



# HPE ProLiant BL660c Gen9 Server Blade

Scale workloads and infrastructure without compromise

Power, space, and budget constraints make server density critical. HPE ProLiant BL660c Gen9 Server Blades offer the right compute for the right workload at the right economics, every time.



## Boost workload performance efficiently

When you need to increase performance with limited data center space and aggressive return on investment (ROI) targets, server blades offer scalable compute resources with processing power for today's demanding workloads—and power to spare for tomorrow's applications.

The HPE ProLiant BL660c Gen9 Server Blade features the latest innovations to deliver the right performance, scalability, economics, and manageability—through HPE OneView—for the converged data center, at the lowest cost and fastest time-to-value. That makes it an ideal match for workloads that require a fine-tuned balance between space, price, and performance—such as virtualization, databases, business processing, analytics, high-performance computing (HPC), and other data-intensive applications.

Transform your data center to respond with agility to the business challenges of today and tomorrow.

## More performance

The HPE ProLiant BL660c Gen9 Server Blade delivers up to a 21 percent performance increase with the new Intel® Xeon® E5-4600 v4 processors<sup>1</sup> and the enhanced HPE DDR4 SmartMemory at speeds up to 2,400 MT/s.

## More flexibility

New flexible internal storage controller options strike the right balance between performance and price, helping to lower overall TCO.

## More storage options

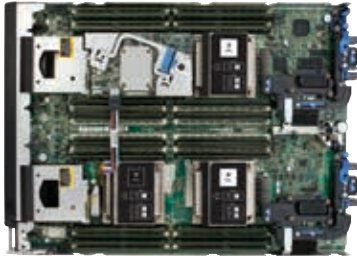
With the BL660c Gen9 Server Blade, you now have NVMe PCI SSD support, internal USB 3.0, as well as future support for redundant microSD and optional M.2 support for a variety of system boot alternatives.

## The Power of One

HPE BladeSystem with HPE OneView delivers the Power of One—one infrastructure, one management platform. Only the Power of One provides leading infrastructure convergence, the security of federation, and agility through data center automation to transform business economics by accelerating service delivery up to 66X faster while reducing data center costs up to 68 percent.<sup>2</sup> As a single software-defined platform, HPE OneView transforms how you manage your infrastructure across servers, storage, and networking in both physical and virtual environments. HPE's unique automation simplicity shifts the focus from "how devices run" to "how people work," streamlining your IT operations and improving business agility.

<sup>1</sup> Intel® Performance Benchmark Library

<sup>2</sup> Based on data provided by a beta customer. With HPE OneView the beta customer built 12 sites in one night and a new call center deployment in one night vs. the previous way where they could build only two sites at a time and it took 11 days to deploy two sites.



## Key features and benefits

### Ideal form factor

- Delivering powerful flexibility, the ProLiant BL660c Gen9 Server Blade features:
- 4S computing in a single-wide, full-height form factor
- Support for up to four Intel Xeon E5-4600 v4 or v3 processors with up to 22 cores
- 32 DDR4 DIMM sockets for up to 4.0 using up to 128GB DIMMs<sup>3</sup> of HPE SmartMemory and a maximum memory speed of up to 2400 MT/s
- Four internal drive bays for SAS, SATA or NVMe<sup>4</sup> SSDs and HDDs
- Three PCIe 3.0 x16 expansion slots supporting the highest performing mezzanine option cards, both now and in the future
- Your choice of 10 or 10/20Gb FlexibleLOMs

### Innovative design

- Keep the focus on innovation with user-inspired design features, such as:
- HPE SmartDrive hot plug carrier and Smart Socket guide anticipate your needs and reduce common issues that can result in downtime
- Integrated lifecycle automation provides embedded provisioning tools, active health monitoring for speeding problem resolution, and HPE Smart Update for simplifying system maintenance
- Dynamic workload acceleration delivers smarter data protection for ever-increasing hard-drive capacities
- Automated energy optimization improves the server's ability to optimize workloads

### Improved memory, storage, and I/O performance

Enhance performance, quality, manageability, and efficiency by:

- Increasing memory performance up to 33%<sup>5</sup>, along with the benefit of reduced power—16 DIMM slots with 2400 MT/s DDR4 and eight slots per processor socket. HPE DDR4 SmartMemory technology is available only on ProLiant Gen9 servers, offering unmatched quality, performance, and manageability, when compared to industry-standard memory
- Increased bandwidth and reduced latency with HPE NVMe PCIe SSD drives provide performance and reliable operations
- Offering an HPE Dynamic Smart Array B140i as a standard feature or HPE Smart Array P244br/1 GB FBWC for performance or additional features. Both offer support for 12 GB SAS speeds for the two internal drives
- Reducing latency and additional bandwidth per I/O expansion slot, as compared to ProLiant Gen7 server blades with new PCIe 3.0 I/O technology and three x16 slots
- Allowing you to customize server networking and scale up to future demands without the need to overhaul existing server hardware via FlexibleLOM. Get a choice of bandwidth and fabric (Ethernet, FCoE, and InfiniBand), support for wake-on-LAN functionality, and a shared HPE iLO port for ease of use

### Agile infrastructure management

Accelerate IT service delivery with a comprehensive set of HPE management offerings:

- **On-premise**—HPE OneView, our single, software-defined management platform, accelerates IT service delivery through automated configuration and lifecycle management and faster virtual machine provisioning, and it helps accelerate the transition to Infrastructure-as-a-Service (IaaS) and hybrid cloud.

<sup>3</sup> 128GB DIMMS available in the second half 2016

<sup>4</sup> Maximum of two NVMe drives supported

<sup>5</sup> vs DDR4 2100 MT/s DIMM

- **On-system**—On-system management tools simplify management to increase admin productivity. Tools include Unified Extensible Firmware Interface (UEFI), HPE Intelligent Provisioning, HPE Integrated Lights-Out (iLO), HPE Smart Update Manager (HPE SUM), Service Pack for ProLiant (SPP), and Scripting Tools (Scripting Toolkit for Linux® and Microsoft® Windows®, HPE Scripting Tool for Windows PowerShell, and the HPE RESTful Interface Tool).
- **On-cloud**—HPE Insight Online is a cloud-based management and support portal that enables fast problem resolution and easy access to the information you need to support your IT environment. You can use the Insight Online dashboard to track device health, service events, and support cases, view device configurations, create custom reports, and proactively monitor HPE contracts and warranties. You can also use the HPE Insight Online dashboard in the HPE Support Center Mobile App to stay up to date while on the go.

## Technical specifications

<b>Processors supported</b>	Intel Xeon E5-4600 v4 or v3 Series processors
<b>Number of processors</b>	Two or four
<b>Number of cores</b>	6/10/12/14/16/18/20/22
<b>Cache</b>	Up to 55 MB L3
<b>Maximum processor speed</b>	2.9 GHz
<b>Memory type</b>	HPE SmartMemory DDR4 Load Reduced (LRDIMM), or Registered (RDIMM), up to 2,400 MT/s
<b>Maximum memory</b>	4.0 TB
<b>Advanced memory protection features</b>	<ul style="list-style-type: none"> <li>• Advanced ECC/SDDC</li> <li>• Rank sparring (on line spare)</li> <li>• Memory Mirroring</li> </ul>
<b>Memory slots</b>	32 DIMM slots
<b>I/O expansion slots</b>	Three PCIe 3.0 mezzanine slots: one x16 Type A and two x16 Type B
<b>Networking options</b>	<ul style="list-style-type: none"> <li>• <b>FlexFabric</b>—One or two dual-port FlexFabric 10 or 10/20Gb adapters</li> <li>• <b>Mezzanine options</b>—Wide variety of options including Ethernet, InfiniBand, I/O accelerators, Fibre Channel, and more</li> </ul>
<b>Internal storage</b>	<ul style="list-style-type: none"> <li>• Four 2.5-inch hot-plug SAS/SATA/SSD bays supporting up to 8.0 TB SAS, 8.0 TB SATA, 7.68 TB SSD, and 4.0 TB NVMe SSD<sup>5</sup> of internal storage</li> <li>• Dual 64 or 120 GB M.2 kit, optional dual microSD kit</li> </ul>
<b>Storage controller</b>	<ul style="list-style-type: none"> <li>• HPE Smart Array P246br Controller with 1 GB FBWC supporting RAID 0, 1, and 5</li> <li>• HPE Dynamic Smart Array B140i supporting RAID 0, 1, and 5</li> </ul>
<b>Storage options</b>	<ul style="list-style-type: none"> <li>• Hot-plug SAS/SATA/SSD/NVMe drives</li> <li>• Dual 64 or 120 GB M.2 kit</li> <li>• Dual microSD kit</li> <li>• Fibre Channel mezzanine options</li> <li>• 1 GB FBWC for the Smart Array P246br Controller</li> <li>• HPE D2220sb Storage Expansion Blade</li> </ul>
<b>Form factor</b>	<ul style="list-style-type: none"> <li>• Full-height, single-wide c-Class server blade</li> <li>• Eight blades per c7000 (10U) enclosure</li> <li>• Four blades per c3000 (6U) enclosure</li> </ul>

<sup>5</sup> available on v4 processors only. Maximum of two NVMe drives supported

---

**System management**

**On-system**

- HPE iLO
- HPE SUM
- HPE SPP
- HPE Intelligent Provisioning
- HPE Scripting Tools for Windows PowerShell
- HPE RESTful Interface Tool
- Scripting Toolkit for Linux and Windows
- UEFI

**On-premise**

- HPE OneView

**On-cloud**

- HPE Insight Online with enhanced mobile app
- 

**Power supply and fans**

Enclosure-based power: 94 percent Platinum Plus

---

**Warranty (parts/labor/onsite)**

3/3/3

---

Customize your IT lifecycle management, from acquisition of new IT, management of existing assets, and removal of unneeded equipment. [hpe.com/solutions/hpefinancialservices](http://hpe.com/solutions/hpefinancialservices)

## HPE Factory Express

HPE Factory Express provides customization and deployment services along with your storage and server purchases. You can customize hardware to your exact specifications in the factory—helping to speed deployment. [hp.com/go/factoryexpress](http://hp.com/go/factoryexpress)

## Customer technical training

Gain the skills you need with ExpertOne training and certification from HPE. With HPE ProLiant training, you can accelerate your technology transition, improve operational performance, and get the best return on your HPE investment. Our training is available when and where you need it through flexible delivery options and a global training capability. [hp.com/learn/proliant](http://hp.com/learn/proliant)

## HPE Services

Let HPE help guide you to the New Style of IT. HPE Technology Services deliver confidence, reduce risk, and help you realize agility and stability. Our **Consulting** services provide advice and guidance to safely move your workloads to newer technologies. Our implementation and installation services enable faster, reliable startup of your new HPE ProLiant Gen9 servers, and our support portfolio allows you to get connected and back to business. We recommend **HPE Proactive Care** for ProLiant servers to prevent issues and resolve problems faster.

HPE Foundation Care provides a choice of coverage levels and response times for hardware and software support. **HPE Datacenter Care** enables you to operate and evolve your IT environment with less cost and more agility. This includes our **Flexible Capacity** service to acquire IT without impacting capital budget. Our support technology lets you tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, from any location, at any time. [hpe.com/services/proliant](http://hpe.com/services/proliant)



---

**Sign up for updates**

★ Rate this document



Learn more at  
[hpe.com/servers/bl660c](http://hpe.com/servers/bl660c)

---

© Copyright 2015-2016 Hewlett Packard Enterprise Development LP. The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Intel Xeon is a trademark of Intel Corporation in the U.S. and other countries. Microsoft and Windows are trademarks of the Microsoft group of companies. Linux is the registered trademark of Linus Torvalds in the U.S. and other countries. microSD is a trademark or registered trademark of SD-3C in the United States and other countries or both.

4AA5-7755ENW, June 2016, Rev. 2