

# HPE ProLiant DL580 Gen9 Server

The four-socket standard for data-intensive workloads



## The ideal choice for your most demanding and data-intensive resources, plus virtualized workloads:

- Business processing (enterprise resource planning, customer relationship management, human capital management, etc.)
- Business intelligence
- Databases, including large memory databases
- Consolidation and virtualization
- High-performance computing (HPC)

## Addresses key technology trends

- In-memory computing for accelerating data analytics
- In-server flash storage for accelerating data processing
- Coprocessors and GPUs for accelerating technical computing
- Maximum memory and I/O scalability for application consolidation
- Advanced error recovery techniques for even greater levels of uptime
- Automated system management for faster time-to-value and shifting focus from maintenance to innovation

## Answer key business challenges

While each organization has a unique set of drivers, every company must define a plan of action for handling today's biggest challenges.

### Real-time insight

Today, there's no time to wait for quarterly reports or even monthly reviews. You need easy access to real-time insight gleaned from complete, accurate, up-to-date information.

### Always-On expectations

The global marketplace never sleeps. Companies of all sizes need highly reliable IT infrastructure that keeps systems and apps up and available, no matter what.

### Accelerated innovation

Every company is looking for "the next best thing" before the competition discovers it. Defining the next best product, service, solution, or system requires dedicated think-time from workers. Freeing them from mundane tasks is a business imperative.

## Commanding performance and rock-solid resiliency at a lower total cost of ownership

The HPE ProLiant DL580 Gen9 Server is the ideal choice for the mission-critical enterprise, business intelligence, and database applications you rely on to answer these key business challenges. This enterprise-class four-socket (4S) x86 server offers rock-solid reliability and availability, breakthrough performance, and compelling consolidation and manageability efficiencies.

## Key features and benefits

### Commanding performance and breakthrough scalability for your most demanding applications

- Speed up your mission-critical enterprise, business intelligence, and database applications with up to 28 percent faster processor performance and 33 percent more cores than the previous generation<sup>1</sup> with up to four sockets and 96 cores with Intel® Xeon® E7-4800/8800 v4 processors.

### Commanding performance

- Four sockets with up to 96 cores processor cores
- 96 DDR4 DIMM slots (up to 6 TB)
- Nine PCIe Gen3.0 FL/FH slots
- 12 Gbps SAS RAID Controller
- 10 internal 2.5 inch HDD/SSD bays

### Rock-solid reliability

Enjoy cutting-edge reliability, availability, and scalability (RAS) features:

- HPE Advanced Error Recovery
- HPE Memory Quarantine
- HPE Advanced Error Containment
- HPE Advanced Fault Resiliency
- HPE Advanced Event Detection and Reporting
- HPE Server Options

### Cost-efficiency

- Lower power and cooling costs
- Enhanced management and serviceability features

### Management simplicity

- Class-leading manageability for exceptional time- and cost-saving benefits

- Get up to 16 percent performance gain<sup>2</sup> for in-memory computing and large-scale virtualization with support for up to 6 TB of memory capacity with 96 HPE DDR4 SmartMemory slots with speeds of up to 1,866 MHz.
- Adapt and grow to meet changing business needs with nine FL/FH PCIe 3.0 slots (standard) for GPGUs and choice of HPE FlexibleLOM or PCIe standup, and 1 GbE, 10 GbE, 25 GbE, or InfiniBand Adapters.
- Support for HPE NVMe Mixed Use and Write Intensive PCIe Workload Accelerators, ideal for Database and virtual desktop infrastructure (VDI) workloads or online transaction processing (OLTP) and Business Intelligence workloads.
- Access data faster with the redesigned HPE Flexible Smart Array and HPE Smart SAS host bus adapter (HBA) Controllers, with the flexibility to choose the optimal 12 Gbps controller for your environment.
- HPE 25 Gigabit Ethernet (25 GbE) Network Adapters have the breakthrough performance you need at 2.5X increase over previous generation 10 GbE and a lower overall cost for scalability to 100 Gbps.
- HP Trusted Platform Module (TPM) 2.0 prevents unauthorized access to servers and securely store artifacts used to authenticate the server platforms.

### Leading x86 availability and rock-solid reliability your business can depend on

- Enjoy increased system availability and lower service requirements with comprehensive fault management and diagnostics.
- Improve reliability and data protection with HPE Smart Array Controllers featuring HPE Secure Encryption and Advanced Data Mirroring.

- Increase security with four new levels of Secure Boot with support for Unified Extensible Firmware Interface (UEFI) mode.<sup>3</sup>
- Integrate performance, uptime, and productivity into a personalized, simplified support experience with HPE Proactive Care Support Services.

### Compelling agility and efficiencies for scale-up environments

- Reduce your cooling expenses with supported ASHRAE A3 and A4 configurations.<sup>4</sup>
- Lower power costs with high-efficiency redundant HPE Common Slot Power Supplies providing up to 94 percent efficiency (Platinum Plus), and infrastructure power efficiencies with -48 VDC input voltages and support for HPE Power Discovery Services.
- Enhance efficiency with customer-inspired features such as front-access processor/memory drawer for ease of serviceability, hot pluggable fans and drives, optional SID for health and monitoring of components, and Quick Reference Code for quick access to product information.

### Agile infrastructure management for accelerating IT service delivery

- Enjoy faster, lower-cost infrastructure management and a single integrated view of your IT infrastructure with HPE OneView.
- Monitor infrastructure health and manage support more easily with HPE Insight Online.
- Configure in UEFI boot mode, provision local and remote with Intelligent Provisioning and Scripting Toolkits.
- Deploy, monitor, and support your server remotely, out of band with HPE Integrated Lights-Out (iLO) embedded management.
- Optimize firmware and driver updates and reduce downtime with Smart Update.

<sup>1</sup> Intel® measurements. Baseline 4x Intel Xeon processor E7-8890 v3 compared to E7-8890 v4 both with 32x (Intel C++/Fortran Compiler 14.1 STREAM) or 64x (Oracle 12c OLTP) DDR4-1600 16 GB DIMMs. Intel Performance Projections as of December 2015.

<sup>2</sup> Based on HPE internal calculations. Based on comparing the difference of DDR4 DIMMs of 1,866 vs. 1,600 MHz on gen-to-gen HPE servers, May 2015.

<sup>3</sup> Secure Boot authentication inclusive of all UEFI drivers, any UEFI applications, OS Bootloaders, and Linux® Kernel Modules. Hewlett Packard Labs, Houston, TX, July 2014.

<sup>4</sup> See [hpe.com/servers/ASHRAE](http://hpe.com/servers/ASHRAE) for more details.

## Technical specifications

In the following table, **bold** text designates a new or improved feature, as compared to the HPE ProLiant DL580 Gen8 Server.



### HPE PROLIANT DL580 GEN9 SERVER

<b>Compute</b>	Two, three, or four Intel Xeon <b>E7 4800/8800 v4</b> processors; 4/8/10/12/14/16/18/ <b>20/22/24</b> cores; up to 3.2 GHz and 60 MB L3 cache
<b>Memory</b>	HPE SmartMemory (96) <b>DDR4</b> DIMM slots and 6 TB maximum memory with 64 GB DIMMs (supports both R-DIMMs and LR-DIMMs up to <b>1,866 MHz</b> )
<b>Storage</b>	HPE Smart Array P830i 12 Gbps SAS Controller
<b>Flash-Backed Write Cache (FBWC)</b>	2 GB or 4 GB FBWC
<b>HPE SmartDrive</b>	Up to <b>10 SFF max</b> , HDD/SSD ( <b>20 TB max</b> ), and <b>optional 5 NVMe PCIe SSD support</b>
<b>I/O expansion</b>	Nine PCIe Gen3.0 FL/FH slots standard (four x8 and five x16 lanes slots); FlexibleLOM and Embedded SAS RAID Controller provide two additional I/O devices for a total of 11 PCIe devices per system. <b>Note:</b> Slot availability is dependent on the number of processors installed.
<b>Networking</b>	FlexibleLOM; choice of 4 x 1GbE, 2 x 10GbE, or 2 x 10 Gbps CNA or 2 x FDR InfiniBand
<b>VGA/USB/SD ports/Optical</b>	Two video (1f, 1r); eight USB (2f, 2i, 4r); 3/5 NIC; one microSD; <b>Dual microSD</b> (optional); external USB optical drive (optional)
<b>GPU support</b>	Up to five double-wide GPGPUs
<b>System ROM</b>	UEFI and Legacy BIOS
<b>Converged management</b>	HPE OneView with HPE iLO Advanced
<b>Support management</b>	HPE Insight Online with enhanced mobile app
<b>Embedded management</b>	HPE iLO 4, Intelligent Provisioning, Smart Update Manager (SUM), <b>RESTful Interface Tool</b> , Scripting Tools for Microsoft® Windows® PowerShell
<b>Power supplies</b>	Up to four 1,500 W or 1,200 W (N+N redundant), 94 percent efficient (Platinum Plus); common slot 1,200 W power supplies: max power consumption—120 VAC—1,012 VA, 3,408 BTU, 230 VAC—1,332 VA, 4,447 BTU 1,500 W power supplies: max power consumption—230 VAC—1,672 VA, 5,637 BTU
<b>Fans</b>	Four hot plug (eight rotors with N+1 redundancy); front accessible
<b>Security</b>	Secure Boot, Intel Secure Key, and TPM option
<b>System RAS features</b>	HPE Advanced Error Recovery, HPE Memory Quarantine, HPE Advanced Error Containment, HPE Advanced Fault Resiliency, HPE Advanced Event Detection and Reporting, and HPE Qualified Options
<b>Industry compliance</b>	<b>ASHRAE A3 and A4 configurations supported<sup>5</sup></b>
<b>Power discovery services</b>	Supported
<b>Location discovery services</b>	Supported
<b>Form factor/chassis depth</b>	Rack (4U), 29"
<b>Serviceability—easy install rails</b>	Standard with CMA
<b>Warranty (parts/labor/onsite support)</b>	3/3/3

<sup>5</sup> See [hpe.com/servers/ASHRAE](https://www.hpe.com/servers/ASHRAE) for more details.

## Resources

### QuickSpecs

#### HPE x86 Scale-up servers

#### HPE Server Performance Benchmarks

Optimize your IT investment strategy with new ways to acquire, pay for and use technology, in lock-step with your business and transformation goals.

#### [hpe.com/solutions/hpefinancialservices](http://hpe.com/solutions/hpefinancialservices)

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 speed deployment.

#### [hpe.com/info/factoryexpress](http://hpe.com/info/factoryexpress)

## HPE Services

Let Hewlett Packard Enterprise help guide you to the New Style of Business. HPE Technology Services delivers confidence, reduces risk, and helps you realize greater agility and stability.

- Our consulting services provide advice and guidance to safely move your workloads to newer technologies.
- HPE Implementation and Installation Services enable faster, more reliable startup of your new ProLiant Gen9 servers, and our support portfolio allows you to get connected and back to business fast.
- We recommend HPE Proactive Care for ProLiant Gen9 servers to prevent issues and resolve problems quickly and efficiently.

- 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 at a lower cost and with more agility, including 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, anywhere, any time.

Learn more at  
**[hpe.com/servers/dl580gen9](http://hpe.com/servers/dl580gen9)**



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