



HP ProLiant BL680c G7 Server Blade

Data sheet

The HP ProLiant BL680c G7 Server Blade is a world-leading blade that supports a terabyte of memory to provide your data center with superior performance and unparalleled expansion in a 4P x86 server blade.

This extremely powerful virtualization engine delivers an excellent balance of memory and I/O bandwidth, making traditional multiprocessor rack-to-blade transition a true reality. Fully utilizing the architecture of the Intel® Xeon® 7500 chipset, the BL680c G7 supports up to four top-performing 130W 7500 processors and 64 DIMM slots for 1.0 TB of memory. The BL680c G7 also comes with six 10 Gb FlexFabric ports combined with the seven mezzanine slots to yield an outstanding 192 Gb of I/O bandwidth. All these features work together to create a balanced server, making the BL680c G7 ideal for compute-intensive database applications, large consolidation projects, and a variety of demanding workloads.

By designing a balanced architecture, the BL680c G7 is a unique 4P blade offering that makes sure all subsystems are used effectively. Traditional multiprocessor server blades are typically unbalanced,

providing processor performance and density at the expense of proportional memory capacity and I/O bandwidth. As such, these unbalanced servers fail when faced with larger databases, higher-density virtualization applications, and general compute-intensive workloads.

Today, you have a better alternative. Unlike other traditional multiprocessor server blades, the BL680c G7 provides processor performance without compromising on proportional memory capacity and I/O bandwidth. Creating one of the most robust virtualization and database systems, the BL680c G7 is capable of handling x86 applications that require superior performance and scalability.



Features and benefits

Industry-leading multiprocessor scalability: The BL680c G7 supports 1.0 TB of memory, making it the ideal virtualization machine for large consolidation projects and a variety of demanding workloads.

- Up to four Intel Xeon 7500 series processors, each up to 130 watts to deliver significant computing power
- 60 Gb of embedded FlexFabric ports and seven I/O expansion slots that bring the total maximum I/O bandwidth to an outstanding 192 Gb
- Four hot-plug SAS/SATA/SSD bays supporting up to 2.4 TB of internal storage
- High-performance Smart Array P410i 6 Gb controller for hardware RAID 0 and 1 standard and optional battery or flash-backed write cache options to 1 GB with RAID 1+0, 5, and 6 capability
- Six embedded NC553i FlexFabric 10 Gb Converged Network Adapter ports that deliver extensive bandwidth for network intensive applications
- Integrated Fibre Channel over Ethernet (FCoE) and hardware-based Internet Small Computer System Interface (iSCSI) with iSCSI boot simplify management and lower infrastructure costs by converging LAN and SAN traffic over the same flexible connection
- Up to 24 embedded connections to network and storage that reduce and even remove the need for add-in I/O mezzanine cards by utilizing Virtual Connect

Multiprocessor server rack-to-blade transition capability: The BL680c G7 Server Blade offers performance, memory, and I/O slot expandability equal to or greater than a typical 4P x86 rack server. This makes it possible for you to comfortably transition from a multiprocessor rack server to a blade server.

- Reduce rack space up to 58 percent by consolidating four standard 4P rack servers and eight high-performance LAN/SAN edge switches (that can occupy up to 24U) into a single 10U c7000 enclosure
- Radically simplify system design and lower cost through reduced cabling—do away with server-to-edge switch cables and decrease power cables to no more than six
- Consolidate individual sever management cables into just one (or two for redundancy) with the HP BladeSystem enclosure Onboard Administrator with integrated KVM, further simplifying system design

Fully balanced and enhanced server architecture: Typical server blades are often unbalanced, providing processor performance and density at the expense of proportional memory capacity, I/O bandwidth, and storage. Presenting the perfect remedy for this problem, the BL680c G7 comes with a fully enhanced Intel Xeon 7500 series four-socket architecture for increased memory bandwidth, performance, and capacity.

- Each processor socket includes two memory controllers, each having two Intel Scalable Memory Interface (SMI) buses.
- Each SMI connects to an Intel Scalable Memory Buffer (SMB) for a total of four SMIs per processor socket.
- Each of the four SMBs has two DDR3 channels that support four DIMMs each for a grand total of 16 DIMMs per installed processor (64 DIMMs or 1.0 TB memory total per BL680c G7 server).
- Each processor socket supports 130 watts, allowing up to four of the top-performing 7500 series processors.

Hassle-free infrastructure management: HP provides management solutions that are designed to simplify your server's installation, configuration, and maintenance throughout the entire server lifecycle to give you higher levels of operational efficiency and highly reliable systems.

- Enable intelligent and flexible firmware and software deployment through the included HP Insight Foundation Suite that combines HP SmartStart, HP Systems Insight Manager, and Insight Remote Support Standard
- Save time and conserve valuable IT resources by simplifying remote management with the integrated HP Integrated Lights-Out 3 (iLO 3)
- Deploy servers quickly, proactively manage virtual or physical server health, and efficiently regulate power consumption with the optional HP Insight Control
- Rapidly provision, constantly analyze, and confidently enhance your converged server infrastructure with the optional HP Insight Dynamics
- Easily install integrated virtualization and HP value-add software through the included USB 2.0 port

Technical specifications**HP ProLiant BL680c G7 Server Blade**

Processor	
Number of processors	Two, three, or four up to 130 watts each
Maximum number of cores	Up to eight per processor
Processors supported	Intel Xeon 7500 Series
Low-wattage processor offerings	Intel Xeon L7555
Cache	Up to 24 MB L3 per processor
Memory	
Memory type	DDR3 Registered DIMM (RDIMM) to 1066 MHz
Standard memory	16 GB (4 x 4 GB DIMMs) (preconfigured models only)
Maximum memory	1.0 TB (64 x 16 GB DIMMs)
Advanced memory protection	Advanced ECC/Chip Spare/SDDC Intel SMI Clock Fail Over Intel SMI Packet Retry Demand Scrubbing Patrol Scrubbing Intra-socket Memory Mirroring Memory Failover Rank Sparring (Online Spare) Failed DIMM Isolation Data Bus ECC protection DIMM Address/Control Bus Parity Protection
Memory slots	64 DDR3 RDIMM slots to 1066 MHz
Networking and I/O	
Network adapter	Six HP embedded 10 Gb NC553i FlexFabric Converged Network Adapter ports
I/O expansion slots	Seven PCIe Gen2
Standard/maximum I/O bandwidth	60 Gb/192 Gb
Networking options	Multiple, redundant port 10 Gb FlexFabric, 10 GbE Flex-10, 10 Gb and 1 Gb Ethernet, and QDR (40 Gb) InfiniBand
Storage	
Storage type	Hot-plug SFF SAS Hot-plug SFF SATA Hot-plug SFF SSD
Maximum internal storage	Four hot-plug SAS/SATA/SSD bays supporting up to 2.4 TB of internal storage
Storage controller	Integrated 6 Gb Smart Array P410i Controller with RAID 0 and 1; optional BBWC and FBWC options to 1 GB with RAID 1+0, 5, and 6
Storage options	4 Gb and 8 Gb Fibre Channel mezzanine adapters (Brocade, Emulex, and QLogic options) StorageWorks P700m Controller with 512 MB cache and optional BBWC for connection to external directed attached or shared storage I/O accelerator cards for high performance I/O
Deployment	
Form factor	Full height, double wide server blade Four server blades per 10U enclosure Two server blades per 6U enclosure
System management	HP Integrated Lights-Out 3 (iLO 3) HP Insight Foundation BladeSystem enclosure Onboard Administrator with KVM Internal USB 2.0 port Internal microSDHC slot for future use
Other	
Power supply and fans	Redundant hot-plug, high-efficiency, enclosure-based power supplies Redundant hot-plug Active Cool fans HP Thermal Logic Technology HP Dynamic Power Saver
Trusted Platform Module security	Trusted Platform Module (TPM) 1.2 option
Warranty	Three-year parts/three-year labor/three-year onsite

For additional technical specifications, please visit http://h18000.www1.hp.com/products/quickspecs/13742_div/13742_div.pdf

Ideal environment

The BL680c G7 is a powerhouse server that can handle large applications that require a lot of capability, performance, memory, and I/O bandwidth. It is specially designed for large enterprises that manage many data-demanding and scale-up applications for large virtualization and consolidation projects as well as highly threaded applications. You can transform your IT infrastructure by implementing the BL680c G7 and the closely related BL620c G7—a new class of balanced, scale-up multiprocessor HP server blades that deliver the reliability and performance you need to handle demanding workloads with confidence.

HP 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, visit www.hp.com/go/hpfinancialservices

HP Services

When technology works, business works

HP Technology Services—consultants and support experts to solve your most complex infrastructure problems. Boost availability and avoid downtime with your HP solution.

Recommended services

3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service, 6- or 24-hour: Provides expert troubleshooting services to help return the hardware to operating condition within six or 24 hours of the initial service request to the HP Global Solution Center.

3-Year HP Support Plus 24: Delivers integrated onsite hardware/software support services available 24x7x365, including access to HP technical resources, four-hour response onsite hardware support, and software updates.

HP ProLiant Server Hardware Installation: Provides for the basic hardware installation of HP servers, storage devices, and networking options to bring your new hardware into operation in a timely and professional manner.

Related services

3-Year HP Proactive 24: Provides an integrated hardware and software support service that combines industry-leading reactive technical assistance with proactive account services.

3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7: Provides rapid remote support and, if required, an HP-authorized representative who arrives on site any time and day of the year to begin hardware maintenance service within four hours of the service request being logged.

For more information, contact your HP sales representative or HP-authorized Channel Partner, or visit <http://www.hp.com/hps>

Manage the most demanding workloads confidently with the BL680c G7 Server Blade. To learn how the BL680c G7 offers a unique balance of performance and expandability, visit www.hp.com/servers/bl680c-g7

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