



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
 ISCG0031

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF
 KRISTA FERRELL
 304-558-2596

RFQ COPY
 TYPE NAME/ADDRESS HERE
 AdvizeX Technologies
 106 Oakwood Circle
 Gibsonia, PA 15044

DEPARTMENT OF ADMINISTRATION
 IS&C - CHIEF FINANCIAL OFFICER
 1 DAVIS SQUARE
 CHARLESTON, WV 25301
 304-558-5472

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
08/30/2006				

BID OPENING DATE: 09/18/2006 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		205-43		29,995.00
<p>BLADE CHASSIS W/ BLADES</p> <p>REQUEST FOR QUOTATION</p> <p>THE WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ADMINISTRATION'S OFFICE OF TECHNOLOGY, IS SOLICITING BIDS TO PROVIDE THE AGENCY WITH AND IBM BLADE CHASSIS W/ BLADES (OR EQUAL). EQUIPMENT OTHER THAN IBM WILL BE CONSIDERED, BUT VENDOR MUST CERTIFY THEIR PRODUCT PROVIDES 100% OF ALL FEATURES AND FUNCTIONS OF THE IBM CHASSIS AND BLADES SERVERS AND MUST BE ABLE TO PROVIDE SEAMLESS INTEGRATION INTO OUR EXISTING IBM BLADE ENVIRONMENT. THE OFFICE OF TECHNOLOGY RESERVES THE RIGHT TO DETERMINE EQUIVALENCY ON ANY BIDS SUBMITTED.....</p> <p>WARRENTY PERIOD WILL BE ESTABLISHED BY CHANGE ORDER UPON THE INSTALLATION AND ACCEPTANCE OF THE PRODUCT BY THE AGENCY.</p> <p>TECHNICAL QUESTIONS CONCERNING THIS RFQ MUST BE SUBMITTED IN WRITING TO KRISTA FERRELL IN THE WEST VIRGINIA PURCHASING DIVISION VIA EMAIL AT KFERRELL@WVADMIN.GOV OR VIA FAX AT 304-558-4115 NO LATER THAN 09/08/2006 AT 5:00 PM. QUESTIONS (IF ANY) RECEIVED BEFORE THE DEADLINE WILL BE ANSWERED BY ADDENDUM. QUESTIONS CONCERNING BID SUBMISSION MAY BE SUBMITTED AT ANY TIME AND IN ANY FORM.</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: *Krista Ferrell* TELEPHONE: 724-712-6117 DATE: 9/15/06

TITLE: Account Exec FEIN: 37-1504931 ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125.00 registration fee.
5. All services performed or goods delivered under State Purchase Orders/Contracts are to be continued for the term of the Purchase Order/Contract, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this contract is automatically null and void, and is terminated without further order.
14. **HIPAA Business Associate Addendum** - The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Covered Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in cases of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications.

SIGNED BID TO:

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130



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<p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4(F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.</p> <p>VENDOR PREFERENCE CERTIFICATE</p> <p>CERTIFICATION AND APPLICATION* IS HEREBY MADE FOR PREFERENCE IN ACCORDANCE WITH WEST VIRGINIA CODE, 5A-3-37 (DOES NOT APPLY TO CONSTRUCTION CONTRACTS).</p> <p>A. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:</p> <p>() BIDDER IS AN INDIVIDUAL RESIDENT VENDOR AND HAS RESIDED CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR</p> <p>() BIDDER IS A PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR AND HAS MAINTAINED ITS HEAD-QUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY I</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
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TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
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<p>WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR 80% OF THE OWNERSHIP INTEREST OF BIDDER IS HELD BY ANOTHER INDIVIDUAL, PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR WHO HAS MAINTAINED ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR</p> <p>() BIDDER IS A CORPORATION NONRESIDENT VENDOR WHICH HAS AN AFFILIATE OR SUBSIDIARY WHICH EMPLOYS A MINIMUM OF ONE HUNDRED STATE RESIDENTS AND WHICH HAS MAINTAINED ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA CONTINUOUSLY FOR THE FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION.</p> <p>B. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:</p> <p>() BIDDER IS A RESIDENT VENDOR WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES WORKING ON THE PROJECT BEING BID ARE RESIDENTS OF WEST VIRGINIA WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID;</p> <p>OR</p> <p>() BIDDER IS A NONRESIDENT VENDOR EMPLOYING A MINIMUM OF ONE HUNDRED STATE RESIDENTS OR IS A NONRESIDENT VENDOR WITH AN AFFILIATE OR SUBSIDIARY WHICH MAINTAINS ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA EMPLOYING A MINIMUM OF ONE HUNDRED STATE RESIDENTS WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES OR BIDDERS' AFFILIATE'S OR SUBSIDIARY'S EMPLOYEES ARE RESIDENTS OF WEST VIRGINIA</p>						

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<p>WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID.</p> <p>BIDDER UNDERSTANDS IF THE SECRETARY OF TAX & REVENUE DETERMINES THAT A BIDDER RECEIVING PREFERENCE HAS FAILED TO CONTINUE TO MEET THE REQUIREMENTS FOR SUCH PREFERENCE, THE SECRETARY MAY ORDER THE DIRECTOR OF PURCHASING TO: (A) RESCIND THE CONTRACT OR PURCHASE ORDER ISSUED; OR (B) ASSESS A PENALTY AGAINST SUCH BIDDER IN AN AMOUNT NOT TO EXCEED 5% OF THE BID AMOUNT AND THAT SUCH PENALTY WILL BE PAID TO THE CONTRACTING AGENCY OR DEDUCTED FROM ANY UNPAID BALANCE ON THE CONTRACT OR PURCHASE ORDER.</p> <p>BY SUBMISSION OF THIS CERTIFICATE, BIDDER AGREES TO DISCLOSE ANY REASONABLY REQUESTED INFORMATION TO THE PURCHASING DIVISION AND AUTHORIZES THE DEPARTMENT OF TAX AND REVENUE TO DISCLOSE TO THE DIRECTOR OF PURCHASING APPROPRIATE INFORMATION VERIFYING THAT BIDDER HAS PAID THE REQUIRED BUSINESS TAXES, PROVIDED THAT SUCH INFORMATION DOES NOT CONTAIN THE AMOUNTS OF TAXES PAID NOR ANY OTHER INFORMATION DEEMED BY THE TAX COMMISSIONER TO BE CONFIDENTIAL.</p> <p>UNDER PENALTY OF LAW FOR FALSE SWEARING (WEST VIRGINIA CODE 61-5-3), BIDDER HEREBY CERTIFIES THAT THIS CERTIFICATE IS TRUE AND ACCURATE IN ALL RESPECTS; AND THAT IF A CONTRACT IS ISSUED TO BIDDER AND IF ANYTHING CONTAINED WITHIN THIS CERTIFICATE CHANGES DURING THE TERM OF THE CONTRACT, BIDDER WILL NOTIFY THE PURCHASING DIVISION IN WRITING IMMEDIATELY.</p> <p>BIDDER: -----</p>						

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<p>DATE: -----</p> <p>SIGNED: -----</p> <p>TITLE: -----</p> <p>* CHECK ANY COMBINATION OF PREFERENCE CONSIDERATION (S) IN EITHER "A" OR "B", OR BOTH "A" AND "B" WHICH YOU ARE ENTITLED TO RECEIVE. YOU MAY REQUEST UP TO THE MAXIMUM 5% PREFERENCE FOR BOTH "A" AND "B". (REV. 12/00)</p> <p>NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: 21</p>						

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LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
				ISCG0031		
				BID OPENING DATE:	08/18/2006	
				BID OPENING TIME:	1:30 PM	
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: <i>Donald Lind 530-420-4588</i>						
CONTACT PERSON (PLEASE PRINT CLEARLY): <i>Donald Lind</i>						
***** THIS IS THE END OF RFQ ISCG0031 ***** TOTAL:						

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WV Office of Technology

The Purchasing Division of the WV Department of Administration, for the WV Office of Technology (WVOT), is requesting quotations from qualified vendors for the purchase, along with a 36-month warranty contract, provision inclusive of travel or any other expenses, for an IBM Blade Chassis with Blades or equal. Equipment other than IBM will be considered, but vendor must certify their product provides 100% of ALL features and functions of IBM chassis and blades servers and must be able to provide seamless integration into our existing IBM blade environment. The Office of Technology reserves the right to determine equivalency on any bids submitted.

No separate reimbursement will be made to the vendor for travel or any other expense. Quotations must include ALL costs associated with the requested hardware.

DESCRIPTION OF SERVICES REQUESTED

1. GENERAL INFORMATION

1.1 Overview of Request

The purpose of this Request for Quotation is to provide a blade chassis and blade servers needed for the Office of Technology's server consolidation site. This RFQ is for hardware and warranty only no installation services are required.

1.2 Current Environment

The WVOT has been charged with consolidating IT equipment and services for the Executive Branch of State Government. The Client Services section has determined that blade servers and chassis is an important hardware component of this project.

2. PROCUREMENT SPECIFICATIONS

2.1 Scope of Work

The WV Office of Technology intends to acquire a blade chassis and blades as specified below:

- 2.1.1. One IBM H Chassis Blade Center with 7 blades or equal as specified in Attachment 1
- 2.1.2 Vendor must bid the requested parts as specified in Attachment 1. If replacement part numbers are bid please submit documentation from IBM stating that these are the replacement part numbers.
- 2.1.3 Vendor must identify special electrical needs.

- 2.14 The vendor shall give WVOT a minimum of 48 hours notice prior to the equipment arriving at our location. This will allow WVOT to prepare space for the storage of the equipment.
- 2.15 The successful vendor will deliver equipment at the Capitol Complex location during normal business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m. However, the successful vendor shall notify WVOT at least 48 hours in advance of the equipment arriving at the site, as to when to expect the equipment. Delivery shall be "inside" delivery at a location designated or specified by WVOT personnel. Equipment shall not be left at the loading dock or other common drop-off point. Delivery address is WV Office of Technology, Attn: Rita Fernatt, 1900 Kanawha Boulevard, East, Capitol Complex, Building 6, Room B-148, Charleston, WV 25305.

2.2 Maintenance/Warranty

- 2.2.1 The successful vendor must provide original equipment manufacturers (IBM) three-year warranty for all licensed software and hardware, regardless of the manufacturer's warranties. The cost of the three-year warranty will be included in the purchase price listed as item A on Attachment 2. Cost, if any, associated with warranty service must be indicated in the pricing tables and must include all parts, labor, hardware and software upgrades, software Help Desk services, travel or any other expense. No separate reimbursement will be made to the vendor for any expenses.
- 2.2.2 The warranty shall include on-site hardware service with a four (4) hour response time, 7 days a week, 24 hours per day.
- 2.2.3 The successful vendor must also quote an additional 2 year maintenance agreement to begin after the initial three (3) year warranty period to include hardware and software upgrades. This must be billed monthly in arrears.
- 2.2.4 Any maintenance performed by a third party is solely the successful vendor's responsibility. The vendor must be the Agency's single point of contact. The vendor should provide a list of third parties that will be involved in this procurement.
- 2.2.5 The successful vendor must provide all upgrades during the warranty period at no additional cost to the warranty quote.

2.3 ACCEPTANCE

- 2.3.1 WV Office of Technology shall verify all requirements have been delivered as described under this RFQ.
- 2.3.5 The State shall have full and free use of all systems, products, and/or deliverables supplied by this contract.

3. COST QUOTATION FORMAT/BID SHEETS

3.1 Vendor Response

- 3.1.1 Vendors shall complete the Cost Sheet (Attachment 2) that is included in the RFQ in order to be considered for award of this contract.
- 3.1.2 A vendor not completing the above items, either in whole or in part, may be disqualified for consideration.
- 3.1.3 If the successful vendor fails to identify any charges for services that are required to meet the terms and conditions of this Quotation, it will be the responsibility of the successful vendor to pay these charges and such cost shall not be passed on to the State.
- 3.1.4 The vendor will not be reimbursed for travel or any other expense. These costs must be included in the purchase price.

3.2 Cost Evaluation

- 3.2.1 The successful vendor shall be the vendor with the lowest purchase price of the equipment, including shipping, three (3) year all-inclusive warranty and additional 2 year maintenance warranty. This cost evaluation formula is spelled out on the Cost Sheet in Attachment 2.

3.3 Terms and Conditions

- 3.3.1 The Vendor is solely responsible for all work performed under this contract and shall assume prime contractor responsibility for all services offered and products to be delivered under the terms of this contract.
- 3.3.2 The vendor must define in their bid response any subcontractors who will be used to complete the requirements of this RFQ. Vendor shall include the name of the company, contact person and telephone number, type of work subcontractor will perform, and number of certified employees to perform work.

Attachment 1 -- Blade Chassis and Blade Specifications

Qty	Product Code	Description
1	88524XU	
	Product Description	IBM eServer BladeCenter H 8852 - rack-mountable - 9 U
	Form Factor	Rack-mountable - 9 U
	Dimensions (WxDxH)	19 in x 30.2 in x 15.7 in
	Weight	103.6 lbs
	Color	Stealth black
	Built-in Devices	LED panel, DVD-ROM drive, remote management adapter
	I/O Connectors	1 x display / video - VGA \hat{A} 4 x Hi-Speed USB \hat{A} 1 x serial \hat{A} 1 x management - Ethernet 10/100 \hat{A} 1 x network
	Installed Fans Qty	2
	Power Device	Power supply - hot-plug

Power Redundancy Yes
Voltage Required AC 120/230 V (60/60 Hz)

Manufacturer Warranty 3 years warranty

Qty	Product Code	Description
2	13N2261	
	Product Description	Cisco Systems Intelligent Gigabit Ethernet Switch Module - switch - 4 ports
	Device Type	Switch
	Form Factor	Plug-in module
	Dimensions (WxDxH)	10.2 in x 1.1 in x 4.4 in
	RAM	32 MB
	Flash Memory	8 MB
	Ports Qty	4 x Ethernet 10Base-T, Ethernet 100Base-TX, Ethernet 1000Base-T
	Data Transfer Rate	1 Gbps
	Data Link Protocol	Ethernet, Fast Ethernet, Gigabit Ethernet
	Remote Management Protocol	SNMP 3
	Features	IGMP snooping, Broadcast Storm Control
	Compliant Standards	IEEE 802.1D, IEEE 802.1Q, IEEE 802.1p, IEEE 802.3ad (LACP), IEEE 802.1w, IEEE 802.1x, IEEE 802.1s
	Manufacturer Warranty	3 years warranty

Qty	Product Code	Description
1	31R3335	
	Product Description	IBM power supply - hot-plug
	Device Type	Power supply - hot-plug
	Form Factor	Plug-in module
	Manufacturer Warranty	1 year warranty

Qty	Product Code	Description
2	25R5763	
	Product Description	IBM power cable (200-240 VAC) - 14 ft
	Type	Power cable (200-240 VAC)
	Length	14 ft
	Connector(s)	2 x power NEMA L6-30 - male

1 30L9185 3YR ONSITE REPAIR 24X7X4 HOUR LINKED TO ALL SERVPACS

Qty	Product Code	Description
7	88435RU	
	Product Description	IBM eServer BladeCenter HS20 8843 - Xeon 3.8 GHz
	Type	Server
	Form Factor	Blade
	Dimensions (WxDxH)	1.1 in x 17.6 in x 9.6 in
	Localization	English / United States
	Server Scalability	2-way
	Processor	1 x Intel Xeon 3.8 GHz
	Processor Main Features	Intel Extended Memory 64 Technology
	Cache Memory	2 MB L2 cache
	Cache Per Processor	2 MB
	RAM	1 GB (installed) / 16 GB (max) - DDR II SDRAM - ECC - 400 MHz - PC2-3200
	Storage Controller	SCSI (Ultra320 SCSI) - PCI-X / 100 MHz (LSI53C1020)
	Hard Drive	- none.
	Monitor	None.
	Graphics Controller	ATI Radeon 7000M - 16 MB
	Networking	Network adapter - Ethernet, Fast Ethernet, Gigabit Ethernet
	Manufacturer Warranty	3 years warranty

7 13N0697 3.8GHZ 800MHZ 2XIB L2 CACHE 1GB MEMORY

Qty Product Code Description
7 73P9522

Product Description IBM memory - 1 GB (2 x 512 MB) - DIMM 240-pin - DDR II
Storage Capacity 1 GB (2 x 512 MB)
Technology DDR II SDRAM
Form Factor DIMM 240-pin

Memory Speed 400 MHz (PC2-3200)

Data Integrity Check ECC

Features Registered

Lead Plating Gold

Manufacturer Warranty 1 year warranty

Qty Product Code Description
14 40K1038

Product Description IBM hard drive - 73.4 GB - Ultra320 SCSI

Type Hard drive - Internal

Form Factor 2.5" Slim Line

Capacity 73.4 GB

Interface Type Ultra320 SCSI

Data Transfer Rate 320 MBps

Average Seek Time 4.7 ms

Spindle Speed 10000 rpm

Buffer Size 8 MB

Manufacturer Warranty 1 year warranty

Qty Product Code Description
7 69P9518 SVCPAC SVR 3YR IOR 24X7 4 HOUR LINKED TO ALL .
SERVPACS

012

Attachment 2 – Cost Sheet

Purchase Price of Equipment – including shipping and three (3) year all-inclusive warranty

(A) \$ 29,995

Cost of two (2) year post-warranty maintenance agreement

(B) \$ Included

(A) + (B) = \$ 29,995 Total 5-year cost of ownership to be used for evaluation

To: State of WV- IS&C

WV
U.S.A.

Item No	Qty	Model	Description	Unit Price	Ext. Net Price
0100	1	412152-B21	HP C-Class Blade Enclosure- Better than IBM 88524XU HP BLc7000 CTO Enclosure	\$3,336.00	\$3,336.00
0200	1	413379-B21	HP Power Cabling- Better than IBM 25R5783 HP BLc7000 1 PH FIO Power Module Opt	\$175.00	\$175.00
0300	6	412138-B21	HP Power Supplies- Better than 31R3335 HP BLc7000 Encl Pwr Sply IEC320 Option	\$249.00	\$1,494.00
0400	10	412140-B21	HP BLc7000 Encl Single Fan Option	\$149.00	\$1,490.00
0500	2	410916-B21	HP Cisco Gigabit Switches- Better than IBM 13N2281 HP BLc Cisco 1GbE 3020 Switch Opt Kit	\$4,799.00	\$9,598.00
0600	1	AF400A	HP Management Module-Not Offered by IBM HP PDU Management Module	\$199.00	\$199.00
0700	1	412808-B21	HP Wizrd Driven System Management Tool- Not Offered by IBM HP BSE Insight Ctrl Data Ctr 8-Svr Lic	\$1,592.00	\$1,592.00
0800	1	412142-B21	HP Management Module- Not Quoted by IBM HP BLc7000 Encl Mgmt Module Option	\$799.00	\$799.00
0900	7	404667-B21	HP Blade Server- Better than IBM 88435RU HP ProLiant BL460c G1 CTO Chassis	\$1,232.00	\$8,624.00
1000	7	416660-L21	HP X5160 BL460c G1 FIO Kit	\$1,499.00	\$10,493.00
1100	7	416660-B21	HP X5160 BL460c G1 Kit	\$1,249.00	\$8,743.00
1200	14	397409-B21	HP Memory- Better than IBM 73P3522 HP 1GB FBD PC2-5300 2x512 Kit	\$299.00	\$4,186.00
1300	7	351580-B21	HP Battery Backed Write Cache on RAID Controller- Unavailable from IBM HP SA641/642 128MB BBWC Enabler	\$149.00	\$1,043.00
1400	14	375861-B21	HP Hot-Pug Disk Drives- Better than IBM 40K1038 (not Hot-Plug) HP 72GB 10K SAS 2.5 Hot Plug Hard Drive	\$329.00	\$4,606.00
1500	1	UE487E	HP Warranty- Better than IBM 30L9185 and 69P9518 HP 5y 4h 24x7 c7000 Enclosure HWSupp	\$1,783.00	\$1,783.00
1600	7	UE467E	HP 5y 4h 24x7 c-Class Svr Blade HWSupp HP Implementation Services- Not offered by IBM	\$890.00	\$6,230.00
1700	1	UE602E	HP Startup BladeSys c-Class Infrastr SVC	\$4,240.00	\$4,240.00
1800	1	UE493E	HP Install c-Class Server Blade Service	\$200.00	\$200.00
1900	1	DISC	Discount	(\$38,836.00)	(\$38,836.00)

Subtotal:

\$29,995.00

A F F I D A V I T014**West Virginia Code §5A-3-10a states:**

No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owned is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions.

"Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION:

The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

LICENSING:

The vendor must be licensed in accordance with any and all state requirements to do business with the state of West Virginia.

CONFIDENTIALITY:

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit www.state.wv.us/admin/purchase/privacy for the Notice of Agency Confidentiality Policies.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), it is hereby certified that the vendor acknowledges the information in this said affidavit and are in compliance with the requirements as stated.

Vendor's Name: Advize X Technologies
 Authorized Signature: Gerald Lind Date: 9/15/06

HP Blade Solution Compared to IBM

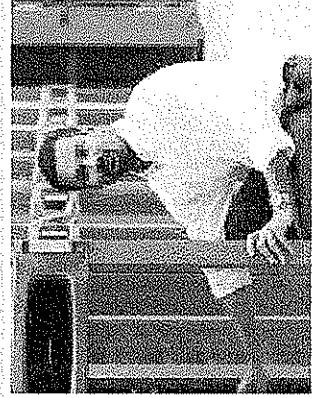
	HP C-Class Blade System	IBM Blade System
# of Blades	16	only 14
Density Trade-Offs (reduction in total # of blades if additional technologies are needed such as hot-plug)	None	Yes
Dual Core Technology	Standard	Not Available
Disk Drives	32 hot-Plug (Up to 2X IBM maximum)	only 28 non-hot-plug with base unit
Memory DIMM Sockets	72 (up to 3X IBM maximum)	less than 72
Battery Backed Write Cache on RAID Controller	Available	Not-Offered
Mid-Plane Bandwidth	5.12TB/Sec	2 TB/Sec
Virtual Connect for SAN and LAN for Much Easier Administration	Offered	Not Available
LCD Based Local Configuration and Diagnostics	Standard	Not Available
Energy Efficiency	Industry Leading	Much heavier user of electricity and cooling
Hot Swap Power and Cooling	Standard	?
Real Time Thermal Information	Standard	Not Available
Maximum # of NICs	8	4
I/O Throughput	Up to 20GB per channel	Limited
Infiniband Bandwidth	20GB/Sec	10GB/Sec
Balanced power across power supplies	Yes	No
Power Failure Risks	Can sustain up to three power supply failures	Can only sustain up to two power supply failures
N+1 Power Redundancy for sites that do not have redundant AC inputs	Yes	No
Maximum Performance when running reduced voltage for power savings	Yes	No
Maintain adequate cooling if one fan fails	Yes	No
Can input power be balanced	Yes	No
Cisco Switches Fully Cisco	Yes. All Cisco ASICs	No. IBM ASICs
Integrated Remote Console	Yes	No
WinPE and Linux Pre-Boot Environments fully integrated in Remote Deployment solution?	Yes	No. IBM requires manual intervention.
Configure and Provision Boot from SAN	Yes	No
Simple, Wizard-based set up of System Management	Yes	No
Native rack view	Yes	No
Virtual Machine Copy, Backup and Templating	Yes	No
Failed Host Recovery	Yes	No
P2V, V2P, V2V Tools	Yes	No
Intelligent Network Option to allow bypassing of failed links	Yes	No



HP's world wide leadership position

- #1 in Blade servers
- #1 in Unix, Windows and Linux combined¹
- #1 in X86 and X86-64 servers
- #1 in Opteron servers
- #1 in Itanium servers
- #1 in total servers shipped
- First tier 1 vendor to introduce a blades server
- First vendor to break 100,000 blades shipped

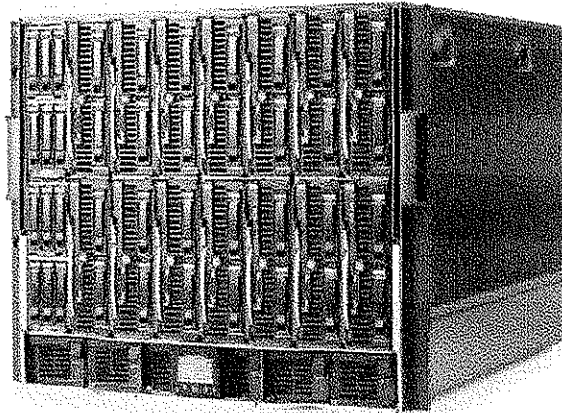
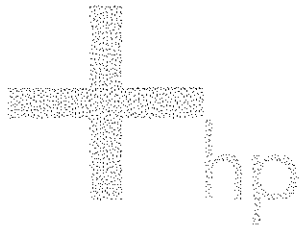
Source: IDC Q2/06 quarterly tracker. All data is worldwide.



¹ Represents more than 96% of all servers shipped worldwide.

HP BladeSystem c7000 Enclosure

Data sheet



The new HP BladeSystem c7000 enclosure is the foundation of a new modular computing architecture that simplifies infrastructure, reduces operational cost and delivers IT services more effectively to your business. It consolidates the essential elements of a datacenter—power, cooling, management, connectivity, redundancy, security—into a modular, self-tuning unit wrapped with intelligence that is expandable with server, storage and interconnect modules to build a variety of solutions for any business.

Redesigned from the start to deliver a bold agenda for the future of blade computing, it integrates HP unique innovations to tackle the toughest problems facing today's IT infrastructures - cost, time, energy and change. Plus, it includes flexibility, scalability and support for future technologies so it's not only easier to create, change, and manage, but also helps your business take full advantage of new things to come.

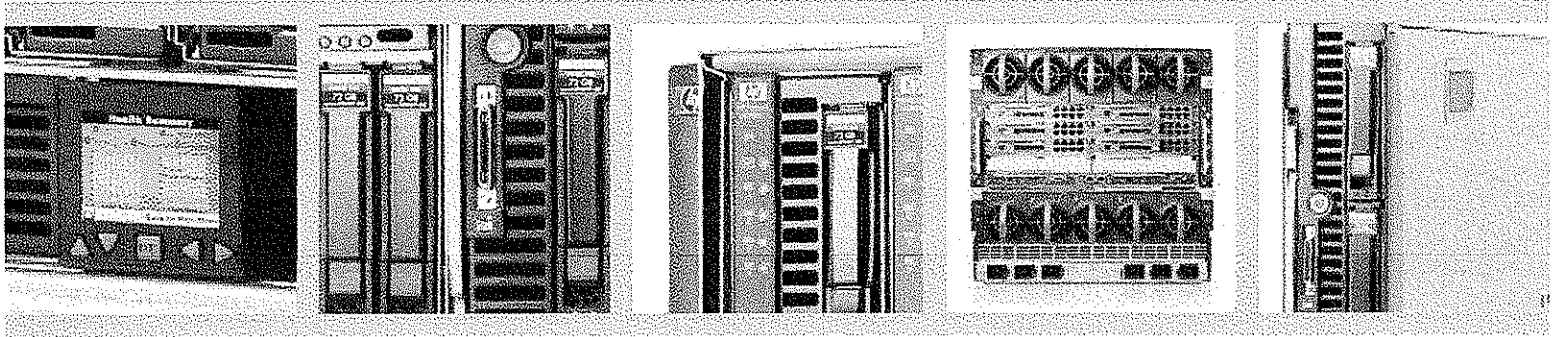
The new HP BladeSystem c7000 enclosure supports up to 16 full-featured blades for one of the highest densities in the industry. And, you can mix and match different server blades in the same enclosure. Consolidated and automated, affordable and facility-friendly, modular and virtualized it helps you build a best-run IT infrastructure out of the box.

Features

HP Thermal Logic technology:

- Actively monitor and automatically adapt power load and cooling capacity based on changes in demand to save more than 33% on total power costs
- HP unique innovations that ensure the highest energy efficiency, redundancy and scalability of power and cooling under any workload and in dense environments
- Single- or 3-phase power options and N+N and N+1 power supply redundancy for maximum power configuration flexibility
- All power and cooling components are hot-pluggable for easy upgrades





HP Insight Control management:

- Built in HP Onboard Administrator includes a simple LCD screen on the front for rapid setup and daily maintenance and redundant modules in the rear for advanced system administrator operations.
- Remote access through 1 link to all iLO 2 controllers built-in to each server
- Choice of HP Insight Control software for end-to-end infrastructure control with a built-in automation, wizard-driven interface, and single sign-on role-based security
- Delivers system health and performance monitoring, server provisioning and recovery, and vulnerability scanning and patching.

HP Virtual Connect architecture:

- 8 high-speed interconnect bays support a choice of industry standard interconnect options from your familiar brands and reduces cabling for LAN, SAN and management connectivity by up to 94%.
- Scaleable 5 Terabit midplane protects your investment with support up to 4 redundant I/O fabrics including 1Gb - 10Gb Ethernet, 4GB Fibre channel, 4x DDR Infiniband support and future I/O connections.
- All BladeSystem interconnect options are hot-pluggable and can be installed in pairs for full redundancy.

Options

- Expand unified infrastructure management capabilities with HP Storage, ProLiant and Integrity Essentials software or the HP OpenView management portfolio.
- Increase infrastructure availability with redundant power, cooling, interconnect, and management modules.
- Maximize your results for the business and lower costs with HP support, consulting and financial services

Ideal environments

Streamline IT operations in large datacenters, remote distributed offices and small server rooms

- Consolidated multi-tier application architectures
- Industry standard OS and processors support Linux, Windows and HP-UX applications
- Large clusters, GRID and utility computing

Technical specifications

Enclosure capacity

Device bays	8 to 16 server and storage blades, Mixed configurations supported
Interconnect bays	8 (up to 4 redundant I/O fabrics)
Power supplies	Up to 6 x 2250W
Fans	Up to 10 hot-plug Active Cool fans
OnBoard Administrator	2 for full redundancy
Height	10U

Enclosure power

Input Voltage	200VAC - 240VAC
3-phase North America and Japan Model	2 x NEMA L15-30p
3-Phase International Model	2 x IEC 309 5-PIN, 6h, Red, 16A
Single phase model	6 x IEC-320 C20

Interconnects

Ethernet	HP 1 Gb Ethernet Pass-Thru Module, Cisco Catalyst Blade Switch 3020 for HP, HP GbE2c Ethernet Blade Switch
Fibre Channel	HP 16 port 4 Gb FC Pass-Thru Module, Brocade 4 Gb SAN Switch
InfiniBand	HP 4X DDR IB Switch Module

Enclosure dimensions

Height	10U - 17.4 in (442 mm)
Width	17.5 in (445 mm)
Depth	32 in (813 mm)

Warranty	3-year parts, 3-year labor, 3-year onsite
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Benefits

Simplicity

- **Simple start-up**—Built-in HP Onboard Administrator facilitates set-up and configuration of up to 64 servers in 15 minutes - locally or remotely - and its wizard-driven interfaces simplify daily tasks and speed troubleshooting and repair.
- **Beyond server blades**—Integrates all of the essential elements of a datacenter with less planning up front—redundancy, power/cooling and management—expandable with modular server, storage, and client devices all managed from one console.
- **Consolidated from the start**—Pools and shares resources to lower up front costs and streamline daily IT operations

Agility

- **Pre-wire and pre-configure**—With HP Virtual Connect modules, server connections to LAN and SAN can be wired-once to add, move and recover servers without impacting other domains

- **Modular, hot-plug expandability**—Blade servers, storage, and other modular components can be easily added or removed without having to power down

- **Simple provisioning and recovery**—Health monitoring and alerting to simplify change and maintenance

Value

- Use up to 20 percent less power, 40 percent less space, 50 percent less airflow and reduce cables by up to 94 percent versus equivalent 1U rack mounted servers.
- Manage your power consumption and heat generation at the enclosure and rack level to stay within your datacenters existing power and cooling budgets
- Optimize power supply efficiency with HP Dynamic Power Saver to reduce wasted power

Services

HP Services provides continuous care and support expertise with committed response designed to meet your IT and business needs.

To fully capitalize on your HP BladeSystem c7000 enclosure and related infrastructure such as Ethernet interconnects, power supplies, etc. requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader of multi vendor support solutions provides a range of services designed to meet the varying needs of business. Whether an SMB or large global corporation, HP has a HP BladeSystem support offer to help you speedily deploy and maximise system uptime.

Extended Care—Minimum recommended service support offer designed to ensure you have access to expert assistance, whenever needed. *HP BladeSystem c7000 Enclosure—3 year 24x7 same business day hardware support.*

Committed Care—Cost-effective combined hardware and software support service designed to extend HP Services committed response and to speed more complex interoperability problem resolution. *HP BladeSystem c7000 Enclosure—3 year 24x7 Support Plus 24.*

Committed Repair—Highest HP Support service level recommend to help increase IT performance and availability, improve IT management with comprehensive, consistent and integrated proactive and reactive hardware and software support services. *HP BladeSystem c7000 Enclosure—3 year 24x7 Mission Critical Proactive 24 service.*

Deployment Services—HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers - and free your IT Team to focus on what they do best, meeting your business needs. *HP BladeSystem c7000 Enclosure Installation and Startup for Bladesystem c-Class infrastructure service.*

For more information visit:

<http://www.hp.com/services/bladessystemservices>

Financial services

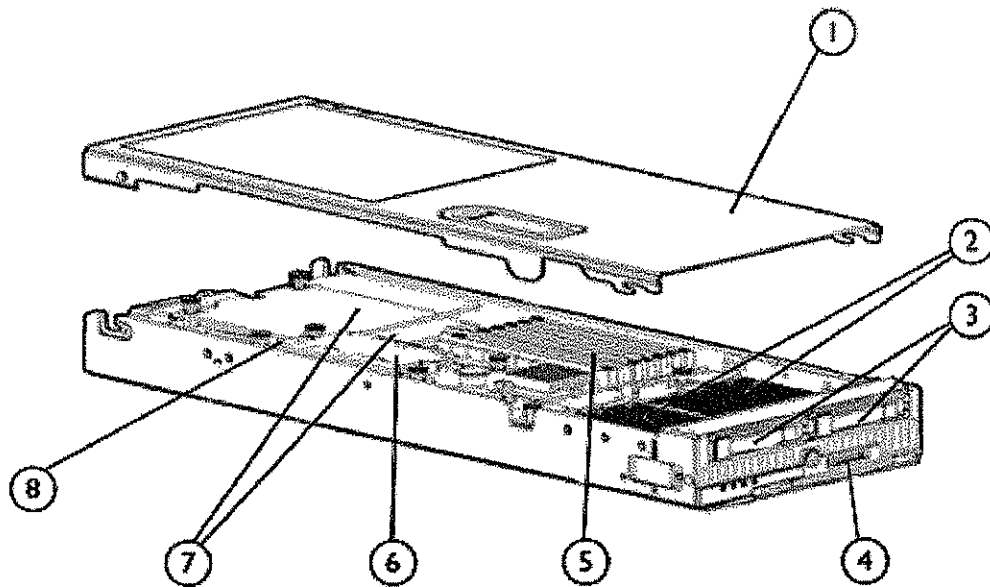
HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire, manage, and ultimately retire your HP solutions. For more information on these services, contact your HP sales representative or visit www.hp.com/go/hpfinancialservices.

For more information

For more information about the HP BladeSystem c7000 Enclosure please contact your local HP sales representative or visit www.hp.com/go/bladessystem/enclosure



Overview



HP ProLiant BL460c Server Blade

- | | |
|---|---|
| 1. Access Panel | 6. Smart Array E200i Controller (optional battery-backed write cache) |
| 2. Up to two Dual-Core Intel® Xeon® processors | 7. Two Mezzanine slots |
| 3. Small form factor (SFF) hot-plug drive bays | 8. Internal USB Connector |
| 4. Local I/O connector | |
| 5. Eight (8) PC2-5300, Fully Buffered DIMMs (DDR2-667) Memory Slots | |

What's New

The BL460c offers dual core processors including the following:

- Dual-Core Intel® Xeon® Processor 5110 (1.6 GHz, 4M L2 Cache)
- Dual-Core Intel® Xeon® Processor 5140 (2.33 GHz, 4M L2 Cache)
- Dual-Core Intel® Xeon® Processor 5150 (2.66 GHz, 4M L2 Cache)
- Dual-Core Intel® Xeon® Processor 5160 (3.0 GHz, 4M L2 Cache)

The BL460c supports up to 32 GB of memory with the new 8 GB FBD PC2-5300 1x4GB Memory Kit.

Overview

At A Glance

This document covers the HP ProLiant BL460c server blade only. For more information on HP BladeSystems c-Class Infrastructure and HP BladeSystem c-Class Interconnect Components, please see the following QuickSpecs:

HP BladeSystem c-Class Infrastructure QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12517_na/12517_na.HTML

and HP BladeSystem c-Class Interconnect Components QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12524_na/12524_na.HTML

The HP ProLiant BL460c provides greater 2P x86 server blade density without compromise and maximum power-efficiency with flexibility and choice.

HP ProLiant BL460c server blade includes:

- Processor:
 - Up to two Intel® Xeon® 5000 and 5100 series Dual-Core processors
 - Supports up to 3.0 GHz 1333 MHz or 1066 MHz FSB; 4MB Level 2 cache memory
 - Intel 5000P chipset supporting up to a 1333 MHz Front Side Bus
- Memory:
 - Up to 32 GB of memory, supported by (8) slots of PC2-5300 Fully Buffered DIMMs at 667 MHz
 - Supporting memory interleaving (2x1); memory mirroring and online spare capacity.
- Storage Controller:
 - Integrated Smart Array E200i RAID controller with 64 MB cache (with optional battery-backed write-cache with an upgrade to 128MB cache (BBWC)). Supports RAID 0,1.
- Internal Drive Support:
 - Up to 2 small form factor (SFF) SAS or SATA hot plug hard disk drives
- Network Controller:
 - Two (2) Embedded Dual NC373i Multifunction Gigabit Network Adapters
 - One (1) additional 10/100 NIC dedicated to iLO 2 Management
- Mezzanine Support:
 - Two (2) additional I/O expansion slots via mezzanine card.
 - Supports up to (2) mezzanine cards
 - Dual-Port Fibre Channel Mezzanine (4-Gb) options for SAN connectivity (Choice of Emulex or QLogic).
 - Ethernet NIC Mezzanine options for additional network ports
 - HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter
 - HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem
 - Infiniband (IB) and 10GbE planned for future support
- Internal USB Support:
 - One (1) internal USB 2.0 connector for security key devices and USB drive keys
- Form Factor:
 - HP ProLiant BL460c server blade plugs vertically into the BladeSystem c7000 enclosure
- Management:
 - Integrated Lights-Out 2 (iLO 2) Standard Blade Edition (includes virtual KVM and graphical remote console at no additional cost)
- Operating Systems:
 - Supports Windows, Linux, and Netware Operating Systems
- Enclosures:
 - HP ProLiant BL460c server blade plugs vertically into the BladeSystem c7000 enclosure
- Warranty:
 - Protected by HP Services and a worldwide network of resellers and service providers. Three-year parts, 3 Year Labor and 3 Year on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SAS hard drives. SATA hard drives have a one year warranty.

Standard Features (Server Blade)

Processor

- Dual-Core Intel Xeon Processor 5160 (3.00 GHz, 1333 MHz FSB)
- Dual-Core Intel Xeon Processor 5150 (2.66 GHz, 1333 MHz FSB)
- Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 1333 MHz FSB)
- Dual-core Intel Xeon Processor 5130 (2.00 GHz, 1333 MHz FSB)*
- Dual-core Intel Xeon Processor 5120 (1.86 GHz, 1066 MHz FSB)*
- Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 1066 MHz FSB)
- Dual-core Intel Xeon Processor 5063 (3.2 GHz, 1066 MHz FSB) Mid-Voltage
- Dual-core Intel Xeon Processor 5050 (3.0 GHz, 667 MHz FSB)*

NOTE: Intel 5100 series processors are 64-bit, Dual-core, support Hyper Threading, and Intel VT.
NOTE: *Offered through CTO only.

Upgradeability Upgradeable to 2 processors

Cache Memory 2x2MB Level 2 cache memory (5000 Series)
1x4MB Level 2 cache memory (5100 Series)

Chipset Intel® 5000P Chipset

Memory

Type	PC2-5300 Fully Buffered DIMMs at 677 MHz
Standard	1 GB (2 x 512 MB) 2 GB (2 x 1 GB)
Maximum	32 GB (8 x 4 GB) NOTE: Memory must be installed in pairs.

Network Adapter (2) Embedded single port NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine
One (1) additional 10/100 NIC dedicated to iLO 2 Management

Expansion Slots Two Mezzanine slots

Integrated Manageability Integrated Lights-Out 2 (iLO 2) Standard Blade Edition (integrated on motherboard)

Storage Controller Smart Array E200i Controller 64MB memory module supports RAID 0, 1
Available upgrades: 128MB with Battery-backed write cache

Maximum Internal Storage

Hot Plug Serial Attach SCSI (SAS)	144GB SAS	2 x 72GB Serial SCSI
Hot Plug Serial ATA (SATA)	120GB SATA	2 x 60GB Serial ATA



Standard Features (Server Blade)

Graphics Integrated ATI RN-50 1280 x 1024 x 16M color (32 MB DDR1 memory)

Graphics Resolution Supported Resolution Color Depths Depths 1280 x 1024, 16.7M, 64k, 256, 16
1024 x 768, 16.7M, 64k, 256, 16
800 x 600, 16.7M, 64k, 256, 16
640 x 480, 16.7M, 64k, 256, 16

Fibre Channel on the HP ProLiant BL460c server blade Two optional Fibre Channel HBAs are supported by the HP ProLiant BL460c. Both mezzanine circuit boards connect directly to the server blade system board. These Fibre Channel HBAs are available via option kits and must be ordered separately.

Two option kits

Emulex LPe1105-HP 4Gb FC HBA for HP c-Class BladeSystem (403621-B21)

- Based on the same field-proven ASIC, firmware, and driver technology as Emulex's renowned LPe1150 HBA, the Emulex LPe1105-HP is fully driver compatible with all Emulex HBAs

QLogic QMH2462 4Gb FC HBA for HP c-Class BladeSystem (403619-B21)

- Uses common drivers which means that customers can standardize on one QLogic driver whether they are using the QMH2462 or other 4Gb and 2Gb HBAs powered by QLogic

Emulex and QLogic Fibre Channel HBAs feature:

- Optimal performance utilizing PCI Express
 - 4/2/1Gb/s auto negotiating speeds
 - Dual-ports for redundant path connections
 - Up to two FC HBAs per server blade providing redundant FC HBA support
 - Optimized for HP StorageWorks and supported by third party SAN vendors
 - Support for Microsoft® Windows® and Linux operating systems environments
-

Compatible SAN HP ProLiant BL460c server blades are optimized for HP StorageWorks MSA, EVA and XP

HP ProLiant 460c server blades are compatible with select 3rd party SANs (please see blade storage page for more details: <http://h18000.www1.hp.com/products/servers/proliant-bl/c-Class/storage.html>)

Standard Features

Insight Control Data Center Edition

Insight Control Data Center Edition delivers foundation management for HP BladeSystem lifecycles, including hardware resource deployment, health monitoring, software version control, performance monitoring, and vulnerability scanning and patch management.

Installs the following components by default using the wizard-based integrated installer:

- HP Systems Insight Manager
- Rapid Deployment Pack
- Performance Management Pack
- Vulnerability and Patch Management Pack

Additional ProLiant Essentials software and management tools included on the Insight Control Data Center Edition DVD can be installed manually.

- Virtualization Management Suite
- Workload Management Pack
- HP Open Service Event Manager
- HP Instant Support Enterprise Edition

NOTE: For Licensing and Packaging Options please see the options section of this QuickSpecs.

NOTE: Insight Control Data Center Edition is delivered with HP BladeSystem c-Class enclosures with either 16-server licenses or 8-server evaluation licenses (30-days). For additional information on HP c-Class Infrastructure please visit: HP BladeSystem c-Class Infrastructure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12517_na/12517_na.HTML

NOTE: For additional product and licensing information about Insight Control Data Center Edition, HP Systems Insight Manager and Essentials software refer to <http://www.hp.com/servers/proliantessentials>.

Unified Foundation Management and Essentials Software Plugins

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.

ProLiant Essentials Rapid Deployment Pack

Rapid Deployment Pack (RDP) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant blade servers. RDP provides a central location to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles.

ProLiant Essentials Performance Management Pack

ProLiant Essentials Performance Management Pack detects, analyzes, and explains hardware bottlenecks on HP ProLiant servers, HP Integrity servers and shared storage.

The Vulnerability and Patch Management Pack

The Vulnerability and Patch Management Pack integrates and simplifies the assessment and remediation of operating system vulnerabilities into HP Systems Insight Manager for Windows and Linux platforms.

Standard Features

Insight Management Agents	<p>The Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers.</p> <p>Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack</p> <p>For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at http://www.hp.com/servers/manage.</p>
Subscriber's Choice	<p>Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.</p>
ProLiant Support Packs and ROMPaq, software	<p>The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through ProLiant Support Packs the ProLiant Essentials Rapid Deployment Pack, SmartStart or downloaded from Software and Drivers download pages website at http://www.hp.com/go/support.</p>

Optional ProLiant Essentials Value Packs

Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- Accelerated iSCSI Pack - enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network.
- Integrated Lights-Out Select Pack - upgrades the Integrated Lights-Out processor with scripted and command line virtual media, Power Regulator reporting and enterprise security
- Intelligent Networking Pack - detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus.
- Server Migration Pack - P2P Edition: Upgrading or replacing your existing server? Effortlessly transition to new servers with automated, accurate and affordable migration of OS, application and data.
- Virtualization Management Software - Get the most out of server virtualization by unifying the management of physical and virtual servers in HP Systems Insight Manager. The Virtual Machine Management Pack plug-in provides central management and control of VMware and Microsoft virtual machines and provides physical host to virtual machine association. The Server Migration Pack plug-in automates the manual task of migrating servers between physical or virtual platforms.
- Workload Management Pack - provides easier management of complex environments, improving overall server utilization and enabling Windows® 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.

Standard Features

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

SmartStart

SmartStart is a tool that simplifies single server setup, providing a rapid way to deploy reliable and consistent server configurations. SmartStart 7.50 and later can now deploy the HP ProLiant BL460c using the I/O port with an attached USB CD-ROM device. To obtain a copy of SmartStart for your blade server order or download your copy from the SmartStart web site. For more information, please visit the SmartStart Web site at <http://www.hp.com/servers/smartstart>.

OS Support

Microsoft Windows 2000 Server
Microsoft Windows 2000 Advanced Server
Microsoft Windows Server 2003, Standard Edition
Microsoft Windows Server 2003 R2, Standard Edition
Microsoft Windows Server 2003, Standard x64 Edition
Microsoft Windows Server 2003 R2, Standard x64 Edition
Microsoft Windows Server 2003, Web Edition
Microsoft Windows Server 2003 R2, Web Edition
Microsoft Windows Server 2003, Enterprise Edition
Microsoft Windows Server 2003 R2, Enterprise Edition
Microsoft Windows Server 2003, Enterprise x64 Edition
Microsoft Windows Server 2003 R2, Enterprise x64 Edition
Red Hat Enterprise Linux 3
Red Hat Enterprise Linux 4
SUSE LINUX Enterprise Server 9
SUSE LINUX Enterprise Server 10
Netware 6.5

NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: <http://www.hp.com/go/supportos>.

NOTE: For an up-to-date listing of the latest drivers available for the ProLiant BL c-Class, please see: <http://www.compaq.com/support/files/server/us/index.html>.

NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux website at: <http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html>.

Supported Software Options

VMware Virtualization Software

Red Hat Enterprise Linux and management bundle for HP BladeSystems

NOTE: For more information on HP's Certified and Supported HP ProLiant Servers, please visit the VMware Server Support Matrix at:

<http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html>

NOTE: For a more complete and up-to-date information on Linux for HP BladeSystems support, please visit HP Linux website at:

http://h18000.www1.hp.com/products/quickspecs/12321_na/12321_na.HTML

Standard Features

Intelligent Manageability Integrated Lights-Out 2 Standard Blade Edition (iLO 2)
Virtual KVM(Text and Graphical modes)
Virtual Media (CD ROM ,floppy and USB flash drive) Virtual Power Button Control Integrated Remote Console Embedded system health Blade power consumption reading Browser, command line and scripted access
Dedicated LAN Connectivity
Automatic IP Configuration via DHCP/DNS/WINS
Industry Standard RC4, 128-bit Secure Sockets Layer (SSL) and Secure Shell (SSH) Security
IML and iLO Event Logging
Support for 12 user accounts with customizable access
Upgrade to HP ProLiant Essentials Integrated Lights-Out Select Pack
NOTE: Advanced features such as Graphical Remote Console and browser accessible Virtual Floppy/CD-ROM are included with the BL c-Class server.

Availability Dual-Port Fibre Channel Mezzanine Card for redundant SAN connection
Two hot-plug SAS/SATA hard drive bays and integrated RAID (Smart Array E200i) controller on every server blade (Battery-backed write cache is optional.)
Redundant ROM on each server blade
ECC Memory
Network adapter teaming (network fault tolerance, transmit load balancing, switch-assisted load balancing)

Security Power-on password
Administrator's password
Integrated Lights-Out 2 has 12 customizable user accounts and SSL encryption
Integrated Lights-Out 2 can be disabled via a Global Setting

Factory Express Portfolio for Servers and Storage HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services on your specific server model please contact your sales representative or go to <http://www.hp.com/go/factory-express>.

Standard Features

RoHS Compliant

For Resellers in countries/regions with RoHS legislation (see NOTE) (e.g. EU, China, etc.)
The use of the noted material in a solution and subsequent resale of that solution will result in the solution no longer meeting the requirements of RoHS legislation.

NOTE: Directive 2002/95/EC restricts the use of lead, mercury, cadmium, hexavalent chromium, PBBs and PBDEs in electronic products. Countries/regions outside the EU, eg. China, are introducing similar legislation. References to 'RoHS legislation' means requirements of Directive 2002/95/EC or to similar substance restriction legislation enacted by any country/region outside the EU.

Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. 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.

NOTE: Server Blade Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. This warranty supports the HP ProLiant BL460c and BL480c Server Blades.

NOTE: Server Blade Enclosure Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.

NOTE: Server Blade Interconnect Limited Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMware-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP has introduced a new building block approach which allows customers to purchase the right coverage at the right time whether purchasing an initial server blade plus enclosure or purchasing additional ProLiant server blades over time. HP will offer two sets of Care Pack services, one designed to support the server blade and one designed to support the enclosure.

HP Care Pack services for HP ProLiant 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.

NOTE: HP Care Pack services for the c7000 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.

NOTE: For more information regarding the Blade service portfolio visit our worldwide web site on the internet at: <http://h20219.www2.hp.com/services/cache/81725-0-0-225-121.html>

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: <http://www.hp.com/hps/carepack>

Standard Features

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: <http://www.hp.com/hps>

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Dual-core Model

HP ProLiant BL460c 5160 Processor(s) DC 2G (1P) 416656-B21	One of the following depending on model	(1) Dual-core Intel Xeon 5160 Processor (3.00 GHz, 1333 FSB) (1) Dual-core Intel Xeon 5150 Processor (2.66 GHz, 1333 FSB) (1) Dual-core Intel Xeon 5140 Processor (2.33 GHz, 1333 FSB) (1) Dual-core Intel Xeon 5110 Processor (1.6 GHz, 1066 FSB) (1) Dual-core Intel Xeon 5063 Processor (3.2 GHz, MV, 1066 FSB)
HP ProLiant BL460c 5150 DC 2G (1P) 416655-B21	Cache Memory	2x2MB Level 2 cache memory (5000 Series) 1x4MB Level 2 cache memory (5100 Series)
HP ProLiant BL460c 5140 DC 2GB (1P) 416654-B21	Memory One of the following depending on model	8 GB (1 X 4 GB) PC2-5300, FBD DDR2-667 4 GB (2 X 2 GB) PC2-5300, FBD DDR2-667 2 GB (2 x 1 GB) PC2-5300, FBD DDR2-667 1 GB (2x512 MB) PC2-5300, FBD DDR2-667
HP ProLiant BL460c 5110 DC 1GB (1P) 416653-B21	Network Adapter Storage Controller	(2) Embedded single port NC373i Multifunction Gigabit NICs plus (1) additional 10/100 NIC dedicated to iLO 2 Management Smart Array E200i Controller with 64MB (optional battery-backed write cache)
HP ProLiant BL460c 5063 DC, 2GB (1P) 404664-B21	Hard Drives Internal Storage Optical Drive Form Factor	No drives included; (2) SFF SAS/SATA drive bays 144GB SAS 120GB SATA None Up to 16 half-height blades supported in HP BladeSystem c7000 Enclosure

Configuration Information - Factory Integrated Models (North America only)

NOTE: For Configure to Order requirements within EMEA region, please consult local Sales Contact.

NOTE: HP does not allow factory integration of options into standard models listed above.

Configure-to-order server blades must start with a CTO Blade.

NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.

NOTE: FIO indicates that this option is a Factory Installable Option.

Step 1: Base Server Blade Configuration (Select a configurable Blade)

Models	<p>HP ProLiant BL460c CTO Blade (North America) 404667-B21</p> <p>Configurable Model ships with:</p> <p>(2) Embedded single port NC373i Multifunction Gigabit NICs plus (1) additional 10/100 NIC dedicated to iLO 2 Management</p> <p>Integrated Smart Array E200i RAID controller</p> <p>NOTE: Controller cache module selection is required. Select either the standard 64 MB module or the optional 128 MB module in step 2 below.</p> <p>Two small form factor (SFF) SAS/SATA hot plug hard drive bays</p> <p>Integrated Lights-Out 2 Standard Blade Edition</p>
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Step 2: Choose Required Options (one of the following from each list unless otherwise noted):

Processors	<p>For single processor configuration choose:</p> <p>Dual-Core Intel Xeon 5160 (3.0 GHz, 1333FSB) Processor Option Kit, FIO Base 416660-L21 NOTE: If 2 processors are desired, select one 416660-L21 and one 416660-B21.</p> <p>Dual-Core Intel Xeon 5150 (2.66 GHz 1333 FSB) Processor Option Kit, FIO Base 416659-L21 NOTE: If 2 processors are desired, select one 416659-L21 and one 416659-B21.</p> <p>Dual-Core Intel Xeon 5140 (2.33 GHz 1333 FSB) Processor Option Kit, FIO Base 416658-L21 NOTE: If 2 processors are desired, select one 416658-L21 and one 416658-B21.</p> <p>Dual-Core Intel Xeon Processor 5130 (2.00 GHz, 1333 MHz FSB) Processor Option Kit, FIO Base 419735-L21 NOTE: If 2 processors are desired, select one 419735-L21 and one 419735-B21.</p> <p>Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 1066 MHz FSB) Processor Option Kit, FIO Base 419734-L21 NOTE: If 2 processors are desired, select one 419734-L21 and one 419734-B21.</p> <p>Dual-Core Intel Xeon 5110 (1.6 GHz, 1066 FSB) Processor Option Kit, FIO Base 416657-L21 NOTE: If 2 processors are desired, select one 416657-L21 and one 416657-B21.</p> <p>Dual-Core Intel Xeon 5063 (3.2 GHz MV, 1066 FSB) (Mid-Voltage) Processor Option Kit, FIO Base 409598-L21 NOTE: If 2 processors are desired, select one 409598-L21 and one 409598-B21.</p> <p>Dual-Core Intel Xeon 5050 (3.0 GHz, 667 FSB) Processor Option Kit, FIO Base 409597-L21 NOTE: If 2 processors are desired, select one 409597-L21 and one 409597-B21.</p>
Memory	<p>1 GB FBD PC2-5300 2 x 512 MB Kit 397409-B21</p> <p>2 GB FBD PC2-5300 2 x 1 GB Kit 397411-B21</p> <p>4 GB FBD PC2-5300 2 x 2 GB Kit 397413-B21</p> <p>8 GB FBD PC2-5300 2 x 4 GB Kit 397415-B21</p> <p>NOTE: Must be installed in pairs</p>

Configuration Information - Factory Integrated Models (North America only)

Controller Cache	64 MB Cache - FIO Only	405102-B21
	128 MB Battery-Backed Cache Enabler	351580-B21
	NOTE: Supports the Smart Array E200i Controller, Smart Array 641 Controller, and Smart Array 642 Controller.	

Step 3: Choose Additional Factory Integratable Options

Fibre Channel Options	Emulex LPe1105 FC Dual Channel 4Gb, PCI-E-to-Fibre Channel Host Bus Adapter	403621-B21
	QLogic QMH2462 4Gb FC HBA for HP c-Class BladeSystem	403619-B21
Communications	HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter for c-Class BladeSystem	406770-B21
	HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem	406771-B21
	NOTE: Supports HP c-Class BladeSystems.	

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, including server blade enclosures interconnect options and power subsystem options; please see the following QuickSpecs:

HP BladeSystem c-Class Infrastructure QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12517_na/12517_na.HTML

and HP BladeSystem c-Class Interconnect Components QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12524_na/12524_na.HTML

Options

ProLiant Essentials Value Pack Software	ProLiant Essentials Accelerated iSCSI Pack for Embedded Multifunction Gigabit Server Adapters	
	ProLiant Essentials Accelerated iSCSI Pack, Single Server License	407484-B21
	NOTE: For additional ProLiant Accelerated iSCSI Pack License Kits- please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_na/12466_na.HTML	
	ProLiant Essentials Integrated Lights-Out Select Pack	
	ProLiant Essentials Integrated Lights-Out Select Pack, 1 server License	413119-B21
	ProLiant Essentials Integrated Lights-Out Select Pack 8-server License	413122-B21
	Featuring: sophisticated remote control and security features for HP BladeSystem servers and ProLiant ML/DL servers in text console environments. NOTE: For additional ProLiant Essentials Integrated Lights-Out Packs please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.HTML	
	ProLiant Essentials Intelligent Networking Pack Windows Edition and Linux Edition	
	ProLiant Essentials Intelligent Networking Pack - Windows Edition, Single Server License	372906-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	
	ProLiant Essentials Intelligent Networking Pack Linux Edition, Single Server License	397004-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key and documentation. NOTE: For additional ProLiant Intelligent Networking Pack License Kits-Windows Edition please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_na/12062_na.HTML NOTE: For additional ProLiant Intelligent Networking Pack License Kits-Linux Edition please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12327_na/12327_na.HTML	
	ProLiant Essentials Server Migration Pack	
	ProLiant Essentials Server Migration Pack, Single-Migration License	375345-B21
	NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation. NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005. NOTE: For additional ProLiant Server Migration Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.HTML	
	ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition	
	ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition, Single-Migration License	412978-B21
	NOTE: For additional ProLiant Server Migration Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12467_na/12467_na.HTML	
	ProLiant Essentials Workload Management Pack	
	ProLiant Essentials Workload Management Pack, Single Server License	303284-B21

Options

NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11452_na/11452_na.HTML

ProLiant Essentials Virtual Machine Management Pack

ProLiant Essentials Virtual Machine Management Pack, Single-Server License 372214-B21

NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

NOTE: For additional ProLiant Virtual Machine Management Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.HTML

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: <http://www.hp.com/servers/proliantessentials>.

Processors	Dual-Core Intel Xeon 5160 (3.0 GHz MV, 1333 FSB) Processor Option Kit	416660-B21
	Dual-Core Intel Xeon 5150 (2.66GHz, 1333 FSB) Processor Option Kit	416659-B21
	Dual-Core Intel Xeon 5140 (2.33 GHz, 1333 FSB) Processor Option Kit	416658-B21
	Dual-Core Intel Xeon Processor 5130 (2.00 GHz, 1333 FSB) Processor Option Kit	419735-B21
	Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 1066 FSB) Processor Option Kit	419734-B21
	Dual-Core Intel Xeon 5110 (1.6 GHz, 1066 FSB) Processor Option Kit	416657-B21
	Dual-Core Intel Xeon Processor 5063 (3.2 GHz MV, 1066 FSB) (Mid-Voltage)	409598-B21
	Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 667 FSB) Processor Option Kit	409597-B21

Memory	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21
	NOTE: Must be installed in pairs.	

Options

Hard Drives	Serial Attached SCSI (SAS) SFF Hot Plug	
	HP 36GB 3G SAS 10K SFF HDD	375859-B21
	HP 72GB 3G SAS 10K SFF HDD	375861-B21
	NOTE: SAS drives have a 3 year warranty. NOTE: Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML	
	SFF SATA Hot Plug	
HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21	
NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12091_na/12091_na.HTML		
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Communications	HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter for c-Class BladeSystem	406770-B21
	HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem	406771-B21
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HP ProLiant BL460c - Fibre Channel Adapter	Emulex LPe1105 FC Dual Channel 4Gb, PCI-E-to-Fibre Channel Host Bus Adapter	403621-B21
	QLogic QMH2462 4Gb FC HBA for HP c-Class BladeSystem	403619-B21
	NOTE: Supports HP c-Class BladeSystems	
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Tape Libraries	HP StorageWorks MSL2024 Tape Library	
	HP StorageWorks MSL2024 1 Ultrium 960 Drive Library	AG115A
	HP StorageWorks MSL2024 1 Ultrium 960 FC Drive Library	AG326A
	HP StorageWorks MSL2024 1 Ultrium 448 Drive Library	AG116A
	HP StorageWorks MSL2024 2 Ultrium 448 Drive Library	AG117A
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 1 Ultrium 448 Drive Library	AG320A
	HP StorageWorks MSL4048 2 Ultrium 448 Drive Library	AG321A
	HP StorageWorks MSL4048 1 Ultrium 960 Drive Library	AG322A
	HP StorageWorks MSL4048 1 Ultrium 960 FC Drive Library	AG324A
	HP StorageWorks MSL4048 2 Ultrium 960 Drive Library	AG323A
	HP StorageWorks MSL4048 2 Ultrium 960 FC Drive Library	AG325A
	HP StorageWorks MSL6000 Tape Library	
	Ultrium 960 technology	
	HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
	HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B
	HP StorageWorks MSL6060 2 Ultrium 960 Dr LVDS Library	AD610B
	HP StorageWorks MSL6060 2 Ultrium 960 Dr FC Library	AD611B

Options

Ultrium 460 technology

HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library	AD598B
HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library	AD600B
HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library	AD599B
HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library	AD601B
HP StorageWorks MSL6060 2 Ultrium 460 Dr LVDS Library	AD603B
HP StorageWorks MSL6060 2 Ultrium 460 Dr FC Library	AD604B

NOTE: Please reference the MSL2024, MSL4048 and MSL6000 Tape Library QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks Virtual Library Systems

HP StorageWorks 6105 Virtual Library System	AF728A
HP StorageWorks 6109 Virtual Library System	AG167A
HP StorageWorks 6510 Virtual Library System	AF729A
HP StorageWorks 6518 Virtual Library System	AG168A
HP StorageWorks 6840 Virtual Library System	AG051A
HP StorageWorks 6870 Virtual Library System	AG169A

NOTE: Please reference the VLS Tape Libraries QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution. Reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000	201723-B22
	NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML	

Cluster Options

NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: <http://www.hp.com/solutions/highavailability/oracle>

NOTE: For additional information regarding the HP ProLiant Cluster for HA/F500 please see the following QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/10232_na/10232_na.html

ProLiant Cluster Starter Kit	364023-B21
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NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html

HP HA/F200 for Entry SAN Cluster	364026-B22
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ProLiant Cluster HA/F500 for the Enterprise SAN	364024-B21
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NOTE: For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11933_na/11933_na.html

HP Serviceguard for Linux, A.11.16 (single license version- Red Hat EL 3&4, SUSE SLES9)	307754-B26
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HP Serviceguard for Linux ProLiant Cluster, A.11.16 (2 license version - Red Hat EL 3&4, SUSE SLES9)	305199-B26
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Options

HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription	T2798AA#001
HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription	T2798AA#003
NOTE: For additional information regarding the HP Serviceguard for Linux License, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html	

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	512MB HP DriveKey II	ED516AA
	USB 2.0 4-port Hub	DG954A
	2004 Standard Keyboard USB	DT528A#xxx

Rack Options for Rack 10000 G2 Series	HP 10642 G2 Front Door ALL	AF009A
	HP 10636 G2 Front Door ALL	AF019A
	10642 G2 (42U) Side Panels (set of two) (Graphite Metallic)	AF054A
	10636 G2 (36U) Side Panels (set of two) (Graphite Metallic)	AF056A
	10636 G2 Rear Extension Kit	AF060A
	600mm G2 Stabilizer Option Kit (Graphite)	AF062A
	600mm G2, Heavy Duty Stabilizer Option Kit (Graphite)	AF064A
	800mm G2 Stabilizer Option Kit (Graphite)	AF066A
	800mm G2, Heavy Duty Stabilizer Option Kit (Graphite)	AF068A
	NOTE: Supports 10000 G2 Series only.	
	HP 10000 G2 Rack Grounding Kit	AF074A
	600W 10K G2 Rack Tie Down	AF076A
	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower .	

HP KVM Switch Options	HP BladeSystem Cat 5 KVM Interface Adapter	AF100A
	NOTE: Cat5e cables are required to connect Interface Adapters to Consoles Switches. Cat52 cables can be found at the following URL: http://www.hp.com/go/kvm	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm	

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		



Options

<p>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</p> <p>NOTE: HP Care Pack services for the c7000 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.</p> <p>Hardware Services On-site Service</p>	UE473E
<p>Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic</p>	UE477E
<p>4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic</p>	UE478E
<p>4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic</p>	UE479E
<p>6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic</p>	UE480E
<p>Hardware Installation, Electronic</p>	U5988E
<p>NOTE: The HP Care Pack service part numbers below covers the HP 4Gb, 12 Port SAN Switch & 4Gb, 12 Port SAN Switch Upgrade LTU.</p> <p>Hardware Services On-site Service</p>	
<p>Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic</p>	UC007E
<p>4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic</p>	UC008E
<p>4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic</p>	UC009E
<p>6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic</p>	UC023E
<p>Hardware Installation, Electronic</p>	U5988E
<p>NOTE: The HP Care Pack service part numbers below covers the HP 4Gb, 24 Port SAN Switch.</p> <p>Hardware Services On-site Service</p>	
<p>Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic</p>	UE436E
<p>4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic</p>	UE437E
<p>4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic</p>	UE438E
<p>6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic</p>	UE439E
<p>Hardware Installation, Electronic</p>	U5988E
<p>NOTE: The HP Care Pack service part numbers below covers the HP 4Gb, 24 Port SAN Switch Power Pack.</p> <p>Hardware Services On-site Service</p>	
<p>Support Plus</p>	
<p>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</p>	UE728E
<p>Support Plus 24</p>	
<p>Onsite HW support 24x7, 4hr response and SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic</p>	UE729E
<p>Installation & Start-up Services</p>	

Options

<p>HP Installation & Startup Service for HP BladeSystem Infrastructure, Electronic NOTE: 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 BladeSystem Essential Insight Control Datacenter Edition which includes Systems Insight Manager (SIM), HP Rapid Deployment Pack (RDP), Vulnerability and Patch Management Pack (VPM) and Performance Management Pack (PMP) and deploy up to two editions of either Windows or Linux, using scripted operating system installation software.</p>	UE602E
<p>ProLiant BL c-Class Blade Server Hardware Installation, Electronic</p>	UE493E
<p>ProLiant BL c-Class Enclosure and Server Blade Hardware Installation, Electronic</p>	UE494E
<p>Provides for the Installation and Start-up of ProLiant Essentials Rapid Deployment Pack, Electronic NOTE: 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.</p>	U5683E
<p>Provides for the Installation and Start-up of Rapid Deployment Pack Implementation of Rapid Deployment Pack (Basic) (Electronic)</p>	UA042E
<p>HP ProLiant Essentials Vulnerability and Patch Management Pack Installation and Startup Service, Electronic NOTE: 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.</p>	UC929E
<p>Provides for the Installation and Start-up of System Insight Manager (Electronic)</p>	UA041E
<p>Provides for the Installation and Start-up of System Insight Manager Agents (Electronic) NOTE: For more information, customer/resellers can contact http://www.hp.com/hps/carepack/services/</p>	UA040E
<p>Software Operating Environment Care Packs</p>	
<p>Microsoft Software Operating Environment Software Telephone 9x5 - 3 incident (Electronic)</p>	U8169E
<p>Red Hat Software Operating Environment Software Telephone 9x5 - 10 incident (Electronic)</p>	U3402E
<p>SUSE Software Operating Environment Software Telephone 9x5 - 3 incident (Electronic)</p>	U9615E
<p>ProLiant Essentials Operating Environment, - 5 Day, 9x5, 1 year, 3 incident (Electronic)</p>	U8222E
<p>ProLiant Essentials Operating Environment, - 5 Day, 24x7, 1 year, 3 incident (Electronic)</p>	U8301E
<p>ProLiant Essentials Operating Environment, - 5 Day, 9x5, 1 year, 10 incident</p>	UE006E
<p>ProLiant Essentials Operating Environment, - 5 Day, 24x7, 1 year, 10 incident</p>	UE116E
<p>ProLiant Essentials Operating Environment, - 5 Day, 9x5, 1 year, 25 incident</p>	UE117E
<p>ProLiant Essentials Operating Environment, - 5 Day, 24x7, 1 year, 25 incident</p>	UE118E

Options

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/hps/carepack/services/>

Memory

DIMM installation guidelines:

1. All DIMMs must be PC2-5300 Fully Buffered DIMMs running at 667 MHz.
2. Both DIMM slots in a memory bank must be populated.
3. Banks must be populated in sequential alphabetic order, starting with bank A.
4. Both DIMMs in a memory bank must be identical. Install identical DIMMs as pairs only, starting with DIMM socket 1, bank A.
5. Multiple advanced memory protection (AMP) modes are supported, based on FBDIMM population and RBSU selection. The server blade defaults to Advanced ECC

HP ProLiant BL460c Server Blade (1P Model)

Standard Memory

1024-MB (2 x 512 MB) or 2048 MB (2 x 1024 MB) (depending on model) of PC2-5300, FBD DDR2-667 ECC DIMMs

Standard Memory Plus Optional Memory

Up to 2560 MB or 26624 MB (depending on model) of PC2-5300, FBD DDR2-667 ECC DIMMs. Memory is available with the installation of optional PC2-5300, FBD DDR2-667 DIMM memory expansion kits.

Standard Memory Replaced with Optional Memory

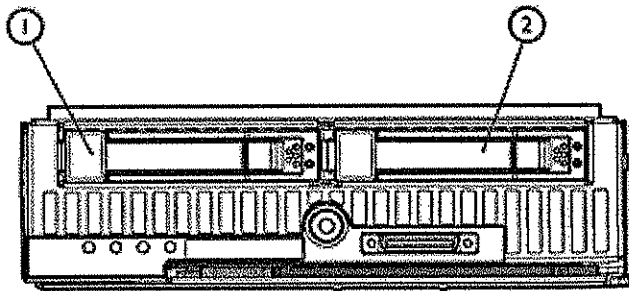
Up to 32768-MB of PC2-5300, FBD DDR2-667 ECC DIMMs. Memory is available with the removal of standard memory and the installation of optional PC2-5300, FBD DDR2-667 DIMM memory expansion kits.

Memory		Slot							
		1A	2C	3A	4C	5B	6D	7B	8D
Standard	1024 MB	512 MB	Empty	512 MB	Empty	Empty	Empty	Empty	Empty
Standard	2048 MB	1024 MB	Empty	1024 MB	Empty	Empty	Empty	Empty	Empty
Optional	25600 MB	512 MB	4096 MB	512 MB	4096 MB	4096 MB	4096 MB	4096 MB	4096 MB
Optional	26624 MB	1024 MB	4096 MB	1024 MB	4096 MB	4096 MB	4096 MB	4096 MB	4096 MB
Maximum	32768 MB	4096 MB	4096 MB	4096 MB	4096 MB	4096 MB	4096 MB	4096 MB	4096 MB

Following are memory options available from HP:

- 1GB FBD PC2-5300 2x512MB Kit 397409-B21
- 2GB FBD PC2-5300 2x1GB Kit 397411-B21
- 4GB FBD PC2-5300 2x2GB Kit 397413-B21
- 8GB FBD PC2-5300 2x4GB Kit 397415-B21

Storage



1-2 2 x SFF SAS or SATA Hot Plug Hard Drives

Hard Drives

SAS Hard Drive

	Quantity Supported	Position Supported	Controller
36 GB 10,000 rpm SAS	2	1-2	Smart Array E200i Controller
72 GB 10,000 rpm SAS			

Serial-ATA (SATA) Hard Drive

	Quantity Supported	Position Supported	Controller
60 GB 5,400 rpm SATA	2	1-2	Smart Array E200i Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs

Modular Smart Array 1000:

http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML

HP StorageWorks 1500cs Modular Smart Array:

http://h18000.www1.hp.com/products/quickspecs/11945_na/11945_na.html

HP StorageWorks 1510i Modular Smart Array:

http://h18000.www1.hp.com/products/quickspecs/12230_na/12230_na.html

XP Disk Array Systems	Please see the XP Disk Array Systems QuickSpecs below to determine configuration requirements	External	Please see the XP Disk Array Systems Quick Specs for the latest list of supported HBAs
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Storage

HP StorageWorks XP10000 Disk Array:

<http://h18006.www1.hp.com/products/storageworks/xp10000/index.html>

Enterprise Virtual Array Systems	Please see the XP Disk Array Systems QuickSpecs below to determine configuration requirements	External	Please see the XP Disk Array Systems Quick Specs for the latest list of supported HBAs
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HP StorageWorks Enterprise Virtual Array Family

http://h18006.www1.hp.com/products/quickspecs/12408_na/12408_na.html

Tape Libraries

NOTE: For complete listing of tape library compatibility see <http://www.hp.com/go/ebs>.

	Quantity Supported	Position Supported	Controller
HP StorageWorks Tape Libraries MSL2024 (Ultrium 448 and 960-based) MSL4048 (Ultrium 448 and 960-based) MSL6000 (Ultrium 960 and 460-based) MSL6000 (SDLT 600-based)	Please reference the relevant MSL or Tape Library QuickSpecs to determine configuration requirements	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.
HP StorageWorks Virtual Library Systems 6105 VLS 6109 VLS 6510 VLS 6518 VLS 6840 VLS 6870 VLS	Please reference the VLS QuickSpecs to determine configuration requirements	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.

Power Specifications

NOTE: To review maximum system power ratings for facilities planning purposes use the Active Answers Power Calculator which is available via the online tool located at URL: <http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls>

Technical Specifications

HP ProLiant BL460c Server Blade	Dimensions	Height	2.207in (5.61cm)
		Depth	20.058in (50.95cm)
		Width	7.154 in (18.17cm)
	Weight	Maximum	14.20 lb (6.44kg)
		Operating	10°C to 35°C (50°F to 95°F)
	Temperature Range*	Non-Operating	-40°C to 60°C (-40°F to 140°F)
		Storage	-20°C to 60°C (-4 to 140°C)
		Maximum Wet Bulb Temperature	-30°C (86°F)
	Relative Humidity**	Operating	10% to 90%
		Shipping	10% to 90%
		Storage	10% to 95%

*NOTE: 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 3,048m (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.

**NOTE: 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.

Smart Array E200i Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI)
		1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR-1/266 MHz provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x4 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 64MB or 128MB cache: ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical volumes
	Maximum Logical Drive Capacity	144GB (2 x 72GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 5 (Distributed Data Guarding)
		RAID 1+0 (Striping & Mirroring)
		RAID 0 (Striping)
Upgradeable Firmware	Upgradeable Firmware	

Technical Specifications

Dual NC373m Multifunction Gigabit NICs	Network Interface	1000Base-T	
	Compatibility	IEEE 802.3ab 1000Base-T	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Network Transfer Rate (Theoretical Maximum Values)	1000Base-TX (Full-Duplex) 2000 Mb/s	
	Connector	RJ-45	(via Interconnect switch or pass thru module)
	Cable Support	1000 Base-TX	Category 5 UTP up to 328 ft (100 m) (via Interconnect switch or pass thru module)

Dual NC326m Multifunction Gigabit NICs	Network Interface	1000Base-T	
	Compatibility	IEEE 802.3ab 1000Base-T	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Network Transfer Rate (Theoretical Maximum Values)	1000Base-TX (Full-Duplex) 2000 Mb/s	
	Connector	RJ-45	(via Interconnect switch or pass thru module)
	Cable Support	1000 Base-TX	Category 5 UTP up to 328 ft (100 m) (via Interconnect switch or pass thru module)

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.