PROSYS

Tech Outlook

Beyond Backup

HP StoreOnce transforms data protection by tightly integrating backup, snapshot management and federated de-duplication.

Once upon a time, "data protection" was synonymous with "backup." Today, however, organizations need a broad spectrum of data protection solutions to meet increasingly stringent recovery requirements.

According to research by Enterprise Strategy Group (ESG), 83 percent of organizations have a downtime tolerance of three hours or less for high-priority applications. For 49 percent of organizations, downtime tolerance for high-priority applications is just 15 minutes.

"Legacy backup and recovery solutions cannot meet these requirements," said Tommy Whatley, VP of Advanced Services, ProSys. "While backup remains a vital part of any data protection strategy, organizations need a variety of solutions to achieve their availability and recoverability goals. Snapshots and replication have become essential."

ESG research shows that 90 percent of organizations are supplementing their backup strategies with snapshots, replication or both. The problem is that these technologies are often deployed in a piecemeal fashion, with administrators choosing their preferred platform for each data protection function.

"Backup alone is fragmented in many organizations, with different solutions in place for physical and virtual servers, virtual desktops and various application workloads. Snapshots and replication add to the complexity," Whatley said. "This approach requires more storage capacity, more backup

Beyond Backup

repositories, more bandwidth and more management resources, all of which translate to higher costs."

HP StoreOnce Backup solves these problems by providing one agile, efficient and secure backup and de-duplication solution for the enterprise. When combined with HP StoreOnce Recovery Manager Central (RMC) software and HP 3PAR StoreServe primary storage, organizations gain a highly integrated data protection platform that delivers high-performance snapshots and application-aware management while reducing costs and keeping pace with rampant data growth.

Simplified Data Protection

HP StoreOnce provides administrators with a single, centralized interface for managing backup, recovery, replication and disaster recovery processes. An intuitive dashboard provides the analytical insight administrators need to better utilize backup resources and make more informed decisions about future capacity requirements.

A key feature of HP StoreOnce is federated de-duplication. When various backup, snapshot and replication solutions are working independently of one another, de-duplication software can't scan files from every system and files are backed up more than once. HP StoreOnce Backup with HP StoreOnce Catalyst software centralizes backup data and detects duplicate data from all sources.

"With HP StoreOnce, only one de-duplication solution is required for the entire enterprise," said Whatley. "De-duplication can occur at the application source, backup server or target appliance. This conserves both storage

and bandwidth by transmitting data in its de-duplicated state."

HP StoreOnce Backup has a scale-out design that grows seamlessly with increased storage demands, and a highly resilient architecture with autonomic restart that eliminates failed backup jobs. It is available in a range of capacity points that are suited for large enterprises, midsize data centers, regional offices, small businesses and remote locations. It can be deployed as a pur-

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pose-built appliance or a virtual storage appliance (VSA) that reduces storage costs by up to 86 percent, and requires 50 percent less rack space and 70 percent less power.

"Because the StoreOnce VSA utilizes the same de-duplication and replication software as the physical StoreOnce appliance, data can be exchanged without the need to reconstruct or rehydrate. This reduces overhead costs and improves bandwidth efficiency, particularly for remote office environments," Whatley said.

Eliminating Tradeoffs

HP recently announced several enhancements to the StoreOnce VSA, which now provides 50TB of storage capacity. Increased kernel-based virtual machine hypervisor support allows for Backup-as-a-Service consolidation, and

integration with VMware vSphere and Microsoft Hyper-V has been improved. The StoreOnce 6500 model now supports system-wide de-duplication across eight nodes to simplify management and boost performance. Microsoft SQL, Symantec NetBackup AIR and Accelerator are now included within the StoreOnce Catalyst software ecosystem.

HP has also introduced StoreOnce Recovery Manager Central (RMC), which integrates StoreOnce Backup systems with HP 3PAR StoreServe flash-optimized Tier 1 storage. This converged data protection solution combines the instant availability of snapshots with the robust protection of backup for simple, reliable and fast protection of mission-critical applications.

"Snapshots provide point-in-time copies of data for fast, non-disruptive recovery. But snapshots alone cannot provide comprehensive protection due to retention limitations, corruption vulnerabilities and dependence on the underlying storage system. Backup is also required," said Whatley.

"HP StoreOnce RMC eliminates these tradeoffs. This application-managed solution meets stringent recovery SLAs — snapshots can be backed up directly from StoreServe to StoreOnce as self-contained, fully independent volumes. And because StoreOnce RMC can be managed directly from HP OneView for VMware vCenter, applications owners can control backup and recovery directly from their preferred native interfaces."

As their tolerance for downtime has decreased, organizations have supplemented traditional backup solutions with snapshot and replication tools. Multiple systems are necessary to meet data recoverability requirements, but implementing disparate solutions creates a fragmented data protection environment that increases costs and complexity. HP StoreOnce Backup and RMC provide industry-leading performance, scalability and federated de-duplication in one easy-to-manage solution.

News Briefs

Identity Theft Top Complaint Again

Identity theft topped the Federal Trade Commission's national ranking of consumer complaints for the 15th consecutive year, while the agency also recorded a large increase in the number of complaints about so-called "imposter" scams, according to the FTC's 2014 Consumer Sentinel Network Data Book.

Imposter scams, in which con artists impersonate government officials or others, moved into third place on the list of consumer complaints, entering the top three complaint categories for the first time. The increase in imposter scams was led by a sharp jump in complaints about IRS and other government imposter scams. Debt collection held steady as the second-most-reported complaint.

"While identity theft remains a huge issue, consumers should also keep a close eye out for imposter scams," said Jessica Rich, director of the FTC's Bureau of Consumer Protection. "Whether it's pretending to be the IRS during tax season or making false promises of a lottery win, scammers are increasingly sophisticated in their efforts to deceive consumers, but the FTC will continue working to shut these scammers down."

The Consumer Sentinel Network Data Book is produced annually using complaints received by the FTC's Consumer Sentinel Network. That includes not only complaints made directly by consumers to the FTC, but also complaints received by state and federal law enforcement agencies, national consumer protection organizations and non-governmental organizations.

Researchers Smash Wireless Record

Researchers at the 5G Innovation Center (5GIC) at the University of Surrey in England have shattered wireless data transmission records by reaching one terabit per second (Tbps), which is more than 65,000 times faster than the current 4G average of 15Mb. At that speed, one could download 10 full-length movies in less than a second.

5G, shorthand for fifth-generation wireless, is the next phase of mobile telecommunication standards. Industry analysts say it should reach the market by 2020. Final technical standards are expected to be drafted in 2019.

A major increase in download speeds will help streaming video and instant app updates. 5G will also bring shorter communication delays that will enable fast-response services like augmented reality, self-driving cars and online gaming features impossible today. In addition, 5G should help sweep billions of new devices into the so-called Internet of Things.

5GIC director Professor Rahim Tafazolli said there are still potential problems to resolve.

"An important aspect of 5G is how it will support applications in the future," he said. "We don't know what applications will be in use by 2020, or 2030 or 2040 for that matter, but we know they will be highly sensitive to latency."

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Server Countdown

End of support looming for Windows Server 2003.

Tick tock. Time is running out on organizations that have not yet moved to upgrade from Windows Server 2003. On July 14, Microsoft will cease all support for what was once the most popular server operating system, a workhorse for most of the world's computer networks for more than a decade.

In fact, the total installed base of Windows Server 2003 remains substantial. Although Microsoft has issued multiple updates of the flagship server OS over the years, Windows Server 2003 still accounts for 39 percent of the Windows Server installed base. Microsoft reports that, globally, there remain 24 million instances (half physical, half virtual) of Windows Server 2003 running on 12 million physical servers. North America accounts for more than 9 million of those instances.

At this point, the large installed base represents a significant risk. Microsoft says there were 21 critical updates for Windows Server 2003 in 2014, and 37 in 2013, which strongly indicates that problems will continue to appear on the platform. Once Microsoft stops issuing new security patches or updates, servers running the unsupported OS will be highly vulnerable to attacks that could expose valuable systems and data.

Feds Issue Warning

The Department of Homeland Security considered the risk great enough to issue an alert in November, warning that IT departments running unsupported server software will face elevated cybersecurity risks and hardware compatibility issues. Additionally, key business applications may become unsupported and organizations could find themselves in violation of legal and regulatory obligations.

"With the end of support date nearing, we are strongly urging customers who currently run Windows Server 2003 and have not yet begun migration planning to do so immediately," said Frazer Scott, Director of Marketing & Operations for Microsoft New Zealand. "We are concerned by a recent Gartner report that points out that business leaders may not be aware of the risks they would face if Windows

Server 2003 systems are not migrated in time, leaving IT leaders at fault for the incomplete disclosure if problems later arise."

As with the end of support for Windows XP last year, organizations have been slow to give up on a product that has worked so well for so long. However, IT demands have changed dramatically since Windows Server 2003 was introduced. The IT infrastructure in those days still revolved around networks of desktop computers. Today's servers are expected to run a wide range of mobile, analytic and collaboration workloads. What's more, Windows Server 2003 is a 32-bit OS, whereas newer operating systems run 64-bit environments.

Challenges and Opportunities

As such, organizations should move quickly to make the upgrade, not only to avoid business risk but to improve their ability to take advantage of the latest IT technologies.

For example, upgrading to a newer version of the Microsoft OS such as Windows Server 2008 or Windows Server 2012 gives organizations the opportunity to work with a system that was designed for virtualization from the ground up. Industry experts say any organization running more than a few servers should be virtualizing their workloads. That's difficult to achieve with Windows Server 2003, which was great for setting up specific physical server roles but much less effective for creating virtual machines.

Migration efforts can also create a better understanding of the organization's overall application portfolio. In many organizations, individual departments and end-users have procured and installed applications through informal channels. Although such apps are undocumented by the IT department, they may have become critical to everyday business processes over time. The migration process provides an opportunity to discover and document these applications and make solid decisions about which apps can be retired, replaced or upgraded.

Plan of Attack

IT solutions provider Softchoice recommends a four-part approach for organizations still running Windows Server 2003:

• **Discover:** Take account of how much Windows Server 2003 is in your IT environment, what hardware it's running on, how old it is, and how much of it is virtualized.

• **Understand:** Determine what processes are running on the each of the servers and what dependences they have.

• **Plan:** Once you have a full view of the environment, evaluate your options, and roadmap your migration or upgrade plan. Are you simplify going to upgrade the hardware and software, are you going to move workloads to the cloud, will you implement a hybrid IT solution?

Cloud Migration Worth Consideration

At a time when IT departments are being challenged to reduce the cost and footprint of infrastructure and maintenance, some organizations see the impending end of support for Windows Server 2003 as an opportunity to migrate workloads to the cloud.

In a recent survey of Fortune 1000 companies conducted by application migration developer AppZero, 75 percent of respondents said they wish to, or are considering, moving to the cloud as part of their Windows Server 2003 migration efforts.

Cloud migration is a potential way to avoid the long-term capital costs of upgrading on-premises server platforms. Most organizations will find that the older servers used to host Windows Server 2003 won't be compatible with the newer versions of Windows Server, which require 64-bit CPUs. In addition to cost considerations, cloud platforms can provide improved flexibility and scalability while still delivering the ability to develop, test and host line-of-business applications.

Among public cloud platforms, Microsoft Azure, Citrix CloudPlatform and Amazon Web Services are the most likely avenues for cloud migration from Windows Server 2003. Microsoft Azure is particularly attractive to organizations looking to continue to authenticate users against on-premises Active Directory via integration with Microsoft Azure Active Directory. It also offers continued support for some Windows Server 2003 applications.

"Many Windows Server 2003 applications still in use are Web-based applications. Microsoft has developed a migration suite to simplify conversion of these applications to be run on the Azure platform," said Andre de Beer, Microsoft Cloud Solutions Architect. "Customers upgrading from Windows Server 2003 to Microsoft Azure also ensure compliance."

• **Test:** Begin the migration from Windows Server 2003 and test repeatedly during the process to ensure systems are running and to guarantee uptime of mission-critical programs.

"With less than a year to go until Microsoft pulls the Server 2003 plug, now is the time for businesses to start their migration," said Softchoice executive David Brisbois. "IT management should evaluate their entire technology environments — from hardware and application workloads to the data living on their servers — to figure out the most strategic way forward, be it an on-premises, hybrid or total cloud setup."

Seeking Simplicity
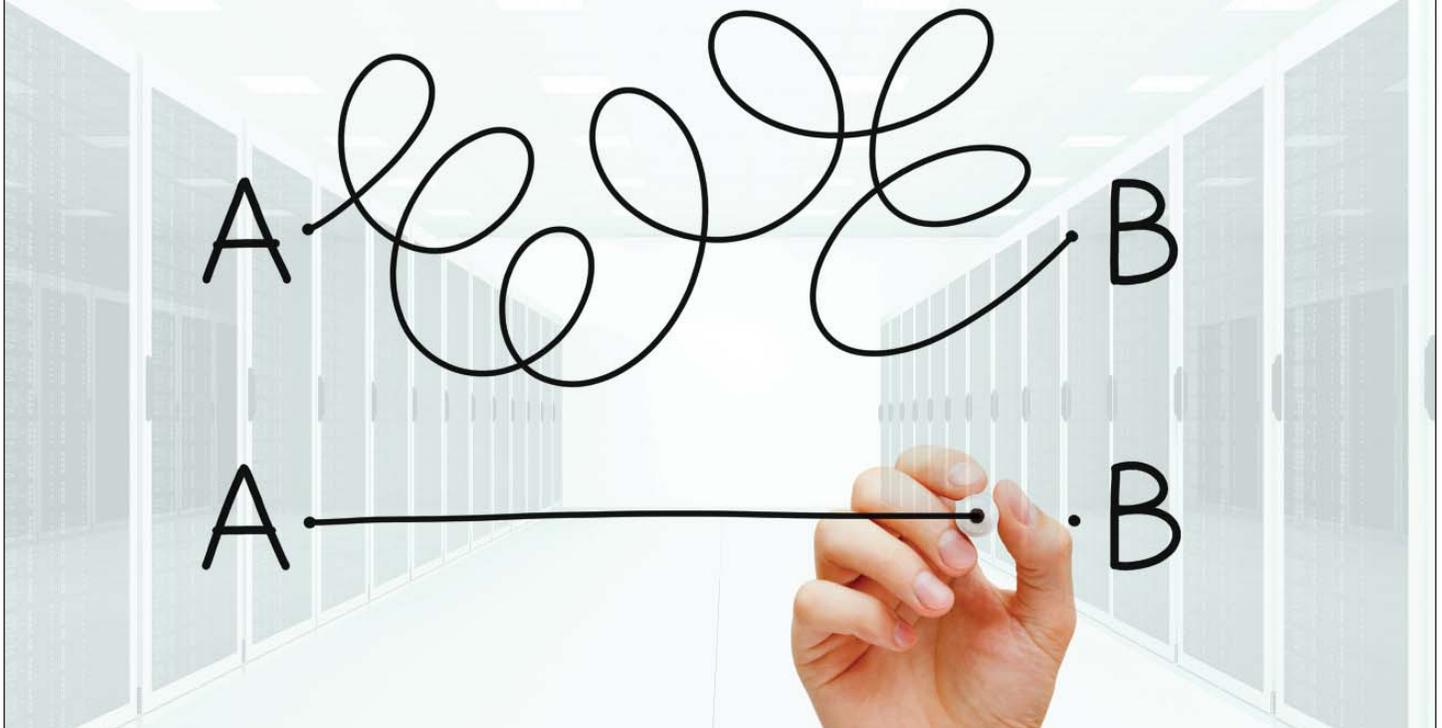
Software-centric hyper-converged solutions eliminate data center complexity.

Leonardo da Vinci said "simplicity is the ultimate sophistication." The recent growth of hyper-converged IT infrastructures represents the latest attempt to apply this 15th-century philosophy to modern data center practices.

Data centers have customarily been built on a box-by-box basis, with devices added as needed, configured independently and managed manually. Years of continually adding servers, storage devices and networking gear to meet evolving business needs has resulted in IT infrastructures so large and complex as to be nearly unmanageable.

Hyper-converged solutions seek to simplify IT through the use of software that controls the physical network and improves agility through increased levels of programmability and automation. This approach also streamlines the typical hardware-centric data center design by tightly integrating compute, storage, networking and virtualization resources into commodity x86 hardware components.

The Next Step in Convergence

Hyper-convergence has evolved from the converged infrastructures developed in recent years as simple, flexible and fast remedies for data center bloat. Converged infrastructures consist of pre-racked and cabled compute, storage and networking components integrated into a unified system based upon a validated reference architecture. This approach shortens deployment time, improves management and delivers one-throat-to-choke support.

There are drawbacks, however. Converged infrastructure solutions are essentially separate hardware components engineered to work together, which can lead to vendor lock-in issues. Additionally, rigid configuration rules severely limit provisioning and expansion. Most converged infrastructure products deliver a standard form factor with a standard maximum number of disks, CPUs and RAM — with no way to deviate from that configuration.

Hyper convergence resolves these limitations by building on key virtualization concepts. These solutions use hypervisor technology to allow distinct hardware components to be integrated while maintaining a high degree of scalability. This enables a modular design approach in which capacity can be quickly scaled out by adding additional modules. That flexibility is important because it provides a building-block approach for those who are moving toward a software-defined data center and a more agile and efficient IT infrastructure.

Streamlined Approach

Hyper-convergence is particularly attractive to small and midsize businesses (SMBs) with limited IT staff because it enables the integration of server and storage resources into a simple, scalable and low-cost replacement of traditional SAN or NAS shared storage. The research firm IDC noted in a recent analyst report that the commingling of storage and compute on a common set of physical resources is a "natural outcome in the evolution of a software-defined infrastructure."

Some hyper-converged solutions also ship with integrated local backup and replication, further simplifying the environment by diminishing the need for expensive backup infrastructures. Many hyper-converged solutions also have the ability to "burst" storage, compute and backups out to a cloud provider, thus extending scalability through on-demand capacity.

Users have the ability to manage, patch and upgrade software from one location. The increased efficiency of creating and managing virtual machines, networks and data stores tend to reduce operational costs as there will be no downtime when performing patches and updates.

Meeting Today's Demands

Legacy networks built on tiers of switches, routers and protocols essentially tie applications to specific servers and require days or even weeks to reconfigure when changes are necessary. That is a major drag on operations at a time when IT departments are facing increased demands from an explosion of mobile devices and content, cloud services and server virtualization.

The ability to deliver data, applications and services simply and quickly gives hyper converged solutions an important role in the modern data center. That's why IDC forecasts a 33 percent compound annual growth rate for the systems through 2017.

"As businesses embark on a transformation to become data-driven entities, they will demand a data infrastructure that supports extreme scalability and flexible acquisition patterns and offer unprecedented economies of scale," said Eric Sheppard, IDC's research director for Storage Software. "Hyper-converged systems hold the promise and the potential to assist buyers along this data-driven journey."

HP StoreOnce Backup

Single federated solution—any way, any how, any scale

HP StoreOnce Backup is available as purpose-built appliance and a virtual storage appliances. Because HP StoreOnce has been virtualized, it significantly reduces or even eliminates the costs to deploy and power physical appliances and provides a universal backup target to any existing backup software. Plus, with HP StoreOnce as the industry's only federated deduplication technology, you can dedupe in any location anywhere and control the movement of dehydrated data across the enterprise using your backup application.

Contact ProSys today to learn more about how HP StoreOnce Backup makes backup more efficient and easier to manage.

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