# QuickSpecs

HP BladeSystem PCI Expansion Blade

Overview

The HP BladeSystem PCI Expansion Blade provides PCI card expansion slots to an adjacent c-Class server blade. This blade expansion unit uses the c-Class mid-plane to pass standard PCI signals between adjacent enclosure bays, to allow a c-Class blade server to add off-the-shelf PCI-X or PCIe cards. Customers would need one PCI Expansion Blade for each c-Class server blade needing PCI card expansion. Any PCI card from third-party manufacturers that works in HP ProLiant ML and HP ProLiant DL servers should work in this PCI Expansion Blade. HP does not offer any warranty or support for third-party PCI manufactured products. HP does joint market with selected PCI manufactures; please visit:
http://h18004.www1.hp.com/products/blades/solutions/solutionbuilder.html to see a list of HP BladeSystem Solutions Builders.

NOTE: HP does not support any HP branded PCI cards for the PCI Expansion blade. This blade is intended for use with specialty PCI cards that are offered by third party PCI card manufacturers. In the c-Class blades, support for normal Ethernet, FC HBA's, and storage controllers are offered and supported as c-Class mezzanine adapter options. Please visit:
http://www.hp.com/go/bladesystem/ for a list of c-Class mezzanine adapters.
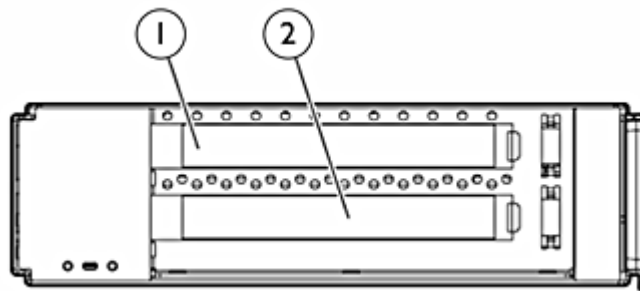
1. PCI Card #1

2. PCI Card #2

What's New
- Support for HP BladeSystem c3000 Enclosure

At A Glance
- Internal PCI card Support:
  - Supports one or two PCI-X cards (either 3.3V or "universal" PCI-X cards), or
  - Supports one or two PCIe cards (either x1, x4, or x8 cards) Note: When two PCIe cards are installed, they share the single x4 PCI bandwidth between the server blade and the PCI Expansion Blade.
  - This expansion blade will NOT support one PCI-X card and one PCIe card in the same expansion blade.
  - HP does not support any HP branded PCI cards for the PCI Expansion blade. This blade is intended for use with specialty PCI cards that are offered by third party PCI card manufacturers.
- Form Factor:
  - Standard c-Class half-height blade form factor
- Warranty:
  - The PCI Expansion Blade is protected by HP Services and a worldwide network of resellers and service providers. 3-year parts, 3-year Labor and 3-year on-site limited global warranty. Certain restrictions and exclusions apply.
  - HP provides no warranty for third-party PCI cards, and HP provides no support of the use of third-party PCI cards within the PCI Expansion Blade.
  - HP provides no support for any HP branded PCI cards in this PCI Expansion blade.

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Overview

Models

NOTE: The PCI Expansion Blade provides PCI card slots for an adjacent c-Class Server Blade. Order one PCI expansion Blade for each server blade needing standard PCI-X or PCIe expansion slots.

HP PCI Expansion Blade   448018-B21

NOTE: Ships with one pre-installed PCI-X connect board. Also includes one PCIe connect board which requires installation.

NOTE: This option is not supported by HP Integrity BL870c, BL860c i2, BL870c i2, and BL890c i2 Server Blades.

Upgrade Options

PCI Express Mezzanine Pass-Thru card	PCI Express Mezzanine Pass-Thru card	431643-B21
	NOTE: The use of the PCI Expansion Blade with a full-height server blade requires the purchase of one (1) PCI Express Mezzanine Pass-Thru card for each server blade. This option is not needed for half-height server blades.	
	NOTE: The PCI Express Mezzanine Pass-Thru card is not required with HP Integrity BL860c i2 and BL870c i2 servers. The functionality provided by the Pass-Thru card is integrated into BL860c i2 and BL870c i2 servers.	

QuickSpecs

Standard Features

Key Features	**Features of the PCI Expansion Blade include:**
	Provides PCI-X or PCIe expansion slots for c-Class blade server in an adjacent enclosure bay.

- Each PCI Expansion Blade can hold one or two PCI-X cards; or one or two PCIe cards, but cannot contain one of each type of PCI card.
- The PCIe and PCI-X expansion slots are rated at 25 Watts per slot.
- Supports typical third-party non-HP PCI cards, such as SSL or XML accelerator cards, VOIP cards, special purpose telecommunications cards, and some graphic acceleration cards.
  - NOTE: The most common PCI expansion method for NICs, Fibre-channel HBAs, and InfiniBand ports is provided by HP BladeSystem c-Class interconnect mezzanine adapters; as such, this PCI Expansion blade is provided to support less common or specialty PCI cards. For more information on c-Class interconnect mezzanine adapters, go to http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html
  NOTE: The PCI Expansion blade will accept full-height/full-length PCI-X cards
- The PCI Expansion blade supports either 3.3V or "universal" PCI-X cards.
- The PCI expansion blade supports either x1, x4, or x8 PCIe cards

LED Indicators	Front panel LEDs indicates power and system health status.
Density	The PCI Expansion Blade fits into a half -height bay in the BladeSystem c3000 and c7000 Enclosure.
Manageability	The PCI Expansion Blade and its PCI boards are managed by the adjacent server blade and its operating system.
Product Kit Contents	PCI Expansion Blade, two PCI Connector cards (one PCI-X and one PCIe connector board),PCI-X & PCIe Connector boards, warranty card, Installation guide
Warranty	Protected by HP Services and a worldwide network of HP Authorized Channel Parnters. 3-year parts, 3-year Labor and 3-year on-site limited global warranty. Certain restrictions and exclusions apply.

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.pdf

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.pdf

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.pdf

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.pdf

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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

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/hps/storage

Technical Specifications

HP PCI Expansion Blade	Dimensions	Height	2.207 in (5.61 cm)
		Depth	20.058 in (50.95 cm)
		Width	7.154 in (18.17 cm)
	Weight	Maximum	10.0 lbs (4.54 kg)
	Temperature Range*	Operating	10° to 35° C (50° to 95° F)
		Non-Operating	-40° to 60° C (-40° to 140° F)
		Storage	-20° to 60° C (-4° to 140° F)
		Maximum Wet Bulb Temperature	-30° C (86° F)
		Operating	10% to 90%
	Relative Humidity**	Shipping	10% to 90%
		Storage	10% to 95%

* All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8° F per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Upper operating limit is 3,048 m (10,000 ft) or 70 Kpa/10.1 psia. Upper non-operating limit is 9,144 m (30,000 ft) or 30.3 KPa/4.4 psia.
**Storage maximum humidity of 95% is based on a maximum temperature of 45° C (113° F). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.

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.