White Paper

VMware vSphere Virtual Volumes (vVols)— More Important Than Ever

How vVols Helps IT Organizations Keep Pace with the Increasing Demands of a Digital Economy

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Introduction: The Value of vVols

VMware Virtual Volumes (vVols) is a storage integration and management framework built into vSphere that enables external storage systems' functionality to be manageable as part of VMware vSphere deployments. Without question, it is a technology that provides value; in fact, some enterprise IT specialists consider vVols to be *the* best tool for simplifying the management of traditional SAN storage in ways that enables application rollouts to happen much faster.

The vVols management framework abstracts multiple heterogeneous storage systems made by different vendors—enabling policy-based management for increased operational efficiency while reducing typical storage tasks. vVols allows VM admins to leverage all the distinctive capabilities of each of those underlying arrays to best serve the particular needs of different workloads.

With the advent of software-defined storage (SDS), the importance of vVols to an IT environment has only grown. Now, in addition to working with on-premises storage systems, its support capabilities cover off-premises public cloud infrastructure resources as well.

Business Benefits

Storage and virtual infrastructure administrators' lives are no longer just busy, keeping pace with increased digital demands has become a business concern. The true bottleneck to effective IT is finding the right people: as IT demands increase, talent is becoming scarcer. For example, 34% of senior IT decision makers surveyed by ESG reported that they are experiencing problematic skill shortages in the area of IT orchestration and automation expertise, and 32% are dealing with staff shortages in IT architecture and planning.[1]

As businesses ramp investments in data-centric initiatives, those investments not only create additional burdens for IT, but also consume technical expertise away from administrator positions. For example, when a business has an urgent need for people with higher-order skills to do things such as support business applications, incorporate automation, and oversee data mining programs, it means that fewer talented people are available to look after the IT ecosystem. Left unchecked, these personnel shortages inhibit modern digital businesses.

Storage and virtual infrastructure administrators need better automation and abstraction capabilities in order to keep pace with the demands of the business and regain time to work on other tasks.

vVols provides notable automation and abstraction advantages to any IT organization, enabling IT to better support the rest of the business:

- **Consolidated, consistent, and integrated management**—vVols simplifies infrastructure management and provisioning by consolidating multiple datastores on different platforms under a single management layer, one that is familiar to and easily leveraged by VM admins. vVols also offers admins the flexibility to use their VMware management tool of choice, not just vSphere Client, while minimizing, or even eliminating, the need for traditional LUN management. With vVols, the integration work between VMware and the array is already completed, decreasing or even eliminating the need for custom integration. As a result, vVols greatly reduces the burden placed on IT administrators.

- **Enterprise features presented to applications**—Often, with IT solutions that consolidate multiple technologies under one management umbrella, the distinctive value of the underlying technologies is lost or "abstracted away." The vVols framework, however, allows a VM admin to continue leveraging the specific benefits of a given storage solution—features such as snapshots, clones, replication, and QoS. With VMware's storage policy-based management (SPBM), virtualization admins are then better able to match VMs with the right storage array functionality. By improving access to array snapshot technology in this manner, for example, organizations can achieve greater efficiency as well as improved speed of data restoration activities and application test/development operations. These capabilities are

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[1] Source: ESG Master Survey Results, *2020 Technology Spending Intentions Survey*, January 2020.

now able to be managed with greater granularity at the VM level, instead of being applied inefficiently at a LUN level. Organizations get more efficient and better usage of the capabilities they already paid for, which increases the value of their existing storage assets.

- **Improved storage efficiency better tailored to virtual machines**—With vVols, storage capacity is no longer to be pre-allocated to individual hosts to support predicted possible future expansion. Virtualization admins have more control over storage provisioning, and, as a result, storage system capacity can be allocated on demand. The net result reduces the capital cost of storage infrastructure as less storage is sitting there allocated but unused. With direct guest access to storage, overall storage efficiency can be improved with space reclamation, reducing the capital cost of storage. Also, space reclamation is immediate, as with vVols the storage array now knows when a VM has been deleted, so it is immediately able to free the capacity, making it available for future use.

It's especially important to appreciate the breadth of infrastructure support vVols offers. vSAN and vVols are both part of the SPBM framework and can work seamlessly together. vVols supports VMware vSAN, but it also works with a wealth of other storage array solutions produced by VMware partners, including Dell EMC, HPE, Pure Storage, NetApp, Hitachi, IBM, Fujistu, Infortrend, NEC, DataCore, Pivot3, and SANBlaze (drive-testing platforms).

When paired with supported storage software technologies that can also reside on public cloud services, such as vSAN, vVols also works with off-premises public cloud infrastructure services.

Why Now? Market Landscape Research Shows Demands on IT Are Increasing

Today's IT organizations feel pressured to expedite service delivery to keep pace with increasing digital business requirements. Simultaneously, they need to manage an influx of diverse new technologies and control operational costs. For instance, IT must keep pace with the demands of line-of-business executives who are determined to keep their organizations competitive in a modern digital economy.

Remarkably, only 6% of the line-of-business executives ESG surveyed said they regard their company's IT group as a competitive differentiator. Conversely, 25% reported that they actually view IT as a *business inhibitor*. Those who view IT as a business inhibitor said it is because IT processes take too long (43%), and/or it is too difficult for business analysts and other workers to access data they need to do their jobs (43%).[2]

That dissatisfaction reflects a service-delivery problem—a problem caused by the complexity that technology diversity and proliferation is creating on- and off-premises. Case in point: 64% of surveyed IT decision makers viewed IT as being more complex in 2020 than it was just two years previous:

- **37%** identified higher data volumes as a factor driving the increased complexity.

- **28%** identified increases in the number and type of applications as a factor.

- **26%** identified the need to use both on- and off-premises technologies as a factor.[3]

That IT complexity won't subside any time soon, especially now that hybrid and multi-cloud architectures are evolving to become the "standard" for IT operations. 58% of IT managers surveyed by ESG said their organizations leveraged public

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[2] Source: ESG Master Survey Results, *2019 Technology Spending Intentions Survey*, March 2019.
[3] Source: ESG Master Survey Results, *2020 Technology Spending Intentions Survey*, January 2020.

cloud infrastructure-as-a-service (IaaS) in 2019. And 76% of those organizations leveraged more than one IaaS provider. Additionally, 64% of organizations that leveraged IaaS expected their IaaS investments to increase in 2019.[4]

To address rising complexity and free IT staff to serve their business's digital needs and strategic objectives more effectively, IT organizations must simplify on- and off-premises infrastructure management. The way to do so is to use tools that consolidate and add consistency. vVols provides these capabilities for vSphere. It delivers consistent infrastructure management, regardless of the storage technology being leveraged.

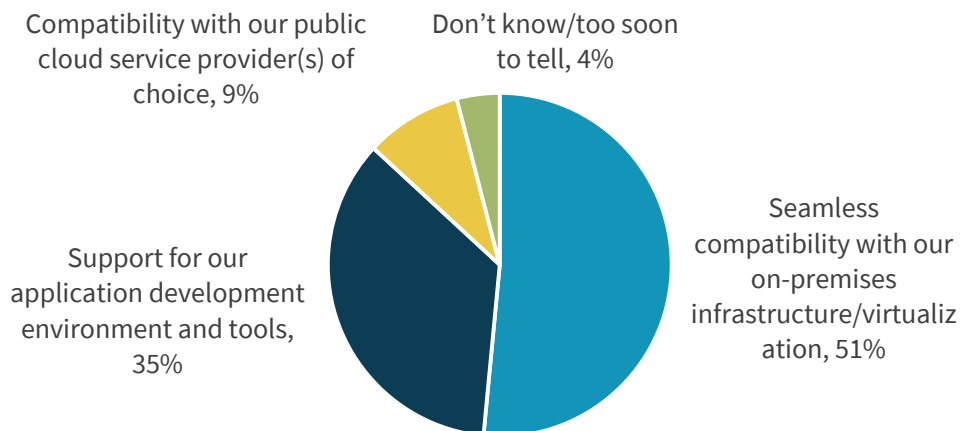vVols should be at the center of any modern IT organization's management framework.

Demands for Consistent Hybrid Cloud Management

IT professionals do have strong opinions about hybrid cloud management. ESG surveyed 358 IT professionals responsible for their organization's on-premises and cloud-based infrastructure and the management software:

- **48%** of the surveyed decision makers identified the ability to manage both on- and off-premises environments as a requirement of hybrid cloud management software.

- **54%** identified off-premises management as being more complex or even much more complex than on-premises management.

- When developing a hybrid cloud strategy, **51%** preferred having management consistency with their existing on-premises infrastructure and virtualization environments (see Figure 1).[5]

Figure 1. The Most Important Aspects of a Hybrid Cloud Strategy

With regard to your organization's hybrid cloud strategy, what is–or will be–the area of most importance in terms of compatibility, vendor partnerships, or feature integration? In other words, what is the most important hybrid cloud strategy consideration? (Percent of respondents, N=358)

Compatibility with our public cloud service provider(s) of choice, 9%

Don't know/too soon to tell, 4%

Support for our application development environment and tools, 35%

Seamless compatibility with our on-premises infrastructure/virtualization, 51%

Source: Enterprise Strategy Group

Additionally, 30% of those IT decision makers identified common infrastructure compatibility as the *main technical objective* of their organization's hybrid cloud strategy.

All of these findings highlight the need for common management across a hybrid cloud environment—a framework that embraces the management capabilities and tools (such as vSphere) already being used on-premises.

Real-world IT Organizations Report that vVols Gives Them an Advantage

Case Study #1: Uludag Electricity Distribution Co.

An electric utility, formerly run by a consortium of companies but now a single independent agency, needed to corral a heterogeneous storage environment and gain control of a fast-growing collection of more than 350 VMs. The near-term goal was to standardize their storage (on HPE 3PAR), minimize storage management, and simplify IT operations. Eventually, the utility wanted to be able to manage that entire infrastructure from a single point.

> *"Now, everything happening in our business is happening faster."*
>
> *—Berkay Balanuye, Systems Administrator, Uludag Electricity Distribution Co.*

To accomplish its objectives, the IT group deployed a deeply integrated instance of vVols. "Now, everything happening in our business is happening faster," Systems Administrator Berkay Balanuye said. Using HPE 3PAR storage along with vVols, they can migrate all their VMs to another cluster faster or create new clusters in 15 minutes. It has also become easier to keep VMs online to ensure higher SLAs.

The team is also realizing its goal of simplified capacity management with automatic, dynamic provisioning, and it's not just provisioning that's easier. Automatic reclamation is also helping them reclaim capacity without having to be involved in the process. And because vVols enables the storage to perform VM snapshotting without any impact to the server, data is being protected more frequently and reliably than it was on traditional LUNs.

Today, the utility is closer to its goal of having a single point of management for its entire IT environment. And the IT team is excited for what comes next.

Case Study #2: Silver Star Brands

Silver Star Brands is one of America's largest direct marketers of consumer gifts and household products. With 5 million orders processed annually, peaking over the holidays, its IT team needed to improve storage performance for the company's legacy ERP system. The team also was hoping to find a way to spend less time managing storage, including manually optimizing performance, in time for the peak holiday catalog sales season.

> *"Our experience has been awesome. It gets us out of the business of managing storage so we can focus on supporting our catalog business."*
>
> *—Bill Van Aacken, Senior IT Infrastructure Engineer, Silver Star Brands*

They made the decision to deploy vVols on Pure Storage. vVols enabled 1:1 relationships for VMs and their storage volumes, which improved both capacity efficiency and manageability. The storage and vVols combination enabled better data protection, too, by automating and simplifying on-premises disaster recovery using Protection Groups.

Silver Star Brands saw a clear positive impact from these moves. With the new hardware and solution design improvements, the IT infrastructure was far more efficient, enabling orders to be processed more quickly and accurately. Leveraging vVols, there was also a 6x improvement in VM recovery times, increasing business resilience as their VMs became recoverable within minutes.

The Bigger Truth

Today, it is imperative for IT admins to continue expanding knowledge and areas of expertise in order to move on to strategic, higher-value tasks. This increase in digital business initiatives is not poised to slow anytime soon, and modern businesses will continue to need more technical talent. IT not only must do more than before, it must do so with less people and do it faster than before. Advanced automation and orchestration technologies such as vSphere and vVols simplify the lives of IT admins, making core IT tasks not only simpler but more efficient, freeing both personnel and infrastructure resources.

As businesses continue down the path to becoming more digital in nature, and more dependent on data and IT services, the efficiency of their IT operations will play a larger, even pivotal, role in determining business competitiveness. Don't be left behind. Look into vVols today. In fact, deploy vVols today. If you have a SAN, especially if you have vSphere, you should be using vVols.

Enterprise Strategy Group is an IT analyst, research, validation, and strategy firm that provides actionable insight and intelligence to the global IT community.