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 in 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

[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] 6 TB support with 64 GB DIMMs to be available
  mid-2015.
[4] Secure Boot authentication inclusive of all UEFI
  drivers, any UEFI applications, OS Bootloaders,
  and Linux® Kernel Modules. HP Labs, Houston, TX,
  July 2014.
[5] See the QuickSpecs for more details.

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[3] 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 Gb/s 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.[4]

• Integrate performance, uptime, and productivity into a personalized, simplified support
  experience with HP Proactive Care Support Services.

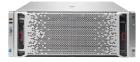## Compelling agility and efficiencies for scale-up environments

• Reduce your cooling expenses with supported ASHRAE A3 and A4 configurations.[5]

• Lower power costs with high-efficiency redundant HP Common Slot Power Supplies providing
  up to 94 percent efficiency (Platinum), 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.

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	Up to 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 SmartDrives	Up to 10 SFF HDD/SSD drive slots (12 Gbps SAS); supports SFF SAS HDDs (10K and 15K rpm) and SAS SSDs
I/O expansion	Nine PCI-e Gen3 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 ports/SD/Optical	Two video (1f, 1r); eight USB (2f, 2i, 4r); 3/5 NIC; one microSD; 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; 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_**
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

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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