

Upgrading Your vSphere Environment

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- This overview of new technology represents no commitment from VMware to deliver these features in any generally available product.
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- This information is confidential.

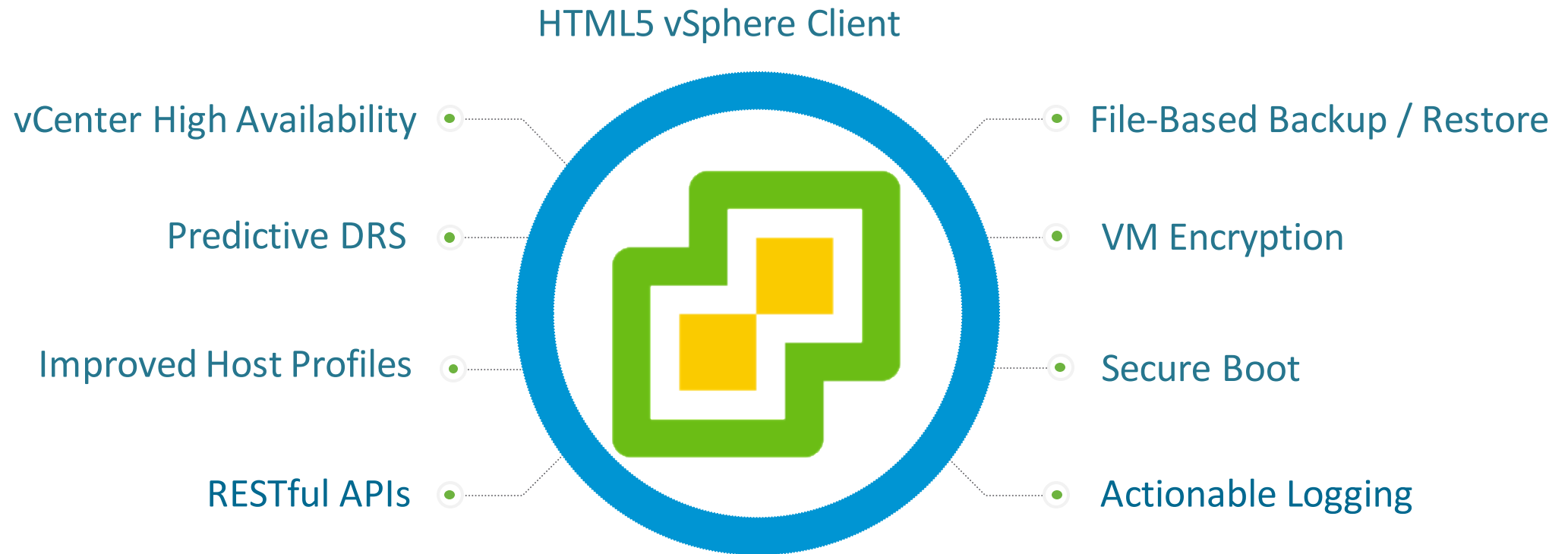
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Agenda

- vSphere News
- vCenter Server Migration
- Pre-Upgrade Considerations
- vSphere Upgrade Process
- vCenter Server Appliance Exclusive Features
- vSphere Management Clients
- Additional Resources

vSphere News

vSphere 6.5 Features



For more information on all the new vSphere 6.5 features visit
<https://blogs.vmware.com/vsphere/>

vSphere 6.5 Update 1

<https://blogs.vmware.com/vsphere/2017/07/vsphere-6-5-update-1-hood.html>



vSAN and vSphere Update Manager integration



HTML5-based vSphere Client supports 90% of general workflows



vCenter Server Foundation now supports 4 hosts



Increased vSphere Maximums
Installer support for macOS Sierra

ESXi support for Mac Pro 6,1



vSphere 6.0 U3 to vSphere 6.5 U1 upgrade path now supported

vSphere 6.5 Update 2

<https://blogs.vmware.com/vsphere/2018/05/vsphere-6-5-update-2-now-available.html>



Embedded Linked Mode Support for Greenfield or Expanded Deployments



Custom Port Support for Migrations and HTTP Reverse Proxy

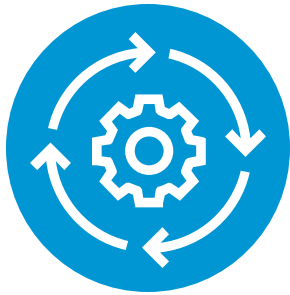


IPv6 Support for VM Encryption KMS



Batch install, upgrade, migrate using CLI

What's New with vSphere 6.7



SIMPLE & EFFICIENT MGMT AT SCALE

- Enhanced VCSA Performance
- vSphere Quick Boot
- Single Reboot Upgrade
- Support for 4K Native Storage
- vTPM
- TPM 2.0
- VBS
- Encrypted xVC vMotion



COMPREHENSIVE BUILT-IN SECURITY



UNIVERSAL APP PLATFORM

- Enhancements for Nvidia GRID™ vGPUs
- vSphere Persistent Memory
- vSphere Integrated Containers
- Instant Clone



SEAMLESS HYBRID CLOUD EXPERIENCE

- Per-VM EVC
- Hybrid Linked Mode

Efficient Security Patch Delivery

Predictable Monthly Cadence

Delivery

- Photon OS - operating system built for virtualization
- OS vulnerability patches on a monthly release cycle
- Patches available on myvmware.com patch Portal
- Security alerts on the VMware Security page

Patches

Release Name	Release Date	File	Description	Download
VC-8.5.U1q-Appliance	03/20/2018	VMware-vCenter-Server-Appliance-8.5.0-19184568.patch-FP.iso	Patch for vCenter Server Appliance 8.5 with bug fixes. For more information, see http://links.vmware.com/kb/52782	Download
VC-8.5.U1f-Appliance	02/15/2018	VMware-vCSA-8.5.0-1810180191519.patch-FP.iso	vCenter Server Appliance 8.5 (80) with security fixes for PhotonOS. For more information, see http://links.vmware.com/kb/52782	Download
VC-8.5.U1f-Appliance-Patch	02/15/2018	VMware-vCenter-Server-Appliance-8.5.0-1810180191519.patch-FP.iso	Patch for vCenter Server Appliance 8.5 with security fixes for PhotonOS. For more information, see http://links.vmware.com/kb/52782	Download
VC-8.5.U1e-Appliance	01/09/2018	VMware-vCenter-Server-Appliance-8.5.0-17191824.patch-FP.iso	Patch for vCenter Server Appliance 8.5 with bug fixes. For more information, see http://links.vmware.com/kb/52018	Download
VC-8.5.U1a-Windows	12/19/2017	VMware-vMPPatch-T-8.5.0-7312216.iso	JRE 1.8.0_141 patch for vCenter Server 8.5. For more information, see http://links.vmware.com/kb/5131727	Download
VC-8.5.U1f-Appliance-Patch	12/19/2017	VMware-vCenter-Server-Appliance-8.5.0-7312216.patch-FP.iso	Patch for vCenter Server Appliance 8.5 with bug fixes. For more information, see http://links.vmware.com/kb/5131724	Download
VC-8.5.U1-Appliance	11/14/2017	VMware-vCenter-Server-Appliance-8.5.0-71917070.patch-FP.iso	Patch for vCenter Server Appliance 8.5 with bug fixes. For more information, see http://links.vmware.com/kb/50056083	Download
VC-8.5.U1c-Appliance-Patch	11/14/2017	VMware-vCenter-Server-Appliance-8.5.0-71917070.patch-FP.iso	Patch for vCenter Server Appliance 8.5 with bug fixes. For more information, see http://links.vmware.com/kb/50056084	Download
VC-8.5.U1-Windows	07/27/2017	VMware-vMPPatch-T-8.5.0-5873321.iso	JRE 1.8.0_131 patch for vCenter Server 8.5. For more information, see http://links.vmware.com/kb/5135225	Download
VC-8.5.U1-Windows	03/14/2017	VMware-vMPPatch-T-8.5.0-5178843.iso	JRE 1.8.0_121 patch for vCenter Server (Third patch set). For more information, see http://links.vmware.com/kb/5136373	Download

Advisories

VMware Security Advisories document remediation for security vulnerabilities that are reported in VMware products. Sign up on the right-hand side of this page to receive new and updated advisories in e-mail.

March 15, 2018
VMMSA-2018-0008
Workstation and Fusion updates address a denial-of-service vulnerability

February 08, 2018
VMMSA-2018-0007.2
VMware Virtual Appliance updates address side-channel analysis due to speculative execution

January 26, 2018
VMMSA-2018-0006
vRealize Automation, vSphere Integrated Containers, and AirWatch Console updates address multiple security vulnerabilities

January 10, 2018
VMMSA-2018-0005
VMware Workstation, and Fusion updates resolve use-after-free and integer-overflow vulnerabilities

January 09, 2018
VMMSA-2018-0004.3
VMware vSphere, Workstation and Fusion updates add Hypervisor-Assisted Guest Remediation for speculative execution issue

January 04, 2018
VMMSA-2018-0003
vRealize Operations for Horizon, vRealize Operations for Published Applications, Workstation, Horizon View Client and Tools updates resolve multiple security vulnerabilities

January 03, 2018
VMMSA-2018-0002.3
VMware ESXi, Workstation and Fusion updates address side-channel analysis due to speculative execution.

January 02, 2018
VMMSA-2018-0001
vSphere Data Protection (VDP) updates address multiple security issues.

December 19, 2017
VMMSA-2017-0021
VMware ESXi, vCenter Server Appliance, Workstation and Fusion updates address multiple security vulnerabilities

vCenter Server for Windows News

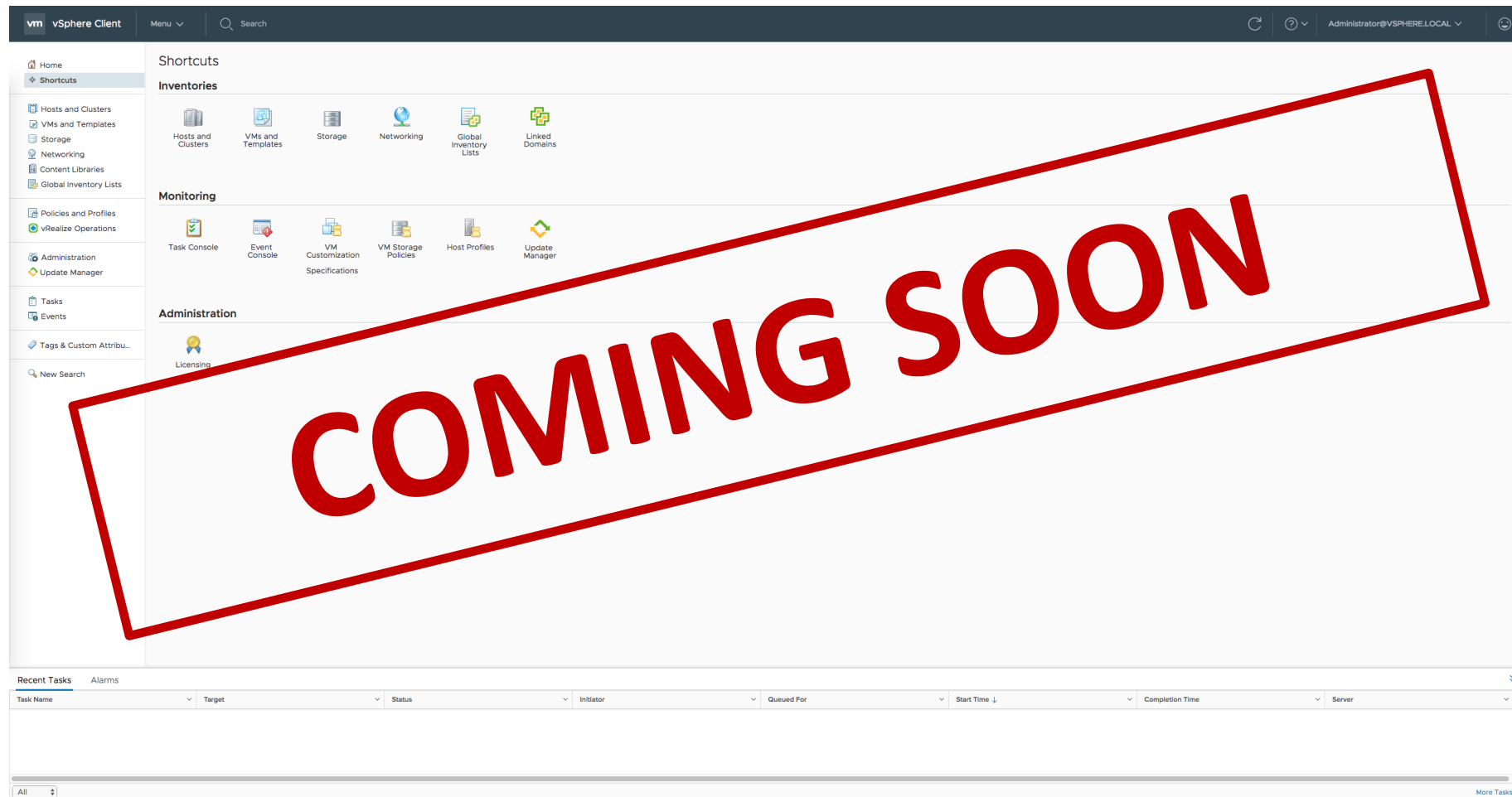
<http://vmwa.re/goodbyewinvc>



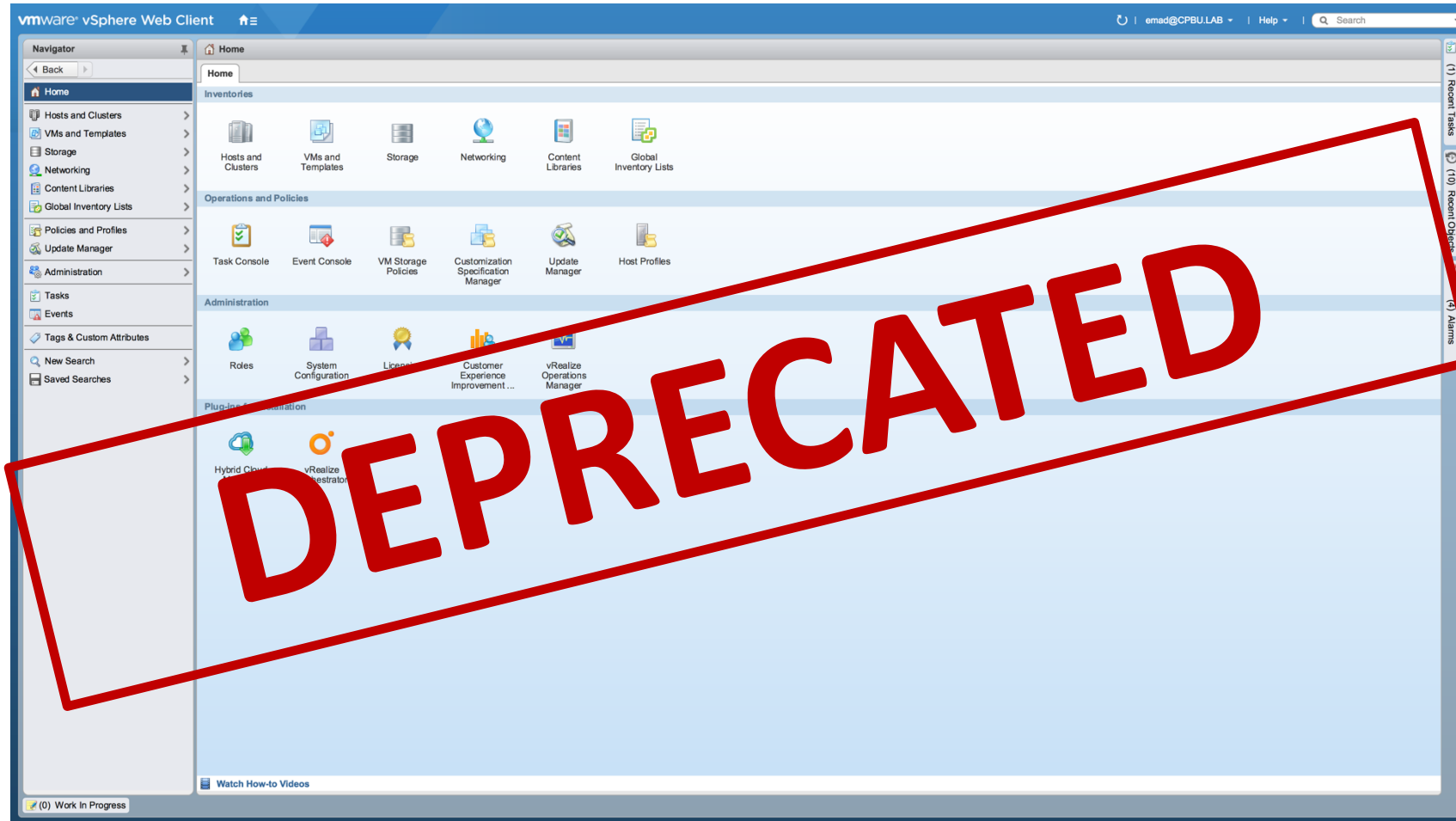
vCenter Server for Windows 6.7 will be the final Windows-based release

vSphere Client (HTML5) News

<https://blogs.vmware.com/vsphere/2018/05/fully-featured-html5-based-vsphere-client-coming-fall-2018.html>



vSphere Web Client News



vCenter Server 6.7 will be the final release of the vSphere Web Client

<http://vmwa.re/goodbyeflash>

CIP Deprecation

CIP – Client Integration Plugin for vSphere Web Client

- Functions in 6.0
 - vCenter / PSC Installation
 - file upload to datastore
 - OVA/OVF deployment
 - Content Library import/export
 - Integrated Windows Authentication / SmartCard Login
- In 6.5 and 6.7 CIP is no longer required
 - CIP functionality replaced by native browser functions (including for installation)
 - SSPI / SmartCard will still require optional plugin called Enhanced Authentication Plugin



End Of General Support

KB VMware Knowledge Base Training Community Store My VMware

Search for topics, products, or issues

Recent Activity: cannot deploy host... x esxi signed update x "officially signed" x See What's New SEARCH

End of General Support for vSphere 5.5 (51491)

Last Updated: 6/19/2018 Categories: Informational

Purpose

This article provides information on the End of Support Life for vSphere 5.5, which includes vSphere Hypervisor ESXi 5.5 and vCenter Server 5.5.

Resolution

The End of General Support for vSphere 5.5 is September 19, 2018. To maintain your full level of Support and Subscription Services, VMware recommends upgrading to vSphere 6.5, vSphere 6.7 or to a newer version. VMware has extended the general support for vSphere 6.5 to a full five years from date of release, which means the general support for vSphere 6.5 will end November 15, 2021. The End of General for vSphere 6.7 will also be on November 15, 2021. For more information on the benefits of upgrading and how to upgrade, visit the [VMware vSphere Upgrade Center](#).

If you would like assistance in moving to a newer version of vSphere, VMware's vSphere Upgrade Service is available. This service delivers a comprehensive guide to upgrading your virtual infrastructure. It includes recommendations for planning and testing the upgrade, the actual upgrade itself, validation guidance and rollback procedures. For more information contact your Technical Account Manager or visit [VMware Professional Services](#) and [VMware Consulting Engagement Request](#).

In the event you are unable to upgrade before the End of General Support (EOGS) and are active on Support and Subscription, you have the option to purchase extended support in one year increments for up to two years beyond the EOGS date. Visit [VMware Extended Support](#) for more information.

Technical Guidance for vSphere 5.5 is available until September 19, 2020 primarily through the self-help portal. During the Technical Guidance phase, VMware does not offer new hardware support, server/client/guest OS updates, new security patches or bug fixes unless otherwise noted. For more information, visit [VMware Lifecycle Support Phases](#).

Related Information

For More information, see also:

- [VMware vSphere Upgrade Center](#)
- [VMware Lifecycle Product Matrix](#)
- [Professional Services Consulting Request](#)
- [VMware Professional Services](#)
- [VMware Extended Support](#)
- [VMware Support](#)

简体中文: [vSphere 5.5 的一般支持终止](#)

Request a Product Feature

To request a new product feature or to provide feedback on a VMware product, please visit the [Request a Product Feature](#) page

Feedback

Please rate this article

☆☆☆☆☆

Did this article help you?*

This article resolved my issue.

This article did not resolve my issue.

This article helped but additional information was required to resolve my issue.

What can we do to improve this information?

Related Resources

- [KB • Riverbed SteelFusion Edge with VMware vSphere Hypervisor \(Partner Verified and Supported\) \(2134330\)](#)
- [KB • Riverbed Steelhead EX Appliance with VMware vSphere Hypervisor \(Partner Verified and Supported\) \(2036523\)](#)
- [KB • Collecting diagnostic information for VMware vCenter Server Multi-Hypervisor Manager \(2036696\)](#)
- [KB • Error:"Internal error occurs during pre-upgrade checks" while upgrading or deploying a vCenter Server Appliance 6.5 \(2148001\)](#)
- [KB • End of General Support for vSphere 5.0 and vSphere 5.1 \(2145103\)](#)

Related Versions:

VMware ESXi 5.5.x
VMware vCenter Server 5.5.x

Actions

[copy external link to clipboard](#)

[subscribe](#)

[print](#)

Language: English

Info

Created: Nov 16, 2017
Last Updated: Jun 19, 2018
Total Views: 55,502

KB 51491

<http://www.vmware.com/go/lifecycle>

Migrating to the vCenter Server Appliance

Migration Overview



- Support for Windows vCenter Server 5.5 or 6.0 → 6.5
- Support for Windows vCenter Server 6.0 or 6.5 → 6.7
- Assumes the identity of the source Windows vCenter (UUID, IP, FQDN, Certs)

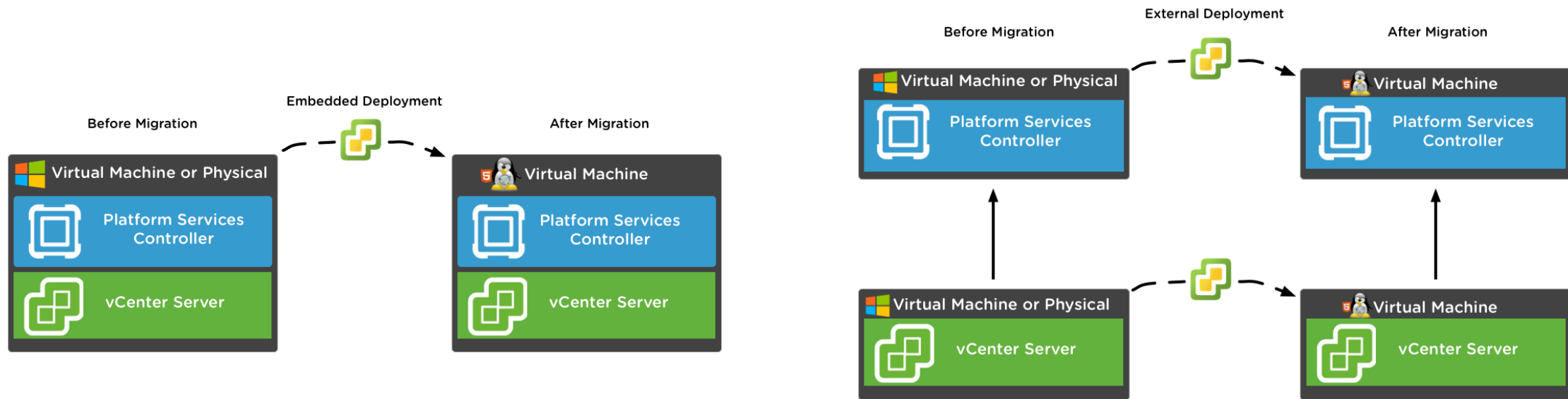


- Database support: MSSQL & Express, Oracle, Postgres
- Migrates Inventory & Configuration by default
- Historical and Performance data migration is optional



- vSphere Update Manager (VUM) Included
- Support for both embedded and external topologies
- Easy rollback

Managing Deployment Types



- Embedded and External deployments are supported
- **No changes** in vCenter Server topology can be made during a migration
- Consolidation of vSphere SSO domain only available in vSphere 5.5 / 6.7

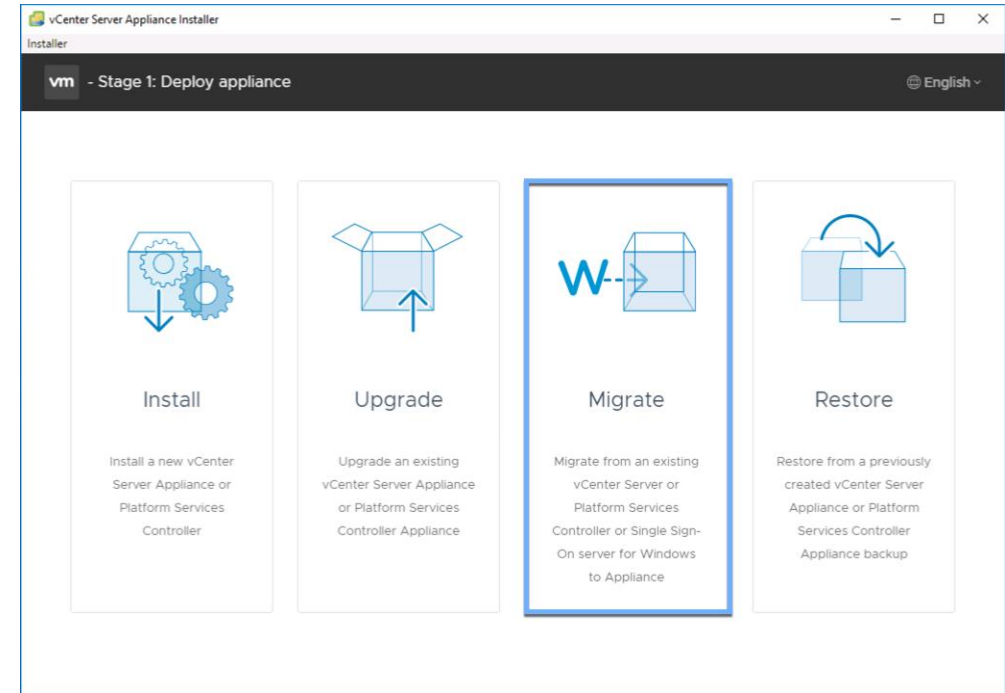
Migration Process

Step 1: Migration Assistant

```
E:\migration-assistant\VMware-Migration-Assistant.exe
Warning: This vCenter Server has extensions registered that cannot be upgraded to or may not work with the new vCenter Server.
Extensions:
Site Recovery Manager (by VMware, Inc.) on https://192.168.10.150:9086/vcdr/vnomsdk
Resolution: Please ensure extensions are compatible with the new vCenter Server and re-register extensions with the new vCenter Server after upgrade.
Please refer to the vSphere documentation on extensions, and the upgrade and interoperability guides.
Warning: Files that cannot be used with Update Manager 6.5 will not be copied from the source. These files include UM guest OS patch baselines, host upgrade baselines and files, and ESX 5.1 and lower version host patches baselines.
Resolution: Please review VMware Update Manager 6.5 Documentation for details
-----
Source Configuration:
Deployment type: VMware vCenter Server 6.0 with an embedded VMware Platform Services Controller
Deployment size: Tiny
DB type: embedded
Additional products that will be migrated: VMware vSphere Update Manager
Destination Configuration:
Deployment type: VMware vCenter Server Appliance 6.5 with an embedded VMware Platform Services Controller
DB type: embedded
Migration Settings:
FQDN: win-vc-01.Younis.Lab
Single Sign-On username: Administrator@vsphere.local
SSL thumbprint: 0E:23:26:8D:FA:15:AE:B2:F0:0B:D2:B6:A0:E9:9B:D8:3E:93:E5:B3
Port: 9123
Export data folder: C:\Users\Administrator\AppData\Local\VMware\Migration-Assistant\
Migration Steps:
1. Launch vCenter Server Appliance UI Installer and click 'Migrate' to start the migration wizard.
2. In the wizard, enter FQDN for the source Windows Server and Port for the Migration assistant port.
3. Validate and accept the SSL thumbprint.
4. Select 'Tiny' or a larger Deployment size, and follow the wizard to complete your migration.
-----
Note: This machine will be shutdown as part of the migration. If migration fails, you can power off the target vCenter Server Appliance and then power on this machine to rollback the migration.
-----
DO NOT CLOSE this console until the migration is complete.
-----
Waiting for migration to start...
```

- vCenter Server Pre-Checks
- Migration Information
- Data Transport Mechanism

Step 2: Migration Tool



- Stage 1: VCSA Deployment
- Stage 2: Configuration / Data Import

Migration Time

How long does the migration process take?



Estimating Windows vCenter Server to vCenter Server Appliance migration time

KB 2147711

Migration (6.7)

vm Migrate - Stage 2: vCenter Server Appliance

- 1 Introduction
- 2 Connect to source vCenter Se...
- 3 Join AD Domain
- 4 **Select migration data**
- 5 Ready to complete

Select migration data

Select the data that you want to copy from the source vCenter Server for Windows.

The data sizes shown below represent only the data that will be copied to the target server. It does not correspond to the actual size of your data on the source server. The identity of the server will also be copied and the source server will remain unchanged.

- Configuration (2.67 GB) Estimated downtime: 33 minutes
- Configuration and historical data (events and tasks) (2.77 GB)
- Configuration and historical data (events, tasks and performance metrics) (2.77 GB)
- Import historical data in the background. Estimated downtime: 34 minutes**
vCenter Server Appliance will start once the configuration data has been imported. The historical data will be imported in the background. During this time, the performance of vCenter Server Appliance might not be optimal.
- Import all data now. Estimated downtime: 37 minutes**
vCenter Server Appliance won't start until all data has been imported from vCenter Server.

CANCEL BACK NEXT

Selective data import

- Deploy & import all data
- Deploy & import data in the background

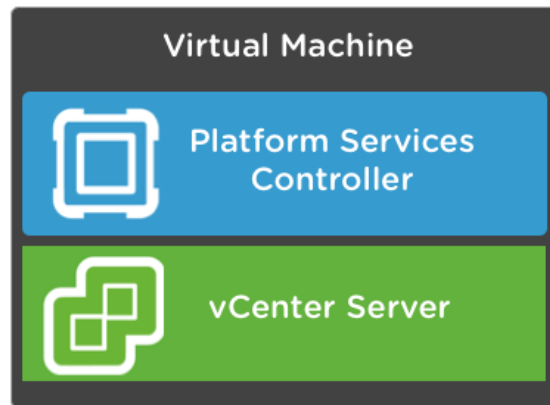
Estimated downtime

Resume and pause data import from the VAMI

Support for custom ports

Automation from the CLI

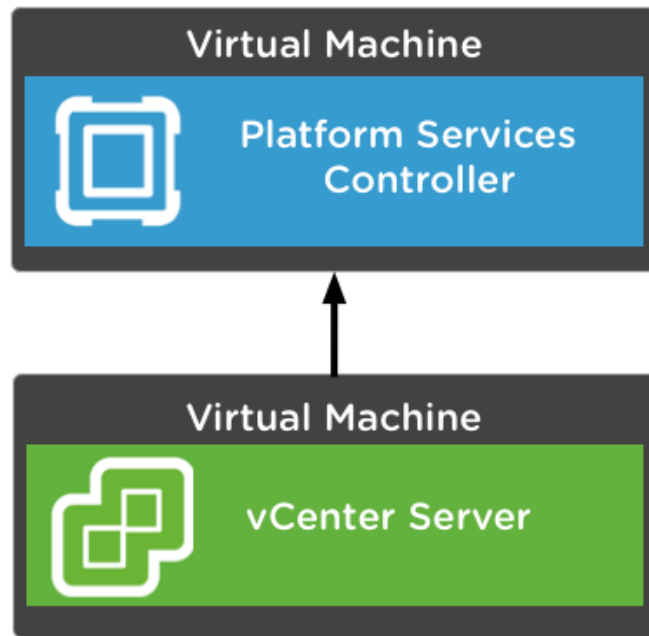
vCenter Server – Embedded Deployment



- Both vCenter Server & PSC components
- No Enhanced Linked Mode (6.5U1)
- Enhanced Linked Mode (6.5U2/6.7 Greenfield)
- vCenter High Availability Supported
- No Load Balancer required
- Supports all vCenter Server Maximums

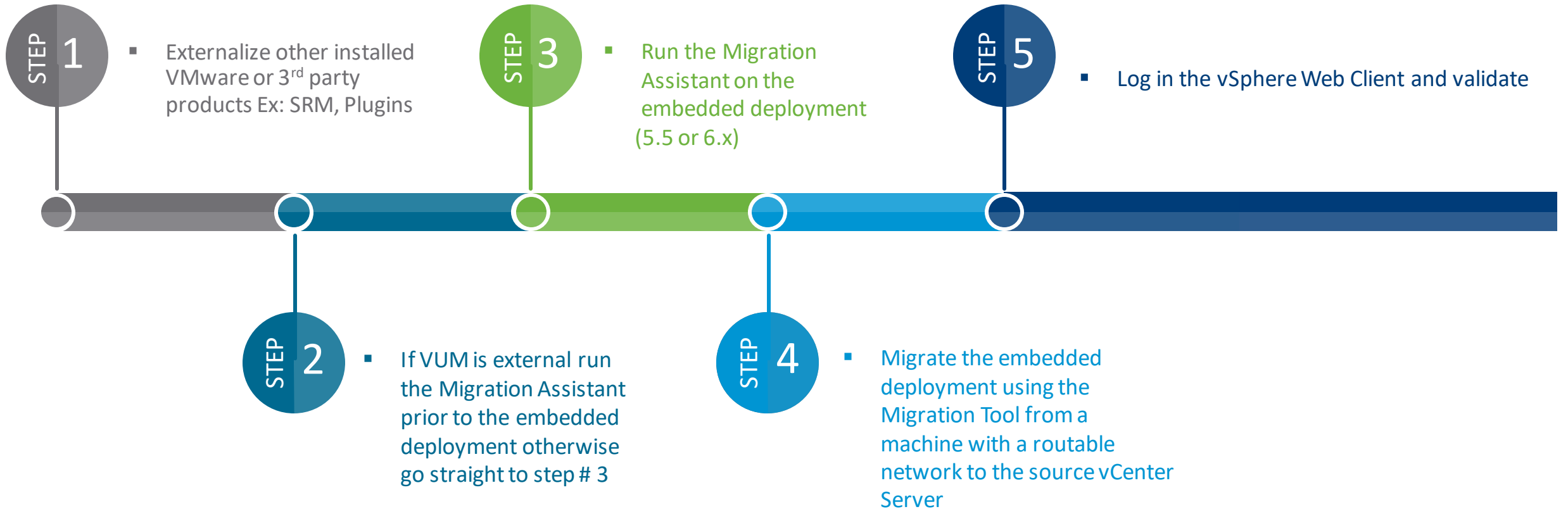
* Enhanced Linked Mode requires the vCenter Server Standard licensing level, and is not supported with vCenter Server Foundation or vCenter Server Essentials

vCenter Server – External Deployment

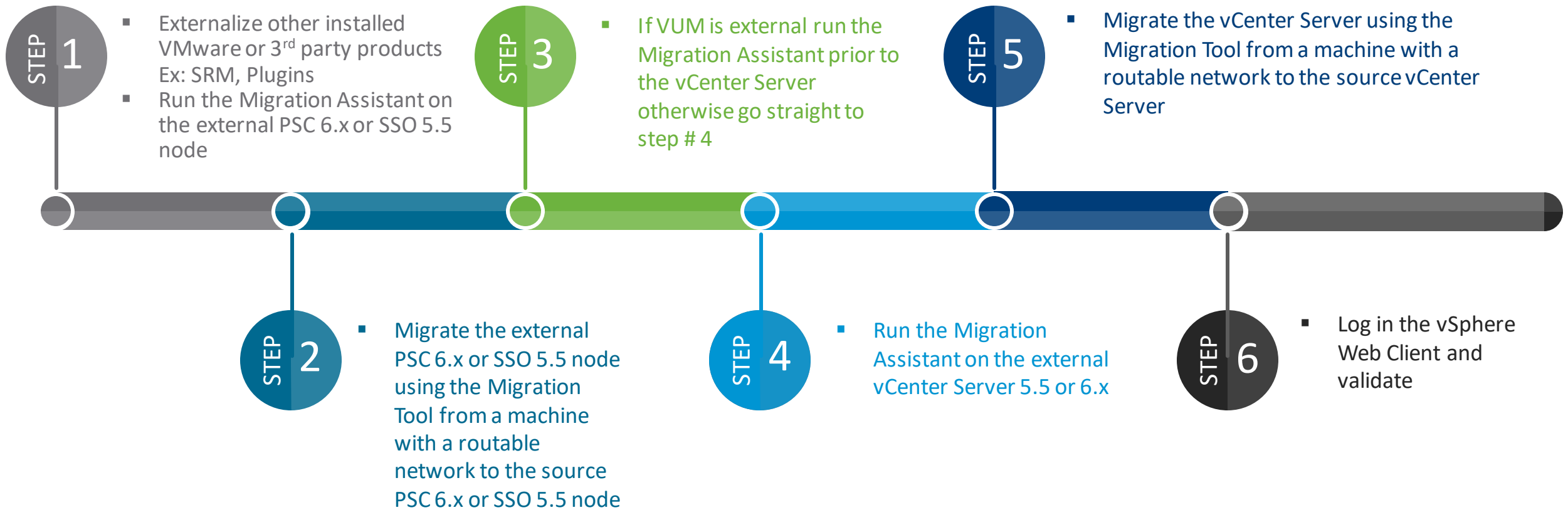


- Separate Virtual Machines
- Enhanced Linked Mode
- vCenter High Availability Supported
- Load Balancer required for:
 - Automatic PSC Failover
 - vCenter HA

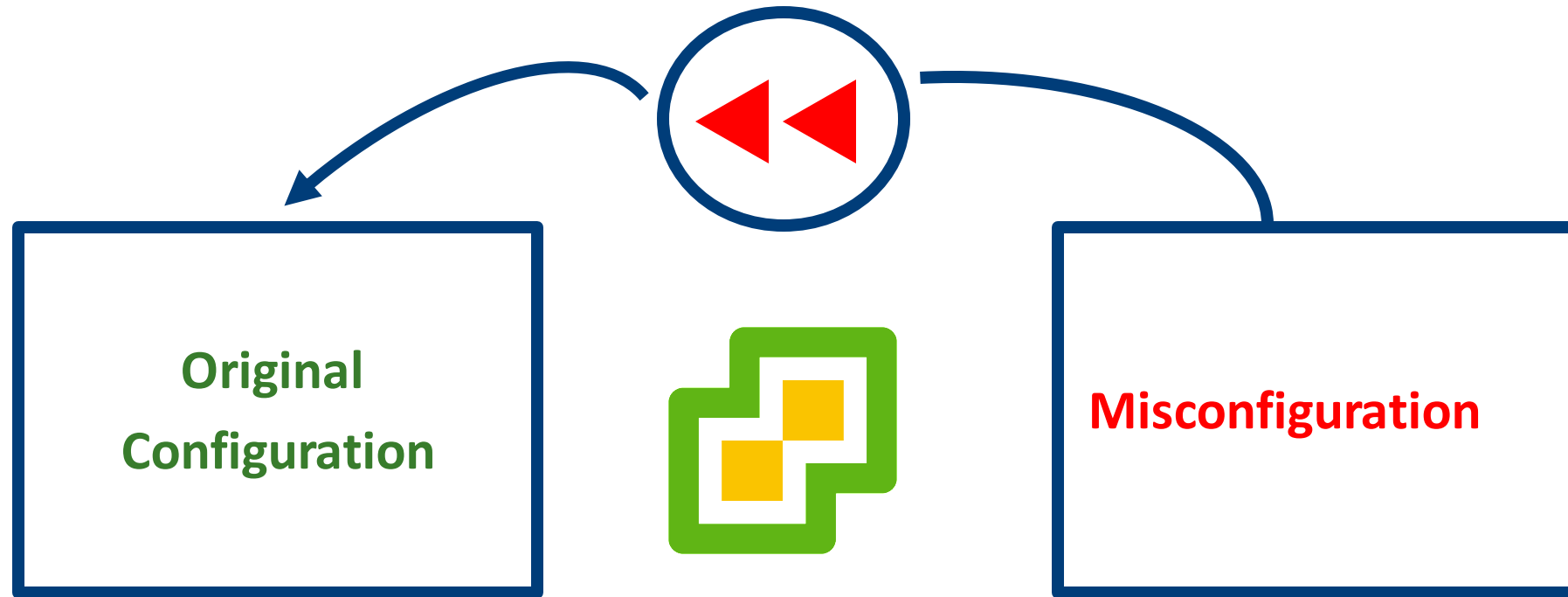
Migration Embedded Workflow



Migration External Workflow



Rollback



- No changes made to the source Windows vCenter Server
- Shutdown and delete VCSA
- Join source Windows vCenter Server to AD domain
- Do not rely on cached credentials on Windows vCenter Server

Scripted Migration

```
aeckerle-m03:mac aeckerle$ ./vcsa-deploy migrate --help
Usage: vcsa-deploy migrate [-h] [--template-help] [-v] [-t] [--log-dir LOG_DIR]
                          [--skip-ovftool-verification] [--no-esx-ssl-verify]
                          [--deployment-target-ssl-thumbprint TARGET_THUMBPRINT]
                          [--accept-eula] [--acknowledge-ceip]
                          [--pause-on-warnings] [--operation-id OPERATION_ID]
                          [--verify-template-only] [--precheck-only]
                          [--no-ma-ssl-verify]
                          template
```

Migrate an existing Windows installation of vCenter Server to a vCSA.

optional arguments:

-h, --help Show this help message and exit.

Other Arguments:

--template-help Print out the help for template settings.

-v, --verbose Debug information will be displayed in the console. If you set this parameter, you cannot set --terse.

-t, --terse Only warning and error information will be displayed in the console. If you set this parameter, you cannot set --verbose.

--log-dir LOG_DIR Directory for log and other output files.

--skip-ovftool-verification

Top Migration Considerations

1. DNS & NTP are critical / DHCP needs FQDN
2. Know your topology & What's installed on vCenter Server
3. Migration Tool will not use a previously deployed VCSA
4. Break Linked Mode prior to migration (just like upgrade) (5.5)
5. Fresh deployment only use configuration & Inventory default option
6. Check compatibility matrix for VMware solutions / 3rd party solutions
7. Backups – Image level or Native File-Based
8. Display Name Retention
9. Verify connectivity of plugins

Bonus

- ESXi hosts are not touched
- Target hosts must be 5.5 or greater (6.5) or 6.0 or greater (6.7)
- vCenter Custom Ports are not supported (6.5U1)
- Dual homing not supported on VCSA

Pre-Upgrade Considerations

Important vSphere Documents



Product Release
Notes



Interoperability
Matrices



vSphere
Documentation



Hardware and
Software
Compatibility
Guides



Knowledge
Base Articles

vSphere Upgrade Documents

Knowledge Base Articles

- Information before upgrading to vSphere 6.5 ([2147548](#))
- Information before upgrading to vSphere 6.7 ([53704](#))
- VMware vSphere Upgrade Policies ([2149713](#))
- Update Sequence for vSphere 6.5 and its compatible VMware products ([2147289](#))
- Update Sequence for vSphere 6.7 and its compatible VMware products ([53710](#))
- Best Practices for upgrading to vCenter Server 6.7 ([54008](#))
- Supported and Deprecated Topologies for VMware vSphere 6.5 ([2147672](#))
- Supported Upgrade paths for vSAN 6.6 ([2149840](#))
- Migrating VMFS 5 datastore to VMFS 6 datastore ([2147824](#))
- Known issues while upgrading to DVS version 6.6 ([52621](#))

Documentation

- [VMware vSphere 6 Documentation](#)
 - Release Notes
 - Compatibility and Configuration Limits
 - Product documentation including vSphere Upgrade Guide
- [Guest Operating System Installation Guide](#)
- [VMware Compatibility Guide](#)

vSphere Interoperability Matrices

<http://www.vmware.com/go/interop>

VMware vCenter Server	6.7.0	6.5 U2	6.5 U1	6.5.0	6.0 U3	6.0.0 U2	6.0.0 U1	6.0.0	5.5 U3	5.5 U2	5.5 U1	5.5
6.5 U2	❌											
6.5 U1	✅	✅										
6.5.0	✅	✅	✅									
6.0 U3	✅	✅	✅	❌								
6.0.0 U2	✅	✅	✅	✅	✅							
6.0.0 U1	✅	✅	✅	✅	✅	✅						
6.0.0	✅	✅	✅	✅	✅	✅	✅					
5.5 U3	❌	✅	✅	✅	✅	✅	—	—				
5.5 U2	❌	✅	✅	✅	✅	✅	✅	✅	✅			
5.5 U1	❌	✅	✅	✅	✅	✅	✅	✅	✅	✅		
5.5	❌	✅	✅	✅	✅	✅	✅	✅	✅	✅	✅	

✅ Compatible

❌ Incompatible

— Not supported

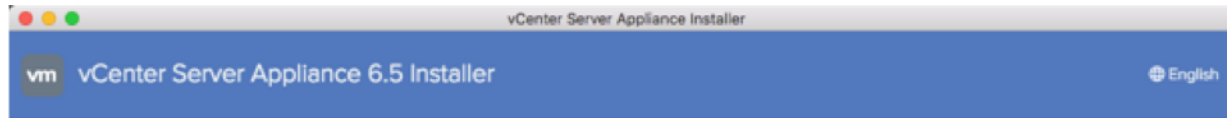
VMware vCenter Server	6.7.0	6.5 U2	6.5 U1	6.5.0	6.0 U3	6.0.0 U2	6.0.0 U1	6.0.0	5.5 U3
▼ VMware Site Recovery Manager									
8.1	✅	✅	✅	✅	✅	—	—	—	—
8.0	—	✅	✅	✅	✅	—	—	—	—
6.5.1	—	✅	✅	—	—	—	—	—	—
6.5	—	—	—	✅	—	—	—	—	—
6.1.2	—	—	—	—	✅	—	—	—	—
6.1.1	—	—	—	—	—	✅	—	—	—
6.1	—	—	—	—	—	✅	✅	—	—
6.0	—	—	—	—	—	✅	✅	✅	—
5.8.1	—	—	—	—	—	—	—	—	✅





Using the VMware Product Interoperability Matrices

[KB2006028](#)

vSphere Upgrade Process

vCenter Server Appliance Upgrade



-  **Install**
Install a new vCenter Server Appliance or Platform Services Controller Appliance
-  **Upgrade**
Upgrade an existing vCenter Server Appliance
-  **Migrate**
Migrate from an existing vCenter Server for Windows to a vCenter Server Appliance
-  **Restore**
Restore from a previously created vCenter Server Appliance backup

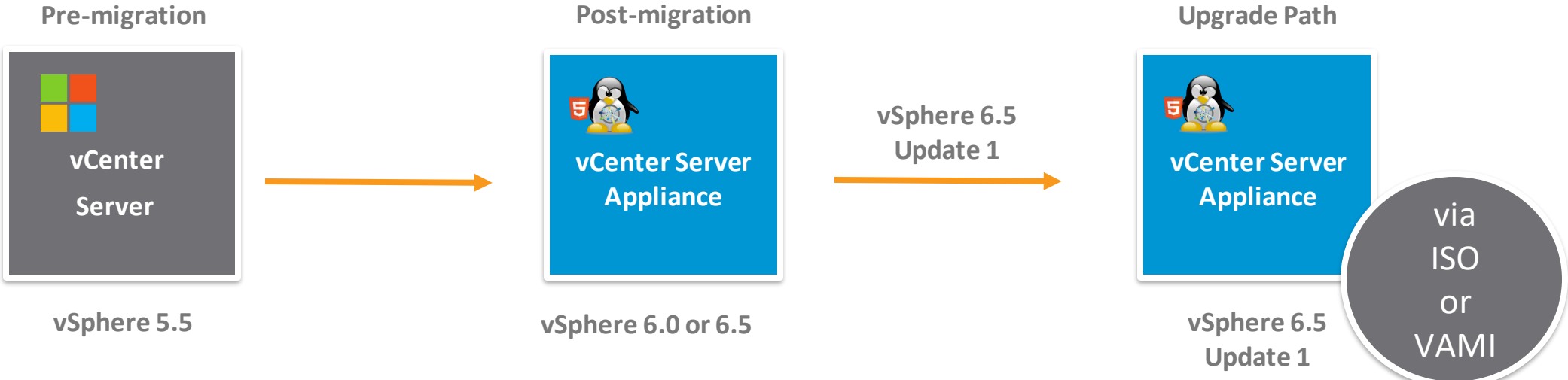
```
aeckerle-m03:mac aeckerle$ ./vcsa-deploy upgrade --help
Usage: vcsa-deploy upgrade [-h] [--template-help] [-v] [-t] [--log-dir LOG_DIR]
                        [--skip-ovftool-verification] [--no-esx-ssl-verify]
                        [--deployment-target-ssl-thumbprint TARGET_THUMBPRINT]
                        [--accept-eula] [--acknowledge-ceip]
                        [--pause-on-warnings] [--operation-id OPERATION_ID]
                        [--verify-template-only] [--precheck-only]
                        template

Upgrade an existing vCSA.

optional arguments:
  -h, --help                Show this help message and exit.

Other Arguments:
  --template-help          Print out the help for template settings.
  -v, --verbose            Debug information will be displayed in the console. If
                          you set this parameter, you cannot set --terse.
  -t, --terse             Only warning and error information will be displayed in
                          the console. If you set this parameter, you cannot set
                          --verbose.
  --log-dir LOG_DIR       Directory for log and other output files.
  --skip-ovftool-verification
                          Deploy the vCenter Server Appliance directly through OVF
```

Upgrade / Migration Paths

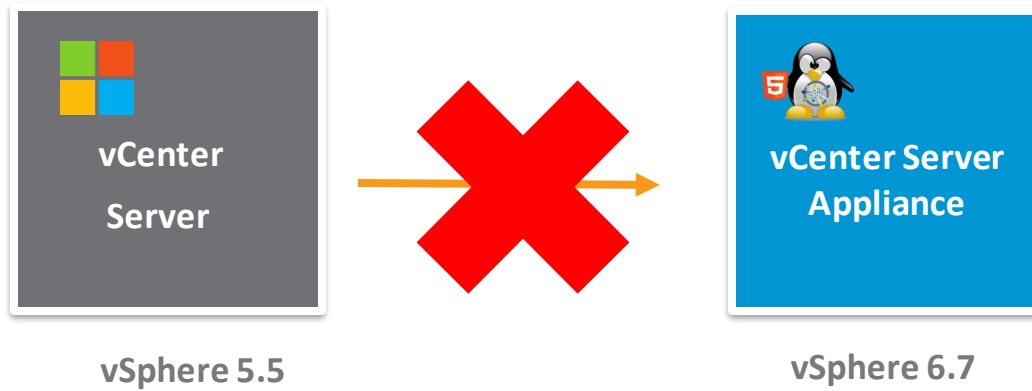


* Release Notes provide migration / upgrade information

vSphere 6.7 Upgrade / Migration Paths

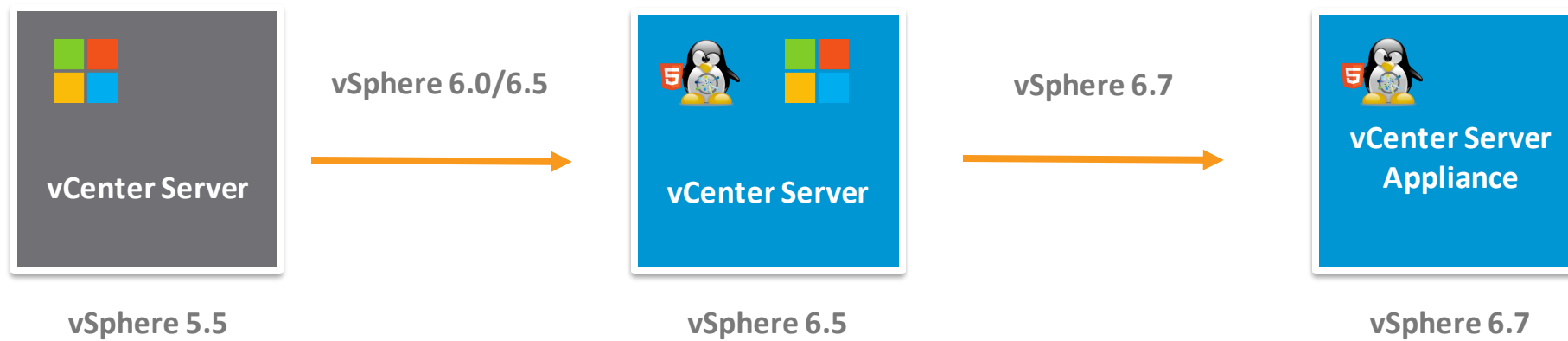
Source	Destination	Upgrade Path
vSphere 5.5 (any)	vSphere 6.7	Not Supported
vSphere 6.0 (any)	vSphere 6.7	Supported
vSphere 6.5 – 6.5 U1	vSphere 6.7	Supported
vSphere 6.5 U2	vSphere 6.7	Not Supported

Upgrade / Migration Paths

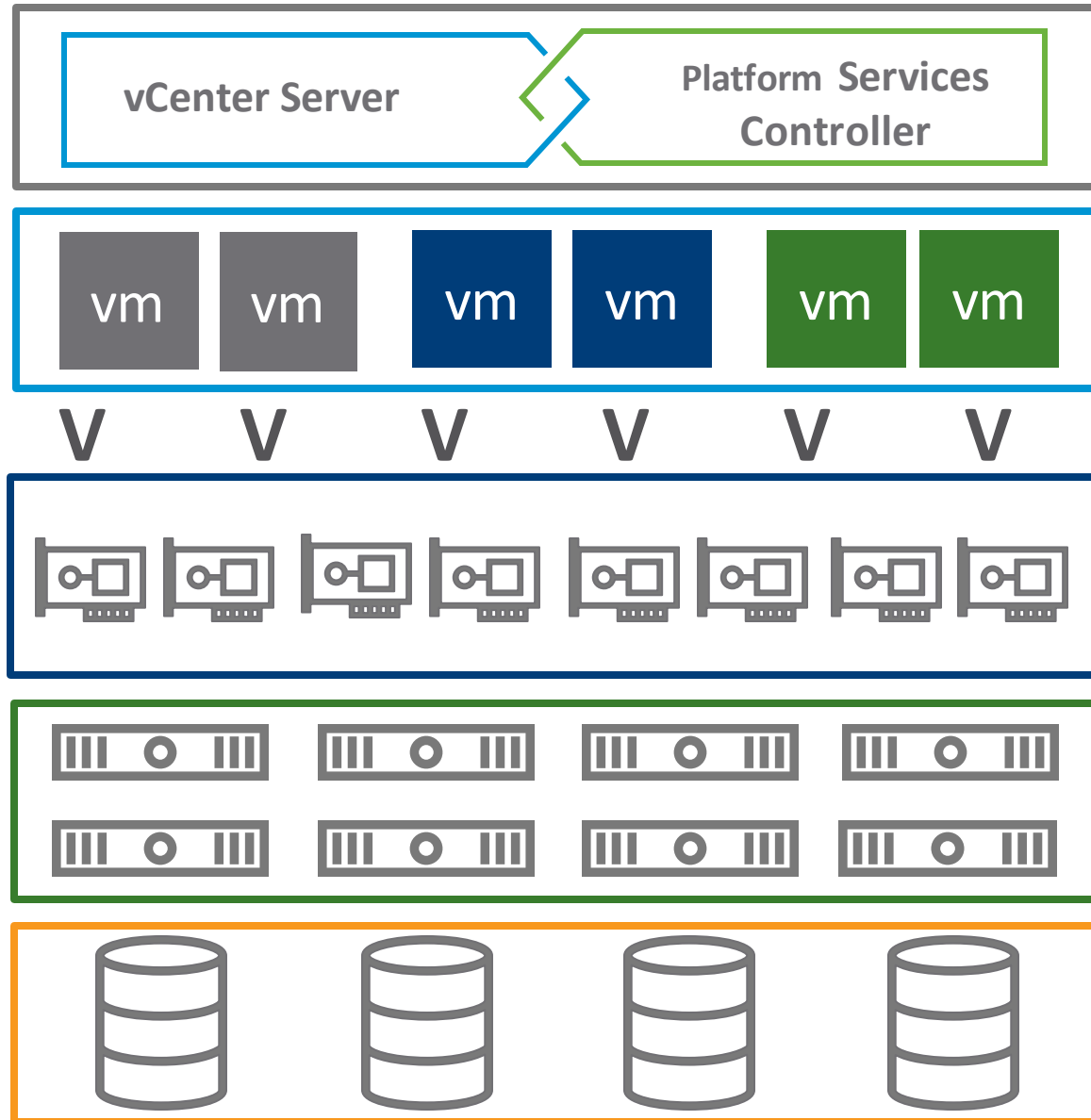


* Release Notes provide migration / upgrade information

Upgrade Path



vSphere Upgrade Process



Step 1: Platform Services Controller

Step 2: vCenter Server

Step 4: VM Tools / Compatibility

Step 6: Virtual Distributed Switch

Step 3: Hypervisor - ESXi

Step 5: Storage - VMFS

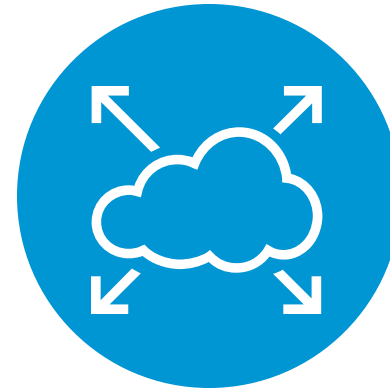
Hypervisor Upgrades - ESXi



Support for
latest server
hardware



vSAN
improvements



VM, Host, and
Cluster scalability
boosts



VMFS
enhancements

VM Tools

Production Cluster



App 1

vm

Tools - Current



App 2

vm

Tools - Current



App 3

vm

Tools - Out of Date



App 4

vm

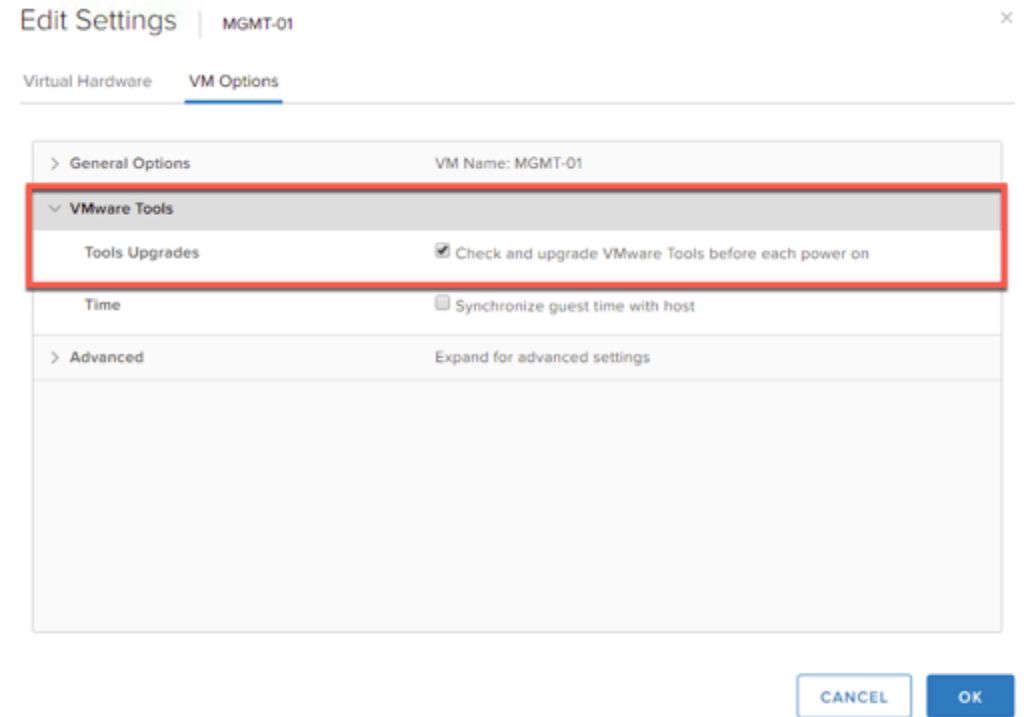
Tools - Out of Date



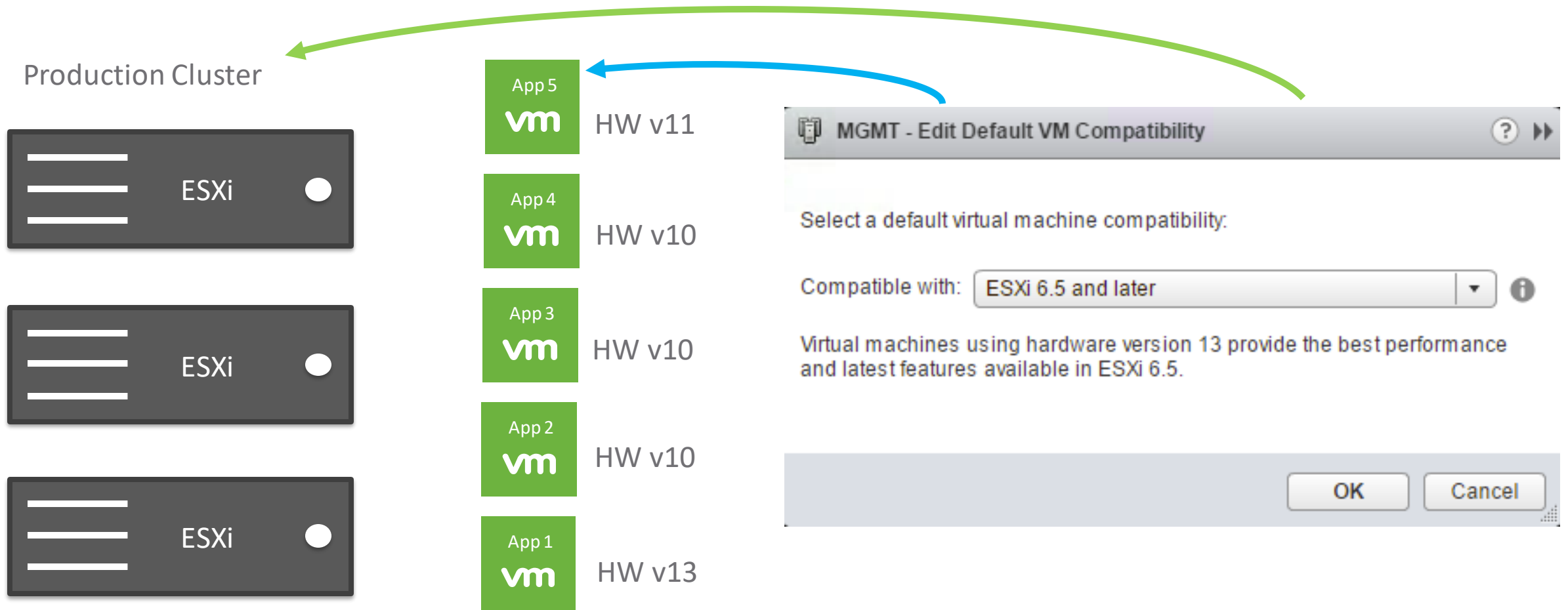
App 5

vm

Tools - Out of Date



VM Compatibility formerly vHardware



Schedule available per VM

Storage – VMFS6

Feature / Function	VMFS6	VMFS5
Access for ESXi 6.5 or 6.7 hosts	Yes	Yes
Access for ESXi hosts version 6.0 and earlier	No	Yes
Datstores per host	512	512
Automatic space reclamation	Yes	No
Space reclamation from guest OS	Yes	Limited
MBR storage device partitioning	No	Yes
Block size	1 MB	1 MB
Default snapshots	VMFSsparse (virtual disks < 2 TB) SEsparse (virtual disks > 2 TB)	SEsparse

Networking

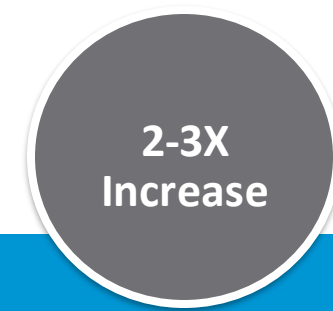
- **Dedicated Gateways for VMkernel Network Adapter**
 - Prior to vSphere 6.5, vSphere DRS, vSphere vMotion, iSCSI, and provisioning have leveraged a single gateway.
- **Virtual Distributed Switch Enhancements**
 - **Distributed switch: 6.6.0**
 - MAC Learning
 - **Distributed switch: 6.5.0**
 - Port Mirroring Enhancements
 - **Distributed switch: 6.0.0**
 - Network I/O Control version 3
 - IGMP/MLD snooping

vCenter Server Appliance Exclusive Features

vSphere Update Manager (VUM)

VMware Update Manager on Windows

- Additional Windows VM for VUM
- Extra configuration; DB dependency
- Sizing and latency considerations
- No inherent backup or failover

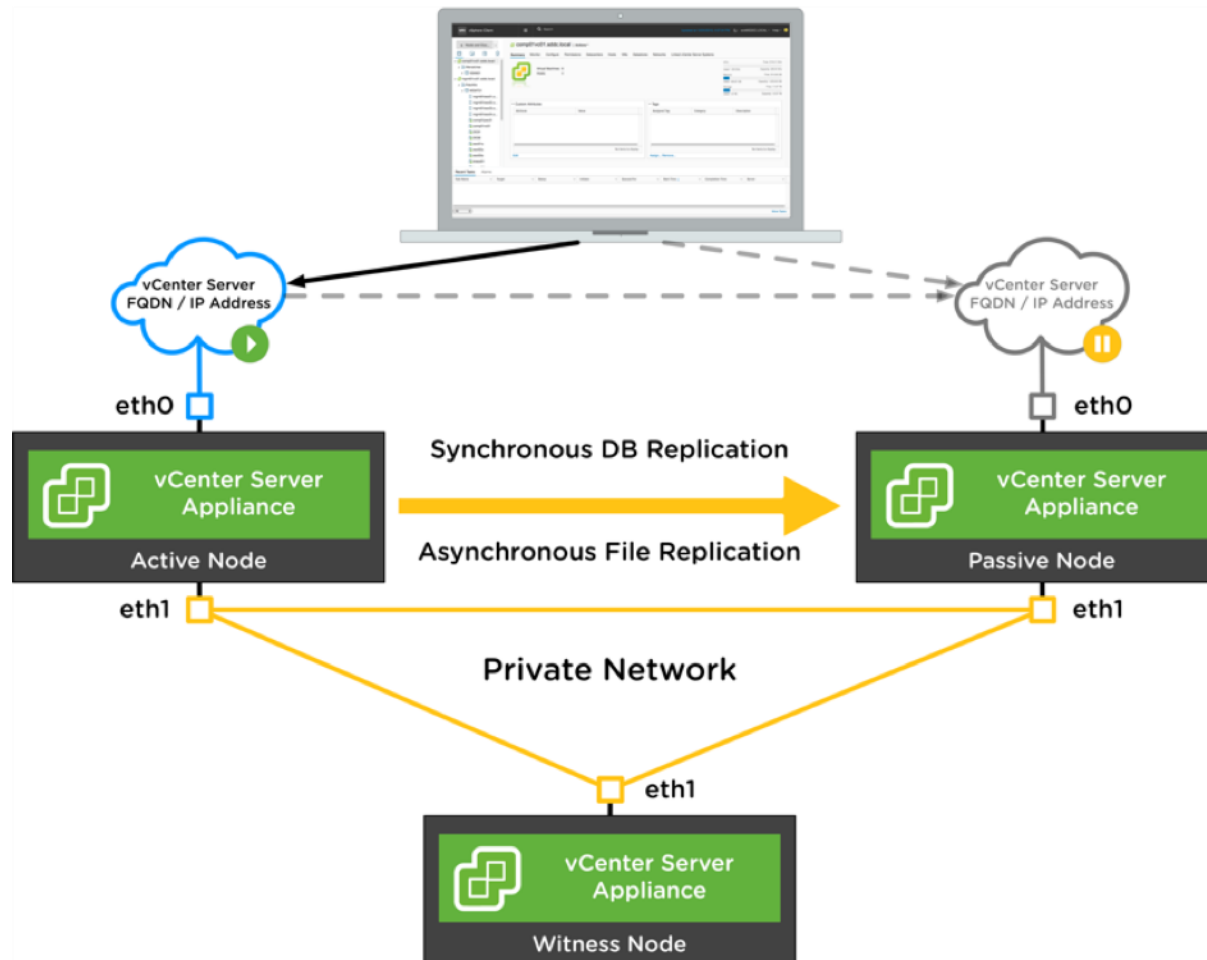


VMware Update Manager on VCSA

- Integrated and enabled by default
- Zero setup; embedded DB
- Scalable and low impact on resources
- Leverages VCSA **HA and backup**

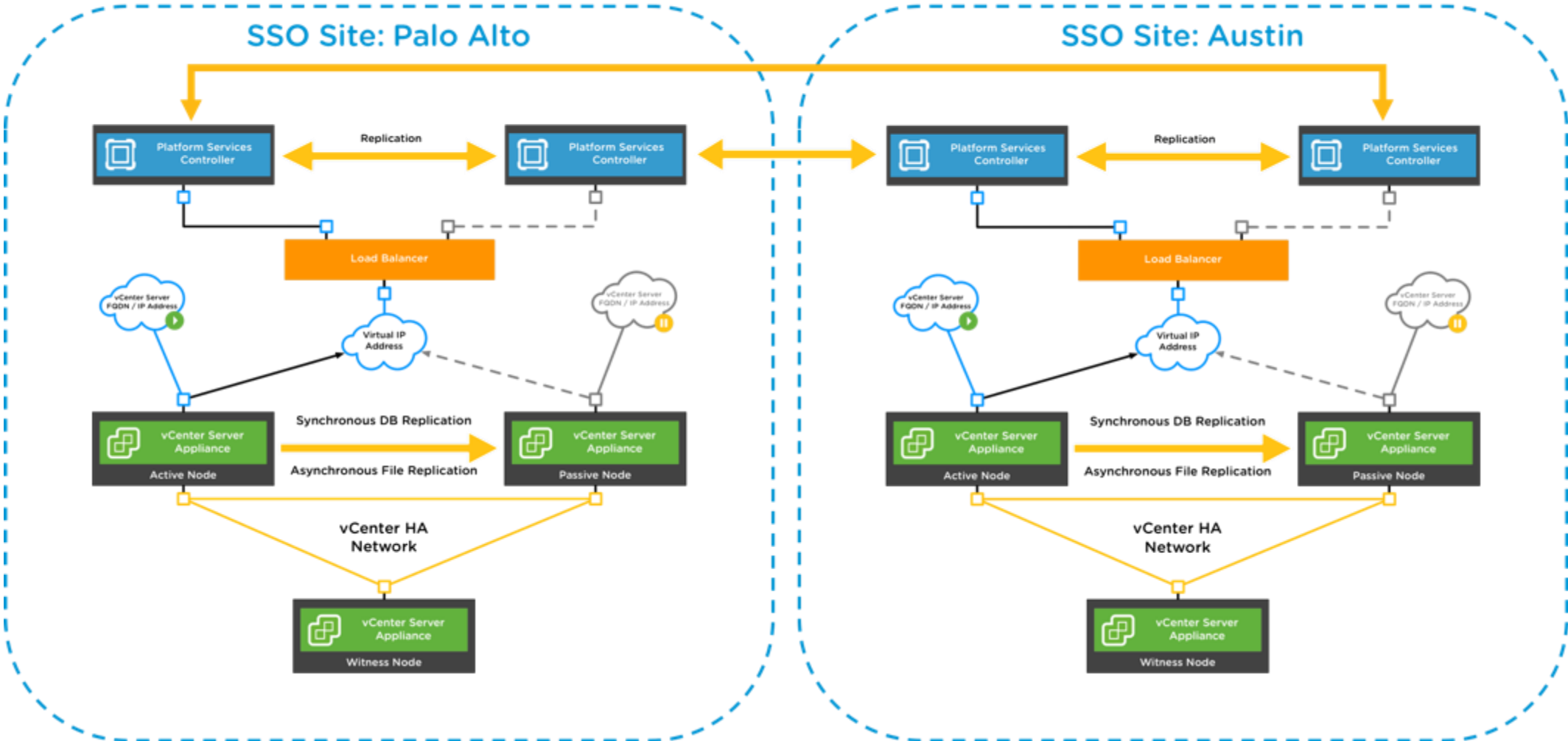


vCenter High Availability



PSC & vCenter Server High Availability

SSO Domain: vsphere.local



Built-in Backup & Restore (6.5)

Native vCenter Server Appliance Backup

- Restore vCenter Server instance to a brand new appliance
- Selective data backup of historical & performance
- Supports embedded & external deployments
- No quiescing
- Option for Encryption (AES 256)
- Restore directly from VCSA ISO

vCenter Server Appliance 6.5 Restore - Stage 1: Deploy OVF

✓ 1 Introduction
✓ 2 End user license agreement
3 Enter backup details
4 Review backup information
5 Appliance deployment target
6 Set up target appliance VM
7 Select deployment size
8 Select datastore
9 Configure network settings
10 Ready to complete stage 1

Enter backup details
Enter the backup location type, location, and credentials.

Backup location type

Backup location


Port


User name


Password


Encryption password optional

HTTP/S
FTP/S
SCP

 **Install**
Install a new vCenter Server Appliance or Platform Services Controller Appliance

 **Upgrade**
Upgrade an existing vCenter Server Appliance

 **Migrate**
Migrate from an existing vCenter Server for Windows to a vCenter Server Appliance

 **Restore**
Restore from a previously created vCenter Server Appliance backup

Built-in Backup & Restore (6.7)

Native vCenter Server Appliance Backup

- Backup Management
 - Scheduled Backup
 - Retention option
 - Backup activity
- Verifies VCSA state
- Supports VCSA & PSC appliances - embedded & external deployments
- Supported Protocols include:
 - HTTP/S
 - SCP
 - FTP/S

The screenshot displays the vCenter Appliance Management interface. The top navigation bar includes 'vm Appliance Management', the date and time 'Mon 03-12-2018 10:41 PM UTC', and utility links for 'English', 'Help', 'Actions', and 'Logout'. A left-hand navigation menu lists various management options, with 'Backup' currently selected. The main content area features a warning message about backup server requirements. Below this, the 'Backup Schedule' section shows a table with configuration details. At the bottom, the 'Activity' section includes a 'BACKUP NOW' button and a table of recent backup operations.

Summary

Before taking a backup, a backup server must be set up and configured such that the appliance has access to it. The protocols supported for backup are FTPS, HTTPS, SCP, FTP and HTTP.

Backup Schedule [EDIT](#) [DISABLE](#) [DELETE](#)

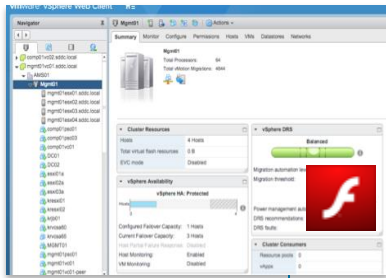
Status	Enabled
Schedule	Daily , 10:40 P.M. Etc/UTC
Backup Location	ftp://10.159.13.53/backup/aus
Backup data	<ul style="list-style-type: none">• Stats, Events, and Tasks• Inventory and configuration
Number of backups to retain	Retain all backups

Activity [BACKUP NOW](#)

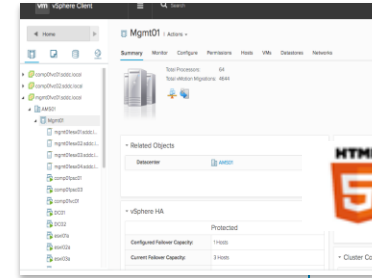
	Backup Location	Type	Status	Data Transferred	Duration	End Time
>	ftp://10.159.13.53/backup/a...	Scheduled	Complete	199.95 MB	00:00:14	Mar 12, 2018, 3:23:18 PM
>	ftp://10.159.13.53/backup/a...	Manual	Complete	199.94 MB	00:00:14	Mar 12, 2018, 3:19:39 PM
>	ftp://10.159.13.53/backup/a...	Scheduled	Complete	199.98 MB	00:00:18	Mar 12, 2018, 3:30:22 PM
>	ftp://10.159.13.53/backup/a...	Scheduled	Complete	200.02 MB	00:00:14	Mar 12, 2018, 3:40:18 PM
>	ftp://10.159.13.53/backup/a...	Manual	Complete	199.97 MB	00:00:16	Mar 12, 2018, 3:16:59 PM

vSphere Management Clients

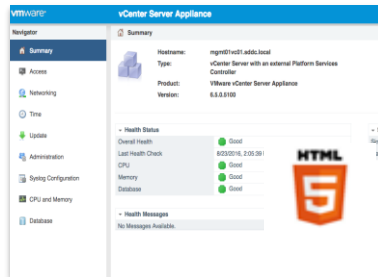
vSphere Management Interfaces



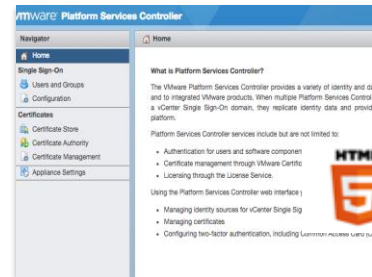
vSphere Web Client
The primary management UI for vCenter Server which is based on Adobe Flex.



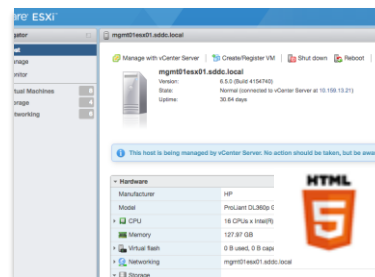
vSphere Client
The future successor of the vSphere Web Client and based on HTML5. Available as a Fling and partial functionality with the 6.5 release.



Appliance Management UI
Contains basic health information along with the ability to reboot, shutdown, and collect support bundles. Accessed via port 5480.



PSC UI
Allows for basic SSO configuration as well as certificate management. Available only on embedded or external PSC nodes.

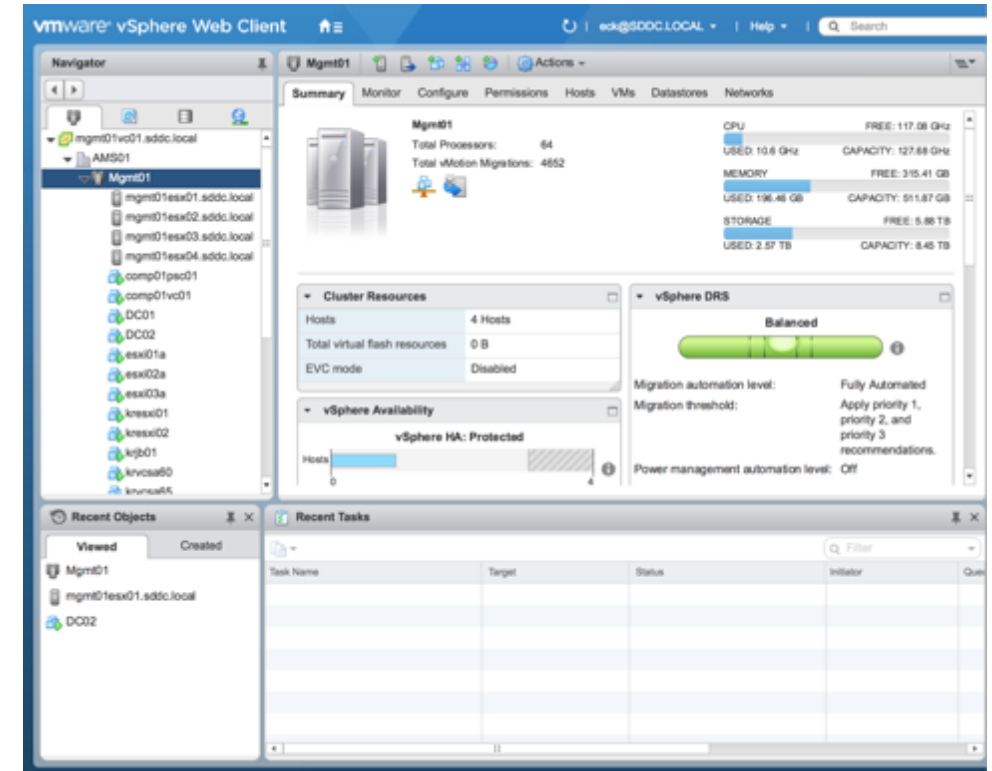


Host Client
A robust interface for managing ESXi hosts directly through a web browser. Replaces the C# client for host management.

vSphere Web Client (Flex) Improvements

Included in vSphere 6.5

- Inventory Tree now default
- Home screen reorganized
- “Manage” tab renamed to “Configure”
- Performance improvements for performance charts
- VM inventory list rollup when > 5000 instead of 50
- And...
- LIVE REFRESH!
- vSphere Web Client can now act as the source of truth



vSphere Client (HTML5)

Benefits

- Clean, modern UI built on VMware's new Clarity UI standards (to be adopted across our portfolio)
- No browser plugins to install/manage
- Integrated into vCenter Server for 6.5
- Fully supports Enhanced Linked Mode
- Users of the Fling have raved about its performance compared to the vSphere Web Client

The screenshot displays the vSphere Client HTML5 interface for the Mgmt01 cluster. The top navigation bar includes the VMware logo, the text 'vSphere Client', a search icon, and the text 'Updated at 9/19/2016 2:04:08 PM' along with a user profile icon labeled 'eck@SDDC.LOCAL'. The left sidebar shows a tree view of the environment, including 'mgmt01vc01.sddc.local' and 'AMSO1'.

The main content area is titled 'Mgmt01 | Actions' and features several tabs: Summary, Monitor, Configure, Permissions, Hosts, VMs, Datastores, and Networks. The 'Summary' tab is active, showing the following information:

- Total Processors:** 64
- Total vMotion Migrations:** 4652
- CPU:** Free: 118.87 GHz, Used: 7.71 GHz, Capacity: 127.68 GHz
- Memory:** Free: 315.41 GB, Used: 196.48 GB, Capacity: 511.87 GB
- Storage:** Free: 5.88 TB, Used: 2.56 TB, Capacity: 8.45 TB

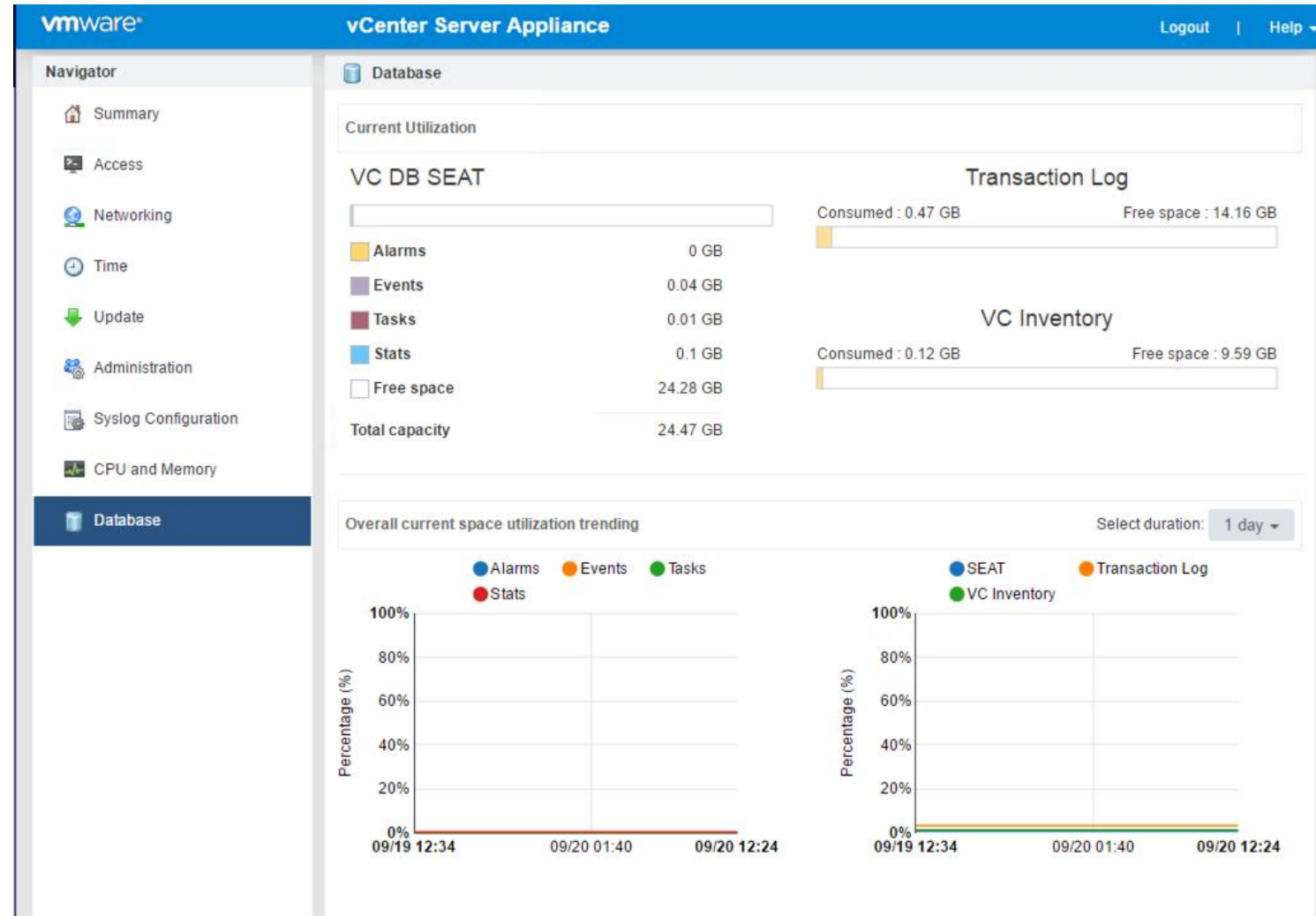
Below the summary, there are sections for 'Related Objects' (showing Datacenter: AMSO1), 'vSphere HA' (Protected state with a table of failover capacity), 'vSphere DRS' (Balanced state with a progress bar and configuration details), and 'Cluster Consumers'.

At the bottom, there is a 'Recent Tasks' section with a table header: Task Name, Target, Status, Initiator, Queued For, Start Time, Completion Time, and Server. The table currently shows 'No items to display'.

vCenter 6.5 Appliance Management Interface

Port 5480

- New vCenter Server Appliance Management Interface
- Built in monitoring :
 - Network
 - CPU
 - Memory
 - vPostgres DB
- Remote syslog configuration
- Safe guard to prevent database corruption & enhanced watchdog functionality - vMon



Streamlined Monitoring (6.7)

vSphere Appliance Monitoring

[https://\[FQDN or IP\]:5480](https://[FQDN or IP]:5480)

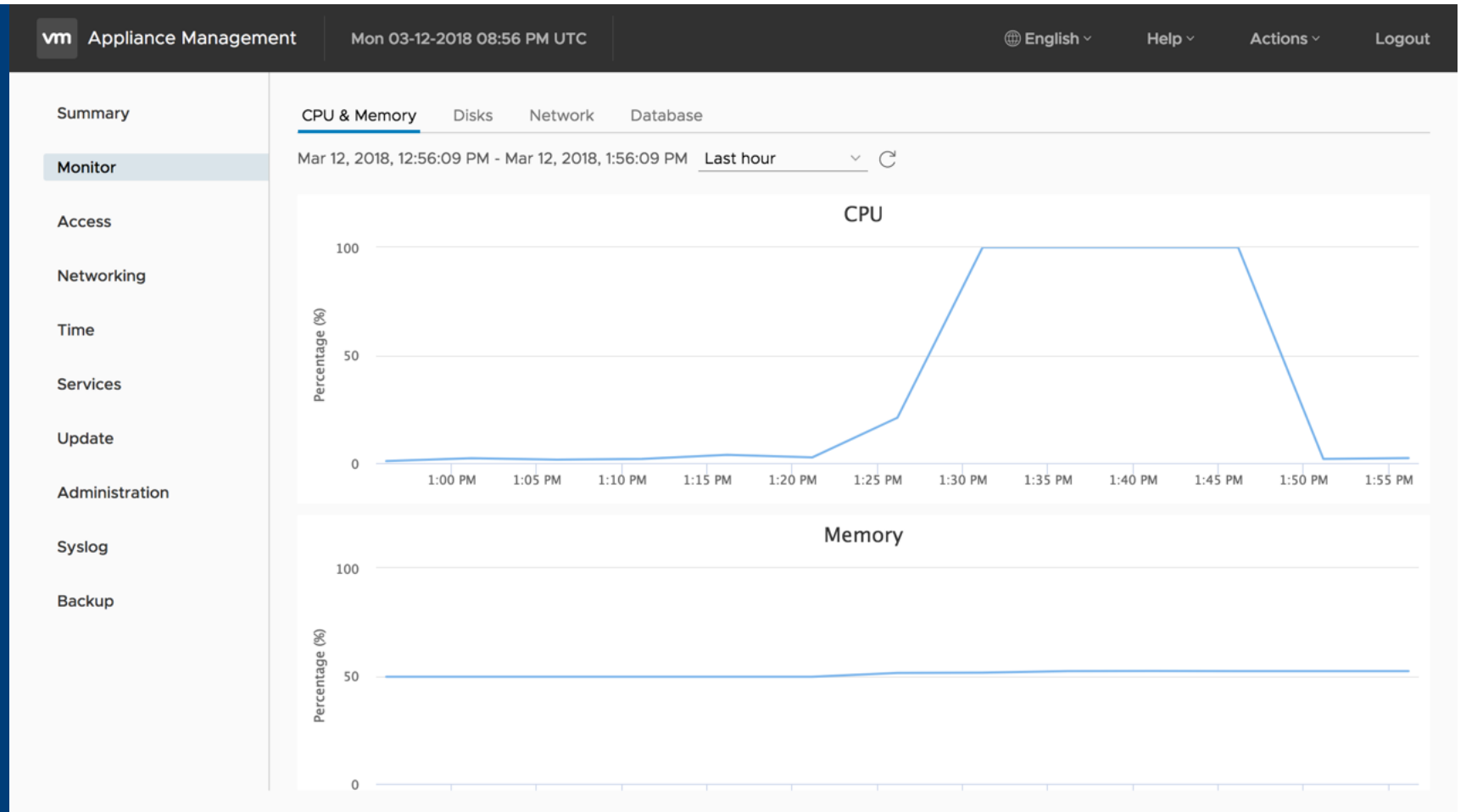
- Built in monitoring:

- CPU
- Memory
- Network
- Disks

- All monitoring under one tab

- VCSA **Services** included

- Syslog forwarding now supports up to **3 remote syslog servers**



Services (6.7)

vm Appliance Management Mon 03-12-2018 08:46 PM UTC English Help Actions Logout

Summary Monitor Access Networking Time **Services** Update Administration Syslog Backup

RESTART START STOP

	Name	Startup Type	Health	State
<input type="radio"/>	VMware Performance Charts Service	Automatic	Healthy	Started
<input type="radio"/>	VMware PSC Health	Automatic	Healthy	Started
<input type="radio"/>	VMware Postgres	Automatic	Healthy	Started
<input type="radio"/>	Appliance Management Service	Automatic	Healthy	Started
<input type="radio"/>	VMware HTTP Reverse Proxy	Automatic	Healthy	Started
<input type="radio"/>	vSAN health Service	Automatic	Healthy	Started
<input checked="" type="radio"/>	VMware vSphere Web Client	Automatic	Healthy	Started
<input type="radio"/>	ImageBuilder Service	Manual		Stopped
<input type="radio"/>	License Service	Automatic	Healthy	Started
<input type="radio"/>	VMware vCenter-Services	Automatic	Healthy	Started
<input type="radio"/>	Content Library Service	Automatic	Healthy	Started
<input type="radio"/>	VMware vSphere Profile-Driven Storage Service	Automatic	Healthy	Started
<input type="radio"/>	VMware vSphere ESXi Dump Collector	Manual		Stopped
<input type="radio"/>	VMware Analytics Service	Automatic	Healthy	Started
<input type="radio"/>	VMware Postgres Archiver	Automatic	Healthy	Started

Disks (6.7)

vm Appliance Management Tue 03-13-2018 08:58 PM PDT English Help Actions Logout

Summary Monitor Access Networking Time Services Update Administration Syslog Backup

CPU & Memory **Disks** Network Database

Disk	Partition	Utilization
Hard disk 1	root	51.4% of 10.6 GB
Hard disk 2	none	Not available
Hard disk 3	swap	1.4% of 26.0 GB
Hard disk 4	core	0.1% of 49.1 GB
Hard disk 5	log	99.7% of 9.7 GB
Hard disk 6	db	0.9% of 9.7 GB
Hard disk 7	dblog	0.6% of 14.6 GB
Hard disk 8	seat	0.3% of 24.5 GB
Hard disk 9	netdump	0.1% of 984.0 MB
Hard disk 10	autodeploy	0.2% of 9.7 GB
Hard disk 11	imagebuilder	0.2% of 9.7 GB
Hard disk 12	updatemgr	0.1% of 98.3 GB
Hard disk 13	archive	0.3% of 49.1 GB

Used Space - 9.7 GB
Available Space - 25.1 MB
Total Space - 9.7 GB

Improved Alerting (6.7)

There are vCenter Server systems with expired or expiring licenses in your inventory. [MANAGE YOUR LICENSES](#) [DETAILS](#)

vm vSphere Client Menu Search Administrator@VSPHERE.LOCAL

vcsa-sfo-01.cpbu.lab ACTIONS

Summary Monitor Configure Permissions Datacenters Hosts & Clusters VMs Datastores Networks Linked vCe

Issues and Alarms
All Issues
Triggered Alarms
Tasks and Events
Tasks
Events
Sessions
Security
Health

ACKNOWLEDGE RESET TO GREEN

Alarm Name	Object	Object type	Severity
Log Disk Exhaustion on vcsa-sfo-01	vcsa-sfo-01.cpbu.lab	Folder	CRITICAL

Memory
Warning 85%
Critical 95%

Disk
Warning 75%
Critical 85%

CPU
Warning 75%
Critical 90%

Recent Tasks Alarms

Syslog (6.7)

vm Appliance Management Mon 03-12-2018 10:51 PM UTC English Help Actions Logout

Summary Monitor Access Networking Time Services Update Administration Syslog Backup

Forwarding Configuration

ⓘ Prior to setting up the forwarding configuration, remote syslog server(s) must be configured and a network connection must exist between the appliance and syslog server(s) to enable log streaming.

Create Forwarding Configuration

Specify forwarding configuration for remote syslog servers (no more than three).

Server Address	Protocol	Port	
10.158.137.12	TLS	6514	⊗
10.158.137.13	TCP	601	⊗
10.158.137.14	UDP	514	⊗

CANCEL SAVE

Flexible Patching & Update (6.7)

The screenshot displays the VMware Appliance Management interface. The top navigation bar includes the VMware logo, 'Appliance Management', the current time 'Thu 03-29-2018 08:35 PM UTC', and options for language ('English'), help, actions, and logout. A left-hand navigation menu lists various management tasks: Summary, Monitor, Access, Networking, Time, Services, Update (highlighted), Administration, Syslog, and Backup.

The main content area is titled 'Current version details' and includes a 'CHECK UPDATES' button. It shows the following information:

- Appliance Type: vCenter Server with an embedded Platform Services Controller
- Version: 6.7.0.10000

Below this, it states 'Available updates (Last Checked Mar 29, 2018, 12:00:00 PM)'. A message box notes: 'Updates and patches are cumulative. The most recent update or patch in the table below will contain all previous patches.'

There are two tabs: 'STAGE ONLY' and 'STAGE AND INSTALL'. The 'STAGE ONLY' tab is active, showing a table of available updates:

	Version	Type	Release Date	Reboot Required	Severity
<input checked="" type="radio"/>	> 6.7.0.10000	Upgrade	2018-03-29	No	Critical
<input type="radio"/>	> 6.7.0.10000	Fix	2018-03-29	No	Moderate
<input type="radio"/>	> 6.7.0.10000	Fix	2018-03-29	Yes	Important
<input type="radio"/>	> 6.7.0.10000	Fix	2018-03-29	Yes	Critical

At the bottom right of the table, it indicates '4 Items'.

- Staging options
 - Stage only
 - Stage & Install
- Selectable Updates
- Monthly Patches
- Updates Options
 - CDROM
 - CDROM + URL

Platform Services Controller

vSphere Client

PSC UI now included in vSphere Client

Configuration Tab

- Identity Sources
- Active Directory Domain
- Policies
- Login Banner
- Smart Card Configuration

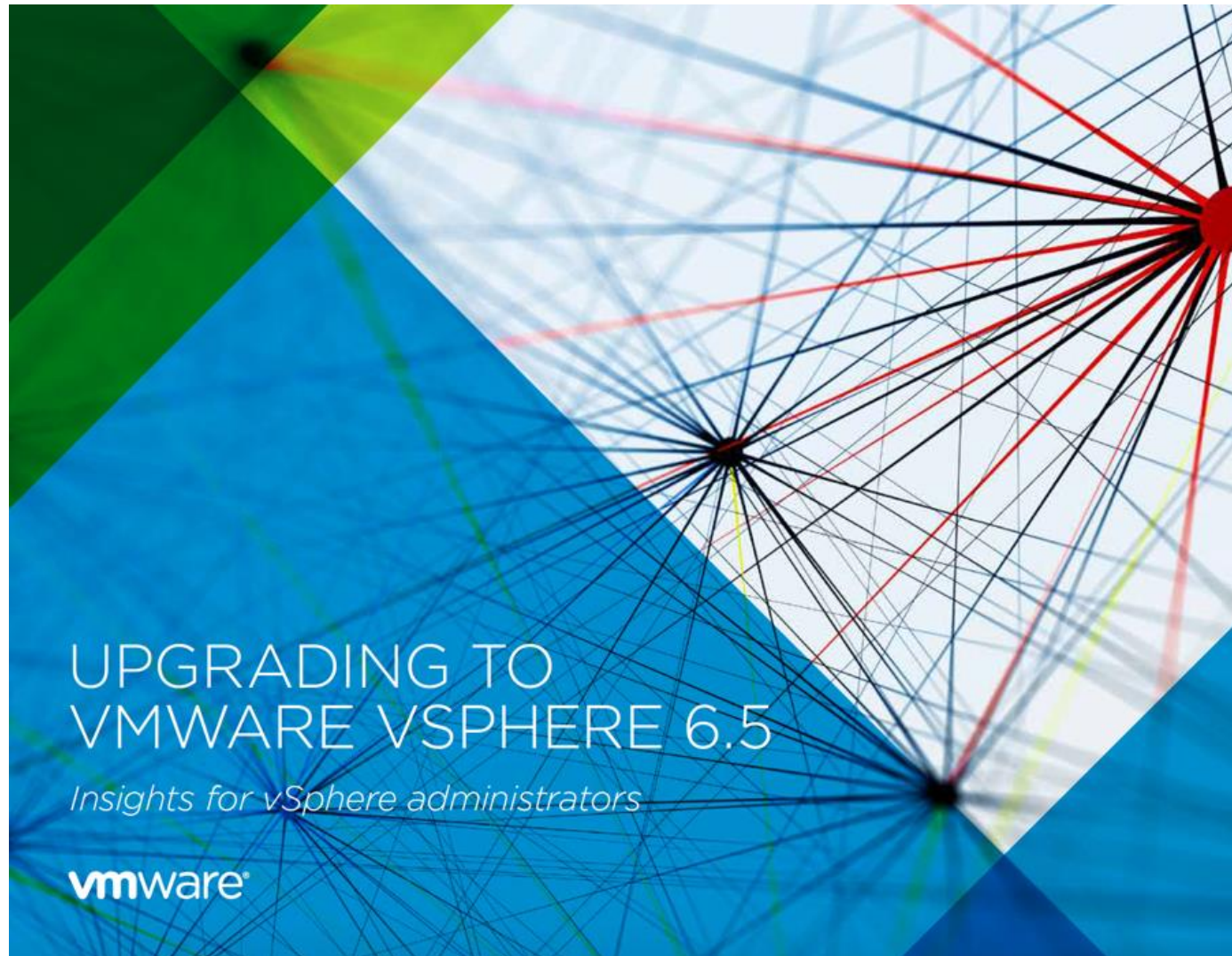
Certificate Management

The screenshot displays the vSphere Client interface for the Platform Services Controller (PSC). The top navigation bar includes the VMware logo, 'vSphere Client', a search bar, and the user 'Administrator@VSPHERE.LOCAL'. The left sidebar shows the 'Administration' menu with 'Configuration' selected. The main content area is titled 'Policies' and includes tabs for 'Identity Sources', 'Active Directory Domain', 'Login Message', and 'Smart Card Authentication'. Under the 'Policies' tab, there are three sub-tabs: 'PASSWORD POLICY', 'LOCKOUT POLICY', and 'TOKEN POLICY'. The 'PASSWORD POLICY' tab is active, showing a description: 'A set of rules and restrictions on the format and expiration of Single Sign-On user passwords'. Below this is a table for the 'Password Policy' configuration.

Description	
Maximum lifetime	Password must be changed every 90 days
Restrict reuse	Users cannot reuse any previous 5 passwords
Maximum length	20
Minimum length	8
Character requirements	At least 1 special characters At least 2 alphabetic characters At least 1 uppercase characters At least 1 lowercase characters At least 1 numeric character Identical adjacent characters: 3

Additional Resources

vSphere Upgrade eBook





<http://www.vmw.re/vsphere-upgrade-ebook>

vSphere 6.7 Upgrade eBook!



Frequently Asked Questions

<https://vspherecentral.vmware.com/faq/>

vmware® What are you looking for?  

← BACK

vSphere Upgrade FAQ

Frequently asked questions regarding vSphere Upgrades

- 1 Deployment Topologies
 - Can we have an External PSC and an Embedded PSC topology deployed in vSphere 6.7?
- 2 Migration
 - How difficult would it be to use the Windows vCenter Server 6.7 for now and then switch over to the vCenter Server Appliance later on?
 - Is it possible to convert a 6.0 Windows vCenter Server to a 6.7 vCenter Server Appliance?
 - Instead of migrating our environment, can I build a new VCSA 6.5 and then connect our nodes to it and still get all the benefits?
 - For migration purposes, can I vMotion my VMs from my ESXI 5.5 u3 to a ESXI 6.5 U1 host within the same cluster?
 - Will the migration tool also take folders and permissions with it?
 - For migration: if existing vCenters are in Enhanced linked mode, will it stay after migration in linked mode, or will the ELM be removed during the process?
 - What is the best way to revert back if the upgrade from vCenter 6.0 on Windows to VCSA 6.5 fails?
- 3 General Upgrade
 - Can I upgrade from vSphere 5.5 to vSphere 6.7?
 - How can vSphere 6.5 Update 2 be migrated or upgraded to vSphere 6.7 if there is no update path?
 - When upgrading from vSphere 6.0 to 6.7, does the vCenter name & IP address stay in place?
 - If I upgrade a standalone 6.5 then can I use the HA functionality afterwards?

- 1 Deployment Topologies
- 2 Migration
- 3 General Upgrade
- 4 Management Clients
- 5 Licensing
- 6 Interoperable Solutions
- 7 Networking
- 8 Storage
- 9 vCenter Server Appliance (VCSA)

vSphere Central

<http://vspherecentral.vmware.com>

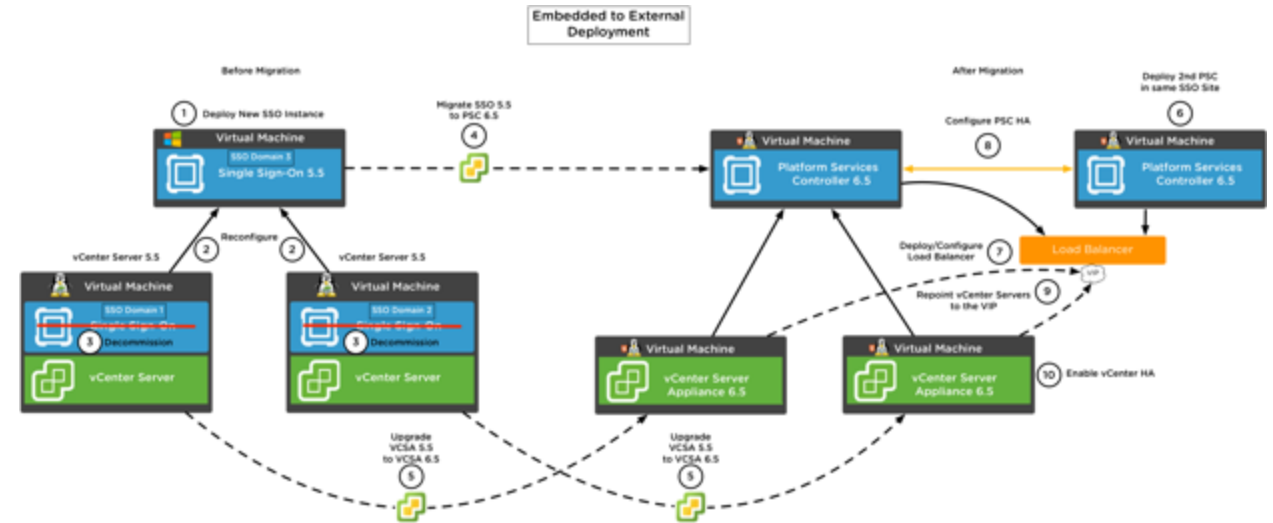
- Curated repository of vSphere resources including blogs, KBs, videos, and walkthroughs
- Simple to access and a single URL to remember
- Conveniently export resources to PDF for offline viewing

The screenshot shows the vSphere Central website interface. At the top left is the VMware logo. To its right is a search bar with the placeholder text "What are you looking for?". Further right are social media icons for help, Twitter, LinkedIn, and a globe. Below the search bar is a dark header with the text "vSphere Central". Underneath the header is a navigation bar with three tabs: "All" (which is underlined), "Trending", and "Most Recent". The main content area features six white cards arranged in a 3x2 grid. Each card has a blue circular icon on the left, a title, and a short description. The cards are: 1. "vCenter Server" with a server icon, describing the newly reimagined vCenter Server with enterprise capabilities like high availability and backup. 2. "Security" with a padlock icon, providing information on ESXi & vCenter Security and Operations. 3. "ESXi Host and Virtual Machine" with a power button icon, covering ESXi Host Lifecycle, configuration, networking, storage, and VM lifecycle. 4. "Resource Management and Availability" with a clock icon, discussing technologies for optimal resource use across multiple datacenters. 5. "Operations Management" with a server rack icon, highlighting intelligent operations and consistent management for better performance. 6. "Developer and Automation Interfaces" with a gear icon, describing the broad set of interfaces for developers to integrate and automate.

vSphere 6.5 Topology and Upgrade Planning Tool

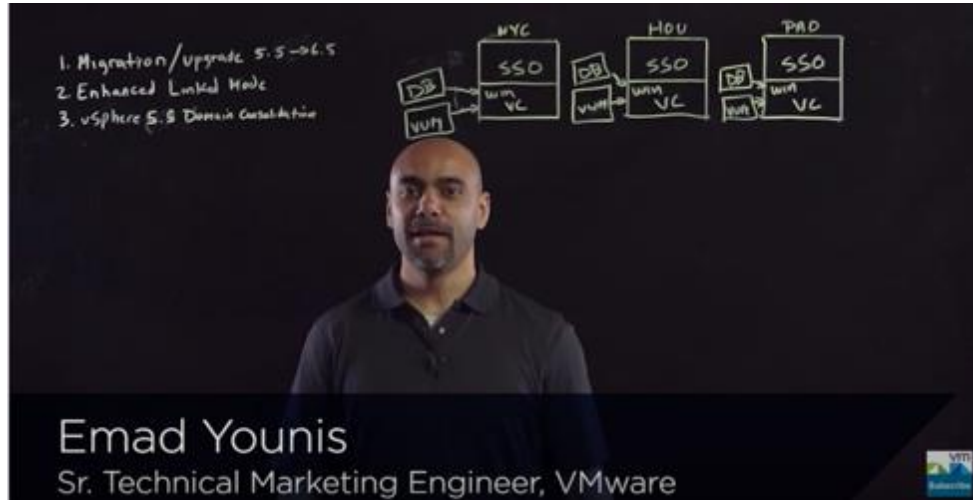
<http://www.vmw.re/65upgradetool>

- Online, browser-based tool – no install necessary
- Walks you through key decisions when planning and upgrade or new deployment
- Provides upgrade/deployment steps along with a diagram and links to key documentation



Lightboard Videos - vSphere YouTube Channel

<http://www.vmware.com/go/vsphere65playlist>



1. Migration/Upgrade 5.5-5.6.5
2. Enhanced Linked Mode
3. vSphere 5.5 Domain Consolidation

MYC HOU PAD
SSO SSO SSO
VC VC VC
DB DB DB
VUM VUM VUM

Emad Younis
Sr. Technical Marketing Engineer, VMware



vCENTER HA

LICENSING:
TINY
PSC:
- EMBEDDED

Adam Eckerle
Sr. Technical Marketing Architect, VMware



Low Level High Level

Example Example

Kyle Ruddy
Sr. Technical Marketing Engineer, VMware



VM Encryption
vMotion Encryption

VCenter

KMS 3rd Party
KMIP 1.1
Key Manager

Esxi Esxi Esxi
V SAN
RPS

Mike Foley
Sr. Technical Marketing Architect, VMware



Thank You!