

Task:

Configuring Virtual Machines in Hyper-V Manager in Windows Server

Task description:

- *Create a new virtual machine using the following settings: The name of the virtual machine should be korisničko_ime-SRV01, where you will write your name for korisničko_ime.*
- *The machine must be of the second generation and belong to a working group called korisničko_ime_.*

You need to allocate 1 GB of RAM, two hard drives (the first 100GB, the second 20GB). Also, there must be two network cards (the first, which will connect to the External team's switch called External Network, and the second one that will connect to a Private-type switch called Private Network). Within this virtual machine, you will need to have Windows Server 2022 Standard with a graphical interface (Desktop Experience) installed. Through screenshots you present the configuration of the machine, the version of the operating system; You must have access to the Internet through an external adapter, and in the Private network there must be a static IP address of 192.168.3.201, a netmask of 255.255.255.0, a default Default Gateway of 192.168.3.1 and a Preferred DNS of 192.168.3.101.

Course: Windows Server 2022 OS - Infrastructure

Module: Installation and configuration of the Hyper-V role and virtual machines

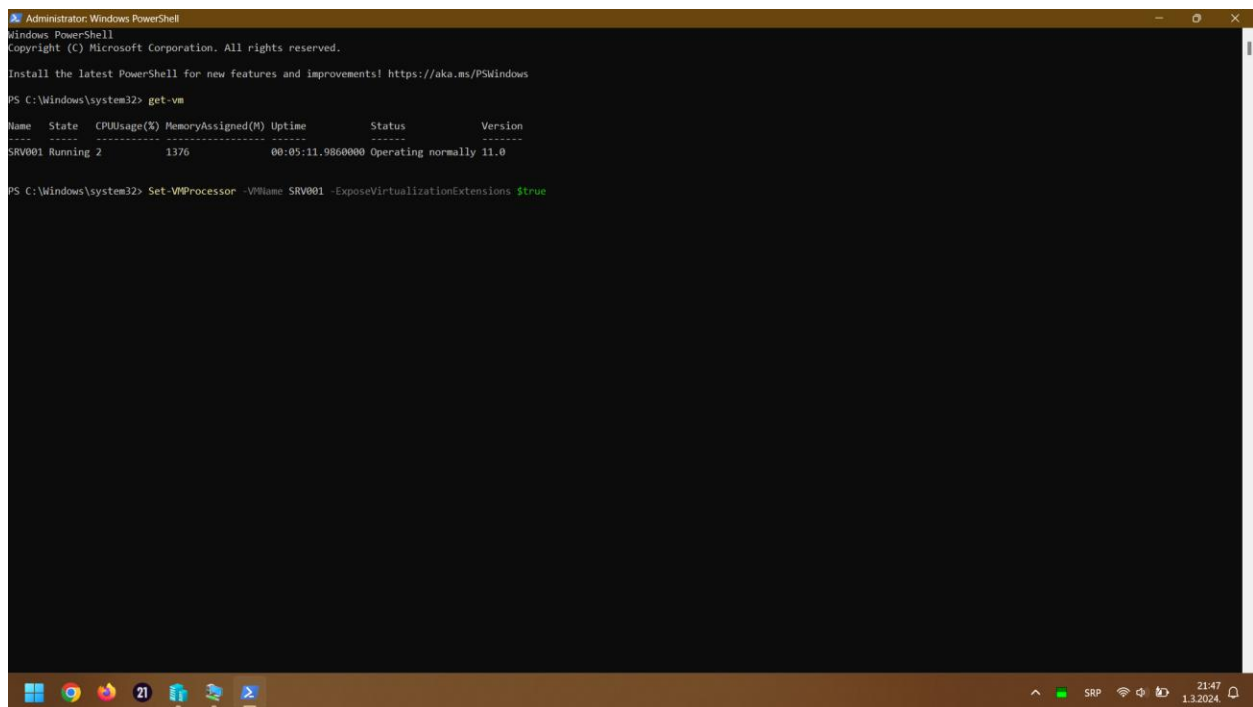
Student: Jovan Ljušić

02.03.2024

This document presents a step-by-step approach to solving a specific task, outlining the methodology, execution, and expected outcomes. By following the instructions, the reader will gain hands-on experience in applying technical concepts to practical situations, reinforcing both theoretical knowledge and problem-solving abilities.

The structured approach ensures that each step is clearly defined, making the process easy to follow and implement in professional environments.

At the very beginning of the task, in order to enable the virtual machine to install Hyper-V Role, first of all, on Powershell, I did the commands that are necessary for the processor of the Virtual Machine, followed by a screenshot. Dab making this task would be simpler in my case, I did the task on Windows 11 operating system.



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

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

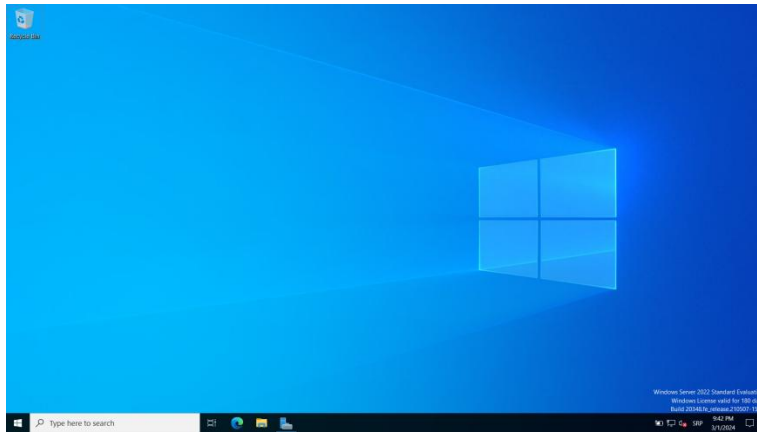
PS C:\Windows\system32> get-vm

Name      State      CPUUsage(%) MemoryAssigned(M) Uptime          Status           Version
-----
SRV001    Running    2             1376             00:05:11.9860000 Operating normally 11.0

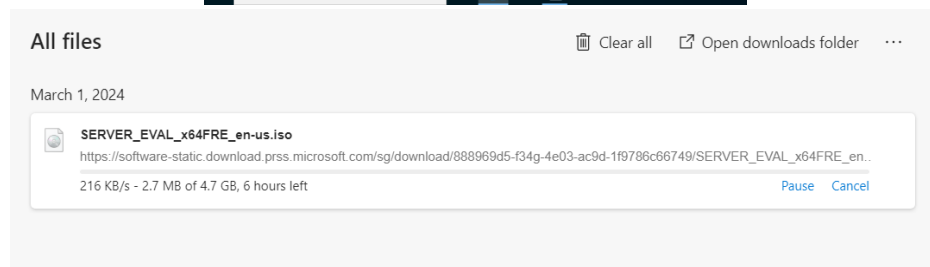
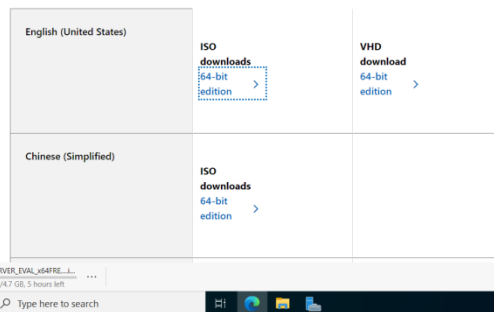
PS C:\Windows\system32> Set-VMProcessor -VMName SRV001 -ExposeVirtualizationExtensions $true
```

The virtual machine on which I did this task, specifically Windows Server 2022 is pre-installed on the Hyper-V platform, and the next steps that I follow will be represented by screenshots.

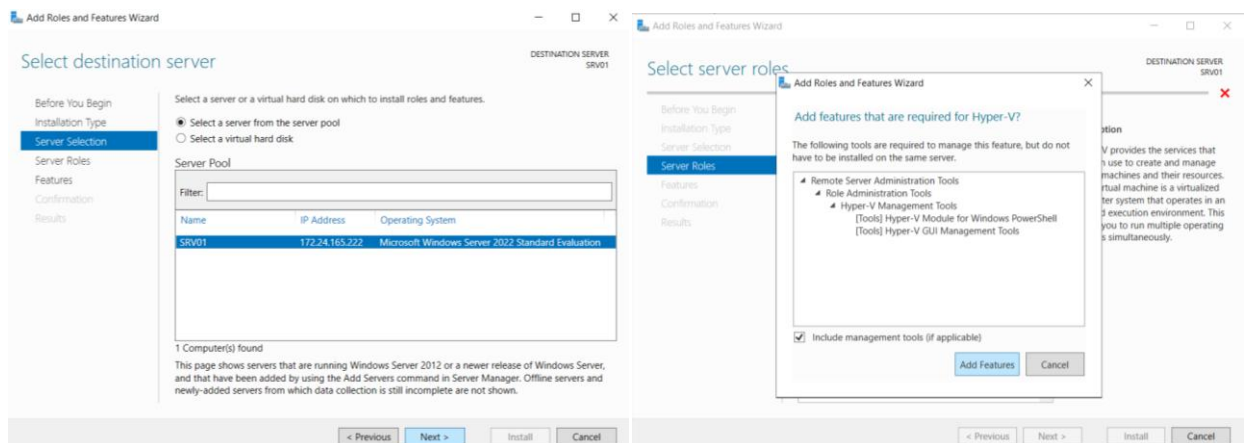
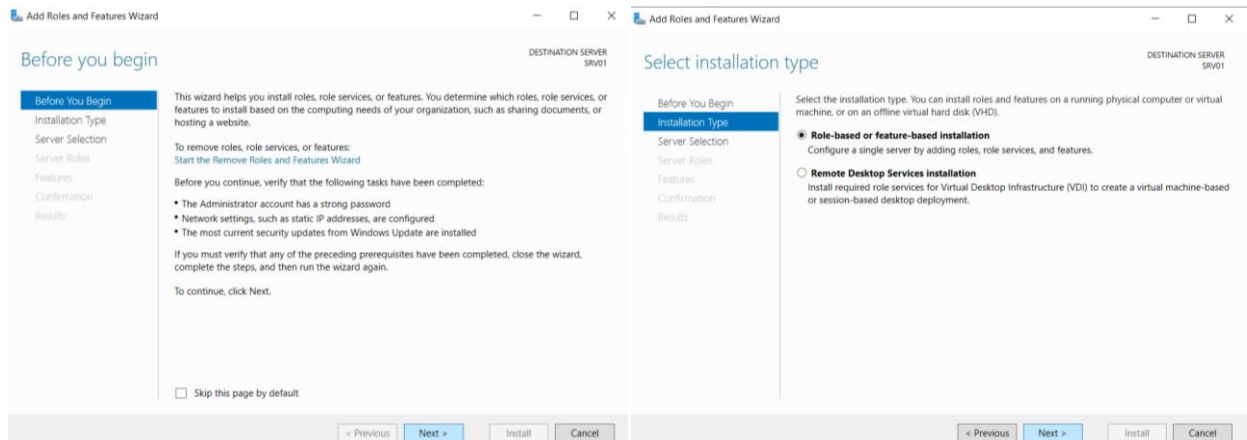
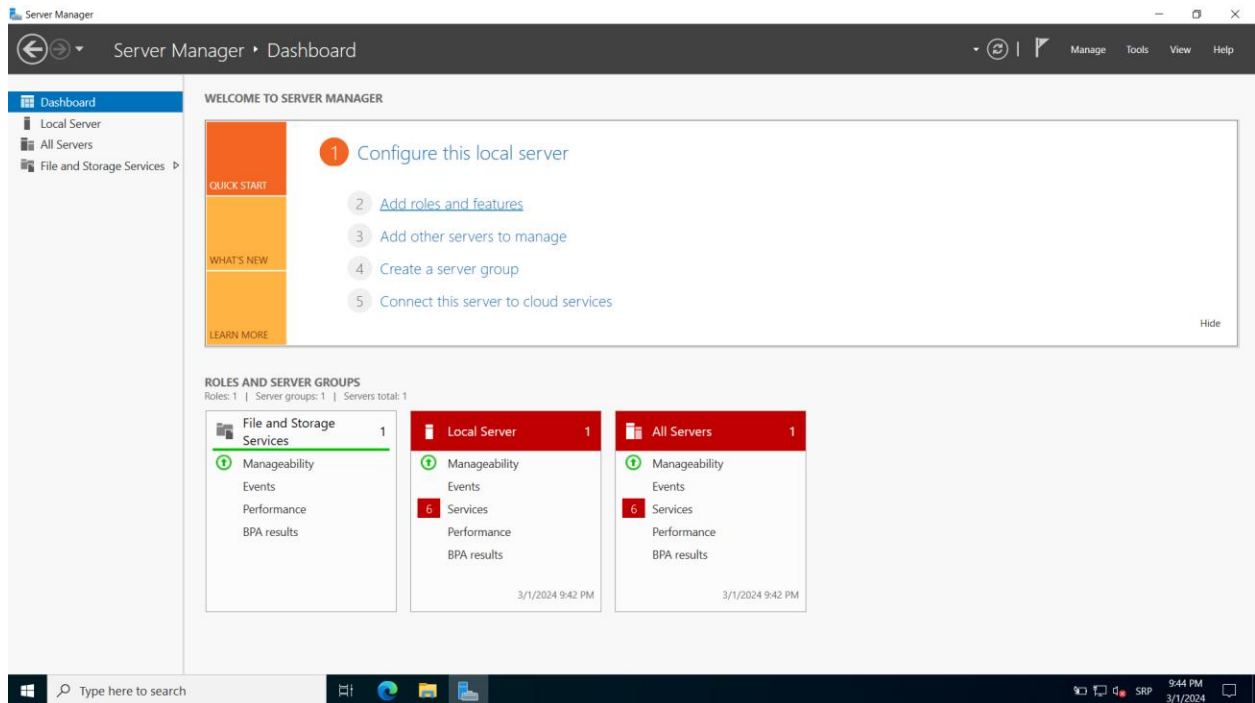
The first image shown shows the graphical interface of Windows Server 2022 with the Desktop Experience installation option, and each subsequent image shows the steps that I follow, at the very beginning I start downloading Windows Server again and then, at the same time, I install Hyper-V Rola on the virtual machine.

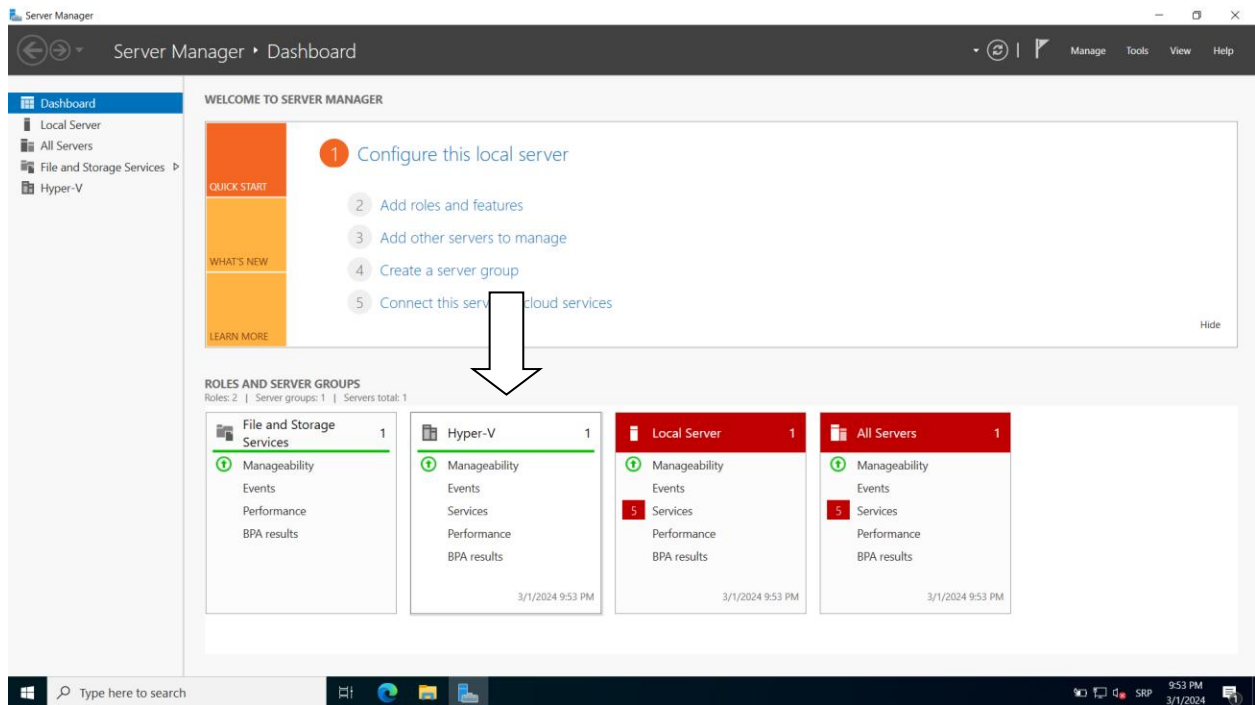
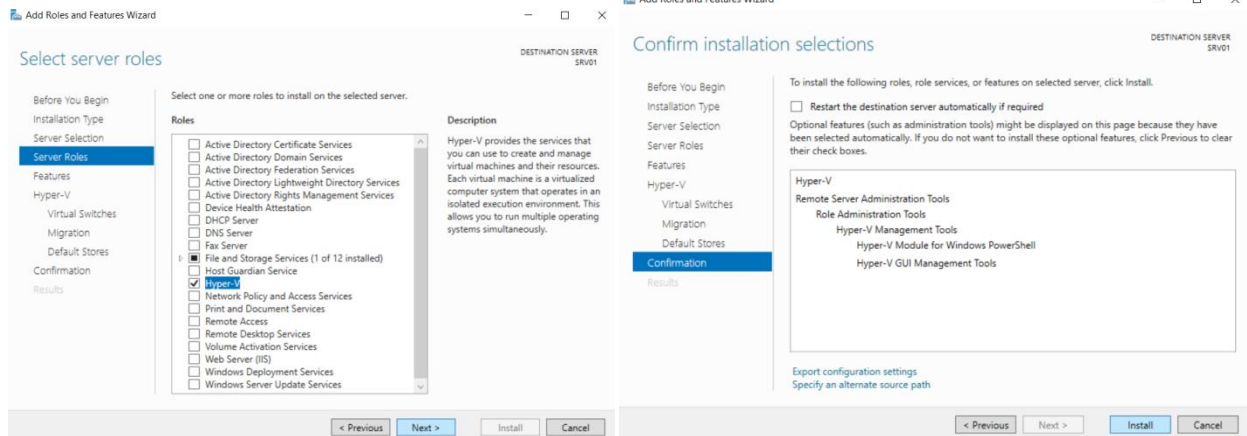


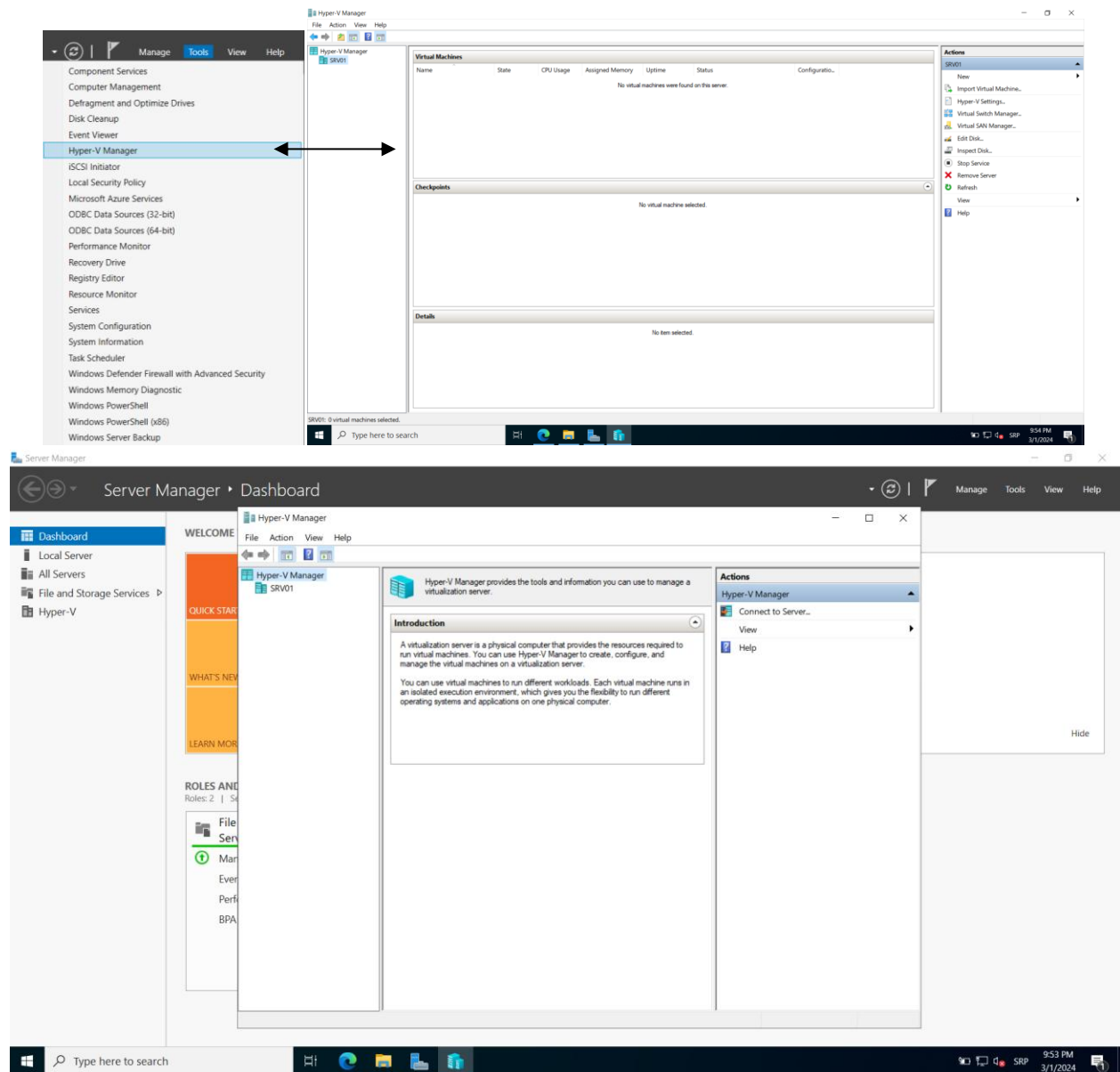
Please select your Windows Server 2022 download



The initial images show the content that covers the Windows Server download process, followed by the following screenshots of the installation of Hyper-V Role.



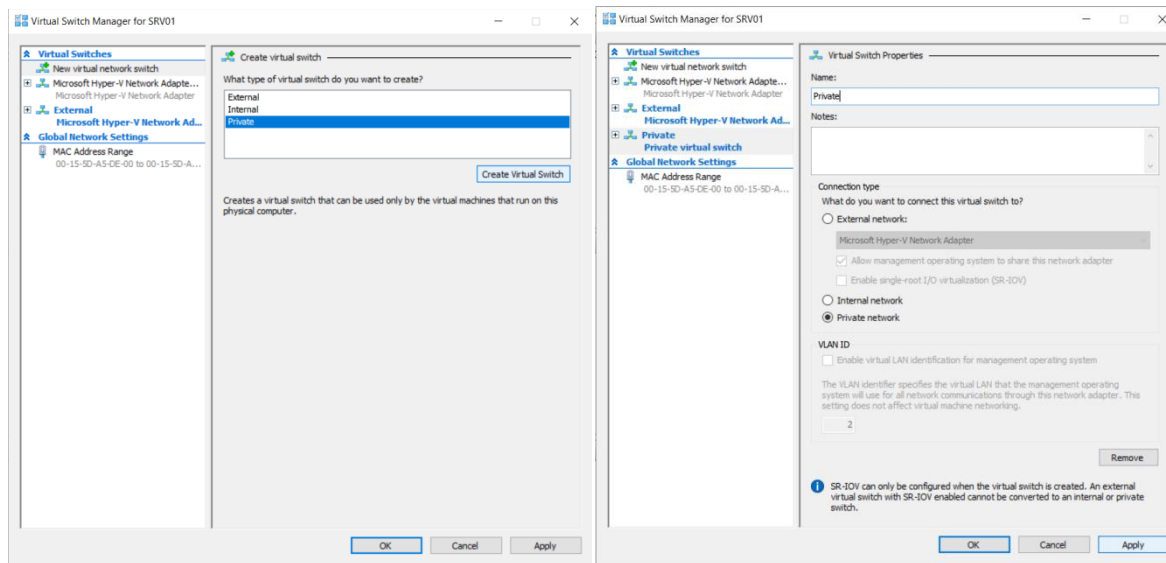
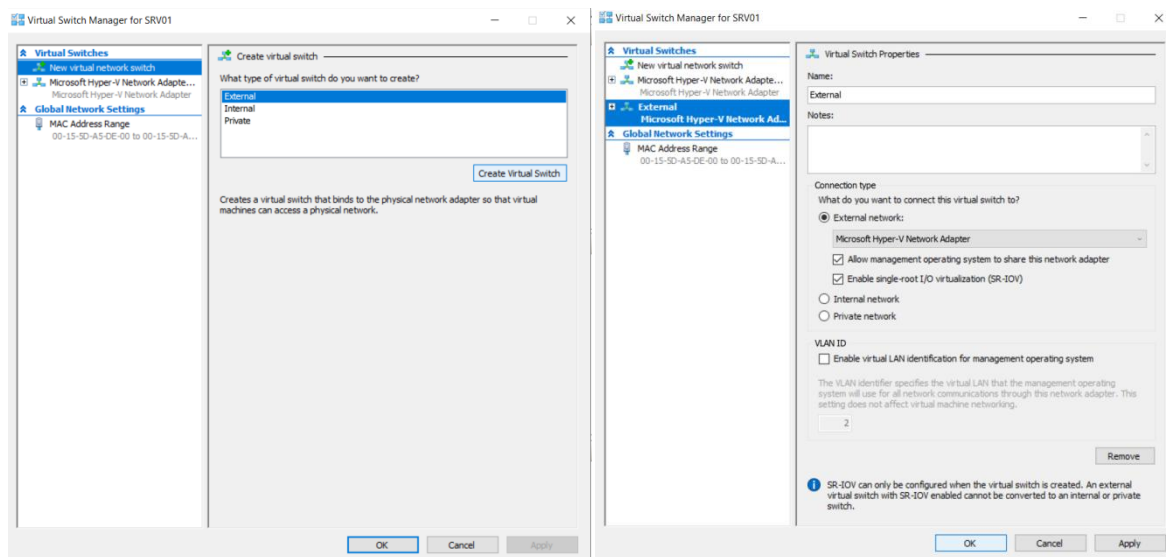
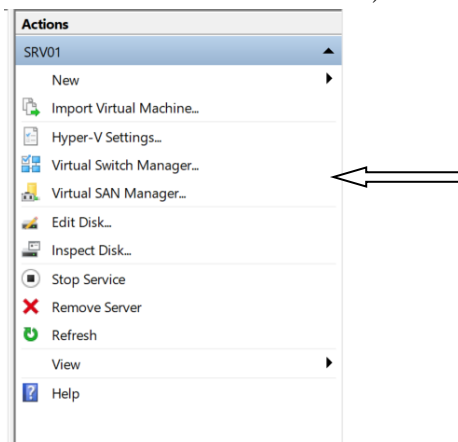


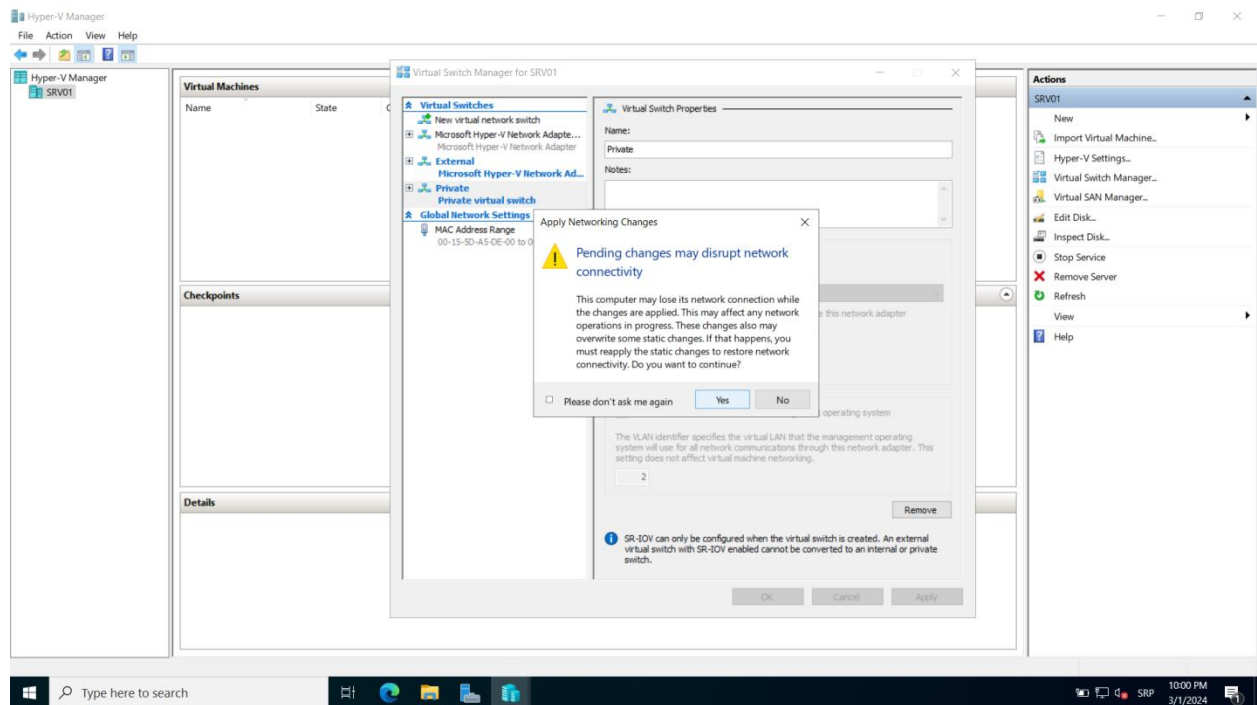


After a successful installation, in Hyper-V, first of all, I start creating two virtual switches as prescribed in the task, the installation of External and Private Switches.

"Also, there must be two network cards (the first, which will connect to the External team's switch called the External Network, and the second one that will connect to the Private-type

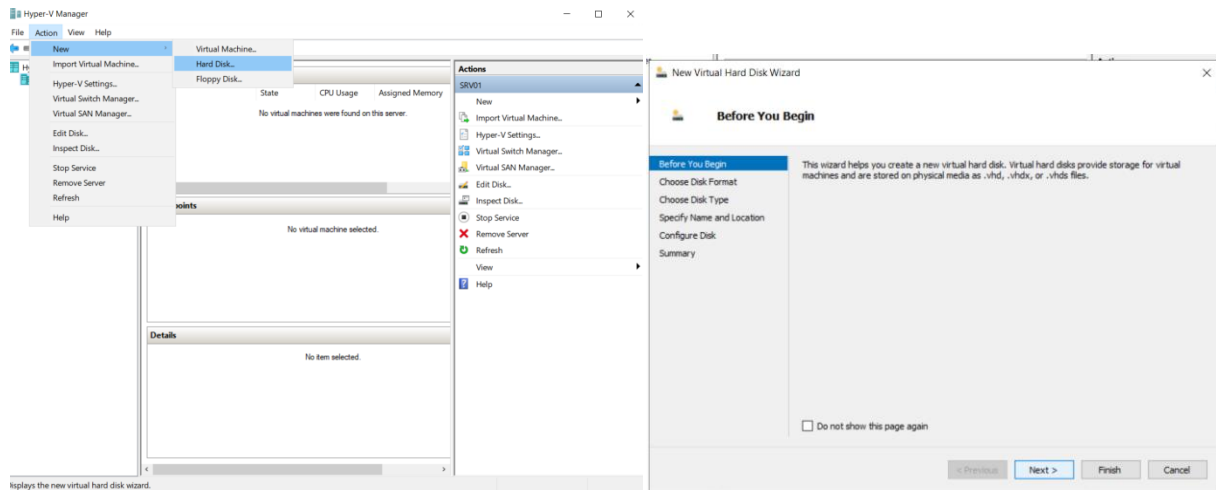
switch called the Private Network).





After creating the Virtual Switches, the next step is to create 100 and 20 GB disks.

Two hard drives (the first 100GB, the second 20GB)



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?

☐ VHDX
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.

☐ VHD Set
This format is for shared virtual hard disks only, and enables backup of virtual machine groups using shared virtual hard disks. This format is not supported in operating systems earlier than Windows 10.

< Previous Next > Finish Cancel

New Virtual Hard Disk Wizard

Choose Disk Type

Before You Begin

Choose Disk Format

Choose Disk Type

Specify Name and Location

Configure Disk

Summary

What type of virtual hard disk do you want to create?

☐ Fixed size
This type of disk provides better performance and is recommended for servers running applications with high levels of disk activity. The virtual hard disk file that is created initially uses the size of the virtual hard disk and does not change when data is deleted or added.

☒ Dynamically expanding
This type of disk provides better use of physical storage space and is recommended for servers running applications that are not disk intensive. The virtual hard disk file that is created is small initially and changes as data is added.

☐ Differencing
This type of disk is associated in a parent-child relationship with another disk that you want to leave intact. You can make changes to the data or operating system without affecting the parent disk, so that you can revert the changes easily. All children must have the same virtual hard disk format as the parent (VHD or VHDX).

< Previous Next > Finish Cancel

New Virtual Hard Disk Wizard

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: H001

Location: C:\ [Browse...]

< Previous Next > Finish Cancel

New Virtual Hard Disk Wizard

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: 100 GB (Maximum: 64 TB)

☐ Copy the contents of the specified physical disk:

Physical Hard Disk	Size
\\.\PHYSICALDRIVE0	49 GB

☐ Copy the contents of the specified virtual hard disk
Path: [Browse...]

< 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:	H001.vhdx
Location:	C:\
Size:	100 GB

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

< Previous Next > Finish Cancel

New Virtual Hard Disk Wizard

Before You Begin

Before You Begin

Choose Disk Format

Choose Disk Type

Specify Name and Location

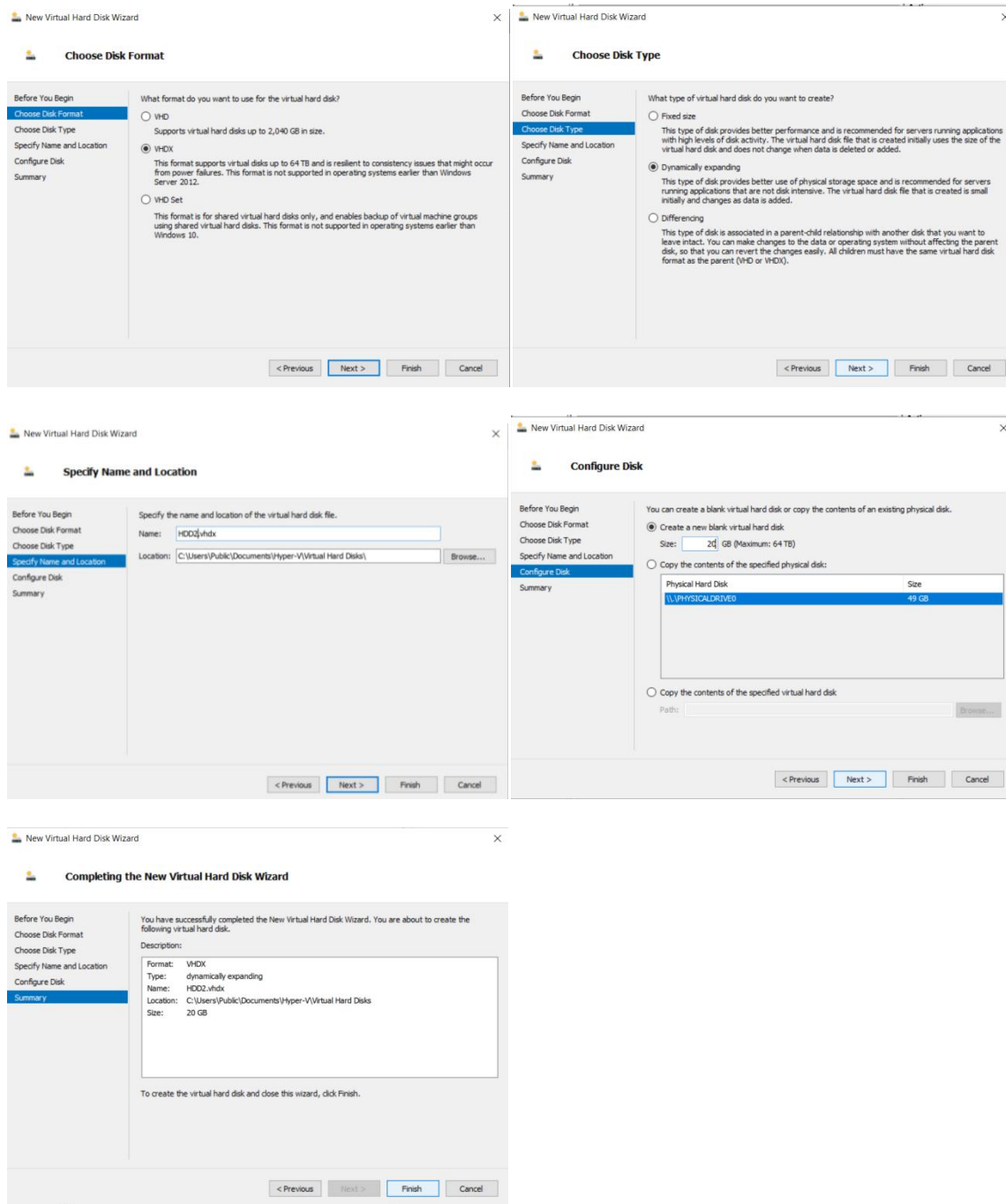
Configure Disk

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 .vhdx, .vhd, or .vhdx files.

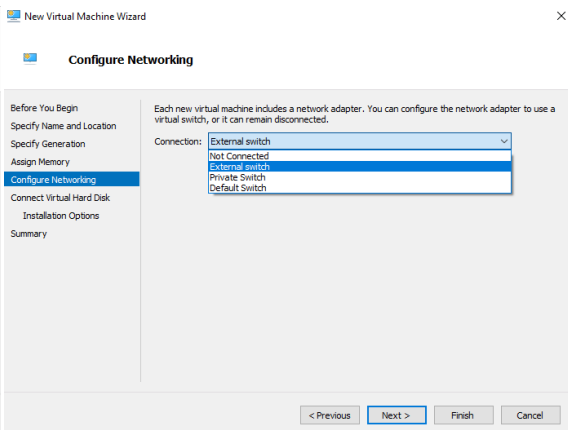
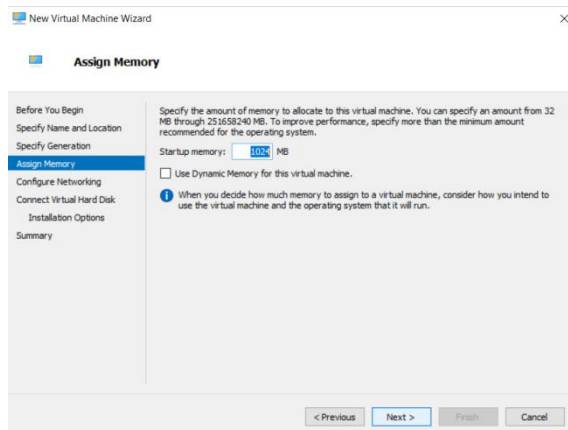
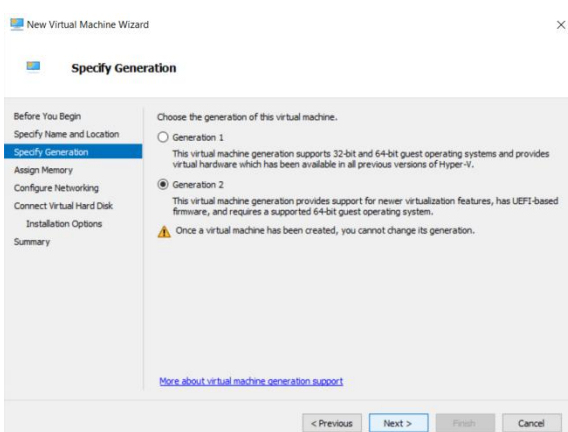
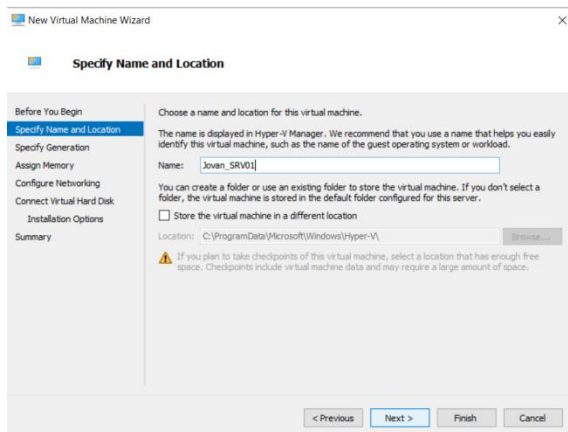
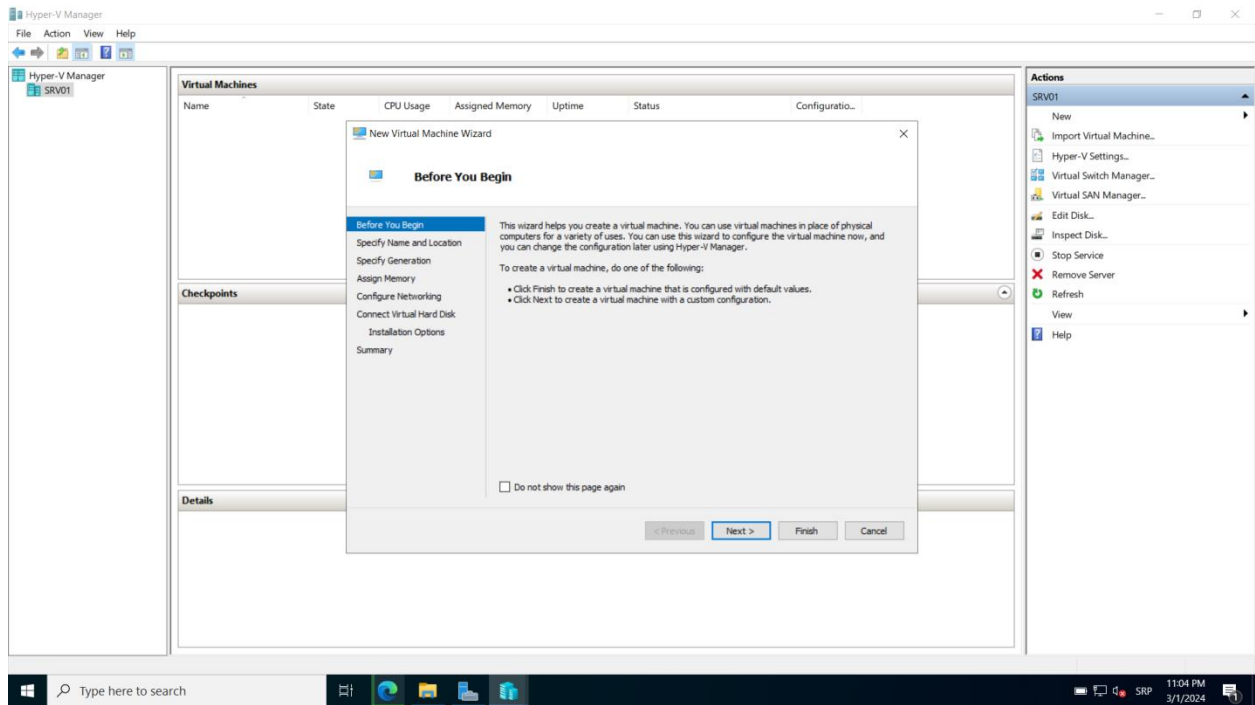
☐ Do not show this page again

< Previous Next > Finish Cancel



After downloading the .iso file on Windows Server, I start its installation through the Hyper-V Roll, in which each subsequent steps provided by the task will be monitored.

"Within this virtual machine, you will need to have Windows Server 2022 Standard with a graphical interface (Desktop Experience) installed."



New Virtual Machine Wizard

Connect Virtual Hard Disk

Before You Begin

Specify Name and Location

Specify Generation

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 VHDx dynamically expanding virtual hard disk.

Name: Jovan_SRV01.vhdx

Location: C:\ProgramData\Microsoft\Windows\Hyper-V\Jovan_SRV01\Virtual H

Size: 52 GB (Maximum: 64 TB)

Use an existing virtual hard disk

Use this option to attach an existing VHDx virtual hard disk.

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

Attach a virtual hard disk later

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

New Virtual Machine Wizard

Installation Options

Before You Begin

Specify Name and Location

Specify Generation

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 bootable image file

Media

Image file (.iso): F:\SERVER\SERVER_EVAL_x64FRE_en-us.iso

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.

New Virtual Machine Wizard

Completing the New Virtual Machine Wizard

Before You Begin

Specify Name and Location

Specify Generation

Assign Memory

Configure Networking

Connect Virtual Hard Disk

Installation Options

Summary

You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine.

Description:

Name: Jovan_SRV01

Generation: Generation 2

Memory: 1024 MB

Network: External switch

Hard Disk: C:\ProgramData\Microsoft\Windows\Virtual Hard Disks\Jovan_SRV01.vhdx (VHD)

Operating System: Will be installed from F:\SERVER\SERVER_EVAL_x64FRE_en-us.iso

To create the virtual machine and close the wizard, click Finish.

< Previous

Next >

Finish

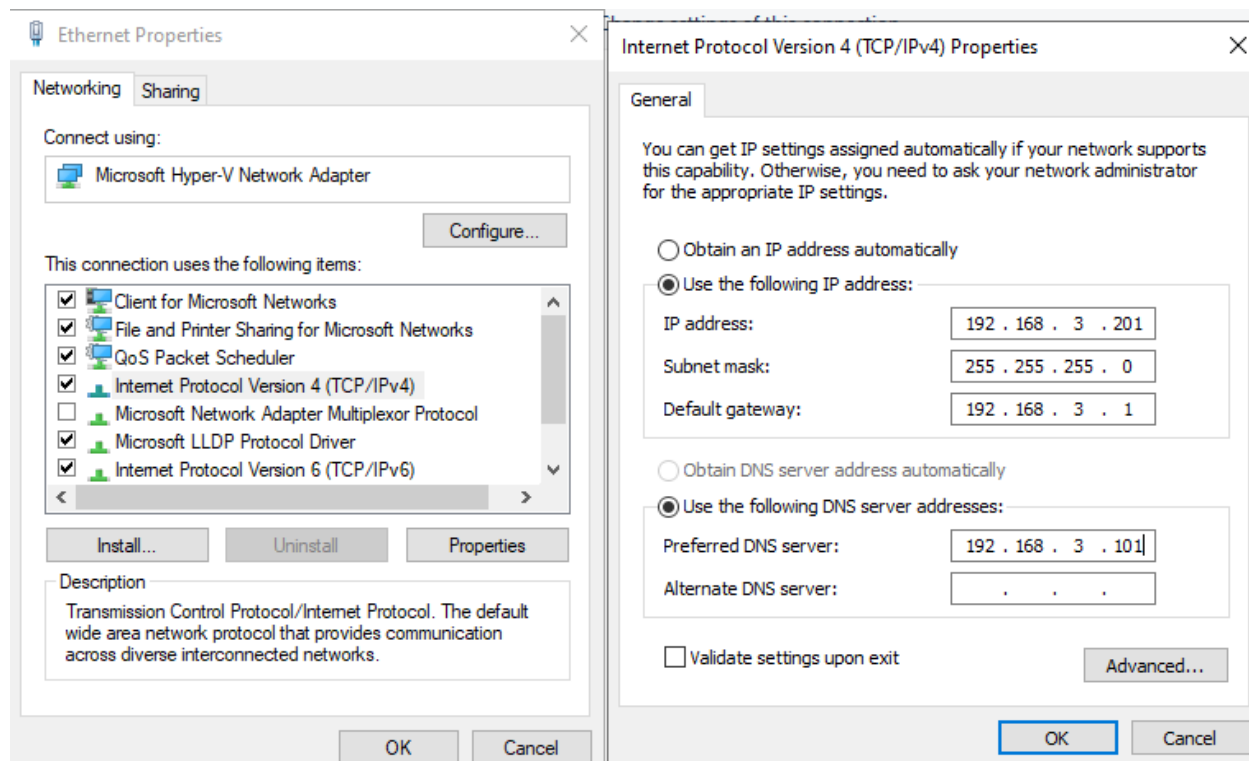
Cancel

DISKS										
All disks 3 total										
Filter										
Number	Virtual Disk	Status	Capacity	Unallocated	Partition	Read Only	Clustered	Subsystem	Bus Type	Name
Jovan_SRV01 (3)										
1		Online	100 GB	100 GB	Unknown				SAS	Msft Virtual Disk
2		Online	20.0 GB	20.0 GB	Unknown				SAS	Msft Virtual Disk
0		Online	127 GB	1.00 MB	GPT				SAS	Msft Virtual Disk

Last refreshed on 3/2/2024 3:28:05 AM

The next step is to connect the server to a private switch and correct the network data.

"and in the Private network, there must be a static IP address of 192.168.3.201, a netmask of 255.255.255.0, a default Default Gateway of 192.168.3.1, and a Preferred DNS of 192.168.3.101."



IP settings

IP assignment: Manual
IPv4 address: 192.168.3.201
IPv4 mask: 255.255.255.0
IPv4 gateway: 192.168.3.1

Edit

DNS settings

DNS server assignment: Manual
IPv4 DNS servers: 192.168.3.101 (Unencrypted)

Edit

Properties

Manufacturer: Microsoft
Description: Microsoft Hyper-V Network Adapter
Driver version: 10.0.20348.469
Physical address (MAC): 00-15-5D-01-6C-1B

Copy