Practice -1 - Installing Windows Server 2022

Windows System Administration

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Task:

Installing and Configuring Windows Server:
- Set up a virtualized environment using Hyper-V or VirtualBox
- Install and configure Windows Server

This practice lesson is designed to provide you with detailed instructions for installing Windows Server 2022. These step-by-step instructions, illustrated with easy-to-understand graphics, explain and show you how to master the installation of Windows Server 2022. With the guidance provided by this easy-to-follow and you will quickly learn the installation process without any obstacles.

Technical requirements for Windows Server 2022

Technical requirements

To complete the hands-on lab for this assignment you will need the following equipment:

- A PC with Windows 11 Pro, at least 16 GB of RAM, 1 TB of HDD, and access to the internet
- A virtual machine with Windows Server 2022 Standard or Datacenter (Desktop Experience), at least 4 GB of RAM, 100 GB of HDD, and access to the internet

- Microsoft has a free trial for Windows servers with a 180-day free trial.

Download Windows Server 2022

Go to Microsoft official web-site: https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2022
Register yourself to access Download portla

Evaluate Windows Server 2022

Windows Server 2022 introduces advanced multi-layer security, hybrid capabilities with Azure and a flexible application platform. Run business-critical workloads with Windows Server 2022:

- Apply advanced multi-layer protection against threats with secured-core server.
- Run SQL Server with confidence using 48 TB of memory, 64 sockets and 2048 logical cores.
- Use Windows Admin Centre for improved VM management, enhanced event viewer and to connect to Azure through Azure Arc.

This new release also includes significant improvements to Windows containers, such as smaller image sizes for faster download, simplified network policy implementation and containerisation tools for .NET applications.

Learn more about the features of Windows Server 2022.

Register for your free trial today

Complete the form below.

* First name

* Last name

* Email

* Company name

* Country/Region

Select...

* Company size

Company size

* Job role

Download Windows Server 2022

Go to Microsoft official web-site: https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2022
And click "Download the ISO" and in column English (United States) start to download "ISO downloads 64-bit edition"

Windows Server 2022

Overview   Get started for free   Description   Prerequisites   Resources   Supporting products

Overview

In addition to your trial experience of Windows Server 2022, you can more easily add and manage languages and Features on Demand with the new Languages and Optional Features ISO. Download this ISO.

This ISO is only available on Windows Server 2022 and combines the previously separate Features on Demand and Language Packs ISOs, and can be used as a FOD and Language pack repository. To learn about Features on Demand, see Features on Demand. To learn about adding languages, see Add Languages.

Get started for free

Please select your evaluation experience:

Try Windows Server on Azure ›   Create a Virtual Machine in Azure ›
Download the ISO ›   Download the VHD ›

Microsoft | **Evaluation Center**   Windows ⌄   Windows Server ⌄   SQL Server ⌄   System Center ⌄   Microsoft Security ⌄   Additional products ⌄   All Microsoft ⌄

Please select your Windows Server 2022 download

	ISO downloads 64-bit edition	VHD download 64-bit edition	Try on Azure	Create a VM in Azure
English (United States)	ISO downloads 64-bit edition ›	VHD download 64-bit edition ›	Learn more ›	Learn more ›
Chinese (Simplified)	ISO downloads 64-bit edition ›			

ISO file

SERVER_EVAL_x64FRE_en-us.iso	01-Apr-23 14:19	Disc Image File	4,925,874 KB

Set up a virtualized environment using Hyper-V

The Hyper-V role in Windows Server lets you create a virtualized computing environment where you can create and manage virtual machines. You can run multiple operating systems on one physical computer and isolate the operating systems from each other. With this technology, you can improve the efficiency of your computing resources and free up your hardware resources.

The following is a list of hardware resources that the host needs to run VMs:
- Processor. Ensure the host has sufficient processor cores to support the VMs you plan to run.
- Memory. Ensure there's enough memory in the host to support the number of VMs you intend to run.
- Storage. Ensure your host has enough storage for the virtual hard disks (VHDs) used by your VMs. The storage subsystem also requires high throughput to support multiple VMs concurrently accessing the storage.
- Network. The Hyper-V host must allocate sufficient network capacity to each VM. In some cases, you might need to allocate different network adapters in the host for dedicated purposes.

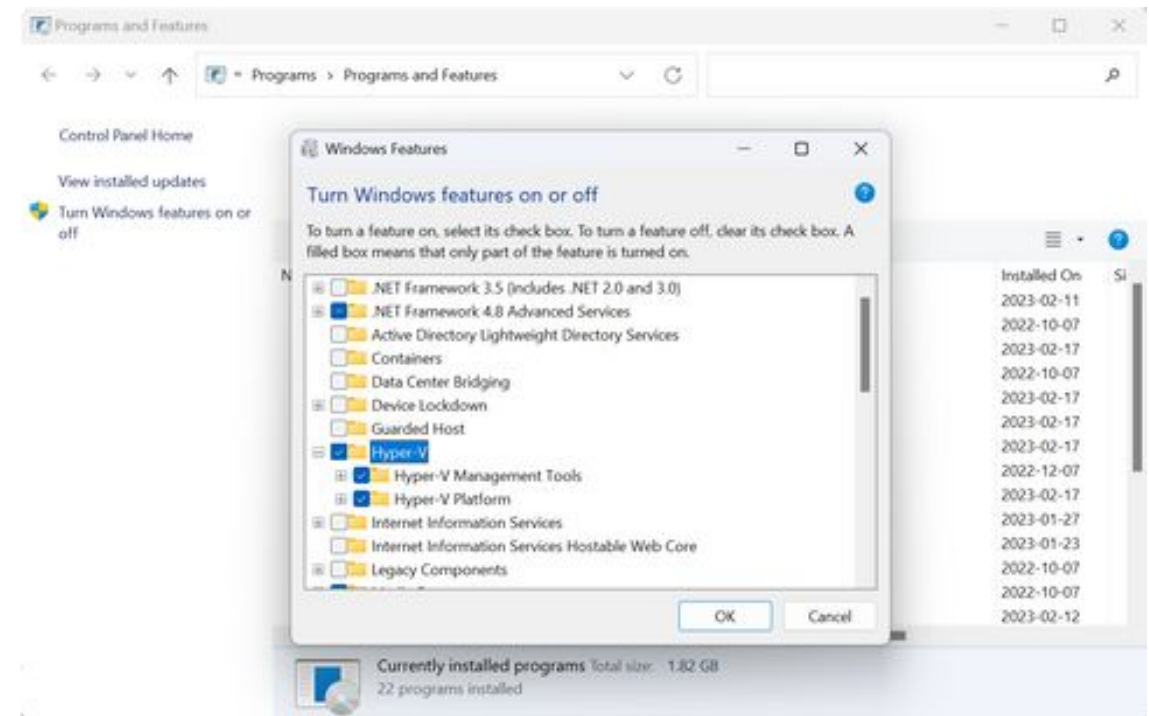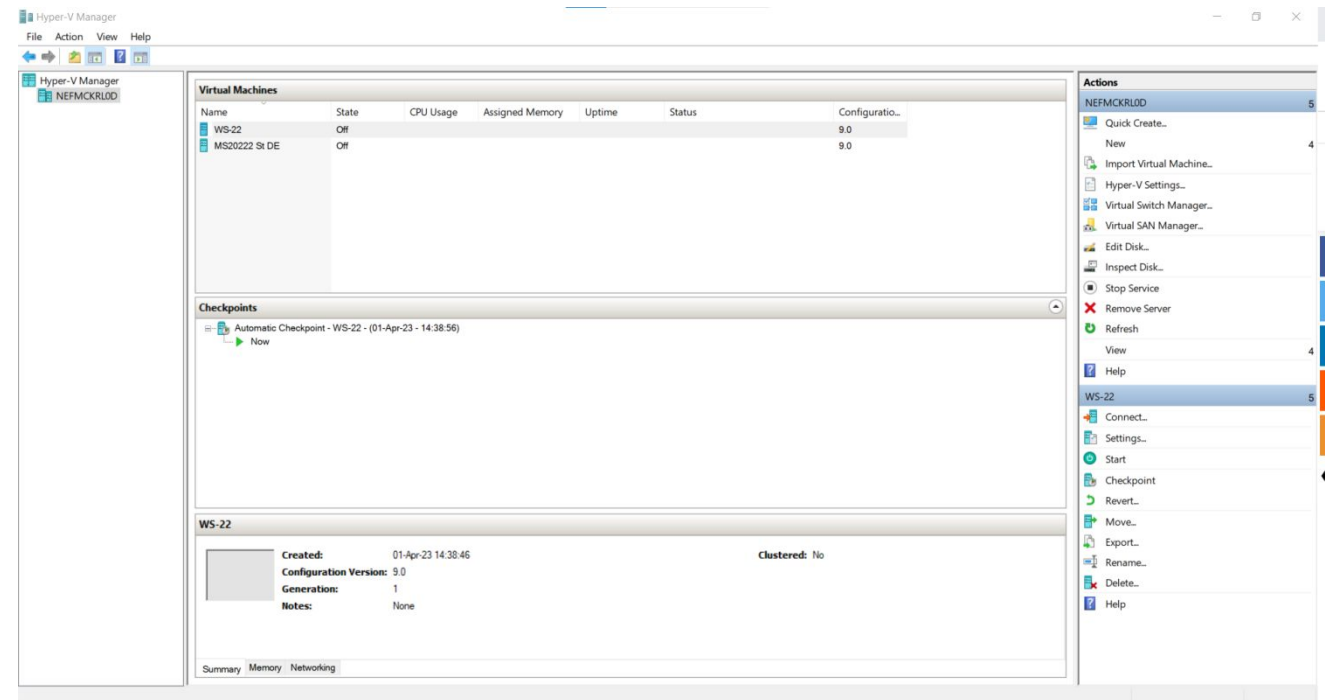# Set up a virtualized environment using Hyper-V

Step-By-Step guide will show you how to enable Hyper-V on your Windows 10/11 device

Step 1: Check if your system is compatible
Before you can enable Hyper-V on your Windows 11 machine, you
need to make sure that your system is compatible. Here are the
system requirements for Hyper-V on Windows 11:
- [Windows 11 Pro or Enterprise 64-bit Operating System](#)
- A 64-bit processor with [Second Level Address Translation](#) (SLAT)
- A minimum of 4 GB of RAM
- BIOS-level hardware virtualization support

To check if your system is compatible, follow these steps:
1. Press the **Windows key** + **R** to open the Run dialog box.
2. Type *msinfo32* and press **Enter**.
3. In the System Information window, scroll down to the "System
   Summary" section and look for the **Hyper-V Requirements** line. If it
   says "Yes", then your system is compatible.

Set up a virtualized environment using Hyper-V

Step-By-Step guide will show you how to enable Hyper-V on your Windows 10/11 device

Step 2: Enable Hyper-V on Windows 11
Once you have confirmed that your system is compatible, you can proceed to enable Hyper-V on your Windows 11 machine. Here's how:

1. Press the **Windows key** + **R** to open the Run dialog box.
2. Type *appwiz.cpl* and press **Enter**.
3. In the Programs and Features window, select **Turn Windows features on or off** in the left-hand pane.
4. In the Windows Features window, scroll down to **Hyper-V** and check the box next to it.
5. Click on **OK** and wait for the installation process to complete.
6. Once the installation is complete, click on **Restart Now** to restart your computer.

Set up a virtualized environment using Hyper-V

Step-By-Step guide will show you how to enable Hyper-V on your Windows 10/11 device

Step 3: Run Hyper-V Manager

Interface of Hyper-V Manager

Set up a virtualized environment using Hyper-V

Interface of Hyper-V Manager
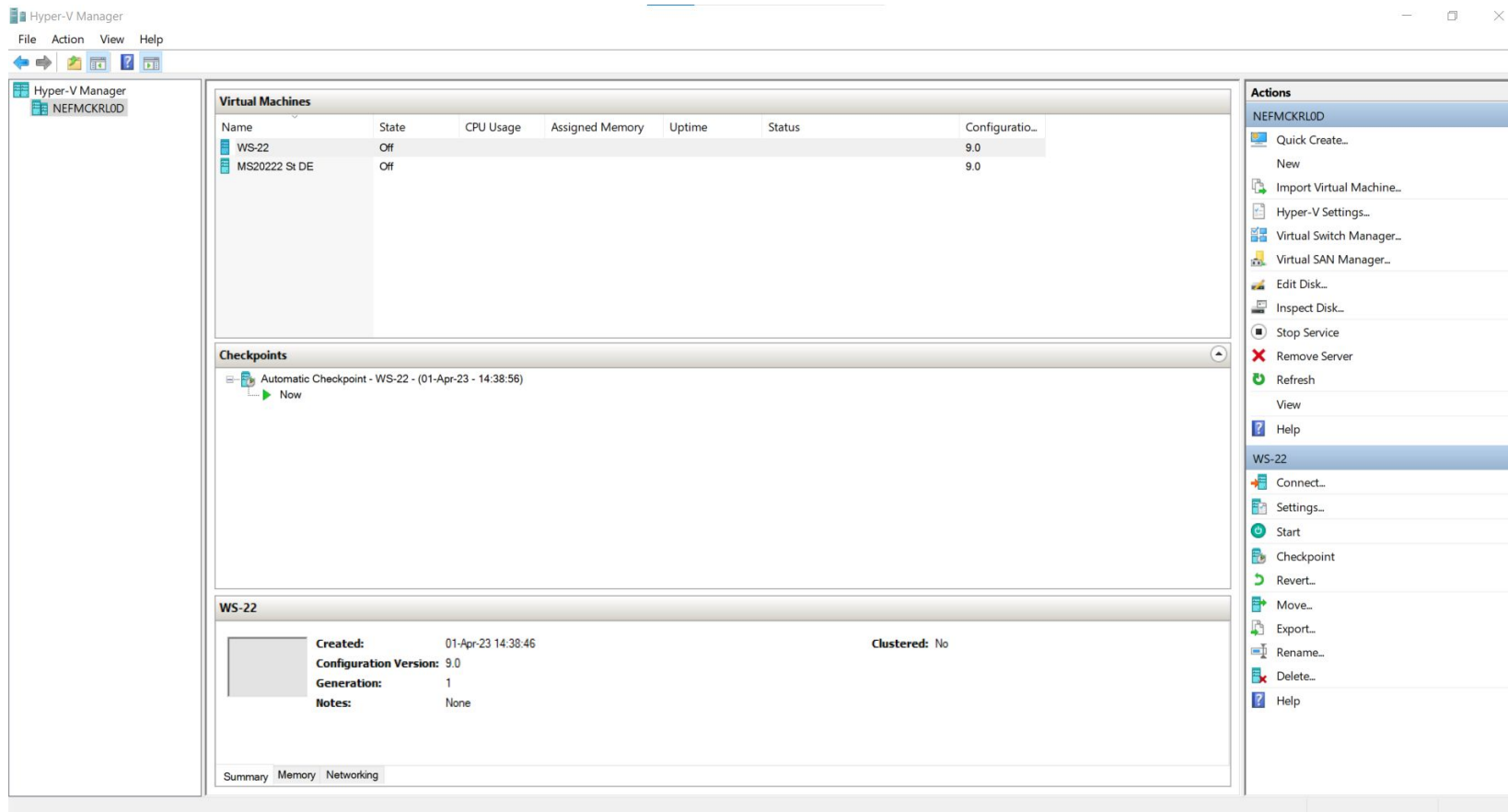
In the left pane, you can see the name of a Hyper-V host. In the right pane, you can see the menu enlisting all the configuration options available for a Hyper-V host as well as VM. Three sub-panes in the center (**Virtual Machines, Checkpoints,** and **Details**) contain the main information about the VMs running on a host.

Create a virtual machine using Hyper-V

Hyper-V Manager

1. Open **Hyper-V Manager**.
2. From the **Action** pane, click **New**, and then click **Virtual Machine**.
3. From the **New Virtual Machine Wizard**, click **Next**.
4. Make the appropriate choices for your virtual machine on each of the pages.
5. After verifying your choices in the **Summary** page, click **Finish**.
6. In Hyper-V Manager, right-click the virtual machine and select **connect**.
7. In the Virtual Machine Connection window, select **Action** > **Start**.

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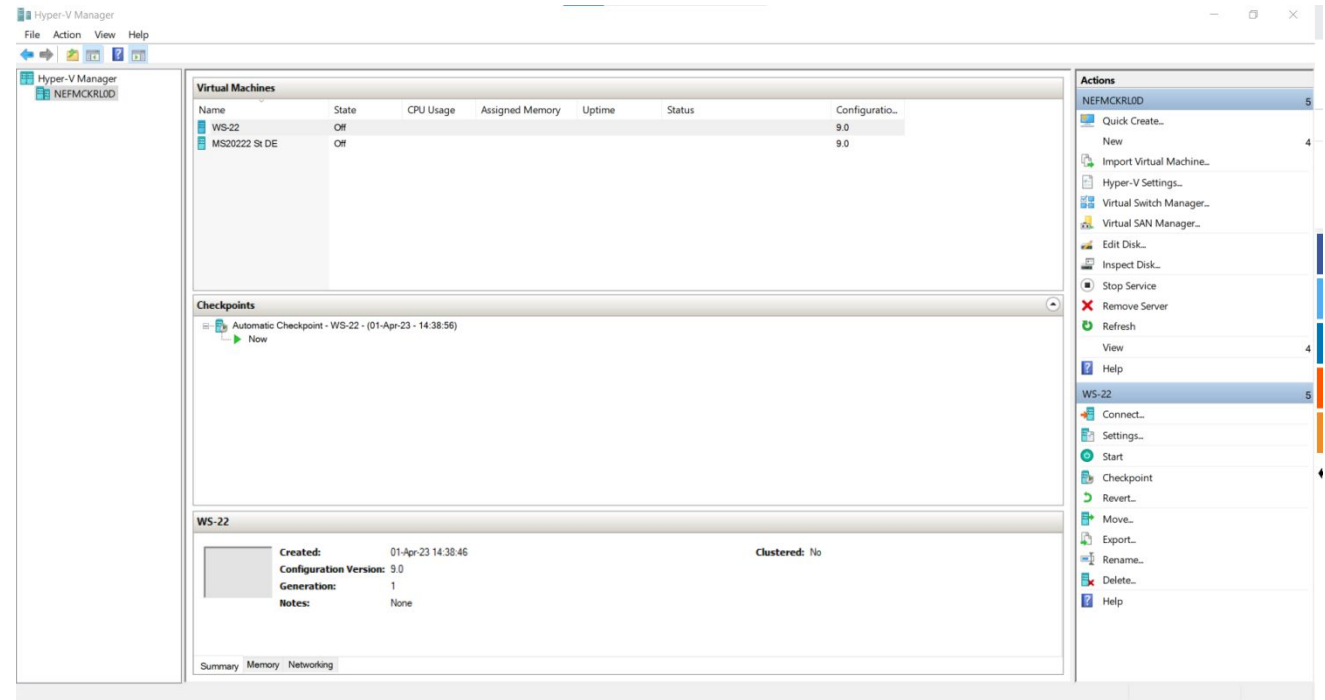
Create a virtual machine using Hyper-V

Hyper-V Manager

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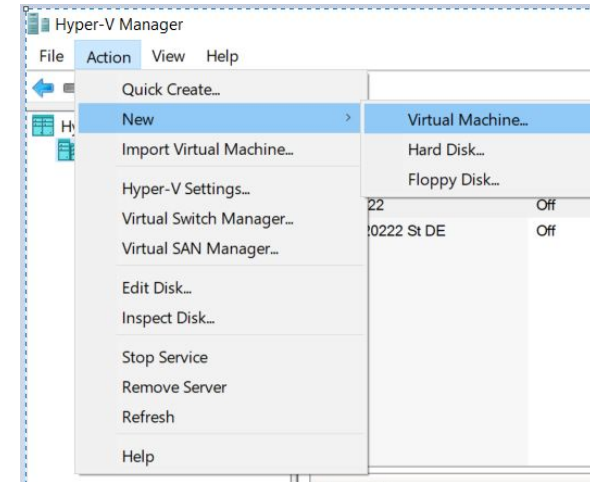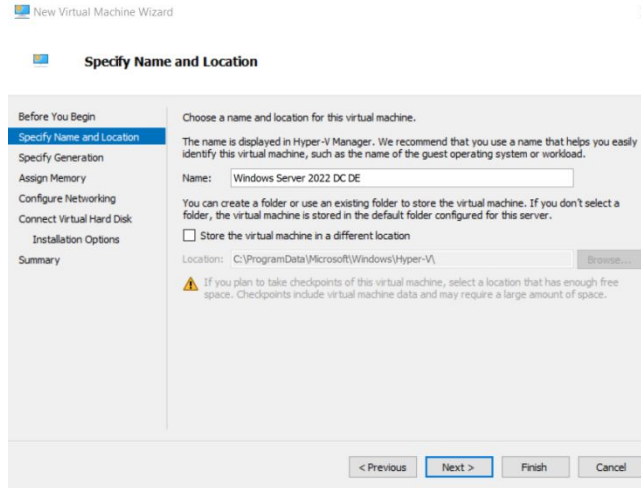
3 From the **New Virtual Machine Wizard**, click **Next**.
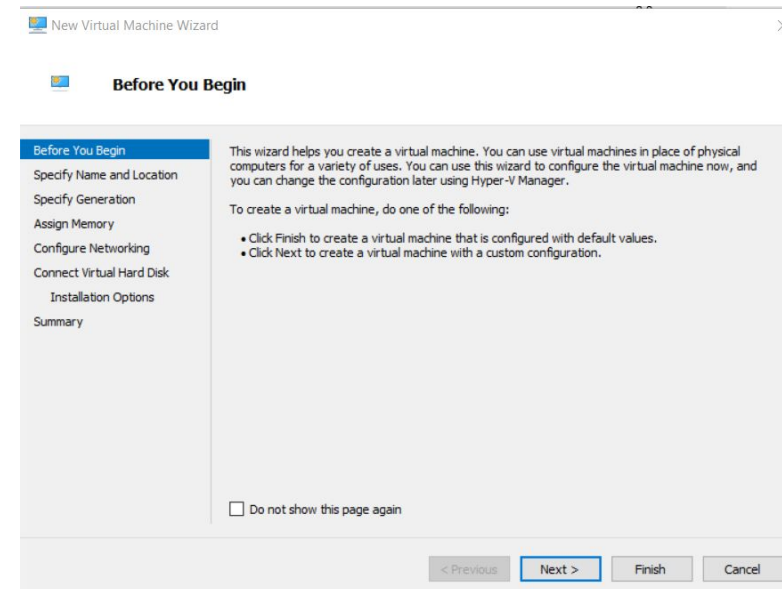
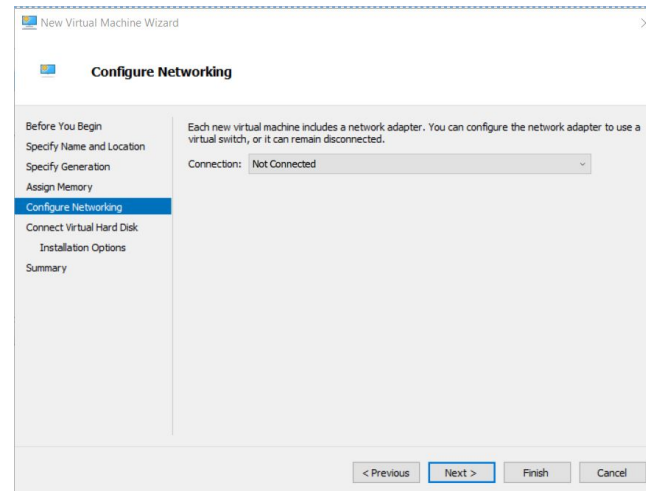# Create a virtual machine using Hyper-V
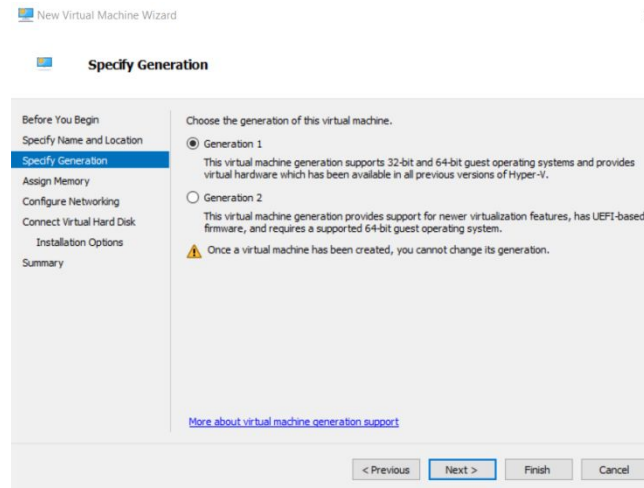
4 Make the appropriate choices for your virtual machine on each of the pages.

- Specify Name and Location

- Specify Generation

Create a virtual machine using Hyper-V

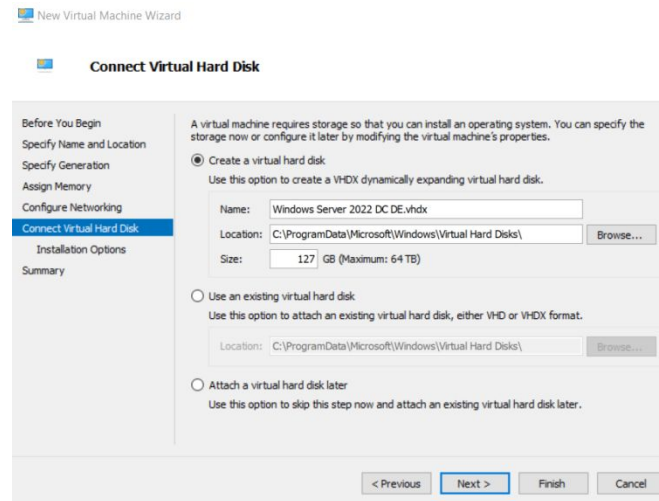4 Make the appropriate choices for your virtual machine on each of the pages.

- Assign Memory
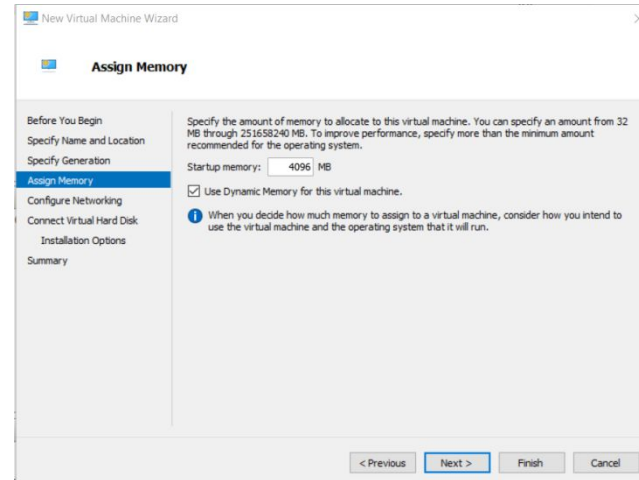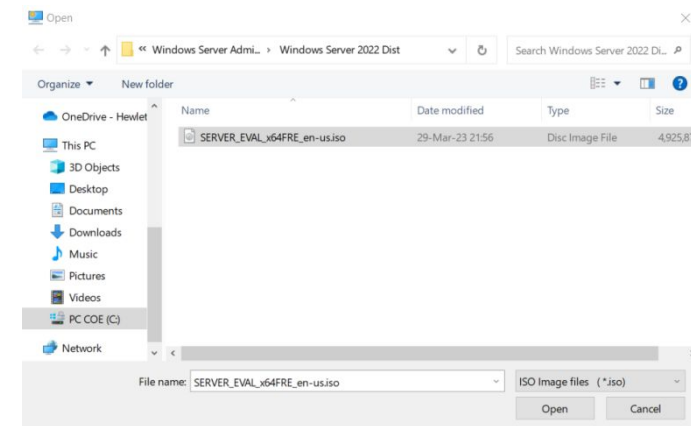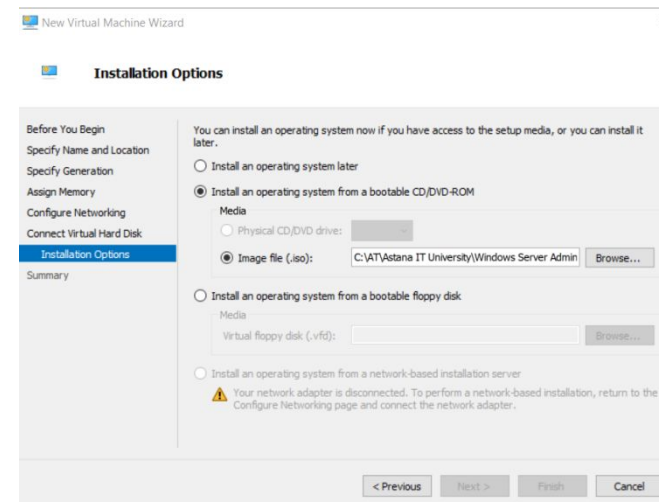
- Configure Networking

Create a virtual machine using Hyper-V

4 Make the appropriate choices for your virtual machine on each of the pages.
- Connect Virtual Hard Disk

- Installation Options
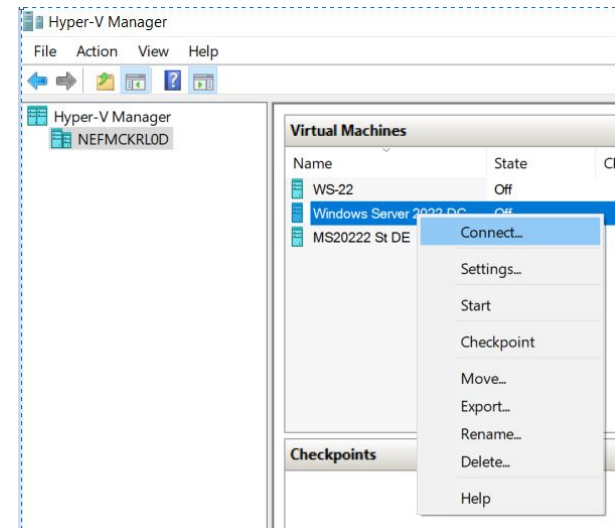   - Browse to your downloaded .iso file

Create a virtual machine using Hyper-V

5 After verifying your choices in
the **Summary** page, click **Finish**.

Displays the options that you have chosen, so
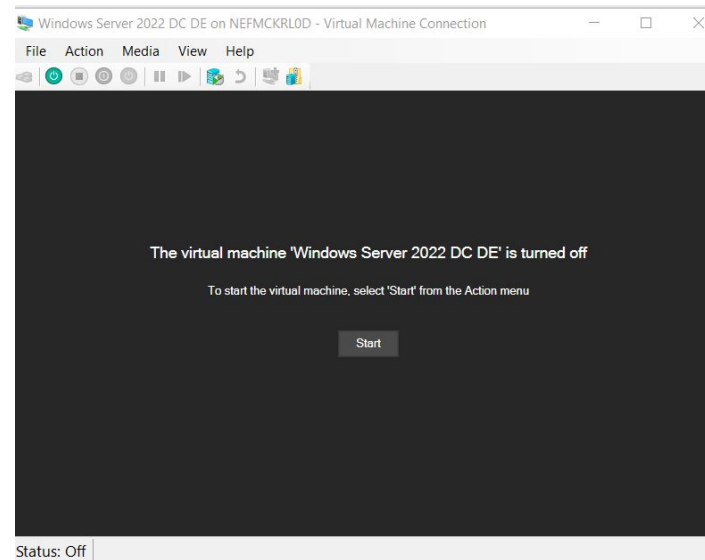that you can verify they are correct.- Name
- Generation
- Memory
- Network
- Hard Disk
- Operating System

6 In Hyper-V Manager, right-click the virtual
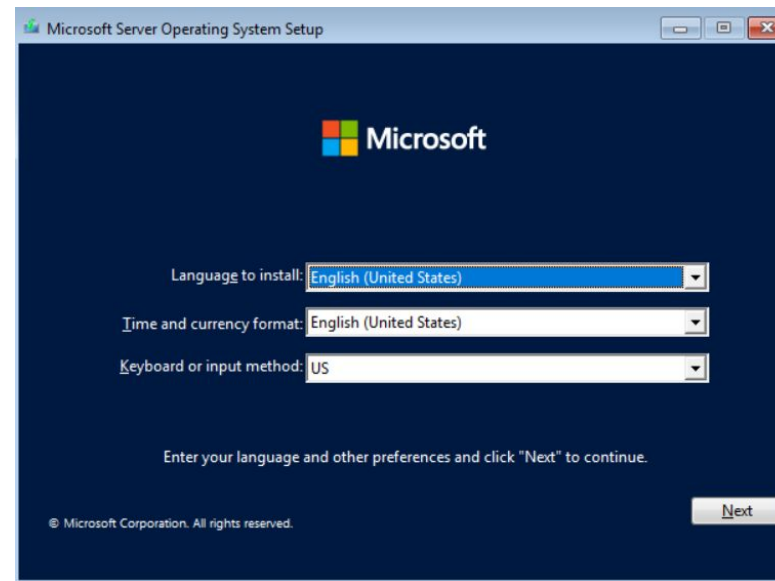machine and select **connect**.

Install Windows Server on a Hyper-V virtual machine
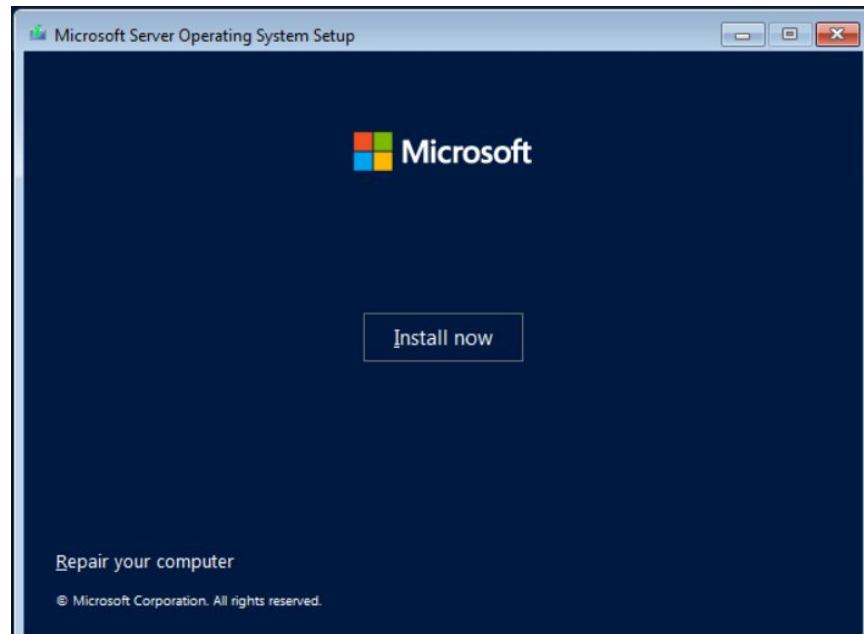
1. Click Start

2. Select Languages

select a language of your choice, as well as keyboard layout preference and your time/currency settings.
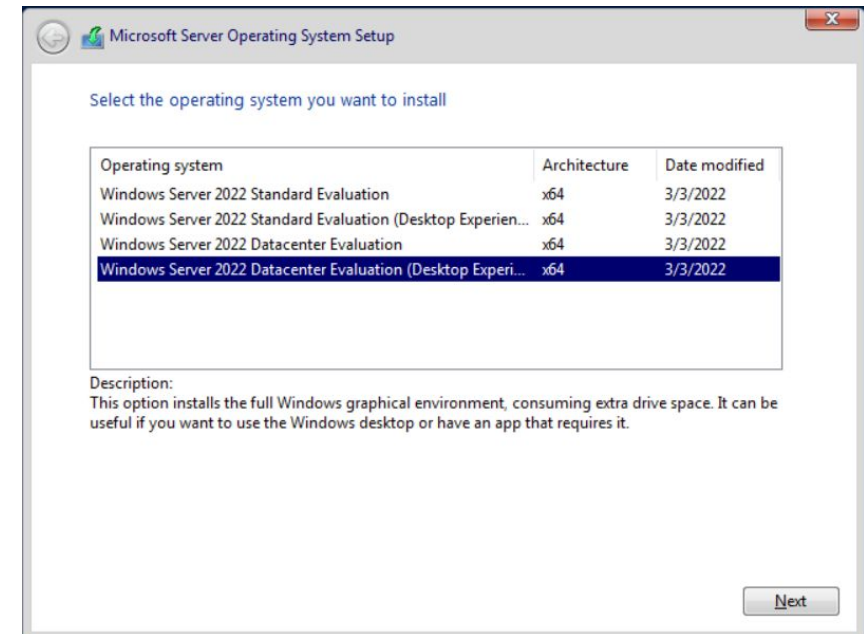
Install Windows Server on a Hyper-V virtual machine

3. Click Install Now button
This initiate the installation process for Windows Server 2022.

4. Select Operating System you want to install
Choose the Windows Server 2022 server option you want to install

Install Windows Server on a Hyper-V virtual machine

4. **Choose an edition and an installation option:**

This ISO evaluation is for the Datacenter and Standard editions. The Datacenter edition is the most complete edition and includes the new Datacenter-specific features (Shielded Virtual Machines, Storage Spaces Direct, and Software-Defined Networking) in addition to unlimited server virtualization.

Choosing Desktop Experience or Server Core installation

Windows Server 2022 offers installation options. However, the selected installation option affects the availability of roles and features, and therefore, you should consider the options before choosing your desired installation option:

Desktop Experience: This installation option contains everything from Windows Server 2022, so choosing Desktop Experience means you have installed everything on Windows Server 2022. However, your hardware needs to exceed the minimum requirements to benefit from the full-featured Graphical User Interface (GUI).

Server Core: This is an installation option recommended by Microsoft due to its minimal hardware resource consumption and higher security. The roles and features can be installed locally through Windows PowerShell or remotely through Server Manager.

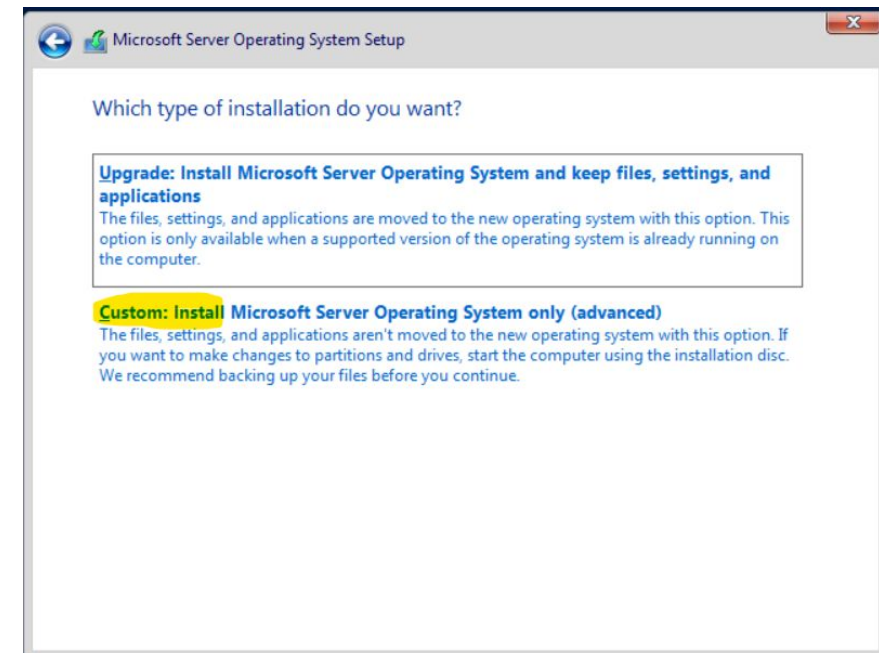# Install Windows Server on a Hyper-V virtual machine

5. Accept License terms
You need to read the License terms and agree to them for the installation process to continue by checking the "I accept all license agreements" box.
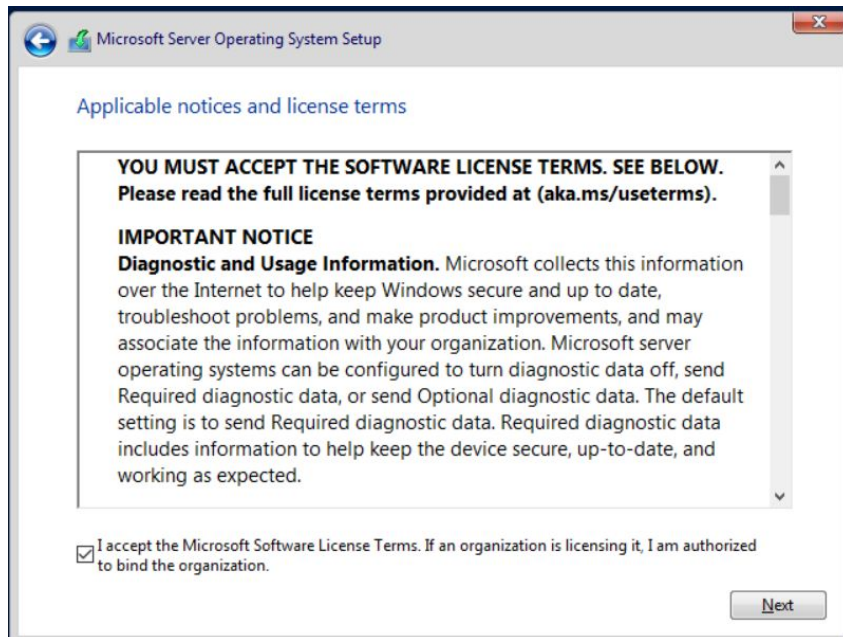
6. Select Custom Installation
Select "Custom: Install Windows Server Operating System only" if you're installing the OS on a fresh server. Otherwise, if upgrading from a previous version of Windows Server, choose the "Upgrade: Install Microsoft Server Operating System and keep files, settings, and applications" option.
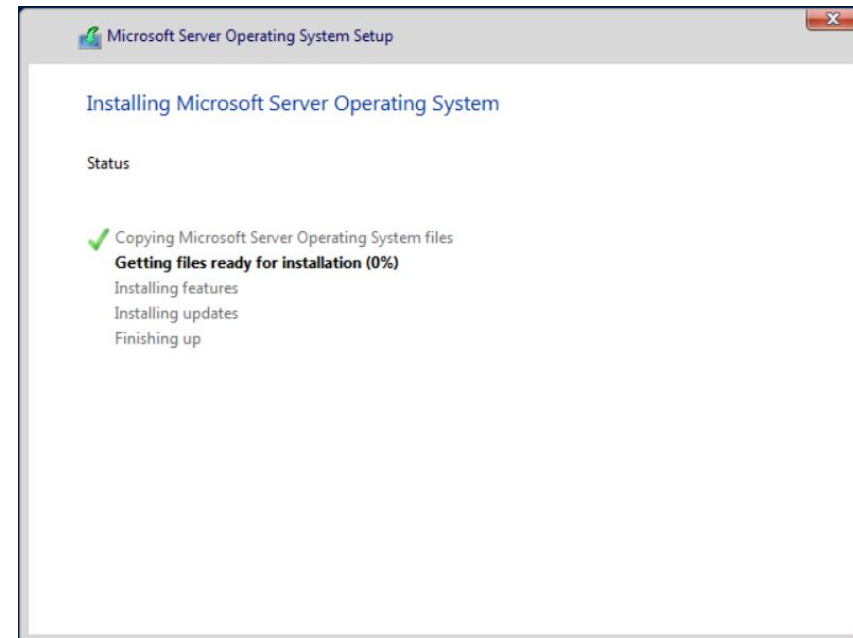
Install Windows Server on a Hyper-V virtual machine

7. Select a partition to install Windows Server onto. You can optionally create a new partition or use the entire drive size. When done selecting the designated OS partition, proceed by clicking "Next."
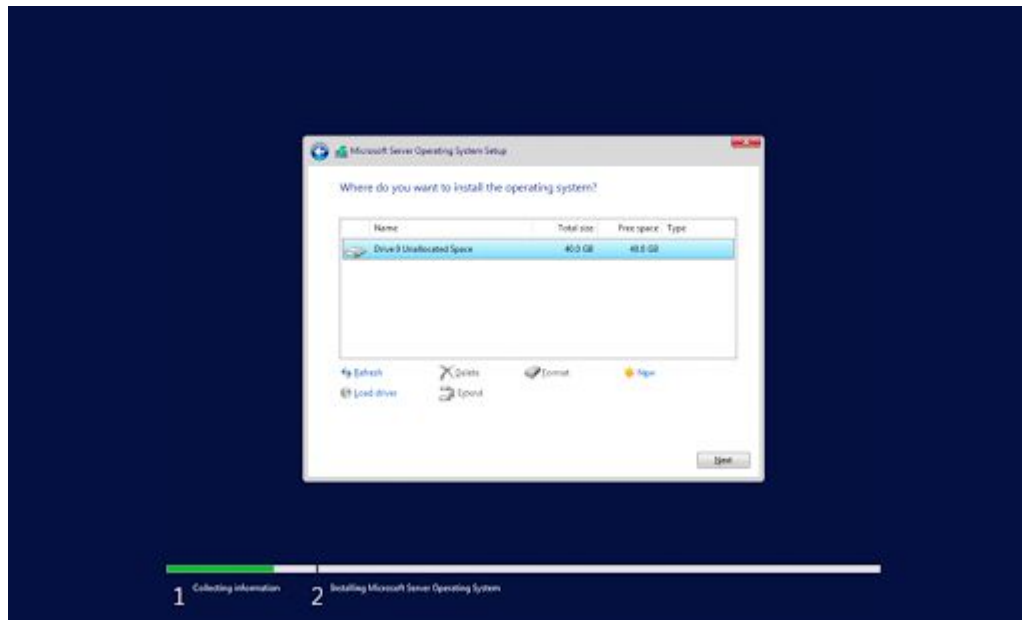

8. The installer will begin installing the necessary system files. You'll see when it's completed, and the system reboots automatically.
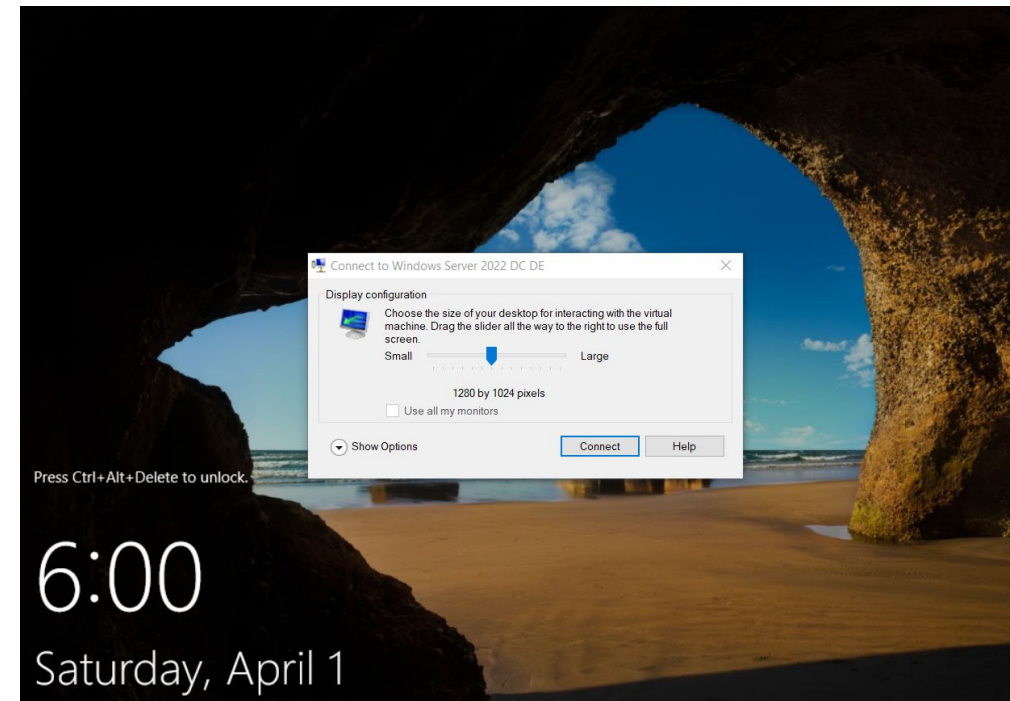
Install Windows Server on a Hyper-V virtual machine

9. After a successful installation, the system should immediately reboot and prompt you for an administrator password. Enter this information before re-entering it once again to verify it, and then continue.
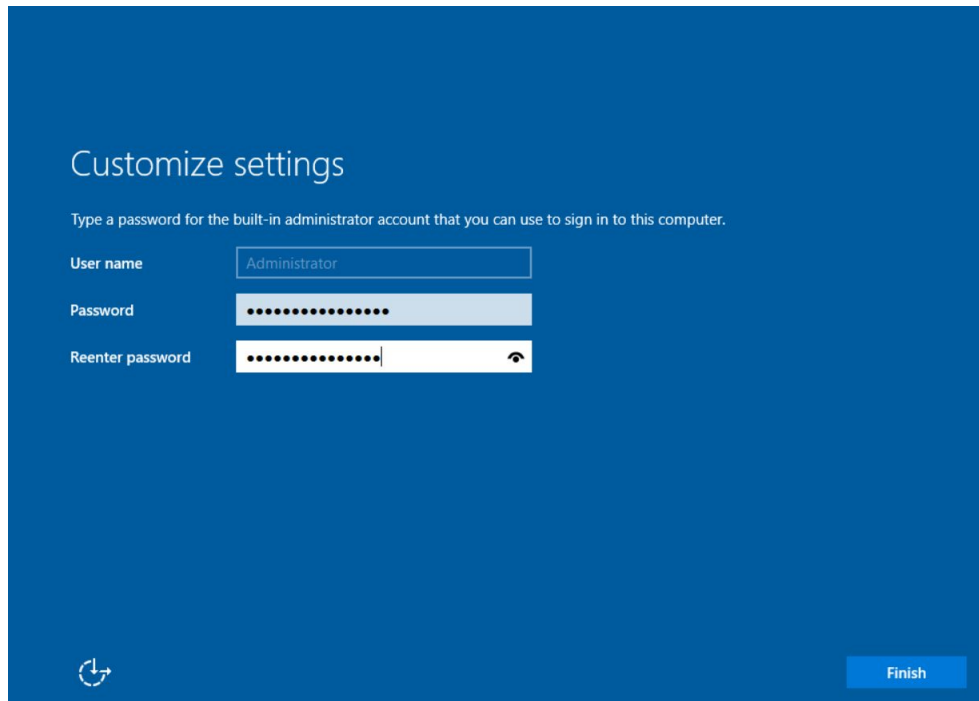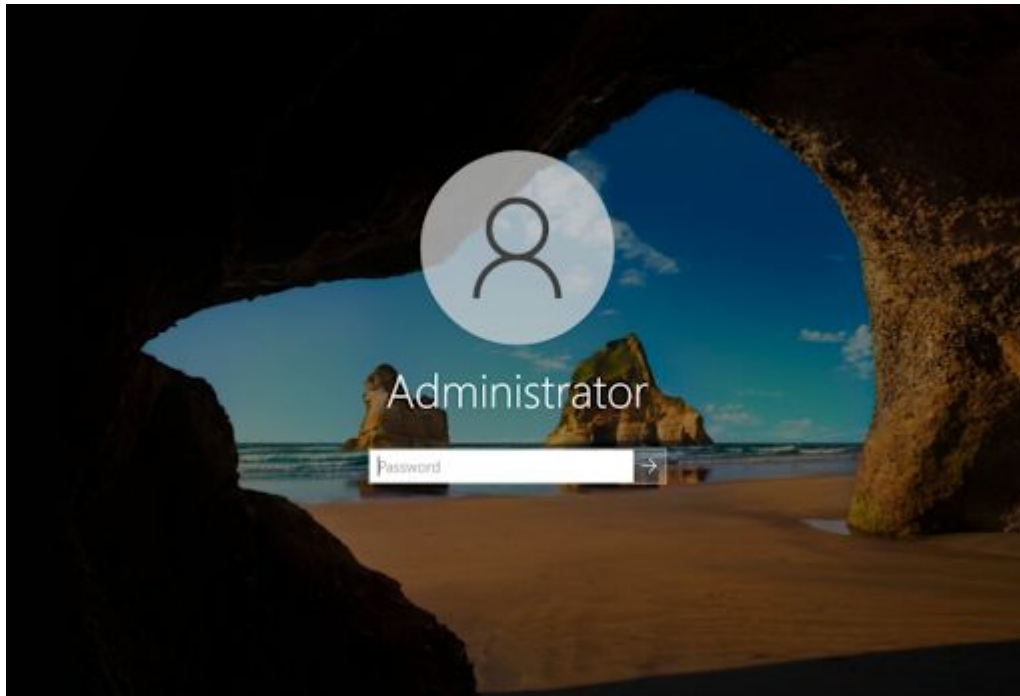
10. Select Display Configuration

11. The login screen will appear when you press Ctrl + Alt + Del. Enter the password set in the previous step to continue accessing your server.
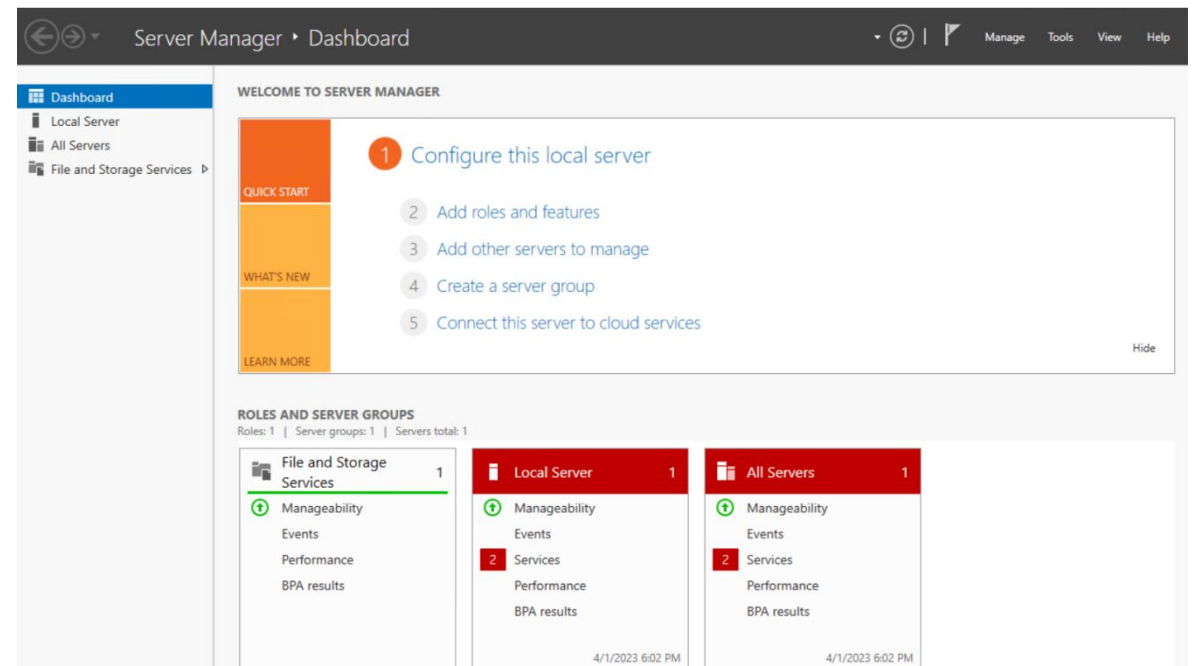
Install Windows Server on a Hyper-V virtual machine

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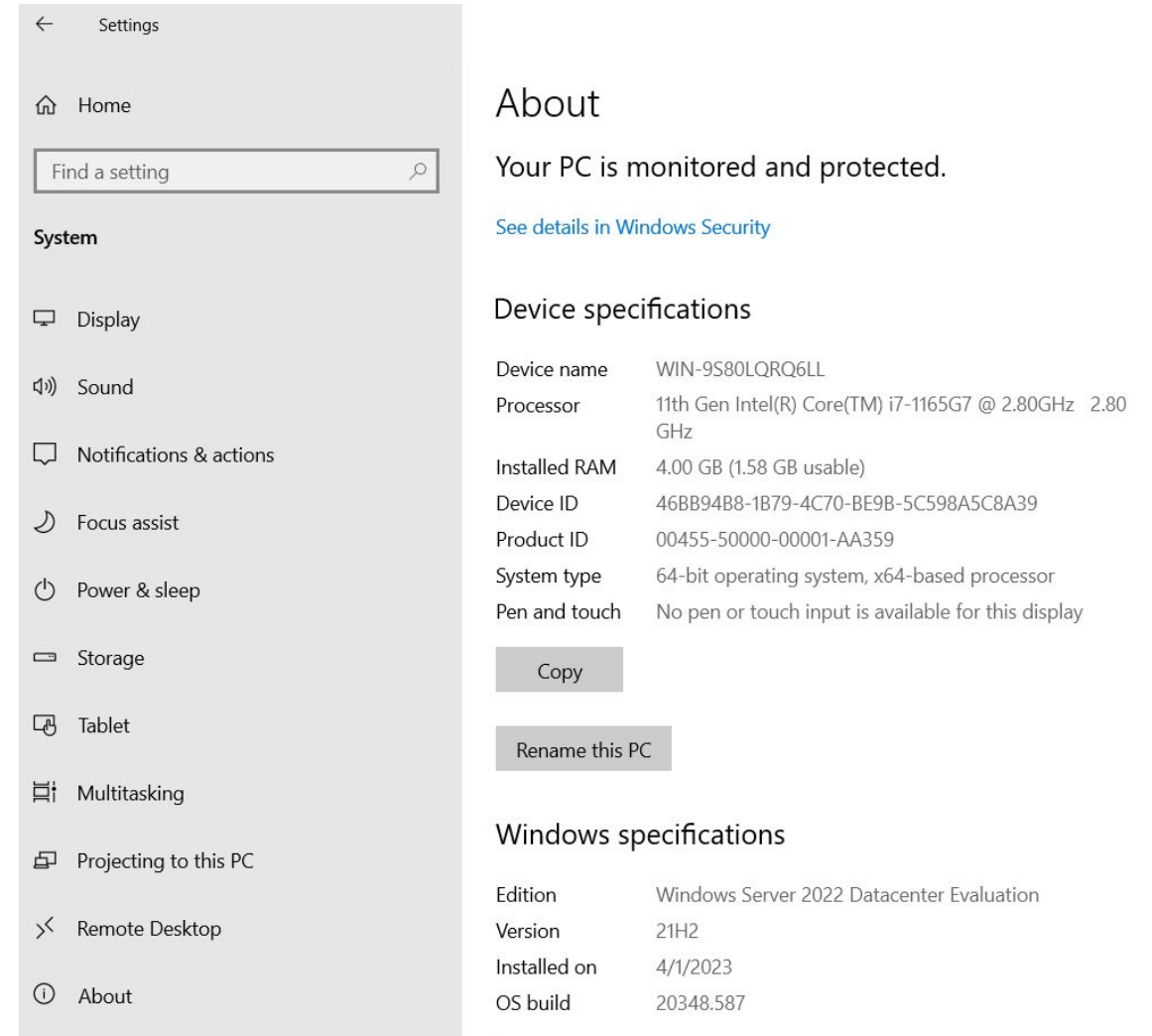
12. You should see the Server Manager launch by default. You can begin configuring your server here or explore more options in the Control Panel accessible in the same way as it is on regular Windows operating systems.

Install Windows Server on a Hyper-V virtual machine

13. Check installation settings and operating system version

Congratulations! You have successfully install Windows Server 2022

Set up a virtualized environment using Oracle VirtualBox

VirtualBox is open-source and cross-platform virtualization software. The Oracle VM Virtualbox allows users to run multiple virtual machines on a single host operating system. This software is free for personal and business use. Therefore, users can install it almost on all operating systems such as Linux, Microsoft Windows, Mac, and Solaris.

Set up a virtualized environment using Oracle VirtualBox

Step-By-Step guide will show you how to enable VirtualBox on your device

Step 1: Download the Oracle Virtualbox Installer
Download the latest available version of Oracle Virtualbox from the official Virtualbox website. Click on the 'Windows hosts' link. The win installer Oracle VM VirtualBox will immediately download to your system in a few minutes.

official Virtualbox website: https://www.virtualbox.org/wiki/Downloads

Set up a virtualized environment using Oracle VirtualBox

Step-By-Step guide will show you how to enable VirtualBox on your device

Step 2: Run the VirtualBox Installer
Once the Virtualbox setup is downloaded, execute it on your system to start the Virtualbox installation.
Right-click on the downloaded Virtualbox installer and choose the option **'Run as administrator'.**

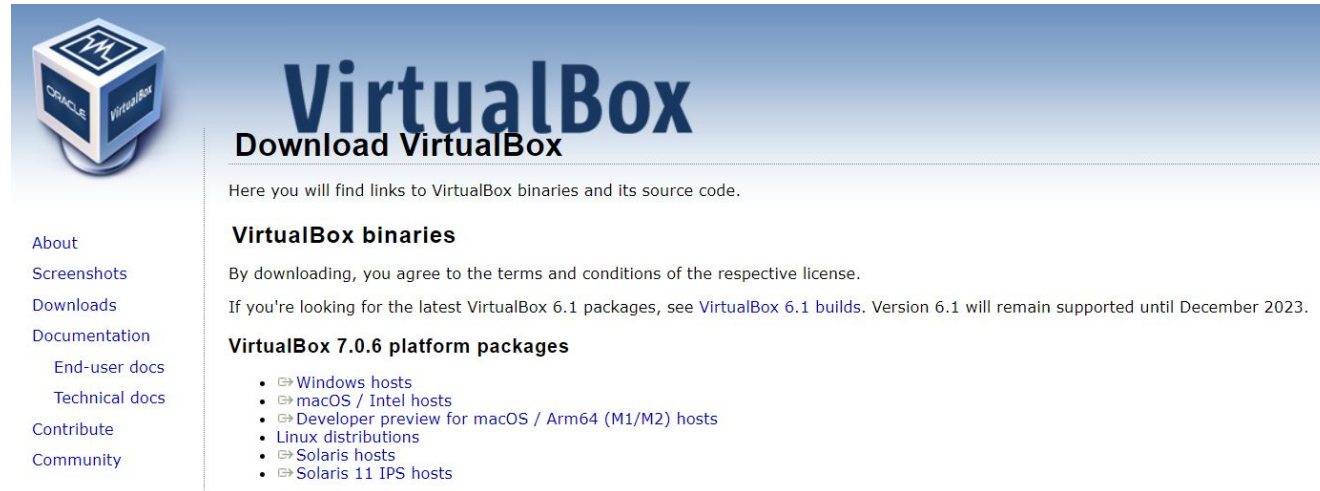# Set up a virtualized environment using Oracle VirtualBox

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Step 2: Run the VirtualBox Installer
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Step 3: Complete Setup Wizard
After that, the VirtualBox installation wizard will display on your operating system. Click on the **'Next'.**
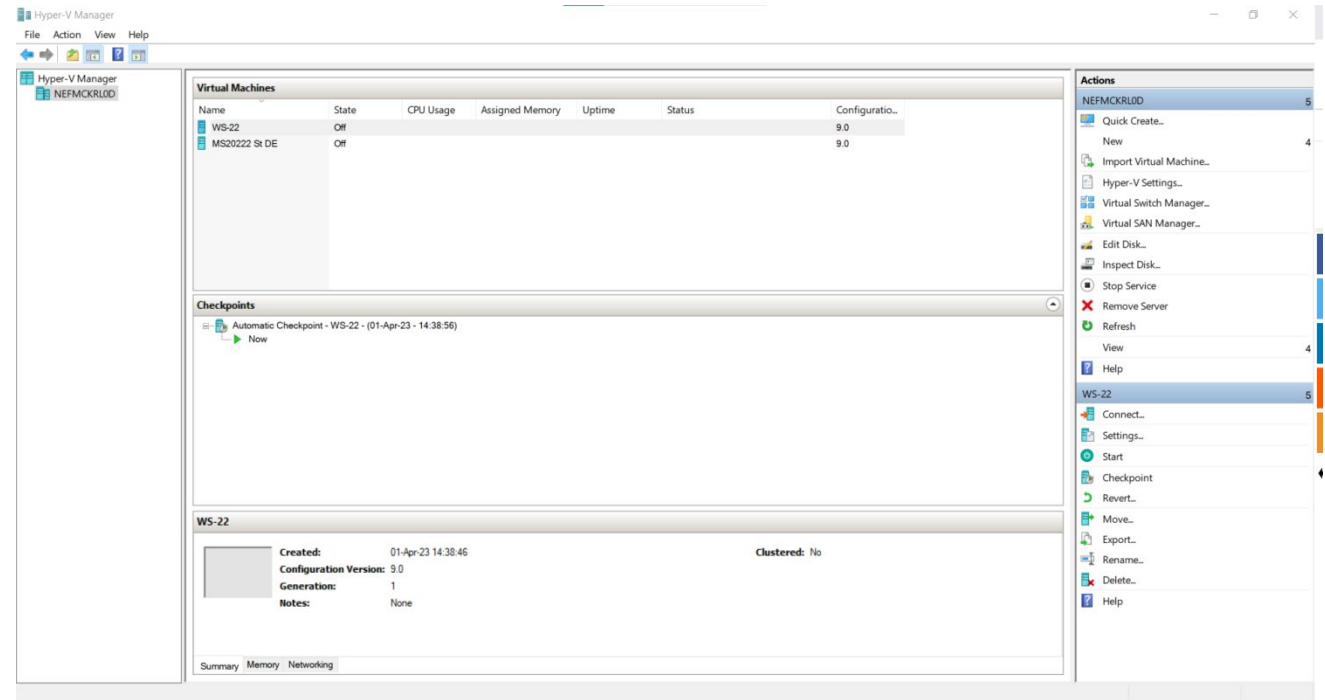
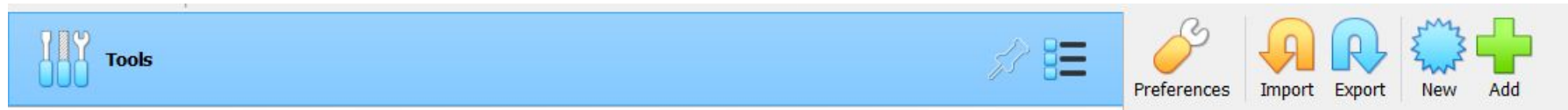# Create a virtual machine using VirtualBox

VirtualBox

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3. From the **New Virtual Machine Wizard**, click **Next**.
4. Make the appropriate choices for your virtual machine on each of the pages.
5. After verifying your choices in the **Summary** page, click **Finish**.
6. In Hyper-V Manager, right-click the virtual machine and select **connect**.
7. In the Virtual Machine Connection window, select **Action** > **Start**.

1 Open **Hyper-V Manager**

Create a virtual machine using VirtualBox

1. Click on New to create a new virtual machine.

2. Name the Virtual Machine and click Next. Virtualbox will automatically suggest the Type and Version of the OS used in the virtual machine by using the name. In our example we are using Windows so Virtualbox set the Type to Microsoft Windows, and Version to Windows…
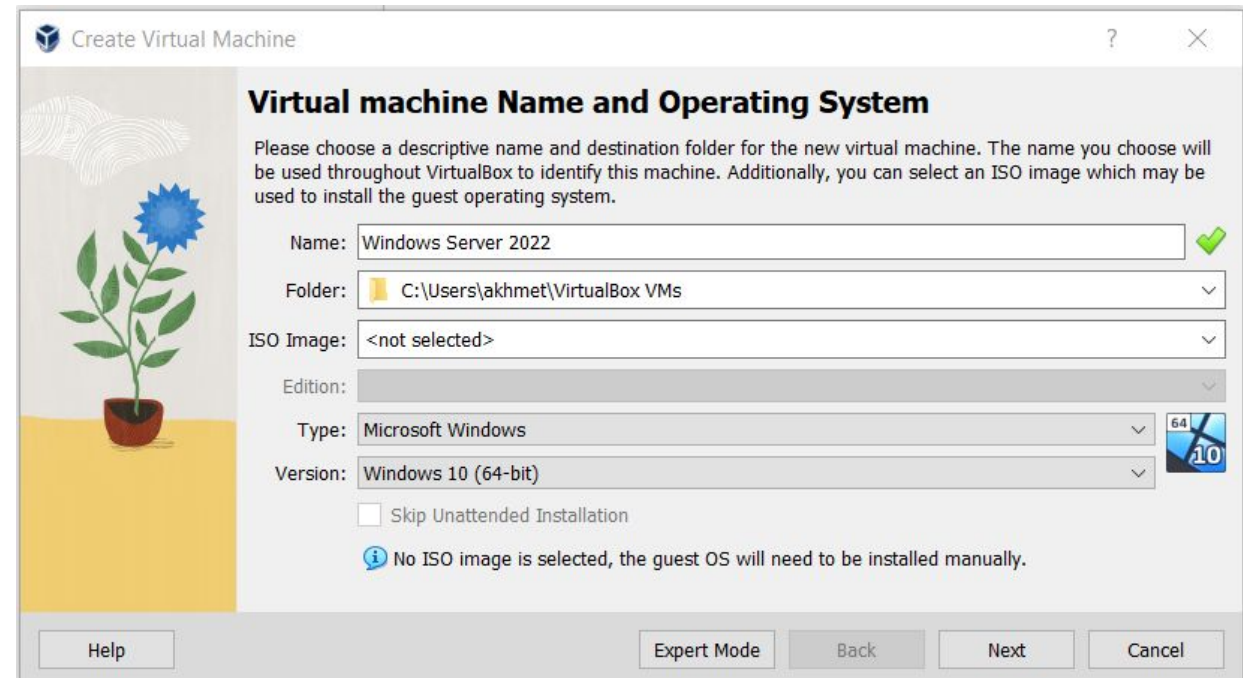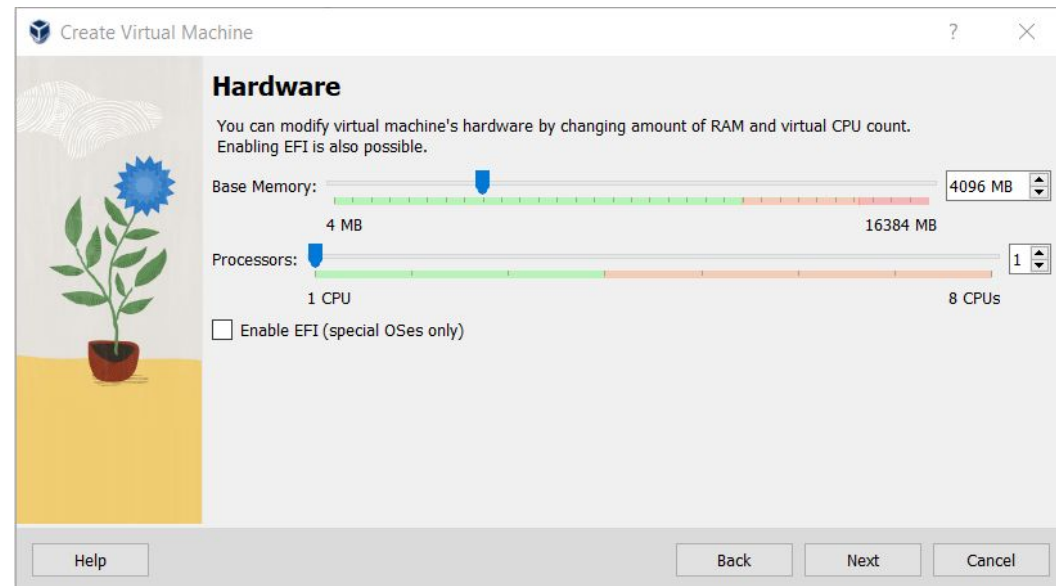
Create a virtual machine using VirtualBox

3. Select your downloaded .iso file

4. Skip Unattended Installation

5. **Set the VM's available memory and click Next.** This will vary depending on your system.
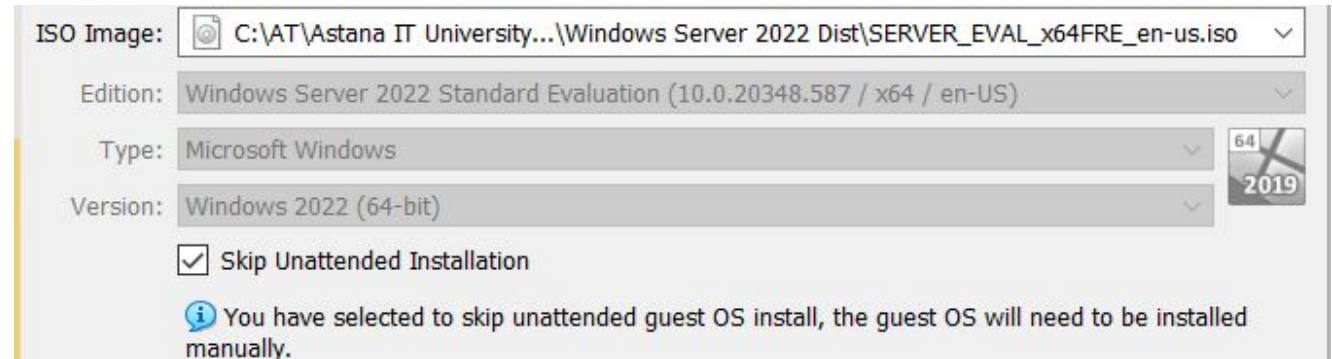
Create a virtual machine using VirtualBox

6. **Select a new virtual hard disk for the VM and click Create.** This will start the process of creating a file that will hold the VM's operating system.
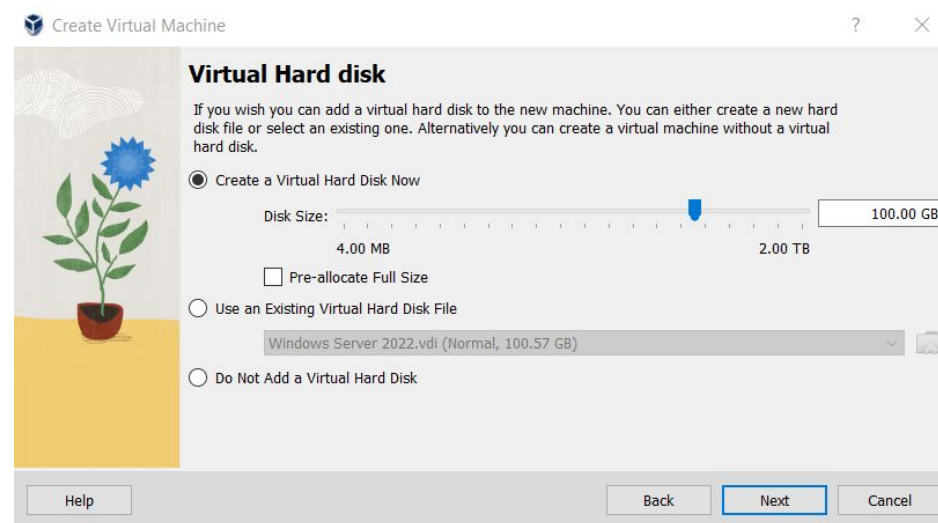
7. Summary, and click Finish
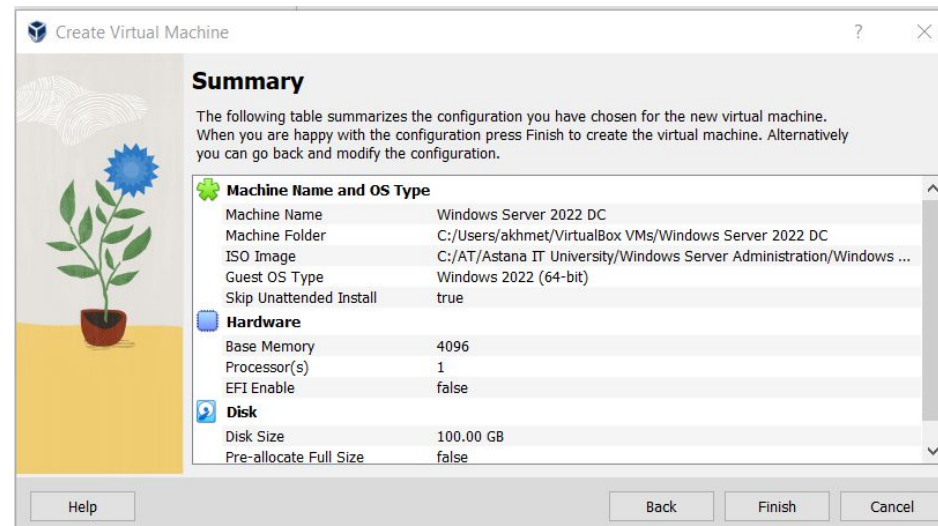
Create a virtual machine using VirtualBox

8. Virtual machine is created

9. Run VM and start to install Windows Server 2022

Install Windows Server on a VirtualBox virtual machine

1. Click Install Now button
This initiate the installation process for
Windows Server 2022.

2. Select Operating System you want to install
Choose the Windows Server 2022 server option
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Install Windows Server on a VirtualBox virtual machine

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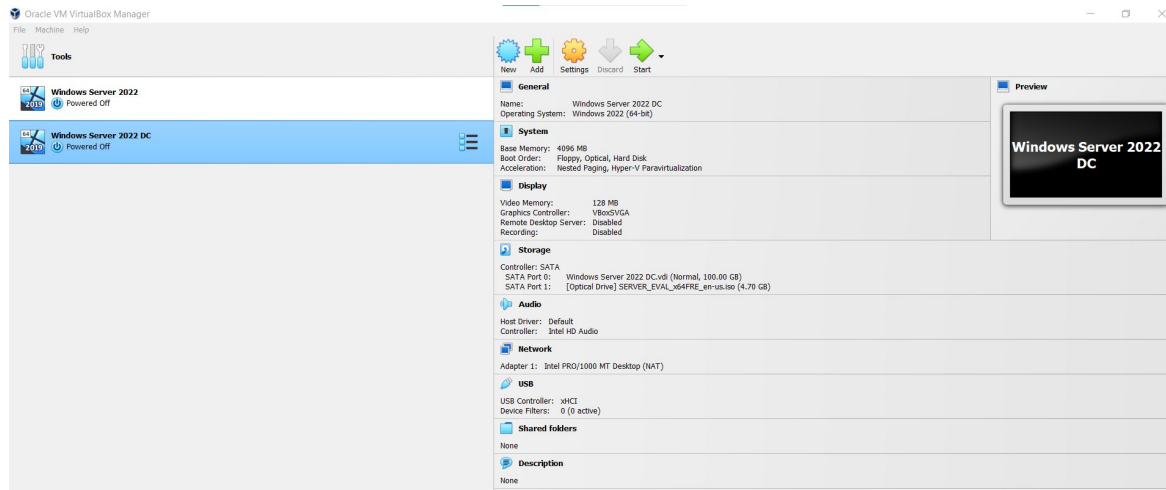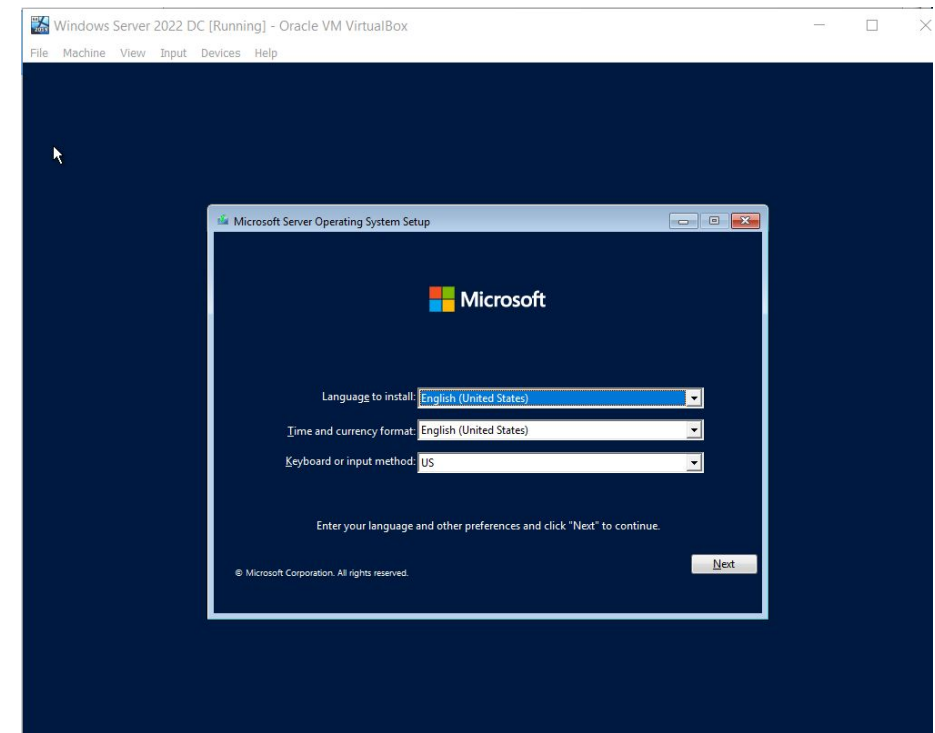
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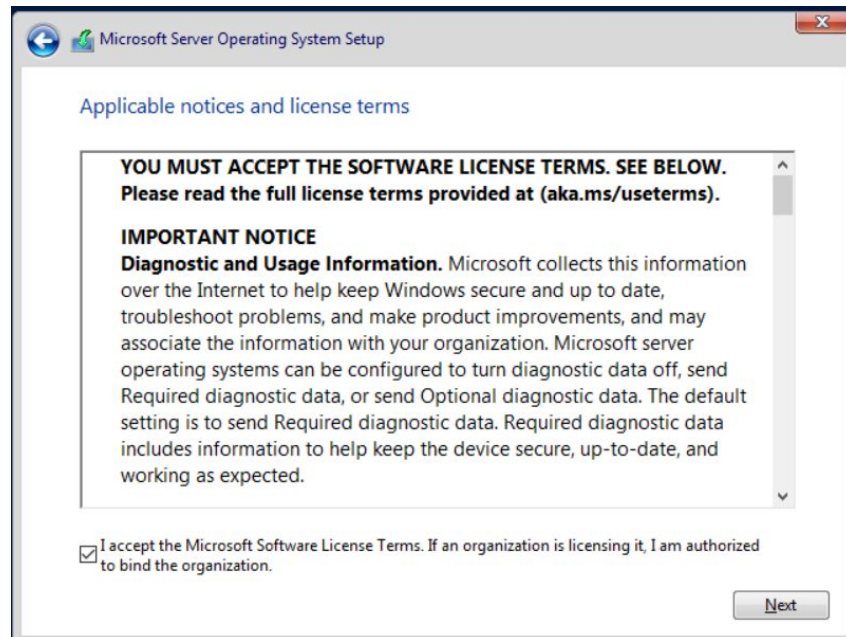
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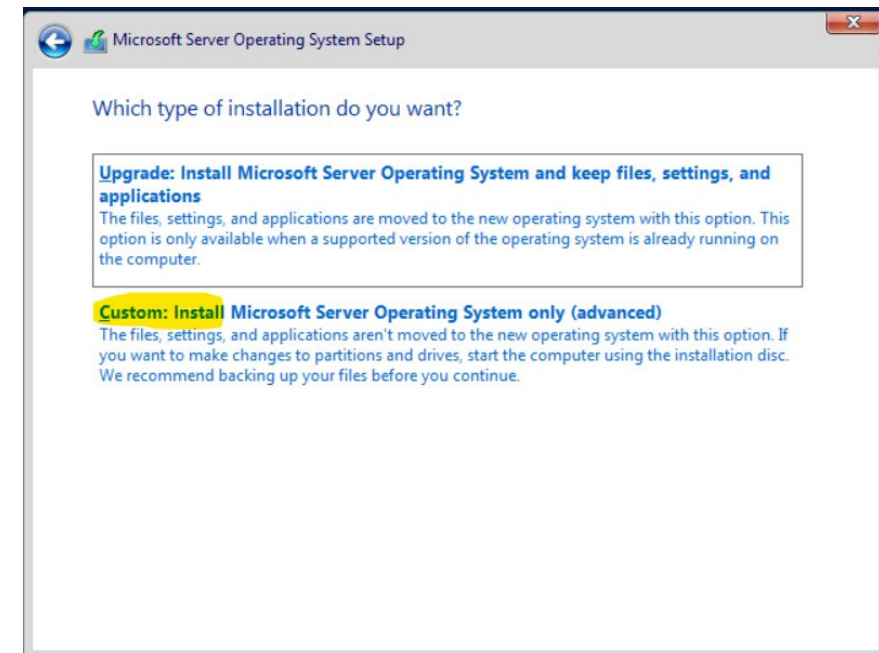
Install Windows Server on a VirtualBox virtual machine

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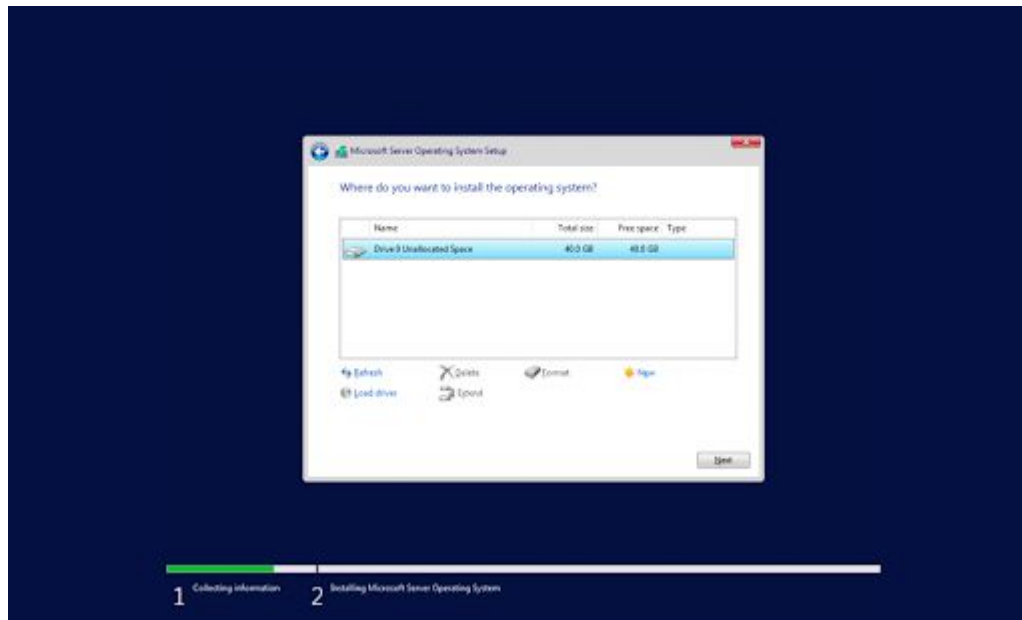
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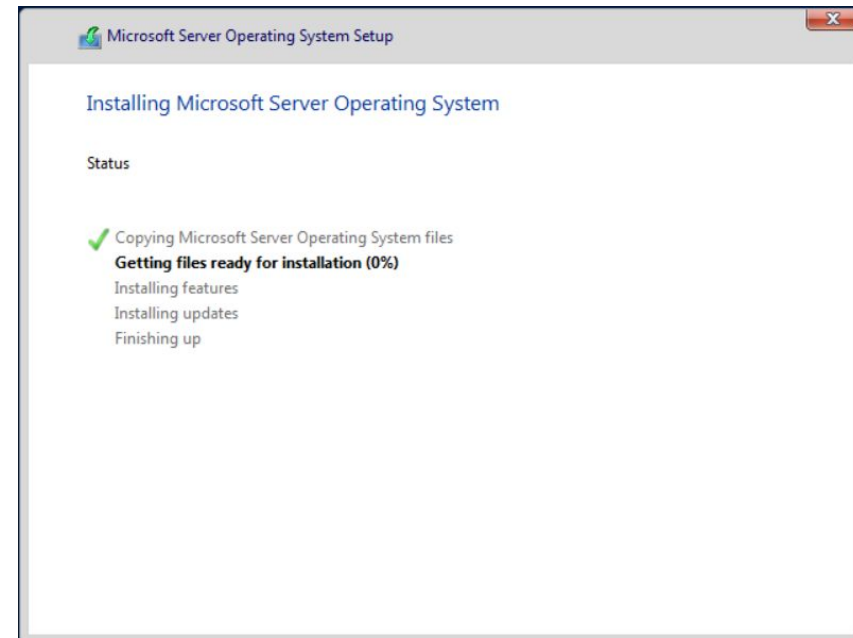
Install Windows Server on a VirtualBox virtual machine

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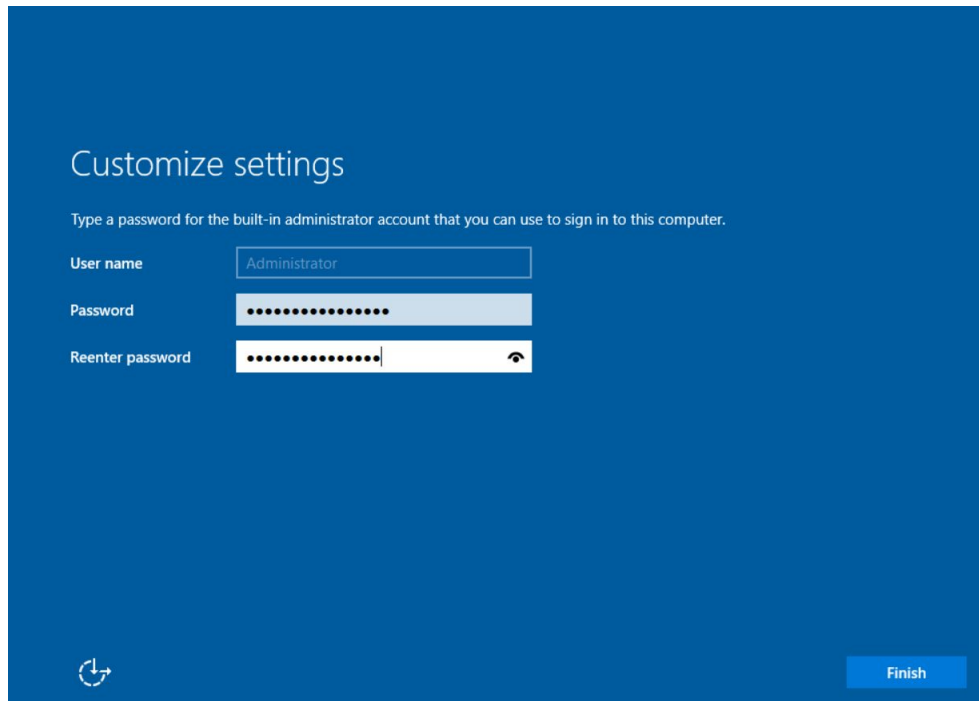
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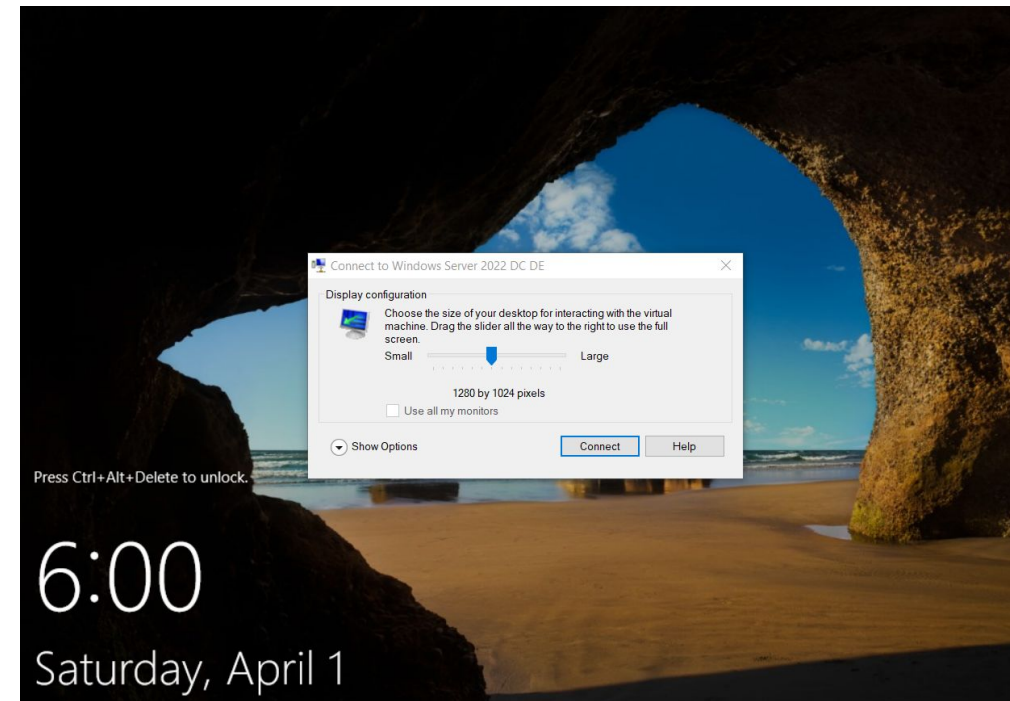
Install Windows Server on a VirtualBox virtual machine

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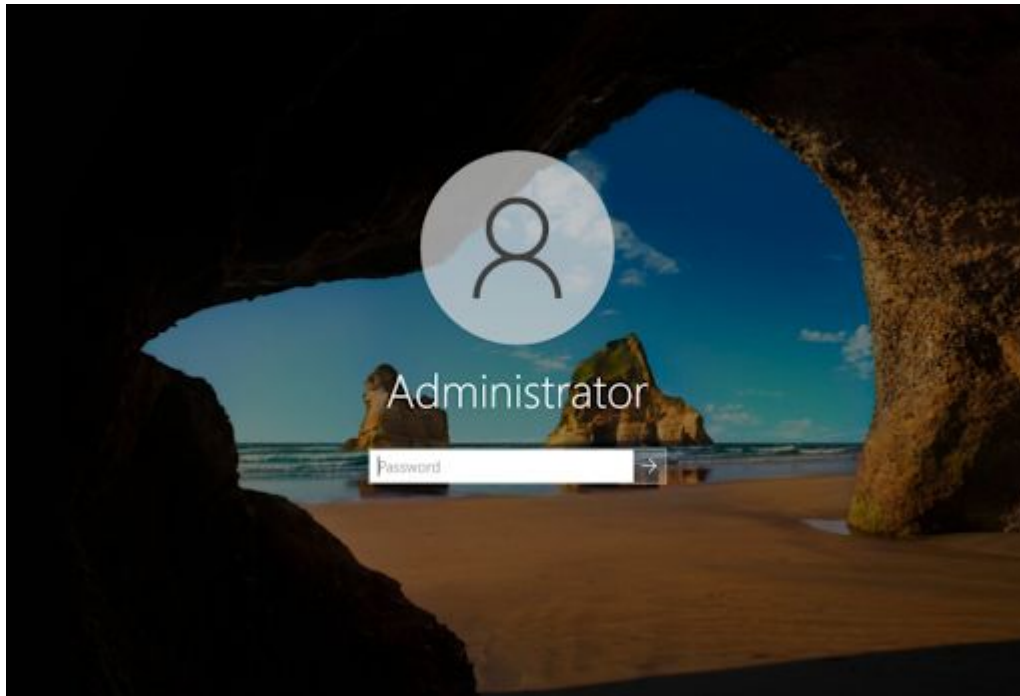
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Install Windows Server on a VirtualBox virtual machine

11. Check installation settings and operating system version

Congratulations! You have successfully install Windows Server 2022

← Settings

🏠 Home

🔍 Find a setting

System

🖥 Display

🔊 Sound

💬 Notifications & actions

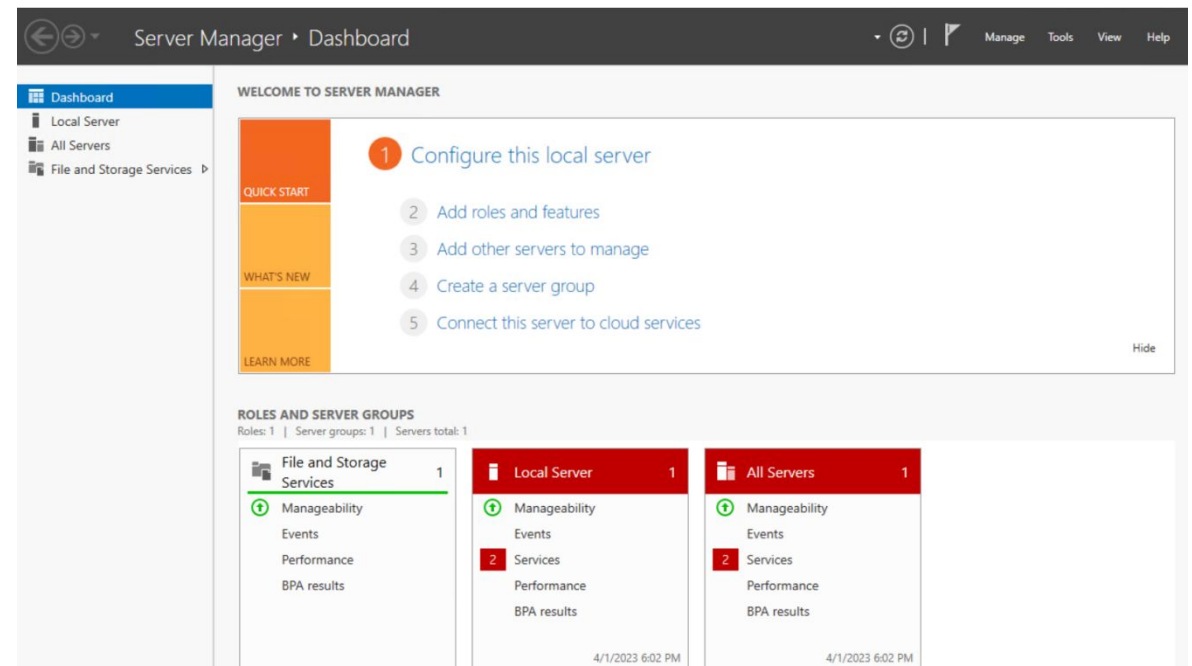🌙 Focus assist

⏻ Power & sleep

▭ Storage

🖥 Tablet

🔳 Multitasking

🔲 Projecting to this PC

✕ Remote Desktop

ⓘ About

About

Your PC is monitored and protected.

See details in Windows Security

Device specifications

Device name	WIN-9S80LQRQ6LL
Processor	11th Gen Intel(R) Core(TM) i7-1165G7 @ 2.80GHz 2.80 GHz
Installed RAM	4.00 GB (1.58 GB usable)
Device ID	46BB94B8-1B79-4C70-BE9B-5C598A5C8A39
Product ID	00455-50000-00001-AA359
System type	64-bit operating system, x64-based processor
Pen and touch	No pen or touch input is available for this display

Copy

Rename this PC

Windows specifications

Edition	Windows Server 2022 Datacenter Evaluation
Version	21H2
Installed on	4/1/2023
OS build	20348.587

Practice-1 exercise
Performing an initial Windows Server configuration

This exercises will teach you how to perform Windows Server initial configuration using Server Manager, as well as Windows Server initial configuration using Server Configuration.

Performing Windows Server initial configuration using Server Manager

This exercise explains the initial configuration of Windows Server 2022 Standard (Desktop Experience) using Server Manager.

Changing the server name
To change the server name, as shown in the following screenshot, follow these steps:

1. In the **Properties** section, click the highlighted default computer name.
2. In the **System Properties** window, click the **Change** button.
3. In the **Computer Name/Domain Changes** window, delete the existing **Computer name**, provide the server's name, and click **OK**:
4. Click **OK** to confirm that you will restart the server to apply these changes.
5. In the **System Properties** window, click the **Close** button.
6. In the **Microsoft Windows** dialog box, click **Restart Now**.
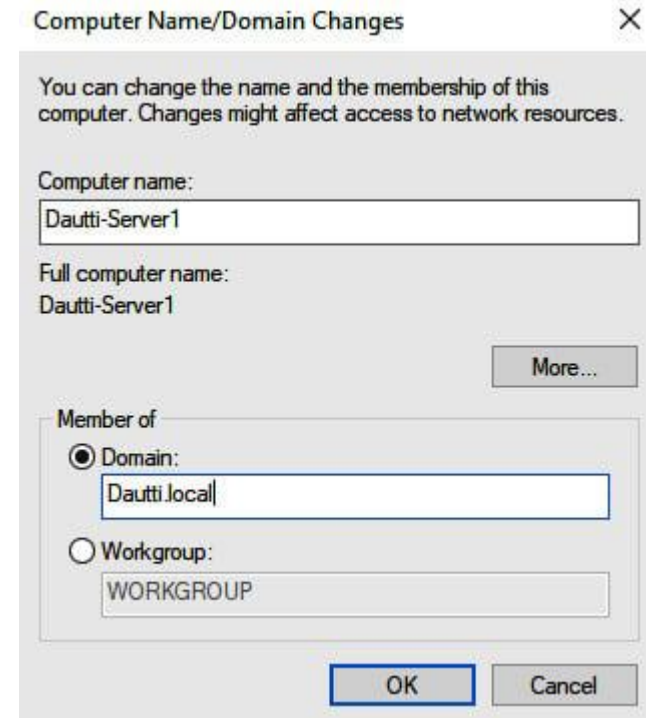
Performing Windows Server initial configuration using Server Manager

Joining the server to a domain
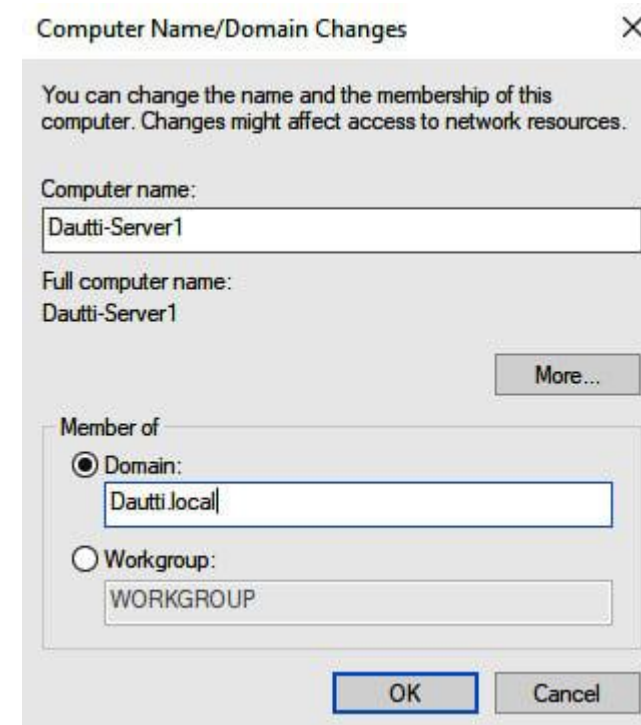
1. In the **Properties** section, click the highlighted workgroup.
2. In the **System Properties** window, click the **Change** button.
3. In the **Computer Name/Domain Changes** window, select the **domain:** option, click the text box to provide your organization's domain, and click **OK**:
4. In the **Windows Security** window, enter the name and password of an account with permission to join the domain, and then click **OK**.
5. The **Computer Name/Domain Changes** dialog box will welcome the server to your organization's domain. Click **OK** to close it.
6. Click **OK** to confirm that you will restart the server to apply these changes.
7. In the **System Properties** window, click the **Close** button.
8. In the **Microsoft Windows** dialog box, click **Restart Now**.

Computer Name/Domain Changes   ✕

You can change the name and the membership of this computer. Changes might affect access to network resources.

Computer name:

Dautti-Server1

Full computer name:
Dautti-Server1

More...

Member of

◉ Domain:

Dautti.local

◯ Workgroup:

WORKGROUP

OK   Cancel

Performing Windows Server initial configuration using Server Manager

Enabling Remote Desktop

1. In the **System Properties** dialog box, click the **Remote** tab.
2. Select the **Allow remote connections to this computer** option in the **System Properties** window.
3. The **Remote Desktop Connection** dialog box informs you that **Remote Desktop Firewall exception will be enabled**. Click **OK** to close it:
4. To add Remote Desktop users, click the **Select Users...** button.
5. In the **Remote Desktop Users** window, click the **Add** button to add users. Select users or groups from your AD DS. When you have finished adding Remote Desktop users, click **OK** to close the **Remote Desktop Users** window.
6. Again, click **OK** to close the **System Properties** window.
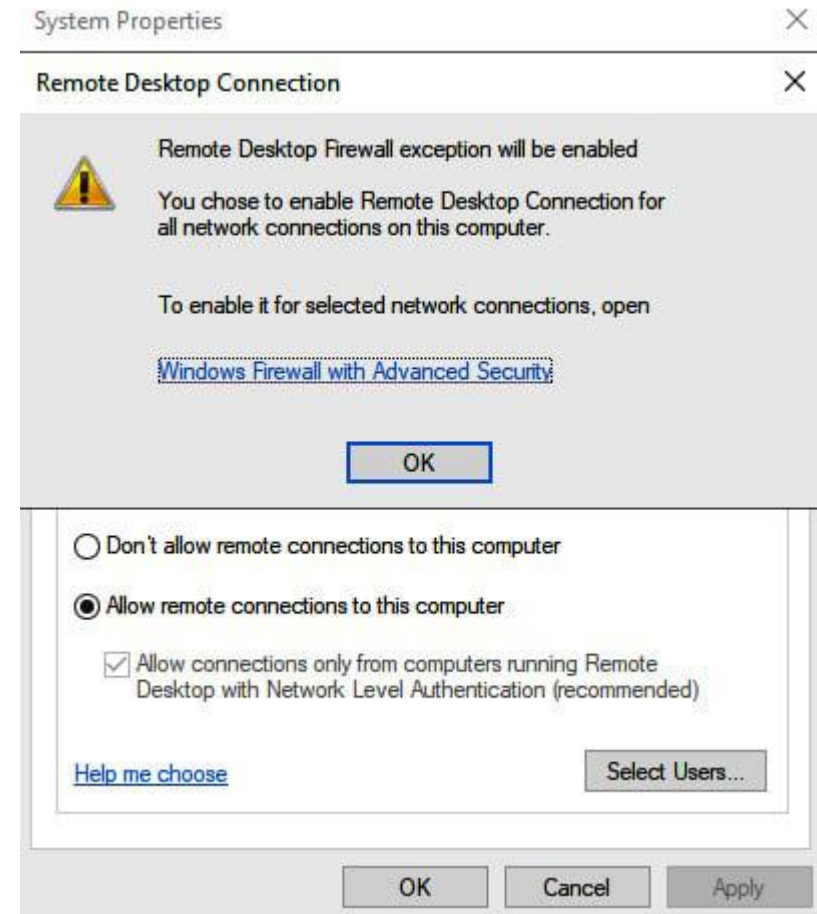
Performing Windows Server initial configuration using Server Manager

Setting up the IP address

1. In the **Properties** section, click the highlighted Ethernet setting:
2. Right-click the server's Ethernet in the **Network Connections** window and select **Properties**.
1. Select **Internet Protocol Version 4 (TCP/IPv4)** in the **Ethernet Properties** window and click the **Properties** button.
2. In the **Internet Protocol Version 4 (TCP/IPv4) Properties** window, select **the following IP address:** option and enter the **IP address**, **Subnet Mask**, and **Default Gateway** fields. Additionally, select the **use the following DNS server addresses:** option and fill in the **Preferred DNS server** and **Alternate DNS server** fields. Click **OK** to close.
3. Click the **Close** button to close the **Ethernet Properties** window.
4. Click the *Close* button (the red X) in the top-right corner to close the **Network Connections** window.

Internet Protocol Version 4 (TCP/IPv4) Properties ✕

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

⦿ Use the following IP address:

IP address:	192 . 168 . 1 . 10
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192 . 168 . 1 . 1

○ Obtain DNS server address automatically

⦿ Use the following DNS server addresses:

|	
Preferred DNS server:	192 . 168 . 1 . 1
Alternate DNS server:	. . .

☐ Validate settings upon exit

Advanced...

OK   Cancel

Performing Windows Server initial configuration using Server Manager

Checking for updates

1. In the **Properties** section, click the highlighted **Last checked for updates** setting.

2. In the **Settings** window on the right-hand side of the **Windows Update** section, the available updates are listed (if any). If any updates are ready to be installed, click the **Install now** button:

3. Installing updates may take some time! In addition, when the installation is done, you will often be asked to restart the server for the updates to occur.
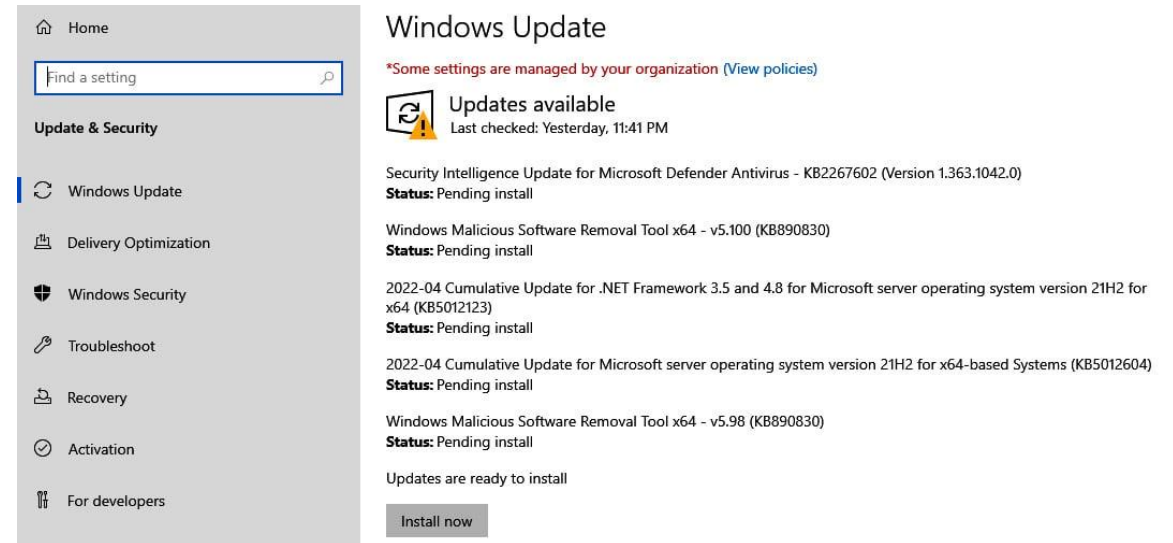
Performing Windows Server initial configuration using Server Manager

Turning off IE enhanced security
1. In the **Properties** section, click the highlighted IE enhanced security configuration setting.
2. Select the **Off** option in the **Internet Explorer Enhanced Security Configuration** window within the **Administrators**: section.
3. Click **OK** to close the **Internet Explorer Enhanced Security Configuration** window:

Performing Windows Server initial configuration using Server Manager

Changing the time zone

1. In the **Properties** section, click the highlighted time zone setting.
2. Click the **Change time zone...** button in the **Date and Time** window.
3. Click the drop-down list in the **Time Zone Settings** window to select your time zone.
4. Click **OK** to close the **Time Zone Settings** window.
5. Again, click **OK** to close the **Date and Time** window:

Date & time

On

Set time zone automatically

Off

Set the date and time manually

Change

Synchronize your clock

Last successful time synchronization: 4/2/2023 11:18:54 AM
Time server: time.windows.com

Sync now

Time zone

(UTC+06:00) Astana

Adjust for daylight saving time automatically

Off

Show additional calendars in the taskbar

Don't show additional calendars

Performing Windows Server initial configuration using Server Manager

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4. Click **OK** to close the **Time Zone Settings** window.
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