

Hyper-V

Virtualization

To view the Hyper-V cmdlets type (remember to run as Administrator)

Get-Command -Module Hyper-V | Sort Noun,Verb



Before you begin

DESTINATION SERVER
WIN-6NQ842FMB9T.etechn2012.com

Before You Begin

Installation Type

Server Selection

Server Roles

Features

Hyper-V

Virtual Switches

Migration

Default Stores

Confirmation

Results

This wizard helps you install roles, role services, or features. You determine which roles, role services, or features to install based on the computing needs of your organization, such as sharing documents, or hosting a website.

To remove roles, role services, or features:

[Start the Remove Roles and Features Wizard](#)

Before you continue, verify that the following tasks have been completed:

- The Administrator account has a strong password
- Network settings, such as static IP addresses, are configured
- The most current security updates from Windows Update are installed

If you must verify that any of the preceding prerequisites have been completed, close the wizard, complete the steps, and then run the wizard again.

To continue, click Next.

Skip this page by default

What is Network Virtualization?

Similar to running multiple virtual servers on a single host, with network virtualization it is possible to run multiple isolated virtual networks on a single host. In essence this is not a new feature, because with VLANs this has already become possible in the Windows 2008 hypervisor. But VLANs – for larger organizations – have limitations (4096 to be exact) and in these environments VLAN maintenance can be error-prone and cumbersome. Network virtualization is a great feature for hosters, but many private clouds can take advantage of this in multiple ways as well.



Select installation type

DESTINATION SERVER
WIN-6NQ842FM89T.etchb2012.com

Before You Begin

Installation Type

Server Selection

Server Roles

Features

Hyper-V

Virtual Switches

Migration

Default Stores

Confirmation

Results

Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).

Role-based or feature-based installation

Configure a single server by adding roles, role services, and features.

Remote Desktop Services installation

Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.

< Previous

Next >

Install

Cancel

Windows logo icon

Add Roles and Features Wizard

DESTINATION SERVER
WIN-6NQ842FMB9T.etechb2012.com

Select destination server

- Before You Begin
- Installation Type
- Server Selection**
- Server Roles
- Features
- Hyper-V
 - Virtual Switches
 - Migration
 - Default Stores
- Confirmation
- Results

Select a server or a virtual hard disk on which to install roles and features.

Select a server from the server pool
 Select a virtual hard disk

Server Pool

Filter:

Name	IP Address	Operating System
WIN-6NQ842FMB9T.ete...	192.168.254.13	Microsoft Windows Server 2012 Standard Evaluation

1 Computer(s) found

This page shows servers that are running Windows Server 2012, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.

< Previous Next > Install Cancel

Select server roles

DESTINATION SERVER
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Before You Begin

Installation Type

Server Selection

Server Roles

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Confirmation

Results

Select one or more roles to install on the selected server.

Roles

- Active Directory Certificate Services
- Active Directory Domain Services (Installed)
- Active Directory Federation Services
- Active Directory Lightweight Directory Services
- Active Directory Rights Management Services
- Application Server
- DHCP Server
- DNS Server (Installed)
- Fax Server
- File And Storage Services (Installed)
- Hyper-V
- Network Policy and Access Services
- Print and Document Services
- Remote Access
- Remote Desktop Services

Description

Hyper-V provides the services that you can use to create and manage virtual machines and their resources. Each virtual machine is a virtualized computer system that operates in an isolated execution environment. This allows you to run multiple operating systems simultaneously.

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Install

Cancel

Select features

DESTINATION SERVER
WIN-6NQ842FMB9T.etcchb2012.com

- Before You Begin
- Installation Type
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- Results

Select one or more features to install on the selected server.

Features

- .NET Framework 3.5 Features
- .NET Framework 4.5 Features (Installed)
- Background Intelligent Transfer Service (BITS)
- BitLocker Drive Encryption
- BitLocker Network Unlock
- BranchCache
- Client for NFS
- Data Center Bridging
- Enhanced Storage
- Failover Clustering
- Group Policy Management (Installed)
- Ink and Handwriting Services
- Internet Printing Client
- IP Address Management (IPAM) Server

Description

.NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.

Windows logo icon

Add Roles and Features Wizard

DESTINATION SERVER
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Hyper-V

- Before You Begin
- Installation Type
- Server Selection
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Hyper-V allows you to virtualize your server workloads by running those workloads on virtual machines. You can use virtual machines to consolidate multiple workloads on one physical server, to improve server availability, and to increase efficiency in developing and testing software.

Things to note:

- Before you install this role, you should identify which network connections on this server you want to use for setting up virtual switches.
- After you install Hyper-V, you can use Hyper-V Manager to create and configure your virtual machines.

[More information about Hyper-V](#)

< Previous Next > Install Cancel



Create Virtual Switches

DESTINATION SERVER
WIN-6NQ842FMB9T.etechn2012.com

Before You Begin

Installation Type

Server Selection

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Results

Virtual machines require virtual switches to communicate with other computers. After you install this role, you can create virtual machines and attach them to a virtual switch.

One virtual switch will be created for each network adapter you select. We recommend that you create at least one virtual switch now to provide virtual machines with connectivity to a physical network. You can add, remove, and modify your virtual switches later by using the Virtual Switch Manager.

Network adapters:

Name	Description
<input type="checkbox"/> Ethernet	Realtek PCIe GBE Family Controller
<input type="checkbox"/> Myteam	Microsoft Network Adapter Multiplexor Driver

 We recommend that you reserve one network adapter for remote access to this server. To reserve a network adapter, do not select it for use with a virtual switch.

< Previous

Next >

Install

Cancel



Virtual Machine Migration

DESTINATION SERVER
WIN-6NQ842FMB9T.etechn2012.com

- Before You Begin
- Installation Type
- Server Selection
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- Results


Hyper-V can be configured to send and receive live migrations of virtual machines on this server. Configuring Hyper-V now enables any available network on this server to be used for live migrations. If you want to dedicate specific networks for live migration, use Hyper-V settings after you install the role.

Allow this server to send and receive live migrations of virtual machines

Authentication protocol

Select the protocol you want to use to authenticate live migrations.

- Use Credential Security Support Provider (CredSSP)
This protocol is less secure than Kerberos, but does not require you to set up constrained delegation. To perform a live migration, you must be logged on to the source server.
- Use Kerberos
This protocol is more secure but requires you to set up constrained delegation in your environment to perform tasks such as live migration when managing this server remotely.

 If this server will be part of a cluster, do not enable migration now. Instead, you will configure the server for live migration, including specifying networks, when you create the cluster.

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Install

Cancel



Default Stores

DESTINATION SERVER
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Before You Begin

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Results

Hyper-V uses default locations to store virtual hard disk files and virtual machine configuration files, unless you specify different locations when you create the files. You can change these default locations now, or you can change them later by modifying Hyper-V settings.

Default location for virtual hard disk files:

C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks

Browse...

Default location for virtual machine configuration files:

C:\ProgramData\Microsoft\Windows\Hyper-V

Browse...

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Next >

Install

Cancel

Confirm installation selections

DESTINATION SERVER
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Before You Begin

Installation Type

Server Selection

Server Roles

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Hyper-V

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Default Stores

Confirmation

Results

To install the following roles, role services, or features on selected server, click Install.

 Restart the destination server automatically if required

Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.

Hyper-V

Remote Server Administration Tools

Role Administration Tools

Hyper-V Management Tools

Hyper-V Module for Windows PowerShell

Hyper-V GUI Management Tools

Export configuration settings
Specify an alternate source path

< Previous

Next >

Install

Cancel

his local server

and features

servers to manage

rver group

DNS 1


Manageability


Events

Services

Performance

BPA results

 File and Storage Services 1


 Manageability


Events

Services

Performance

BPA results

 Hyper-V Manager

 Manageability

Events

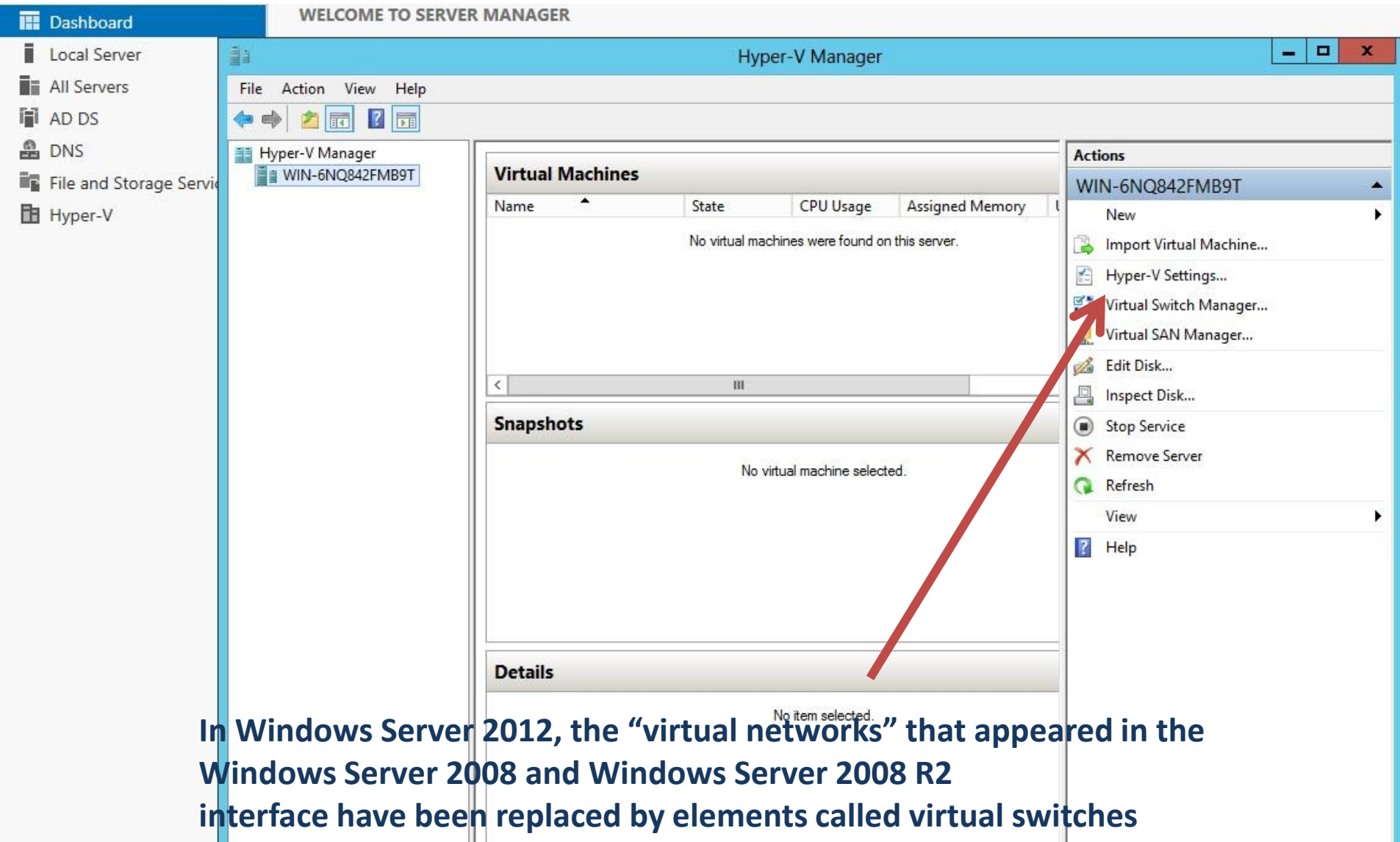
Services

Performance

BPA results

Manage Tools View Help

- Active Directory Administrative Center
- Active Directory Domains and Trusts
- Active Directory Module for Windows PowerShell
- Active Directory Sites and Services
- Active Directory Users and Computers
- ADSI Edit
- Component Services
- Computer Management
- Defragment and Optimize Drives
- Disk Cleanup
- DNS
- Event Viewer
- Group Policy Management
- Hyper-V Manager**
- iSCSI Initiator
- Local Security Policy
- ODBC Data Sources (32-bit)
- ODBC Data Sources (64-bit)
- Performance Monitor
- Resource Monitor
- Security Configuration Wizard
- Services
- System Configuration
- System Information
- Task Scheduler
- Windows Firewall with Advanced Security
- Windows Memory Diagnostic
- Windows PowerShell



In Windows Server 2012, the “virtual networks” that appeared in the Windows Server 2008 and Windows Server 2008 R2 interface have been replaced by elements called virtual switches

- Server
 - Virtual Hard Disks
C:\Users\Public\Documents\Hyper-V...
 - Virtual Machines
C:\ProgramData\Microsoft\Windo...
 - Physical GPUs
Manage RemoteFX GPUs
 - NUMA Spanning
Allow NUMA Spanning
 - Live Migrations
No Live Migrations
 - Storage Migrations
2 Simultaneous Migrations
 - Replication Configuration
Not enabled as a Replica server

- User
 - Keyboard
Use on the virtual machine
 - Mouse Release Key
CTRL +ALT +LEFT ARROW
 - Reset Check Boxes
Reset check boxes

Virtual Hard Disks

Specify the default folder to store virtual hard disk files.

C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks

Browse...

OK Cancel Apply

Virtual Switches

New virtual network switch

My Virtual Switch
Private virtual switch

Global Network Settings

MAC Address Range
00-15-5D-FE-0D-00 to 00-15-5D-F...

Create virtual switch

What type of virtual switch do you want to create?

- External
- Internal
- Private

Create Virtual Switch

Creates a virtual switch that can be used only by the virtual machines that run on this physical computer.

OK

Cancel

Apply

Virtual Switches

New virtual network switch

+ My Virtual Switch

Private virtual switch

Global Network Settings

MAC Address Range

00-15-5D-FE-0D-00 to 00-15-5D-F...

Virtual Switch Properties

Name:

My Virtual Switch

Notes:

Connection type

What do you want to connect this virtual switch to?

 External network:

Microsoft Network Adapter Multiplexor Driver

 Allow management operating system to share this network adapter Enable single-root I/O virtualization (SR-IOV) Internal network Private network

VLAN ID

 Enable virtual LAN identification for management operating system

The VLAN identifier specifies the virtual LAN that the management operating system will use for all network communications through this network adapter. This setting does not affect virtual machine networking.

Remove

i SR-IOV can only be configured when the virtual switch is created. An external virtual switch with SR-IOV enabled cannot be converted to an internal or private switch.

OK

Cancel

Apply

- Dashboard
- Local Server
- All Servers
- AD DS
- DNS
- File and Storage Serv
- Hyper-V

Hyper-v manager

File Action View Help

Hyper-V Manager
WIN-6NQ842FMB9T

Virtual Machines

- New
 - Virtual Machine...
 - Hard Disk...
 - Floppy Disk...
- Import Virtual Machine...
- Hyper-V Settings...
- Virtual Switch Manager...
- Virtual SAN Manager...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh
- View
- Help

Assigned Memory
No virtual machine selected.

Actions

- WIN-6NQ842FMB9T
 - New
 - Import Virtual Machine...
 - Hyper-V Settings...
 - Virtual Switch Manager...
 - Virtual SAN Manager...
 - Edit Disk...
 - Inspect Disk...
 - Stop Service
 - Remove Server
 - Refresh
 - View
 - Help

Details

No item selected.

Opens a cascading menu specifying objects which can be created on this server.

100%



Dashboard

- Local Server
- All Servers
- AD DS
- DNS
- File and Storage Serv
- Hyper-V

File Action View Help


Hyper-V Manager

WIN-6NQ842FMB9T

Hyper-V Manager

New Virtual Machine Wizard

Before You Begin



This wizard helps you create a virtual machine. You can use virtual machines in place of physical computers for a variety of uses. You can use this wizard to configure the virtual machine now, and you can change the configuration later using Hyper-V Manager.

To create a virtual machine, do one of the following:

- Click Finish to create a virtual machine that is configured with default values.
- Click Next to create a virtual machine with a custom configuration.

Do not show this page again

< Previous Next > Finish Cancel

- Dashboard
- Local Server
- All Servers
- AD DS
- DNS
- File and Storage Services >
- Hyper-V

WELCOME TO SERVER MANAGER

- QUICK START
- WHAT'S NEW
- LEARN MORE

ROLES AND SERVICES

Roles: 4 | Server groups: 0

- AD DS
- Manageability Tools
- Events
- Services
- Performance and Diagnostics Tools
- BPA results

New Virtual Machine Wizard

Specify Name and Location

Before You Begin

- Specify Name and Location
- Assign Memory
- Configure Networking
- Connect Virtual Hard Disk
- Installation Options
- Summary

Choose a name and location for this virtual machine.


The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.

Name:

You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.

Store the virtual machine in a different location

Location:

 If you plan to take snapshots of this virtual machine, select a location that has enough free space. Snapshots include virtual machine data and may require a large amount of space.

< Previous Next > Finish Cancel

- Dashboard
- Local Server
- All Servers
- AD DS
- DNS
- File and Storage
- Hyper-V

File Home View

Paste Cut Copy

Select Crop Resize Rotate

Clipboard Image

New Virtual Machine Wizard

Assign Memory

Before You Begin

- Specify Name and Location
- Assign Memory**
- Configure Networking
- Connect Virtual Hard Disk
- Installation Options
- Summary

Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 8 MB through 6240 MB. To improve performance, specify more than the minimum amount recommended for the operating system.

Startup memory: MB

Use Dynamic Memory for this virtual machine.

i When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.

< Previous Next > Finish Cancel

- Dashboard
- Local Server
- All Servers
- AD DS
- DNS
- File and Storage
- Hyper-V

File Home View

Paste Cut Copy

Select Crop Resize Rotate

Clipboard Image

New Virtual Machine Wizard

Configure Networking

Before You Begin

Specify Name and Location

Assign Memory

Configure Networking

Connect Virtual Hard Disk

Installation Options

Summary

Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.

Connection:

< Previous Next > Finish Cancel

- Dashboard
- Local Server
- All Servers
- AD DS
- DNS
- File and Storage
- Hyper-V

File Home View

Paste Cut Copy

Select Crop Resize Rotate

Clipboard Image

New Virtual Machine Wizard

Configure Networking

Before You Begin

Specify Name and Location

Assign Memory

Configure Networking

Connect Virtual Hard Disk

Installation Options

Summary

Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.

Connection:

< Previous Next > Finish Cancel

Dashboard

- Local Server
- All Servers
- AD DS
- DNS
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- Hyper-V

File Home View

Paste Cut Copy

Select Crop Resize Rotate

Clipboard Image

New Virtual Machine Wizard

Connect Virtual Hard Disk

Before You Begin

- Specify Name and Location
- Assign Memory
- Configure Networking
- Connect Virtual Hard Disk**
- Installation Options
- Summary

A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine's properties.

Create a virtual hard disk

Use this option to create a dynamically expanding virtual hard disk with the default format (VHDX).

Name:

Location:

Size: GB (Maximum: 64 TB)

Use an existing virtual hard disk

Use this option to attach an existing virtual hard disk, either VHD or VHDX format.

Location:

Attach a virtual hard disk later

Use this option to skip this step now and attach an existing virtual hard disk later.

< Previous Next > Finish Cancel

Dashboard

- Local Server
- All Servers
- AD DS
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File Home View

Paste Cut Copy

Select Crop Resize Rotate

Clipboard Image

New Virtual Machine Wizard

Installation Options

Before You Begin

- Specify Name and Location
- Assign Memory
- Configure Networking
- Connect Virtual Hard Disk
- Installation Options**
- Summary

You can install an operating system now if you have access to the setup media, or you can install it later.

- Install an operating system later
- Install an operating system from a boot CD/DVD-ROM

Media

Physical CD/DVD drive: [dropdown]


Image file (.iso): [text box]

- Install an operating system from a boot floppy disk

Media

Virtual floppy disk (.vfd): [text box]














- Install an operating system from a network-based installation server

 Your network adapter is disconnected. To perform a network-based installation, return to the Configure Networking page and connect the network adapter.






< Previous Next > Finish Cancel

New Virtual Machine

Hardware

-  Add Hardware
-  BIOS
Boot from CD
-  Memory
512 MB
-  Processor
1 Virtual processor
-  IDE Controller 0
 -  Hard Drive
New Virtual Machine.vhdx
-  IDE Controller 1
 -  DVD Drive
None
-  SCSI Controller
-  Network Adapter
Not connected
-  COM 1
None
-  COM 2
None
-  Diskette Drive
None

Management

-  Name
New Virtual Machine
-  Integration Services
All services offered
-  Snapshot File Location
C:\ProgramData\Microsoft\Win...
-  Smart Paging File Location
C:\ProgramData\Microsoft\Win...
-  Automatic Start Action
Restart if previously running

Add Hardware

You can use this setting to add devices to your virtual machine. Select the devices you want to add and click the Add button.

- SCSI Controller**
- Network Adapter
- Legacy Network Adapter
- Fibre Channel Adapter
- RemoteFX 3D Video Adapter

Add

You can increase the storage available to a virtual machine by adding a SCSI controller and attaching virtual hard disks to it. A SCSI controller requires integration services in the guest operating system. Do not attach a system disk to a SCSI controller. System disks must be attached to an IDE controller.

OK

Cancel

Apply



New Virtual Hard Disk Wizard



Before You Begin

Before You Begin

- Choose Disk Format
- Choose Disk Type
- Specify Name and Location
- Configure Disk
- Summary

This wizard helps you create a new virtual hard disk. Virtual hard disks provide storage for virtual machines and are stored on physical media as .vhd or .vhdx files.

Do not show this page again


Before You Begin



- Before You Begin
- Choose Disk Format
- Choose Disk Type
- Specify Name and Location
- Configure Disk
- Summary

New Virtual Hard Disk Wizard

Choose Disk Format



Before You Begin

Choose Disk Format

Choose Disk Type

Specify Name and Location

Configure Disk

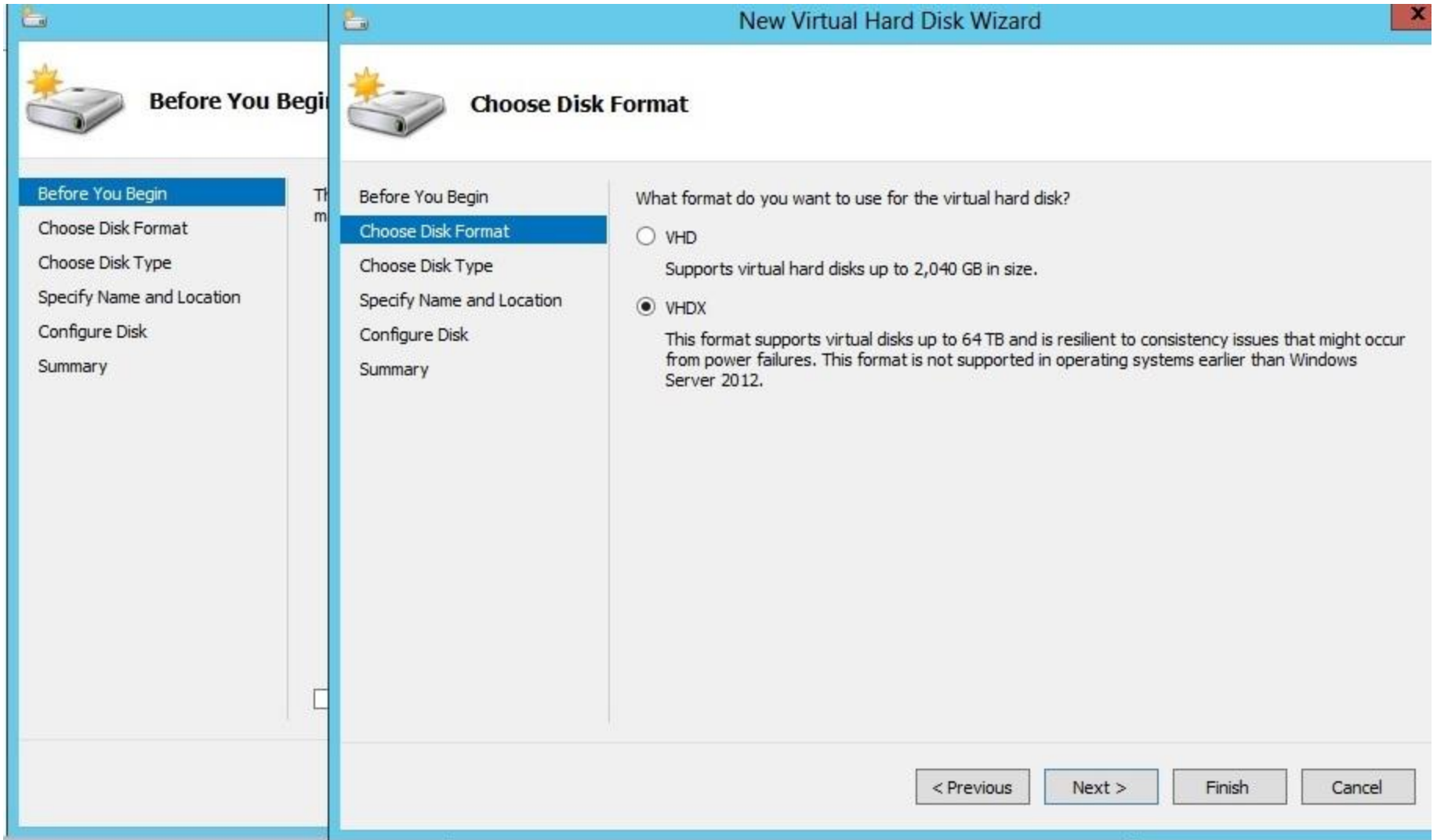
Summary

What format do you want to use for the virtual hard disk?

VHD
Supports virtual hard disks up to 2,040 GB in size.

VHDX
This format supports virtual disks up to 64 TB and is resilient to consistency issues that might occur from power failures. This format is not supported in operating systems earlier than Windows Server 2012.

< Previous Next > Finish Cancel



New Virtual Hard Disk Wizard

Hyper-V Manager
WIN-6NQ842FMB9T



Specify Name and Location

- Before You Begin
- Choose Disk Format
- Choose Disk Type
- Specify Name and Location**
- Configure Disk
- Summary

Specify the name and location of the virtual hard disk file.

Name:

Location:

Browse...

< Previous Next > Finish Cancel

**Configure Disk**

Before You Begin

Choose Disk Format

Choose Disk Type

Specify Name and Location

Configure Disk

Summary

You can create a blank virtual hard disk or copy the contents of an existing physical disk.

Create a new blank virtual hard disk

Size: GB (Maximum: 64 TB)

Copy the contents of the specified physical disk:

Physical Hard Disk	Size
\\.\PHYSICALDRIVE0	465 GB

Copy the contents of the specified virtual hard disk

Path:

< Previous

Next >

Finish

Cancel

New Virtual Hard Disk Wizard



Completing the New Virtual Hard Disk Wizard

Before You Begin

Choose Disk Format

Choose Disk Type

Specify Name and Location

Configure Disk

Summary

You have successfully completed the New Virtual Hard Disk Wizard. You are about to create the following virtual hard disk.

Description:

Format: VHDX
Type: dynamically expanding
Name: New Virtual Hard Disk.vhdx
Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks
Size: 127 GB

To create the virtual hard disk and close this wizard, click Finish.

< Previous

Next >

Finish

Cancel