Solution Profile

2024-25 DCIG TOP 5

ENTERPRISE VMWARE VSPHERE ALTERNATIVES // US EDITION

VergeIO VergeOS Solution Profile

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Enterprise VMware vSphere Alternatives // US Edition

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SOLUTION

VergeIO VergeOS

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DISTINGUISHING FEATURES OF VERGEOS

- All-inclusive software licensing licensed per physical machine in a cluster.
- Globally deduplicates all data.
- Individual VDCs on VergeOS each possess their own data center features.
- Offers a VMware service within each VDC to facilitate VMware vSphere migrations.

VMware by Broadcom Licensing Changes Prompting Enterprises to Reevaluate Their Choice of Hypervisor

Broadcom's formal announcement of the scope of the changes to VMware's software licensing in December 2023 sent shockwaves through many enterprises. Many enterprises expected Broadcom to fully adopt subscription-based software licensing once it completed its acquisition of VMware. However, few enterprises, if any, had insight into the breadth of these changes or how these changes might impact them.

What caught many enterprises off guard was Broadcom's decision to reduce the number of VMware software licensing options. Many software features that enterprises could once license individually they could now only obtain as part of a software bundle.

Enterprises that use many or all available VMware software features may well lower their overall software licensing costs. However, enterprises using one or a few VMware software features often report being quoted higher VMware software licensing costs.[1]

Other software licensing challenges have also emerged. Enterprises that utilize multiple VMware software features may find they must overbuy software licenses. For instance, enterprises may now only license VMware vSphere Standard for at least 16 CPU cores per server processor. This per-processor requirement applies even if the server has a processor or processors with fewer than 16 CPU cores.[2]

Conversely, enterprises licensing VMware Cloud Foundation (VCF) or VMware vSphere Foundation (VVF) may find VMware provides insufficient software licenses for some features.

For instance, both VCF and VVF include software licenses for vSAN. VCF includes one (1) tebibyte (TiB) of capacity per licensed core. VVF includes a 100 gibibyte (GiB) trial license per licensed core. Enterprises needing to manage more raw storage capacity than the vSAN licensing included with VCF or VVF must purchase additional vSAN licenses.[3]

These factors and others have prompted all size enterprises to reevaluate their virtualization platform. To make the best choice of a VMware vSphere Standard alternative solution, they must first quantify:

- The VMware software features they currently use.
- How broadly they use VMware and its features across their enterprise.
- How well competing hypervisors stack up.

The number of VMware software features an enterprise uses and how broadly it uses them factor into any decision. Alternative virtualization solutions vary in features, software licensing methods, and technical support options. These options and others all factor into selecting an appropriate VMware vSphere Standard alternative.

The State of Enterprise VMware vSphere Standard Alternative Solutions

In the United States, DCIG identified 19 different VMware vSphere Standard alternative solutions available in various configurations. Deployment options may include software for use on-premises, in the cloud, a preconfigured hardware appliance, or a combination of these.

Some providers also partner with hardware OEMs so that enterprises may order appliances from their preferred OEM. A few providers even make infrastructure-as-a-service (IaaS) available as an option. If electing to use IaaS, the provider manages the software after an enterprise deploys it.

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Software Licensing

Software licensing has emerged as a hot-button topic. Broadcom chose to consolidate and simplify VMware's software licensing and move solely to subscription-based software licensing. This decision has led competitors to differentiate themselves in how they make their software available and license it.

For instance, Broadcom ended the availability of the VMware vSphere Hypervisor (free edition).[4] In response, some providers offer low- or no-cost software licensing to encourage enterprises to use their software. Optionally, some providers grant enterprises more time to test running existing enterprise applications on their VMware vSphere alternative.

Some providers do compete against Broadcom's subscription-based pricing with their own subscription-based pricing.[5] Alternatively, some offer only perpetual software licensing. A few give enterprises a choice between perpetual or subscription-based software licensing.

Support for Multiple Hypervisors

Moving to an alternative platform does not automatically mean an enterprise must abandon using VMware vSphere Standard in every instance. Some hyperconverged infrastructure (HCI) platforms support multiple hypervisors.

Supported hypervisors may include Microsoft Hyper-V, different versions of the Linux Kernel-based Virtual Machine (KVM), and VMware vSphere Standard, among others. An enterprise may even elect to run a different hypervisor on different deployments of the provider's HCI solution.

Some enterprises may find running multiple hypervisors their most affordable and practical option. Moving every application or workload off VMware vSphere may not work due to some advanced vSphere features those workloads utilize.

However, not all applications and workloads use advanced vSphere features. Enterprises may find they only need baseline vSphere features and can identify and use comparable features in an alternative hypervisor to host those applications and workloads.

Common Features across All Enterprise VMware vSphere Standard Alternative Solutions

DCIG evaluated over 25 different VMware vSphere Standard alternatives of which 19 met DCIG's inclusion criteria for the US Edition. Across these 19 VMware vSphere Standard alternative solutions DCIG evaluated over 250 features on each one.

These 19 solutions all offer the following seven (7) core features:

1. ***Hypervisor.*** The hypervisor permits an enterprise to run one or more virtual machines (VMs) on a single computer. Each of these 19 solutions includes a hypervisor by default. Generally, enterprises should expect the solution to offer a Linux-based KVM or a variant based on KVM.
2. ***Management interface.*** The management interface facilitates the management of the VMs and other software features offered by the solution. Many include multiple management interfaces. These may include a CLI, a web-based GUI, REST APIs, and integration with third-party management platforms.
3. ***Software-defined networking (SDN).*** SDN, included in all 19 solutions, enables centralized control, programmability, and flexibility to adapt the network infrastructure to changing needs. This feature handles, directs, and prioritizes the communication between the different internal nodes and/or VMs in the solution.

VergeOS implements multi-tenancy by creating a virtual data center (VDC). Enterprises may then manage and use each VergeOS VDC like they manage and use VDCs available in general-purpose public clouds.

4. ***Software-defined storage (SDS).*** SDS, also included in all 19 solutions, virtualizes physical hard disk and solid state drives. This solution will minimally virtualize the server's physical disk drives, though some include options to virtualize external storage arrays. Using SDS, the solution generally puts all the physical storage together into one central pool of storage. It then partitions this storage pool into smaller storage segments and assigns individual storage partitions to specific VMs.
5. ***Support Windows and Linux Guest Operating Systems.*** The Windows OS became ubiquitous in enterprises years ago and remains heavily used in enterprise data centers. However, enterprises increasingly use Linux as a guest operating system (OS) as an alternative to Windows. Regardless of which guest OS enterprises prefer, all 19 vSphere alternative solutions support both Linux and Windows.
6. ***Web-based management GUI.*** All 19 products minimally provide enterprises with a web-based graphical user interface (GUI) to manage their solution. However, each solution's GUI may differ in terms of its capabilities. For instance, enterprises should verify if the GUI can access, visualize, and manage all installed instances of the solution in their environment. Some may achieve this feat. Other GUIs may require enterprises to enter the IP address of each installed solution to manage that instance.
7. ***Command-line interface (CLI).*** Enterprise administrators often need a CLI to facilitate scripting specific administrative tasks. Each of these 19 solutions offers a CLI to perform these tasks. However, the CLI commands that each solution supports may and likely do differ. If enterprise administrators plan to use the CLI, they should verify the solution's CLI includes the commands they need.

VergeIO VergeOS

Upon DCIG's completion of reviewing 19 VMware vSphere alternatives, DCIG ranked the VergeIO VergeOS as a TOP 5 solution. VergeIO distinguishes VergeOS by delivering its self-described next iteration of the hyperconverged infrastructure: the ultraconverged infrastructure (UCI). Rather than simply virtualizing the normal server stack (compute, networking, and storage), VergeOS tackles virtualizing the entire data center. To do so effectively, it must implement technologies that prevent it from becoming a performance bottleneck.

VergeIO starts by installing VergeOS on bare metal servers. It then brings the servers' hardware resources under its management, catalogs these resources, and makes them available to VMs. By the VergeOS directly accessing and managing the server's hardware resources, it optimizes them in ways other hypervisors often cannot.

For instance, VergeOS' deduplication feature globally deduplicates all data stored across all the storage resources it manages. While deduplication provides the expected data reduction benefits, it positions enterprises to more effectively and efficiently perform other tasks. These include taking and replicating space-efficient VM clones and snapshots to other clusters. It also well-positions VergeOS to operate in edge environments with fewer resources.

Other features that the VergeIO VergeOS offers that help differentiate it from other TOP 5 VMware vSphere alternative solutions include:

- ***Delivers multi-tenancy by creating its own VDCs with each having its own data center capabilities.*** Multi-tenancy often gets deployed by only logically grouping certain resources and users together. VergeOS implements multi-tenancy by creating a virtual data center (VDC).

  This new VDC has its own compute, network, storage, management US, and even its own mini-VergeOS instance assigned to it. Enterprises may then manage and use each VergeOS VDC much like they manage and use virtual private clouds (VPCs) offered by general-purpose public cloud providers.

VergeIO does not require enterprises to adhere to a hardware compatibility list (HCL) or certified vendor list when selecting server hardware.

- ***Offers a VMware service within a VDC to facilitate VMware vSphere migrations.*** VergeOS offers its own VMware service that enterprises may leverage to facilitate migrating existing vSphere VMs onto a VergeOS VDC. Once an enterprise creates a VDC, an administrator points the VergeOS VDC VMware service to an existing VMware vSphere instance.

  The administrator enters the vSphere instance's username and password to gain access to vSphere. The VergeOS VDC VMware service then displays all the VMs in that vSphere environment.

  The administrator then needs to select the VMs that it wants to migrate to VergeOS and click "Import" to start the migration. As VergeOS imports the vSphere VMs, an enterprise may start using the VMs immediately. Alternatively, the enterprise may test the VMs to ensure they work while the source VMs continue to run in production.

- ***Uses per physical machine all-inclusive software licensing.*** VergeIO licenses VergeOS by each physical machine, or node, in a VergeOS cluster. VergeIO uses an all-inclusive software licensing model for VergeOS. Each software license includes VergeOS' full complement of server virtualization, networking, and storage capabilities.

  Further, VergeIO does not require enterprises to adhere to a hardware compatibility list (HCL) or certified vendor list when selecting server hardware.[6] While VergeIO does have minimum physical server hardware guidelines, enterprises may find they can re-use available existing servers to host VergeOS.[7] ■

Sources

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