Hewlett Packard Enterprise

Business white paper

HPE ProLiant Gen10: Servers that Transform your Business

Maximize performance, security, and affordability with next-gen HPE servers

Intel® Xeon® Scalable processors.

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Introduction

As digital transformation gains momentum, small and midsize businesses (SMBs) are struggling to stay ahead. To keep pace, they are seeking innovative ways to increase performance, speed time to market, and gain market share.

With the growth of mobile, social, **Big Data**, and the **Internet of Things (IoT)**, the quantity and diversity of data have skyrocketed. To embrace these trends and drive better business outcomes, organizations need IT as a trusted partner more than ever before. As a result, IT is being tasked with managing dense workloads, ramping up data storage and security, upgrading legacy systems, and accommodating the technology demands of a mobile workforce. With limited budgets and lean staff, the gap between escalating business demands for fast, value-added services and IT's ability to supply it continues to grow.

For many, the answer lies in modernizing IT infrastructures—especially servers—to make them easy to manage and completely secure, whether critical applications and data are hosted on-site or in the cloud. SMBs need server platforms that not only address current needs but also seamlessly handle future workloads, while lowering costs. New innovations in server technology now make it possible for SMBs to leverage the performance and efficiencies that only large enterprises could afford before.

Data explosion: Are you ready?

By 2025 the global datasphere will grow to 163 ZB (a trillion gigabytes).[1] Driven by the Internet of Things, the total amount of data created by any device will reach 600 ZB per year by 2020.[2]

[1] IDC, white paper sponsored by Seagate, "Data Age 2025: The Evolution of Data to Life-Critical Don't Focus on Big Data; Focus on the Data That's Big," 2017.

[2] Cisco, "Cisco Global Cloud Index: Forecast and Methodology, 2015–2020," 2016.

The Cost of Cyber Crime

50%

More than 50% of IT security professionals reported at least one incident of malware-infected firmware in 2016.[4] Can you afford a security breach? Learn more in this **white paper**.

Data overload: Key challenges

Today's organizations are faced with ever-growing volumes of data, which needs to be ingested, correlated, and analyzed in real-time to provide a comprehensive view of business processes. Data insights can be used to improve efficiencies, drive superior customer service, and inform smarter marketing. But, in reality, most SMBs lack the capabilities to respond to data overload and ever- changing customer expectations. They find themselves constrained by various obstacles, including:

- **Legacy Systems:** Many SMBs find it difficult to embrace digital transformation because they're saddled with clunky legacy IT systems. When an organization has aging servers, productivity suffers significantly. Inadequate computing and storage performance can delay simple reporting, not to mention sophisticated analyses. Most SMBs do not have the resources to manage legacy IT. They need simple, automated, high-performing IT—including modern servers—to run critical workloads more efficiently, minimize system administration, and free up resources for more strategic activities.
- **Security:** A nagging concern that keeps IT managers up at night is the need to ramp up security. Organizations of all sizes are potential targets of security breaches—and SMBs are especially vulnerable. Studies reveal that 43% of cyber-attacks target small businesses and only 14% of small businesses rate their ability to mitigate vulnerabilities as highly effective.[3] Mobility, Big Data, BYOD, and cloud services pose new security challenges. To keep pace, SMBs need to deploy secure servers—capable of protecting sensitive data and ensuring the highest levels of security.
- **Budget constraints:** SMBs have to navigate shifting compliance regulations, increase network security, and ensure 24x7 availability—all with a limited budget and lean IT staff. As a result, the prospect of modernizing their current IT environment is attractive because it can also lower operating costs. Most SMBs seek affordable on-premises or Hybrid IT that is easy to purchase with innovative financing options.

[3] Symantec, "2016 Internet Security Threat Report," 2016.

[4] ISACA Study on Firmware Security Risks and Mitigation: Enterprise Practices and Challenges, 2016.

Performance by the numbers

71%

Up to 71% boost in performance compared to previous generation[6]

27%

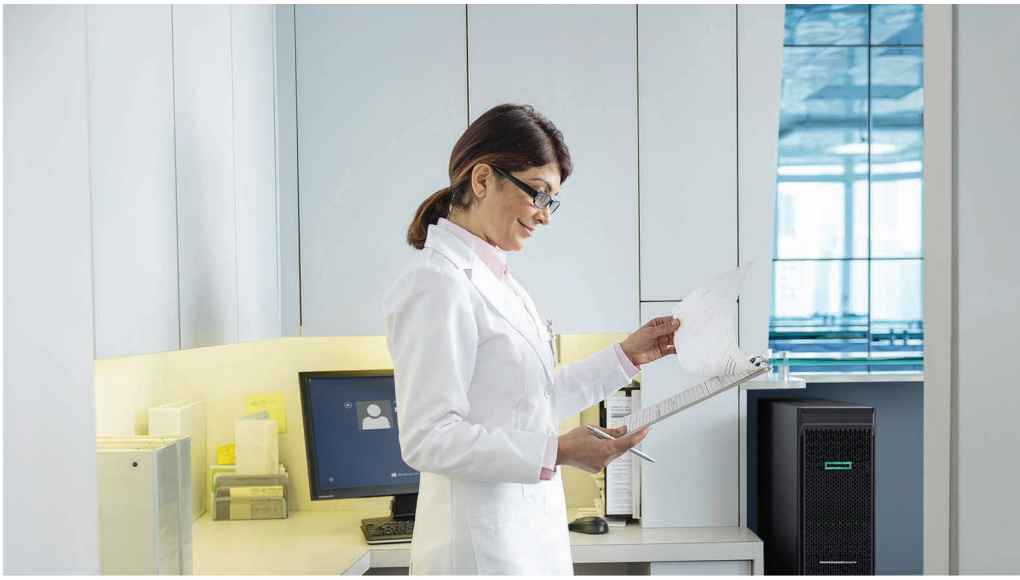
Up to 27% increase in cores[7]

3.9X

Up to 3.9X higher virtualized workload throughput and number of VMs[8]

65%

Smart Array Gen10 Controllers deliver up to 1.6 million IOPS—65% better performance[9]—while using up to 45% less power[10] than previous generation



Discover a New Compute Experience

For SMBs looking to innovate in the era of digital transformation, **HPE ProLiant Gen10 servers**, powered by Intel Xeon Scalable processors, deliver greater agility, security, and economic control with the world's most secure industry-standard servers.[5] HPE ProLiant Gen10 servers—such as the HPE ProLiant ML350, ML110, DL380, and DL360—empower SMBs to unlock the full potential of infrastructure modernization, while also accelerating business insights across a hybrid world of traditional IT and public and private clouds.

Increased agility: HPE Gen10 servers make it easy to adapt IT to changing requirements with Intelligent System Tuning and advances in server networking and storage. Complementing existing storage technologies, HPE NVDIMMs improve application performance by reducing traditional storage hardware bottlenecks like write latency, and are ideal for accelerating databases and analytics workloads.

Improved security: Unique security features protect your digital assets, down to the silicon. HPE's Secure Compute Lifecycle offers best-in-class innovations in firmware protection, malware detection, and firmware recovery. HPE's new Silicon Root of Trust technology designs security directly into the iLO 5 chip, creating an immutable fingerprint in the silicon and preventing servers from booting up unless the firmware matches the fingerprint.

Affordability: HPE Gen10 servers provide a unique blend of enterprise-class capabilities at a great value—offering outstanding configuration flexibility to meet complex business requirements at an affordable price point. HPE also offers ClearOS™—a simple, secure, and affordable operating system that can be tailored to the ever-changing needs of any SMB—with no upfront cost. With over 100 applications to choose from, organizations can build the right IT infrastructure for their needs.

[5] Based on external firm conducting cyber security penetration testing of a range of server products from a range of manufactures, May 2017.

[6] Intel® measurements. Up to 71% performance increase of Intel Xeon Platinum versus previous generation E5 v4 average performance based on key industry-standard benchmark calculations comparing 2-socket Intel Xeon Platinum 8180 to E5-2699 v4 family processors. Any difference in system hardware or software design or configuration may affect actual performance, May 2017.

[7] Intel measurements. Up to 27% performance increase of Intel Xeon Platinum versus previous generation comparing 2-socket Intel Xeon Platinum 8180 (28 cores) to E5-2699 v4 (22 cores). Calculation 28 cores/22 cores= 1.27 = 27%. May 2017.

[8] Intel measurements. Up to 3.9X higher virtualized throughput and more VMs/server versus Intel Xeon processor E5 performance estimate based on virtualization infrastructure consolidation workload. Any difference in system hardware or software design or configuration may affect actual performance, May 2017.

[9] Internal lab testing performed January 2017 comparing HPE Gen9 to Gen10 Smart Array Controllers with 4 KB random read test.

[10] Internal lab testing performed October 2016 comparing HPE Gen9 versus Gen10 Smart Array Controllers.

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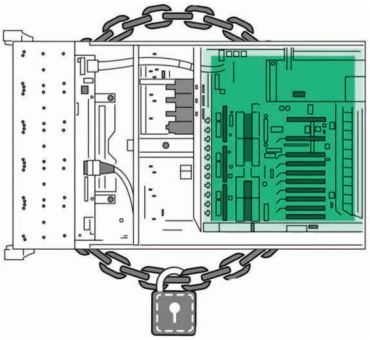
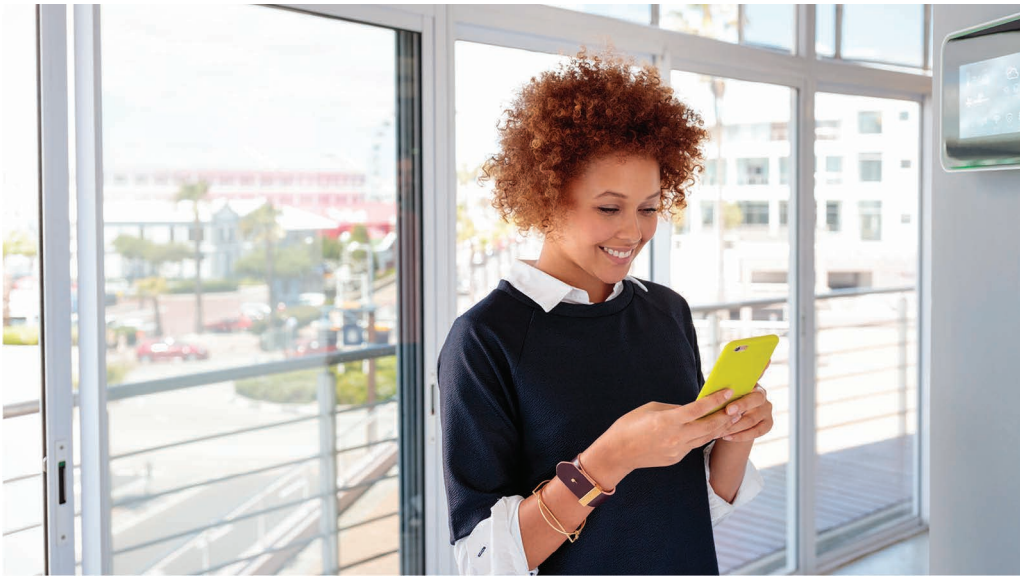


A Secure Root of Trust

How did HPE build the Silicon Root of Trust? Watch this **video** to find out.

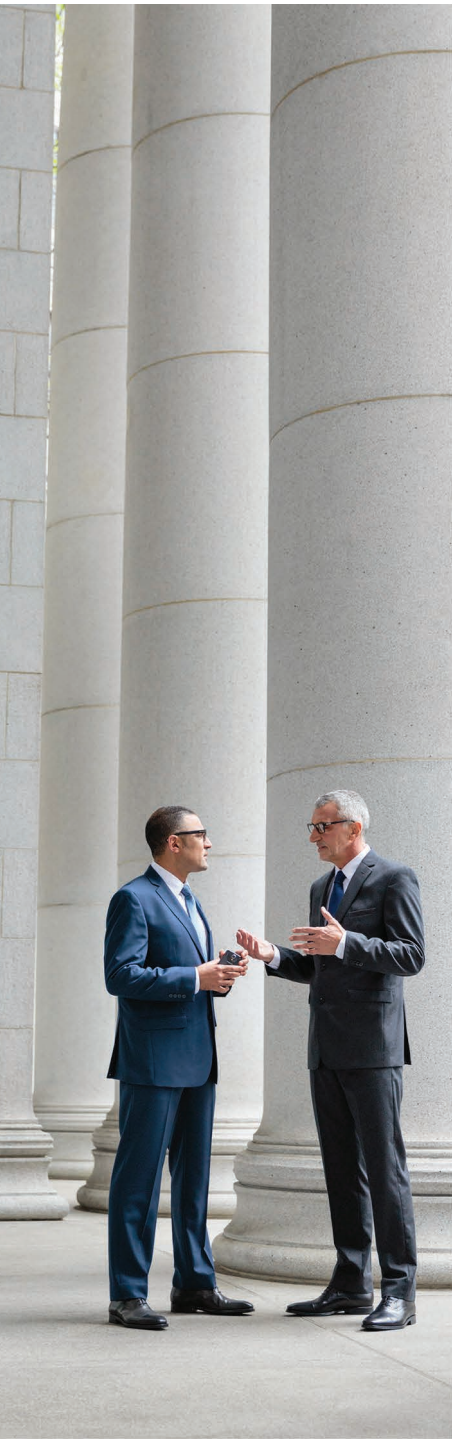


Power meets versatility: HPE ProLiant ML350 Gen10

One of HPE's right-fit servers—the new HPE ProLiant ML350 Gen10—has the power to support the latest high-performance workloads, including engineering/technical applications, demanding business applications, virtualization, structured data management and analytics, and high-scale cloud, collaboration, and storage. With a flexible chassis design that can adapt to diverse physical environments, the HPE ProLiant ML350 Gen10 server delivers the right expandability for changing business needs, making it the perfect choice for growing SMBs, remote branch offices, and modern data centers.

What's new?

- Easy storage expansion with a shorter, rackable chassis and multiple drive cage options
- Greater core count and throughput with new Intel Xeon Scalable processors
- Enhanced security with iLO 5 Advanced Premium Security Edition
- Wider GPU support for graphics-intensive applications like VDI and machine learning



Best-performing single-processor tower: HPE ProLiant ML110 Gen10

For budget-conscious businesses that need an expandable server, the HPE ProLiant ML110 Gen10 is a single processor, 4.5U tower server that is designed to provide enterprise-class redundancy and manageability. The 1P tower is well matched for low-density virtualization, basic data management and analytics, low-scale cloud services, collaborative applications, and storage workloads. For scalable performance from SMB to remote-office/branch-office (ROBO) environments, the HPE ProLiant ML110 Gen10 server grows with you in the digital economy and accelerates your business at every stage.

What's new?

- Supports Intel Xeon Scalable processors up to 14 cores and up to 105W
- Supports up to 16 SFF or 8 LFF hot-plug/non-hot plug drives
- Supports up to two graphic processing units (GPUs), including one single-wide and one double-wide
- Optional redundant fan and redundant power supply to satisfy automatic failover needs

Redefining versatile computing: HPE ProLiant DL380 Gen10

The **HPE DL380 Gen10 server** offers a versatile platform that can accommodate a number of different chassis configurations and support diverse workloads including containers, cloud, virtualization, and Big Data applications. HPE Persistent Memory—combining the performance of memory with the persistence of storage—delivers unprecedented levels of performance and data resiliency for databases and analytics workloads.

What's new?

- Security through firmware and optional chassis intrusion options
- HPE performance leadership with Persistent Memory
- HPE innovation with Intelligent System Tuning
- Modular chassis with greater drive capacity and flexibility

Optimize performance with Intelligent System Tuning

How can HPE Intelligent System Tuning radically improve server performance? **Read the solution brief to find out**.

Built for dense performance: HPE ProLiant DL360 Gen10

The HPE ProLiant DL360 Gen10 server means business—even in space-constrained environments. With the added performance of 12 NVDIMMs and 10 NVMe, HPE ProLiant DL360 Gen10 makes it easier to manage virtualization, databases, analytics, and other high-performance computing workloads by automating the most essential server lifecycle management tasks with **HPE OneView** and **HPE iLO 5**.

What's new?

- Innovative design with greater flexibility to mix and match storage within a single chassis
- Persistent Memory harnesses the speed of memory to support dynamic workloads
- Built-in security features such as Silicon Root of Trust, Run-Time Firmware Validation, and Secure Recovery
- Supports Intel Xeon Processor Scalable Family with 2666 MT/s HPE DDR4 SmartMemory enabling up to 3.0 TB and an increase in performance up to 66%[11]

Meet the family

Ready to meet the next generation of servers? Download this **guide** to get acquainted with HPE's Rack and Tower family.

[11] Percentage compare Gen10 versus Gen9: Gen10 = 12 Channels x 2666 data rate x 8 bytes = 256 GB/s. Gen9 = 8 channels x 2400 x 8 bytes = 154 GB/s. 256/154 = 1.66 or Gen10 is 66% greater bandwidth, July 2017.

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Transform to Digital with HPE

The right IT infrastructure is a must-have for any business that is looking to outperform the competition today. SMBs need to embrace digital transformation and sync IT priorities with key business objectives—while keeping an eye on productivity, cost, and security. To close the gap between business expectations and IT capabilities, they need servers that address current needs and handle future workloads, while lowering costs.

HPE ProLiant Gen10 servers offer a secure, high-performing, and highly affordable platform to run Big Data workloads and the most demanding applications. They provide a complete infrastructure that supports both your business objectives and your business growth. With HPE ProLiant Gen10 servers, IT can operate at the speed of today's business, handle the most demanding applications, and constantly accelerate innovation.

Learn more at
hpe.com/us/en/servers/entry-level.html

Sign up for updates

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