Hewlett Packard Enterprise

HPE's IT organization gets a new style of storage

Agility, flexibility, and cost-efficiency drive IT leader's adoption of its own HPE 3PAR StoreServ technology

Objective

Improve ability to respond to rapidly-changing business needs while keeping costs under control

Approach

Leverage enterprise-class HPE 3PAR StoreServ Storage arrays to reduce storage capacity requirements and costs while improving service levels and responsiveness

IT Matters

- Thin provisioning capabilities increase storage capacity utilization by 56%

- 10x gains in performance

- Lower costs by 25% without compromising service levels by leveraging Adaptive Optimization

Business Matters

- Nimbler IT services enable business to respond more quickly to the market and customer needs, supporting long-term competitiveness and profitability

- Storage capacity savings of 79% allow HPE to keep IT equipment and operating costs down, improving the company's bottom line

- Company can non-disruptively scale its infrastructure to accommodate future data growth without resorting to reactive and costly ad hoc upgrades

Hewlett Packard Enterprise (HPE), a $120 billion company with five major business lines and an employee base of more than 250,000 people, faces many of the same IT challenges as other global enterprises at hyperscale: it must accommodate ever-increasing demands for business services without allowing its IT costs to spiral out of control. So the company embraced a solution from its own hardware portfolio: HPE 3PAR StoreServ Storage, modern Tier-1 storage for mission-critical IT-as-a-Service (ITaaS) and cloud environments. And the benefits of implementing this storage solution have been substantial, including increased storage capacity and density, as well as more agile, responsive IT services that better meet HPE's business needs.

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> "It's impossible to know what our business will need in six months, let alone a year from now. But with HPE 3PAR StoreServ, we're ready. No matter what, we have the flexibility to enable critical business services quickly and easily."
>
> – Dan Demcak, manager, HPE IT Storage Engineering, HPE

As a global leader in enterprise IT solutions, HPE invests considerable time and resources in understanding the challenges that face enterprise IT organizations. But HPE is also a worldwide producer of consumer and business technology solutions—and in that role, it faces many of those exact same challenges itself.

New generations of user devices, including smartphones and tablets, have spurred demand for richer user experiences and "anytime, anywhere" application access. Unprecedented levels of collaboration and communication have led to mind-boggling increases in the amount of data flowing over enterprise networks. And through it all, cost pressures on IT organizations have—if anything—only intensified. As noted by Bill Veghte, Enterprise Group EVP and GM, HPE, "Enterprise IT is under huge pressure to simplify, to go faster, [to] innovate . . . [but] at a lower and lower cost."

HPE's IT organization is well aware of those pressures, particularly within its data storage services group. Supporting the business requires HPE IT to drive ongoing improvements in flexibility and responsiveness. Yet it must also find ways to drive cost efficiencies—despite recent increases in HPE's data storage capacity requirements of 35% year-over-year.

So while HPE has long relied on a combination of HPE EVA Storage and HPE XP Storage arrays within its own data centers, it has made the strategic decision to invest in HPE 3PAR StoreServ Storage arrays, which will now become HPE's primary storage platform.

Business-critical applications in a multi-tenant, multi-tier environment

HPE 3PAR StoreServ is deployed within HPE IT as a multi-tenant platform. Each of the HPE 3PAR StoreServ systems deployed is configured with SAS, Nearline, and Solid State Drive (SSD) hardware to support Tier 3, 2, and 1 storage requirements, respectively. Of the systems deployed within HPE's IT environment, 61% of each HPE 3PAR StoreServ system is comprised of Nearline drives, 36% SAS drives, and 3% Solid State Drives (SSDs). This configuration allows each HPE 3PAR StoreServ system to support as many as 200 physical servers, and dynamically leverage the performance characteristics of these various capacity tiers for cost-effective performance optimization. This allows HPE to lower its hardware cost/GB by 25% as compared to using only SAS drives, without compromising performance or service levels.

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"Things are moving faster than ever in business today. That's why we need HPE 3PAR StoreServ."

- Mike Wilhite, director, HPE Storage and Backup Solutions

"With HPE 3PAR StoreServ, we can share our infrastructure as a utility storage service," explains Mike Wilhite, director, HPE Storage and Backup Solutions. "3PAR mesh-active architecture and wide striping ensure the array has no performance hotspots. This allows us to drive consolidation projects with confidence that the array can handle the mixed workload requirements effectively."

The HPE 3PAR StoreServ Storage deployment at Hewlett Packard Enterprise supports a number of business-critical services, including the company's hpe.com web applications; its virtualized environments (both VMware and Hyper-V), Microsoft® SQL Servers®; and the 1,000-server internal private cloud used by the HPE IT organization.

HPE 's 300,000-mailbox Microsoft Exchange platform also runs on HPE 3PAR StoreServ Storage technology; that implementation alone requires 4.5 petabytes of allocated storage.

Thin built-in

After deploying HPE 3PAR StoreServ Storage, HPE's IT organization immediately achieved a number of benefits, starting with capacity savings of 79% as compared to its previous environment. "HPE 3PAR StoreServ stands out from other storage technologies because of its built-in thin capabilities," notes Dan Demcak, manager, HPE IT Storage Engineering, HPE. "Not only do we get more usable TBs per array, we also get more storage space per data center floor tile."

The HPE 3PAR StoreServ platform also allows Hewlett Packard Enterprise to utilize its storage array capacity more effectively. Previously, HPE storage administrators estimated the capacity required for given applications and allocated that capacity accordingly—typically around 85% of the arrays' total space. Once that space was claimed for particular workloads, however, no other applications had access to it. As this scenario was duplicated many times across the HPE data center landscape, the impact on storage utilization rates was substantial.

HPE 3PAR StoreServ Storage, however, can shift storage to applications dynamically, on an as-needed basis. With HPE 3PAR Thin Provisioning software, HPE's IT organization can safely over-allocate storage by 25%, a capability that means it is less reactive in managing its storage environment. "With 'thick' provisioning, there's a trade-off," Wilhite explains. "Either we have to purchase enough extra storage as a hedge against future demand, or we incur a risk that our capacity will run out. But with HPE 3PAR StoreServ Storage, we can rely on thin provisioning to better utilize available storage and leave less unused storage on the array. We're less likely to waste storage capacity."

"We have been pleased with the increased levels of reliability that we have observed to date with these platforms."

- Dan Demcak, manager, HPE IT Storage Engineering, HPE

Less-reactive management, in turn, helps HPE lower its storage TCO. For example, the team is less likely to be forced to migrate applications to a new array when application growth occurs—a scenario the company wants to avoid because it drives up TCO. The storage environment is also more standardized because HPE purchases arrays in blocks; every array is identical.

"We're currently utilizing 3PAR StoreServ to allocate 125% of a storage array's capacity versus 85% in the previous environment—which allows for a higher utilization rate of the asset and resulting in a lower overall cost."

– Mike Wilhite, director, HPE Storage & Backup Solutions, HPE

10x performance gains

Another benefit HPE has achieved by implementing 3PAR StoreServ Storage is performance gains. The platform delivers a 10x performance improvement compared to HPE's previous environment.

The HPE 3PAR StoreServ systems have also been highly stable. "We have been pleased with the increased levels of reliability that we have observed to date with these platforms," notes Demcak.

More nimble, more responsive

Today, HPE 3PAR StoreServ Storage represents 21% of HPE's storage capacity within its six U.S. data centers. The technology also plays a major role in boosting storage capacity at HPE's remote managed compute sites located in areas such as Boeblingen, Germany and Bangalore, India. At these remote managed computing locations, over 90% of the storage is HPE 3PAR StoreServ.

With time, HPE expects to convert even more of its storage to HPE 3PAR StoreServ technology by replacing HPE XP Storage arrays with HPE 3PAR StoreServ systems.

As this transpires, HPE will increasingly realize the vision it articulates as the New Style of IT. "With HPE 3PAR StoreServ, we are modernizing our service capabilities," says Demcak. "It's more than providing solid, usable storage. It's the capabilities that we gain as a result: the ability to be more nimble and respond more quickly to the business."

"When customers come to us and say 'we have a new project, we need 15 servers and 20 terabytes of storage, and we need it this week,' we have to be ready to respond," adds Wilhite. "The 3PAR StoreServ platform allows us to react to changes in our business quickly and easily, without additional staff or equipment. It gives us what we need to keep HPE competitive in our industry."

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