



## Upgrading to vSphere 5

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**"If I had eight hours to chop down a tree, I'd spend six sharpening my axe."**

**— Abraham Lincoln**

# vSphere Licensing



vRAM



Memory Pool

# vRAM Licensing

License Type	vRam
Essentials/Essentials Plus/Standard	32 GB
Enterprise	64 GB
Enterprise Plus	96 GB
vSphere Hypervisor (free)	32 GB

# VMware License Validator



[vmware.com/go/vsphere-license-validator](https://vmware.com/go/vsphere-license-validator)

# 3<sup>rd</sup> Party Tools and Plugins



- NetApp -> VSC 2.1.2 Needs ONTAP 7.3.3
- Veeam -> HotFixes for v5 required prior to v6
- BackupExec -> 2010 R3 5204 SP1
- vRanger -> v5.3

HCL, HCL, HCL



# VMware HCL

<http://vmware.com/go/hcl>

Search Compatibility Guide: ? (e.g. compatibility or esx or 3.0)

All Listings

Search

Looking for management tools optimized for ESXi? [See the partner-managed ESXi convergence tools database](#)

What are you looking for: **Systems / Servers** Compatibility Guides Help Current Results: 0

**Product Release Version:**  
All  
ESXi 5.0  
ESX 4.1 U2  
ESX 4.1 U1  
ESX 4.1  
ESXi 4.1 Installable U2

**System Type:**  
All  
Blade  
Mother Board  
Rack or Tower  
Rackmount  
Tower

**Partner Name:**  
HP  
HUAWEI  
Huawei Symantec Technologies C  
IBM  
ICO  
Inbox  
INFORMATICA EL CORTE INGLE  
Insite Technology Ltd  
Inspur  
Intel  
Inventec Corp  
INVESTRONICA

**Features:**  
Fault Tolerant(FT)  
Trusted Execution Technology(TXT)  
VM Direct Path IO  
vSphere Storage Appliance(VSA)

**Additional Criteria: (Collapse All)**

**Sockets:** All

**Max Memory:** All

**Max Cores per Socket:** All

**CPU Series:**  
All  
AMD Opteron 12xx Series  
AMD Opteron 13xx Series  
AMD Opteron 1xx Rev-C Series

**Posted Date Range:** All

**Enhanced vMotion Capability Modes:**  
All  
AMD Opteron™ Generation 1  
AMD Opteron™ Generation 2  
AMD Opteron™ Generation 3

**Fault Tolerant Compatible Sets:**  
AMD Opteron™ Generation 3  
FT-SandyBridge  
FT-Westmere  
Intel® Xeon® 45nm Core™ 2

**Keyword:**

## Model Detail

Model: ProLiant DL380 G6

Partner: HP

CPU Series: Intel Xeon 56xx Series

System Type: Rackmount

Number of Sockets: 2

Max Memory: 192 GB

Max Cores Per Socket: 6

Notes:

For further details  
the server vendor

## Model Release Details

VMware Product Name : ESXi 5.0

BIOS

HP P62

HP P62

BIOS Upgrade May  
Be  
Required

# BACKUPS





# VMware vSphere® 5.0

## VMware Product Installers

- vCenter Server™
- vSphere Client™
- VMware vSphere® Web Client (Server)
- VMware vSphere® Update Manager

## vCenter Support Tools

- VMware ESXi™ Dump Collector
- VMware® Syslog Collector
- VMware® Auto Deploy
- VMware vSphere® Authentication Proxy

## Utility

- vCenter™ Host Agent Pre-Upgrade Checker**

## vCenter™ Host Agent Pre-Upgrade Checker

For vCenter Server™ upgrades, the vCenter™ Host



Pre-Upgrade  
Checker

**Install**

# FOUR PHASES TO INSTALL

Upgrade vCenter and vCenter Client

Rolling Upgrade of Hosts to ESXi 5

Upgrade VMware Tools Then to Virtual Hardware Version 8

Upgrade to VMFS-5



# VMware vSphere® 5.0

## VMware Product Installers

- vCenter Server™
- vSphere Client™
- VMware vSphere® Web Client (Server)
- VMware vSphere® Update Manager

## vCenter Support Tools

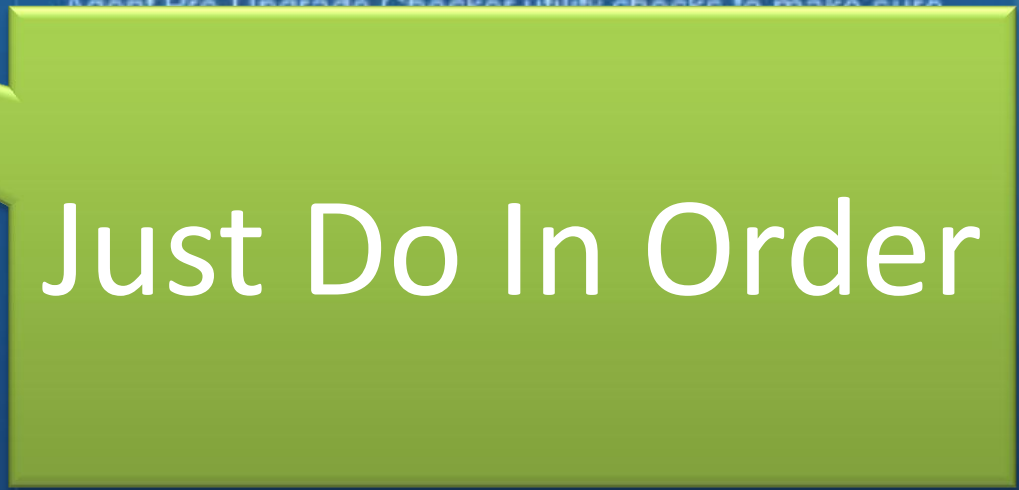
- VMware ESXi™ Dump Collector
- VMware® Syslog Collector
- VMware® Auto Deploy
- VMware vSphere® Authentication Proxy

## Utility

- vCenter™ Host Agent Pre-Upgrade Checker

## vCenter™ Host Agent Pre-Upgrade Checker

For vCenter Server™ upgrades, the vCenter™ Host Agent Pre-Upgrade Checker utility checks to make sure



Just Do In Order

**Install**

# Upgrade Hosts – Lots of Options

- Update Manager ( Update Update Manager First )
- **VMware Installer ISO upgrade interactively ( for small environment this way easy )**
- Scripted upgrade
- vSphere Auto Deploy
- **Fresh Install – A No Cruft Solution**
- esxupdate is not an option in vSphere 5

# Install 3<sup>rd</sup> Party Software VIBS

- For Example, HP Servers Should Do:
  - CIM Provider (For Custom Health Status in vCenter)
  - NMI Driver
  - HP VMware Utilities for ILO ( optional )

Syntax for installing VIB is:

```
esxcli software vib install -d <path to VIB zip>
```

# Apply vSphere 5 Licensing

Go To VMware Portal to Get vSphere  
5 Licenses if on Active SnS

# New CHOICES



# vCenter vCSA or Windows



# Pros of vCenter Server Virtual Appliance (vCSA)

- No Windows License
- Quicker to deploy a fresh install, just an OVF Template
- vCSA supports the **major** vCenter features like DRS, SDRS, HA, Host Profiles, dvSwitches, etc. and **\*most\*** VMware Products.

# Disadvantages

- Not a complete replacement. Doesn't work with View Composer, Linked Mode, Heartbeat, vSphere Storage Appliance, VIX for vCO, Single Sign On.
- Still need Windows for other services VMware provides like the SYSLOG provider, Update Manager, SRM etc.
- It's Not as Time Tested and Customer Weathered
- Only supports Oracle as external DB.

# VMFS-5 or VMFS-3



# No Real Negative to VMFS-5!

- VMFS-5 upgrade is ONE WAY. Non-vSphere 5 hosts CANNOT SEE VMFS-5 DATATORES. (vCenter won't allow you to upgrade until all connected hosts are at vSphere 5)
- You can upgrade in place with VMs running, simple upgrade, no scheduled downtime

# UPGRADE VMFS5 VS New VMFS5



# Upgraded vs New Limitations

- Upgraded VMFS5 does NOT use the new unified block size.
- Different Block Size == No Storage VAll (Array Offload)
- Different Block Size == Slower Storage vMotion ( Even without VAll )
- Other optimizations/scaling missing

# Different Block Size = SLOW Even WITHOUT VAIL

<b>From</b>	<b>To</b>	<b>Duration</b>
FC datastore 1MB blocksize	FATA datastore 4MB blocksize	08:01
FATA datastore 4MB blocksize	FC datastore 1MB blocksize	12:49
<b>FC datastore 4MB blocksize</b>	<b>FATA datastore 4MB blocksize</b>	<b>02:36</b>
<b>FATA datastore 4MB blocksize</b>	<b>FC datastore 4MB blocksize</b>	<b>02:24</b>

# Storage vMotion Solution

- NOTE WITH EVALUATION MODE YOU HAVE 60 DAYS WITH FULL UNLIMITED FEATURES. Go to Configuration->Licensed Features->Edit
- **READ: STORAGE VMOTION TO NEW VMFS5 DATASTORE**

# VM Hardware Version 4, 7 or 8

- Version 8 is new in vSphere 5, it is NOT Compatible with vSphere 4.1
- If you have a rollback plan, don't create new VM with version 8 ( the default ) or migrate to 8 until you are certain you don't have to roll back. Use version 7 for compat with 4.1
- **BEFORE GOING TO 8, FIRST UPGRADE VMWARE TOOLS.**

# A Few Final Clean Up Tips



# I Love Tech Support Mode

```
Min 0                               Ma 86400
```

```
UserVars.SuppressShellWarning
```

```
Don't show warning for enabled local and remote shell access
```

```
Min 0                               Ma 1
```

# Install vMA

Used for Central Scripting

Technical Support

Debugging ( resxtop )

Command Line Management

Full Blow Linux Appliance

<http://www.vmware.com/support/developer/vima/>

# vMA Hates Your Password

```
Please provide a password for the vi-admin user. If you are prompted for an old
password for this user, press <enter>.
Old Password:
New UNIX password:
Password unchanged
passwd: Authentication token manipulation error

Please provide a password for the vi-admin user. If you are prompted for an old
password for this user, press <enter>.
Old Password:
New UNIX password:
BAD PASSWORD: is too simple
passwd: Authentication token manipulation error

Please provide a password for the vi-admin user. If you are prompted for an old
password for this user, press <enter>.
Old Password:
New UNIX password:
BAD PASSWORD: it is based on a dictionary word
passwd: Authentication token manipulation error

Please provide a password for the vi-admin user. If you are prompted for an old
password for this user, press <enter>.
Old Password: _
```



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**vmware** vEXPERT