HP Integrity BL860c Server Blade

Data sheet

HP Integrity servers: delivering a better return on your IT investment through flexible capacity, secured availability and simplified management

The HP Integrity BL860c Server Blade delivers the robust value and virtualisation of Integrity systems coupled with the efficiency of HP BladeSystem c-Class. The BL860c Server Blade is a versatile and expandable next-generation HP Integrity server that is well-suited for application-tier and transaction workloads, database, Java™, business intelligence and technical computing. The Integrity BL860c Server Blade is ideal if you are seeking to deploy or enhance HP-UX 11i applications in a HP BladeSystem c-Class architecture. In addition to the robust HP-UX 11i operating environment, you can choose from Red Hat and Novell SUSE Linux, followed in 2H 2007 by Microsoft® Windows® Server 2003 Enterprise Edition and OpenVMS. Powered by a new generation of Dual-Core Intel® Itanium® 2 processors, the Integrity BL860c Server Blade has up to four processor cores supported by up to 48 GB memory in a single, full-height HP BladeSystem c-Class form factor.

The Integrity BL860c Server Blade delivers the flexible capacity, secured availability and simplified management found in all HP Integrity servers, along with the manageability, density, and power and cooling advantages of the HP BladeSystem c-Class family. Simple, built-in control interfaces and unified infrastructure management software will streamline your operations while increasing administrator productivity. In addition, you can manage all infrastructure components as one system and through one console to simplify operations, save time and promote high-quality service levels. The Integrity BL860c Server Blade is extremely energy-thrifty because it shares pooled power and cooling resources, significantly increasing efficiency, reliability and scalability.

Key features and benefits

Improved utilisation and continuous service levels – To enhance your consolidation initiatives, the HP Integrity BL860c Server Blade supports both HP Integrity Virtual Machines and HP Secure Resource Partitions, enabling you to safely share your server capacity among many applications. The HP Virtual Server Environment (VSE), combined with the HP-UX 11i operating environment, gives you the flexible capacity to improve your server utilisation in real time. The VSE lets you create a pool of virtual servers that can grow or shrink based upon your business priorities by using industry-leading integration of intelligent control with partitioning and high availability utilising HP Serviceguard. Global Workload Manager (gWLM), an intelligent policy engine that automatically allocates resources among multiple workloads, is also available with the Integrity BL860c Server Blade. With gWLM, you can increase server utilisation while meeting service-level requirements for high-priority applications.

Enhanced scalability and balanced performance – The new HP zx2 Chipset enhances the capabilities of the Intel Itanium 2 processor by: 1) reducing memory latencies; 2) providing extensive reliability, availability and serviceability (RAS) features; and 3) increasing memory and I/O subsystem scalability. This chipset has a well-balanced architecture designed to increase the performance of the latest multi-core, multi-thread processors across a wide range of commercial and technical applications. It provides more than twice the memory bandwidth and twice the I/O bandwidth of earlier generations – along with considerable reductions in system latencies. This type of flexible capacity within the server enables increased, balanced performance across transactional and batch workloads as well as Java applications and technical computing workloads. It also lowers your costs further by reducing the need for additional servers.

High density, strong price/performance and better return on IT investment – The Integrity BL860c Server Blade brings the value of the HP Integrity server family to HP BladeSystem c-Class for the first time. The Integrity BL860c Server Blade, the lowest-priced Integrity server, occupies one full-height slot in the HP BladeSystem c-Class enclosure. Up to eight Integrity BL860c Server Blades can be deployed in a single c-Class enclosure, delivering scalability of up to 32 blades in a single, industry-standard 42U rack.

Improved IT productivity and secured availability— The Integrity BL860c Server Blade offers extensive high-availability features to safeguard your data integrity, improve application availability and reduce planned maintenance time. These features include redundant power supplied via the HP BladeSystem c-Class enclosure, double chip spare memory, and error checking and correcting. You can also manage your HP-UX 11i applications on Integrity BL860c Server Blades with the same tools as for other entry-class Integrity servers.

Reduced upfront costs, more efficiency, greater simplicity – The Integrity BL860c Server Blade combines the benefits and efficiencies of HP Integrity servers, HP-UX 11i and the HP BladeSystem c-Class architecture. The BladeSystem c-Class server environment enables you to scale to thousands of servers – but even with only a few blades in one enclosure, you can achieve lower costs with greater efficiencies and simplicity. The Integrity BL860c Server Blade, through the BladeSystem c-Class architecture, also delivers up to 5 TB of aggregated bandwidth for streamlined connections from your servers to LANs and SANs.

Technical specifications

Processor	1.6 GHz/18 MB Dual-Core Intel Itanium 2	1.4 GHz/12 MB Dual-Core Intel Itanium 2	1.6 GHz/6 MB Intel Itanium 2
Processors per system	1–2	1–2	1–2
Module type	Single processor/dual core	Single processor/dual core	Single processor/single core
Clock speed	1.6 GHz	1.4 GHz	1.6 GHz
Front-side bus	533 MHz	400 MHz	533 MHz
L1 cache	32 KB	32 KB	32 KB
L2 cache	1 MB instruction/256 KB data per core	1 MB instruction/256 KB data per core	1 MB instruction/256 KB data per core
L3 cache	18 MB (9 MB per core)	12 MB (6 MB per core)	6 MB

RAM minimum/maximum	1 GB/48 GB
RAM type	PC-4200 ECC DR2
Memory protection	Error checking and correcting (ECC) on memory and caches; double chip spare
Hard drive capacity	36 GB, 73 GB and 146 GB Small Form Factor Serial Attached SCSI (SAS) drives
Internal hard drive bays	2 hot-plug Small Form Factor Serial Attached SCSI (SAS)
Maximum internal storage	292 MB
Removable media	External USB MultiBay II
I/O slots	3 HP BladeSystem c-Class mezzanines
Network adapter	Two dual-port Gbit Ethernet (four total)
Storage controller	Dual-channel SAS, internal only
Internal RAID	HW RAID-1 with two identical internal HDDs
Interfaces	VGA and 2 USB ports for local human interface; 1 RS-232 serial port and 10/100Base-T LAN for Integrated Lights Out (iLO 2) management.
Form factor	Full-height HP BladeSystem c-Class form factor
Hot-plug fans	Up to 10 hot plug, n+1 high availability (or greater depending on the load) supplied with c-Class enclosure[1]
Operating systems supported	HP-UX 11i v3[2] and HP-UX 11i v2 (choice of Mission Critical, Enterprise, Technical Computing, or Foundation Operating Environment) www.hp.com/go/hpux11i Microsoft Windows Server 2003, Enterprise Edition[2] www.hp.com/go/integrity/windows Red Hat Enterprise Linux AS/ES 4 and Novell SUSE Linux Enterprise Server 10 www.hp.com/go/integritylinux OpenVMS v8.3[2] (choice of Mission Critical, Enterprise, or Foundation Operating Environment) www.hp.com/go/openvms
Performance	12.8 GFLOPS per processor (1.6 GHz/18 MB); 10.4 GFLOPS per processor (1.4 GHz/12 MB); 6.4 GFLOPS per processor (1.6 GHz/6 MB)
High availability Standard server features	N+1 up to N+N redundant power supplies (N <=3) supplied via HP BladeSystem c-Class enclosure N+1 fans (or greater depending on the load) – supplied via HP BladeSystem c-Class enclosure Support for HP zx2 Chipset Error checking and correcting (ECC) on memory and caches Memory double chip spare Automatic deconfiguration of memory and processors Service processor to monitor system status Redundant network paths Multiple Fibre Channel and InfiniBand paths Hot-spare Instant Capacity functionality (for HP-UX 11i and OpenVMS partitions only; requires iCAP processors)
HP Virtual Server Environment (VSE)	Workload management, partitions and availability software www.hp.com/go/vse

Environmental specifications

Altitude	Operating: 3,000 m (10,000 ft.) maximum Non-operating: 4,600 m (15,000 ft.) maximum
Temperature	Operating: 10°C to 35°C (50°F to 95°F) Non-operating: −30°C to +60°C (−22°F to +140°F)
Humidity	Operating: 20% to 80% Non-operating: 5% to 95%
Dimensions	Height: 26.14 cm (10.29 in.) Depth: 71.10 cm (28.00 in.) Width: 4.29 cm (1.69 in.)
Weight	Maximum configuration 10.44 kg (23 lb.)
Power requirements	Maximum 595 W Typical load 500 W with a CPU load factor of .7 (maximum CPU, memory, I/O and internal drives), 565 W with a .9 CPU utilisation
BTU rating	Maximum 2,036 BTU/hour Typical .7 CPU utilisation (with maximum memory, I/O and internal drives), 1,711 BTU/hour
Voltage tolerance range	Power is supplied via the HP BladeSystem c-Class enclosure. Single-phase model: 200 to 240 VAC Three-phase NA/JPN model: 200 to 208 VAC line to line; 3-phase Delta Three-phase international model: 346 VAC to 415 VAC line to line; 3-phase WYE
Frequency tolerance range	50 to 60 Hz
Regulatory model number	RSVLA-0502

[1] For additional information on the HP BladeSystem c-Class enclosure, visit **http://h18004.www1.hp.com/products/quickspecs/12517_div/12517_div.pdf**

[2] Support planned in 2H 2007

HP Financial Services – put the power of the HP portfolio to work for you

In addition to having the industry's strongest range of products, services, people, tools, methodologies and world-class partnerships, we also provide world-class financial services. HP Financial Services has a full spectrum of IT transition, acquisition, management and disposition services to help customers most effectively manage the IT infrastructure and the balance sheet at the same time. For more information on these services, contact your HP sales representative or visit:
www.hp.com/go/hpfinancialservices

For additional information, please visit our Web sites at:

HP Storage – **www.hp.com/go/storageworks**
HP Serviceguard – **www.hp.com/go/serviceguard**
HP Systems Insight Manager (SIM) –
www.hp.com/go/hpsim

For more information:

For more information about the HP Integrity server family, visit:
www.hp.com/go/integrityserverfamilyguide

For more information about the HP Integrity BL860c Server, please contact any of our worldwide sales offices or visit our Web sites at:
www.hp.com/go/integrity or
www.hp.com/go/bladesystem or
www.hp.com/go/bl860c

HP Services

HP Services has the people and processes to help you take full advantage of your server's capabilities and receive the high levels of availability and performance required by your business.

The HP Services range includes:

Consulting and Integration – an array of infrastructure, industry, business application and availability services

Support

• Assessment and Design services – translating business and technical needs into a solution that melds the necessary hardware and software support

• Deployment services – for reduced-risk installation, start-up, implementation and integration

  – HP Factory Express – customised factory configurations and on-site deployment

• Availability services – to reduce downtime and meet service-level requirements in mission-critical environments

  – HP Support Plus 24 Service – integrated hardware and software support services designed specifically for your technology

  – HP Proactive 24 Service – integrated hardware and software support, including proactive and reactive services to improve stability and availability throughout your IT environment

  – HP Critical Service – a comprehensive support solution designed to help minimise the business impact of downtime upon mission-critical applications

Education – classroom courses with self-paced curricula and on-line instructor-led courses delivered off-the-shelf or customised to deliver an effective learning experience

Customers rely on HP to design, deploy, operate and support the IT systems that run their businesses. HP Services has an extensive track record of helping customers improve their ability to support changing business needs.

For more information, please visit: **www.hp.com/services/support**

To learn more, visit www.hp.com

4AA1-0071EEW Rev.1, February 2007

hp ®

i n v e n t