HP Integrity BL860c Server Blade

The value of Integrity servers and the economics of the HP BladeSystem

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Unprecedented value for customers looking to deploy enterprise-class UNIX® in the blades environment

IT operations absorb a huge portion of today's typical IT budget, leaving very little for strategic or innovative initiatives. Enterprises clearly need to reduce the resources dedicated to routine tasks and redirect those resources to far more valuable projects that drive a high rate of return to the business. Across a wide range of industries, enterprise data centers face a common set of costly infrastructure challenges: they have too many applications, too much customization, and too much complexity. They're putting too much money into hardware, software, and the resources to manage it. And there is too much underutilized server capacity. New servers dedicated to a single application are acquired because computing resources are locked into rigid silos. All the while, IT organizations are being asked to do more with less. They need to reduce headcount, respond to new compliance demands, manage risks, and build defenses against a growing range of security threats. They are also expected to improve service levels and make IT more responsive to the needs of the business.

To address these challenges, enterprises are implementing fundamental changes to their data centers. They need to break down the silos, automate error-prone manual processes, and tighten management control. They need to bring together hardware, software, and services to create next-generation data centers that operate more efficiently.

The HP Integrity BL860c Server Blade brings together the value of Integrity servers and the economics of the HP BladeSystem.

The HP Integrity BL860c Server Blade brings together—for the first time—the benefits of the HP-UX operating system, Integrity servers, and the HP BladeSystem c-Class architecture to provide unprecedented value to customers looking to deploy enterprise-class UNIX in a blade server environment. In addition to HP-UX 11i, the Integrity BL860c Server Blade also supports Linux (both Red Hat and Novell SUSE), and in the second half of 2007, Windows® and OpenVMS.

This two-socket, full-height server blade combines the capabilities of Integrity servers with the manageability, density, power, and cooling advantages of the HP BladeSystem c-Class family. What's more, the Integrity BL860c Server Blade, together with HP-UX 11i, is a powerful virtualization engine, making it an ideal platform for application and server consolidation—a proven path to enhancing the ROI of an existing IT infrastructure.

In the next few pages we'll discuss the business case for enterprise applications hosted by HP BladeSystem c-Class featuring Integrity BL860c Server Blades.

Let's start with HP BladeSystem c-Class.

Cost-savvy, change-ready, energy-thrifty, time-smart

The next-generation HP BladeSystem delivers a best-run IT infrastructure right out-of-the-box. The HP BladeSystem c-Class unifies server, storage, and network as well as power/cooling and management capabilities to reduce the complexity of IT. The c-Class benefits include:

- **Lower power and cooling requirements**: As data center electricity bills soar—already estimated at $5.9 million annually for a 100,000-square-foot data center[1]—the cost to power and cool servers, storage, and networks over three years often exceeds the acquisition costs for the hardware. HP BladeSystem c-Class moves power and cooling out of individual servers and into a shared enclosure, reducing power consumption and providing higher availability for the entire blade infrastructure. Our Thermal Logic technologies, Active Cool fans, and PARSEC cooling architecture (all components of the HP BladeSystem) work together to reduce overall power consumption up to 30% over rack-based systems.[2]
- **More efficient cabling and I/O connectivity**: Because blade-based server systems share network connectivity within an enclosure, cabling needs are significantly reduced. HP BladeSystem c-Class can reduce LAN and SAN cabling requirements by as much as 94% when compared to similar rack-based servers.[3]

[1] Based on internal HP estimates

[2] Based on internal HP power and cooling tests comparing eight Integrity BL860c server blades to eight Integrity rx2660 rack-optimized servers

[3] Comparing all cable requirements of 16 c-Class server blades vs. 16 standard 1U servers

- No keyboard, video, and mouse (KVM) requirement: Because HP BladeSystem servers are managed through the Onboard Administrator and the HP integrated Lights-Out 2 (iLO 2) processor on each server blade, the need for individual KVM cables and switches is eliminated. This functionality alone can save up to US$25,000 for each rack.[4]
- **Improved availability**: In traditional rack-optimized architectures, increasing availability often requires additional hardware for redundancy, as well as all the connections and external networking components to support the systems—all of which add extra costs. With the HP BladeSystem, however, redundancy is built in and N+1 redundancy configurations are easier and more cost-effective to set up.
- **Greater density**: The HP BladeSystem c-Class consolidates more servers into an industry-standard rack than is possible with traditional rack-optimized form factors, so you can conserve valuable data-center floor space. Eight Integrity BL860c Server Blades can be supported by a single HP BladeSystem c-Class enclosure, and four enclosures can be configured to a single 42U rack, putting 32 Integrity BL860c Server Blades in less than seven square feet of space.

Operational cost savings

The HP BladeSystem is easier to manage than traditional IT infrastructures. In fact, in some cases HP BladeSystem c-Class has allowed businesses to more than double the number of resources (servers, switches, and storage) managed by a single administrator. HP Insight Control management software helps IT organizations save time with simple and reliable provisioning, monitoring, and control of the HP BladeSystem infrastructure. By automating fundamental IT processes, Insight Control helps ensure that scarce IT talent is focused on proactively responding to business needs instead of supporting time-consuming manual processes or responding reactively to system issues. This increase in operational efficiency means companies can save money long after the system is purchased and installed.

Server blades streamline system management in several ways:

- **Server setup**: Adding servers in a blade architecture is easier and takes less time than expanding a typical rack environment. In fact, deploying a full rack of server blades and its supporting infrastructure can take as little as 15 minutes, while adding a comparable rack server can take up to 12 hours.
- **Network changes**: When a server is added, moved, or replaced in any server system, the LAN and SAN must be adjusted. So LAN and SAN administrators must become involved in routine server activities, creating delay for the server administrator waiting for schedule coordination. HP's innovative Virtual Connect allows network and storage administrators to establish all LAN and SAN connections once during deployment. When servers are changed there is no need to make connection changes.
- **Ongoing operations**: HP Insight Control software simplifies numerous administrative tasks to save time and raise productivity. Through a single screen, administrators can quickly create and deploy resources and application environments (assigning server, network, and storage resources) based on the needs of the business.
- **Remote operations**: HP BladeSystem c-Class is an ideal solution when significant computing resources are situated in remote locations. Following installation, most aspects of deployment and management can be handled from a central office without dispatching IT personnel to the remote site. Even the process of adding blade servers can often be handled without highly trained IT resources onsite because it's such an intuitive task.
- **Commonality with your existing HP rack environments**: There is no need to retrain staff or replace your existing hardware. You can easily operate a mixed rack and blade server environment as you integrate HP BladeSystem solutions—and not worry about multiple system requirements and management tools.

[4] Based on HP Internet List Prices of a Keyboard, Video, and Mouse solution to support 64 servers compared to the built-in HP Onboard Administrator and iLO feature on each HP server blade.

Now let's address the Integrity BL860c Server Blade specifically, and how its value proposition is unique and powerful within the context of HP BladeSystem computing.

- It's an Integrity server! The Integrity BL860c Server Blade, like all the Integrity servers, utilizes the robust Intel® Itanium® 2 processors. The enhanced reliability, flexibility, and secured availability of the Integrity platform bring true mission-critical capabilities to the HP BladeSystem. The Integrity BL860c Server Blade features the HP zx2 chipset, delivering leadership capabilities for higher bandwidth, lower latency, and support for future processors. These attributes provide greater performance and scalability, which enhance the flexible capacity of the IT environment. Enhanced error correcting and self-healing technologies optimize the reliability and availability of the server. Plus, the Integrity BL860c Server Blade features a large processor cache for superior floating-point performance. This true enterprise-class UNIX operating environment is ideal for virtualization, which sets the stage for smooth application and server consolidation.
- **Flexible capacity**: HP Virtual Server Environment (VSE) offers increased return on IT investment by improving server resource utilization in real time according to business priorities. In addition to increased server utilization, the HP Virtual Server Environment enables greater flexibility and improved availability through its tight integration with partitioning and high-availability software.
- **Simplified management**: HP Systems Insight Manager builds on the capabilities of HP integrated Lights Out (iLO 2) management software and provides common management across your entire HP-UX environment, regardless of the underlying hardware. HP Integrity Essentials Global Workload Manager automates integrated policy management and software development.
- **Increased application availability and security**: The Integrity BL860c Server Blade incorporates the innovative HP zx2 chipset for mainframe-class memory and I/O reliability, availability, and security.

Considering all these features, the Integrity BL860c Server Blade can be an attractive solution for companies in the retail, distribution, manufacturing, telecommunications, and financial services industries pursuing any of these initiatives:

- Application consolidation
- SAP implementations
- Business Intelligence in data mart settings
- Testing and development

For more information

To learn how the next-generation HP BladeSystem and Integrity BL860c Server Blades can help your company save time and money, contact you local HP sales representative or authorized HP reseller, or visit www.hp.com/go/bl860c

To learn more, visit www.hp.com

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