MARKET NOTE

Pure Storage Touts Native Integration with VMware's vVols, VCF for Hybrid Cloud and Cloud-Native Apps

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Pure Storage Touts Native Integration with VMware's vVols, VCF for Hybrid Cloud and Cloud-Native Apps

In conjunction with VMware's VMworld conference, Pure Storage announced four primary upgrades to its storage products in support of VMware environments. Those upgrades will enable a combined view of storage and compute resources for virtual machine (VM) administrators who will be able to easily provision virtual volumes and leverage NVMe-oF with Pure's all-flash arrays, enabling a single management plane for hybrid cloud environments.

Key Takeaways

- **Native integration of Pure Storage's FlashStack, its converged infrastructure product, with VMware Cloud Foundation (VCF):** Pure Storage customers can now take advantage of vVols natively through the vCenter management control panel.
- **Support for Site Recovery Manager, VMware's automated disaster recovery product:** The integration allows enterprises to consume vVols on Pure Storage while protecting their mission-critical applications through the automated disaster recovery toolset, which includes a snapshot and recovery of virtual machines within vCenter or orchestrated disaster recovery with VMware Site Recovery Manager.
- **Support for VMware Tanzu, through both vSphere 7 and VCF 4 and higher:** vSphere with Tanzu simplifies the adoption of Kubernetes on premises, and the same Tanzu Kubernetes distribution can be extended across multiple clouds by using Pure Storage as the underlying infrastructure.
- **NVME-oF with vSphere 7 support:** VMware and Pure Storage can now provide native end-to-end support for NVMe-oF using Pure Storage's DirectFlash Fabric, enabling massive parallelism of the NVMe protocol.

Source: IDC, 2020

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IN THIS MARKET NOTE

In conjunction with VMware's VMworld conference, held September 29–October 1, Pure Storage announced four primary upgrades to its storage products in support of VMware environments.

Pure Storage has had a long-standing development and design partnership with VMware, which dates back to when Pure was in stealth mode.

During an analyst briefing with IDC, Pure Storage emphasized optimizing storage for VMware is a key design principle in the FlashArray//X. In addition, Pure is a VMware Ready Program storage partner, which is the highest level of endorsement for products and solutions created by established VMware partners.

The FlashArray//X is an all NVMe-based all-flash array that supports both SAN and NAS storage access protocols.

Native Integration and Support for vVols with VMware Cloud Foundation on FlashStack

Pure Storage stated VMware Cloud Foundation (VCF) is a strategic partner initiative with VMware, with support on FlashStack to enable greater simplicity, resiliency, and performance compared with alternative options. FlashStack is a joint converged infrastructure platform that consists of Pure Storage and Cisco compute and networking.

Earlier in September, VMware announced that vSphere Virtual Volumes (vVols) was available on VCF 4.1, making it the principal storage layer for an HCI or CI stack. Pure stated its integrations provide end-to-end management with automated deployments of VMware workload domains, which include a vCenter as well as one or more clusters through VMware's Software-Defined Datacenter (SDDC) Manager. Management capabilities also include the ability to independently scale compute and storage resources on demand and deliver nondisruptive software updates for the entire VCF software stack (ESXi, NSX, etc.) via vSphere Lifecycle Manager (vLCM). Both SDDC Manager and vSphere Lifecycle Manager are management tools within VCF.

VMware vVols allows admins using vCenter to manage external storage resources at the virtual machine and virtual disk (VMDK) levels to attach storage policies to them. Without those management tools, storage volumes must be managed at the device level through a storage array management interface.

VMware first released support for vVols with vSphere 6.0 in 2015, enabling an application-centric management paradigm that is the same across both block and file protocols. It offers consistent VM-level visibility to storage teams in vCenter and the FlashArray management interface.

Pure Storage believes that vVols provides much simpler management and storage efficiency than the legacy virtual disk format (VMDKs), which is supported on VMFS and NFS. vVols provides higher performance and enables array-based data services on a per-VM or -container basis. In addition, vVols makes data-centric workflows execute faster and provides for data portability between virtual machines (VMs) and containers.

Extended Support for Site Recovery Manager with vSphere 7 and vVols

VMware Site Recovery Manager (SRM) is an automated disaster recovery product. Pure's integration allows enterprises with VMware on Pure Storage to protect their mission-critical applications through an automated disaster recovery application when using vVols. This integration provides bandwidth-efficient array-based replication and the ability to test a disaster recovery plan without disrupting the production environment through array-based cloning of VMs.

Pure Storage shared that SRM support can be paired with vSphere Metro Storage Clustering (vMSC) on a FlashArray//X ActiveCluster. This configuration provides zero recovery time objectives (RTOs) with orchestration.

Support for VMware Tanzu with vSphere 7 and VCF 4

Tanzu is VMware's Kubernetes container management platform, which was launched at last year's VMworld. In April 2020, VMware announced VCF 4, powered by vSphere 7 with Kubernetes (formerly Project Pacific). vSphere with Tanzu simplifies adoption of Kubernetes on premises, and the same Tanzu Kubernetes distribution can be extended across multiple clouds.

Pure is a VMware design partner for the Cloud Native Storage and vSphere vVols programs, and it believes vSphere with Tanzu is the fastest way for VMware teams to get started with Kubernetes.

Pure Storage provides the Pure Service Orchestrator (PSO) and its recent acquisition of PortWorx as the means to offer developers with a published set of data services to orchestrate persistent storage to containers. Both Pure products provide a Container Storage Interface (CSI)-compliant driver that can be used with vSphere 6.5 and 7 and VCF 4. vSphere virtual machines can now support up to 24TB of memory and 768 virtual CPUs for applications such as SAP HANA, Epic Operational Databases, InterSystems Caché, and IRIS. It can also support up to 96 hosts per cluster — a 50% improvement over the previous release to specifically address the scaling needs of Kubernetes workload deployments. And, to simplify operations of the cloud, VMware also gave it a more cohesive vSphere Lifecycle Manager (vLCM). The vLCM upgrade will allow different vCenter clients to be managed across on-premises and cloud environments, as more users move full-stack HCI deployments. The new feature allows one-click software updates for vSphere, vSAN, and NSX software and the underlying hardware, including Pure FlashArray//X.

Pure Storage is a VMware design partner for the cloud-native storage and vSphere vVols programs. That translates into Pure Storage's arrays being able to become the persistent storage that enables hybrid cloud mobility for containers running on VMware vSphere and VCF. Cloud-native storage and vSphere vVols enable workloads in Kubernetes environments using Pure Storage's FlashArray//X, a container storage interface (CSI)-compliant persistent storage offering. The combination of vVols and CSI with Pure FlashArray//X brings all-flash performance and data services to containerized applications in VMware vSphere environments.

Support of NVMe over Fabrics (NVMe-oF) with vSphere 7

With vSphere 7, VMware and Pure provide native support for NVMe-oF using Pure's DirectFlash Fabric. NVMe-oF enables up to 64,000 parallel queues to a flash device, which provides significant storage performance gains in the form of higher throughput and lower storage latency while also providing a reduction in storage controller and host CPU.

This capability enables vSphere 7 to support more performance-centric workloads and to reduce costs through increased VM and container density.

IDC'S POINT OF VIEW

Pure Storage's VMware integration announcements enable administrators to manage their infrastructure with considerations to applications, including containers, through the VMware Software-Defined Data Center (SDDC) Manager and vSphere Lifecycle Manager (vLCM). Pure Storage enables users to run VCF on Ethernet, Fibre Channel, next-generation fabrics such as NVMe-oF, enabling independent scaling between compute and storage resources and shared infrastructure. In other words, administrators are not building silos as they would when cohabitating storage and compute together.

By providing automated data services to applications in virtual machines and containers, Pure Storage is enabling users to more easily manage with their VMware hybrid clouds through a single, familiar interface. And VMware's latest release of the vLCM upgrade allows different vCenter clients to be managed across on-premises and cloud environments, as more users move full-stack HCI deployments.

LEARN MORE

Related Research

- *VMware Releases Cloud Foundation, vSphere, and vSAN Updates to Streamline Kubernetes Adoption* (IDC #US46869020, September 2020)
- *VMware Cloud Management Portfolio Assessment: SaaS Pivot Targets Converged Cloud, VM, and Kubernetes Control* (IDC #US45933420, August 2020)
- *VMware Adds Full-Stack Integration, Native File Services with Release of vSAN 7.0* (IDC #US46195020, April 2020)
- *VMware Launches VMware Cloud Foundation with Tanzu, Expands Tanzu Portfolio, and Updates Cloud Management* (IDC #IcUS45082119, March 2020)

Synopsis

This IDC Market Note provides an overview of Pure Storage's announcement, made on September 29, 2020, about its integration with vSphere Virtual Volumes with VMware Cloud Foundation and VMware Site Recovery Manager, Cloud Native Storage for Kubernetes on VMware, and NVMe over Fabric.

"Pure Storage has had a long-standing development and design partnership with VMware, and that has afforded it early integration with VMware's advancements in simplifying and automating infrastructure management," said Lucas Mearian, research manager, Infrastructure Systems, Platforms and Technologies Group. "Pure Storage's latest announcement affords VM administrators a more cohesive view of infrastructure as it relates to modern application deployment through a familiar vCenter interface."

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