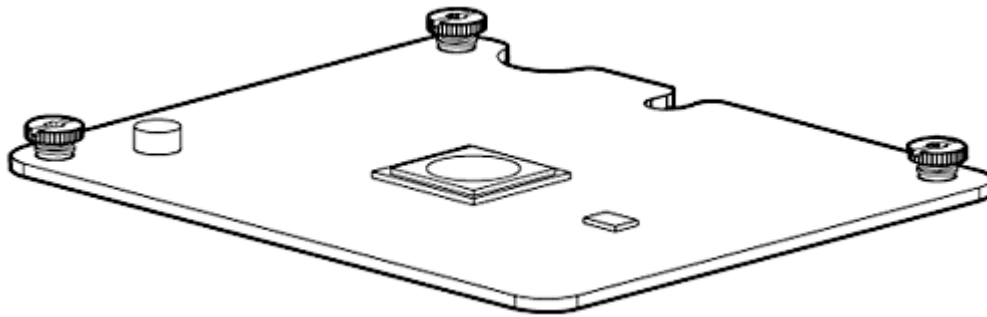


### Overview

The Emulex LPe1105-HP dual port PCI Express Fibre Channel HBA provides reliable, high-performance 4 Gb/s connectivity, enabling high-availability to scalable storage in order to meet the needs of the most demanding applications and environments. Based on the same field-proven ASIC, firmware, and driver technology as Emulex's LPe1150 HBA, the Emulex LPe1105-HP is fully driver compatible with all Emulex HBAs. As a centralized management suite, HBAnyware™ incorporates agent technology that provides discovery, reporting and management of local and remote HBAs.

Fibre Channel is the de-facto standard for virtual server storage connectivity and Emulex HBAs are fully qualified for virtual server environments. In addition, the Emulex HBAs feature an exclusive firmware-based architecture, which allows firmware and features to be upgraded without taking the server off-line or re-booting, and without the need to upgrade the driver. This provides investment protection of end user hardware and ensures minimum downtime.



**Emulex LPe1105-HP 4Gb FC HBA for HP c-Class BladeSystem**

### Models

Emulex LPe1105 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

403621-B21

### Key Features

- 4 Gb/s Fibre Channel link speed support
- PCI-Express 1.0a
- Multi-Path support for redundant HBAs and paths
- Superior performance capable of sustaining up to 115,000 I/Os per second per channel
- Full fabric support with automatic topology and speed adaptation
- Full support for both FC service Class 2 and 3
- Support FC-Tape devices

### Overview

#### At A Glance

- **Value:**

- Emulex installation and management tools automate installation and provide local and remote HBA configuration and management, therefore reducing cost of HBA installations across the enterprise
- Emulex HBAs feature a firmware upgradeable architecture for long-term investment protection, feature and performance upgrades and seamless backward compatibility.
- A common driver model amongst all Emulex HBAs enables a customer to standardize on one driver version across their entire installed base - thus reducing the cost and complexity of managing all HBAs.
- Superior Quality and Reliability- Emulex HBAs deliver industry-leading reliability levels which minimizes downtime and increases productivity

- **Simplicity:**

- Emulex's unique Service Level Interface (SLI) architecture allows complete independence between HBA hardware, firmware and drivers. That means no reboots during configuration changes and no need for OS specific firmware. A single driver model simplifies management and upgrades across multiple generations of HBAs.
- Rich suite of software - As a centralized management suite, HBAnyware™ incorporates agent technology that provides discovery, reporting and management of local and remote HBAs with both in-band Fibre Channel and out-of-band IP support, enabling sophisticated management capabilities such as remote firmware upgrades and advanced diagnostics from a single console anywhere in the SAN.

- **Agility:**

- Maximum SAN Performance - The LPe1105-HP delivers maximum performance levels in real-world application environments, with superior full-duplex data throughput levels that optimize SAN performance. Emulex's exclusive Dynamic Frame Multiplexing ensures consistently superior performance in mixed load environments such as disk and tape back-up applications.

### Standard Features

#### Superior Quality and Reliability

Emulex HBAs deliver industry-leading reliability levels by utilizing a field-proven, single-chip design that minimizes components. Emulex HBAs also use a combination of parity, CRC, ECC and other advanced error checking methods to verify the integrity of data blocks, which are passed from the host interface through the HBA.

#### The Most Efficient Installation and Management

Emulex management tools automate installation and provide local and remote HBA configuration and management. Emulex's unique Service Level Interface (SLI™) architecture allows complete independence of device drivers from HBA hardware and firmware. That means no reboots during most configuration changes and no need for OS specific firmware. A single driver model simplifies management across multiple generations of HBAs. In addition, Emulex HBAs have a firmware-based architecture that enables feature and performance upgrades without costly hardware changes, for long-term investment protection and seamless backward compatibility.

#### Maximum SAN Performance

Emulex HBAs deliver maximum performance levels in real-world application environments, with superior full-duplex data throughput and I/Os per second. And Emulex's exclusive Dynamic Frame Multiplexing ensures consistently superior performance in mixed load environments such as disk and tape back-up applications.

#### The Fastest Diagnosis and Recovery

Comprehensive diagnostic functions, coupled with detailed event logging and tracing, provide for fast, efficient SAN troubleshooting.

#### The Broadest Enterprise Deployment

With the largest installed base of any Fibre Channel HBA supplier, Emulex is trusted by the world's largest, mission critical enterprises. Long-standing partnerships with leading storage vendors ensure unparalleled compatibility levels.

#### Software Features

A rich suite of software complements the LightPulse LPe11000 family of enterprise and midrange-class Fibre Channel HBAs. As a centralized management suite, HBAnyware incorporates agent technology that provides discovery, reporting and management of local and remote HBAs with both in-band Fibre Channel and out-of-band IP support, enabling sophisticated management capabilities such as remote firmware upgrades and advanced diagnostics from a single console anywhere in the SAN.

All Emulex device drivers are fully compatible with previous generations of Emulex host bus adapters. A single driver binary supports all Emulex HBAs on a given host platform, streamlining the management of device drivers in environments with multiple generations and versions of HBAs, simplifying the upgrade process, and providing investment protection.

**NOTE:** For the latest Driver and Operating System options, please visit:  
<http://h18004.www1.hp.com/products/ blades/components/c-class-adapters.html>

### Standard Features

#### BladeSystem compatibility

**NOTE:** The Emulex LPe1105-HP 4Gb FC HBA for HP c-Class BladeSystem must be deployed with the c-Class BladeSystem infrastructure and will only work with the BL c-Class Server Enclosure.

- HP ProLiant and Integrity Servers**
- Compatible with current releases of HP ProLiant and HP Integrity c-class Blade Servers supporting Type 1 Mezzanine Cards
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#### Switch interoperability

- HP Storage and Third Party Switches**
- 4Gb Switches and Directors
  - 2Gb Switches and Directors
  - Compatible with Fibre Channel switches including HP Storage and third party vendors including Cisco, Brocade, and McData

### 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](http://www.hp.com/services/servers) and [www.hp.com/services/storage](http://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>

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##### 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

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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.

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### 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.

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### 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.

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### 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](http://www.hp.com/services/proliant) or [www.hp.com/services/bladesystem](http://www.hp.com/services/bladesystem) or <http://www.hp.com/services/storage>



### Related Options

#### Service and Support Offerings (HP Care Pack Services)

**NOTE:** The HP Care Pack service part numbers below for ProLiant BL c-Class server blades, cover the server blade and all HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the server.

#### Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UE458E

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE459E

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE460E

#### Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic UE473E

**NOTE:** HP Care Pack services for the c7000 and c3000 Enclosure cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP Supported Ethernet devices covered include the Ethernet Pass-Through Module, Fibre Channel Pass-Through Module, Cisco Catalyst 3020 Blade Switch and GbE2c Ethernet Blade Switch.

#### Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic UE477E

**NOTE:** Uplifts the Ethernet devices to the same level of warranty as the c-class enclosure

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UE478E

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE479E

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE480E

**NOTE:** The HP Care Pack service part numbers below covers the Brocade 4/12 SAN Switch and Brocade 4/12 SAN Switch 12-port Upgrade LTU.

#### Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage 3 Years, Electronic UC007E

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UC008E

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UC009E

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UC023E

**NOTE:** The HP Care Pack service part numbers below covers the Brocade 4/24 SAN Switch.

#### Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic UE436E

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UE437E

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE438E

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE439E

Hardware Installation, Electronic U5988E

**NOTE:** The HP Care Pack service part numbers below covers the Brocade 4/24 SAN Switch Power Pack.

#### Hardware Services On-site Service

#### Support Plus

### Related Options

Onsite HW support, 8am-9pm, M-F, 4hr response and SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	UE728E
<b>Support Plus 24</b>	
Onsite HW support 24x7, 4hr response and SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	UE729E
<b>Installation &amp; Start-up Services</b>	
HP Installation & Startup Service for HP BladeSystem Infrastructure, Electronic	UE602E
<b>NOTE:</b> Provides for an integrated hardware and software implementation that includes remote service planning, onsite deployment of hardware and software, installation verification testing and customer orientation. Hardware deployment covers the installation of a single BladeSystem enclosure that include server blades (up to 16), Ethernet network interconnect, and power options. Software deployment covers the installation and configuration of HP Systems Insight Manager (SIM), HP Rapid Deployment Pack (RDP), and deploy up to two operating system editions of either Windows or Linux, using scripted operating system installation software	
ProLiant BL c-Class Blade Server Hardware Installation, Electronic	UE493E
ProLiant BL c-Class Enclosure and Server Blade Hardware Installation, Electronic	UE494E
Provides for the Installation and Start-up of ProLiant Essentials Rapid Deployment Pack, Electronic	U5683E
<b>NOTE:</b> Provides installation on a Customer supplied server designated as a Deployment Server. Includes the deployment of a single server. This new server will be deployed using either one of the pre-configured scripts or an image. In addition, the service will provide for the capture and storage of the configuration of the newly deployed server and orientation on product usage. To be delivered during standard office ours, standard office days.	
Provides for the Installation and Start-up of Rapid Deployment Pack Implementation of Rapid Deployment Pack (Basic) (Electronic)	UA042E
<b>NOTE:</b> Service coverage: onsite installation of the Vulnerability and Patch Management (VPM) software on a customer designated server, configuration of the VPM software to acquire security patches, enabling the VPM software to scan up to five (5) systems, applying the security patches to the designated servers, generating a report from VPM that shows the vulnerability assessment results, and providing customer with an orientation to the software.	
Provides for the Installation and Start-up of System Insight Manager (Electronic)	UA041E
Provides for the Installation and Start-up of System Insight Manager Agents (Electronic)	UA040E
<b>NOTE:</b> For more information, customer/resellers can contact <a href="http://www.hp.com/services/servers">http://www.hp.com/services/servers</a>	
<b>Software Operating Environment Care Packs</b>	
Microsoft Software Operating Environment Software Telephone 9x5 - 3 incident (Electronic)	U8169E
Red Hat Software Operating Environment Software Telephone 9x5 - 10 incident (Electronic)	U3402E
SUSE Software Operating Environment Software Telephone 9x5 - 3 incident (Electronic)	U9615E
ProLiant Essentials Operating Environment, - 5 Day, 9x5,1 year, 3 incident (Electronic)	U8222E
ProLiant Essentials Operating Environment, - 5 Day, 24x7,1 year, 3 incident (Electronic)	U8301E
ProLiant Essentials Operating Environment, - 5 Day, 9x5,1 year, 10 incident	UE006E

### Related Options

ProLiant Essentials Operating Environment, - 5 Day, 24x7, 1 year, 10 incident	UE116E
ProLiant Essentials Operating Environment, - 5 Day, 9x5, 1 year, 25 incident	UE117E
ProLiant Essentials Operating Environment, - 5 Day, 24x7, 1 year, 25 incident	UE118E
ProLiant Essentials Operating Environment, - 5 Day, 9x5, 1 year, 50 incident	UE119E
ProLiant Essentials Operating Environment, - 5 Day, 24x7, 1 year, 50 incident	UE120E
ProLiant Essentials Operating Environment, - 5 Day, 9x5, 1 year, unlimited SW Tech Support	UE121E
ProLiant Essentials Operating Environment, - 5 Day, 24x7, 1 year, unlimited SW Tech Support	UE452E
ProLiant Essentials Operating Environment, - 5 Day, 9x5, 3 year, unlimited SW Tech Support	UE453E
ProLiant Essentials Operating Environment, - 5 Day, 24x7, 3 year, unlimited SW Tech Support	UE454E

**NOTE:** For more information, customer/resellers can contact  
<http://www.hp.com/services/servers>

### Technical Specifications

<b>System Unit</b>	<b>Dimensions (H x W)</b>	4.460 in x 3.970 in (113.28 mm x 100.84mm)		
	<b>Media</b>	N/A (Backplane connection to Virtual Connect, Switch or Pass-Thru Module)		
	<b>Ports</b>	Two		
	<b>System Inlet Temperature</b>	Operating	10° to 70°C (55° to 158°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).	
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).	
	<b>Relative Humidity (non-condensing)</b>	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.	
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.	
	<b>Altitude</b>	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).	
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).	

<b>Environment-friendly Products and Approach</b>	<b>End-of-life Management and Recycling</b>	<p>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 <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>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: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. 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.</p>
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## Technical Specifications

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