Data sheet

HP 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 HP 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.

Commanding performance
- Four sockets with up to 72 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:
- HP Advanced Error Recovery
- HP Memory Quarantine
- HP Advanced Error Containment
- HP Advanced Fault Resiliency
- HP Advanced Event Detection and Reporting
- HP Qualified 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

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 39 percent faster processor performance and 20 percent more cores than the previous generation[1] with up to four sockets and 72 cores with Intel® Xeon® E7-4800/8800 v3 processors.
- Get up to 16 percent performance gain[2] for in-memory computing and large-scale virtualization with support for up to 6 TB of memory capacity with 96 HP 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 GPGPUs and choice of HP FlexibleLOM or PCIe standup, and 1GbE, 10GbE, or InfiniBand Adapters.
- Support for HP 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 HP Flexible Smart Array and HP Smart SAS host bus adapter (HBA) Controllers, with the flexibility to choose the optimal 12 Gbps controller for your environment.

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 HP Smart Array Controllers featuring HP Secure Encryption, Advanced Data Mirroring, and backup power protection with the HP Smart Storage Battery.
- Increase security with four new levels of Secure Boot with support for Unified Extensible Firmware Interface (UEFI) mode.[3]
- Integrate performance, uptime, and productivity into a personalized, simplified support experience with HP Proactive Care Support Services.

Compelling agility and efficiencies for scale-up environments
- Reduce your cooling expenses with supported ASHRAE A3 and A4 configurations.[4]
- Lower power costs with high-efficiency redundant HP Common Slot Power Supplies providing up to 94 percent efficiency (Platinum Plus), and infrastructure power efficiencies with -48 VDC input voltages and support for HP 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 HP OneView.
- Monitor infrastructure health and manage support more easily with HP Insight Online.
- Configure in UEFI boot mode, provision local and remote with HP Intelligent Provisioning and Scripting Toolkits.
- Deploy, monitor, and support your server remotely, out of band with HP Integrated Lights-Out (iLO) embedded management.
- Optimize firmware and driver updates and reduce downtime with HP Smart Update.

[1] Intel® measurements. Up to 39 percent top-bin performance increase based on OLTP Warehouse Oracle 11g R2 database workload comparing 4X Intel Xeon processor E7-8890 v3 (18C, 2.5 GHz) with 2 TB to similarly configured E7-4890 v2 (15C, 2.8 GHz) with 1 TB. Twenty percent more cores comparing E7-8800/4800 (15 cores) v2 vs. v3 (18 cores), January 2015.

[2] Based on HP internal calculations. Based on comparing the difference of DDR4 DIMMs of 1,866 vs. 1,600 MHz on gen-to-gen HP servers, May 2015.

[3] Secure Boot authentication inclusive of all UEFI drivers, any UEFI applications, OS Bootloaders, and Linux® Kernel Modules. HP Labs, Houston, TX, July 2014.

[4] See hp.com/servers/ASHRAE for more details.

Technical specifications

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

HP ProLiant DL580 Gen9 Server

Compute	Two, three, or four Intel Xeon ***E7 4800/8800 v3*** processors; 4/8/10/12/***14/16/18*** cores; up to 3.2 GHz and 45 MB L3 cache
Memory	HP SmartMemory (96) ***DDR4*** DIMM slots and 6 TB maximum memory with 64 GB DIMMs (supports both R-DIMMs and LR-DIMMs up to ***1,866 MHz***)
Storage	HP Smart Array P830i 12 Gbps SAS Controller
Flash-Backed Write Cache (FBWC)	2 GB or 4 GB FBWC
HP SmartDrive	Up to ***10*** SFF max, HDD/SSD (***20 TB max***), and ***optional 5 NVMe PCIe SSD support***
I/O expansion	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. **Note:** Slot availability is dependent on the number of processors installed.
Networking	FlexibleLOM; choice of 4 x 1GbE, 2 x 10GbE, or 2 x 10 Gbps CNA or 2 x FDR InfiniBand
VGA/USB/SD ports/Optical	Two video (1f, 1r); eight USB (2f, 2i, 4r); 3/5 NIC; one microSD; **Dual microSD** (optional); external USB optical drive (optional)
GPU support	Up to five double-wide GPGPUs
System ROM	UEFI and Legacy BIOS
Converged management	HP OneView with HP iLO Advanced
Support management	HP Insight Online with enhanced mobile app
Embedded management	HP iLO 4, HP Intelligent Provisioning, HP System Update Manager (SUM), ***HP RESTful Interface Tool***, HP Scripting Tools for Microsoft® Windows® PowerShell
Power supplies	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–1672 VA, 5,637 BTU
Fans	Four hot plug (eight rotors with N+1 redundancy); front accessible
Security	Secure Boot, Intel Secure Key, and TPM option
System RAS features	HP Advanced Error Recovery, HP Memory Quarantine, HP Advanced Error Containment, HP Advanced Fault Resiliency, HP Advanced Event Detection and Reporting, and HP Qualified Options
Industry compliance	***ASHRAE A3 and A4 configurations supported***[5]
Power discovery services	Supported
Location discovery services	Supported
Form factor/chassis depth	Rack (4U), 29"
Serviceability—easy install rails	Standard with CMA
Warranty (parts/labor/onsite support)	3/3/3

[5] See hp.com/servers/ASHRAE for more details.

Resources

QuickSpecs

HP x86 Scale-up servers

HP Server Performance Benchmarks

Customize your IT lifecycle management, from acquisition of new IT, management of existing assets, and removal of unneeded equipment. **hp.com/go/hpfinancialservices**

HP 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. **hp.com/go/factoryexpress**

hp.com/qref/dl580gen9

HP Services

Let HP help guide you to the New Style of Business. HP 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.
- HP 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 HP Proactive Care for ProLiant Gen9 servers to prevent issues and resolve problems quickly and efficiently.
- HP Foundation Care provides a choice of coverage levels and response times for hardware and software support.
- HP 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
hp.com/servers/dl580gen9

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