

HP ProLiant BL680c G7 Server Blade

Data sheet

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

This extremely powerful virtualisation and database engine delivers an excellent balance of performance, memory, storage and I/O bandwidth. Moreover, it makes traditional multi-processor rack-to-blade transition a reality.

Fully utilising the architecture of the Intel® Xeon® 7500 chipset, the two models of BL680c G7 are now available – one customised for the Intel Xeon processor E7-4800 product family (E7-4800 series) and the other for the Intel Xeon 7500 series. The servers support up to four top-performing 130W processors and 64 DIMM slots for up to 2.0 TB (BL680c G7 E7-4800 models) and 1.0 TB (BL680c G7 7500 models). The BL680c G7 also comes with four hot-plug drive bays plus 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, other demanding workloads and 4P rack-to-blade transition.



By designing a balanced architecture, the BL680c G7 is a unique 4P blade service that makes sure that all subsystems are used effectively. Traditional multi-processor 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 virtualisation applications and general compute-intensive workloads.

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

Features and benefits

Industry-leading multi-processor scalability:

The BL680c G7 supports up to 2.0 TB of memory, making it the ideal virtualisation machine for large consolidation projects and a variety of memory-intensive, demanding workloads.

- Up to four Intel Xeon E7-4800 or 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 4.0 TB of internal storage
- High-performance Smart Array P410i 6 Gb controller for hardware RAID 0 and 1 standard and optional flash-backed write cache (FBWC) 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 FCoE and hardware-based 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 utilising Virtual Connect

Multi-processor 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 multi-processor rack server to a blade server.

- Reduce rack space up to 58 per cent 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
- Simplify system design and lower cost radically through reduced cabling – do away with often an extensive number of 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) by using the HP BladeSystem enclosure Onboard Administrator (OA) 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 four-socket architecture for balanced memory, performance, I/O bandwidth and storage.

- Each processor socket includes two memory controllers. Each controller connects to two Intel Scalable Memory Buffers (SMBs) for a total of four SMBs per processor socket.
- Each of the four SMBs has in turn two DDR3 channels that support four DIMMs each for a total of 16 DIMMs per processor (64 DIMMs or up to 2.0 TB memory total per BL680c G7 server using 32 GB DDR-3 RDIMMs).
- Each socket supports 130 watts, allowing up to four of the top-performing E7-4800 or 7500 series processors.

Hassle-free infrastructure management: We provide management solutions that are designed to simplify your server's installation, configuration and maintenance throughout the entire server life cycle 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
- Provision rapidly, constantly analyse and confidently enhance your converged server infrastructure with the optional HP Insight Dynamics
- Instal integrated virtualisation and HP value-add software easily through the included USB 2.0 and Micro Secure Digital High Capacity (MicroSDHC) ports

HP Services

HP Technology Services has a robust range of packaged life cycle support solutions that enable you to optimise ProLiant support for better business outcomes.

Optimised Care: Delivers optimum performance and continuous availability of crucial ProLiant systems through deployments and proactive management practices.

- HP Installation and Startup for HP BladeSystem c-Class Infrastructure plus HP Enhanced Network
- 3-Year HP Critical Advantage

Standard Care: Maintains high level of server availability along with expert help to cut the cost and complexity of implementing and supporting ProLiant server.

- HP Installation and Startup for HP BladeSystem c-Class Infrastructure plus HP Enhanced Network
- 3-Year HP 6 hour Call-to-Repair Hardware Support
- 3-Year HP 24x7 Software Support for Insight Control

Basic Care: Delivers minimum recommended support service level with expert advice, implementation and support.

- HP Installation and Startup for HP BladeSystem c-Class Infrastructure
- 3-Year HP 24x7 4 hour Response, Hardware Support
- 3-Year HP 24x7 Software Support for Insight Control

All come with Insight Remote Support, available at no additional cost, delivering remote monitoring, diagnosis and problem resolution.

Only HP brings together deep expertise, proactive and business critical support and a strong partner network.

For more information visit

www.hp.com/services/bladesystem

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 ten per processor
Processors supported	• Intel Xeon E7-4800 and 7500 Series
Low-wattage processors	• Intel Xeon E7-8867L and L7555
Cache	• Up to 30 MB L3 per processor
Memory	
Memory type	• DDR3 Registered DIMM (RDIMM)
Memory slots	• 64 DDR3 RDIMM slots
Low voltage DIMM support	• 8 GB, 16 GB and 32 GB (BL680c G7 Intel Xeon E7-4800 series models)
Standard memory	• 16 GB (4 x 4 GB DIMMs) (BL680c G7 Intel Xeon E7-4800 series pre-configured models) • 64 GB (8 x 8 GB DIMMs) (BL680c G7 Intel Xeon 7500 series pre-configured models)
Maximum memory	• 2.0 TB (64 x 32 GB DIMMs) (BL680c G7 Intel Xeon E7-4800 series models) • 1.0 TB (64 x 16 GB DIMMs) (BL680c G7 Intel Xeon 7500 series models)
Advanced memory protection	• HP Memory Quarantine (i.e. Intel MCA Recovery)* • Double Device Data Correction (DDDC)* (BL680c G7 Intel Xeon E7-4800 series pre-configured models) • Advanced ECC/Chip Spare/SDDC • Intel SMI Clock Fail Over • Intel SMI Packet Retry • Demand Scrubbing • Intra-socket Memory Mirroring • Memory Failover • Rank Sparring (Online Spare) • Failed DIMM Isolation • Data Bus ECC protection • DIMM Address/Control Bus Parity Protection
Networking and I/O	
Integrated 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, 10GbE 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 4.0 TB
Integrated storage controller	• 6 Gb Smart Array P410i Controller with RAID 0 and 1; optional FBWC options to 1 GB with RAID 1+0, 5 and 6
Storage options	• 4 Gb and 8 Gb FC mezzanine adapters (Brocade, Emulex and QLogic options) • StorageWorks Controller mezzanines options with battery-backed write cache (BBWC) or FBWC to 1 GB for connection to external directed attached or shared storage • I/O accelerator cards for high performance I/O • Compatible with HP StorageWorks MSA, EVA, XPHP and select third-party SANs
Flash media	• Internal USB 2.0 port • Internal MicroSDHC slot
Deployment	
Form factor	• Full height, double-wide server blade • Four server blades per c7000 10U enclosure • Two server blades per c3000 6U enclosure

System management

- iLO 3
- HP Insight Foundation
- BladeSystem enclosure OA with KVM (optional redundant OA)
- HP Insight Control (optional)
- HP Insight Dynamics for ProLiant (optional)

Other

Power and fans

- True N+N redundant hot-plug, high-efficiency, enclosure-based power supplies
- Redundant hot-plug HP Active Cool fans
- HP Thermal Logic Technology/Sea of Sensors
- HP Dynamic Power Saver Mode
- HP Power Regulator
- Parallel redundant scalable enclosure cooling (PARSEC) design
- Power workload balancing
- Enclosure-based HP Dynamic Power Capping
- Enclosure-based common power supply form factor
- Lower power Intel Model 7510 SMB (BL680c G7 E7-4800 series models)
- Intel Intelligent Power Technology Lower Partial Active and Lower Idle Power (BL680c G7 E7-4800 series models)
- Low voltage DDR3 RDIMMs (LV DIMM) (BL680c G7 E7-4800 series models)

RAS

- Nearly 40 system-wide reliability, availability and serviceability features

Security

- Intel Trusted Execution Environment (TXT)* (BL680c G7 Intel Xeon E7-4800 series pre-configured models)
- Trusted Platform Module (TPM) 1.2 option
- Intel AES-NI (BL680c G7 E7-4800 series models)
- Power-on password
- Administrator password
- iLO 3 with 12 customisable user accounts, SSL encryption SSH v2, AES and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface, AES and RC4 encryption of video and global disable setting
- Keyboard password
- External USB port enable/disable
- Network server mode
- Serial interface control
- OA accounts with defined user privilege levels
- OA Lightweight Directory Access Protocol (LDAP) authentication for user accounts

Warranty

- Three-year parts/three-year labour/three-year onsite

QuickSpecs URL

http://h18000.www1.hp.com/products/quickspecs/13742_div/13742_div.pdf

*This is a "ready" feature meaning the hardware is capable of supporting the feature with only a future planned software upgrade.

HP Factory Express

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HP Financial Services

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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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