

QuickSpec



At A Glance

cx2600 Server Product Numbers

- Server and one 1.3GHz/3MB CPU
AB216A

Standard System Features

- Multiple Operating Environment support (HP-UX 11i version 2, Linux)
- Dual-channel Ultra320 SCSI controller, 2 internal disks on one channel, 1 internal disk on a second channel
- External Ultra320 SCSI port
- 10/100/1000Base-TX LAN (auto speed sensing, RJ-45 connector)
- 10/100Base-TX LAN (auto speed sensing, wake-on capability, RJ-45 connector)
- Management Processor for remote management and HA monitoring
- Two general purpose RS-232 serial ports
- Telnet and web console via 10/100Base-TX management LAN (RJ-45 connector)
- Two general purpose RS-232 serial ports
- Three RS-232 serial ports linked to the management processor (multiplexed from a single DB-25 port)
- Factory integration of CPUs, memory, disk drives, removable media, I/O cards
- One-year warranty with next business day on-site

Minimum System

- One 64-bit Itanium 2 CPU: 1.3GHz/3MB cache
- One-GB PC2100 ECC Registered DDR266A SDRAM (4x256MB DIMMs)
- Two hot swap power supplies, providing N+1 protection and dual feed input

Maximum Server Capacities

- Two 64-bit Itanium 2 CPUs: 1.3GHz/3MB cache
- 24-GB PC2100 ECC Registered DDR266A SDRAM (12x 2GB DIMMs)
- Two hot swap power supplies, providing N+1 protection and dual feed input
- Four PCI-X/PCI IO adapter cards
- One internal DVD ROM or CD-RW/DVD-ROM combo drive
- Three internal hot plug LVD SCSI disks

Standard System Features

- Support for multiple operating environments (HP-UX 11i version 2, Linux)
- Dual-channel Ultra320 SCSI controller, 2 internal disks on one channel, 1 internal disk on a second channel
- External Ultra320 SCSI port 10/100/1000Base-TX LAN (auto speed sensing, RJ-45 connector)
- 10/100Base-TX LAN (auto speed sensing, wake-on capability, RJ-45 connector)
- Management Processor for remote management and HA monitoring
- Telnet and web console via 10/100Base-TX management LAN (RJ-45 connector)
- Two general purpose RS-232 serial ports
- Three RS-232 serial ports linked to the management processor (multiplexed from a single DB-25 port)
- Factory integration of CPUs, memory, disk drives, removable media, PCI/PCI-X I/O cards
- One-year warranty with next business day on-site

High Availability

- N+1 Hot swap, front to rear chassis cooling
- Two Hot swap power supplies required, provides N+1 protection and dual feed capability
- IPMI monitoring of system health and reporting to host based HA or remote manageability
- Management processor with down system diagnostics and remote power down and boot
- ECC protected DDR memory
- Memory chip spare to overcome single DRAM chip failures
- On-line memory page de-allocation
- Dynamic Processor resilience and de-allocation
- Hot Plug internal disks

- Two independent Ultra SCSI channels to internal disks for mirroring across disks and channels
- Journal file system for HP-UX

Security

- Separate LAN for system management
- Password protection on console port
- Disablement of remote console ports
- SSL encryption on web console
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Configuration

CPU Configuration The HP Integrity cx2600 is a symmetrical multiprocessing (SMP) server supporting up to two high-performance 64-bit Itanium 2 processors @ 1.3GHz.

Processor Details

- 1.3GHz frequencies
- Level 3 Cache: 3 MB
- Level 2 Cache: 256 KB
- Level 1 Cache: 32 KB
- Single-bit cache error corrections
- 50-bit physical addressing
- 64-bit virtual addressing
- 4 GB maximum page size

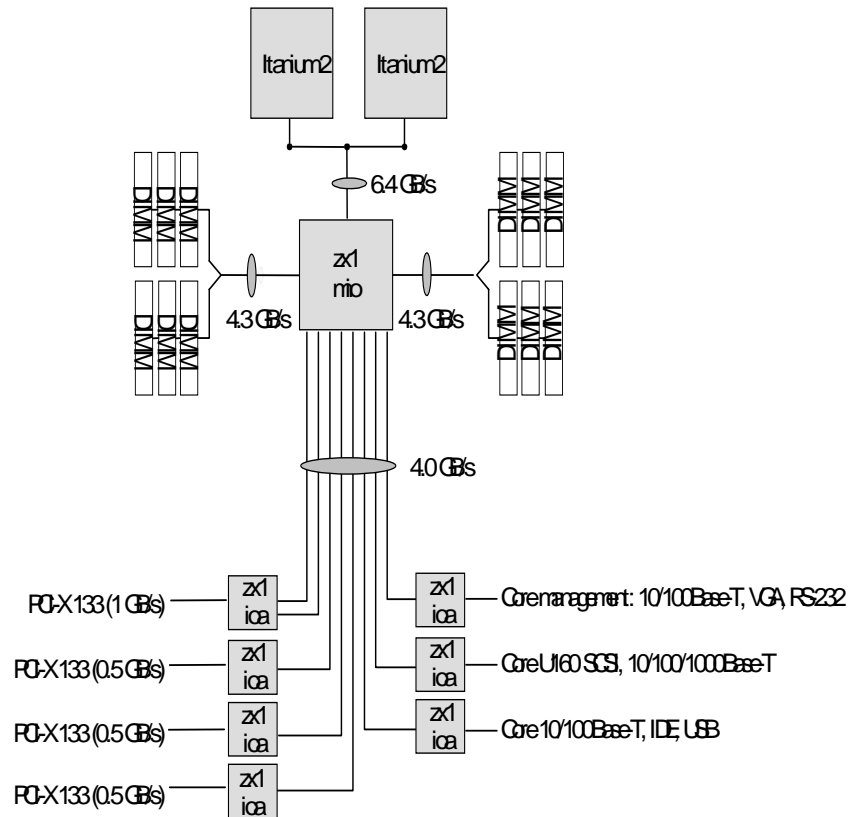
Memory Configuration HP Integrity cx2600 supports DDR (double data rate) SyncDRAM (synchronous dynamic random access memory) DIMMs with ECC and chip spare protection. The HP integrity cx2600 has twelve DIMM slots, allowing a maximum of 24 GB of total system memory.

Memory Loading Rules and Performance Guidelines

- Memory must be installed in groups of four DIMMs, also know as quads
- Each quad must consist of equal density DIMMs
- Memory can be ordered in quads or 1 GB (4x256 MB), 2 Gb (4x512 MB), 4 GB (4x1 GB), or 8 GB (4x2 GB)
- Minimum memory is 1 GB (4x256 MB)
- Maximum memory is 24 GB (4x2 GB)
- Memory must be loaded in the specific order on the system board.
- Each quad of memory is loaded across both memory buses (two DIMMs on each bus) to ensure maximum bandwidth and performance
- Total bandwidth is 8.5 GB/s, split across two 4.25GB/s memory buses
- Open page memory latency is <= 80 nanoseconds

I/O Architecture

The HP Integrity cx2600 I/O architecture utilizes industry standard PCI-X and PCI buses in a unique design for maximum performance, scalability and reliability.



The HP Integrity cx2600 architecture uses eight high-speed I/O channels, each channel providing 0.5 GB/s of sustained I/O throughput. The eight independent I/O channels provide improved I/O performance and failure containment. Independence protects each channel from bus hangs or extended latencies due to failure or high bandwidth demands of other I/O. This architecture ensures an aggregated I/O throughput of over 4GB/s between the CPUs, memory, and I/O devices.

Three of the independent 0.5 GB/s I/O channels are dedicated to the core system I/O functions, such as onboard SCSI, IDE, and LAN controllers, as well as the system management processor.

The remaining five independent 0.5GB/s I/O channels are dedicated to the PCI-X subsystem. Each of the four open PCI-X slots has a dedicated 64-bit 133MHz PCI-X bus and their own independent I/O channels.

The first PCI-X slot uses two dedicated I/O channels, resulting in sustained PCI-X bandwidth of 1.0GB/s. This slot should be reserved for the highest bandwidth cards,

such as clustering interconnects or multi-port storage adapters. The remaining three PCI-X slots each have a single dedicated I/O channel, resulting in 0.5 GB/s of sustained bandwidth on each slot.

All slots are keyed for 3.3V I/O cards. 5V cards are not supported in the HP Integrity cx2600.

Configurations

Core I/O

- 10/100/1000Base-T LAN with RJ-45 connector – Supports LAN boot for operating system installation
- 10/100Base-T LAN with RJ-45 connector and wake-on LAN capabilities
- Ultra320 SCSI port
- Four USB 2.0 style A ports (USB 1.1 compatible)
- Two general purpose serial ports (Serial A and Serial B)
- VGA graphics

Management Processor (MP) Functionality

- Dedicated I/O channel on the system's core I/O bus (33MHz, 32-bit PCI) with a private IPMB connection to a separate baseboard management controller
- Dedicated 10/100Base-T LAN console and embedded web console access
- DB-25 serial port – multiplexed (using W cable) into RS-232 ports: local ASCII console, remote/modem console, and general purpose
- Password protected console ports with configurable remote access control
- Console mirroring between all local, modem, LAN, and WEB consoles
- Remote power up and power down control via IPMI commands or simplified system console and control interface
- Event notification to system console – Provides connectivity, information, and support for email, pager, and/or HP response centers
- Access to multiple I2C busses for CPU and memory status, fan and temperature status/control, power supply status, subsystem inventory, and LED indicator panel
- Interface to system monitoring and diagnostic hardware via internal IC busses
- Secure Sockets Layer (SSL) security on web console
- Complete sensor data records (SDR), system event log (SEL), field replaceable unit (FRU) inventory, and forward progress logs (FPL) accessible via IPMI commands or simplified system console interface
- Support for IPMI 1.0 via direct serial connection or LAN transport

System Console Configurations

- The HP Integrity cx2600's integrated Management Processor provides five methods for console connections
- 1. SSL-secured web console accessible through the 10/100Base-T management LAN
- 2. Standard telnet connections accessible through the management LAN
- 3. Local console access via nul-modem serial connection
- 4. Remote console access via external modem
- 5. VGA graphics console – supported on Linux, and HP-UX

Internal Disk and Media

- The HP Integrity cx2600 supports up to three internal low profile hot-plug drives
- A dual channel US320 SCSI channel provides independent channels for the internal disks – two disks on one channel and one disk on a second channel. Split SCSI channels provide enhanced high availability – one channel can fail without impacting the disks on the other channel
- Support by MirrorDisk/UX across disk drives and independent channels
- The Smart Array 5302 and 5304 Y160 SCSI RAID cards are available for hardware RAID under the Linux operating system. Currently, the hp factory does not load the operating system in a RAID configuration. Customers should order internal RAID cables (A9827A) and re-load their operating system if internal RAID is desire.
- 36 GB 15K, 73 GB 15K, and 146 GB 10K hot-plug Ultr320 SCSI disks are supported
- Optional optical media drives include a DVD-ROM (A9919A) and CD-RW/DVD-ROM combo drive (A9920A).

HP Integrity cx2600 Power Subsystem

- The HP Integrity cx2600 provide a high level of integrated power protection
- N+1 redundant hot swap power supplies (N=1)
- N+1 redundant –48VDC power feed (N=1)
- Power monitoring and control via integrated management processor

TechSpecs

Server model number	cx2600	
Server product number	AB216A	
Supported Processors	1.3GHz Intel Itanium 2 processor	
	Cache	3MB
	Floating point Coprocessor	yes, included
	TPM estimate (2-way configuration)	50K
System Memory	Minimum memory	1GB
	Maximum memory	24Gb
Internal disks	Maximum disk mechanisms	3
	Maximum disk capacity	438GB
Standard Integrated I/O	Ultra320 SCSI-LVD	Yes
	10/100/1000Base-T (RJ-45 connector)	Yes
	10/100base-T (RJ-45 connector)	Yes
	RS232 serial ports	5
	10/100Base-T Management port (RJ-45 connector)	Yes
	VGA graphics	Yes
	USB	4
I/O buses and slots	Total PCI-X/PCI	4
	All four slots are 133MHz, 64-bit slots on dedicated PCI-X buses capable of 0.5 GB/s throughput, with one capable of 1.0 GB/s throughput.	
Maximum Network Interface Cards (see supported I/O table)	1000Base-SX	4
	1000Base-TX	4
	10/100Base-TX	4
	Dual-port X.25	4 (HP-UX only)
	4-port 10/100Base-TX	4

Electrical Characteristics

	Power supply specification	
	DC input power	-48VDC
	Nominal input operation range	-40VDC to -60VDC
	Inrush current	25A
	Power supplies	2 required, N+1 Hot swappable
	System Power draw	@-48VDC
	Input power	580 watts – input line
	Typical Heat dissipation	1,826 BTUs/hour
	Input current	12A @ -48VDC
Site Preparation	Site planning and installation Included	No
	Chassis depth	20.0 in/508 mm
	Chassis width	17.32 in/440 mm
	Chassis height	7.00 in/178mm
	Rack depth (inches/mm)	23.6 in/600 mm
	Rack width (inches/mm)	19.0 in/482 mm
	Rack height (EIA/inches/mm)	4U/7.0 in/172 mm
	Weight (lbs/kg) maximum	62 lbs/27.7 kg
	Weight w/o power & disk removed	49.5lbs/22.1 kg
Regulatory Compliance		
NEBS	NEBS level 3, NEBS 2000 form factor, Seismic Zone 4	
Electromagnetic interference	Complies with FCC rules and Regulations, Part 15 as a Class A digital device. Manufacturer's Declaration to EN55022 Level A, VCCI Registered, Class A, Korea RLL	
Safety	UL Listed, CSA Certified, UL GS Mark compliant with EN 60950 and EN 41003	