USDC TECHNOLOGY
Smart Data Center

VMware EUC Versus Microsoft RDS and Azure RemoteApp

Cuong Le Sy

vmware

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Agenda

1	Overview
2	One Trusted Platform
3	Flexible Delivery Options
4	Workspace Environment Management
5	Industry Recognition

Three Pillars of Differentiation for VMware

VMware's Mobile-Cloud Architecture

Workspace Environment Management for lower OPEX

App Delivery

Policy Management

User Environment Management

End-to-end monitoring

Flexible Delivery for best end user experience

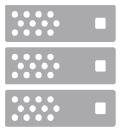
On Premise

Cloud

Hybrid

Offline

Trusted Platform for reduced risk and lower cost


Compute

Network

Storage

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What Capabilities Are We Comparing?

Capability	VMware	Microsoft
x86 Server Virtualization	vSphere	Hyper-V
EMM	AirWatch	InTune
VDI	Horizon 7 with View	Server 2016 RDS VDI, Azure RemoteApp
RDS Hosted App	Horizon 7 Hosted RDSH App	Server 2016 RDS, Azure RemoteApp
Offline	Horizon FLEX	
DaaS	Horizon Air	Azure RemoteApp
Real time app delivery	App Volumes	
App Isolation	ThinApp	App-V
User environment management	UEM	UE-V (user environment)
App Catalog	Workspace Portal/SSO	App Store
OS and App Deployment	Mirage	SCCM
Cloud	vCloud Air	Azure

Agenda

1	Overview
2	**One Trusted Platform**
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One Trusted Platform for Cloud, Datacenter, and End User Computing

Compute Virtualization

- The leading hypervisor with a complete management and operations solution
- Extensive 3D graphics support: vGPU w/NVIDIA, vSGA, sVGA
- Instant Clones for fast provisioning

- **One platform for All**
- **Reduce OPEX and CAPEX**

Software-defined Storage

- Software-defined storage management
- Reduces storage costs by up to 50%

- **Reduce CAPEX**
- **Streamline Management**

Network Virtualization

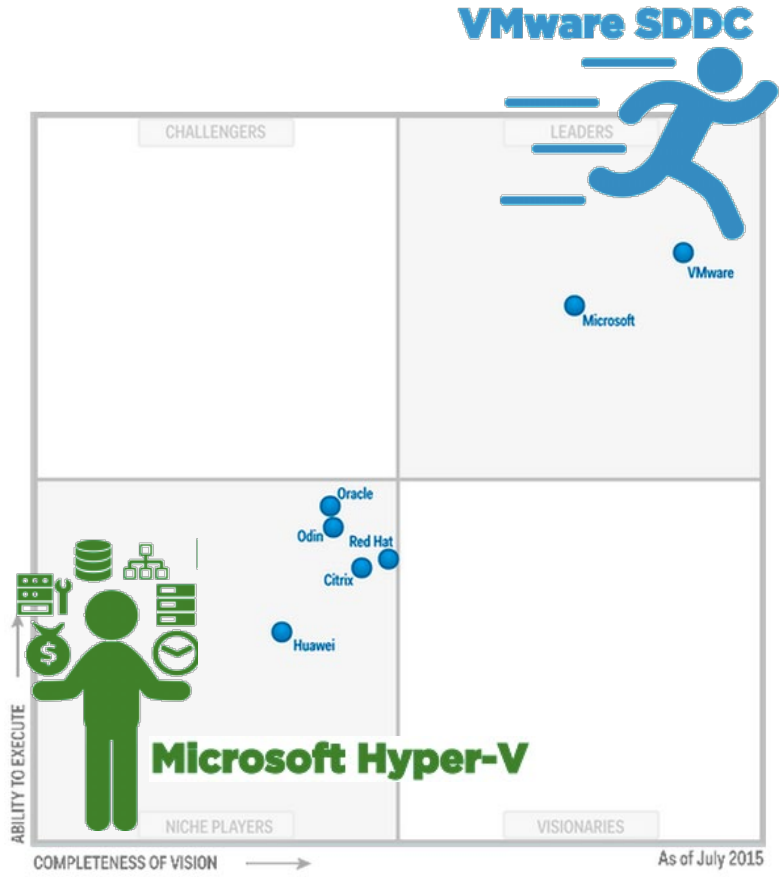
- Simplifying network provisioning
- Micro-segmentation

- **Support More Use Cases**
- **Leverage Existing Infrastructure**

VMware SDDC Platform

VMware SDDC Strengths Over Microsoft Hyper-V

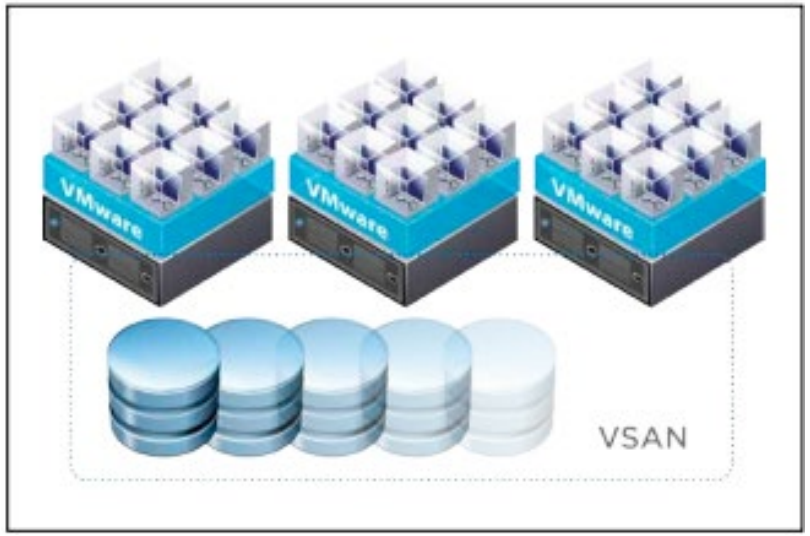
- Complete data center virtualization and automation solution
  - Microsoft requires network and storage configuration to be done separately with no top-level resource management
- VMware's smaller, purpose-built hypervisor does not require a legacy OS is safer, smaller, and less-risky
  - Microsoft requires more admin time and storage to manage large, general-purpose OS that contains a lot of code that is completely unrelated to virtualization
- vCenter provides one single management interface with end-to-end visibility, centralized automation and guidance
  - Microsoft has EIGHT separate interfaces and Powershell scripting to manage Microsoft Hyper-V with System Center
- Ease of moving VMs from data center to cloud with same platform – no conversion necessary!
  - Microsoft has differences in networking, storage, HA, live migration and Gen1 vs Gen2 VM versions before workloads can be moved to Azure

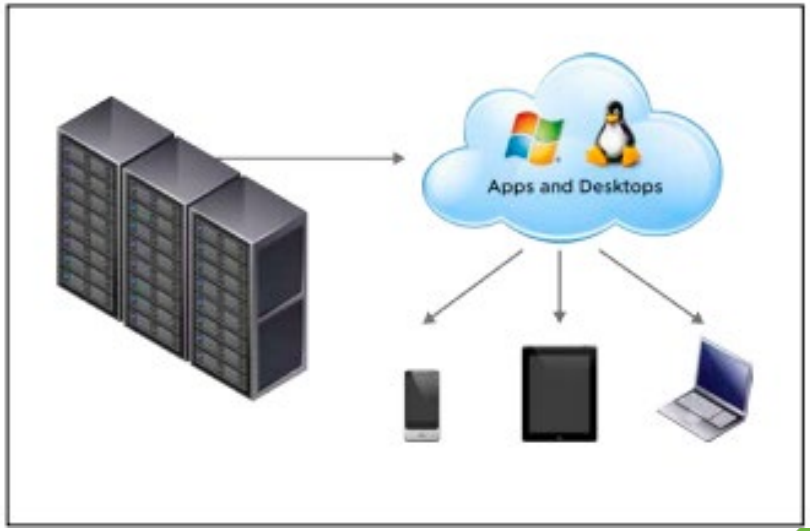


Gartner Magic Quadrant x86 Server Virtualization Infrastructure 2015 Gartner (July 2015)

Competitive Advantages of Horizon Integration with SDDC

- Supports easy, scalable, and cost-optimized desktop and application virtualization deployments
- Virtual SAN drives down storage costs
  - Automates storage provisioning
  - Leverages direct- attached storage resources
- Supports both Windows and Linux-based desktops including RHEL, Ubuntu, CentOS and NeoKylin
- Instant Clones creates VMs quickly and easily for Just-in-time Desktops
- Networking and Security with NSX (sold separately) enables quick and simple set up of networking security policy that follows the end user across devices and locations





Just-in-Time Desktops

Deliver 2000 desktops in under 20 minutes

Support **more than 50,000 sessions** across 10 sites, and 25 pods to predictably scale

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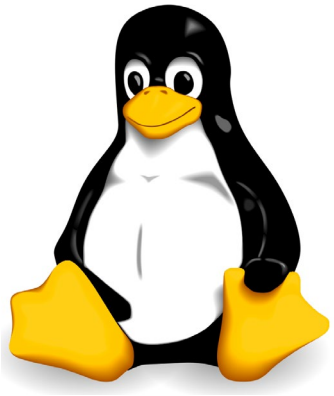
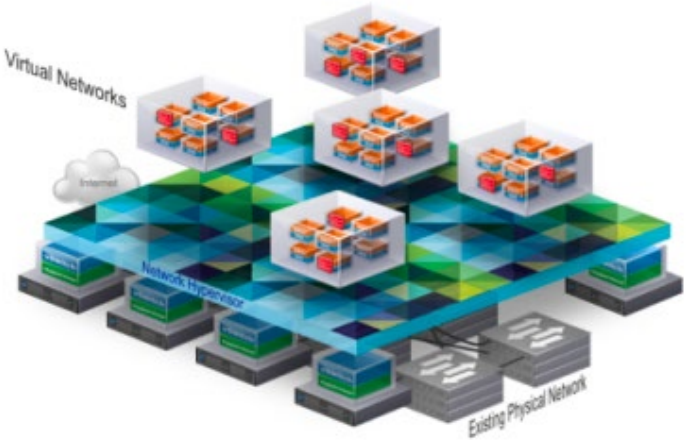
EUC and SDDC Integration Benefits



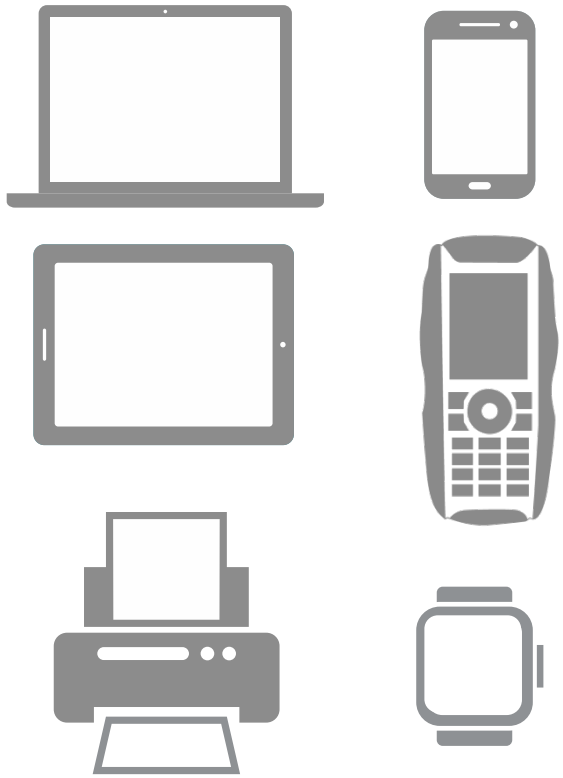
Only VMware EUC provides…

- Integration with SDDC (vSphere, Virtual SAN, NSX) provides costs savings in storage, computing and networking infrastructure
- Enterprise-grade management platform with more control and visibility and easily managed
- Reduced complexity and cost supporting Windows and Linux desktops



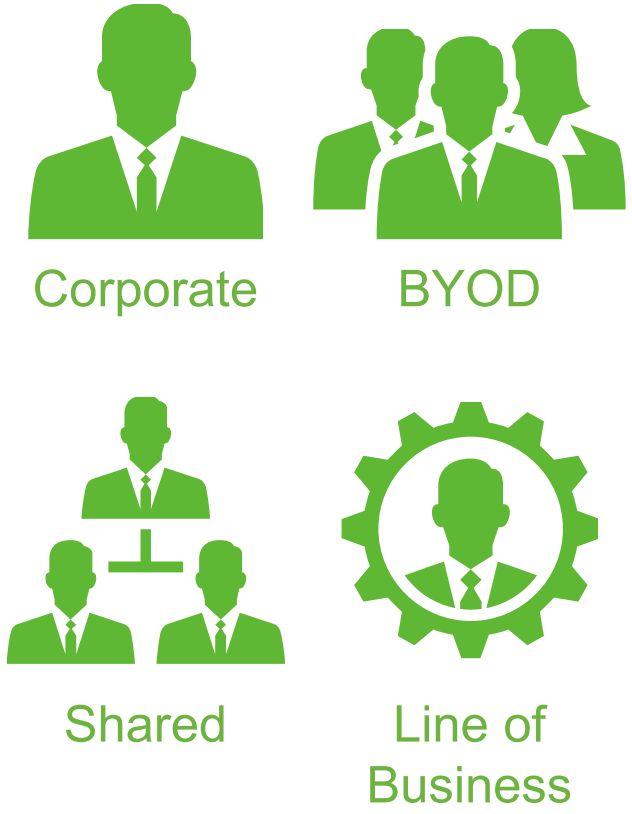
Unified Enterprise Mobility Management with AirWatch

Any Endpoint



Any Platform

Any Use Case



Competitive Advantages of AirWatch EMM Over Microsoft Intune

- Works closely with Google, Apple, ACE initiatives
- Supports Microsoft O365 applications and integration
- Microsoft's focus is on the Microsoft ecosystem; not part of Google's AfW program or Apple's Mobile Essentials program

Enables use of more Apps

Industry Recognition

- AirWatch has been a leader for 5 consecutive years
- Microsoft Intune wasn't included in Gartner MQ until 2015 when listed in visionary quadrant

- AirWatch embraces native OS containers from Apple, Google and Microsoft (Win10)
- Microsoft uses proprietary containers (O365 Apps)

Containerization

Day Zero support of new mobile OS's

- Microsoft typically doesn't provide Day Zero support of non-Windows mobile OSs

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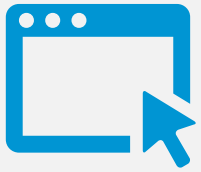
Flexible Delivery of Virtual Workspaces

What to Deliver



- Applications
- Hosted Applications
- Remote Applications

- Persistent Desktops
- Non-Persistent Desktops
- Hosted Desktops

- **Best, most consistent end user experience**
- **Access from anywhere on any device**

How to Deliver

On Premise

Cloud

Hybrid

Offline

- **Same user experience across all delivery modes**

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Supports More Types of Applications and Desktops

Applications and Desktops securely delivered and accessed through unified workspace:

- RDS-hosted apps and desktops for Windows Server 2012, 2016
- XenApp (up to 7.x)
- SaaS applications
- ThinApp 5.x and later
- Horizon Air Applications and Desktops
- Horizon Virtual Desktops and RDS Hosted Apps
- Supports SSO to AirWatch Web Secure Content Locker and AirWatch Device Enrollment

One login | One experience | Any device

Microsoft solution in incomplete

- Doesn't provide SaaS, SSO, XenApp, Horizon/Air Apps & Desktops, or SSO to AirWatch
- Requires SCCM

Horizon 7 VDI Strengths vs Microsoft VDI

Horizon 7 VDI Strengths

- Enterprise-class VDI feature complete
- Large-scale deployment success stories
- Easier to manage at scale
- Superior end user experience based on third party testing
- Choice of display protocols based on used case: PCoIP, RDP and the new Blast Extreme
- Support for hybrid cloud with Horizon Air – easier to implement

Microsoft VDI Strengths

- Perception of being “free” with Hyper-V
- Success in education and SMB but not large enterprise

Blast Extreme User Experience

Support the broadest range of H.264 capable devices including the industry's lowest cost $99 PCs—with extended battery life.

Flexibly choose between PCoIP or VMware's Blast Xtreme display technology

Horizon Hosted App vs Microsoft RemoteApp

Device Type Access

- Horizon has clients for Mac, Windows, Linux, iOS, Android and Chromebook as well as HTML5 access
- Microsoft RemoteApp has no support for Linux, Chromebook or HTML5

3D Application Support

- Horizon Hosted App can be provisioned with an NVIDIA GRID vGPU, allowing users to access the most graphically demanding applications
- Microsoft RemoteApp has weak 3D application support

Simple File Type Association

- End users can select file association types. No changes are needed on Horizon Hosted App
- Simplifies Horizon hosted application launch for end users
- Microsoft RemoteApp has no user defined file type association; must be configured on the server

Cloud Pod Architecture

- Simplifies and enhances scalability and high availability
- Microsoft RemoteApp doesn't have this

User Created Start Menu and Desktop Shortcuts

- Users can customize access to apps with start menu and desktop shortcuts
- Microsoft RemoteApp doesn't support this

Enterprise Version Includes Multiple Enhancements for Management

- ThinApp, vRealize Operations for Horizon, VMware Identity Manager, and User Environment Manager

Horizon Air Hosted Apps vs MSFT Azure RemoteApp

Horizon Air Strengths

Supports both remote applications and VDI on the same platform

- Microsoft Azure RemoteApp does not support VDI

Provides seamless user experience for using local files with hosted applications and simplifies Horizon Hosted Application launch for end users

- Microsoft RemoteApp client does not allow for direct desktop or start menu shortcuts
- Microsoft lacks file type association capabilities

Ease of management and monitoring through use of local tools to manage and monitor

- Microsoft requires SCCM which is complex and difficult to setup

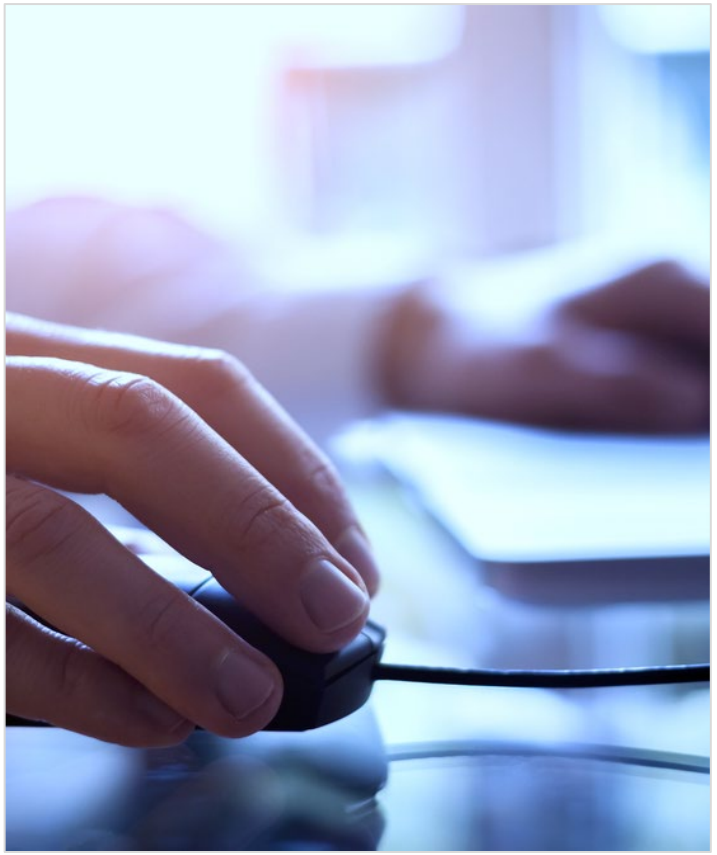
Connects to Active Directory without the need for an extra connector No sync tool needed to connect to on-premise Active Directory

- Microsoft requires setup of AD sync tool to connect to on-premises AD
- Microsoft Azure Directory cannot replace a full AD domain controller
- Microsoft requires both on-premises Active Directory and Azure Active Director

Microsoft Azure Remote App Strengths

- Integrates easily with Office 365, Windows 10 and Server 2016
- Can easily deploy mobile applications

Windows 10 and VMware EUC



- Windows 10 will be an influential product for organizations
- Windows 10 offers legacy and EMM-based management techniques
- VMware is uniquely positioned to support both management approaches with our AirWatch/App Volumes planned integration
- Most of the Windows 10 deployments will be around laptops/desktops; however, EMM will be the poster application
- Windows 10 will reinvigorate desktop applications
  - Customers using Horizon, Horizon Air, FLEX, App Volumes, Mirage will benefit from this
- Most customers will benefit from a blended portfolio of VMware EUC solutions
- How you manage Windows 10 will be scenario based

VMware Horizon and Windows 10

For customers wanting thin clients and desktop PCs, Horizon provides consistency in operations

AirWatch manages Windows as well as other platforms (iOS, Android, etc.)

User environment and local management all important Windows 10 under App Volumes

AirWatch takes full advantage of Win10 management capabilities

Local control of Windows 10 also a great way to deliver applications using FLEX, Mirage

Windows 10
vmware Project A2
Airwatch
App Volumes
Modern Cloud / Mobile Management
Real-time Application Delivery
Unified Management across Heterogeneous Environments

Flexible Delivery of Virtual Workspaces

What to Deliver

- Applications
- Hosted Applications
- Remote Applications

- Persistent Desktops
- Non-Persistent Desktops
- Hosted Desktops

- **Best, most consistent end user experience**
- **Access from anywhere on any device**

How to Deliver

On Premise

Cloud

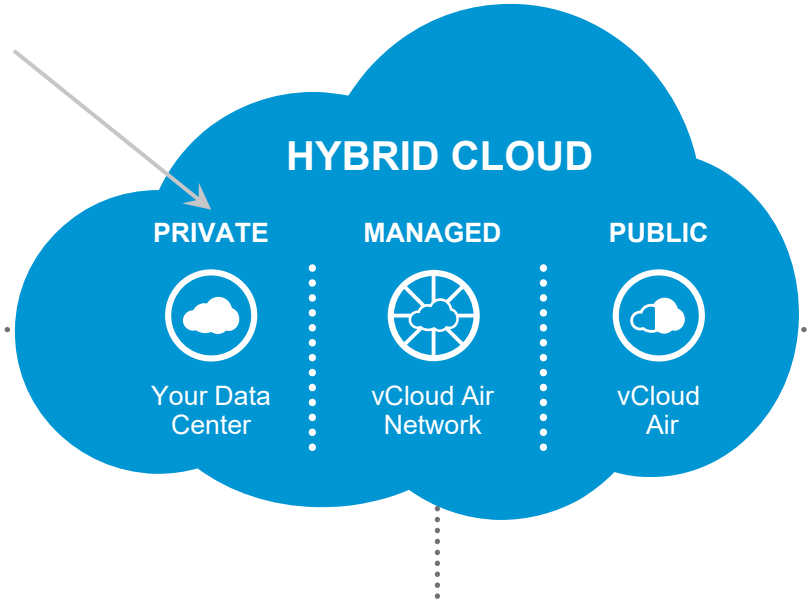
Hybrid

Offline

- **Same user experience across all delivery modes**

One Cloud, Any Application

SDDC Private Cloud



Any Application, Anywhere

Architect, deploy, and run all traditional and modern applications

Open Management

Flexible choice to manage your cloud infrastructure and your applications

Unified Platform

On- and off-premise cloud with a common Software-Defined Data Center platform, built on VMware's best-in-class compute, network, and storage virtualization solutions

VMware – Architecture for IT

Any Device

Business Mobility: Applications | Devices | Content

Any Application

Traditional Applications — APP APP APP | APP APP APP — Modern, Cloud Applications

One Cloud

SDDC Private Cloud

Cloud Management

HYBRID CLOUD

PRIVATE	MANAGED	PUBLIC
Your Data Center	vCloud Air Network	vCloud Air

Software-Defined Data Center

Virtualized Compute, Network, Storage

- Build-Your-Own
- Converged Infrastructure
- Hyper-Converged Infrastructure

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Flexible Delivery Options – Cloud: VMware Horizon Air

Public Cloud
VMware

- No infrastructure to manage
- No upfront costs
- Scalable on demand
- Minimal expertise required

Public Cloud
Horizon Air Powered Service Provider

- No infrastructure to manage
- No upfront costs
- Scalable on demand
- Minimal expertise required
- Value-added services including help desk, management, security, backup, etc.

Private Cloud
VMware On-Premises DaaS

- Customer manages infrastructure
- Buy your own compute, network, storage
- Flexibility in desktop options
- IT expertise required

Flexible Delivery Options: Offline

Horizon FLEX provides a centrally provisioned, managed and controlled desktop for contract workers, remote workers, Mac users, and BYO who need offline use of their Windows desktop

	vmware Horizon FLEX	Microsoft
VMware end-to-end	✓ Solution is comprised entirely of VMware products	X Relies on Oracle VirtualBox and Microsoft Hyper-V
Policy Management	✓ FLEX policy server installs on standard Windows Server	~ Synchronizer requires Hyper-V
Client	✓ Leader in Client hypervisor – fully integrated VMware solution	~ Relies on Oracle Virtual Box, a type 2 hypervisor, with poor integration to support documentation

vCloud Air vs Microsoft Azure

	VMware vCloud Air	Microsoft Azure
Target buyer	Infrastructure and operations	Application developers and web-only startups
Use Cases	Disaster Recovery Development/Test Extend existing apps running on vSphere	.NET apps, new apps
Hybrid Cloud Support	Same networking, security, management tools and IT teams. Complements existing IT investment strategy and application portability	New tools, processes, new IT team, new app architecture.
Flexibility	Works with many technology stacks	Customers complain about Microsoft lock-in
Price comparison	Price per performance is less or the same in many cases	Often requires PSO and incurring more expenses

Flexible Delivery Benefit Summary

Only VMware EUC provides…

- More applications through Workspace portal
- Enterprise-class VDI with large scale proven success stories
- Supports desktop OS's - Windows 7, 8 and 10
- Cloud on Your Terms: Mix and match public cloud Horizon Air desktops and on-premises Horizon 6 virtual desktops
- Easy integration and syncing with Active Directory
- Offline management support: Horizon FLEX provides endpoint security and central management
- Better cloud for vSphere and infrastructure use cases

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Workspace Environment Management

Workspace Management

Reduce OPEX with comprehensive, simplified and consistent management

Applications

- Application Lifecycle Management
- App Catalog
- Application Virtualization

User, Image & Desktop

- User Environment Management
- Desktop Virtualization (VDI)
- Image management across physical, virtual, BYO PC

Control Access

Ensure corporate resources are available and protected

Identity Management

- Federated Identity: SAML, OAuth, WSFed
- Enterprise Single Sign-on

Security & Compliance

- Multi-factor Authentication
- Common Access Card
- Gov. Compliance
- Secure Network Access

Monitor & Automate

Reduce administrative costs and increase system up time

Monitor & Plan

- Capacity planning
- Predict, trace, troubleshoot, fix
- End-to-end visibility

Automation

- End User Self Service

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End-to-end Workspace Environment Management

App Isolation

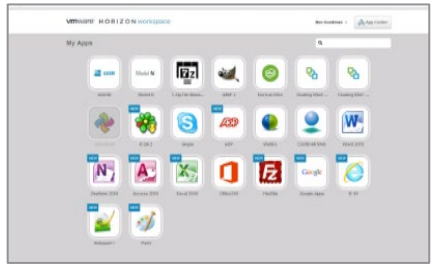
Containerized applications, isolated from the operating system with **ThinApp**

App Delivery

Application delivery to virtual desktops in real-time with **AppVolumes**

User Environment Management

Maintain consistent personalized settings across devices with **UEM**



App Access

SSO access to all apps and services through a unified **Workspace Portal**

End-to-end Monitoring

End-to-monitoring with **vROPs for Horizon** and Image Management with **Mirage**

App Isolation: ThinApp vs Microsoft App-V

VMware ThinApp Strengths

Plugs directly into existing IT tools without adding dedicated infrastructure.

- Microsoft App-V requires three additional servers: publishing server, SQL server and management server

Agentless architecture designed for fast deployment and ease of management

- Microsoft end points require an agent to run App-V applications

Application sync automatically applies updates to applications on unmanaged PCs and devices

Virtualized Internet Explorer (IE6 -10) and Office 2013 support

- Microsoft discontinues support for older versions of IE and Office

Microsoft App-V Strengths

- Packaging: included in RDS CAL and available with MDOP
- Integrations with System Center Configuration Manager

App Delivery: AppVolumes Can Augment Microsoft App-V and SCCM

App Volumes provides application delivery and management

- Application workloads are delivered to desktops, or users, in seconds and at scale. Applications delivered through Virtual Disks and perform as if natively installed.

Microsoft SCCM provides PC lifecycle management

- Applications take time to be installed to each desktop

Microsoft App-V provides app isolation

- App Volumes can augment App-V capabilities
- App Volumes is able to perform real time delivery of both App-V streamed applications (the .appv file) and App Volumes dynamically delivered applications

App Volumes and SCCM Can Work Together

- You only need to use SCCM once for Appstack creation. Once created, App Volumes manages the lifecycle and real-time delivery of applications at scale in seconds

VMware UEM vs Microsoft User Experience Virtualization (UE-V)

VMware UEM Strengths

Provides management console to manage settings easily

- Microsoft UE-V requires Power Shell whic… requires training for support staff

Offers context-based settings

- Microsoft UE-V does not

Manages profiles, application settings and broad range of context-based user settings

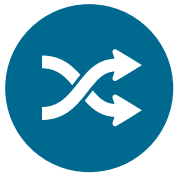
- Microsoft UE-V can only manage App-V and locally installed applications and cannot manage application settings based on context such as network location

Provides a Helpdesk tool and self-service support tool that allows users to restore their own profile settings

- Microsoft UE-V lacks self service or Helpdesk support tools and requires Power Shell to restore user settings

Works in any Windows environment

- Microsoft UE-V is not supported on Windows XP
- Microsoft UE-V cannot be used to help migrate to newer versions of Windows



Integrates with Microsoft App-V 4 and 5 and Symantec Workspace Virtualization (SWV) 7.5

- Microsoft UE-V only works with App-V or locally installed applications

Included with Horizon 7

- Microsoft UE-V is only available to customers with a Software Assurance subscription

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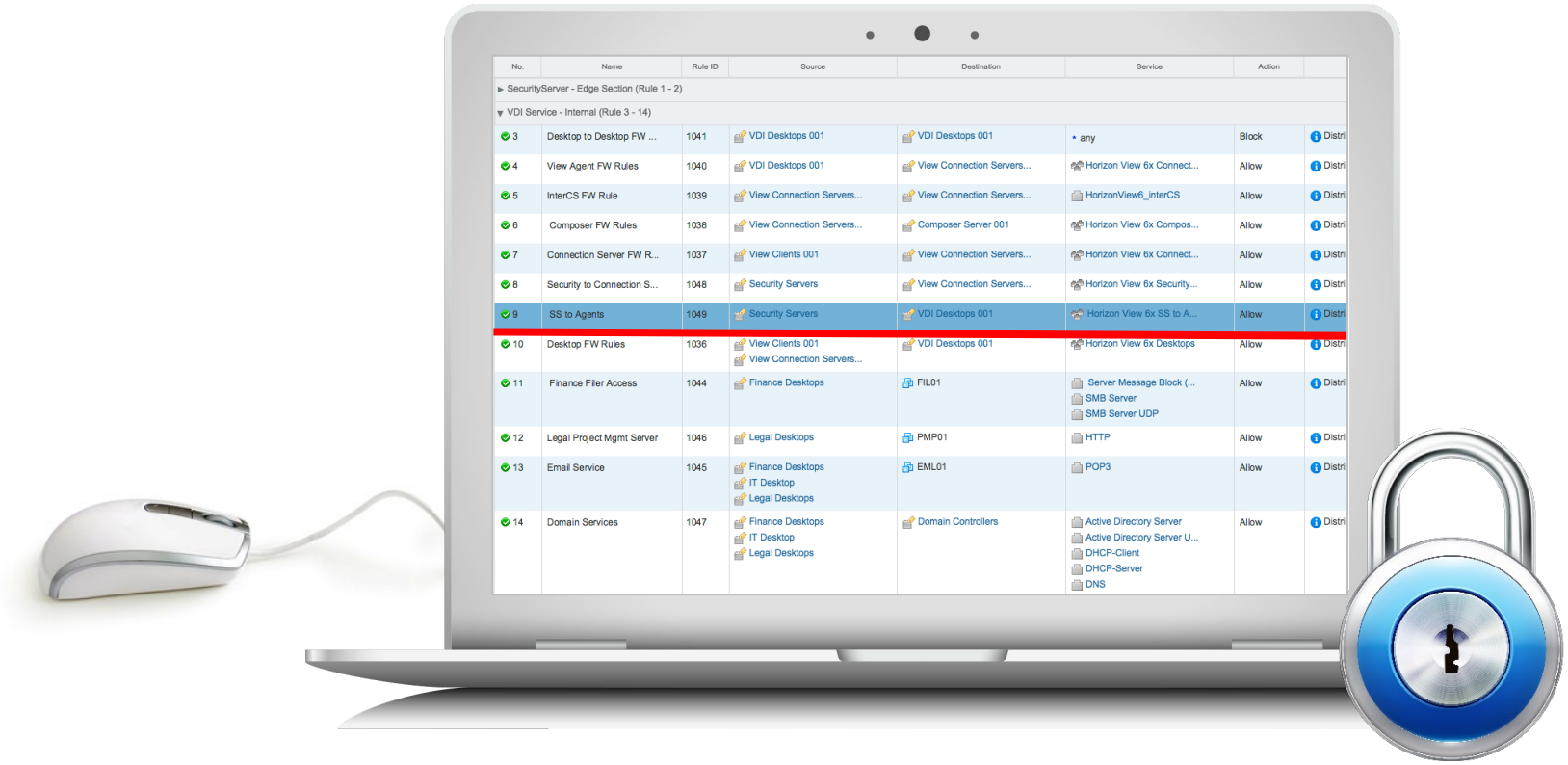
App Store Comparison Key Take-aways

	vmware	CITRIX	Microsoft
Proofpoints	• Only VMware supports: thick Windows apps, SaaS apps, and Remote Apps • Supports multi-vendor applications: XenApp & O365 • Enables SSO across multiple networks \ identity stores \ non-MS environments.	• Have an App store that incorporates all of their products, including XenMobile • SSO of SaaS Applications (includes insecure form fill) • Does not extend to Windows thick applications	• App Store is more list like, not similar in structure to consumer offerings • Offers Thick apps, XenApps – not SaaS • Requires SCCM
App store	✓	✓	✓
SSO Platform	✓	✓	X
Thick apps supported cross platform	✓	X	✓

Smart Polices

Get flexible, real-time policies with intelligent, fine-grained control and true-single-sign on with the click of mouse



True SSO Experience

Policy-Managed Client Features

Access Point Authentication

Common Criteria / FIPS 140-2

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End-to-end Monitoring: vRealize Operations vs Microsoft

vRealize Operations for Horizon Advantages

- Provides individualized monitoring for business-critical apps, in-guest application and process metrics, and login times
- Correlates monitoring with underlying storage
- Connects performance data with change events
- Provides Connection Protocol characteristics, latency times and related metrics
- Supports dynamic thresholds

Microsoft Weaknesses

- Cannot provide log management scenario modeling
- Lacks end-to-end visibility from data center to remote desktop or app
- Lacks ability to perform proactive analysis
- Requires several, un-integrated tools to monitor and manage the whole platform effectively

Management Tools Comparison

	vRealize Ops with vRealize LogInsight	Microsoft System Center Ops Manager
End-to-End	✓	X
Session Monitoring	✓	X
Infrastructure Monitoring	✓	✓
Proactive Analysis	✓	X
Root Cause Analysis	✓	✓
“What-if” Scenarios	✓	X
Reporting	✓	✓
Log Management	✓	X

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VMware WEM Advantages vs Microsoft

Only VMware EUC provides…

- Diverse application and OS support
- Agentless app isolation
- Real-time application delivery
- Enable SSO across multiple networks \ identity stores \ non-MS environments
- End-to-end visibility and operations management/monitoring
- Patch, update, and manage them from a single console

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Gartner®

AirWatch Mobile:

- A Leader for 5 Consecutive Years
- Placed Highest on Ability to Execute Axis 3 Consecutive Years

Source: Gartner, Inc., Magic Quadrant for Enterprise Mobility Management Suites, Terrence Cosgrove, et al, June 8 2015. & Gartner, Inc., 2015 Critical Capabilities for Enterprise Mobility Management Suites, Terrence Cosgrove, et al, June 9 2015.

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Magic Quadrant

Figure. Magic Quadrant for Enterprise Mobility Management Suites

Source: Gartner (June 2015)

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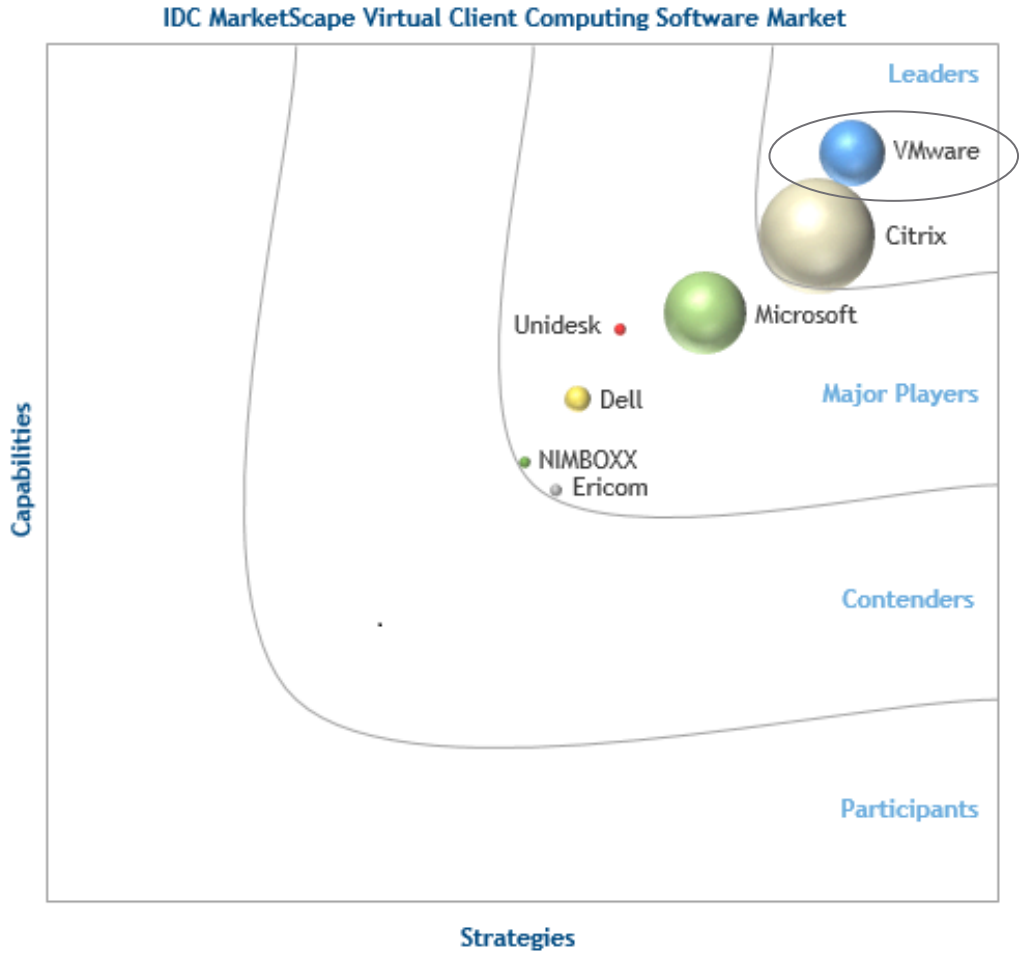
IDC
Analyze the Future

Horizon Desktop:

VMware leaps past the competition

“VMware's position reflects the company's market position and commitment to providing resources to expand its EUC product portfolio and infrastructure.”



vmware
USDC TECHNOLOGY Smart Data Center

Thank You!

Additional Advantages

- Superior Network Management with VMware NSX
  - Includes more granular control, and network virtualization
  - Provides VDI and mobile users with fast, easy, and extensible networking and security
  - Offers more efficient firewalls with fewer hops and more precise virtual machine networking than other solutions
  - Allows for elasticity and agility to spin new pools up or down or expand existing ones with micro-segmentation