

VMware vSphere, vSAN & VCF Announcements

Silverton Consulting, Inc. StorInt™ Briefing

VMware® announced enhancements to VMware vSphere®, VMware vSAN™ and VMware Cloud Foundation™ this month.

VMware vSphere 7 Update 2 changes

VMware vSphere 7 has been updated for AI workloads. This includes support for:

- **NVIDIA Ampere A100 GPUs** – the new A100 GPUs come with up to 20X more computational throughput
- **GPU Direct access** – RDMA access between vGPUs can be used to accelerate vGPU activity and migration without IO overhead.
- **Multi-instance GPU (MIG) support** – up to 7 VMs can share the same A100 GPU hardware and MIG using VMs can be migrated to other ESXi hosts (using GPU direct) via vMotion or DRS initial placement to optimize workload availability and GPU utilization.

In addition to the above, vSphere 7 U2 boosts infrastructure security with:

- VMware vSphere **Native Key Provider** – this enables customers to benefit from encryption out-of-the-box.
- **Confidential Containers** – this uses vSphere Pods and the support for AMD Secure Encrypted Virtualization – Encrypted State (SEV-ES) to enhance security for containerized workloads.

VMware vSphere 7 Update 2 also enhances operations with support for **VM suspend to memory** during ESXi quick boot that can speed up patching and software maintenance. It also added **PMEM-aware vSphere High Availability**, i.e., vSphere can now failover PMEM workloads from one ESXi host to another for high availability, e.g. for SAP HANA. Moreover, vSphere Lifecycle Manager now supports vSphere with Tanzu.

VMware vSAN 7 Update 2 enhancements

VMware vSAN 7 U2 now increases cloud-native workload support with **non-disruptive persistent volume resizing** as well as automated migration from vSphere Cloud Provider (VCP) to Container Storage Interface (CSI).

Previously, VMware introduced remote vSAN storage support which allowed vSAN clusters to access storage in remote vSAN clusters. However, previously all servers required vSAN local storage. With vSAN 7 U2, this is no longer required. Now customers can configure **compute only** clusters using servers with no vSAN locale storage that can use local vSAN storage in another cluster. This allows for completely independent scaling of vSAN storage and compute. VMware calls both the vSAN storage and compute

clusters that use that vSAN storage an **HCI Mesh**. Customers can manage storage for non-HCI clusters and HCI clusters from VMware vCenter with consistent operations.

vSphere Storage Policy Based Management (SPBM) also supports HCI Mesh. As such, one HCI cluster could support say encryption while another data reduction/high performance and SPBM will automate storage placement of VMs to one or the other based on storage requirements.

VMware vSAN 7 U2 also supports vSphere Native Key Provider to supply keys for data at rest encryption.

VMware Cloud Foundation – Subscription (VCF-S)

VCF on prem is now available with a subscription licensing option exclusively available through the VMware Cloud Universal Program and VMware Cloud Console. Customers can use VMware Cloud Universal credits to purchase VCF-S services on prem on a per CPU basis for 1- to 3-year terms.

The new VMware Cloud Universal Program allows customers to refresh, allocate and purchase VCF-S licenses for on prem VCF, VMware Cloud (VMC) on AWS or VMC on Dell EMC from a VMware Cloud Console.

Significance

VMware's quick roll out of AI and NVIDIA GPU functionality is impressive. AI workloads are becoming more important to the enterprise every day. The partnership between NVIDIA and VMware announced last year at VMworld 2020 is already proving its worth.

It's interesting to see how VMware vSAN is tackling networked storage advantages. It used to be independent scaling of compute and storage was only available through the use of networked storage. But that's no more.

Through the VMware Cloud Universal program, VCF-S provides licensing option equivalence and flexibility between on-prem and in cloud environments. This may help enterprises adopt a more fluid hybrid cloud environment.

Silverton Consulting, Inc., is a U.S.-based Storage, Strategy & Systems consulting firm offering products and services to the data storage community.

