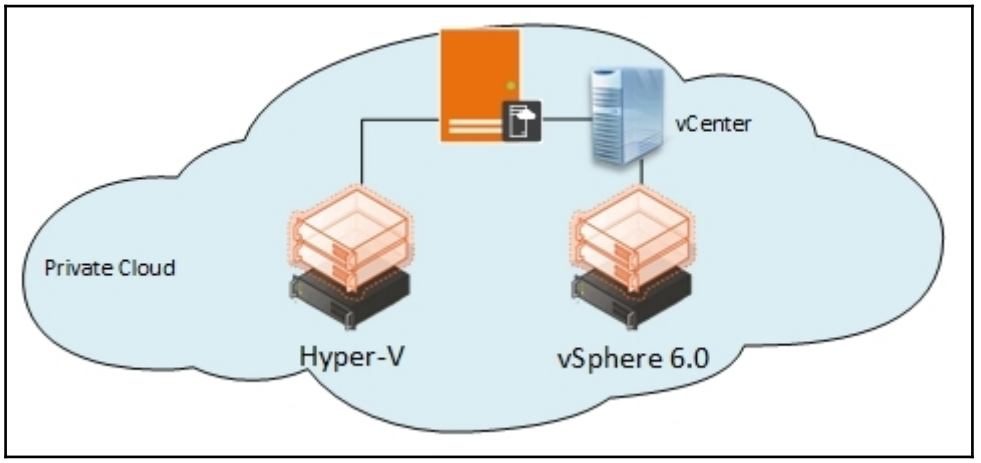
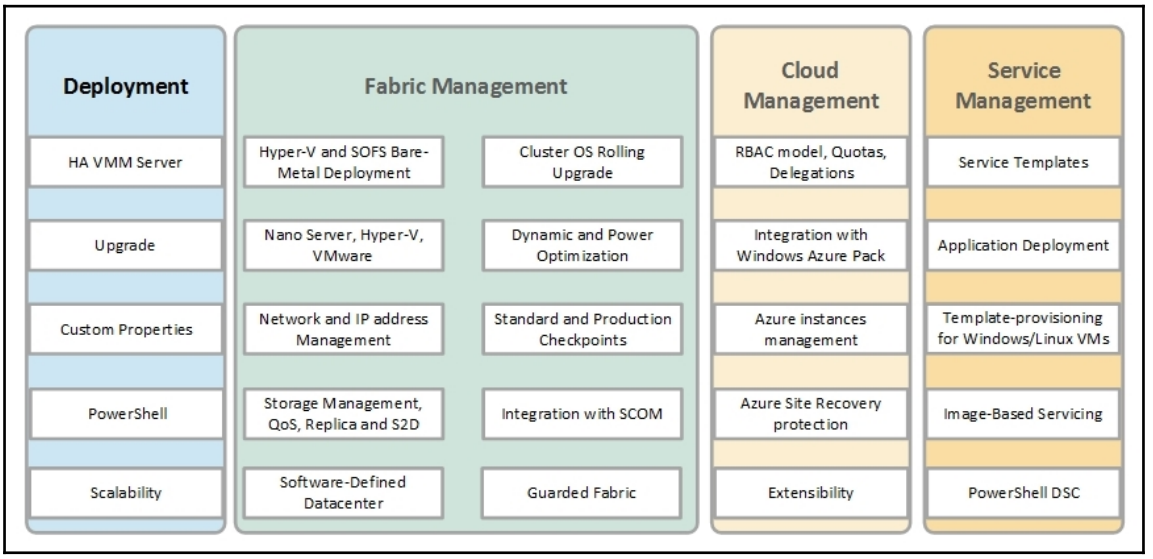
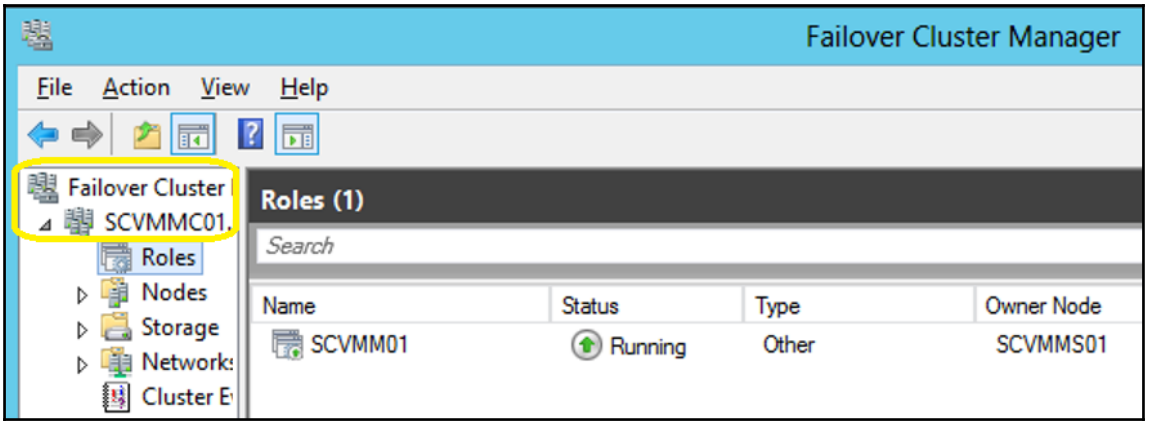
Chapter 1: VMM 2016 Architecture

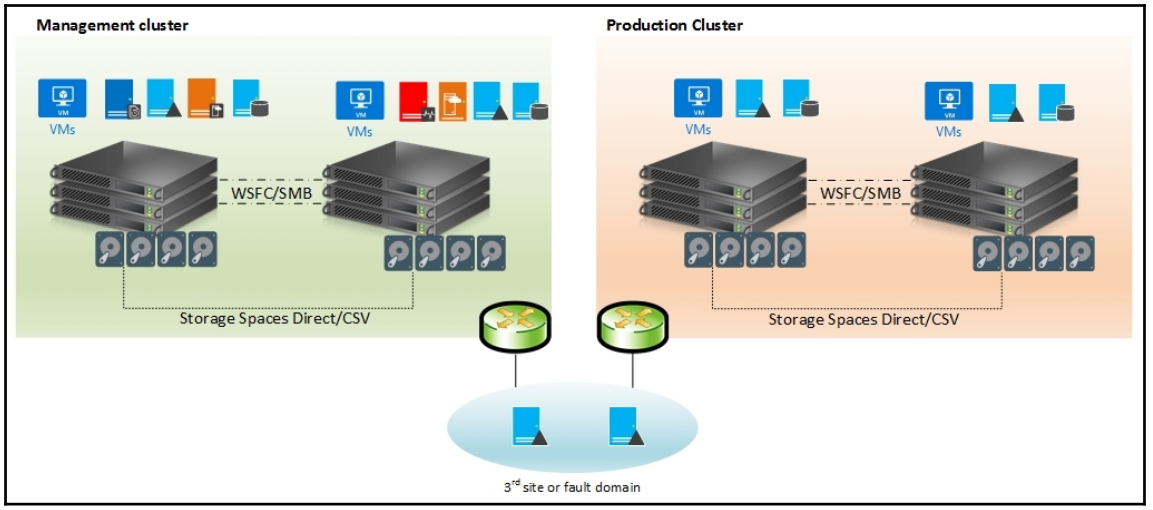


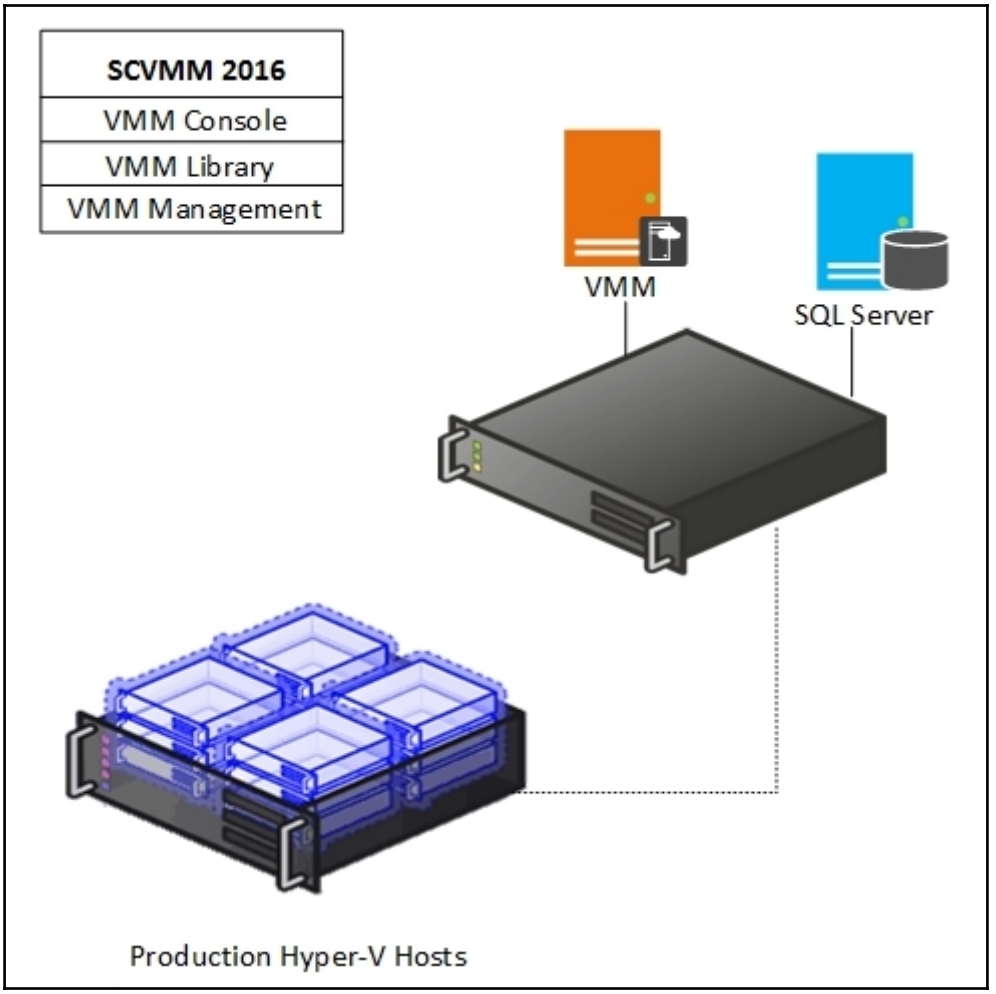


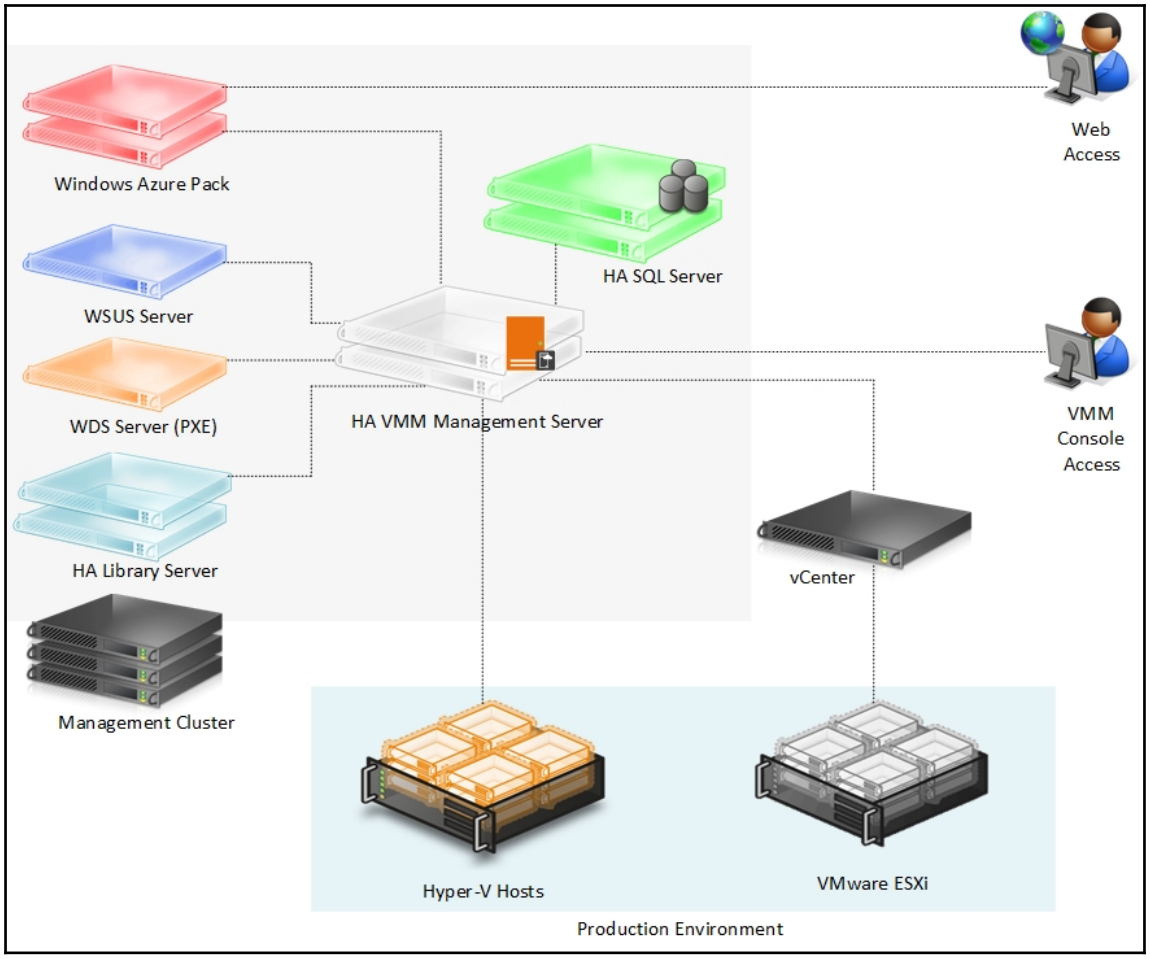

Failover Cluster Manager
File
Action
View
Help
Failover Cluster
SCVMMC01.
Roles
Nodes
Storage
Networks
Cluster E
Roles (1)
Search
Name
Status
Type
Owner Node
SCVMM01
Running
Other
SCVMMS01

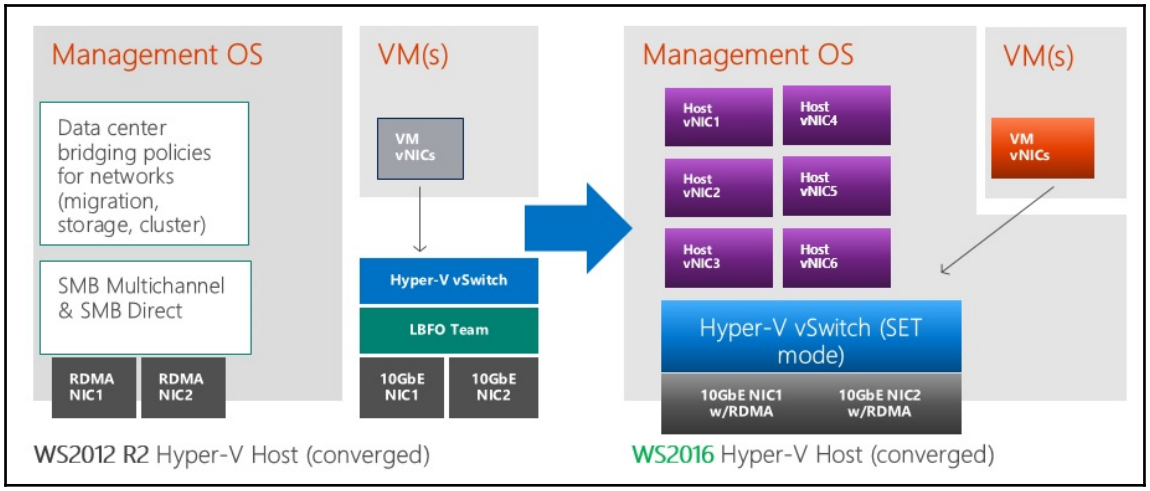
Scenarios	Enabling technologies				
	WAP	**Operations Manager**	**Orchestrator**	**Service Manager**	**VMM**
Fabric provider					
Bare Metal deploy					√
Integration with network and storage			√		√
Host patching					√
Shielded VMs	√				√
Cluster OS Rolling Upgrade					√
Storage QoS and Replica					√
Host optimization / power optimization					√
Software-defined storage (S2D)					√
Software-Defined Networking (SDN)					√

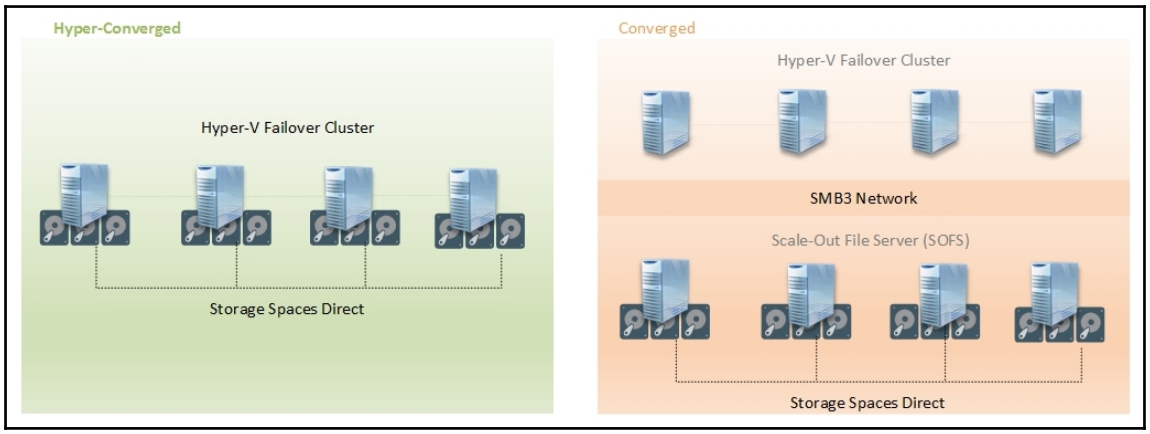
Scenarios	Enabling technologies				
Capacity reporting		√			√
Service provider					
Service templates (offerings)	√				√
Service and VM catalog	√			√	√
Life cycle (create, upgrade, retire)	√		√	√	√
Application and SLA monitoring		√			
SLA and capacity reporting		√		√	
Usage and Metering	√	√			√
Billing and pricing	√	√			√
Service consumer					
Request quote or capacity (cloud)			√	√	√
Request/deploy VM	√	√	√	√	√
Request/deploy service	√	√	√	√	√
Quota enforcement	√				√
Request approvals			√	√	
SDN management	√				√

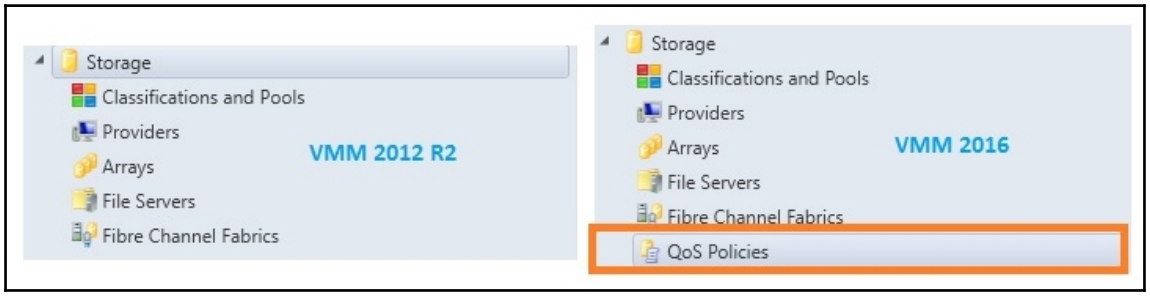

Management cluster
VMs
VMs
WSFC/SMB
Storage Spaces Direct/CSV
Production Cluster
VMs
VMs
WSFC/SMB
Storage Spaces Direct/CSV
3rd site or fault domain


SCVMM 2016
VMM Console
VMM Library
VMM Management
VMM
SQL Server
Production Hyper-V Hosts


Web Access
Windows Azure Pack
HA SQL Server
WSUS Server
HA VMM Management Server
WDS Server (PXE)
VMM Console Access
HA Library Server
vCenter
Management Cluster
Hyper-V Hosts
VMware ESXi
Production Environment


Management OS
Data center bridging policies for networks (migration, storage, cluster)
SMB Multichannel & SMB Direct
RDMA NIC1
RDMA NIC2
VM(s)
VM vNICs
Hyper-V vSwitch
LBFO Team
10GbE NIC1
10GbE NIC2
WS2012 R2 Hyper-V Host (converged)
Management OS
Host vNIC1
Host vNIC4
Host vNIC2
Host vNIC5
Host vNIC3
Host vNIC6
Hyper-V vSwitch (SET mode)
10GbE NIC1 w/RDMA
10GbE NIC2 w/RDMA
VM(s)
VM vNICs
WS2016 Hyper-V Host (converged)


Hyper-Converged
Hyper-V Failover Cluster
Storage Spaces Direct
Converged
Hyper-V Failover Cluster
SMB3 Network
Scale-Out File Server (SOFS)
Storage Spaces Direct


Storage
Classifications and Pools
Providers
Arrays
File Servers
Fibre Channel Fabrics
VMM 2012 R2
Storage
Classifications and Pools
Providers
Arrays
File Servers
Fibre Channel Fabrics
QoS Policies
VMM 2016

Component	OS/Server supported	Version
VMM server	Windows Server 2016	Server Core, Server with Desktop Experience
VMM database	SQL Server 2012 SP1	Standard, Enterprise
	SQL Server 2014	Standard, Enterprise
	SQL Server 2016	Standard, Enterprise
VMM console	Windows Server 2012	Standard, Datacenter
	Windows Server 2012 R2	Standard, Datacenter
	Windows Server 2016	Standard, Datacenter
	Windows 8.1	x86 and x64
	Windows 10 Enterprise	x86 and x64
VMM library	Windows Server 2016	Standard, Datacenter (full installation or Server Core installation)
	Windows 2012 R2	
Windows Azure Pack	Windows 2012 R2	Standard, Datacenter (full installation with desktop experience)
	Windows Server 2016	
WSUS	Windows 2012 R2, Windows Server 2016 - WSUS 4.0 or later	Standard, Datacenter (full installation with desktop experience)
Managed Hyper-V Host or SOFS	Windows Server 2012 R2, Windows Server 2016	Standard, Datacenter (full installation, Server Core installation or Nano Server*[1])
PXE	Windows Server 2012 R2	Standard, Datacenter (full installation with desktop experience)
	Windows Server 2016	

* Keep in mind that Nano Server is no longer supported for infrastructure roles (Hyper-V, DNS and so on). It's mentioned above to show that existing deployments have support until **Spring of 2018 (April)**. So, plan migration to Windows Server Core or full installation of Windows Server

Hardware component	Minimum	Recommended
Processor	8 core Pentium 4, 2GHz (x64)	16-core, 2.66 GHz CPU
RAM	4 GB	16 GB
Hard disk space *[1]	4 Gb	10 GB
*[1] Excluding OS partition and SQL Server data (if it's installed on VMM server)		

Hardware component	Minimum	Recommended
Processor	8 core Pentium 4, 2.8 GHz	16-core 2.6 GHz CPU
RAM	8 GB	16 GB
Hard disk space*	50 GB	150 GB
* Excluding OS partition		

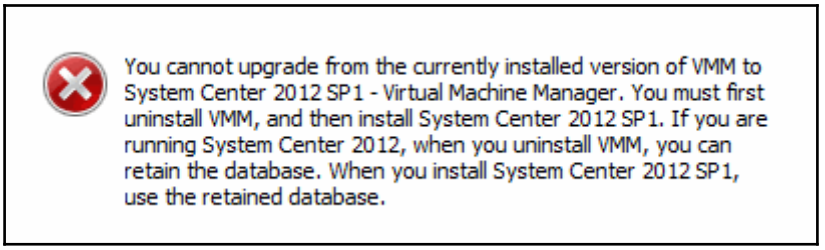
Hardware component	Minimum	Recommended
Processor	2 core Pentium 4, 2.8GHz	4 core 2.66 GHz CPU
RAM	2 GB	4 GB
Hard disk space*	As a minimum, I recommend 80 GB, taking into consideration the following table that contains some samples of real image sizes. However, the recommended size will vary depending on business requirements and on the number and size of files stored, especially when working with templates.	
* Excluding OS partition		

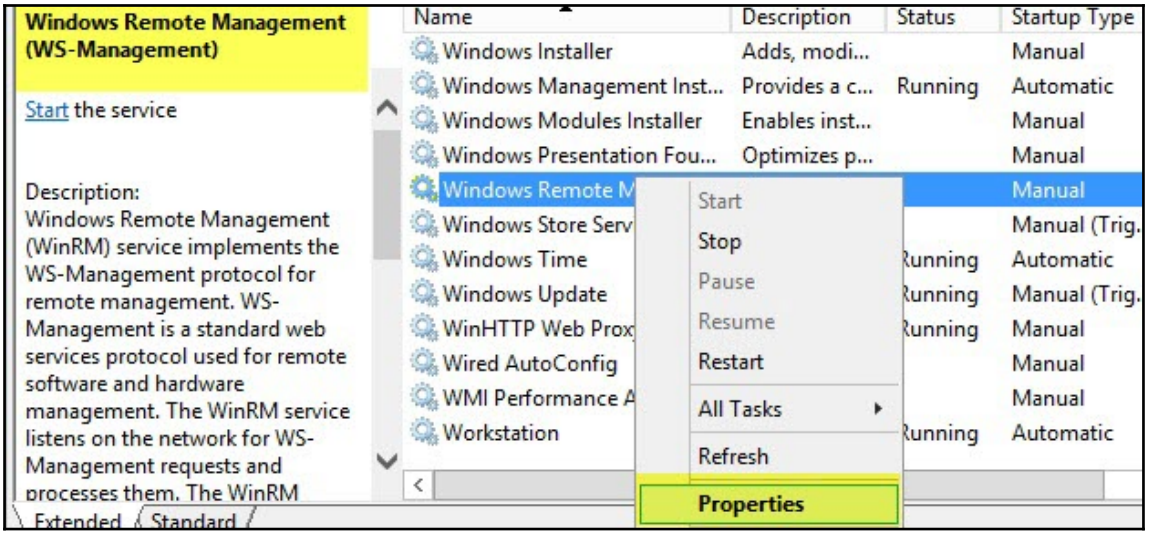
Hardware component	Minimum	Recommended
Processor	2 core Pentium 4, 1 GHz CPU	2 core 2 GHz CPU
RAM	4 GB	4 GB
Hard disk space *	10 GB	10 GB
* Excluding OS partition		

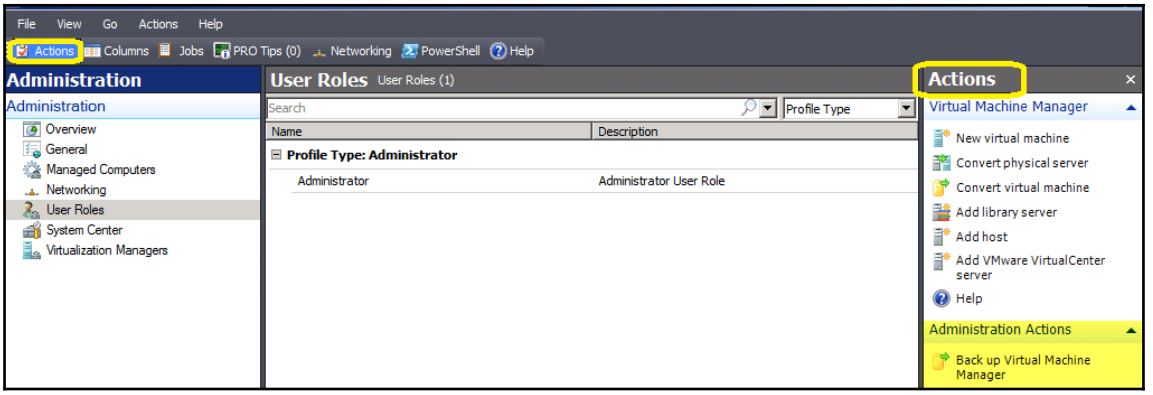
Hardware component	Express/Machine	Distributed/for each machine
Processor	1 CPU	2 CPU
RAM**	8	8 GB
Hard disk space *	40 Gb	40 GB
* Excluding OS partition **dynamic memory is not recommended		

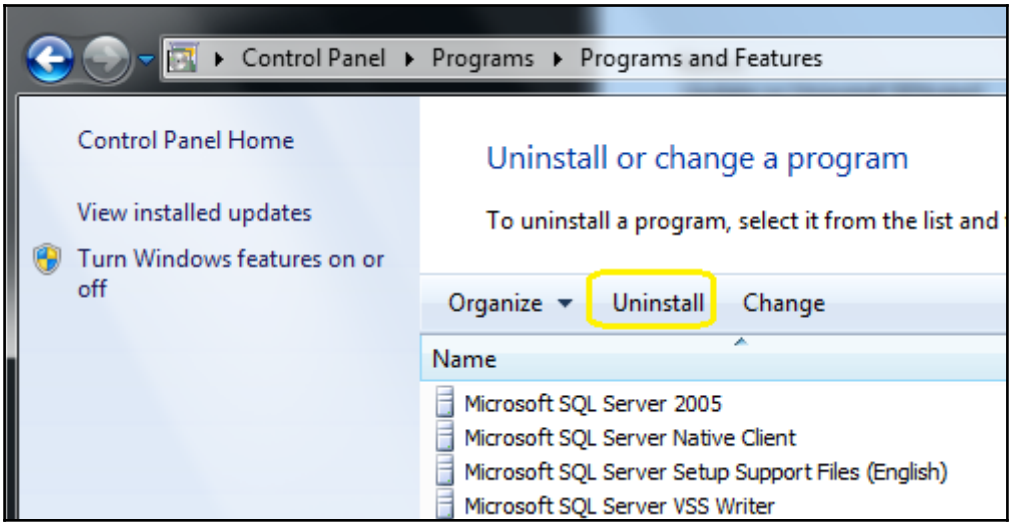
Chapter 2: Upgrading from Previous Versions

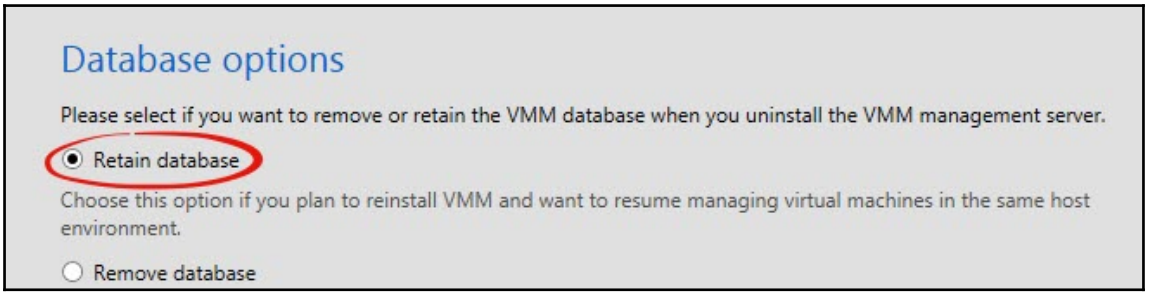
Product	End of mainstream support	End of extended support
VMM 2008 R2	Not applicable*	Not applicable*
VMM 2008 R2 SP1	4/8/2014	4/9/2019
VMM 2012	Not applicable*	Not applicable*
VMM 2012 SP1	11/07/2017	12/07/2022
VMM 2012 R2	7/11/2017	7/12/2022
VMM 2016	1/11/2022	1/11/2027
*The latest service pack is required to receive support (see dates for SP1)		

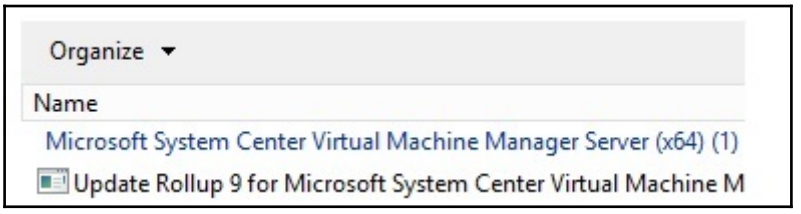

You cannot upgrade from the currently installed version of VMM to System Center 2012 SP1 - Virtual Machine Manager. You must first uninstall VMM, and then install System Center 2012 SP1. If you are running System Center 2012, when you uninstall VMM, you can retain the database. When you install System Center 2012 SP1, use the retained database.

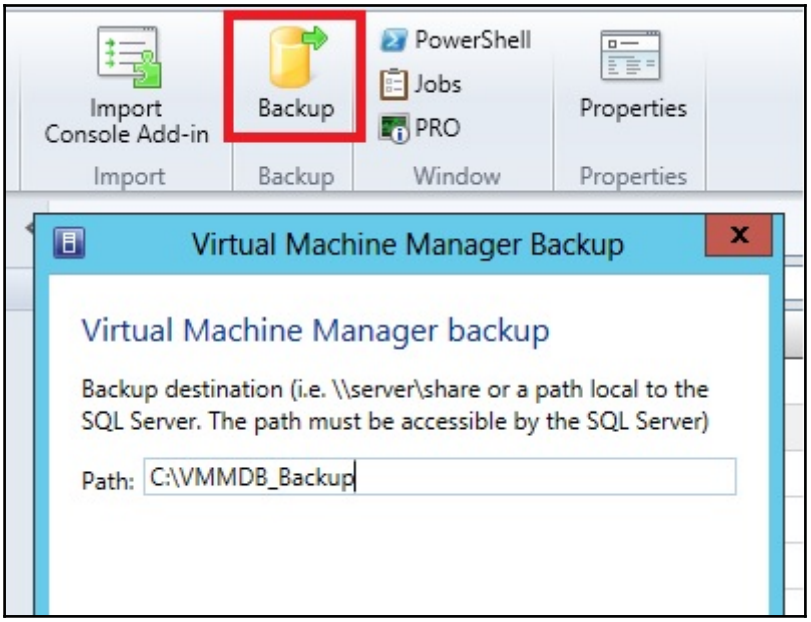

Windows Remote Management (WS-Management)
Start the service
Description:
Windows Remote Management (WinRM) service implements the WS-Management protocol for remote management. WS-Management is a standard web services protocol used for remote software and hardware management. The WinRM service listens on the network for WS-Management requests and processes them. The WinRM
Extended
Standard
Name
Description
Status
Startup Type
Windows Installer
Adds, modi...
Manual
Windows Management Inst...
Provides a c...
Running
Automatic
Windows Modules Installer
Enables inst...
Manual
Windows Presentation Fou...
Optimizes p...
Manual
Windows Remote M
Manual
Windows Store Serv
Manual (Trig.
Windows Time
Running
Automatic
Windows Update
Running
Manual (Trig.
WinHTTP Web Prox
Running
Manual
Wired AutoConfig
Manual
WMI Performance A
Manual
Workstation
Running
Automatic
Start
Stop
Pause
Resume
Restart
All Tasks
Refresh
Properties

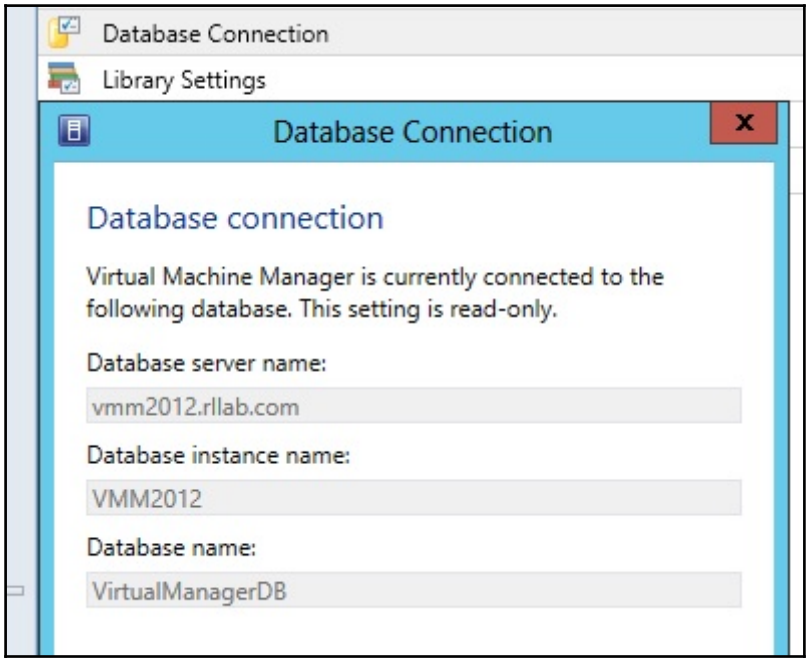

File
View
Go
Actions
Help
Actions
Columns
Jobs
PRO Tips (0)
Networking
PowerShell
Help
Administration
Administration
Overview
General
Managed Computers
Networking
User Roles
System Center
Virtualization Managers
User Roles
User Roles (1)
Search
Profile Type
Name
Description
Profile Type: Administrator
Administrator
Administrator User Role
Actions
Virtual Machine Manager
New virtual machine
Convert physical server
Convert virtual machine
Add library server
Add host
Add VMware VirtualCenter server
Help
Administration Actions
Back up Virtual Machine Manager

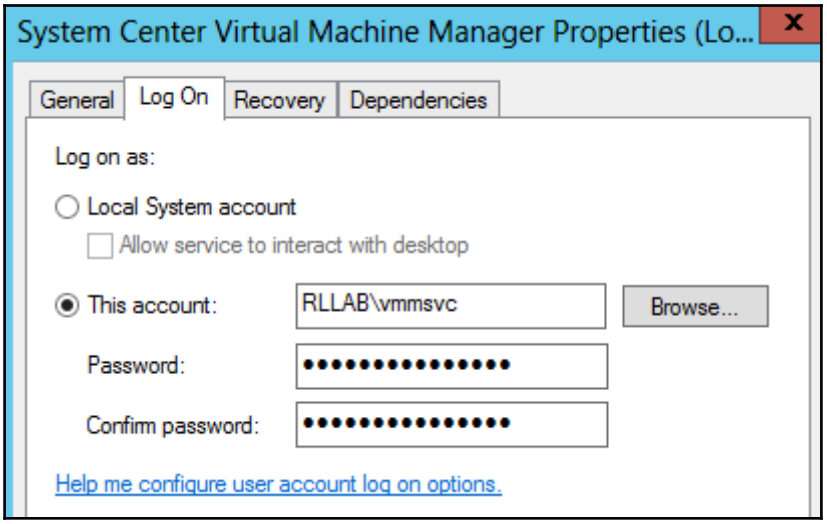

Control Panel ▸ Programs ▸ Programs and Features
Control Panel Home
View installed updates
Turn Windows features on or off
Uninstall or change a program
To uninstall a program, select it from the list and
Organize
Uninstall
Change
Name
Microsoft SQL Server 2005
Microsoft SQL Server Native Client
Microsoft SQL Server Setup Support Files (English)
Microsoft SQL Server VSS Writer

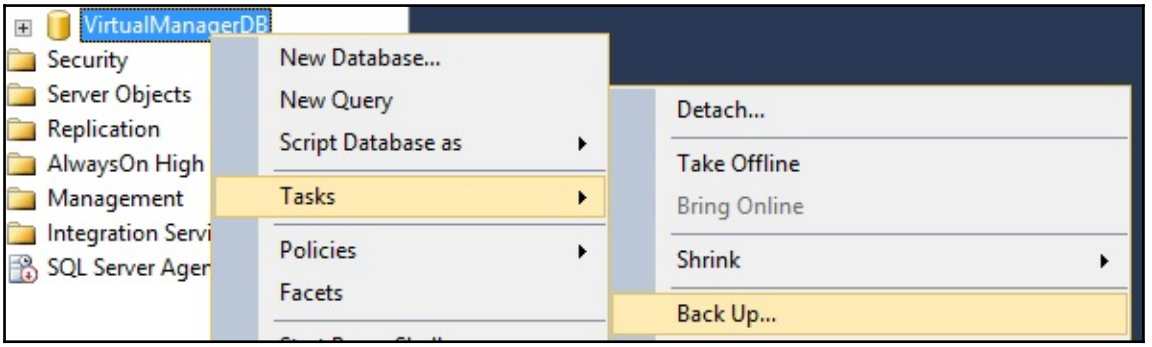

Database options
Please select if you want to remove or retain the VMM database when you uninstall the VMM management server.
Retain database
Choose this option if you plan to reinstall VMM and want to resume managing virtual machines in the same host environment.
Remove database

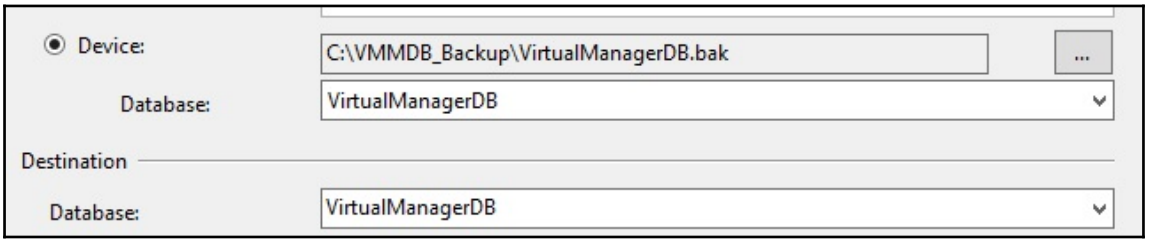

Organize
Name
Microsoft System Center Virtual Machine Manager Server (x64) (1)
Update Rollup 9 for Microsoft System Center Virtual Machine M


Import
Console Add-in
Import
Backup
Backup
PowerShell
Jobs
PRO
Window
Properties
Properties
Virtual Machine Manager Backup
Virtual Machine Manager backup
Backup destination (i.e. \\server\share or a path local to the SQL Server. The path must be accessible by the SQL Server)
Path:
C:\VMMDB_Backup

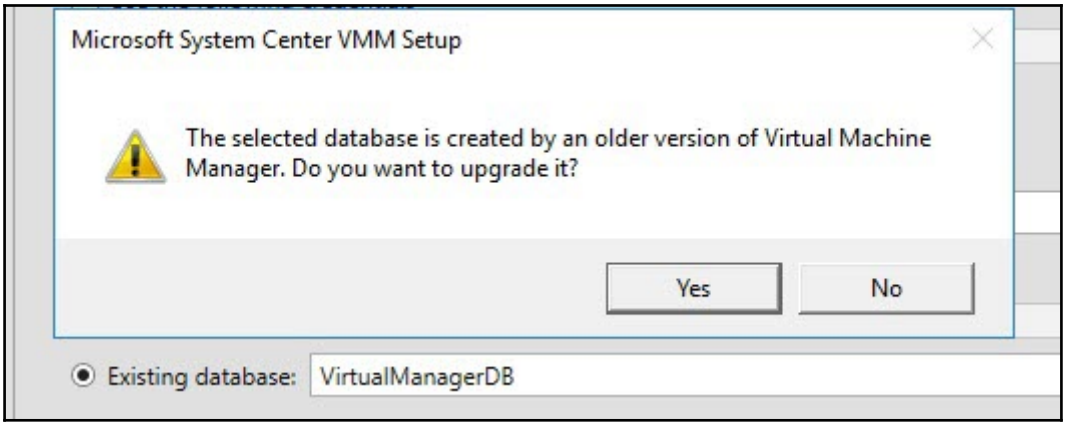

Database Connection
Library Settings
Database Connection
Database connection
Virtual Machine Manager is currently connected to the following database. This setting is read-only.
Database server name:
vmm2012.rllab.com
Database instance name:
VMM2012
Database name:
VirtualManagerDB

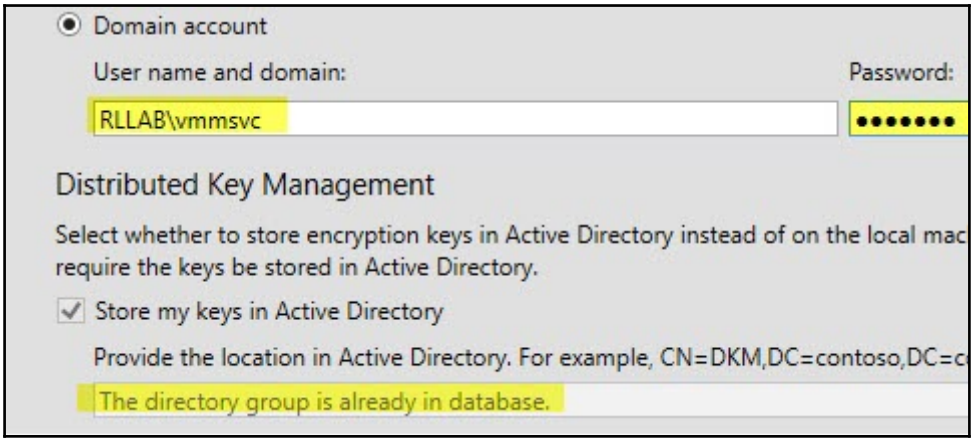

System Center Virtual Machine Manager Properties (Lo...
General
Log On
Recovery
Dependencies
Log on as:
Local System account
Allow service to interact with desktop
This account:
RLLAB\vmmsvc
Browse...
Password:
Confirm password:
Help me configure user account log on options.

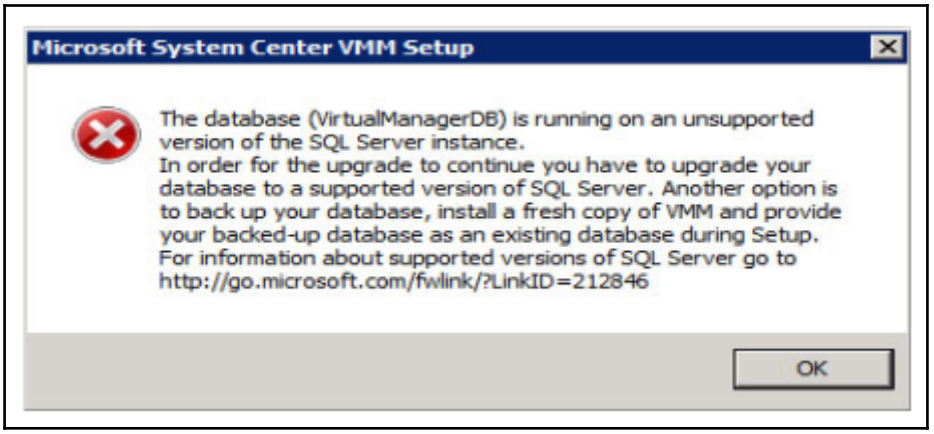

VirtualManagerDB
Security
Server Objects
Replication
AlwaysOn High
Management
Integration Servi
SQL Server Ager
New Database...
New Query
Script Database as
Tasks
Policies
Facets
Detach...
Take Offline
Bring Online
Shrink
Back Up...

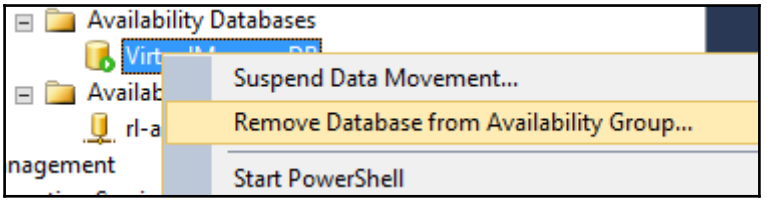

Device:
C:\VMMDB_Backup\VirtualManagerDB.bak
...
Database:
VirtualManagerDB
Destination
Database:
VirtualManagerDB

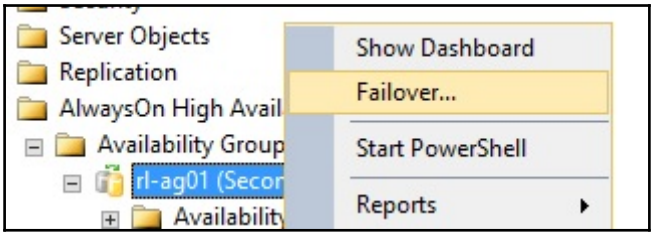

Click a feature name for more information.
Application Compatibility Tools
Deployment Tools
Windows Preinstallation Environment (Windows PE)

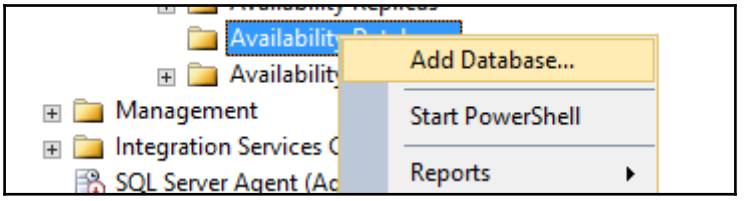

Microsoft System Center VMM Setup
The selected database is created by an older version of Virtual Machine Manager. Do you want to upgrade it?
Yes
No
Existing database:
VirtualManagerDB

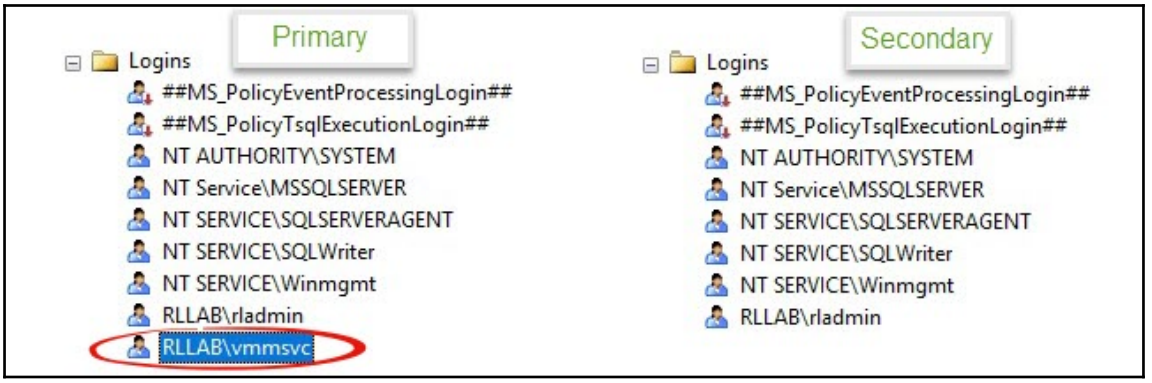

Domain account
User name and domain:
Password:
RLLAB\vmmsvc
Distributed Key Management
Select whether to store encryption keys in Active Directory instead of on the local mac
require the keys be stored in Active Directory.
Store my keys in Active Directory
Provide the location in Active Directory. For example, CN=DKM,DC=contoso,DC=c
The directory group is already in database.

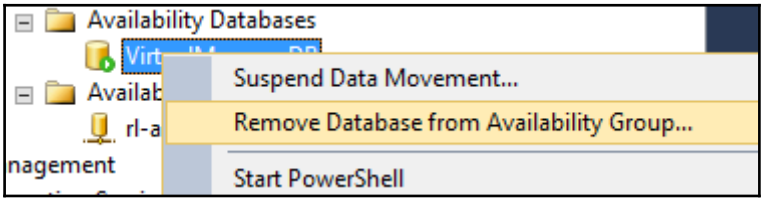

Microsoft System Center VMM Setup
The database (VirtualManagerDB) is running on an unsupported version of the SQL Server instance.
In order for the upgrade to continue you have to upgrade your database to a supported version of SQL Server. Another option is to back up your database, install a fresh copy of VMM and provide your backed-up database as an existing database during Setup.
For information about supported versions of SQL Server go to http://go.microsoft.com/fwlink/?LinkID=212846
OK

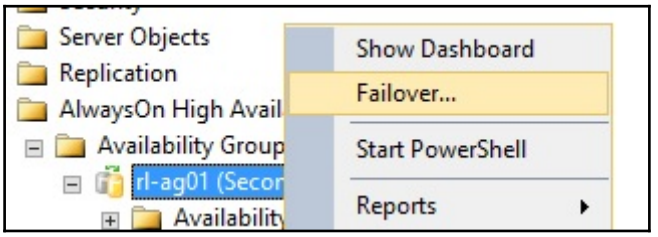

Availability Databases
Suspend Data Movement...
Remove Database from Availability Group...
Start PowerShell

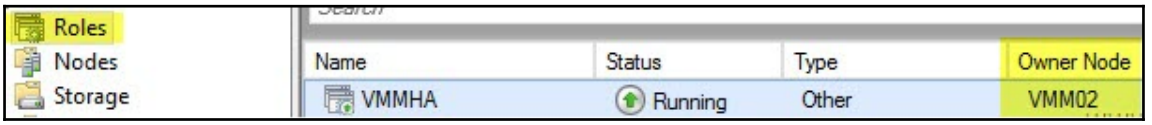

Server Objects
Replication
AlwaysOn High Avail
Availability Group
Show Dashboard
Failover...
Start PowerShell
Reports

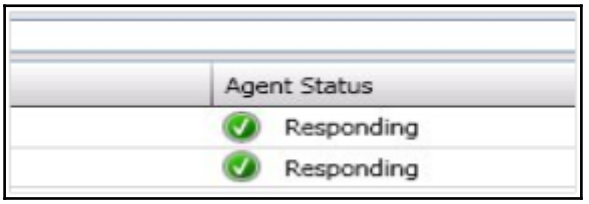

Add Database...
Start PowerShell
Reports
Management
Integration Services
SQL Server Agent

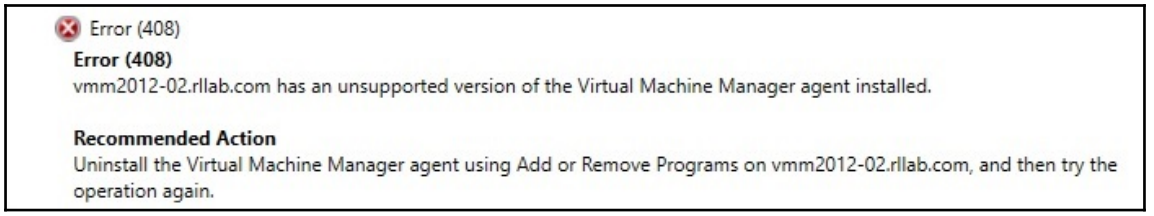

Primary
Logins
##MS_PolicyEventProcessingLogin##
##MS_PolicyTsqlExecutionLogin##
NT AUTHORITY\SYSTEM
NT Service\MSSQLSERVER
NT SERVICE\SQLSERVERAGENT
NT SERVICE\SQLWriter
NT SERVICE\Winmgmt
RLLAB\rladmin
RLLAB\vmmsvc
Secondary
Logins
##MS_PolicyEventProcessingLogin##
##MS_PolicyTsqlExecutionLogin##
NT AUTHORITY\SYSTEM
NT Service\MSSQLSERVER
NT SERVICE\SQLSERVERAGENT
NT SERVICE\SQLWriter
NT SERVICE\Winmgmt
RLLAB\rladmin


Availability Databases
Suspend Data Movement...
Remove Database from Availability Group...
Start PowerShell
nagement

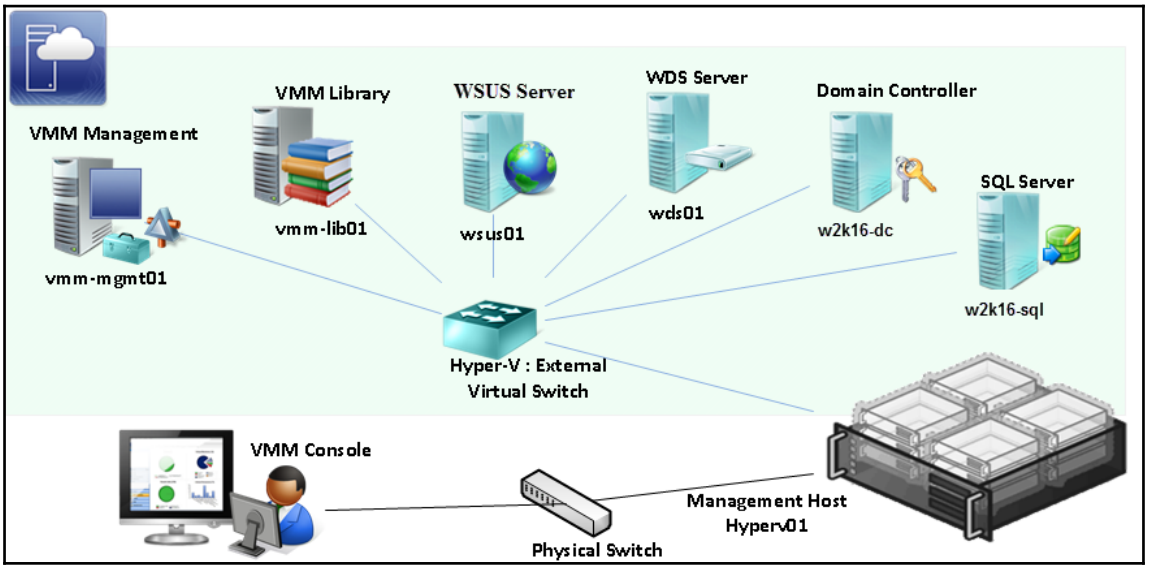

Server Objects
Replication
AlwaysOn High Avail
Availability Group
Show Dashboard
Failover...
Start PowerShell
Reports

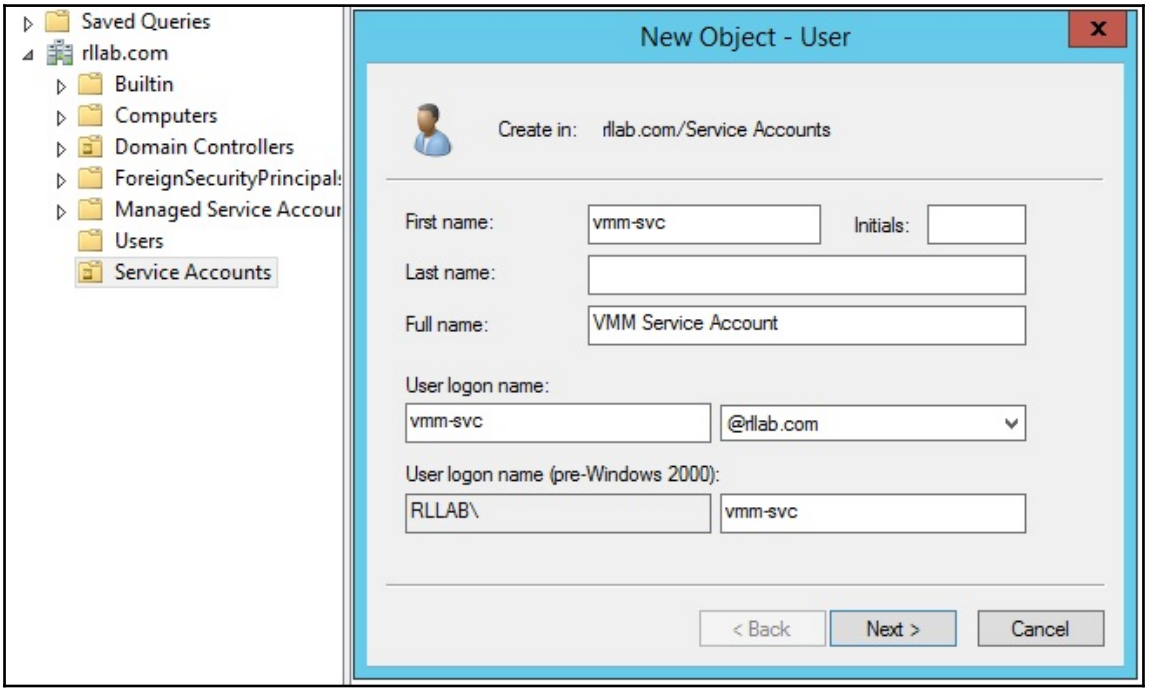

Roles
Nodes
Storage
Name
Status
Type
Owner Node
VMMHA
Running
Other
VMM02

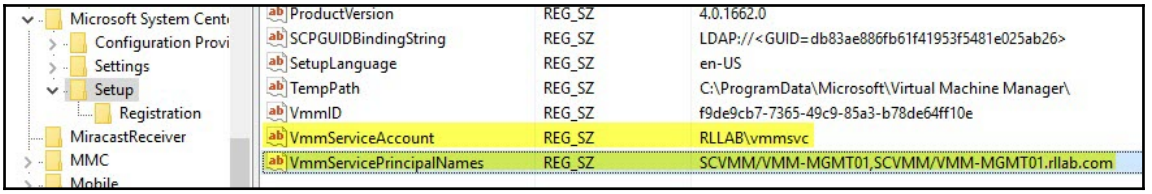

Agent Status
Responding
Responding

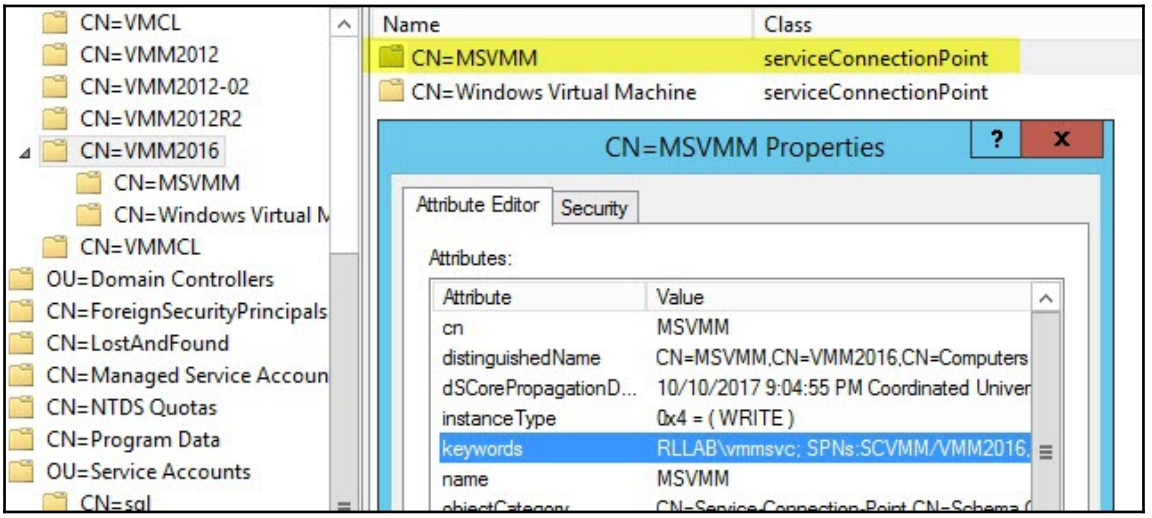

Error (408)
Error (408)
vmm2012-02.rllab.com has an unsupported version of the Virtual Machine Manager agent installed.
Recommended Action
Uninstall the Virtual Machine Manager agent using Add or Remove Programs on vmm2012-02.rllab.com, and then try the operation again.

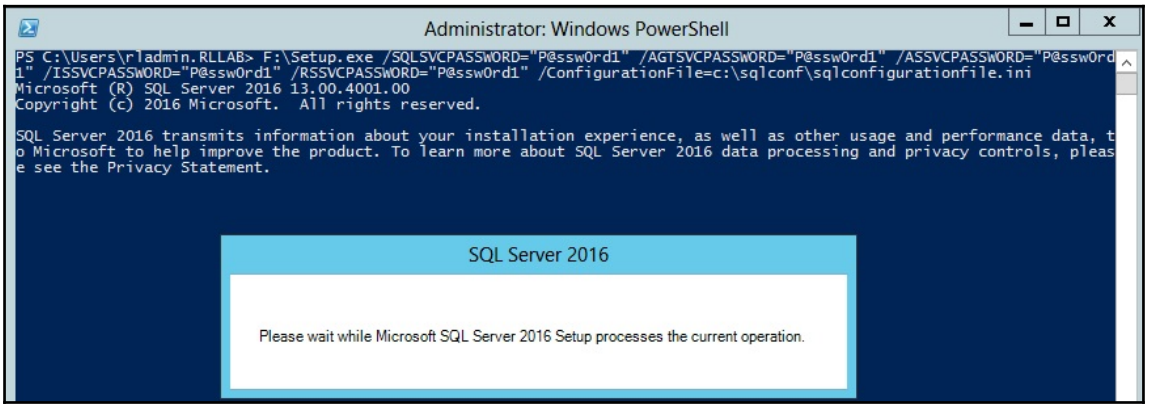
Chapter 3: Installing VMM 2016

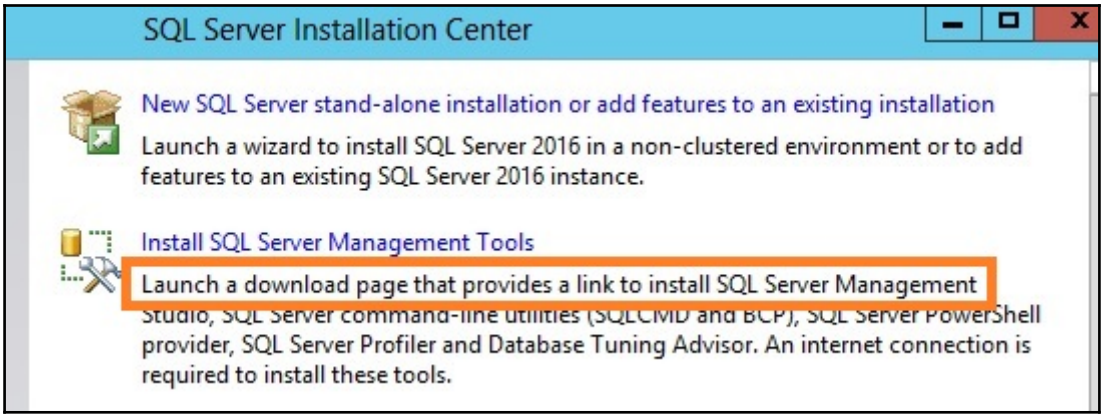


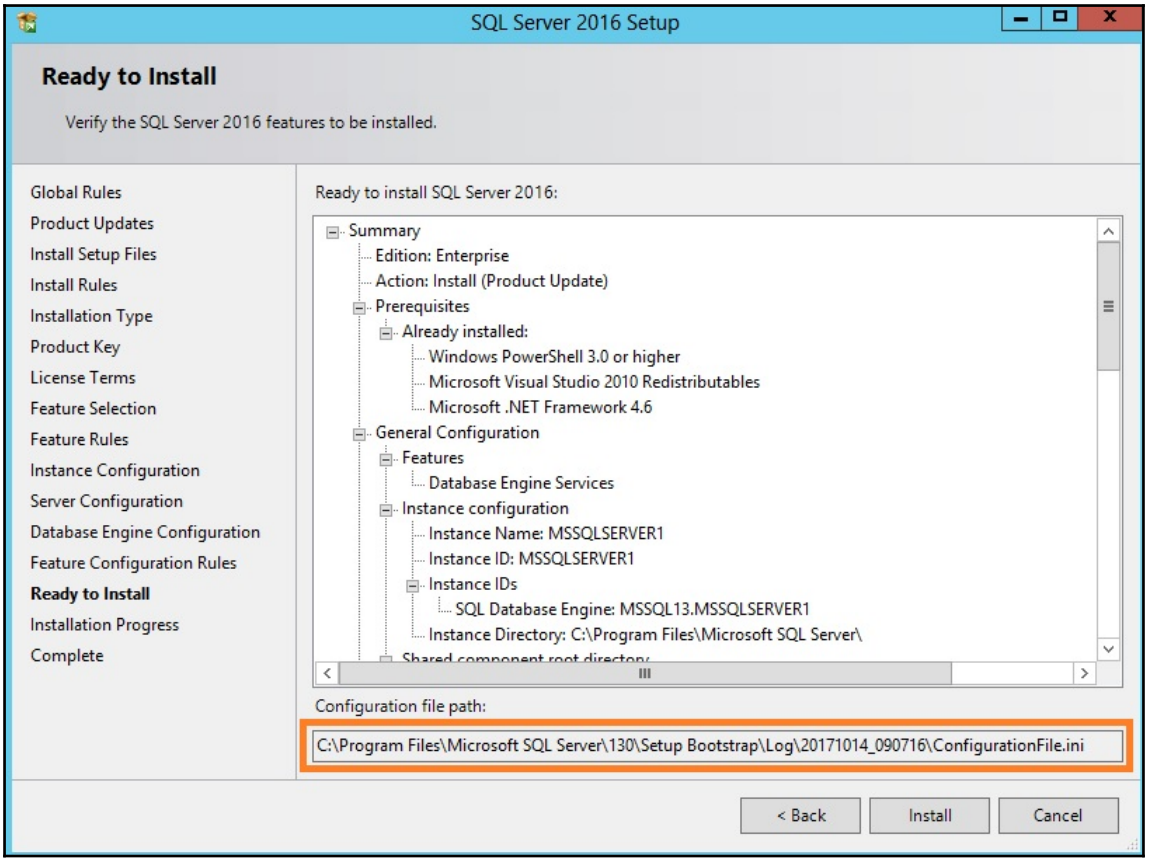


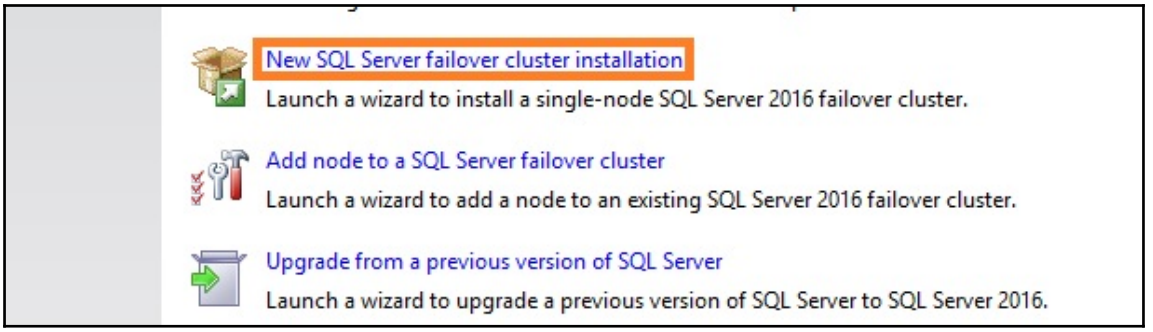

Microsoft System Cent
Configuration Provi
Settings
Setup
Registration
MiracastReceiver
MMC
Mobile
ProductVersion REG_SZ 4.0.1662.0
SCPGUIDBindingString REG_SZ LDAP://<GUID=db83ae886fb61f41953f5481e025ab26>
SetupLanguage REG_SZ en-US
TempPath REG_SZ C:\ProgramData\Microsoft\Virtual Machine Manager\
VmmID REG_SZ f9de9cb7-7365-49c9-85a3-b78de64ff10e
VmmServiceAccount REG_SZ RLLAB\vmmsvc
VmmServicePrincipalNames REG_SZ SCVMM/VMM-MGMT01,SCVMM/VMM-MGMT01.rllab.com

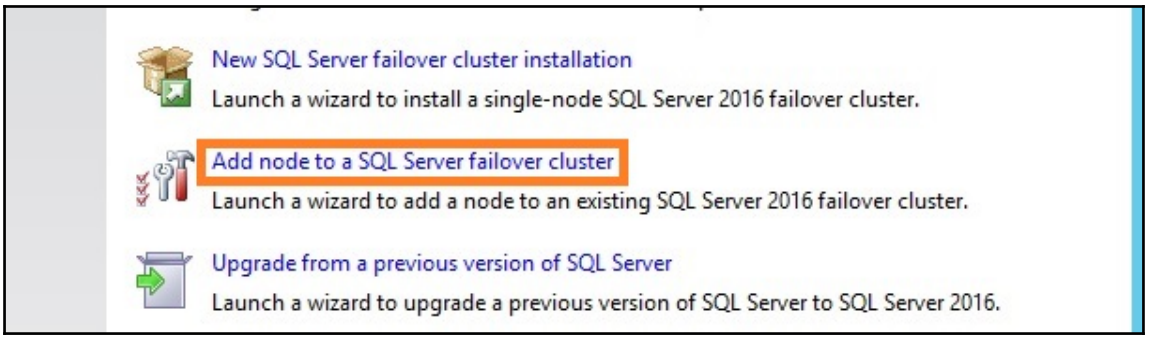

CN=VMCL
CN=VMM2012
CN=VMM2012-02
CN=VMM2012R2
CN=VMM2016
CN=MSVMM
CN=Windows Virtual M
CN=VMMCL
OU=Domain Controllers
CN=ForeignSecurityPrincipals
CN=LostAndFound
CN=Managed Service Accoun
CN=NTDS Quotas
CN=Program Data
OU=Service Accounts
CN=sql
Name
Class
CN=MSVMM
serviceConnectionPoint
CN=Windows Virtual Machine
serviceConnectionPoint
CN=MSVMM Properties
Attribute Editor
Security
Attributes:
Attribute
Value
cn
MSVMM
distinguishedName
CN=MSVMM,CN=VMM2016,CN=Computers
dSCorePropagationD...
10/10/2017 9:04:55 PM Coordinated Univer
instanceType
0x4 = (WRITE)
keywords
RLLAB\vmmsvc; SPNs:SCVMM/VMM2016,
name
MSVMM

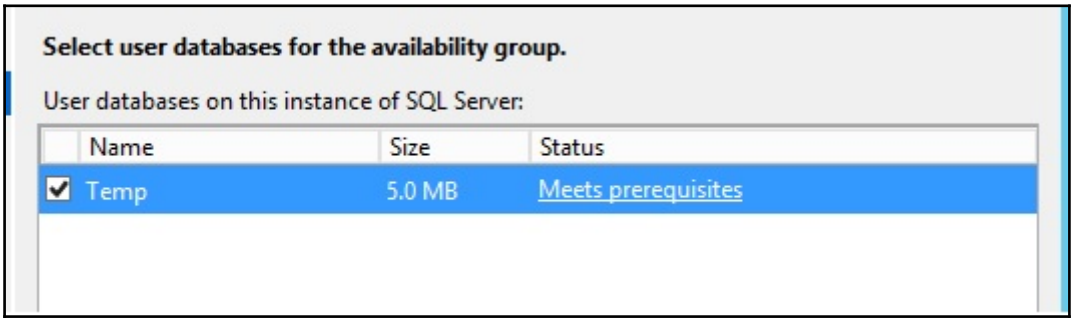

Administrator: Windows PowerShell
PS C:\Users\rladmin.RLLAB> F:\Setup.exe /SQLSVCPASSWORD="P@ssw0rd1" /AGTSVCPASSWORD="P@ssw0rd1" /ASSVCPASSWORD="P@ssw0rd1" /ISSVCPASSWORD="P@ssw0rd1" /RSSVCPASSWORD="P@ssw0rd1" /ConfigurationFile=c:\sqlconf\sqlconfigurationfile.ini
Microsoft (R) SQL Server 2016 13.00.4001.00
Copyright (c) 2016 Microsoft. All rights reserved.
SQL Server 2016 transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about SQL Server 2016 data processing and privacy controls, please see the Privacy Statement.
SQL Server 2016
Please wait while Microsoft SQL Server 2016 Setup processes the current operation.

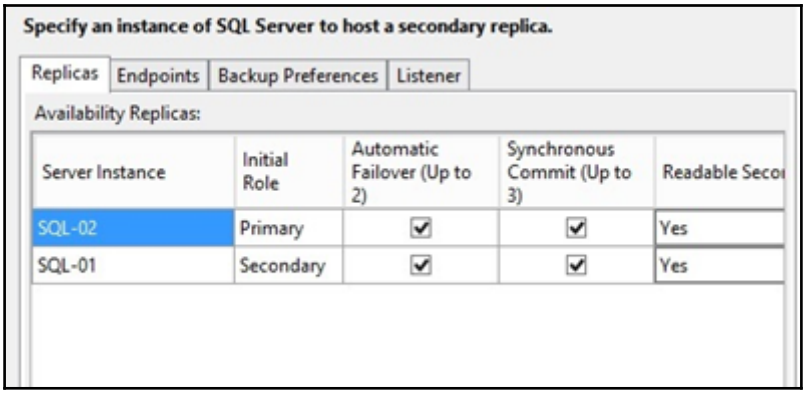

SQL Server Installation Center
New SQL Server stand-alone installation or add features to an existing installation
Launch a wizard to install SQL Server 2016 in a non-clustered environment or to add features to an existing SQL Server 2016 instance.
Install SQL Server Management Tools
Launch a download page that provides a link to install SQL Server Management
provider, SQL Server Profiler and Database Tuning Advisor. An internet connection is required to install these tools.

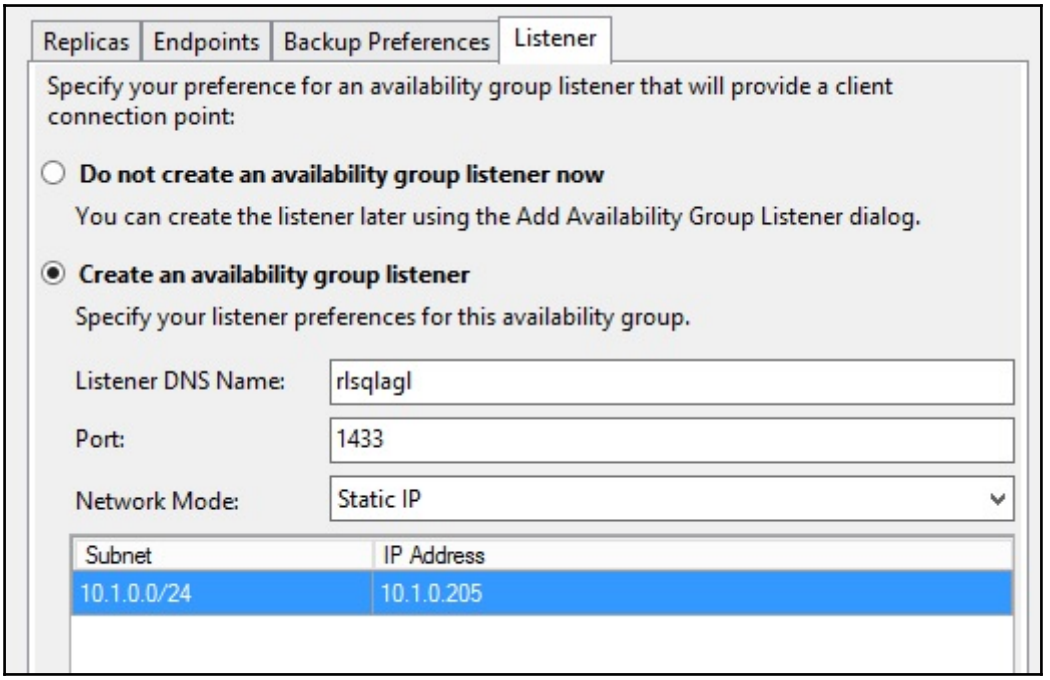

SQL Server 2016 Setup
Ready to Install
Verify the SQL Server 2016 features to be installed.
Global Rules
Product Updates
Install Setup Files
Install Rules
Installation Type
Product Key
License Terms
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Ready to install SQL Server 2016:
Summary
Edition: Enterprise
Action: Install (Product Update)
Prerequisites
Already installed:
Windows PowerShell 3.0 or higher
Microsoft Visual Studio 2010 Redistributables
Microsoft .NET Framework 4.6
General Configuration
Features
Database Engine Services
Instance configuration
Instance Name: MSSQLSERVER1
Instance ID: MSSQLSERVER1
Instance IDs
SQL Database Engine: MSSQL13.MSSQLSERVER1
Instance Directory: C:\Program Files\Microsoft SQL Server\
Configuration file path:
C:\Program Files\Microsoft SQL Server\130\Setup Bootstrap\Log\20171014_090716\ConfigurationFile.ini
< Back
Install
Cancel

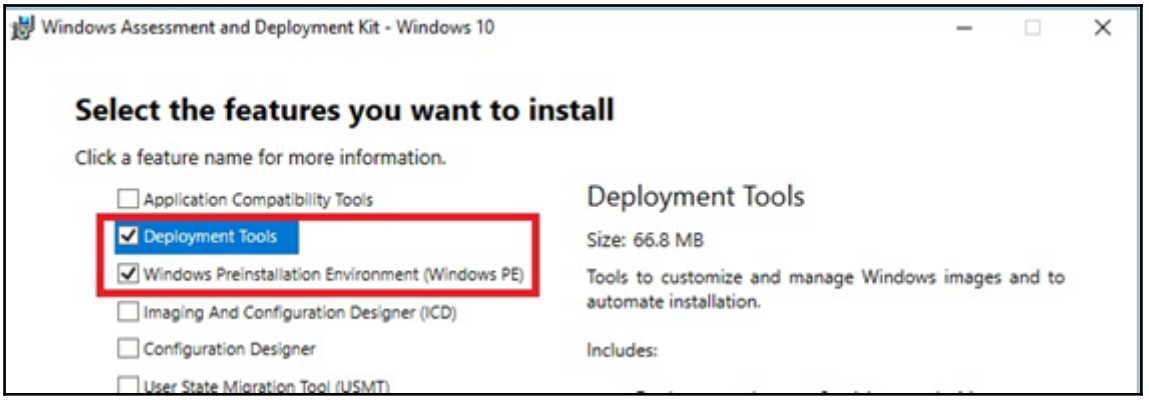

New SQL Server failover cluster installation
Launch a wizard to install a single-node SQL Server 2016 failover cluster.
Add node to a SQL Server failover cluster
Launch a wizard to add a node to an existing SQL Server 2016 failover cluster.
Upgrade from a previous version of SQL Server
Launch a wizard to upgrade a previous version of SQL Server to SQL Server 2016.

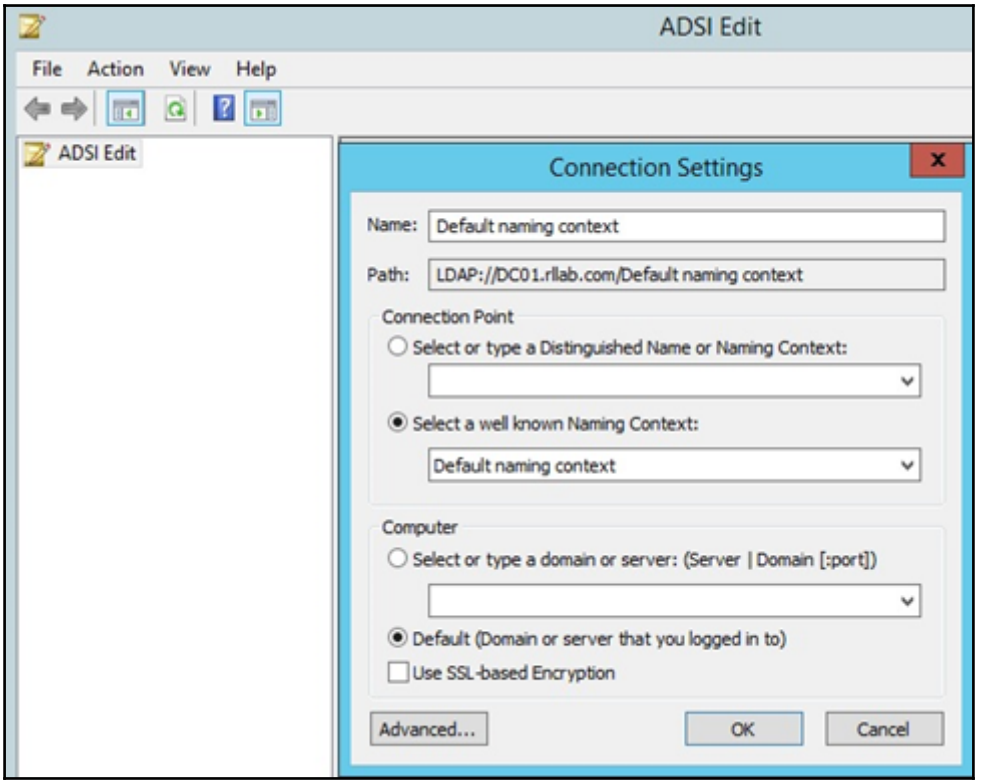

New SQL Server failover cluster installation
Launch a wizard to install a single-node SQL Server 2016 failover cluster.
Add node to a SQL Server failover cluster
Launch a wizard to add a node to an existing SQL Server 2016 failover cluster.
Upgrade from a previous version of SQL Server
Launch a wizard to upgrade a previous version of SQL Server to SQL Server 2016.

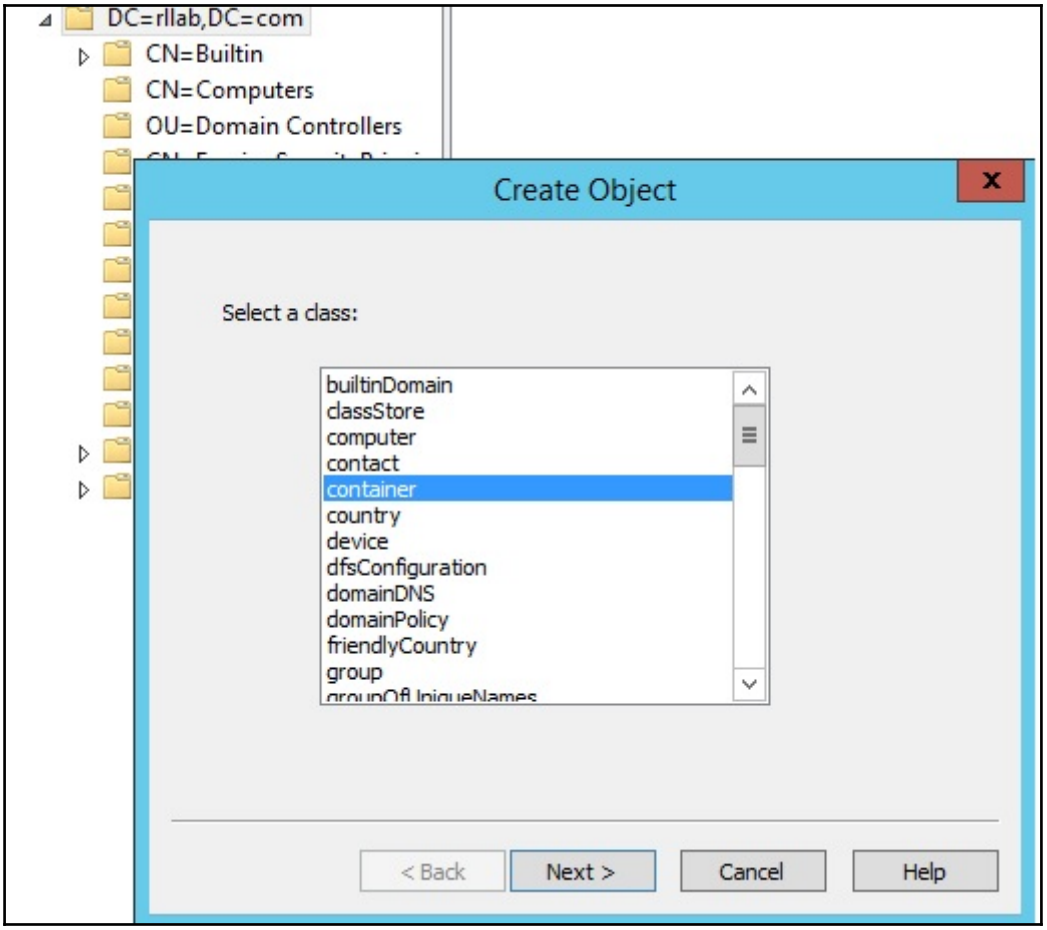

Select user databases for the availability group.
User databases on this instance of SQL Server:
Name
Size
Status
Temp
5.0 MB
Meets prerequisites

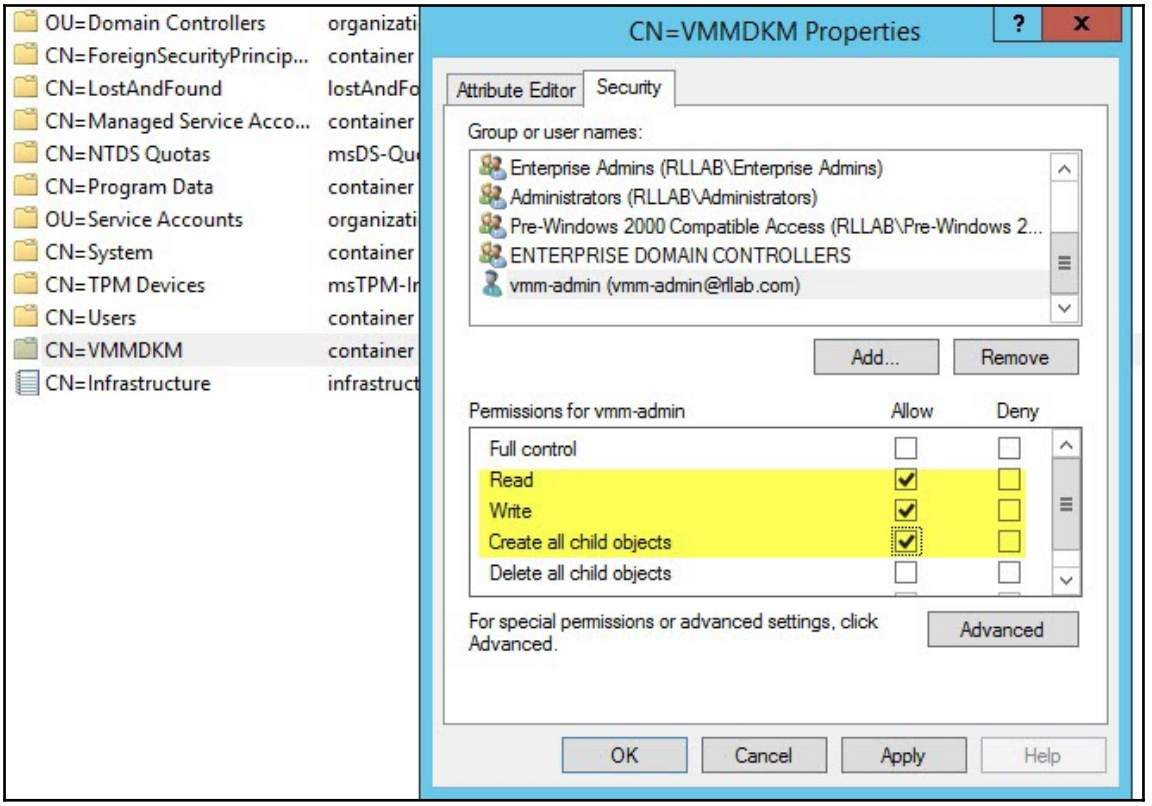

Specify an instance of SQL Server to host a secondary replica.
Replicas
Endpoints
Backup Preferences
Listener
Availability Replicas:
Server Instance
Initial Role
Automatic Failover (Up to 2)
Synchronous Commit (Up to 3)
Readable Seco
SQL-02
Primary
Yes
SQL-01
Secondary
Yes

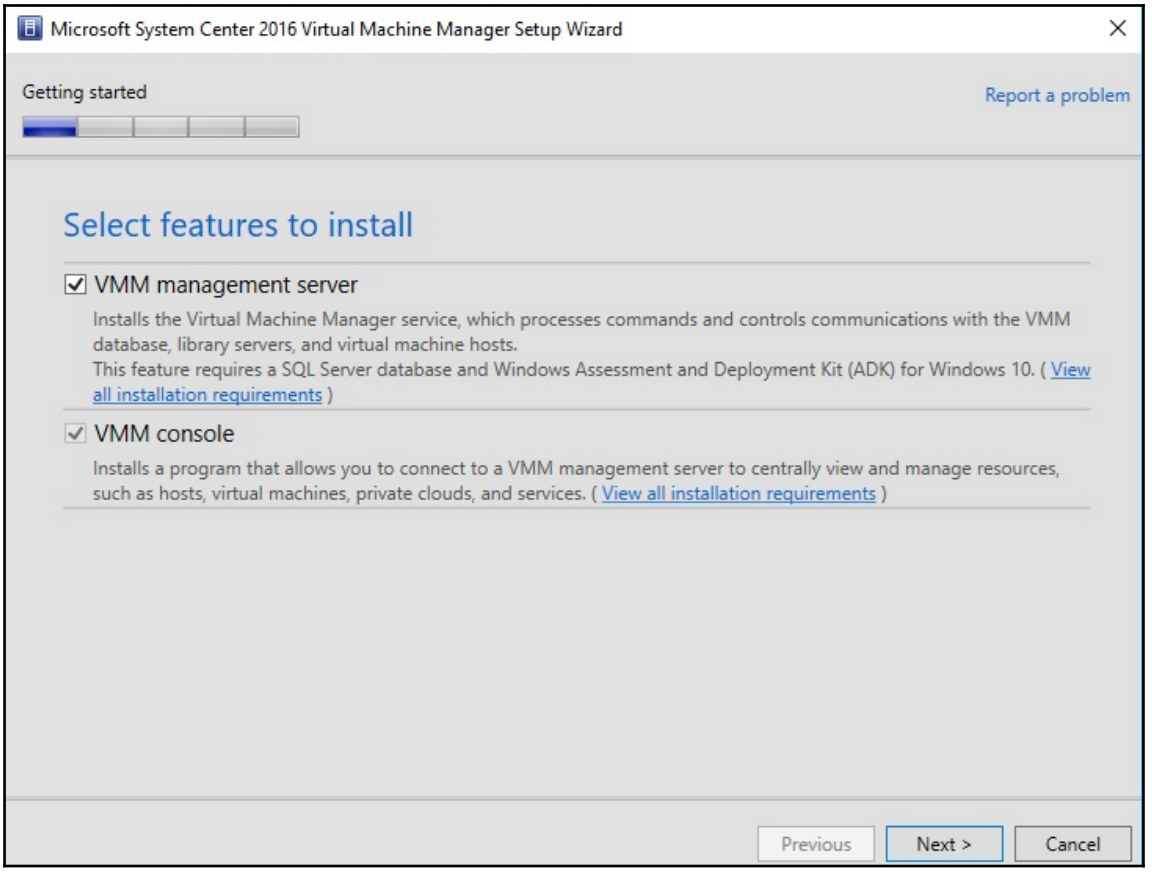

Replicas
Endpoints
Backup Preferences
Listener
Specify your preference for an availability group listener that will provide a client connection point:
Do not create an availability group listener now
You can create the listener later using the Add Availability Group Listener dialog.
Create an availability group listener
Specify your listener preferences for this availability group.
Listener DNS Name:
rlsqlagl
Port:
1433
Network Mode:
Static IP
Subnet
IP Address
10.1.0.0/24
10.1.0.205

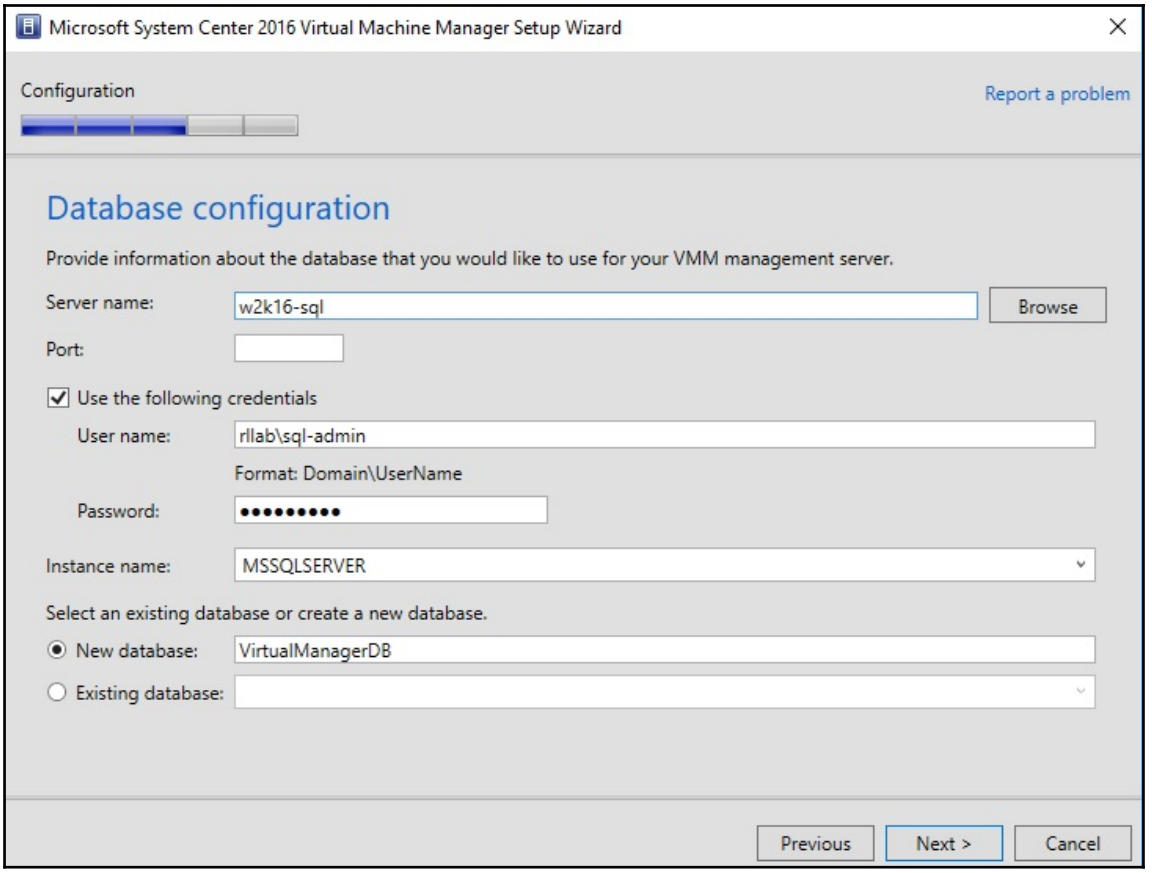

Windows Assessment and Deployment Kit - Windows 10
Select the features you want to install
Click a feature name for more information.
Application Compatibility Tools
Deployment Tools
Windows Preinstallation Environment (Windows PE)
Imaging And Configuration Designer (ICD)
Configuration Designer
User State Migration Tool (USMT)
Deployment Tools
Size: 66.8 MB
Tools to customize and manage Windows images and to automate installation.
Includes:

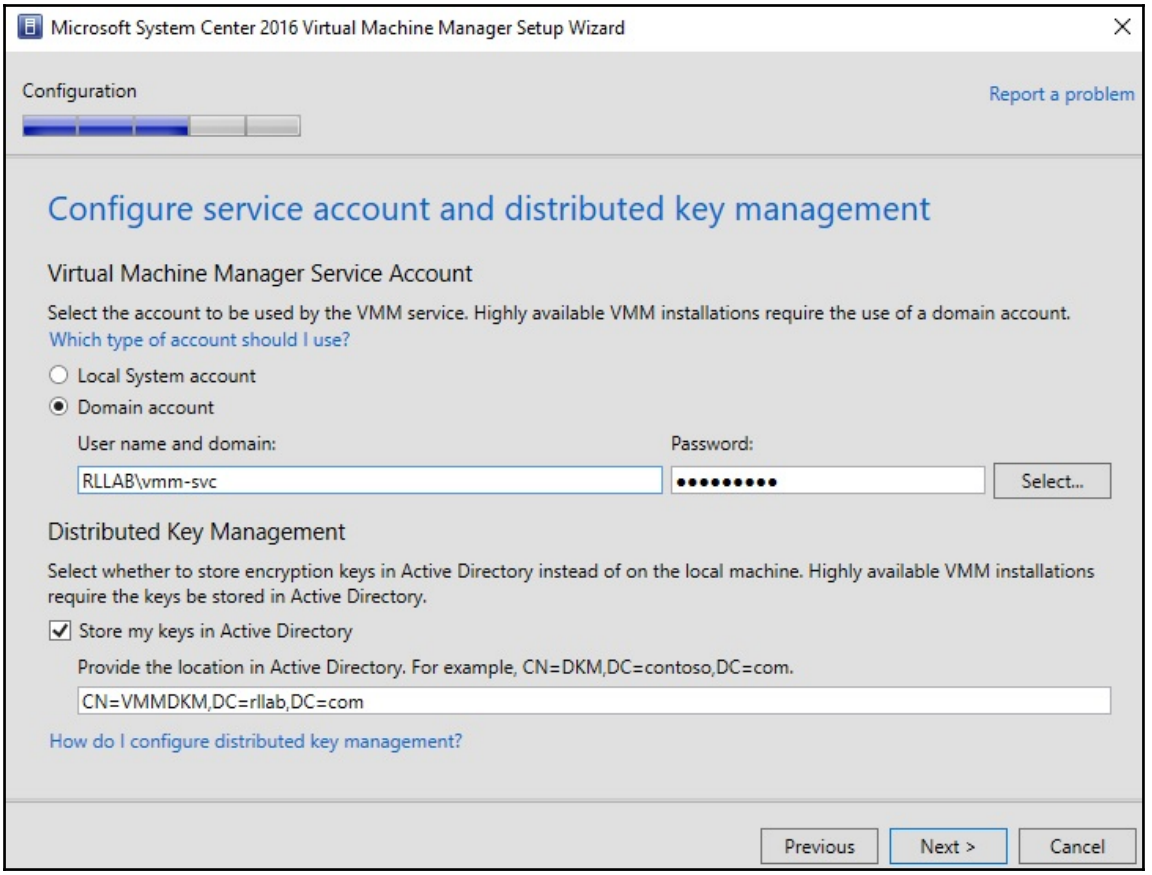

ADSI Edit
File Action View Help
ADSI Edit
Connection Settings
Name: Default naming context
Path: LDAP://DC01.rllab.com/Default naming context
Connection Point
Select or type a Distinguished Name or Naming Context:
Select a well known Naming Context:
Default naming context
Computer
Select or type a domain or server: (Server | Domain [:port])
Default (Domain or server that you logged in to)
Use SSL-based Encryption
Advanced...
OK
Cancel

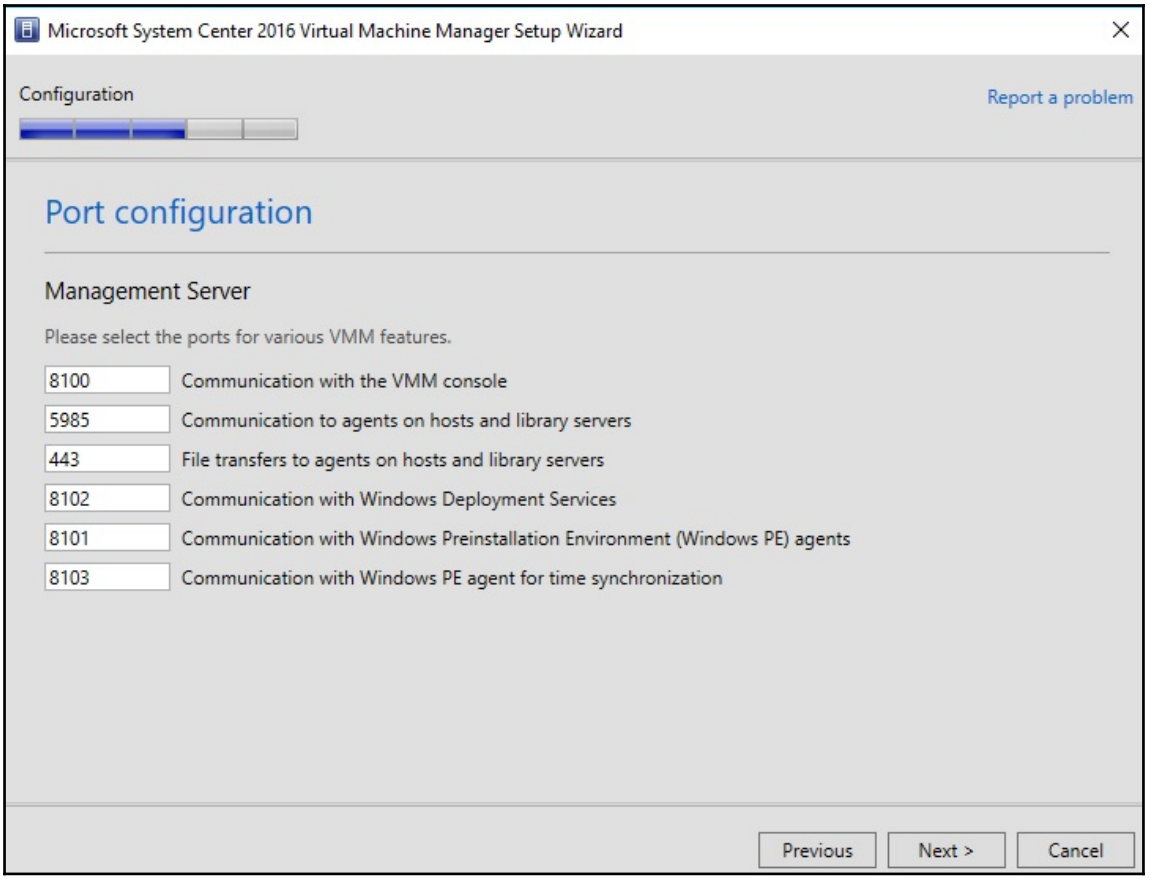

DC=rllab,DC=com
CN=Builtin
CN=Computers
OU=Domain Controllers
Create Object
Select a class:
builtinDomain
classStore
computer
contact
container
country
device
dfsConfiguration
domainDNS
domainPolicy
friendlyCountry
group
< Back
Next >
Cancel
Help

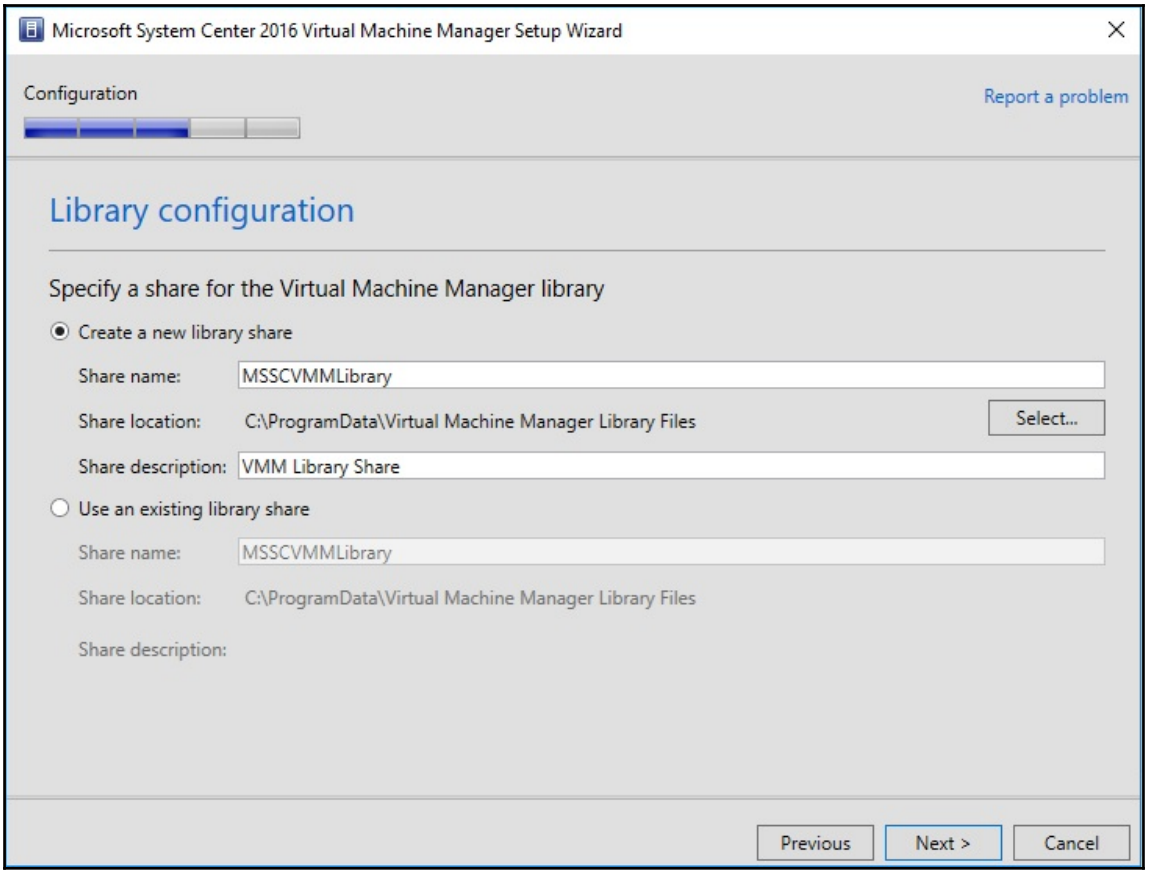

OU=Domain Controllers
organizati
CN=ForeignSecurityPrincip...
container
CN=LostAndFound
lostAndFo
CN=Managed Service Acco...
container
CN=NTDS Quotas
msDS-Qu
CN=Program Data
container
OU=Service Accounts
organizati
CN=System
container
CN=TPM Devices
msTPM-In
CN=Users
container
CN=VMMDKM
container
CN=Infrastructure
infrastruct
CN=VMMDKM Properties
Attribute Editor
Security
Group or user names:
Enterprise Admins (RLLAB\Enterprise Admins)
Administrators (RLLAB\Administrators)
Pre-Windows 2000 Compatible Access (RLLAB\Pre-Windows 2...
ENTERPRISE DOMAIN CONTROLLERS
vmm-admin (vmm-admin@rllab.com)
Add...
Remove
Permissions for vmm-admin
Allow
Deny
Full control
Read
Write
Create all child objects
Delete all child objects
For special permissions or advanced settings, click Advanced.
Advanced
OK
Cancel
Apply
Help

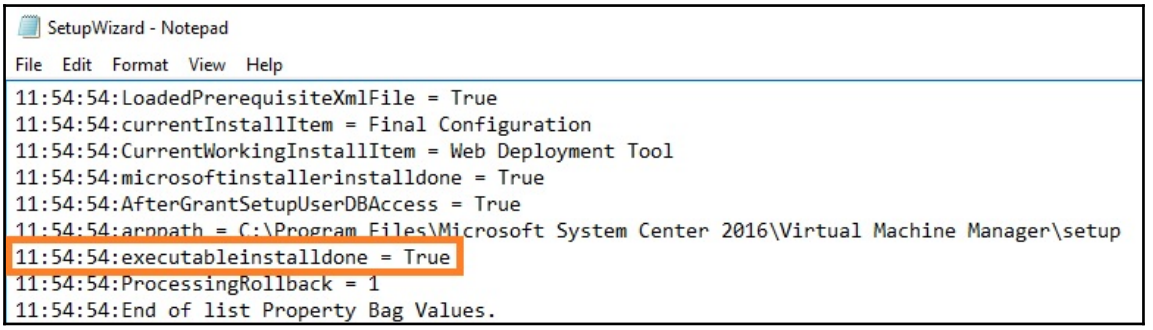

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Getting started
Report a problem
Select features to install
VMM management server
Installs the Virtual Machine Manager service, which processes commands and controls communications with the VMM database, library servers, and virtual machine hosts.
This feature requires a SQL Server database and Windows Assessment and Deployment Kit (ADK) for Windows 10. (View all installation requirements)
VMM console
Installs a program that allows you to connect to a VMM management server to centrally view and manage resources, such as hosts, virtual machines, private clouds, and services. (View all installation requirements)
Previous
Next >
Cancel

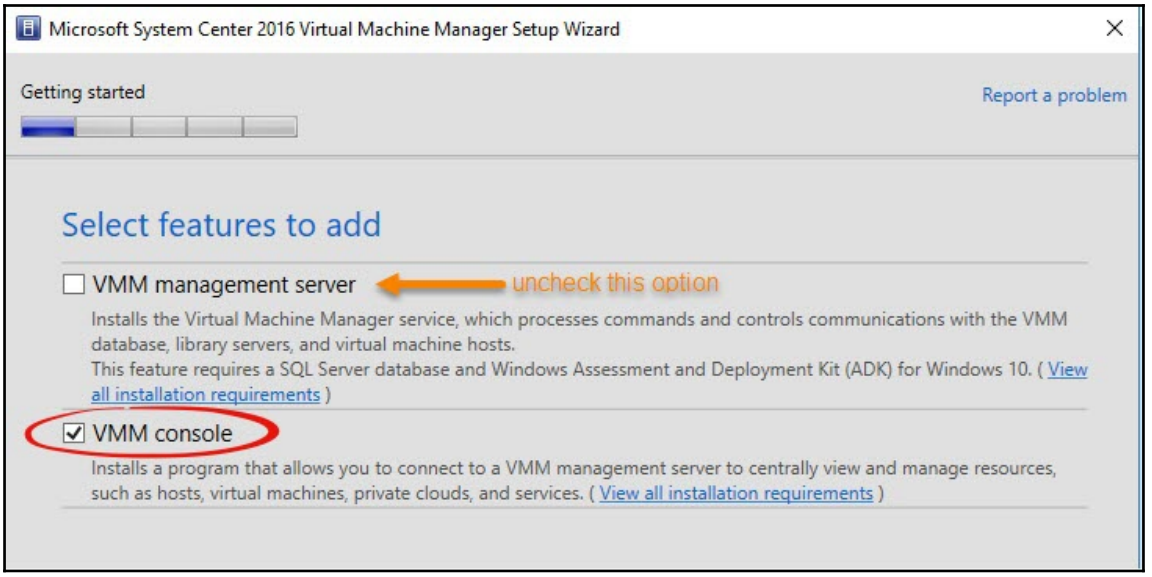

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Database configuration
Provide information about the database that you would like to use for your VMM management server.
Server name:
w2k16-sql
Browse
Port:
Use the following credentials
User name:
rllab\sql-admin
Format: Domain\UserName
Password:
Instance name:
MSSQLSERVER
Select an existing database or create a new database.
New database:
VirtualManagerDB
Existing database:
Previous
Next >
Cancel

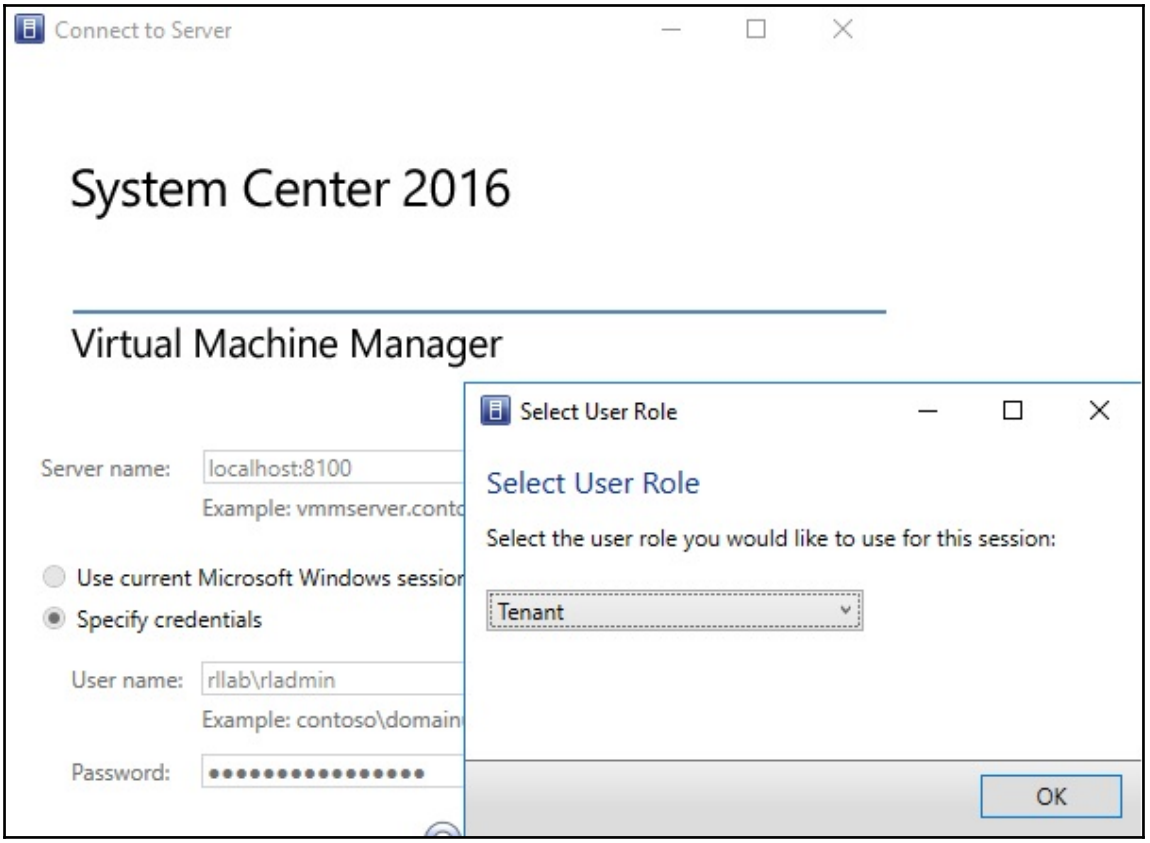

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Configure service account and distributed key management
Virtual Machine Manager Service Account
Select the account to be used by the VMM service. Highly available VMM installations require the use of a domain account.
Which type of account should I use?
Local System account
Domain account
User name and domain:
Password:
RLLAB\vmm-svc
Select...
Distributed Key Management
Select whether to store encryption keys in Active Directory instead of on the local machine. Highly available VMM installations require the keys be stored in Active Directory.
Store my keys in Active Directory
Provide the location in Active Directory. For example, CN=DKM,DC=contoso,DC=com.
CN=VMMDKM,DC=rllab,DC=com
How do I configure distributed key management?
Previous
Next >
Cancel

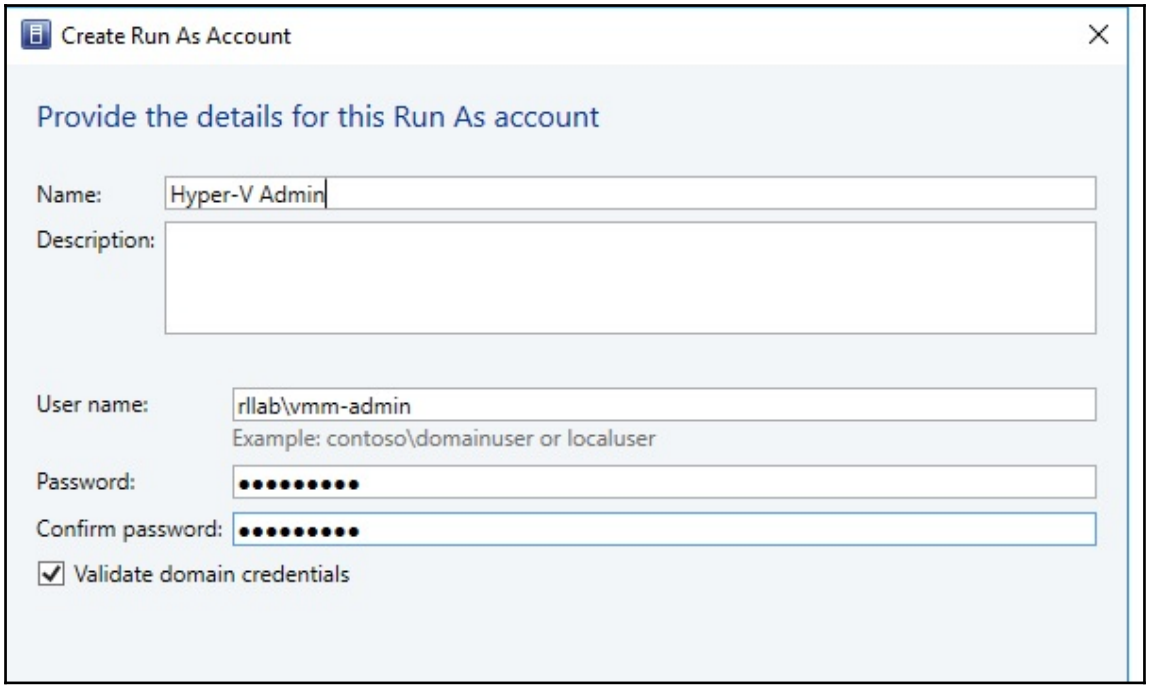

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Port configuration
Management Server
Please select the ports for various VMM features.
8100
Communication with the VMM console
5985
Communication to agents on hosts and library servers
443
File transfers to agents on hosts and library servers
8102
Communication with Windows Deployment Services
8101
Communication with Windows Preinstallation Environment (Windows PE) agents
8103
Communication with Windows PE agent for time synchronization
Previous
Next >
Cancel

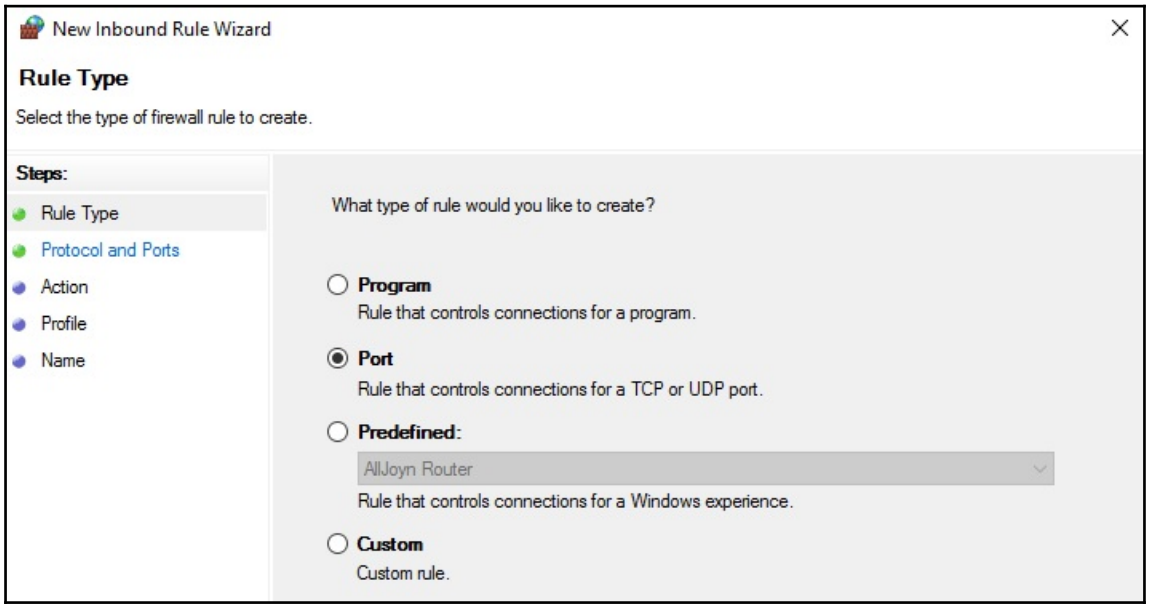

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Library configuration
Specify a share for the Virtual Machine Manager library
Create a new library share
Share name: MSSCVMMLibrary
Share location: C:\ProgramData\Virtual Machine Manager Library Files
Select...
Share description: VMM Library Share
Use an existing library share
Share name: MSSCVMMLibrary
Share location: C:\ProgramData\Virtual Machine Manager Library Files
Share description:
Previous
Next >
Cancel


SetupWizard - Notepad
File Edit Format View Help
11:54:54:LoadedPrerequisiteXmlFile = True
11:54:54:currentInstallItem = Final Configuration
11:54:54:CurrentWorkingInstallItem = Web Deployment Tool
11:54:54:microsoftinstallerinstalldone = True
11:54:54:AfterGrantSetupUserDBAccess = True
11:54:54:executableinstalldone = True
11:54:54:ProcessingRollback = 1
11:54:54:End of list Property Bag Values.

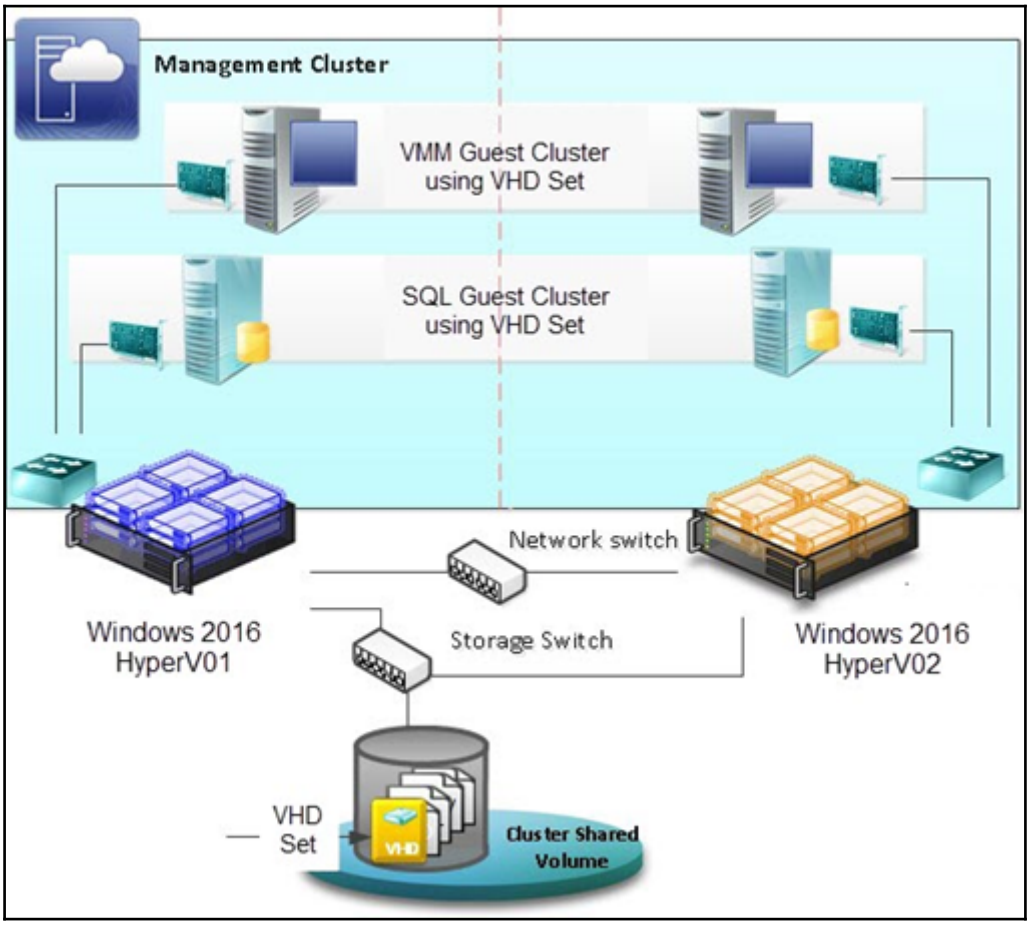

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Getting started
Report a problem
Select features to add
VMM management server
uncheck this option
Installs the Virtual Machine Manager service, which processes commands and controls communications with the VMM database, library servers, and virtual machine hosts.
This feature requires a SQL Server database and Windows Assessment and Deployment Kit (ADK) for Windows 10. (View all installation requirements)
VMM console
Installs a program that allows you to connect to a VMM management server to centrally view and manage resources, such as hosts, virtual machines, private clouds, and services. (View all installation requirements)

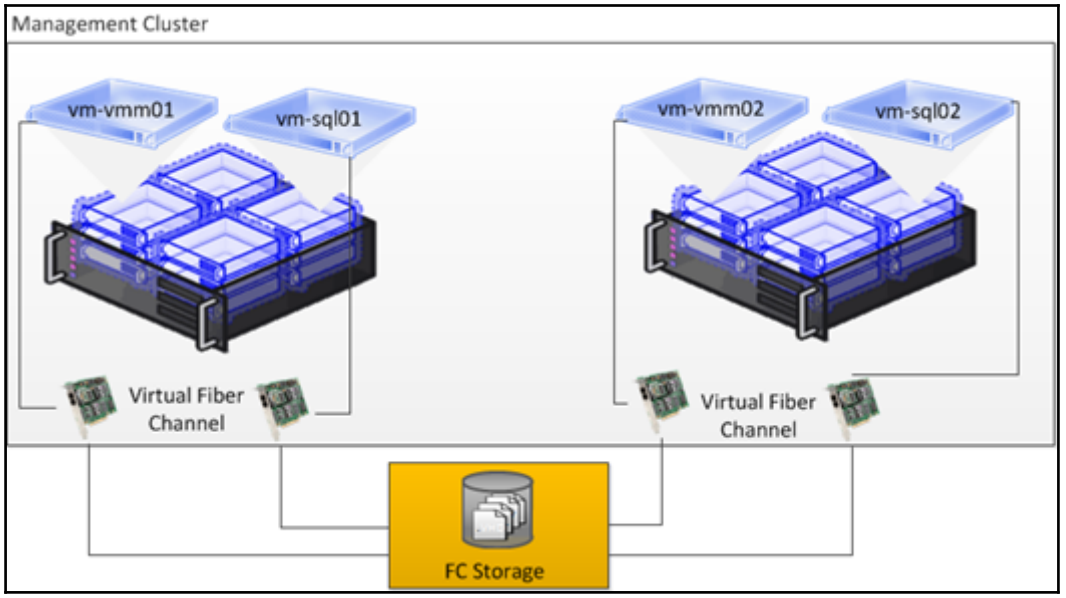

Connect to Server
System Center 2016
Virtual Machine Manager
Server name:
localhost:8100
Example: vmmserver.conto
Use current Microsoft Windows session
Specify credentials
User name:
rllab\rladmin
Example: contoso\domain
Password:
Select User Role
Select User Role
Select the user role you would like to use for this session:
Tenant
OK

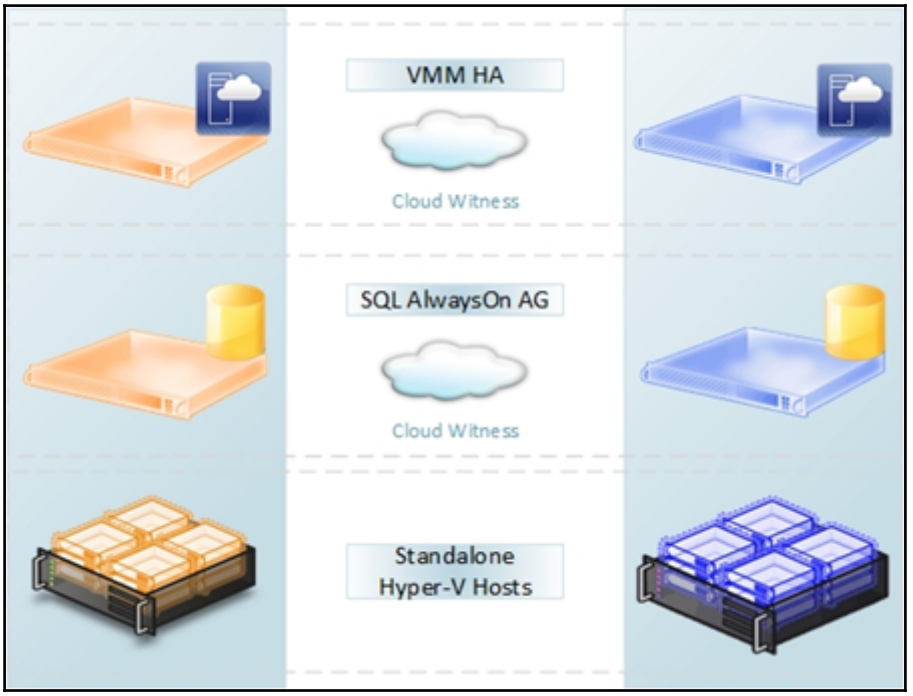

Create Run As Account
Provide the details for this Run As account
Name:
Hyper-V Admin
Description:
User name:
rllab\vmm-admin
Example: contoso\domainuser or localuser
Password:
Confirm password:
Validate domain credentials

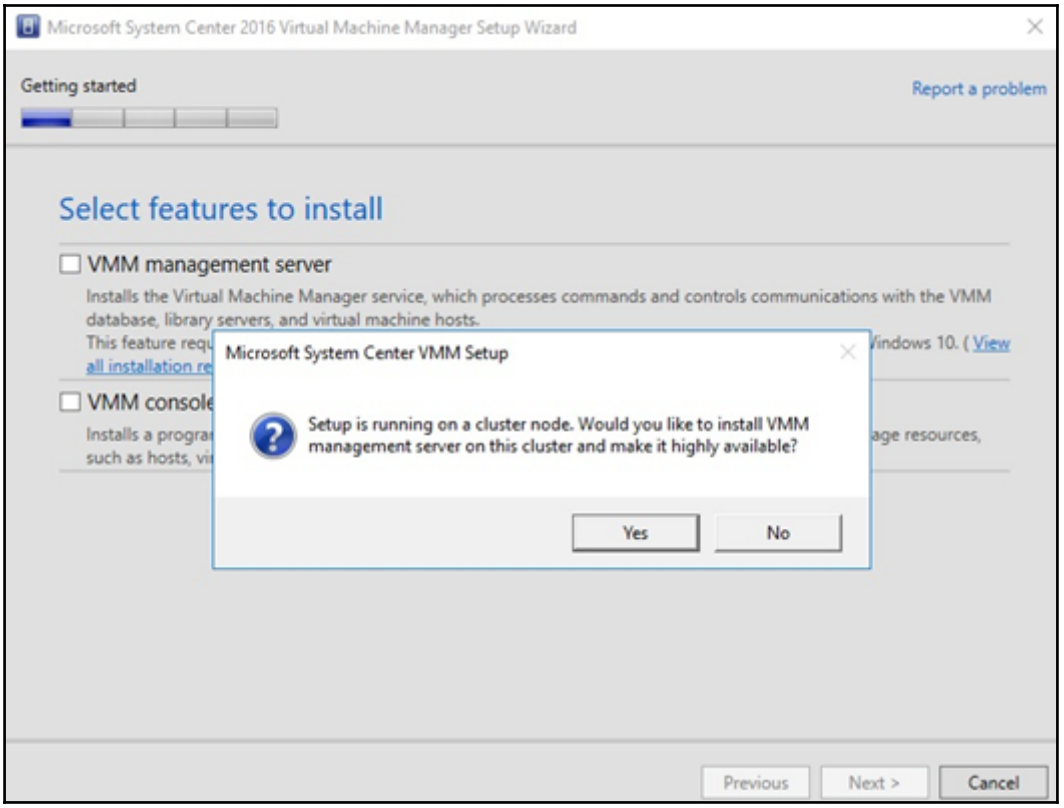

New Inbound Rule Wizard
Rule Type
Select the type of firewall rule to create.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
What type of rule would you like to create?
Program
Rule that controls connections for a program.
Port
Rule that controls connections for a TCP or UDP port.
Predefined:
AllJoyn Router
Rule that controls connections for a Windows experience.
Custom
Custom rule.

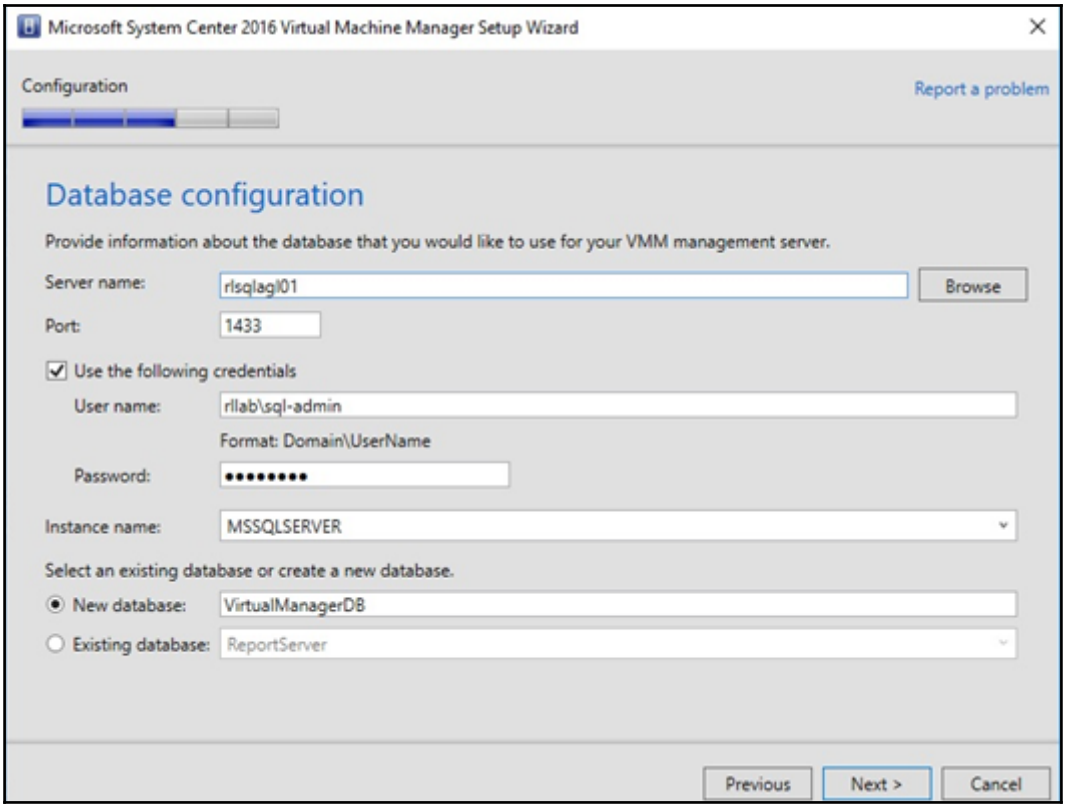
Chapter 4: Installing a Highly Available VMM Server

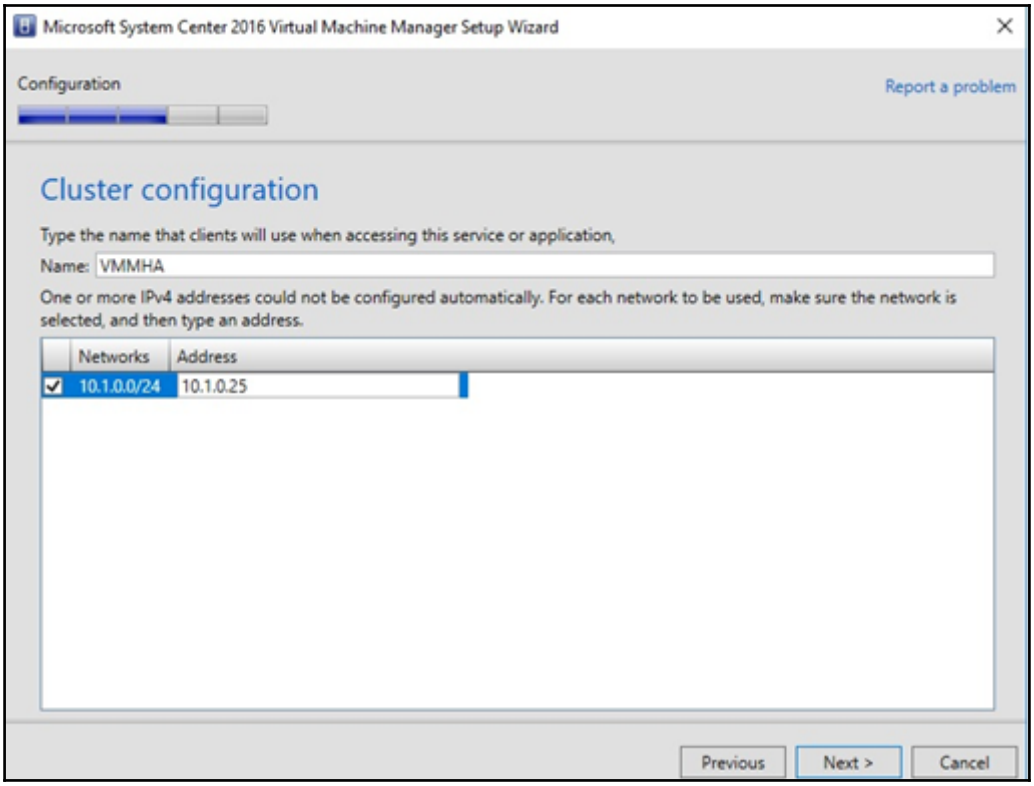


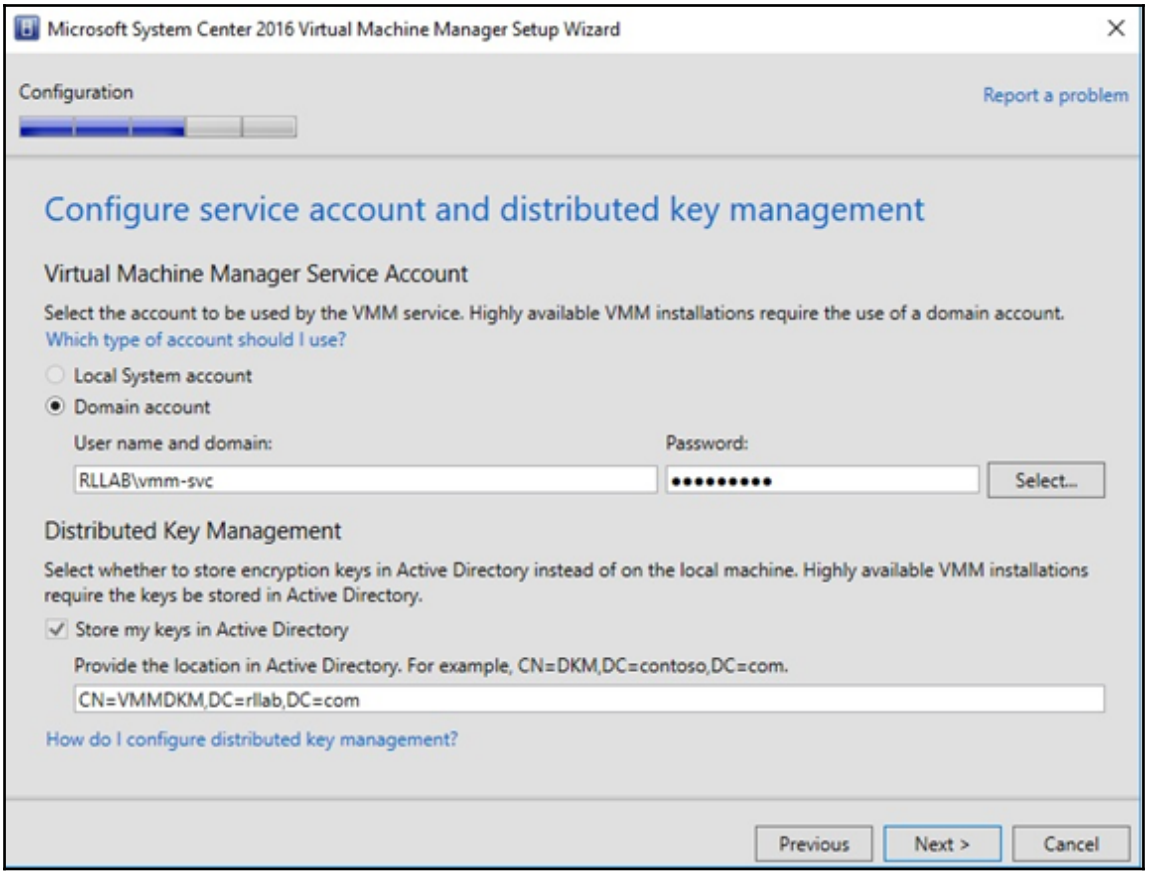

Management Cluster
vm-vmm01
vm-sql01
vm-vmm02
vm-sql02
Virtual Fiber Channel
Virtual Fiber Channel
FC Storage

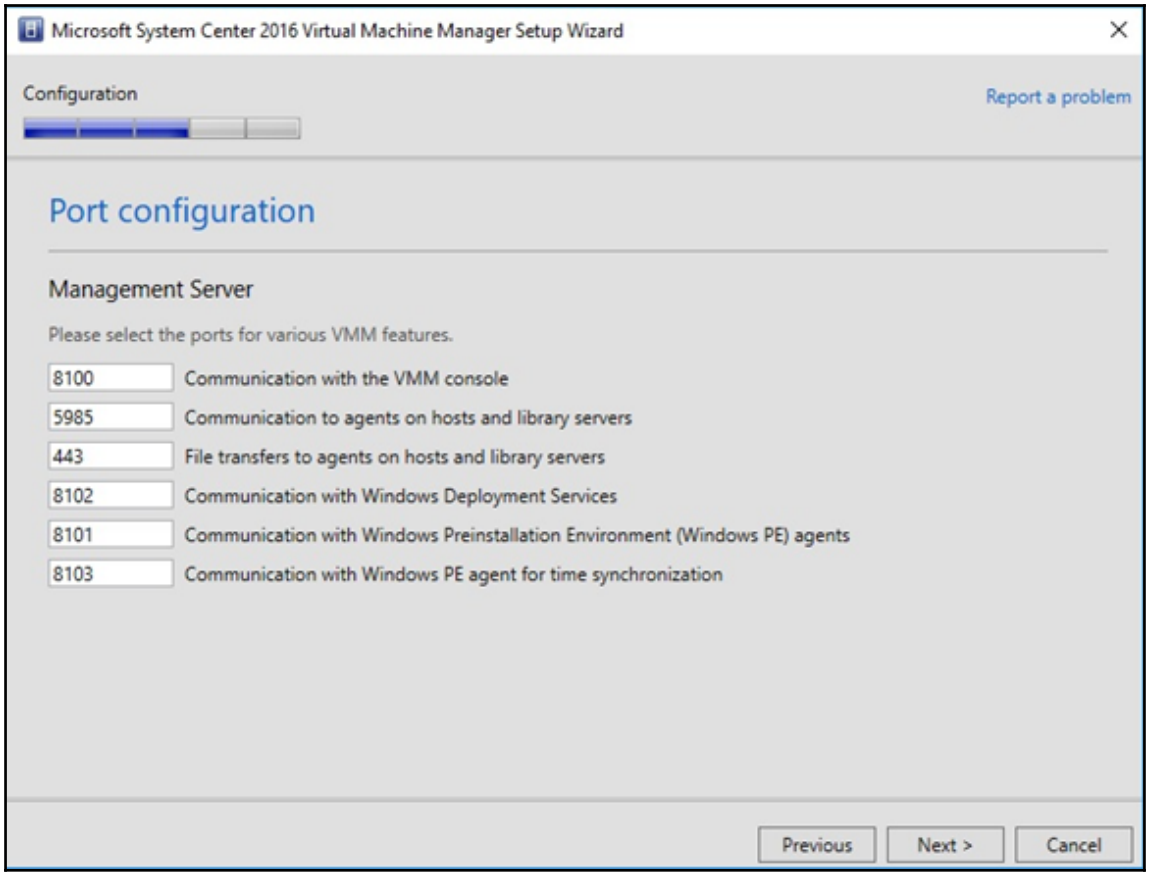

VMM HA
Cloud Witness
SQL AlwaysOn AG
Cloud Witness
Standalone Hyper-V Hosts

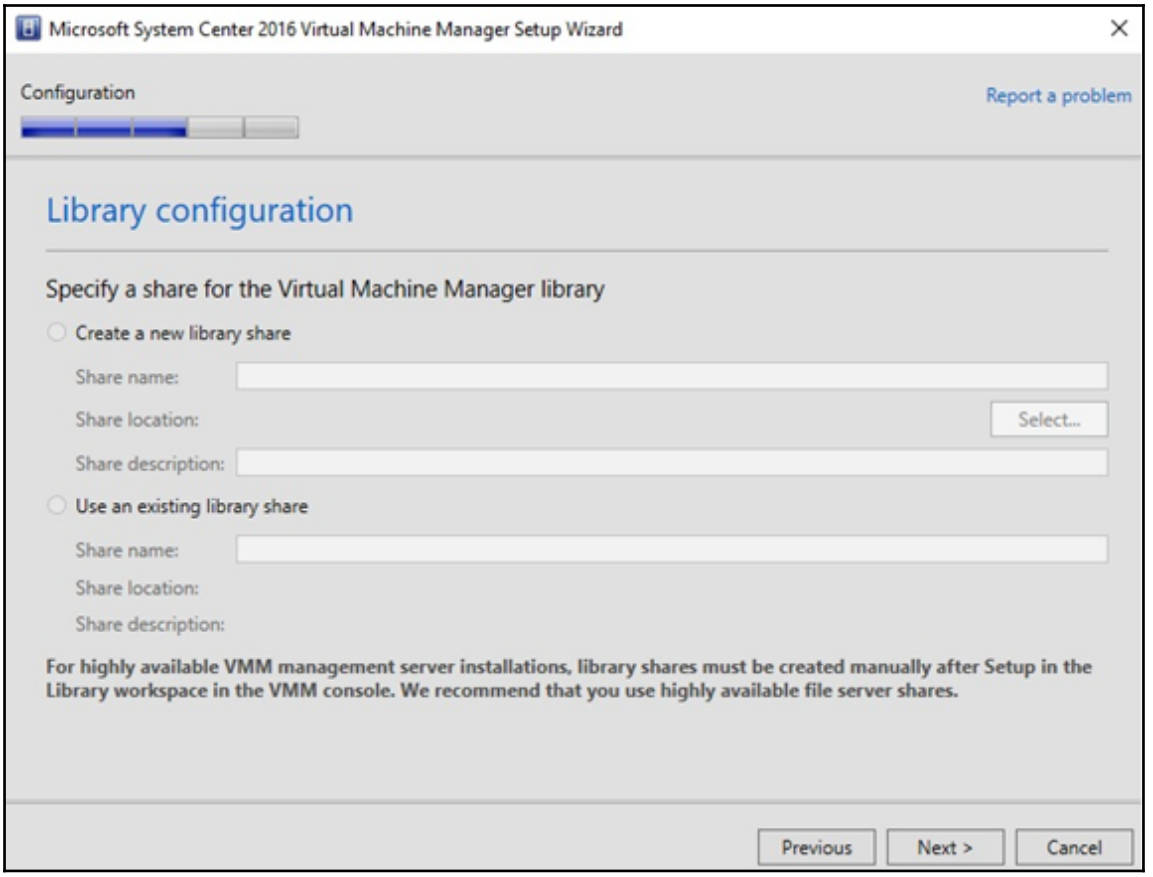

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Getting started
Report a problem
Select features to install
VMM management server
Installs the Virtual Machine Manager service, which processes commands and controls communications with the VMM database, library servers, and virtual machine hosts.
This feature requ
Windows 10. (View
all installation re
VMM console
Installs a progra
such as hosts, vi
age resources,
Microsoft System Center VMM Setup
Setup is running on a cluster node. Would you like to install VMM management server on this cluster and make it highly available?
Yes
No
Previous
Next >
Cancel

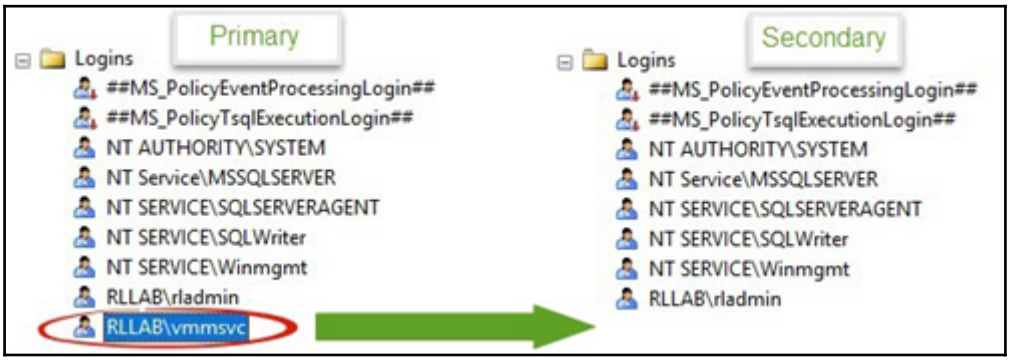

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Database configuration
Provide information about the database that you would like to use for your VMM management server.
Server name:
rlsqlagl01
Browse
Port:
1433
Use the following credentials
User name:
rllab\sql-admin
Format: Domain\UserName
Password:
Instance name:
MSSQLSERVER
Select an existing database or create a new database.
New database:
VirtualManagerDB
Existing database:
ReportServer
Previous
Next >
Cancel

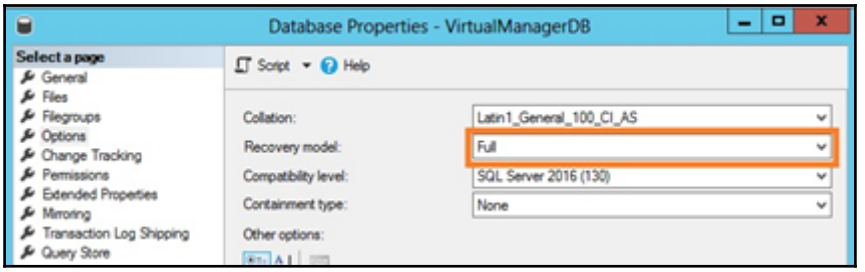

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Cluster configuration
Type the name that clients will use when accessing this service or application,
Name: VMMHA
One or more IPv4 addresses could not be configured automatically. For each network to be used, make sure the network is selected, and then type an address.
Networks
Address
10.1.0.0/24
10.1.0.25
Previous
Next >
Cancel

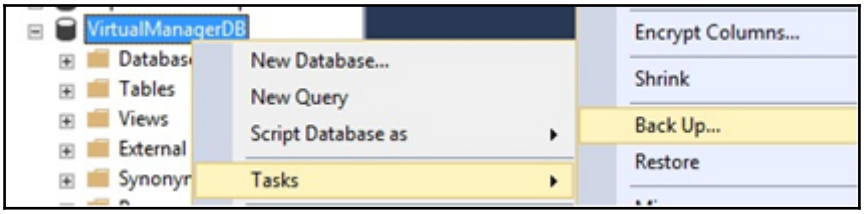

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Configure service account and distributed key management
Virtual Machine Manager Service Account
Select the account to be used by the VMM service. Highly available VMM installations require the use of a domain account.
Which type of account should I use?
Local System account
Domain account
User name and domain:
Password:
RLLAB\vmm-svc
Select...
Distributed Key Management
Select whether to store encryption keys in Active Directory instead of on the local machine. Highly available VMM installations require the keys be stored in Active Directory.
Store my keys in Active Directory
Provide the location in Active Directory. For example, CN=DKM,DC=contoso,DC=com.
CN=VMMDKM,DC=rllab,DC=com
How do I configure distributed key management?
Previous
Next >
Cancel

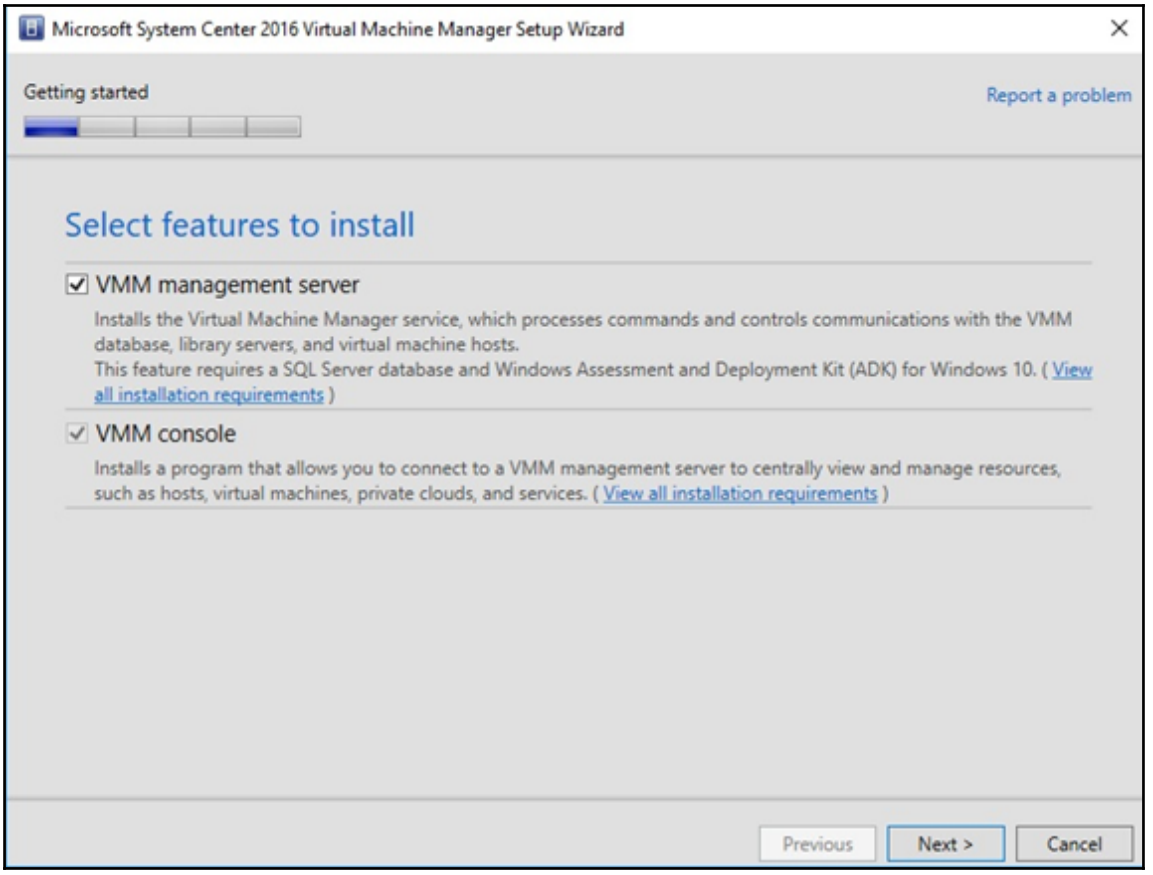

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Port configuration
Management Server
Please select the ports for various VMM features.
8100
Communication with the VMM console
5985
Communication to agents on hosts and library servers
443
File transfers to agents on hosts and library servers
8102
Communication with Windows Deployment Services
8101
Communication with Windows Preinstallation Environment (Windows PE) agents
8103
Communication with Windows PE agent for time synchronization
Previous
Next >
Cancel

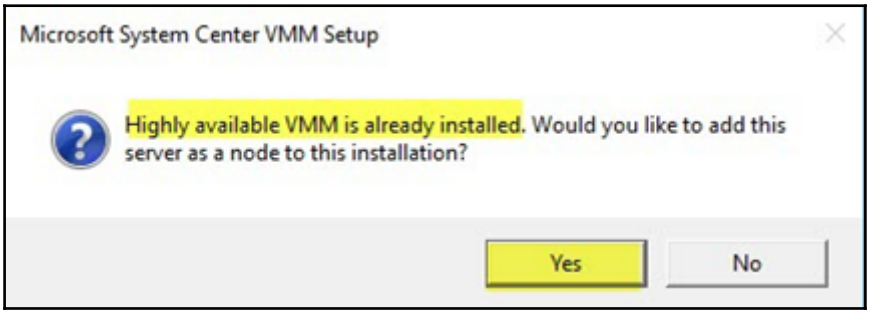

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Library configuration
Specify a share for the Virtual Machine Manager library
Create a new library share
Share name:
Share location:
Select...
Share description:
Use an existing library share
Share name:
Share location:
Share description:
For highly available VMM management server installations, library shares must be created manually after Setup in the Library workspace in the VMM console. We recommend that you use highly available file server shares.
Previous
Next >
Cancel

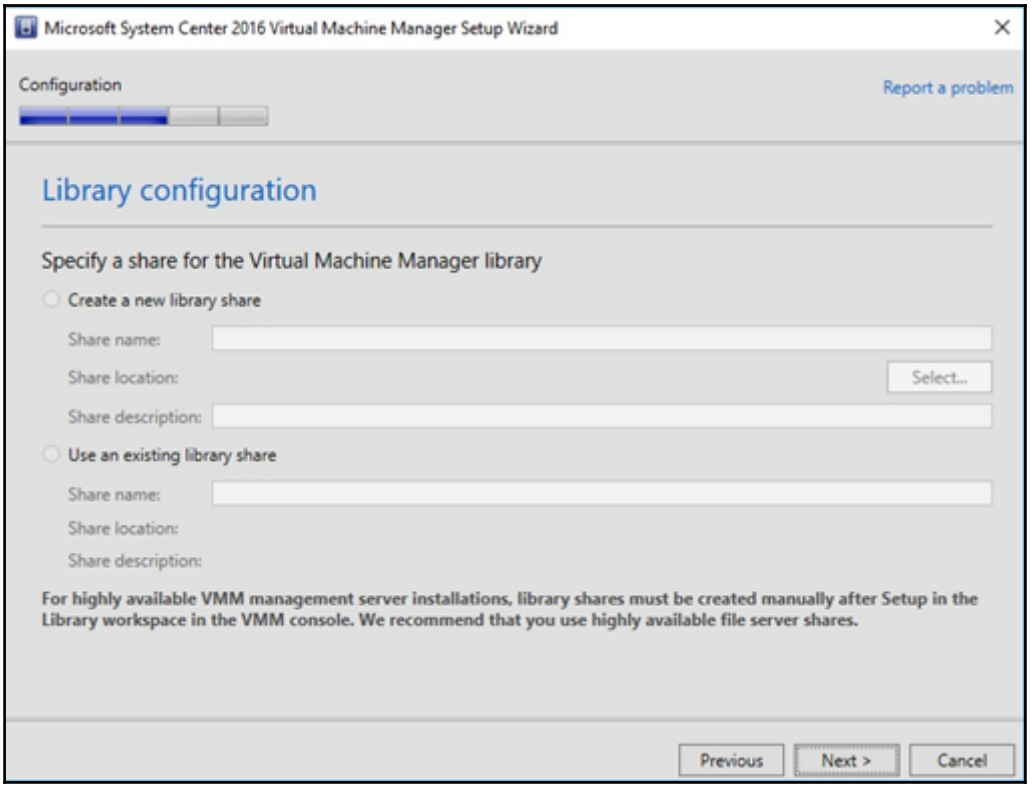

Primary
Logins
##MS_PolicyEventProcessingLogin##
##MS_PolicyTsqlExecutionLogin##
NT AUTHORITY\SYSTEM
NT Service\MSSQLSERVER
NT SERVICE\SQLSERVERAGENT
NT SERVICE\SQLWriter
NT SERVICE\Winmgmt
RLLAB\rladmin
RLLAB\vmmsvc
Secondary
Logins
##MS_PolicyEventProcessingLogin##
##MS_PolicyTsqlExecutionLogin##
NT AUTHORITY\SYSTEM
NT Service\MSSQLSERVER
NT SERVICE\SQLSERVERAGENT
NT SERVICE\SQLWriter
NT SERVICE\Winmgmt
RLLAB\rladmin

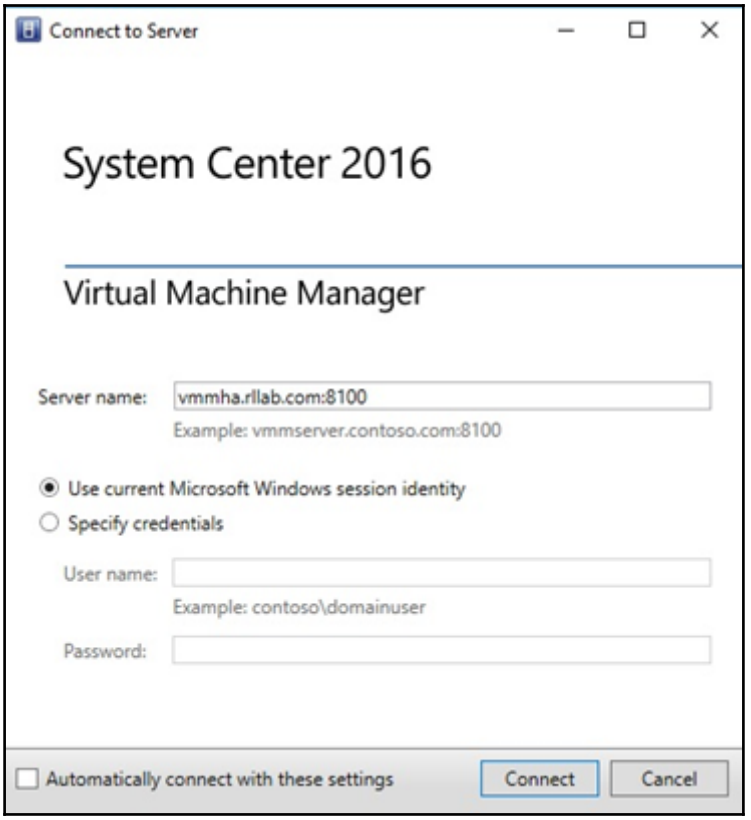

Database Properties - VirtualManagerDB
Select a page
General
Files
Filegroups
Options
Change Tracking
Permissions
Extended Properties
Mirroring
Transaction Log Shipping
Query Store
Script
Help
Collation:
Latin1_General_100_CI_AS
Recovery model:
Full
Compatibility level:
SQL Server 2016 (130)
Containment type:
None
Other options:

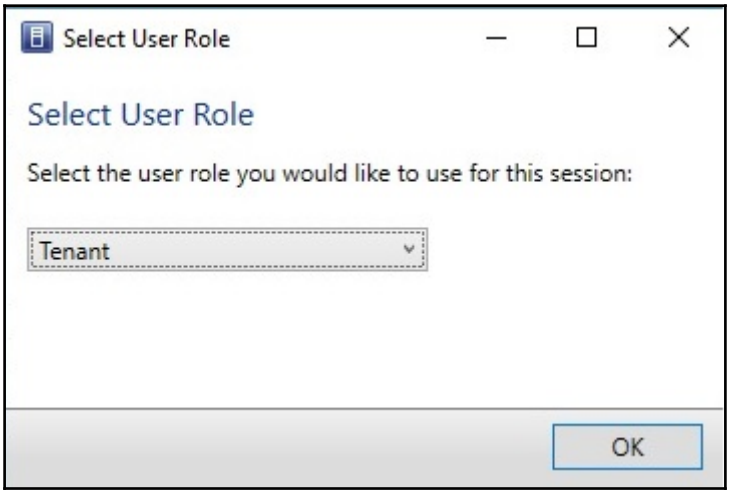

VirtualManagerDB
Tables
Views
External
New Database...
New Query
Script Database as
Tasks
Encrypt Columns...
Shrink
Back Up...
Restore

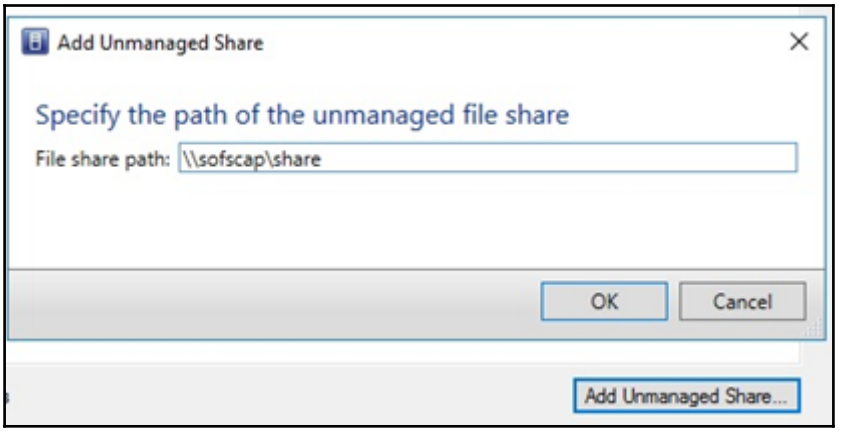

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Getting started
Report a problem
Select features to install
VMM management server
Installs the Virtual Machine Manager service, which processes commands and controls communications with the VMM database, library servers, and virtual machine hosts.
This feature requires a SQL Server database and Windows Assessment and Deployment Kit (ADK) for Windows 10. (View all installation requirements)
VMM console
Installs a program that allows you to connect to a VMM management server to centrally view and manage resources, such as hosts, virtual machines, private clouds, and services. (View all installation requirements)
Previous
Next >
Cancel

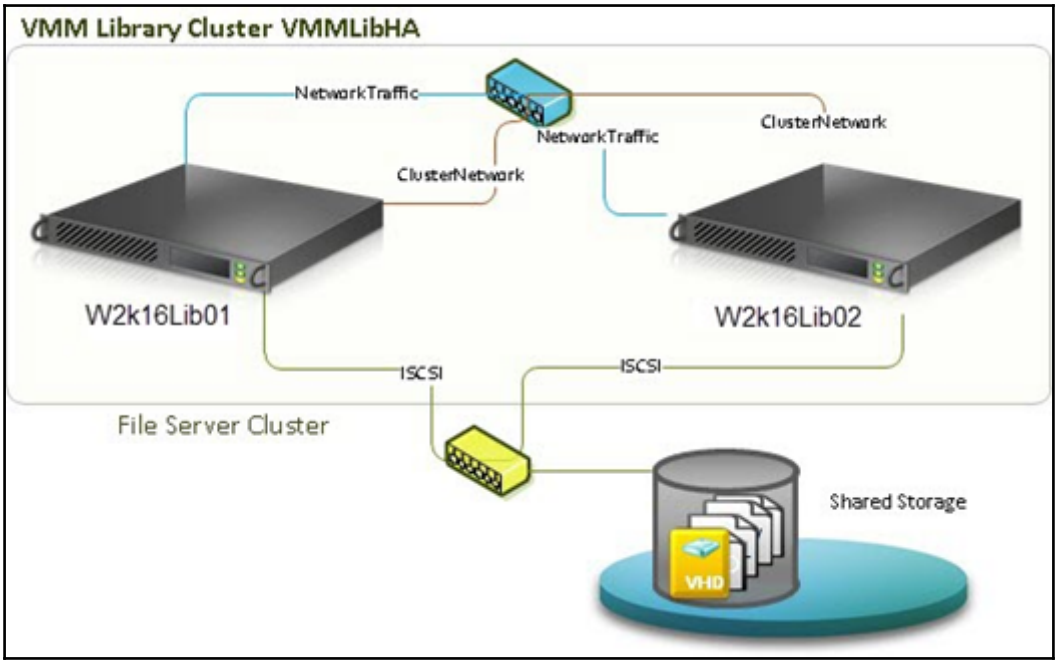

Microsoft System Center VMM Setup
Highly available VMM is already installed. Would you like to add this server as a node to this installation?
Yes
No

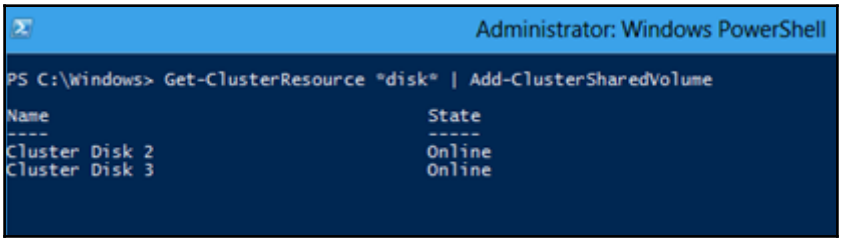

Microsoft System Center 2016 Virtual Machine Manager Setup Wizard
Configuration
Report a problem
Library configuration
Specify a share for the Virtual Machine Manager library
Create a new library share
Share name:
Share location:
Select...
Share description:
Use an existing library share
Share name:
Share location:
Share description:
For highly available VMM management server installations, library shares must be created manually after Setup in the Library workspace in the VMM console. We recommend that you use highly available file server shares.
Previous
Next >
Cancel

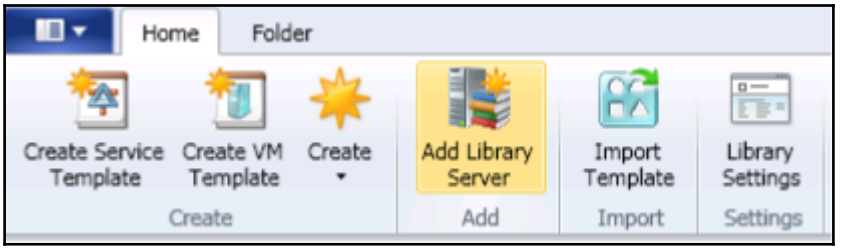

Connect to Server
System Center 2016
Virtual Machine Manager
Server name:
vmmha.rllab.com:8100
Example: vmmserver.contoso.com:8100
Use current Microsoft Windows session identity
Specify credentials
User name:
Example: contoso\domainuser
Password:
Automatically connect with these settings
Connect
Cancel

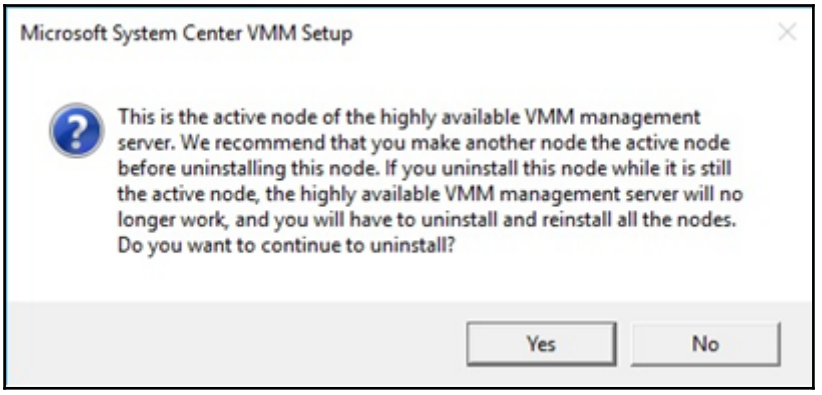

Select User Role
Select User Role
Select the user role you would like to use for this session:
Tenant
OK


Add Unmanaged Share
Specify the path of the unmanaged file share
File share path: \\sofscap\share
OK
Cancel
Add Unmanaged Share...

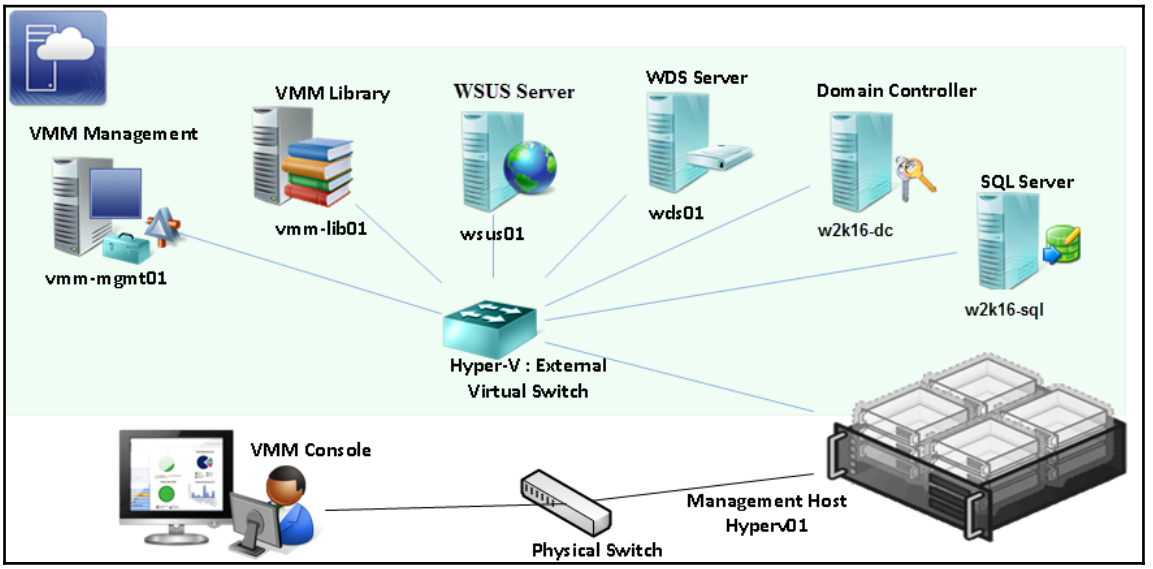

VMM Library Cluster VMMLibHA
NetworkTraffic
NetworkTraffic
ClusterNetwork
ClusterNetwork
W2k16Lib01
W2k16Lib02
ISCSI
ISCSI
File Server Cluster
Shared Storage
VHD

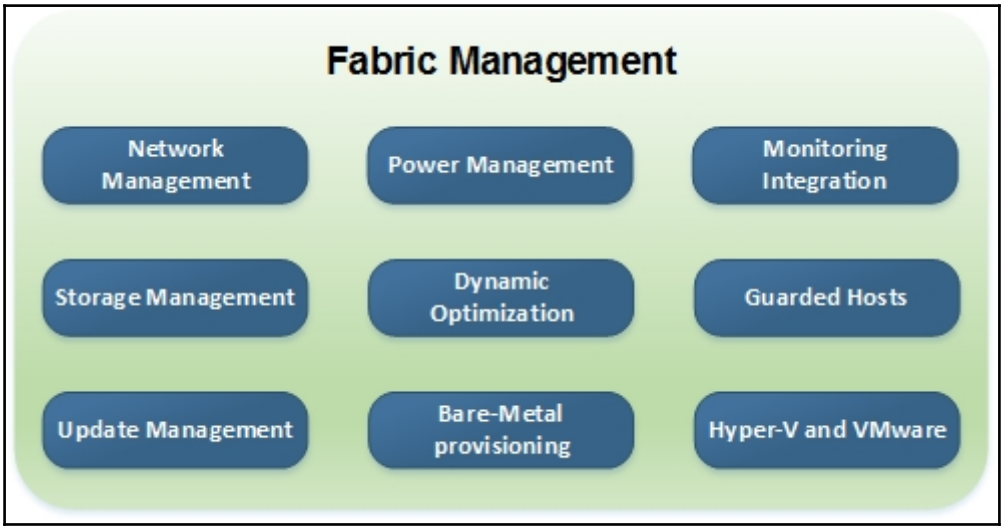

Administrator: Windows PowerShell
PS C:\Windows> Get-ClusterResource *disk* | Add-ClusterSharedVolume
Name State
---- -----
Cluster Disk 2 Online
Cluster Disk 3 Online

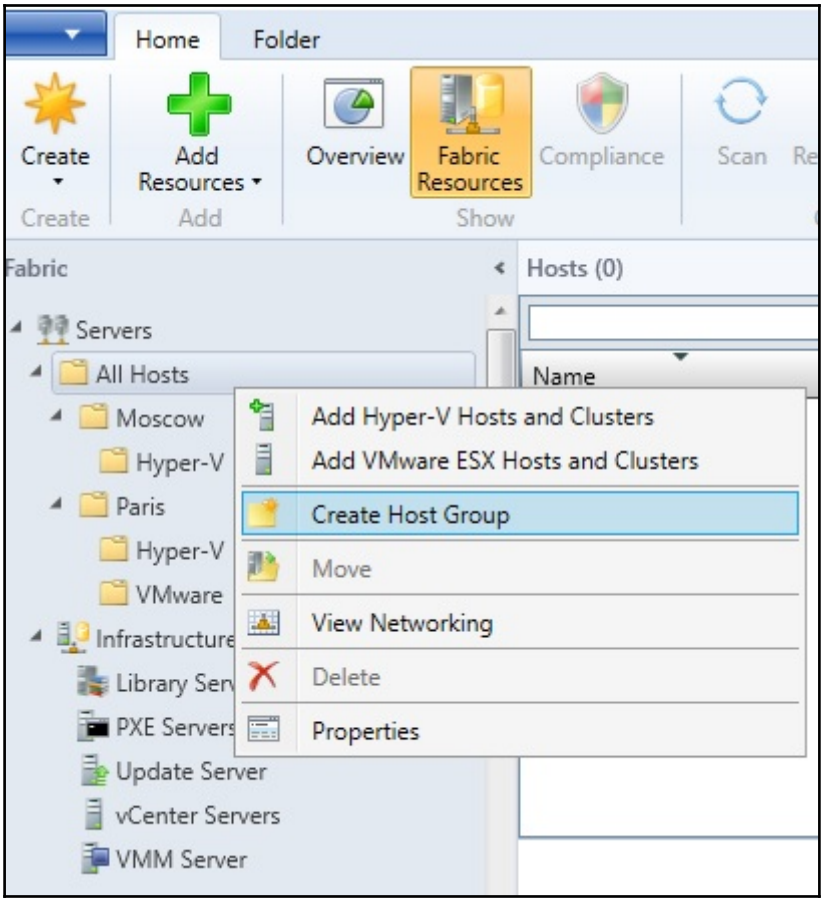

Home
Folder
Create Service Template
Create VM Template
Create
Add Library Server
Import Template
Library Settings
Create
Add
Import
Settings

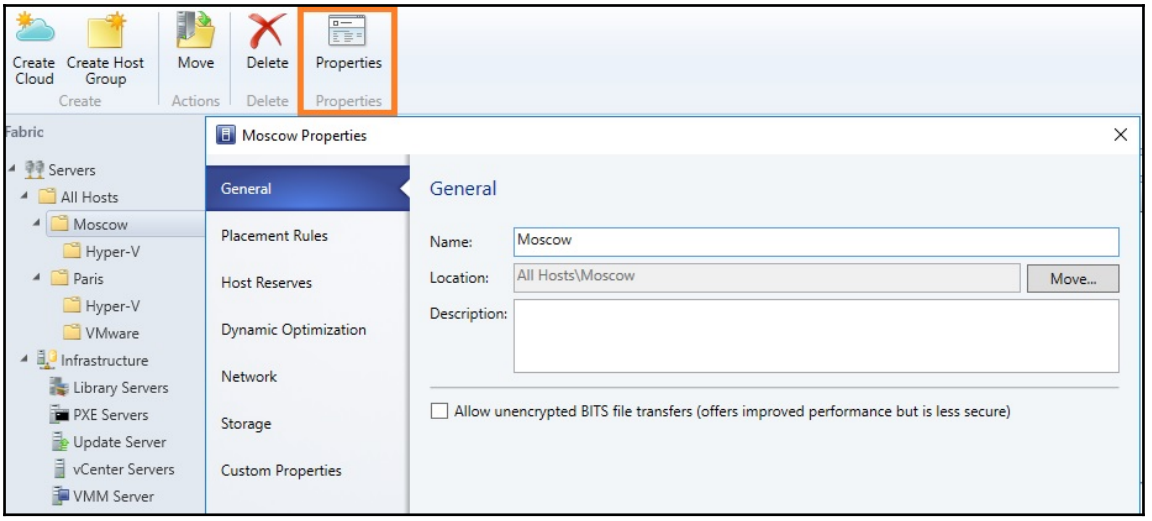

Microsoft System Center VMM Setup
This is the active node of the highly available VMM management server. We recommend that you make another node the active node before uninstalling this node. If you uninstall this node while it is still the active node, the highly available VMM management server will no longer work, and you will have to uninstall and reinstall all the nodes. Do you want to continue to uninstall?
Yes
No

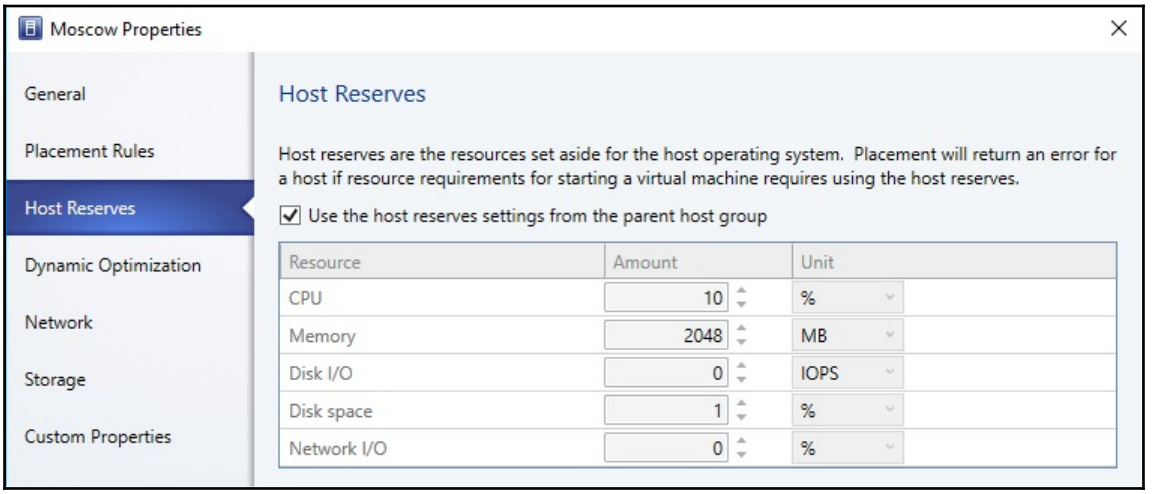
Chapter 5: Configuring Fabric Resources in VMM

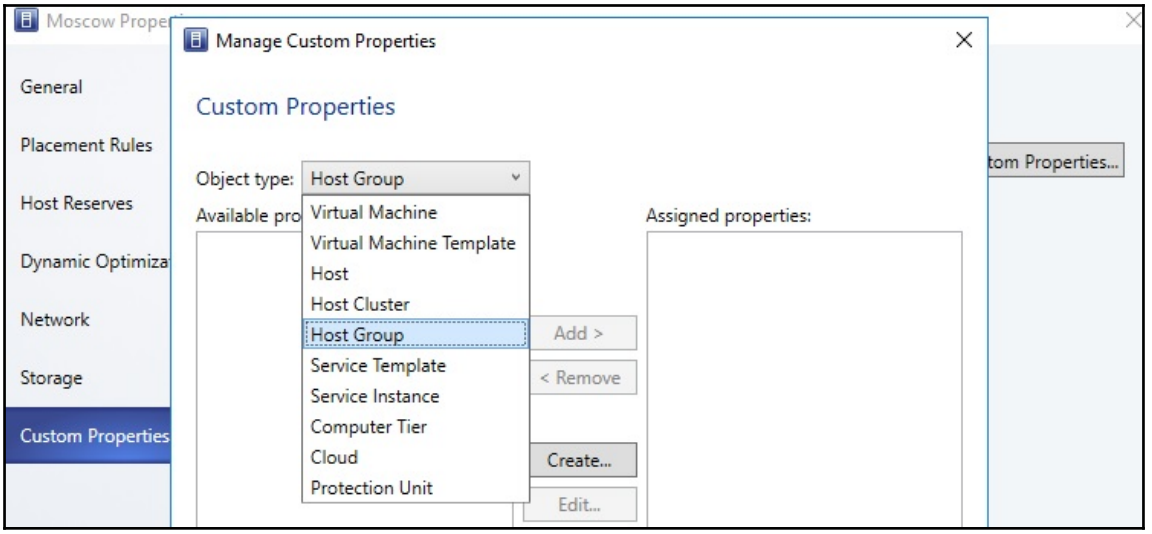


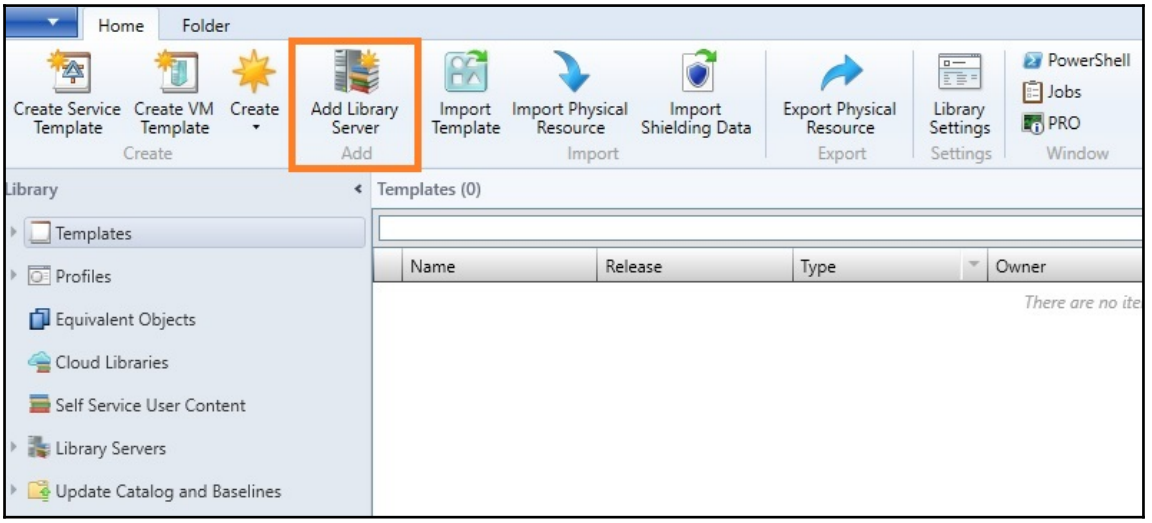


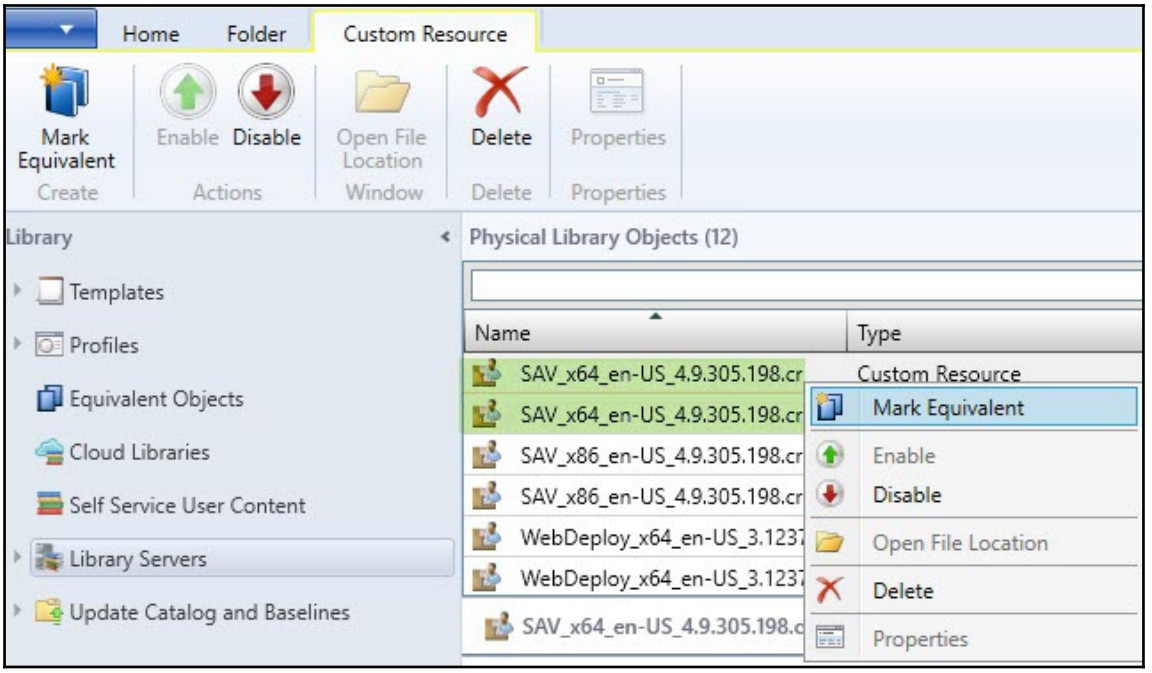

Home
Folder
Create
Add Resources
Overview
Fabric Resources
Compliance
Scan
Create
Add
Show
Fabric
Hosts (0)
Servers
All Hosts
Moscow
Hyper-V
Paris
Hyper-V
VMware
Infrastructure
Library Serv
PXE Servers
Update Server
vCenter Servers
VMM Server
Name
Add Hyper-V Hosts and Clusters
Add VMware ESX Hosts and Clusters
Create Host Group
Move
View Networking
Delete
Properties

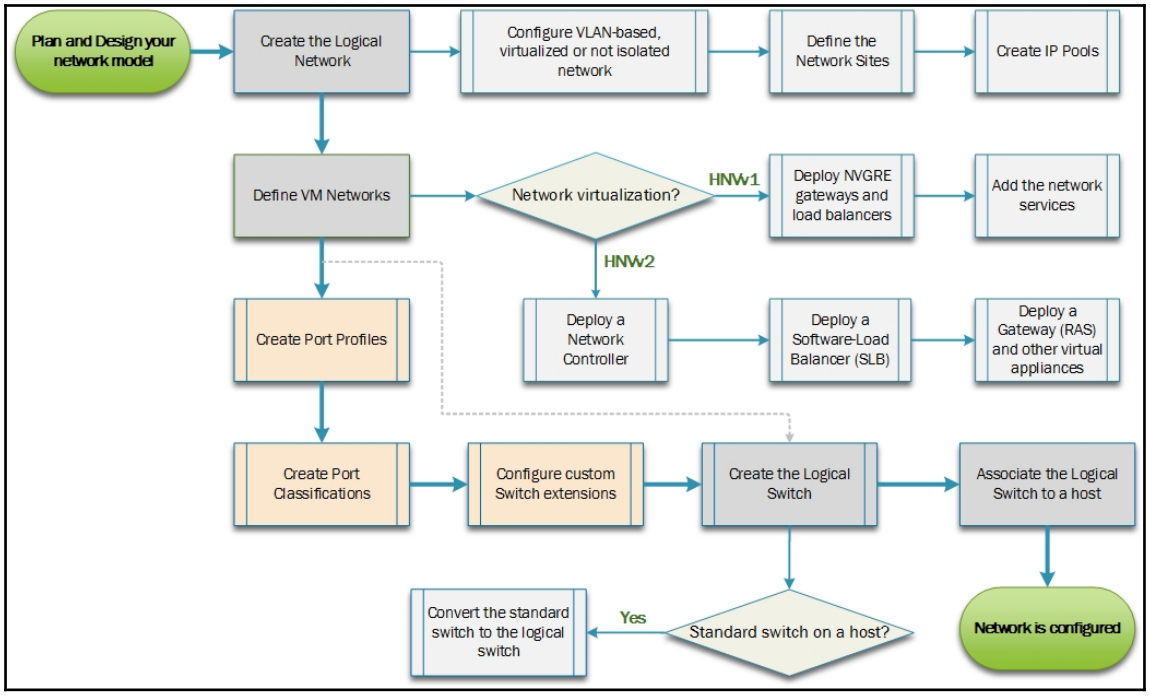

Create Cloud
Create Host Group
Create
Move
Actions
Delete
Delete
Properties
Properties
Fabric
Servers
All Hosts
Moscow
Hyper-V
Paris
Hyper-V
VMware
Infrastructure
Library Servers
PXE Servers
Update Server
vCenter Servers
VMM Server
Moscow Properties
General
Placement Rules
Host Reserves
Dynamic Optimization
Network
Storage
Custom Properties
General
Name:
Moscow
Location:
All Hosts\Moscow
Move...
Description:
Allow unencrypted BITS file transfers (offers improved performance but is less secure)

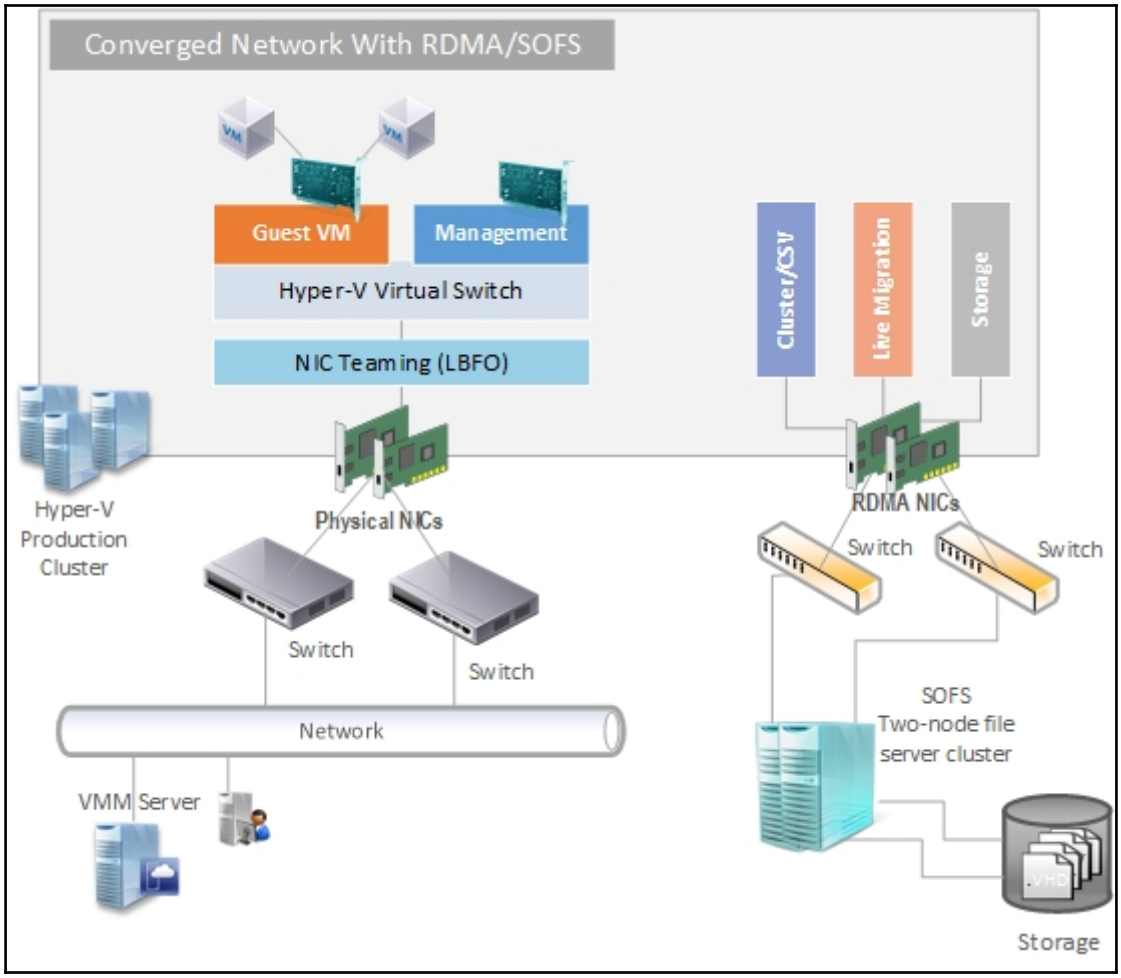

Moscow Properties
General
Placement Rules
Host Reserves
Dynamic Optimization
Network
Storage
Custom Properties
Host Reserves
Host reserves are the resources set aside for the host operating system. Placement will return an error for a host if resource requirements for starting a virtual machine requires using the host reserves.
Use the host reserves settings from the parent host group
Resource
Amount
Unit
CPU
10
%
Memory
2048
MB
Disk I/O
0
IOPS
Disk space
1
%
Network I/O
0
%

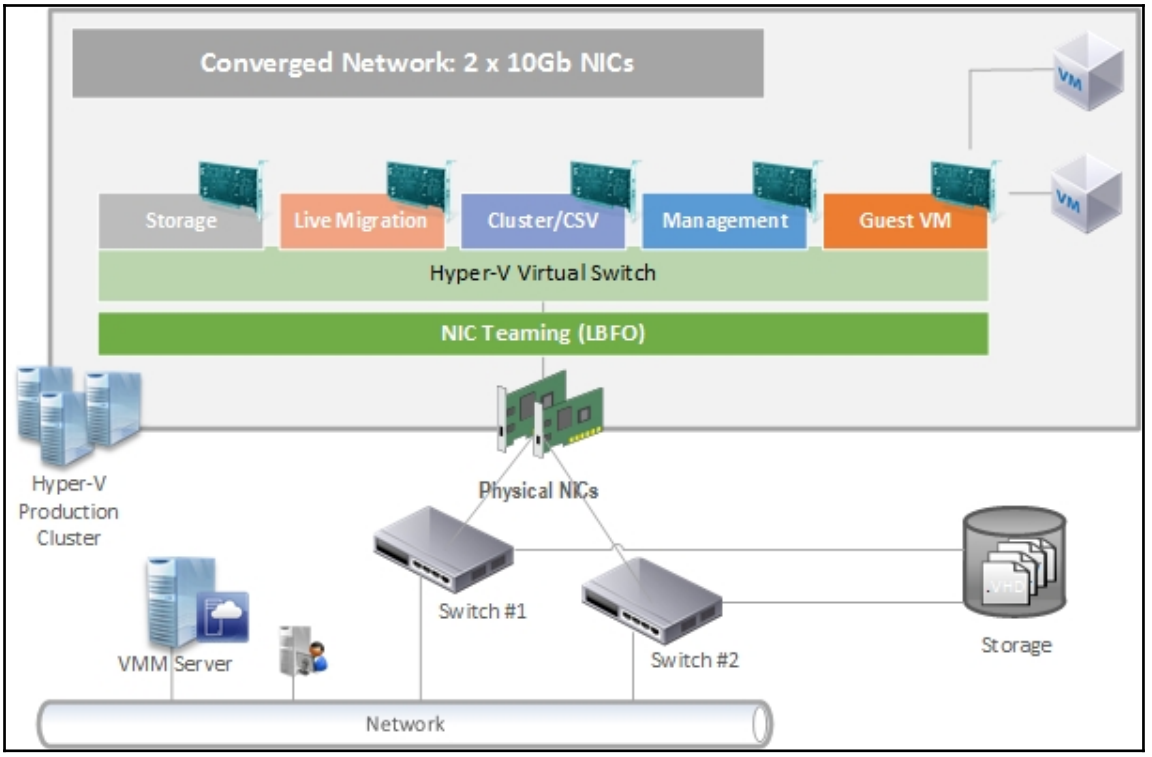

Moscow Prope
Manage Custom Properties
General
Placement Rules
Host Reserves
Dynamic Optimiza
Network
Storage
Custom Properties
Custom Properties
Object type:
Host Group
Available pro
Virtual Machine
Virtual Machine Template
Host
Host Cluster
Host Group
Service Template
Service Instance
Computer Tier
Cloud
Protection Unit
Add >
< Remove
Create...
Edit...
Assigned properties:
tom Properties...

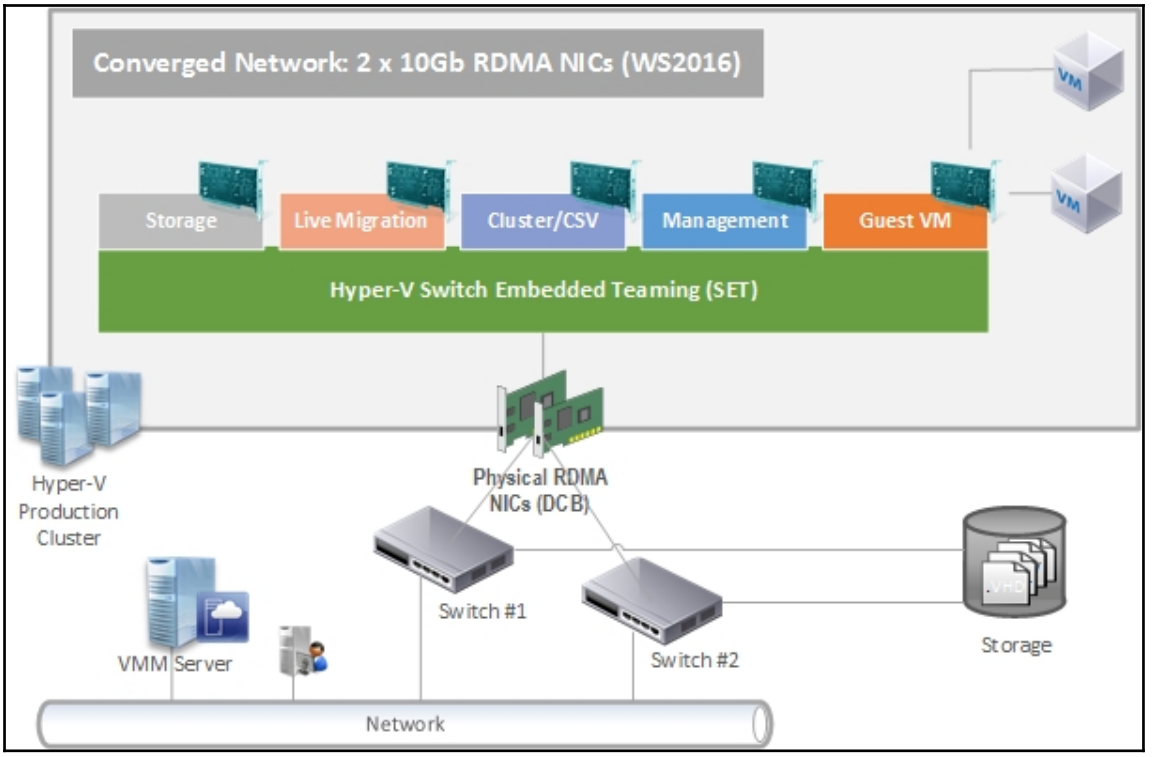

Home
Folder
Create Service Template
Create VM Template
Create
Add Library Server
Import Template
Import Physical Resource
Import Shielding Data
Export Physical Resource
Library Settings
PowerShell
Jobs
PRO
Create
Add
Import
Export
Settings
Window
Library
Templates (0)
Templates
Profiles
Equivalent Objects
Cloud Libraries
Self Service User Content
Library Servers
Update Catalog and Baselines
Name
Release
Type
Owner
There are no ite


Home
Folder
Custom Resource
Mark Equivalent
Create
Enable
Disable
Actions
Open File Location
Window
Delete
Delete
Properties
Properties
Library
Templates
Profiles
Equivalent Objects
Cloud Libraries
Self Service User Content
Library Servers
Update Catalog and Baselines
Physical Library Objects (12)
Name
Type
SAV_x64_en-US_4.9.305.198.cr
Custom Resource
SAV_x64_en-US_4.9.305.198.cr
SAV_x86_en-US_4.9.305.198.cr
SAV_x86_en-US_4.9.305.198.cr
WebDeploy_x64_en-US_3.123
WebDeploy_x64_en-US_3.123
SAV_x64_en-US_4.9.305.198.c
Mark Equivalent
Enable
Disable
Open File Location
Delete
Properties

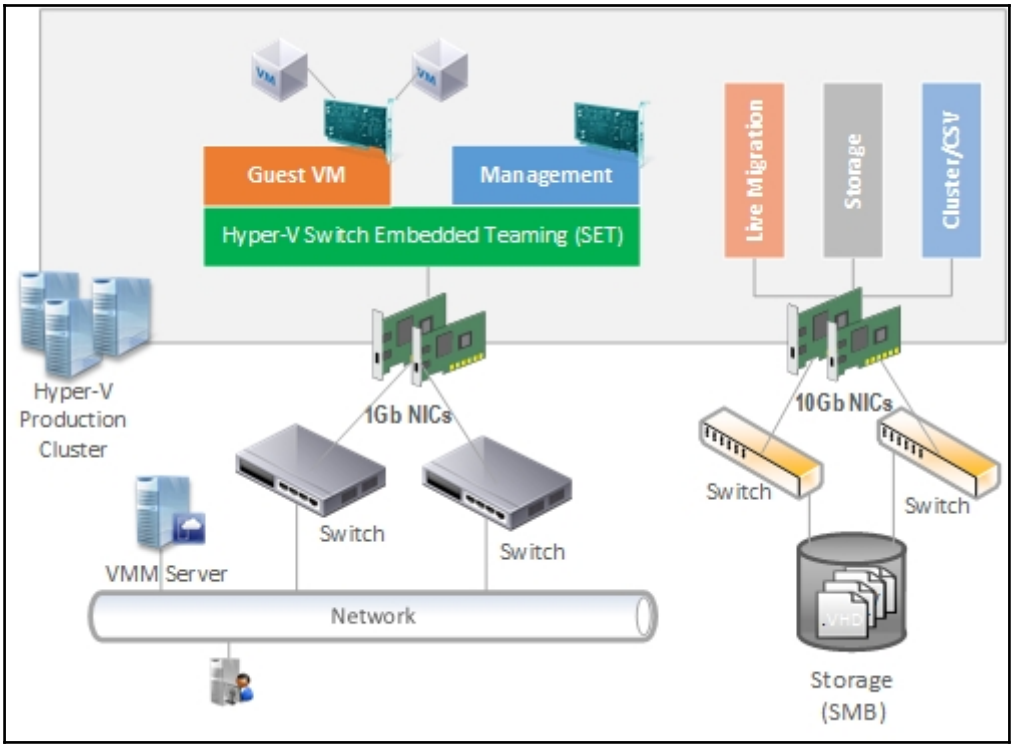

Plan and Design your network model
Create the Logical Network
Configure VLAN-based, virtualized or not isolated network
Define the Network Sites
Create IP Pools
Define VM Networks
Network virtualization?
HNW1
Deploy NVGRE gateways and load balancers
Add the network services
HNW2
Create Port Profiles
Deploy a Network Controller
Deploy a Software-Load Balancer (SLB)
Deploy a Gateway (RAS) and other virtual appliances
Create Port Classifications
Configure custom Switch extensions
Create the Logical Switch
Associate the Logical Switch to a host
Convert the standard switch to the logical switch
Yes
Standard switch on a host?
Network is configured


Converged Network With RDMA/SOFS
VM
VM
Guest VM
Management
Hyper-V Virtual Switch
NIC Teaming (LBFO)
Cluster/CSV
Live Migration
Storage
Hyper-V
Production
Cluster
Physical NICs
RDMA NICs
Switch
Switch
Switch
Switch
Network
SOFS
Two-node file
server cluster
VMM Server
Storage

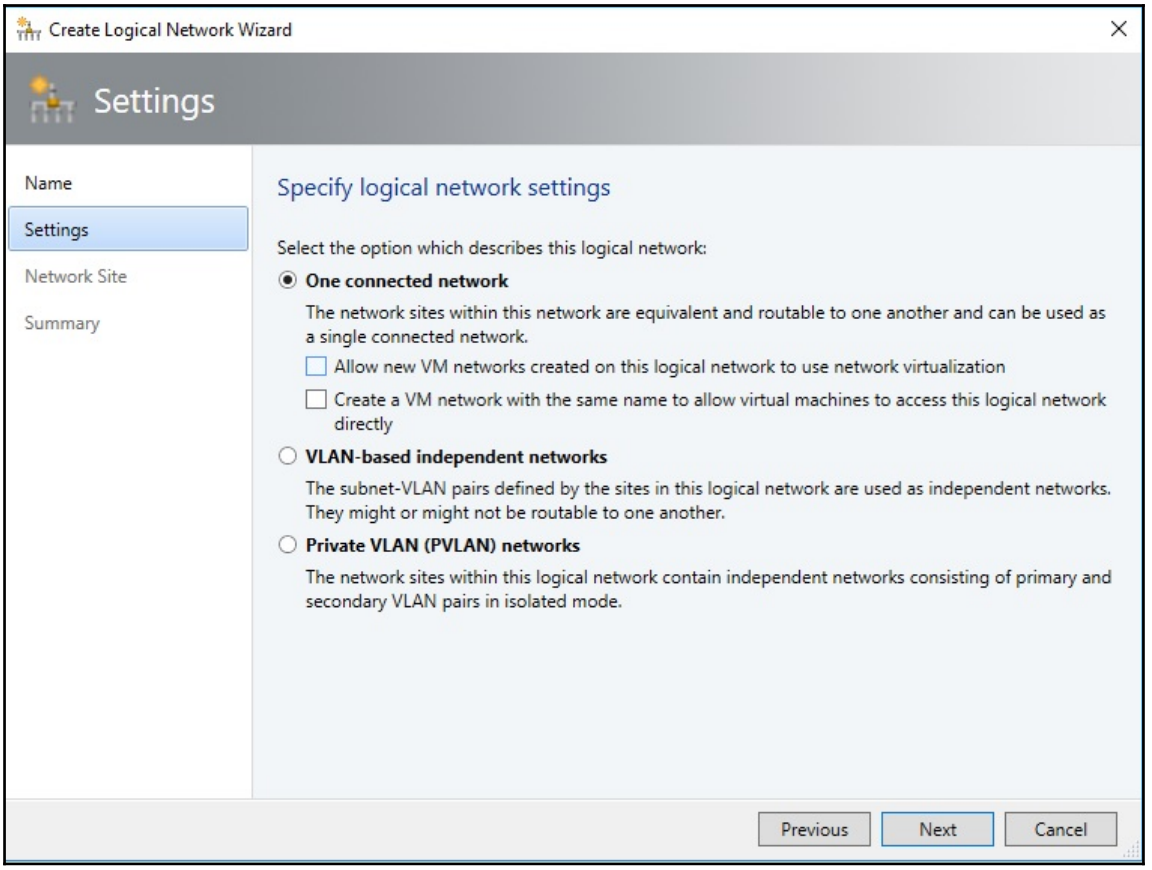

Converged Network: 2 x 10Gb NICs
VM
VM
Storage
Live Migration
Cluster/CSV
Management
Guest VM
Hyper-V Virtual Switch
NIC Teaming (LBFO)
Hyper-V
Production
Cluster
Physical NICs
Switch #1
Switch #2
Storage
VMM Server
Network

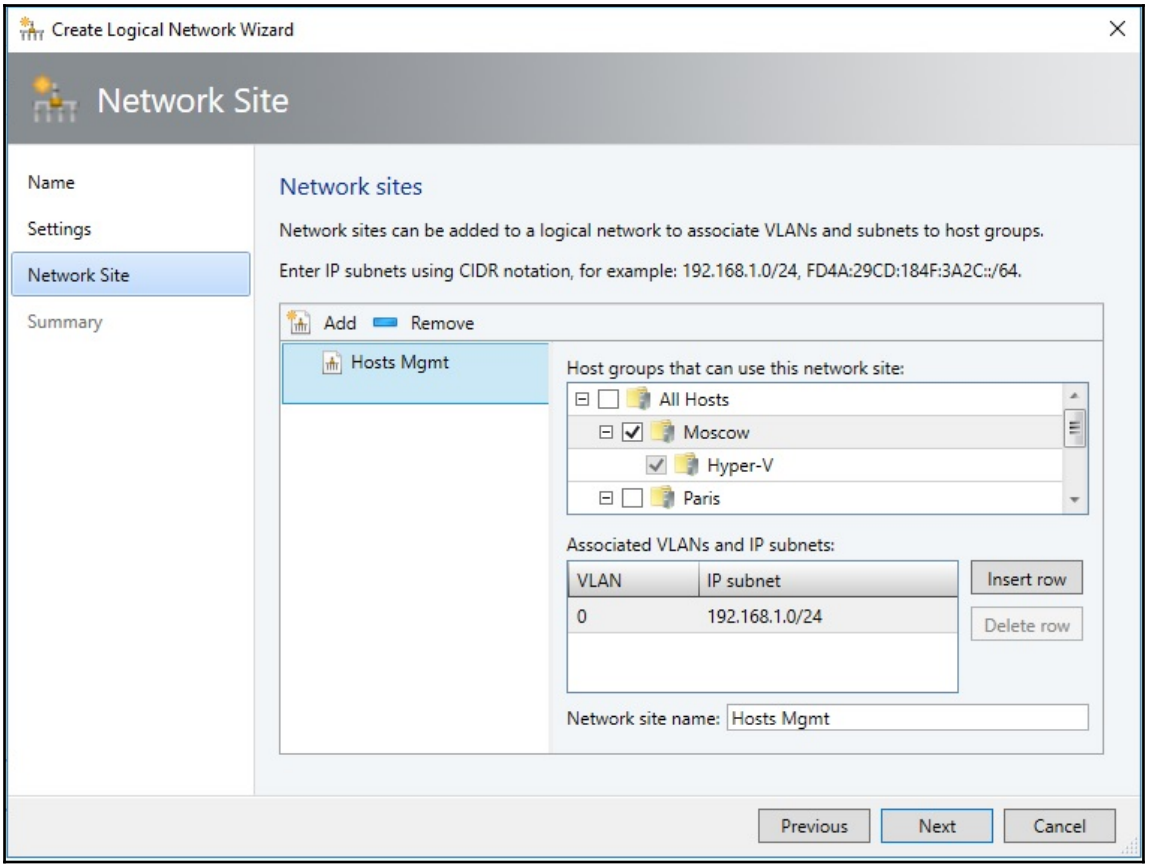

Converged Network: 2 x 10Gb RDMA NICs (WS2016)
VM
VM
Storage
Live Migration
Cluster/CSV
Management
Guest VM
Hyper-V Switch Embedded Teaming (SET)
Hyper-V Production Cluster
Physical RDMA NICs (DCB)
Switch #1
Switch #2
Storage
VMM Server
Network

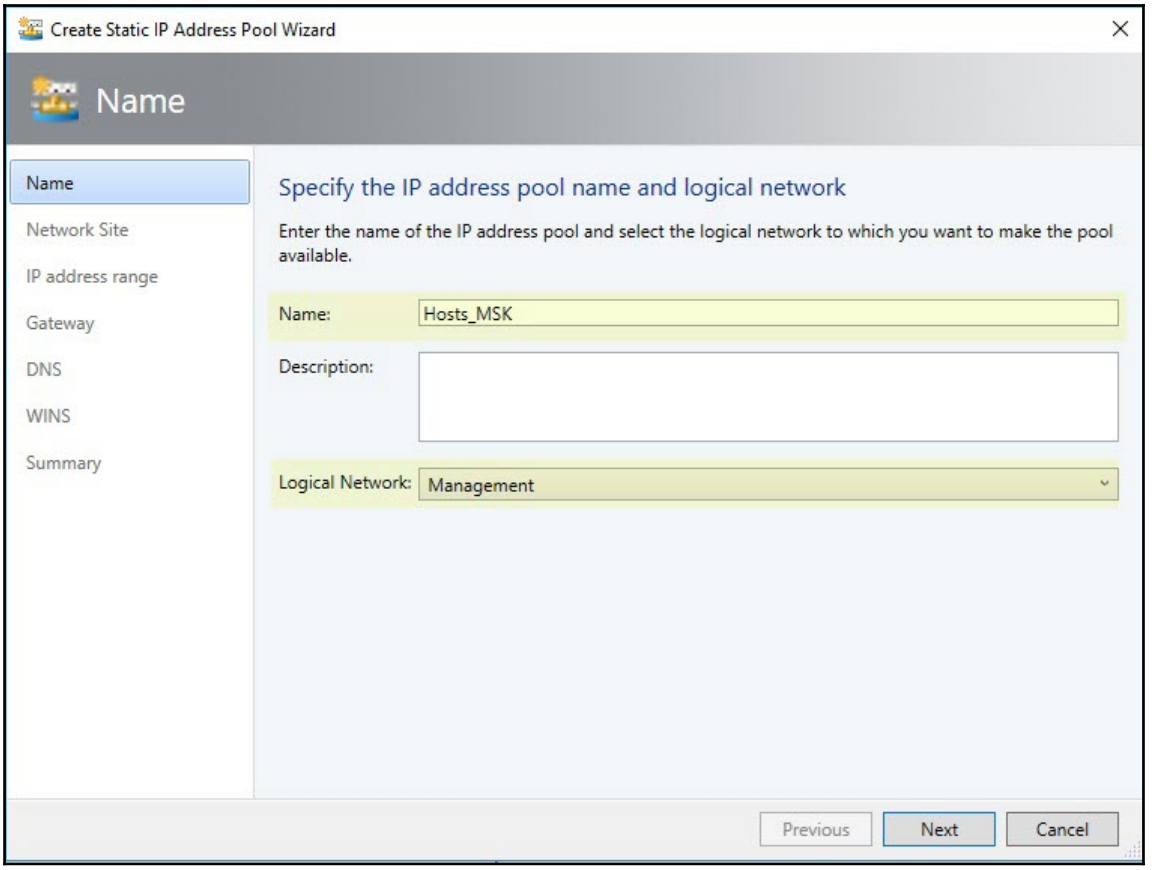
LBFO and SET Feature comparison					
Feature	**LBFO**	**SET**	**Feature**	**LBFO**	**SET**
Switch Tndependent Teaming			IEEE 802.1X		
Switch Dependent Teaming: Static			IPsecTO		
Switch Dependent Teaming: LACP			LSO		
Dynamic Load Distribution			RDMA		
Hyper-V Port Load Distribution			RSC		
Address Hash Load Distribution			RSS		
Active/Standy mode			SDN-QoS		
Max. team members	32	8	SR-IOV		
VMM Managed			TCP Chimney		
Windows Server UI Managed			VMMQ		
PowerShell Managed			VMQ (filter)		
Works in VMs			VMQ (NIC Switch)		
Different NICs in teams			vmQoS		
Affinity of vNIC/vmNIC to phys.NICs			vRSS		
Checksum offloads (IPv4,IPv6,TCP)			HNV v1 (NVGRE)		
Data Center Bridging (DCB)			HNV v2 (NVGRE/VxLAN)		
VLANs/PVLANs			Custom switch extensions		



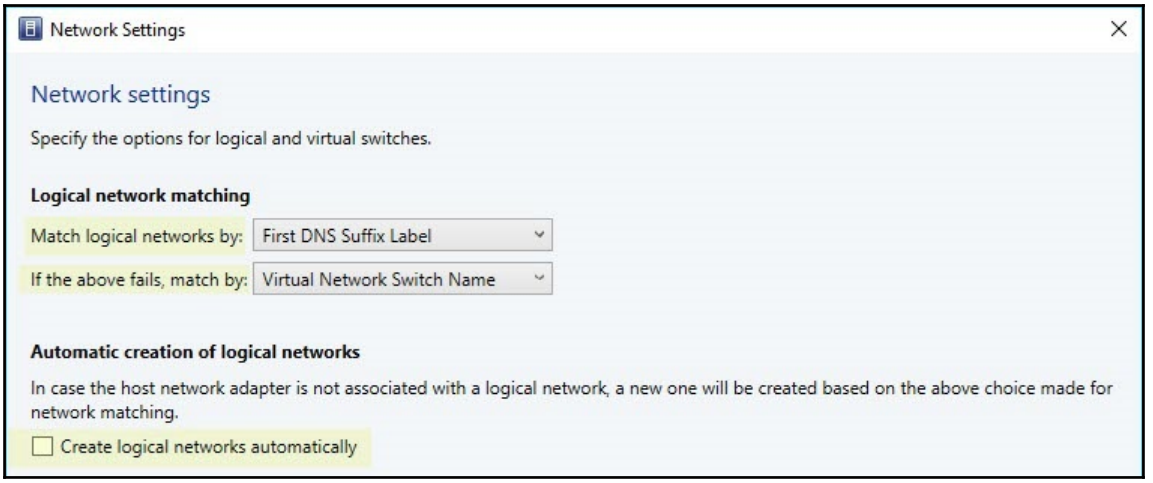
Physical NIC	Teaming	Can it be associated with a logical network?
1 Gigabit NIC #1	SET	Yes
1 Gigabit NIC #2-4		
10 Gigabit NIC #1 (SMB)	-	No
10 Gigabit NIC #2 (SMB)		

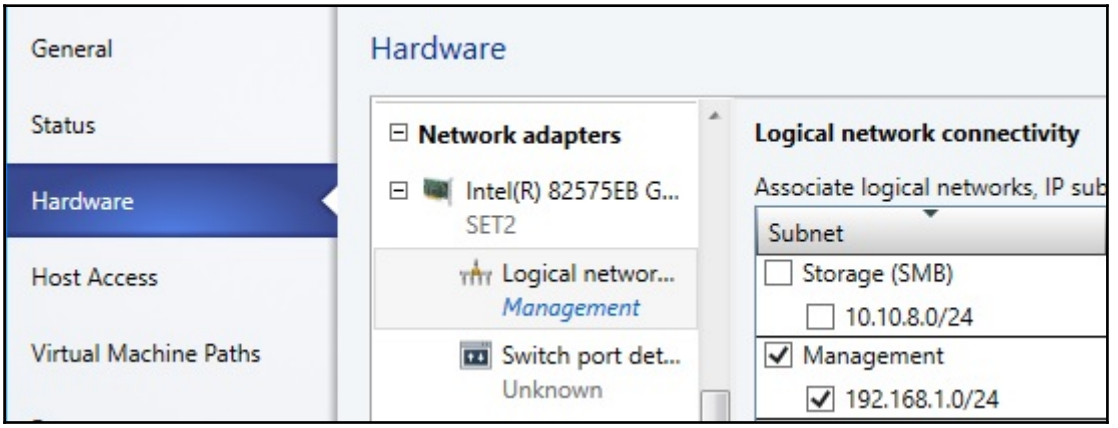

Create Logical Network Wizard
Settings
Name
Settings
Network Site
Summary
Specify logical network settings
Select the option which describes this logical network:
One connected network
The network sites within this network are equivalent and routable to one another and can be used as a single connected network.
Allow new VM networks created on this logical network to use network virtualization
Create a VM network with the same name to allow virtual machines to access this logical network directly
VLAN-based independent networks
The subnet-VLAN pairs defined by the sites in this logical network are used as independent networks. They might or might not be routable to one another.
Private VLAN (PVLAN) networks
The network sites within this logical network contain independent networks consisting of primary and secondary VLAN pairs in isolated mode.
Previous
Next
Cancel

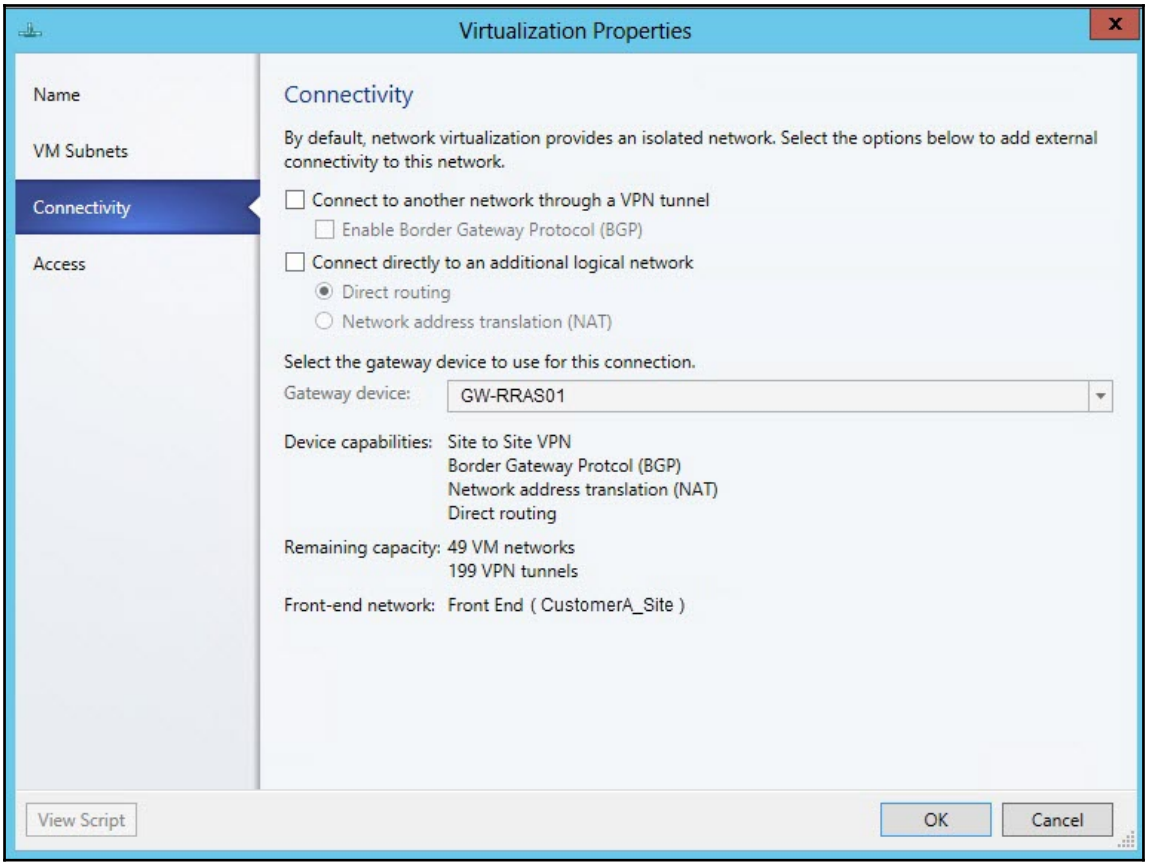

Create Logical Network Wizard
Network Site
Name
Settings
Network Site
Summary
Network sites
Network sites can be added to a logical network to associate VLANs and subnets to host groups.
Enter IP subnets using CIDR notation, for example: 192.168.1.0/24, FD4A:29CD:184F:3A2C::/64.
Add
Remove
Hosts Mgmt
Host groups that can use this network site:
All Hosts
Moscow
Hyper-V
Paris
Associated VLANs and IP subnets:
VLAN
IP subnet
0
192.168.1.0/24
Insert row
Delete row
Network site name:
Hosts Mgmt
Previous
Next
Cancel

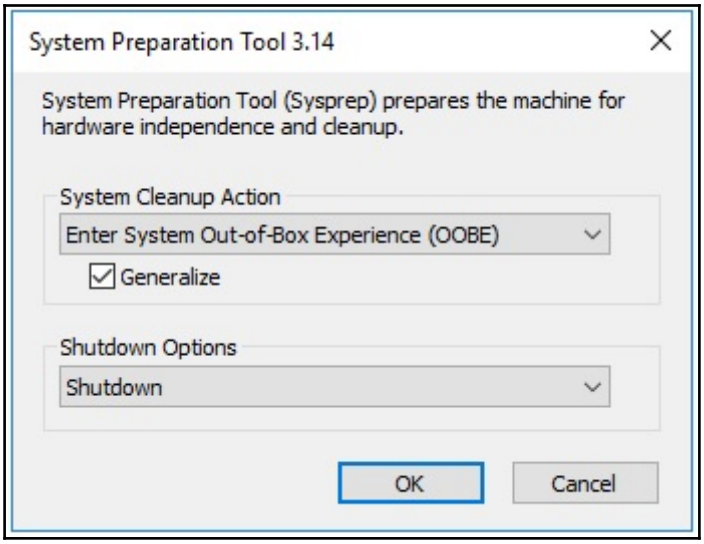


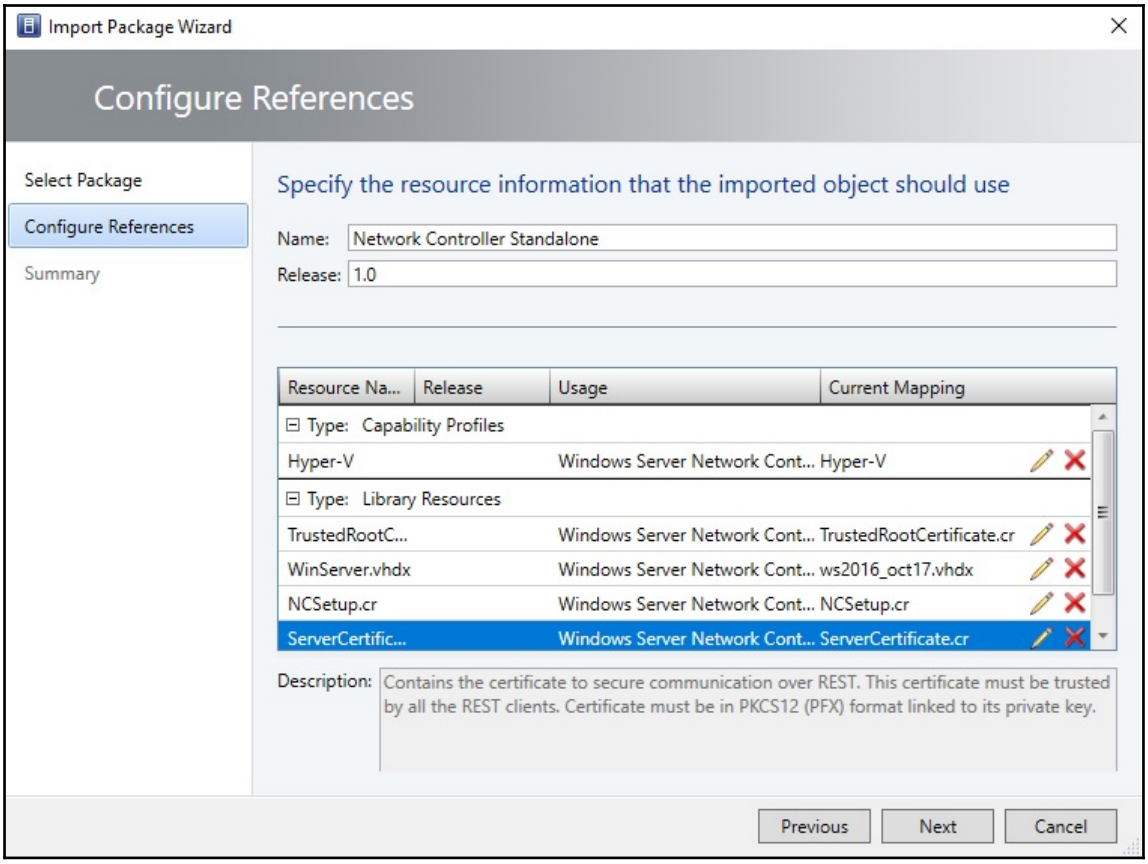
Name	Network Compliance	Subnet
Cluster	Fully compliant	
CLU_MSK	Fully compliant	10.10.25.0/24
Guest VMs	Fully compliant	
Guest_MSK	Fully compliant	10.10.23.0/24
Live Migration	Fully compliant	
LM_MSK	Fully compliant	10.10.24.0/24
Management	Fully compliant	
Hosts_MSK	Fully compliant	192.168.1.0/24
Storage (SMB)	Fully compliant	
SMB_MSK	Fully compliant	10.10.8.0/24

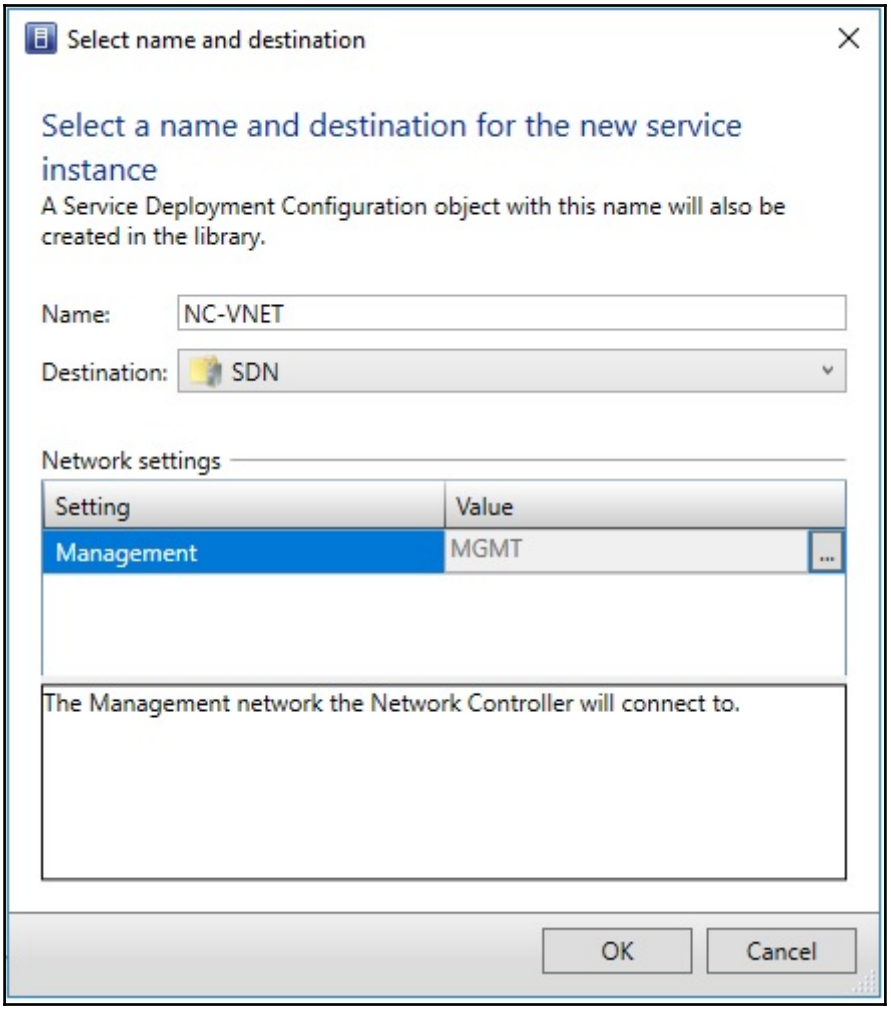

Network Settings
Network settings
Specify the options for logical and virtual switches.
Logical network matching
Match logical networks by:
First DNS Suffix Label
If the above fails, match by:
Virtual Network Switch Name
Automatic creation of logical networks
In case the host network adapter is not associated with a logical network, a new one will be created based on the above choice made for network matching.
Create logical networks automatically

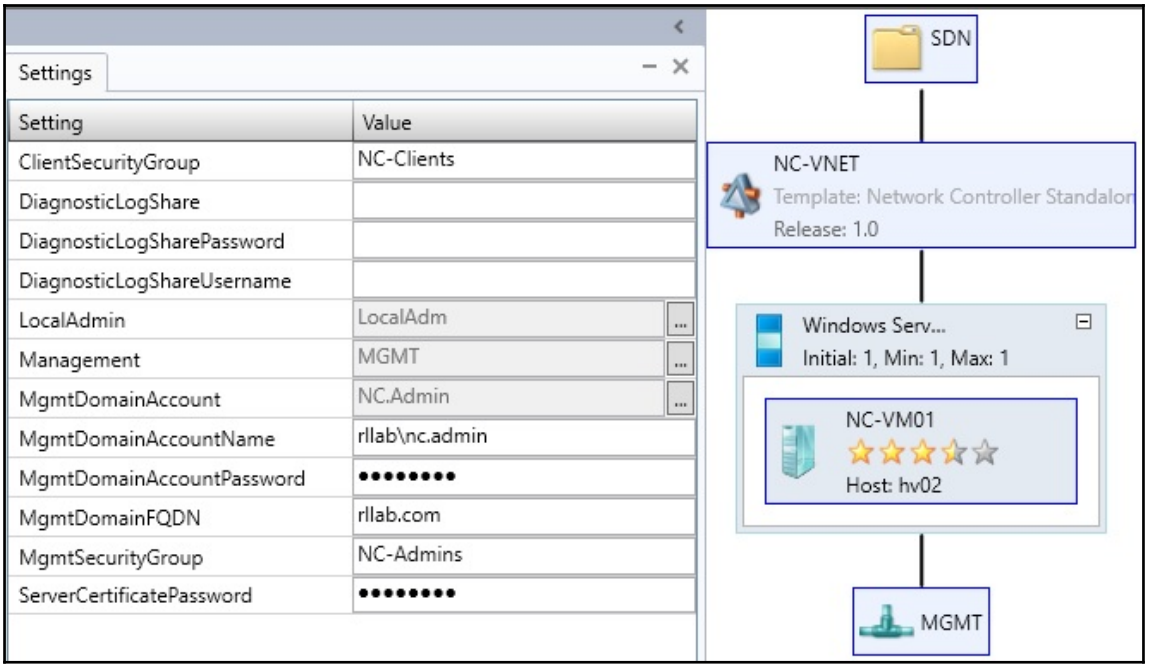

General
Status
Hardware
Host Access
Virtual Machine Paths
Hardware
Network adapters
Intel(R) 82575EB G...
SET2
Logical networ...
Management
Switch port det...
Unknown
Logical network connectivity
Associate logical networks, IP sub
Subnet
Storage (SMB)
10.10.8.0/24
Management
192.168.1.0/24


Virtualization Properties
Name
VM Subnets
Connectivity
Access
Connectivity
By default, network virtualization provides an isolated network. Select the options below to add external connectivity to this network.
Connect to another network through a VPN tunnel
Enable Border Gateway Protocol (BGP)
Connect directly to an additional logical network
Direct routing
Network address translation (NAT)
Select the gateway device to use for this connection.
Gateway device:
GW-RRAS01
Device capabilities:
Site to Site VPN
Border Gateway Protcol (BGP)
Network address translation (NAT)
Direct routing
Remaining capacity:
49 VM networks
199 VPN tunnels
Front-end network:
Front End (CustomerA_Site)
View Script
OK
Cancel

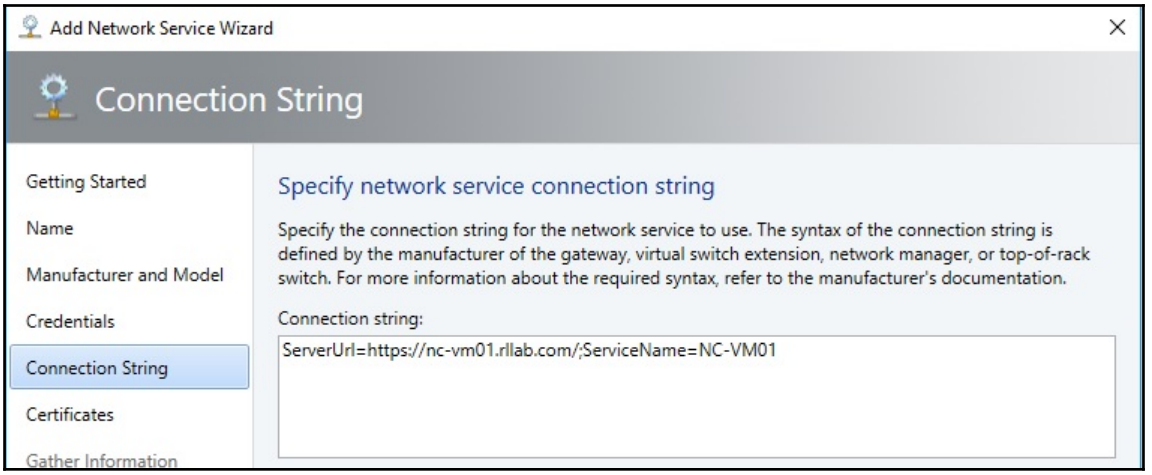

System Preparation Tool 3.14
System Preparation Tool (Sysprep) prepares the machine for hardware independence and cleanup.
System Cleanup Action
Enter System Out-of-Box Experience (OOBE)
Generalize
Shutdown Options
Shutdown
OK
Cancel

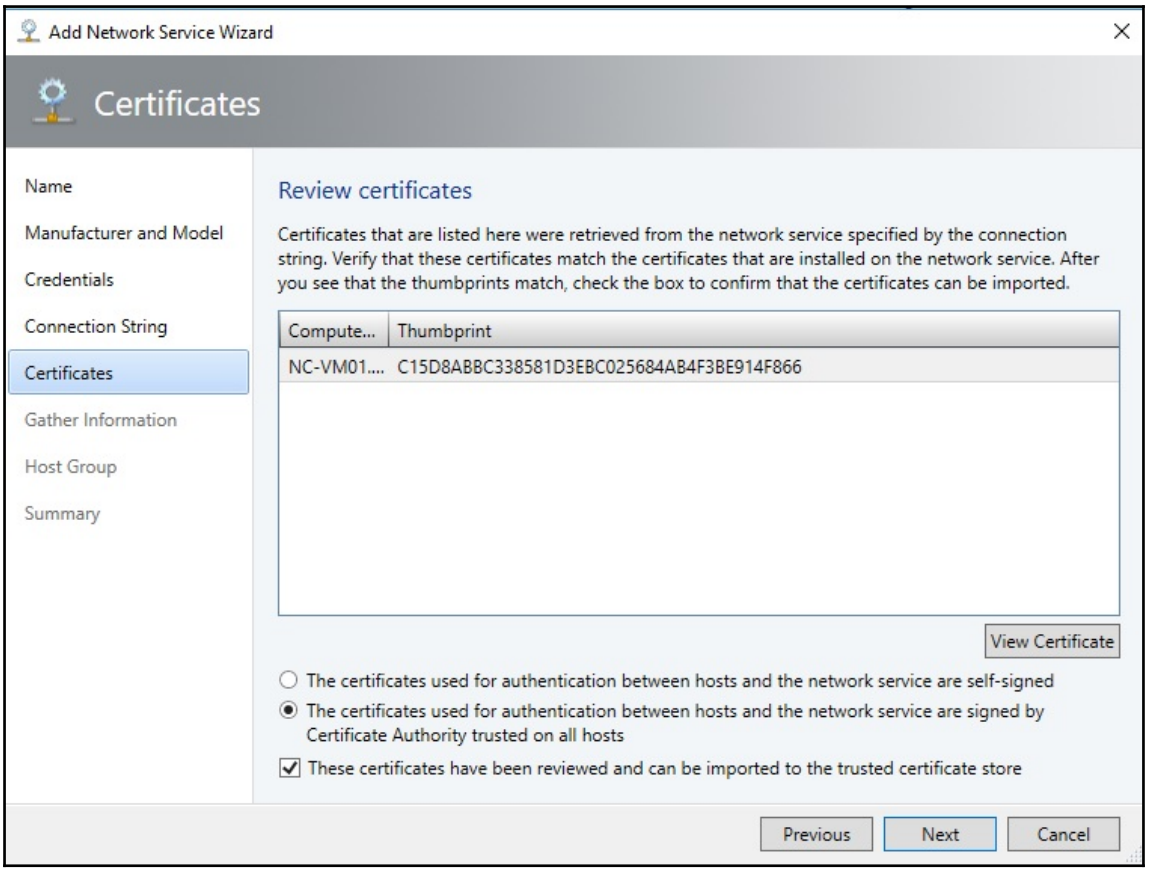

Import Package Wizard
Configure References
Select Package
Configure References
Summary
Specify the resource information that the imported object should use
Name: Network Controller Standalone
Release: 1.0
Resource Na... Release Usage Current Mapping
Type: Capability Profiles
Hyper-V Windows Server Network Cont... Hyper-V
Type: Library Resources
TrustedRootC... Windows Server Network Cont... TrustedRootCertificate.cr
WinServer.vhdx Windows Server Network Cont... ws2016_oct17.vhdx
NCSetup.cr Windows Server Network Cont... NCSetup.cr
ServerCertific... Windows Server Network Cont... ServerCertificate.cr
Description: Contains the certificate to secure communication over REST. This certificate must be trusted by all the REST clients. Certificate must be in PKCS12 (PFX) format linked to its private key.
Previous
Next
Cancel

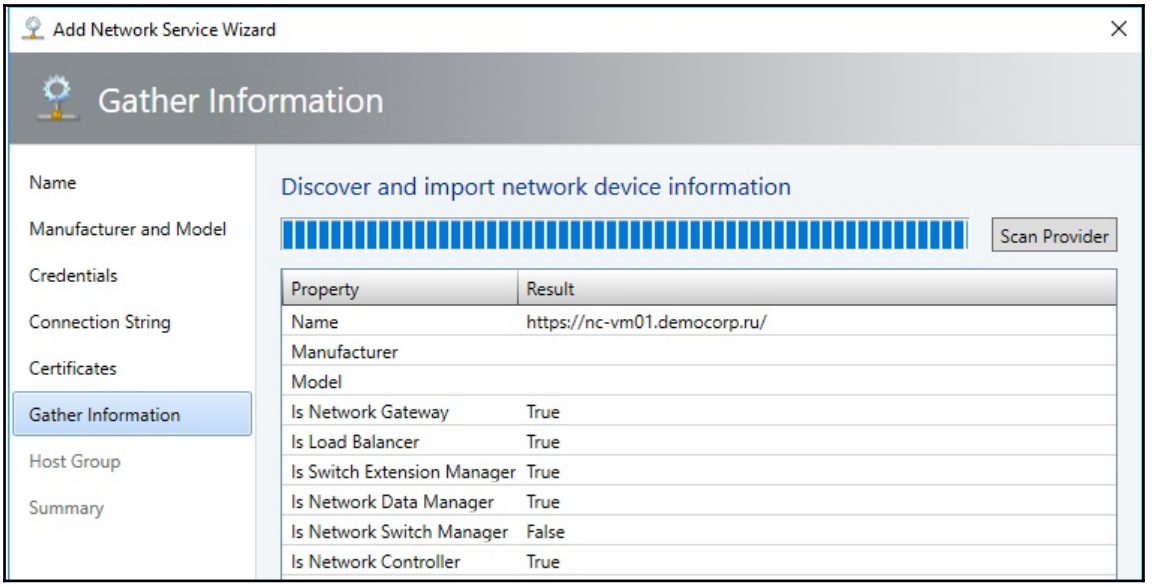

Select name and destination
Select a name and destination for the new service instance
A Service Deployment Configuration object with this name will also be created in the library.
Name:
NC-VNET
Destination:
SDN
Network settings
Setting
Value
Management
MGMT
...
The Management network the Network Controller will connect to.
OK
Cancel

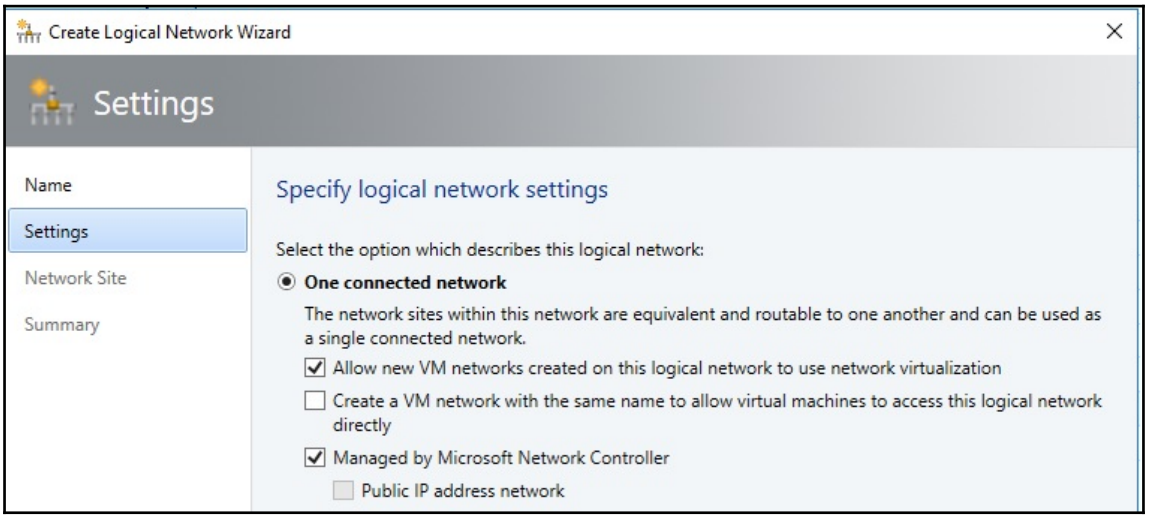


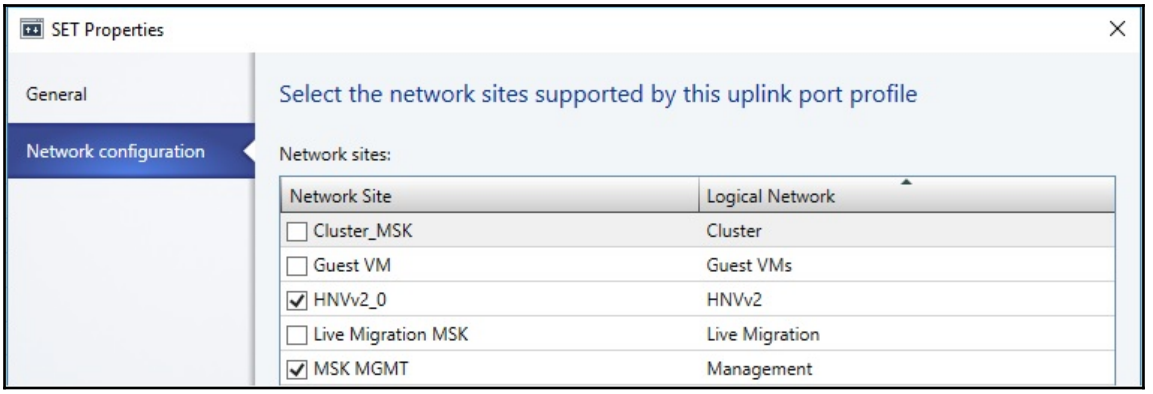
Name	Status	All VMs Accessible	VM Status	User Role	Job Status
NC-VNET	OK	Yes	Running	Administrator	Completed
Windows Ser...	OK	Yes	Running		
NC-VM01....	Running		Running	Administrator	Completed

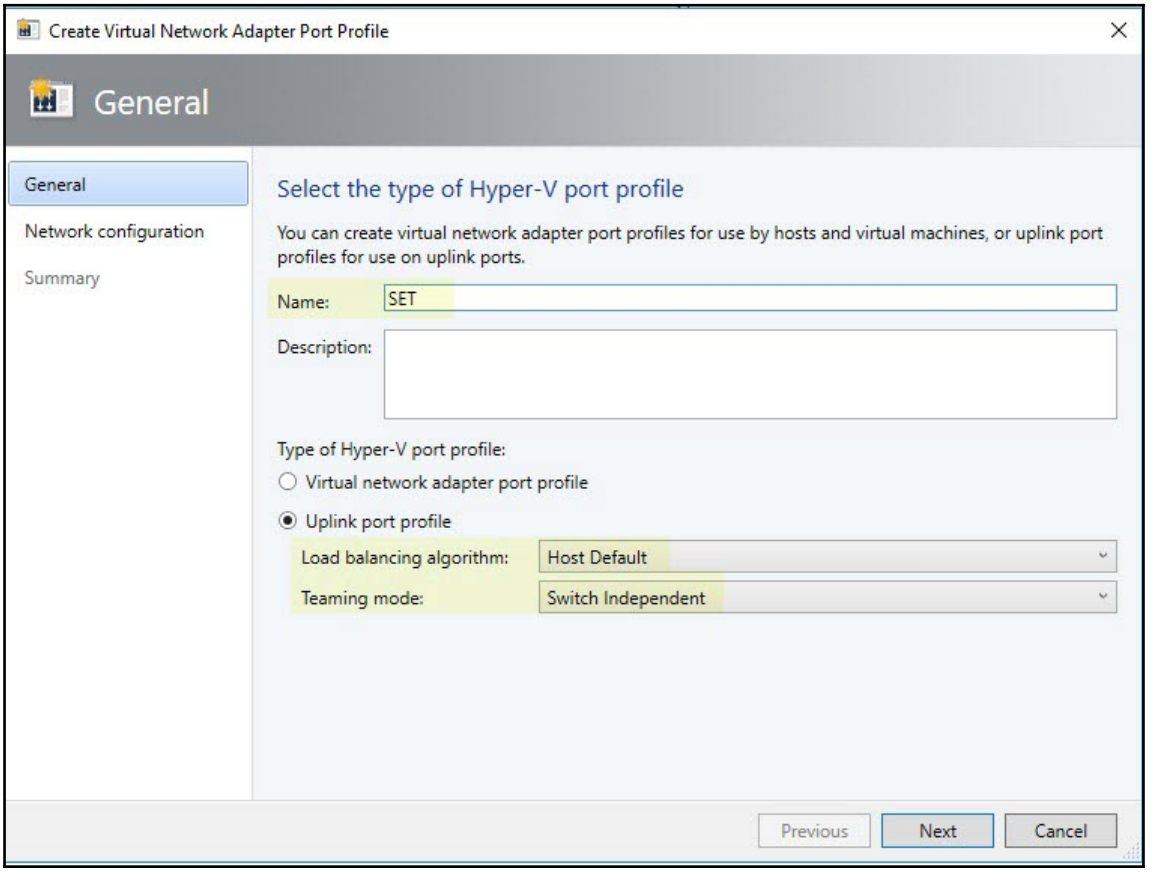

Add Network Service Wizard
Connection String
Getting Started
Name
Manufacturer and Model
Credentials
Connection String
Certificates
Gather Information
Specify network service connection string
Specify the connection string for the network service to use. The syntax of the connection string is defined by the manufacturer of the gateway, virtual switch extension, network manager, or top-of-rack switch. For more information about the required syntax, refer to the manufacturer's documentation.
Connection string:
ServerUrl=https://nc-vm01.rllab.com/;ServiceName=NC-VM01

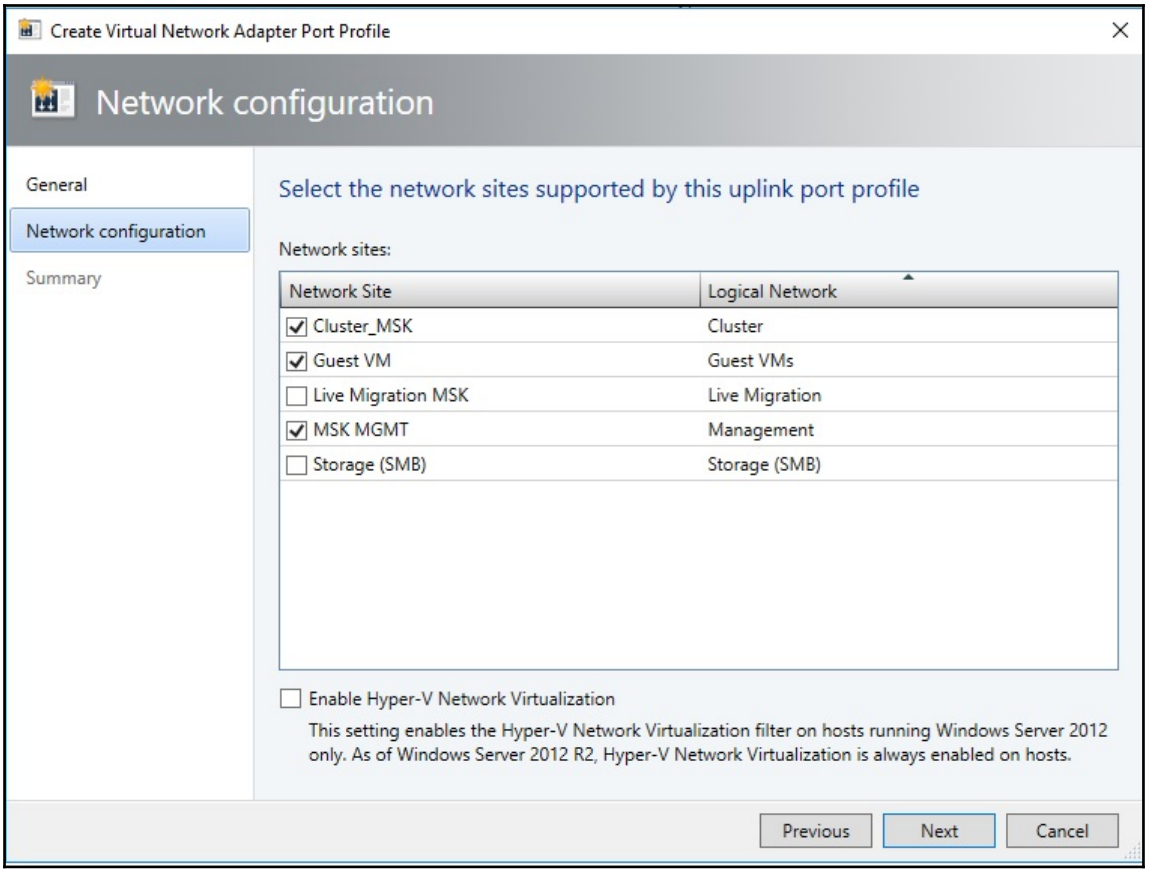

Add Network Service Wizard
Certificates
Name
Manufacturer and Model
Credentials
Connection String
Certificates
Gather Information
Host Group
Summary
Review certificates
Certificates that are listed here were retrieved from the network service specified by the connection string. Verify that these certificates match the certificates that are installed on the network service. After you see that the thumbprints match, check the box to confirm that the certificates can be imported.
Compute...
Thumbprint
NC-VM01....
C15D8ABBC338581D3EBC025684AB4F3BE914F866
View Certificate
The certificates used for authentication between hosts and the network service are self-signed
The certificates used for authentication between hosts and the network service are signed by Certificate Authority trusted on all hosts
These certificates have been reviewed and can be imported to the trusted certificate store
Previous
Next
Cancel

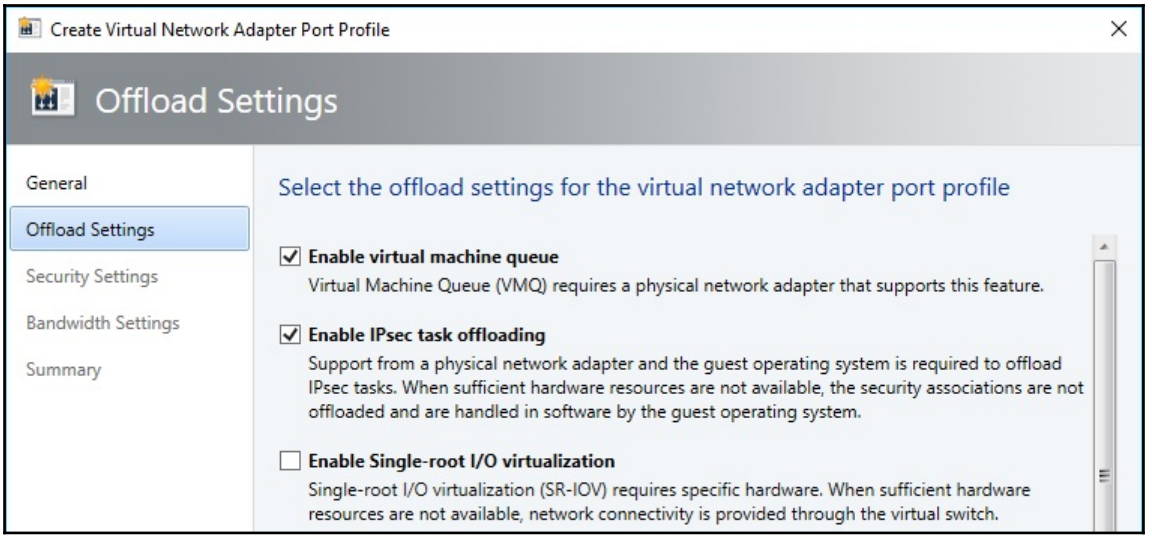

Add Network Service Wizard
Gather Information
Name
Manufacturer and Model
Credentials
Connection String
Certificates
Gather Information
Host Group
Summary
Discover and import network device information
Scan Provider
Property
Result
Name
https://nc-vm01.democorp.ru/
Manufacturer
Model
Is Network Gateway
True
Is Load Balancer
True
Is Switch Extension Manager
True
Is Network Data Manager
True
Is Network Switch Manager
False
Is Network Controller
True

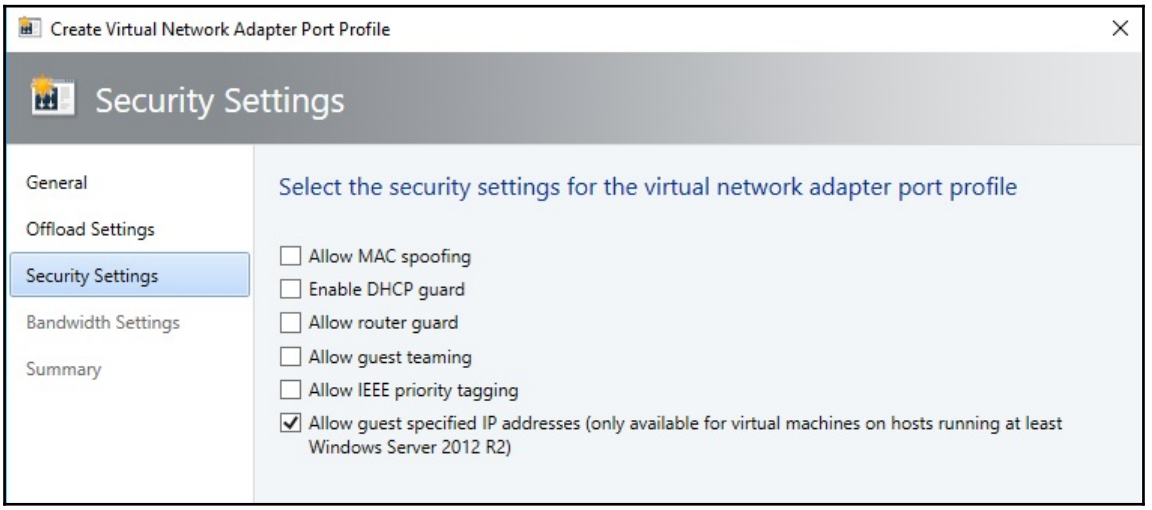

Create Logical Network Wizard
Settings
Name
Settings
Network Site
Summary
Specify logical network settings
Select the option which describes this logical network:
One connected network
The network sites within this network are equivalent and routable to one another and can be used as a single connected network.
Allow new VM networks created on this logical network to use network virtualization
Create a VM network with the same name to allow virtual machines to access this logical network directly
Managed by Microsoft Network Controller
Public IP address network

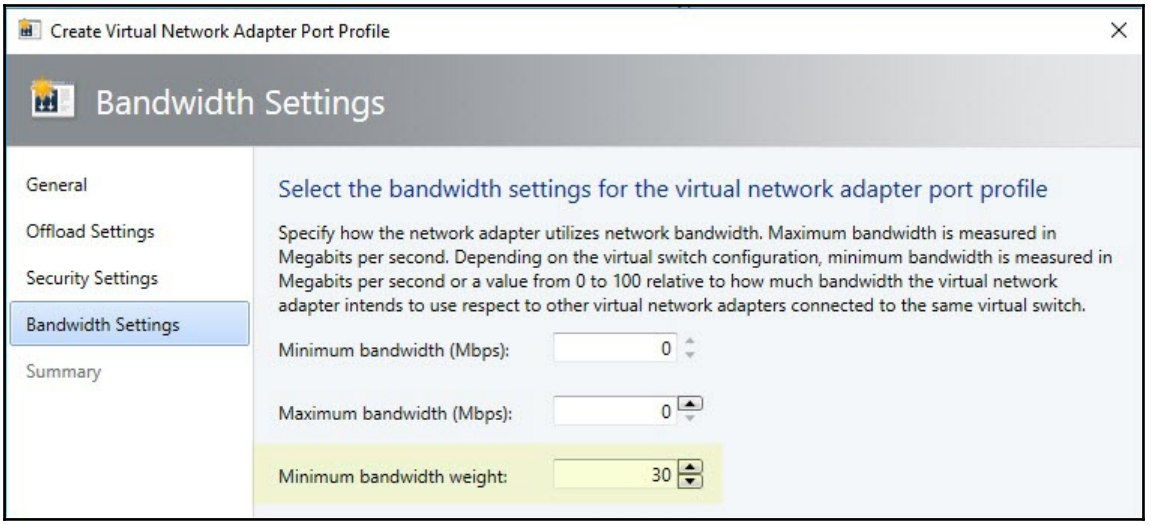

SET Properties
General
Network configuration
Select the network sites supported by this uplink port profile
Network sites:
Network Site
Logical Network
Cluster_MSK
Cluster
Guest VM
Guest VMs
HNVv2_0
HNVv2
Live Migration MSK
Live Migration
MSK MGMT
Management

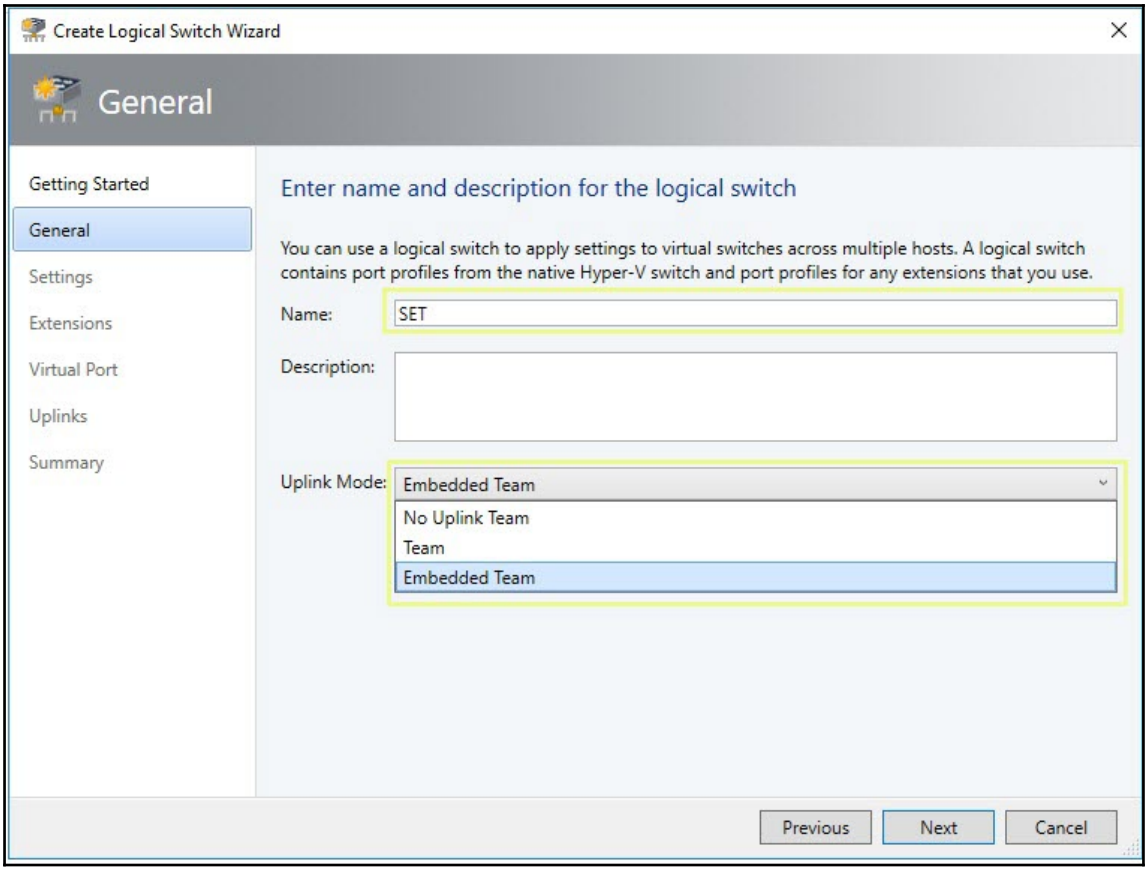

Create Virtual Network Adapter Port Profile
General
General
Network configuration
Summary
Select the type of Hyper-V port profile
You can create virtual network adapter port profiles for use by hosts and virtual machines, or uplink port profiles for use on uplink ports.
Name:
SET
Description:
Type of Hyper-V port profile:
Virtual network adapter port profile
Uplink port profile
Load balancing algorithm:
Host Default
Teaming mode:
Switch Independent
Previous
Next
Cancel

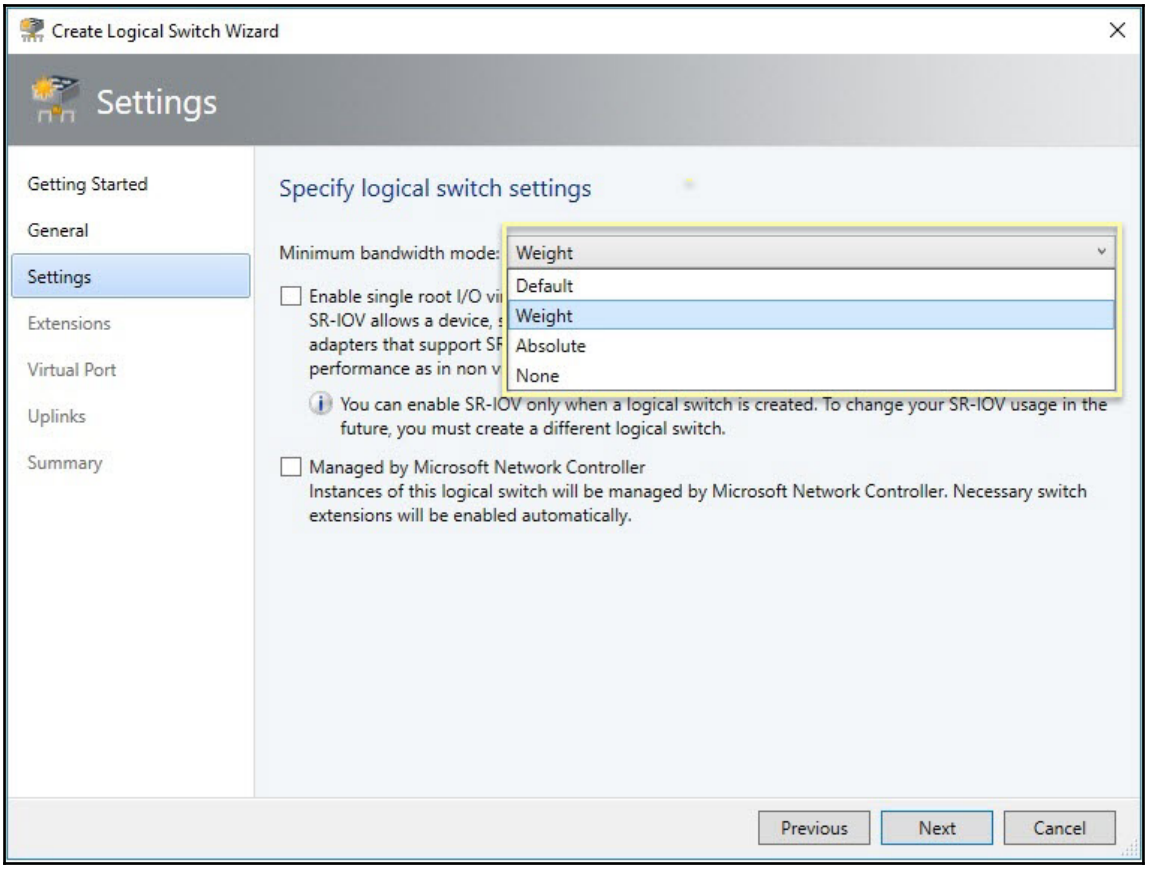

Create Virtual Network Adapter Port Profile
Network configuration
General
Network configuration
Summary
Select the network sites supported by this uplink port profile
Network sites:
Network Site
Logical Network
Cluster_MSK
Cluster
Guest VM
Guest VMs
Live Migration MSK
Live Migration
MSK MGMT
Management
Storage (SMB)
Storage (SMB)
Enable Hyper-V Network Virtualization
This setting enables the Hyper-V Network Virtualization filter on hosts running Windows Server 2012 only. As of Windows Server 2012 R2, Hyper-V Network Virtualization is always enabled on hosts.
Previous
Next
Cancel

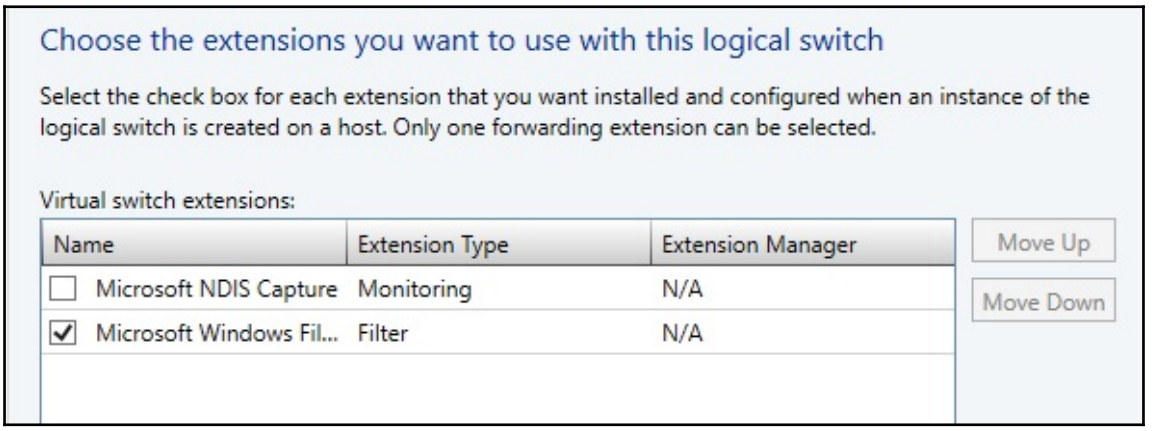

Create Virtual Network Adapter Port Profile
Offload Settings
General
Offload Settings
Security Settings
Bandwidth Settings
Summary
Select the offload settings for the virtual network adapter port profile
Enable virtual machine queue
Virtual Machine Queue (VMQ) requires a physical network adapter that supports this feature.
Enable IPsec task offloading
Support from a physical network adapter and the guest operating system is required to offload IPsec tasks. When sufficient hardware resources are not available, the security associations are not offloaded and are handled in software by the guest operating system.
Enable Single-root I/O virtualization
Single-root I/O virtualization (SR-IOV) requires specific hardware. When sufficient hardware resources are not available, network connectivity is provided through the virtual switch.

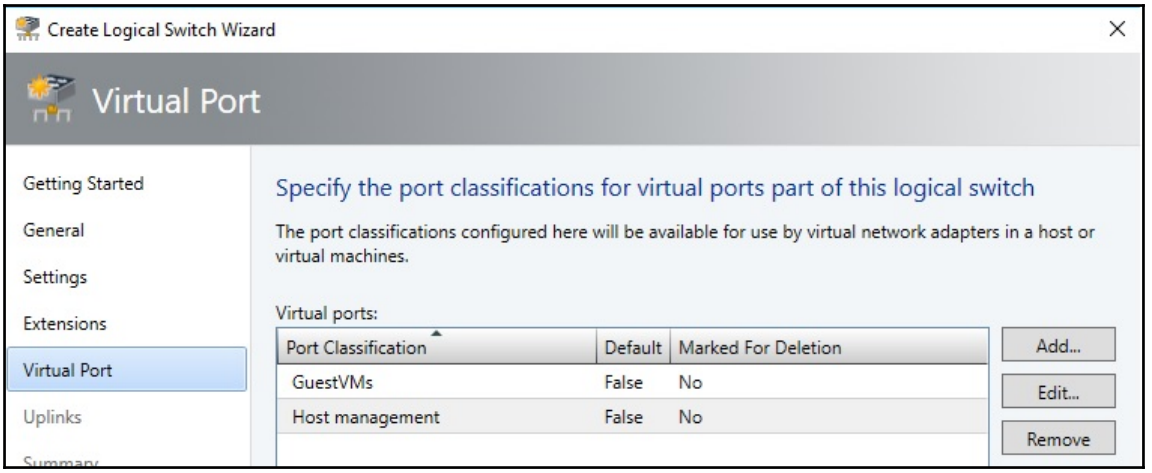

Create Virtual Network Adapter Port Profile
Security Settings
General
Offload Settings
Security Settings
Bandwidth Settings
Summary
Select the security settings for the virtual network adapter port profile
Allow MAC spoofing
Enable DHCP guard
Allow router guard
Allow guest teaming
Allow IEEE priority tagging
Allow guest specified IP addresses (only available for virtual machines on hosts running at least Windows Server 2012 R2)

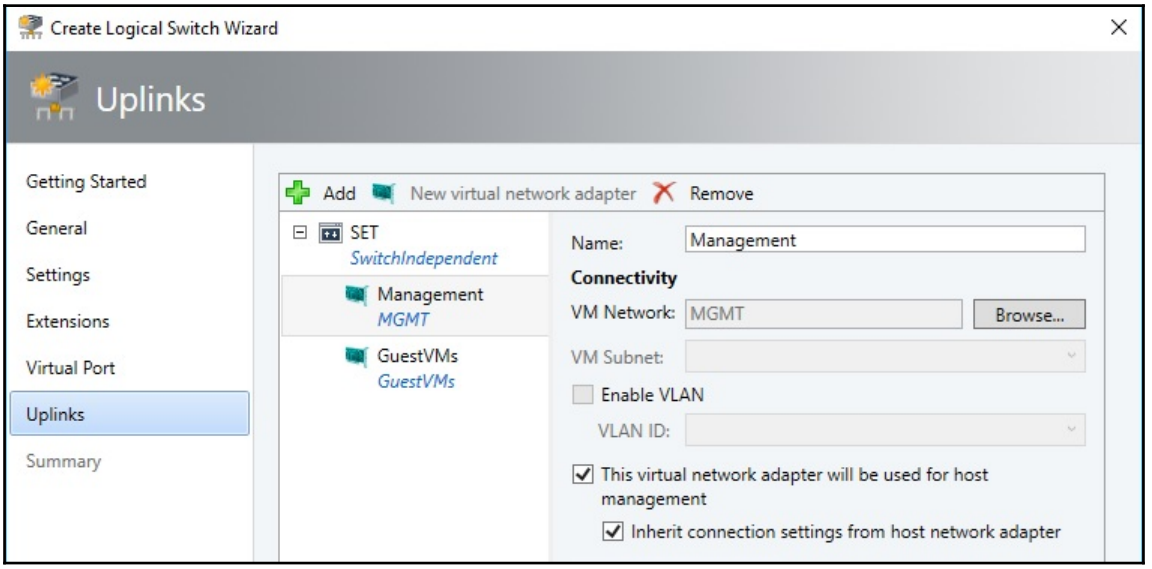

Create Virtual Network Adapter Port Profile
Bandwidth Settings
General
Offload Settings
Security Settings
Bandwidth Settings
Summary
Select the bandwidth settings for the virtual network adapter port profile
Specify how the network adapter utilizes network bandwidth. Maximum bandwidth is measured in Megabits per second. Depending on the virtual switch configuration, minimum bandwidth is measured in Megabits per second or a value from 0 to 100 relative to how much bandwidth the virtual network adapter intends to use respect to other virtual network adapters connected to the same virtual switch.
Minimum bandwidth (Mbps):
0
Maximum bandwidth (Mbps):
0
Minimum bandwidth weight:
30

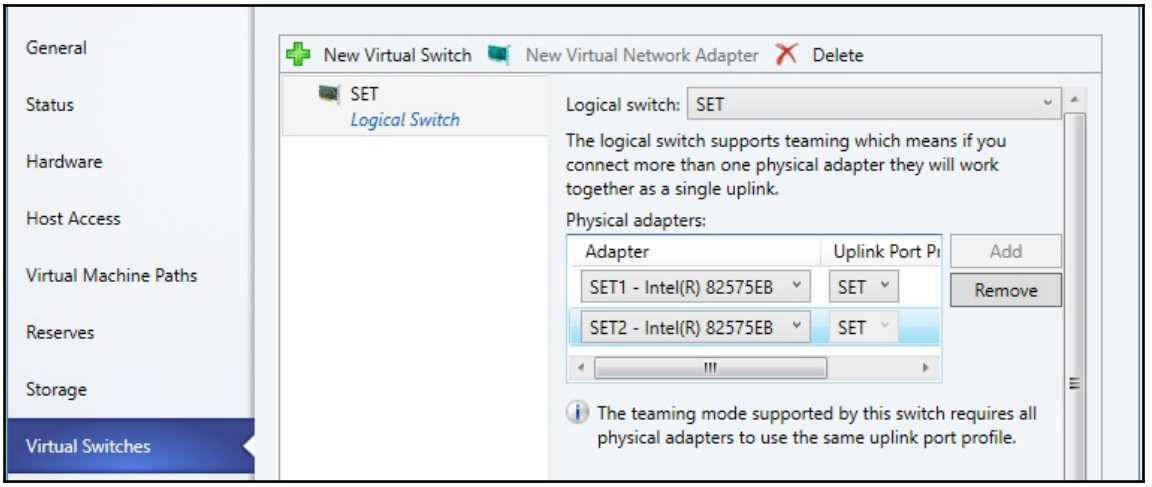

Create Logical Switch Wizard
General
Getting Started
General
Settings
Extensions
Virtual Port
Uplinks
Summary
Enter name and description for the logical switch
You can use a logical switch to apply settings to virtual switches across multiple hosts. A logical switch contains port profiles from the native Hyper-V switch and port profiles for any extensions that you use.
Name:
SET
Description:
Uplink Mode:
Embedded Team
No Uplink Team
Team
Embedded Team
Previous
Next
Cancel

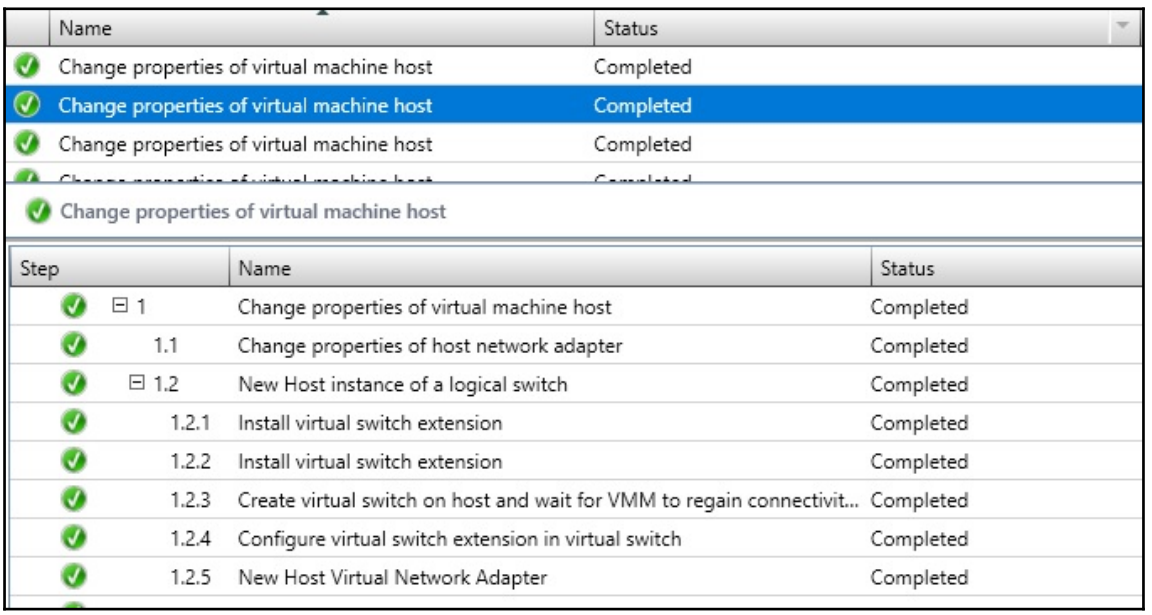

Create Logical Switch Wizard
Settings
Getting Started
General
Settings
Extensions
Virtual Port
Uplinks
Summary
Specify logical switch settings
Minimum bandwidth mode:
Weight
Default
Weight
Absolute
None
Enable single root I/O vi
SR-IOV allows a device,
adapters that support SF
performance as in non v
You can enable SR-IOV only when a logical switch is created. To change your SR-IOV usage in the future, you must create a different logical switch.
Managed by Microsoft Network Controller
Instances of this logical switch will be managed by Microsoft Network Controller. Necessary switch extensions will be enabled automatically.
Previous
Next
Cancel

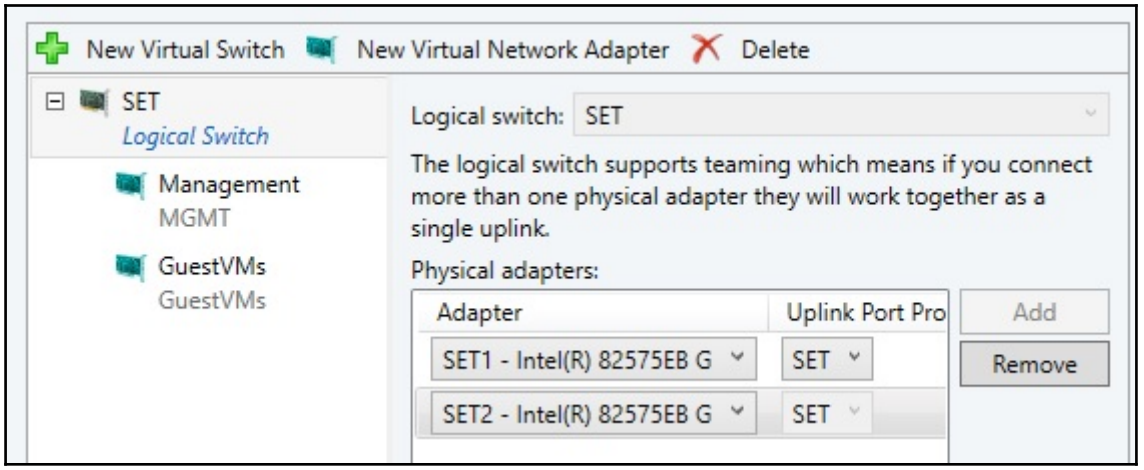

Choose the extensions you want to use with this logical switch
Select the check box for each extension that you want installed and configured when an instance of the logical switch is created on a host. Only one forwarding extension can be selected.
Virtual switch extensions:
Name
Extension Type
Extension Manager
Microsoft NDIS Capture
Monitoring
N/A
Microsoft Windows Fil...
Filter
N/A
Move Up
Move Down

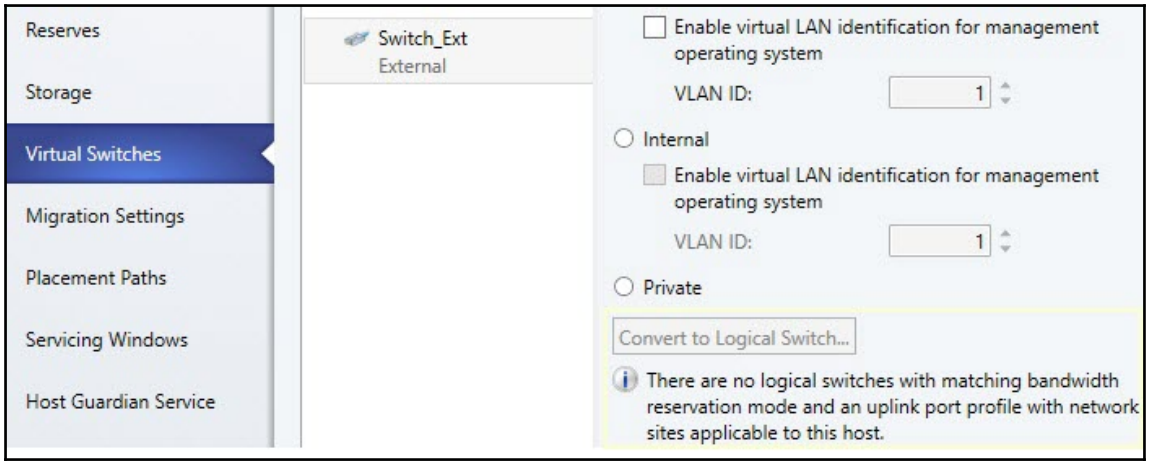

Create Logical Switch Wizard
Virtual Port
Getting Started
General
Settings
Extensions
Virtual Port
Uplinks
Summary
Specify the port classifications for virtual ports part of this logical switch
The port classifications configured here will be available for use by virtual network adapters in a host or virtual machines.
Virtual ports:
Port Classification
Default
Marked For Deletion
GuestVMs
False
No
Host management
False
No
Add...
Edit...
Remove

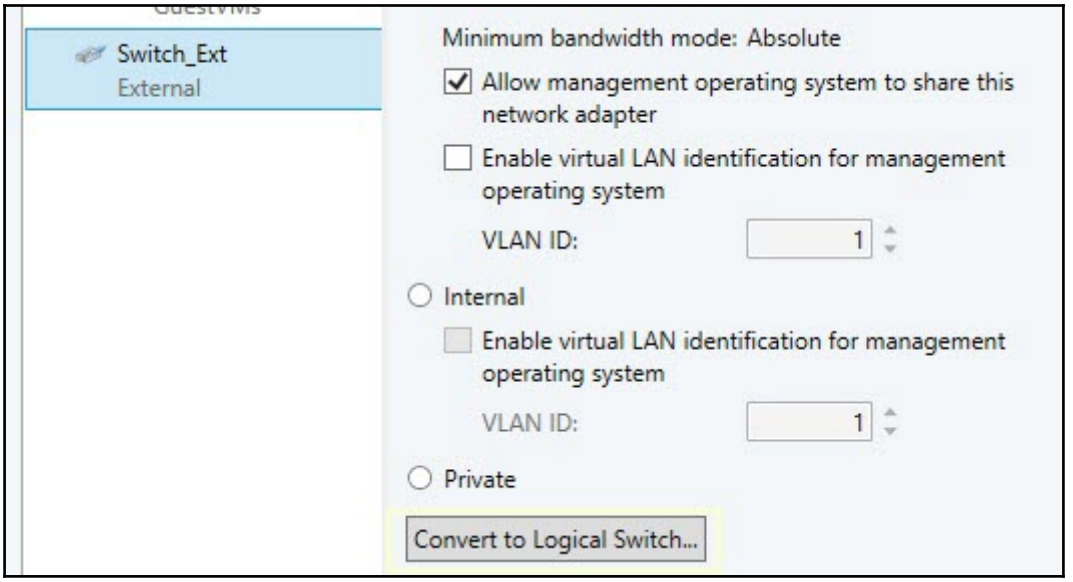

Create Logical Switch Wizard
Uplinks
Getting Started
General
Settings
Extensions
Virtual Port
Uplinks
Summary
Add
New virtual network adapter
Remove
SET
SwitchIndependent
Management
MGMT
GuestVMs
GuestVMs
Name:
Management
Connectivity
VM Network:
MGMT
Browse...
VM Subnet:
Enable VLAN
VLAN ID:
This virtual network adapter will be used for host management
Inherit connection settings from host network adapter

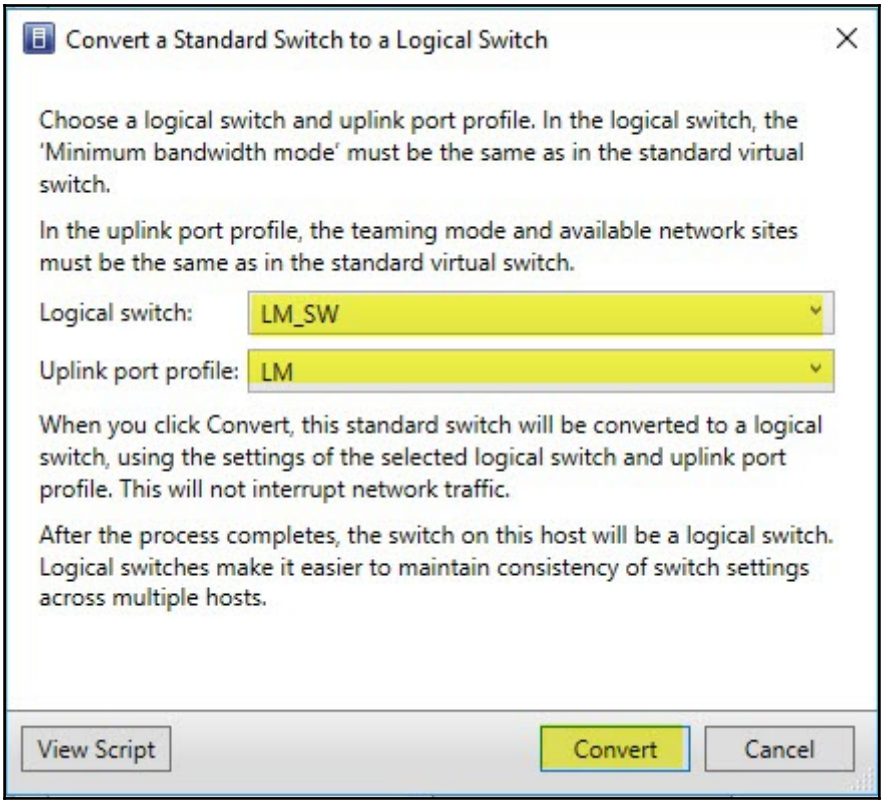

General
Status
Hardware
Host Access
Virtual Machine Paths
Reserves
Storage
Virtual Switches
New Virtual Switch
New Virtual Network Adapter
Delete
SET
Logical Switch
Logical switch:
SET
The logical switch supports teaming which means if you connect more than one physical adapter they will work together as a single uplink.
Physical adapters:
Adapter
Uplink Port Pı
Add
SET1 - Intel(R) 82575EB
SET
Remove
SET2 - Intel(R) 82575EB
SET
The teaming mode supported by this switch requires all physical adapters to use the same uplink port profile.

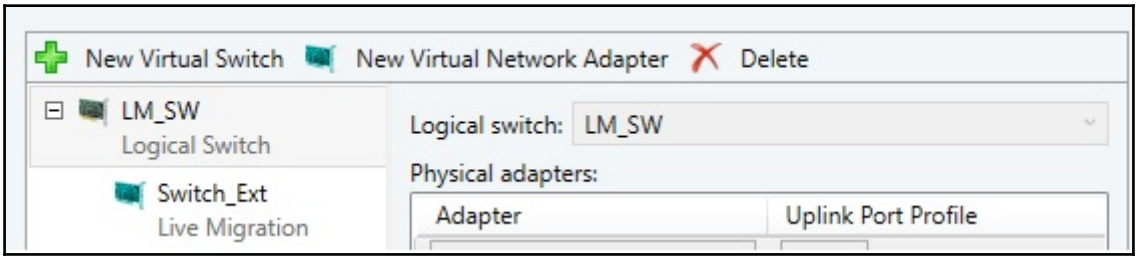

Name
Status
Change properties of virtual machine host
Completed
Change properties of virtual machine host
Completed
Change properties of virtual machine host
Completed
Change properties of virtual machine host
Step
Name
Status
1
Change properties of virtual machine host
Completed
1.1
Change properties of host network adapter
Completed
1.2
New Host instance of a logical switch
Completed
1.2.1
Install virtual switch extension
Completed
1.2.2
Install virtual switch extension
Completed
1.2.3
Create virtual switch on host and wait for VMM to regain connectivit...
Completed
1.2.4
Configure virtual switch extension in virtual switch
Completed
1.2.5
New Host Virtual Network Adapter
Completed

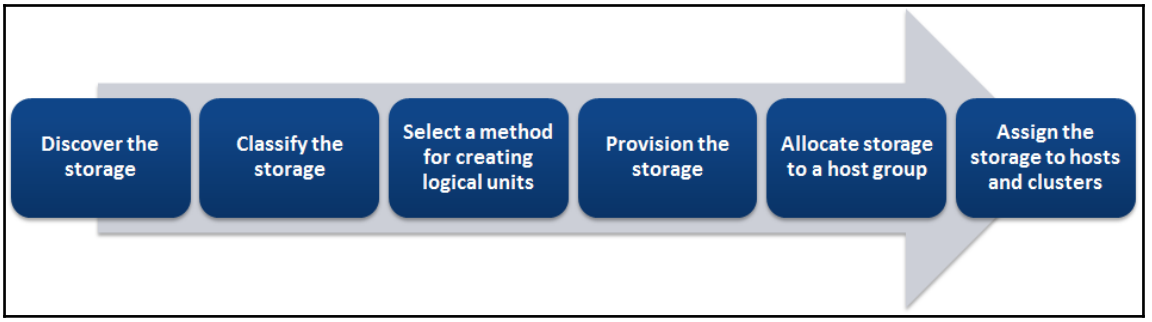

New Virtual Switch
New Virtual Network Adapter
Delete
SET
Logical Switch
Management
MGMT
GuestVMs
GuestVMs
Logical switch:
SET
The logical switch supports teaming which means if you connect more than one physical adapter they will work together as a single uplink.
Physical adapters:
Adapter
Uplink Port Pro
Add
SET1 - Intel(R) 82575EB G
SET
Remove
SET2 - Intel(R) 82575EB G
SET

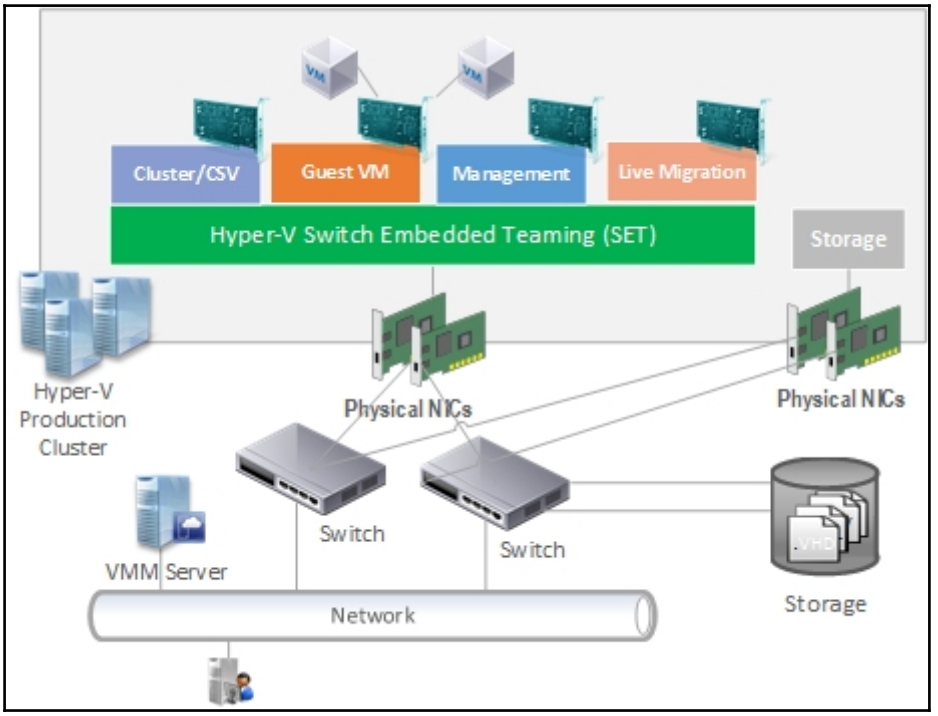

Reserves
Storage
Virtual Switches
Migration Settings
Placement Paths
Servicing Windows
Host Guardian Service
Switch_Ext
External
Enable virtual LAN identification for management operating system
VLAN ID:
1
Internal
Enable virtual LAN identification for management operating system
VLAN ID:
1
Private
Convert to Logical Switch...
There are no logical switches with matching bandwidth reservation mode and an uplink port profile with network sites applicable to this host.

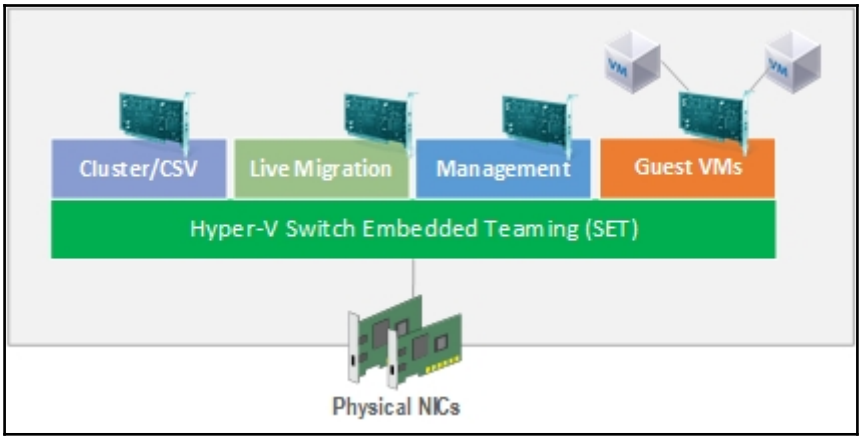

Switch_Ext
External
Minimum bandwidth mode: Absolute
Allow management operating system to share this network adapter
Enable virtual LAN identification for management operating system
VLAN ID:
1
Internal
Enable virtual LAN identification for management operating system
VLAN ID:
1
Private
Convert to Logical Switch...

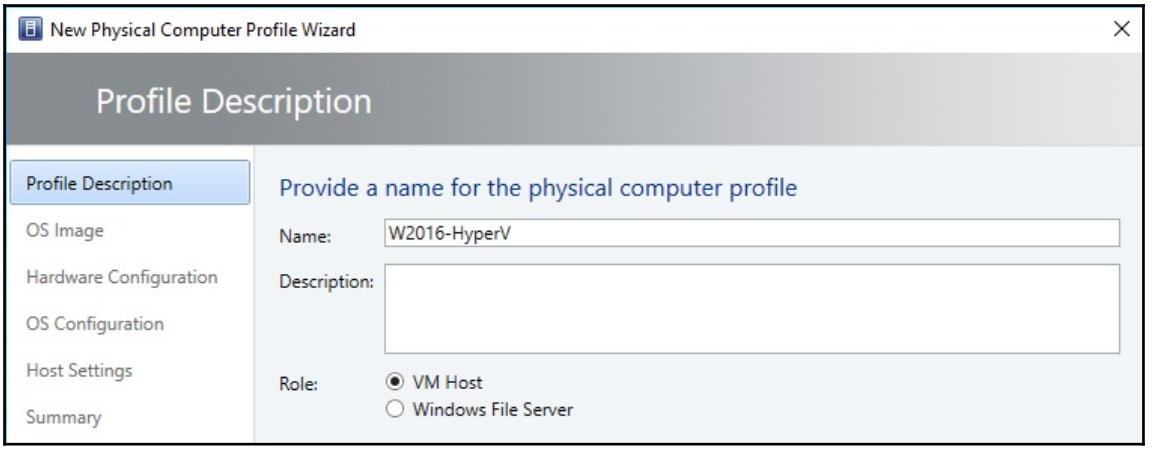

Convert a Standard Switch to a Logical Switch
Choose a logical switch and uplink port profile. In the logical switch, the 'Minimum bandwidth mode' must be the same as in the standard virtual switch.
In the uplink port profile, the teaming mode and available network sites must be the same as in the standard virtual switch.
Logical switch:
LM_SW
Uplink port profile:
LM
When you click Convert, this standard switch will be converted to a logical switch, using the settings of the selected logical switch and uplink port profile. This will not interrupt network traffic.
After the process completes, the switch on this host will be a logical switch. Logical switches make it easier to maintain consistency of switch settings across multiple hosts.
View Script
Convert
Cancel

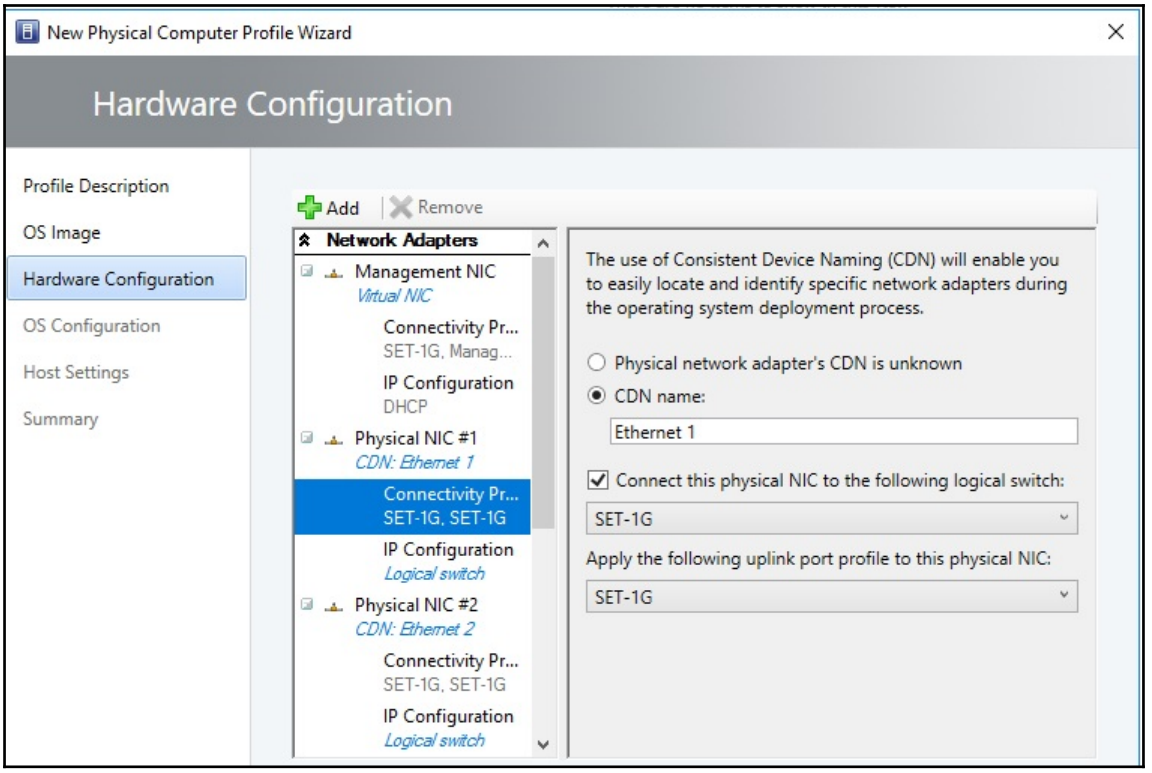

New Virtual Switch
New Virtual Network Adapter
Delete
LM_SW
Logical Switch
Switch_Ext
Live Migration
Logical switch:
LM_SW
Physical adapters:
Adapter
Uplink Port Profile

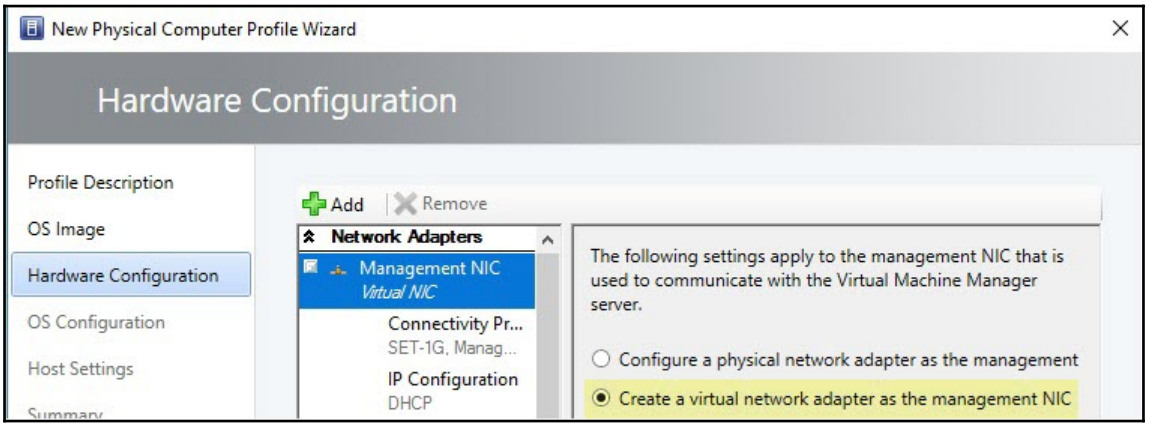

Discover the storage
Classify the storage
Select a method for creating logical units
Provision the storage
Allocate storage to a host group
Assign the storage to hosts and clusters

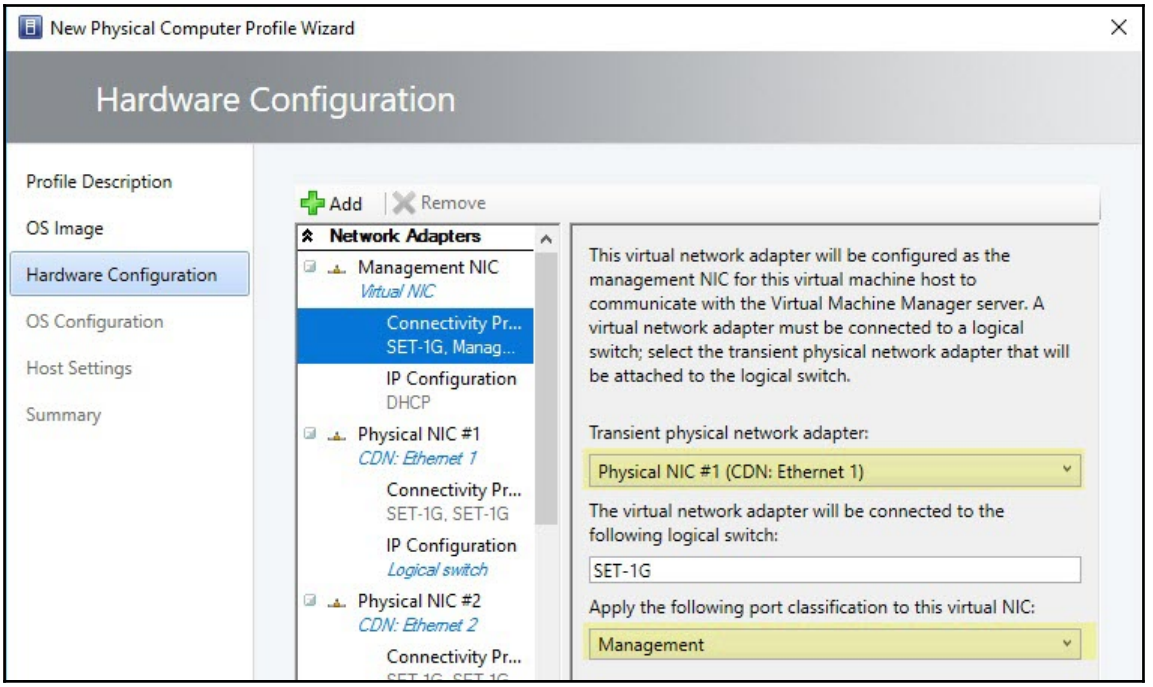

VM
VM
Cluster/CSV
Guest VM
Management
Live Migration
Hyper-V Switch Embedded Teaming (SET)
Storage
Hyper-V Production Cluster
Physical NICs
Physical NICs
Switch
Switch
VMM Server
Network
Storage

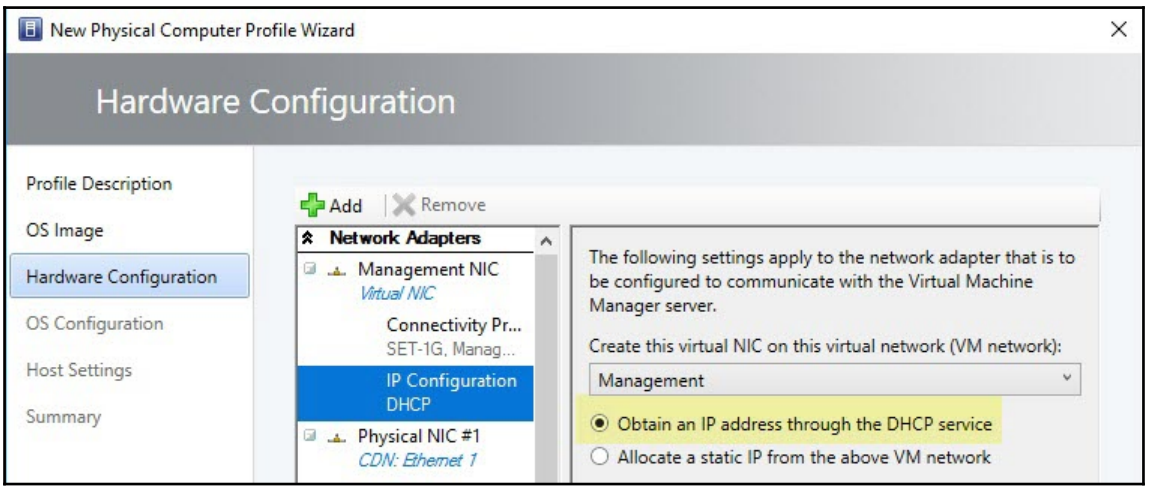

VM
VM
Cluster/CSV
Live Migration
Management
Guest VMs
Hyper-V Switch Embedded Teaming (SET)
Physical NICs

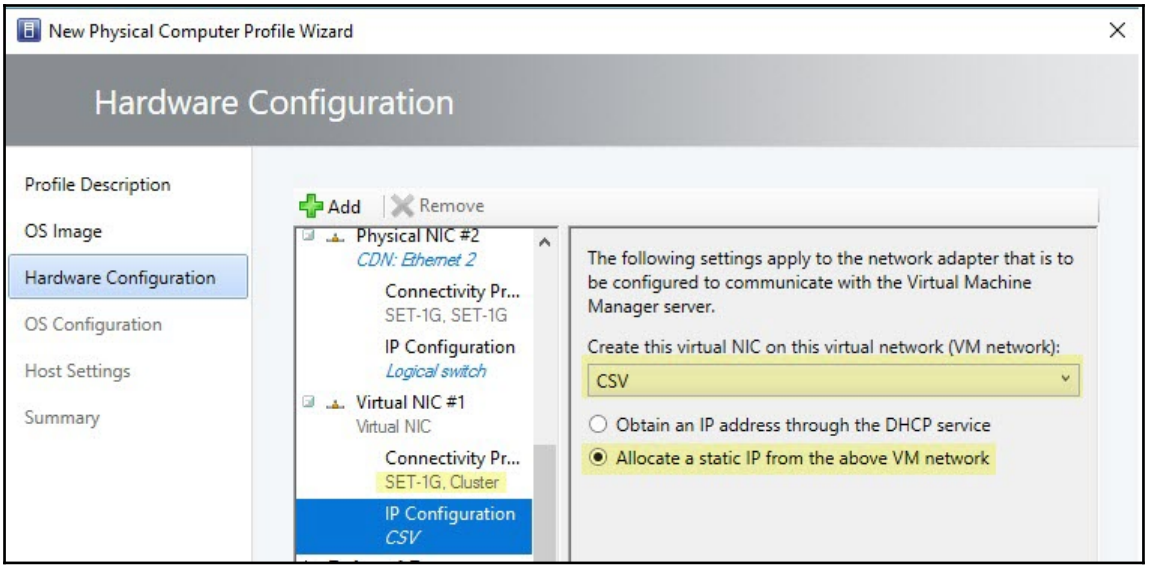

New Physical Computer Profile Wizard
Profile Description
Profile Description
OS Image
Hardware Configuration
OS Configuration
Host Settings
Summary
Provide a name for the physical computer profile
Name:
W2016-HyperV
Description:
Role:
VM Host
Windows File Server

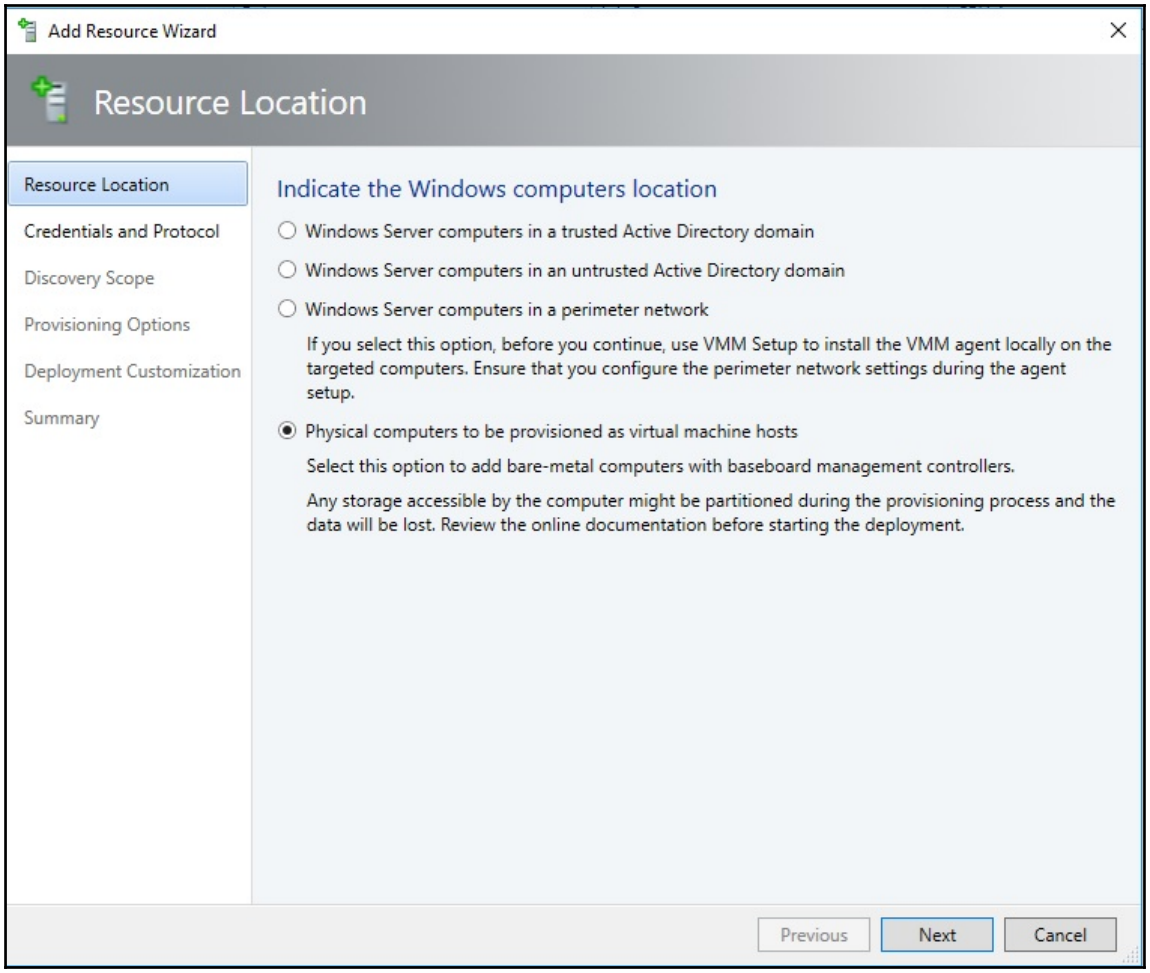

New Physical Computer Profile Wizard
Hardware Configuration
Profile Description
OS Image
Hardware Configuration
OS Configuration
Host Settings
Summary
Add
Remove
Network Adapters
Management NIC
Virtual NIC
Connectivity Pr...
SET-1G, Manag...
IP Configuration
DHCP
Physical NIC #1
CDN: Ethernet 1
Connectivity Pr...
SET-1G, SET-1G
IP Configuration
Logical switch
Physical NIC #2
CDN: Ethernet 2
Connectivity Pr...
SET-1G, SET-1G
IP Configuration
Logical switch
The use of Consistent Device Naming (CDN) will enable you to easily locate and identify specific network adapters during the operating system deployment process.
Physical network adapter's CDN is unknown
CDN name:
Ethernet 1
Connect this physical NIC to the following logical switch:
SET-1G
Apply the following uplink port profile to this physical NIC:
SET-1G

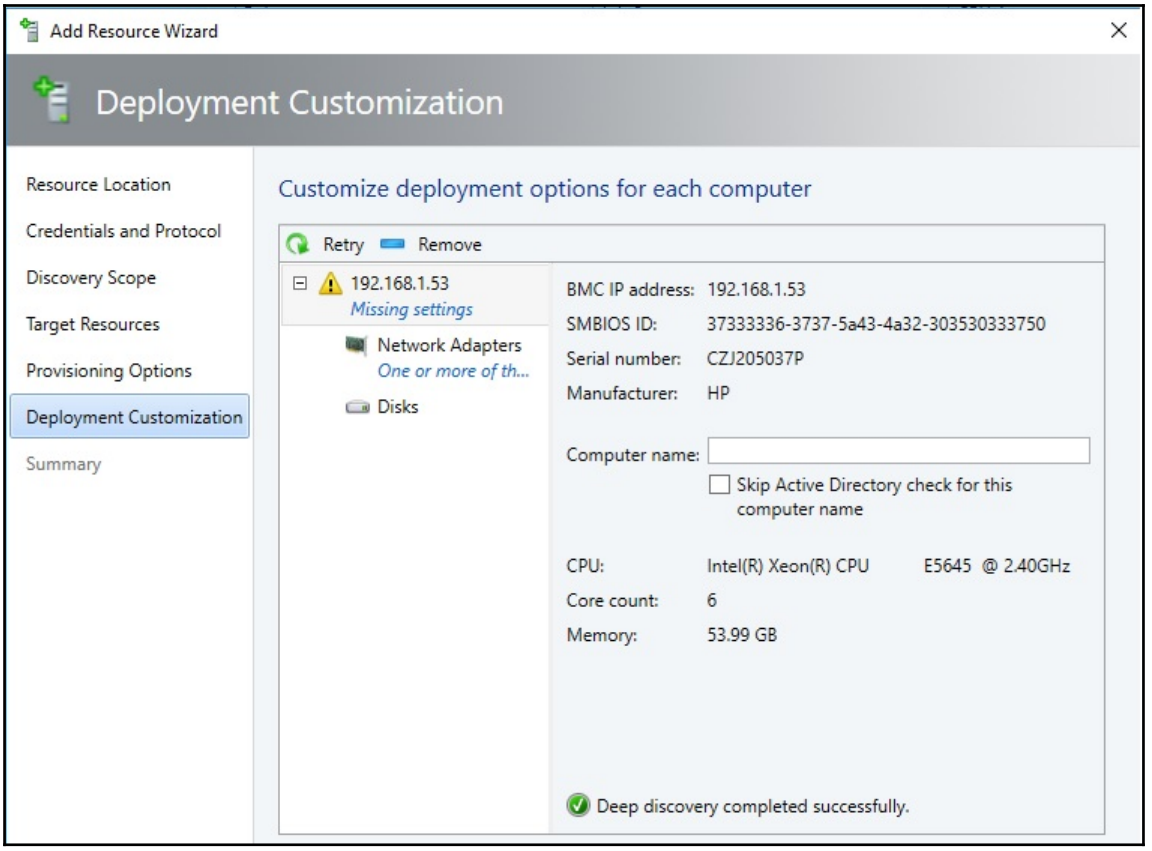

New Physical Computer Profile Wizard
Hardware Configuration
Profile Description
OS Image
Hardware Configuration
OS Configuration
Host Settings
Add
Remove
Network Adapters
Management NIC
Virtual NIC
Connectivity Pr...
SET-1G, Manag...
IP Configuration
DHCP
The following settings apply to the management NIC that is used to communicate with the Virtual Machine Manager server.
Configure a physical network adapter as the management
Create a virtual network adapter as the management NIC

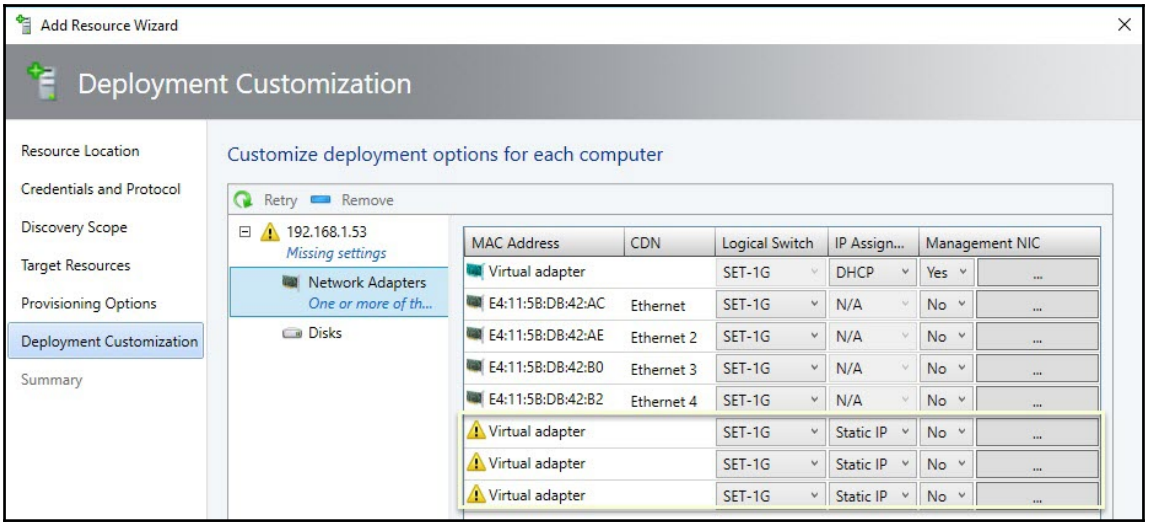

New Physical Computer Profile Wizard
Hardware Configuration
Profile Description
OS Image
Hardware Configuration
OS Configuration
Host Settings
Summary
Add
Remove
Network Adapters
Management NIC
Virtual NIC
Connectivity Pr...
SET-1G, Manag...
IP Configuration
DHCP
Physical NIC #1
CDN: Ethernet 1
Connectivity Pr...
SET-1G, SET-1G
IP Configuration
Logical switch
Physical NIC #2
CDN: Ethernet 2
Connectivity Pr...
This virtual network adapter will be configured as the management NIC for this virtual machine host to communicate with the Virtual Machine Manager server. A virtual network adapter must be connected to a logical switch; select the transient physical network adapter that will be attached to the logical switch.
Transient physical network adapter:
Physical NIC #1 (CDN: Ethernet 1)
The virtual network adapter will be connected to the following logical switch:
SET-1G
Apply the following port classification to this virtual NIC:
Management

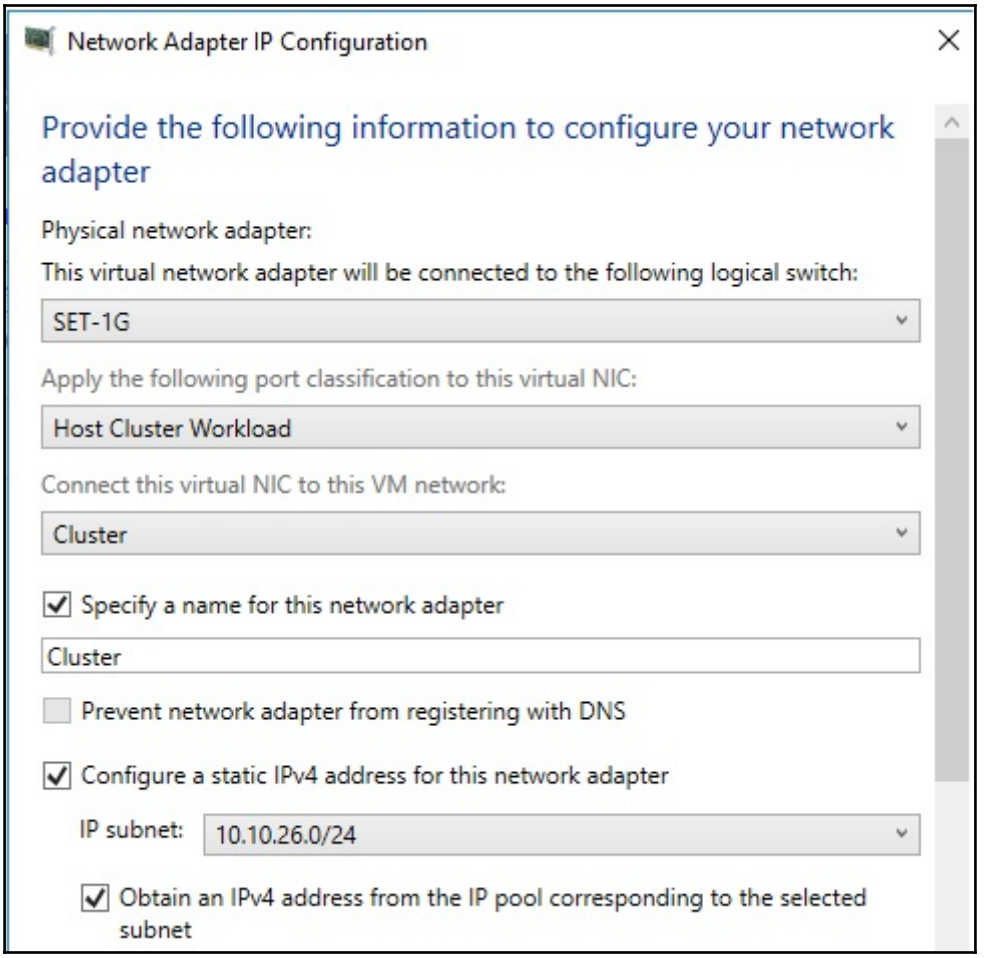

New Physical Computer Profile Wizard
Hardware Configuration
Profile Description
OS Image
Hardware Configuration
OS Configuration
Host Settings
Summary
Add
Remove
Network Adapters
Management NIC
Virtual NIC
Connectivity Pr...
SET-1G, Manag...
IP Configuration
DHCP
Physical NIC #1
CDN: Ethernet 1
The following settings apply to the network adapter that is to be configured to communicate with the Virtual Machine Manager server.
Create this virtual NIC on this virtual network (VM network):
Management
Obtain an IP address through the DHCP service
Allocate a static IP from the above VM network

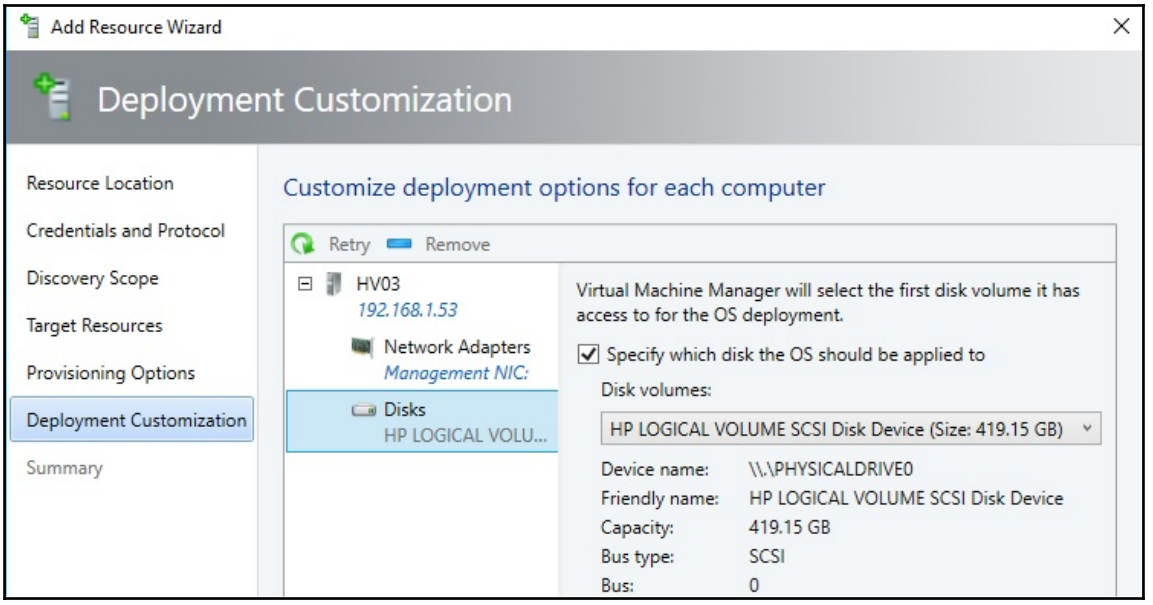

New Physical Computer Profile Wizard
Hardware Configuration
Profile Description
OS Image
Hardware Configuration
OS Configuration
Host Settings
Summary
Add
Remove
Physical NIC #2
CDN: Ethernet 2
Connectivity Pr...
SET-1G, SET-1G
IP Configuration
Logical switch
Virtual NIC #1
Virtual NIC
Connectivity Pr...
SET-1G, Cluster
IP Configuration
CSV
The following settings apply to the network adapter that is to be configured to communicate with the Virtual Machine Manager server.
Create this virtual NIC on this virtual network (VM network):
CSV
Obtain an IP address through the DHCP service
Allocate a static IP from the above VM network


Add Resource Wizard
Resource Location
Resource Location
Credentials and Protocol
Discovery Scope
Provisioning Options
Deployment Customization
Summary
Indicate the Windows computers location
Windows Server computers in a trusted Active Directory domain
Windows Server computers in an untrusted Active Directory domain
Windows Server computers in a perimeter network
If you select this option, before you continue, use VMM Setup to install the VMM agent locally on the targeted computers. Ensure that you configure the perimeter network settings during the agent setup.
Physical computers to be provisioned as virtual machine hosts
Select this option to add bare-metal computers with baseboard management controllers.
Any storage accessible by the computer might be partitioned during the provisioning process and the data will be lost. Review the online documentation before starting the deployment.
Previous
Next
Cancel


Add Resource Wizard
Deployment Customization
Resource Location
Credentials and Protocol
Discovery Scope
Target Resources
Provisioning Options
Deployment Customization
Summary
Customize deployment options for each computer
Retry
Remove
192.168.1.53
Missing settings
Network Adapters
One or more of th...
Disks
BMC IP address: 192.168.1.53
SMBIOS ID: 37333336-3737-5a43-4a32-303530333750
Serial number: CZJ205037P
Manufacturer: HP
Computer name:
Skip Active Directory check for this computer name
CPU: Intel(R) Xeon(R) CPU E5645 @ 2.40GHz
Core count: 6
Memory: 53.99 GB
Deep discovery completed successfully.


Add Resource Wizard
Deployment Customization
Resource Location
Credentials and Protocol
Discovery Scope
Target Resources
Provisioning Options
Deployment Customization
Summary
Customize deployment options for each computer
Retry
Remove
192.168.1.53
Missing settings
Network Adapters
One or more of th...
Disks
MAC Address
CDN
Logical Switch
IP Assign...
Management NIC
Virtual adapter
SET-1G
DHCP
Yes
E4:11:5B:DB:42:AC
Ethernet
N/A
No
E4:11:5B:DB:42:AE
Ethernet 2
E4:11:5B:DB:42:B0
Ethernet 3
E4:11:5B:DB:42:B2
Ethernet 4
Static IP

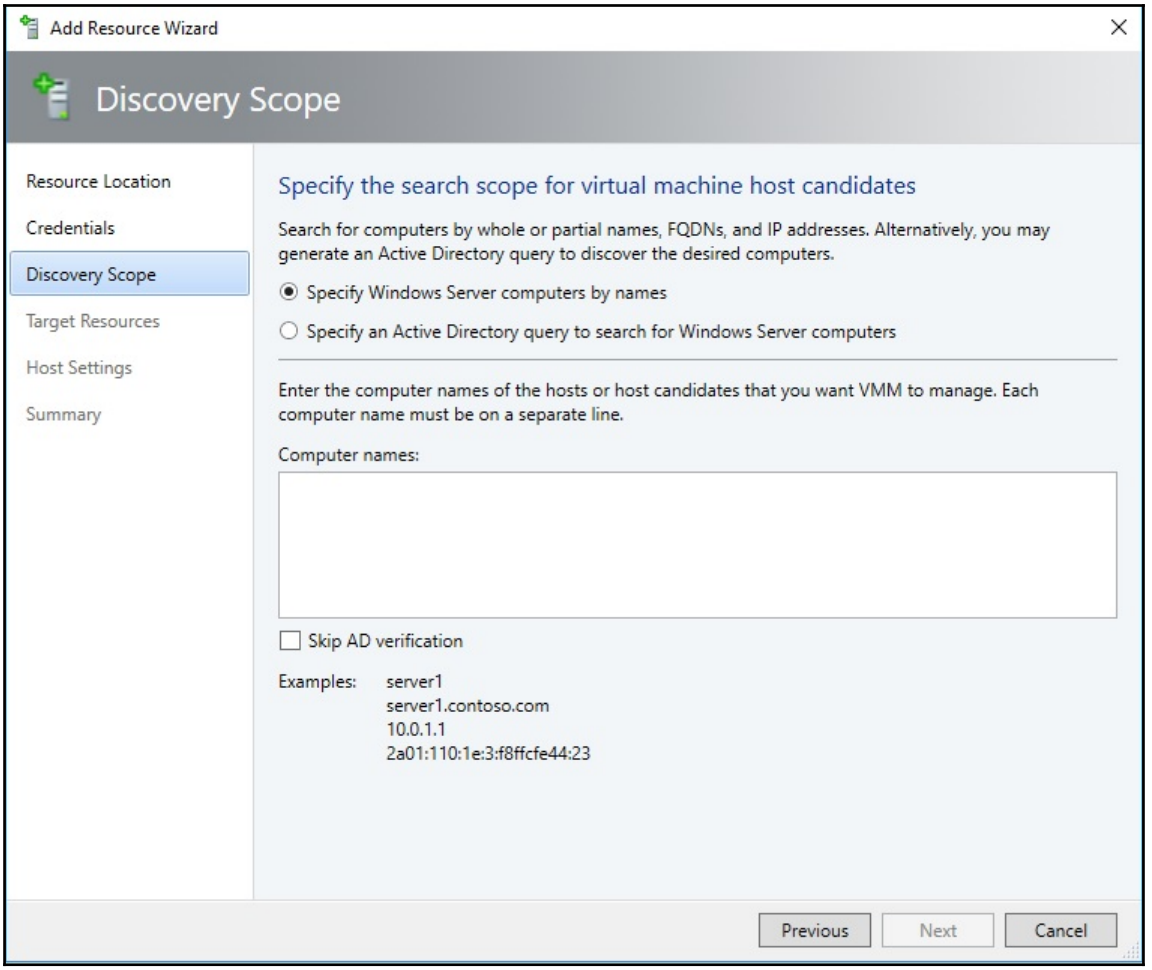

Network Adapter IP Configuration
Provide the following information to configure your network adapter
Physical network adapter:
This virtual network adapter will be connected to the following logical switch:
SET-1G
Apply the following port classification to this virtual NIC:
Host Cluster Workload
Connect this virtual NIC to this VM network:
Cluster
Specify a name for this network adapter
Cluster
Prevent network adapter from registering with DNS
Configure a static IPv4 address for this network adapter
IP subnet:
10.10.26.0/24
Obtain an IPv4 address from the IP pool corresponding to the selected subnet



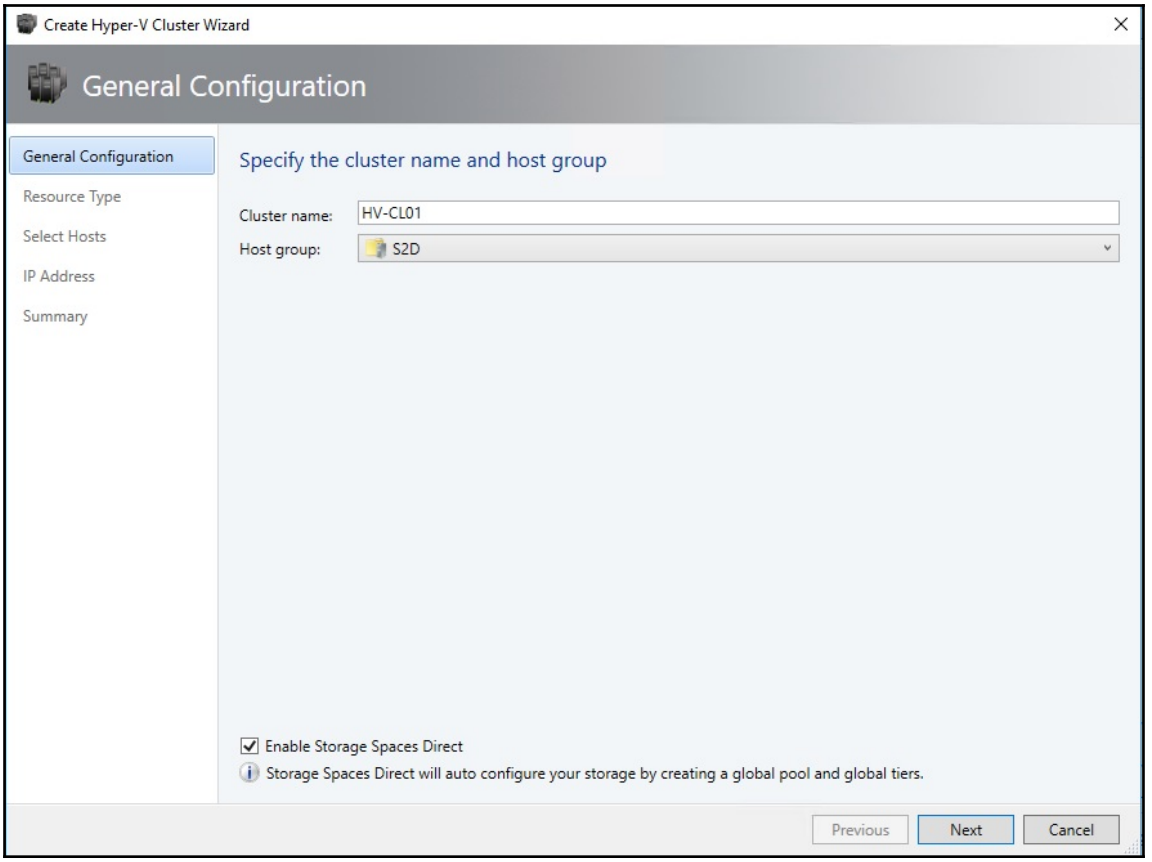
Create a new host from physical machine: HV03 (BMC address: 192.168.1.53) Completed

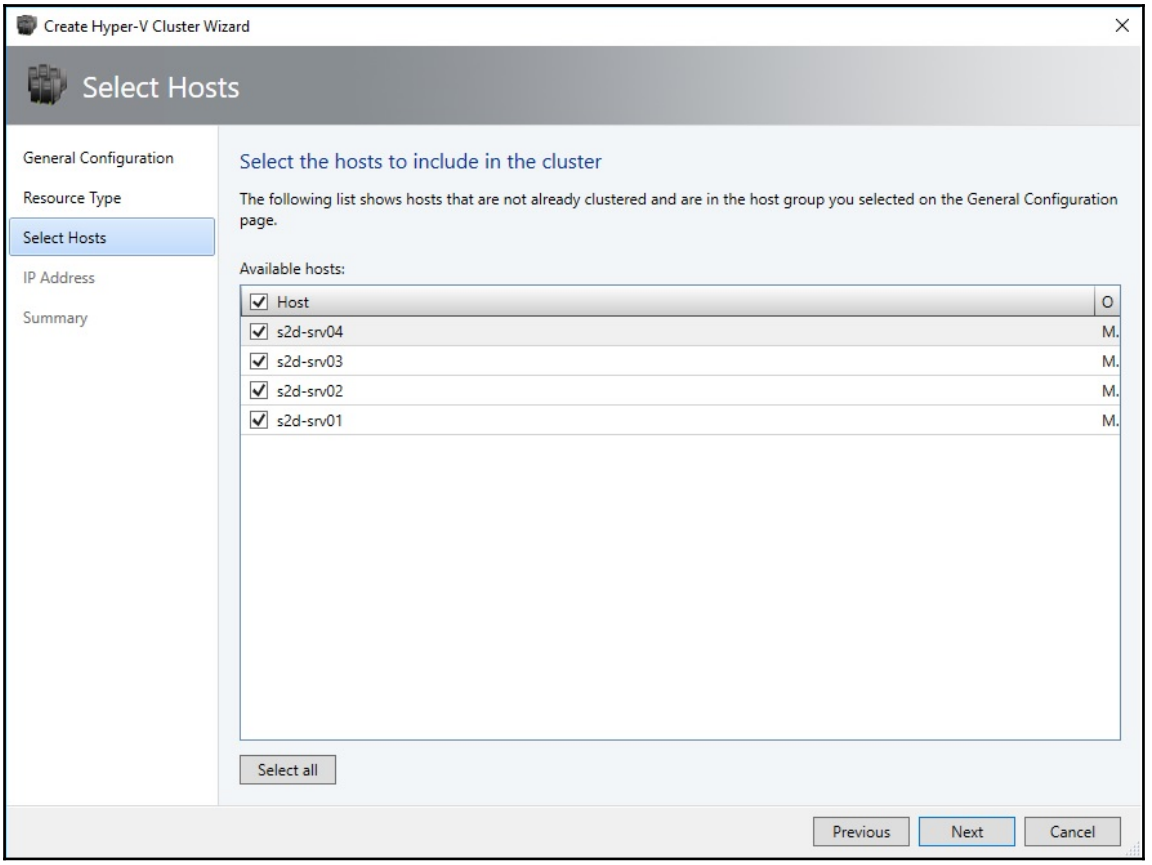
Create a new host from physical machine: HV03 (BMC address: 192.168.1.53)

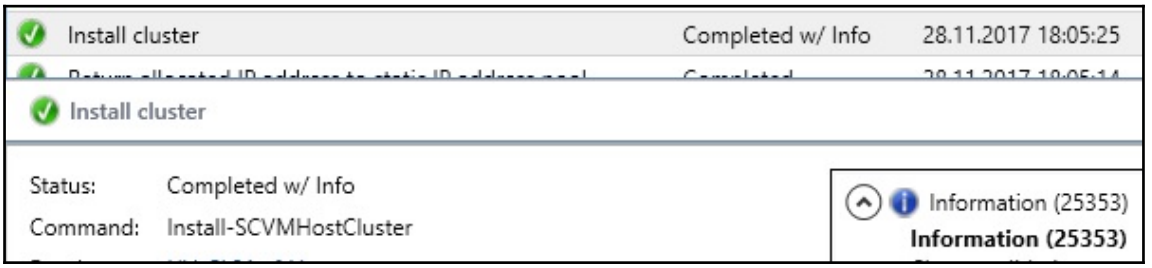
Step	Name	Status
1.2.10	Deploy OS customization scripts	Completed
1.2.11	Enable Hyper-V server role	Completed
1.2.12	Enable Multipath I/O feature	Completed
1.2.13	Setup OS customization scripts	Completed
1.2.14	Wait for physical machine to reboot and customization to be finish...	Completed
1.3	Install Virtual Machine Manager agent	Completed
1.4	Run post-unattend script commands on 'HV03'	Completed

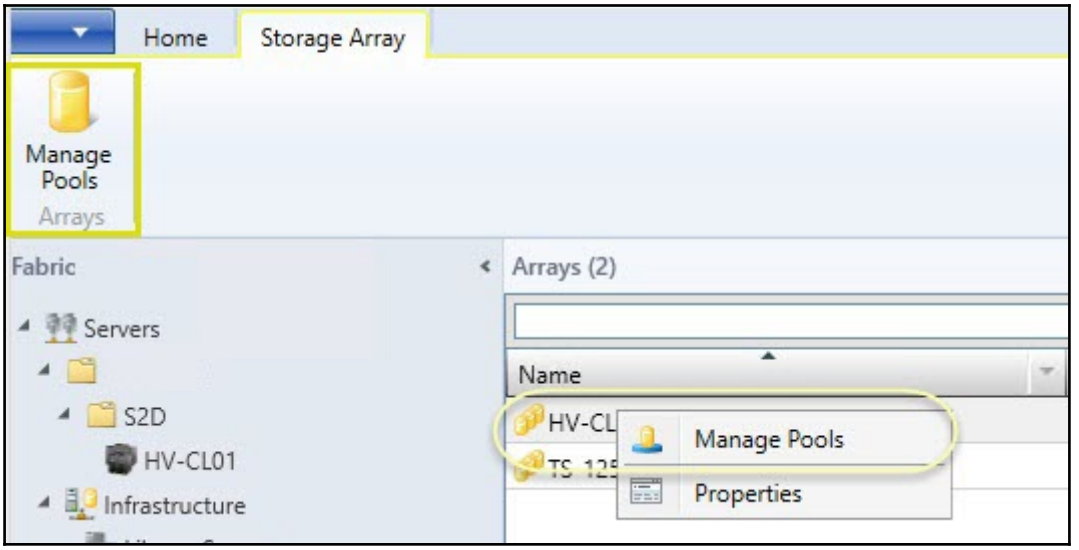


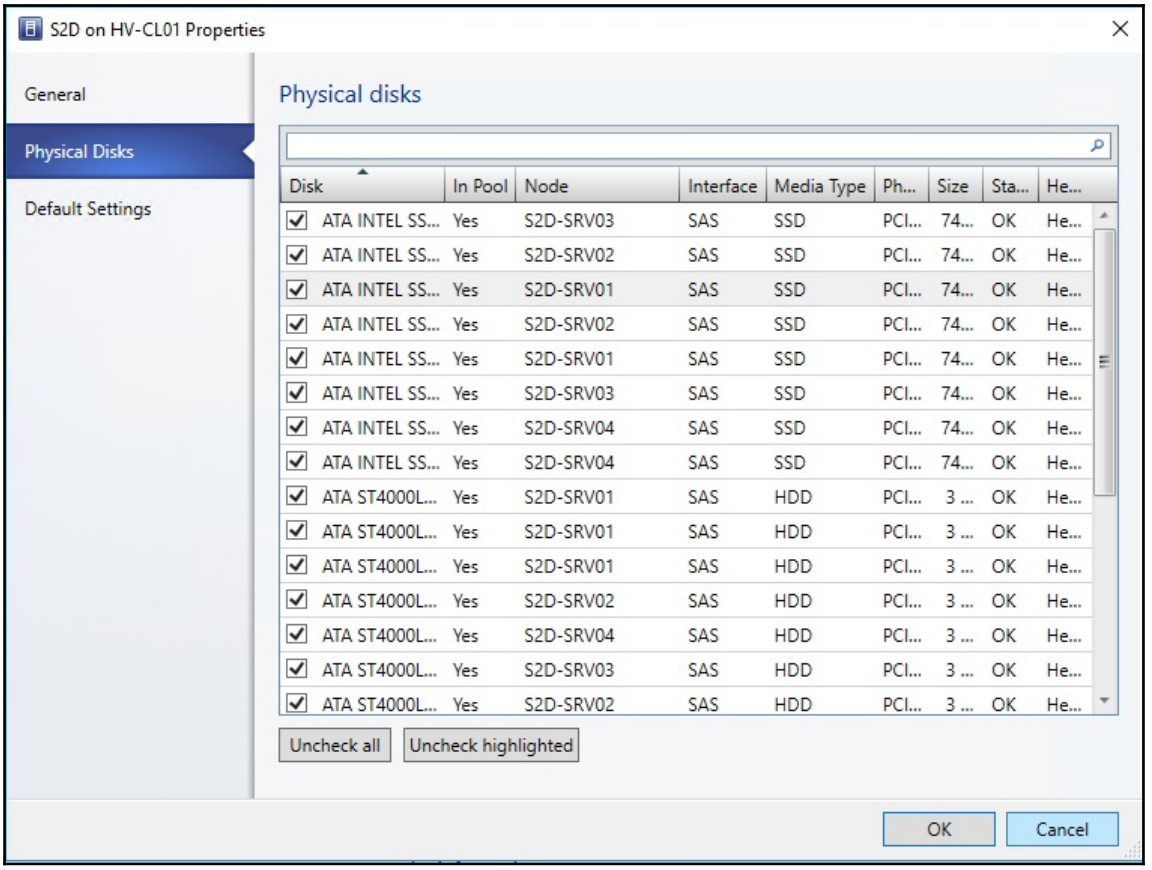
Drive types present	Minimum number required	Cache drives
All NVMe (same model)	4 NVMe	None, Write-only (if configured manually)
All SSD (same model)	4 SSD	None, Write-only (if configured manually)
NVMe + SSD	2 NVMe + 4 SSD	NVMe, Write-only
NVMe + HDD	2 NVMe + 4 HDD	NVMe, Read + Write
SSD + HDD	2 SSD + 4 HDD	SSD, Read + Write
NVMe + SSD + HDD	2 NVMe + 4 Others	NVMe, Read + Write for HDD, Write-only for SSD

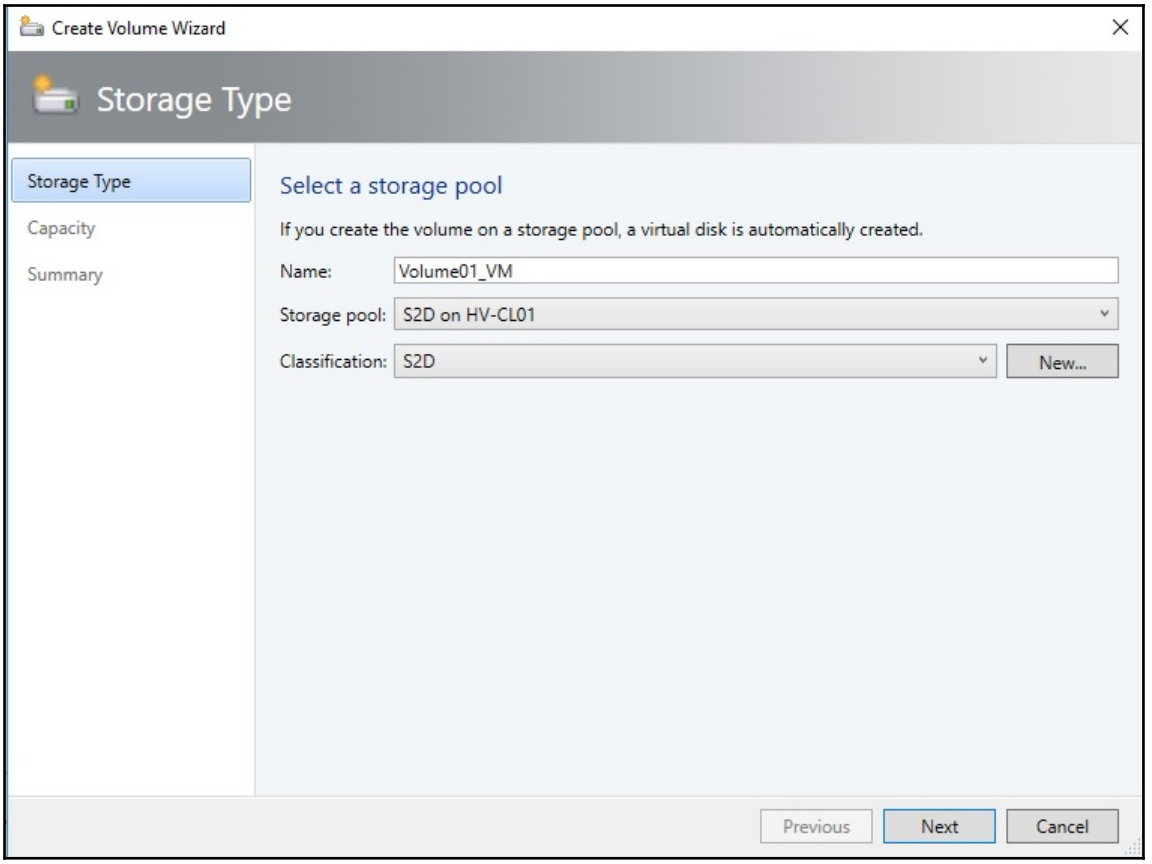

Create Hyper-V Cluster Wizard
General Configuration
General Configuration
Resource Type
Select Hosts
IP Address
Summary
Specify the cluster name and host group
Cluster name:
HV-CL01
Host group:
S2D
Enable Storage Spaces Direct
Storage Spaces Direct will auto configure your storage by creating a global pool and global tiers.
Previous
Next
Cancel

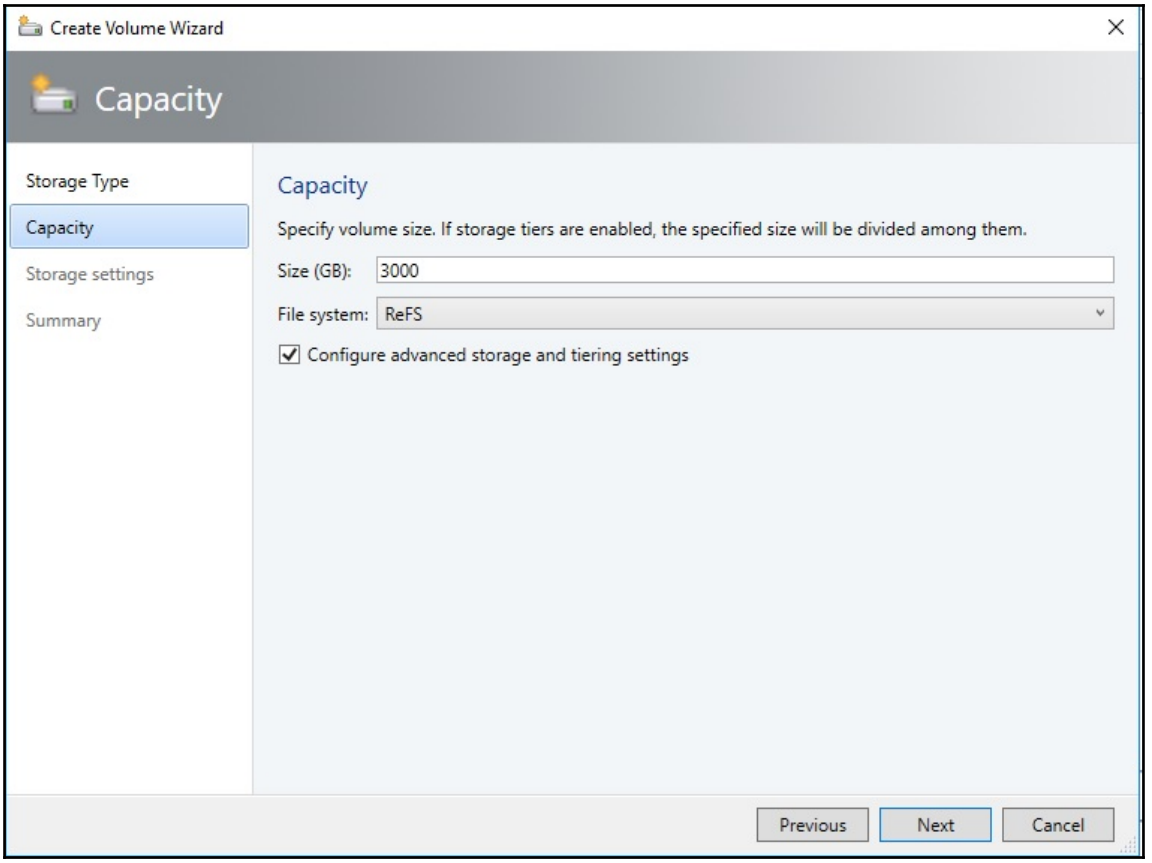

Create Hyper-V Cluster Wizard
Select Hosts
General Configuration
Resource Type
Select Hosts
IP Address
Summary
Select the hosts to include in the cluster
The following list shows hosts that are not already clustered and are in the host group you selected on the General Configuration page.
Available hosts:
Host
O
s2d-srv04
M.
s2d-srv03
M.
s2d-srv02
M.
s2d-srv01
M.
Select all
Previous
Next
Cancel

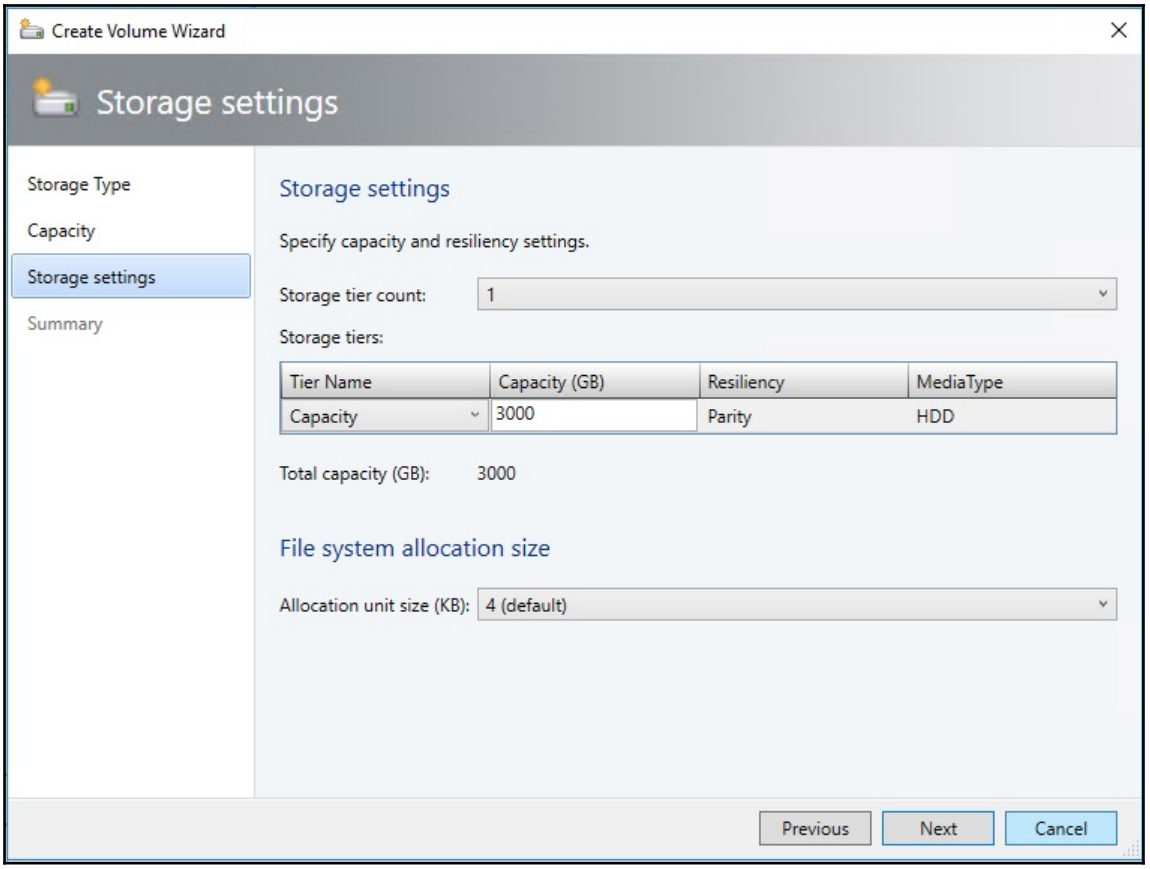

Install cluster
Completed w/ Info
28.11.2017 18:05:25
Install cluster
Status:
Completed w/ Info
Command:
Install-SCVMHostCluster
Information (25353)
Information (25353)

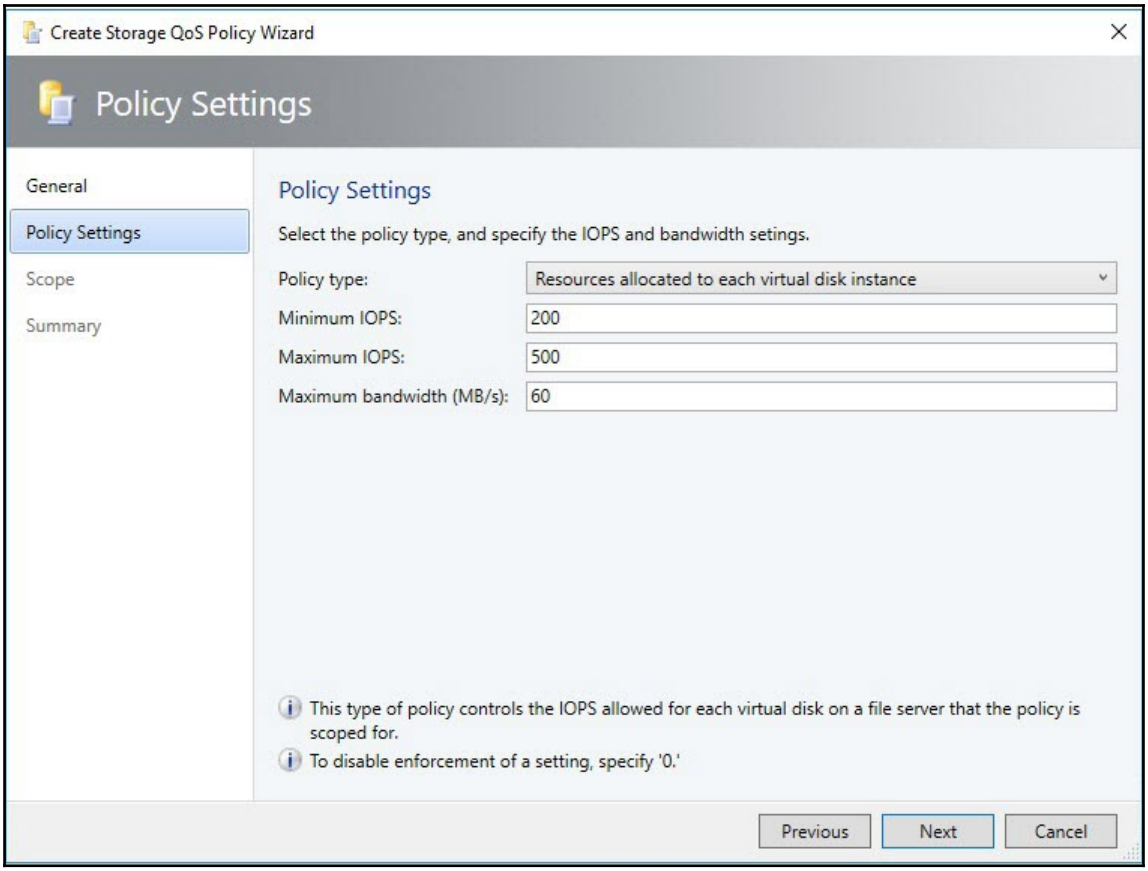

Home
Storage Array
Manage Pools
Arrays
Fabric
Servers
S2D
HV-CL01
Infrastructure
Arrays (2)
Name
HV-CL
Manage Pools
Properties


S2D on HV-CL01 Properties
General
Physical Disks
Default Settings
Physical disks
Disk
In Pool
Node
Interface
Media Type
Ph...
Size
Sta...
He...
ATA INTEL SS... Yes S2D-SRV03 SAS SSD PCI... 74... OK He...
ATA INTEL SS... Yes S2D-SRV02 SAS SSD PCI... 74... OK He...
ATA INTEL SS... Yes S2D-SRV01 SAS SSD PCI... 74... OK He...
ATA INTEL SS... Yes S2D-SRV02 SAS SSD PCI... 74... OK He...
ATA INTEL SS... Yes S2D-SRV01 SAS SSD PCI... 74... OK He...
ATA INTEL SS... Yes S2D-SRV03 SAS SSD PCI... 74... OK He...
ATA INTEL SS... Yes S2D-SRV04 SAS SSD PCI... 74... OK He...
ATA INTEL SS... Yes S2D-SRV04 SAS SSD PCI... 74... OK He...
ATA ST4000L... Yes S2D-SRV01 SAS HDD PCI... 3 ... OK He...
ATA ST4000L... Yes S2D-SRV01 SAS HDD PCI... 3 ... OK He...
ATA ST4000L... Yes S2D-SRV01 SAS HDD PCI... 3 ... OK He...
ATA ST4000L... Yes S2D-SRV02 SAS HDD PCI... 3 ... OK He...
ATA ST4000L... Yes S2D-SRV04 SAS HDD PCI... 3 ... OK He...
ATA ST4000L... Yes S2D-SRV03 SAS HDD PCI... 3 ... OK He...
ATA ST4000L... Yes S2D-SRV02 SAS HDD PCI... 3 ... OK He...
Uncheck all
Uncheck highlighted
OK
Cancel

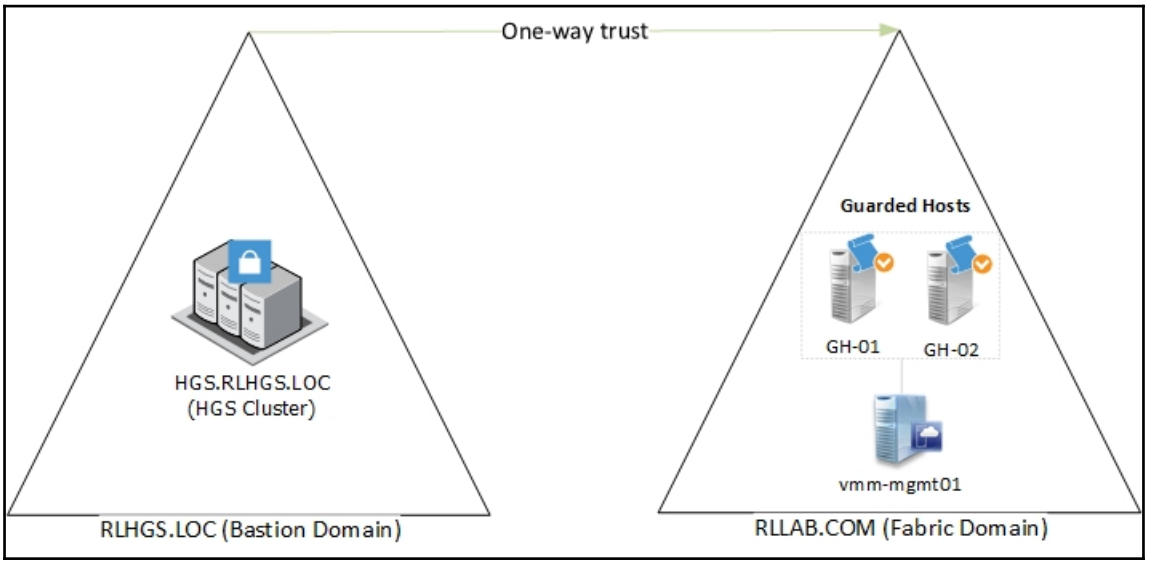

Create Volume Wizard
Storage Type
Storage Type
Capacity
Summary
Select a storage pool
If you create the volume on a storage pool, a virtual disk is automatically created.
Name:
Volume01_VM
Storage pool:
S2D on HV-CL01
Classification:
S2D
New...
Previous
Next
Cancel


Create Volume Wizard
Capacity
Storage Type
Capacity
Storage settings
Summary
Capacity
Specify volume size. If storage tiers are enabled, the specified size will be divided among them.
Size (GB):
3000
File system:
ReFS
Configure advanced storage and tiering settings
Previous
Next
Cancel

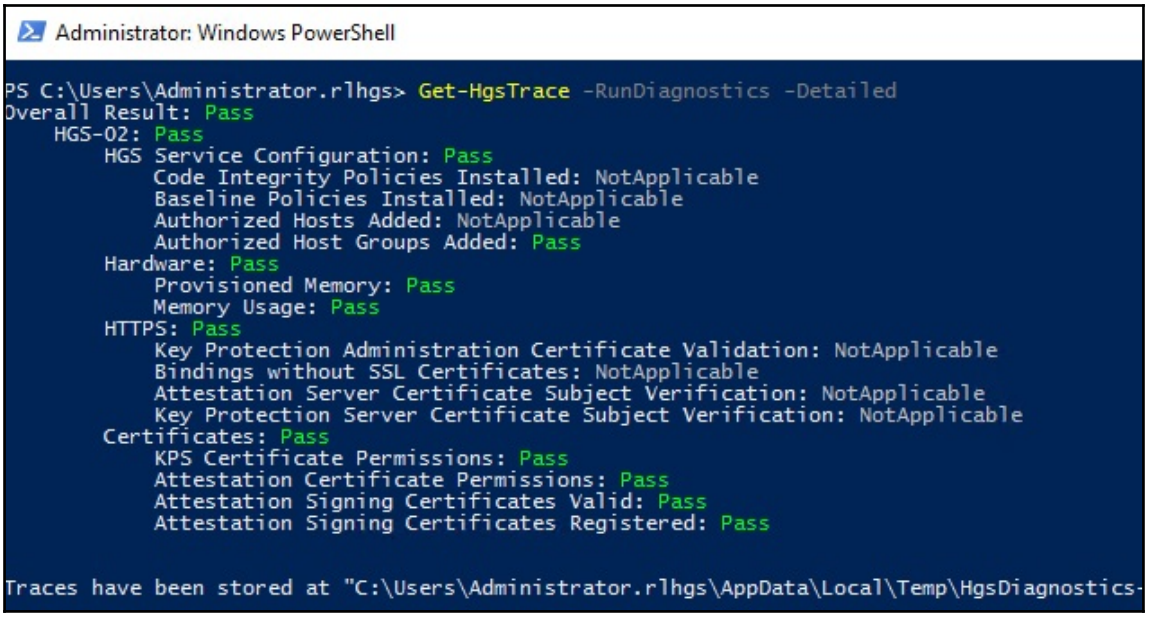

Create Volume Wizard
Storage settings
Storage Type
Capacity
Storage settings
Summary
Storage settings
Specify capacity and resiliency settings.
Storage tier count:
1
Storage tiers:
Tier Name
Capacity (GB)
Resiliency
MediaType
Capacity
3000
Parity
HDD
Total capacity (GB):
3000
File system allocation size
Allocation unit size (KB):
4 (default)
Previous
Next
Cancel


Create Storage QoS Policy Wizard
Policy Settings
General
Policy Settings
Scope
Summary
Policy Settings
Select the policy type, and specify the IOPS and bandwidth setings.
Policy type:
Resources allocated to each virtual disk instance
Minimum IOPS:
200
Maximum IOPS:
500
Maximum bandwidth (MB/s):
60
This type of policy controls the IOPS allowed for each virtual disk on a file server that the policy is scoped for.
To disable enforcement of a setting, specify '0.'
Previous
Next
Cancel

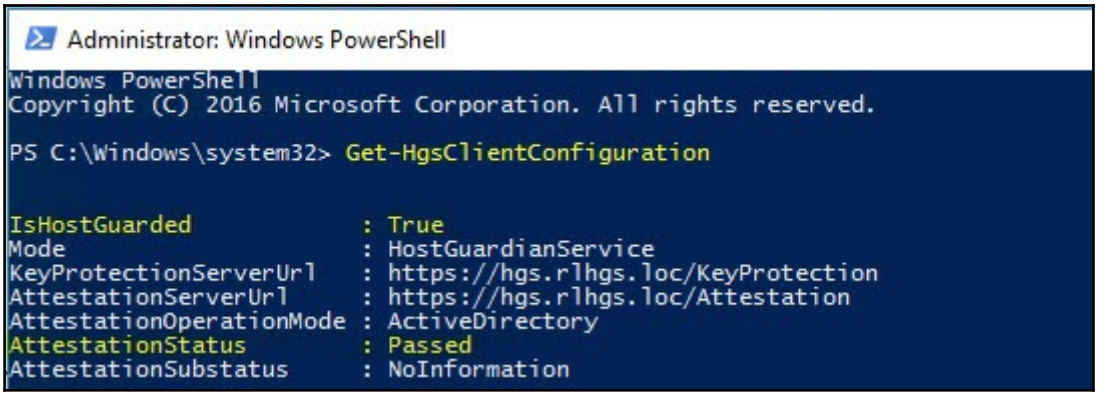
Chapter 6: Configuring Guarded Fabric in VMM

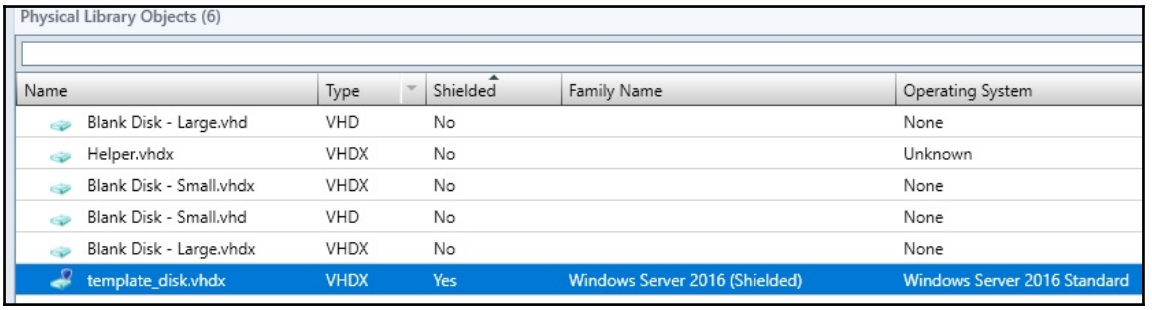



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> Get-HgsTrace -RunDiagnostics -Detailed
Overall Result: Pass
    HGS-01: Pass
        HGS Service Configuration: Pass
            Code Integrity Policies Installed: NotApplicable
            Baseline Policies Installed: NotApplicable
            Authorized Hosts Added: NotApplicable
            Authorized Host Groups Added: Pass
        Hardware: Pass
            Provisioned Memory: Pass
            Memory Usage: Pass
        HTTPS: Pass
            Key Protection Administration Certificate Validation: Pass
            Bindings without SSL Certificates: Pass
            Attestation Server Certificate Subject Verification: Pass
            Key Protection Server Certificate Subject Verification: Pass
        Certificates: Pass
            KPS Certificate Permissions: Pass
            Attestation Certificate Permissions: Pass
            Attestation Signing Certificates Valid: Pass
            Attestation Signing Certificates Registered: Pass
```

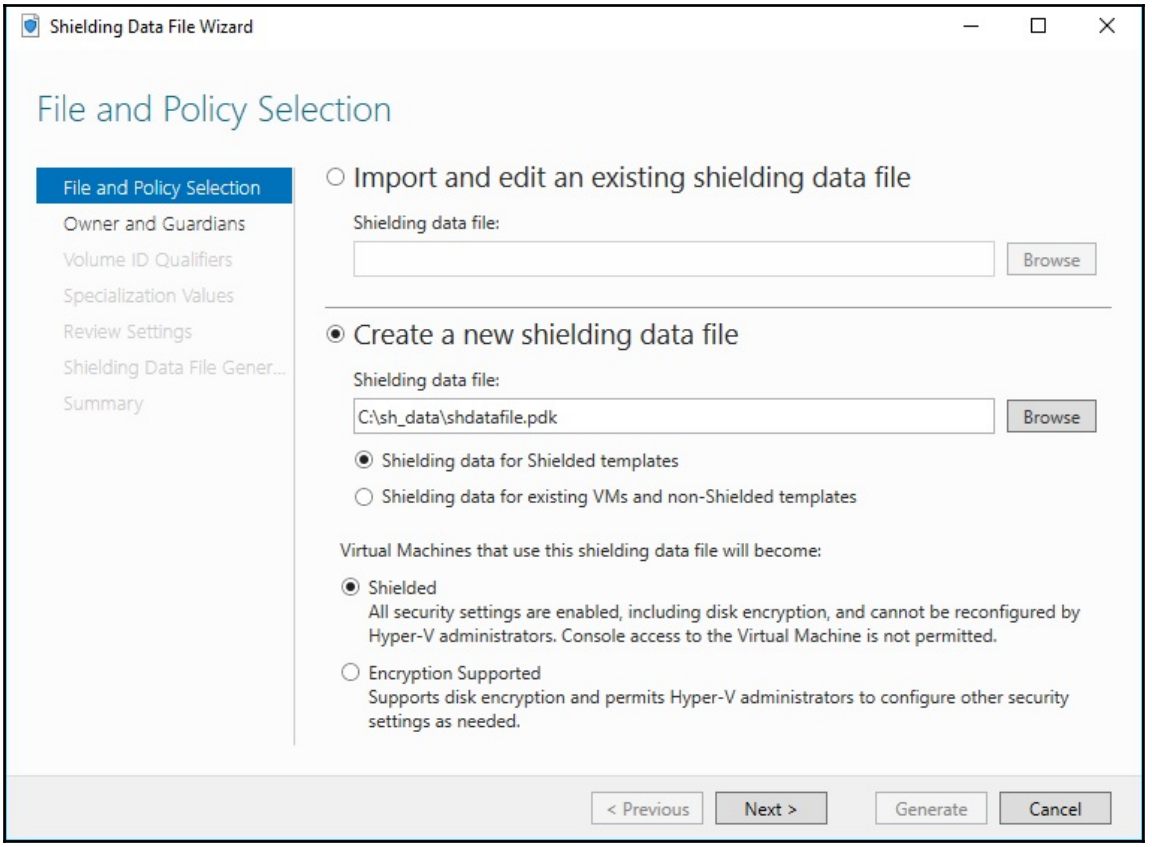

Administrator: Windows PowerShell
PS C:\Users\Administrator.rlhgs> Get-HgsTrace -RunDiagnostics -Detailed
Overall Result: Pass
HGS-02: Pass
HGS Service Configuration: Pass
Code Integrity Policies Installed: NotApplicable
Baseline Policies Installed: NotApplicable
Authorized Hosts Added: NotApplicable
Authorized Host Groups Added: Pass
Hardware: Pass
Provisioned Memory: Pass
Memory Usage: Pass
HTTPS: Pass
Key Protection Administration Certificate Validation: NotApplicable
Bindings without SSL Certificates: NotApplicable
Attestation Server Certificate Subject Verification: NotApplicable
Key Protection Server Certificate Subject Verification: NotApplicable
Certificates: Pass
KPS Certificate Permissions: Pass
Attestation Certificate Permissions: Pass
Attestation Signing Certificates Valid: Pass
Attestation Signing Certificates Registered: Pass
Traces have been stored at "C:\Users\Administrator.rlhgs\AppData\Local\Temp\HgsDiagnostics-

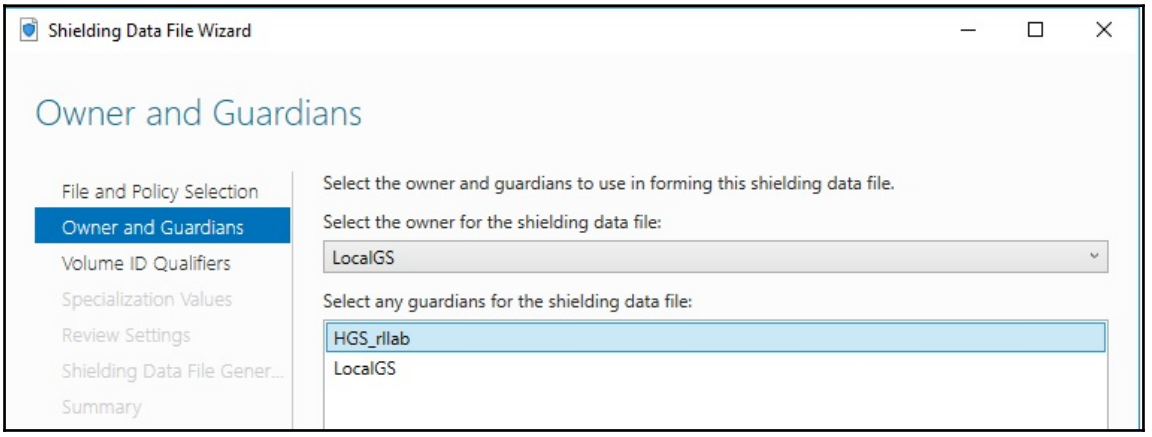

Host Guardian Service Settings
Specify Host Guardian Service and related settings
When you enable the Host Guardian Hyper-V Support on a host, the following URLs will be configured on the host. Virtual Machine Manager (VMM) will also use the Key Protection Server URL as the destination for tenant keys.
Attestation Server URL:
https://hgs.rlhgs.loc/Attestation
Example: http://contoso.com/Attestation
Key Protection Server URL:
https://hgs.rlhgs.loc/KeyProtection
Example: http://contoso.com/KeyProtection

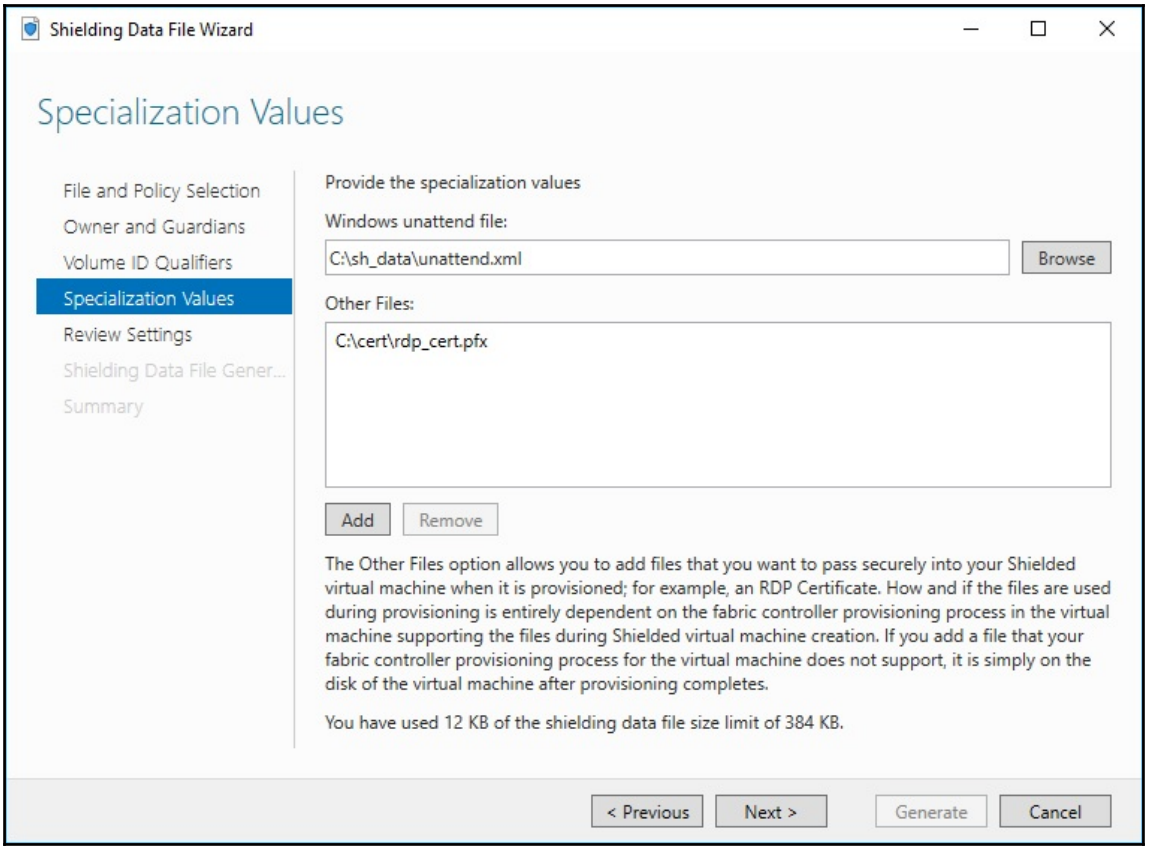


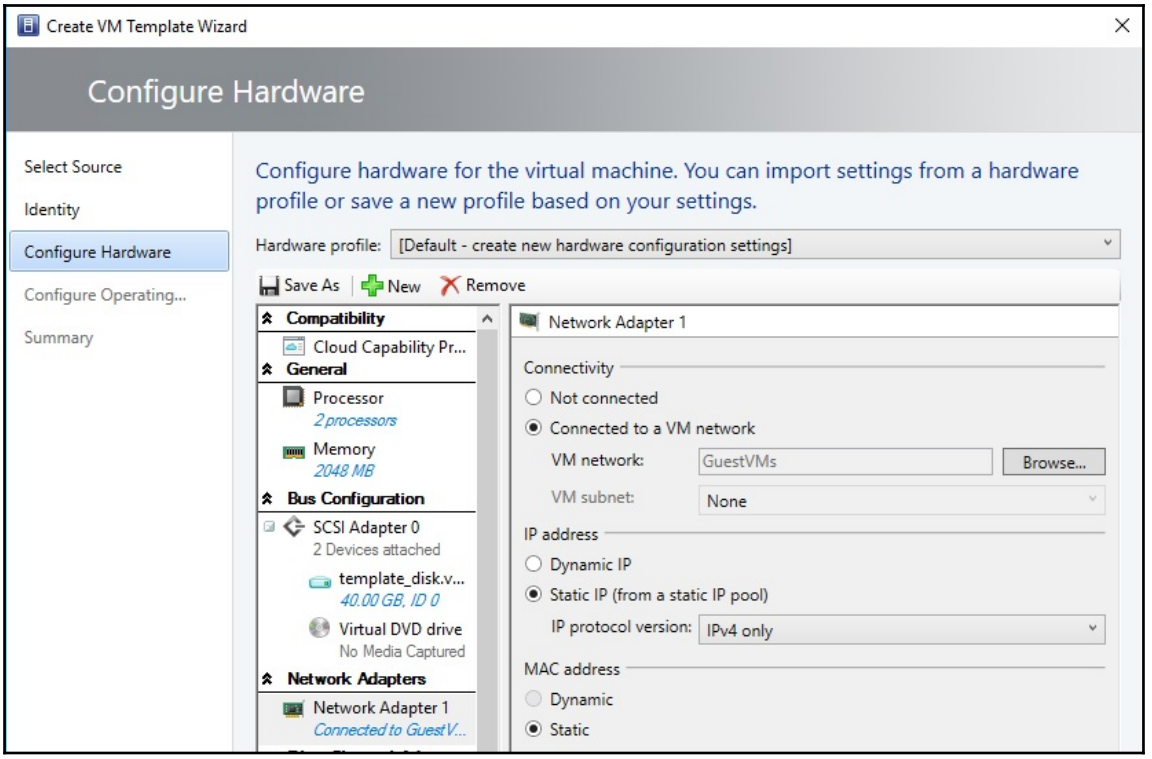


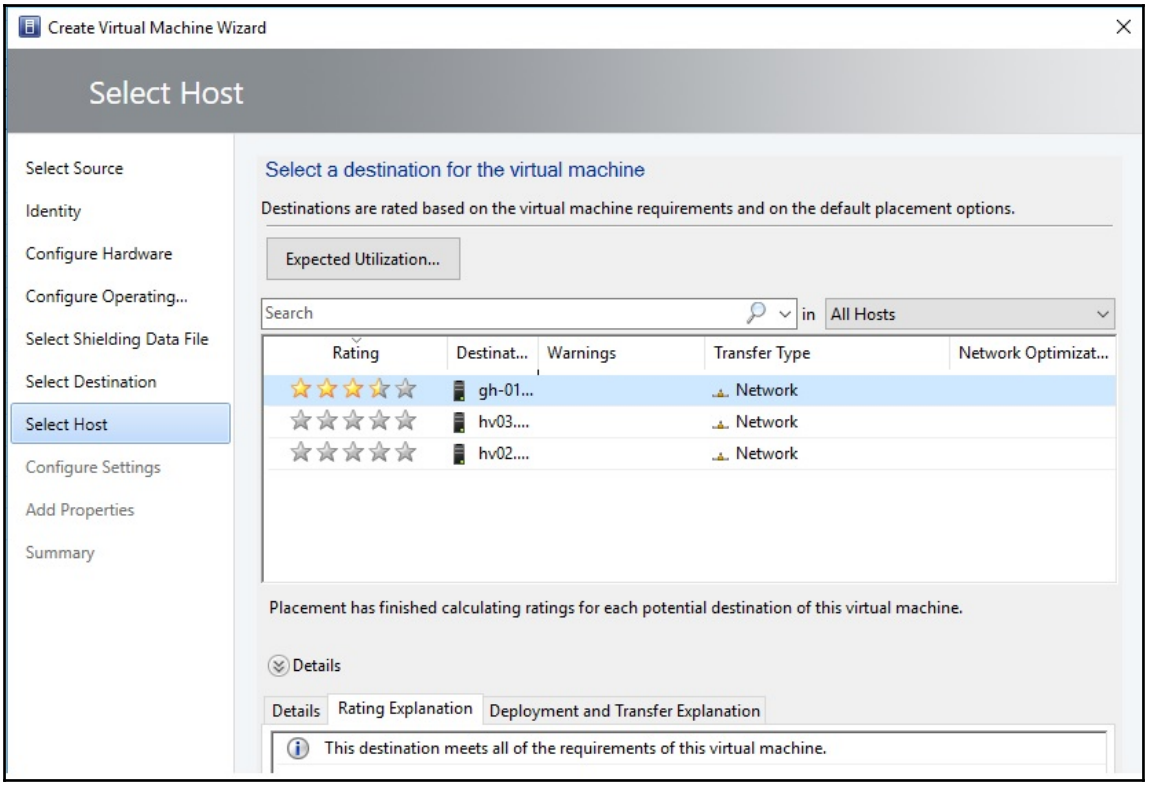
Name	Type	Shielded	Family Name	Operating System
Blank Disk - Large.vhd	VHD	No		None
Helper.vhdx	VHDX	No		Unknown
Blank Disk - Small.vhdx	VHDX	No		None
Blank Disk - Small.vhd	VHD	No		None
Blank Disk - Large.vhdx	VHDX	No		None
template_disk.vhdx	VHDX	Yes	Windows Server 2016 (Shielded)	Windows Server 2016 Standard

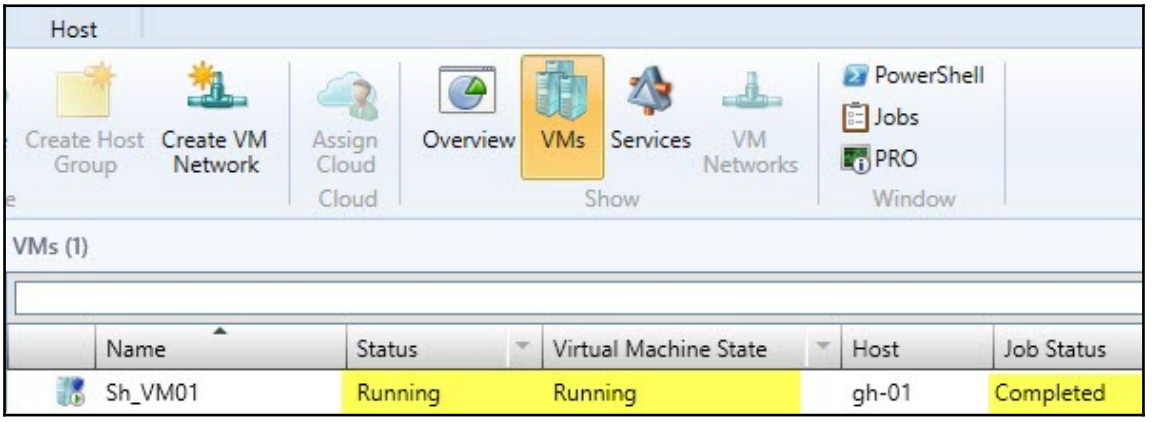

Shielding Data File Wizard
File and Policy Selection
File and Policy Selection
Owner and Guardians
Volume ID Qualifiers
Specialization Values
Review Settings
Shielding Data File Gener...
Summary
Import and edit an existing shielding data file
Shielding data file:
Browse
Create a new shielding data file
Shielding data file:
C:\sh_data\shdatafile.pdk
Browse
Shielding data for Shielded templates
Shielding data for existing VMs and non-Shielded templates
Virtual Machines that use this shielding data file will become:
Shielded
All security settings are enabled, including disk encryption, and cannot be reconfigured by Hyper-V administrators. Console access to the Virtual Machine is not permitted.
Encryption Supported
Supports disk encryption and permits Hyper-V administrators to configure other security settings as needed.
< Previous
Next >
Generate
Cancel

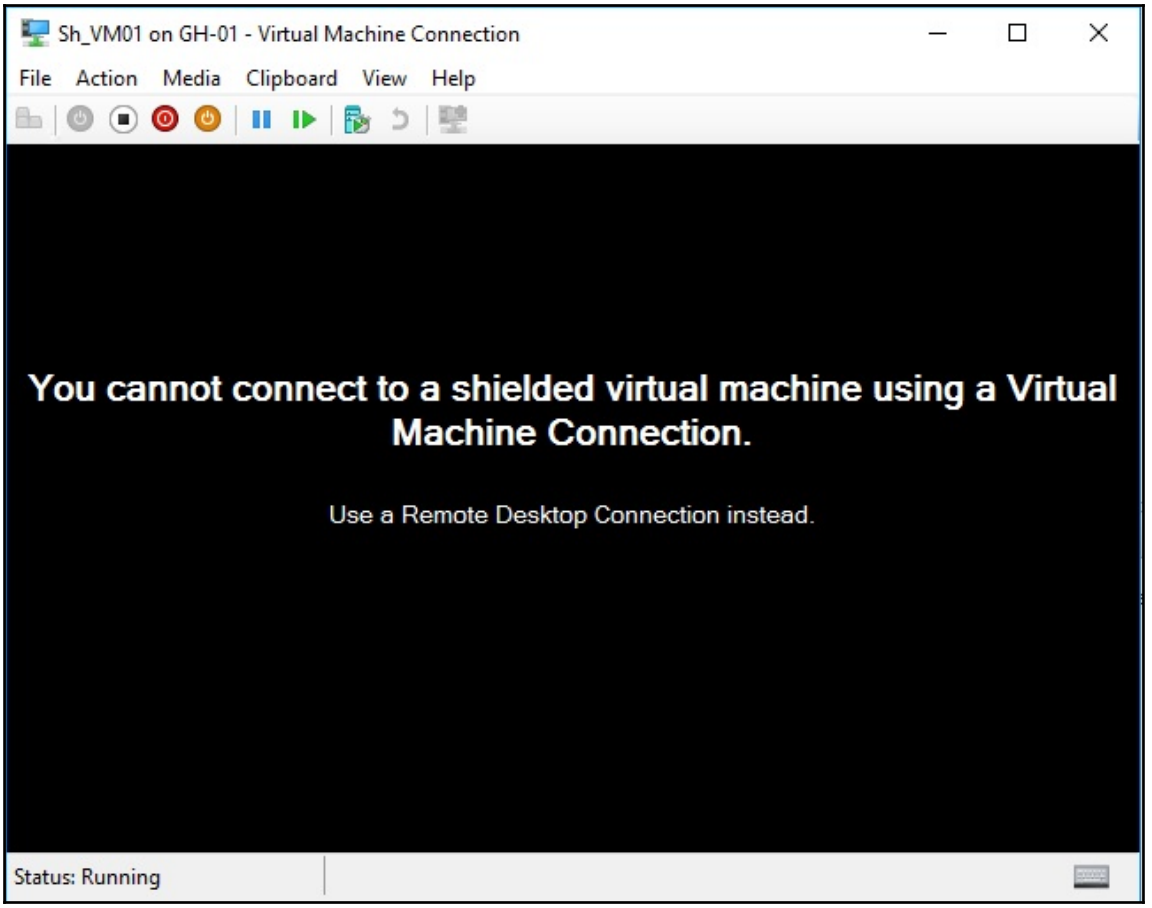

Shielding Data File Wizard
Owner and Guardians
File and Policy Selection
Owner and Guardians
Volume ID Qualifiers
Specialization Values
Review Settings
Shielding Data File Gener...
Summary
Select the owner and guardians to use in forming this shielding data file.
Select the owner for the shielding data file:
LocalGS
Select any guardians for the shielding data file:
HGS_rllab
LocalGS


Shielding Data File Wizard
Specialization Values
File and Policy Selection
Owner and Guardians
Volume ID Qualifiers
Specialization Values
Review Settings
Shielding Data File Gener...
Summary
Provide the specialization values
Windows unattend file:
C:\sh_data\unattend.xml
Browse
Other Files:
C:\cert\rdp_cert.pfx
Add
Remove
The Other Files option allows you to add files that you want to pass securely into your Shielded virtual machine when it is provisioned; for example, an RDP Certificate. How and if the files are used during provisioning is entirely dependent on the fabric controller provisioning process in the virtual machine supporting the files during Shielded virtual machine creation. If you add a file that your fabric controller provisioning process for the virtual machine does not support, it is simply on the disk of the virtual machine after provisioning completes.
You have used 12 KB of the shielding data file size limit of 384 KB.
< Previous
Next >
Generate
Cancel

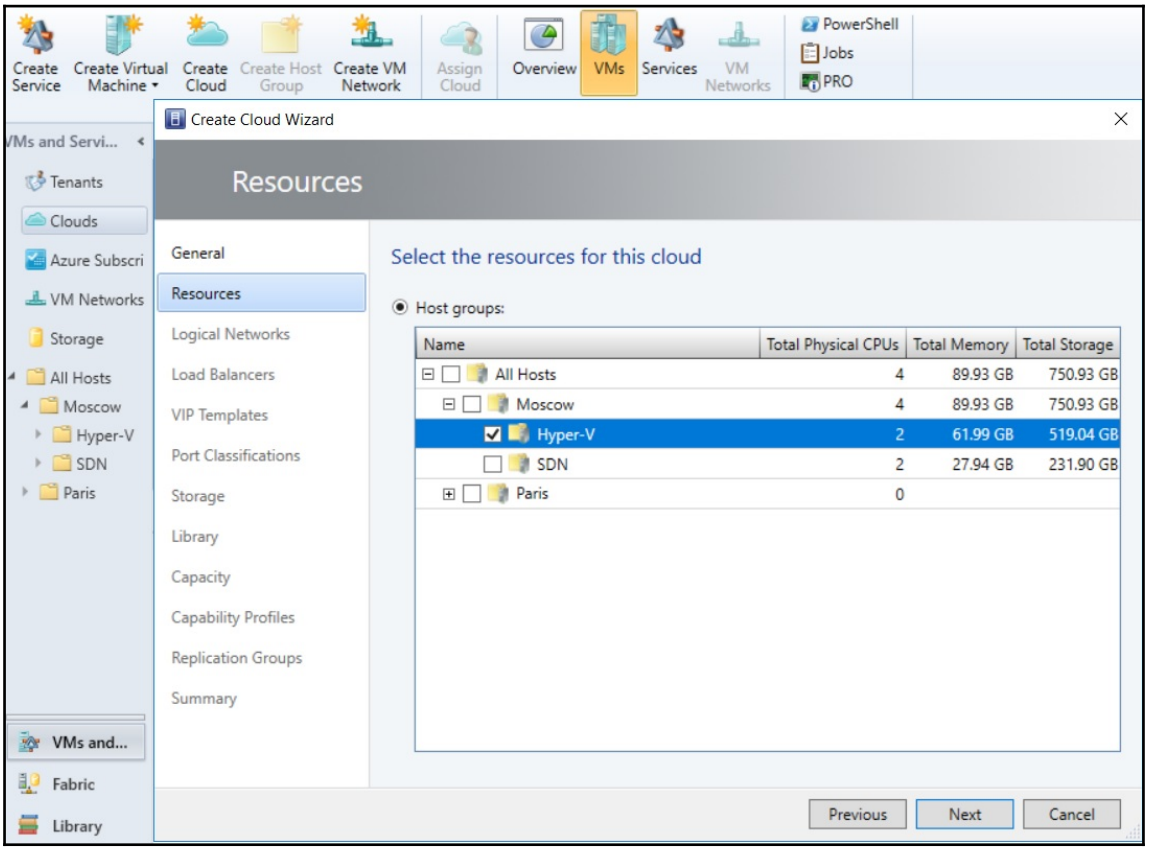

Create VM Template Wizard
Configure Hardware
Select Source
Identity
Configure Hardware
Configure Operating...
Summary
Configure hardware for the virtual machine. You can import settings from a hardware profile or save a new profile based on your settings.
Hardware profile:
[Default - create new hardware configuration settings]
Save As
New
Remove
Compatibility
Cloud Capability Pr...
General
Processor
2 processors
Memory
2048 MB
Bus Configuration
SCSI Adapter 0
2 Devices attached
template_disk.v...
40.00 GB, ID 0
Virtual DVD drive
No Media Captured
Network Adapters
Network Adapter 1
Connected to Guest V...
Network Adapter 1
Connectivity
Not connected
Connected to a VM network
VM network:
GuestVMs
Browse...
VM subnet:
None
IP address
Dynamic IP
Static IP (from a static IP pool)
IP protocol version:
IPv4 only
MAC address
Dynamic
Static

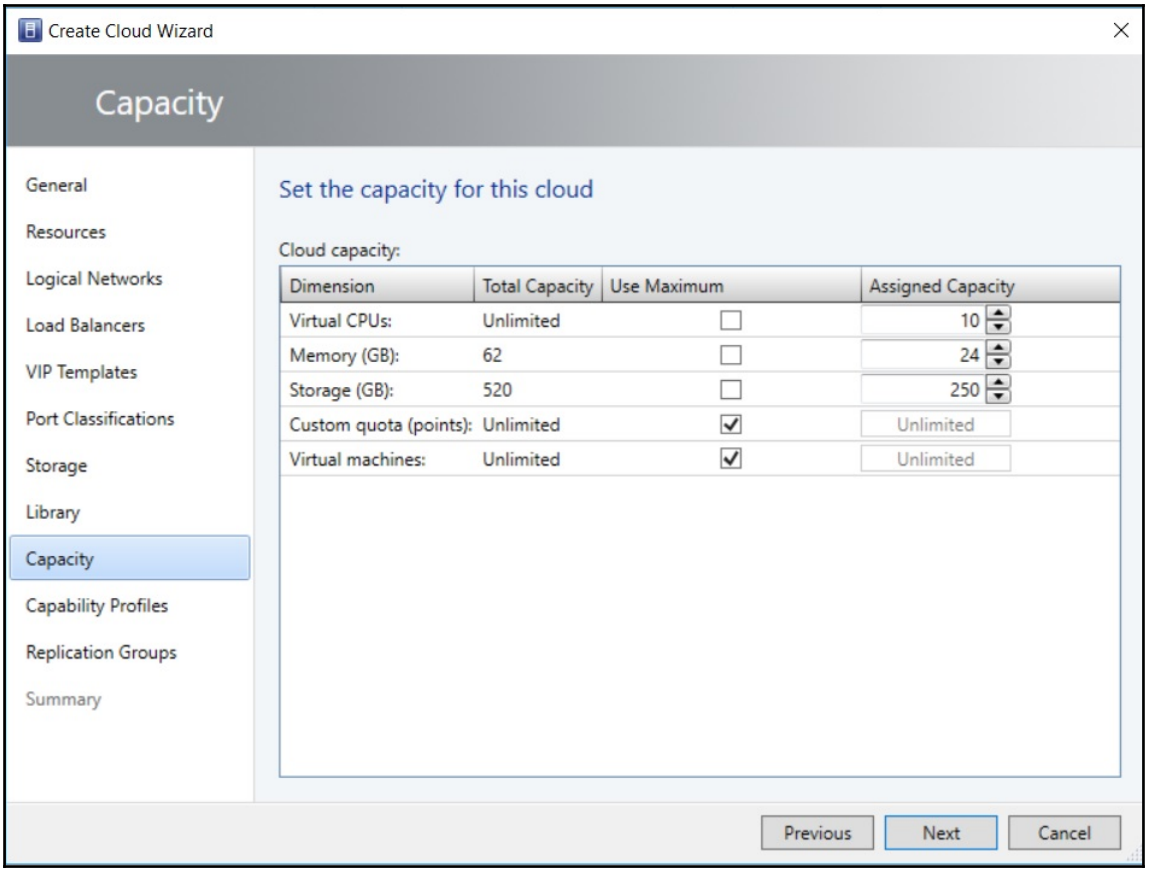

Create Virtual Machine Wizard
Select Host
Select Source
Identity
Configure Hardware
Configure Operating...
Select Shielding Data File
Select Destination
Select Host
Configure Settings
Add Properties
Summary
Select a destination for the virtual machine
Destinations are rated based on the virtual machine requirements and on the default placement options.
Expected Utilization...
Search
in
All Hosts
Rating
Destinat...
Warnings
Transfer Type
Network Optimizat...
gh-01...
Network
hv03....
Network
hv02....
Network
Placement has finished calculating ratings for each potential destination of this virtual machine.
Details
Details
Rating Explanation
Deployment and Transfer Explanation
This destination meets all of the requirements of this virtual machine.

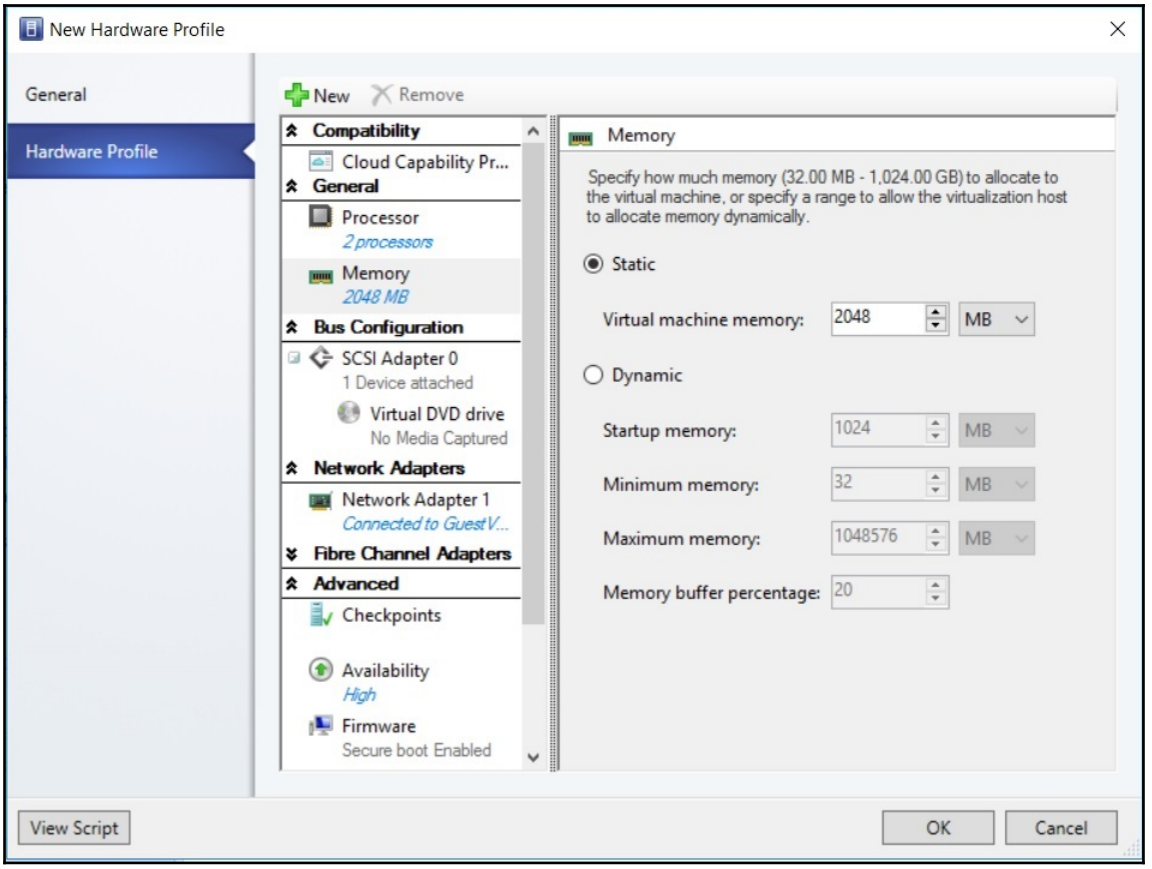

Host
Create Host Group
Create VM Network
Assign Cloud
Cloud
Overview
VMs
Services
VM Networks
Show
PowerShell
Jobs
PRO
Window
VMs (1)
Name
Status
Virtual Machine State
Host
Job Status
Sh_VM01
Running
Running
gh-01
Completed

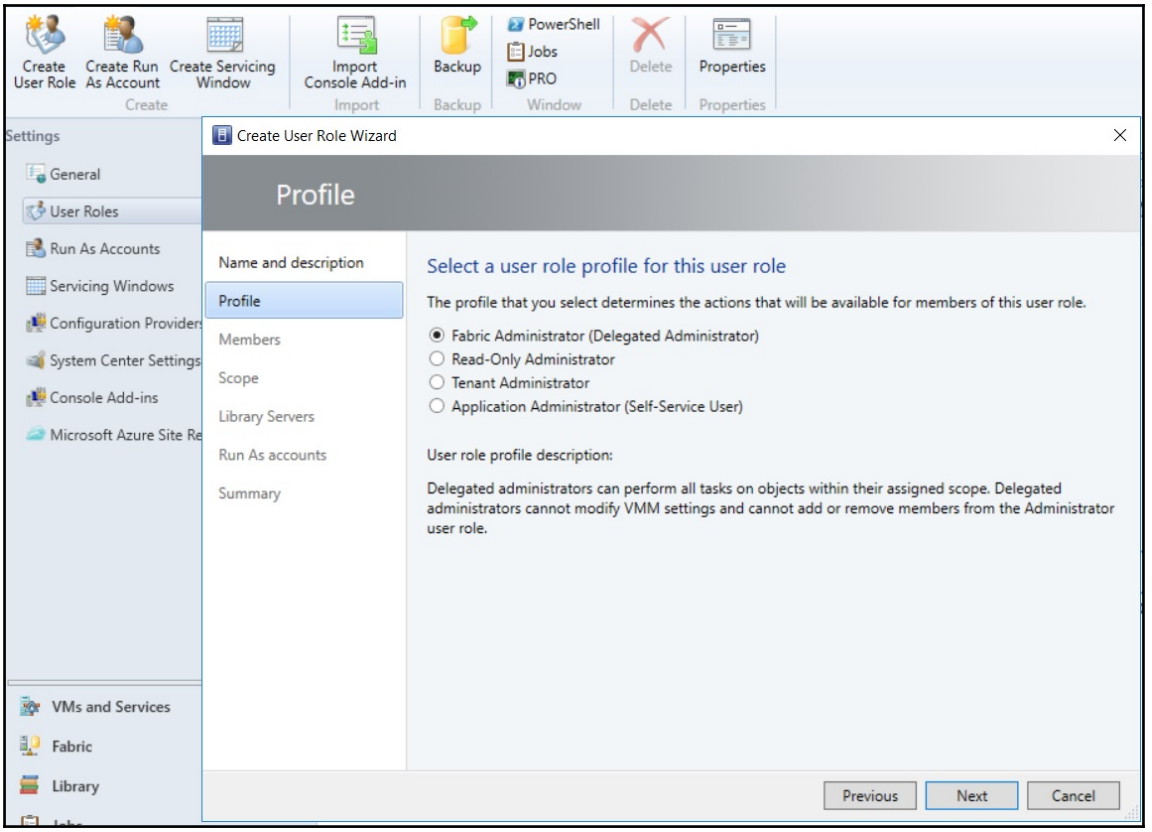

Sh_VM01 on GH-01 - Virtual Machine Connection
File Action Media Clipboard View Help
You cannot connect to a shielded virtual machine using a Virtual Machine Connection.
Use a Remote Desktop Connection instead.
Status: Running

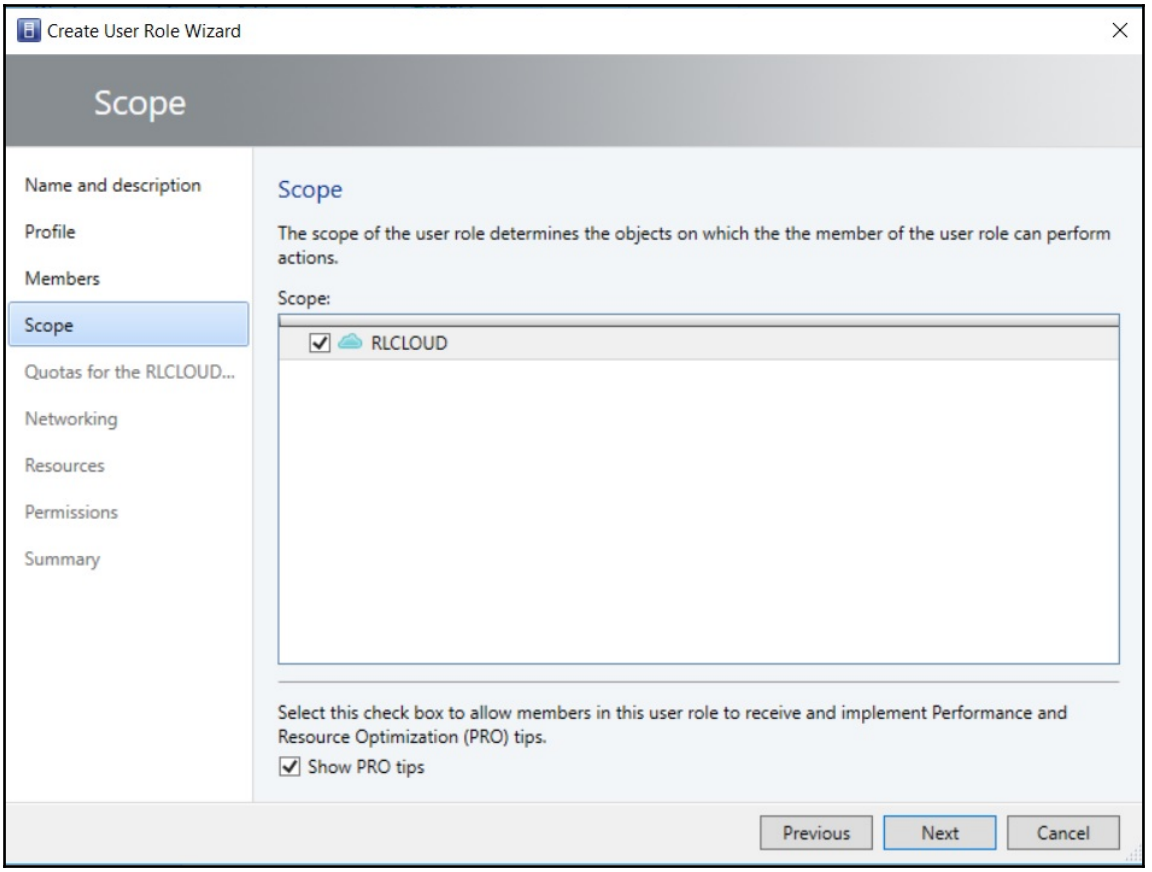
Chapter 7: Deploying Virtual Machines and Services

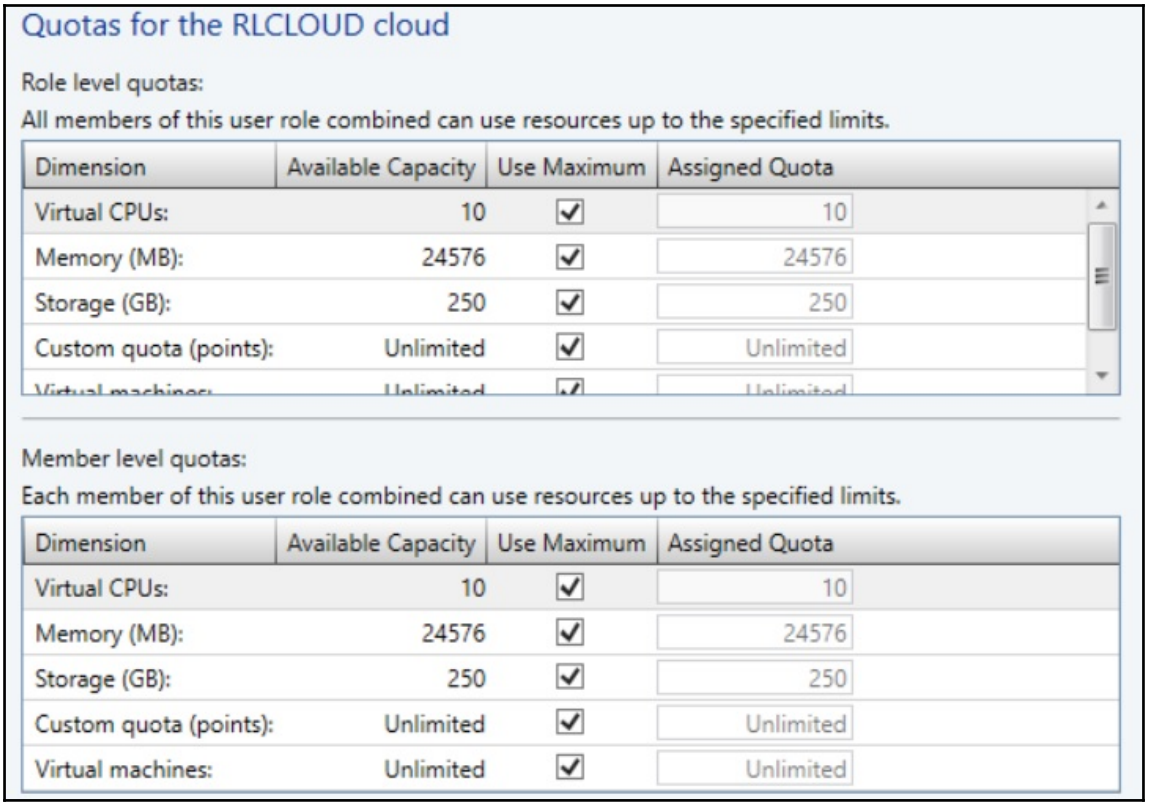



Create Cloud Wizard
Capacity
General
Resources
Logical Networks
Load Balancers
VIP Templates
Port Classifications
Storage
Library
Capacity
Capability Profiles
Replication Groups
Summary
Set the capacity for this cloud
Cloud capacity:
Dimension
Total Capacity
Use Maximum
Assigned Capacity
Virtual CPUs:
Unlimited
10
Memory (GB):
62
24
Storage (GB):
520
250
Custom quota (points):
Unlimited
Unlimited
Virtual machines:
Unlimited
Unlimited
Previous
Next
Cancel


New Hardware Profile
General
Hardware Profile
New
Remove
Compatibility
Cloud Capability Pr...
General
Processor
2 processors
Memory
2048 MB
Bus Configuration
SCSI Adapter 0
1 Device attached
Virtual DVD drive
No Media Captured
Network Adapters
Network Adapter 1
Connected to Guest V...
Fibre Channel Adapters
Advanced
Checkpoints
Availability
High
Firmware
Secure boot Enabled
Memory
Specify how much memory (32.00 MB - 1,024.00 GB) to allocate to the virtual machine, or specify a range to allow the virtualization host to allocate memory dynamically.
Static
Virtual machine memory:
2048
MB
Dynamic
Startup memory:
1024
MB
Minimum memory:
32
MB
Maximum memory:
1048576
MB
Memory buffer percentage:
20
View Script
OK
Cancel


Create User Role
Create Run As Account
Create Servicing Window
Create
Import Console Add-in
Import
Backup
Backup
PowerShell
Jobs
PRO
Window
Delete
Delete
Properties
Properties
Settings
General
User Roles
Run As Accounts
Servicing Windows
Configuration Providers
System Center Settings
Console Add-ins
Microsoft Azure Site Re
VMs and Services
Fabric
Library
Create User Role Wizard
Profile
Name and description
Profile
Members
Scope
Library Servers
Run As accounts
Summary
Select a user role profile for this user role
The profile that you select determines the actions that will be available for members of this user role.
Fabric Administrator (Delegated Administrator)
Read-Only Administrator
Tenant Administrator
Application Administrator (Self-Service User)
User role profile description:
Delegated administrators can perform all tasks on objects within their assigned scope. Delegated administrators cannot modify VMM settings and cannot add or remove members from the Administrator user role.
Previous
Next
Cancel


Create User Role Wizard
Scope
Name and description
Profile
Members
Scope
Quotas for the RLCLOUD...
Networking
Resources
Permissions
Summary
Scope
The scope of the user role determines the objects on which the the member of the user role can perform actions.
Scope:
RLCLOUD
Select this check box to allow members in this user role to receive and implement Performance and Resource Optimization (PRO) tips.
Show PRO tips
Previous
Next
Cancel



Quotas for the RLCLOUD cloud

Role level quotas:

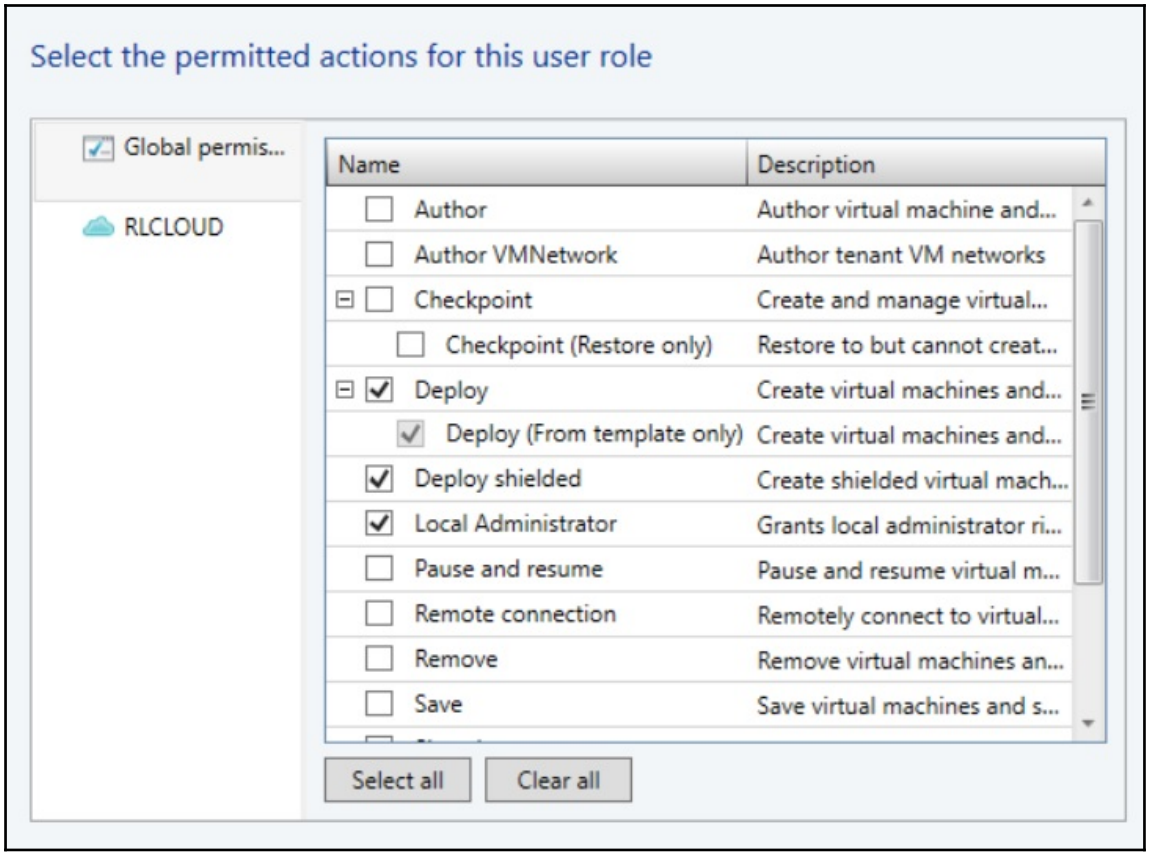
All members of this user role combined can use resources up to the specified limits.

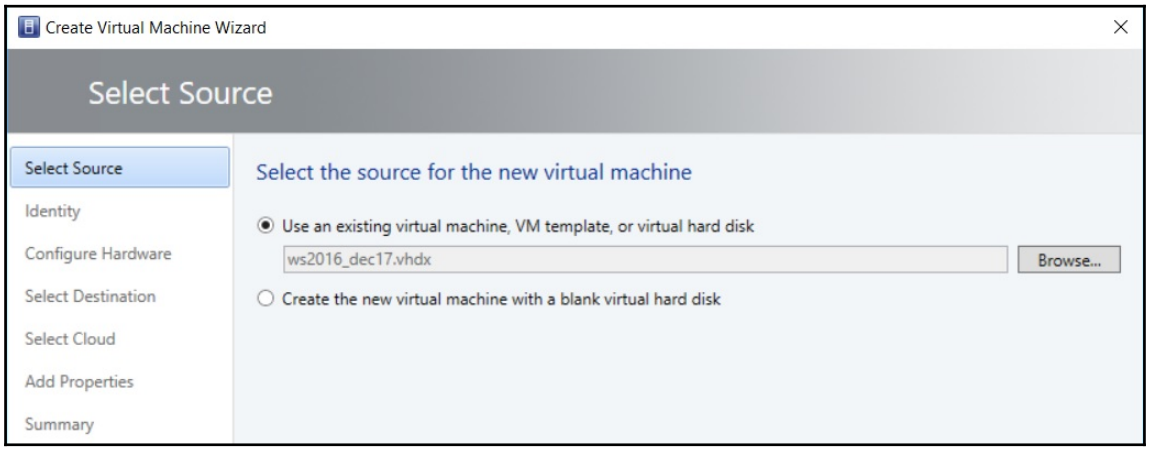
Dimension	Available Capacity	Use Maximum	Assigned Quota
Virtual CPUs:	10	☑	10
Memory (MB):	24576	☑	24576
Storage (GB):	250	☑	250
Custom quota (points):	Unlimited	☑	Unlimited
Virtual machines:	Unlimited	☑	Unlimited

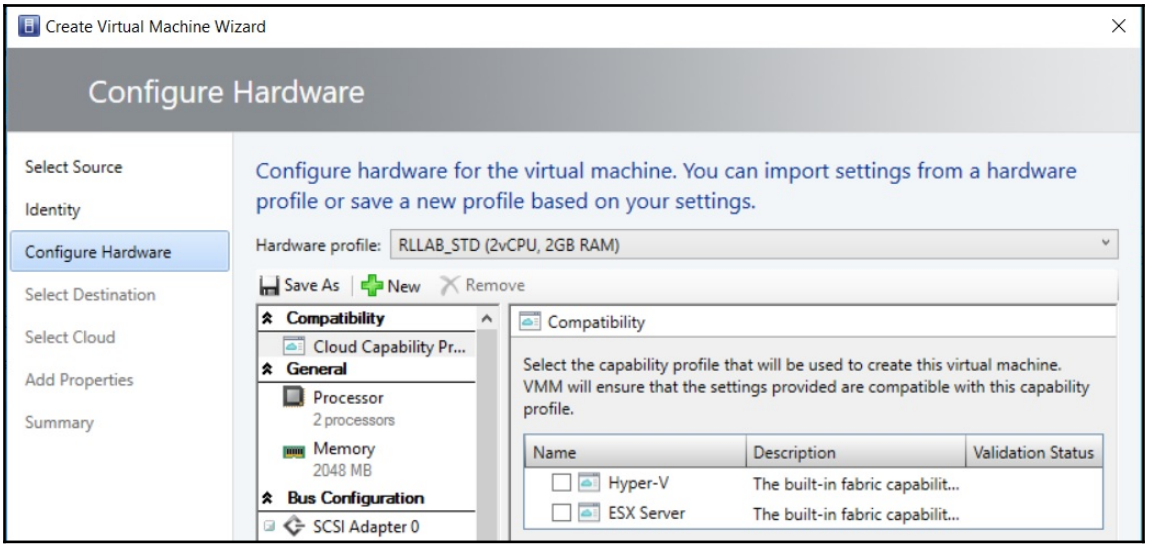
Member level quotas:

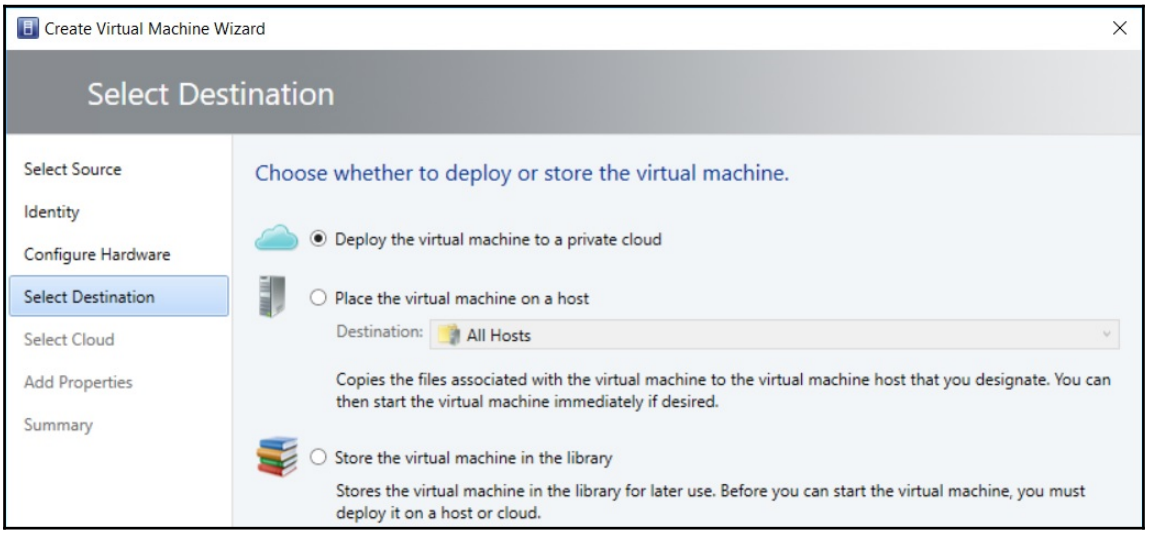
Each member of this user role combined can use resources up to the specified limits.

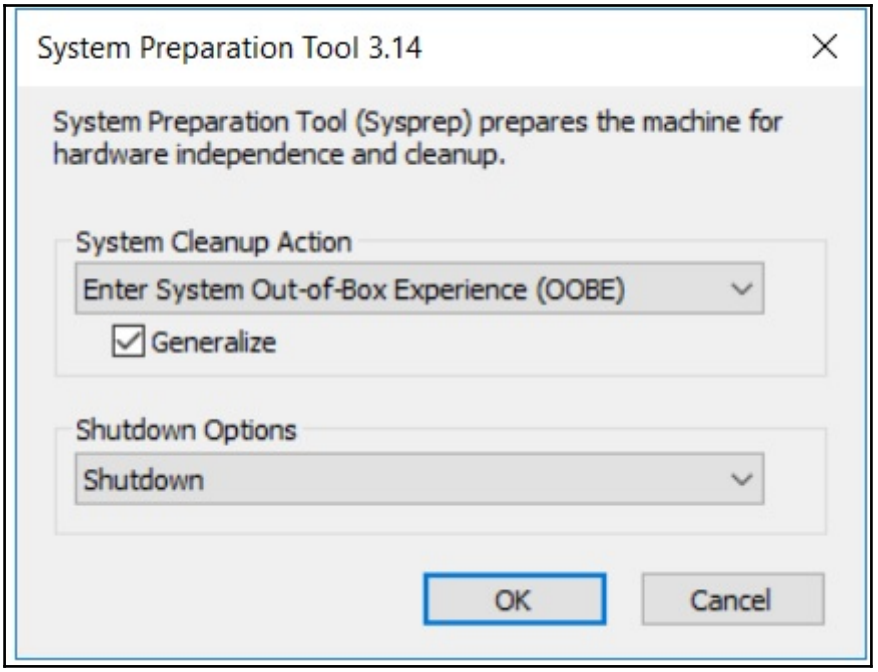
Dimension	Available Capacity	Use Maximum	Assigned Quota
Virtual CPUs:	10	☑	10
Memory (MB):	24576	☑	24576
Storage (GB):	250	☑	250
Custom quota (points):	Unlimited	☑	Unlimited
Virtual machines:	Unlimited	☑	Unlimited

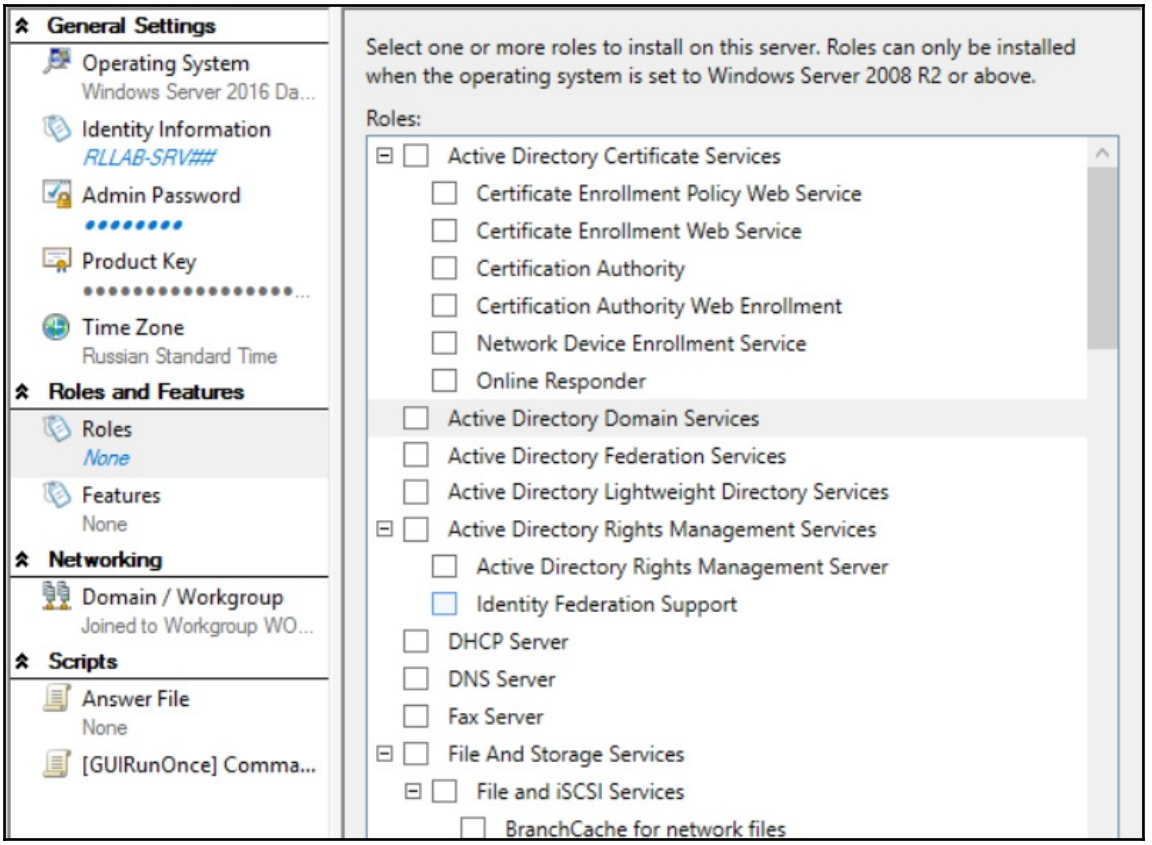

Select the permitted actions for this user role
Global permis...
RLCLOUD
Name
Description
Author
Author virtual machine and...
Author VMNetwork
Author tenant VM networks
Checkpoint
Create and manage virtual...
Checkpoint (Restore only)
Restore to but cannot creat...
Deploy
Create virtual machines and...
Deploy (From template only)
Create virtual machines and...
Deploy shielded
Create shielded virtual mach...
Local Administrator
Grants local administrator ri...
Pause and resume
Pause and resume virtual m...
Remote connection
Remotely connect to virtual...
Remove
Remove virtual machines an...
Save
Save virtual machines and s...
Select all
Clear all

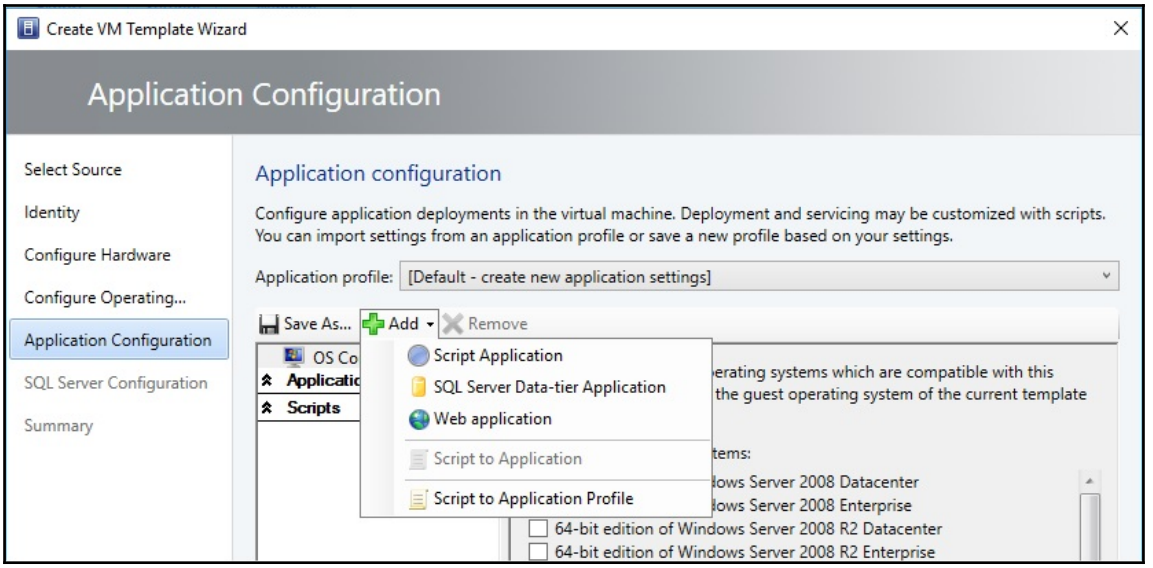

Create Virtual Machine Wizard
Select Source
Select Source
Identity
Configure Hardware
Select Destination
Select Cloud
Add Properties
Summary
Select the source for the new virtual machine
Use an existing virtual machine, VM template, or virtual hard disk
ws2016_dec17.vhdx
Browse...
Create the new virtual machine with a blank virtual hard disk

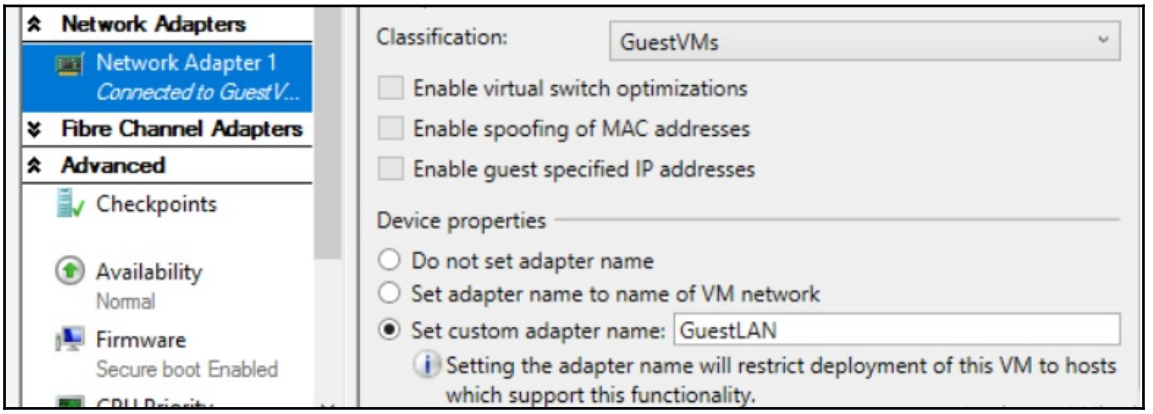

Create Virtual Machine Wizard
Configure Hardware
Select Source
Identity
Configure Hardware
Select Destination
Select Cloud
Add Properties
Summary
Configure hardware for the virtual machine. You can import settings from a hardware profile or save a new profile based on your settings.
Hardware profile: RLLAB_STD (2vCPU, 2GB RAM)
Save As
New
Remove
Compatibility
Cloud Capability Pr...
General
Processor
2 processors
Memory
2048 MB
Bus Configuration
SCSI Adapter 0
Compatibility
Select the capability profile that will be used to create this virtual machine. VMM will ensure that the settings provided are compatible with this capability profile.
Name
Description
Validation Status
Hyper-V
The built-in fabric capabilit...
ESX Server
The built-in fabric capabilit...

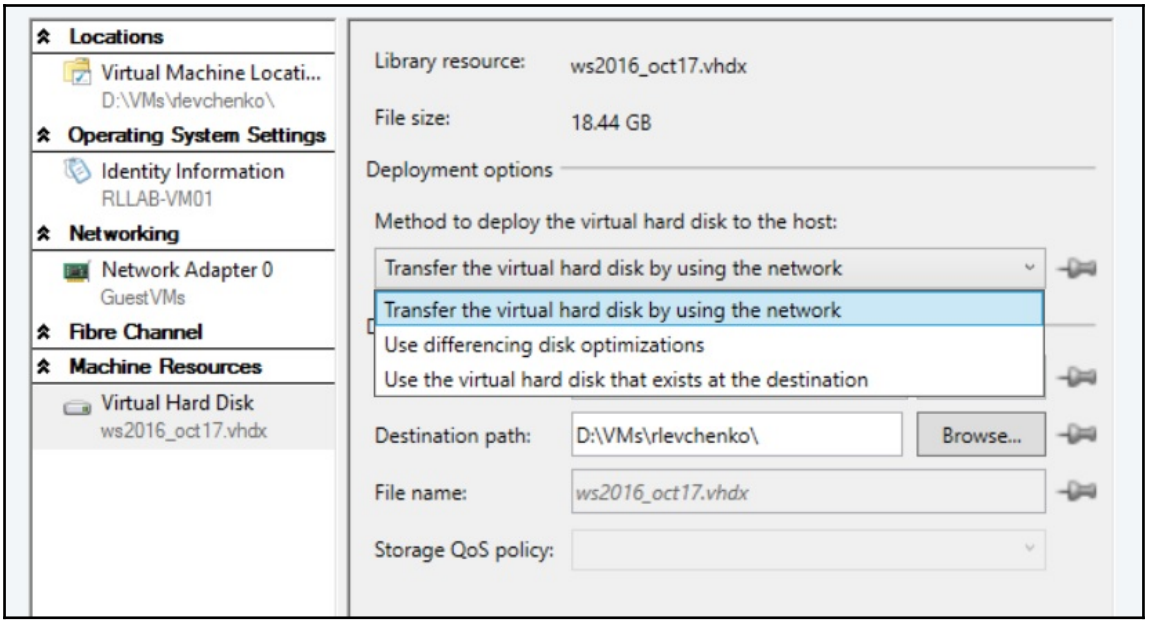

Create Virtual Machine Wizard
Select Destination
Select Source
Identity
Configure Hardware
Select Destination
Select Cloud
Add Properties
Summary
Choose whether to deploy or store the virtual machine.
Deploy the virtual machine to a private cloud
Place the virtual machine on a host
Destination: All Hosts
Copies the files associated with the virtual machine to the virtual machine host that you designate. You can then start the virtual machine immediately if desired.
Store the virtual machine in the library
Stores the virtual machine in the library for later use. Before you can start the virtual machine, you must deploy it on a host or cloud.

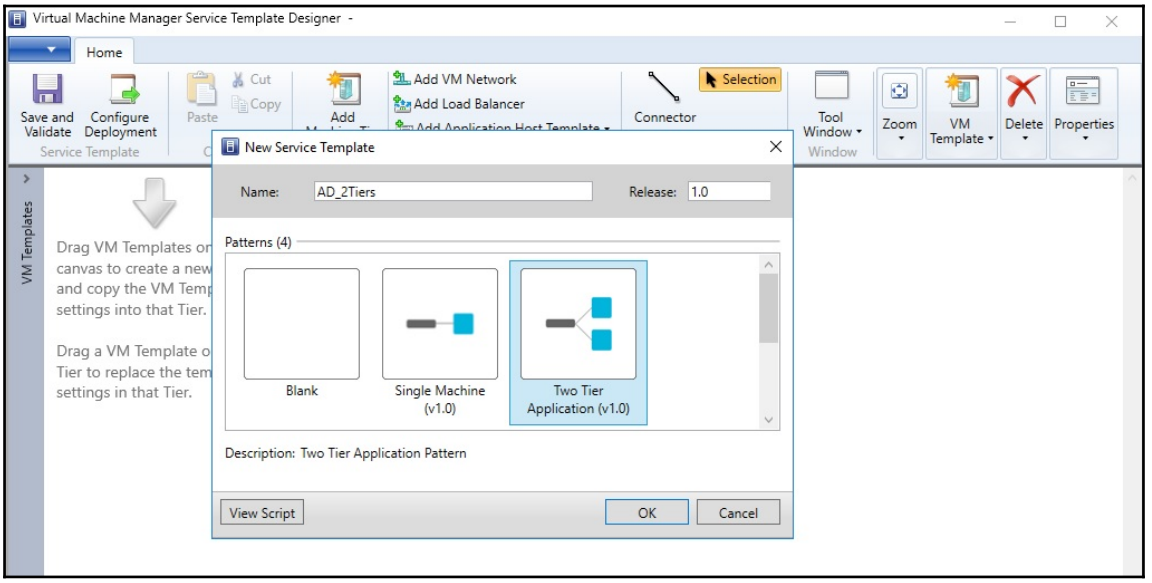

System Preparation Tool 3.14
System Preparation Tool (Sysprep) prepares the machine for hardware independence and cleanup.
System Cleanup Action
Enter System Out-of-Box Experience (OOBE)
Generalize
Shutdown Options
Shutdown
OK
Cancel

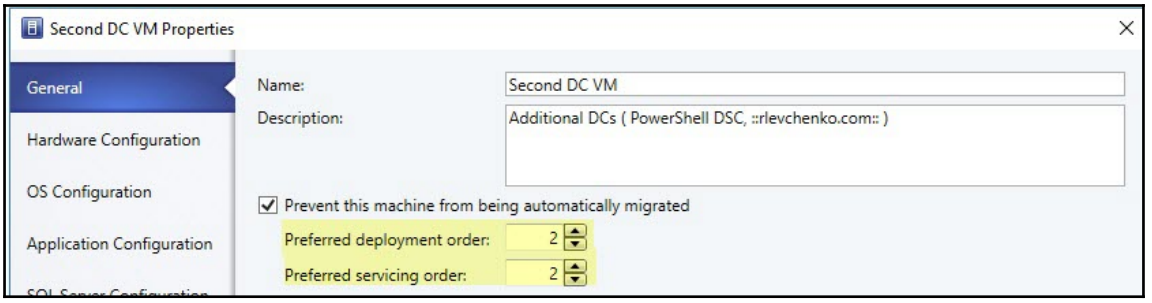

General Settings
Operating System
Windows Server 2016 Da...
Identity Information
RLLAB-SRV##
Admin Password
Product Key
Time Zone
Russian Standard Time
Roles and Features
Roles
None
Features
None
Networking
Domain / Workgroup
Joined to Workgroup WO...
Scripts
Answer File
None
[GUIRunOnce] Comma...
Select one or more roles to install on this server. Roles can only be installed when the operating system is set to Windows Server 2008 R2 or above.
Roles:
Active Directory Certificate Services
Certificate Enrollment Policy Web Service
Certificate Enrollment Web Service
Certification Authority
Certification Authority Web Enrollment
Network Device Enrollment Service
Online Responder
Active Directory Domain Services
Active Directory Federation Services
Active Directory Lightweight Directory Services
Active Directory Rights Management Services
Active Directory Rights Management Server
Identity Federation Support
DHCP Server
DNS Server
Fax Server
File And Storage Services
File and iSCSI Services
BranchCache for network files

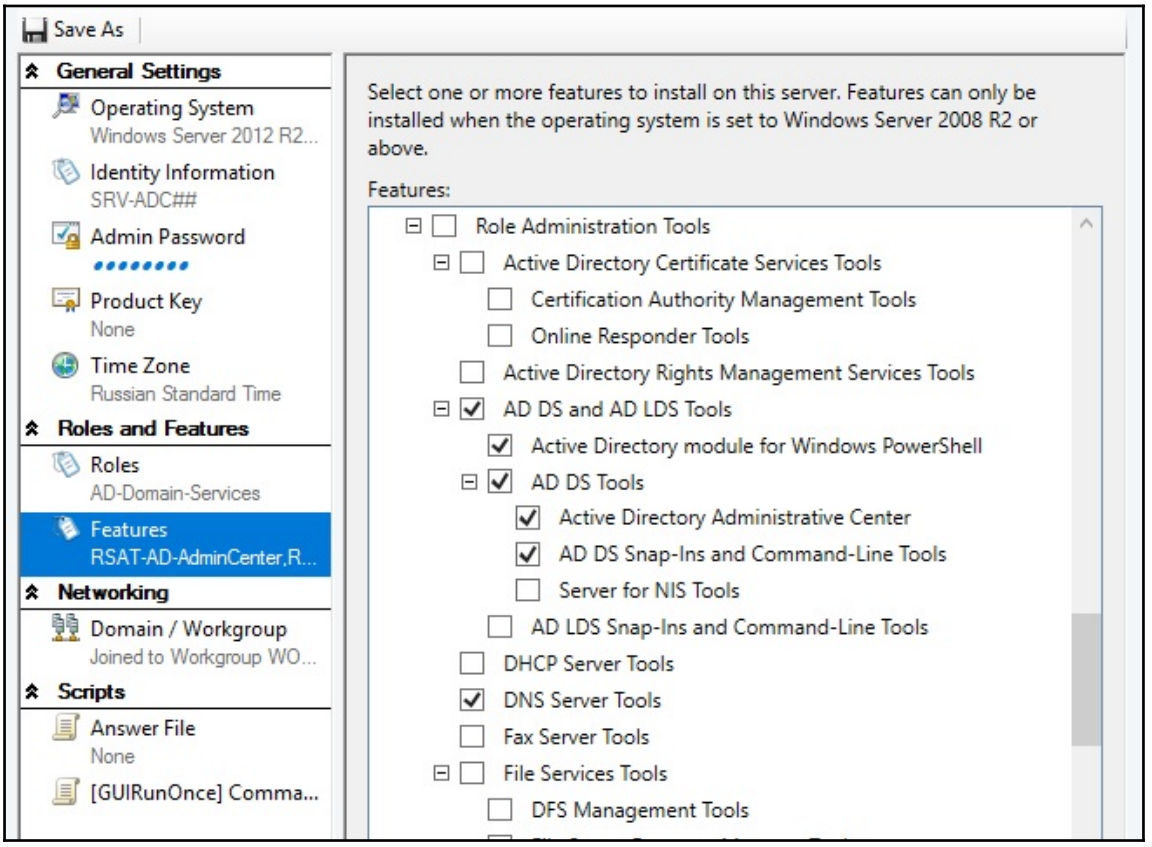

Create VM Template Wizard
Application Configuration
Select Source
Identity
Configure Hardware
Configure Operating...
Application Configuration
SQL Server Configuration
Summary
Application configuration
Configure application deployments in the virtual machine. Deployment and servicing may be customized with scripts. You can import settings from an application profile or save a new profile based on your settings.
Application profile: [Default - create new application settings]
Save As...
Add
Remove
Script Application
SQL Server Data-tier Application
Web application
Script to Application
Script to Application Profile
Scripts
64-bit edition of Windows Server 2008 R2 Datacenter
64-bit edition of Windows Server 2008 R2 Enterprise

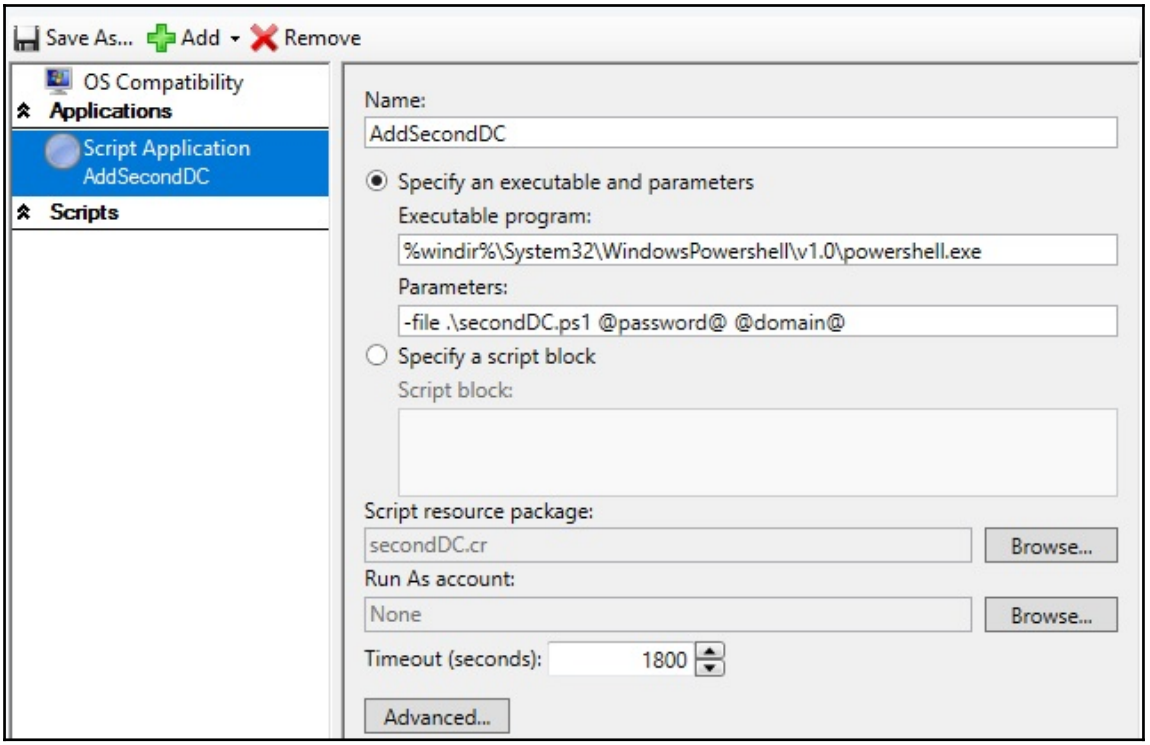

Network Adapters
Network Adapter 1
Connected to GuestV...
Fibre Channel Adapters
Advanced
Checkpoints
Availability
Normal
Firmware
Secure boot Enabled
Classification:
GuestVMs
Enable virtual switch optimizations
Enable spoofing of MAC addresses
Enable guest specified IP addresses
Device properties
Do not set adapter name
Set adapter name to name of VM network
Set custom adapter name:
GuestLAN
Setting the adapter name will restrict deployment of this VM to hosts which support this functionality.

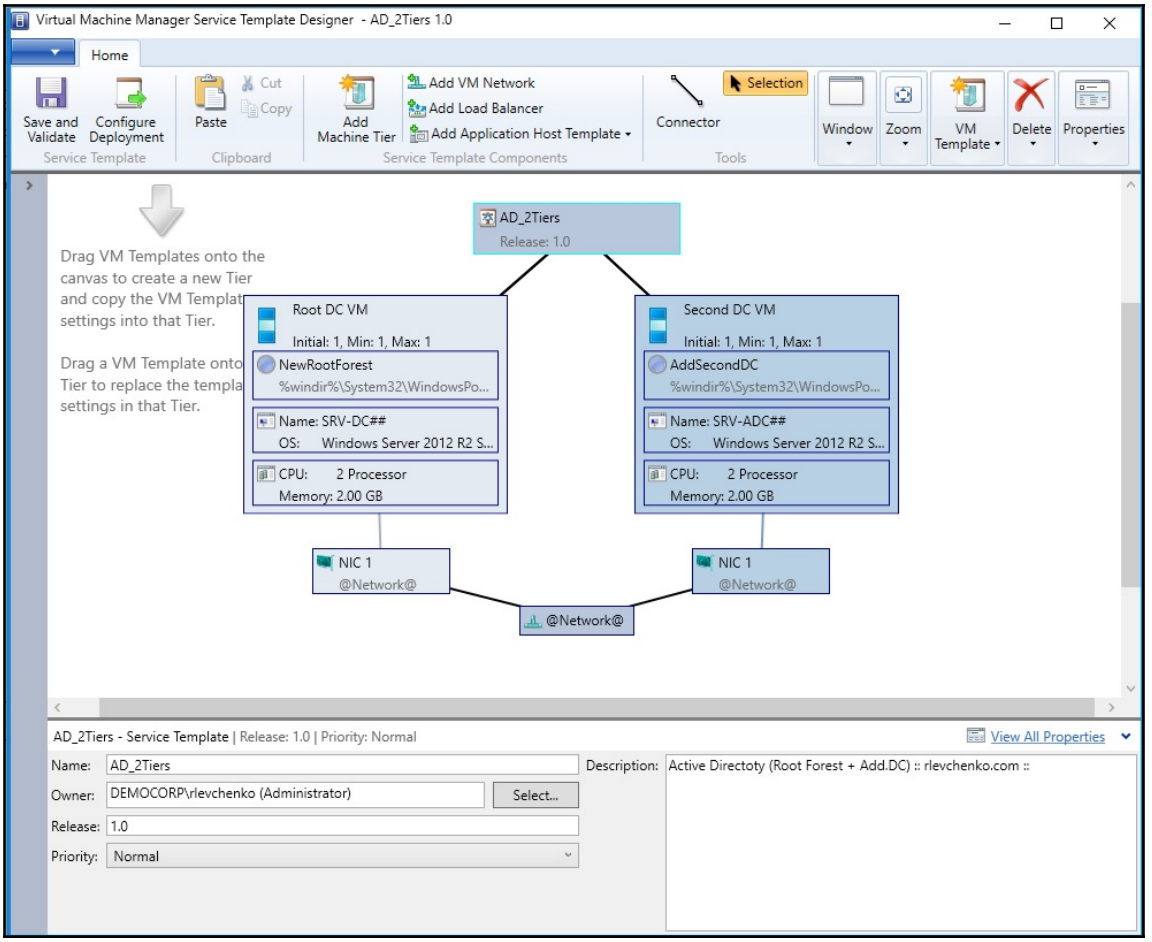

Locations
Virtual Machine Locati...
D:\VMs\rlevchenko\
Operating System Settings
Identity Information
RLLAB-VM01
Networking
Network Adapter 0
GuestVMs
Fibre Channel
Machine Resources
Virtual Hard Disk
ws2016_oct17.vhdx
Library resource:
ws2016_oct17.vhdx
File size:
18.44 GB
Deployment options
Method to deploy the virtual hard disk to the host:
Transfer the virtual hard disk by using the network
Transfer the virtual hard disk by using the network
Use differencing disk optimizations
Use the virtual hard disk that exists at the destination
Destination path:
D:\VMs\rlevchenko\
Browse...
File name:
ws2016_oct17.vhdx
Storage QoS policy:


Virtual Machine Manager Service Template Designer -
Home
Save and Validate
Configure Deployment
Service Template
Paste
Cut
Copy
Add
Add VM Network
Add Load Balancer
Connector
Selection
Tool Window
Window
Zoom
VM Template
Delete
Properties
VM Templates
Drag VM Templates or
canvas to create a new
and copy the VM Temp
settings into that Tier.
Drag a VM Template o
Tier to replace the tem
settings in that Tier.
New Service Template
Name:
AD_2Tiers
Release:
1.0
Patterns (4)
Blank
Single Machine (v1.0)
Two Tier Application (v1.0)
Description: Two Tier Application Pattern
View Script
OK
Cancel


Second DC VM Properties
General
Hardware Configuration
OS Configuration
Application Configuration
Name:
Second DC VM
Description:
Additional DCs (PowerShell DSC, ::rlevchenko.com::)
Prevent this machine from being automatically migrated
Preferred deployment order:
2
Preferred servicing order:
2

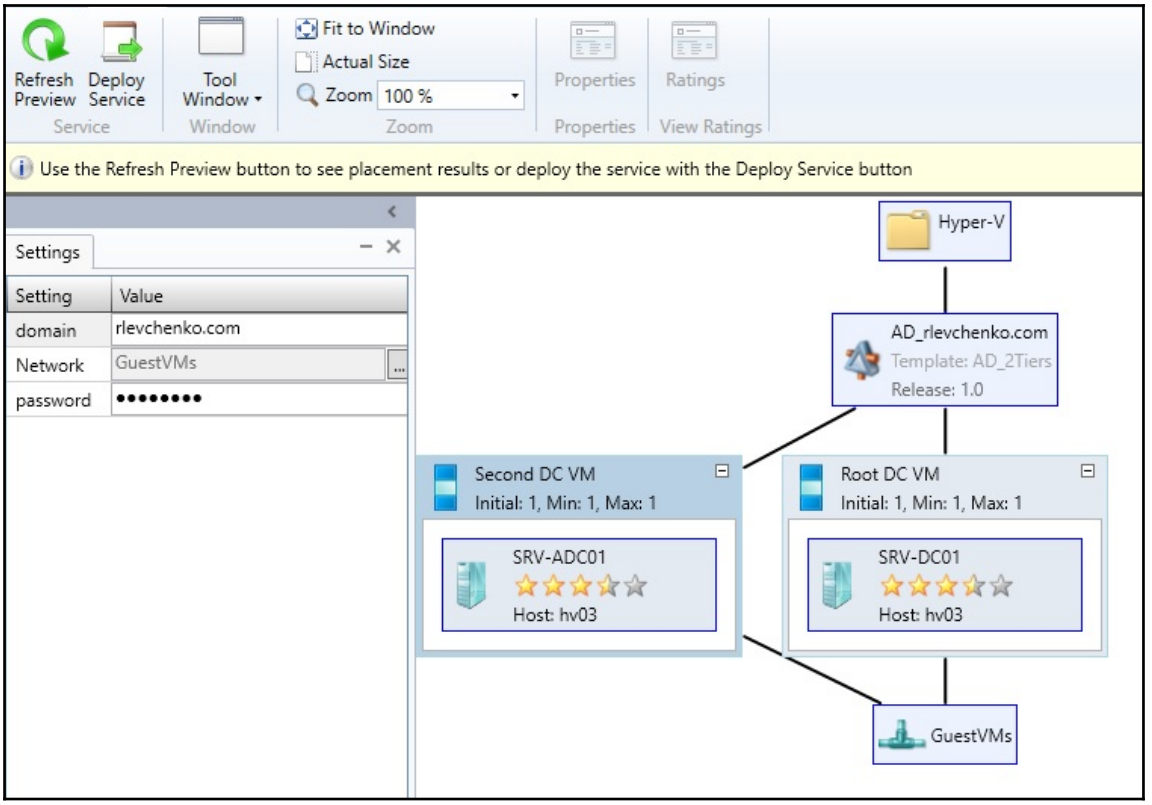

Save As
General Settings
Operating System
Windows Server 2012 R2...
Identity Information
SRV-ADC##
Admin Password
Product Key
None
Time Zone
Russian Standard Time
Roles and Features
Roles
AD-Domain-Services
Features
RSAT-AD-AdminCenter,R...
Networking
Domain / Workgroup
Joined to Workgroup WO...
Scripts
Answer File
None
[GUIRunOnce] Comma...
Select one or more features to install on this server. Features can only be installed when the operating system is set to Windows Server 2008 R2 or above.
Features:
Role Administration Tools
Active Directory Certificate Services Tools
Certification Authority Management Tools
Online Responder Tools
Active Directory Rights Management Services Tools
AD DS and AD LDS Tools
Active Directory module for Windows PowerShell
AD DS Tools
Active Directory Administrative Center
AD DS Snap-Ins and Command-Line Tools
Server for NIS Tools
AD LDS Snap-Ins and Command-Line Tools
DHCP Server Tools
DNS Server Tools
Fax Server Tools
File Services Tools
DFS Management Tools

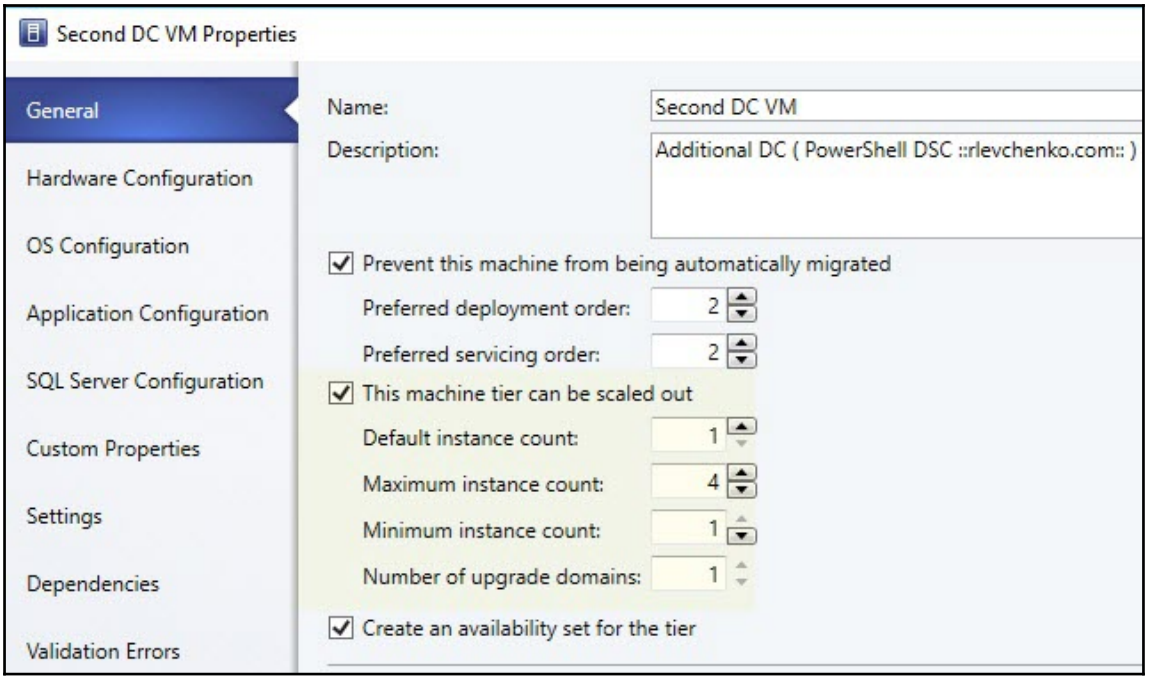

Save As...
Add
Remove
OS Compatibility
Applications
Script Application
AddSecondDC
Scripts
Name:
AddSecondDC
Specify an executable and parameters
Executable program:
%windir%\System32\WindowsPowershell\v1.0\powershell.exe
Parameters:
-file .\secondDC.ps1 @password@ @domain@
Specify a script block
Script block:
Script resource package:
secondDC.cr
Browse...
Run As account:
None
Browse...
Timeout (seconds):
1800
Advanced...

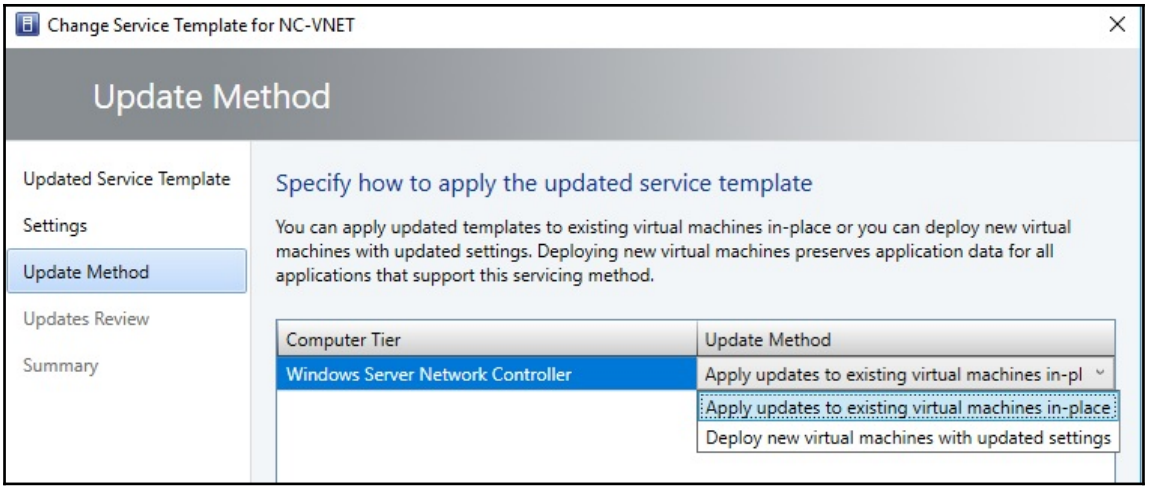


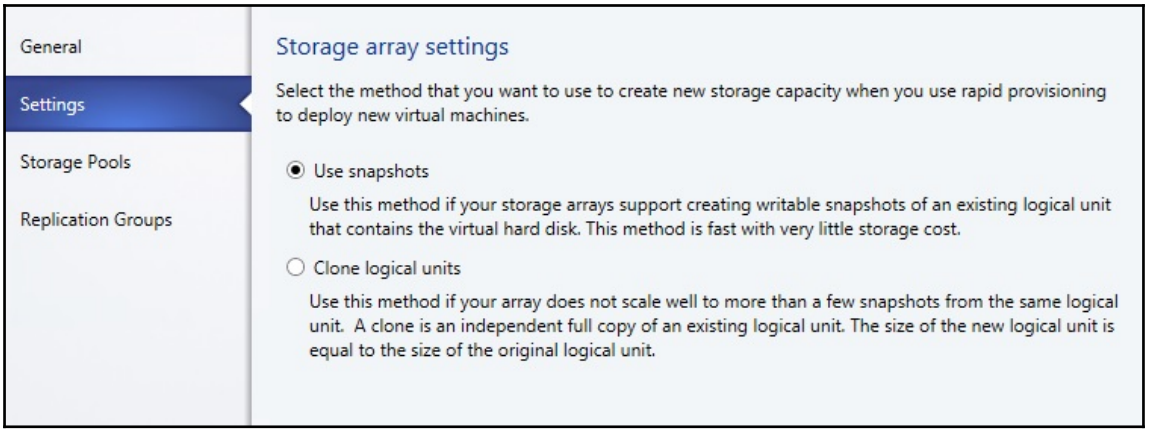
Settings:

Name	Value	Mandatory	Encrypted
⊟ domain	rlevchenko.com	Yes	No
Root DC VM\NewRootForest\Script commands\Install\Parameters Second DC VM\AddSecondDC\Script commands\Install\Parameters			
Network		Yes	
⊟ password		Yes	Yes
Root DC VM\NewRootForest\Script commands\Install\Parameters Second DC VM\AddSecondDC\Script commands\Install\Parameters			

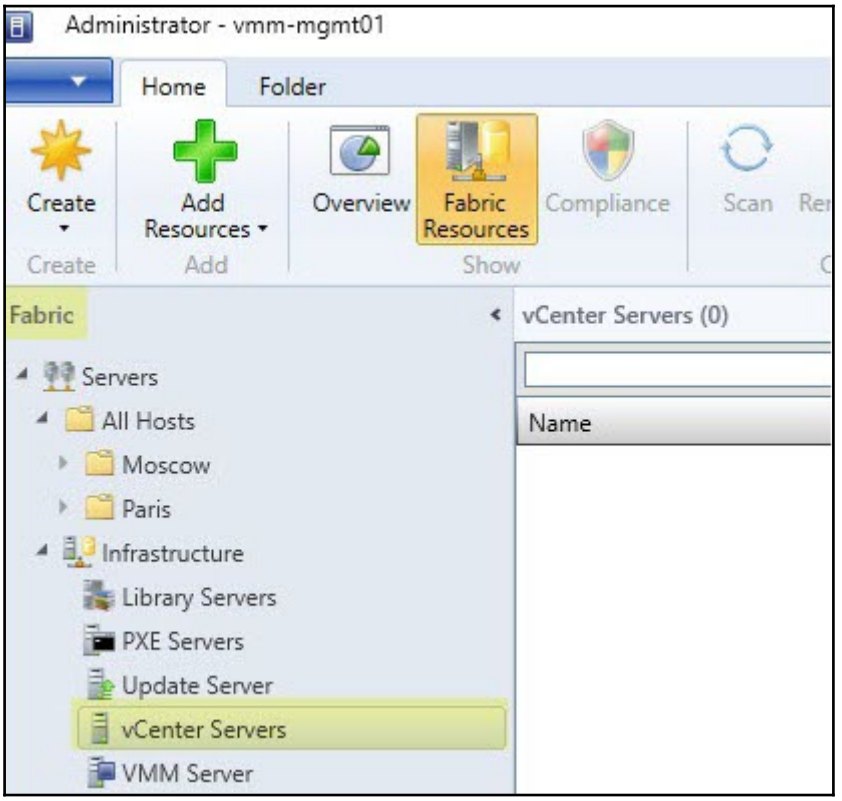

Refresh Preview
Deploy Service
Service
Tool Window
Window
Fit to Window
Actual Size
Zoom
100 %
Zoom
Properties
Properties
Ratings
View Ratings
Use the Refresh Preview button to see placement results or deploy the service with the Deploy Service button
Settings
Setting
Value
domain
rlevchenko.com
Network
GuestVMs
password
Hyper-V
AD_rlevchenko.com
Template: AD_2Tiers
Release: 1.0
Second DC VM
Initial: 1, Min: 1, Max: 1
SRV-ADC01
Host: hv03
Root DC VM
Initial: 1, Min: 1, Max: 1
SRV-DC01
Host: hv03
GuestVMs

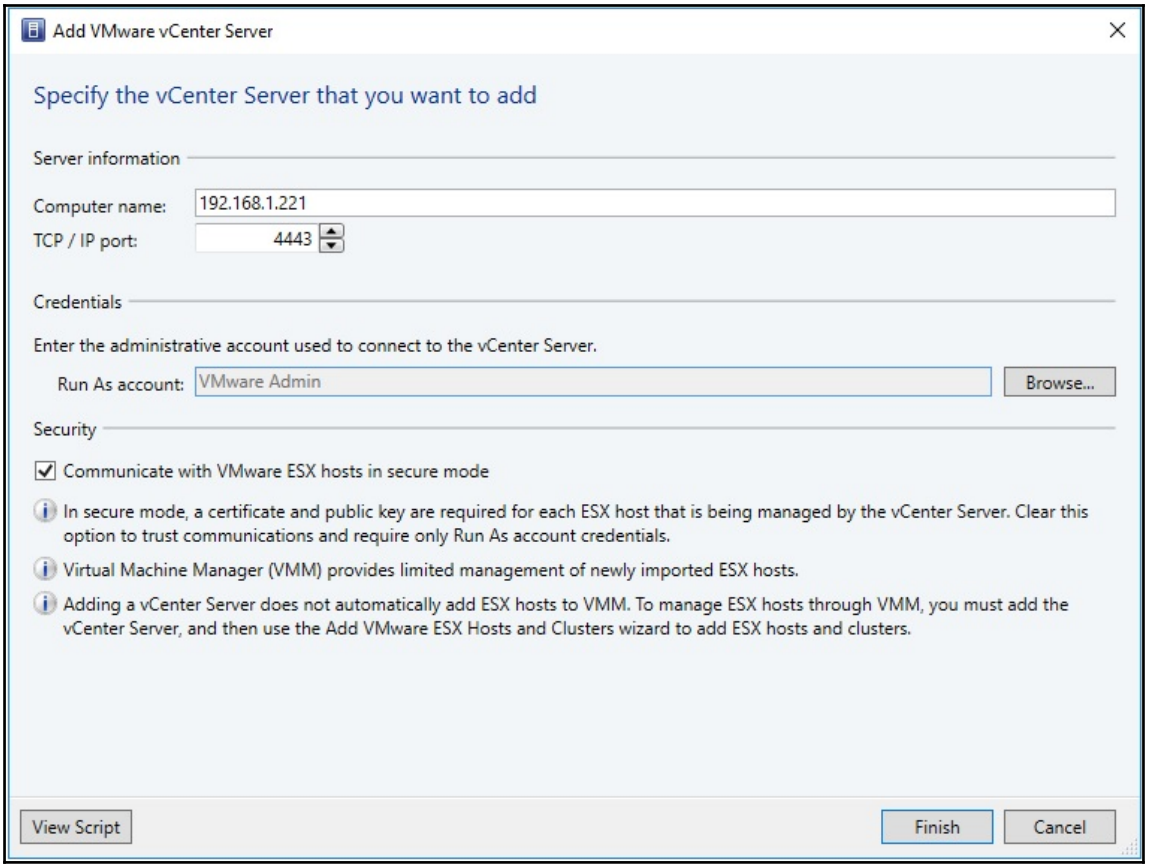

Second DC VM Properties
General
Hardware Configuration
OS Configuration
Application Configuration
SQL Server Configuration
Custom Properties
Settings
Dependencies
Validation Errors
Name:
Second DC VM
Description:
Additional DC (PowerShell DSC ::rlevchenko.com::)
Prevent this machine from being automatically migrated
Preferred deployment order:
2
Preferred servicing order:
2
This machine tier can be scaled out
Default instance count:
1
Maximum instance count:
4
Minimum instance count:
1
Number of upgrade domains:
1
Create an availability set for the tier

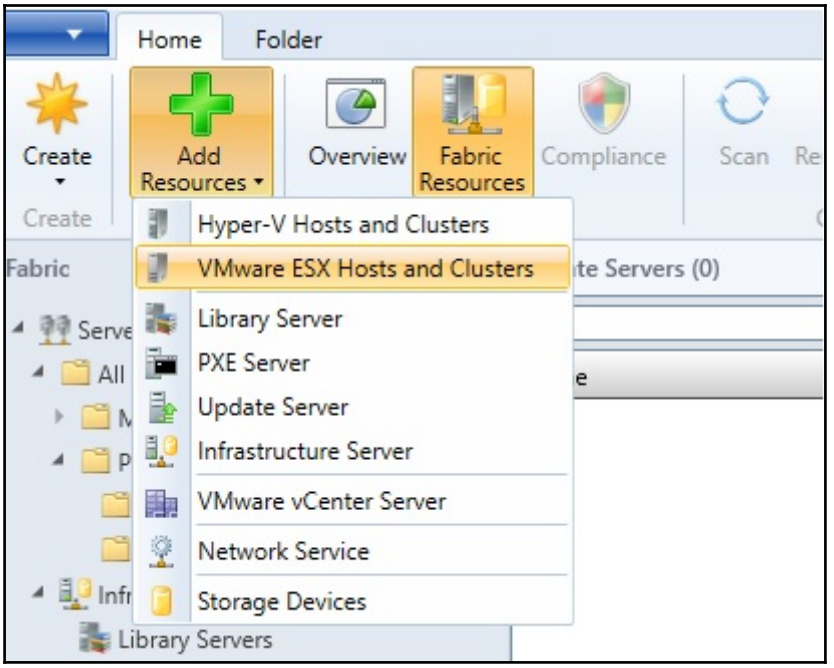

Change Service Template for NC-VNET
Update Method
Updated Service Template
Settings
Update Method
Updates Review
Summary
Specify how to apply the updated service template
You can apply updated templates to existing virtual machines in-place or you can deploy new virtual machines with updated settings. Deploying new virtual machines preserves application data for all applications that support this servicing method.
Computer Tier
Update Method
Windows Server Network Controller
Apply updates to existing virtual machines in-pl
Apply updates to existing virtual machines in-place
Deploy new virtual machines with updated settings

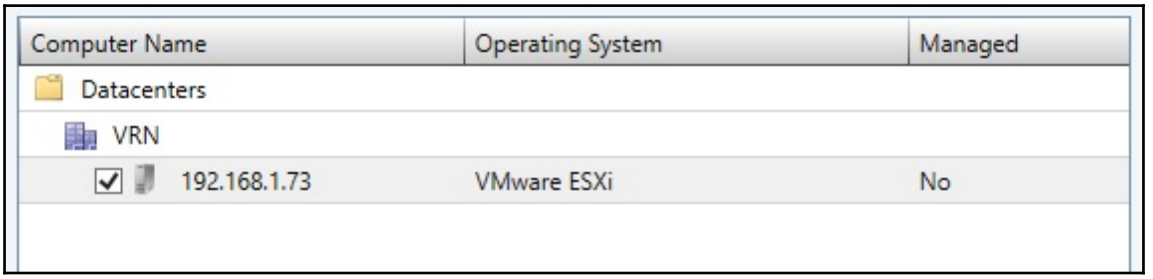

General
Settings
Storage Pools
Replication Groups
Storage array settings
Select the method that you want to use to create new storage capacity when you use rapid provisioning to deploy new virtual machines.
Use snapshots
Use this method if your storage arrays support creating writable snapshots of an existing logical unit that contains the virtual hard disk. This method is fast with very little storage cost.
Clone logical units
Use this method if your array does not scale well to more than a few snapshots from the same logical unit. A clone is an independent full copy of an existing logical unit. The size of the new logical unit is equal to the size of the original logical unit.

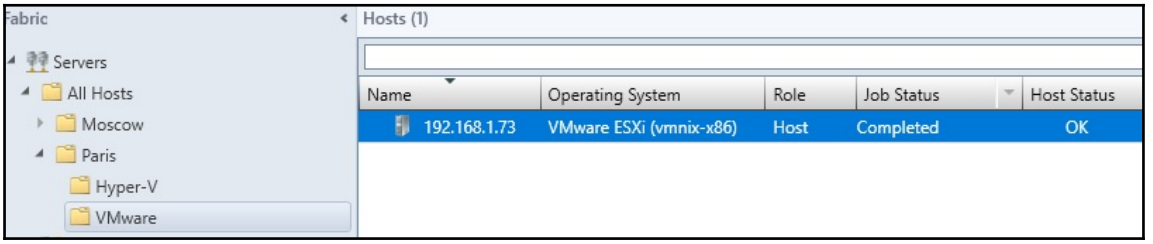
Chapter 8: Managing VMware ESXi hosts

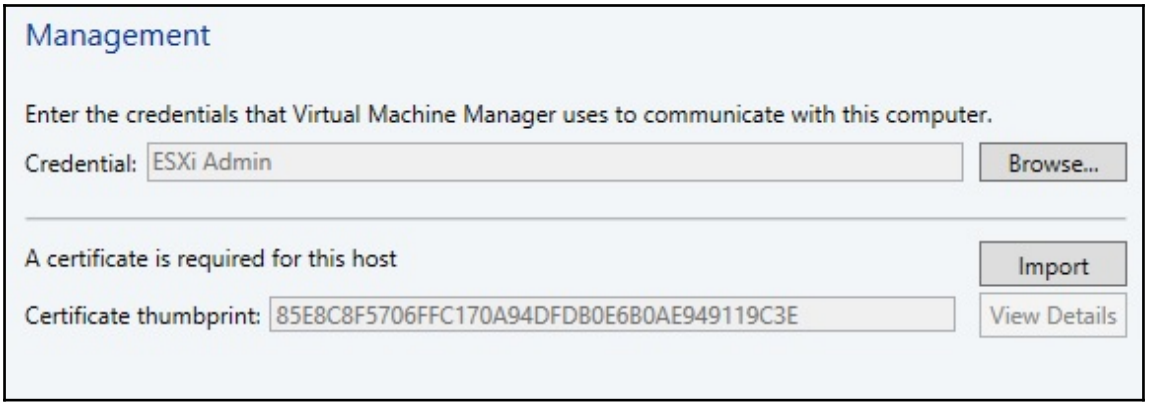


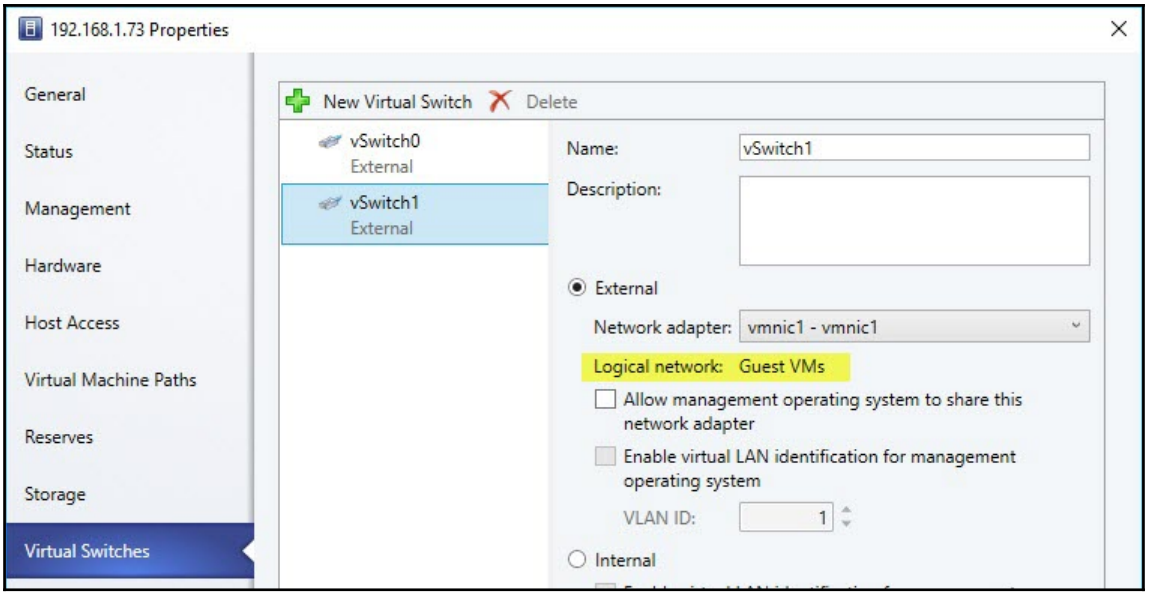

Add VMware vCenter Server
Specify the vCenter Server that you want to add
Server information
Computer name:
192.168.1.221
TCP / IP port:
4443
Credentials
Enter the administrative account used to connect to the vCenter Server.
Run As account:
VMware Admin
Browse...
Security
Communicate with VMware ESX hosts in secure mode
In secure mode, a certificate and public key are required for each ESX host that is being managed by the vCenter Server. Clear this option to trust communications and require only Run As account credentials.
Virtual Machine Manager (VMM) provides limited management of newly imported ESX hosts.
Adding a vCenter Server does not automatically add ESX hosts to VMM. To manage ESX hosts through VMM, you must add the vCenter Server, and then use the Add VMware ESX Hosts and Clusters wizard to add ESX hosts and clusters.
View Script
Finish
Cancel

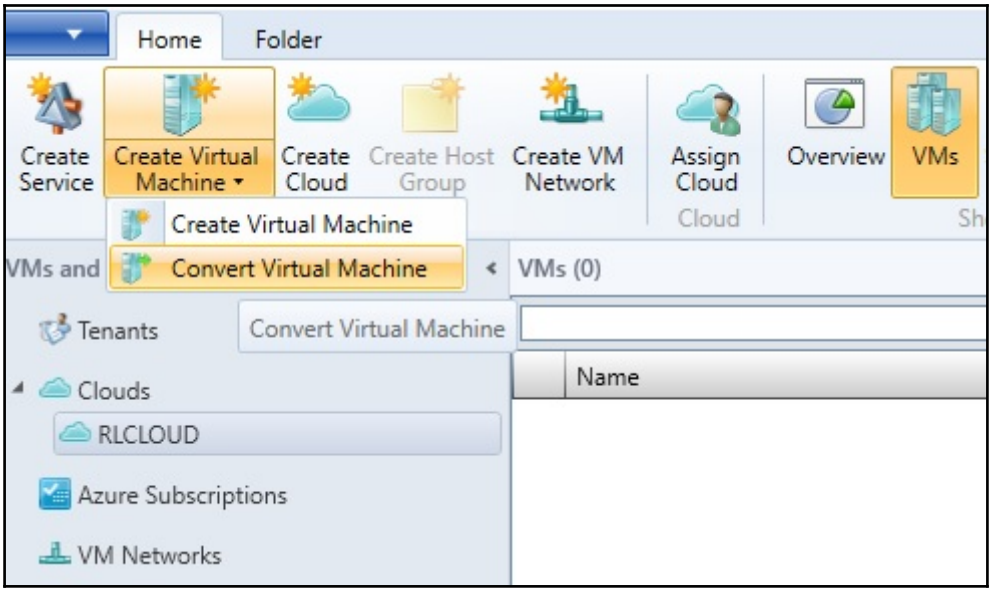

Home
Folder
Create
Add Resources
Overview
Fabric Resources
Compliance
Scan
Create
Hyper-V Hosts and Clusters
VMware ESX Hosts and Clusters
Library Server
PXE Server
Update Server
Infrastructure Server
VMware vCenter Server
Network Service
Storage Devices
Fabric
Library Servers

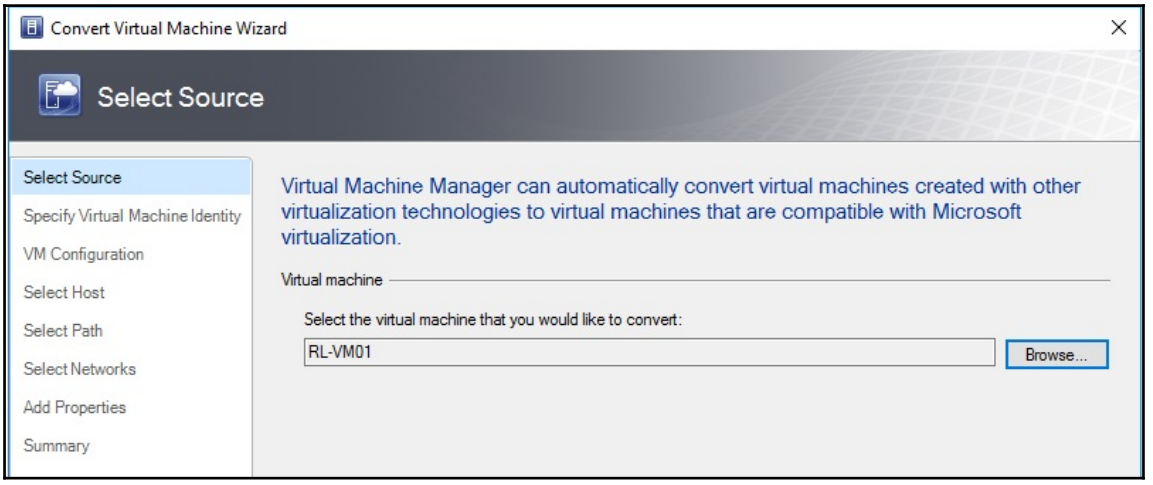

Computer Name
Operating System
Managed
Datacenters
VRN
192.168.1.73
VMware ESXi
No

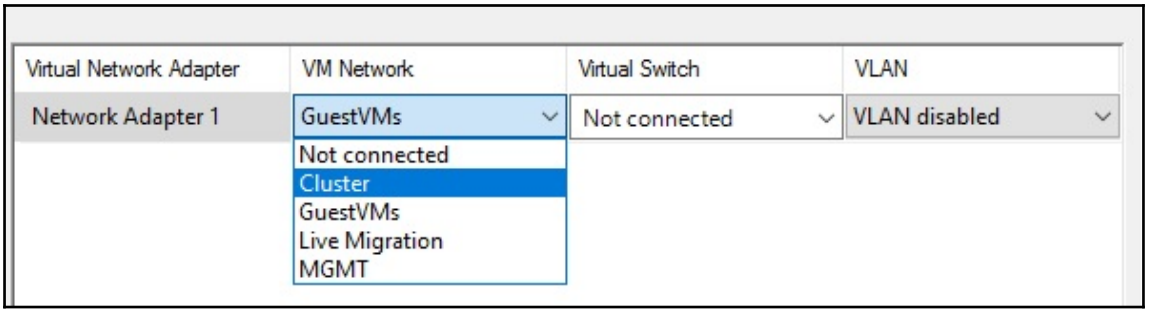

Fabric
Servers
All Hosts
Moscow
Paris
Hyper-V
VMware
Hosts (1)
Name
Operating System
Role
Job Status
Host Status
192.168.1.73
VMware ESXi (vmnix-x86)
Host
Completed
OK


Management
Enter the credentials that Virtual Machine Manager uses to communicate with this computer.
Credential:
ESXi Admin
Browse...
A certificate is required for this host
Import
Certificate thumbprint:
85E8C8F5706FFC170A94DFDB0E6B0AE949119C3E
View Details

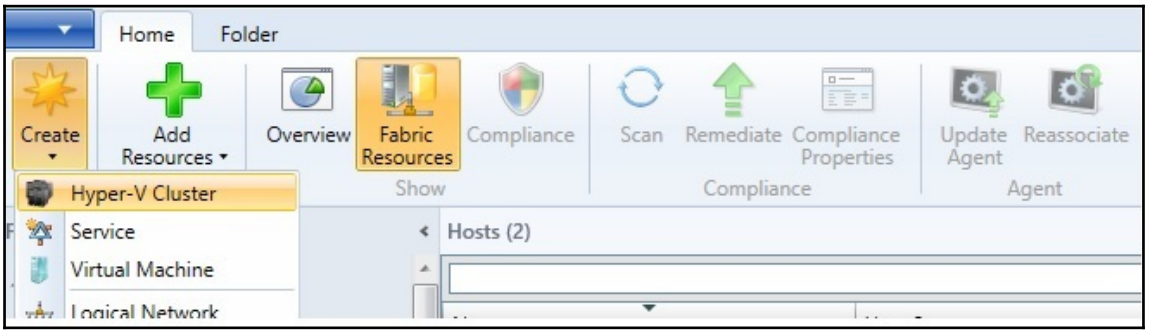

192.168.1.73 Properties
General
Status
Management
Hardware
Host Access
Virtual Machine Paths
Reserves
Storage
Virtual Switches
New Virtual Switch
Delete
vSwitch0
External
vSwitch1
External
Name:
vSwitch1
Description:
External
Network adapter:
vmnic1 - vmnic1
Logical network:
Guest VMs
Allow management operating system to share this network adapter
Enable virtual LAN identification for management operating system
VLAN ID:
1
Internal

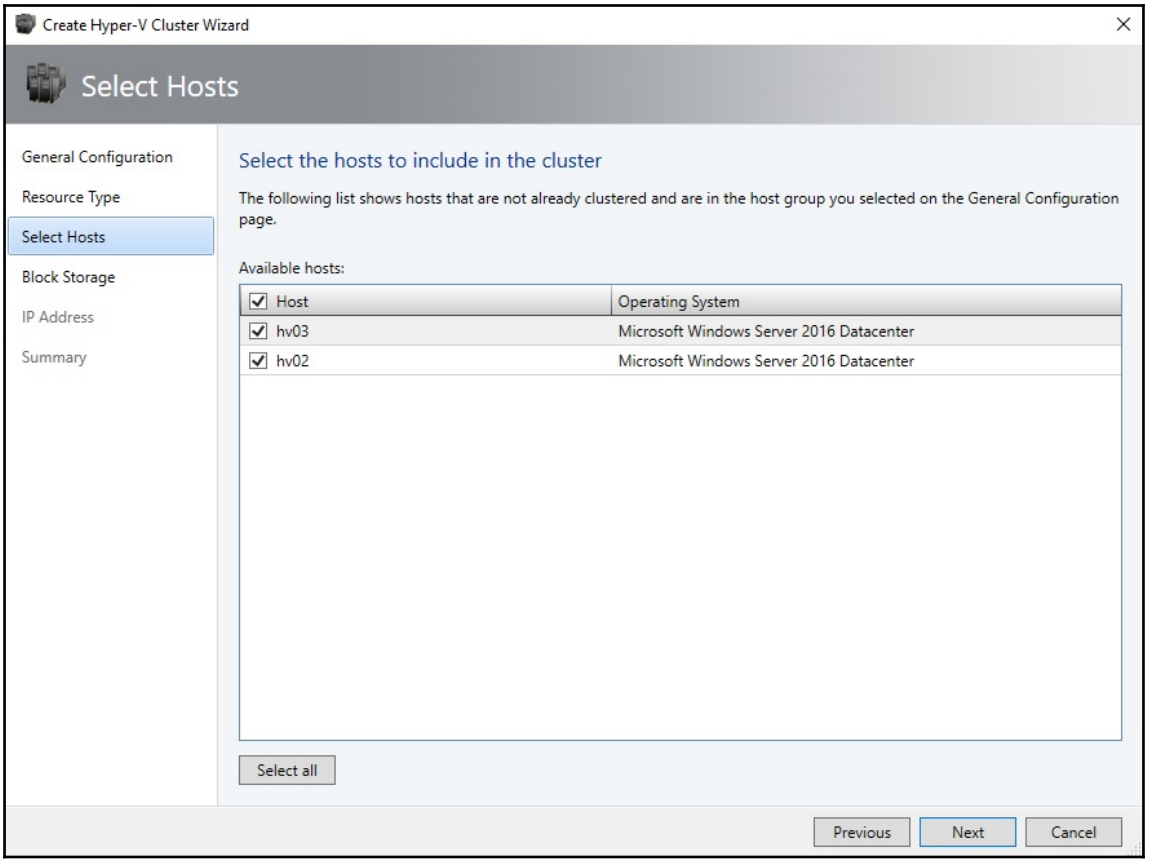

Home
Folder
Create Service
Create Virtual Machine
Create Cloud
Create Host Group
Create VM Network
Assign Cloud
Overview
VMs
Cloud
Create Virtual Machine
Convert Virtual Machine
VMs and
VMs (0)
Tenants
Convert Virtual Machine
Clouds
Name
RLCLOUD
Azure Subscriptions
VM Networks

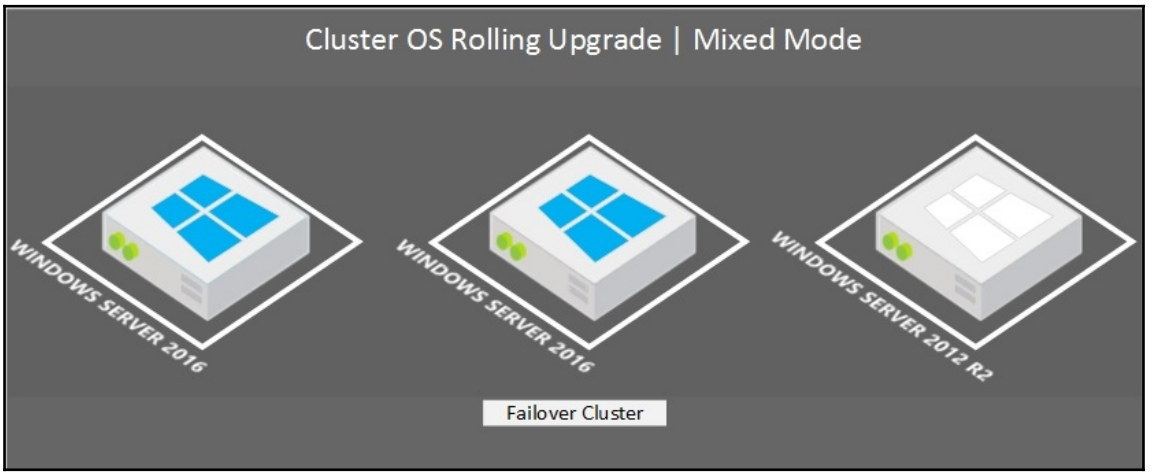

Convert Virtual Machine Wizard
Select Source
Select Source
Specify Virtual Machine Identity
VM Configuration
Select Host
Select Path
Select Networks
Add Properties
Summary
Virtual Machine Manager can automatically convert virtual machines created with other virtualization technologies to virtual machines that are compatible with Microsoft virtualization.
Virtual machine
Select the virtual machine that you would like to convert:
RL-VM01
Browse...

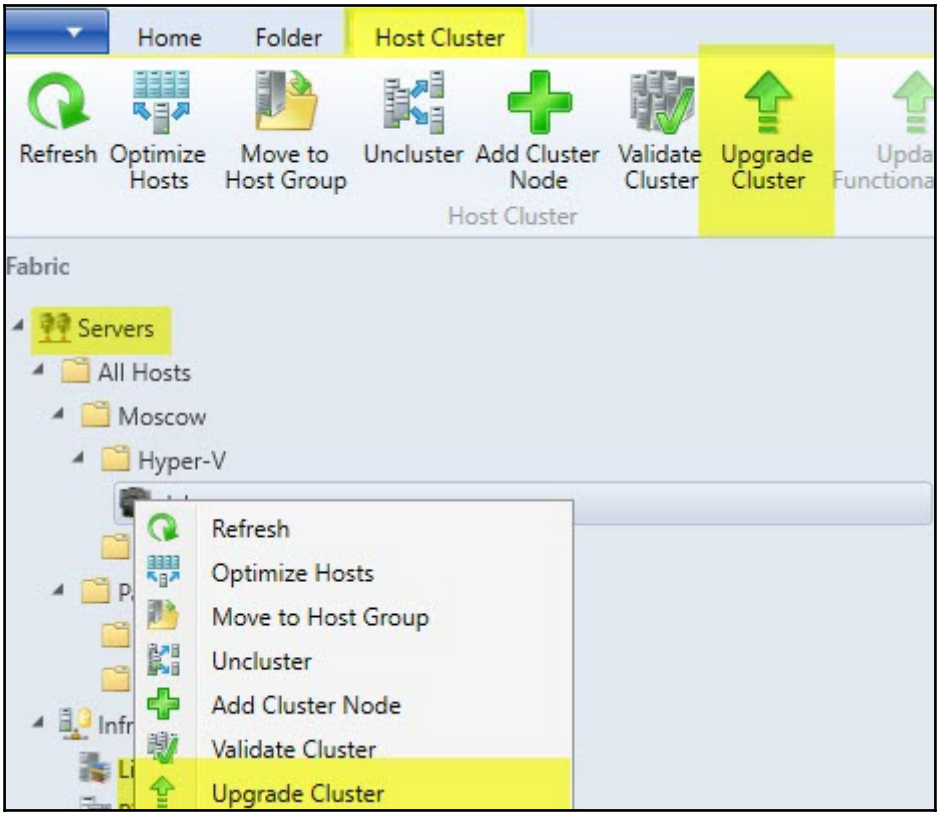

Virtual Network Adapter
VM Network
Virtual Switch
VLAN
Network Adapter 1
GuestVMs
Not connected
VLAN disabled
Not connected
Cluster
GuestVMs
Live Migration
MGMT

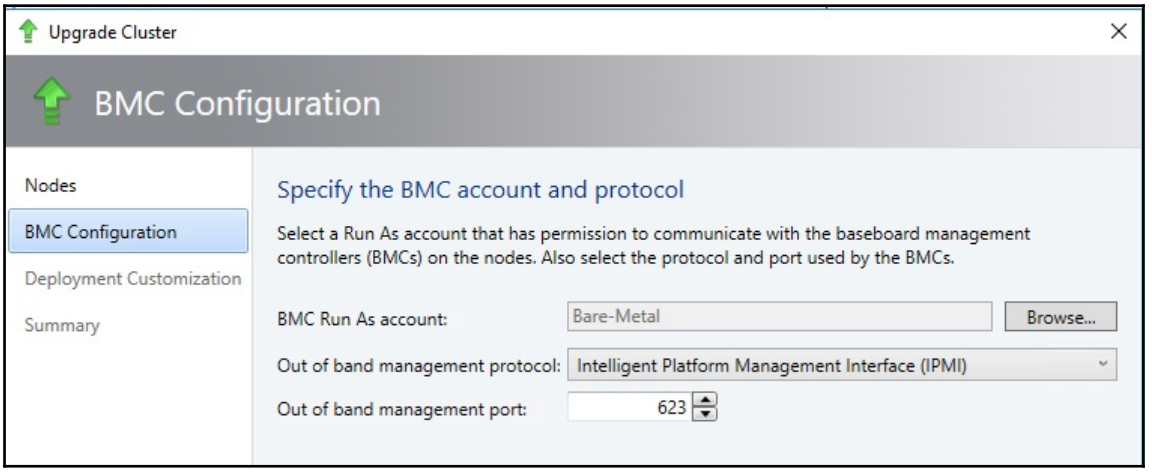
Chapter 9: Managing Clouds, Fabric Updates, Resources, Clusters, and New Features of VMM 2016

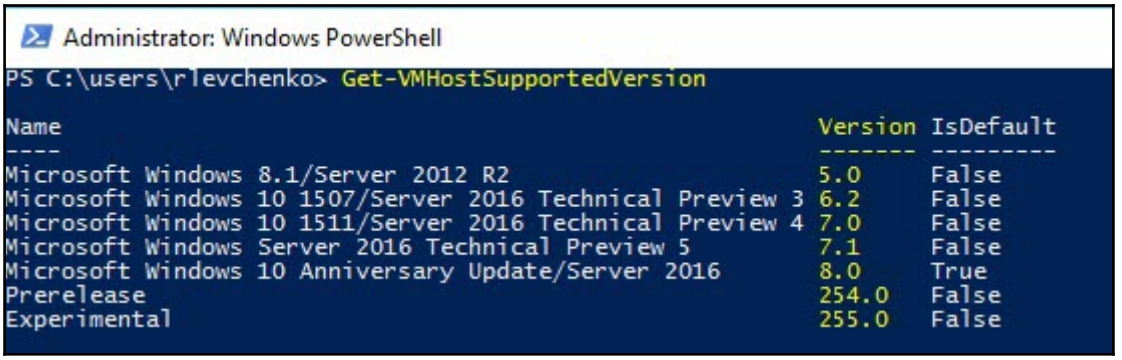


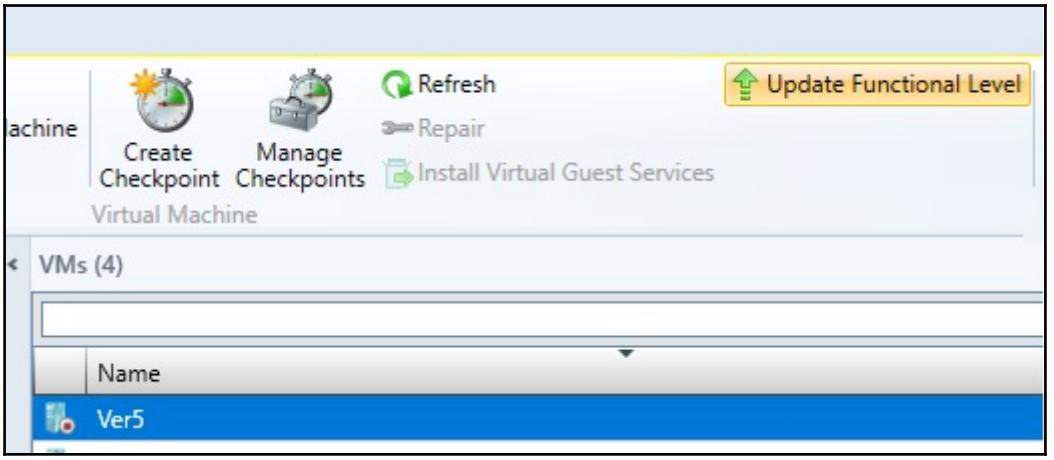

Create Hyper-V Cluster Wizard
Select Hosts
General Configuration
Resource Type
Select Hosts
Block Storage
IP Address
Summary
Select the hosts to include in the cluster
The following list shows hosts that are not already clustered and are in the host group you selected on the General Configuration page.
Available hosts:
Host
Operating System
hv03
Microsoft Windows Server 2016 Datacenter
hv02
Microsoft Windows Server 2016 Datacenter
Select all
Previous
Next
Cancel

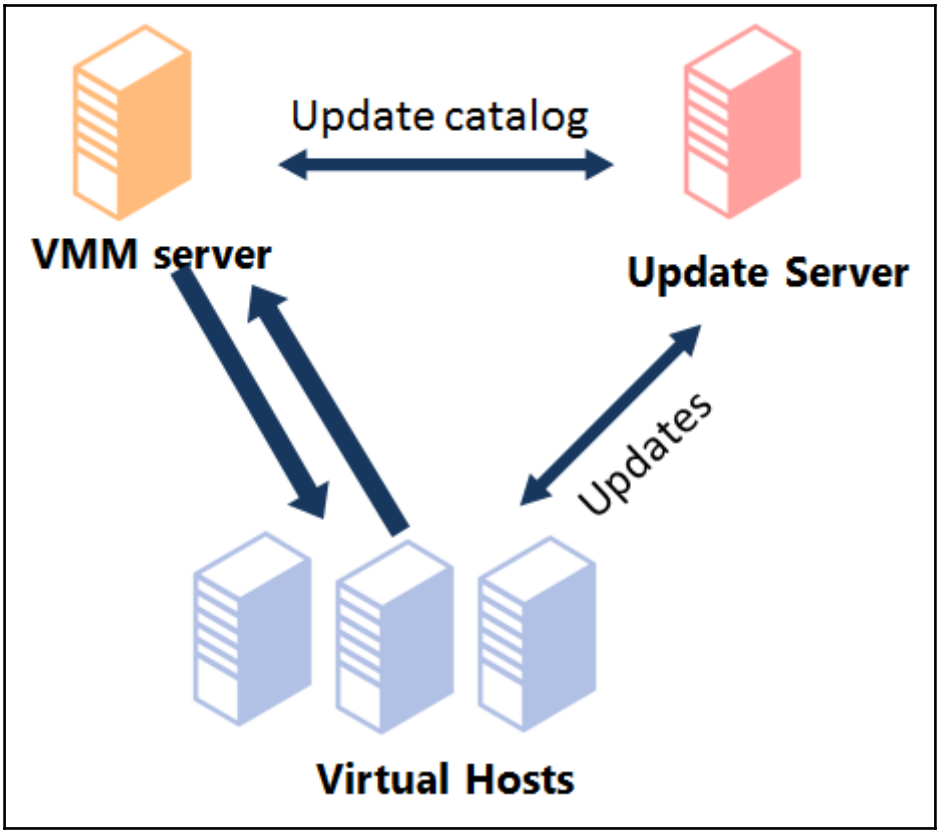

Cluster OS Rolling Upgrade | Mixed Mode
WINDOWS SERVER 2016
WINDOWS SERVER 2016
WINDOWS SERVER 2012 R2
Failover Cluster


Home
Folder
Host Cluster
Refresh
Optimize Hosts
Move to Host Group
Uncluster
Add Cluster Node
Validate Cluster
Upgrade Cluster
Host Cluster
Fabric
Servers
All Hosts
Moscow
Hyper-V
Refresh
Optimize Hosts
Move to Host Group
Uncluster
Add Cluster Node
Validate Cluster
Upgrade Cluster


Upgrade Cluster
BMC Configuration
Nodes
BMC Configuration
Deployment Customization
Summary
Specify the BMC account and protocol
Select a Run As account that has permission to communicate with the baseboard management controllers (BMCs) on the nodes. Also select the protocol and port used by the BMCs.
BMC Run As account:
Bare-Metal
Browse...
Out of band management protocol:
Intelligent Platform Management Interface (IPMI)
Out of band management port:
623

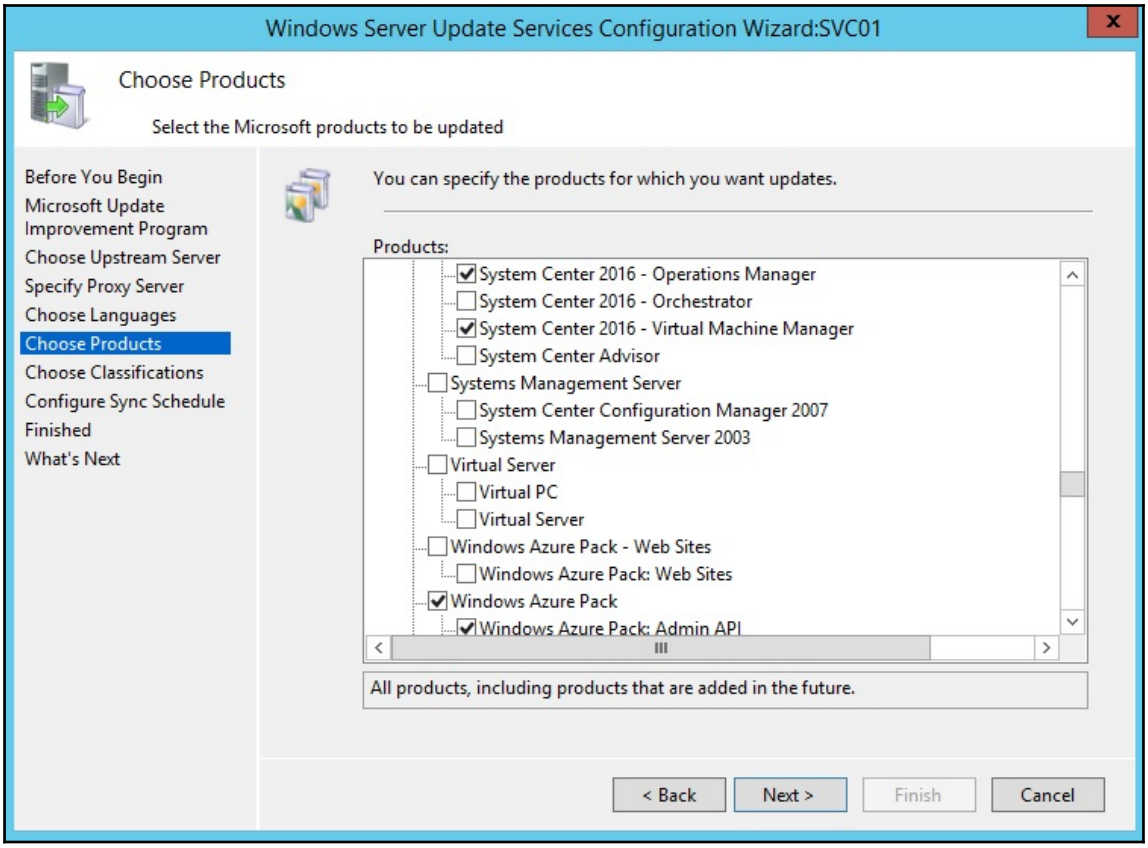

Administrator: Windows PowerShell
PS C:\users\rlevchenko> Get-VMHostSupportedVersion
Name Version IsDefault
---- ------- ---------
Microsoft Windows 8.1/Server 2012 R2 5.0 False
Microsoft Windows 10 1507/Server 2016 Technical Preview 3 6.2 False
Microsoft Windows 10 1511/Server 2016 Technical Preview 4 7.0 False
Microsoft Windows Server 2016 Technical Preview 5 7.1 False
Microsoft Windows 10 Anniversary Update/Server 2016 8.0 True
Prerelease 254.0 False
Experimental 255.0 False

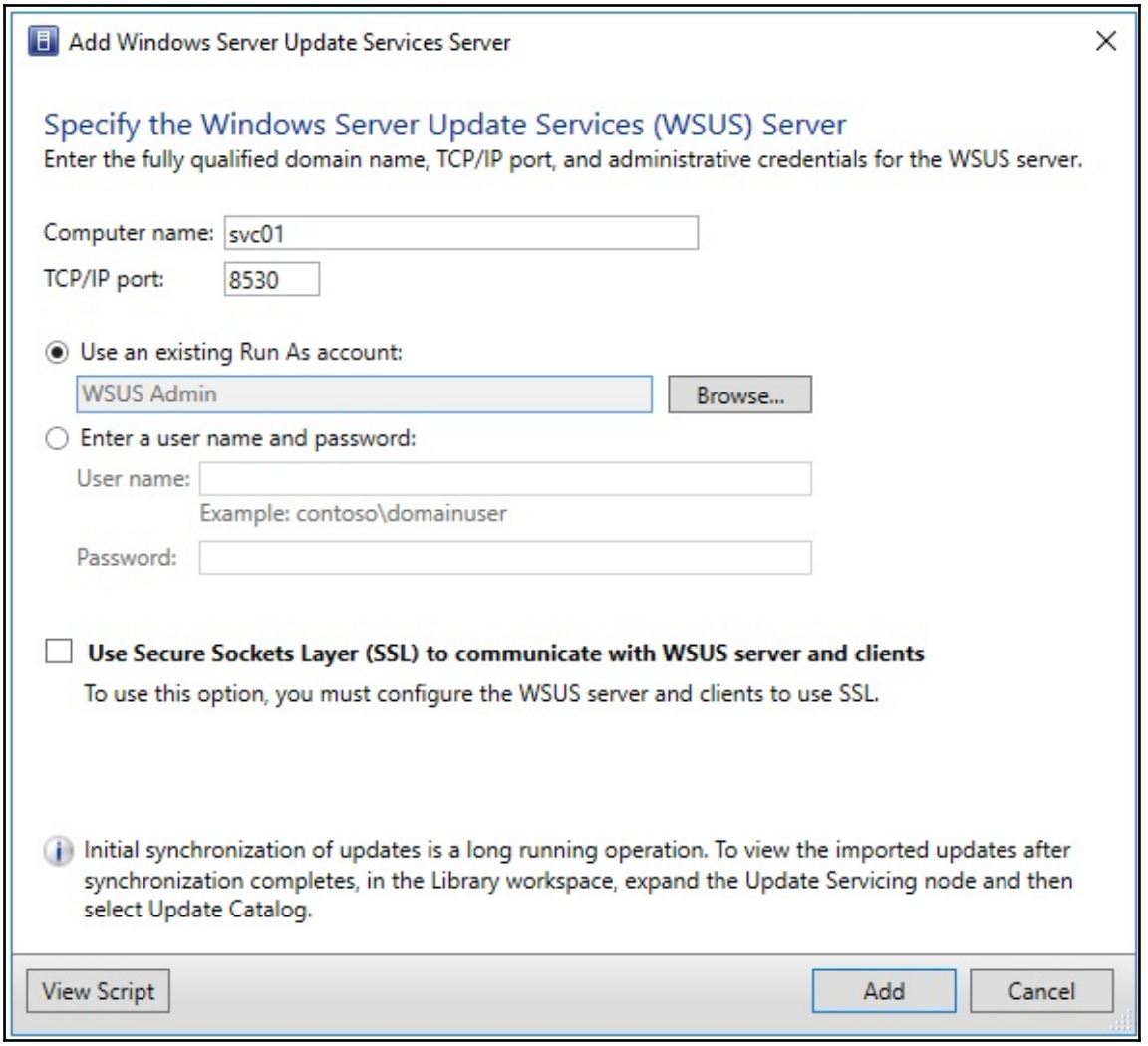

achine
Create Checkpoint
Manage Checkpoints
Refresh
Repair
Install Virtual Guest Services
Update Functional Level
Virtual Machine
VMs (4)
Name
Ver5

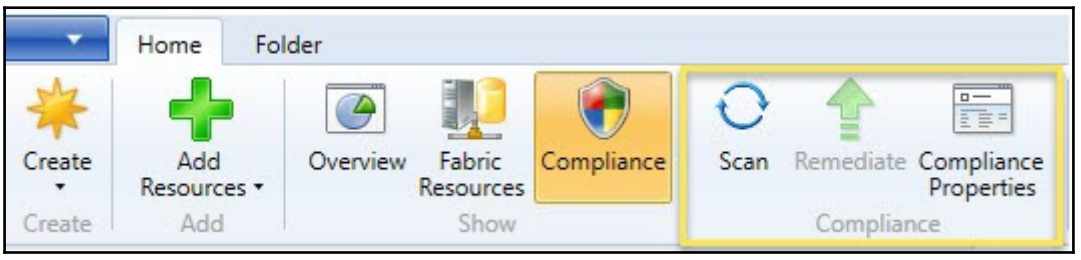


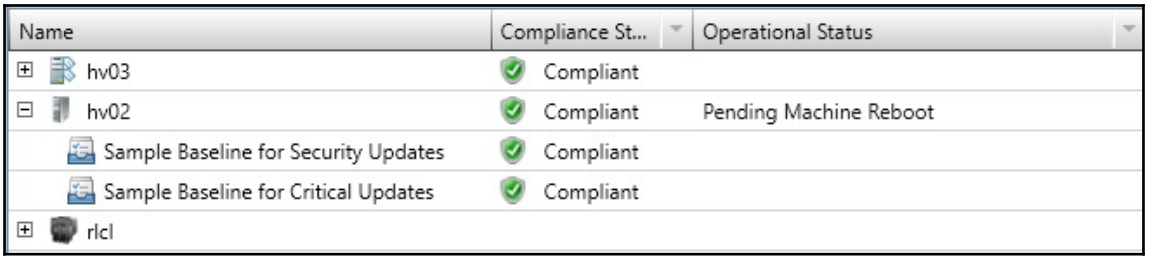

```
Administrator: Windows PowerShell
PS C:\Users\rlevchenko> Install-WindowsFeature -Name UpdateServices, UpdateServices-Ui

Success Restart Needed Exit Code      Feature Result
------- -------------- ---------      --------------
True    No             Success        {Windows Server Update Services, WSUS Serv...
WARNING: Additional configuration may be required. Review the article Managing WSUS Usi
 (http://go.microsoft.com/fwlink/?LinkId=235499) for more information on the recommende
installation using PowerShell.
```

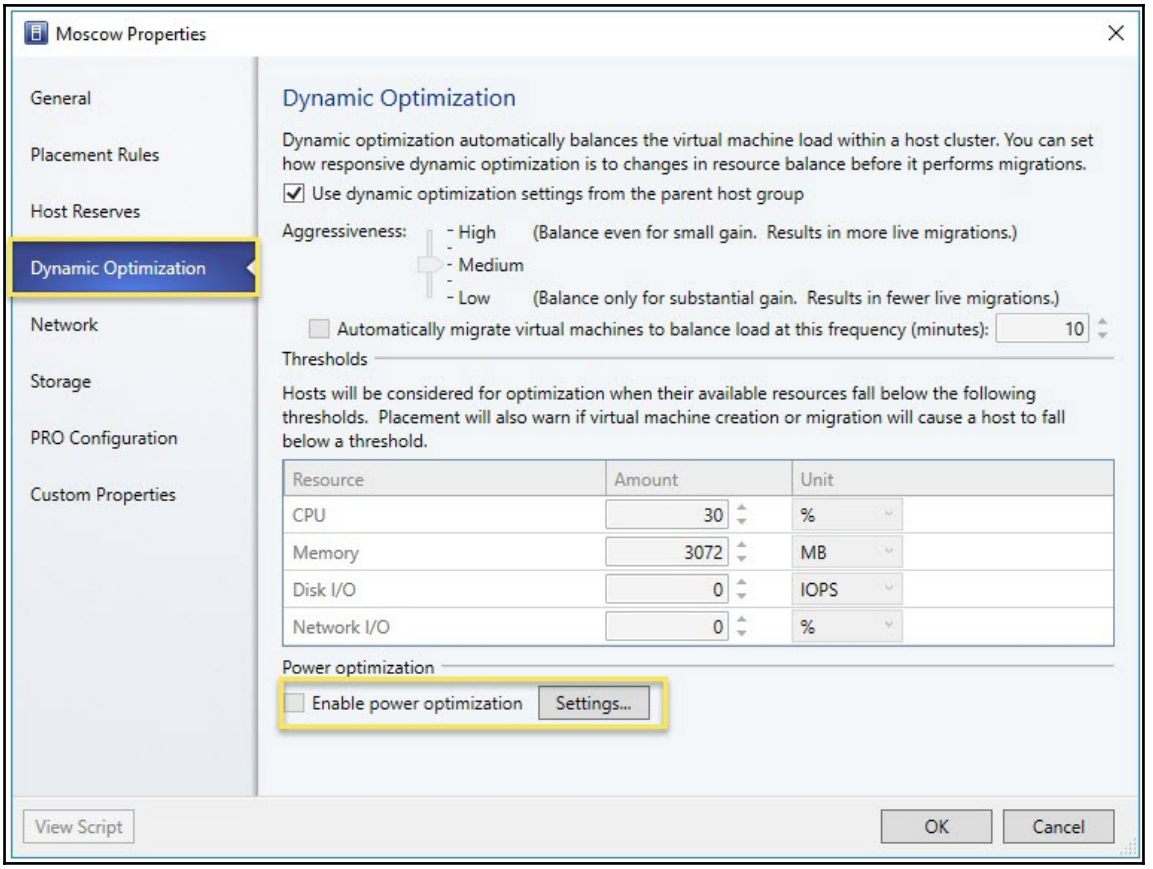
```
Administrator: Windows PowerShell
PS C:\Program Files\Update Services\Tools> .\WsusUtil.exe PostInstall CONTENT_DIR=C:\WSUS
Log file is located at C:\Users\rlevchenko\AppData\Local\Temp\tmp3D63.tmp
Post install is starting
Post install has successfully completed
```

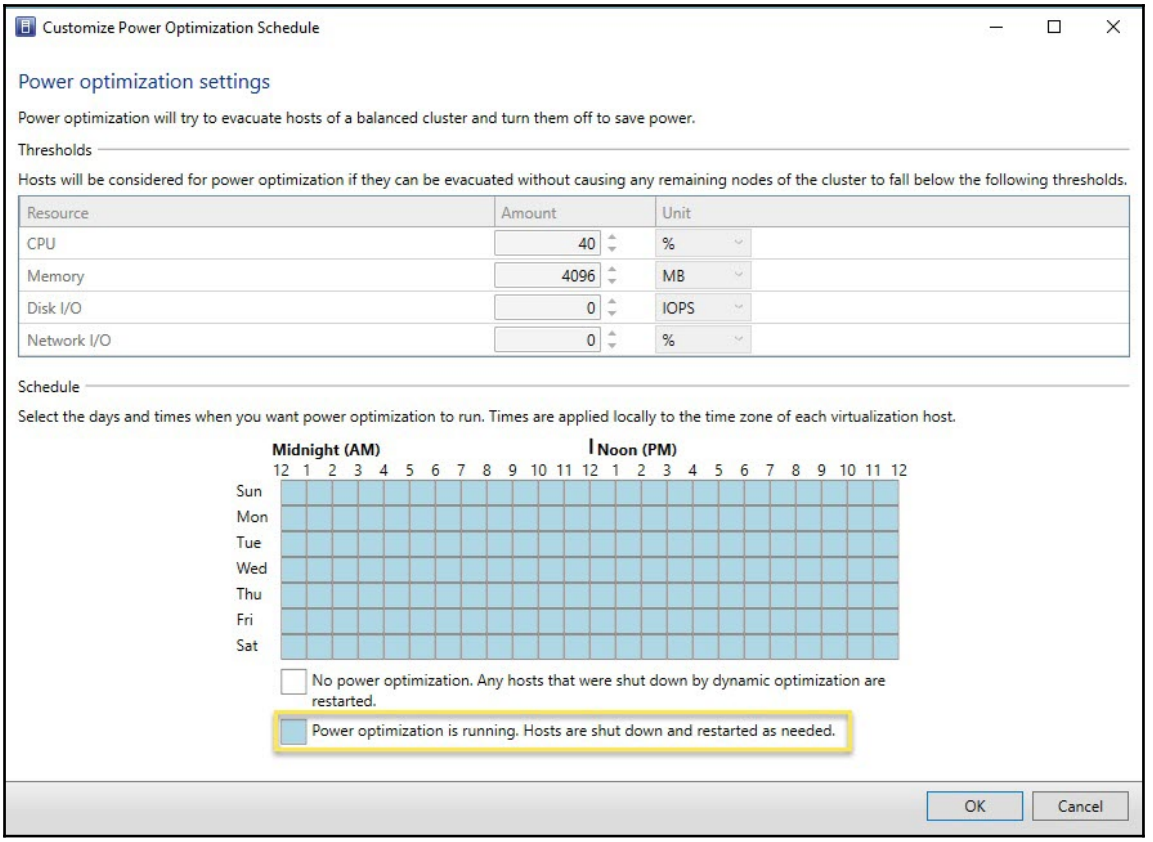

Windows Server Update Services Configuration Wizard:SVC01
Choose Products
Select the Microsoft products to be updated
Before You Begin
Microsoft Update Improvement Program
Choose Upstream Server
Specify Proxy Server
Choose Languages
Choose Products
Choose Classifications
Configure Sync Schedule
Finished
What's Next
You can specify the products for which you want updates.
Products:
System Center 2016 - Operations Manager
System Center 2016 - Orchestrator
System Center 2016 - Virtual Machine Manager
System Center Advisor
Systems Management Server
System Center Configuration Manager 2007
Systems Management Server 2003
Virtual Server
Virtual PC
Virtual Server
Windows Azure Pack - Web Sites
Windows Azure Pack: Web Sites
Windows Azure Pack
Windows Azure Pack: Admin API
All products, including products that are added in the future.
< Back
Next >
Finish
Cancel

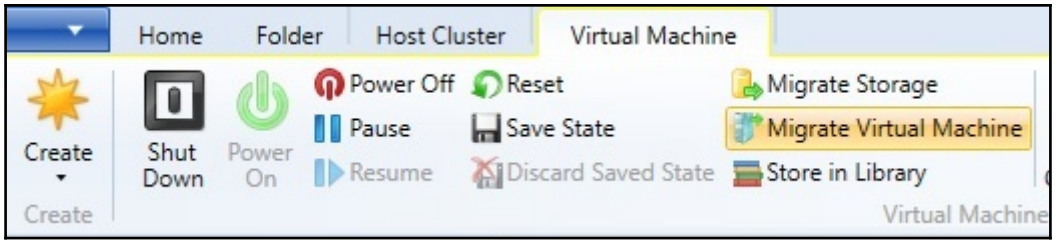

Add Windows Server Update Services Server
Specify the Windows Server Update Services (WSUS) Server
Enter the fully qualified domain name, TCP/IP port, and administrative credentials for the WSUS server.
Computer name:
svc01
TCP/IP port:
8530
Use an existing Run As account:
WSUS Admin
Browse...
Enter a user name and password:
User name:
Example: contoso\domainuser
Password:
Use Secure Sockets Layer (SSL) to communicate with WSUS server and clients
To use this option, you must configure the WSUS server and clients to use SSL.
Initial synchronization of updates is a long running operation. To view the imported updates after synchronization completes, in the Library workspace, expand the Update Servicing node and then select Update Catalog.
View Script
Add
Cancel

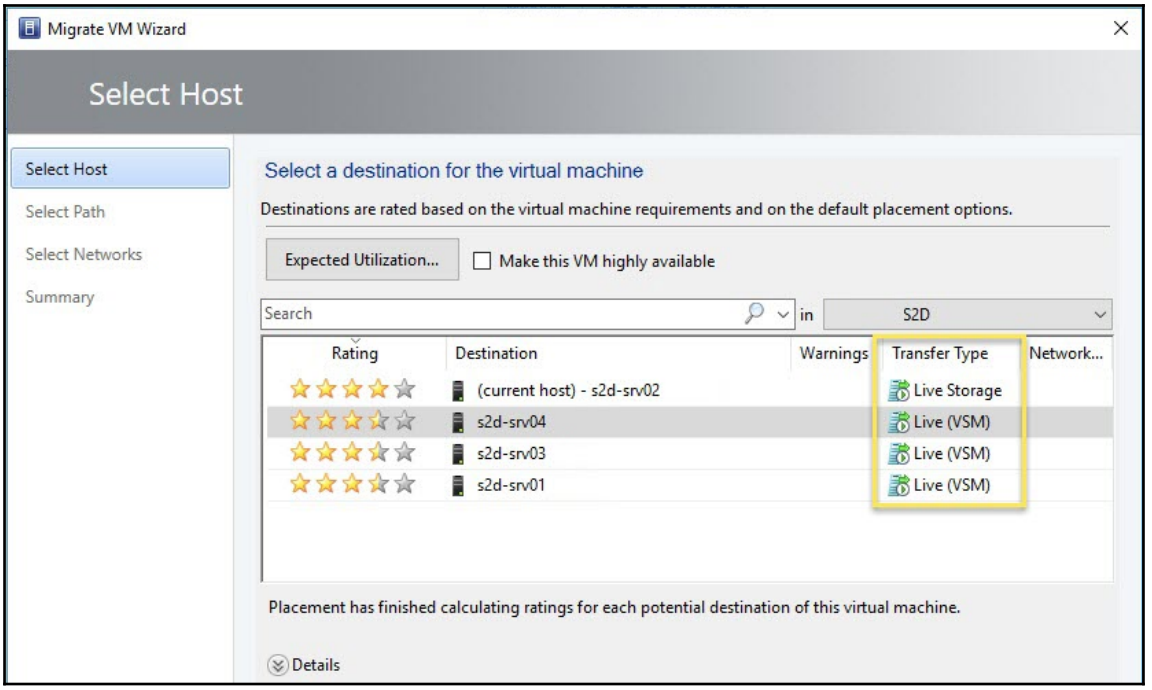

Home
Folder
Create
Add Resources
Overview
Fabric Resources
Compliance
Scan
Remediate
Compliance Properties
Create
Add
Show
Compliance

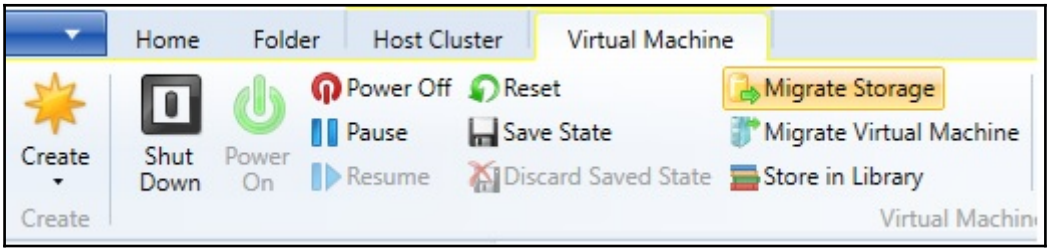

Name
Compliance St...
Operational Status
hv03
Compliant
hv02
Compliant
Pending Machine Reboot
Sample Baseline for Security Updates
Compliant
Sample Baseline for Critical Updates
Compliant
rlcl

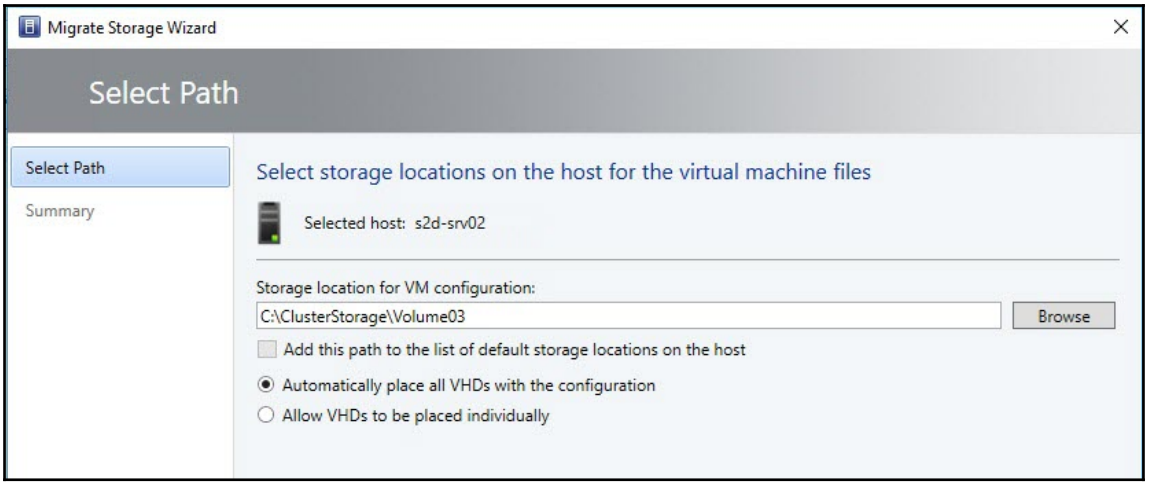

Moscow Properties
General
Placement Rules
Host Reserves
Dynamic Optimization
Network
Storage
PRO Configuration
Custom Properties
Dynamic Optimization
Dynamic optimization automatically balances the virtual machine load within a host cluster. You can set how responsive dynamic optimization is to changes in resource balance before it performs migrations.
Use dynamic optimization settings from the parent host group
Aggressiveness:
High (Balance even for small gain. Results in more live migrations.)
Medium
Low (Balance only for substantial gain. Results in fewer live migrations.)
Automatically migrate virtual machines to balance load at this frequency (minutes):
10
Thresholds
Hosts will be considered for optimization when their available resources fall below the following thresholds. Placement will also warn if virtual machine creation or migration will cause a host to fall below a threshold.
Resource
Amount
Unit
CPU
30
%
Memory
3072
MB
Disk I/O
0
IOPS
Network I/O
0
%
Power optimization
Enable power optimization
Settings...
View Script
OK
Cancel

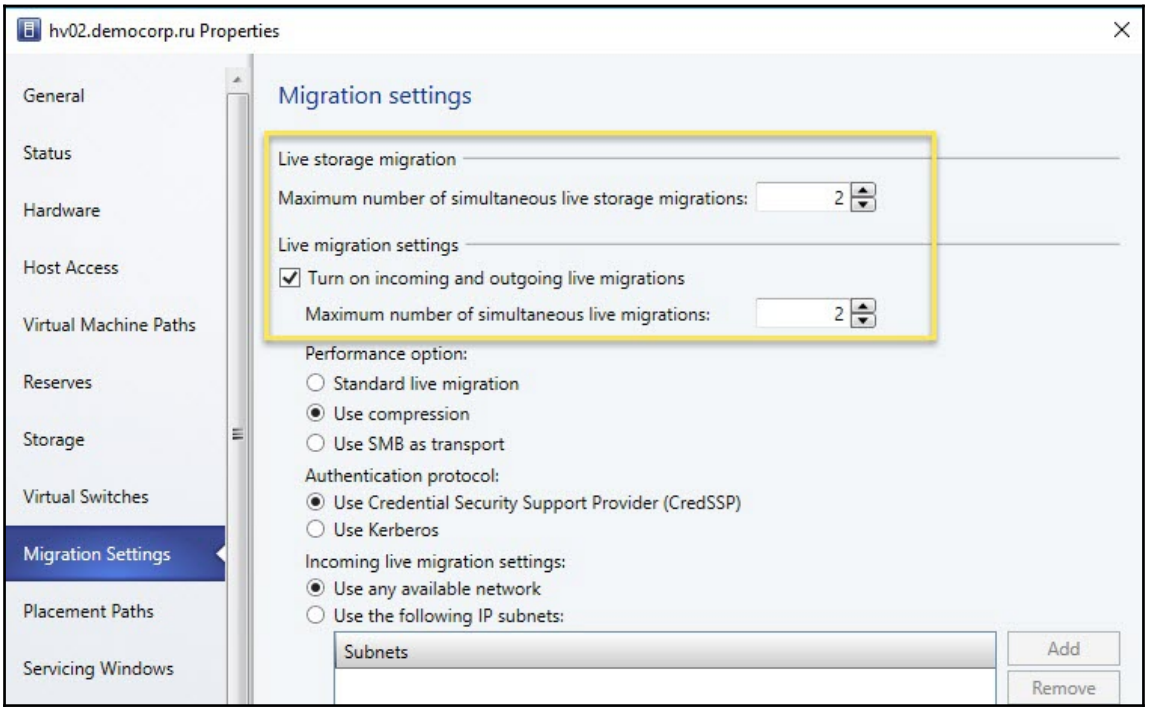

Customize Power Optimization Schedule
Power optimization settings
Power optimization will try to evacuate hosts of a balanced cluster and turn them off to save power.
Thresholds
Hosts will be considered for power optimization if they can be evacuated without causing any remaining nodes of the cluster to fall below the following thresholds.
Resource
Amount
Unit
CPU
40
%
Memory
4096
MB
Disk I/O
0
IOPS
Network I/O
0
%
Schedule
Select the days and times when you want power optimization to run. Times are applied locally to the time zone of each virtualization host.
Midnight (AM)
Noon (PM)
12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12
Sun
Mon
Tue
Wed
Thu
Fri
Sat
No power optimization. Any hosts that were shut down by dynamic optimization are restarted.
Power optimization is running. Hosts are shut down and restarted as needed.
OK
Cancel

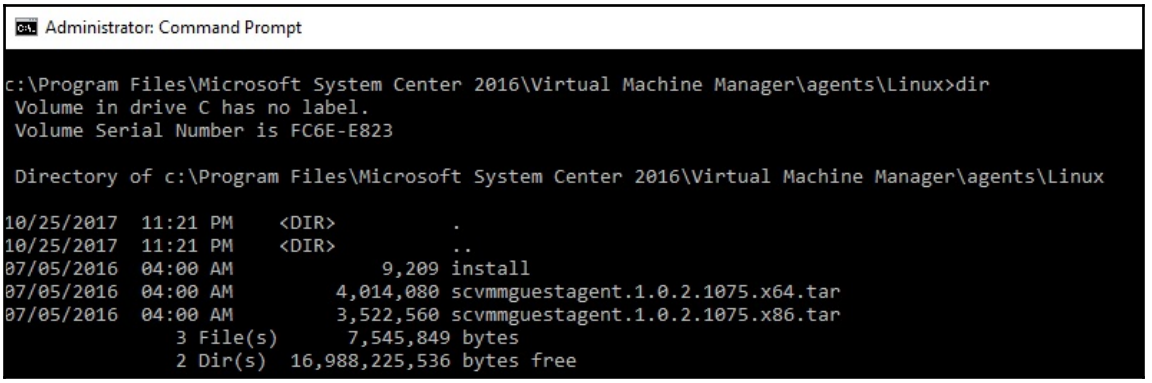

Home
Folder
Host Cluster
Virtual Machine
Create
Shut Down
Power On
Power Off
Reset
Pause
Save State
Resume
Discard Saved State
Migrate Storage
Migrate Virtual Machine
Store in Library
Create
Virtual Machine

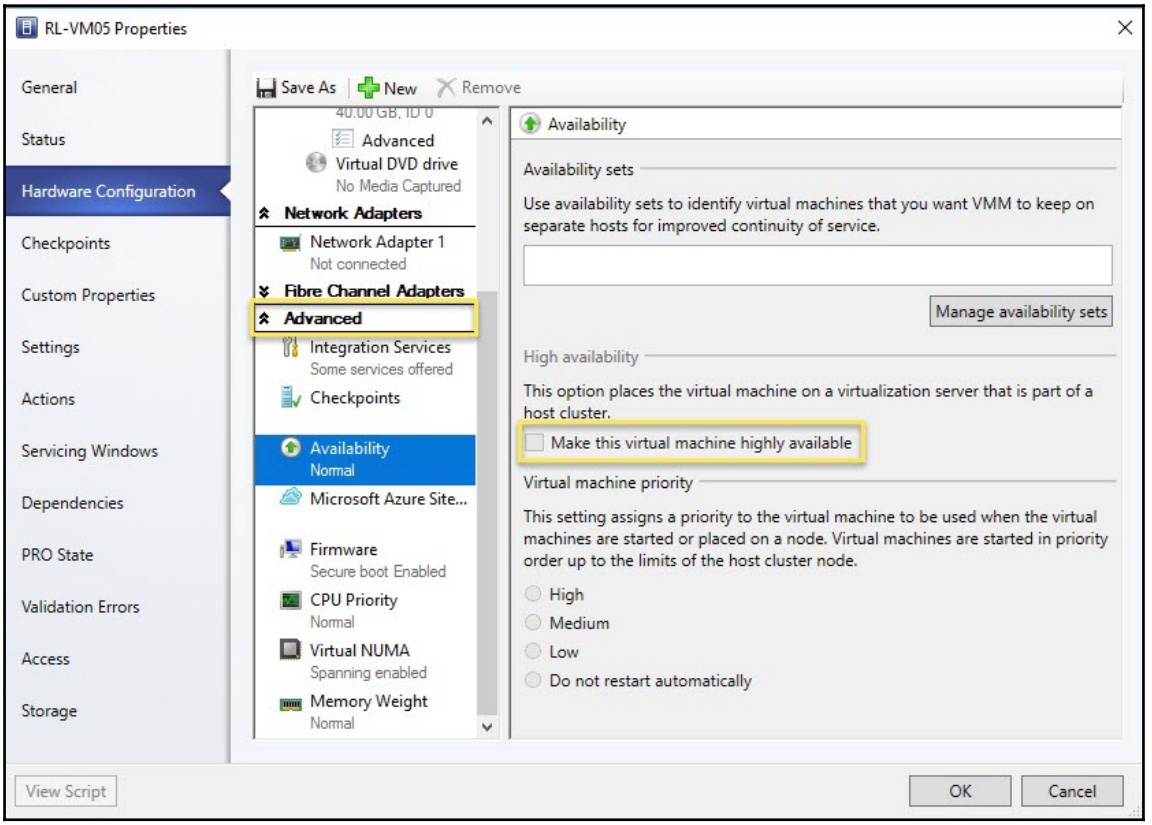

Migrate VM Wizard
Select Host
Select Host
Select Path
Select Networks
Summary
Select a destination for the virtual machine
Destinations are rated based on the virtual machine requirements and on the default placement options.
Expected Utilization...
Make this VM highly available
Search
in
S2D
Rating
Destination
Warnings
Transfer Type
Network...
(current host) - s2d-srv02
Live Storage
s2d-srv04
Live (VSM)
s2d-srv03
Live (VSM)
s2d-srv01
Live (VSM)
Placement has finished calculating ratings for each potential destination of this virtual machine.
Details

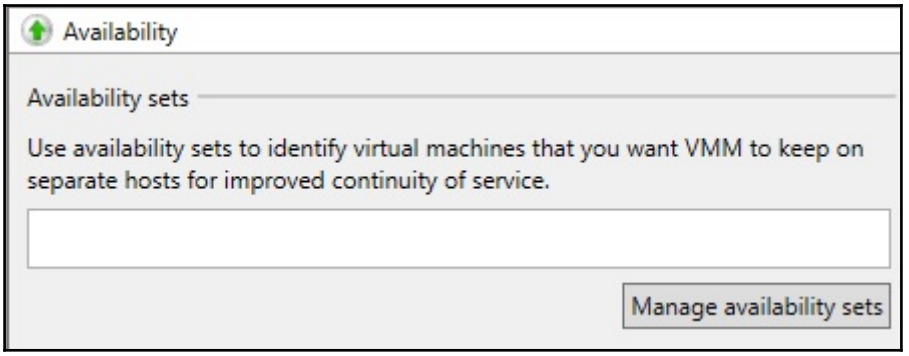

Home
Folder
Host Cluster
Virtual Machine
Create
Shut Down
Power On
Power Off
Reset
Pause
Save State
Resume
Discard Saved State
Migrate Storage
Migrate Virtual Machine
Store in Library
Create
Virtual Machin

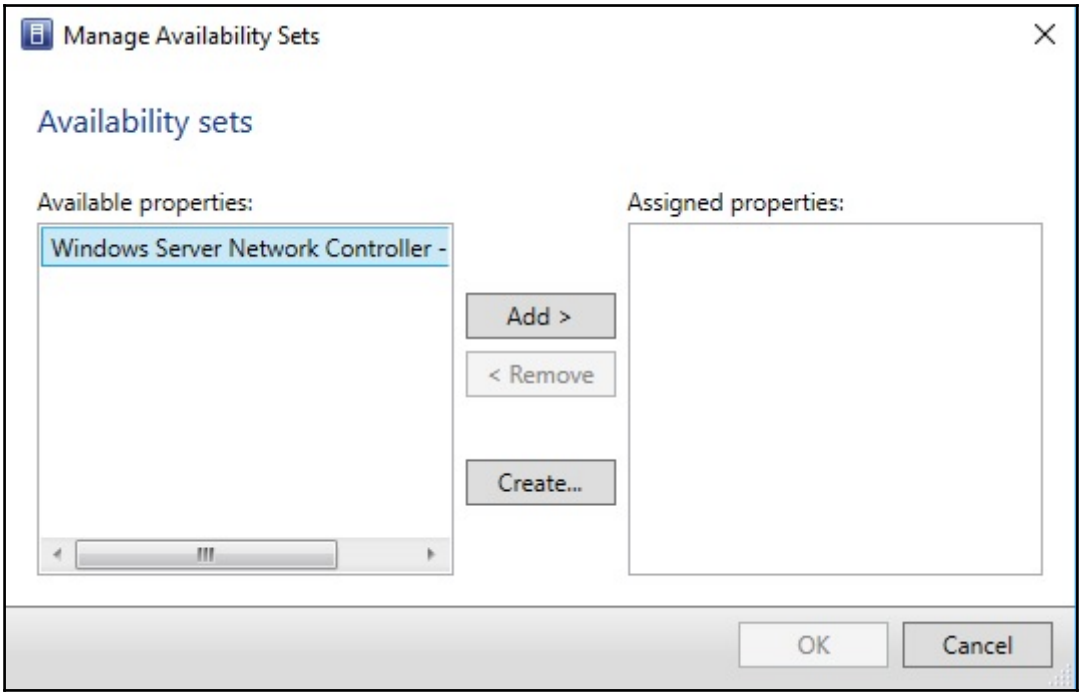

Migrate Storage Wizard
Select Path
Select Path
Summary
Select storage locations on the host for the virtual machine files
Selected host: s2d-srv02
Storage location for VM configuration:
C:\ClusterStorage\Volume03
Browse
Add this path to the list of default storage locations on the host
Automatically place all VHDs with the configuration
Allow VHDs to be placed individually

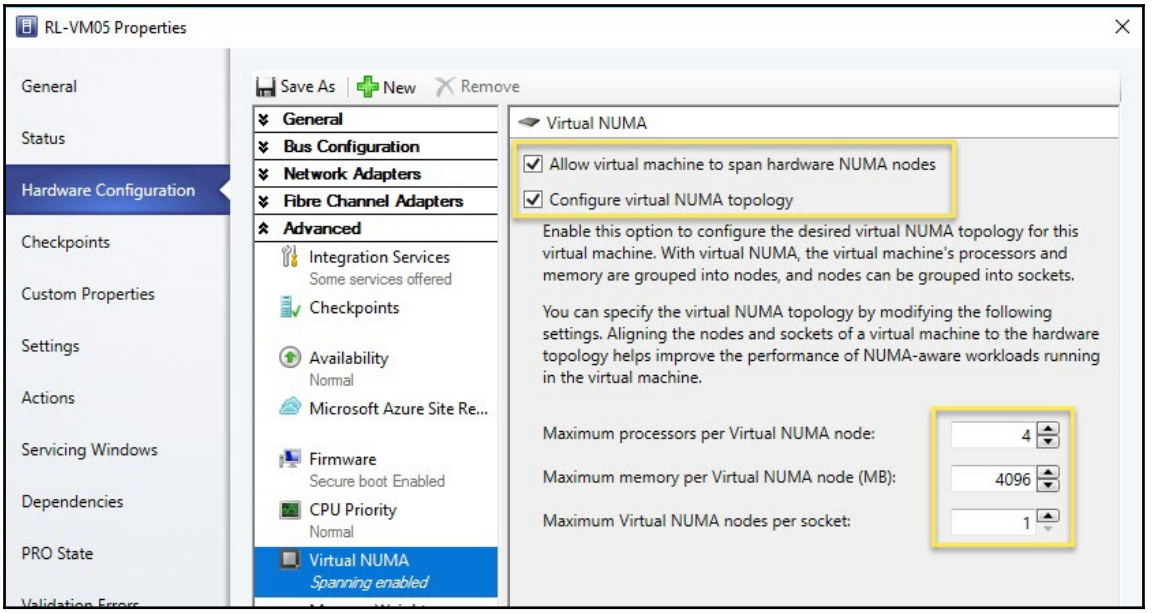

hv02.democorp.ru Properties
General
Status
Hardware
Host Access
Virtual Machine Paths
Reserves
Storage
Virtual Switches
Migration Settings
Placement Paths
Servicing Windows
Migration settings
Live storage migration
Maximum number of simultaneous live storage migrations: 2
Live migration settings
Turn on incoming and outgoing live migrations
Maximum number of simultaneous live migrations: 2
Performance option:
Standard live migration
Use compression
Use SMB as transport
Authentication protocol:
Use Credential Security Support Provider (CredSSP)
Use Kerberos
Incoming live migration settings:
Use any available network
Use the following IP subnets:
Subnets
Add
Remove

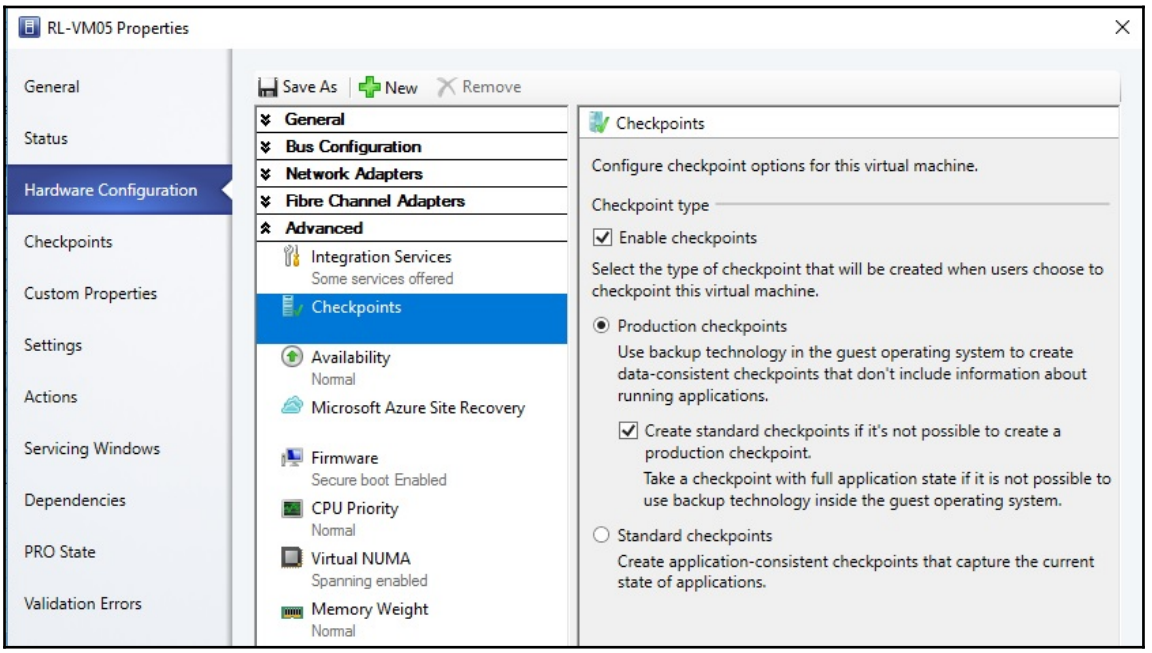

Administrator: Command Prompt
c:\Program Files\Microsoft System Center 2016\Virtual Machine Manager\agents\Linux>dir
Volume in drive C has no label.
Volume Serial Number is FC6E-E823
Directory of c:\Program Files\Microsoft System Center 2016\Virtual Machine Manager\agents\Linux
10/25/2017 11:21 PM <DIR> .
10/25/2017 11:21 PM <DIR> ..
07/05/2016 04:00 AM 9,209 install
07/05/2016 04:00 AM 4,014,080 scvmmguestagent.1.0.2.1075.x64.tar
07/05/2016 04:00 AM 3,522,560 scvmmguestagent.1.0.2.1075.x86.tar
3 File(s) 7,545,849 bytes
2 Dir(s) 16,988,225,536 bytes free

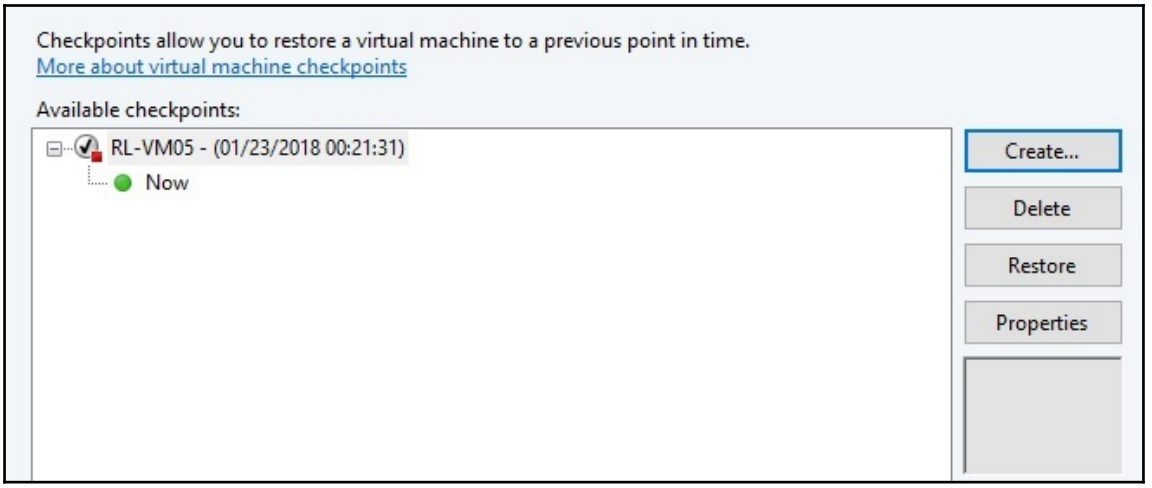

RL-VM05 Properties
General
Status
Hardware Configuration
Checkpoints
Custom Properties
Settings
Actions
Servicing Windows
Dependencies
PRO State
Validation Errors
Access
Storage
Save As
New
Remove
Advanced
Virtual DVD drive
No Media Captured
Network Adapters
Network Adapter 1
Not connected
Fibre Channel Adapters
Advanced
Integration Services
Some services offered
Checkpoints
Availability
Normal
Microsoft Azure Site...
Firmware
Secure boot Enabled
CPU Priority
Normal
Virtual NUMA
Spanning enabled
Memory Weight
Normal
Availability
Availability sets
Use availability sets to identify virtual machines that you want VMM to keep on separate hosts for improved continuity of service.
Manage availability sets
High availability
This option places the virtual machine on a virtualization server that is part of a host cluster.
Make this virtual machine highly available
Virtual machine priority
This setting assigns a priority to the virtual machine to be used when the virtual machines are started or placed on a node. Virtual machines are started in priority order up to the limits of the host cluster node.
High
Medium
Low
Do not restart automatically
View Script
OK
Cancel

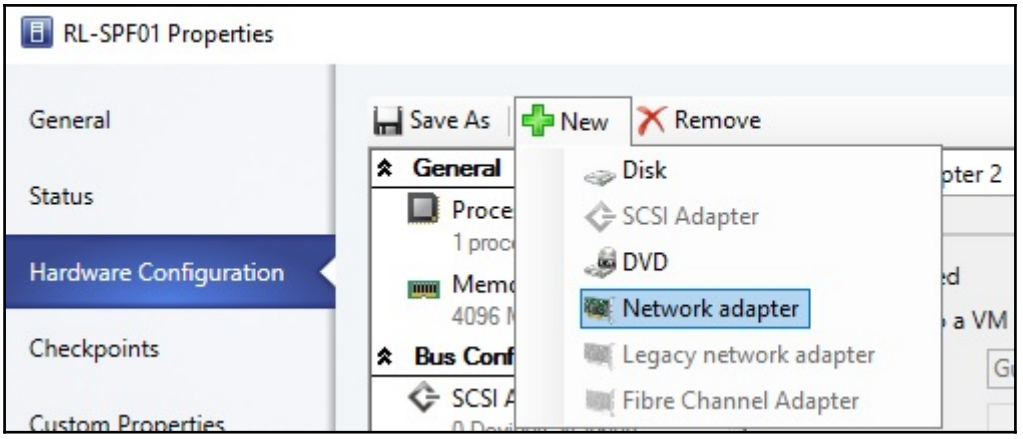

Availability
Availability sets
Use availability sets to identify virtual machines that you want VMM to keep on separate hosts for improved continuity of service.
Manage availability sets

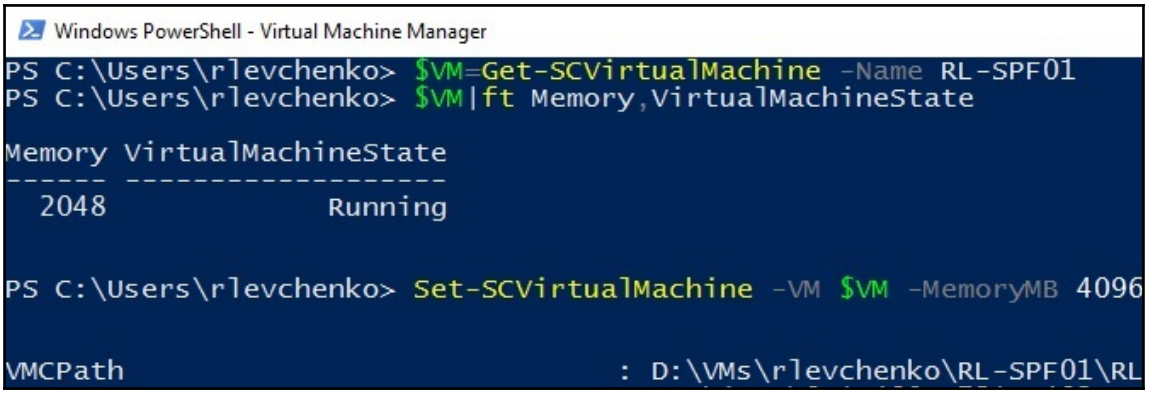

Manage Availability Sets
Availability sets
Available properties:
Windows Server Network Controller -
Add >
< Remove
Create...
Assigned properties:
OK
Cancel

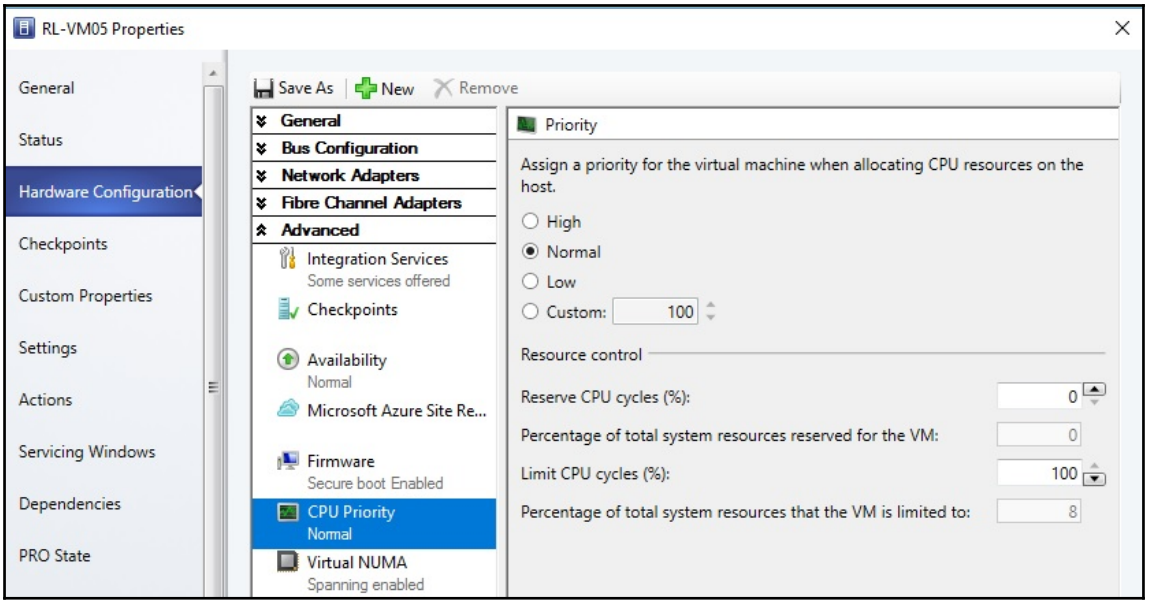

RL-VM05 Properties
General
Status
Hardware Configuration
Checkpoints
Custom Properties
Settings
Actions
Servicing Windows
Dependencies
PRO State
Save As
New
Remove
General
Bus Configuration
Network Adapters
Fibre Channel Adapters
Advanced
Integration Services
Some services offered
Checkpoints
Availability
Normal
Microsoft Azure Site Re...
Firmware
Secure boot Enabled
CPU Priority
Normal
Virtual NUMA
Spanning enabled
Virtual NUMA
Allow virtual machine to span hardware NUMA nodes
Configure virtual NUMA topology
Enable this option to configure the desired virtual NUMA topology for this virtual machine. With virtual NUMA, the virtual machine's processors and memory are grouped into nodes, and nodes can be grouped into sockets.
You can specify the virtual NUMA topology by modifying the following settings. Aligning the nodes and sockets of a virtual machine to the hardware topology helps improve the performance of NUMA-aware workloads running in the virtual machine.
Maximum processors per Virtual NUMA node:
4
Maximum memory per Virtual NUMA node (MB):
4096
Maximum Virtual NUMA nodes per socket:
1

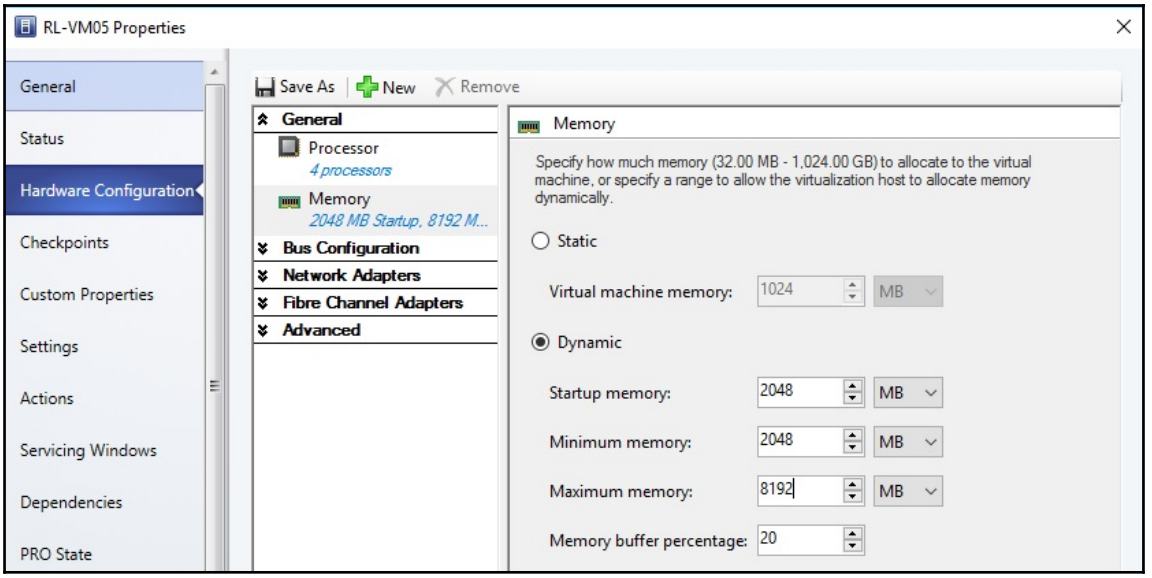

RL-VM05 Properties
General
Status
Hardware Configuration
Checkpoints
Custom Properties
Settings
Actions
Servicing Windows
Dependencies
PRO State
Validation Errors
Save As
New
Remove
General
Bus Configuration
Network Adapters
Fibre Channel Adapters
Advanced
Integration Services
Some services offered
Checkpoints
Availability
Normal
Microsoft Azure Site Recovery
Firmware
Secure boot Enabled
CPU Priority
Normal
Virtual NUMA
Spanning enabled
Memory Weight
Normal
Checkpoints
Configure checkpoint options for this virtual machine.
Checkpoint type
Enable checkpoints
Select the type of checkpoint that will be created when users choose to checkpoint this virtual machine.
Production checkpoints
Use backup technology in the guest operating system to create data-consistent checkpoints that don't include information about running applications.
Create standard checkpoints if it's not possible to create a production checkpoint.
Take a checkpoint with full application state if it is not possible to use backup technology inside the guest operating system.
Standard checkpoints
Create application-consistent checkpoints that capture the current state of applications.

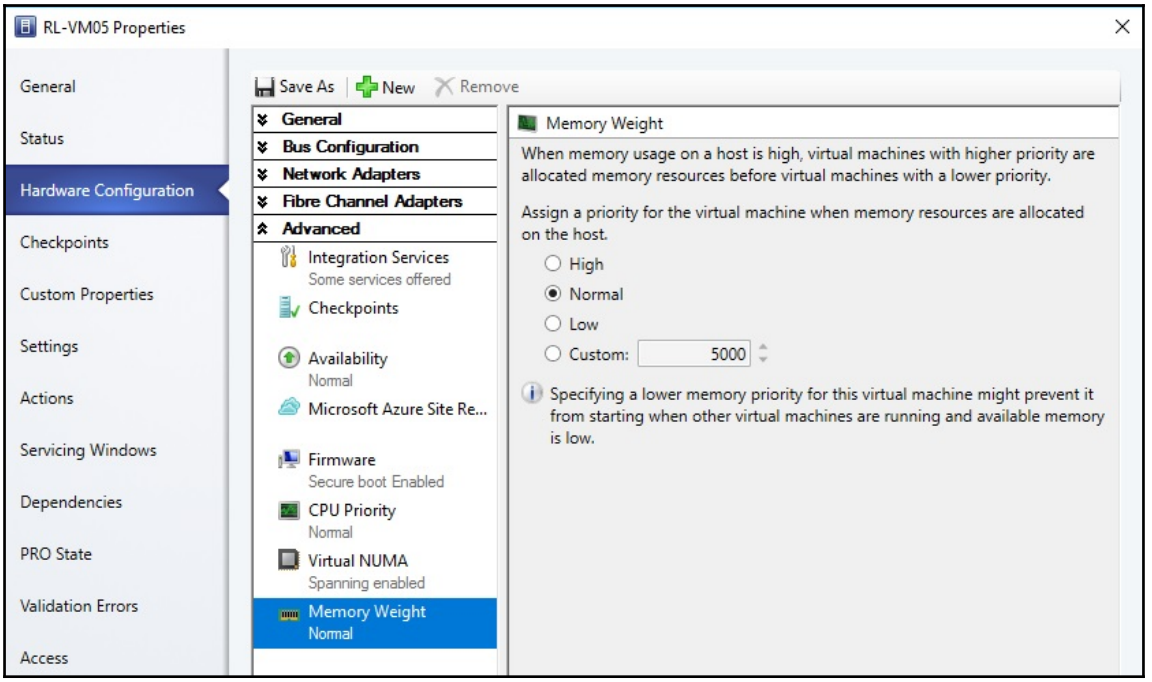

Checkpoints allow you to restore a virtual machine to a previous point in time.
More about virtual machine checkpoints
Available checkpoints:
RL-VM05 - (01/23/2018 00:21:31)
Now
Create...
Delete
Restore
Properties

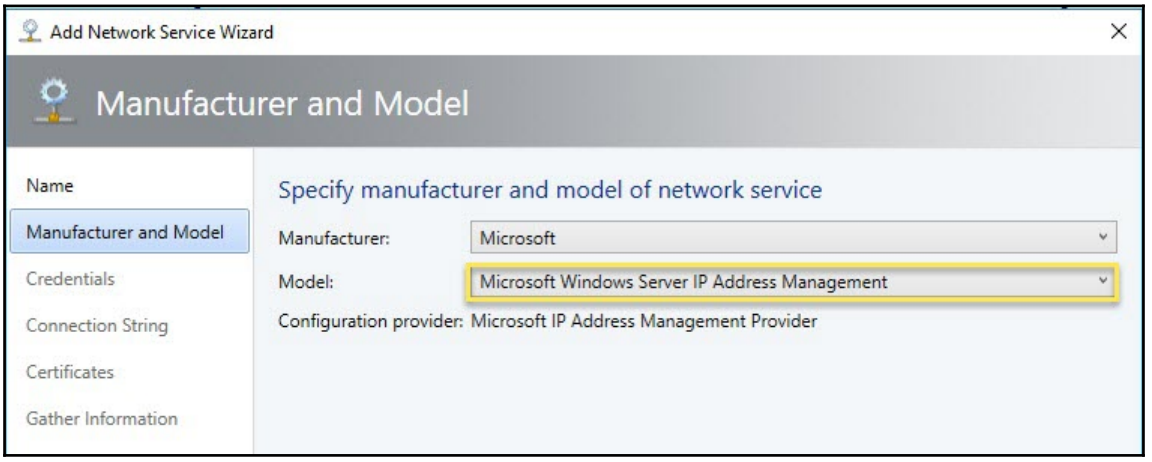

RL-SPF01 Properties
General
Status
Hardware Configuration
Checkpoints
Save As
New
Remove
Disk
SCSI Adapter
DVD
Network adapter
Legacy network adapter
Fibre Channel Adapter

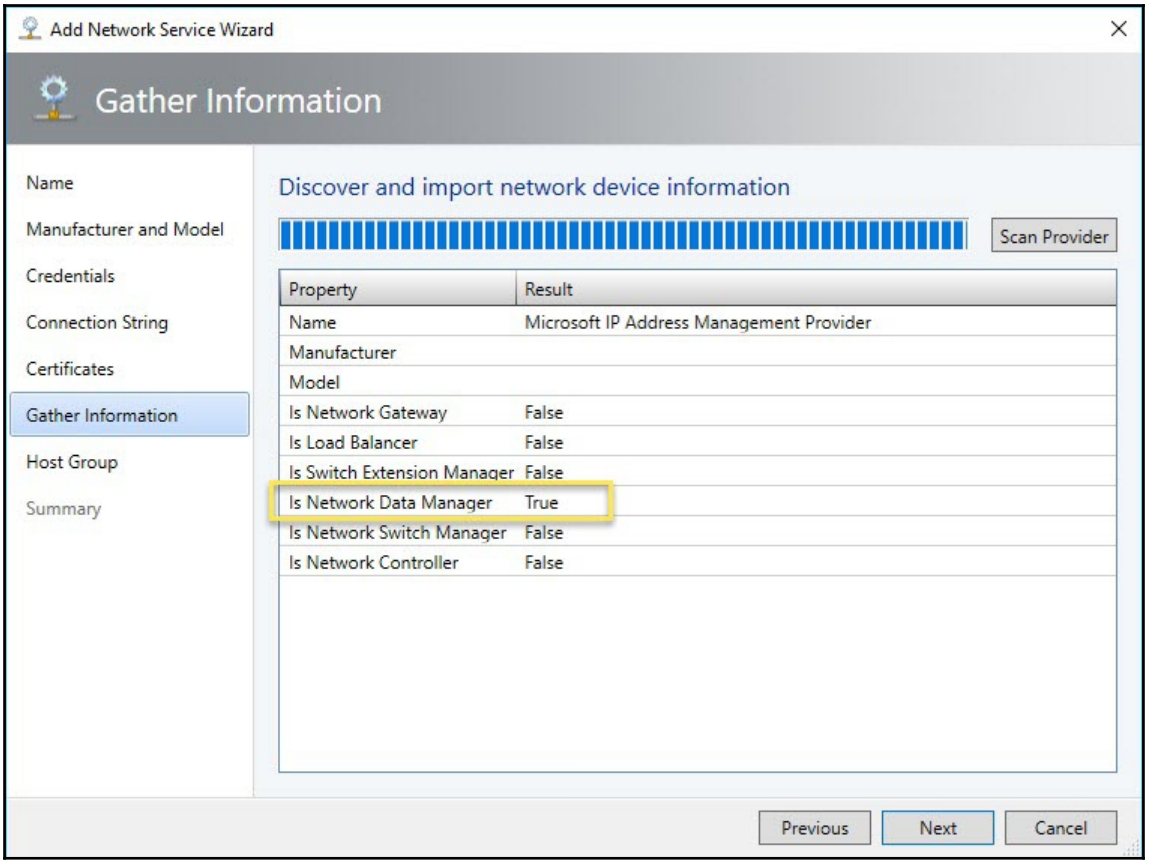

Windows PowerShell - Virtual Machine Manager
PS C:\Users\rlevchenko> $VM=Get-SCVirtualMachine -Name RL-SPF01
PS C:\Users\rlevchenko> $VM|ft Memory,VirtualMachineState
Memory VirtualMachineState
2048 Running
PS C:\Users\rlevchenko> Set-SCVirtualMachine -VM $VM -MemoryMB 4096
VMCPath : D:\VMs\rlevchenko\RL-SPF01\RL

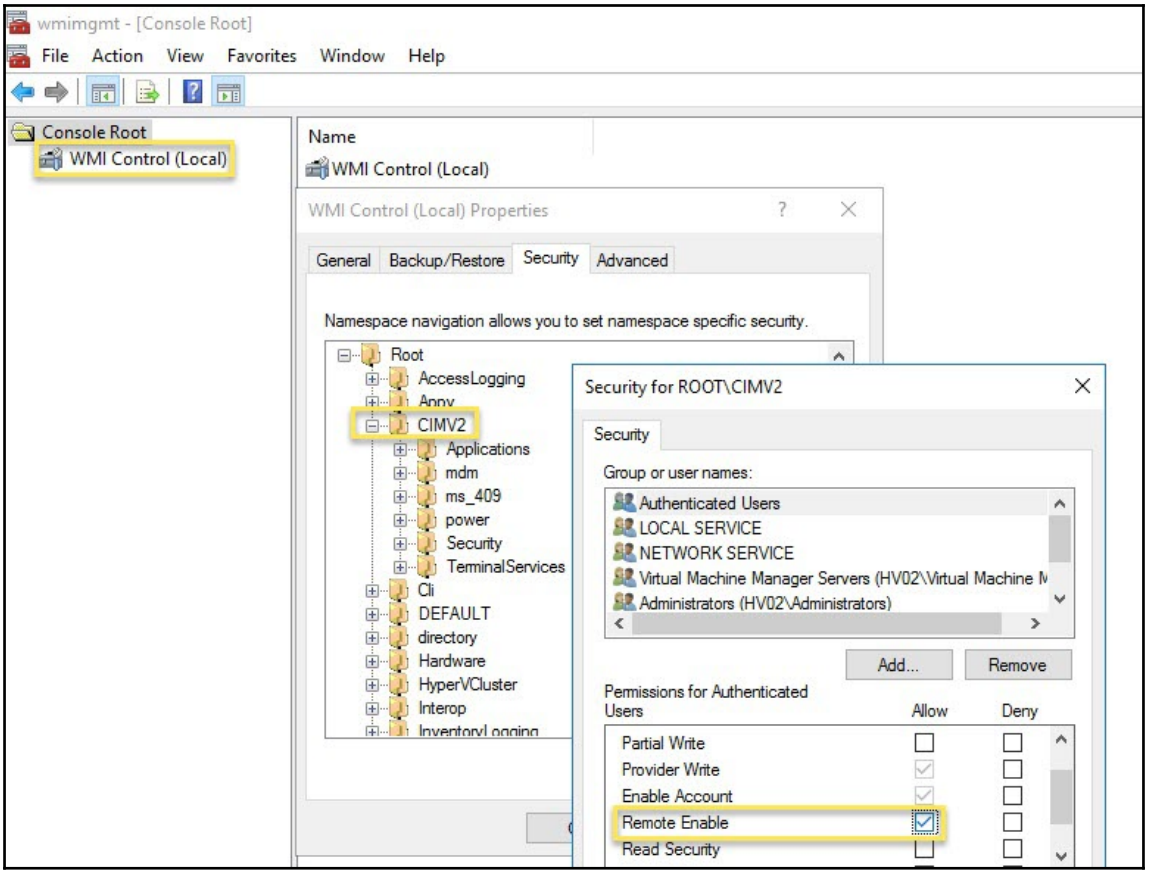

RL-VM05 Properties
General
Status
Hardware Configuration
Checkpoints
Custom Properties
Settings
Actions
Servicing Windows
Dependencies
PRO State
Save As
New
Remove
General
Bus Configuration
Network Adapters
Fibre Channel Adapters
Advanced
Integration Services
Some services offered
Checkpoints
Availability
Normal
Microsoft Azure Site Re...
Firmware
Secure boot Enabled
CPU Priority
Normal
Virtual NUMA
Spanning enabled
Priority
Assign a priority for the virtual machine when allocating CPU resources on the host.
High
Normal
Low
Custom:
100
Resource control
Reserve CPU cycles (%):
0
Percentage of total system resources reserved for the VM:
0
Limit CPU cycles (%):
100
Percentage of total system resources that the VM is limited to:
8

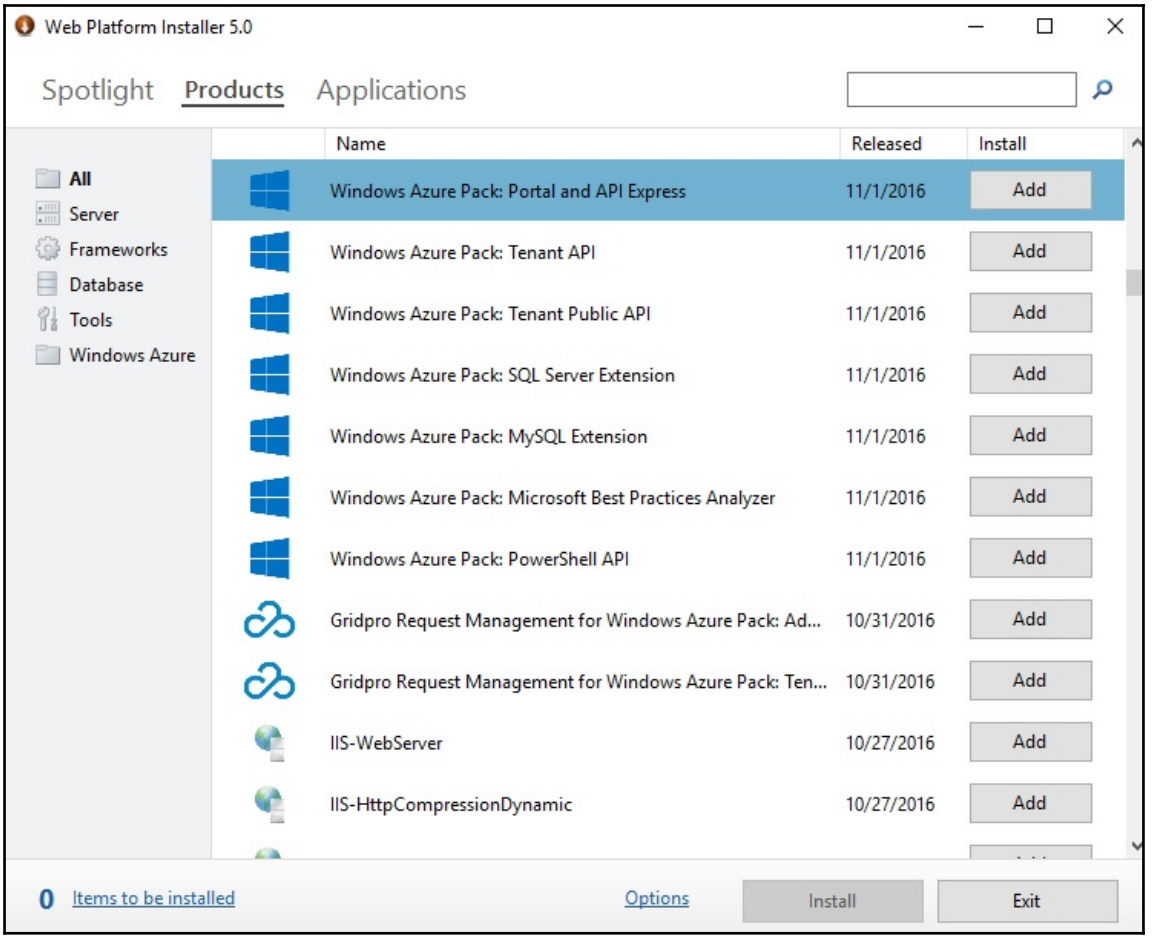

RL-VM05 Properties
General
Status
Hardware Configuration
Checkpoints
Custom Properties
Settings
Actions
Servicing Windows
Dependencies
PRO State
Save As
New
Remove
General
Processor
4 processors
Memory
2048 MB Startup, 8192 M...
Bus Configuration
Network Adapters
Fibre Channel Adapters
Advanced
Memory
Specify how much memory (32.00 MB - 1,024.00 GB) to allocate to the virtual machine, or specify a range to allow the virtualization host to allocate memory dynamically.
Static
Virtual machine memory:
1024
MB
Dynamic
Startup memory:
2048
MB
Minimum memory:
2048
MB
Maximum memory:
8192
MB
Memory buffer percentage:
20

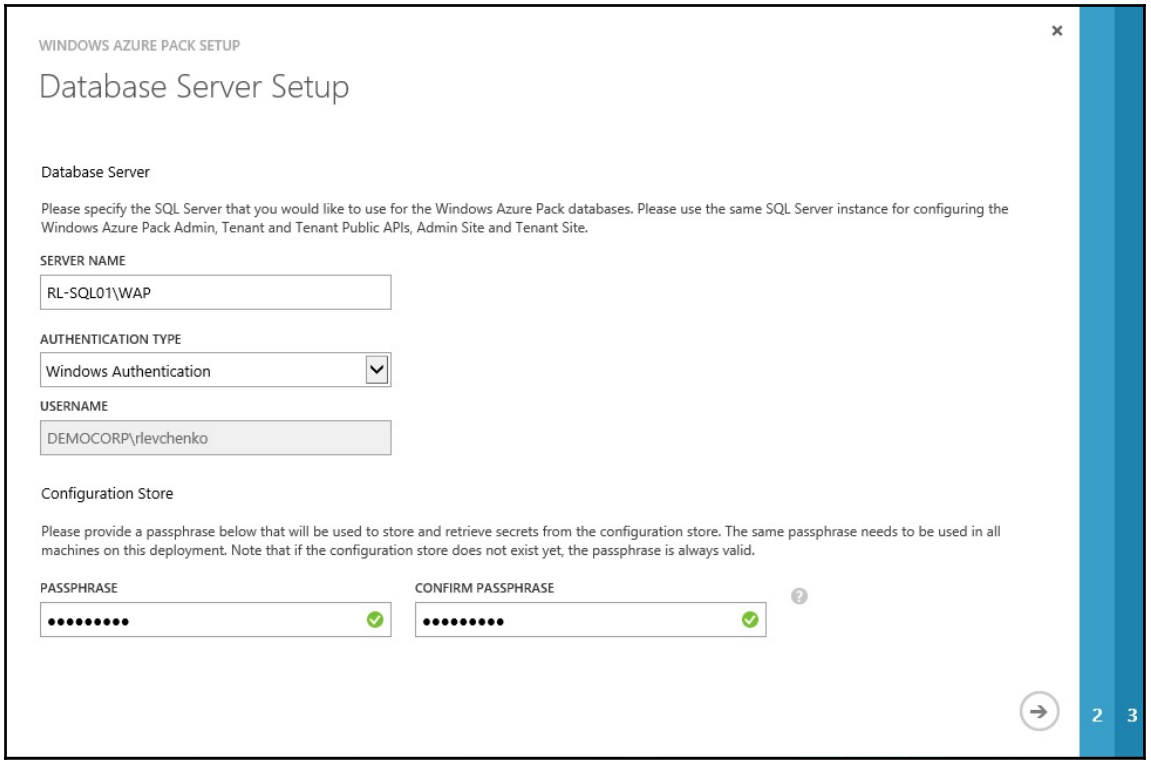

RL-VM05 Properties
General
Status
Hardware Configuration
Checkpoints
Custom Properties
Settings
Actions
Servicing Windows
Dependencies
PRO State
Validation Errors
Access
Save As
New
Remove
General
Bus Configuration
Network Adapters
Fibre Channel Adapters
Advanced
Integration Services
Some services offered
Checkpoints
Availability
Normal
Microsoft Azure Site Re...
Firmware
Secure boot Enabled
CPU Priority
Normal
Virtual NUMA
Spanning enabled
Memory Weight
Normal
Memory Weight
When memory usage on a host is high, virtual machines with higher priority are allocated memory resources before virtual machines with a lower priority.
Assign a priority for the virtual machine when memory resources are allocated on the host.
High
Normal
Low
Custom:
5000
Specifying a lower memory priority for this virtual machine might prevent it from starting when other virtual machines are running and available memory is low.

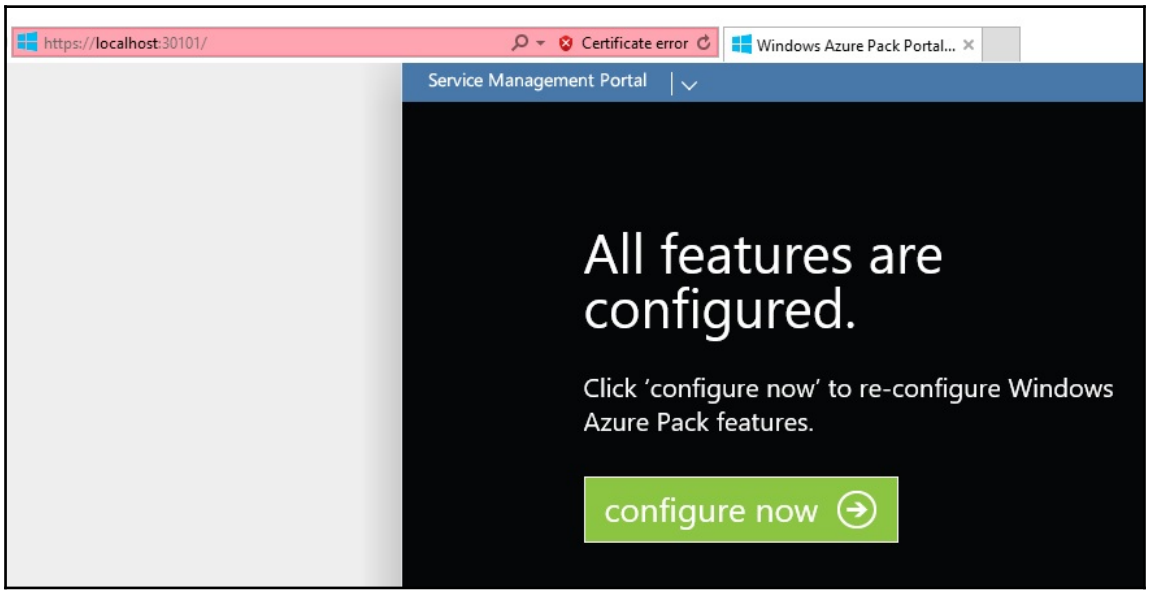

Add Network Service Wizard
Manufacturer and Model
Name
Manufacturer and Model
Credentials
Connection String
Certificates
Gather Information
Specify manufacturer and model of network service
Manufacturer:
Microsoft
Model:
Microsoft Windows Server IP Address Management
Configuration provider:
Microsoft IP Address Management Provider

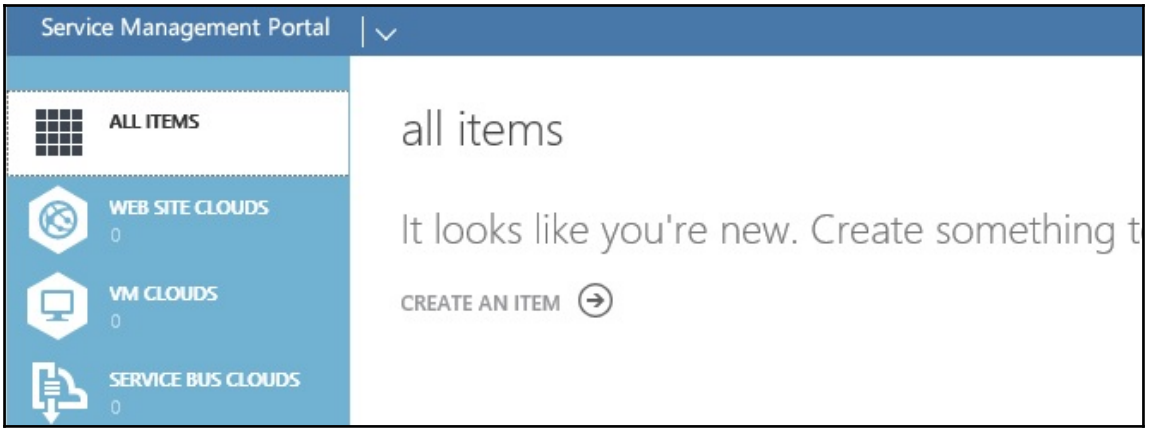

Add Network Service Wizard
Gather Information
Name
Manufacturer and Model
Credentials
Connection String
Certificates
Gather Information
Host Group
Summary
Discover and import network device information
Scan Provider
Property
Result
Name
Microsoft IP Address Management Provider
Manufacturer
Model
Is Network Gateway
False
Is Load Balancer
False
Is Switch Extension Manager
False
Is Network Data Manager
True
Is Network Switch Manager
False
Is Network Controller
False
Previous
Next
Cancel

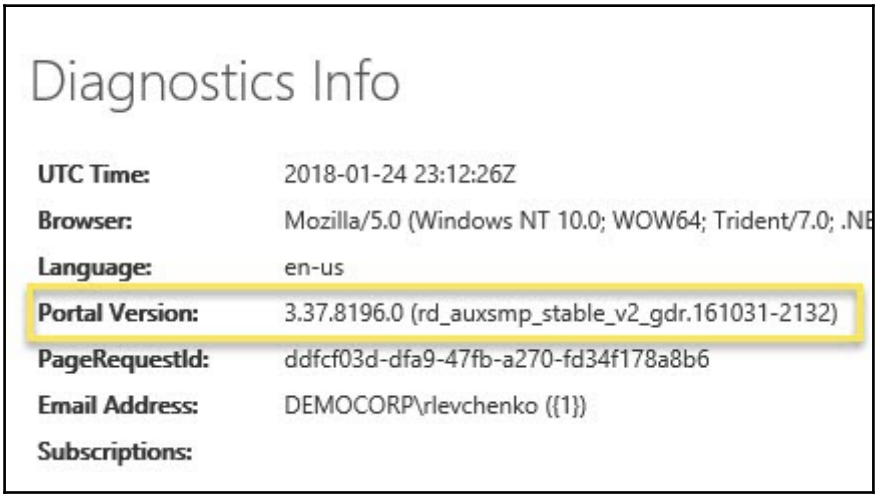

wmimgmt - [Console Root]
File Action View Favorites Window Help
Console Root
WMI Control (Local)
Name
WMI Control (Local)
WMI Control (Local) Properties
General Backup/Restore Security Advanced
Namespace navigation allows you to set namespace specific security.
Root
AccessLogging
CIMV2
Applications
mdm
ms_409
power
Security
TerminalServices
DEFAULT
directory
Hardware
HyperVCluster
Interop
Security for ROOT\CIMV2
Security
Group or user names:
Authenticated Users
LOCAL SERVICE
NETWORK SERVICE
Virtual Machine Manager Servers (HV02\Virtual Machine
Administrators (HV02\Administrators)
Add...
Remove
Permissions for Authenticated Users
Allow
Deny
Partial Write
Provider Write
Enable Account
Remote Enable
Read Security

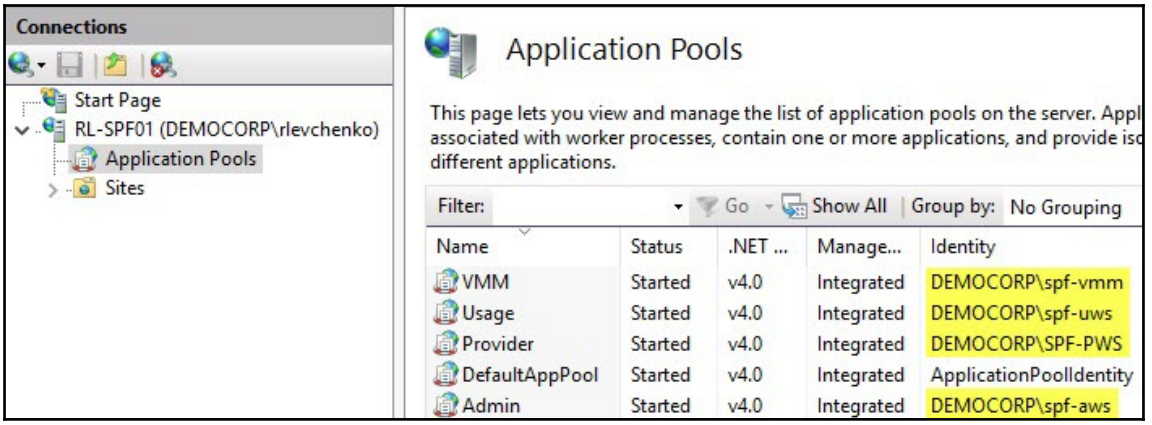

Web Platform Installer 5.0
Spotlight
Products
Applications
All
Server
Frameworks
Database
Tools
Windows Azure
Name
Released
Install
Windows Azure Pack: Portal and API Express
11/1/2016
Add
Windows Azure Pack: Tenant API
11/1/2016
Add
Windows Azure Pack: Tenant Public API
11/1/2016
Add
Windows Azure Pack: SQL Server Extension
11/1/2016
Add
Windows Azure Pack: MySQL Extension
11/1/2016
Add
Windows Azure Pack: Microsoft Best Practices Analyzer
11/1/2016
Add
Windows Azure Pack: PowerShell API
11/1/2016
Add
Gridpro Request Management for Windows Azure Pack: Ad...
10/31/2016
Add
Gridpro Request Management for Windows Azure Pack: Ten...
10/31/2016
Add
IIS-WebServer
10/27/2016
Add
IIS-HttpCompressionDynamic
10/27/2016
Add
0
Items to be installed
Options
Install
Exit

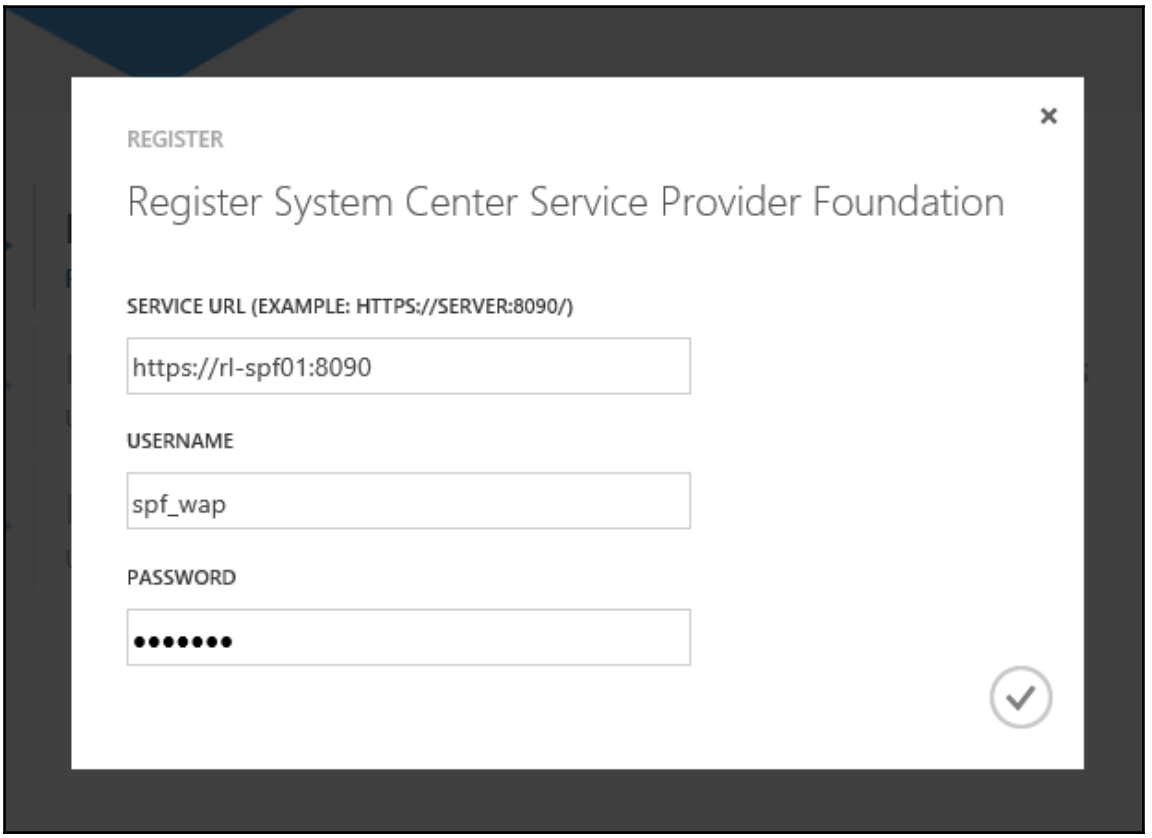

WINDOWS AZURE PACK SETUP
Database Server Setup
Database Server
Please specify the SQL Server that you would like to use for the Windows Azure Pack databases. Please use the same SQL Server instance for configuring the Windows Azure Pack Admin, Tenant and Tenant Public APIs, Admin Site and Tenant Site.
SERVER NAME
RL-SQL01\WAP
AUTHENTICATION TYPE
Windows Authentication
USERNAME
DEMOCORP\rlevchenko
Configuration Store
Please provide a passphrase below that will be used to store and retrieve secrets from the configuration store. The same passphrase needs to be used in all machines on this deployment. Note that if the configuration store does not exist yet, the passphrase is always valid.
PASSPHRASE
CONFIRM PASSPHRASE
2
3


https://localhost:30101/
Certificate error
Windows Azure Pack Portal...
Service Management Portal
All features are configured.
Click 'configure now' to re-configure Windows Azure Pack features.
configure now


Service Management Portal
ALL ITEMS
WEB SITE CLOUDS
0
VM CLOUDS
0
SERVICE BUS CLOUDS
0
all items
It looks like you're new. Create something t
CREATE AN ITEM


Diagnostics Info
UTC Time: 2018-01-24 23:12:26Z
Browser: Mozilla/5.0 (Windows NT 10.0; WOW64; Trident/7.0; .NE
Language: en-us
Portal Version: 3.37.8196.0 (rd_auxsmp_stable_v2_gdr.161031-2132)
PageRequestId: ddfcf03d-dfa9-47fb-a270-fd34f178a8b6
Email Address: DEMOCORP\rlevchenko ({1})
Subscriptions:

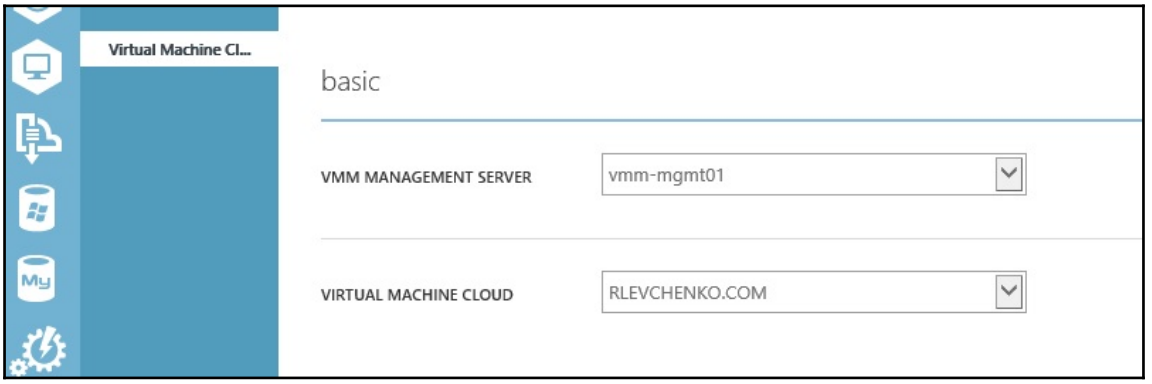

Connections
Start Page
RL-SPF01 (DEMOCORP\rlevchenko)
Application Pools
Sites
Application Pools
This page lets you view and manage the list of application pools on the server. Appl
associated with worker processes, contain one or more applications, and provide iso
different applications.
Filter:
Go
Show All
Group by:
No Grouping
Name
Status
.NET ...
Manage...
Identity
VMM
Started
v4.0
Integrated
DEMOCORP\spf-vmm
Usage
Started
v4.0
Integrated
DEMOCORP\spf-uws
Provider
Started
v4.0
Integrated
DEMOCORP\SPF-PWS
DefaultAppPool
Started
v4.0
Integrated
ApplicationPoolIdentity
Admin
Started
v4.0
Integrated
DEMOCORP\spf-aws

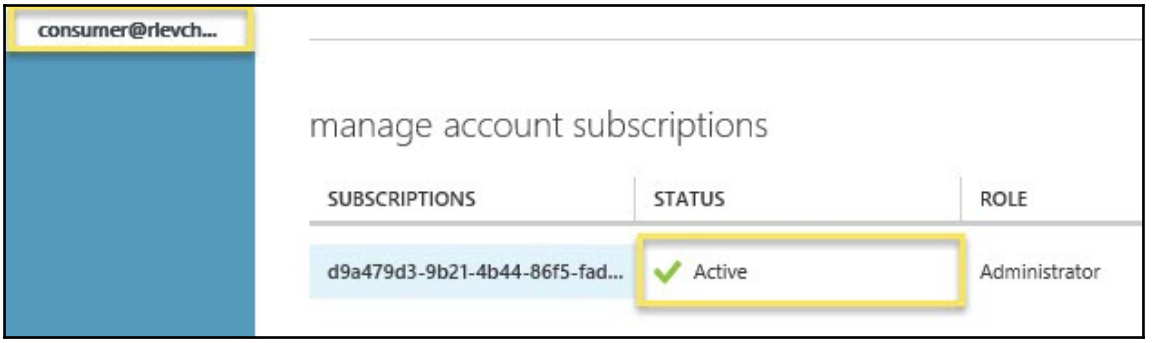

REGISTER
Register System Center Service Provider Foundation
SERVICE URL (EXAMPLE: HTTPS://SERVER:8090/)
https://rl-spf01:8090
USERNAME
spf_wap
PASSWORD
•••••••

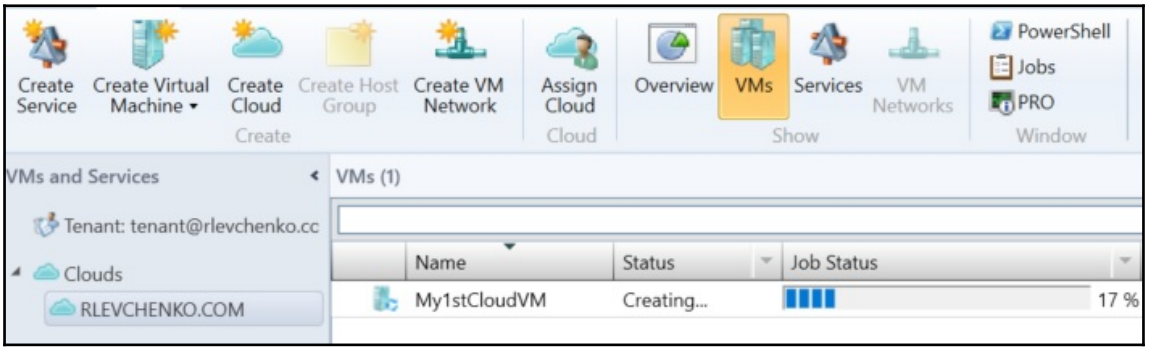

Register System Center Service Provider Foundation
Currently registered System Center Service Provider Foundation endpoint: https://rl-spf01:8090

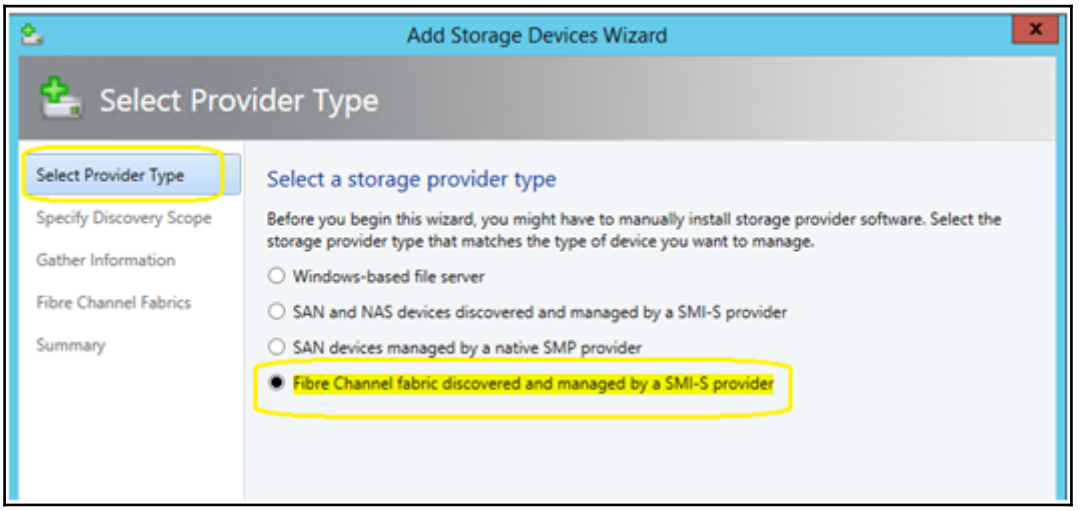

ALL ITEMS
WEB SITE CLOUDS
0
VM CLOUDS
0
SERVICE BUS CLOUDS
0
SQL SERVERS
vm clouds
CLOUDS
VIRTUAL MACHINES
NETWORKS
AUTOMATION
GALLERY
No Virtual Machine Cloud provider was found. Ensure tha
management server is available through the Service Provi
USE AN EXISTING VIRTUAL MACHINE CLOUD PROVIDER TO PROVISION VIRTUAL MACHINES

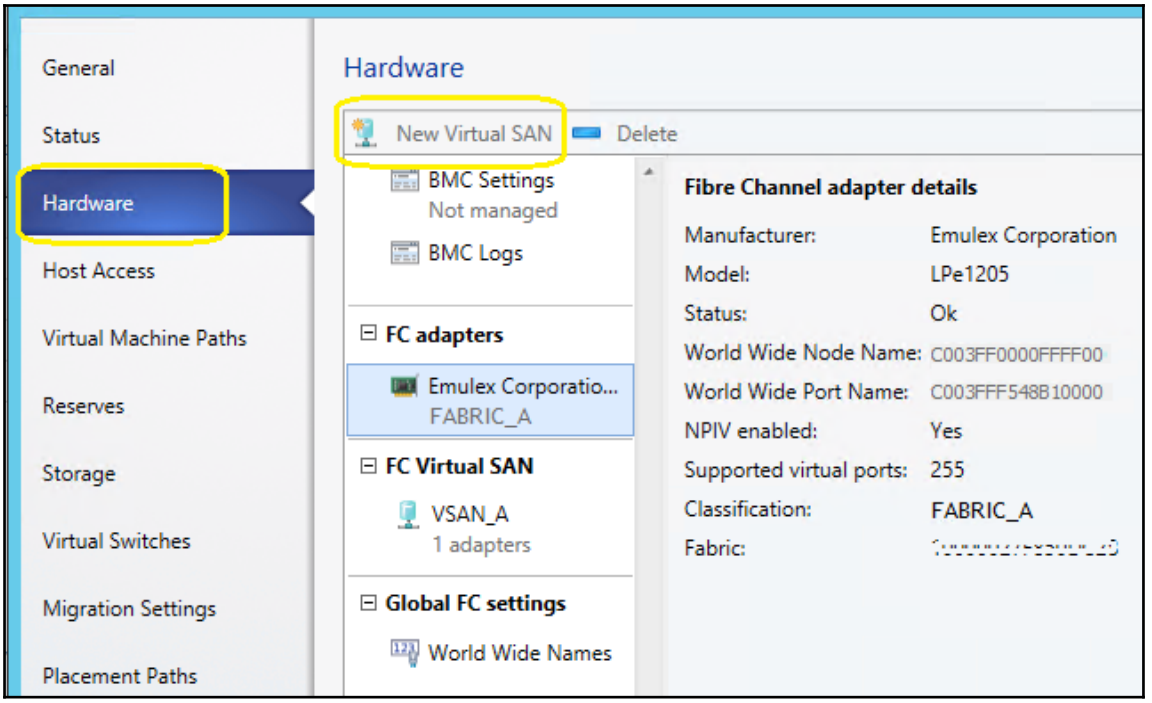

ALL ITEMS
WEB SITE CLOUDS
0
VM CLOUDS
1
SERVICE BUS CLOUDS
0
vm clouds
CLOUDS
VIRTUAL MACHINES
NETWORKS
AUTOMATION
NAME
STATUS
VIRTUAL MACHINES
vmm-mgmt01
Ready
0 of unlimited
RLEVCHENKO.COM
Ready
0 of unlimited


Virtual Machine Cl...
basic
VMM MANAGEMENT SERVER
vmm-mgmt01
VIRTUAL MACHINE CLOUD
RLEVCHENKO.COM

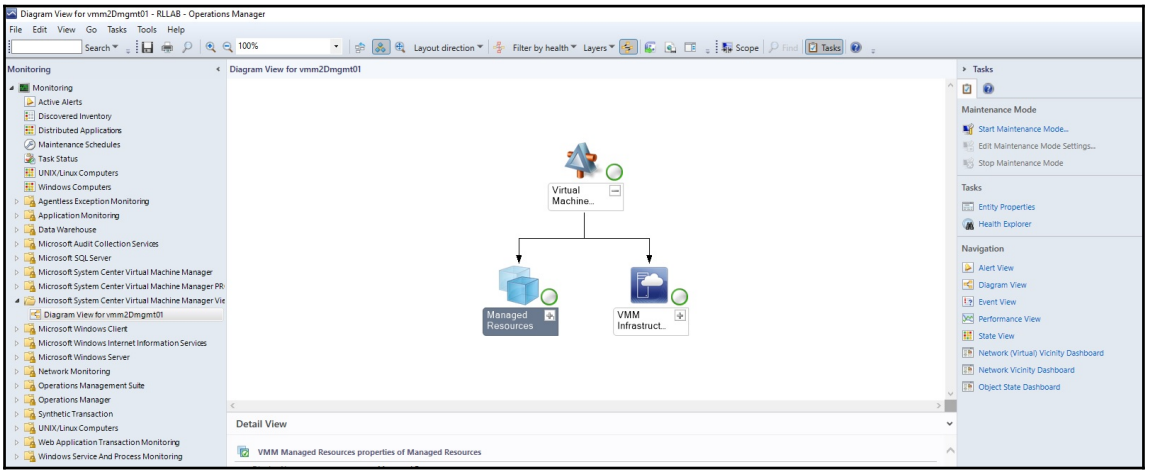

consumer@rlevch...
manage account subscriptions
SUBSCRIPTIONS
STATUS
ROLE
d9a479d3-9b21-4b44-86f5-fad...
Active
Administrator

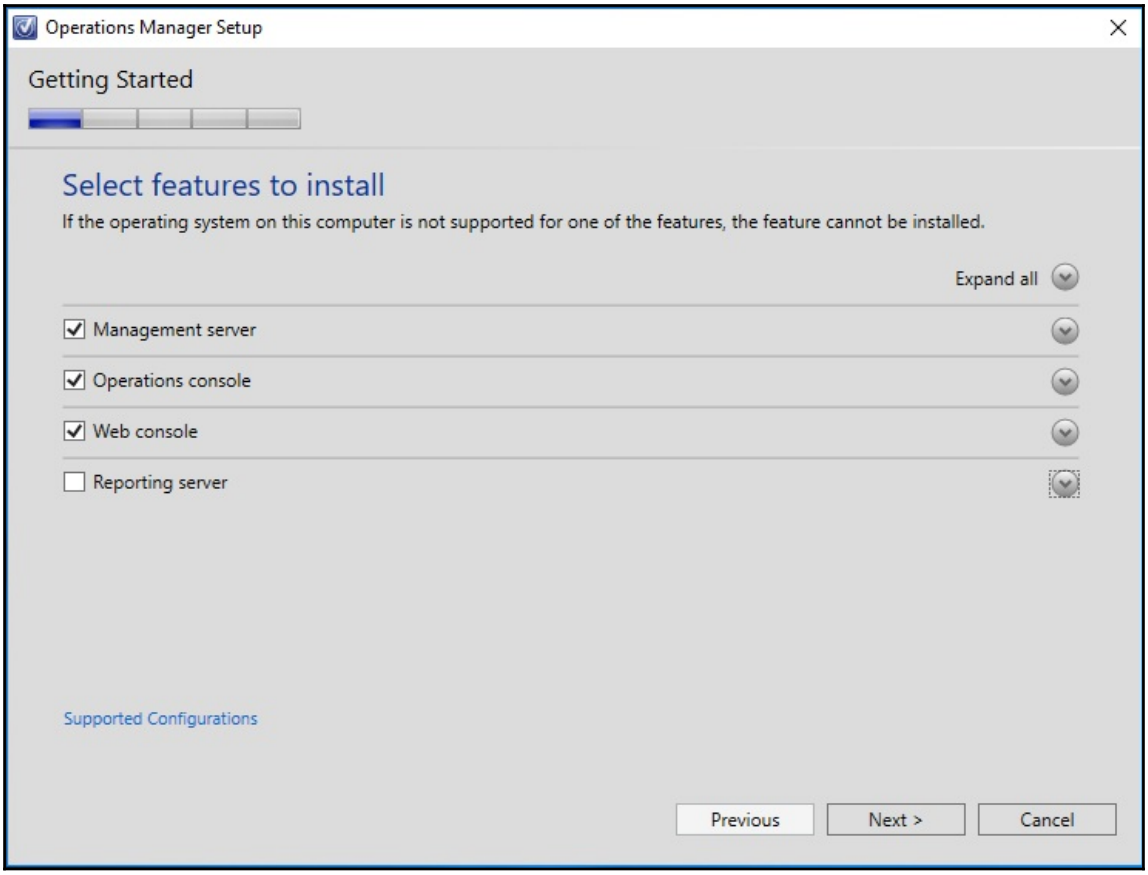

Create Service
Create Virtual Machine
Create Cloud
Create Host Group
Create VM Network
Assign Cloud
Overview
VMs
Services
VM Networks
PowerShell
Jobs
PRO
Create
Cloud
Show
Window
VMs and Services
VMs (1)
Tenant: tenant@rlevchenko.cc
Clouds
RLEVCHENKO.COM
Name
Status
Job Status
My1stCloudVM
Creating...
17 %

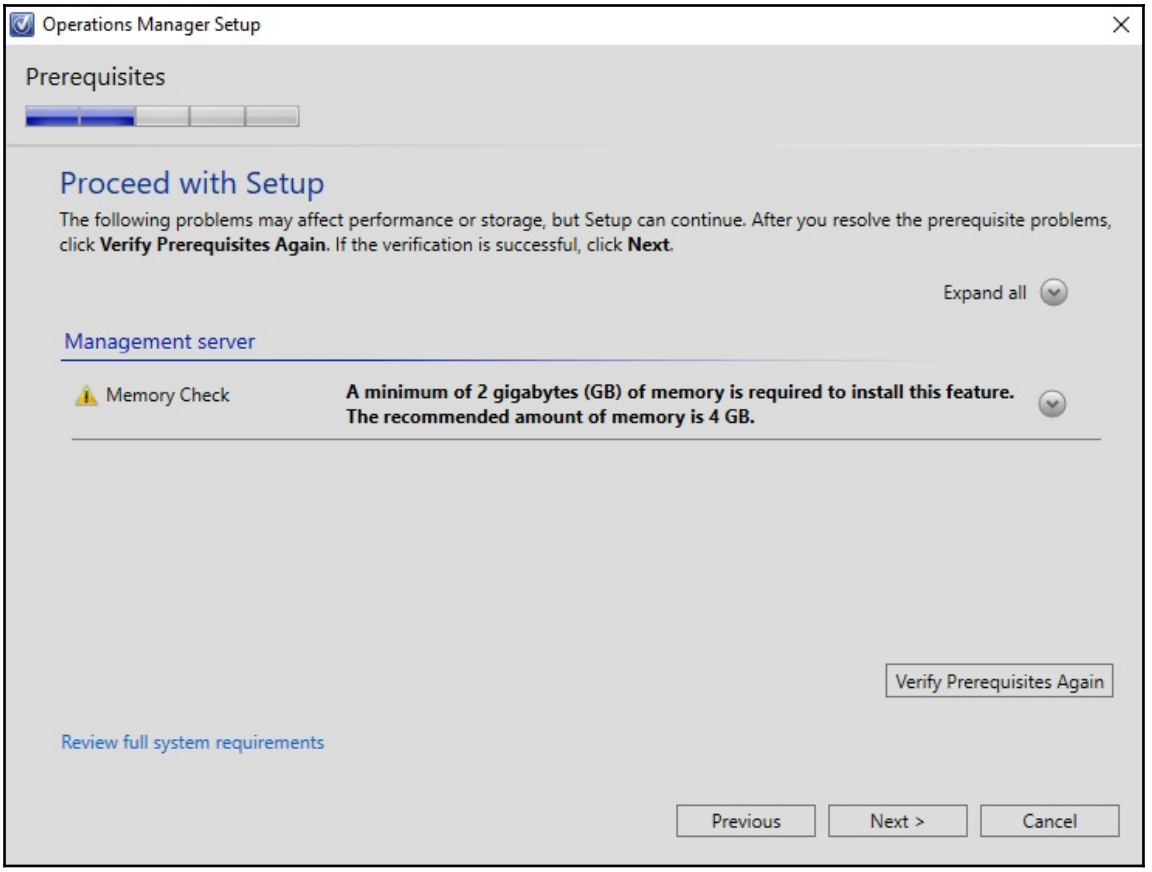

Add Storage Devices Wizard
Select Provider Type
Select Provider Type
Specify Discovery Scope
Gather Information
Fibre Channel Fabrics
Summary
Select a storage provider type
Before you begin this wizard, you might have to manually install storage provider software. Select the storage provider type that matches the type of device you want to manage.
Windows-based file server
SAN and NAS devices discovered and managed by a SMI-S provider
SAN devices managed by a native SMP provider
Fibre Channel fabric discovered and managed by a SMI-S provider

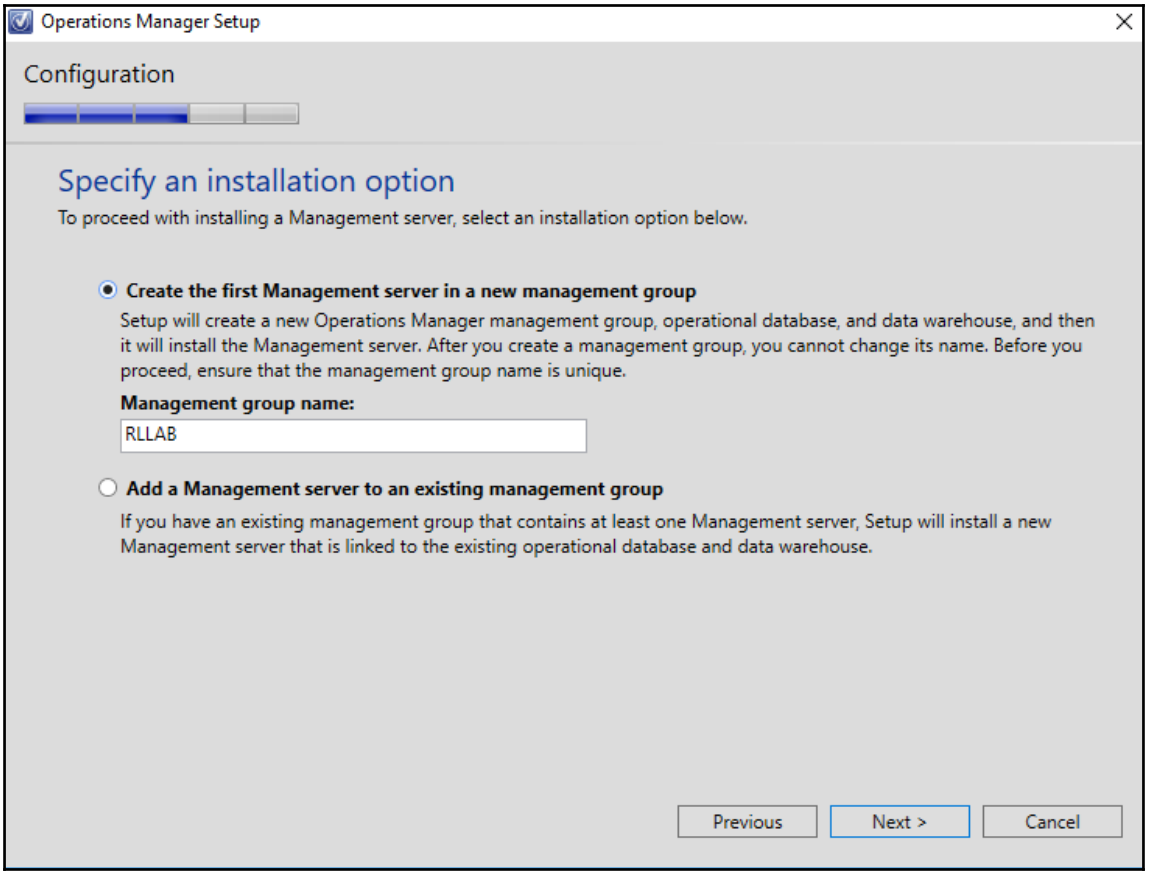

General
Status
Hardware
Host Access
Virtual Machine Paths
Reserves
Storage
Virtual Switches
Migration Settings
Placement Paths
Hardware
New Virtual SAN
Delete
BMC Settings
Not managed
BMC Logs
FC adapters
Emulex Corporatio...
FABRIC_A
FC Virtual SAN
VSAN_A
1 adapters
Global FC settings
World Wide Names
Fibre Channel adapter details
Manufacturer: Emulex Corporation
Model: LPe1205
Status: Ok
World Wide Node Name: C003FF0000FFFF00
World Wide Port Name: C003FFF548B10000
NPIV enabled: Yes
Supported virtual ports: 255
Classification: FABRIC_A
Fabric:

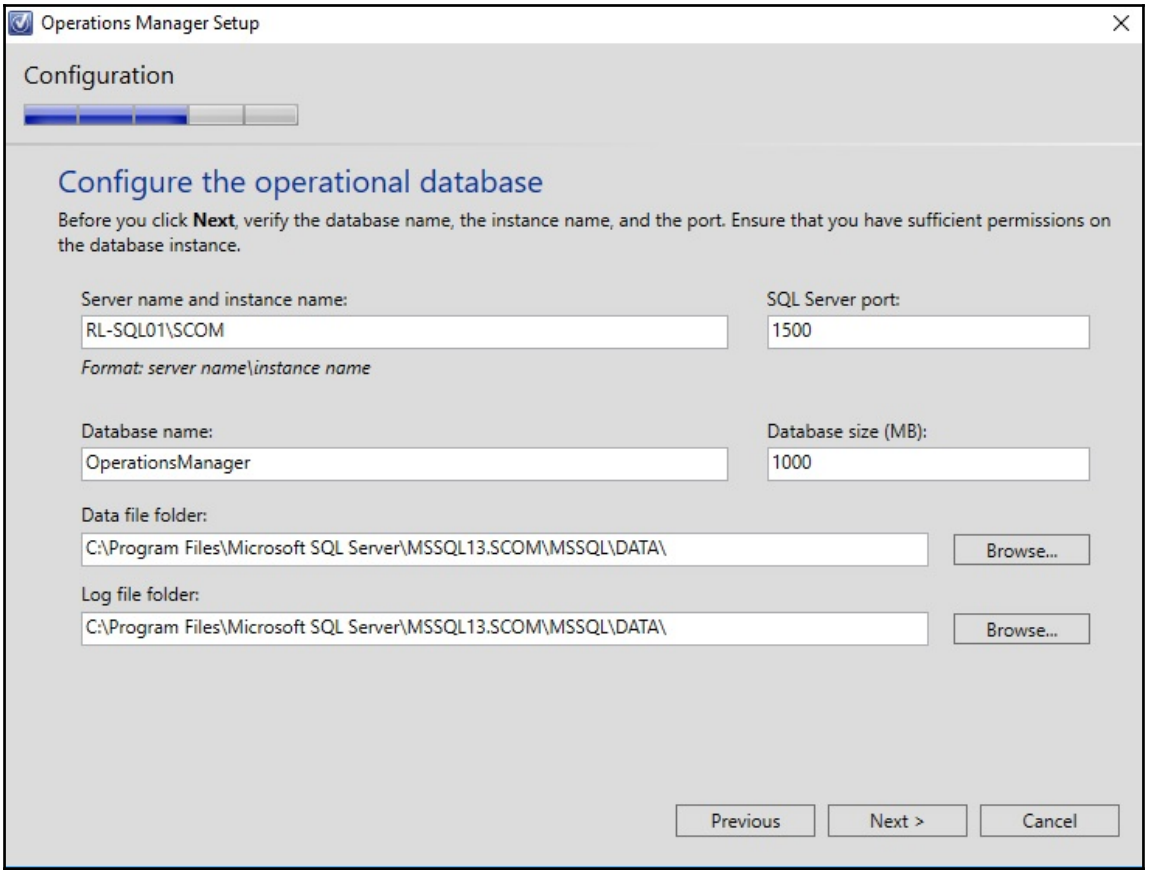
Chapter 10: Integration with System Center Operations Manager 2016

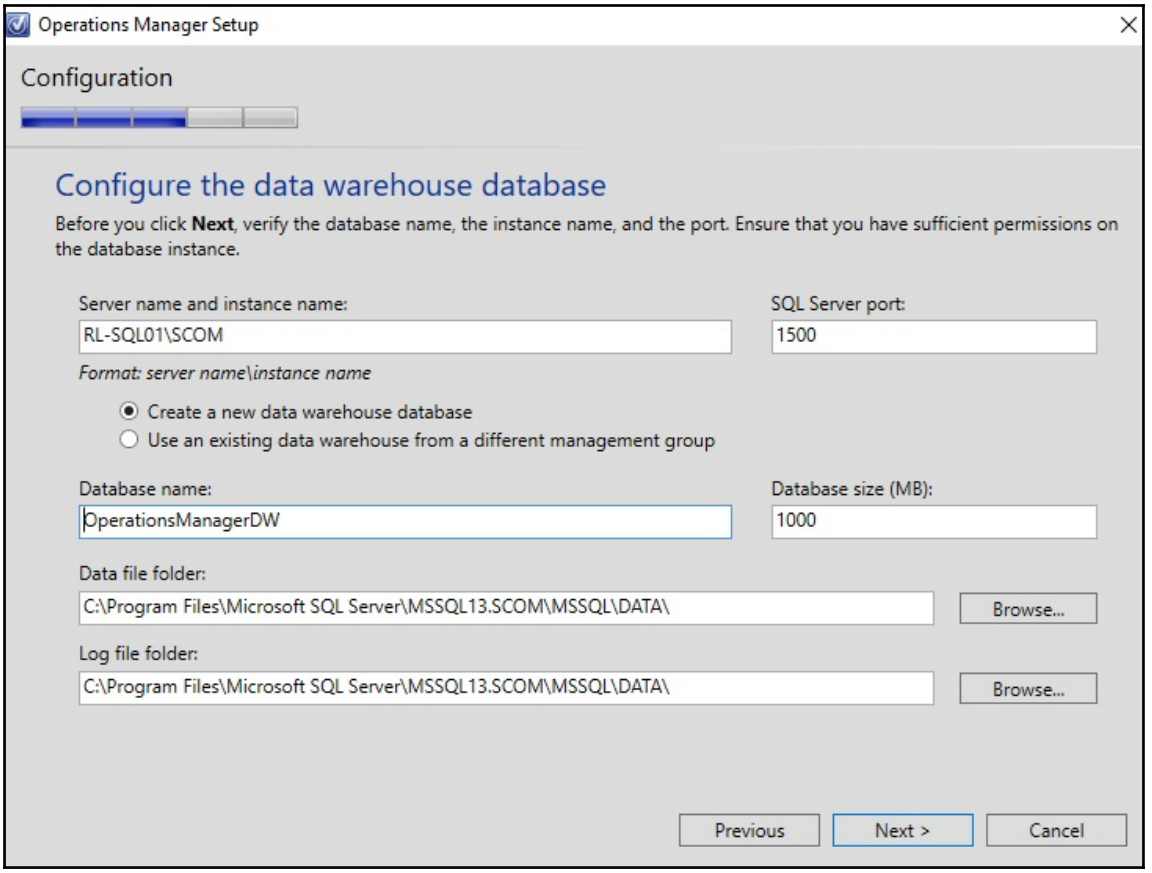


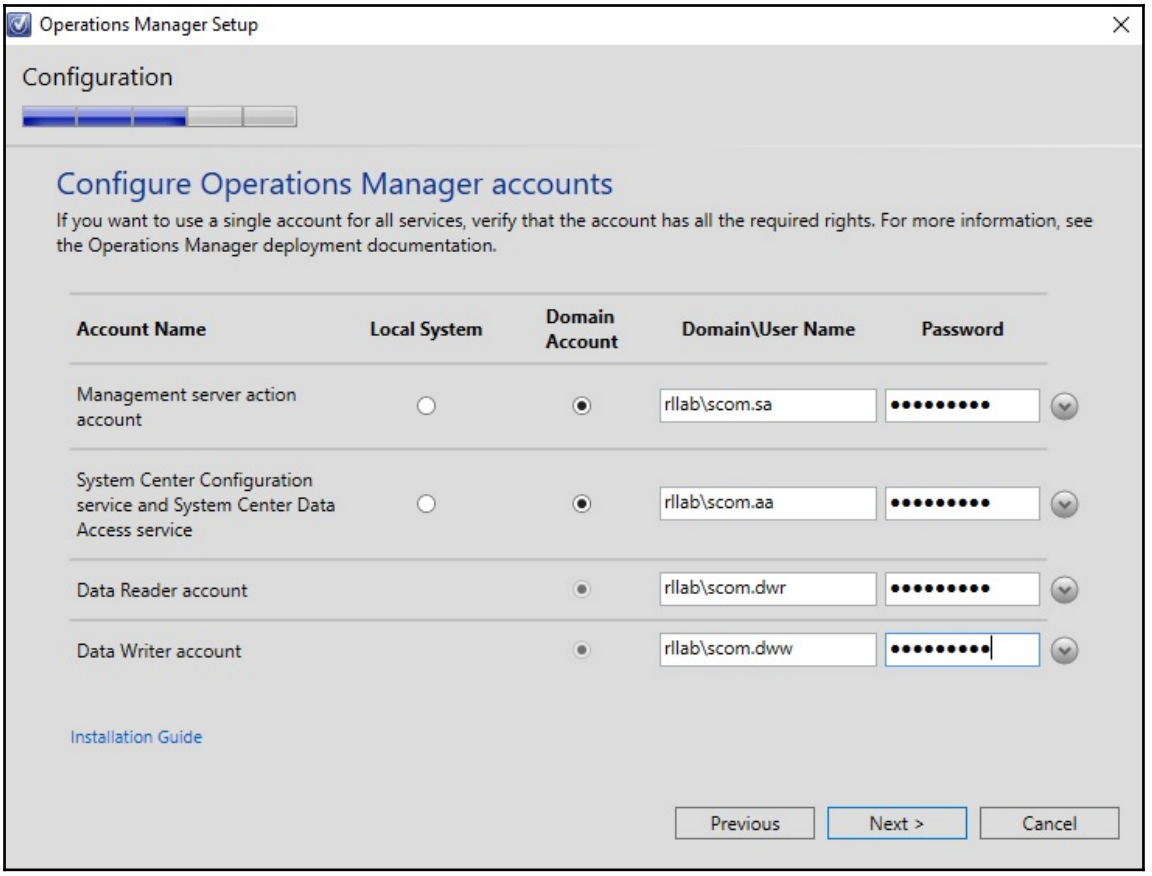

Operations Manager Setup
Getting Started
Select features to install
If the operating system on this computer is not supported for one of the features, the feature cannot be installed.
Expand all
Management server
Operations console
Web console
Reporting server
Supported Configurations
Previous
Next >
Cancel

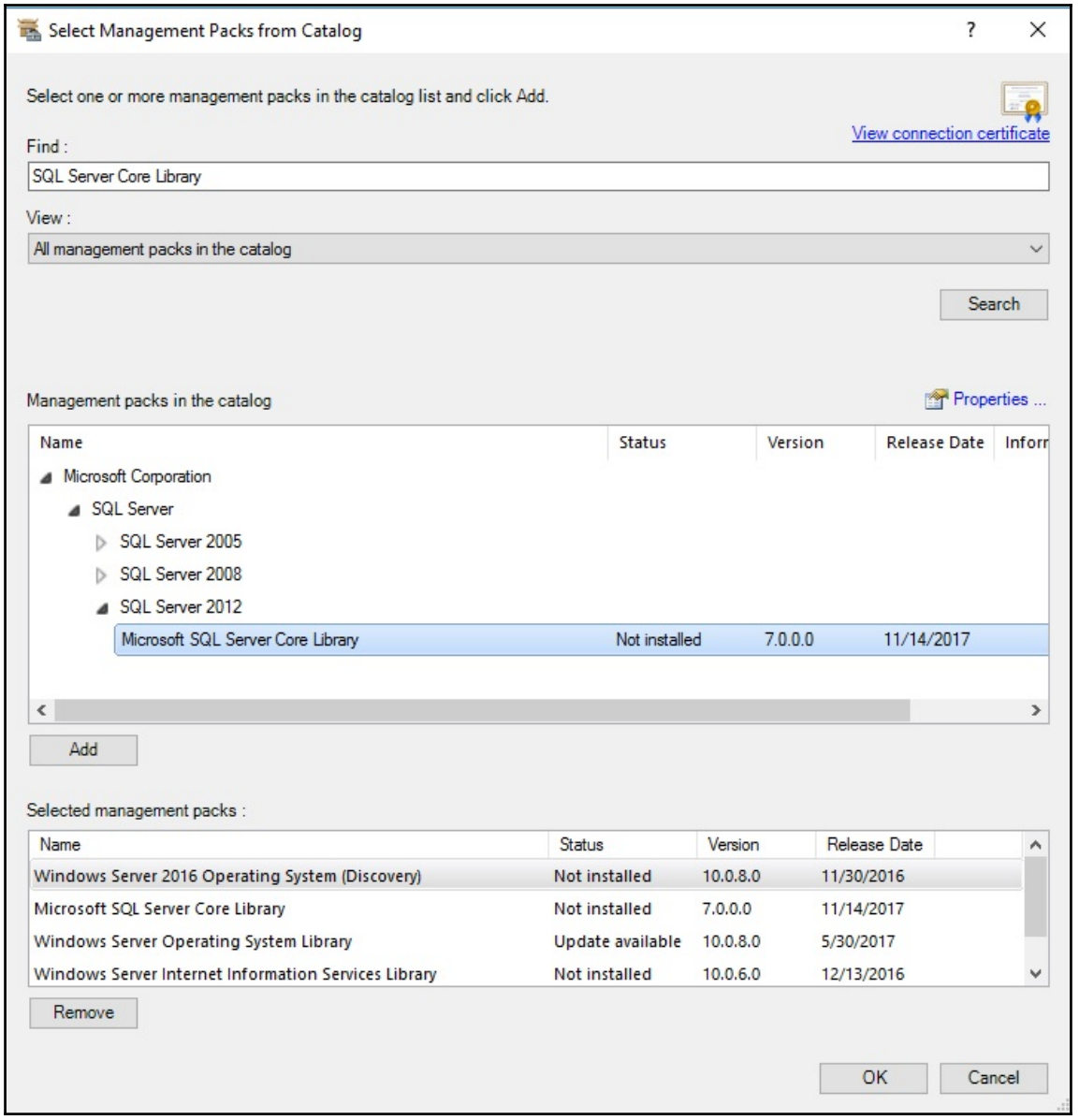

Operations Manager Setup
Prerequisites
Proceed with Setup
The following problems may affect performance or storage, but Setup can continue. After you resolve the prerequisite problems, click Verify Prerequisites Again. If the verification is successful, click Next.
Expand all
Management server
Memory Check
A minimum of 2 gigabytes (GB) of memory is required to install this feature. The recommended amount of memory is 4 GB.
Verify Prerequisites Again
Review full system requirements
Previous
Next >
Cancel

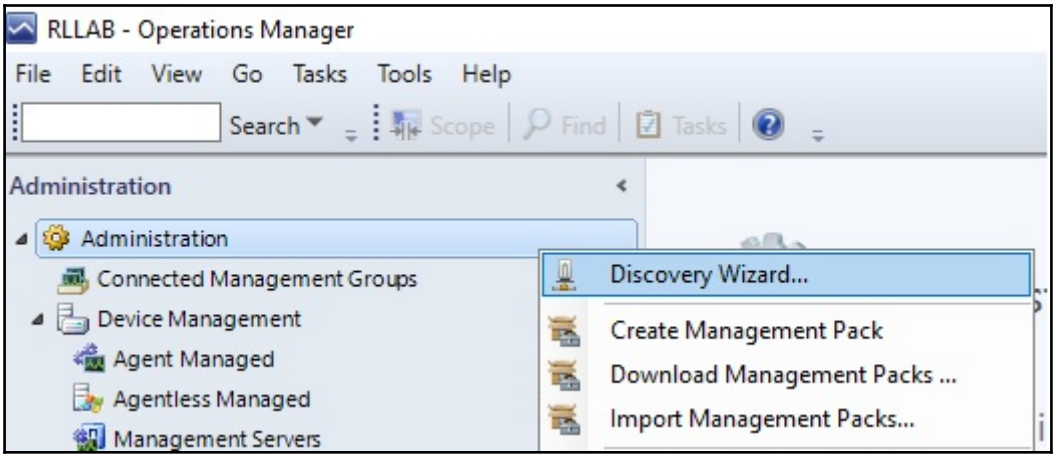

Operations Manager Setup
Configuration
Specify an installation option
To proceed with installing a Management server, select an installation option below.
Create the first Management server in a new management group
Setup will create a new Operations Manager management group, operational database, and data warehouse, and then it will install the Management server. After you create a management group, you cannot change its name. Before you proceed, ensure that the management group name is unique.
Management group name:
RLLAB
Add a Management server to an existing management group
If you have an existing management group that contains at least one Management server, Setup will install a new Management server that is linked to the existing operational database and data warehouse.
Previous
Next >
Cancel

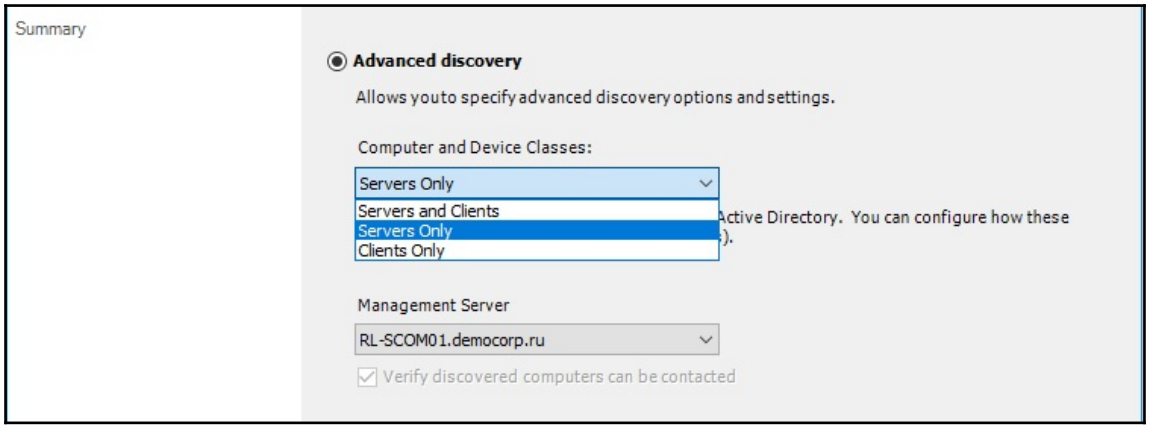

Operations Manager Setup
Configuration
Configure the operational database
Before you click Next, verify the database name, the instance name, and the port. Ensure that you have sufficient permissions on the database instance.
Server name and instance name:
RL-SQL01\SCOM
Format: server name\instance name
SQL Server port:
1500
Database name:
OperationsManager
Database size (MB):
1000
Data file folder:
C:\Program Files\Microsoft SQL Server\MSSQL13.SCOM\MSSQL\DATA\
Browse...
Log file folder:
C:\Program Files\Microsoft SQL Server\MSSQL13.SCOM\MSSQL\DATA\
Browse...
Previous
Next >
Cancel

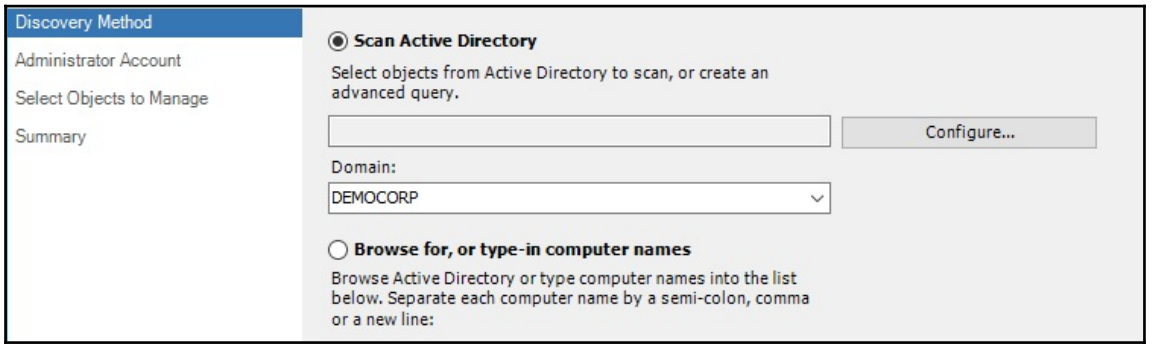

Operations Manager Setup
Configuration
Configure the data warehouse database
Before you click Next, verify the database name, the instance name, and the port. Ensure that you have sufficient permissions on the database instance.
Server name and instance name:
RL-SQL01\SCOM
SQL Server port:
1500
Format: server name\instance name
Create a new data warehouse database
Use an existing data warehouse from a different management group
Database name:
OperationsManagerDW
Database size (MB):
1000
Data file folder:
C:\Program Files\Microsoft SQL Server\MSSQL13.SCOM\MSSQL\DATA\
Browse...
Log file folder:
C:\Program Files\Microsoft SQL Server\MSSQL13.SCOM\MSSQL\DATA\
Browse...
Previous
Next >
Cancel

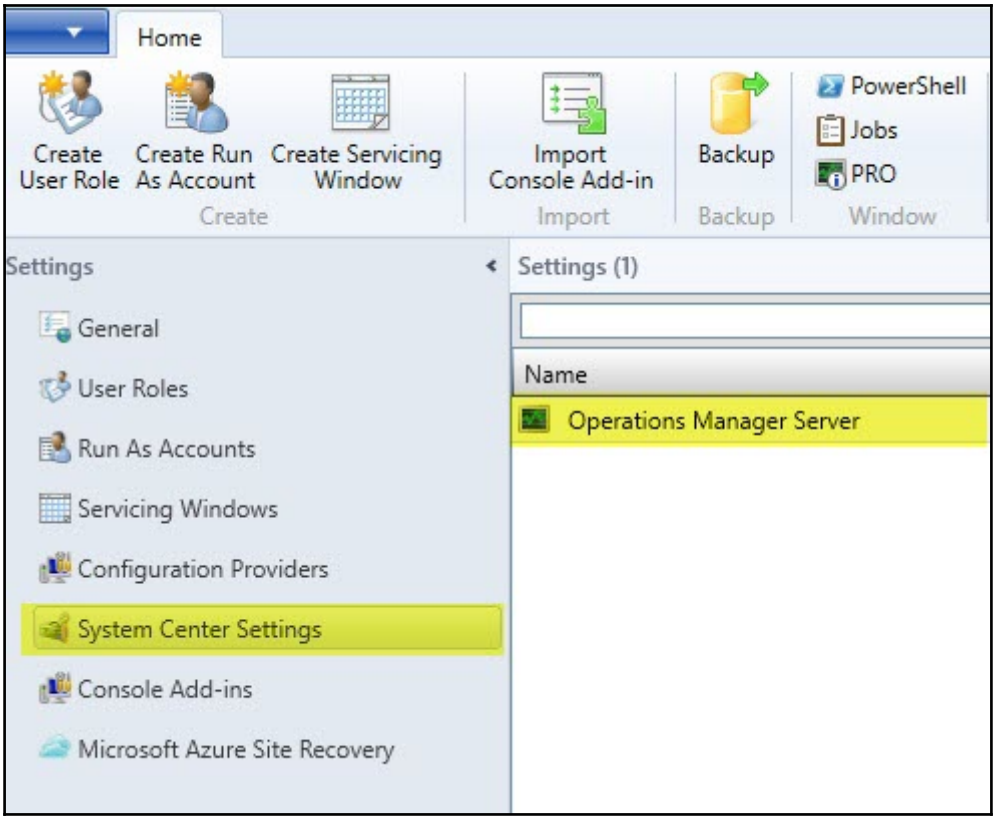

Operations Manager Setup
Configuration
Configure Operations Manager accounts
If you want to use a single account for all services, verify that the account has all the required rights. For more information, see the Operations Manager deployment documentation.
Account Name
Local System
Domain Account
Domain\User Name
Password
Management server action account
rllab\scom.sa
System Center Configuration service and System Center Data Access service
rllab\scom.aa
Data Reader account
rllab\scom.dwr
Data Writer account
rllab\scom.dww
Installation Guide
Previous
Next >
Cancel

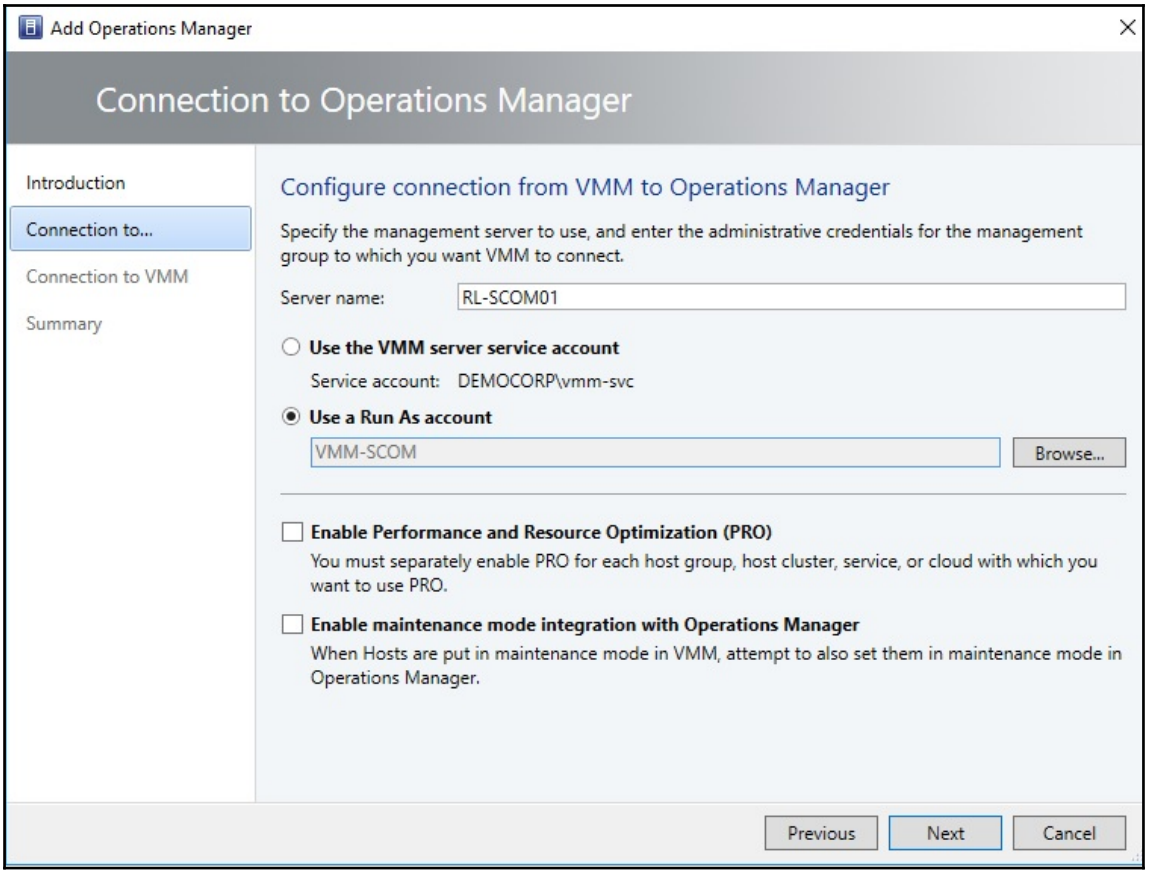

Select Management Packs from Catalog
Select one or more management packs in the catalog list and click Add.
View connection certificate
Find :
SQL Server Core Library
View :
All management packs in the catalog
Search
Management packs in the catalog
Properties ...
Name
Status
Version
Release Date
Inforr
Microsoft Corporation
SQL Server
SQL Server 2005
SQL Server 2008
SQL Server 2012
Microsoft SQL Server Core Library
Not installed
7.0.0.0
11/14/2017
Add
Selected management packs :
Name
Status
Version
Release Date
Windows Server 2016 Operating System (Discovery)
Not installed
10.0.8.0
11/30/2016
Microsoft SQL Server Core Library
Not installed
7.0.0.0
11/14/2017
Windows Server Operating System Library
Update available
10.0.8.0
5/30/2017
Windows Server Internet Information Services Library
Not installed
10.0.6.0
12/13/2016
Remove
OK
Cancel

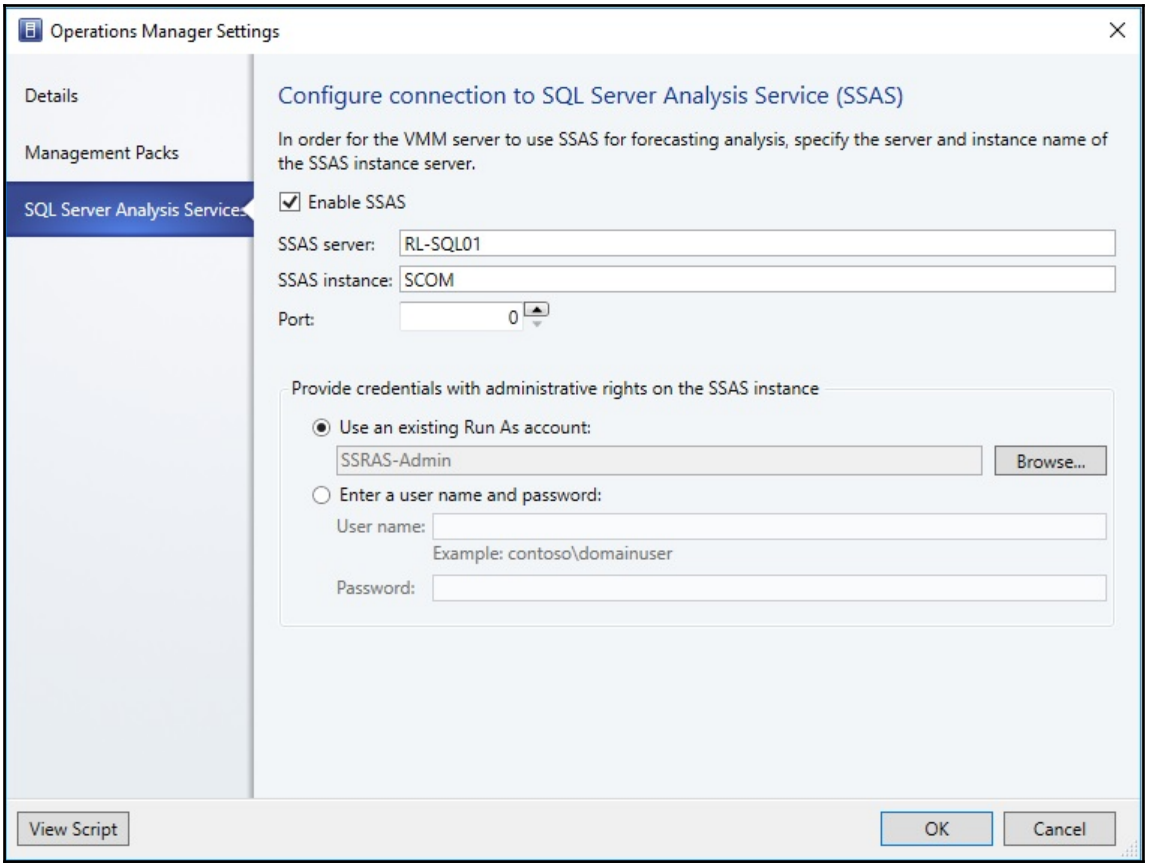

RLLAB - Operations Manager
File Edit View Go Tasks Tools Help
Search
Scope
Find
Tasks
Administration
Administration
Connected Management Groups
Device Management
Agent Managed
Agentless Managed
Management Servers
Discovery Wizard...
Create Management Pack
Download Management Packs ...
Import Management Packs...

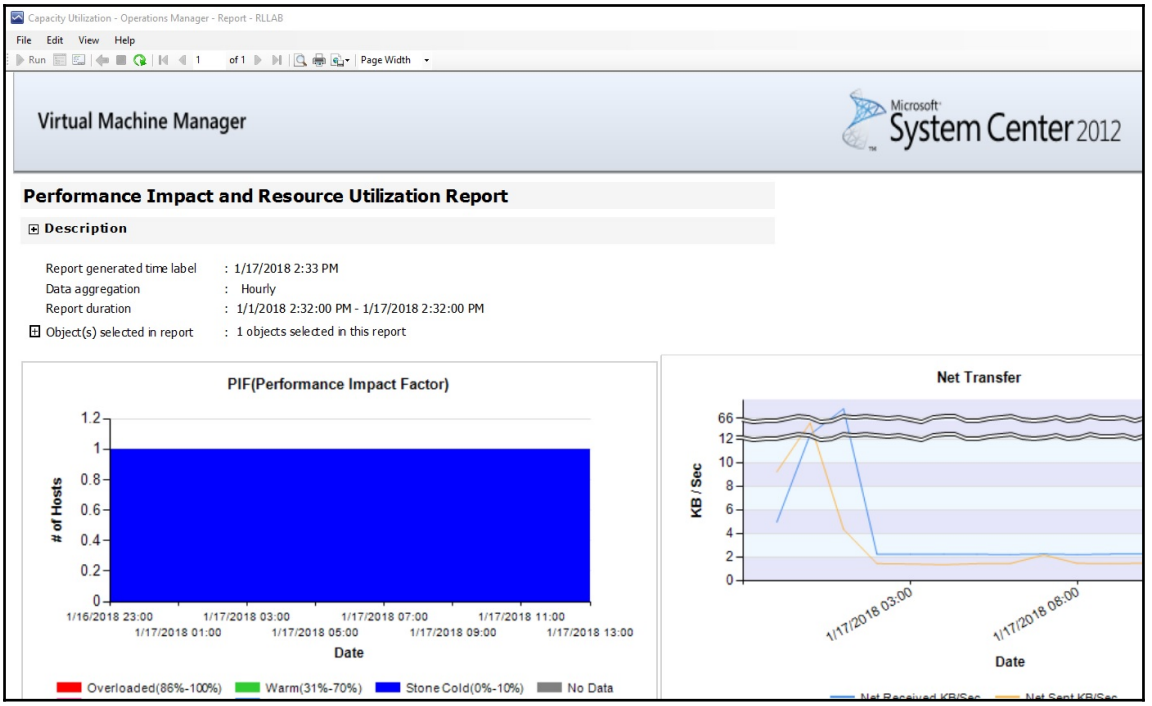

Summary
Advanced discovery
Allows you to specify advanced discovery options and settings.
Computer and Device Classes:
Servers Only
Servers and Clients
Servers Only
Clients Only
Active Directory. You can configure how these
).
Management Server
RL-SCOM01.democorp.ru
Verify discovered computers can be contacted


Discovery Method
Administrator Account
Select Objects to Manage
Summary
Scan Active Directory
Select objects from Active Directory to scan, or create an advanced query.
Configure...
Domain:
DEMOCORP
Browse for, or type-in computer names
Browse Active Directory or type computer names into the list below. Separate each computer name by a semi-colon, comma or a new line:


Home
Create User Role
Create Run As Account
Create Servicing Window
Import Console Add-in
Backup
PowerShell
Jobs
PRO
Create
Import
Backup
Window
Settings
General
User Roles
Run As Accounts
Servicing Windows
Configuration Providers
System Center Settings
Console Add-ins
Microsoft Azure Site Recovery
Settings (1)
Name
Operations Manager Server


Add Operations Manager
Connection to Operations Manager
Introduction
Connection to...
Connection to VMM
Summary
Configure connection from VMM to Operations Manager
Specify the management server to use, and enter the administrative credentials for the management group to which you want VMM to connect.
Server name:
RL-SCOM01
Use the VMM server service account
Service account: DEMOCORP\vmm-svc
Use a Run As account
VMM-SCOM
Browse...
Enable Performance and Resource Optimization (PRO)
You must separately enable PRO for each host group, host cluster, service, or cloud with which you want to use PRO.
Enable maintenance mode integration with Operations Manager
When Hosts are put in maintenance mode in VMM, attempt to also set them in maintenance mode in Operations Manager.
Previous
Next
Cancel


Operations Manager Settings
Details
Management Packs
SQL Server Analysis Services
Configure connection to SQL Server Analysis Service (SSAS)
In order for the VMM server to use SSAS for forecasting analysis, specify the server and instance name of the SSAS instance server.
Enable SSAS
SSAS server:
RL-SQL01
SSAS instance:
SCOM
Port:
0
Provide credentials with administrative rights on the SSAS instance
Use an existing Run As account:
SSRAS-Admin
Browse...
Enter a user name and password:
User name:
Example: contoso\domainuser
Password:
View Script
OK
Cancel


Capacity Utilization - Operations Manager - Report - RLLAB
File Edit View Help
Run
1
of 1
Page Width
Virtual Machine Manager
Microsoft System Center 2012
Performance Impact and Resource Utilization Report
Description
Report generated time label : 1/17/2018 2:33 PM
Data aggregation : Hourly
Report duration : 1/1/2018 2:32:00 PM - 1/17/2018 2:32:00 PM
Object(s) selected in report : 1 objects selected in this report
PIF(Performance Impact Factor)
# of Hosts
1.2
1
0.8
0.6
0.4
0.2
0
1/16/2018 23:00
1/17/2018 01:00
1/17/2018 03:00
1/17/2018 05:00
1/17/2018 07:00
1/17/2018 09:00
1/17/2018 11:00
1/17/2018 13:00
Date
Overloaded(86%-100%)
Warm(31%-70%)
Stone Cold(0%-10%)
No Data
Net Transfer
KB / Sec
66
12
10
8
6
4
2
0
1/17/2018 03:00
1/17/2018 08:00
Date