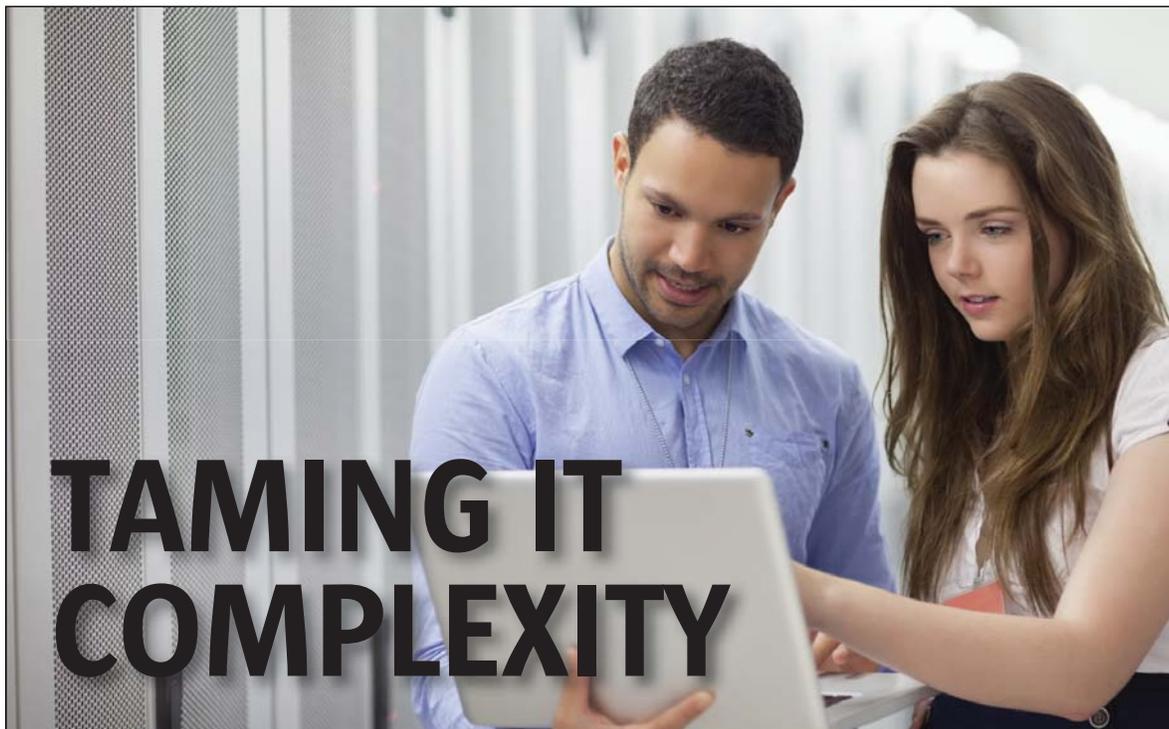


Tech Outlook



HP OneView offers a frightfully good approach to infrastructure management.

Like the fictional Dr. Frankenstein’s famous creature, most computer networks are a complex hodgepodge of things that were not specifically designed to work together. After a few years of cobbling together disparate types of hardware, software

and communications protocols, many network engineers may indeed feel as though they’ve created a monster.

The good news is that ProSys can show you how to tame the beast with HP’s OneView IT infrastructure management platform.

“IT complexity is a real problem today, and many organizations are spending huge sums of money trying to integrate mismatched applications and systems,” said Matt Merriman, VP of Professional Services, ProSys. “The time, effort and expense involved is causing people to take a hard look at traditional infrastructure practices.

“We believe HP’s OneView offers significant value by allowing customers

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TECH OUTLOOK

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Taming IT Complexity

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to dramatically simplify the data center and shift their focus to innovation instead of operations.”

A New Approach

Organizations of all sizes, industries and regions report increasing complexity within the data center. A new IDC study cites disparate systems and standards, continued dependence on legacy systems, unpredictable business demand and the growing need to support mobile computing as some of the key components of IT complexity.

Part of the problem is that most data centers are based upon decades-old design concepts in which commodity x86 servers from a variety of vendors are coupled with separately purchased business and professional software suites. Having evolved in a piecemeal fashion, they lack the overarching rationality needed to streamline management and control costs.

With OneView, HP delivers simplified and consistent management across servers, storage and networking. It was developed in collaboration with more than 150 customers across 30 real-world data centers worldwide over four years, and the result is a fresh management approach that shifts the focus from how devices run to how people work.

“HP OneView improves productivity for IT administrators with an intuitive user interface and automated intelligence that simplifies common tasks,” said Merriman. “It has

a contemporary, web-like design that delivers an instantly familiar workspace for your entire IT team, along with a consistent view of your infrastructure.”

Out of the Tree

Designed for the HP BladeSystem, HP ProLiant Generation 8 and HP ProLiant Generation 7 servers, HP OneView builds upon HP’s mission of driving complexity out of the data center. Over the past several years, HP has pushed simplicity and agility with converged infrastructure solutions that tightly integrate compute, storage and network resources to deliver virtualized, application-aware and highly automated technology environments. However, most converged infrastructures still rely heavily upon legacy network management software.

These legacy management tools largely evolved to serve heterogeneous environments consisting of both HP and non-HP components. They feature a traditional tree-and-branch network representation of selected network devices and their associated modules, which require administrators to drill down through each element to discover and diagnose network issues.

“One of the design principles of OneView is to present to users exactly the information they need, organized in the way they need it,” said Gary Thome, VP and Chief Engineer, HP Enterprise Server Business. “For example, there’s no tree navigation view of the Internet — it just doesn’t exist. How do we find things there? We find it with search. We thought about it and said, ‘Why not borrow the search metaphor and bring it to the IT infrastructure.’”

The HP OneView architecture builds upon the open REST API, the way modern web-based architectures and applications are designed. A dashboard allows users to view the entire data center in seconds. The view is equally simple whether a customer has 16 devices or 640, and more information is just one click away. With typical tree-and-branch tools, it can take more than 30 clicks to access the same information.

Search, Templates and More

OneView’s Smart Search feature allows administrators to find key information in seconds rather than hunting through online and offline records. Smart Search is built into every task to provide immediate access to device, event or task information. Smart Search also allows administrators to search, view and filter all alerts, which can then be assigned to specific users and annotated with notes from the administrator.



Another customer-inspired feature, MapView, examines the relationship between devices, connections and status to help administrators find, triage and fix problems in seconds or minutes.

Customers also wanted the ability to create templates to do much of the heavy lifting in OneView. Workflow templates can be created to capture best practices and policies to increase productivity and enable compliance and consistency. Team leaders can create templates with predefined server and networking profiles to dramatically streamline hardware implementation. These templates can ensure that the infrastructure for thousands of workloads is provisioned consistently, regardless of who does the provisioning.

Such automated intelligence combined with an intuitive interface improves productivity by simplifying common tasks. The most common data center processes, such as deployment, updating, migrating and troubleshooting, are reduced from hours or days to minutes.

For example, provisioning hypervisors across 16 servers with traditional tools requires two hours and 50 minutes of administrative time, on average, compared to just 14 minutes with HP OneView. The process of retiring a virtual LAN (vLAN) requires only four steps and 30 seconds of administrative time with HP OneView, compared to 480 steps and more than two hours with a traditional tool.

HP says OneView will allow organizations to manage HP infrastructure with a 42 percent lower TCO and a 220 percent ROI. HP also claims that workloads can be migrated up to five times faster than with manual operations, server configuration is nine times faster and network configurations are 24 times faster.

“Resource-strapped organizations today are looking for infrastructure management platforms that will unchain them from spending countless hours on mundane administrative tasks to focus more on innovation,” said Matt Eastwood, group vice president and general manager, IDC. “The market is primed and ready for an infrastructure management platform that is more intuitive and built for the needs of IT today — not the days gone by.”

With scavenged parts, a few nuts and bolts, and one well-timed lightning strike, Dr. Frankenstein created one of literature’s most famous monsters. Similarly, years of organic growth have created a real-world horror story in the form of networks too large and complex to manage effectively. With OneView, however, ProSys is helping customers streamline operations to ensure a happy ending.

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Avoiding VDI Bottlenecks

What to look for in a storage solution for a virtual desktop environment.



Virtual desktop infrastructure (VDI) is a mature technology with proven benefits, but many organizations have hesitated to deploy it due to the perceived total cost of ownership. There is little question that VDI is more expensive than a traditional PC environment in terms of upfront investments. Some organizations have come away with a sense that these upfront costs outweigh the operational and strategic advantages of VDI.

Storage continues to be a major challenge in designing and optimizing a VDI environment. Because all virtual desktop environments are centrally stored on servers, and images and data from virtual desktops are constantly being updated and backed up, the cost to meet initial and ongoing VDI storage requirements can be significant.

In addition to the raw storage capacity needed to handle the virtual desktops, organizations must ensure that the storage environment can handle the VDI workload. Without careful planning, I/O bottlenecks can occur when a large number of virtual desktops attempt to access storage at the same time. A VDI environment has a high risk of performance degradation and downtime due to boot and login storms and write bursts.

Because users are sharing the same physical infrastructure, any performance problems or outages have a significant impact on operations. Organizations must give careful consideration to the capacity, performance and availability of the VDI storage infrastructure.

Understanding Capacity Requirements

A typical virtual desktop can require anywhere from 10GB to 20GB or more, depending upon the applications installed. As a result, large VDI deployments must be able to expand to several terabytes or more. To keep costs in line, VDI storage arrays should allow for expansion, with incremental capacity and upgradeable components.

The good news is that VDI is well suited to data reduction techniques such as de-duplication. Because most VDI data is a copy of the master operating system image, VDI de-duplication rates can reach 90 percent. As a result, organizations should look for VDI storage solutions with integrated de-duplication capabilities.

Sizing a VDI storage environment depends upon whether the organization plans to deploy persistent or non-persistent VDI. Persistent VDI means each desktop will have its own disk image, with user settings that are

saved and appear every time the user logs in. Persistent desktops are customizable, making it easier to switch from a physical desktop to VDI. However, more storage capacity is required and image management is more complex.

With non-persistent VDI, no user settings or data are saved and the image reverts to a standard master image every time the user logs off. Non-persistent desktops are simpler to manage, offer more security and require less storage, but allow for little application and personalization flexibility.

Because most pre-VDI environments use persistent images, it often makes sense to continue this approach with VDI instead of reconfiguring desktops and trying to develop a universally acceptable image. Non-persistent VDI is more likely to waste time, complicate the shift to VDI, and upset users who enjoyed the customization of a persistent desktop.

The Performance Challenge

Capacity and performance are tightly linked. VDI storage arrays should be able to handle I/O bursts even when nearing capacity — costs will explode if capacity has to be overprovisioned to keep up with performance demands. Additionally, VDI workloads are highly random so most read requests must come from physical storage rather than cache. Virtual desktops are also heavily oriented toward write requests, unlike the typical enterprise application.

Some organizations struggle with VDI because they simply choose the same vendor that deployed their server storage environment. This is a flawed approach because VDI storage requirements are very different from server storage requirements. Traditional enterprise storage arrays can't cope with the read/write demands of VDI.

There are a number of VDI-specific storage solutions available today, with more and more storage vendors jumping on the bandwagon. Several vendors take a hybrid approach with a mix of hard disk and flash storage technologies: Flash arrays are used to accommodate boot storms and other peaks in I/O intensity while lower-cost hard drives are used for user profiles. However, those commodity hard drives often become the weak link in the chain.

A VDI environment requires a different way of thinking, and storage is no exception. It's important to understand the differences between VDI and traditional server storage and choose a solution that delivers the capacity and performance that VDI demands.



Full Speed Ahead

Application acceleration and WAN optimization have become critical to business success.

Aesop's tale of the tortoise and the hare is meant to illustrate that the race does not always go to the swift. But the fable doesn't quite reach the winner's circle when it comes to network performance. That is an area in which speed and success are indisputably linked.

Organizations increasingly need to deliver server and desktop virtualization and content-rich collaboration tools

across the wide-area network (WAN) to branch offices and mobile workers. According to the Webtorials 2014 Wide Area Networking State-of-the-Market Report, the three most important WAN-related issues are improving application performance, supporting real-time applications such as voice and video, and supporting mobile users.

WAN performance is particularly critical given the dual trends of data center consolidation and cloud com-

puting. Many organizations are consolidating applications and files into centralized data centers and the cloud, relying upon the network to connect users, systems and resources across locations. But increasingly complex applications and growing file sizes have caused serious performance issues. Increased latency continues to generate poor response times, which threaten productivity. These issues are especially pronounced on WAN links connecting branch offices.

Given the vital importance of supporting remote and mobile workers, organizations are looking for ways to simplify and accelerate application and data delivery, both from the data center and the cloud. As a result, they are recognizing the strategic value of application acceleration and WAN optimization technologies that speed response times and improve the user experience.

Multiple Approaches

According to IDC, organizations traditionally have taken a piecemeal approach to WAN optimization and application acceleration, focusing on the requirements of individual applications rather than the overall WAN infrastructure. However, more organizations are beginning to look at the WAN holistically in anticipation of growing bandwidth demands, disaster recovery requirements and cloud integration.

To ensure that applications are delivered consistently and predictably to end-users, organizations are implementing solutions that accelerate the performance of any TCP-based application across the WAN. These optimization and acceleration technologies help organizations improve data throughput, speed application response times, and enable the consolidation of branch office server, storage and backup infrastructures for easier management and lower capital and operational costs.

Application acceleration and WAN optimization attack typical WAN limitations from different perspectives.

Application acceleration relies upon algorithms to improve application performance over IP networks. It prioritizes mission-critical traffic to maximize WAN throughput, helping to guarantee quality of service (QoS) and improve the user experience by controlling bandwidth usage and priority, avoiding network congestion and packet delays.

Application acceleration platforms load-balance incoming requests and off-load the repetitive, CPU-intensive tasks typically performed by servers, enabling the servers to operate much more efficiently. Application acceleration solutions assess bandwidth usage, prioritize network traffic, cache redundant data blocks, and enforce policies to block certain applications or user-based restrictions.

More Bang for the Buck

WAN optimization solutions address application performance prob-

lems caused by bandwidth constraints, latency and protocol limitations. Data reduction technologies such as compression and caching recognize repeated traffic patterns, such as those associated with frequently requested files, and store them locally so they don't have to travel over the WAN each time. As a result, WAN optimization solutions can reduce some WAN traffic by up to 80 percent.

WAN optimization appliances work at the packet level by compressing data streams, monitoring traffic flows, shaping data and managing applications from a protocol perspective. These solutions decrease the number of bits crossing the WAN and therefore improve response time for transactions. This can result in better performance and cost savings by making WAN circuits act as if they have more bandwidth than the organization is paying for.

These techniques improve applications performance without the expense of adding bandwidth. Better application performance translates to better productivity, better collaboration, better customer experiences and faster business transactions – all of which lead to a better bottom line.

Slow and steady may have won the race in Aesop's fable, but that moral doesn't apply to network performance. Poorly performing applications negatively impact productivity, customer service and ultimately the bottom line. With application acceleration and WAN optimization solutions, organizations can maximize their existing bandwidth to control costs, enable data center consolidation and provide consistent and predictable application performance across far-flung networks. That combination of benefits is hard to beat.



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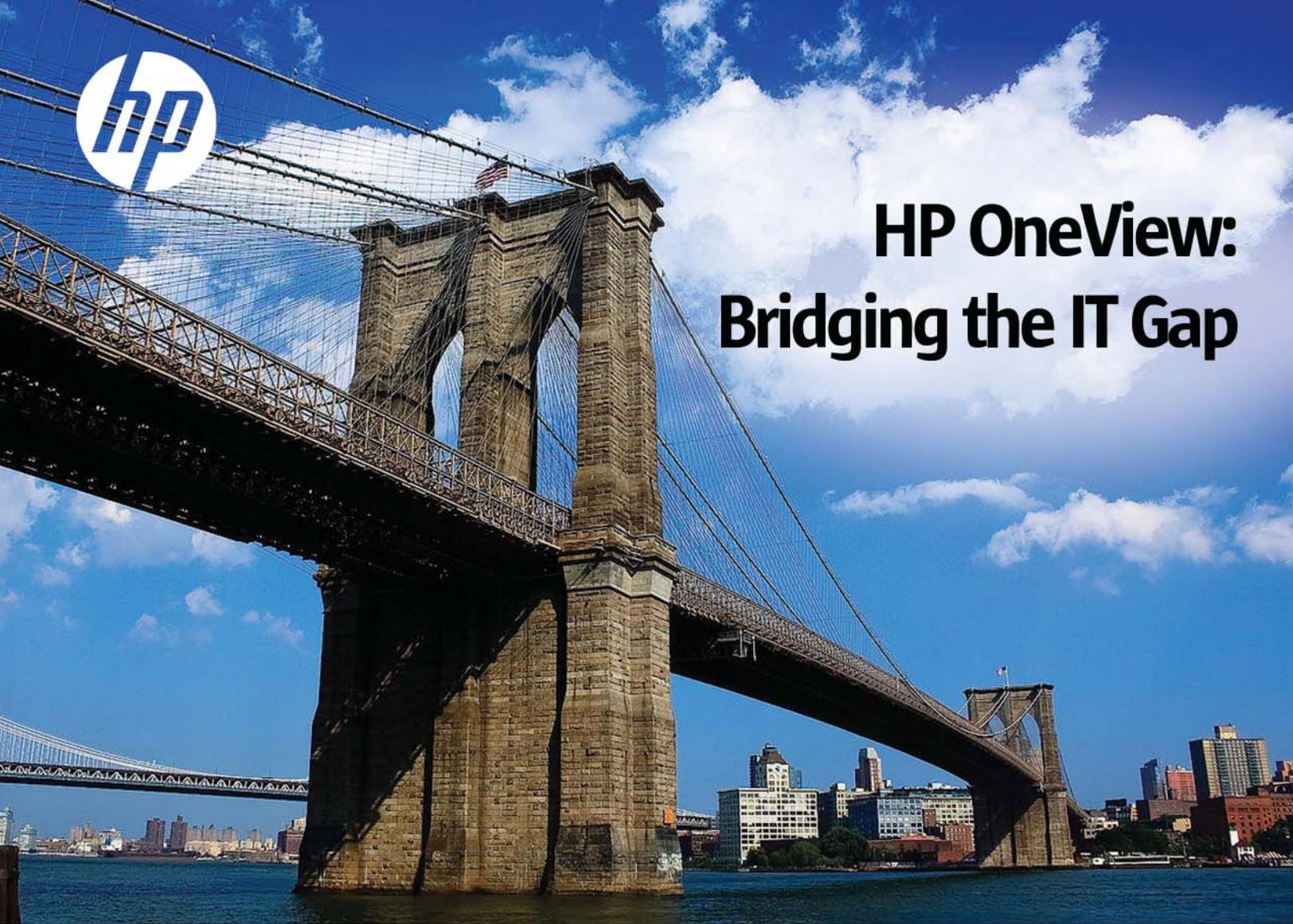
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HP OneView: Bridging the IT Gap



A better way to manage IT infrastructure

Most data centers today use 10 or more tools to monitor their infrastructure and applications. Some organizations use 50 or more tools. Each tool operates differently — different user interfaces, different APIs, different data models —and none of them help your administrators work together.

HP OneView is designed to help you overcome today's IT management gap by allowing teams to work in a more natural and collaborative way. By shifting the focus from “how devices run” to “how people work,” HP OneView delivers unprecedented ease of use so you can deploy and manage infrastructure faster, at lower cost, and at virtually any scale.

Contact your ProSys representative to learn more.

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