

# 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 virtualization 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're seeking to deploy or enhance HP-UX 11i applications in an 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 2H2007 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 offers 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 also streamline your operations while increasing administrator productivity. Additionally, 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 utilization 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, letting you safely share your server capacity among many applications. The HP Virtual Server Environment (VSE) that is combined with the HP-UX 11i operating environment gives you the flexible capacity to improve your server utilization in real time. The VSE lets you create a pool of virtual servers that can grow or shrink based on your business priorities by using industry-leading integration of intelligent control with partitioning, and high availability utilizing 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 utilization while meeting service levels 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 multicore, multithread processors across a wide variety 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 HP's 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 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

<b>Processor</b>	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
<b>Processors per system</b>	1–2	1–2	1–2
<b>Module type</b>	Single processor/dual core	Single processor/dual core	Single processor/single core
<b>Clock speed</b>	1.6 GHz	1.4 GHz	1.6 GHz
<b>Front-side bus</b>	533 MHz	400 MHz	533 MHz
<b>L1 cache</b>	32 KB	32 KB	32 KB
<b>L2 cache</b>	1 MB instruction/256 KB data per core	1 MB instruction/256 KB data per core	1 MB instruction/256 KB data per core
<b>L3 cache</b>	18 MB (9 MB per core)	12 MB (6 MB per core)	6 MB
<b>RAM minimum/maximum</b>	1 GB/48 GB		
<b>RAM type</b>	PC-4200 ECC DR2		
<b>Memory protection</b>	Error checking and correcting (ECC) on memory and caches; double chip spare		
<b>Hard drive capacity</b>	36 GB, 73 GB, and 146 GB Small Form Factor Serial Attached SCSI (SAS) drives		
<b>Internal hard drive bays</b>	2 hot-plug Small Form Factor Serial Attached SCSI (SAS)		
<b>Maximum internal storage</b>	292 MB		
<b>Removable media</b>	External USB MultiBay II		
<b>I/O slots</b>	3 HP BladeSystem c-Class mezzanines		
<b>Network adapter</b>	Two dual-port Gbit Ethernet (four total)		
<b>Storage controller</b>	Dual-channel SAS, internal only		
<b>Internal RAID</b>	HW RAID-1 with two identical internal HDDs		
<b>Interfaces</b>	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.		
<b>Form factor</b>	Full-height HP BladeSystem c-Class form factor		
<b>Hot-plug fans</b>	Up to 10 hot plug, n+1 high availability (or greater depending on the load) supplied with c-Class enclosure <sup>1</sup>		
<b>Operating systems supported</b>	HP-UX 11i v3 <sup>2</sup> and HP-UX 11i v2 (choice of Mission Critical, Enterprise, or Foundation Operating Environment) Microsoft Windows Server 2003, Enterprise Edition <sup>2</sup> Red Hat Enterprise Linux AS/ES 4 and Novell SUSE Linux Enterprise Server 10 OpenVMS v8.3 <sup>2</sup> (choice of Mission Critical, Enterprise, or Foundation Operating Environment)		<a href="http://www.hp.com/go/hpux11i">www.hp.com/go/hpux11i</a> <a href="http://www.hp.com/go/integrity/windows">www.hp.com/go/integrity/windows</a> <a href="http://www.hp.com/go/integritylinux">www.hp.com/go/integritylinux</a> <a href="http://www.hp.com/go/openvms">www.hp.com/go/openvms</a>
<b>Performance</b>	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)		
<b>High availability</b>			
<b>Standard server features</b>	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)		
<b>HP Virtual Server Environment (VSE)</b>	Workload management, partitions, and availability software		<a href="http://www.hp.com/go/vse">www.hp.com/go/vse</a>
<b>Environmental specifications</b>			
<b>Altitude</b>	Operating: 10,000 ft. (3,000 m) maximum Non-operating: 15,000 ft. (4,600 m) maximum		
<b>Temperature</b>	Operating: 50°F to 95°F (10°C to 35°C) Non-operating: -22°F to +140°F (-30°C to +60°C)		
<b>Humidity</b>	Operating: 20% to 80% Non-operating: 5% to 95%		
<b>Dimensions</b>	Height: 10.29 in (26.14 cm) Depth: 28.00 in (71.10 cm) Width: 1.69 in (4.29 cm)		
<b>Weight</b>	Maximum configuration (23 lbs)		
<b>Power requirements</b>	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 utilization		
<b>BTU rating</b>	Maximum 2,036 BTU/hour Typical .7 CPU utilization (with maximum memory, I/O, and internal drives) 1,711 BTU/hour		
<b>Voltage tolerance range</b>	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		
<b>Frequency tolerance range</b>	50 to 60 Hz		
<b>Regulatory model number</b>	RSVLA-0502		

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

<sup>2</sup> Support planned in 2H2007

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For more information about the HP Integrity server family, visit:

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For more information about the HP Integrity BL860c Server, please contact any of our worldwide sales offices or visit our Web sites at:

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## HP Services

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

The HP Services portfolio offers:

**Consulting and Integration**—a portfolio of infrastructure, industry, business application, and availability services

### Support

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