

### WINDOWS SERVER HYPER-V INSTALL MANAGE MAINTAIN AND TROUBLESHOOT

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# **Installing Hyper-V**

### Installing Hyper-V as a Role in Windows Server

Pre-Installation Requirements

1. From the Server Manager Dashboard go to Manage, and then click Add Roles and Features



2. At **Before You Begin** page, Click **Next** 



3. At Installation Type page, Click Next



4. On the Server Selection page, Click Next or select the server you will install Hyper-V on

<u>الم</u>	Add F	Roles and Features V	Vizard	_ 0 X
Select destination	on server			DESTINATION SERVER WinServ2012
Before You Begin Installation Type Server Selection Server Roles Features	Select a server or a vi Select a server fro Select a virtual has Server Pool Filter	rtual hard disk on which m the server pool rd disk	to install roles and features.	]
Confirmation Results	Name	IP Address	Operating System	
	WinServ2012 1 Computer(s) found This page shows serve	192.168.191.144	Microsoft Windows Server 201	2 R2 Datacenter
	Add Servers comman collection is still incor	d in Server Manager. Off mplete are not shown.	vious Next >	Install Cancel

5. On the Server Roles page, Select Hyper-V

elect server ro	les	DESTINATION SERV WinServ2/
Before You Begin Installation Type	Select one or more roles to install on the selected server.	Description
Server Selection	Active Directory Certificate Services	Active Directory Certificate Service
Server Koles Features Confirmation Results	<ul> <li>Active Directory Domain Services</li> <li>Active Directory Federation Services</li> <li>Active Directory Lightweight Directory Services</li> <li>Active Directory Rights Management Services</li> <li>Application Server</li> <li>DHCP Server</li> <li>DNS Server</li> <li>Fax Server</li> <li>File and Storage Services (1 of 12 installed)</li> <li>Wetwork Policy and Access Services</li> <li>Print and Document Services</li> </ul>	certification authorities and relate role services that allow you to issu and manage certificates used in a variety of applications.
	Remote Desktop Services	~

6. Click Add Features when the wizard comes up

	Add Roles and Features Wizard	winserv2012
Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	Add features that are required for Hyper-V? The following tools are required to manage this feature, but do not have to be installed on the same server. A Remote Server Administration Tools A Role Administration Tools A Hyper-V Management Tools [Tools] Hyper-V Module for Windows PowerShell [Tools] Hyper-V GUI Management Tools	tion provides the services that use to create and manage hachines and their resources ual machine is a virtualized er system that operates in an execution environment. Thi pu to run multiple operating simultaneously.
	Include management tools (if applicable)	

- 7. On the Features page, Click Next
- 8. On the Hyper-V page, Click Next



9. On the **Virtual Switches** page, Click on the NIC you will use to manage your Virtual Machines if you have multiple NICs

à	Add Roles	and Features Wizard
Create Virtual S	witches	DESTINATION SERVER WinServ2012
Before You Begin Installation Type Server Selection Server Roles Features	Virtual machines require vi role, you can create virtual One virtual switch will be c at least one virtual switch r can add, remove, and mod Network adapters:	rtual switches to communicate with other computers. After you install this machines and attach them to a virtual switch. reated for each network adapter you select. We recommend that you create tow to provide virtual machines with connectivity to a physical network. You lify your virtual switches later by using the Virtual Switch Manager.
Hyper-V	Name	Description
Virtual Switches Migration Default Stores Confirmation Results	<ul> <li>Ethernet0</li> <li>We recommend that y network adapter, do n</li> </ul>	Intel(R) 82574L Gigabit Network Connection ou reserve one network adapter for remote access to this server. To reserve a ot select it for use with a virtual switch.
		< Previous Next > Install Cancel

10. On Virtual Machine Migration page, Click Next



11. On **Default Stores** page, Click **Browse** and select the folder under the Drive you created for the Virtual Hard Disk and Virtual Machine Configuration Files then click **Next** 

Defensive Center	Hyper-V use	Browse For Folder	×	hine configuration files.
Installation Type Server Selection	unless you s now, or you Default loca	4 📭 This PC		nge these default location
Features Hyper-V Virtual Switches Migration Default Stores Confirmation Results	C:\Users\Pu Default loca C:\Program		HE V	Browse



12. Check the Restart destination server.... And choose **Yes**. Verify settings then click, **Install**. The Role will install and the server will automatically restart.

2	Add Roles and Features Wizard	_ □	x
Confirm installation	on selections	TINATION SERVEI WinServ201	R 2
Refore You Regin	To install the following roles, role services, or features on selected server, click Install.		
Installation Type	Restart the destination server automatically if required		
Server Selection	Optional features (such as administration tools) might be displayed on this page becau	se they have	
Server Roles	been selected automatically. If you do not want to install these optional features, click their check boxes.	Previous to clea	ir .
Features	Huner-V		1
Hyper-V Virtual Switches	F Add Boles and Features Wittand X	1	
Migration	Add Roles and Features Wizard	_	
Default Stores Confirmation	If a restart is required, this server restarts automatically, without additional notifications. Do you want to allow automatic restarts?		
Results	Yes No		
	Export configuration settings Specify an alternate source path		
	< Previous Next > Install	Cancel	
	Working on features 56% complete Don't turn off your computer		
	Windows Server 2012 R2		

13. Once the server restarts and you login, the Installation progress will come up verifying Hyper-V has successfully installed. Click **Close** 

<b>b</b>	Add Roles and Features Wizard	
Results	Add Roles and Features Wizard TCSS View installation progress Feature installation Installation succeeded on WinServ2012. Hyper-V Remote Server Administration Tools Role Administration Tools Hyper-V Management Tools	DESTINATION SERVER WinServ2012
	Role Administration Tools Hyper-V Management Tools Hyper-V Module for Windows PowerShell Hyper-V GUI Management Tools You can close this wizard without interrupting running tasks. View tas page again by clicking Notifications in the command bar, and then Ta	k progress or open this ask Details.
	< Previous Next >	Close Cancel

14. Go to **Tools** and you will **Hyper-V Manager**. Click on **Hyper-V Manager** to bring up the Hyper-V Management Console





#### You will see the Hyper-V Manager. Now we will add our Virtual Machines to our Hyper-V Management Console

## **Manage Hyper-V**

### Installing Virtual Machines in Hyper-V

1. Bring up **Hyper-V Manager**. Under Actions Click **New** and select **Virtual Machine** or Right Click on your Hyper-V Host and Select **New** > **Virtual Machine** 

Hyper-V Ma	anager				
WINS	New	+	Virtual Machine		
	Import Virtual Machine		Hard Disk	State	C
	Hyper-V Settings		Floppy Disk		
	Virtual Switch Manager Virtual SAN Manager	0.7			
	Edit Disk Inspect Disk				
	Stop Service Remove Server Refresh				
	View	•			
	Help				
			Checkpoints		

2. Click Next on Before You Begin.

3. On Specify Name and Location page, Name your new Virtual Machine. Click Next Do not change the Location as this was configured during the setup

<b>3</b> .	New Virtual Machine Wizard	x
Specify Nan	ne and Location	
Before You Begin Specify Name and Location Specify Generation Assign Memory	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 easi identify this virtual machine, such as the name of the guest operating system or workload.	ily
Configure Networking Connect Virtual Hard Disk Installation Options	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  Constitution:  V:/Config Files  Repute	
Summary	If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.	<u>.</u>
	< Previous Next > Finish Cancel	

4. On Specify Generation Page, Click Next.



5. On **Assign Memory** page, assign the amount of memory to allocate to this virtual machine.

a.	New Virtual Machine Wizard
Assign Mem	iory
Before You Begin Specify Name and Location Specify Generation	Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 856 MB. To improve performance, specify more than the minimum amount recommended for the operating system. Startup memory: 856 MB
Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	<ul> <li>Use Dynamic Memory for this virtual machine.</li> <li>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.</li> </ul>
	< Previous Next > Finish Cancel

6. On Configure Networking page, select the NIC card from the list. Click Next

8	New Virtual Machine Wizard	x
Configure I	Networking	
Before You Begin Specify Name and Location Specify Generation 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 virtual switch, or it can remain disconnected. Connection: Not Connected Not Connected Intel(R) 82574L Giaabit Network Connection - Virtual Switch	a
	< Previous Next > Finish Cancel	

7. On Create Virtual Hard Disk page, click Next

<b>3</b> 6	New Virtual Machine Wizard	x
Connect Vir	tual Hard Disk	
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking	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 VHDX dynamically expanding virtual hard disk.     Name: SCCM what	
Connect Virtual Hard Disk Installation Options Summary	Location: V:\Virtual Machines\ Size: 100 GB (Maximum: 64 TB)	
	O Use an existing virtual hard disk Use this option to attach an existing virtual hard disk, either VHD or VHDX format. Location: V:\Virtual Machines\ Browse	
	<ul> <li>Attach a virtual hard disk later</li> <li>Use this option to skip this step now and attach an existing virtual hard disk later.</li> </ul>	
	< Previous Next > Finish Cance	1

8. On Installation Operating System Options page, click Next

	New Virtual Machine Wizard	x
Installation	Options	
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk	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 bootable CD/DVD-ROM  Media  Physical CD/DVD drive: D:	
Installation Options Summary	Install an operating system from a bootable floppy disk     Media     Virtual floppy disk (.vfd):     Install an operating system from a network-based installation server	]
	< Previous Next > Finish Cancel	

9. **Confirm configuration** and click **Finish**. The wizard will run through the installation and create the virtual disk.

38	New Virtual Machine Wizard
Completing	the New Virtual Machine Wizard
Before You Begin Specify Name and Location Specify Generation	You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine. Description:
Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	Name:       SCCM         Generation:       Generation 1         Memory:       856 MB         Network:       Intel(R) 82574L Gigabit Network Connection - Virtual Switch         Hard Disk:       V: \Virtual Machines\SCCM.vhdx (VHDX, dynamically expanding)         Operating System:       Will be installed at a later time         To create the virtual machine and close the wizard, click Finish.
	< Previous Next > Finish Cancel

10. Click on the **Hyper-V server** and you will see the new **Virtual Machine** you just created.



Name 📩	State	CPU Usage	Assigned Memory	Uptime	Status
SCCM	0#	- 11	-		
	Connect				
	Settings				
	Start				
	Checkpoir	nt			
	Move				
	Export				
	Rename				
	Delete				
	Enable Re	plicatio <mark>n</mark>			
	Help				

11. Right click on your VM and click on settings

12. Under **IDE Controller 1**, select **DVD Drive**. Select either **Image File** or **Physical drive**. Click **OK** to close

SCCM	~	
<ul> <li>★ Hardware</li> <li>Madd Hardware</li> <li>BIOS Boot from CD</li> <li>■ Memory 512 MB</li> <li>■ Processor 1 Virtual processor</li> <li>■ IDE Controller 0</li> <li>■ UDE Controller 0</li> </ul>	^	DVD Drive      Select the controller and location on the controller to attach the CD/DVD drive.      Controller:     Location:      IDE Controller 1     V     O (in use)     V      Media     Specify the media to use with your virtual CD/DVD drive.     None
SCSI Controller 1     DVD Drive     Physical drive D:     SCSI Controller     Network Adapter     Intel(R) 82574L Gigabit Networ.     COM 1     None     COM 2     None     Diskette Drive		Image file:     Browse      Physical CD/DVD drive:     Drive 'D:'       To remove the virtual CD/DVD drive from this virtual machine, dick Remove.     Remove
None None None None None None None None		

Name 📩	State	CPU Usage	Assigned Memory	Uptime	Status
SCCM	0#		_		
	Connec	t			
	Settings				
	Start				
	Checkp	oint 🛛			
	Move				
	Export				
	Rename	h			
	Delete				
	Enable	Replication			
	Help				

13. **Right click** on your VM and click on **Connect** 

14. When the console screen pops up, click on the Green Start Button to power on the VM



#### You will be able to install the operation system normally



## **Troubleshooting Hyper-V**

#### Tips for maintaining virtual machines with Hyper-V Manager

#### Backing up Hyper-V and VM's using Windows Server Backup

- 1. Make sure you have added the Windows Server Backup Feature before.
- 2. Open Windows Server Backup. Under Actions choose Backup Schedule

]		_ 0 ×
	Ac	tions
	Lo	ocal Backup 🔺
	t.	Backup Schedule
	1	Backup Once
гопе-ите васкир.	1	Recover
		Configure Performance Sett
		View 🕨
	?	Help
All De chouse	1	
Ан раскиря		
Total backups: 0 copies		
Latest copy: -		

3. On Getting Started page, click Next



4. On Select **Backup Configuration** page, click on **Custom** and click **Next** 



5. On Select Items for Backup page, click on Add Items. Select the items you wish to backup and click OK. Click Next

20	Backup Schedule Wizard	x
Select Items	; for Backup	
Getting Started Select Backup Configurat	Select the items that you want to back up. Selecting bare metal recovery will provide you with the most options if you need to perform a recovery.	e
Select Items for Backup Specify Backup Time Specify Destination Type Confirmation Summary	Name •	>
	Advanced Settings           < Previous         Next >         Finish         Cancel	



<b>F</b> <sup>⊕</sup>	Backup Schedule Wizard
Select Item	s for Backup
Getting Started Select Backup Configurat Specify Backup Time Specify Destination Type Confirmation Summary	Select the items that you want to back up. Selecting bare metal recovery will provide you with the most options if you need to perform a recovery.

6. On **Specify Backup Time** page, select the specified time you want the backup to run. Click **Next** 

٤.	Backup Schedule Wizard
Specify Bac	kup Time
Getting Started Select Backup Configurat Select Items for Backup Specify Backup Time Specify Destination Type	How often and when do you want to run backups? <ul> <li>Once a day Select time of day: 9:00 PM</li> <li>More than once a day Click an available time and then click Add to add it to the backup schedule.</li> </ul>
Confirmation Summary	Available time:     Scheduled time:       12:00 AM     Image: Comparison of the second secon
	< Previous Next > Finish Cancel

7. On **Specify Destination Type** page, choose where you want to store the backup and click **Next** 

bo Backup Schedule Wizard				
Specify Des	tination Type			
Getting Started Select Backup Configurat Select Items for Backup Specify Backup Time Specify Destination Type Select Destination Volume Confirmation Summary	<ul> <li>Where do you want to store the backups?</li> <li>Back up to a hard disk that is dedicated for backups (recommended) Choose this option for the safest way to store backups. The hard disk that you use will be formatted and then dedicated to only store backups. The hard disk that you use the backup to a volume</li> <li>Back up to a volume and the volume may be reduced by up to 200 percent while it is used to store backups. We recommend that you do not store other server data on the same volume.</li> <li>Back up to a shared network folder</li> <li>Choose this option if you do not want to store backups locally on the server. Note that you will only have one backup at a time because when you create a new backup it overwrites the previous backup.</li> </ul>			
	< Previous Next > Finish Cancel			

8. On the next page, click **Add** to add either the **Destination Volume**, **Disk**, or **Remote Share Folder** 

Volume	Disk	Capacity	Free Space
Virtual Disk (V:)	VMware, VMware Virtual	100.00 GB	77.30 GB

9. Verify your settings and click Finish

10	Backup Schedule Wizard
Confirmatio	on
Modify Scheduled Backu Select Backup Configurat Select Items for Backup Specify Backup Time Specify Destination Type Keep or Change Backup	You are about to create the following backup schedule. Backup times: 9:00 PM Files excluded: None Advanced option: VSS Copy Backup Backup destinations Name Size Used Space Virtual Disk (V:) 100.00 GB 19.72 GB
Summary	Backup items       Name       Host Component       SCCM(Online)
	< Previous Next > Finish Cancel

10. Once your backup has been successfully created, click Close

