



Server Modernization: Why You Need to Act Now

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NOVEMBER 2023

IN PARTNERSHIP WITH



Hewlett Packard
Enterprise

Executive Summary

One thing that has remained constant in modern IT is the role of compute. Compute turns data into value, powers applications, and accelerates workloads. These processes take on growing importance as the sheer volume of data and its business value are greater than ever. However, the way that enterprises consume compute has changed significantly.

Flexible consumption models are a pillar of modern compute. Enterprises, driven by the need for flexibility and quicker time to market, now seek a public cloud-like experience for their compute resources, delivered in a hybrid cloud model in which on-premises infrastructure seamlessly operates with public cloud architectures. As a result, hybrid cloud and as-a-service consumption solutions are seen as the best ways to maintain modern compute experiences. In many cases, they are the only ways to meet security, performance, and management requirements that have never been more demanding. They are also the best way to keep up with oncoming technology advances.

Hybrid environments give organizations the best of two worlds: the ability to access on-demand resources and cloud-native services quickly and simply through public clouds, as well as control over valuable and sensitive information in private cloud architecture in either owned or co-located data centers.

Organizations are in different places in their hybrid cloud journeys. Although some are far along in setting up a secure, well-performing, and cost-effective manner for all workload placement, many more are only starting out or are in the early stages on their path. Yet others have not begun at all.

The Futurum Group urges all organizations to explore hybrid cloud now and to implement where it makes sense. Given how a hybrid cloud environment can effectively overcome today's greatest IT challenges, this goal should be urgently addressed.

The same goes for modern consumption approaches to IT delivery. Traditional on-premises infrastructure vendors have found a way to provide public cloud-like experiences through managed services and as-a-service solutions. As with public cloud, these managed services and as-a-service buying programs make the latest sufficient compute resources immediately available and configured to specific workload requirements.

In this unfolding era of cloud, this paper looks at the impact of modern IT requirements on organizations of all sizes and in all industries, and offers recommendations for meeting those requirements.



Modern IT Requirements Call for Modern Solutions

Today's organizations need to distribute data throughout data centers, private clouds, and public clouds to meet the tremendous demands of creating, storing, analyzing, and protecting data that drives their businesses. Having more data in more places not only stresses compute systems but also can complicate resource and infrastructure management.

It is not only data that is growing with unprecedented speed. So are technology advancements. To meet performance and security demands, IT vendors constantly add new features and raw power to each product generation. With continuous software development, organizations do not have to wait for completely new versions of applications; providers roll out features as soon as they are ready. So, although modern technology advances can have a positive impact on customers, they can also create lifecycle management headaches.

Hybrid and multi-clouds have their advantages, but working across clouds, data centers, and edge sites also poses problems. IT customers today face challenges around managing mixed infrastructures, data visibility, hidden cloud costs, and sustainability. According to the [2023 Nutanix Enterprise Cloud Index](#) survey, 94% of respondents said they wanted full visibility over where their data lives but only 40% said they have that now. Eighty-five percent said that managing cloud cost is difficult, 46% said they plan to repatriate applications to on-premises data centers, and 92% said sustainability concerns are increasing.

Security concerns are also growing, as ransomware and other attacks are frequent occurrences. Cybercrime is expected to increase 15% year-over-year to \$10.5 trillion by 2025 – up from \$3 trillion in 2015 -- according to [Cybersecurity Ventures](#). [IBM Security](#) puts the average cost of a data breach at \$4.35 million. With 83% of organizations reporting multiple breaches, these organizations should implement end-to-end security practices. However, many organizations lack the expertise to apply security innovations such as zero-trust architectures and DevSecOps, the software development method that incorporates security practices

Why Doing Nothing Is Not an Option

Companies using legacy infrastructure are stuck with centralized architectures and complex management, and risk security approaches that have been frequently breached in recent years. Even compute systems designed just a few years ago were not built for the breadth of today's security threats, dispersed workforces, and explosion of AI and machine learning (ML) use cases. Legacy systems also have rigid purchasing plans that can prohibit the agility required by today's fluid business demands.

Cloud consumption models enable self-service through centralized management; flexible payment models that enable capex, opex, and subscription purchases based on consumption; elastic scaling to meet changing capacity needs; and ways to deal with growing security threats.





Solution Overview:

HPE ProLiant Gen11 Adds Flexibility and Trust

Hewlett Packard Enterprise (HPE) ProLiant Gen11 servers meet the three major needs of a modern hybrid infrastructure: cloud operating model, trusted security by design, and performance optimized for specific workloads. These servers can be deployed in a traditional data center model, as part of a hybrid cloud setup, or as a managed service through HPE GreenLake.

HPE ProLiant Gen11 servers drive compute modernization in the following ways.

Cloud Operating Model

As with all HPE IT products, the latest HPE ProLiant servers are available through [HPE GreenLake](#). The infrastructure as a service offering - HPE GreenLake for Compute - enables cloud-like consumption and as-a-service management of compute devices. Organizations can easily obtain the compute infrastructure they need for any workload while achieving cloud operating model benefits of scalability, cost efficiencies, agility, speed, and reduced complexity.

HPE GreenLake for Compute Ops Management makes it easy to manage servers across a distributed environment and provision any device from anywhere with a software as a service model. Aiding in sustainability initiatives, a report feature provides emissions and energy metrics for individual servers as well as the full server environment. By integrating as-a-service management, HPE simplifies the operational aspects and allows enterprises to focus on strategic initiatives instead of infrastructure management.

Trusted Security

From data center to edge to cloud, HPE provides end-to-end security with a zero-trust lifecycle approach. This approach includes HPE's Silicon Root of Trust and a trusted supply chain that adds a layer of protection starting on the manufacturing floor.

HPE's Silicon Root of Trust extends up the boot stack all the way to the application through processes such as:

- Firmware rollback protection
- Continual attestation during runtime attestation
- Processor self-authentication using cryptographic for zero trust
- Boot with an immutable source in silicon

These features are complemented by a trusted supply chain that guarantees the integrity of components from manufacturing through to deployment, mitigating the risk associated with third-party vulnerabilities.

Customers who buy GenII technology with a subscription for HPE GreenLake for Compute Ops Management also benefit from a policy-driven method of keeping servers in compliance and secure.

Optimized Performance for Workloads

With new levels of efficiency to power applications with the right economics for optimal business value, HPE ProLiant GenII is designed to bring efficiency and improved consolidation for legacy workloads while utilizing ultra-scalable architecture for key emerging workloads. From the data center to the edge, this new generation delivers breakthrough performance and economics for demanding applications that require the most advanced acceleration such as AI, ML, virtual desktop infrastructure (VDI), data analytics, and more.

With 2X IO bandwidth and up to 33% more graphics processing unit (GPU) density compared with previous generations, HPE ProLiant GenII enables organizations to power a wide range of graphics and compute use cases with a broad ecosystem of the most popular software applications. Core workloads, such as data analytics and VDI, will also benefit from the faster, more efficient DDR5 memory. Additionally, many organizations can improve workload consolidation, particularly in virtualized environments, with 50% more cores per CPU from the latest generation of Intel and AMD processors that HPE ProLiant GenII offers.

This portfolio of next-generation servers, engineered to meet a wide range of customer needs, can accelerate innovation across industries such as retail, manufacturing, financial services, healthcare, and media and entertainment.





Conclusion

As the competitive landscape puts increasing performance pressure on businesses, today's IT resources must be futureproofed for a hybrid and multi-cloud world. Customers should look to design their IT deployments to address these business outcomes:

- Modern lifecycle management with cloud simplicity
- Unify compute management with a centralized console for self-service operation
- Automate tasks for efficiency to reduce manual effort in deployment and achieve seamless, simplified support and lifecycle management
- Securely bring cloud agility to distributed compute infrastructure

Hybrid and multi-cloud computing has changed the way people work; modern technology must keep up with these changes. As data grows massively and becomes more widely distributed, IT teams must deal with greater security risks, more demanding workloads with more specific requirements, and the need to manage assets in more places.

It has become clear that legacy architectures and legacy security and management practices no longer work adequately. Compute must be scalable and optimized for the performance requirements of special workloads as well as resource-intensive applications such as AI and ML. Many IT organizations want new business models as well. Some want opex and some want capex payment options; some want to manage their systems themselves; yet others want a vendor- or cloud-managed service.

By adopting hybrid cloud and as-a-service delivery, organizations can reduce downtime and data loss from data center disruptions. They can also improve load balancing and distribution of critical operations.

Important Information About this Report

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Hewlett Packard Enterprise is the global edge-to-cloud company that helps organizations accelerate outcomes by unlocking value from all of their data, everywhere. Built on decades of reimagining the future and innovating to advance the way people live and work, HPE delivers unique, open and intelligent technology solutions as a service. With offerings spanning Cloud Services, Compute, High Performance Computing & AI, Intelligent Edge, Software, and Storage, HPE provides a consistent experience across all clouds and edges, helping customers develop new business models, engage in new ways, and increase operational performance. For more information, visit: www.hpe.com.

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