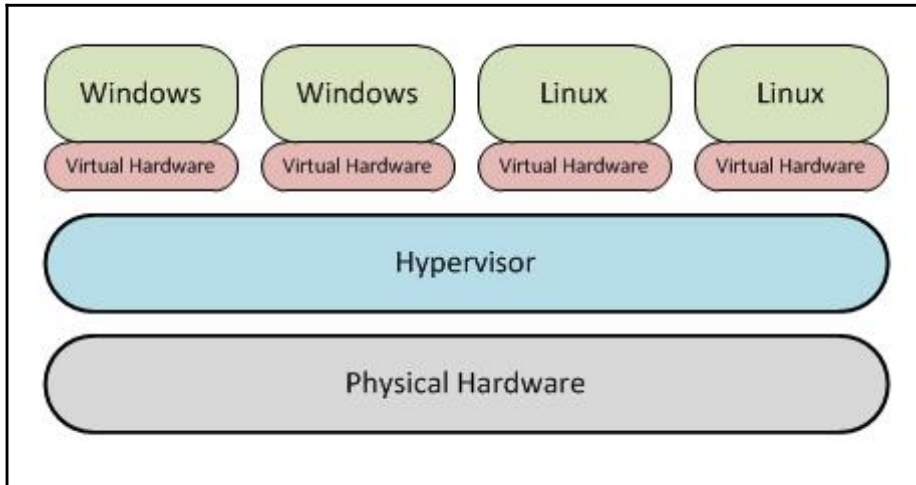


Chapter 1: The Virtual Data Center



VMware ESXi 6.7.0 (VMKernel Release Build 10302608)

VMware, Inc. VMware Virtual Platform

8 x Intel(R) Xeon(R) CPU E5620 @ 2.40GHz
256 GiB Memory

To manage this host go to:
<http://esxi3/>
<http://10.8.20.177/> (STATIC)

<F2> Customize System/View Logs

<F12> Shut Down/Restart

NFS_Datastore1 Actions

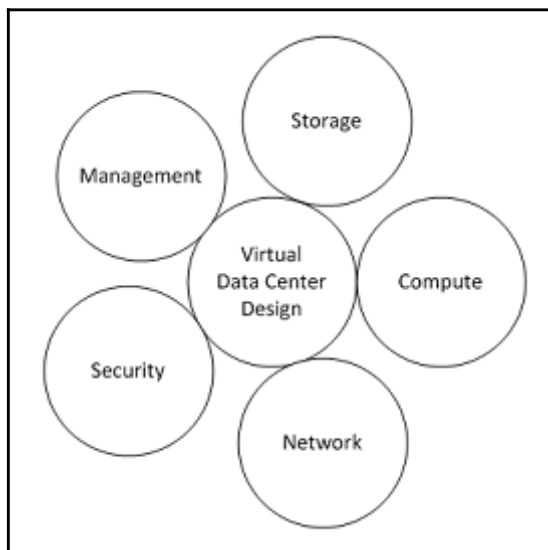
Summary Monitor **Manage** Related Objects

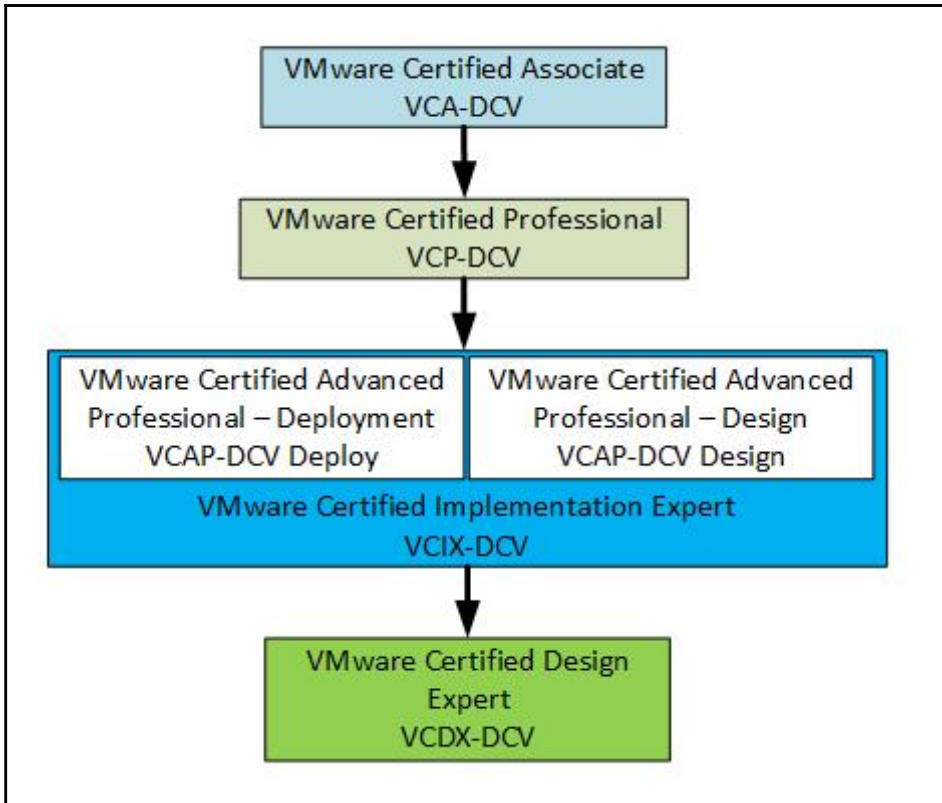
Settings Alarm Definitions Tags Permissions Scheduled Tasks **Files**

[NFS_Datastore1] LABFILE01

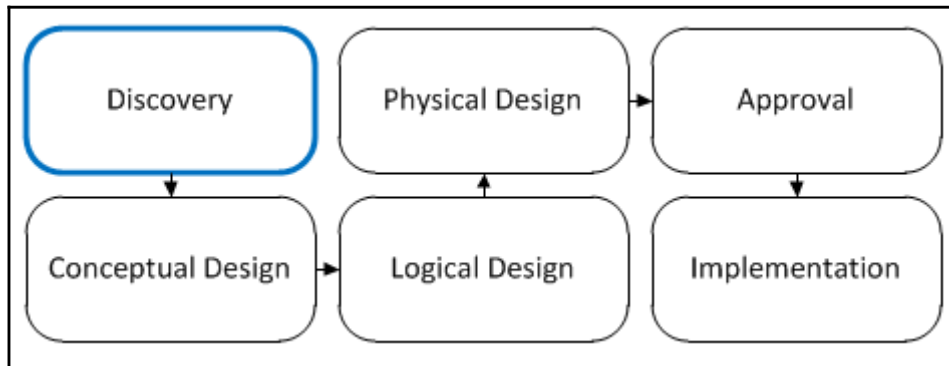
Search

Name	Size	Modified	Type	Path
LABFILE01_1.vmdk	2,665,620.00 KB	12/26/2015 3:18 PM	Virtual Disk	[NFS_Datastore1] LABFI...
LABFILE01-aux.xml	0.01 KB	11/14/2015 8:52 AM	File	[NFS_Datastore1] LABFI...
LABFILE01.vmx.lck	0.00 KB	12/26/2015 3:18 PM	File	[NFS_Datastore1] LABFI...
recovery-VM-111415...	2,550,900.00 KB	12/26/2015 3:18 PM	Virtual Disk	[NFS_Datastore1] LABFI...
LABFILE01.nvram	8.48 KB	1/1/2016 12:00 AM	Non-volatile Memory File	[NFS_Datastore1] LABFI...
LABFILE01.vmsd	0.04 KB	11/14/2015 8:52 AM	File	[NFS_Datastore1] LABFI...
vmx-LABFILE01-418...	194,560.00 KB	12/26/2015 3:18 PM	File	[NFS_Datastore1] LABFI...
LABFILE01.vmdk	10,675,844.00 KB	12/26/2015 3:18 PM	Virtual Disk	[NFS_Datastore1] LABFI...
vmware-8.log	538.10 KB	12/26/2015 10:53 AM	VM Log File	[NFS_Datastore1] LABFI...
vmware-3.log	229.28 KB	6/25/2015 9:04 AM	VM Log File	[NFS_Datastore1] LABFI...
vmware-7.log	484.89 KB	8/27/2015 7:36 AM	VM Log File	[NFS_Datastore1] LABFI...
vmware-6.log	146.39 KB	7/14/2015 2:50 PM	VM Log File	[NFS_Datastore1] LABFI...
vmware.log	200.29 KB	1/4/2016 3:51 AM	VM Log File	[NFS_Datastore1] LABFI...
vmware-5.log	228.71 KB	6/25/2015 9:04 AM	VM Log File	[NFS_Datastore1] LABFI...
vmware-4.log	223.07 KB	6/25/2015 9:04 AM	VM Log File	[NFS_Datastore1] LABFI...
LABFILE01-1147355...	0.78 KB	6/25/2015 9:19 AM	File	[NFS_Datastore1] LABFI...
LABFILE01.vmx	3.14 KB	12/26/2015 3:18 PM	Virtual Machine	[NFS_Datastore1] LABFI...
LABFILE01-193a986...	2,097,152.00 KB	12/26/2015 3:18 PM	File	[NFS_Datastore1] LABFI...





Chapter 2: The Discovery Process



Edit Report Settings

Hardware Selection
 Select and adjust the new hardware used for consolidating the systems; the quick assessment table will update automatically. You can also adjust individual parameters manually using the text fields. Click the "Refresh Table" button to update the quick assessment. Only non-zero input values will be considered for scenario recommendations.

Scenario 1: Conservative Type

HW HP - HP ProLiant DL360 G6 w/ 8 CPUs@2800MHz 327 Make: VMware, Inc. Model: 8 CPU Cores w/ 32 GB of RAM

HW HP - HP ProLiant ML570 G5 w/ 4 CPUs@3000MHz 65536MB RAM

HW HP - HP ProLiant BL465c w/ 4 CPUs@3000MHz 32768MB RAM

HW HP - HP ProLiant BL680c w/ 16 CPUs@2400MHz 131072MB RAM

HW HP - HP ProLiant BL685c w/ 8 CPUs@3000MHz 65536MB RAM

HW HP - HP ProLiant DL365 w/ 4 CPUs@3000MHz 32768MB RAM

HW HP - HP ProLiant DL385 G2 w/ 4 CPUs@3000MHz 32768MB RAM

HW HP - HP ProLiant DL580 G4 w/ 8 CPUs@3400MHz 65536MB RAM

HW HP - HP ProLiant DL580 G5 w/ 16 CPUs@2930MHz 262144MB RAM

HW HP - HP ProLiant DL585 G2 w/ 8 CPUs@3200MHz 131072MB RAM

HW HP - HP ProLiant ML570 G4 w/ 8 CPUs@3400MHz 65536MB RAM

HW HP - HP ProLiant DL380 G6 w/ 8 CPUs@2800MHz 65536MB RAM

HW HP - HP ProLiant DL360 G6 w/ 8 CPUs@2800MHz 32768MB RAM

HW Hitachi - HITACHI BladeSymphony BS320 x5 2CPUs@2000MHz 98304MB RAM Fibre

HW Hitachi - HITACHI BladeSymphony BS320 x5 2CPUs@2400MHz 98304MB RAM Fibre

HW Hitachi - HITACHI BladeSymphony BS320 x5 2CPUs@2660MHz 98304MB RAM Fibre

HW Hitachi - HITACHI BladeSymphony BS320 x5 2CPUs@2930MHz 98304MB RAM Fibre

HW Hitachi - HITACHI BladeSymphony BS320 x5 2CPUs@2130MHz 98304MB RAM Fibre

HW Hitachi - HITACHI BladeSymphony BS320 H5 2CPUs@2000MHz 98304MB RAM

HW Hitachi - HITACHI BladeSymphony BS320 H5 2CPUs@2400MHz 98304MB RAM

HW Hitachi - HITACHI BladeSymphony BS320 H5 2CPUs@2660MHz 98304MB RAM

HW Hitachi - HITACHI BladeSymphony BS320 H5 2CPUs@2930MHz 98304MB RAM

Moderate	9	9	1	9:1	0	89
Aggressive	9	9	1	9:1	0	89

System Consolidation Recommendation

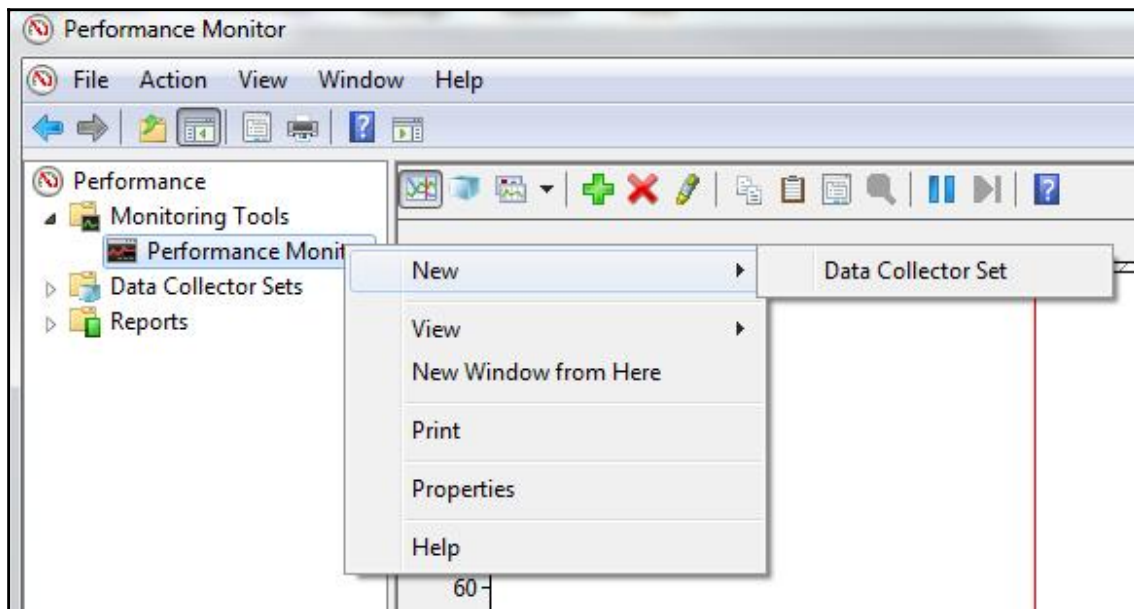
Before Virtualization		With VMware Virtualization							
Total Systems	Eligible Systems	Consolidation Scenario and Platform	ESX Hosts	ESX CPU Utilization	ESX Memory Utilization	Average Memory Per VM	Racks Saved	Eligible System Consolidation Ratio	Total System Consolidation Ratio
9	9	Conservative Type	1	23.04%	56.27%	3.25 GB	0	89%	89%
9	9	Aggressive Type	1	23.04%	56.27%	3.25 GB	0	89%	89%

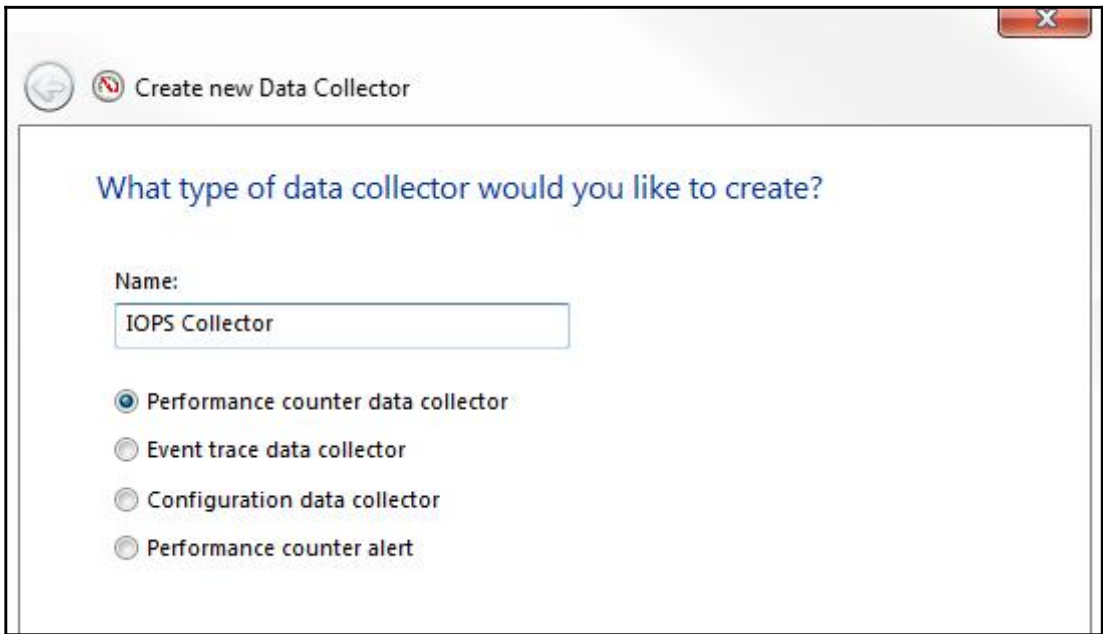
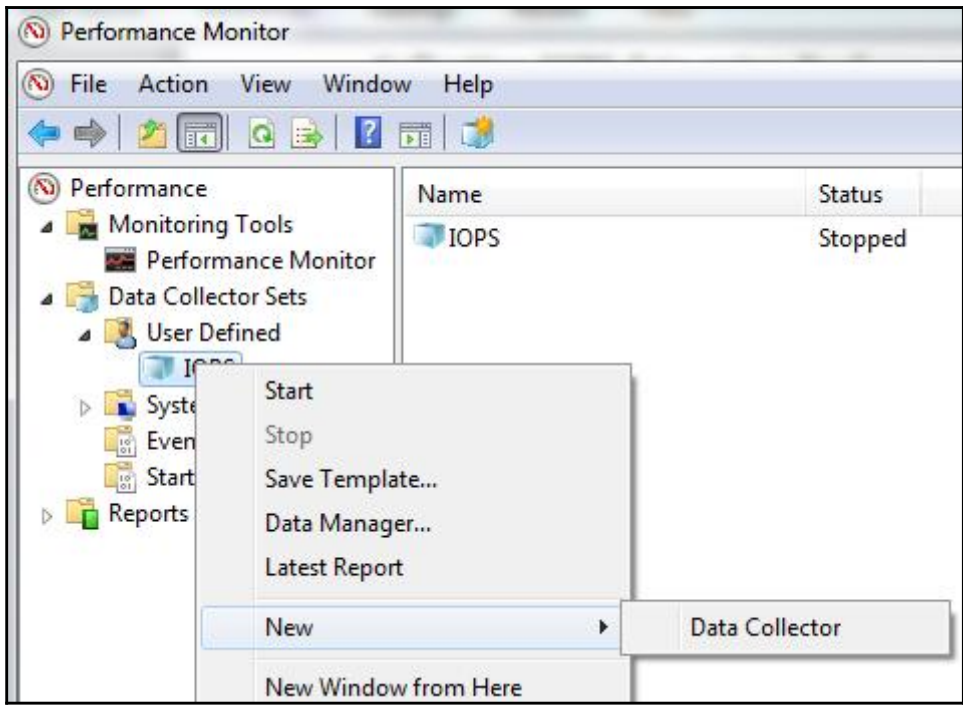
Conservative Type

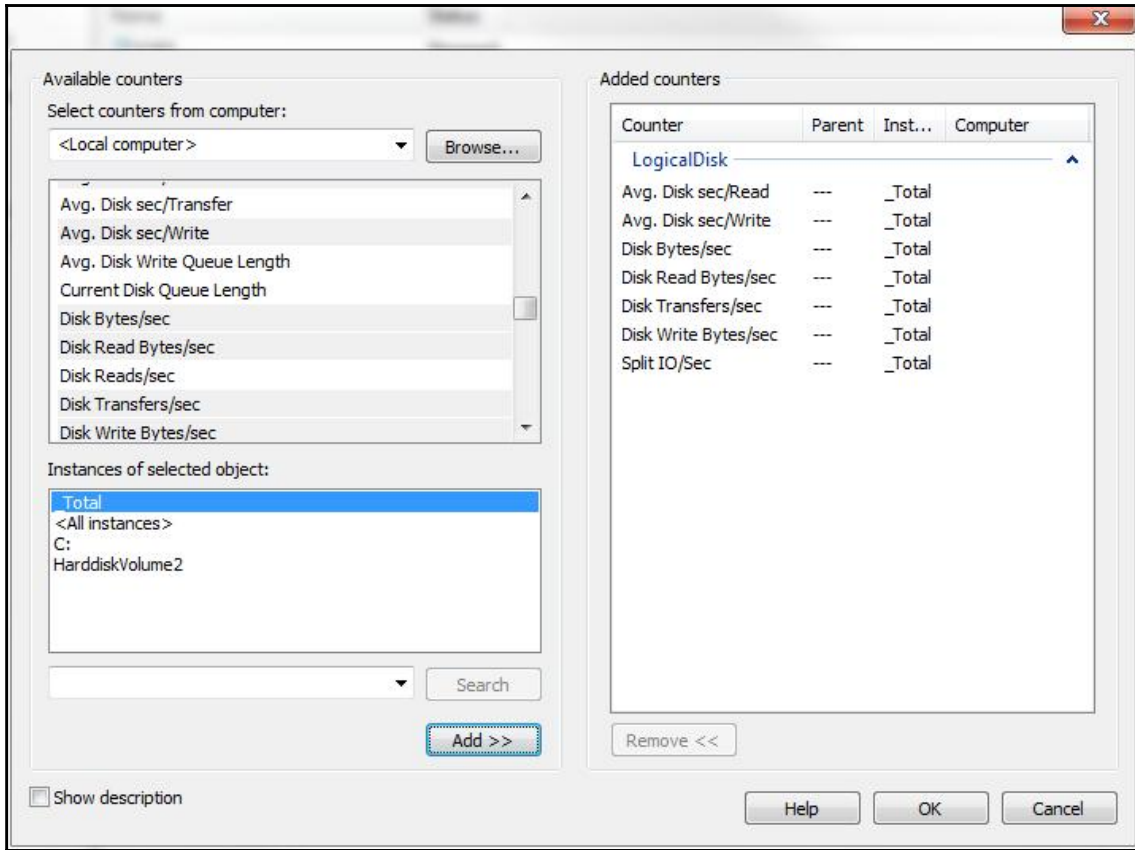
Make: VMware, Inc.
 Model: 8 CPU Cores w/ 32 GB of RAM
 CPU: 8
 Memory: 32 GB

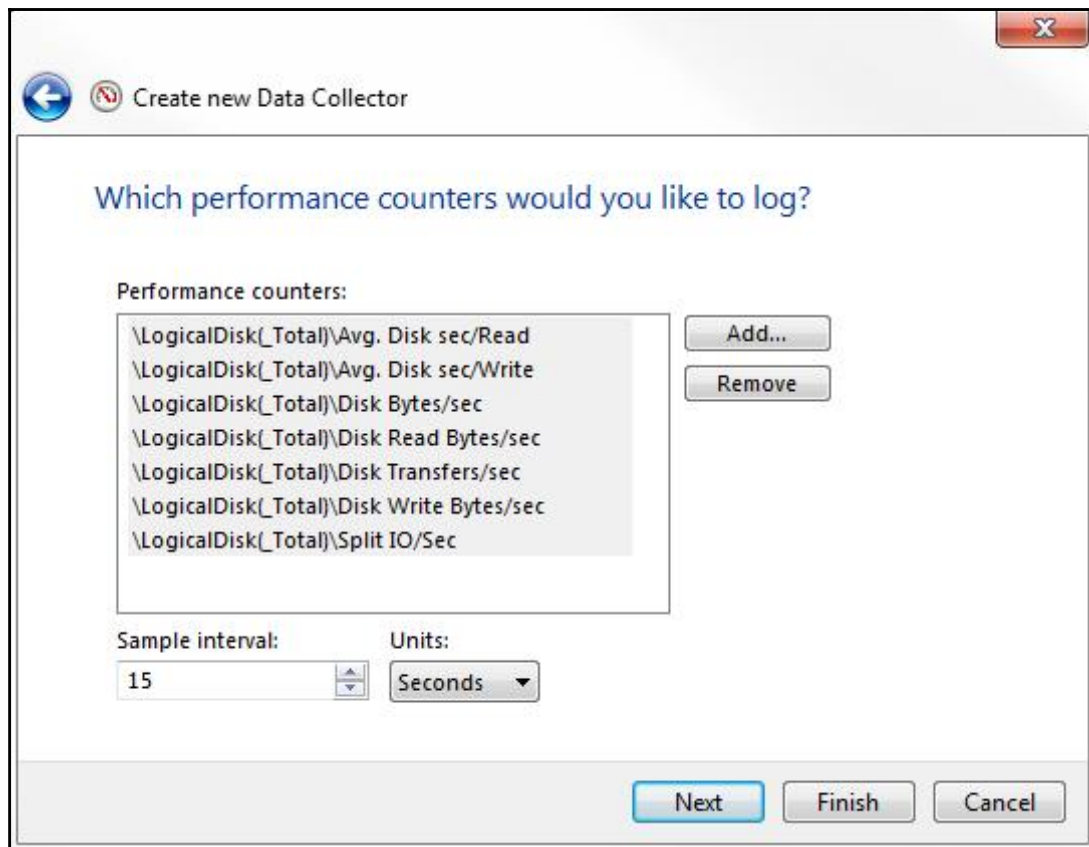
Aggressive Type

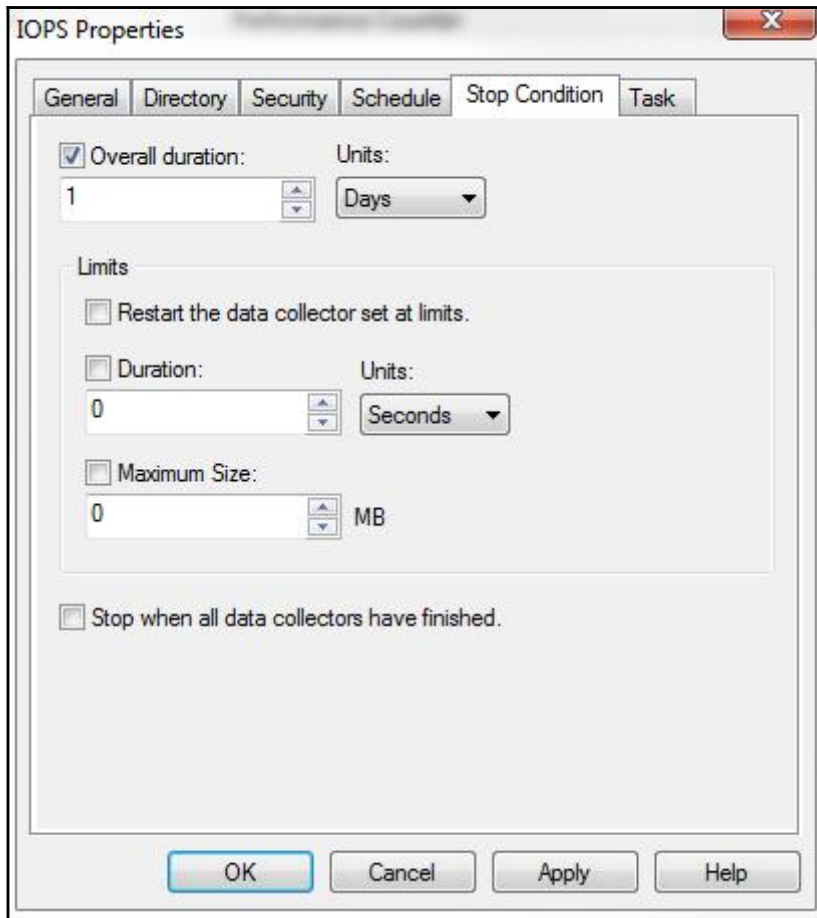
Make: VMware, Inc.
 Model: 8 CPU Cores w/ 32 GB of RAM
 CPU: 8
 Memory: 32 GB

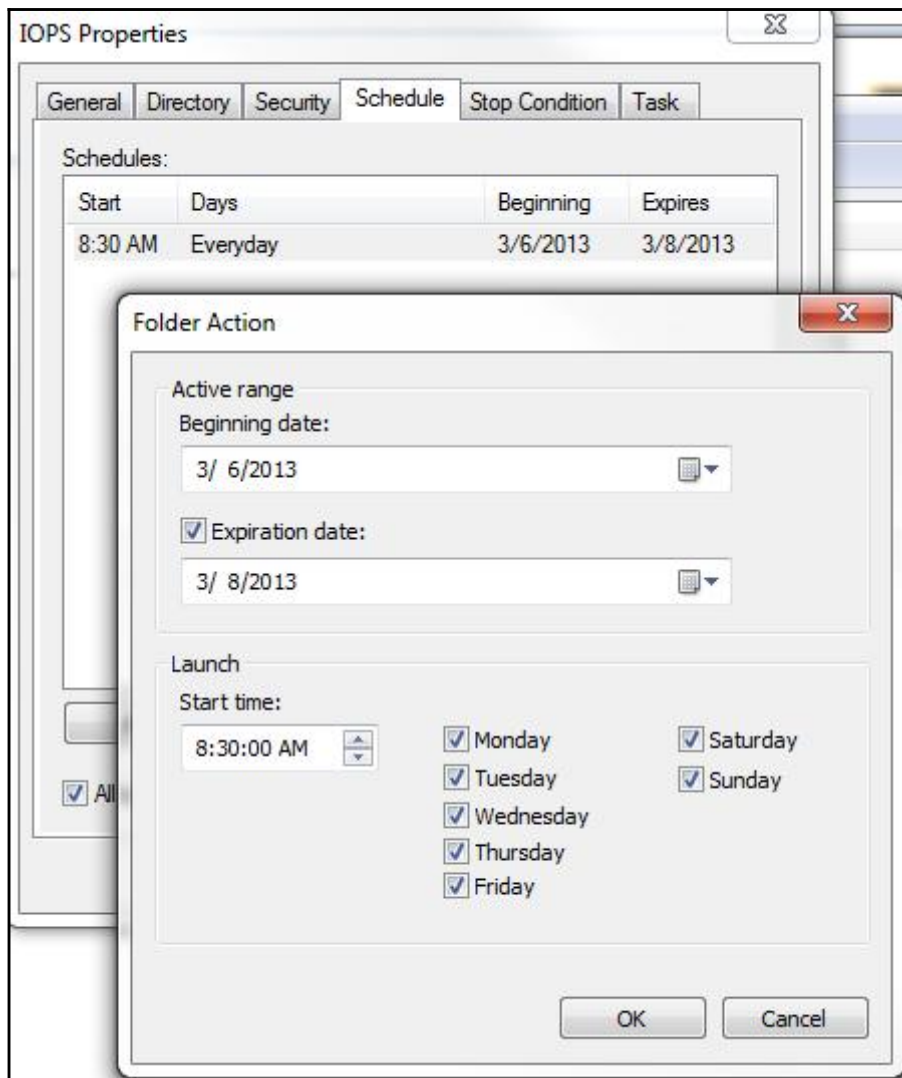


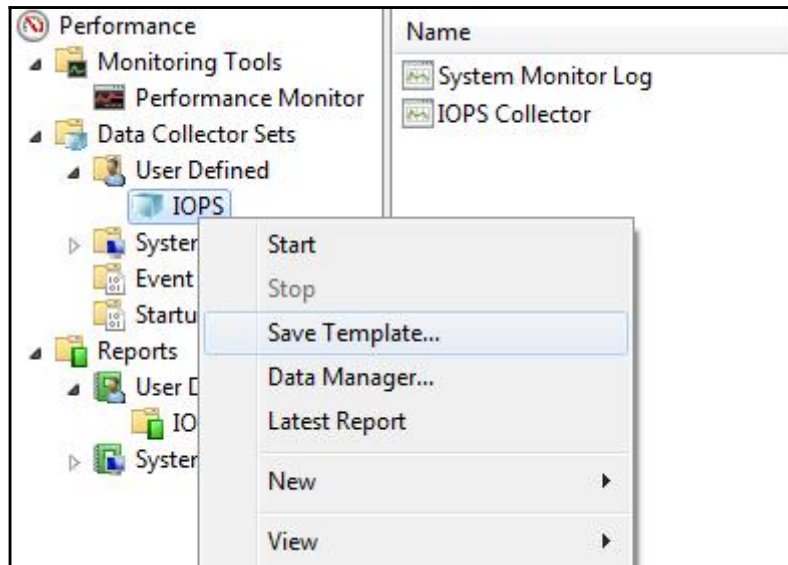












Get Started

vRealize Operations Manager Initial Setup

Welcome to vRealize Operations Manager.
Choose one of the options below to get started.

Express Installation

New Installation

Expand an Existing Installation

Manage Solution - VMware vSphere

Adapter Type	Description	Instances	Version	Provided by
vCenter Adapter	Provides the connection information and ...	1	2.0.2511124	VMware Inc.
vCenter Python Actions Adapter	Provides actions for vCenter objects usin...	0	1.0.2511126	VMware Inc.

+ x

Instance Name ▲

vCenter

Adapter Settings

Display name:

Description:

Basic Settings

vCenter Server:

Credential: + ✎

Page 1 of 1

Environment Health

Health
Immediate issues

Health Weather Map

Why is health Good?
Health is based on the alert definitions you configure to impact the health score. Check the triggered alerts for the configured widget object to understand the displayed state, including child objects.

Environment Risk

Risk
Future issues

Population criticality over time

Why is risk Good?
Risk is based on the alert definitions you configure to impact the risk score. Check the triggered alerts for the configured widget object to understand the displayed state, including child objects.

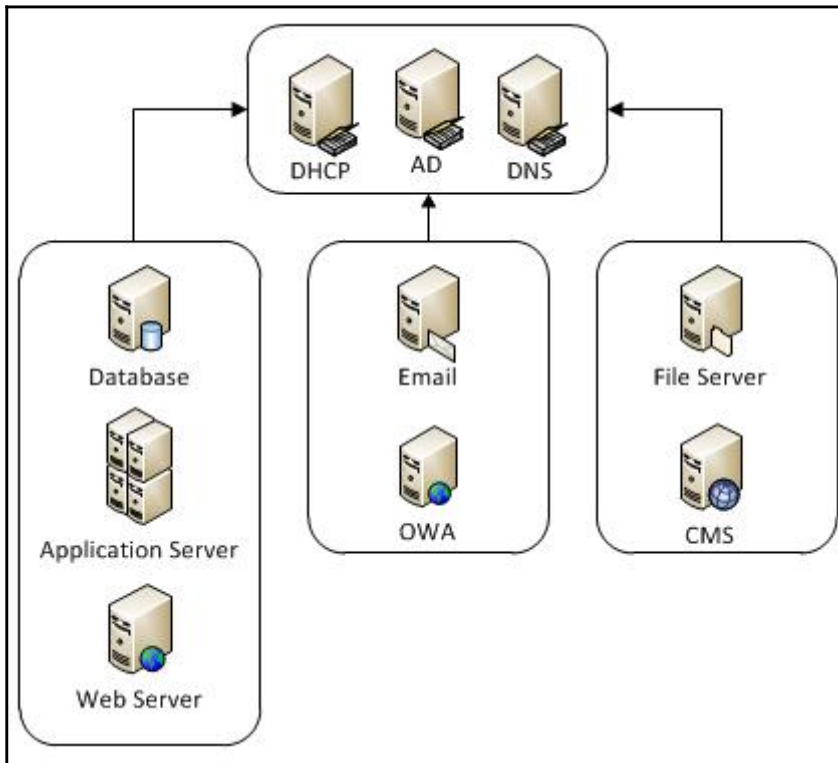
Environment Efficiency

Efficiency
Optimization opportunities

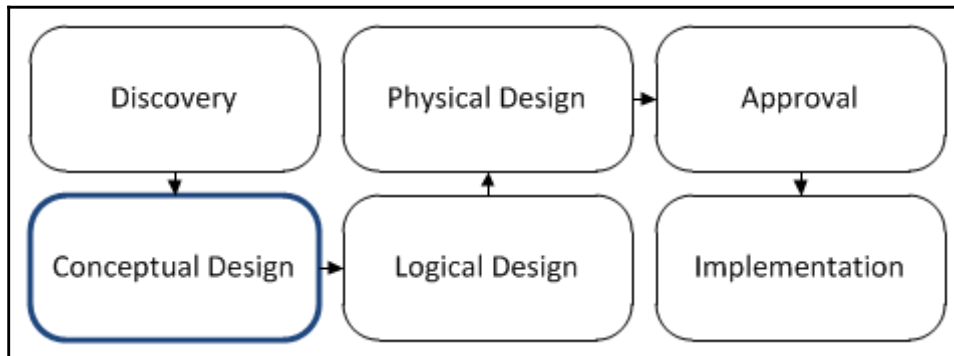
Population criticality over time

Why is efficiency Good?
Efficiency is based on the alert definitions you configure to impact the efficiency score. Check the triggered alerts for the configured widget object to understand the displayed state, including child objects.

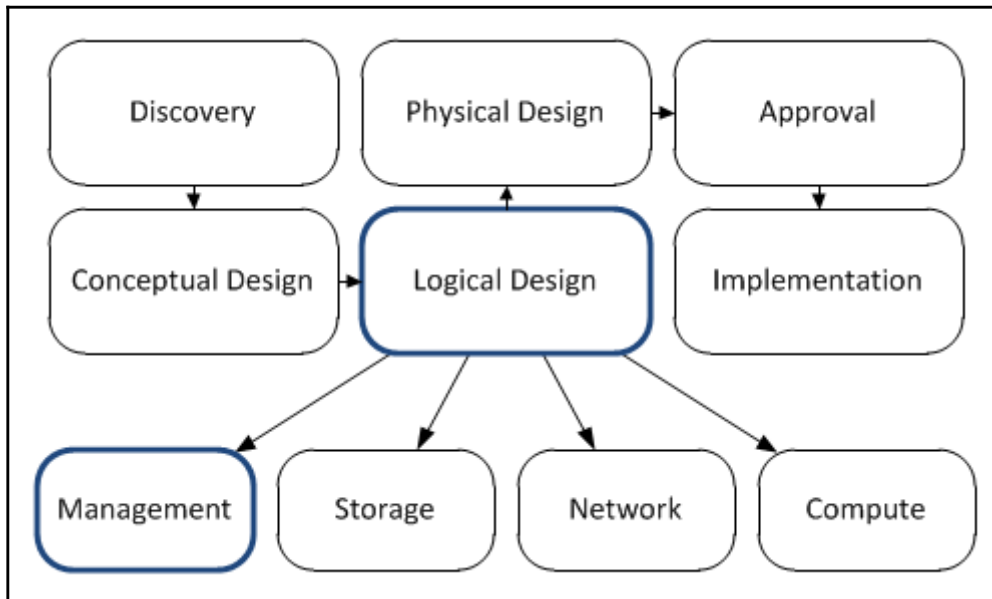
Report Templates		Generated Reports		
Name	Subject	Modified	Last run	Owner
[VOA] Consolidated Assessment Report Generated reports (0) Schedules (0)	Alerts Rollup, Cluster Compute R...	-	-	admin
[VOA] Phase 1 Configuration Reporting Generated reports (0) Schedules (0)	Cluster Compute Resource, Host ...	-	-	admin
[VOA] Phase 2 Performance Reporting Generated reports (0) Schedules (0)	Alerts Rollup, Host System, Virtua...	-	-	admin
[VOA] Phase 3 Capacity Reporting Generated reports (0) Schedules (0)	Cluster Compute Resource, Host ...	-	-	admin

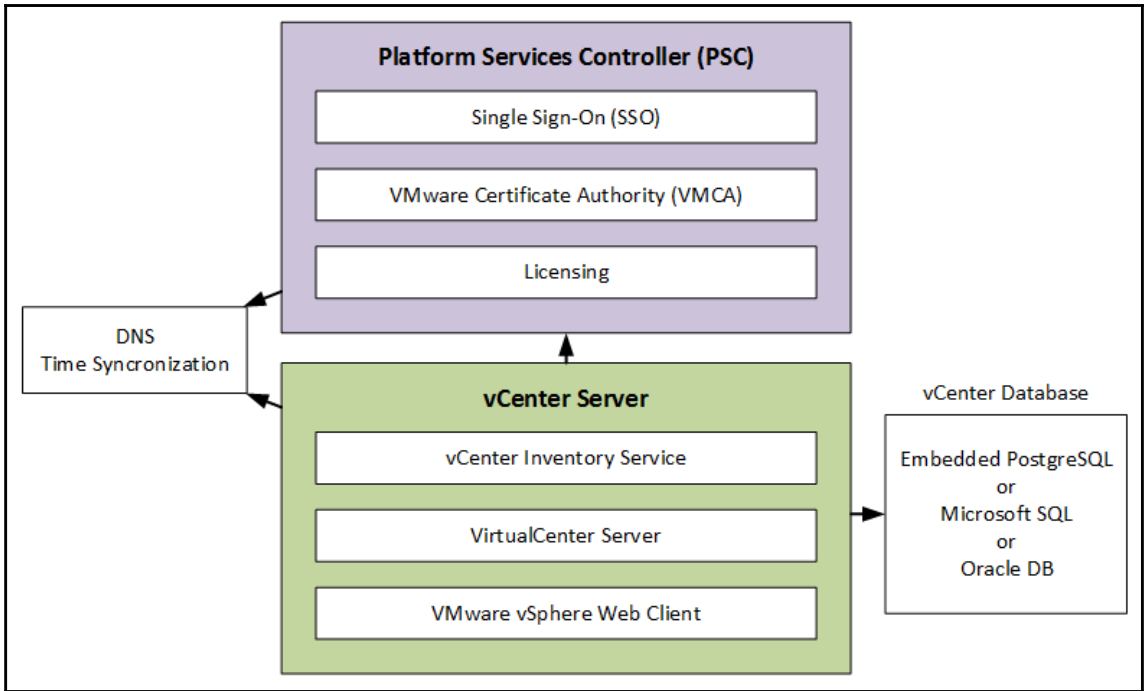


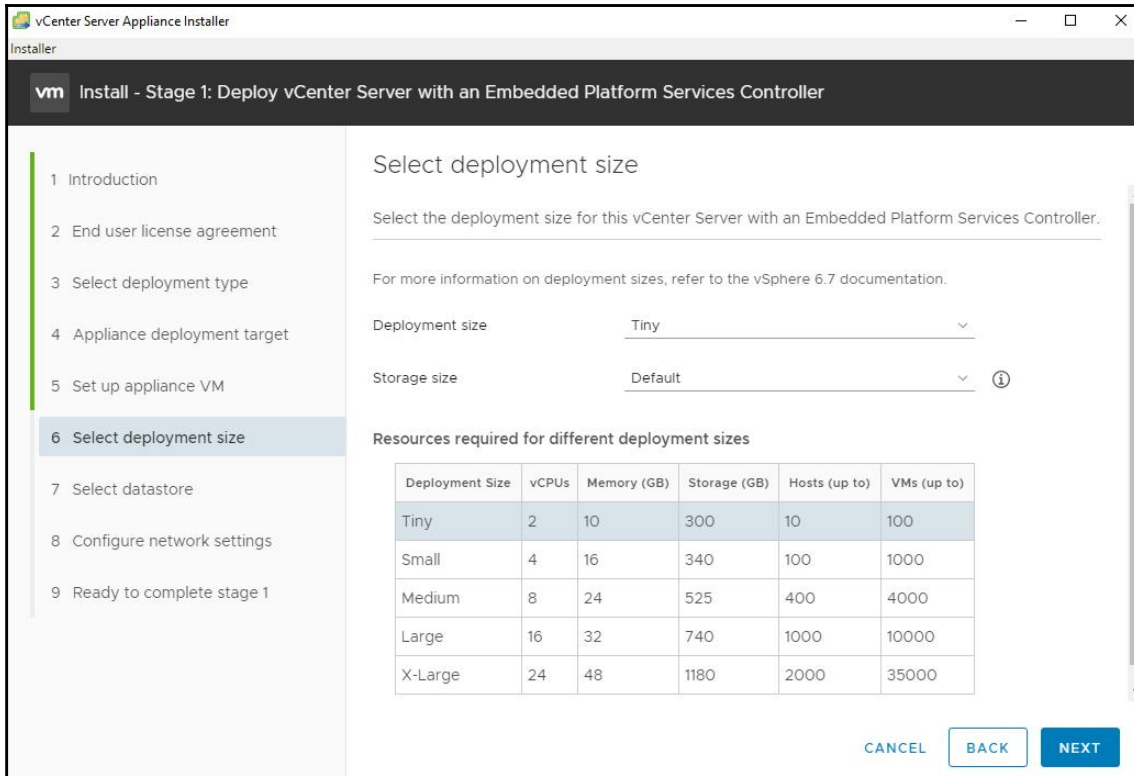
Chapter 3: The Design Factors



Chapter 4: vSphere Management Design







VMware Product Interoperability Matrixes

[Interoperability](#) [Solution/Database Interoperability](#) [Upgrade Path](#)

1. Select a Solution

If you do not know the *solution's* version leave it blank.

VMware vCenter Server

2. Add Database (optional)

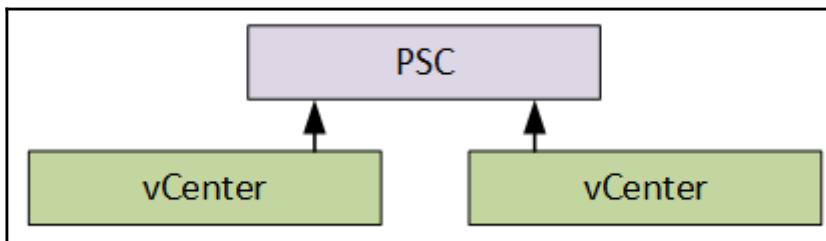
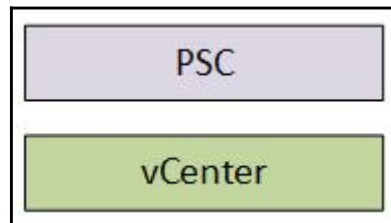
Add *databases* to see if they are compatible with the selected *solution*.

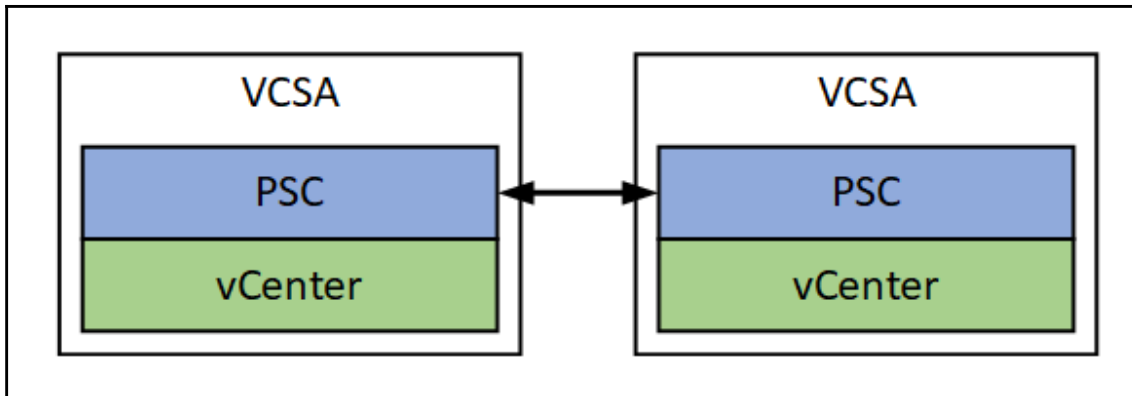
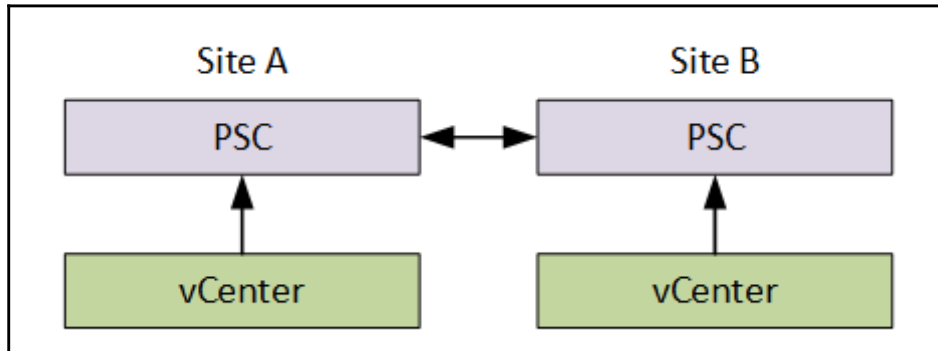
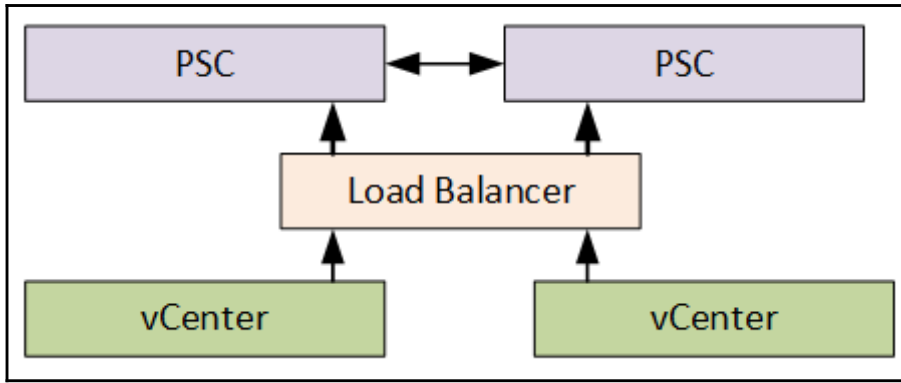
Hide empty rows/columns

[Copy](#) [Excel](#) [Print](#)

VMware vCenter Server	6.0 U1
Microsoft SQL Server 2008 Express - 64-bit	
Microsoft SQL Server 2008 Datacenter (R2 SP1) - 32-bit	✓
Microsoft SQL Server 2012 Enterprise (SP2) - 64 bit	✓

Showing 1 to 3 of 3 entries





192.168.1.27 Actions ▾

Summary Monitor **Manage** Related Objects

Settings Scheduled Tasks Storage Providers Alarm Definitions Tags Permissions Sessions

◀

vCenter Server Settings Edit...

▶ Statistics	Estimated space required: 16.71 GB
▶ Runtime settings	vCenter Server name: 192.168.1.27
▶ User directory	60 seconds timeout
▶ Mail	--
▶ SNMP receivers	
Ports	HTTP: 80 HTTPS: 443
Timeout settings	Normal: 30 Long: 120
Logging options	info
▶ Database	Max connections: 50
SSL settings	vCenter Server requires verified SSL certificates

General
 Licensing
 Message of the Day
 Advanced Settings
 Auto Deploy

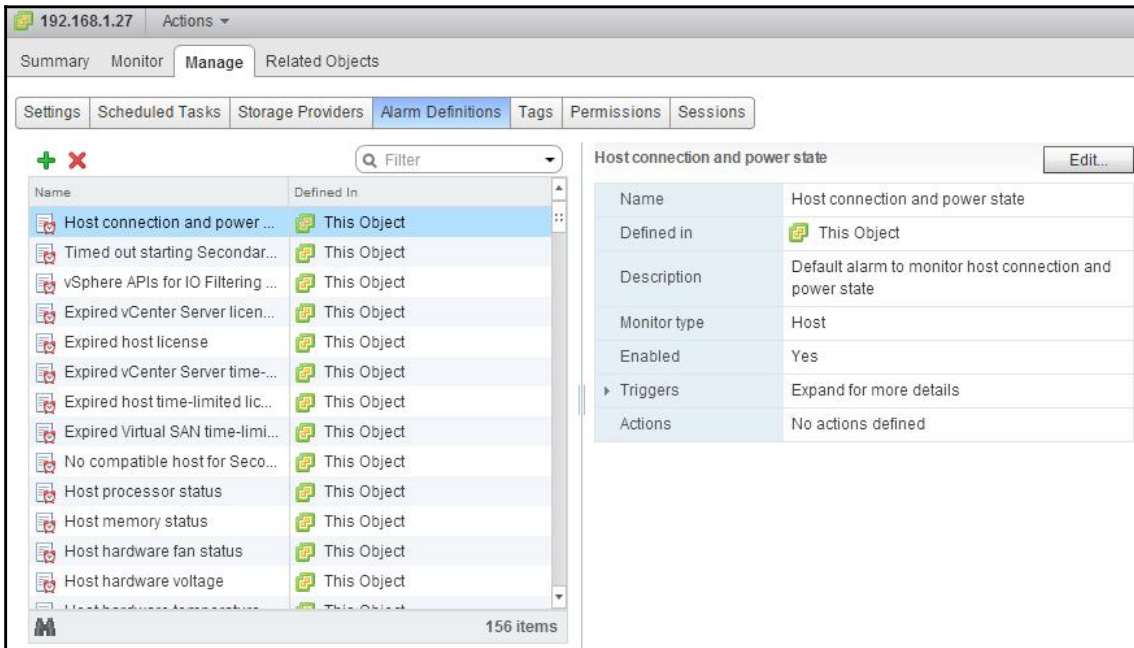
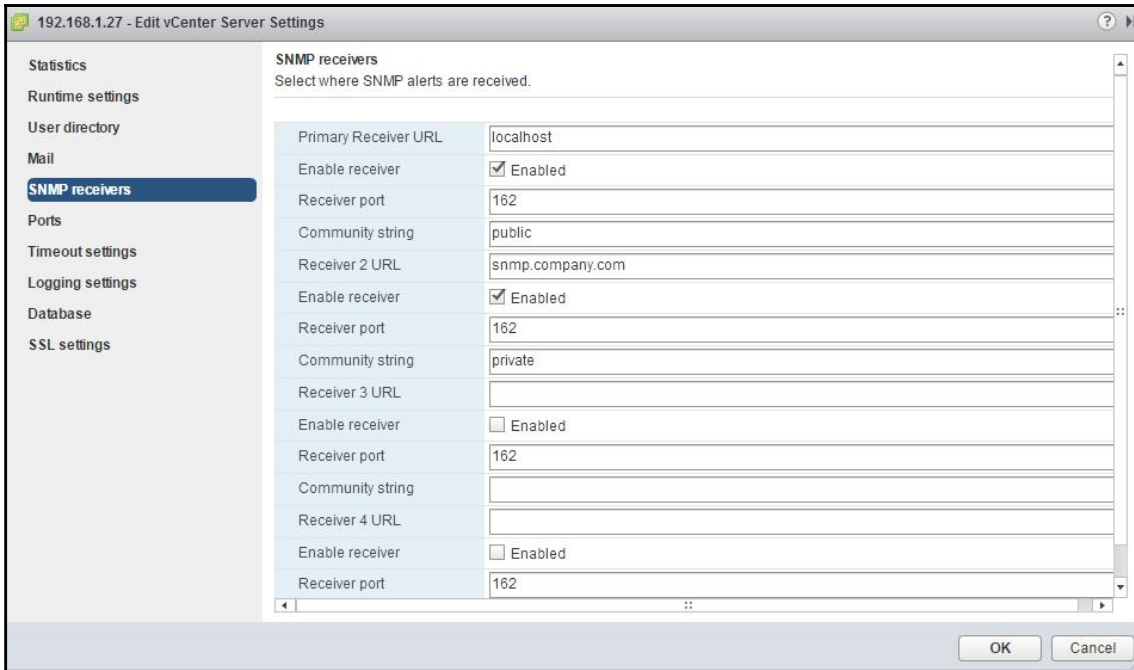
192.168.1.27 - Edit vCenter Server Settings ? ▶▶

Statistics
 Runtime settings
 User directory
Mail
 SNMP receivers
 Ports
 Timeout settings
 Logging settings
 Database
 SSL settings

Mail
 Enter the settings that vCenter Server uses to send email alerts.

Mail server	<input type="text" value="smtp.company.com"/>
Mail sender	<input type="text" value="vcenter@company.com"/>

OK Cancel



Host connection and power state - Edit

1 General
2 Triggers
3 Actions

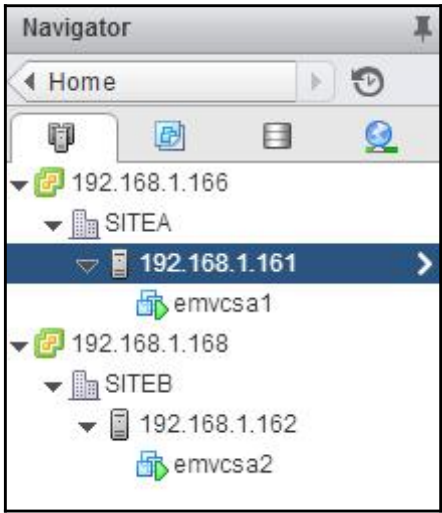
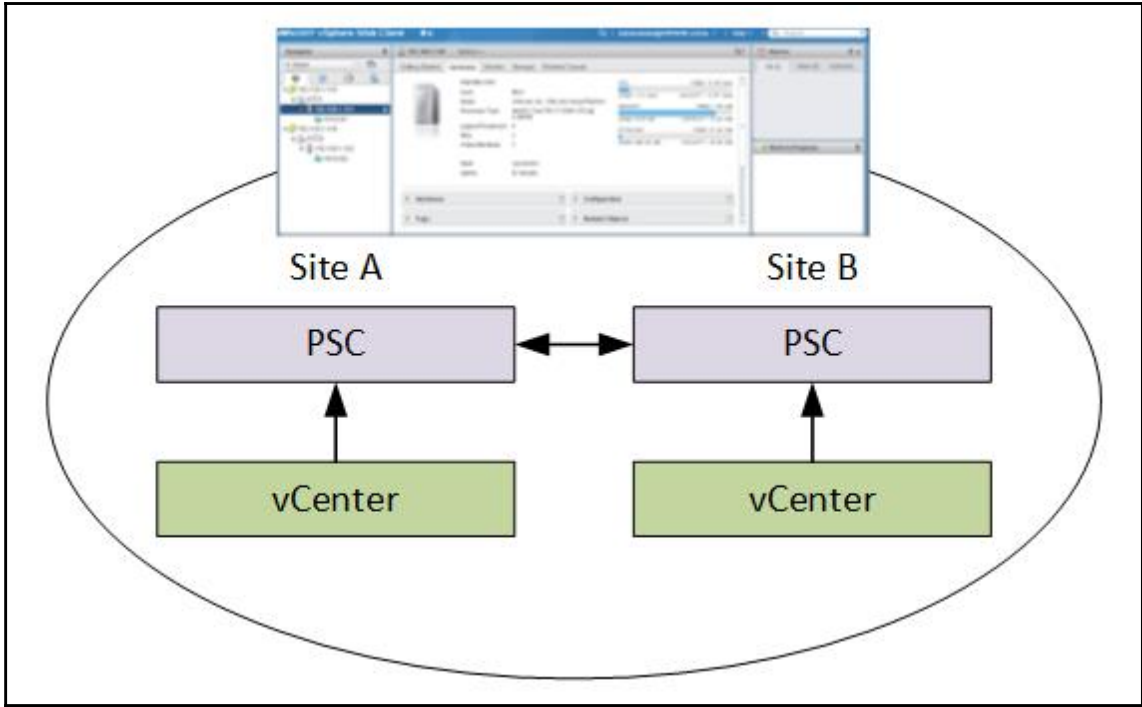
Specify the actions to take when the alarm state changes.

Action	Configuration				
Send a notification email	hersey@company.com		Once		
Send a notification trap			Repeat		

Repeat actions every: minutes.

Email sender is not configured.
To receive an email when the alarm triggers, configure vCenter Server and set the mail sender.

Back Next Finish Cancel



VMware Product Interoperability Matrices

Interoperability Solution/Database Interoperability Upgrade Path

1. Select a Solution

If you do not know the *solution's* version leave it blank.

VMware vCenter Server × 6.7 U1

2. Add Platform/Solution

Add *platforms/solutions* to see if they are compatible with the selected *solution*.

VMware vSphere Hypervisor (ESXi) All versions

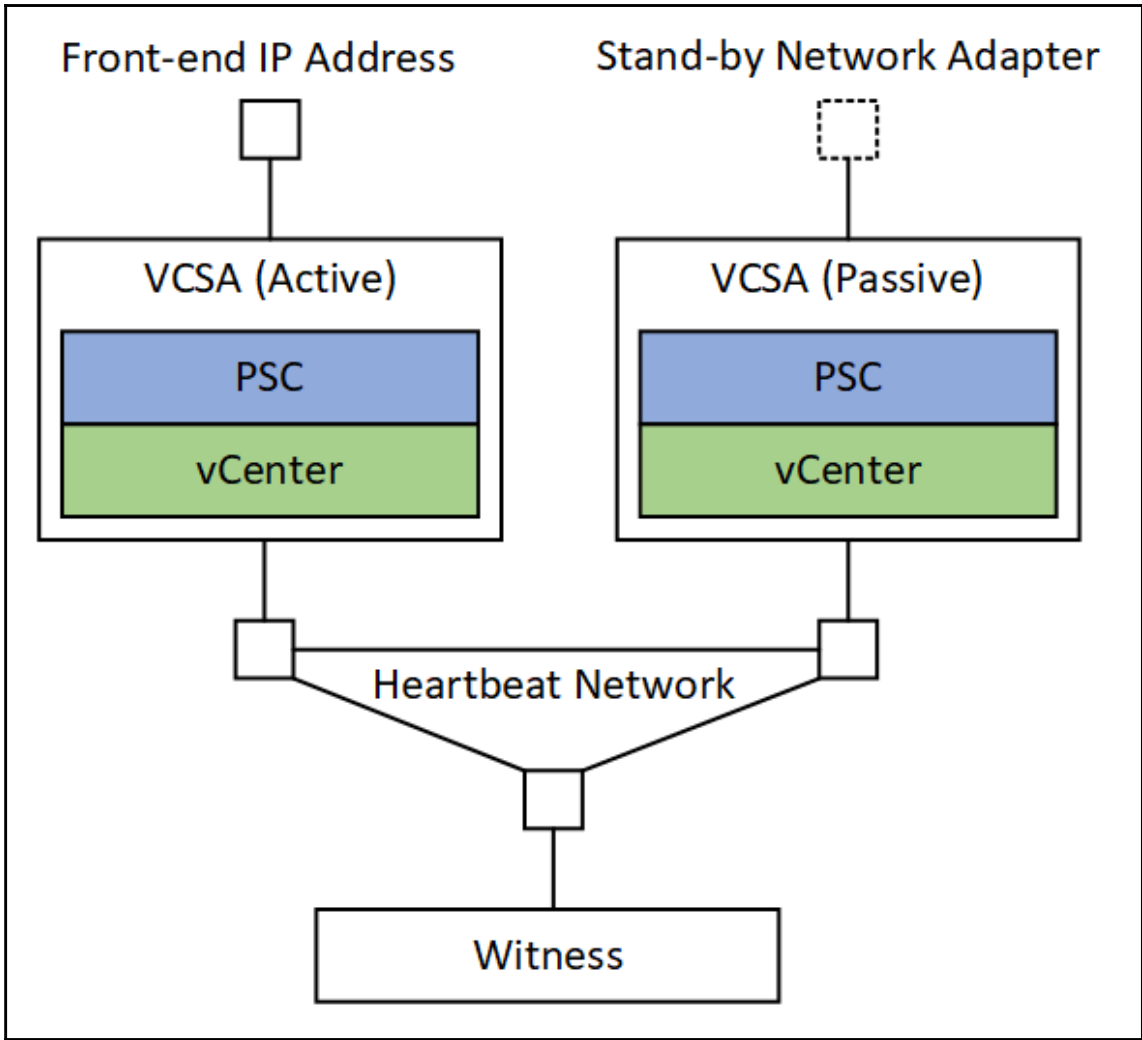
+ Add Another Solution

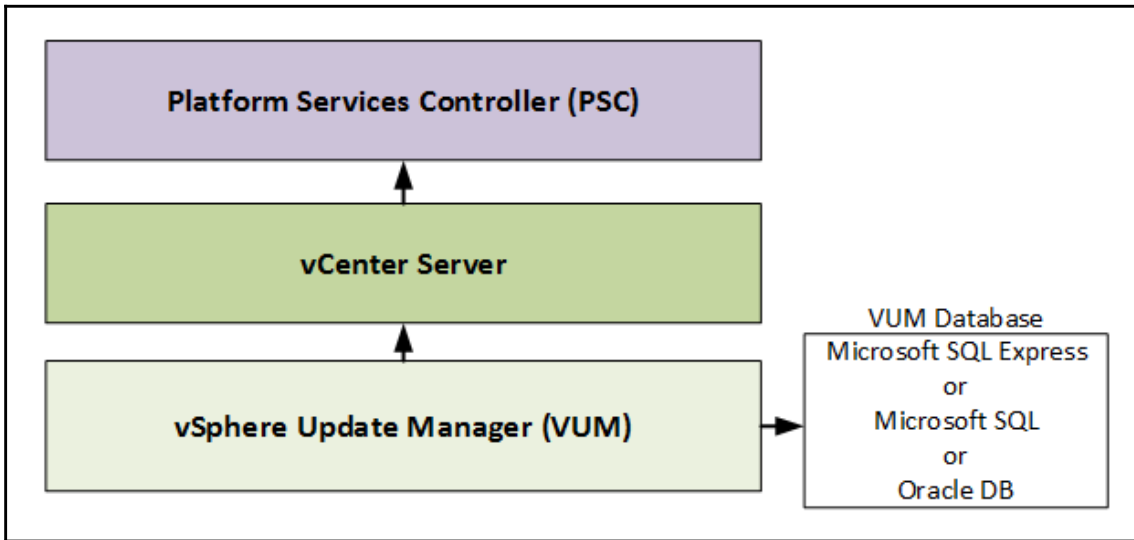
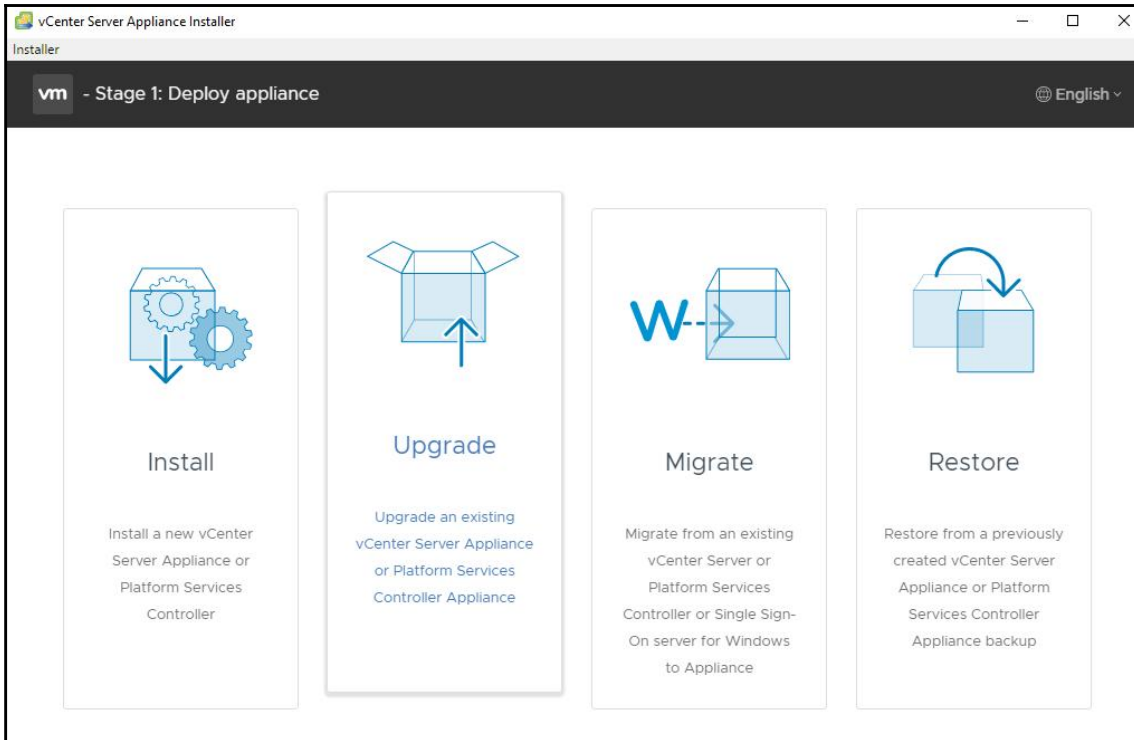
Hide empty rows/columns Hide unsupported releases

Copy CSV Print

- Collapse All

VMware vCenter Server	6.7 U1
▼ VMware vSphere Hypervisor (ESXi)	
6.7 U1	
6.7.0	
6.5 U2	
6.5 U1	
6.5.0	
6.0 U3	
6.0.0 U2	
6.0.0 U1	





192.168.1.153 Actions ▾

Getting Started Monitor **Manage**

Settings **Hosts Baselines** VMs/VAs Baselines Patch Repository ESXi Images VA Upgrades

Go to compliance view

Baseline Name	Content	Type
Critical Host Patches (Prede...	66	Dynamic
Non-Critical Host Patches (...)	244	Dynamic

2 items

Group Name	Component
ESXiPatch	Host
Critical Host Patches (Predefined)	Host Patch
Non-Critical Host Patches (Predefine	Host Patch

3 items

192.168.1.161 Actions ▾

Getting Started Summary Monitor **Manage** Related Objects

Settings Networking Storage Alarm Definitions Tags Permissions Scheduled Tasks **Update Manager**

Attach Baseline... Scan for Updates... Stage Patches... Remediate... Go to Admin View

Attached Baseline Groups:

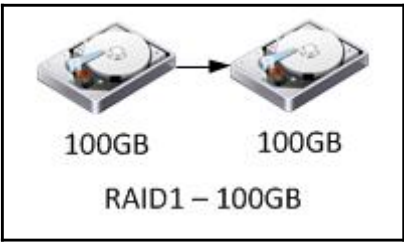
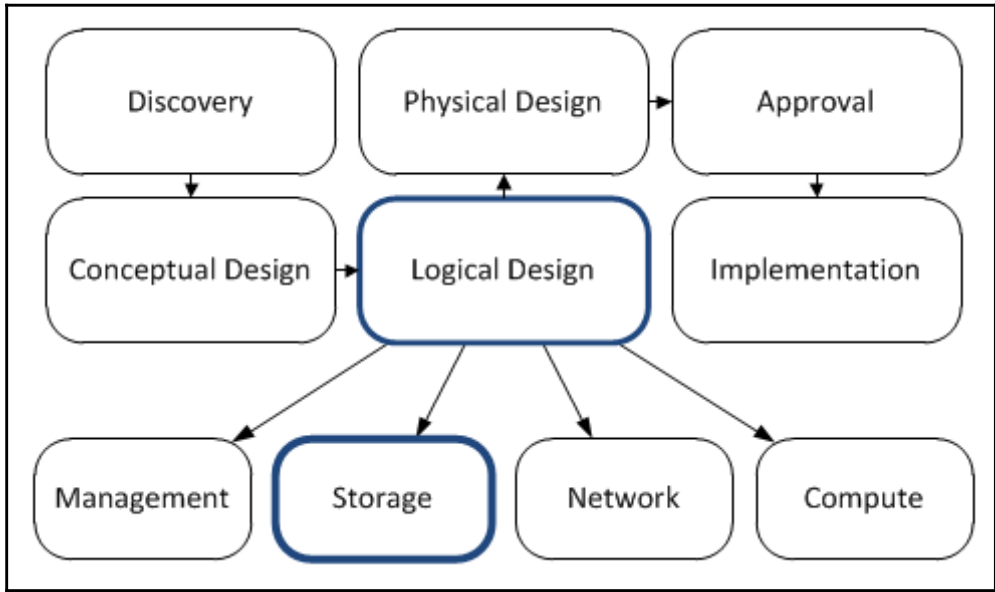
✓ All Groups and Independent Baselines

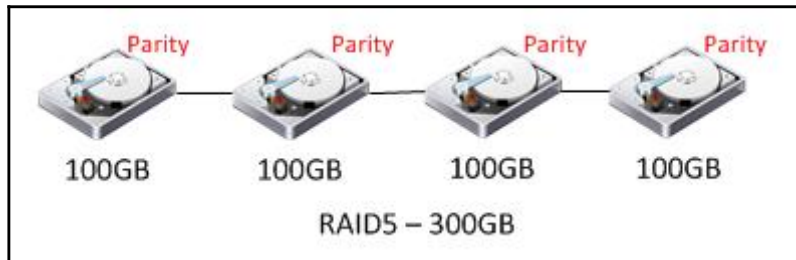
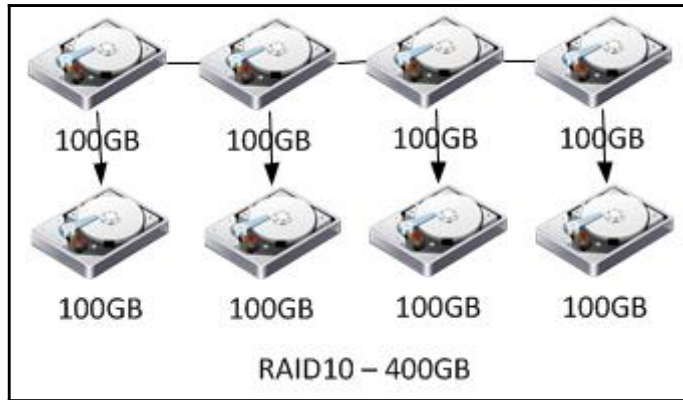
Attached Baselines:

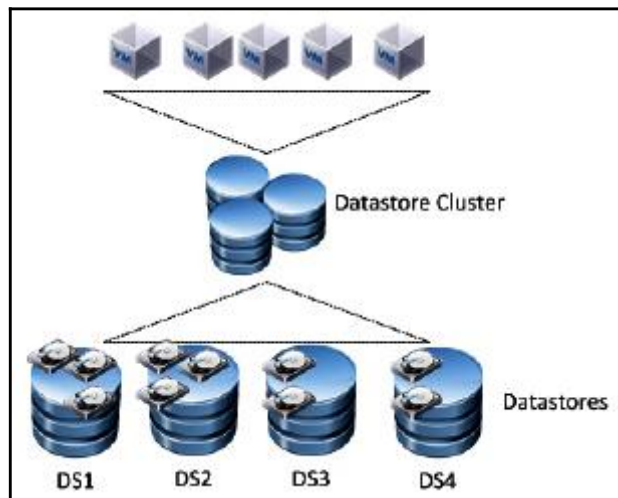
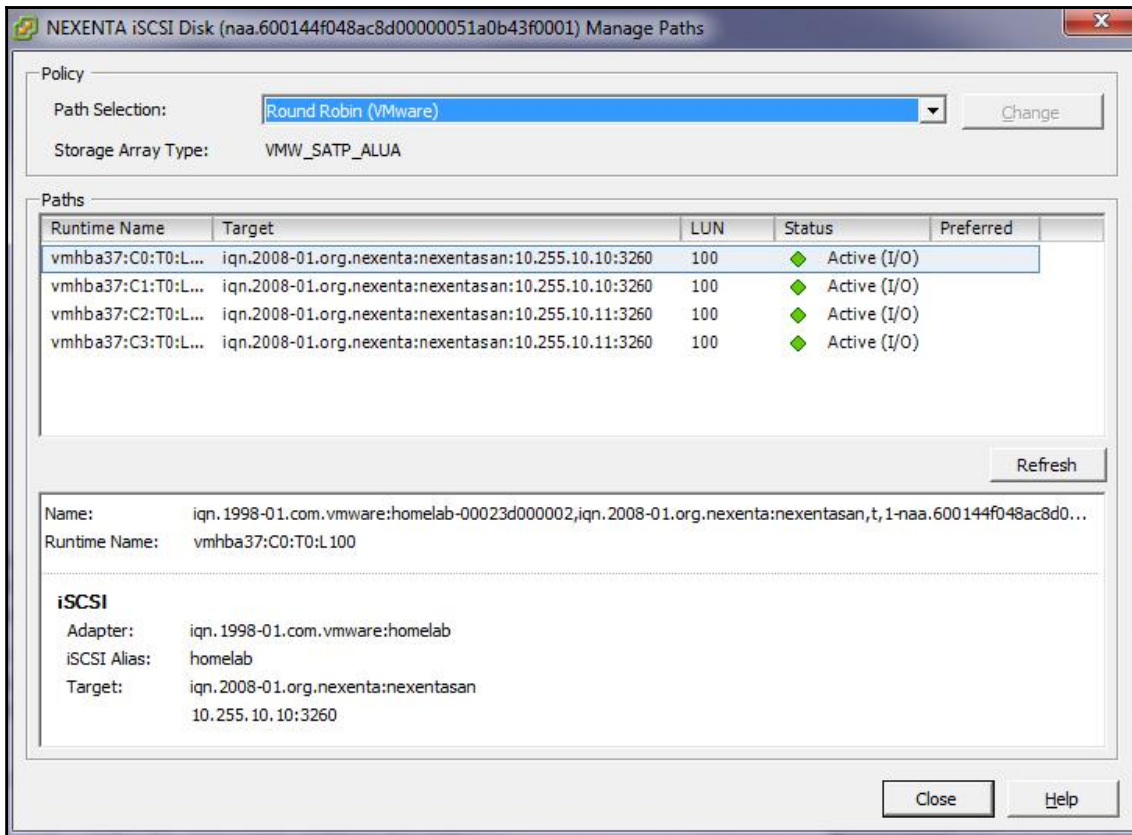
Baseline	Type	Compliance Status
Critical Host Patches (Predefined)	Host Patch	✓ Compliant
Non-Critical Host Patches (Predefined)	Host Patch	✓ Compliant

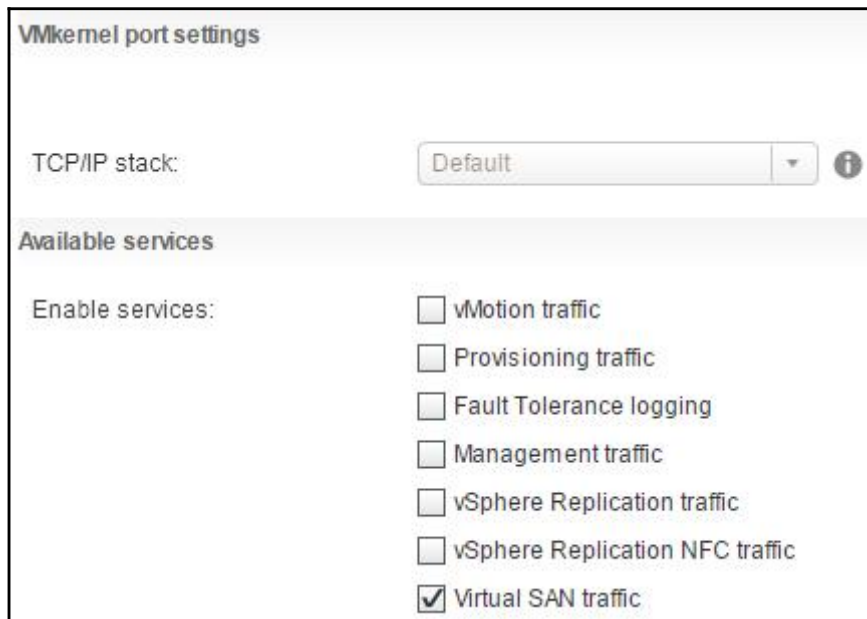
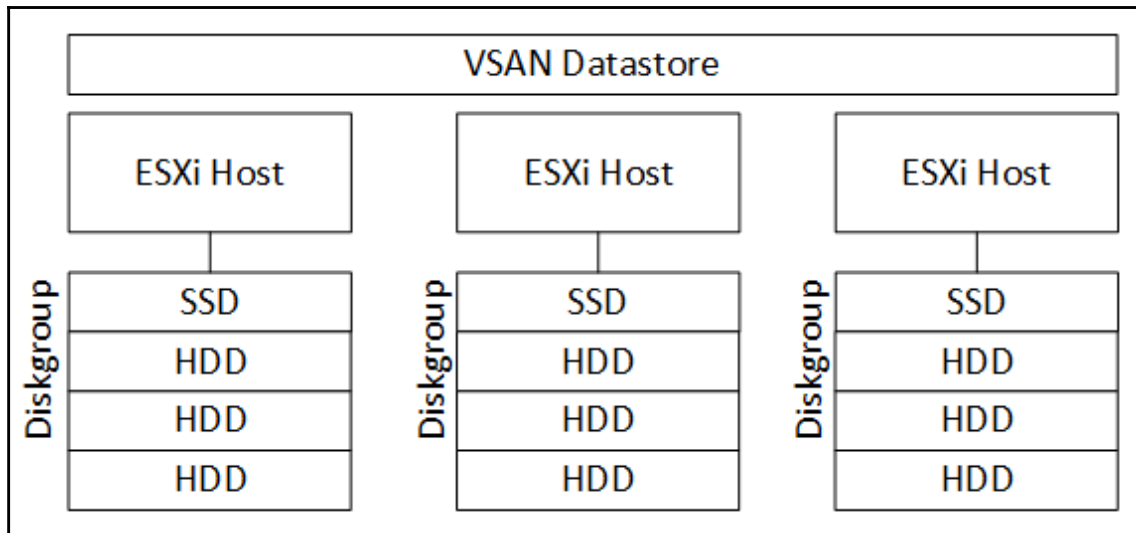
Updates (66)

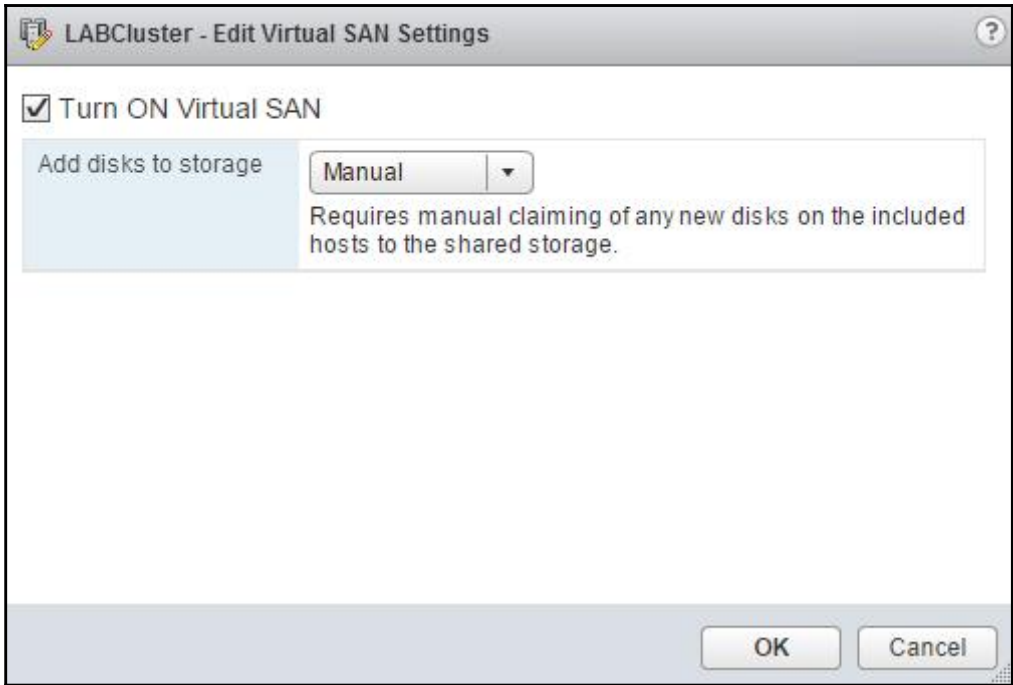
Chapter 5: vSphere Storage Design














LABCluster - Claim Disks for Virtual SAN Use










When claiming disks for Virtual SAN, the following rules apply:



1. Hosts that contribute to the Virtual SAN cluster must contribute at least 1 flash disk.
2. The number of HDD disks that a host contributes must be greater than or equal to the number of flash disks it contributes.

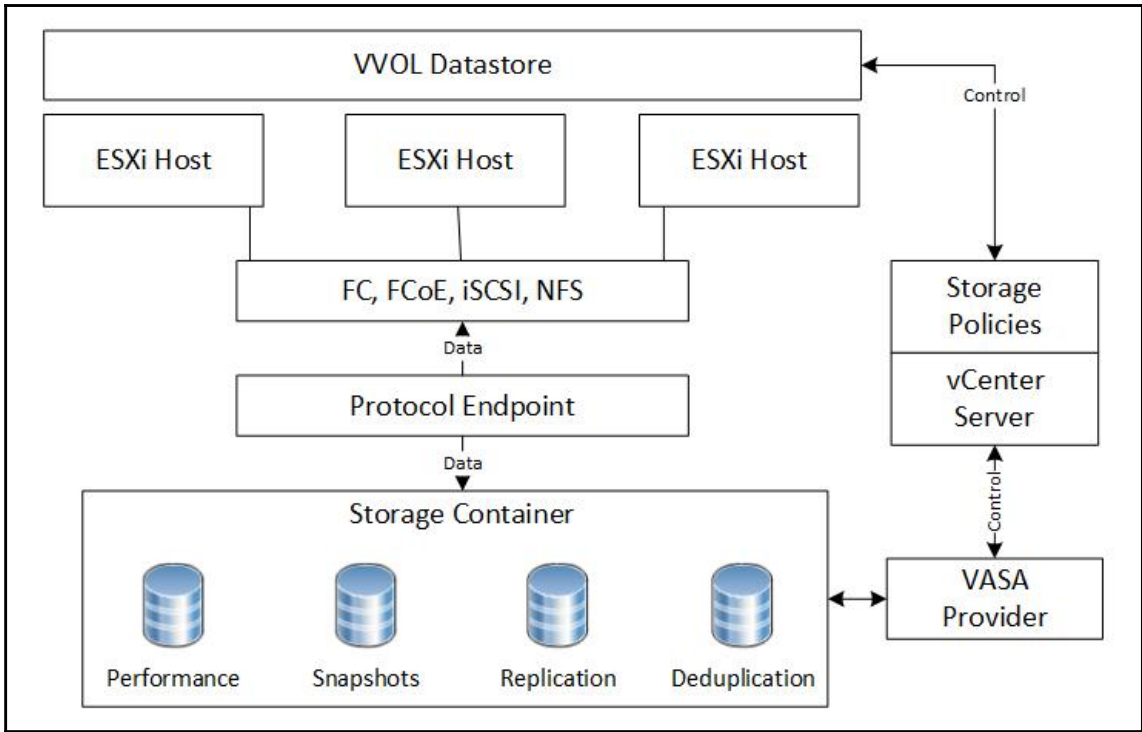
More flash disks means better performance, and more HDD disks mean more datastore capacity.

Unselect all  

Show: **Eligible hosts** 

Name	Drive Type	Capacity	Transport Type
<input checked="" type="checkbox"/>  n-esxi1.nested.local			
<input checked="" type="checkbox"/>  Local VMware Disk (mpx.vmhba1:C0:T2:L0)	HDD	100.00 GB	Parallel SCSI
<input checked="" type="checkbox"/>  Local VMware Disk (mpx.vmhba1:C0:T1:L0)	Flash	10.00 GB	Parallel SCSI
<input checked="" type="checkbox"/>  n-esxi2.nested.local			
<input checked="" type="checkbox"/>  Local VMware Disk (mpx.vmhba1:C0:T2:L0)	HDD	100.00 GB	Parallel SCSI
<input checked="" type="checkbox"/>  Local VMware Disk (mpx.vmhba1:C0:T1:L0)	Flash	10.00 GB	Parallel SCSI
<input checked="" type="checkbox"/>  n-esxi3.nested.local			
<input checked="" type="checkbox"/>  Local VMware Disk (mpx.vmhba1:C0:T2:L0)	HDD	100.00 GB	Parallel SCSI
<input checked="" type="checkbox"/>  Local VMware Disk (mpx.vmhba1:C0:T1:L0)	Flash	10.00 GB	Parallel SCSI






 9 items 



Summary Monitor **Manage** Related Objects

Settings Scheduled Tasks **Storage Providers** Alarm Definitions Tags Permissions Sessions

Storage Providers Group by:

Storage Provider/Storage System	Status	Active/Standby	Priority	URL	Last Rescan Time	VASA API Versi
▼ WVOLs	Connected	--	--	https://192.168.1.162:8443/vasa...	--	2.0
No Storage System (0/1 onli...		Active	--			

Storage Provider Details

General General

Supported vendor IDs

Certificate info

Provider name	WVOLs
Provider status	Connected
Active/standby status	--
Activation	Automatic
URL	https://192.168.1.162:8443/vasa/version.xml

New Datastore ? >>

1 Location
 2 Type
 3 Name and container selection
 4 Select hosts accessibility
 5 Ready to complete

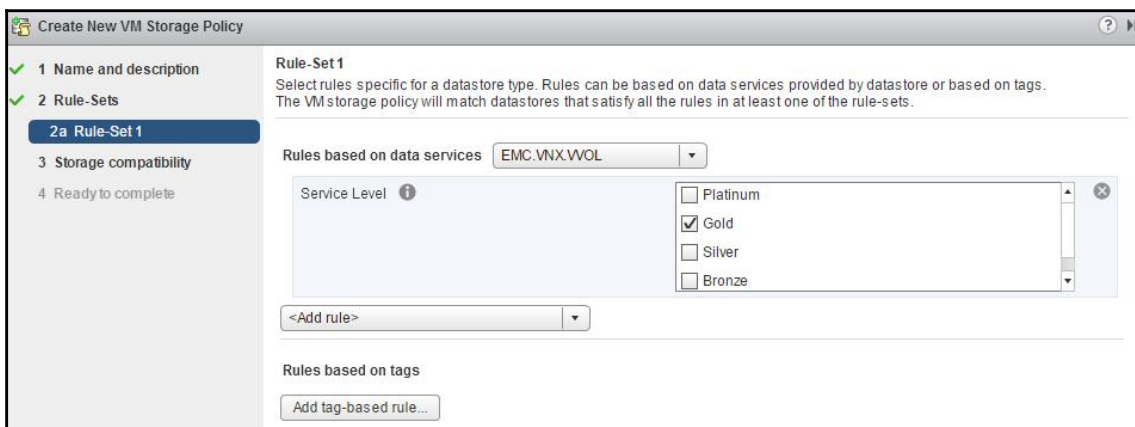
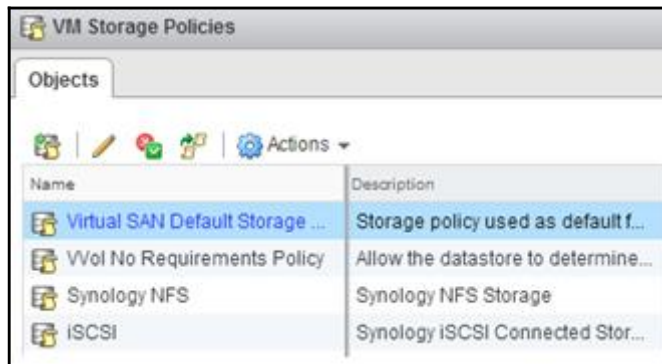
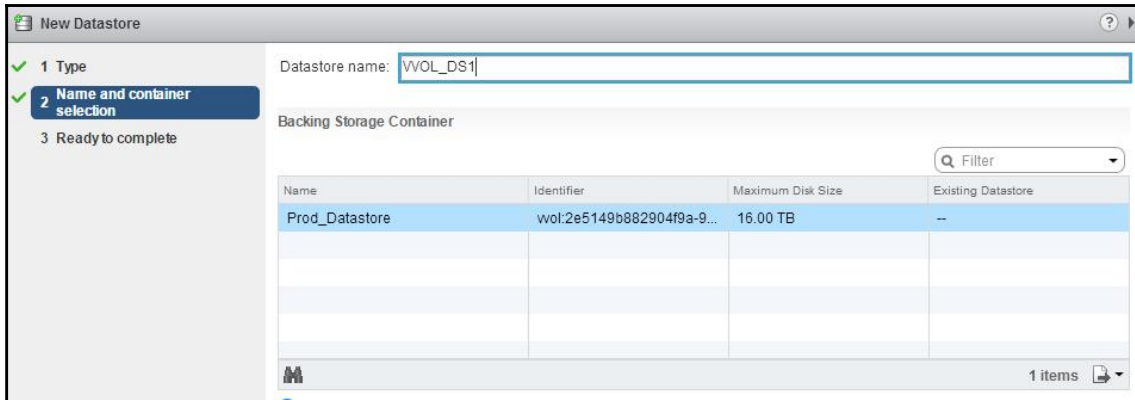
Type

VMFS
 Create a VMFS datastore on a disk/LUN.

NFS
 Create an NFS datastore on an NFS share over the network.

WVOL
 Create a Virtual Volumes datastore on a storage container connected to a storage provider.

Back Next Finish Cancel



LABSQL01: Manage VM Storage Policies

Select a common storage policy for all storage objects or use the table below to define different policies for the different storage objects.


VM storage policy: **VVOL-HIGHPERF**

Name	Disk Size	VM Storage Policy	Datastore	Datastore Type
VM home		VVOL-HIGHPERF	NFS_Datastore2	NFS
Hard disk 1	40.00 GB	VVOL-HIGHPERF	NFS_Datastore2	NFS
Hard disk 2	100.00 GB	VVOL-HIGHPERF	NFS_Datastore2	NFS

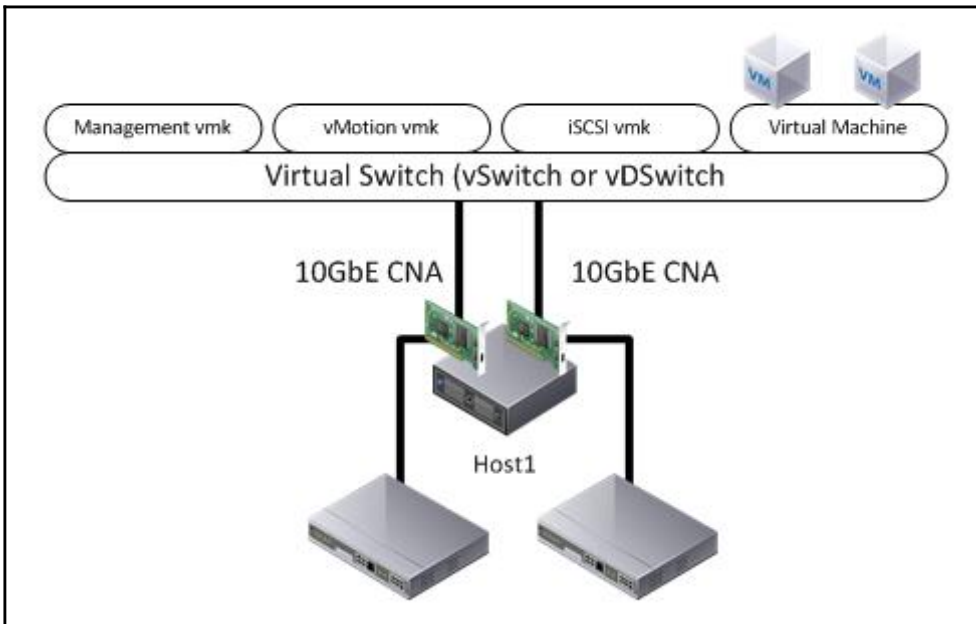
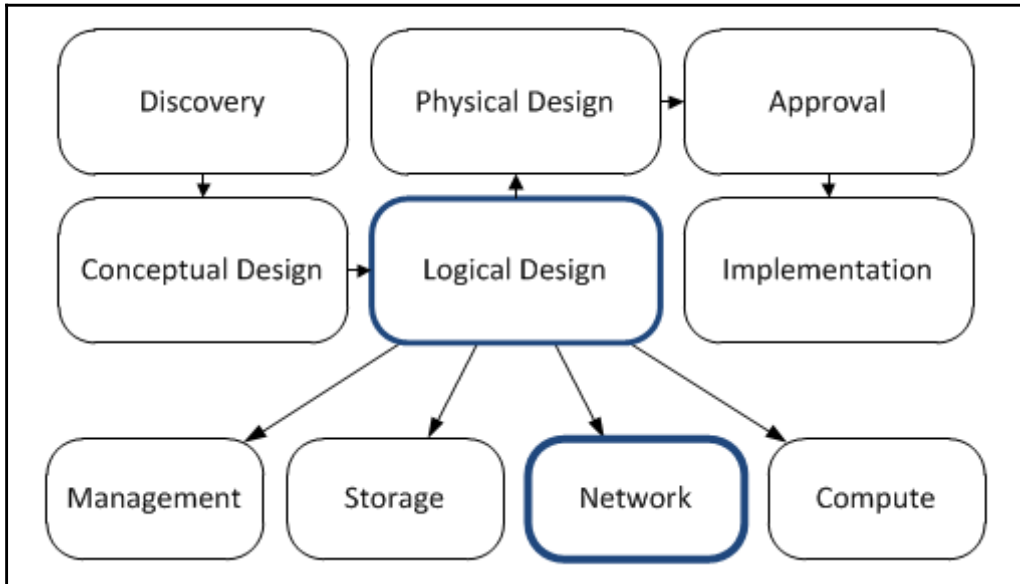
Edit NFS Kerberos Credentials

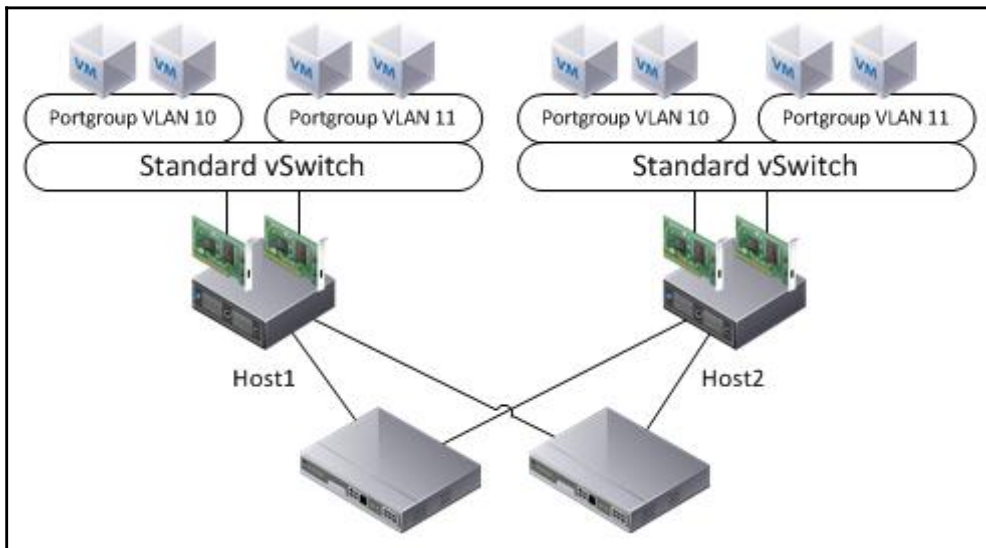
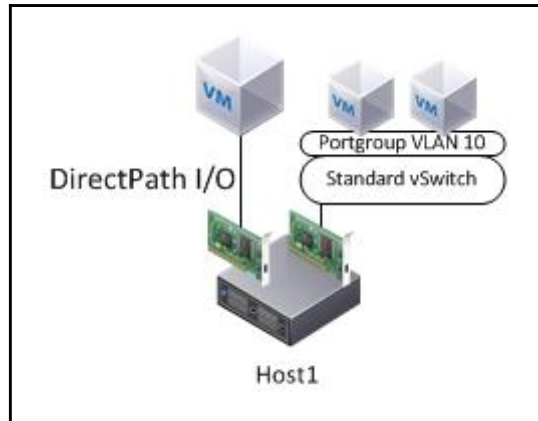
User name:

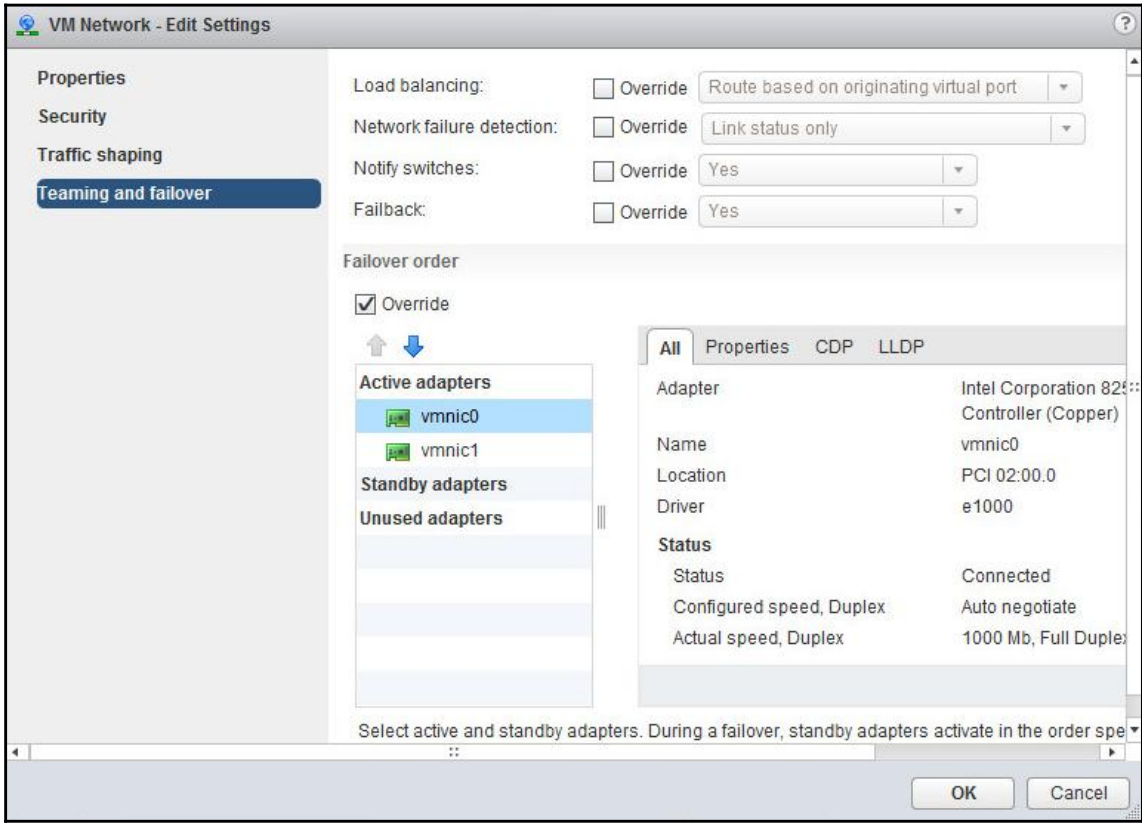
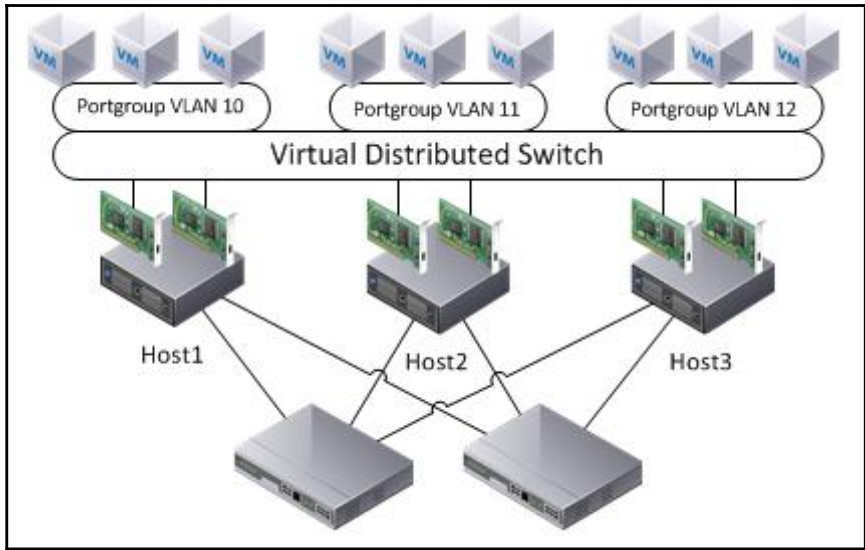
Password:

 Please note that the provided credentials are currently not validated until you mount a datastore with kerberos authentication.

Chapter 6: vSphere Network Design







Teaming and failover

Failback: Override Yes

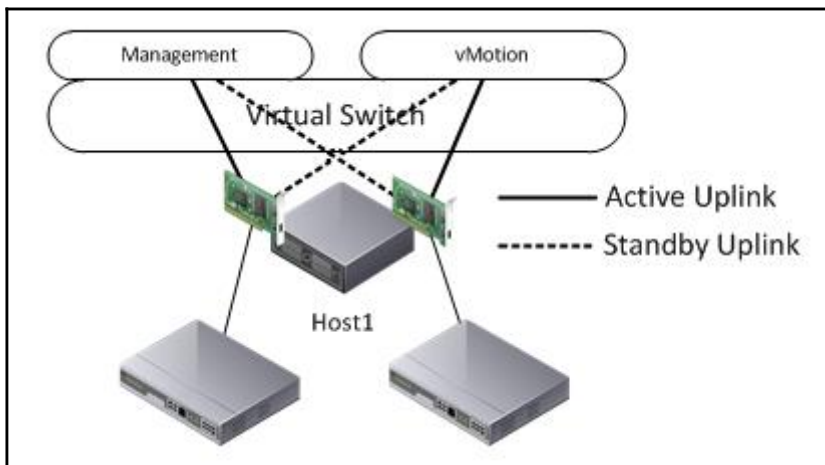
Failover order

Override

↑ ↓

Active adapters	
	vmnic0
Standby adapters	
	vmnic1
Unused adapters	

All	Prope
Adapter	
Name	
Location	
Driver	
Status	



VM Network - Edit Settings

Properties

Security

Traffic shaping

Teaming and failover

Status: Override Enabled

Average bandwidth (kbit/s): 100000

Peak bandwidth (kbit/s): 100000

Burst size (KB): 102400

dvPortGroup-Prod - Edit Settings

- General
- Advanced
- Security
- Traffic shaping**
- VLAN
- Teaming and failover
- Monitoring
- Traffic filtering and marking
- Miscellaneous

Ingress traffic shaping

Status:

Average bandwidth (kbit/s):

Peak bandwidth (kbit/s):

Burst size (KB):

Egress traffic shaping

Status:

Average bandwidth (kbit/s):

Peak bandwidth (kbit/s):

Burst size (KB):

i Traffic shaping policy is applied individually to each port in the port group.

DSwitch | Actions

Summary | Monitor | **Manage** | Related Objects

Settings | Alarm Definitions | Tags | Permissions | Network Protocol Profiles | Ports | **Resource Allocation**

System traffic

Network resource pools

0 Gbit/s | 0.75 Gbit/s | 1.00 Gbit/s

Total bandwidth capacity	1.00 Gbit/s
Maximum reservation allowed i	0.75 Gbit/s
Configured reservation	0.10 Gbit/s
Available bandwidth	0.90 Gbit/s

Network I/O Control: Enabled
Version: 3
Physical network adapters: 2
Minimum link speed: 1,000 Mbit/s

Traffic Type	Shares	Shares Value	Reservation	Limit
Fault Tolerance (FT) Traffic	Normal	50	0 Mbit/s	Unlimited
Management Traffic	Normal	50	0 Mbit/s	Unlimited
NFS Traffic	Normal	50	0 Mbit/s	Unlimited
Virtual Machine Traffic	High	100	100 Mbit/s	Unlimited
Virtual SAN Traffic	Normal	50	0 Mbit/s	Unlimited
iSCSI Traffic	Normal	50	0 Mbit/s	Unlimited
vMotion Traffic	Normal	50	0 Mbit/s	Unlimited
vSphere Data Protection Backup Traffic	Normal	50	0 Mbit/s	Unlimited
vSphere Replication (VR) Traffic	Normal	50	0 Mbit/s	Unlimited

9 items

DSwitch - New Network Resource Pool ?

Name:

Description:

Reservation quota:

Max. quota: 100 Mbit/s

OK Cancel

DPortGroup - Edit Settings ?

General

Advanced

Security

Traffic shaping

VLAN

Teaming and failover

Monitoring

Traffic filtering and marking

Miscellaneous

Name:

Port binding:

Port allocation:

Elastic port groups automatically increase or decrease the number of ports.

Number of ports:

Network resource pool:

Description:

OK Cancel

dvSwitch-PROD - Edit Private VLAN Settings

Primary VLAN ID	Secondary V...	VLAN Type
+ 200	200	Promiscuous
	+ 201	Community
		Isolated
		Community

Buttons: Add, Remove, Add, Remove, OK, Cancel

dvPortGroup-Prod - Edit Settings

General
Advanced
Security
Traffic shaping
VLAN
Teaming and failover

VLAN type: Private VLAN

Private VLAN ID: Promiscuous (200, 200)
Promiscuous (200, 200)
Community (200, 201)

192.168.1.25 - Bind vmhba37 with VMkernel Adapter

VMkernel network adapter

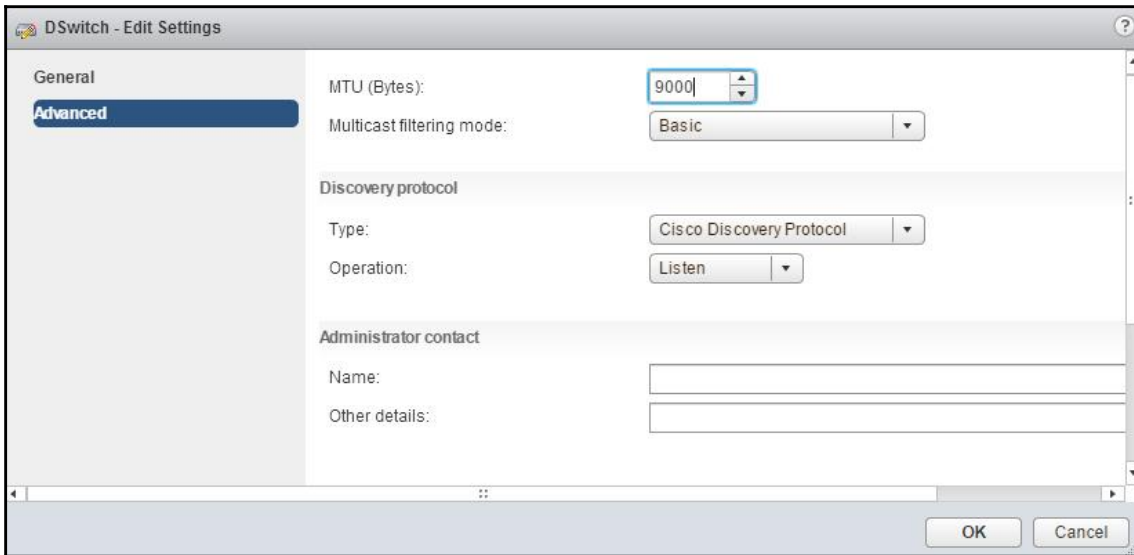
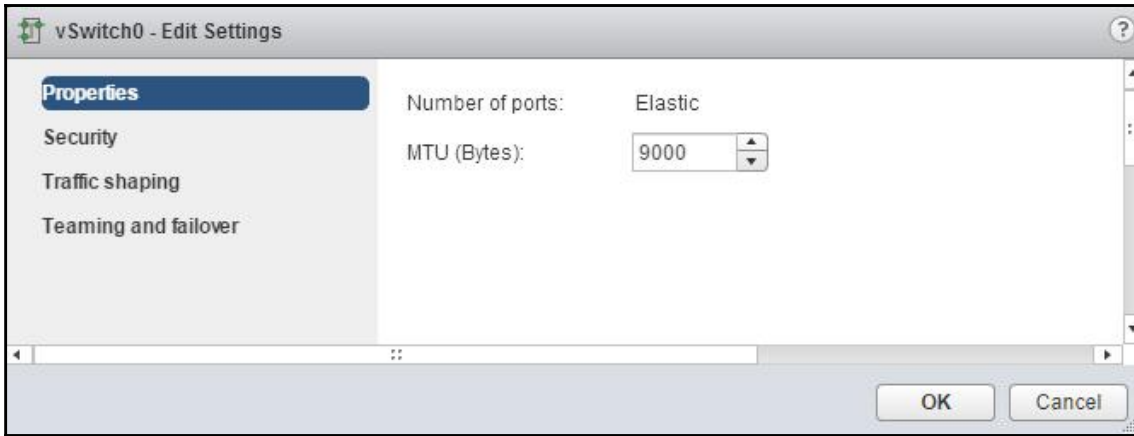
Only VMkernel adapters compatible with the iSCSI port binding requirements and available physical network adapters are listed.

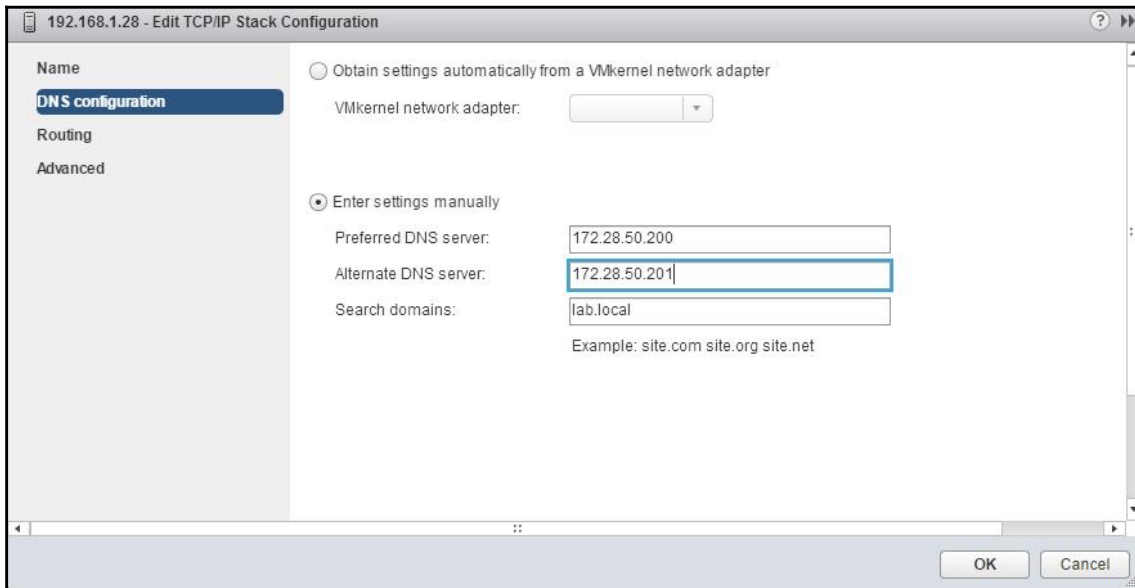
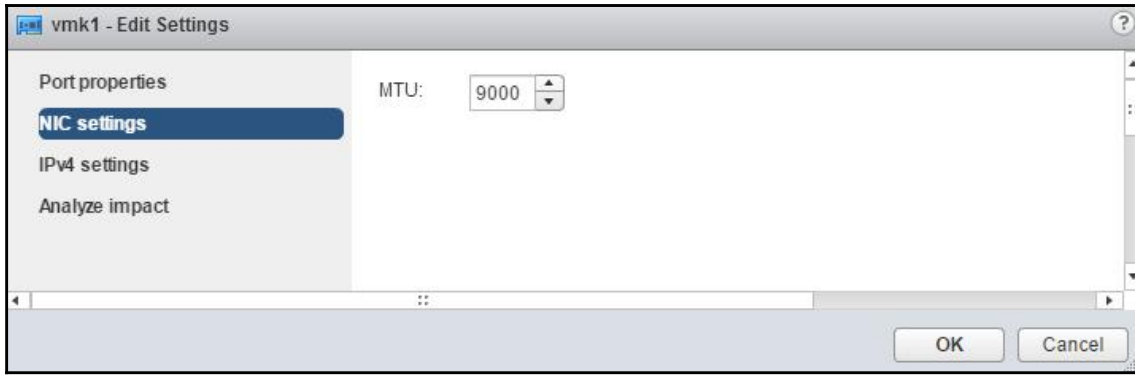
Port Group	VMkernel Ad...	Physical Network Adapter
Management Network (vSwitch0)	vmk0	vmnic5 (1 Gbit/s, Full)
NFS2 (vSwitch4)	vmk3	vmnic2 (1 Gbit/s, Full)
--	--	vmnic3
--	--	vmnic4

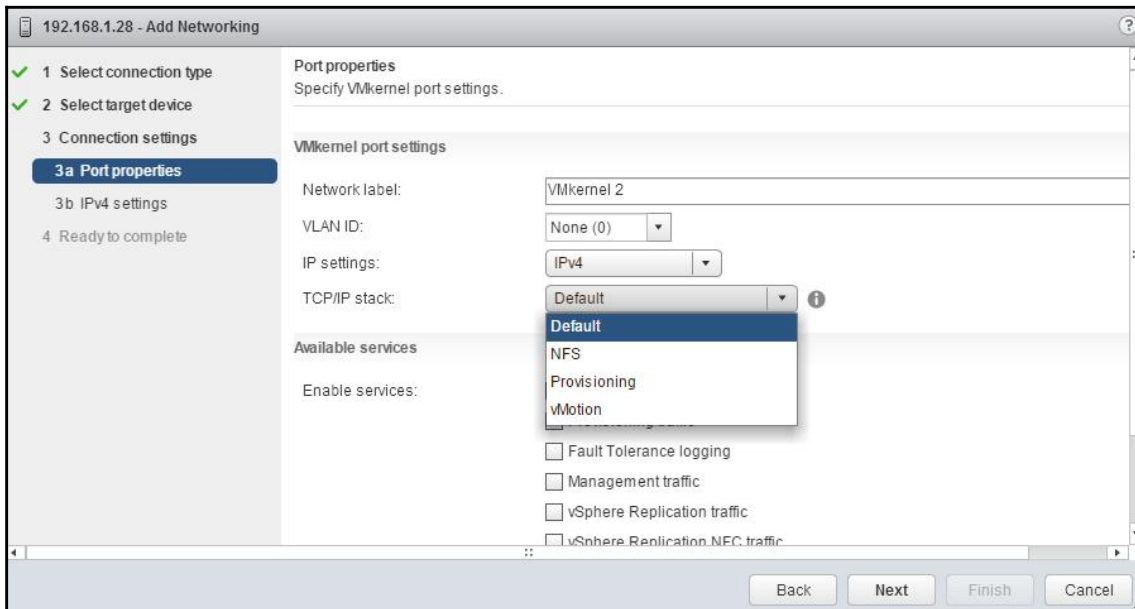
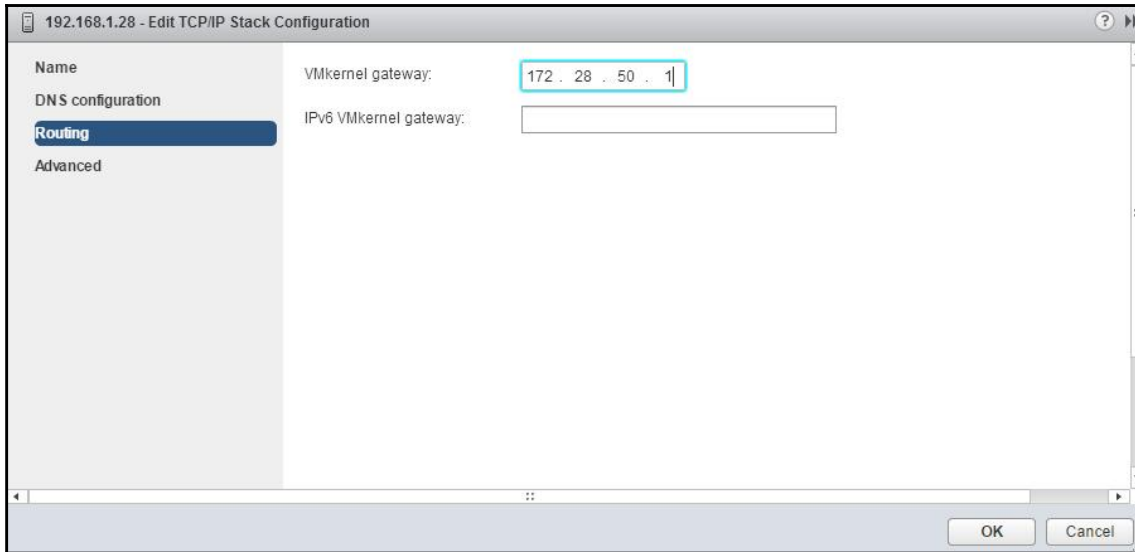
VMkernel port binding

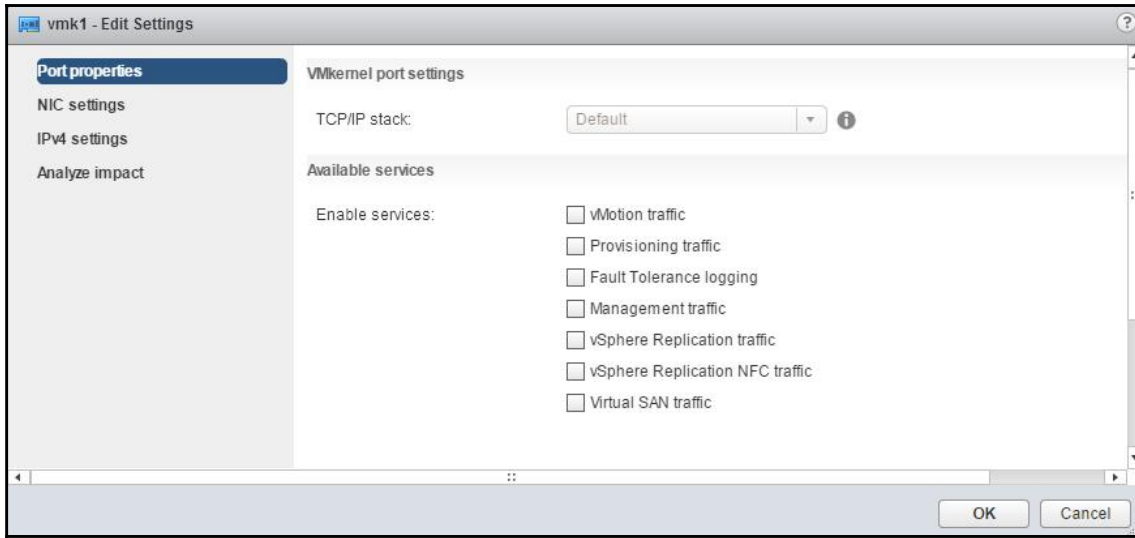
Status | Port Group | Switch | VMkernel Adapter | Physical Adapter

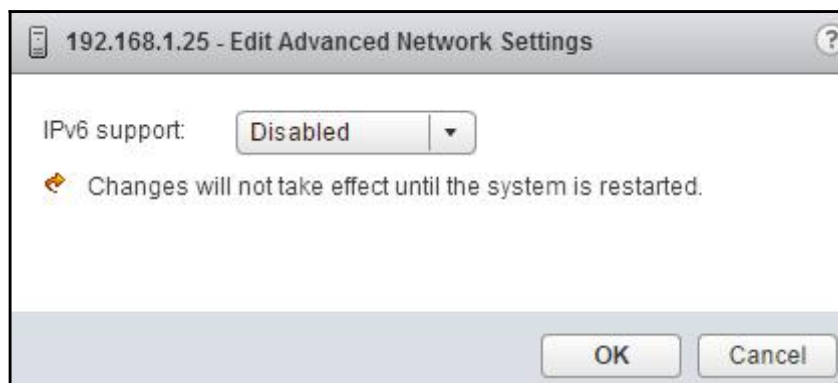
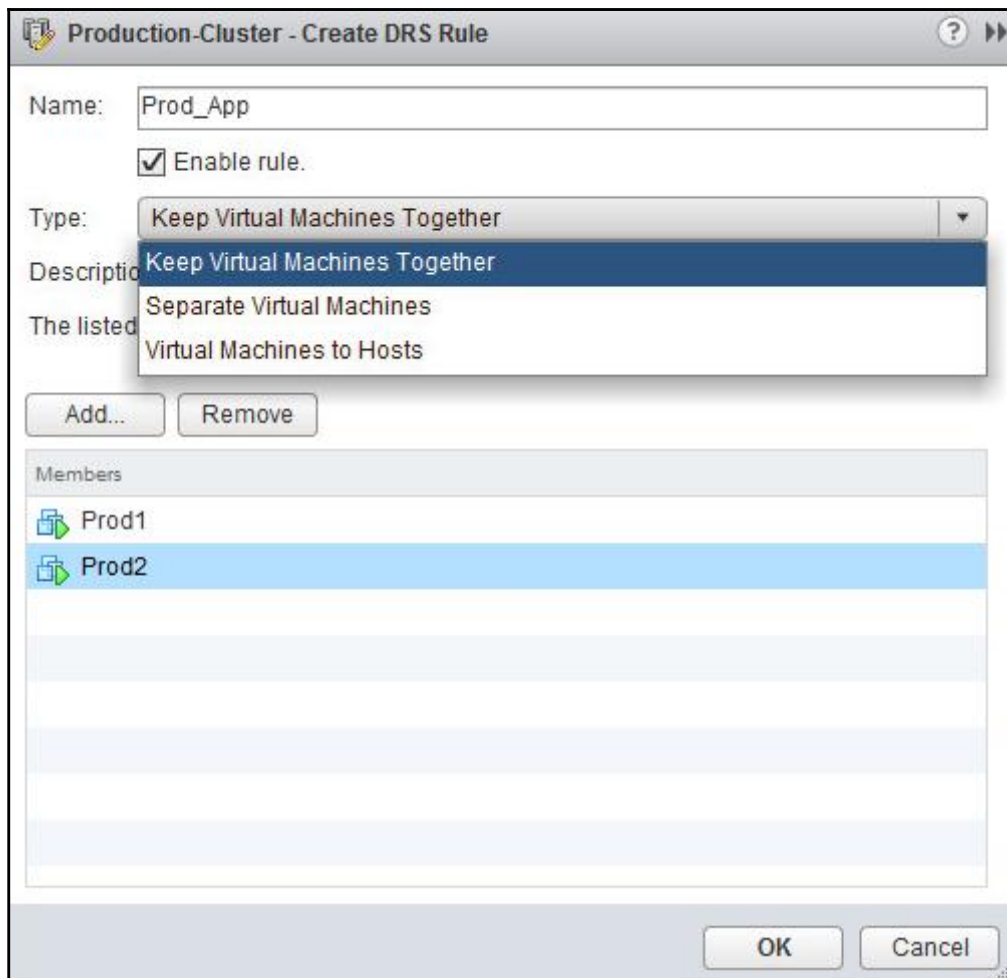
Port group policy: ✔ Compliant

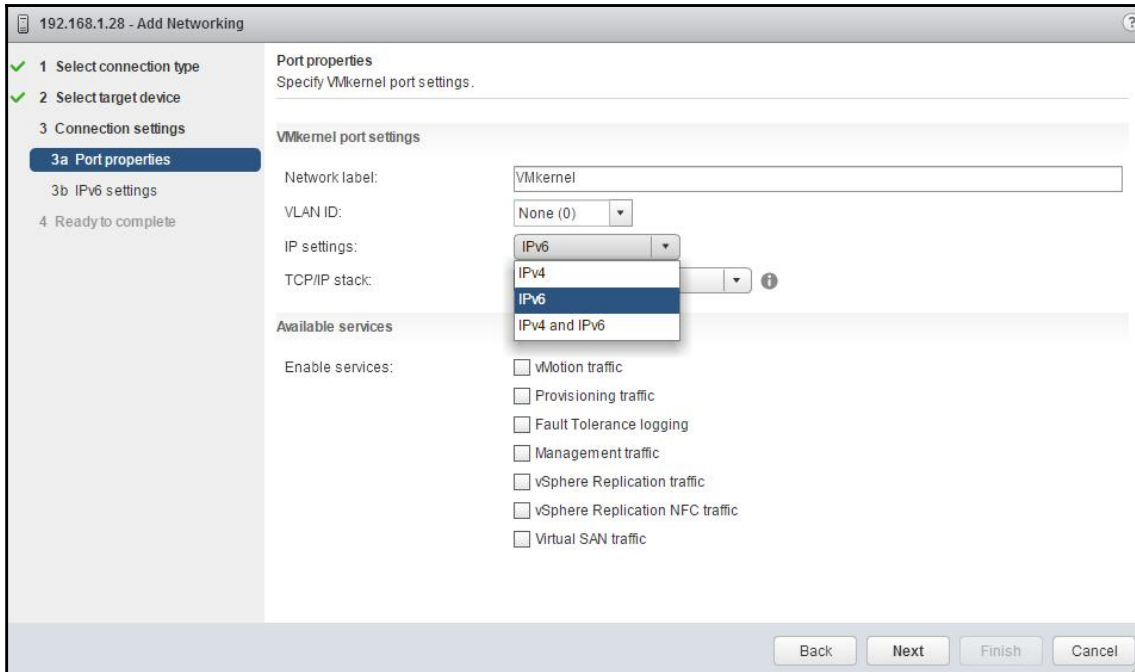




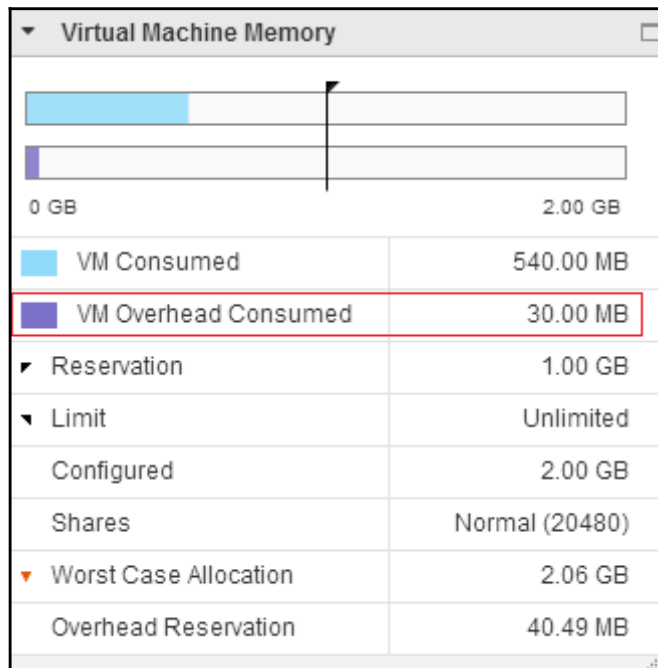
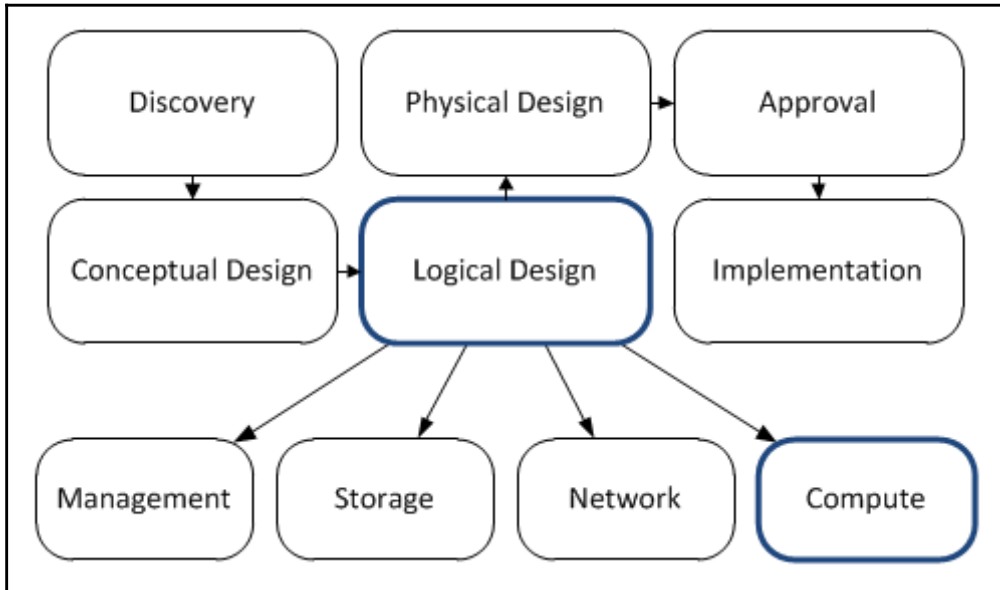








Chapter 7: vSphere Compute Design



192.168.1.25 Actions ▾

Summary Monitor **Manage** Related Objects

Settings Networking Storage Alarm Definitions Tags Permissions

◀◀
 ▼ Virtual Machines
 VM Startup/Shutdown
 Agent VM Settings
 Swap file location
 Default VM Compatibility
 ▼ System
 Licensing
 Host Profile
 Time Configuration
 Authentication Services
 Certificate
 Power Management
 Advanced System Settings
 System Resource

Advanced System Settings

✎

Name	1 ▲	Value
Mem.ShareForceSalting		0

M

LABSQL01 Actions ▾

Summary Monitor Manage Related Objects

Issues Performance Policies Tasks Events Utilization

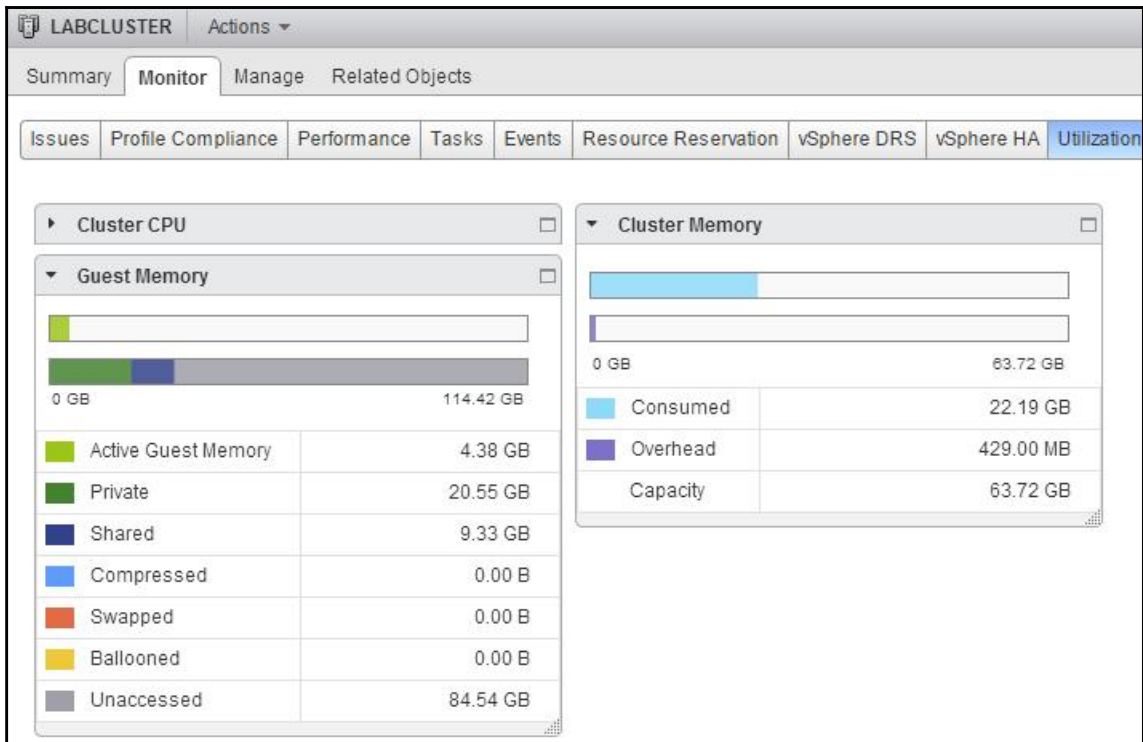
Virtual Machine CPU

Guest Memory




Active Guest Memory	61.00 MB
Private	739.00 MB
Shared	1.27 GB
Compressed	0.00 B
Swapped	0.00 B
Ballooned	0.00 B
Unaccessed	7.00 MB

Virtual Machine Memory

VM Consumed	1.01 GB
VM Overhead Consumed	32.00 MB
Reservation	0.00 B
Limit	Unlimited
Configured	2.00 GB
Shares	Normal (20480)
Worst Case Allocation	0.00 B
Overhead Reservation	36.50 MB



New Cluster [?] [>>]

Name	<input type="text" value="New Cluster"/>
Location	 SV4
▼ DRS	<input checked="" type="checkbox"/> Turn ON
Automation Level	<input type="text" value="Fully automated"/> ▼
Migration Threshold	Conservative  Aggressive
▼ vSphere HA	<input checked="" type="checkbox"/> Turn ON
Host Monitoring	<input checked="" type="checkbox"/> Enable host monitoring
Admission Control	<input checked="" type="checkbox"/> Enable admission control
▼ VM Monitoring	
VM Monitoring Status	<input type="text" value="Disabled"/> ▼ Overrides for individual VMs can be set from the VM Overrides page from Manage Settings area.
Monitoring Sensitivity	Low  High
▶ EVC	<input type="text" value="Disable"/> ▼
vSAN	<input type="checkbox"/> Turn ON

OK Cancel

LABCLUSTER Actions

Summary Monitor Manage Related Objects

LABCLUSTER

Total Processors: 12
Total vMotion Migrations: 26

CPU FREE: 39.01 GHz
USED: 1.70 GHz CAPACITY: 40.70 GHz

MEMORY FREE: 33.75 GB
USED: 29.97 GB CAPACITY: 63.72 GB

STORAGE FREE: 18.19 TB
USED: 1.74 TB CAPACITY: 19.93 TB

Cluster Resources

Hosts	3 Hosts
Total virtual flash resources	0.00 B
EVC mode	Intel® "Sandy Bridge" Generation

vSphere HA

Admission Control: Disabled
Host Monitoring: Enabled
VM Monitoring: Disabled

Tags

vSphere DRS

Balanced

Migration automation level: Fully Automated
Migration threshold: Apply priority 1, priority 2, and priority 3 recommendations
Power management automation level: Off
DRS recommendations: 0
DRS faults: 0

SV4-CLU-VDIX-1 - Edit Cluster Settings

vSphere DRS

vSphere Availability

Failures and Responses
Proactive HA Failures and Responses
Admission Control
Heartbeat Datastores
Advanced Options

Admission Control

Admission control is a policy used by vSphere HA to ensure failover capacity within a cluster. Increasing the value of host failures cluster tolerates will increase the availability constraints and capacity reserved.

Host failures cluster tolerates: 1 Maximum is one less than number of hosts in cluster.

Define host failover capacity by: Cluster resource percentage

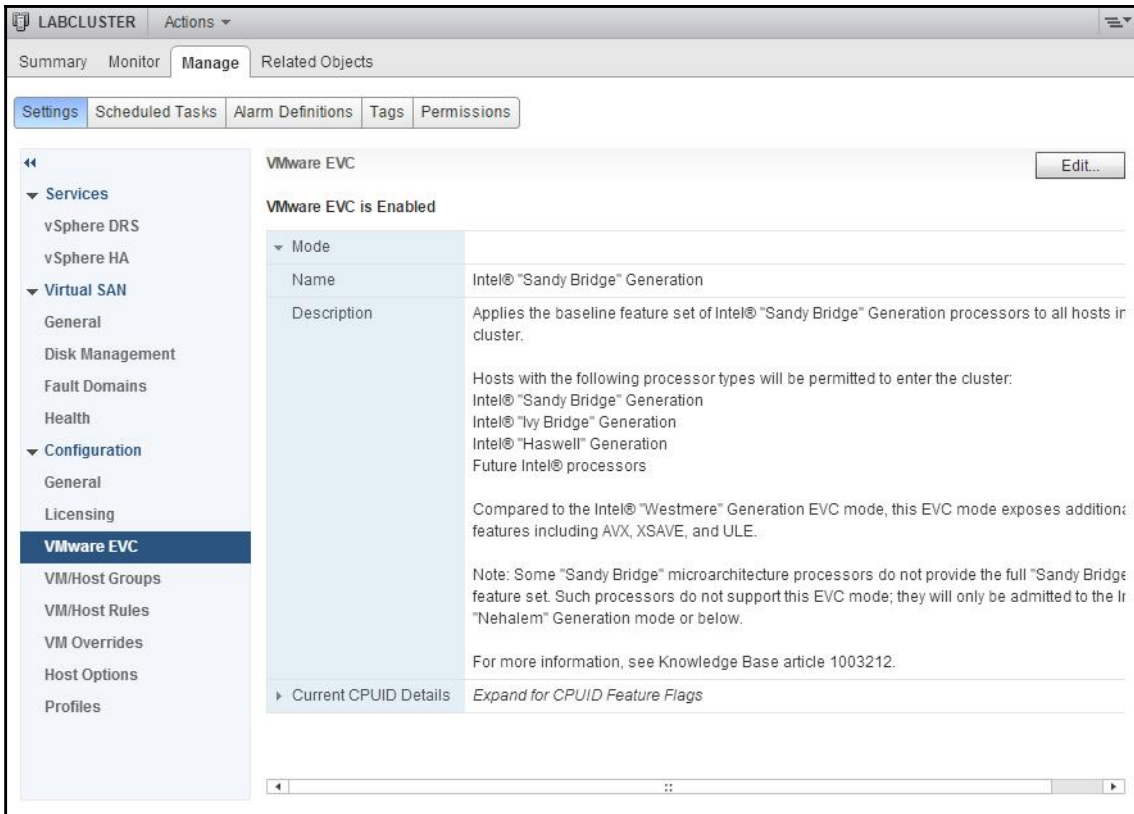
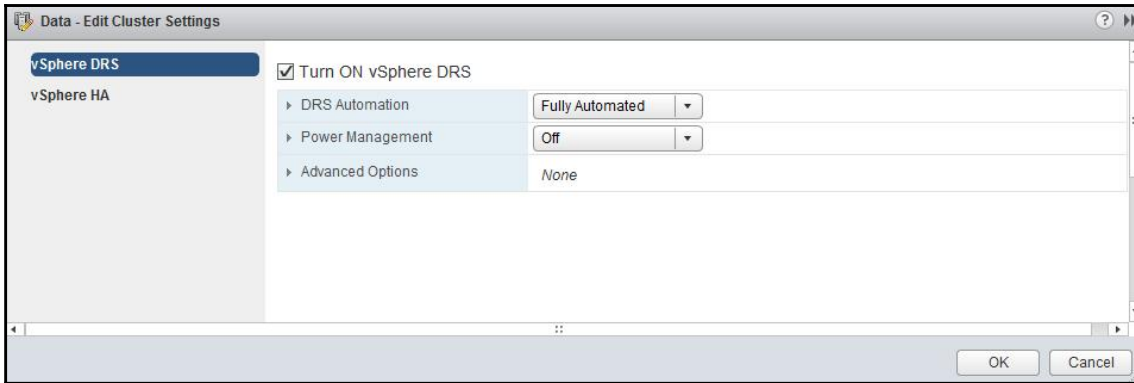
Override calculated failover capacity.

CPU 25 % Memory 25 %

Performance degradation VMs tolerate: 100 % Percentage of performance degradation the VMs in the cluster are allowed to tolerate during a failure

0% - Raises a warning if there is insufficient failover capacity to guarantee the same performance after VMs restart.
100% - Warning is disabled

OK Cancel



LABCLUSTER - New Resource Pool

Name: Critical

▼ CPU

Shares: Normal 4000

Reservation: 0 MHz
Max reservation: 28,054 MHz

Reservation type: Expandable

Limit: Unlimited MHz
Max limit: 30,254 MHz

▼ Memory

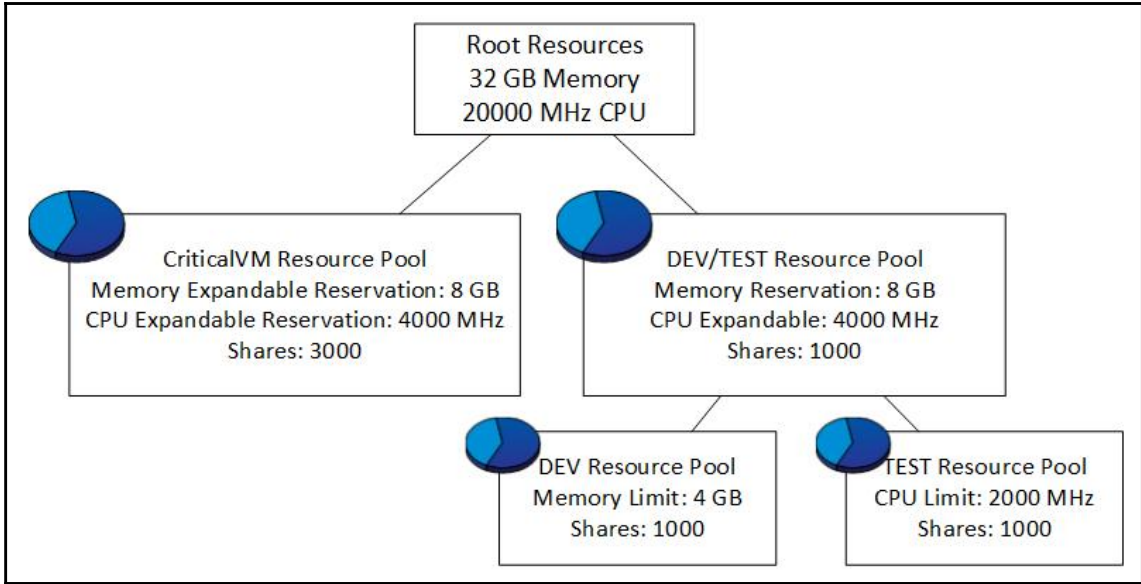
Shares: Normal 163840

Reservation: 0 MB
Max reservation: 32,651 MB

Reservation type: Expandable

Limit: Unlimited MB
Max limit: 49,654 MB

OK Cancel



Critical Actions

Summary Monitor Manage Related Objects

Issues Performance Tasks Events Resource Reservation Utilization

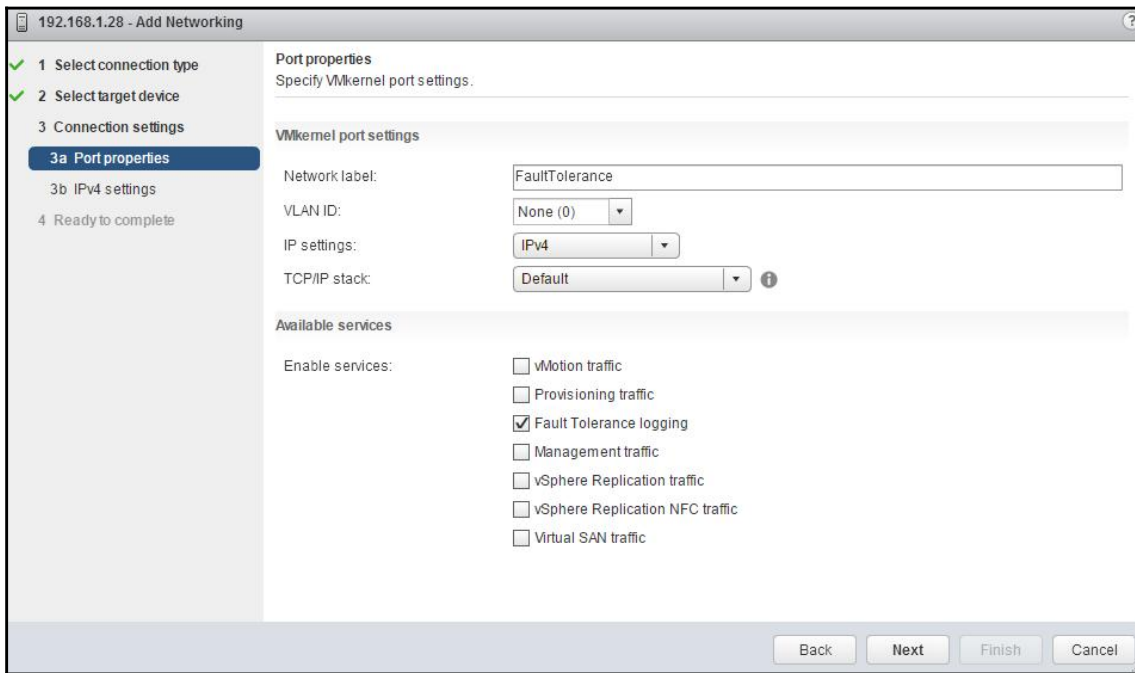
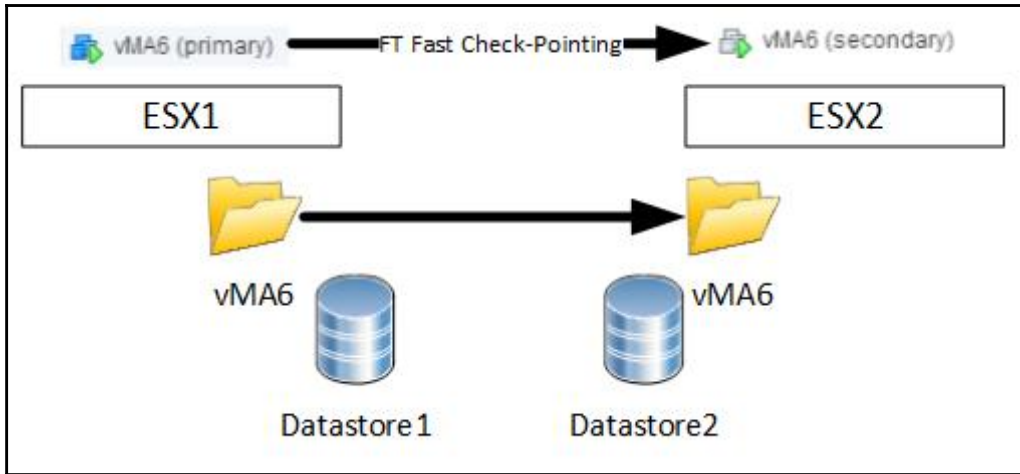
CPU 0 GB 44.45 GB

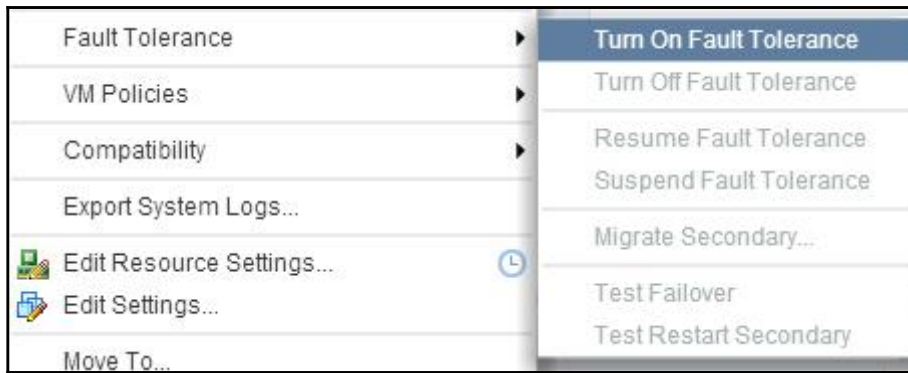
Memory

Storage

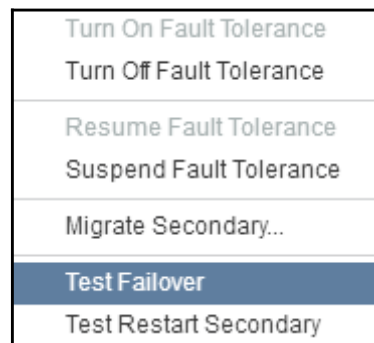
Configured Reservation	2.00 GB
Used Reservation	1.13 GB
Available Reservation	43.33 GB
Reservation Type	Expandable

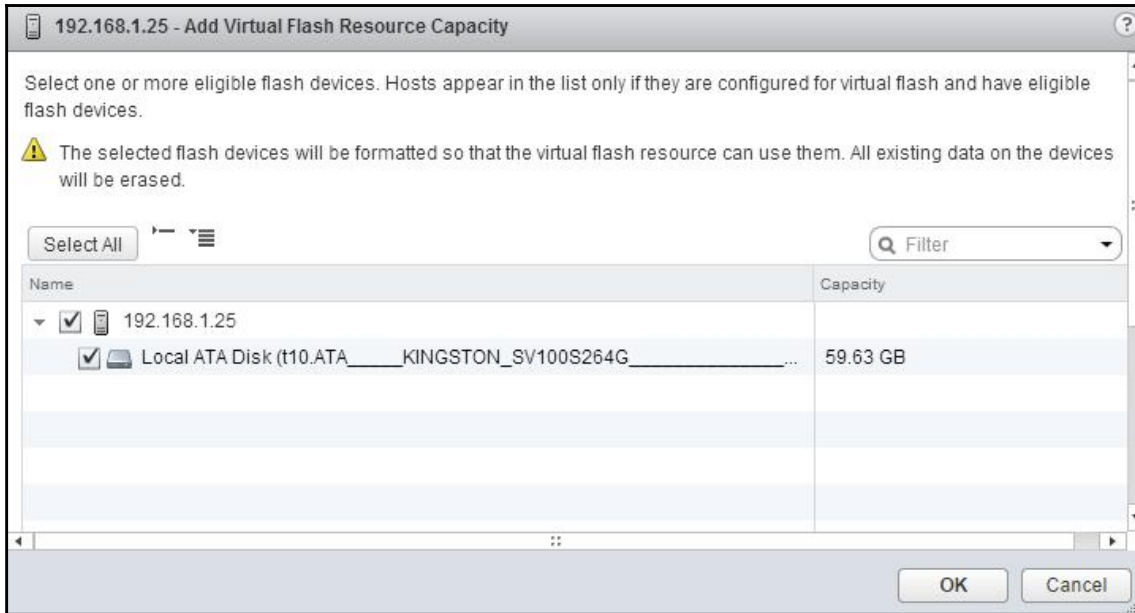
Name	Reservation (MB)	Limit (MB)	Type
LABFILE01	0	Unlimited	Fixed
LABSQL01	1024	Unlimited	Fixed

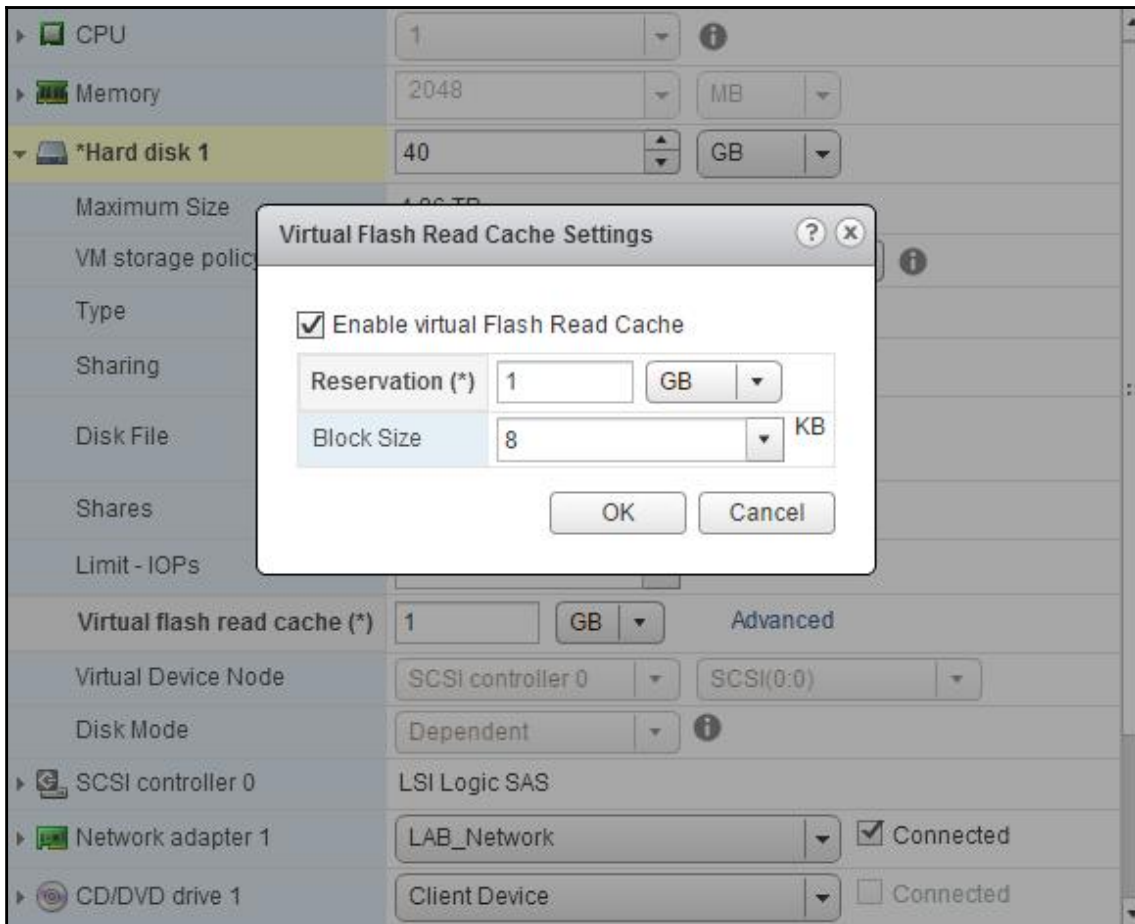




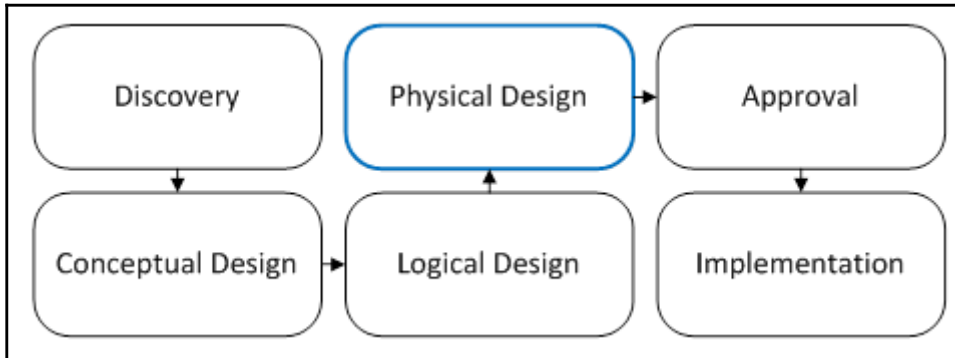
Fault Tolerance	
Fault Tolerance status	Protected
Secondary VM location	192.168.1.25
Log bandwidth usage	386 Kbps







Chapter 8: vSphere Physical Design



The screenshot shows the VMware Compatibility Guide website. At the top, there is a navigation bar with links for Products, Cloud Services, Support, Downloads, Consulting, Partners, and Company. Below this is a breadcrumb trail: Home > Resources > Compatibility Guides. The main heading is "VMware Compatibility Guide". A search bar is present with the text "Search Compatibility Guide: [e.g. compatibility or esx or 3.0]" and a "Search" button. Below the search bar, there is a link: "Looking for a simplified search? Use the Guided Search Wizard". A dropdown menu is open, showing "What are you looking for: Systems / Servers" and "Compatibility Guides". The dropdown menu lists several categories: Product Release Version, Partner Name, Platform & Compute, Management & Orchestration, End User Computing, End User Computing Storage, Graphics, Solutions & Architectures, and Networking & Security. The "Platform & Compute" category is expanded, showing sub-items like CIM Providers (HW Monitoring), CPU Series, Guest OS, Host OS, Host Profiles, IO Devices, and Systems / Servers. The "Management & Orchestration" category shows vRealize Operations and vRealize Orchestrator. The "End User Computing" category shows View (Thin Clients) and View Rapid Desktop Appliances (Turnkey Appliances). The "End User Computing Storage" category shows View Proven Storage for VDI Capacity, View Composer Array Integration (VCAI) - Horizon, and Virtual Volumes (VVols) - Horizon. The "Graphics" category shows Shared Pass-Through Graphics, Virtual Dedicated Graphics Acceleration (vDGA), and Virtual Shared Graphics Acceleration (vSGA). The "Solutions & Architectures" category shows Certified Partner Architecture. The "Networking & Security" category shows Networking and Security Services. At the bottom of the page, there is a link: "Looking for information on VMware product compatibility by version? See the Product Interoperability Matrix".

What are you looking for: **IO Devices** Compatibility Guides Help Current Results: 0

Product Release Version: All ESXi 6.0 U2 ESXi 6.0 U1 ESXi 6.0 ESXi 5.5 U3 ESXi 5.5 U2	I/O Device Type: All Block FC FCoE CNAs Memory Channel Attached Storage (MCA) NVMe Network SATA RoCE SAS SAS SATA Combo SAS-RAID SAS-RAID-Passthrough	Features: All IPv6 RSS SR-IOV Secondary LUNID (Enables VVoIs) UEFI SW FCoE Boot VN2VN VSA VXLAN-Offload Versatile I/O	Additional Criteria: (Collapse All) VID: All DID: All SVID: All Max SSID: All
--	---	--	--

Brand Name: All, Adaptec, Adaptec by PMC, Allied Telesis, AMCC
Keyword:
Driver Types: All **Posted Date Range:** All

Search Results: Your search for "IO Devices" returned one result. [Back to Top](#) [Turn Off Auto Scroll](#) Display: 10

Brand Name	Model	Device Type	Supported Releases																												
HP	HP NC364T PCIe Quad-port Gigabit Server Adapter	Network	<table border="0"> <tr> <td>ESX</td> <td>4.1 U3</td> <td>4.1 U2</td> <td>4.1 U1</td> <td>4.1 U4</td> <td>4.0 U3</td> <td>4.0 U2</td> </tr> <tr> <td>ESXi Installable</td> <td>3.5 U5</td> <td>3.5 U4</td> <td>3.5 U3</td> <td>3.5 U2</td> <td>3.5 U1</td> <td></td> </tr> <tr> <td>ESXi Embedded</td> <td>3.5 U5</td> <td>3.5 U4</td> <td>3.5 U3</td> <td>3.5 U2</td> <td>3.5 U1</td> <td></td> </tr> <tr> <td>ESXi</td> <td>6.0 U2</td> <td>6.0 U1</td> <td>6.0 U3</td> <td>5.5 U2</td> <td>5.5 U1</td> <td>5.5</td> </tr> </table>	ESX	4.1 U3	4.1 U2	4.1 U1	4.1 U4	4.0 U3	4.0 U2	ESXi Installable	3.5 U5	3.5 U4	3.5 U3	3.5 U2	3.5 U1		ESXi Embedded	3.5 U5	3.5 U4	3.5 U3	3.5 U2	3.5 U1		ESXi	6.0 U2	6.0 U1	6.0 U3	5.5 U2	5.5 U1	5.5
ESX	4.1 U3	4.1 U2	4.1 U1	4.1 U4	4.0 U3	4.0 U2																									
ESXi Installable	3.5 U5	3.5 U4	3.5 U3	3.5 U2	3.5 U1																										
ESXi Embedded	3.5 U5	3.5 U4	3.5 U3	3.5 U2	3.5 U1																										
ESXi	6.0 U2	6.0 U1	6.0 U3	5.5 U2	5.5 U1	5.5																									

[Back to Search Results](#) Print

Model Details

Model: HP NC364T PCIe Quad-port Gigabit Server Adapter
 Device Type: Network DID: 10bc
 Brand Name: HP SVID: 103c
 Number of Ports: 4 SSID: 704b
 VID: 8086
 Notes: Please refer to <http://kb.vmware.com/kb/2030818> for latest recommended driver and firmware combinations

[Click here to be notified when this page is updated:](#) [rss feed](#)

Model Release Details Expand All | Collapse All

VMware Product Name:

Release	Device Driver(s)	Firmware Version	Type	Features
ESXi 6.0 U2	e1000e version 2.5.4-6vmw	N/A	VMware Inbox	

Footnotes: iBFT Enabled
Support iSCSI SAN Boot using iBFT

[Back to Search Results](#) Print

What are you looking for: **IO Devices** Compatibility Guides ▾

Product Release Version:

- All
- ESXi 6.0 U2
- ESXi 6.0 U1
- ESXi 6.0
- ESXi 5.5 U3
- ESXi 5.5 U2

Brand Name:

- All
- Adaptec
- Adaptec by PMC
- Allied Telesis
- AMCC

Keyword:

I/O Device Type:

- All
- Block
- FC
- FCoE CNAs
- Memory Channel Attached Storage (MCA)
- NVMe
- Network
- PATA
- RoCE
- SAS
- SAS SATA Combo
- SAS-RAID
- SAS-RAID-Passthrough

Driver Types:

- All

[Update and View Results](#) [Reset](#)

[Click here to Read Important Support Information.](#)

I/O Device and Model Information

Compatibility Guides ▾

- Systems Compatibility Guide >
- Storage/SAN Compatibility Guide >
- I/O Device Compatibility Guide ▾**
- What's New
- Introduction
- Linux Driver Compatibility
- Storage and Network I/O Driver Versions
- Download Full I/O Compatibility Guide
- Guest OS Compatibility Guide >
- View (Thin Clients) Compatibility Guide >
- VASA Compatibility Guide >

EMC	VNX5100	FC	VMW_SATP_ALUA_CX / VMW_PSP_FIXED *13, 34, 74 VMW_SATP_ALUA_CX *13, 34, 74, 80, 182, 24, 148, 158, 196, 76, 168, 187, 260, 171, 201, 202, 270, 243, 172, 271, 272, 273, 274, 275	DGC
EMC	VNX5200	FC	VMW_SATP_ALUA_CX *13, 34, 74, 80, 182, 24, 148, 158, 196, 76, 168, 187, 260, 171, 201, 202, 270, 243, 172, 271, 272, 273, 274, 275	RAID5
EMC	VNX5300	FC	VMW_SATP_ALUA_CX / VMW_PSP_FIXED *13, 34, 74 VMW_SATP_ALUA_CX *13, 34, 74, 80, 182, 24, 148, 158, 196, 76, 168, 187, 260, 171, 201, 202, 270, 243, 172, 271, 272, 273, 274, 275	DGC
EMC	VNX5400	FC	VMW_SATP_ALUA_CX *13, 34, 74, 80, 182, 24, 148, 158, 196, 76, 168, 187, 260, 171, 201, 202, 270, 243, 172, 271, 272, 273, 274, 275	RAID5
EMC	VNX5500	FC	VMW_SATP_ALUA_CX *13, 34, 74, 80, 182, 24, 148, 158, 196, 76, 168, 187, 260, 171, 201, 202, 270, 243, 172, 271, 272, 273, 274, 275 VMW_SATP_ALUA_CX / VMW_PSP_FIXED *13, 34, 74, 24	DGC

Interoperability Solution/Database Interoperability Upgrade Path

1. Select a Solution
 If you do not know the *solution's* version leave it blank.

VMware vSphere Hypervisor (ESXi) 6.7 U1

2. Add Platform/Solution
 Add *platforms/solutions* to see if they are compatible with the selected *solution*.


VMware Site Recovery Manager All versions

+ Add Another Solution

Hide empty rows/columns Hide unsupported releases

Copy CSV Print Collapse All

VMware vSphere Hypervisor (ESXi)	6.7 U1
VMware Site Recovery Manager	
8.11	✓
8.1	✓

 UCS Hardware and Software Compatibility

virtuallymikeb Logout Help

Search Saved Searches Hardware Profiles

Search Type

New Search Existing Search Uploaded Hardware Profile

Search By

Servers
 B-Series, C-Series, HX-Series, M-Series, ...

Operating Systems
 VMware, Microsoft, RedHat, ...

Products
 Adapters, Storage, Software, ...

Search Options Reset All

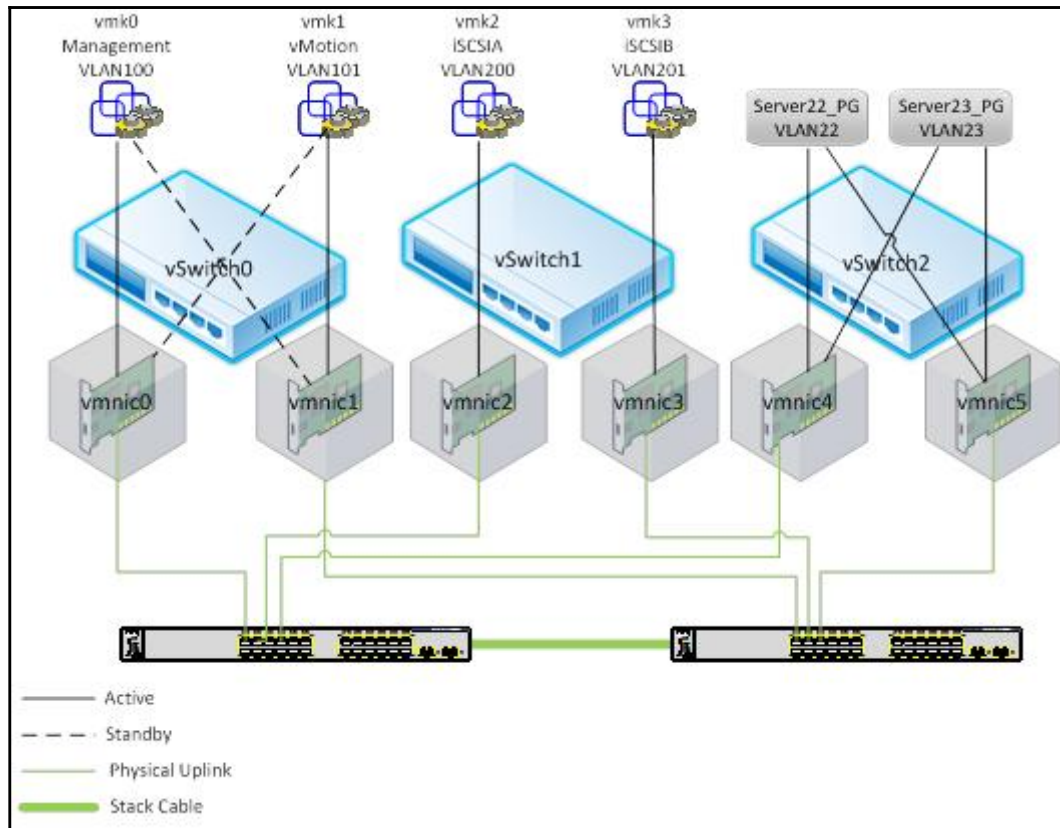
Server Type: B-Series

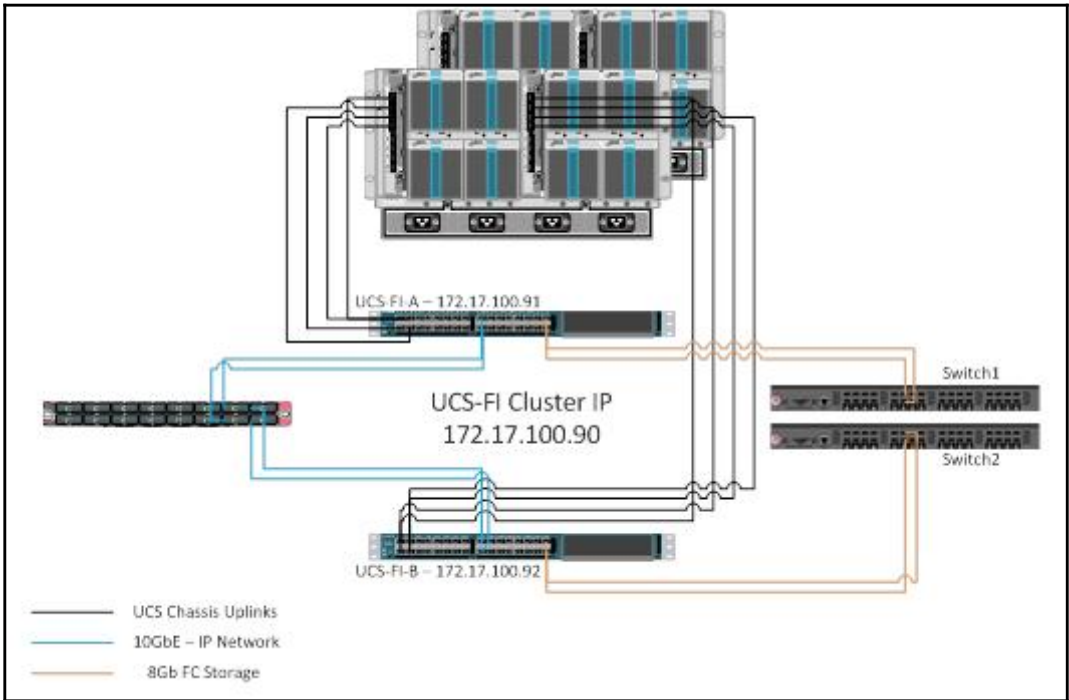
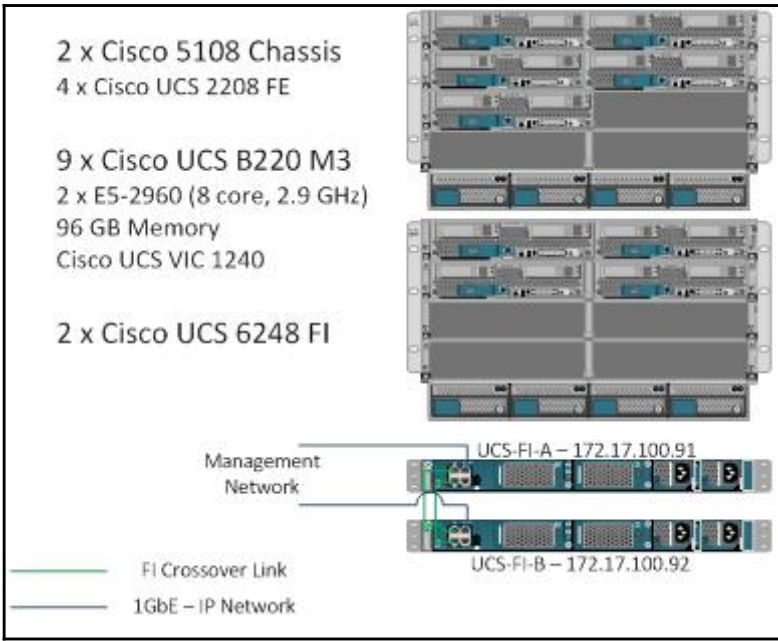
Server Model: Cisco UCS B200 M5 2 Socket Blade Server

Processor Version: Intel Xeon Processor Scalable Family

Operating System: VMware

Operating System Version: ESXi 6.7 U1





Product Downloads Drivers & Tools Open Source Custom ISOs

File **Information**

For VMware Tools 10.0.6 [Click here](#)

ESXi ISO image (Includes VMware Tools) [Download Now](#)

File size: 357.95 MB
File type: iso
[Read More](#)

ESXi Offline Bundle [Download Now](#)

File size: 680.91 MB
File type: zip
[Read More](#)

VMware vSphere Client 6.0 Update 2 [Download Now](#)

File size: 348.81 MB
File type: exe
[Read More](#)

Download Manager

Product Downloads Version History

File **Information**

VMware ESXi 6.0 qlnativefc 2.1.24.0-1 FC-FCoE driver for QLogic and OEM-branded FC and CNAs [Download Now](#)

File size: 7 MB
File type: ZIP
[Read More](#)


```
VMware vSphere PowerCLI 6.3 Release 1
PowerCLI C:\temp> Add-EsxSoftwareDepot C:\vSphere6\update-from-esxi6.0-6.0_update02.zip

Depot Url
-----
zip:C:\vSphere6\update-from-esxi6.0-6.0_update02.zip?index.xml

PowerCLI C:\temp> Add-EsxSoftwareDepot C:\vSphere6\VMW-ESX-6.0.0-qlnativefc-2.1.20.0-offline_bundle-2731168.zip

Depot Url
-----
zip:C:\vSphere6\VMW-ESX-6.0.0-qlnativefc-2.1.20.0-offline_bundle-2731168.zip...

PowerCLI C:\temp>
```

```
VMware vSphere PowerCLI 6.3 Release 1
PowerCLI C:\temp> Get-EsxSoftwarePackage | Where {$_.Vendor -eq "QLogic"}

Name                               Version                               Vendor                               Creation Date
----                               -
qlnativefc                         2.1.20.0-10EM.600.0.0.2159203      QLogic                              4/9/2015 ...

PowerCLI C:\temp>
```

```
VMware vSphere PowerCLI 6.3 Release 1
PowerCLI C:\temp> Get-EsxImageProfile

Name                               Vendor                               Last Modified   Acceptance Level
----                               -
ESXi-6.0.0-20160301001s-no-...      VMware, Inc.      3/4/2016 3:3... PartnerSupported
ESXi-6.0.0-20160302001-stan...      VMware, Inc.      3/4/2016 3:3... PartnerSupported
ESXi-6.0.0-20160301001s-sta...      VMware, Inc.      3/4/2016 3:3... PartnerSupported
ESXi-6.0.0-20160302001-no-t...      VMware, Inc.      3/4/2016 3:3... PartnerSupported

PowerCLI C:\temp>
```

```
VMware vSphere PowerCLI 6.3 Release 1

PowerCLI C:\temp> New-EsxImageProfile -CloneProfile ESXi-6.0.0-20160302001-standard -Name Custom6Qlogic -Vendor Custom -AcceptanceLevel PartnerSupported

Name                Vendor          Last Modified      Acceptance Level
----                -
Custom6Qlogic       Custom         3/4/2016 3:3...   PartnerSupported

PowerCLI C:\temp>
C:\temp> Get-EsxImageProfile
```

```
VMware vSphere PowerCLI 6.3 Release 1

PowerCLI C:\temp> Add-EsxSoftwarePackage -ImageProfile Custom6Qlogic -SoftwarePackage qlnativefc

Name                Vendor          Last Modified      Acceptance Level
----                -
Custom6Qlogic       Custom         4/2/2016 7:4...   PartnerSupported

PowerCLI C:\temp>
```

```
VMware vSphere PowerCLI 6.3 Release 1

PowerCLI C:\temp> Export-EsxImageProfile -ImageProfile Custom6Qlogic -ExportToIso -filepath C:\vSphere6\CustomESX6.0-Qlogic.iso
PowerCLI C:\temp> dir C:\vSphere6\*.iso

Directory: C:\vSphere6

Mode                LastWriteTime         Length Name
----                -
-a----             4/2/2016  7:43 AM      375396352 CustomESX6.0-Qlogic.iso

PowerCLI C:\temp>
```

Product Downloads	Drivers & Tools	Open Source	Custom ISOs
Custom ISOs		Release Date	
OEM Customized Installer CDs			
CISCO Custom Image for ESXi 6.0 U2 GA Install CD	2016-04-01	Go to Downloads	
NEC Custom Image for ESXi 6.0U1b Install CD	2016-03-16	Go to Downloads	
HPE Custom Image for ESXi 6.0 U2Install CD	2016-03-15	Go to Downloads	
Fujitsu Custom Image for ESXi 6.0U1b Install CD	2016-02-12	Go to Downloads	
CISCO Custom Image for ESXi 6.0.0 GA Install CD	2016-02-05	Go to Downloads	

[Back to Search Results](#)
Print

Model Details

Model: HP NC364T PCIe Quad-port Gigabit Server Adapter

Device Type: Network	DID: 10bc
Brand Name: HP	SVID: 103c
Number of Ports: 4	SSID: 704b
VID: 8086	

Notes: Please refer to <http://kb.vmware.com/kb/2030818> for latest recommended driver and firmware combinations

[Click here to be notified when this page is updated:](#) [rss feed](#)

Model Release Details [Expand All](#) | [Collapse All](#)

VMware Product Name :

Release	Device Driver(s)	Firmware Version	Type	Features
<input type="checkbox"/> ESXi 6.0 U2	e1000e version 2.5.4-6vmw	N/A	VMware Inbox	

Footnotes : IBFT Enabled
Support iSCSI SAN Boot using iBFT

[Back to Search Results](#)
Print

Chapter 9: Virtual Machine Design

Summary Monitor Manage Related Objects

Win7Client

Guest OS: Microsoft Windows 7 (64-bit)

Compatibility: ESXi 5.0 and later (VM version 8)

VMware Tools: Running, version:9221 (Current)

DNS Name: Win7-PC.lab.local

IP Addresses: 192.168.199.100

Host: 192.168.1.25

Powered On

Launch Console

CPU USAGE
135.00 MHz

MEMORY USAGE
389.00 MB

STORAGE USAGE
12.39 GB

VM Hardware

- ▶ CPU 1 CPU(s), 203 MHz used
- ▶ Memory 2048 MB, 389 MB used
- ▶ Hard disk 1 32.00 GB
- ▶ Network adapter 1 Lab_Local (connected)

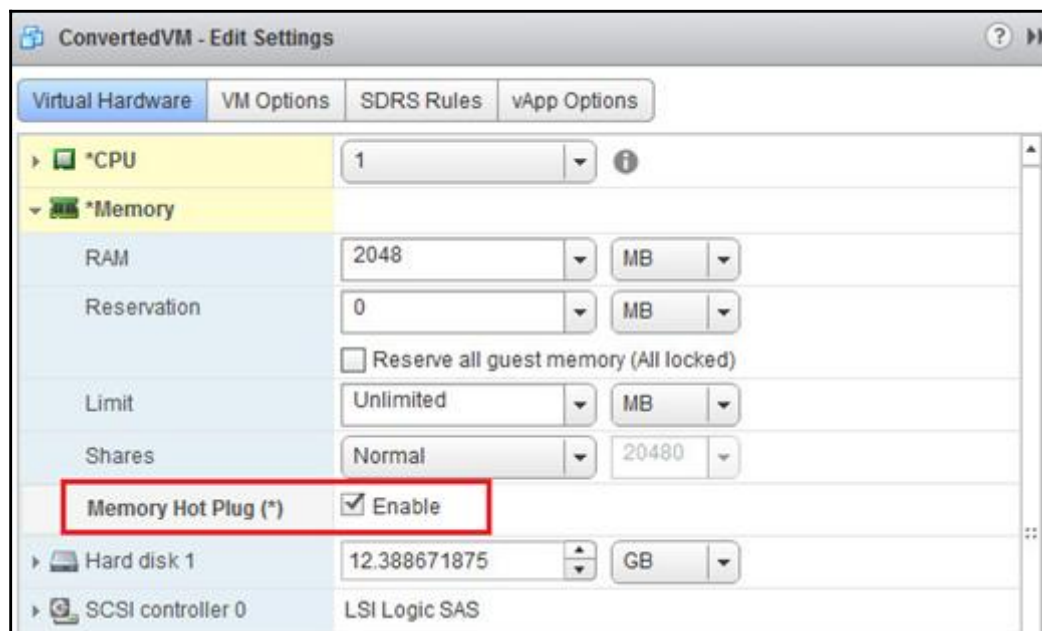
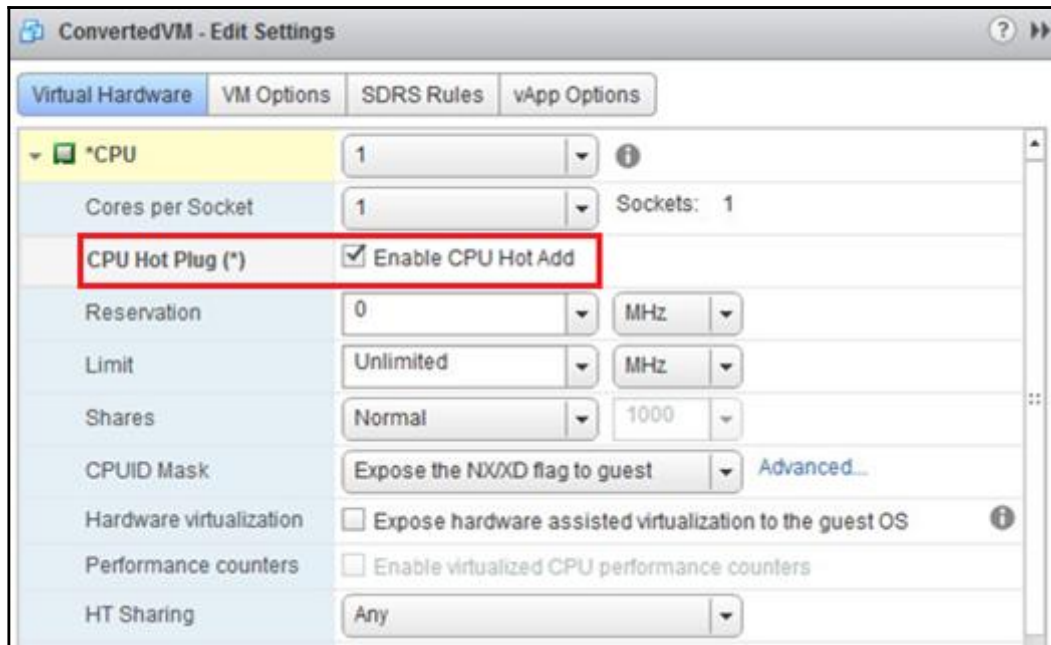
VM Storage Policies

VM Storage Policies	--
VM Storage Policy Compliance	--
Last Checked Date	--

Refresh



Windows Server 2012 Datacenter Edition R2	Workstation12.0, 11.0, 10.0
	Fusion8.0, 7.0, 6.0
	ESXi6.0 U2 1,6,7,8,3, 6,0 U1 1,6,7,8,3, 6,0 1,6,7,8,3, 5,5 U3 1,6,7,8,3, 5,5 U2 1,6,7,8,3, 5,5 U1 1,6,7,8,3, 5,5 1,6,7,8,3
	ESXi5.1 U3 1,2,6,7,8,3, 5,1 U2 1,2,6,7,8,3, 5,1 U1 1,2,6,7,8,3, 5,1 1,2,6,7,8,3, 5,0 U3 1,2,6,7,8,3, 5,0 U2 1,2,6,7,8,3
	e1000e, VMXNET 3 (Recommended), IDE, LSI Logic SAS, SATA, VMware Paravirtual, Hot Add Memory, Hot Add vCPU, SMP, Tools Available on Media
	e1000e, VMXNET 3 (Recommended), IDE, LSI Logic SAS, VMware Paravirtual, Hot Add Memory, Hot Add vCPU, SMP, Tools Available on Media



What are you looking for: **Guest OS** Compatibility Guides Help Current Results: **22**

Product Name:
All
ESXi
ESX
Fusion
Workstation
ACE

OS Family Name:
All
Asianux 3.0
Asianux 4.0
CentOS 4
CentOS 5
CentOS 6

Product Release Version:
All
ESXi 6.0 U2
ESXi 6.0 U1
ESXi 6.0
ESXi 5.5 U3
ESXi 5.5 U2

OS Vendor:
Debian
FreeBSD
IBM
Mandriva
Microsoft
Novell
Oracle

Keyword:

Posted Date Range:
All

Additional Criteria: (Collapse All)

OS Family: All

Virtual Hardware: All

Networking: VMXNET 3

Storage: VMware Paravirtual

Bits: All

OS Type: All

VMware Tools: All

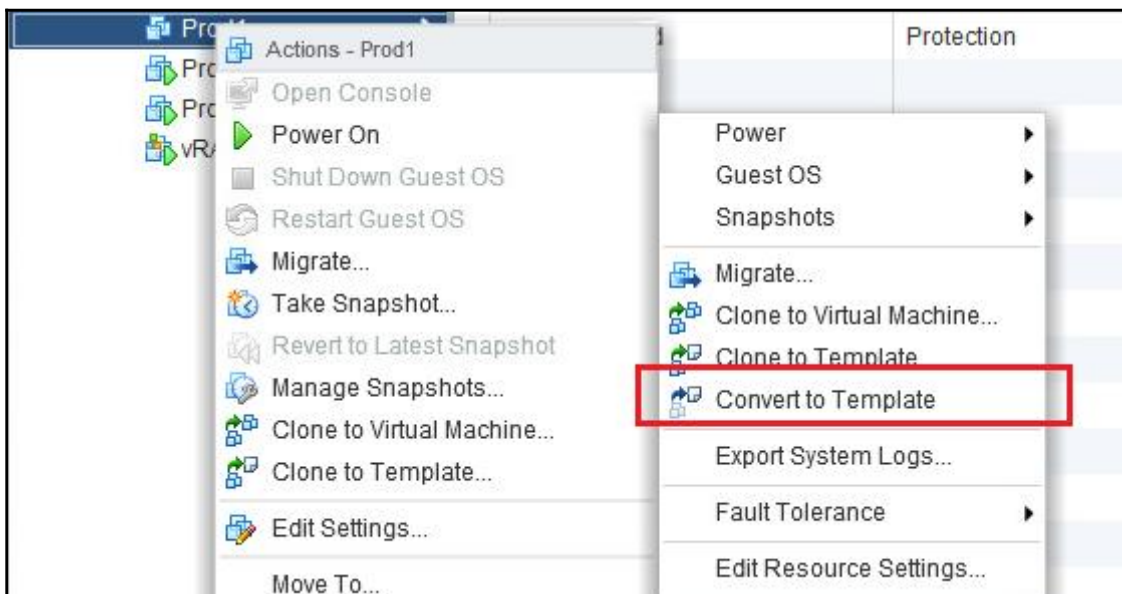
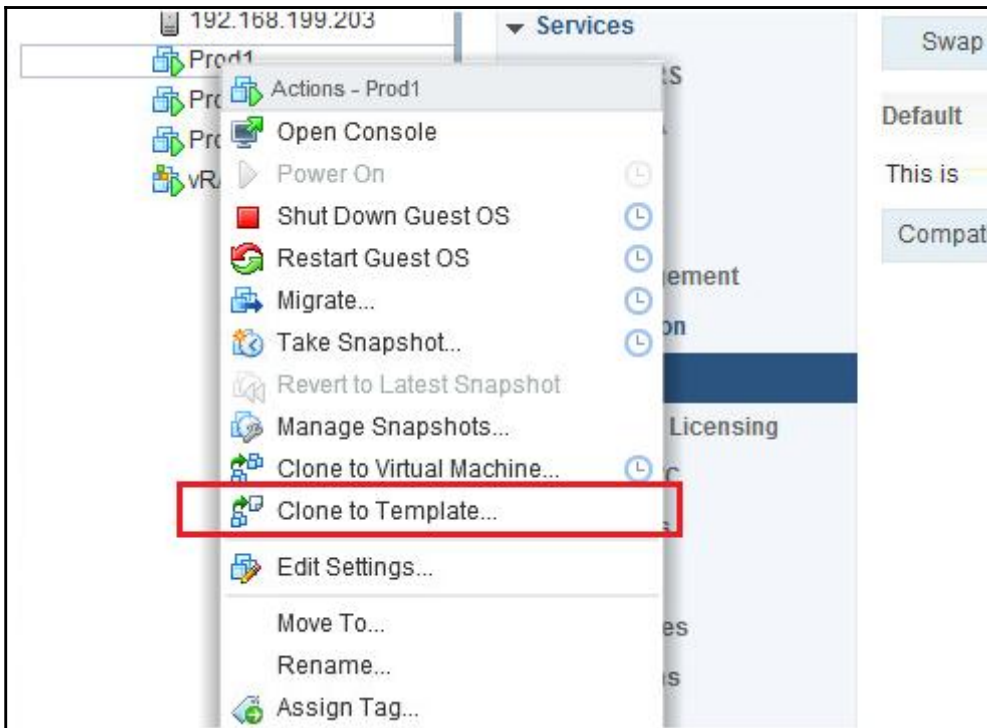
Update and View Results **Reset**

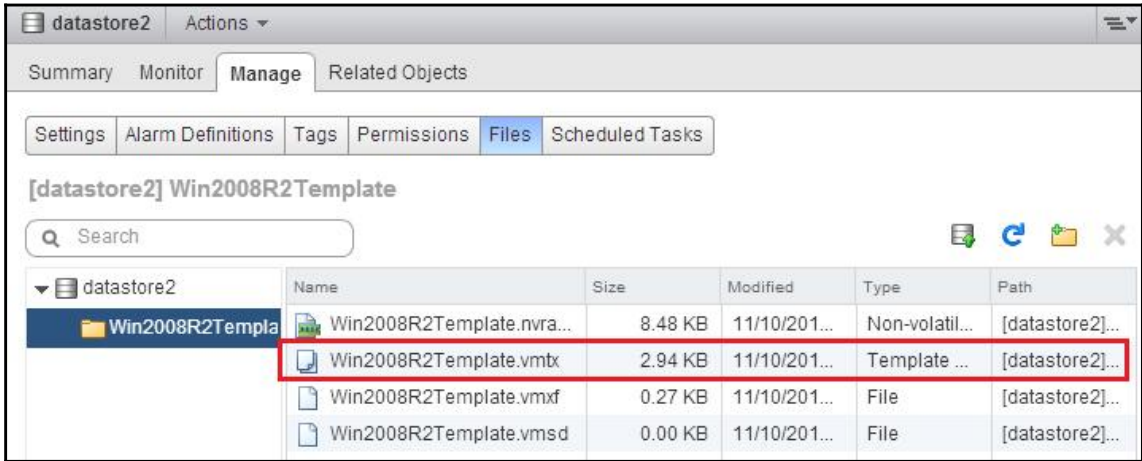
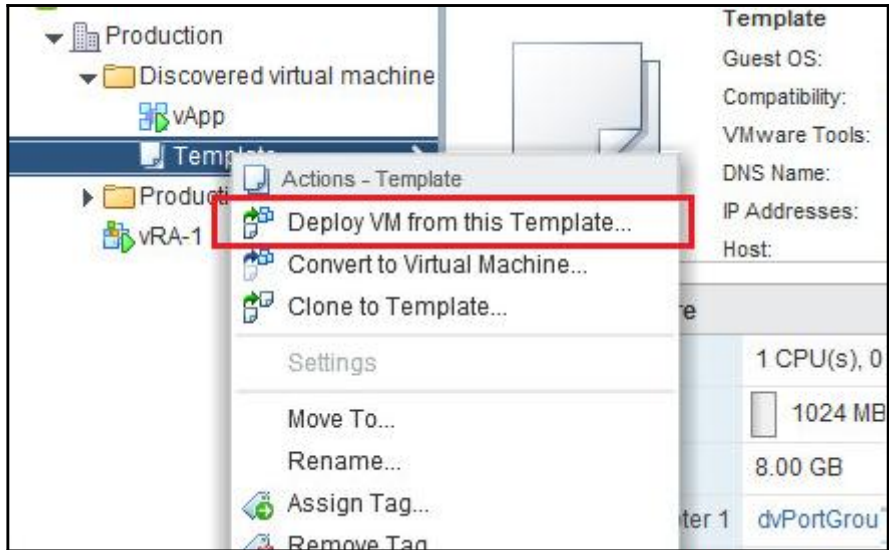
Virtual Hardware	VM Options	SDRS Rules	vApp Options
▶ CPU	1		
▶ Memory	4096	MB	
▶ Hard disk 1	40	GB	
▶ SCSI controller 0	LSI Logic SAS		
▶ Network adapter 1	LAB_Network	<input checked="" type="checkbox"/> Connect...	
▶ CD/DVD drive 1	Client Device	<input type="checkbox"/> Connect...	
▶ Floppy drive 1	Client Device	<input type="checkbox"/> Connect...	
▶ Video card	Specify custom settings		
▶ VMCI device			
▶ Other Devices			
▼ New Network	LAB_Network		
Status	<input checked="" type="checkbox"/> Connect At Power On		
Adapter Type	E1000		
MAC Address	E1000	Automatic	
	<ul style="list-style-type: none"> SR-IOV passthrough VMXNET 2 (Enhanced) VMXNET 3 		
New device:	Network		Add

Virtual Hardware | VM Options | SDRS Rules | vApp Options

▶ CPU	1	
▶ Memory	4096	MB
▶ Hard disk 1	40	GB
▶ SCSI controller 0	LSI Logic SAS	
▶ Network adapter 1	LAB_Network	<input checked="" type="checkbox"/> Connect...
▶ CD/DVD drive 1	Client Device	<input type="checkbox"/> Connect...
▶ Floppy drive 1	Client Device	<input type="checkbox"/> Connect...
▶ Video card	Specify custom settings	
▶ VMCI device		
▶ Other Devices		
▼ New SCSI controller	VMware Paravirtual	
SCSI Bus Sharing	None	
Change Type	<ul style="list-style-type: none"> VMware Paravirtual LSI Logic SAS VMware Paravirtual BusLogic Parallel LSI Logic Parallel 	

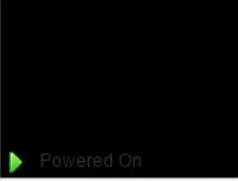
New device: SCSI Controller Add





New VM Guest Customization Spec

- ✓ 1 Specify Properties
- 2 Set Registration Information
- 3 Set Computer Name
- 4 Enter Windows License
- 5 Set Administrator Password
- 6 Time Zone
- 7 Run Once
- 8 Configure Network
- 9 Set Workgroup or Domain
- 10 Set Operating System Options
- 11 Ready to complete



Powered On

[Launch Remote Console](#)

[Download Remote Console](#)

LABSQL01

Guest OS: Microsoft Windows Server 2012 (64-bit)


Compatibility: ESXi 6.0 and later (VM version 11)


VMware Tools: Running, version:10240 (Upgrade available)


DNS Name: labsql01.lab.local


IP Addresses: 192.168.1.152


Host: 192.168.1.26

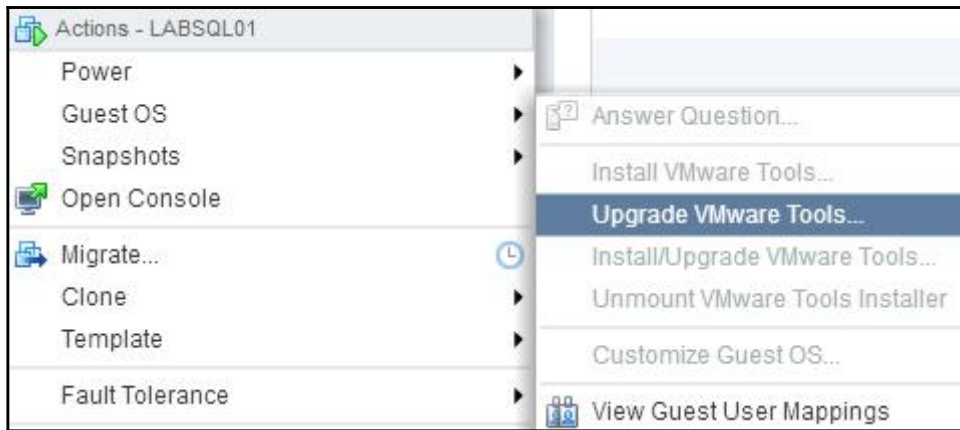
 CPU USAGE
0.00 Hz

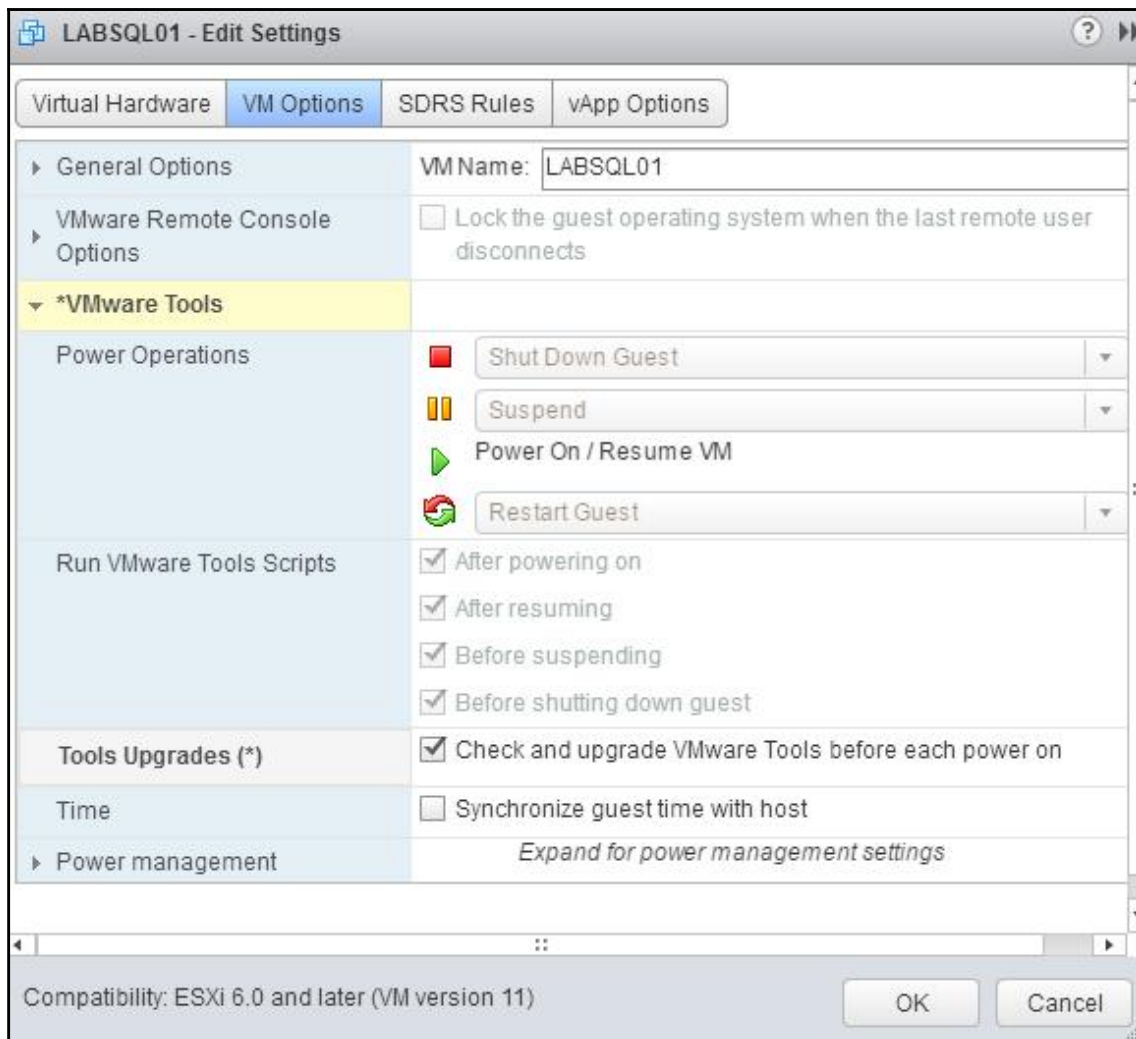
 MEMORY USAGE
102.00 MB

 STORAGE USAGE
23.31 GB

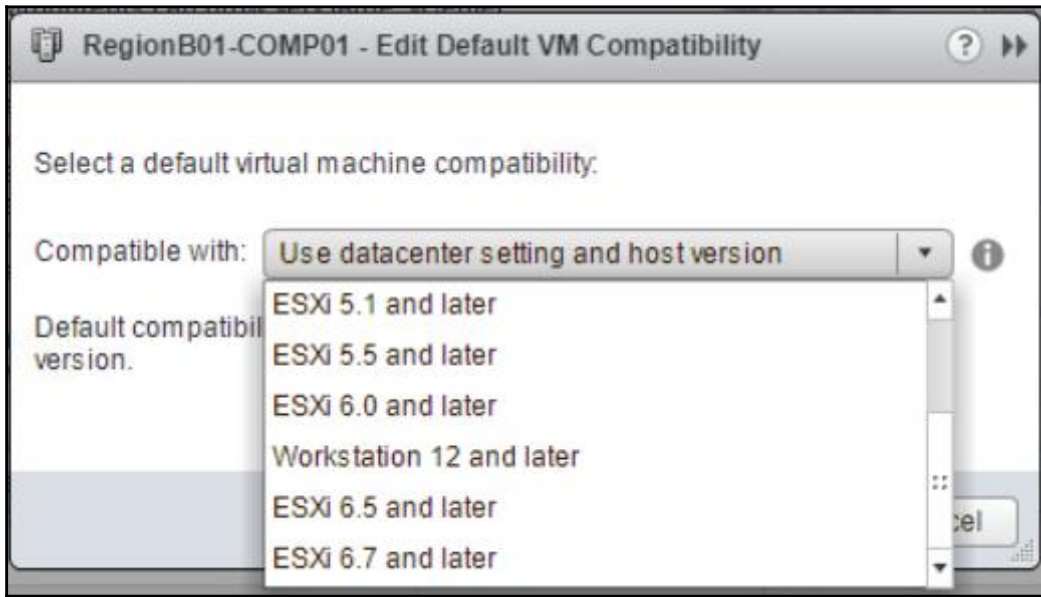
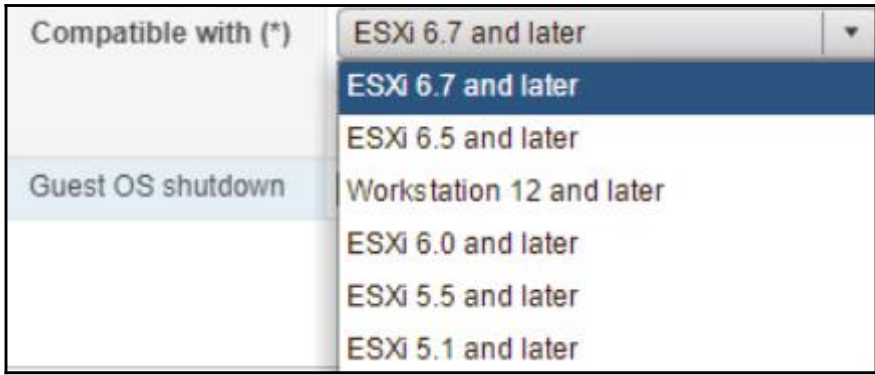
 VMware Tools is outdated on this virtual machine. [Update VMware Tools](#)

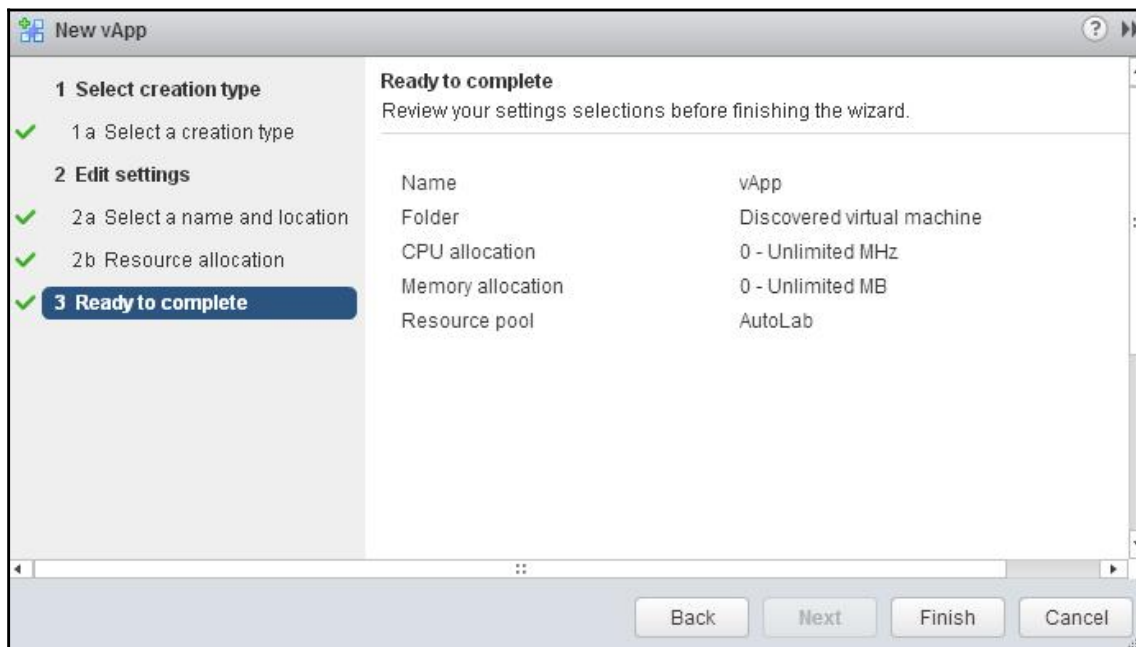
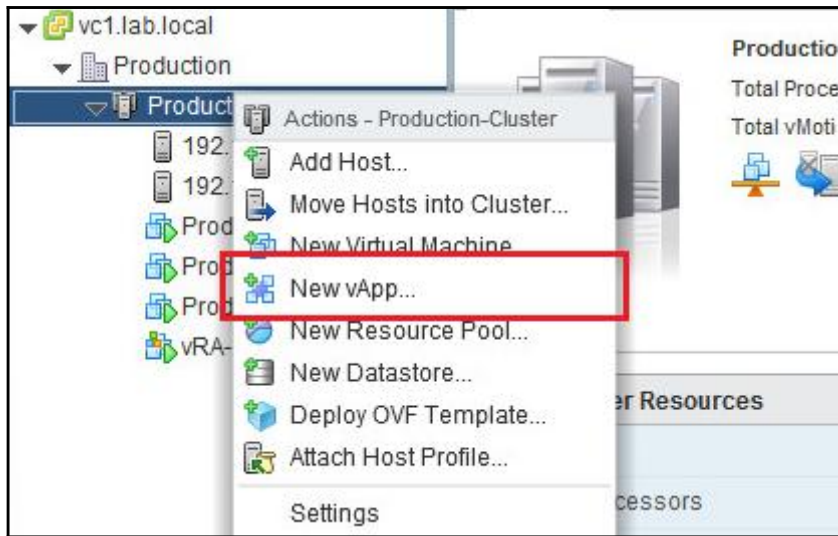
 VMware Tools is outdated on this virtual machine. [Update VMware Tools](#)





Virtual Hardware	VM Options	SDRS Rules	vApp Options
▶ CPU	1		i
▶ Memory	600	MB	
▶ Hard disk 1	3	GB	
▶ SCSI controller 0	LSI Logic Parallel		
▶ Network adapter 1	LAB_Network	<input checked="" type="checkbox"/> Connected	
▶ CD/DVD drive 1	Host Device	<input type="checkbox"/> Connected	
▶ Video card	Specify custom settings		
▶ VMCI device			
▶ Other Devices			
▼ *Upgrade	<input checked="" type="checkbox"/> Schedule VM Compatibility Upgrade...		
	Select the compatibility to upgrade the virtual machine on next reboot		
Compatible with (*)	ESXi 6.0 and later		i
	Virtual machines using hardware version 11 provide the best performance and latest features available in ESXi 6.0.		
Guest OS shutdown	<input type="checkbox"/> Only upgrade after normal guest OS shutdown		
New device: ----- Select ----- Add			
Compatibility: ESX/ESXi 4.0 and later (VM version 7)			OK Cancel





vc1.lab.local

- Production
 - Production-Cluster
 - 192.168.199.202
 - 192.168.199.203
 - vApp**
 - Prod1
 - Prod2
 - Prod3
 - vRA-1

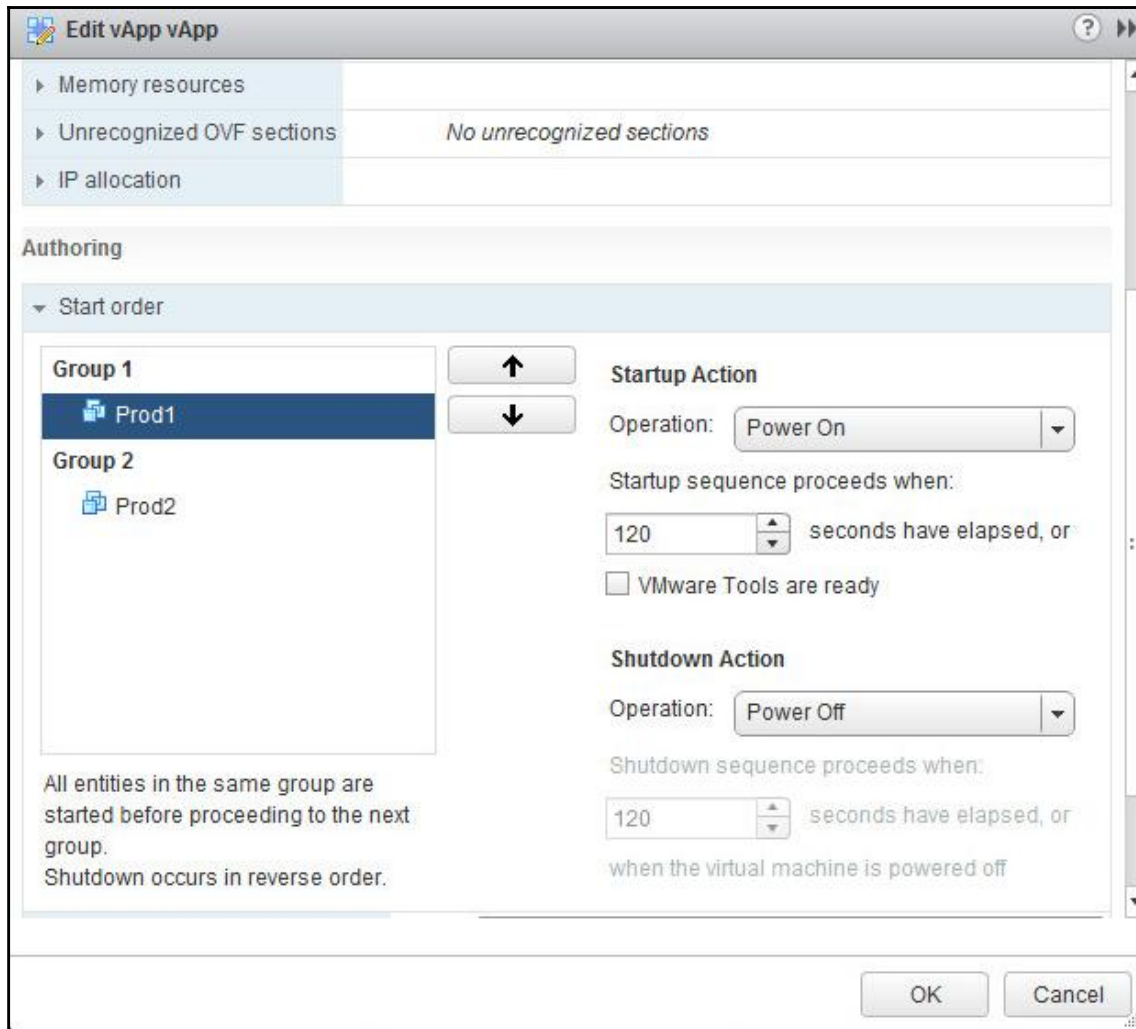
Summary | Monitor | Manage | Related Objects

vApp

Product: vApp
Version: 1
Vendor: LAB

Status

Health	✓ Normal
vApp state	Running



Settings Alarm Definitions Tags Permissions Scheduled Tasks

←

- Services
 - vSphere DRS
 - vSphere HA
- Virtual SAN
 - General
 - Disk Management
- Configuration
 - General
 - Virtual SAN Licensing
 - VMware EVC
 - DRS Groups
 - DRS Rules**
 - VM Overrides
 - Host Options
 - Profiles

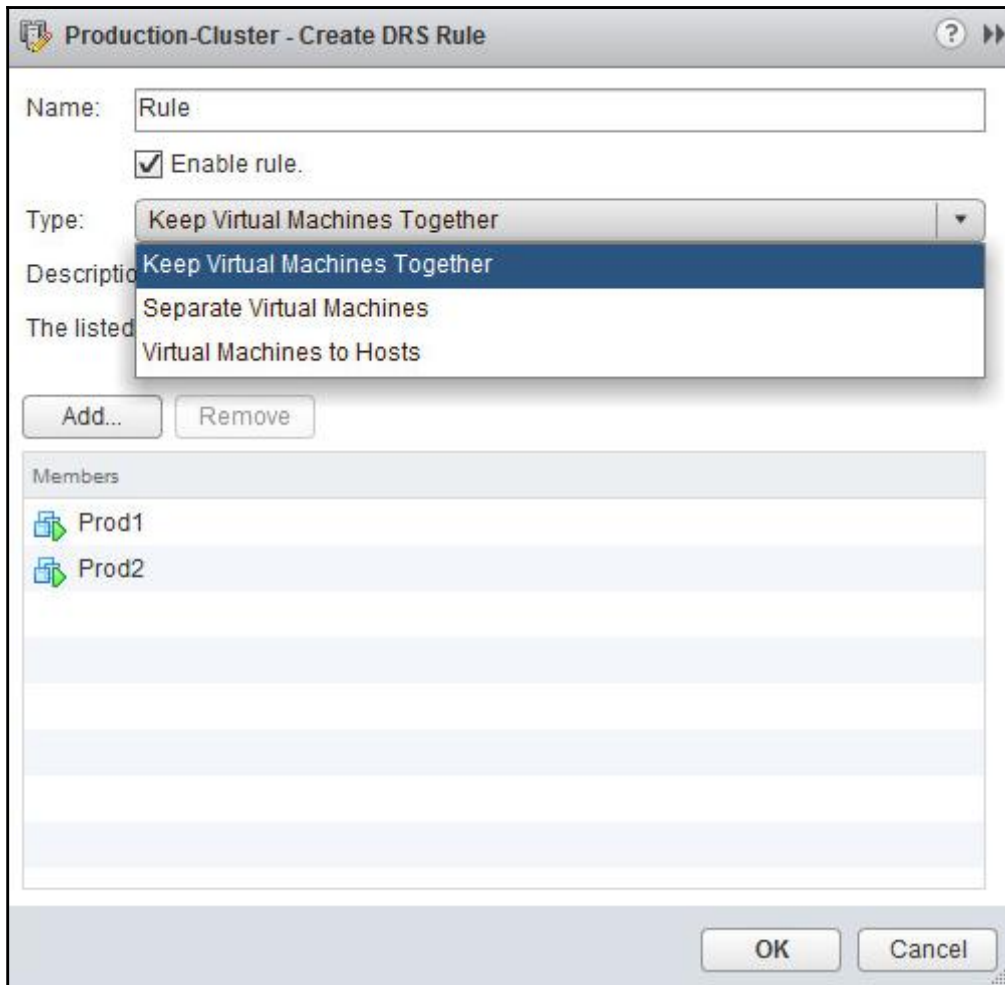
DRS Rules

Add... Edit... Delete

Name	Type	Ena...	Conf...	Defi...
This list is empty.				

☰

No DRS rule selected



LABCLUSTER Actions

Summary Monitor **Manage** Related Objects

Settings Scheduled Tasks Alarm Definitions Tags Permissions

Services
vSphere DRS
vSphere HA
Virtual SAN
General
Disk Management
Fault Domains & Stretched Cluster
Health and Performance
Configuration
General
Licensing
VMware EVC
VM/Host Groups

VM/Host Groups

Add... Edit... Delete

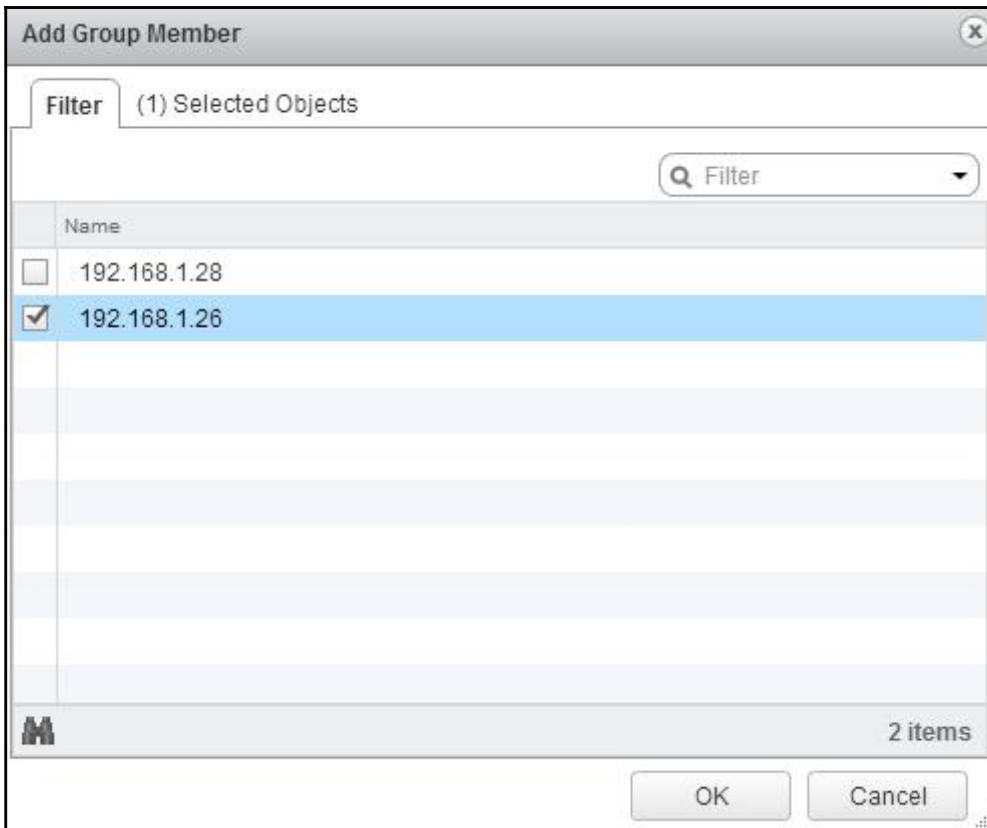
Name	Type
VMs1	VM Group
Host25and26	Host Group

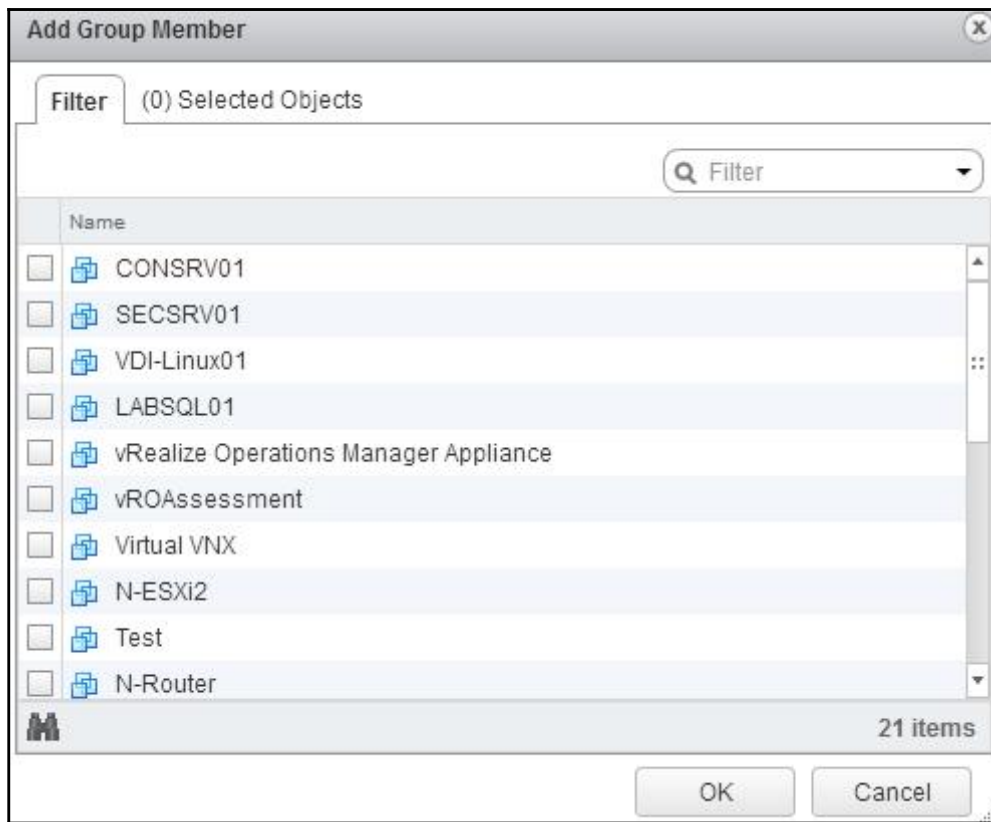
VM/Host Group Members

Add... Remove

VMs1 Group Members

- vcsa60
- vMA6





LABCLUSTER - Create VM/Host Rule

Name: VMs1toHosts

Enable rule.

Type: Virtual Machines to Hosts

Description:
Virtual machines that are members of the Cluster VM Group VMs1 must run on host group Host25and26.

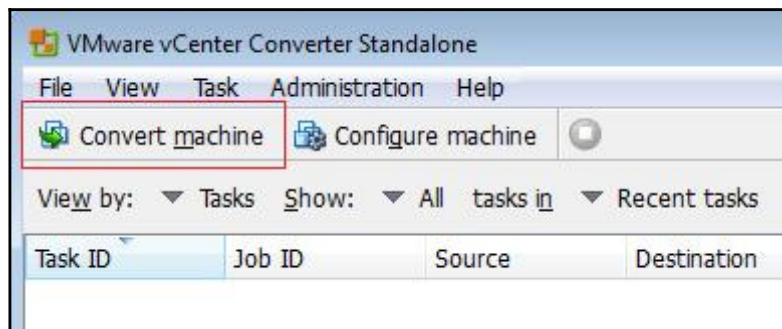
VM Group:
VMs1

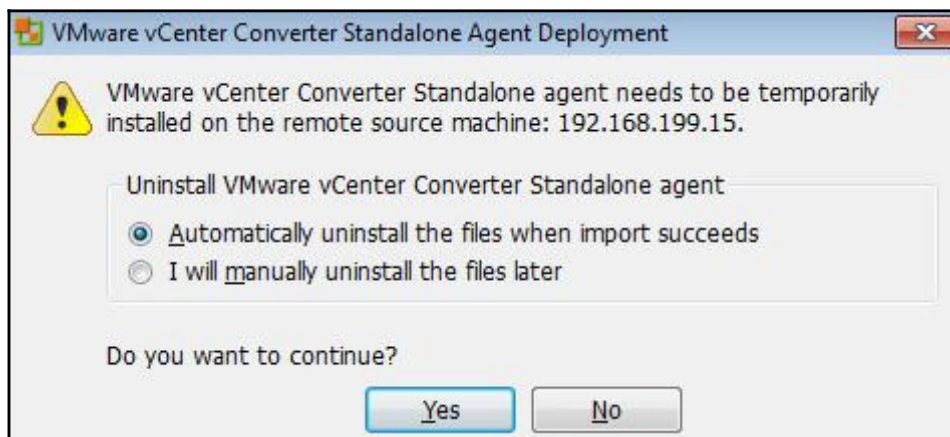
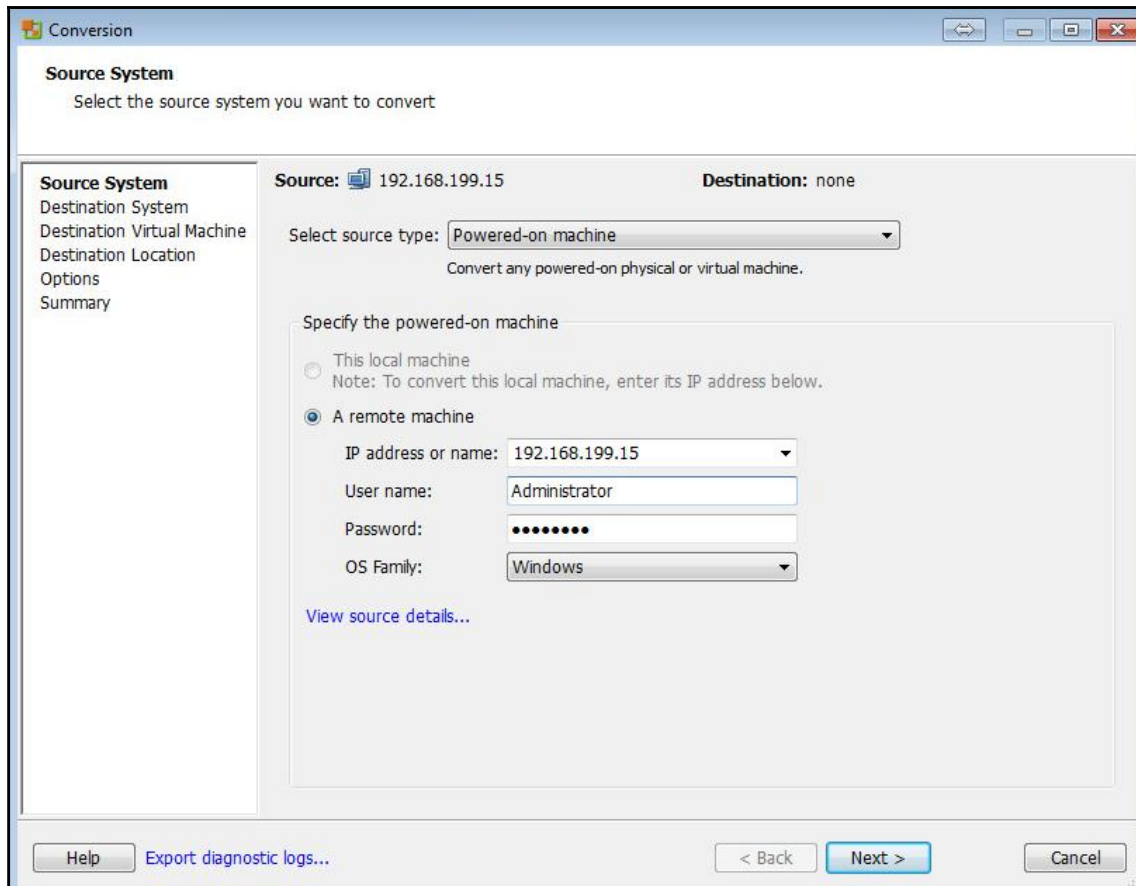
Must run on hosts in group

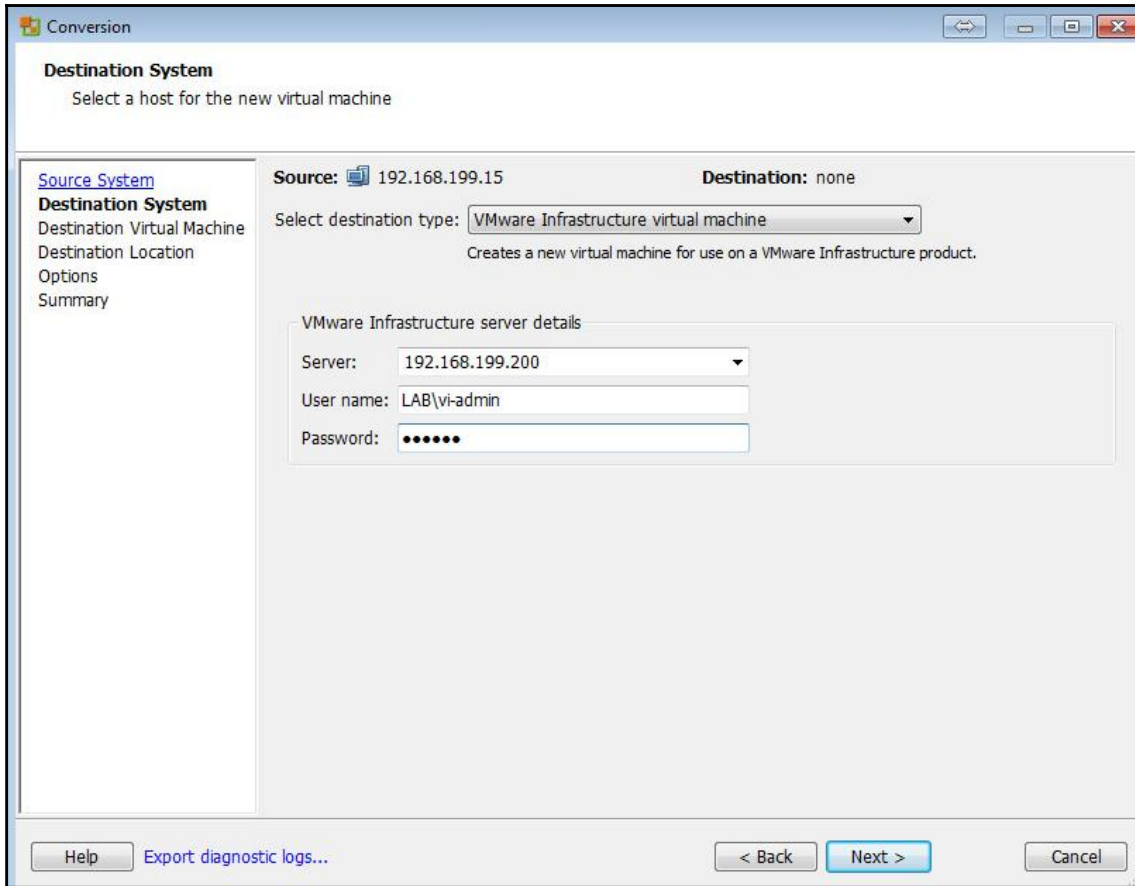
Host Group:
Host25and26

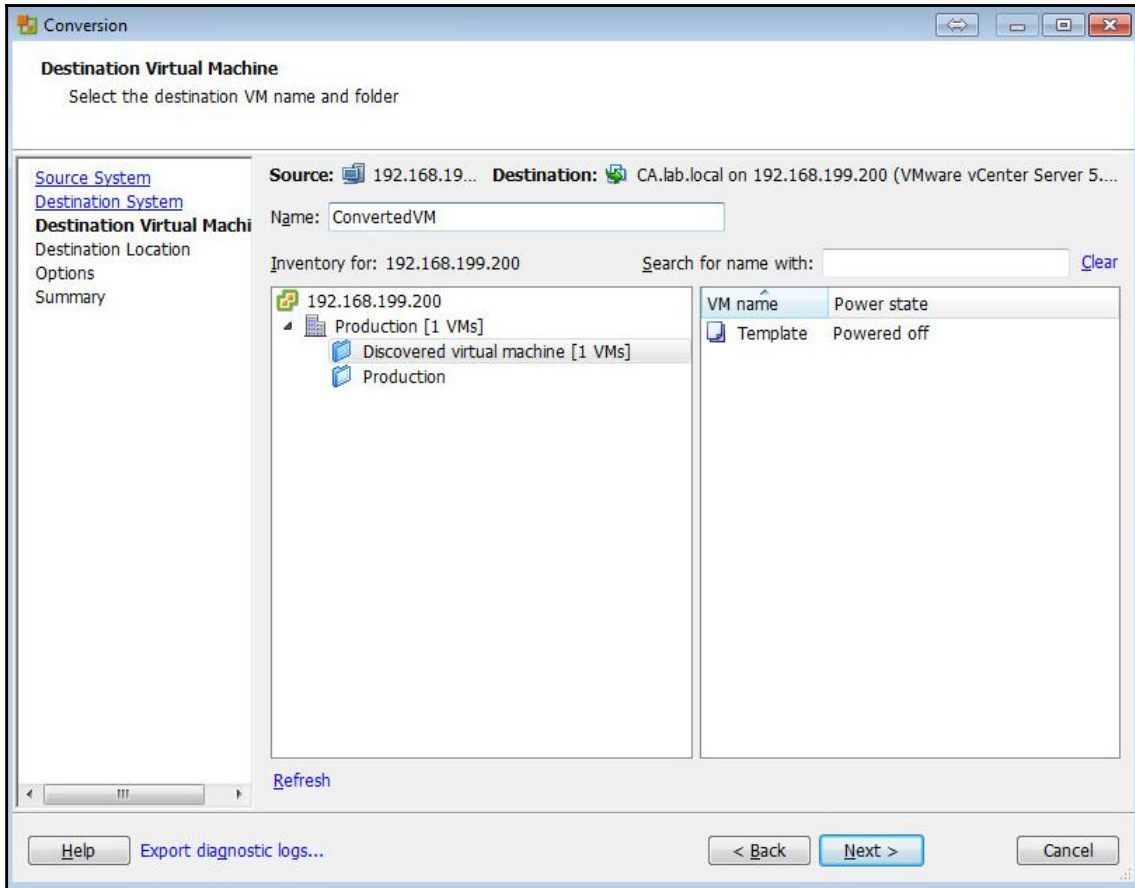
OK Cancel

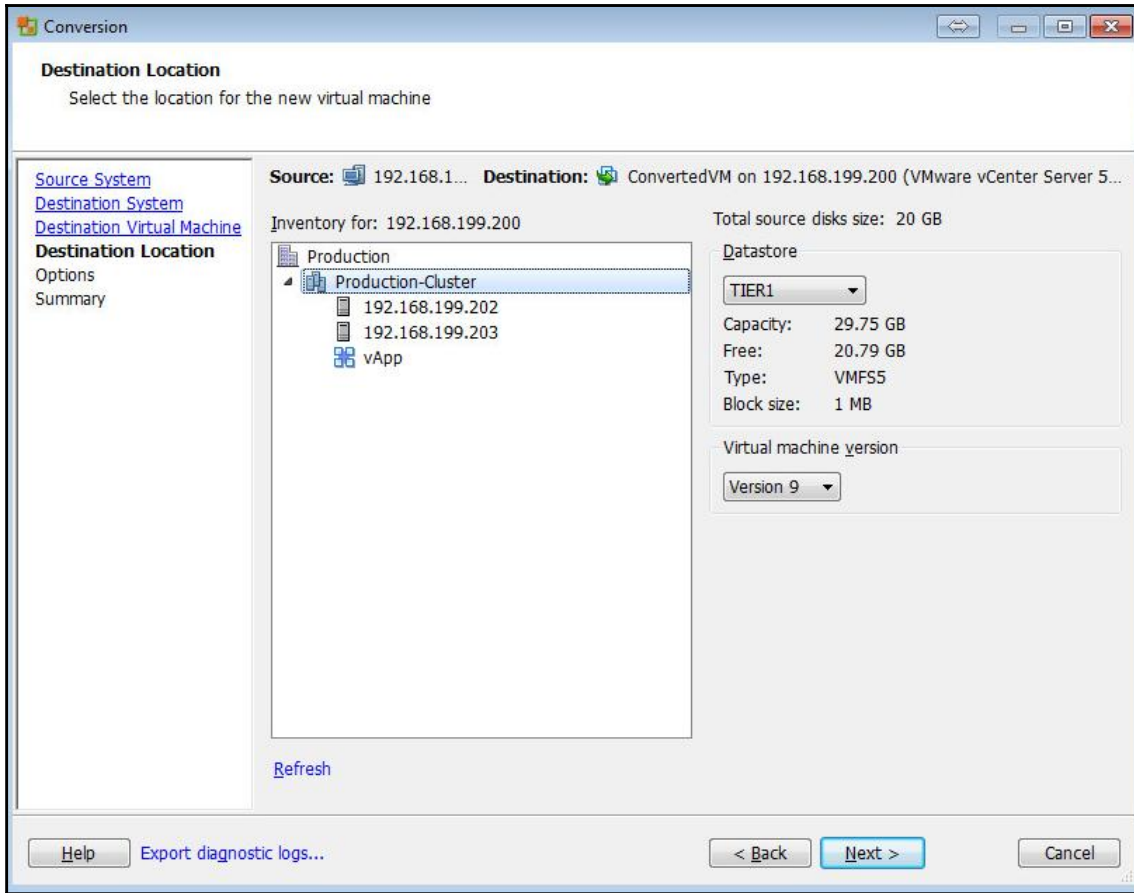
- Should run on hosts in group
- Must run on hosts in group
- Should run on hosts in group**
- Must Not run on hosts in group
- Should Not run on hosts in group

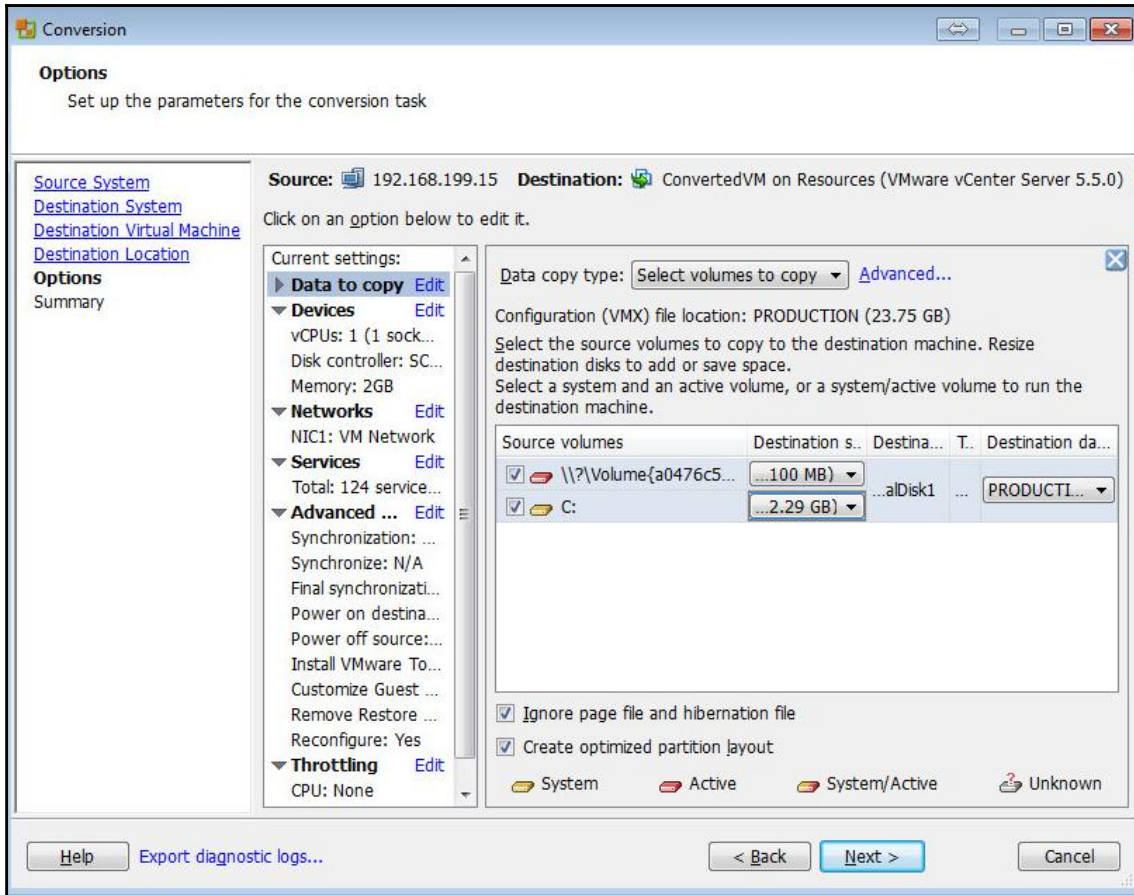


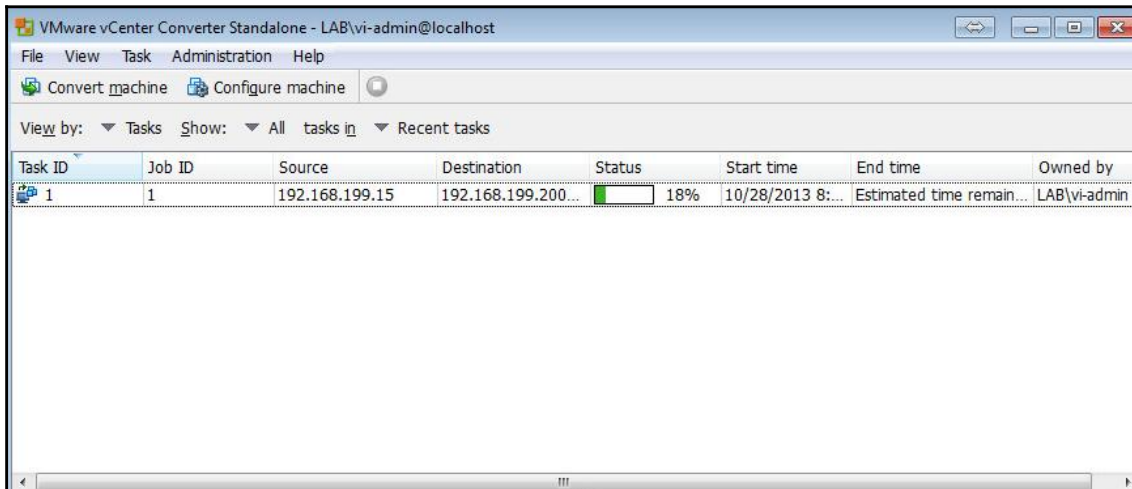
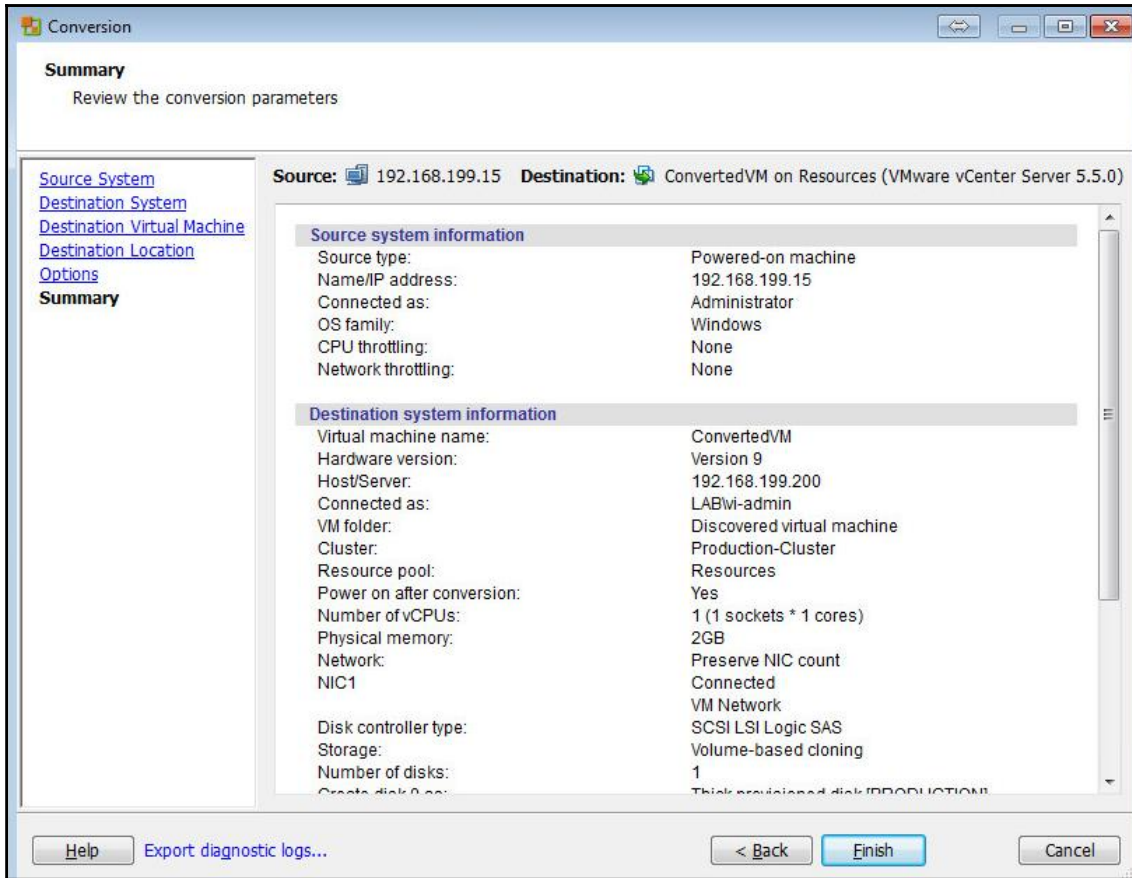












Chapter 10: vSphere Security Design

The screenshot shows the vSphere Single Sign-On configuration interface. The left sidebar contains a navigation menu with categories: Administration (Access Control, Roles, Global Permissions), Single Sign-On (Users and Groups), Configuration (highlighted), Licensing (Licenses, Reports), Solutions (Client Plug-Ins, vCenter Server Extensions), Deployment (System Configuration), and Customer Experience Improvement Framework. The main content area is titled 'Policies' and includes tabs for 'Password Policy', 'Lockout Policy', and 'Token Policy'. Below the tabs, a description states: 'A set of rules and restrictions on the format and expiration of vCenter Single Sign-On user passwords'. The 'Password Policy' section contains a table with the following details:

Description	Password Policy
Maximum lifetime	Password must be changed every 99999 days
Restrict reuse	Users cannot reuse any previous 5 passwords
Maximum length	20 characters
Minimum length	8 characters
Character requirements	At least 2 alphabetic characters At least 1 special characters At least 1 uppercase characters At least 1 lowercase characters At least 1 numeric characters Identical adjacent characters:3

Edit Password Policies ?

Description

Maximum lifetime Password must be changed every days

Restrict reuse Users cannot reuse any previous passwords

Password format requirements

Maximum length

Minimum length

Character requirements

- At least special characters
- At least alphabetic characters
- At least uppercase characters
- At least lowercase characters
- At least numeric characters

Identical adjacent Characters

Edit Lockout Policy ?

Description: Password Policy

Maximum number of failed login attempts: 5

Time interval between failures: 180 Seconds

Unlock time: 300 Seconds

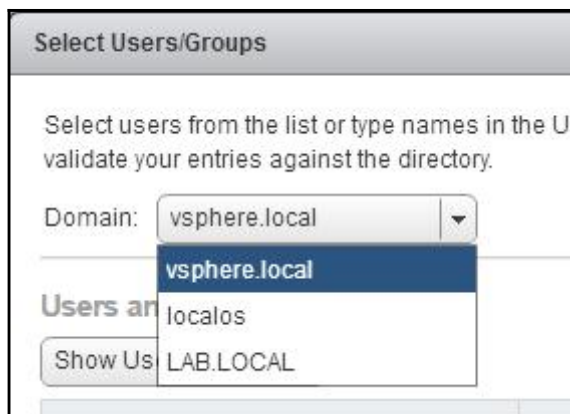
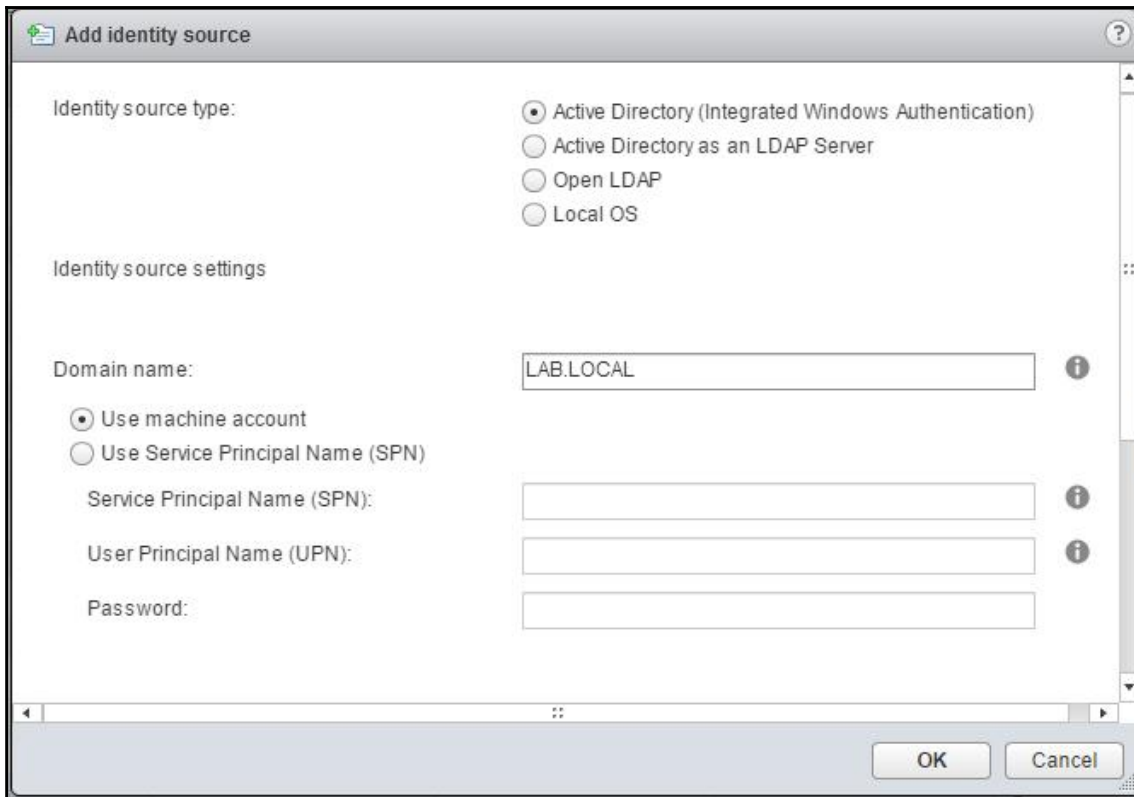
OK Cancel

Home > Policies Identity Sources Certificates SAML Service Providers

Administration

- Access Control
 - Roles
 - Global Permissions
- Single Sign-On
 - Users and Groups
- Configuration**
- Licensing
 - Licenses
 - Reports

Name	Server URL	Type	Domain	Alias
--	--	--	vsphere.local	--
--	--	Local OS	localos (default)	--
lab.local	--	Active Directory (Integrate...	lab.local	lab.local



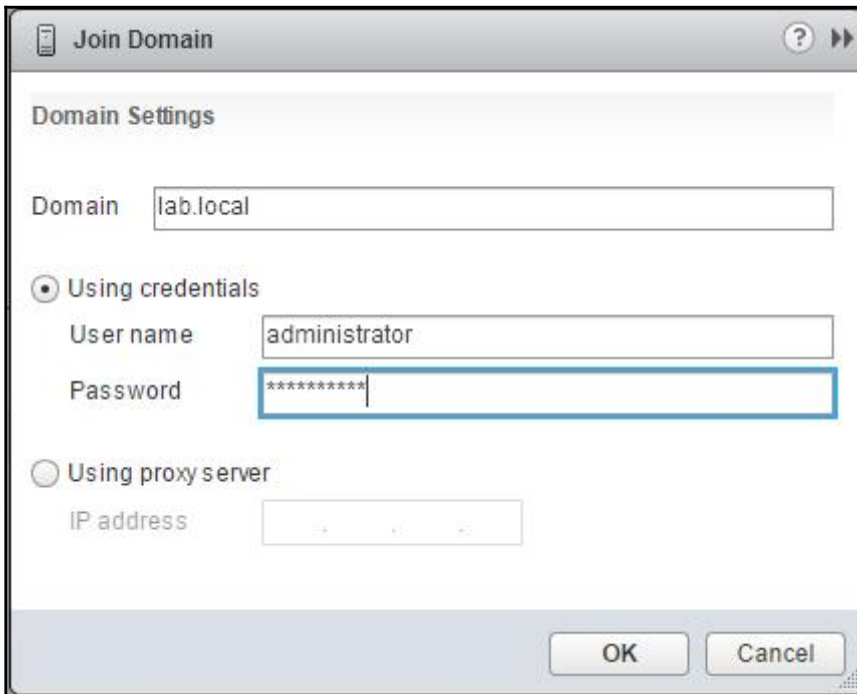
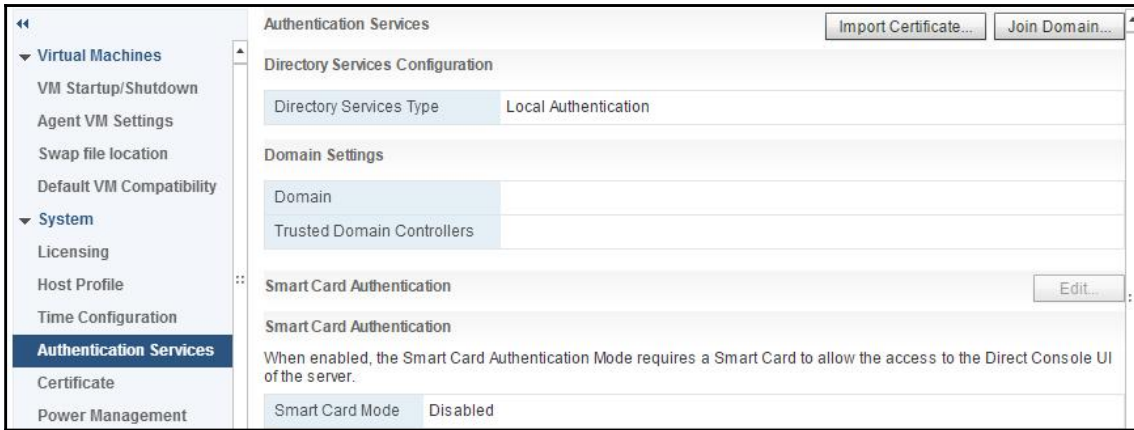
```
login as: root
VMware vCenter Server Appliance 6.5.0.22000
Type: vCenter Server with an embedded Platform Services Controller
Using keyboard-interactive authentication.
Password:
root@ [ ~ ]# /usr/lib/vmware-vmca/bin/certificate-manager

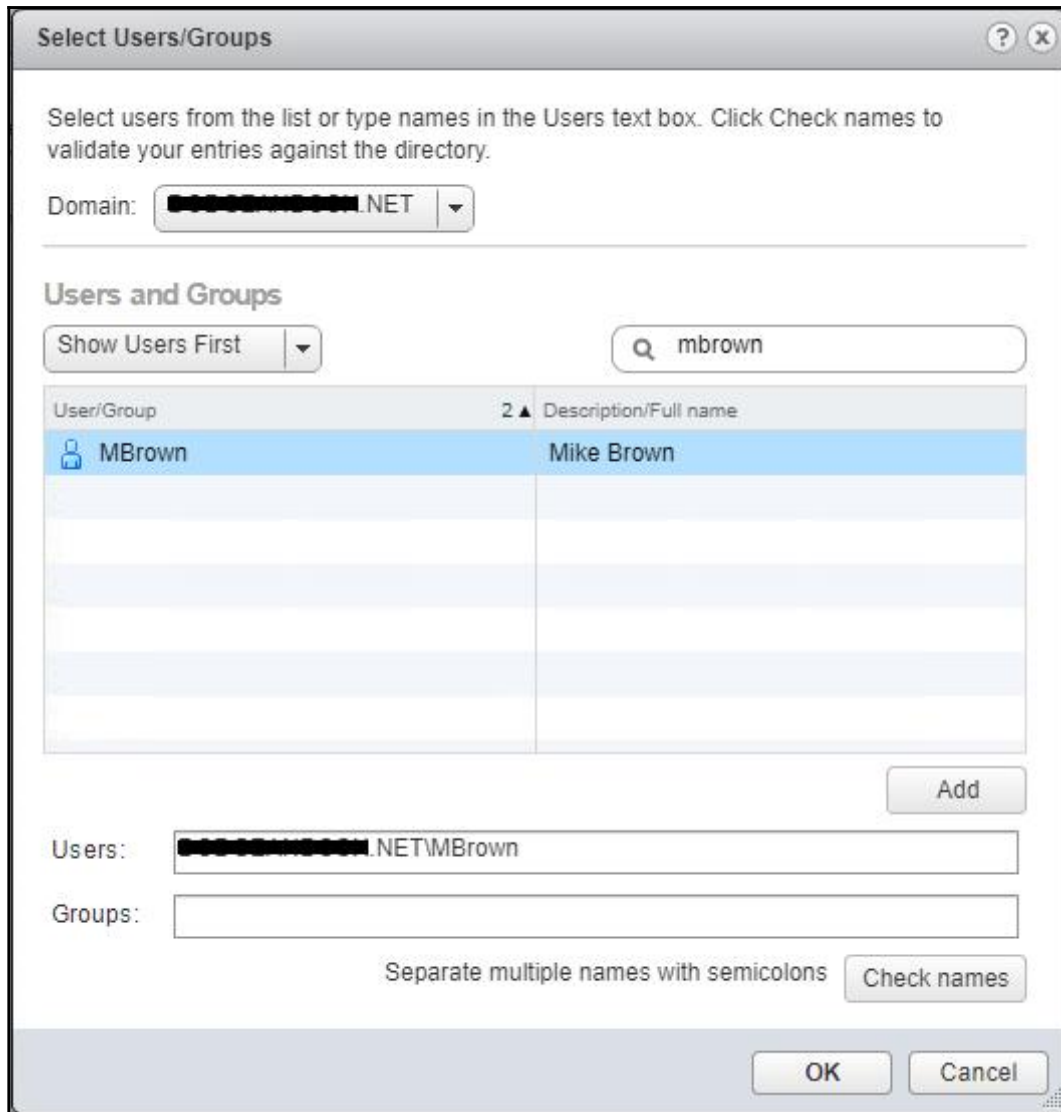
*** Welcome to the vSphere 6.5 Certificate Manager ***

-- Select Operation --

1. Replace Machine SSL certificate with Custom Certificate
2. Replace VMCA Root certificate with Custom Signing
   Certificate and replace all Certificates
3. Replace Machine SSL certificate with VMCA Certificate
4. Regenerate a new VMCA Root Certificate and
   replace all certificates
5. Replace Solution user certificates with
   Custom Certificate
6. Replace Solution user certificates with VMCA certificates
7. Revert last performed operation by re-publishing old
   certificates
8. Reset all Certificates

Note : Use Ctrl-D to exit.
Option[1 to 8]: █
```





Firewall Edit...

Virtual Machines

- VM Startup/Shutdown
- Agent VM Settings
- Swap file location
- Default VM Compatibility
- System
 - Licensing
 - Host Profile
 - Time Configuration
 - Authentication Services
 - Certificate
 - Power Management
 - Advanced System Settings
 - System Resource Reservation
 - Security Profile**
 - System Swap

Incoming Connections

CIM Server	5988 (TCP)	All
CIM Secure Server	5989 (TCP)	All
CIM SLP	427 (UDP,TCP)	All
DVSSync	8301,8302 (UDP)	All
NFC	902 (TCP)	All
SynologyNasPlugin	2049 (TCP)	All
Virtual SAN Clustering Service	12345,12321,23451 (UDP)	All
DHCP Client	68 (UDP)	All
DNS Client	53 (UDP)	All
Fault Tolerance	8200,8100,8300 (UDP,TCP)	All
vSphere High Availability Agent	8182 (UDP,TCP)	All
Virtual SAN Transport	2233 (TCP)	All
SNMP Server	161 (UDP)	All
SSH Server	22 (TCP)	192.168.1.0/24
vMotion	8000 (TCP)	All

192.168.1.25: Edit Security Profile

To provide access to a service or client, check the corresponding box.
By default, daemons will start automatically when any of their ports are opened, and stop when all of their ports are closed.

Name	Incoming Ports	Outgoing Ports	Protocols	Daemon
Required Services				
Secure Shell				
<input type="checkbox"/> SSH Client		22	TCP	N/A
<input checked="" type="checkbox"/> SSH Server	22		TCP	N/A
Simple Network Man...				
Ungrouped				

Service Details: N/A

Status: N/A

Allowed IP Addresses: Connections not allowed from all IP address

IP Addresses: Allow connections from any IP address

192.168.1.0/24

Enter a comma-separated list of IP addresses. E.g.: 111.111.111.111, 111.111.111/22

OK Cancel

Default VM Compatibility

System

Licensing

Host Profile

Time Configuration

Authentication Services

Certificate

Power Management

Advanced System Settings

System Resource Reservation

Security Profile

System Swap

Lockdown Mode Edit...

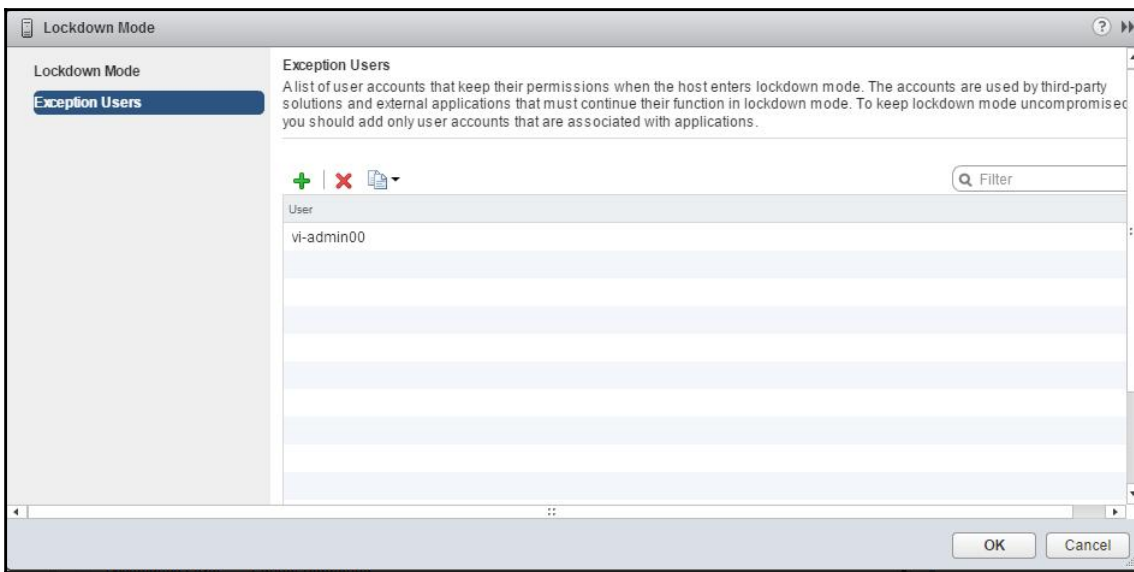
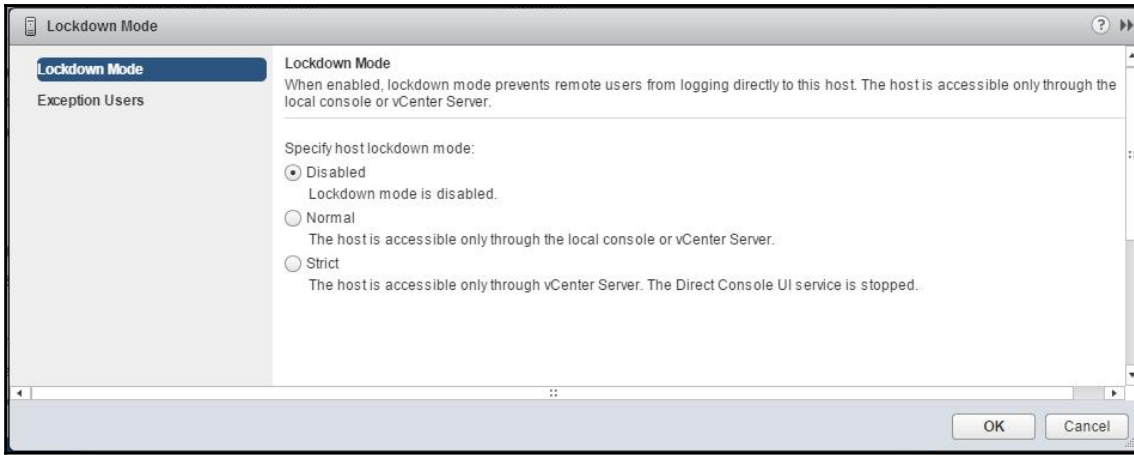
When enabled, lockdown mode prevents remote users from logging directly into this host. The host will only be accessible through the local console or an authorized centralized management application.

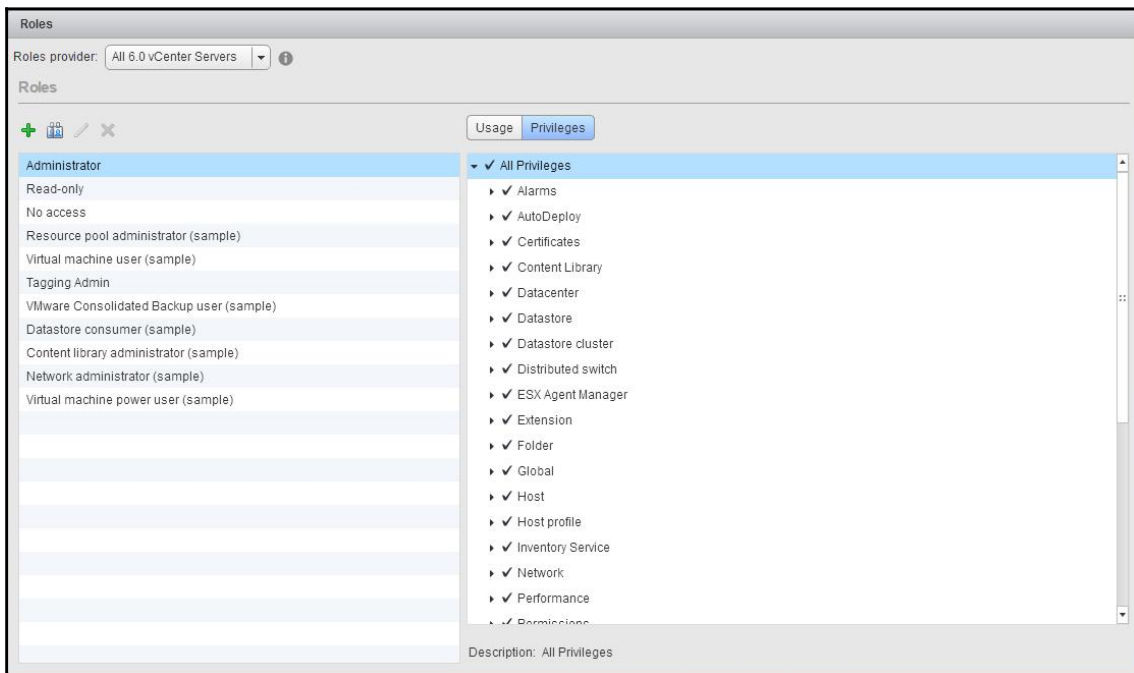
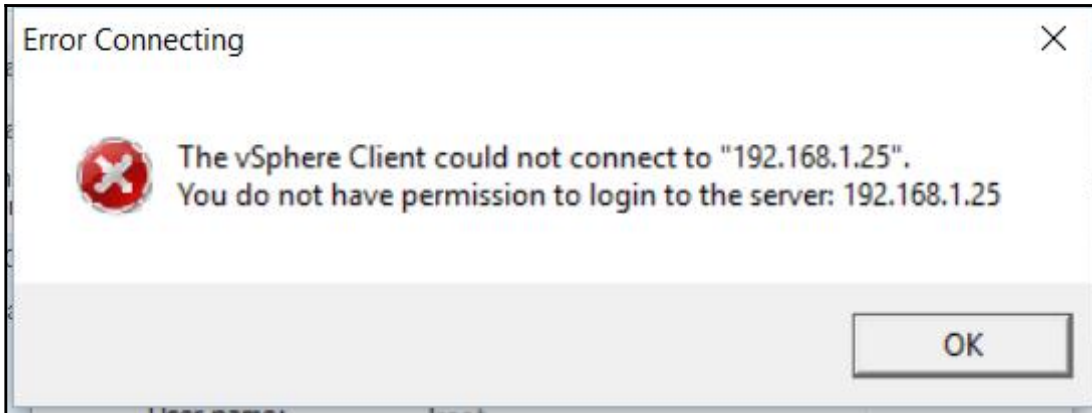
Lockdown Mode: Disabled

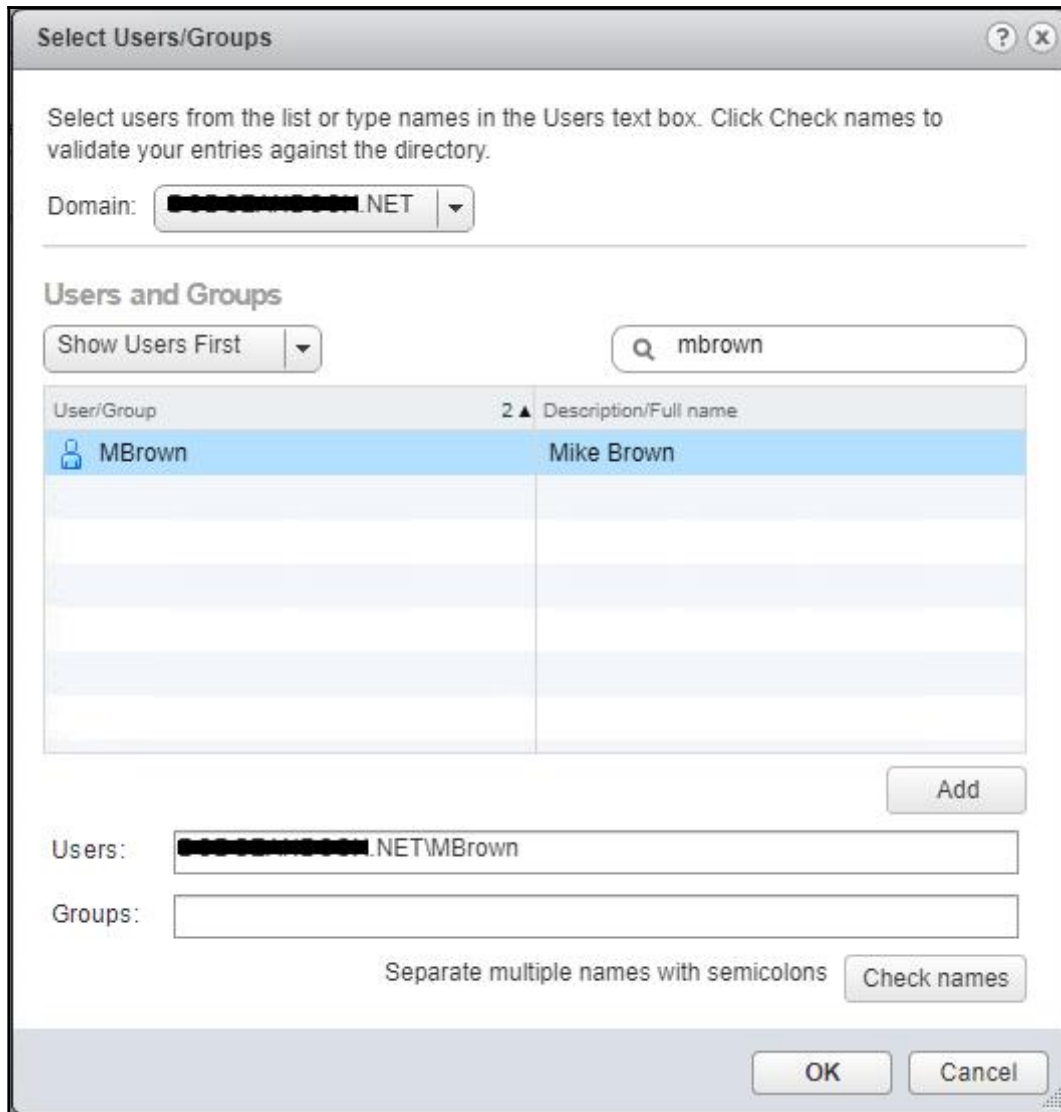
Exception Users: User

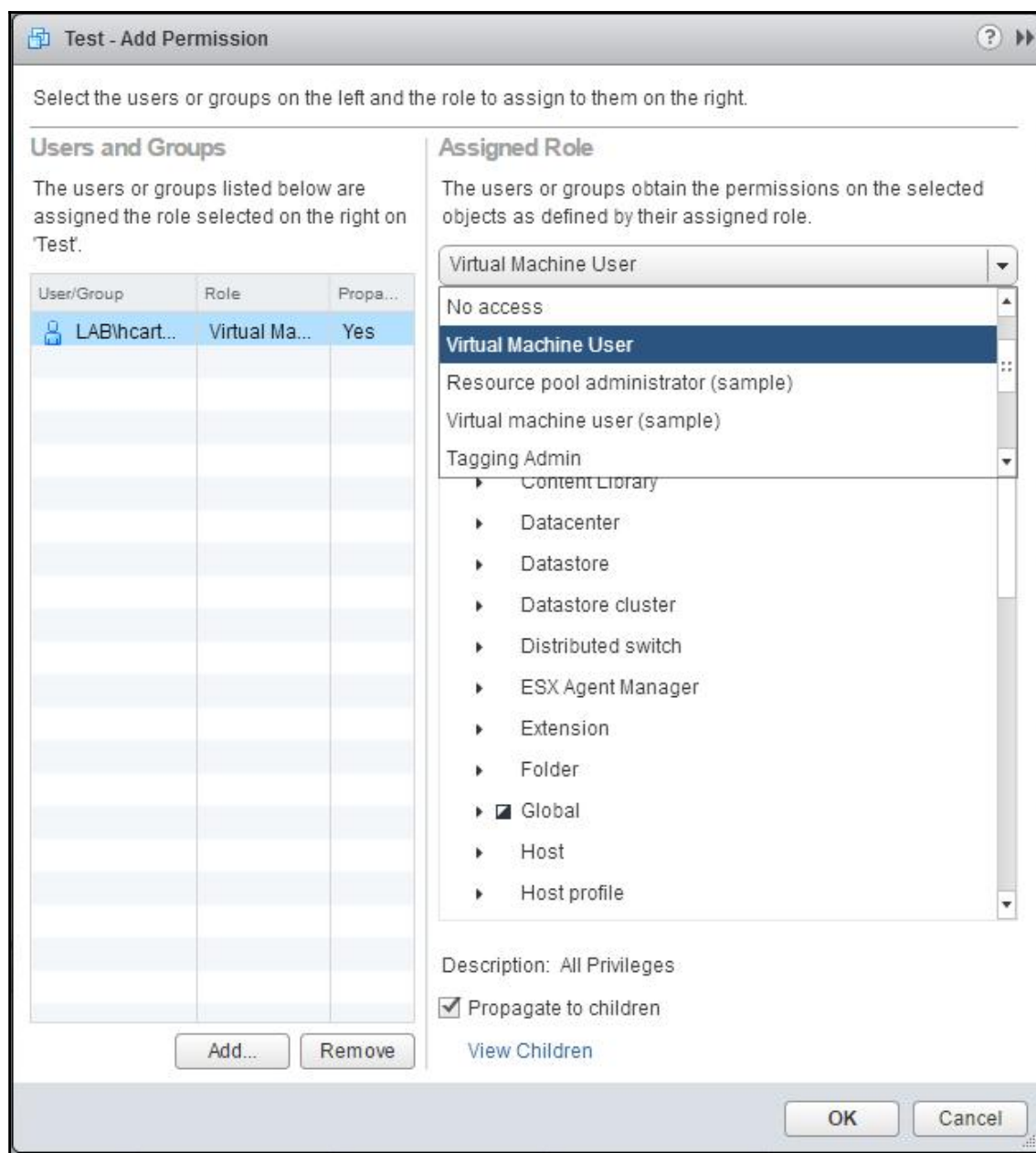
This list is empty.

Host Image Profile Acceptance Level Edit...









VM Network - Edit Settings

Properties

Security

Traffic shaping

Teaming and failover

Promiscuous mode: Override Reject

MAC address changes: Override Accept

Forged transmits: Override Accept

Guideline ID	Risk Profile	Description	Vulnerability Discussion	Configuration
VM.disable-unexposed-features-autologon	1	Disable certain unexposed features	Some VMX parameters don't apply on vSphere because VMware virtual machines work on both vSphere and hosted virtualization platforms such as Workstation and Fusion. Explicitly disabling these features reduces the potential for vulnerabilities because it reduces the number of ways in which a guest can affect the host.	isolation.tool
VM.disable-unexposed-features-biosbbs	1	Disable certain unexposed features	Some VMX parameters don't apply on vSphere because VMware virtual machines work on vSphere and hosted virtualization platforms such as Workstation and Fusion. Explicitly disabling these features reduces the potential for vulnerabilities because it reduces the number of ways in which a guest can affect the host.	isolation.bios
VM.disable-unexposed-features-getcreds	1	Disable certain unexposed features	Some VMX parameters don't apply on vSphere because VMware virtual machines work on vSphere and hosted virtualization platforms such as Workstation and Fusion. Explicitly disabling these features reduces the potential for vulnerabilities because it reduces the number of ways in which a guest can affect the host.	isolation.tool

Chapter 11: Disaster Recovery and Business Continuity

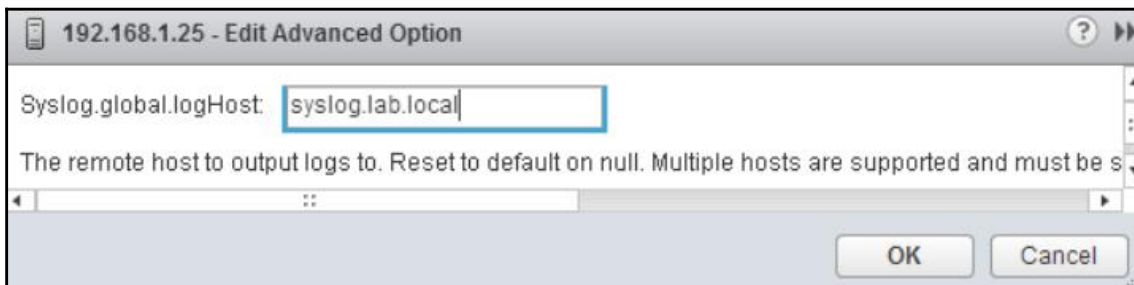
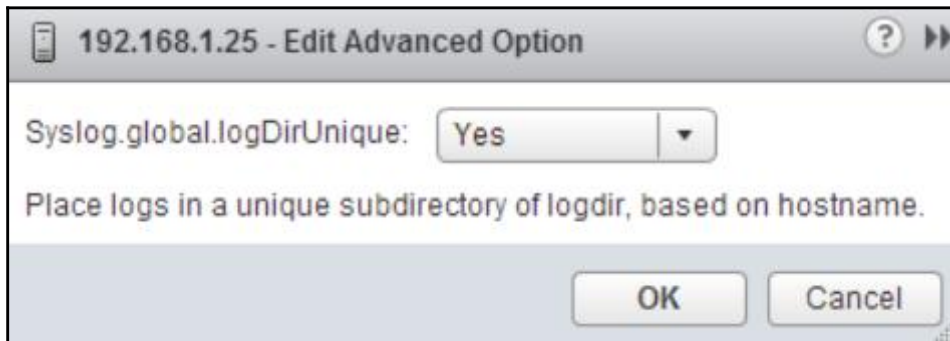
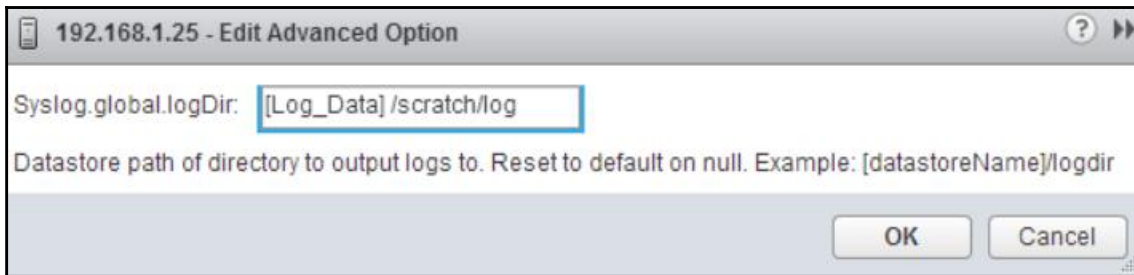
```
PowerCLI C:\>
PowerCLI C:\>
PowerCLI C:\> Get-UMHostFirmware -vmhost 192.168.1.25 -BackupConfiguration -DestinationPath C:\Temp\

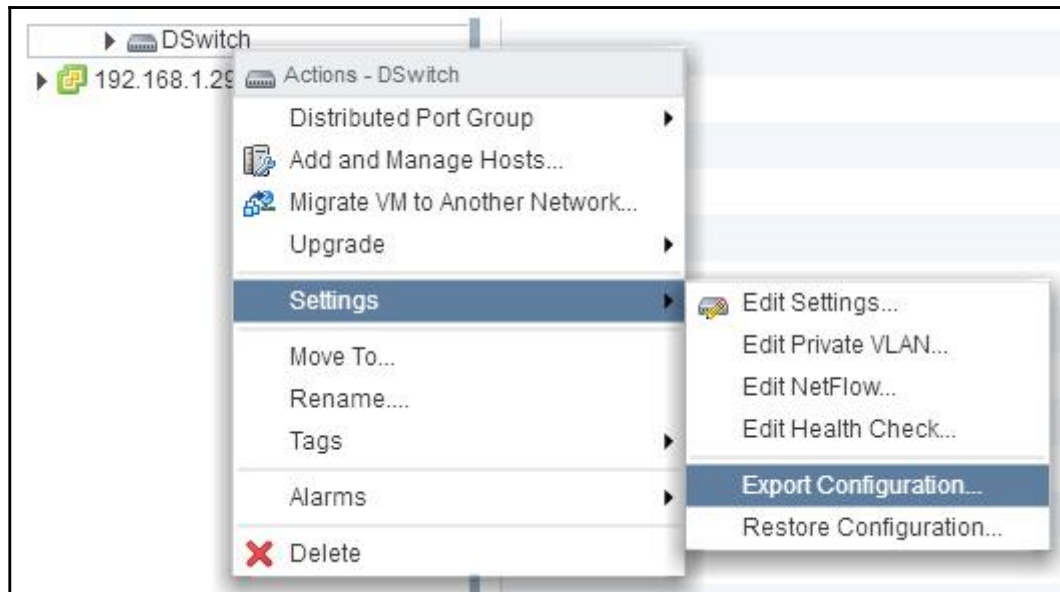
Host          Data
----          -
192.168.1.25  C:\Temp\configBundle-192.168.1.25.tgz

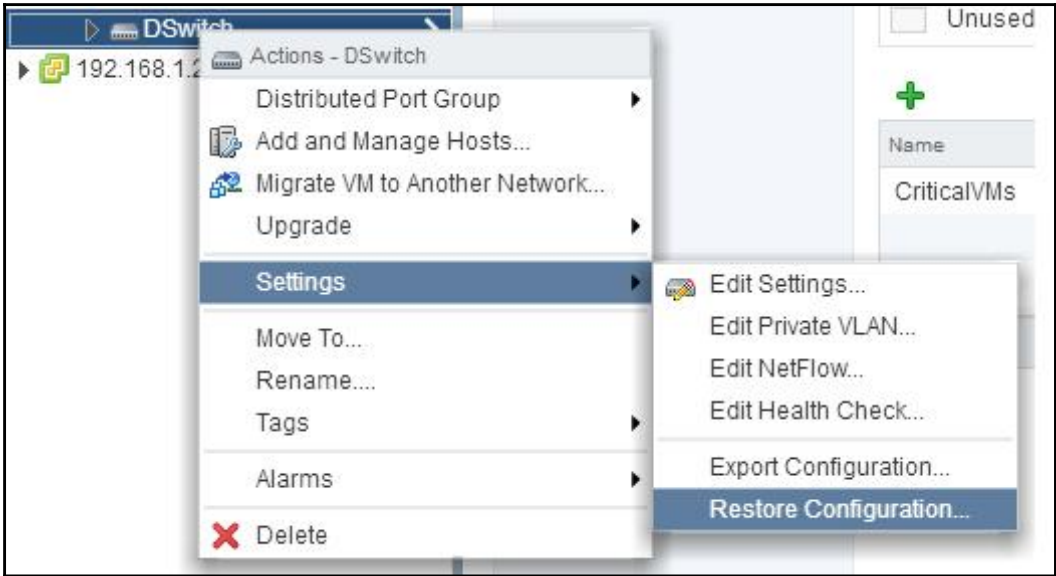
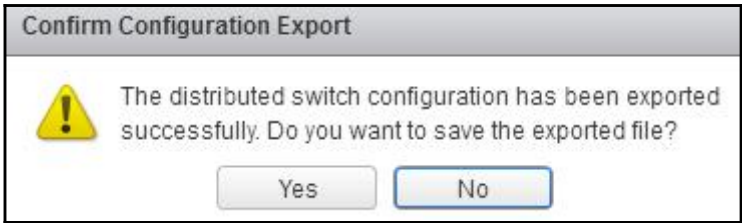
PowerCLI C:\> _
```

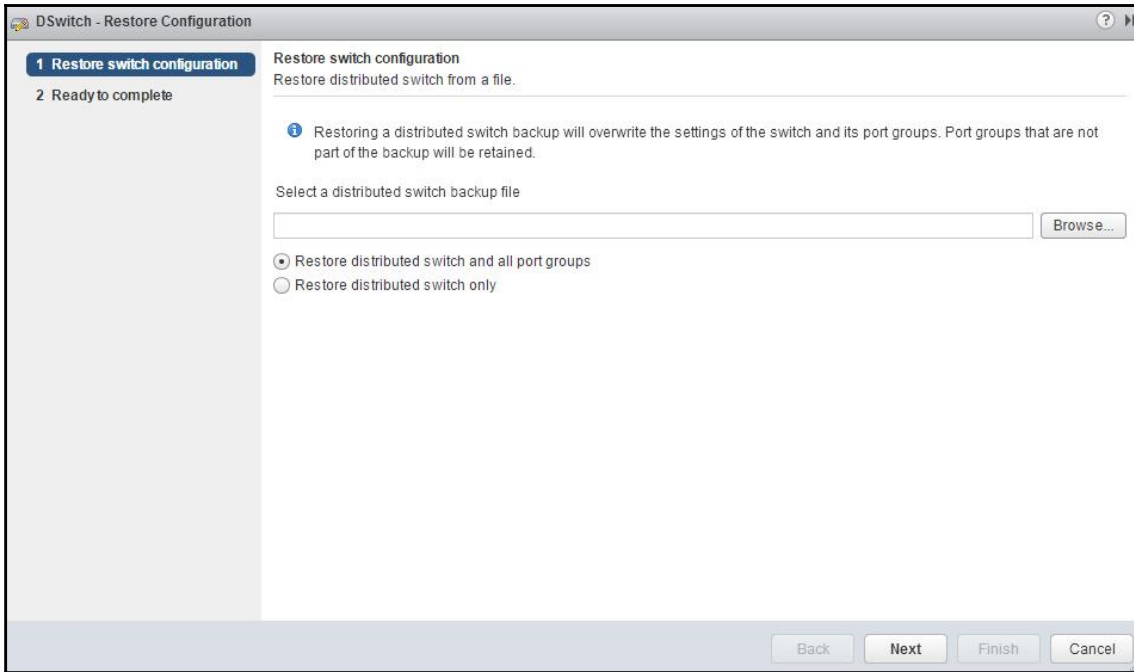
The screenshot shows the vSphere Advanced System Settings interface. The left sidebar contains a navigation tree with categories like Virtual Machines, System, and Advanced System Settings. The main area is titled 'Advanced System Settings' and features a search bar with 'Syslog' entered. Below the search bar is a table with columns for Name, Value, and Description. The table lists various Syslog settings, with 'Syslog.global.logDir' highlighted in blue.

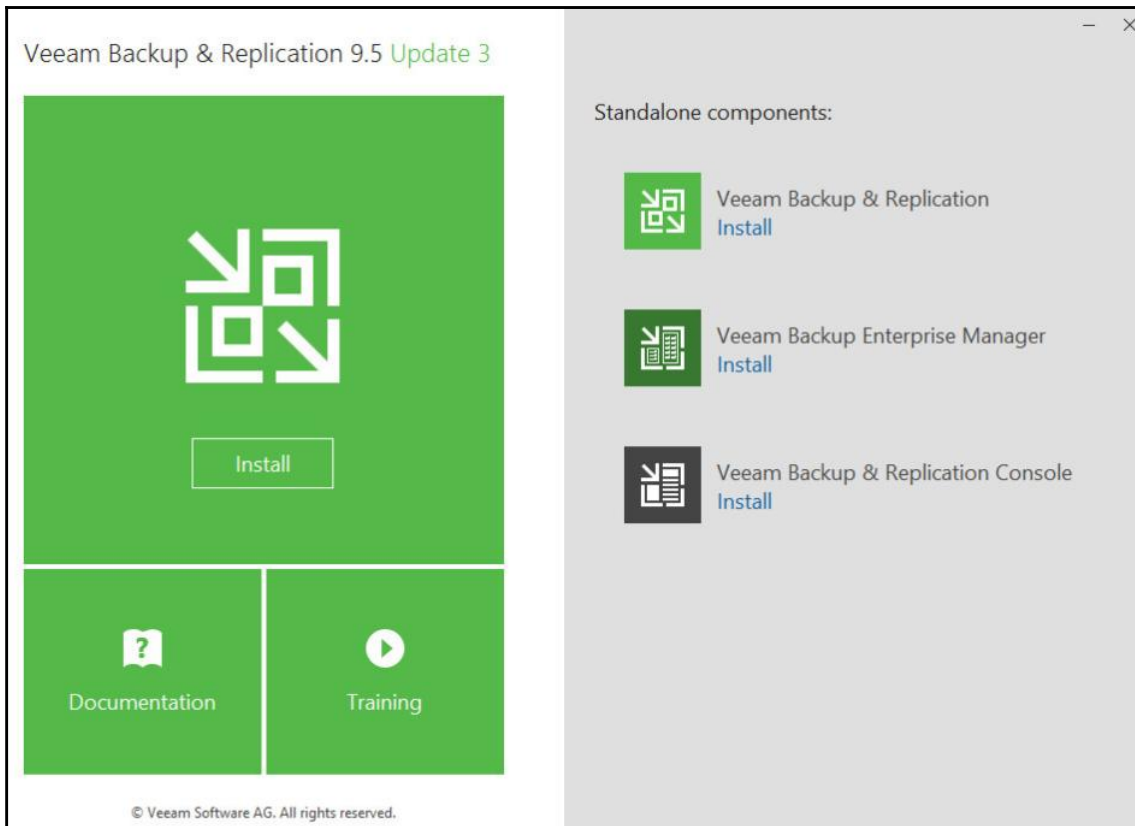
Name	Value	Description
Syslog.global.defaultRotate	8	Default number of rotated ...
Syslog.global.defaultSize	1024	Default size of logs before...
Syslog.global.logDir	[] /scratch/log	Datastore path of director...
Syslog.global.logDirUnique	false	Place logs in a unique su...
Syslog.global.logHost		The remote host to output...
Syslog.loggers.Xorg.rotate	8	Number of rotated logs to ...
Syslog.loggers.Xorg.size	1024	Set size of logs before rot...
Syslog.loggers.auth.rotate	8	Number of rotated logs to ...
Syslog.loggers.auth.size	1024	Set size of logs before rot...
Syslog.loggers.dhclient.ro...	8	Number of rotated logs to ...
Syslog.loggers.dhclient.si...	1024	Set size of logs before rot...

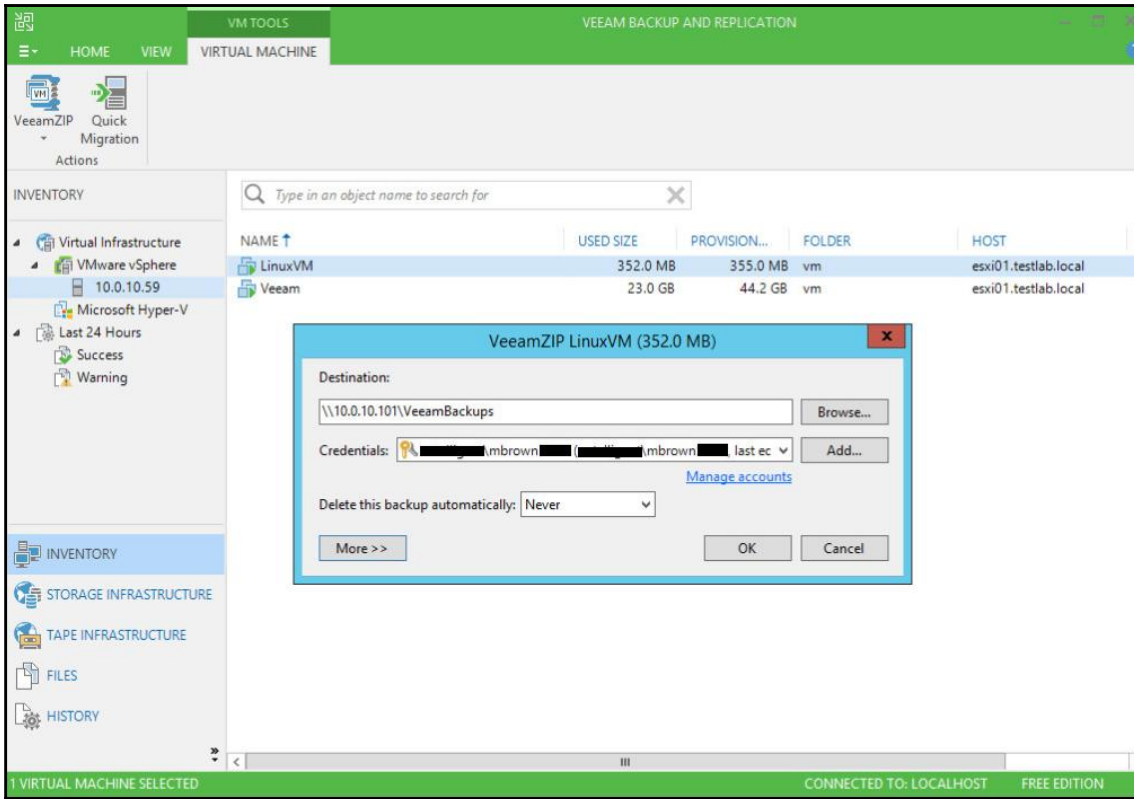












LinuxVM_2019-03-18T004152 (Active Full)

Job progress: 100% 1 of 1 VMs

SUMMARY		DATA		STATUS	
Duration:	01:34	Processed:	125.0 MB (100%)	Success:	1 ✓
Processing rate:	12 MB/s	Read:	125.0 MB	Warnings:	0
Bottleneck:	Source	Transferred:	68.5 MB (1.8x)	Errors:	0

THROUGHPUT (ALL TIME) Speed: 6.2 MB/s

NAME	STATUS	ACTION	DURATI...
LinuxVM	Success	<ul style="list-style-type: none"> Job started at 3/18/2019 12:41:52 AM Building VMs list VM size: 128.0 MB (125.0 MB used) Changed block tracking is enabled Processing LinuxVM All VMs have been queued for processing Backup file LinuxVMD2019-03-18T004157.vbk Load: Source 99% > Proxy 74% > Network 21% > Target 0% Primary bottleneck: Source Job finished at 3/18/2019 12:43:26 AM 	

Hide Details OK

Deploy OVF Template

1 Source

- 1a Select source
- 1b Review details
- 1c Accept EULAs

2 Destination

- 2a Select name and folder
- 2b Select storage
- 2c Setup networks
- 2d Customize template**
- 2e vService bindings

3 Ready to complete

Customize template

Customize the deployment properties of this software solution

All properties have valid values [Show next...](#) [Collapse all...](#)

Application	2 settings
Password The administrative password for the root account. Enter password: <input type="password" value="*****"/> Confirm password: <input type="password" value="*****"/>	
Initial configuration	Performs initial configuration of the appliance using an embedded database. <input checked="" type="checkbox"/>
Networking Properties	1 setting
Management Network IP Address	The IP address for this interface. <input type="text" value="192.168.1.38"/>

Navigator | **vSphere Replication**

History | Getting Started | Home

What is vSphere Replication?

VMware vSphere Replication (VR) is an extension to VMware vCenter Server. VR delivers hypervisor-based replication that can be used as a replacement for traditional storage-based replication. VR supports replication and recovery of virtual machines, and can be used for protection from partial or complete site failures.

To configure replication for a virtual machine, first select the virtual machine from anywhere within the vSphere client. From the Actions context menu select All vSphere Replication Actions > Configure Replication. This will open the wizard to configure replication for the selected VM. From the wizard you can also add additional replication target sites.

Local Site

- vCenter Server
- VRM Server
- VMs
- Host (VR Agent)
- Source Datastores

Remote Site

- vCenter Server
- VRM Server
- VMs
- VR Server
- Target Datastores

Explore Further

- [vSphere Replication Documentation](#)
- [Replicating Virtual Machines](#)
- [Performing a Recovery with vSphere Replication](#)
- [Monitoring and Managing Replication](#)

Delete from Disk

All vRealize Orchestrator plugin Actions ▶

All vSphere Replication Actions ▶ **Configure Replication...**

Configure Replication for CA

- ✓ 1 Target site
- ✓ 2 Replication server
- ✓ 3 Target location
- ✓ 4 Replication options
- ✓ 5 Recovery settings
- ✓ 6 Ready to complete

Target site
Specify the target site where the virtual machine(s) will be replicated.

Filter (1) Selected Objects

Name	Status
vcva	Connected

1 items

Add Remote Site...

Target site validation:

✓ Validation succeeded


Back Next Finish Cancel

Configure Replication for CA

- ✓ 1 Target site
- ✓ 2 Replication server
- ✓ 3 Target location
- ✓ 4 Replication options
- ✓ 5 Recovery settings
- ✓ 6 Ready to complete

Recovery settings
Specify recovery settings for the virtual machine(s).

Recovery Point Objective (RPO)
Lower RPO times will reduce potential data loss, but will use more bandwidth and system resources.

15 min  24 hr

0 hr 15 min

Point in time instances
Recent replication instances will be converted to snapshots during recovery. (Replication of existing VM snapshots is not supported.)

Enable

Keep 3 instances per day for the last 5 days (15 total)

You may need to adjust the RPO to achieve the desired number of instances per day. The maximum number of retained instances is 24.

Recovery settings validation:

✓ Validation succeeded

Back Next Finish Cancel

Summary Monitor Manage Related Objects

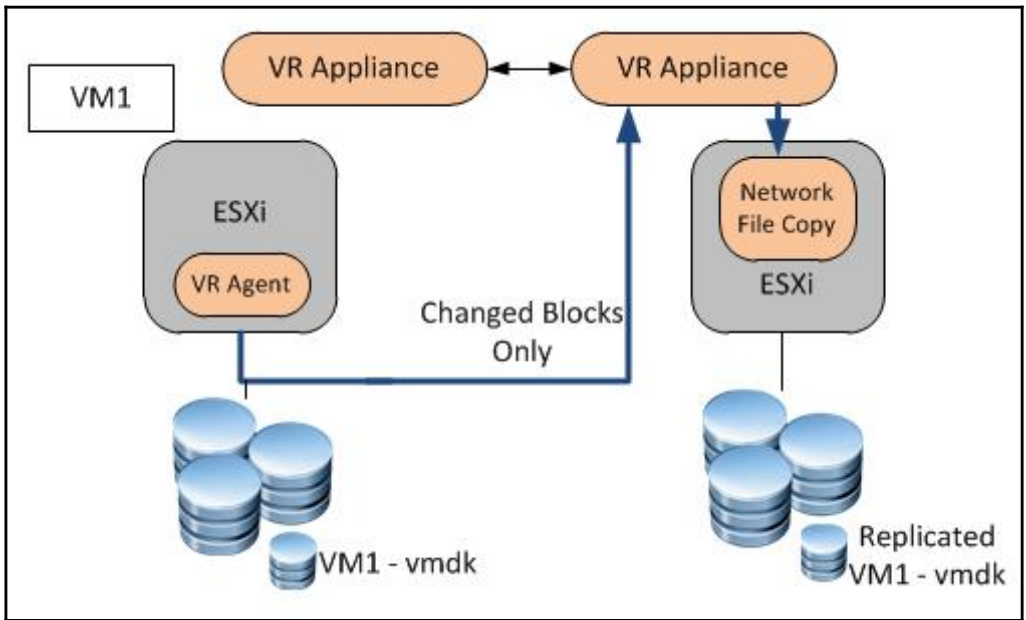
Issues Tasks Events System Logs Service Health Log Browser vSphere Replication

Outgoing Replications

Virtual Mac...	Status	Target	Sync...	VR server	Duration	Size	RPO	Quiesc...
CA	Initial Full Sync	vcva		vSphere Replication ...			15 minu...	MS Sh

1 items

Virtual machine: CA Status: Initial Full Sync RPO: 15 minutes
 Target site: vcva Last sync duration: 92% Quiescing: MS Shadow Copy Services (VSS)
 VR server: vSphe... Last instance sync point:
 Last sync size:



vcva Actions ▾

Summary Monitor Manage Related Objects

Issues Tasks Events System Logs Service Health Log Browser vSphere Replication

Outgoing Replications

Incoming Replications

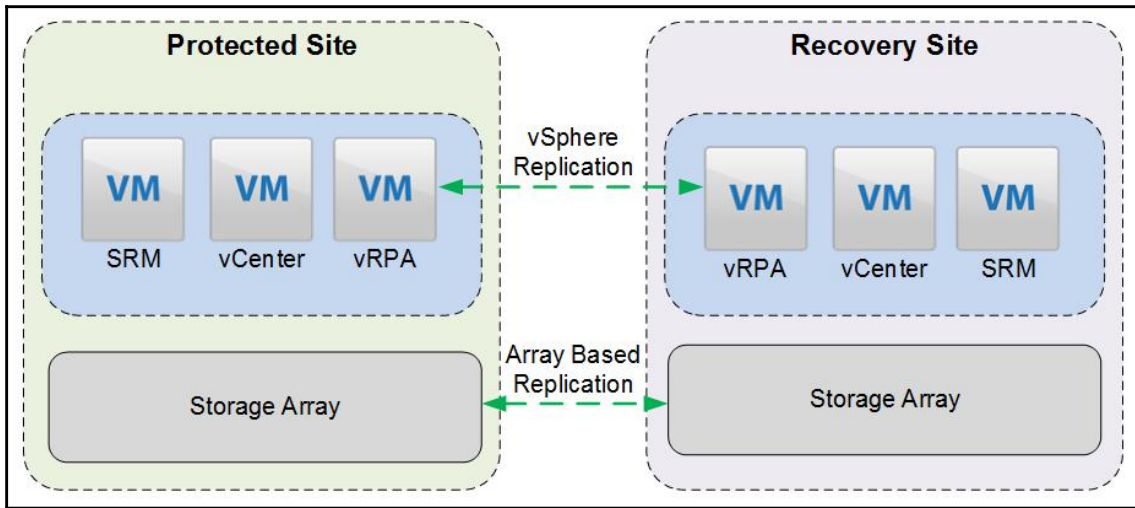
Virtual Machine	Status	Source	VR server	Sync Point	Duration
CA	OK	vcva	vSphere...	11/30/2013 ...	29 seco...

Actions - CA

- Reconfigure...
- Resume
- Pause
- Sync Now
- Stop
- Move to...
- Recover...

Virtual machine: Status: RPO:

Source site: Last sync duration: Quiescing:



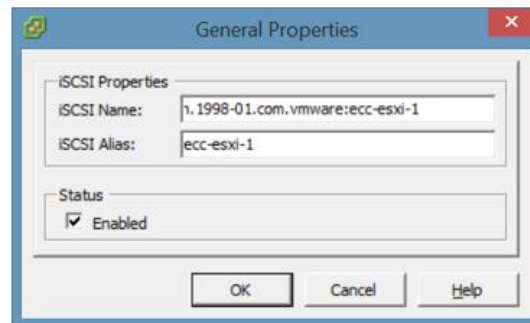
Chapter 12: Design Documentation

5.3 Configure Storage

1. Enable the Software iSCSI HBA.
 - Select **Storage Adapters** in the **Hardware** menu.
 - Select **Add** to create the Software iSCSI HBA



- Select the new Software iSCSI HBA and select **Properties**.
- In the iSCSI initiator properties select **Configure** to set the iSCSI Name and iSCSI Alias.

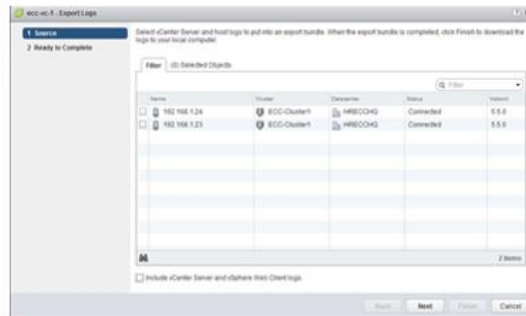


- Select the **Network Configuration** tab and **Add** the iSCSI-A VMkernel

5. Exporting a vCenter Log Bundle

When a service request is submitted to VMware for support, VMware Support may require the system logs to troubleshoot the reported issue.

1. To export system logs right-click the vCenter Server inventory object and select All vCenter Actions -> **Export System Logs**.
2. Select the hosts and vCenter logs to include in the log bundle.



3. Select the logs to export. In most cases the default selections will be used unless otherwise stated by VMware Support. Click **Generate Log Bundle** to begin the log export.



4. After the log bundle has been generated click **Download Log Bundle** to download the logs.
5. Choose a location to save the log export. A zipped archive containing the exported logs will be downloaded to location selected.

