



Migrating from VMware to Hyper-V

Higher VM Density and Performance with Gridstore HCI

AT A GLANCE VMware has been a pioneer at reducing hardware costs through its server virtualization technology. Ironically, it has become an IT cost center, requiring yearly license renewals and dedicated manpower. There are great reasons to stop paying for VMware and move to Hyper-V, including reducing data center and virtual desktop infrastructure (VDI) costs by using new or free Microsoft capabilities. Plus, there are myriad migration tools and approaches that fit any budget. Migrating to Hyper-V, coupled with Gridstore all-flash HyperConverged Infrastructure, results in a refreshed data center infrastructure that is cost-effective with high performance and low management.

Benefits

- Cost savings associated with VMware licensing virtually pay for infrastructure refresh
- Workloads can experience no disruption and are faster post-migration with all-flash I/O
- Migrate over a short time period with few resources required

"ALTHOUGH VMWARE HAS STRONG EASE OF USE AND LOW OPERATIONAL COSTS, SOFTWARE ACQUISITION COSTS FOR VMWARE ARE ALSO THE HIGHEST...MANY GARTNER CLIENTS DEPLOY MULTIPLE HYPERVISOR INFRASTRUCTURES FOR THIS REASON."

— Gartner²

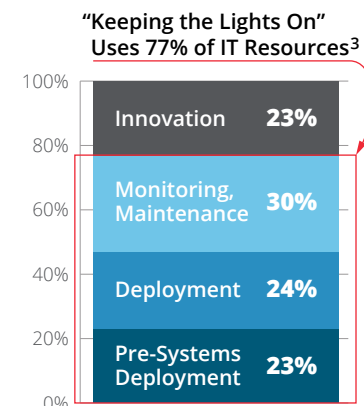
VMware is a Cost Center

Microsoft Windows Server 2012 R2 has come of age, with enterprise-level features that can replace expensive add-on products, reducing operational and capital expenditures across the data center. Its virtualization platform, Hyper-V, is now considered a viable and dependable hypervisor for private, public and hybrid cloud deployments. In fact, Gartner says that Microsoft "... has effectively closed most of the functionality gap with VMware in terms of the x86 server virtualization infrastructure."¹

VMware stands out as a large cost center that requires yearly license renewals along with dedicated personnel to just "keep the lights on" (see chart to the right). Many IT managers are tired of the high recurring cost of VMware with little incremental value, and are seeing comparable, and even better, capabilities from Microsoft—with features that are free. Eliminating this cost center without adversely impacting your operations can be achieved by replacing VMware with Hyper-V.

Infrastructure Refresh is Paid For By Migrating to Hyper-V

Simplifying the data center is easy to do with hyper-converged infrastructure (HCI), but will it fit your budget? If you are running VMware now, migrating to Hyper-V all but pays for a refreshed infrastructure. Gridstore enabled Warren Memorial Hospital to transition from VMware to Hyper-V, a move saving them \$50,000 a year⁴. Plus, the CIO reported that the migration was completed after only a few hours, in large part due to the easy installation of the Gridstore product.



¹ Gartner *Magic Quadrant for x86 Server Virtualization Infrastructure*, by Bittman, Dawson and Warrilow, July 14, 2015

² Gartner *Critical Capabilities for x86 Server Virtualization Infrastructure*, 13 July 2015 (Document ID: G00271149)

³ International Data Corporation (IDC), *Measuring the Business Value of Converged Systems*, December 2014

⁴ *10X Performance Increase with Gridstore Helps Warren Memorial Hospital Improve Patient Care While Saving 66%*, Sept 2014

Migration of VMs can be made without downtime and with zero risk using advanced migration tools that have been widely used across many industries.

Unique Benefits of Using Hyper-V with HCI

Microsoft Hyper-V offers unique advantages, in addition to being completely free. In fact, the free version offered in Hyper-V Server has the same virtualization features found in Windows Server 2012 R2 (unlike VMware's "free" version). These features include:

- Clustering for high availability
- Live Migration
- Scale / performance
- Hyper-V Replica
- Lower-cost VDI and remote application hosting

Coupled with Gridstore HCI, you get great all-flash, high-performance storage options to leverage on mission critical workloads, especially VDI.

Hyper-V with HCI for VDI

VDI enables data center savings, and using Hyper-V for VDI means even more savings when no VMware licensing costs are factored in. Plus, using Hyper-V instead of VMware is simple as it uses the familiar RDP protocol. Hyper-V also integrates seamlessly with Windows clients for easy management while Gridstore HCI can be managed via Microsoft System Center.

VDI "bring your own device" requirements are supported easily with Hyper-V, which can mix deployments with RemoteApp; that is, Hyper-V supports more than just virtual machine (VM)-only deployments. Windows apps are deployed in the cloud so VDI end users are productive anywhere, on any device—Windows, Mac, iOS or Android. With Gridstore all-flash HCI performance, these VDI end users also have the same, and even better, experience as a physical desktop user.

VMware to Hyper-V Migration Basics

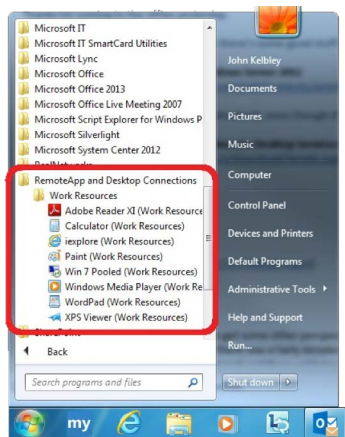
When planning your migration to Hyper-V, there are a number of things to consider, but the most important are your budget and your tolerance for downtime. IT managers commonly evaluate migration tools based on budget and application uptime requirements:

- Low or no cost versus cost money
- Short or no down time versus longer application outage

It should be noted that many applications can be moved without using tools since they have their own replication.

Because Hyper-V is part of Windows, migrating VMware to Hyper-V doesn't require a steep learning curve because IT staff already know a lot about Windows. Hyper-V VMs are defined similarly to VMs in VMware where the VM "definition" is with hardware resources (vCPUs, RAM, NICs, SCSI and IDE controllers, attached drives, etc.). Plus, the drives are typically encapsulated in a disk file, similar to a VMDK. The table on the next page shows the common definitions and processes of each hypervisor.

There are many resources available to taking the next step toward migrating from VMware to Hyper-V. Download the [Gridstore VMware to Hyper-V Migration InfoPak](#) to access a list of the most useful tools as well as customer testimonials for migration success.



VDI with Hyper-V: Windows 7 Client RemoteApp and Desktop Connections (from Server 2012 R2 Servers)

Hyper-V with Gridstore HCI results in higher VM density due to all-flash I/O.

VMware versus Hyper-V

Capabilities	VMware	Hyper-V
Host File System	VMFS (Virtual Machine File System) VMware allows you to extend (not recommended)	NTFS/ ReFS . Native Windows file systems, can easily extend and use cluster-shared volumes (CSV) for HA support for performance and scalability
Management	Management via vSphere client , optional PowerCLI, vCenter , vRealize	Management via Hyper-V Manager (Windows feature), integrated PowerShell Cmdlets , System Center , Windows Azure Pack (free)
Virtual Disk Image Format	VMDK . VMware Virtual Disk Image	VHD/VHDX . Hyper-V Virtual Disk Image
Integration Tools, Drivers	VMware tools . Drivers and tools installed in VM to improving performance and integration	Integration services . Drivers and tools installed in VM to improving performance and integration
Connect LUN Directly to VM from SAN	Raw Device Mapping Present raw LUNs on your physical storage to virtual machines directly	Pass-Through Disk Present raw LUNs on your physical storage to virtual machines directly
Clustering	vSphere HA . High availability (not free)	Failover Clustering . High availability
Migration of Running VMs	vSphere vMotion (not free)	Hyper-V Live Migration Unlimited simultaneous live migrations

Conclusion

Refreshing your infrastructure to Gridstore HCI will simplify your data center by combining storage, compute and storage networking into a single 2U appliance. Migrating to Hyper-V from VMware will reduce your total cost of ownership, and in most cases, the savings will pay for your infrastructure

refresh. Companies worldwide are now trusting Hyper-V to meet their business needs, and using Gridstore HCI with Hyper-V, especially VDI deployments, means they operate with high performance and low cost.

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