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http://www.vmware.com/why-choose-vmware

Considering Microsoft?

Here are the **Top 10** reasons why **VMware** is a better choice for your Software Defined Data Center and Hybrid Cloud!

The **VMware SDDC** is a complete cloud-ready data center virtualization solution. With VMware, when you add a VM, you **automatically** have access to the following capabilities, all portable with the VM and embedded into the software hypervisor:



Microsoft's approach to virtualization requires much of the network and storage configuration to be done separately, outside of the hypervisor, with no top-level resource management.

Microsoft still cannot guarantee that key resources like CPU and Memory will be available for every VM – something that VMware has been able to do for over a decade!

VMware offers the most complete and flexible portfolio of high impact solutions that reduce risk, solve real business challenges and provide superior investment protection for the future. While Microsoft is forcing customers to learn new management frameworks, an investment in a new VMware technology is designed to let you build on the vSphere expertise that you already have and gives you access to unique innovation and industry-leading solutions such as:

- **VSAN** (storage virtualization)
- Cloud Foundation (next-gen hyper-convergence)
- **NSX** (network virtualization)
- ✓ vRealize Suite (intelligent cloud automation & management)
 ✓ vCloud Air (seamless public cloud with no VM conversion)
- AirWatch (mobility and security)
- vCloud Air DR (DR to the Cloud) 🛛 🗹
- Workspace ONE (virtual desktops, apps & unified user portal)

Learn more about how VMware connects to your business at <u>http://www.vmware.com/it-outcomes</u>

vCenter, VMware's ONE single management interface with end-to-end visibility, centralized automation and guidance is more efficient than the EIGHT separate interfaces and Powershell scripting required to manage Microsoft Hyper-V with System Center.

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Operations Management Suite (OMS) and Azure Stack announcements only add confusion to Microsoft's lack of management standardization!

Microsoft's EIGHT required interfaces are:

1.Configuration Manager, 2.Data Protection Manager, 3.Endpoint Protection, 4.Operations Manager, 5.Orchestrator, 6.Service Manager, 7.Virtual Machine Manager, 8.PowerShell

Microsoft does **NOT** have a multi-cloud strategy!

It is now a multi-cloud world, where customers need solutions that enable choice and flexibility more than ever but...



Don't be forced to adopt Microsoft's "single cloud" option!

Think of VMware's Multi-Cloud strategy as the most flexible and risk-free "all of the above" option for an unpredictable cloud future!

Don't forget – vSphere continues to be the foundation for the VMware SDDC. Key solutions that customers really want, like Operations Management, Virtual SAN, NSX, Site Recovery Manager, DRS, HA, Fault Tolerance, Storage DRS, and other key capabilities are only available with vSphere. VMware offers a complete and integrated set of technologies and features that customers really want!

Key capabilities that are most important to customers:

Automated HA and VM replication provide flexible resiliency.

Fault Tolerance provides in-memory lockstep protection of VMs.

Hot add CPU, RAM, NICs, Storage.

Compute

Clustering Services is complex, not purpose-built for VMs and prone t majority node failure issue.

Io In-memory Fault Tolerance.

Cannot hot add CPU resources. Limited memory and storage hot add capabilities when running. Universally accessible and managed pools of CPU and RAM resources.

Provides guidance on right-sizing, resource consumption, risks and future issues that are unique to every customer's unique data center environment.

Management

No resource pools. Basic resource imits are assigned at a per-VM level

No universal, top-level way to nanage resources across hosts.

No forecasting or right-sizing. Basic and static usage reporting only.

Virtual SAN (VSAN) provides truly integrated and easily managed software-defined storage.

Storage DRS provides load balancing.

Dynamic prioritization of I/O at the storage level ensures performance.

Storage

Storage spaces is NOT like VSAN. If is a complex build-it-yourself NAS solution, with no VM awareness.

No native storage load balancing.

Still requires manual and separate VM storage configuration with numerous opportunities for error.

NSX provides policy-based automated network management and works with existing network hardware.

Network and security configurations are contained within the VM, allowing for ease of portability and flexible deployment.

Networking

Limited network virtualization capabilities and new to VXLAN support.

Limited hardware-defined and manual approach lacks key features and automation and presents significant opportunities for error.

Network is separate from the VM.

VMware's compact, **purpose-built** hypervisor, that does not require a legacy operating system, represents a significantly safer and less-risky virtualization platform due to a much smaller code-base, with far less management overhead and complexity. With Microsoft, admin time is lost having to manage a large, general-purpose operating system that contains a lot of code that is completely unrelated to virtualization.



Microsoft Windows Server 2012 with Hyper-V**



**Hyper-V requires the installation of Windows Server 2012 and will not function without it.

 * Yes, this even includes the code for VSAN and NSX!

Don't **reboot** your data center every "update" Tuesday!

Operating System-dependent hypervisors add risk, complexity and require more patching. Almost every "Update Tuesday" since the release of Hyper-V has included "important" or "critical" security updates to Windows Server that **REQUIRED a REBOOT** of the host!

of Microsoft patches required to secure Hyper-V:

Initial Setup of Windows Server

"Update Tuesday" Patches (last 12 months)

*1.9GB of patches to apply before server can be used for Hyper-V

**Source: Microsoft Security Bulletin, July 2016

Microsoft relies on largely untested first-gen technologies!

Patch 'iolato

With the upcoming releases of Windows Server 2016, Azure Stack and OMS, Microsoft expects customers to accept numerous first-gen capabilities that are not fully tested in mission-critical business environments.



Are you ready to trust Microsoft with your most important production-level workloads when VMware offers proven and mature solutions for customers?

| Microsoft First-Gen Tech | VMware Proven Solution | |
|--|---|--|
| Storage Spaces Direct | Virtual SAN and VVOLS | |
| Software-Defined Networking (only recently using VXLAN) | NSX (FYI, VMware invented the VXLAN standard) | |
| Software Load Balancing | NSX | |
| Azure Stack | vRealize Suite | |
| Operations Management Suite (OMS) | vCenter Server | |
| "Cloud Inspired Infrastructure" | VMware's Software Defined Data Center & Cloud Foundation | |

1806 VM density* advantage is all that is needed to offset the cost of vSphere!

That's easy for vSphere vs Hyper-V! In many cases VMware's VM Density advantage can be 50% or more!





vSphere's 4 proven memory management techniques are the reason why! Dynamic Memory, Microsoft's ONE approach to VM memory management is manual (7+ steps per VM!) and not reliable for most production workloads, forcing customers to <u>fully reserve</u> the RAM assigned to each VM.

By not being able to overcommit and efficiently "share" memory across VMs, Hyper-V customers simply cannot fit as many VMs on a host when compared to VMware, meaning Hyper-V customers will be forced to purchase more hardware and licensing to deploy the same number of VM workloads. This can add up very quickly!

Anything over 18% is "icing on the cake!"

* VM Density is defined as the number of VM's you can fit on a host server. The more the better!

| | VMware's FOUR proven Me | mory Management | techniques are: |
|--|-------------------------|-----------------|-----------------|
|--|-------------------------|-----------------|-----------------|

Transparent Page Sharing

Memory Ballooning

Memory Compression

Memory Swapping

Microsoft to be "less free" in 2017!

Microsoft is changing to **per-core** pricing for Windows Server 2016 & System Center 2016 to try to make it more expensive to stay on-prem vs Azure.

NOTE: vSphere licensing is remaining processor-based and our significantly less expensive management costs, combined with our greater VM density mean customers will spend a lot less to run their VM's on VMware!

Prove this cost advantage for yourself RIGHT NOW @ http://vmware.com/go/tcocalculator

BONUS: VMware's Unified Hybrid Cloud is the best place for your single-instance* VM's!

A single-instance VM is a workload that runs in a single VM and must rely on the uptime of the underlying data center/cloud for its availability.

BIG VMWARE ADVANTAGE:

Since vSphere-based VM's always have the benefit of our HIGH AVAILABILITY capability on-prem AND in the cloud, along with network policies that follow the VM, you can be sure that your most important workloads will always be ready, accessible and secure, even if they are single-instance VM's!

BIG GOTCHA: Azure only provides an SLA when multiple instances of a VM are deployed and Traffic Manager is used!

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