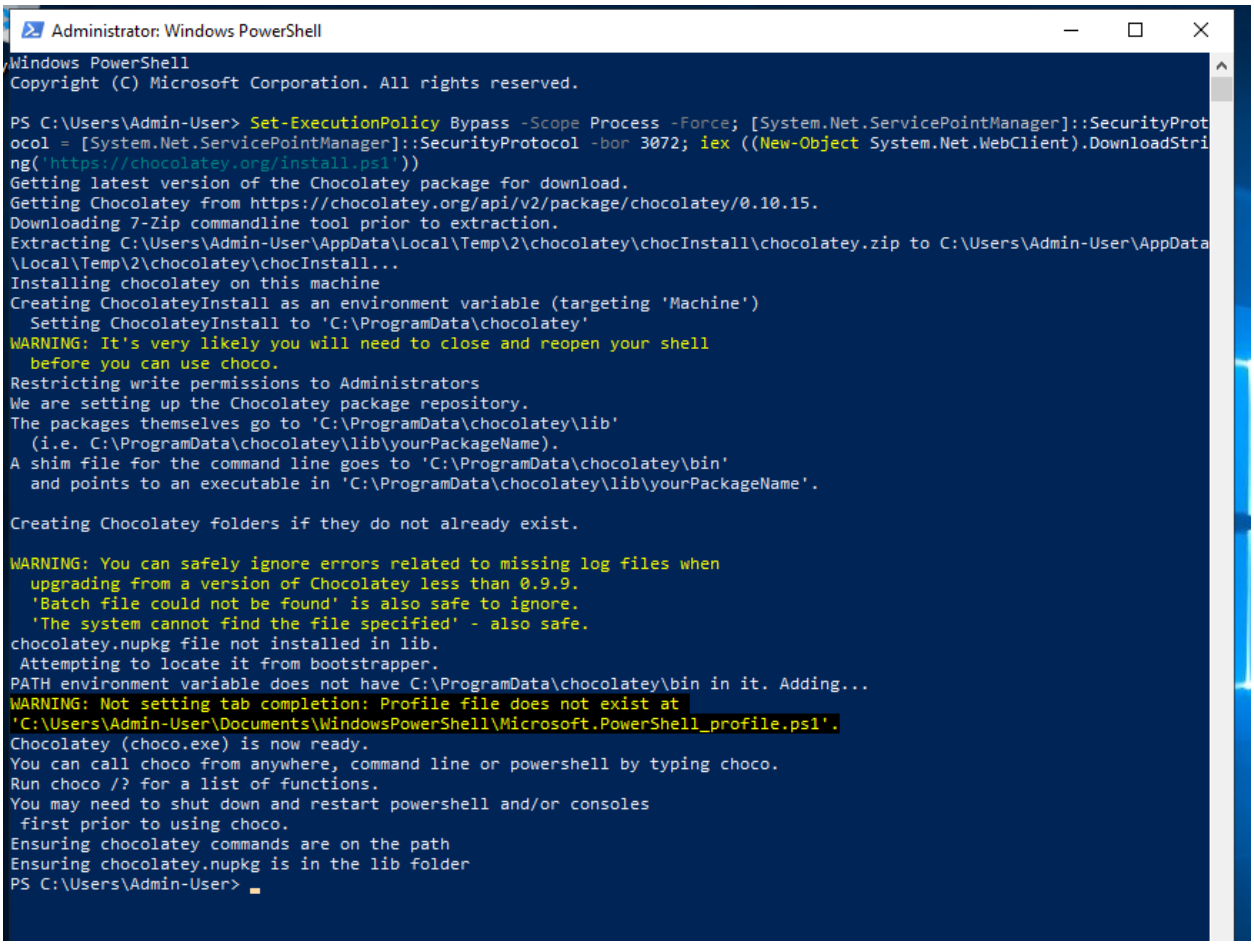
Nompumelelo Mtshatsheni

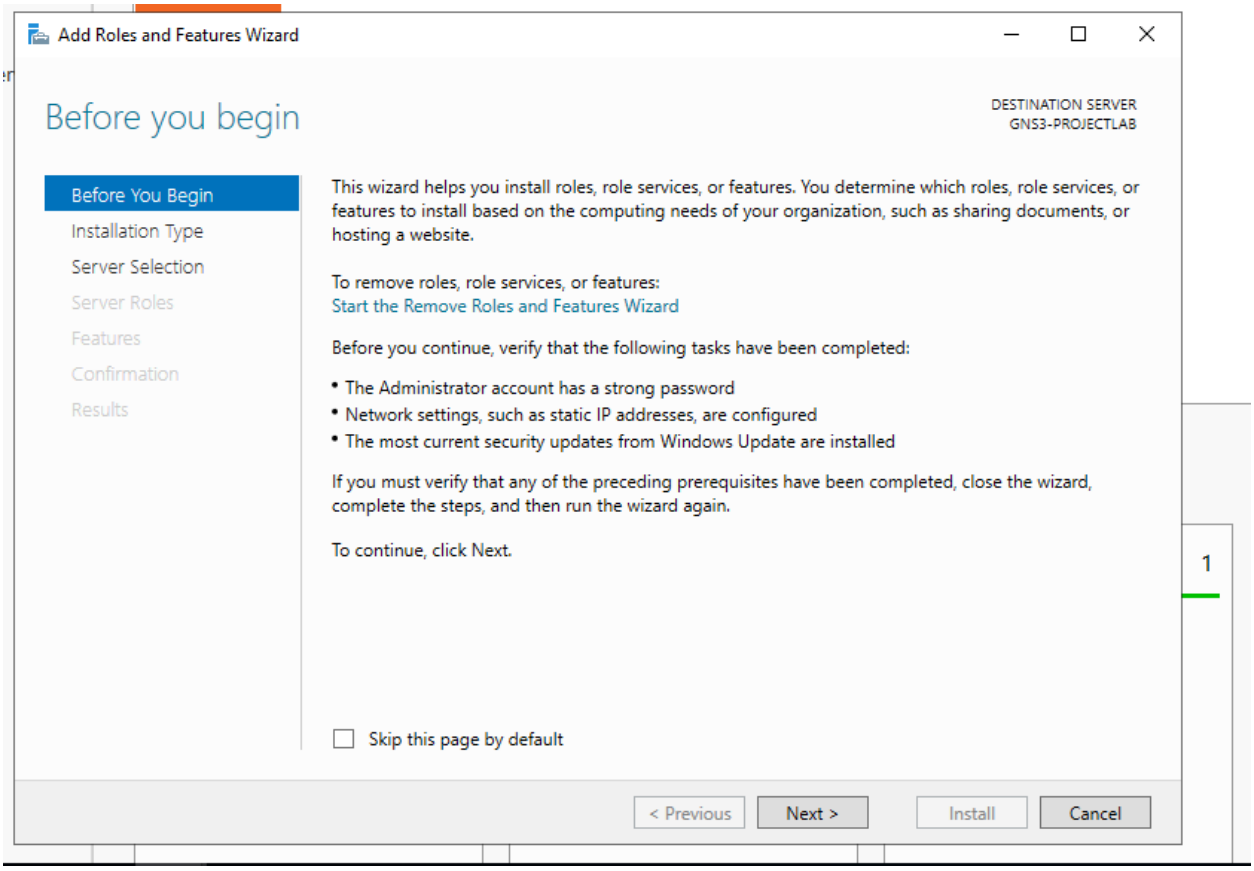
Student Number: BXMDLL7W9

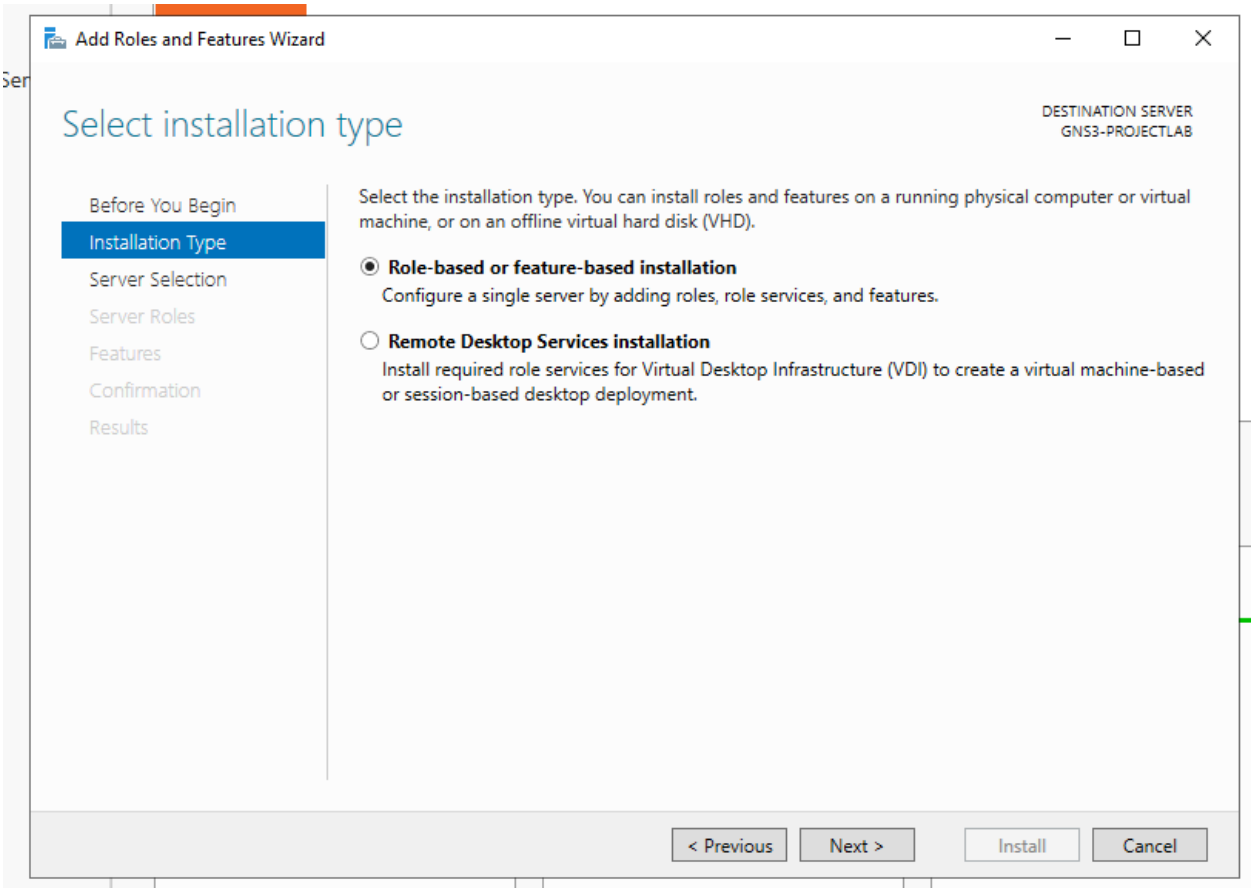
ITSC311 – Project

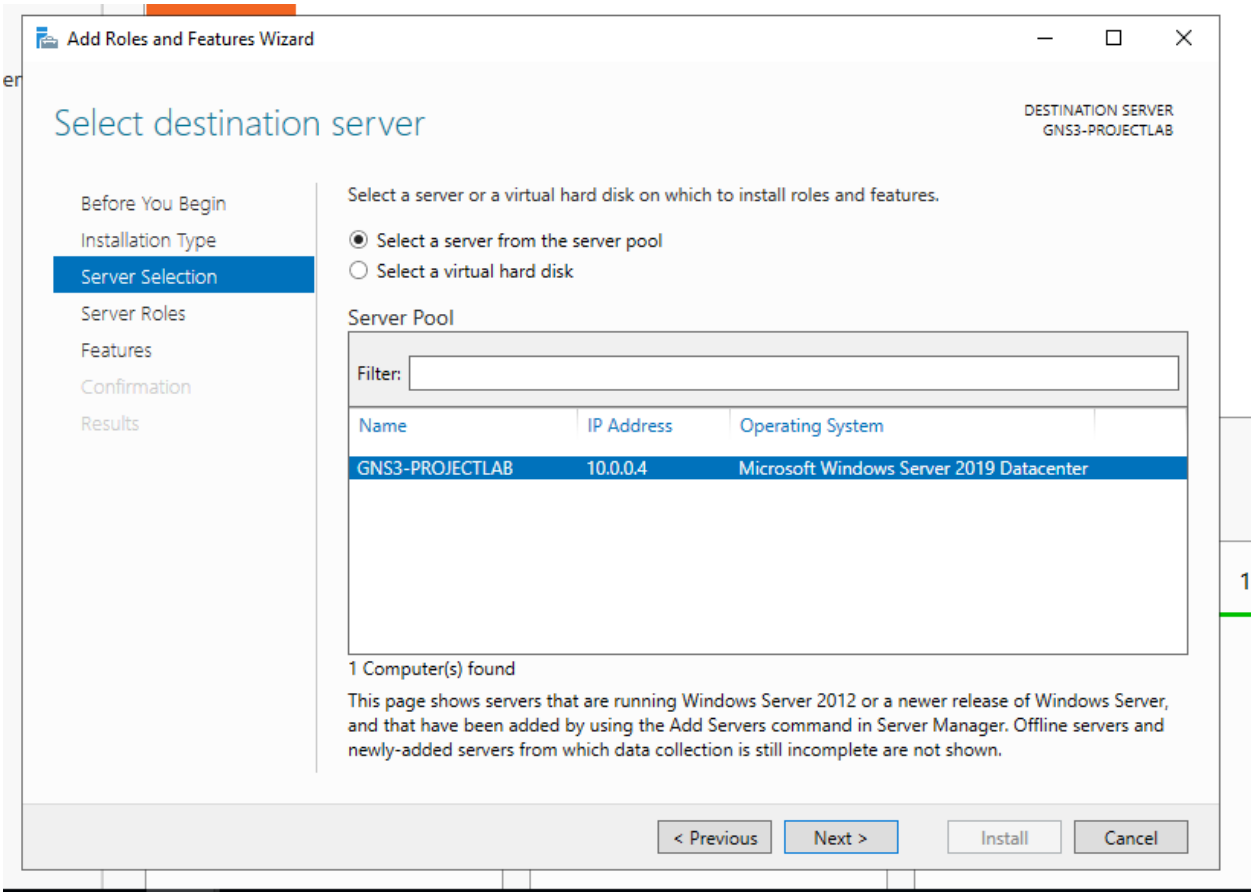
NB. Screenshots

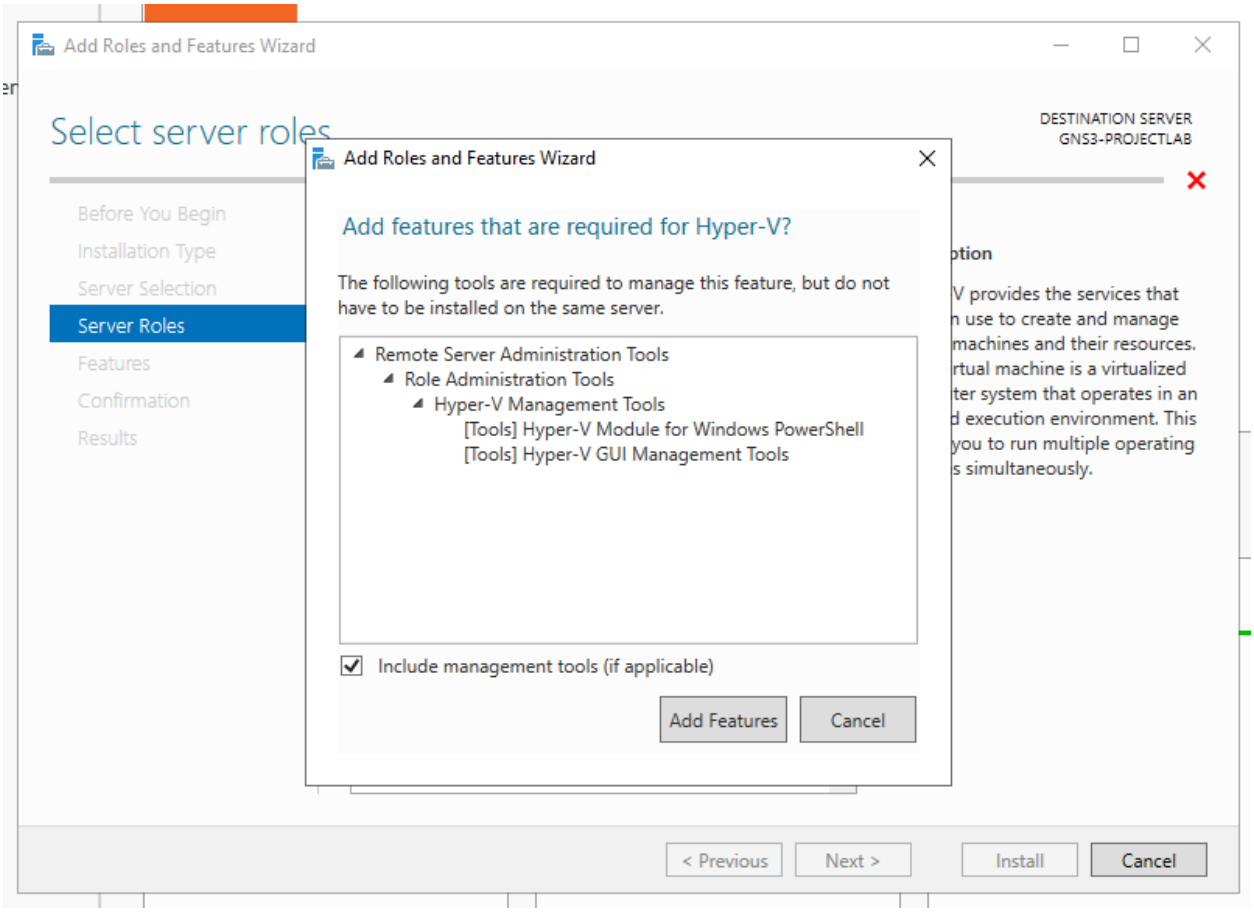


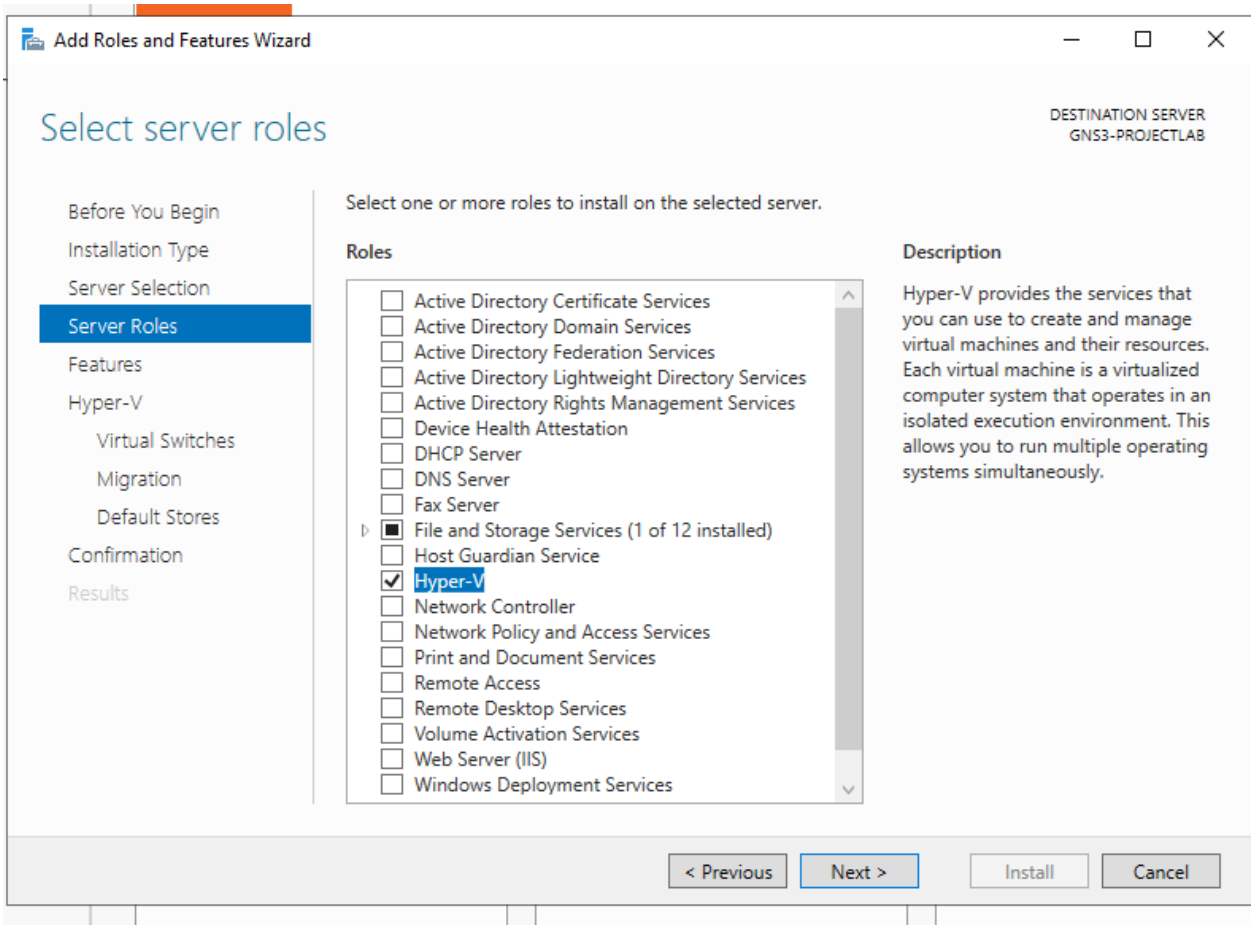
```
PS C:\Users\Admin-User> choco install -y microsoft-edge
Chocolatey v0.10.15
Installing the following packages:
microsoft-edge
By installing you accept licenses for the packages.
Progress: Downloading microsoft-edge 83.0.478.45... 100%

microsoft-edge v83.0.478.45 [Approved]
microsoft-edge package files install completed. Performing other installation steps.
Downloading microsoft-edge 64 bit
  from 'http://dl.delivery.mp.microsoft.com/filestreamingservice/files/39efe221-38fc-47ea-bfde-17afb0710d4a/MicrosoftEdg
eEnterpriseX64.msi'
Progress: 100% - Completed download of C:\Users\Admin-User\AppData\Local\Temp\chocolatey\microsoft-edge\83.0.478.45\Micr
osoftEdgeEnterpriseX64.msi (81.89 MB).
Download of MicrosoftEdgeEnterpriseX64.msi (81.89 MB) completed.
Hashes match.
Installing microsoft-edge...
microsoft-edge has been installed.
  microsoft-edge may be able to be automatically uninstalled.
 The install of microsoft-edge was successful.
  Software installed as 'MSI', install location is likely default.

Chocolatey installed 1/1 packages.
 See the log for details (C:\ProgramData\chocolatey\logs\chocolatey.log).
PS C:\Users\Admin-User>
```

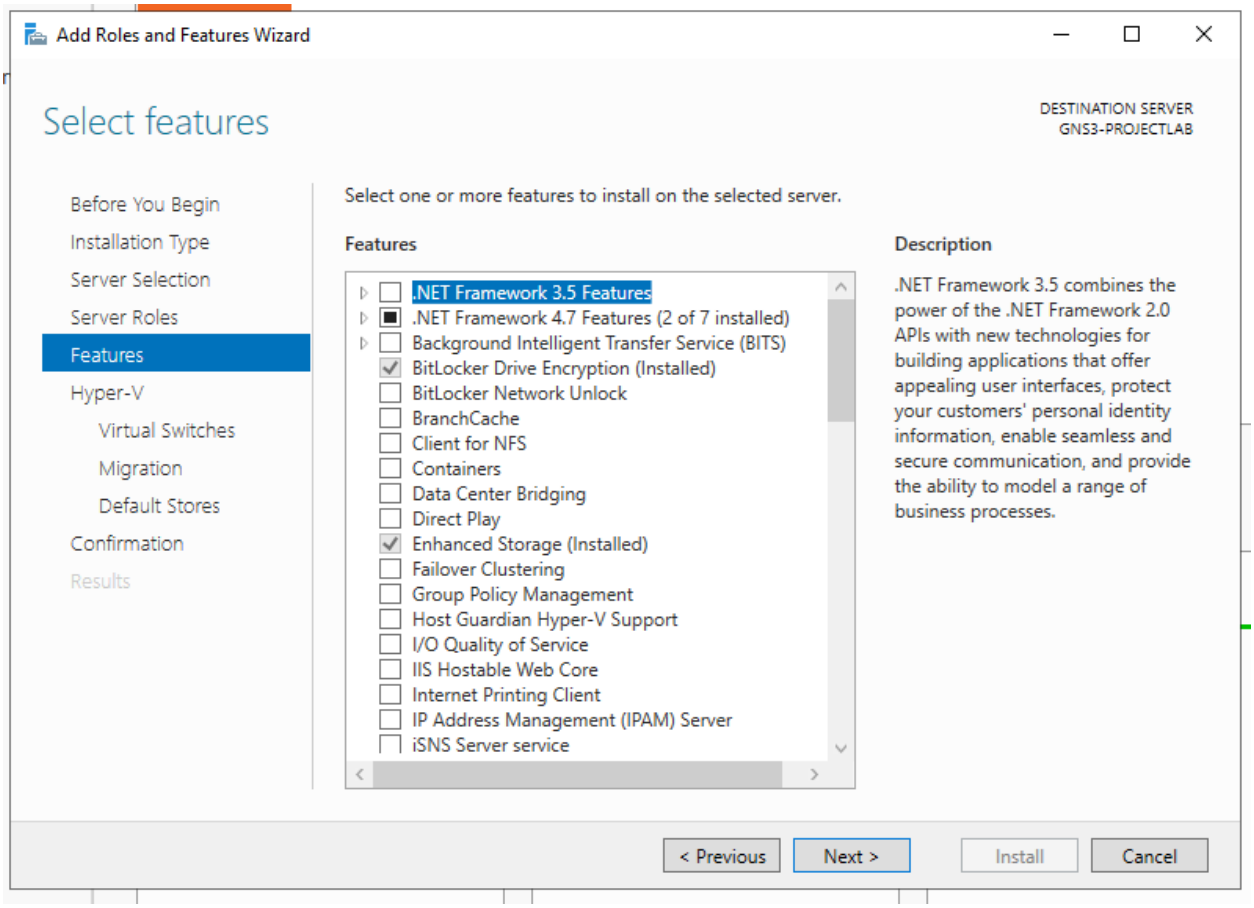


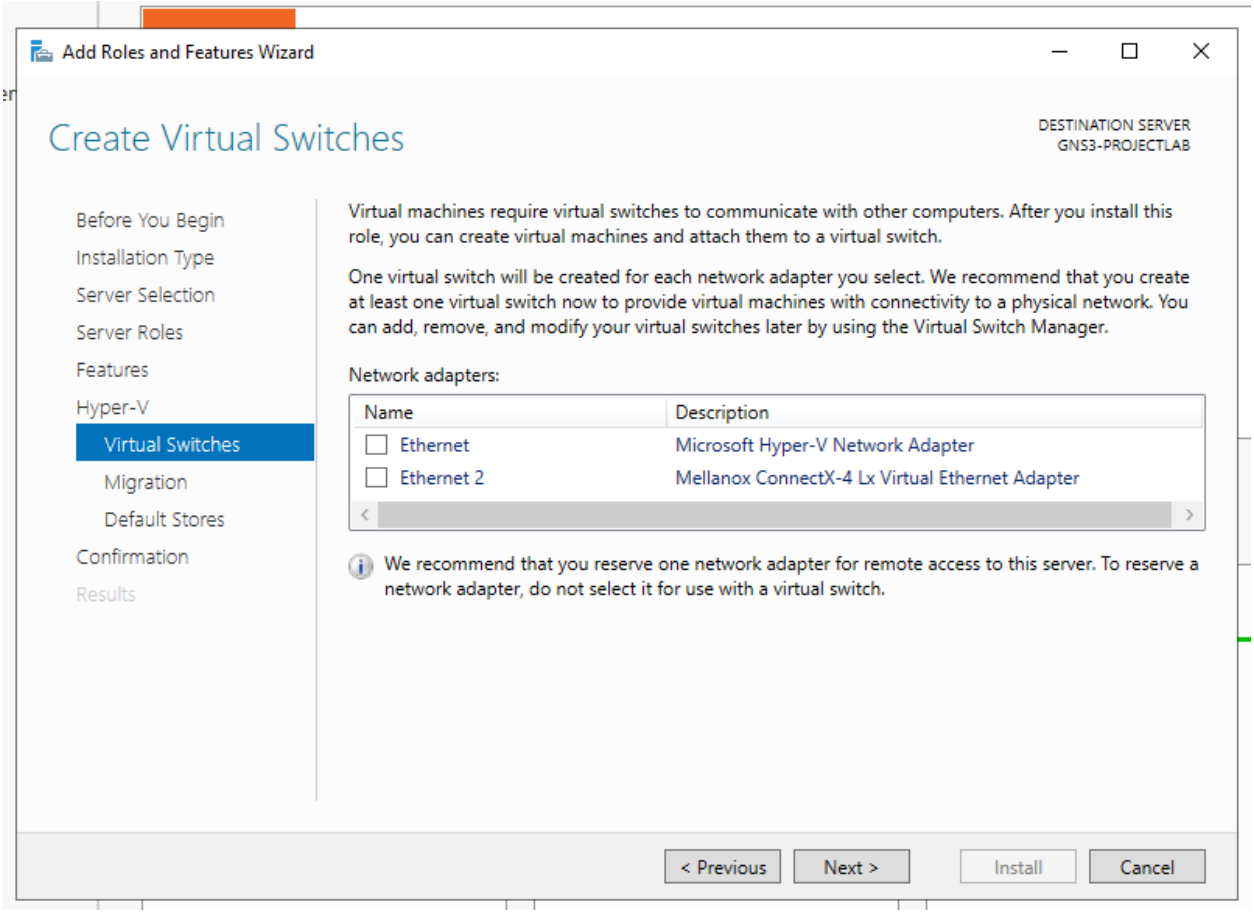

Add Roles and Features Wizard
Select installation type
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select the installation type. You can install roles and features on a running physical computer or virtual machine, 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

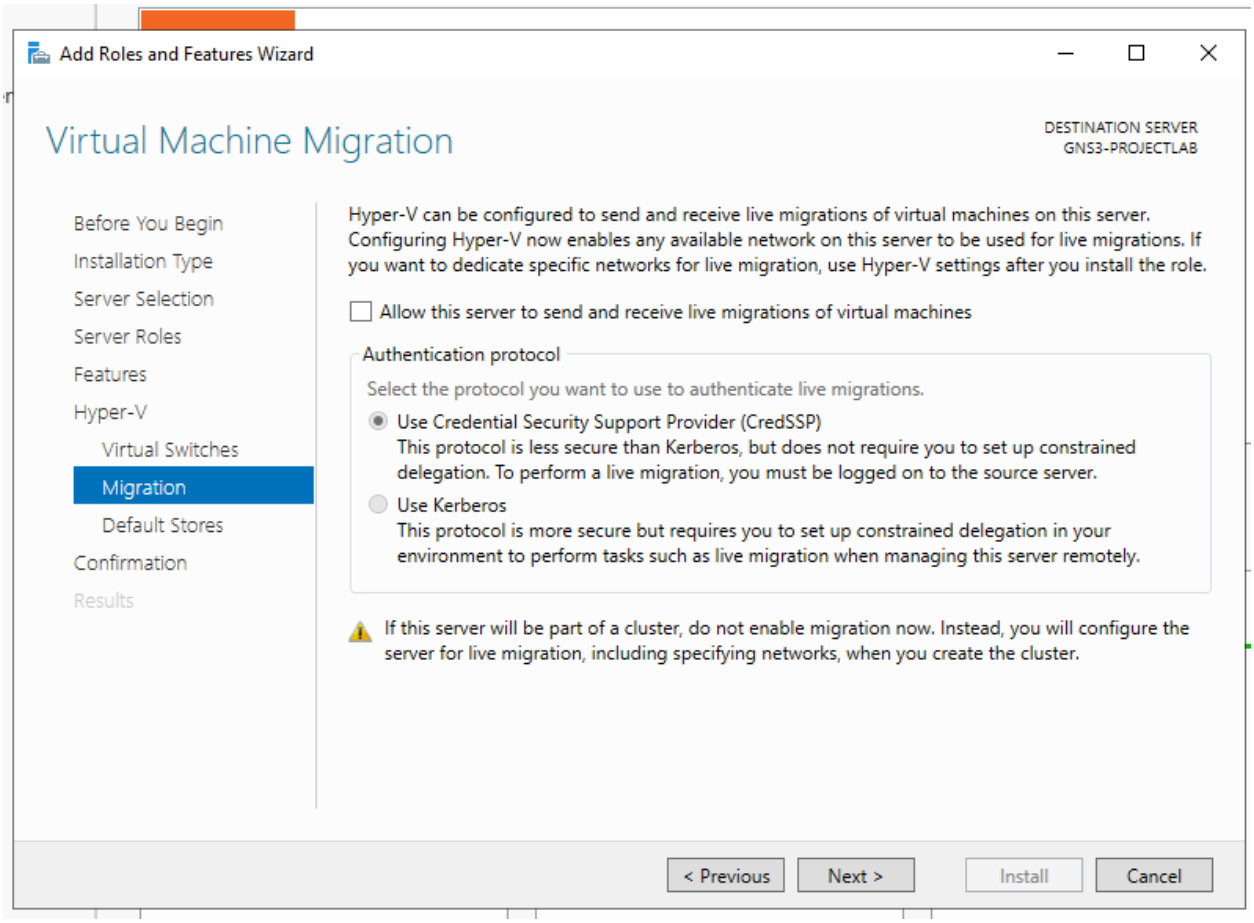

Add Roles and Features Wizard
Select destination server
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select a server or a virtual hard disk on which to install roles and features.
Select a server from the server pool
Select a virtual hard disk
Server Pool
Filter:
Name
IP Address
Operating System
GNS3-PROJECTLAB
10.0.0.4
Microsoft Windows Server 2019 Datacenter
1 Computer(s) found
This page shows servers that are running Windows Server 2012 or a newer release of Windows Server, 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

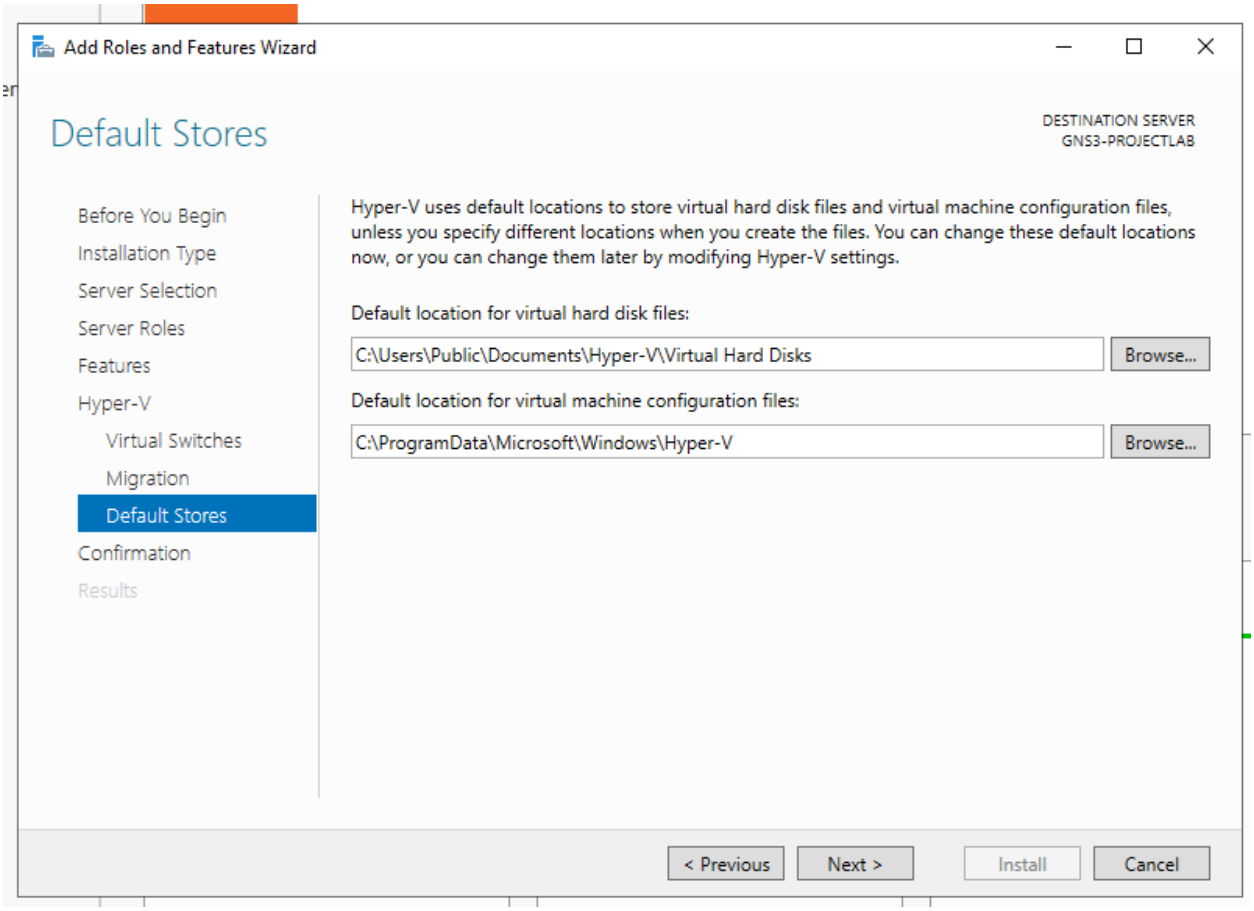

Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Add Roles and Features Wizard
Add features that are required for Hyper-V?
The following tools are required to manage this feature, but do not have to be installed on the same server.
Remote Server Administration Tools
Role Administration Tools
Hyper-V Management Tools
[Tools] Hyper-V Module for Windows PowerShell
[Tools] Hyper-V GUI Management Tools
Include management tools (if applicable)
Add Features
Cancel
< Previous
Next >
Install
Cancel

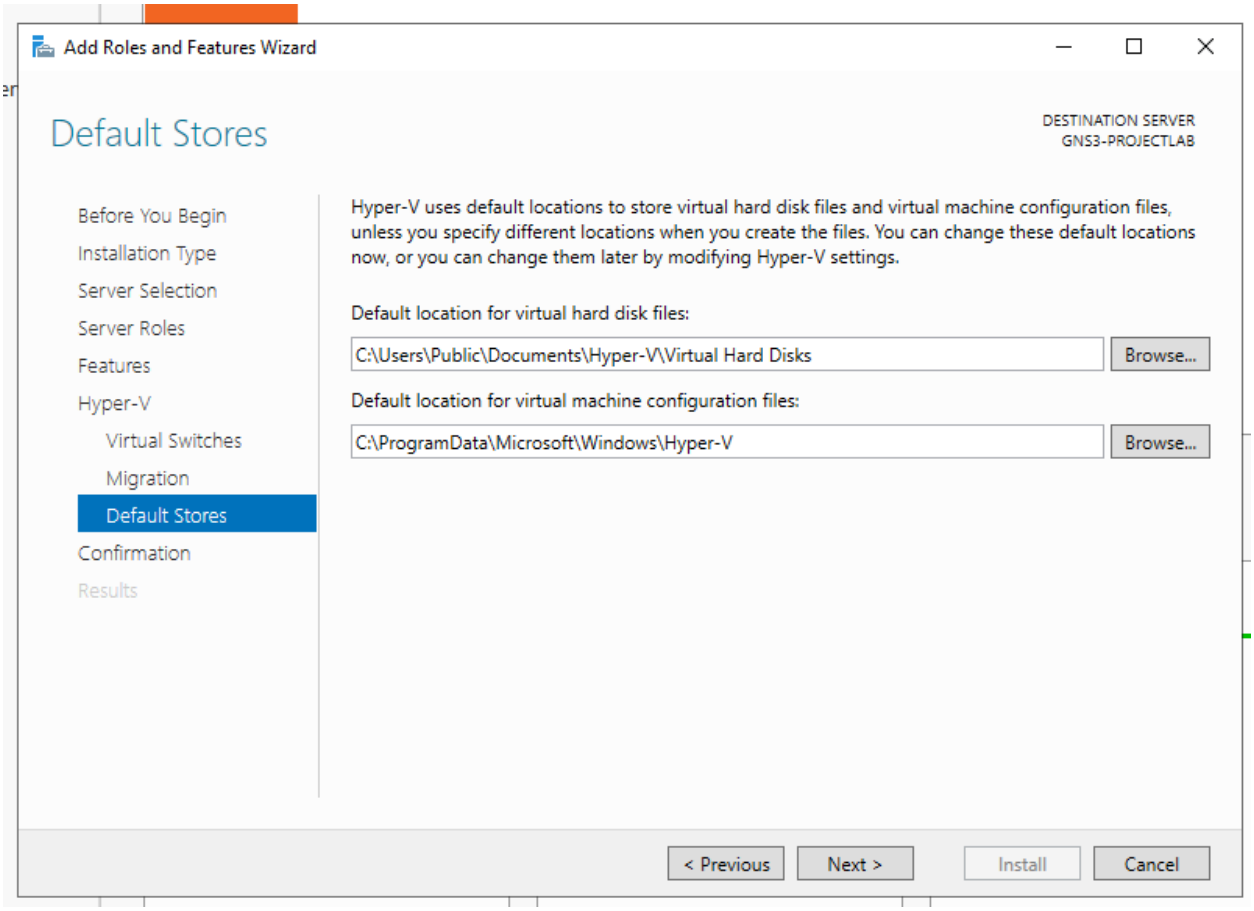

Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
Select one or more roles to install on the selected server.
Roles
Active Directory Certificate Services
Active Directory Domain Services
Active Directory Federation Services
Active Directory Lightweight Directory Services
Active Directory Rights Management Services
Device Health Attestation
DHCP Server
DNS Server
Fax Server
File and Storage Services (1 of 12 installed)
Host Guardian Service
Hyper-V
Network Controller
Network Policy and Access Services
Print and Document Services
Remote Access
Remote Desktop Services
Volume Activation Services
Web Server (IIS)
Windows Deployment 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.
< Previous
Next >
Install
Cancel

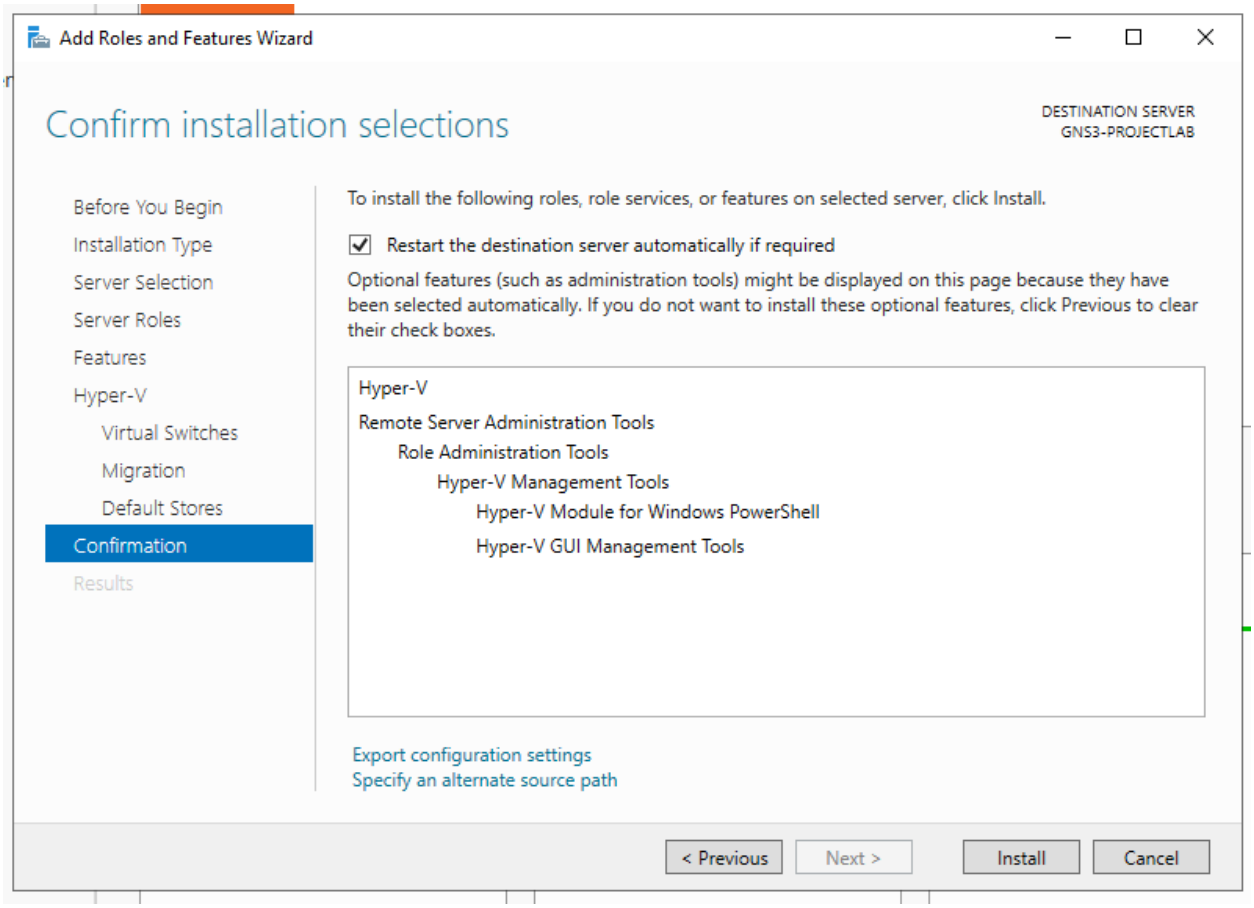

Add Roles and Features Wizard
Select features
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
Select one or more features to install on the selected server.
Features
.NET Framework 3.5 Features
.NET Framework 4.7 Features (2 of 7 installed)
Background Intelligent Transfer Service (BITS)
BitLocker Drive Encryption (Installed)
BitLocker Network Unlock
BranchCache
Client for NFS
Containers
Data Center Bridging
Direct Play
Enhanced Storage (Installed)
Failover Clustering
Group Policy Management
Host Guardian Hyper-V Support
I/O Quality of Service
IIS Hostable Web Core
Internet Printing Client
IP Address Management (IPAM) Server
iSNS Server service
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.
< Previous
Next >
Install
Cancel

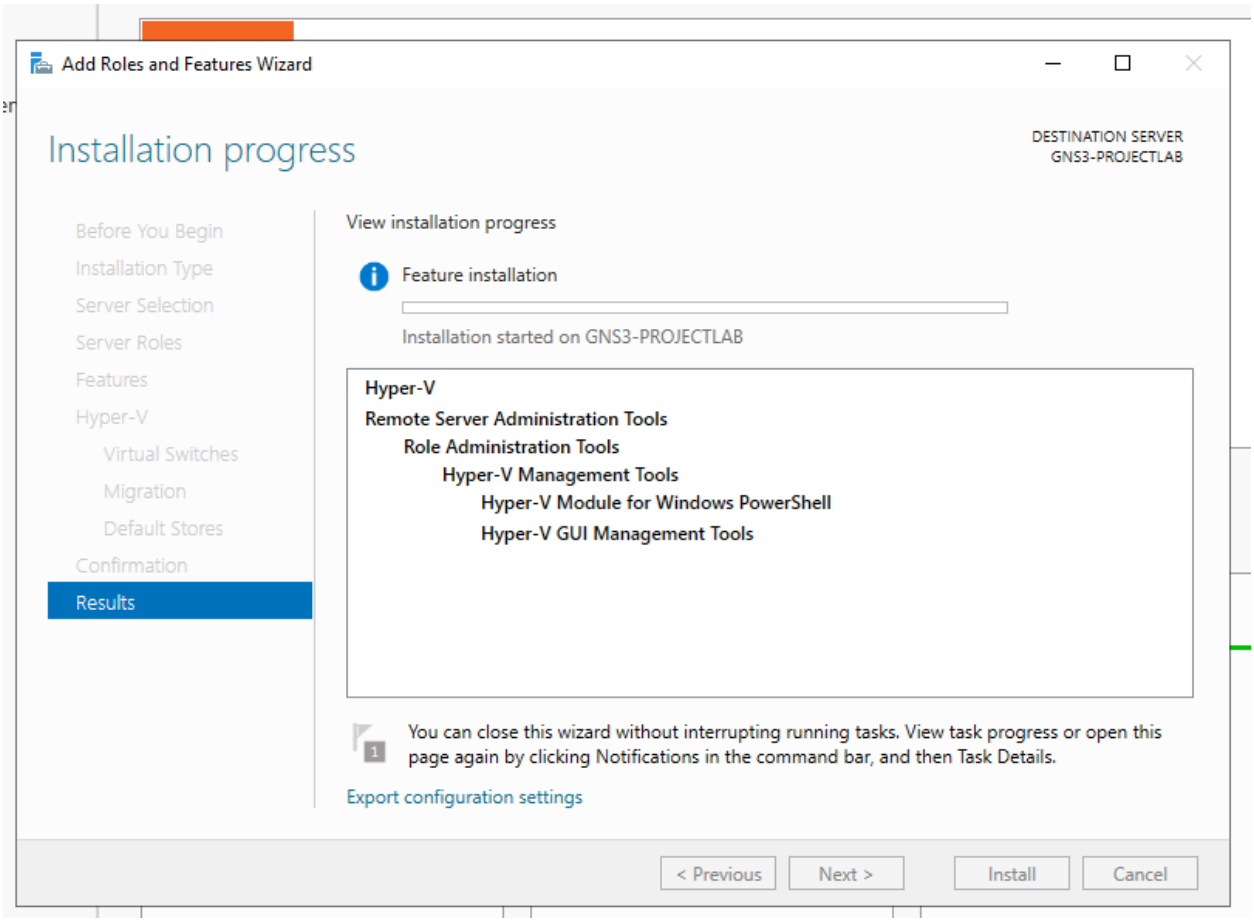

Add Roles and Features Wizard
Create Virtual Switches
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
Virtual machines require virtual switches to communicate with other 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
Ethernet
Microsoft Hyper-V Network Adapter
Ethernet 2
Mellanox ConnectX-4 Lx Virtual Ethernet Adapter
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

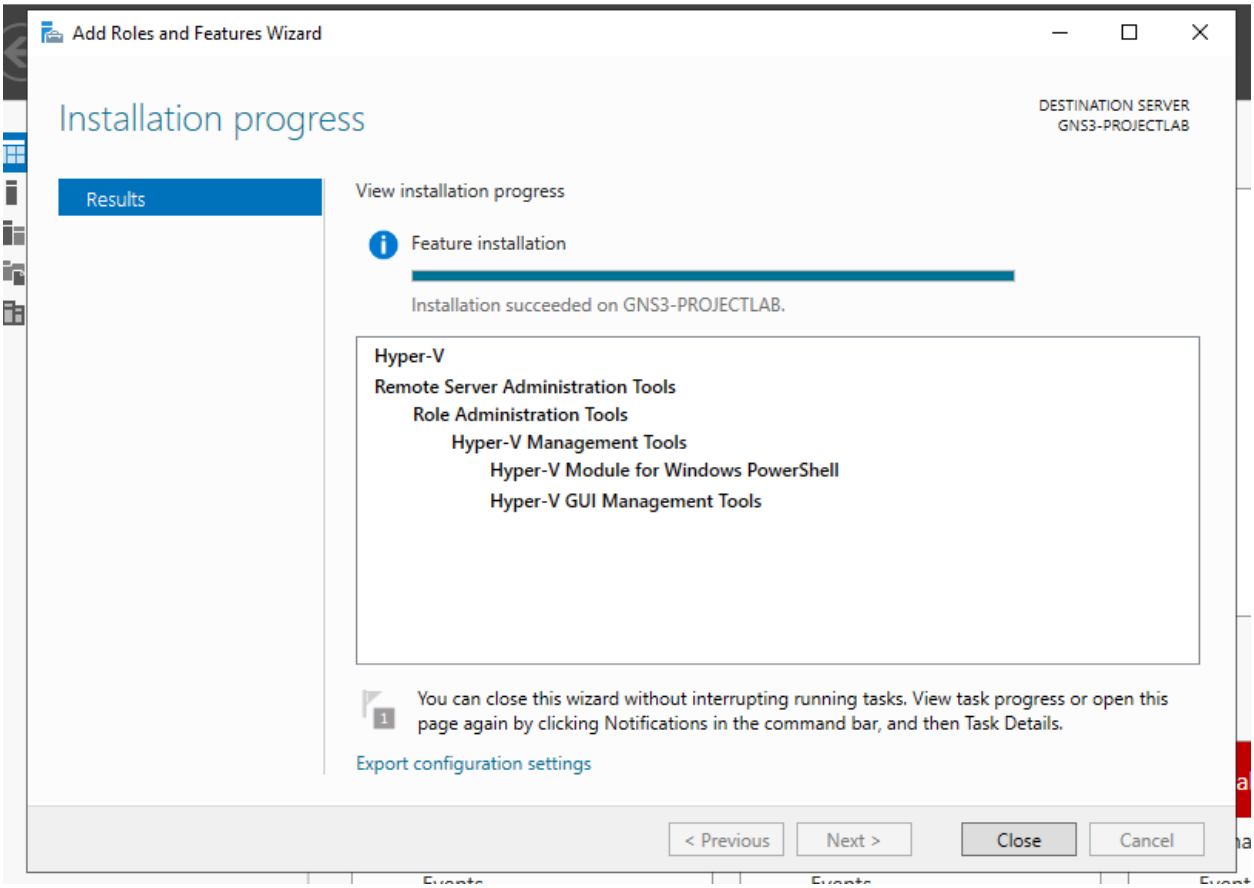

Add Roles and Features Wizard
Virtual Machine Migration
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
Hyper-V can be configured to send and receive live migrations of 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.
< Previous
Next >
Install
Cancel

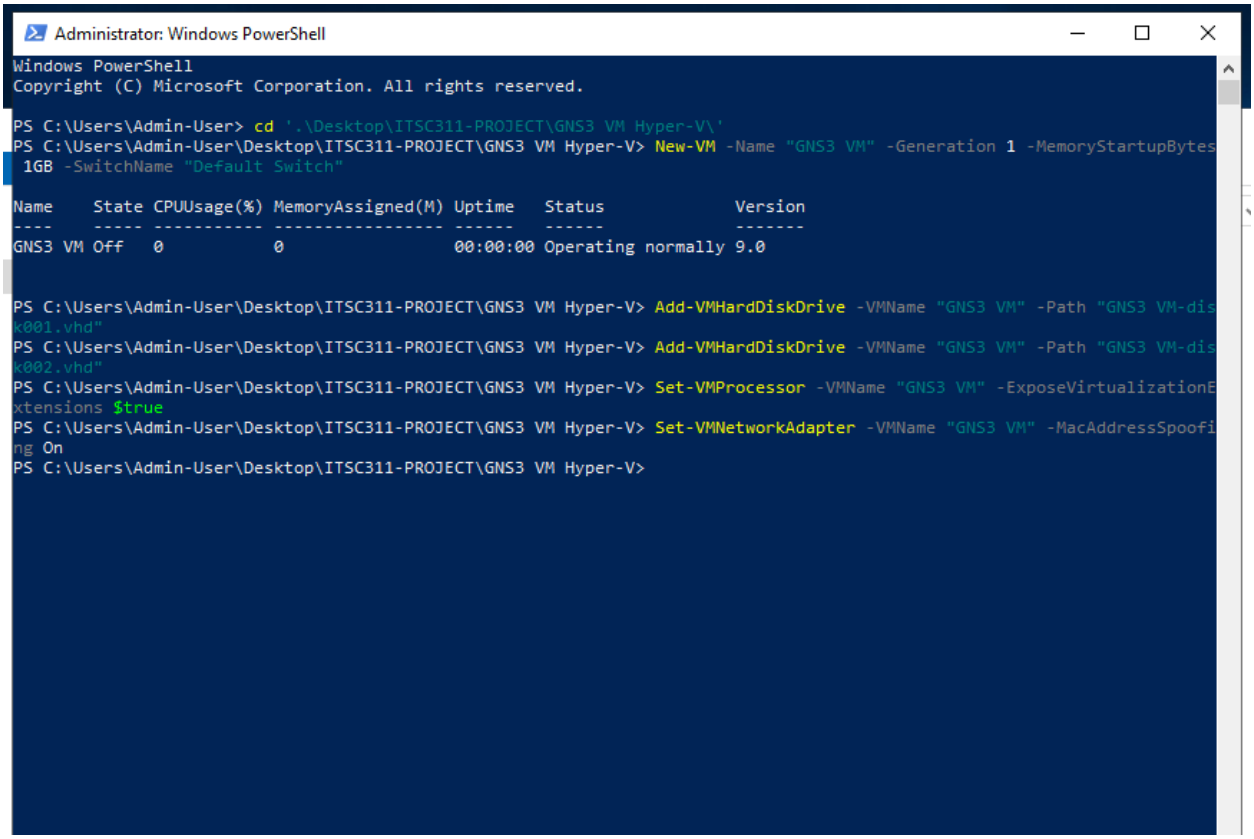

Add Roles and Features Wizard
Default Stores
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
Hyper-V uses default locations to store virtual hard disk files and virtual 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...
< Previous
Next >
Install
Cancel

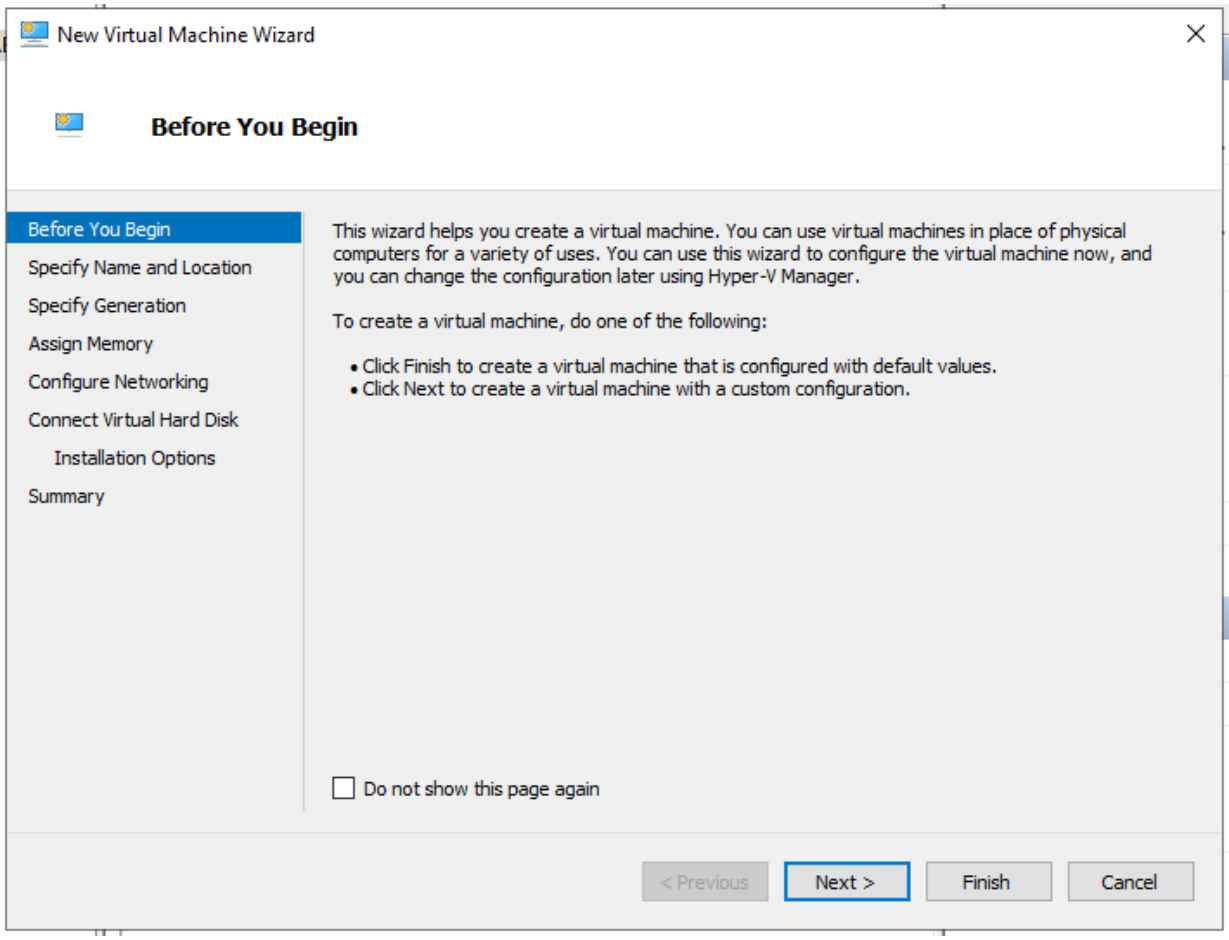

Add Roles and Features Wizard
Default Stores
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
Hyper-V uses default locations to store virtual hard disk files and virtual 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...
< Previous
Next >
Install
Cancel

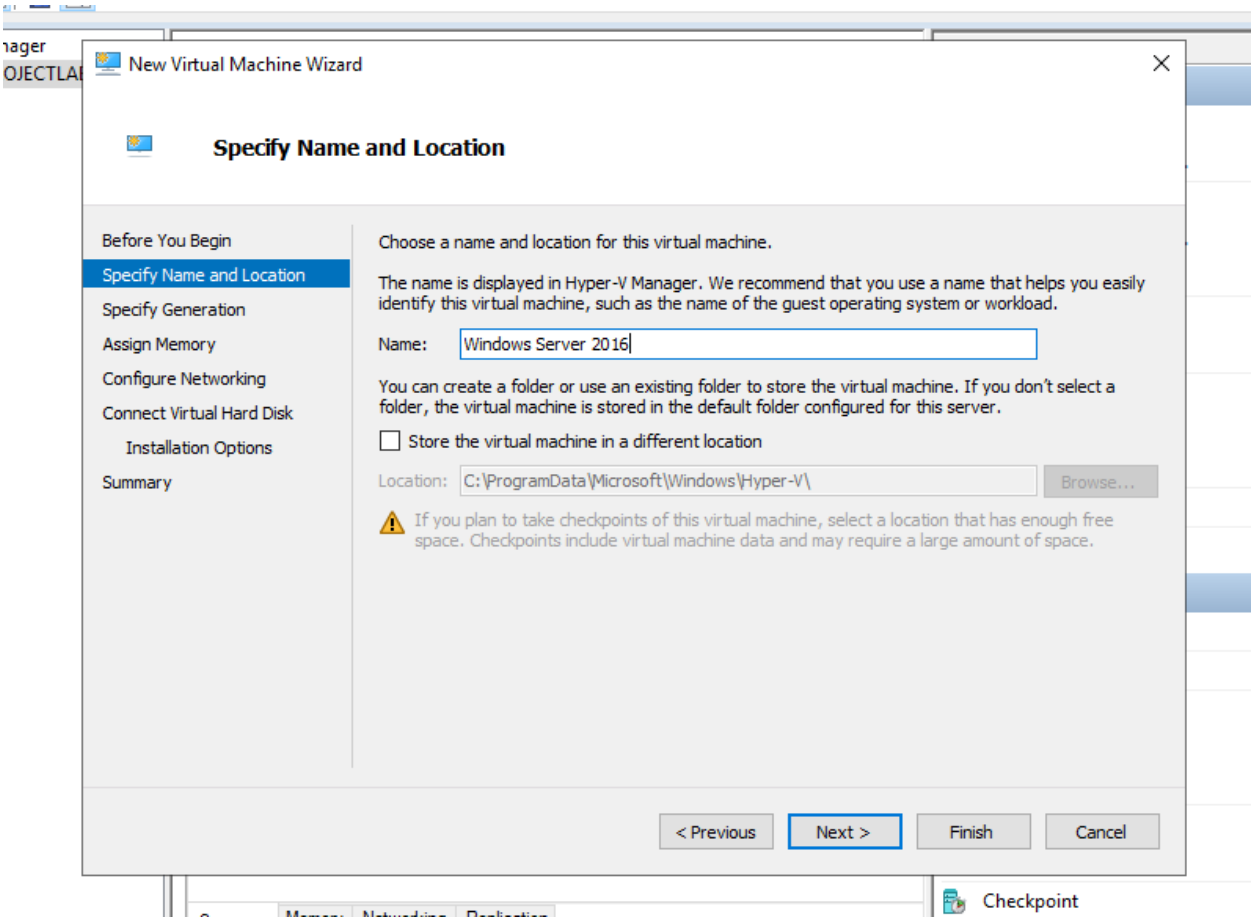

Add Roles and Features Wizard
Confirm installation selections
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
To install the following roles, role services, or features 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

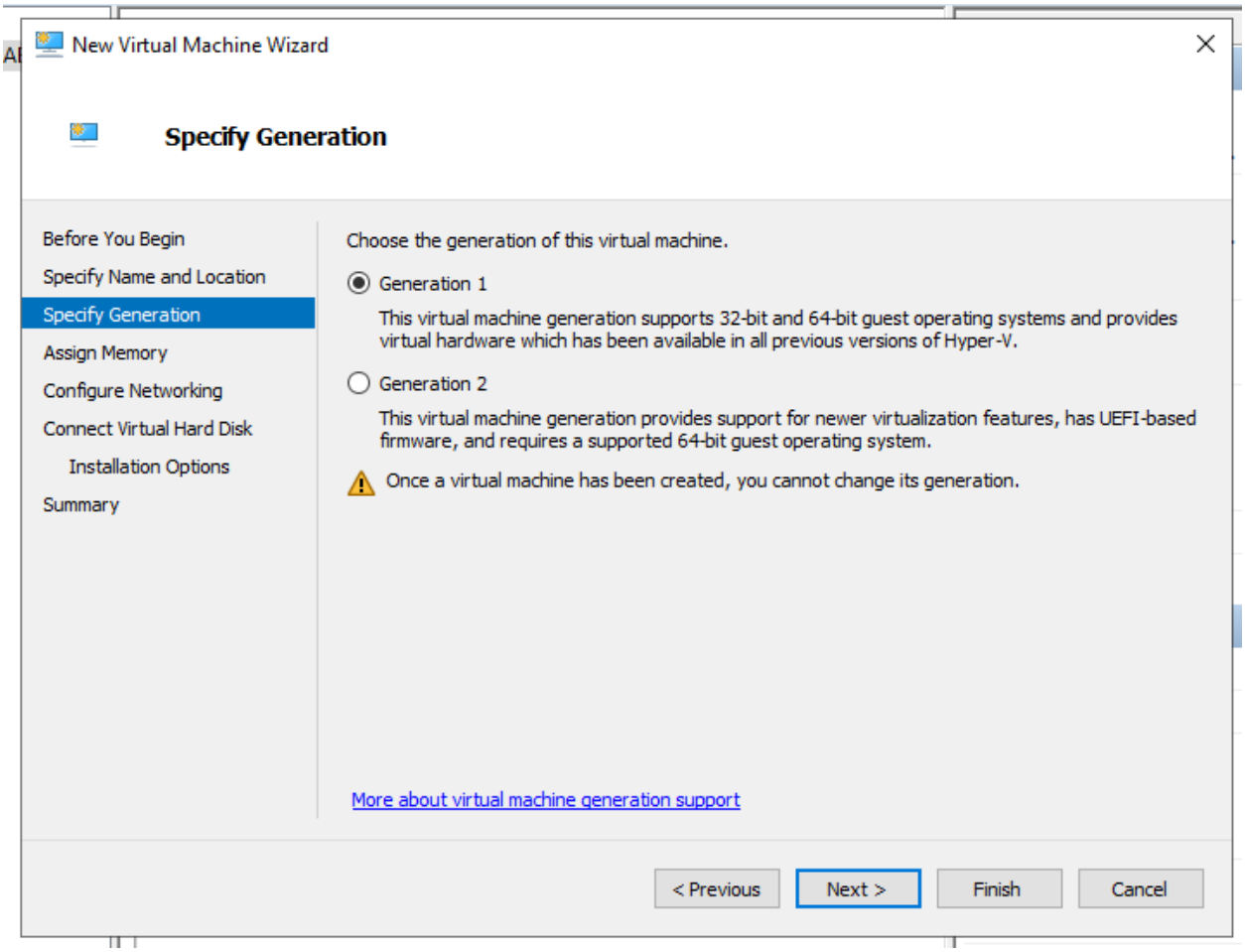

Add Roles and Features Wizard
Installation progress
DESTINATION SERVER
GNS3-PROJECTLAB
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results
View installation progress
Feature installation
Installation started on GNS3-PROJECTLAB
Hyper-V
Remote Server Administration Tools
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 task progress or open this page again by clicking Notifications in the command bar, and then Task Details.
Export configuration settings
< Previous
Next >
Install
Cancel

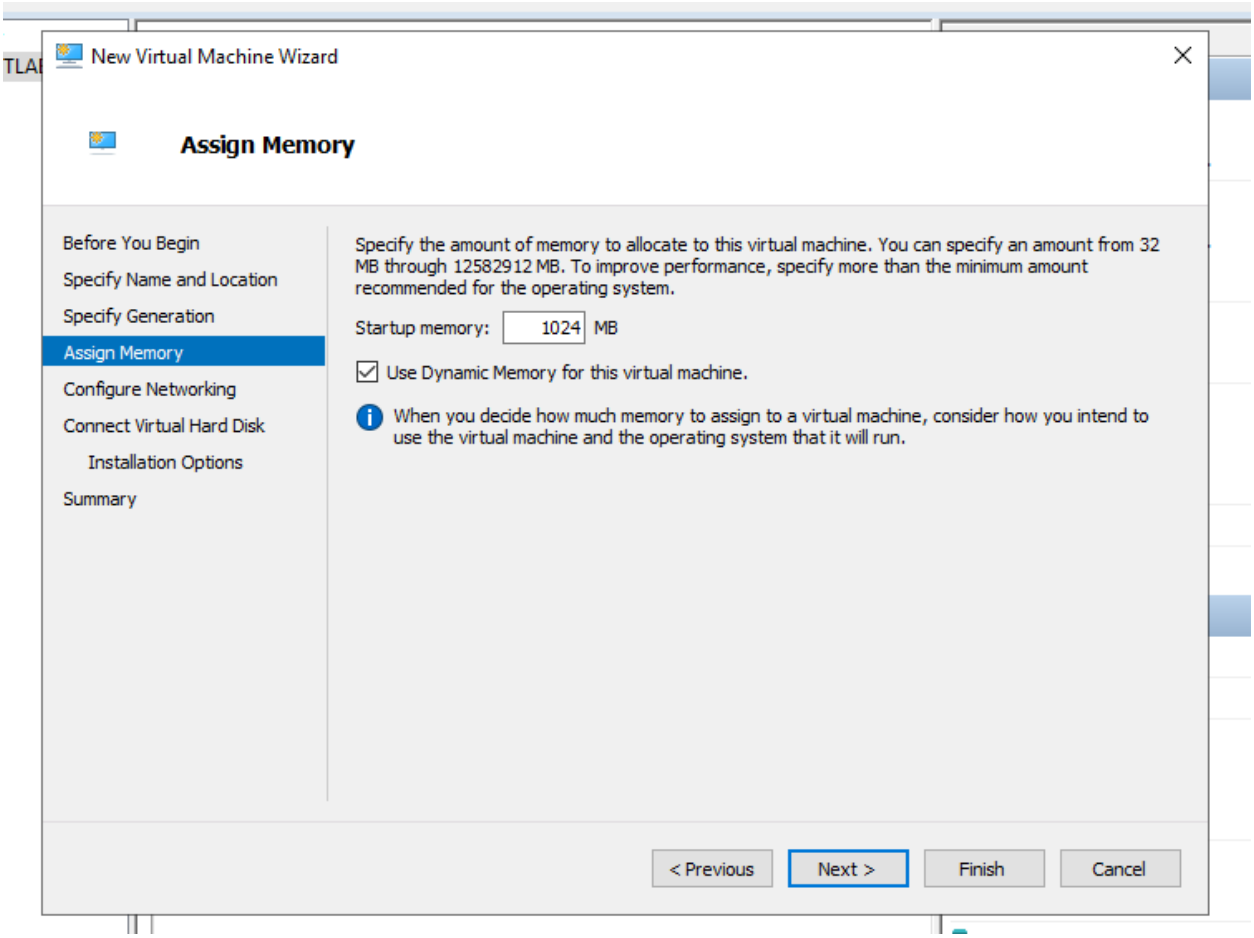

Add Roles and Features Wizard
Installation progress
DESTINATION SERVER
GNS3-PROJECTLAB
Results
View installation progress
Feature installation
Installation succeeded on GNS3-PROJECTLAB.
Hyper-V
Remote Server Administration Tools
Role Administration Tools
Hyper-V Management Tools
Hyper-V Module for Windows PowerShell
Hyper-V GUI Management Tools
You can close this wizard without interrupting running tasks. View task progress or open this page again by clicking Notifications in the command bar, and then Task Details.
Export configuration settings
< Previous
Next >
Close
Cancel

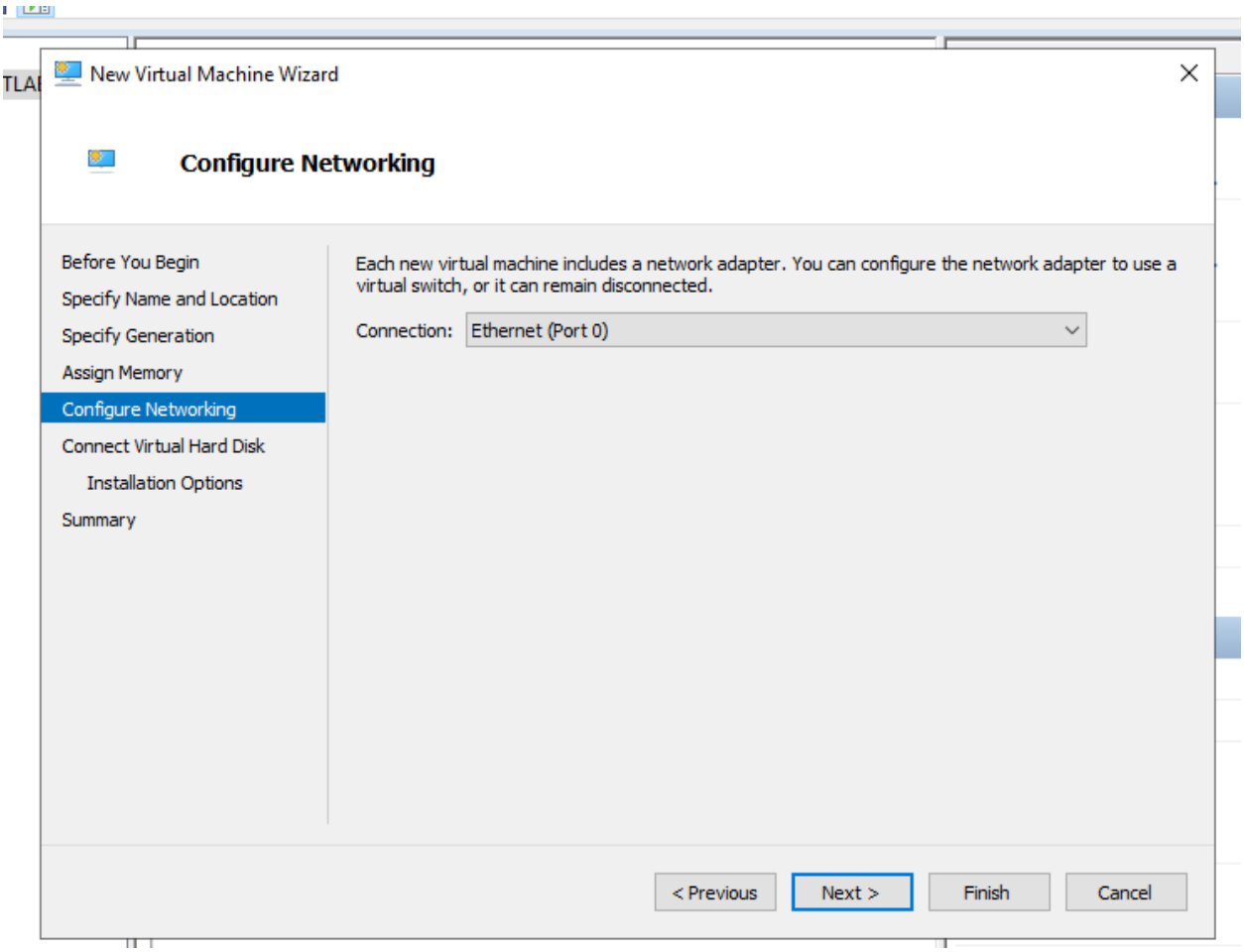

Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
PS C:\Users\Admin-User> cd '.\Desktop\ITSC311-PROJECT\GNS3 VM Hyper-V\'
PS C:\Users\Admin-User\Desktop\ITSC311-PROJECT\GNS3 VM Hyper-V> New-VM -Name "GNS3 VM" -Generation 1 -MemoryStartupBytes 1GB -SwitchName "Default Switch"
Name State CPUUsage(%) MemoryAssigned(M) Uptime Status Version
GNS3 VM Off 0 0 00:00:00 Operating normally 9.0
PS C:\Users\Admin-User\Desktop\ITSC311-PROJECT\GNS3 VM Hyper-V> Add-VMHardDiskDrive -VMName "GNS3 VM" -Path "GNS3 VM-disk001.vhd"
PS C:\Users\Admin-User\Desktop\ITSC311-PROJECT\GNS3 VM Hyper-V> Add-VMHardDiskDrive -VMName "GNS3 VM" -Path "GNS3 VM-disk002.vhd"
PS C:\Users\Admin-User\Desktop\ITSC311-PROJECT\GNS3 VM Hyper-V> Set-VMProcessor -VMName "GNS3 VM" -ExposeVirtualizationExtensions $true
PS C:\Users\Admin-User\Desktop\ITSC311-PROJECT\GNS3 VM Hyper-V> Set-VMNetworkAdapter -VMName "GNS3 VM" -MacAddressSpoofing On
PS C:\Users\Admin-User\Desktop\ITSC311-PROJECT\GNS3 VM Hyper-V>

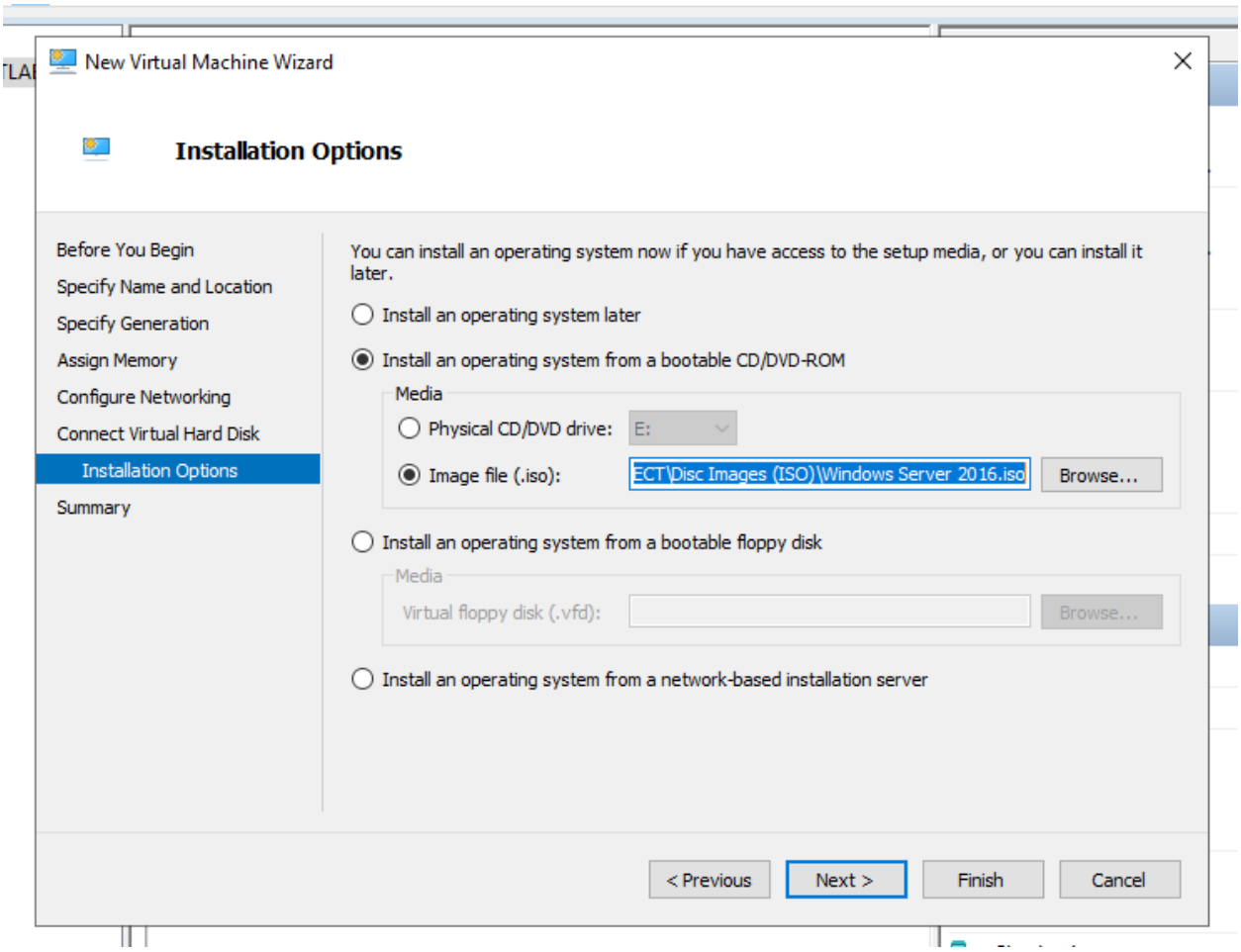

New Virtual Machine Wizard
Before You Begin
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
This wizard helps you create a virtual machine. You can use virtual machines in place of physical computers 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

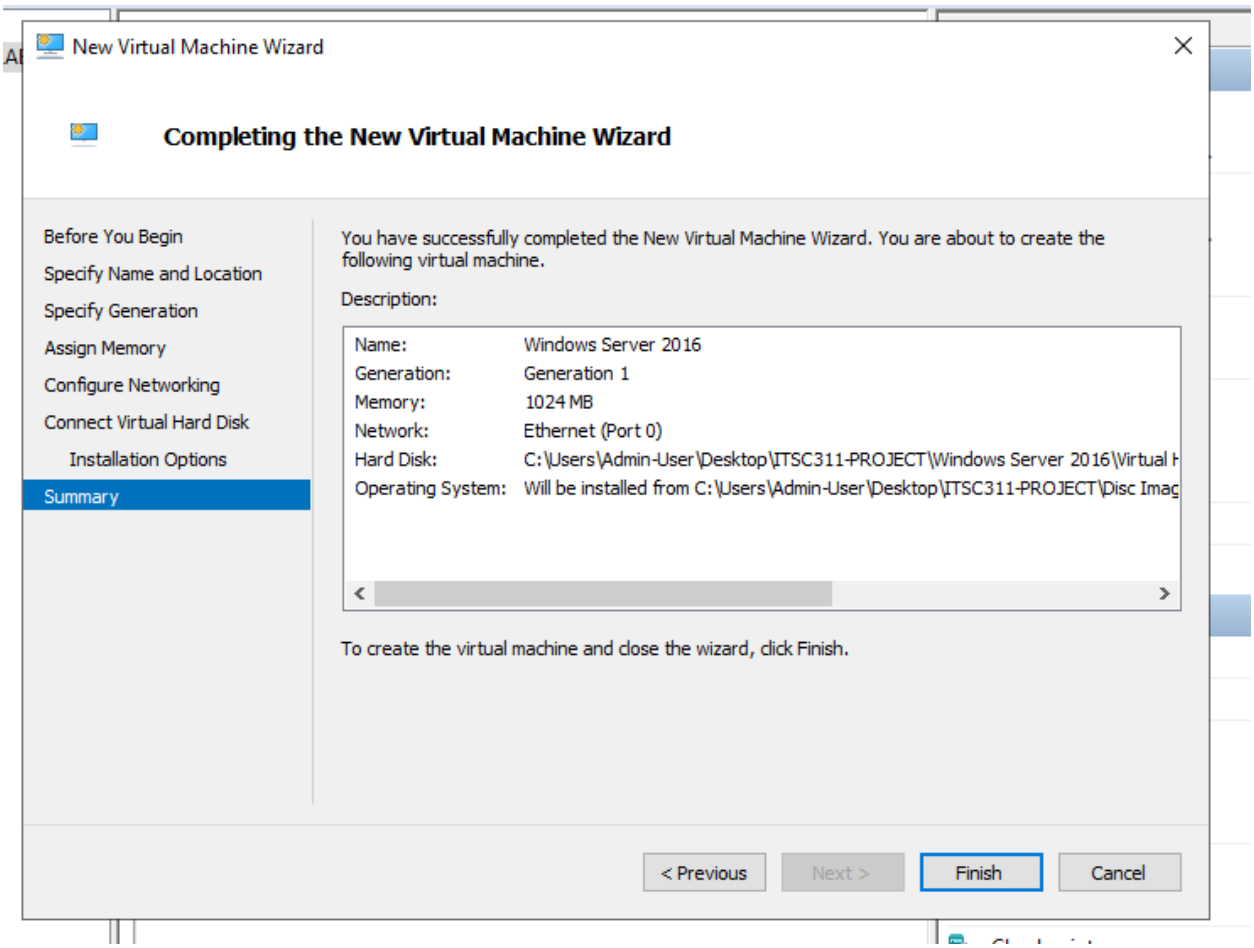

New Virtual Machine Wizard
Specify Name and Location
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose a name and location for this virtual machine.
The name is displayed in Hyper-V Manager. We 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:
Windows Server 2016
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:
C:\ProgramData\Microsoft\Windows\Hyper-V\
Browse...
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.
< Previous
Next >
Finish
Cancel
Checkpoint

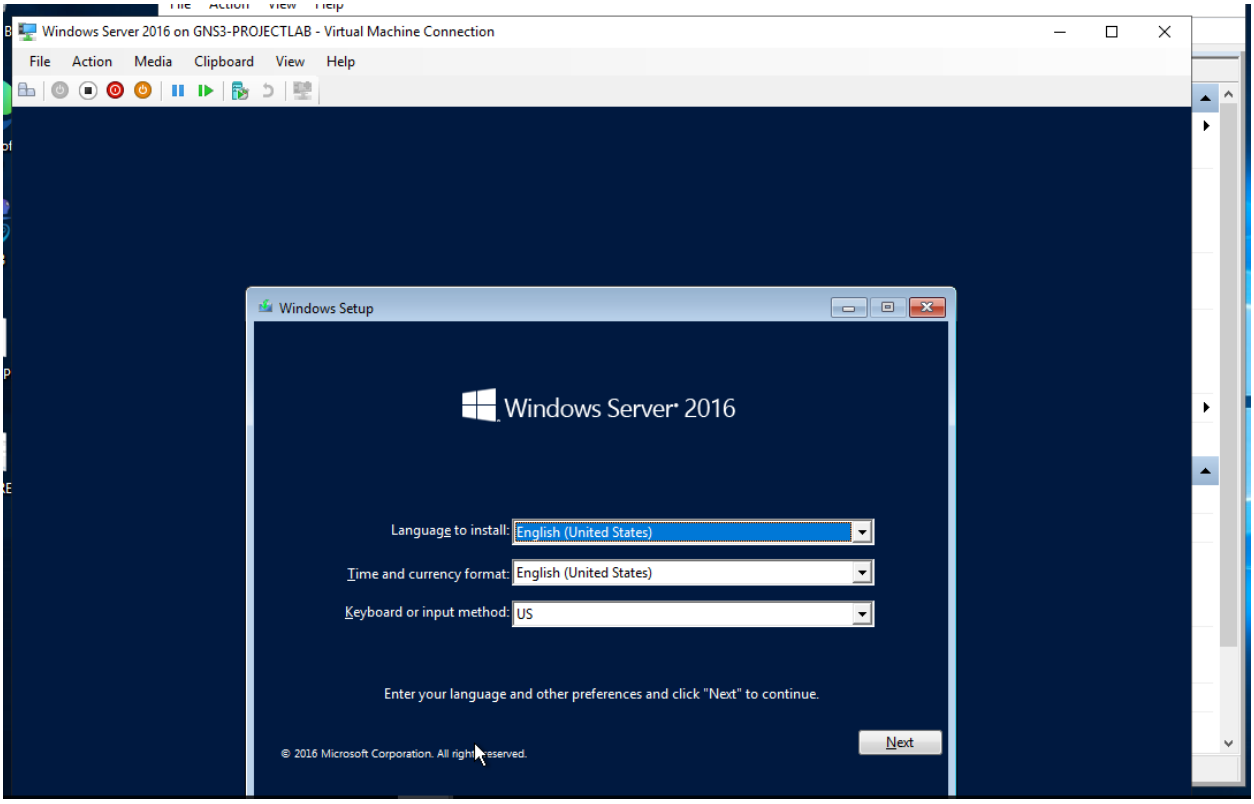

New Virtual Machine Wizard
Specify Generation
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose the generation of this virtual machine.
Generation 1
This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.
Generation 2
This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.
Once a virtual machine has been created, you cannot change its generation.
More about virtual machine generation support
< Previous
Next >
Finish
Cancel

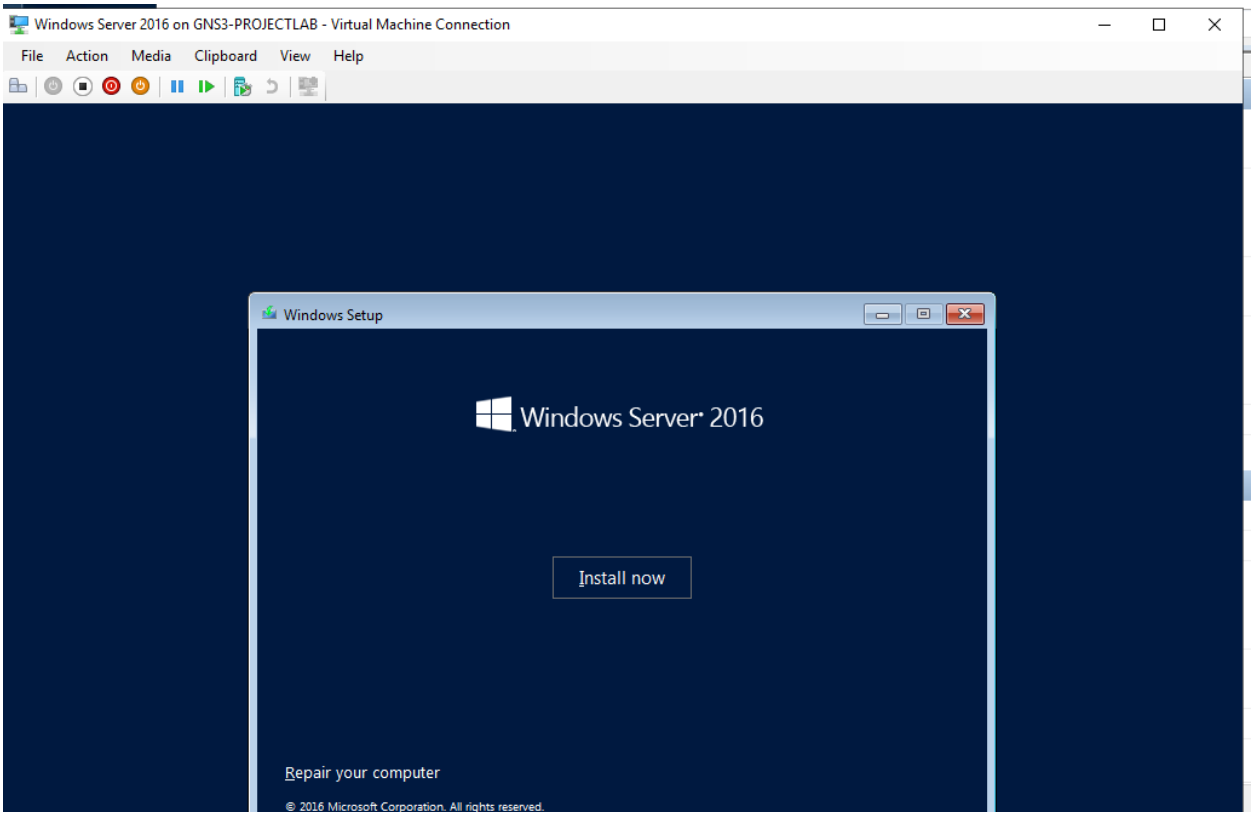

New Virtual Machine Wizard
Assign Memory
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912 MB. To improve performance, specify more than the minimum amount recommended for the operating system.
Startup memory: 1024 MB
Use Dynamic Memory for this virtual machine.
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

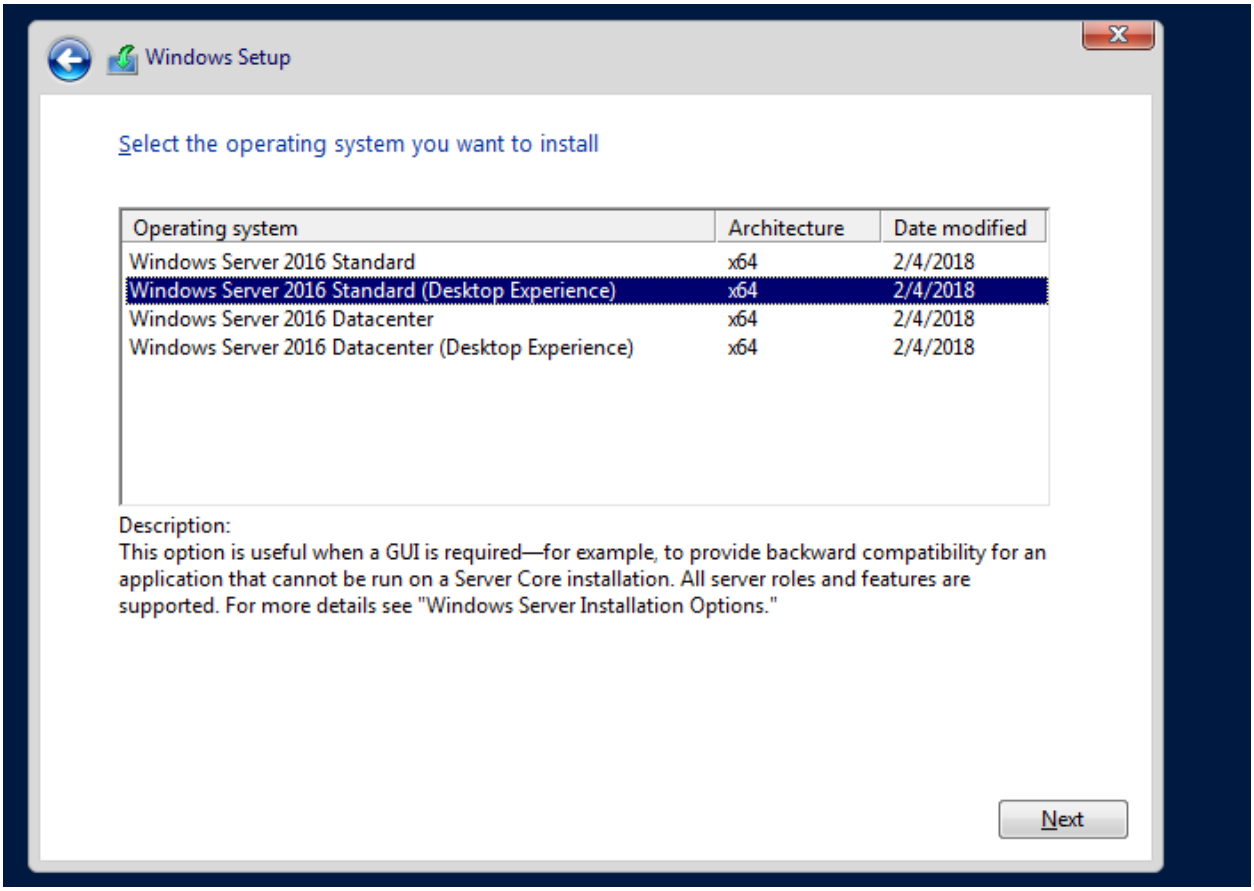

New Virtual Machine Wizard
Configure Networking
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.
Connection:
Ethernet (Port 0)
< Previous
Next >
Finish
Cancel

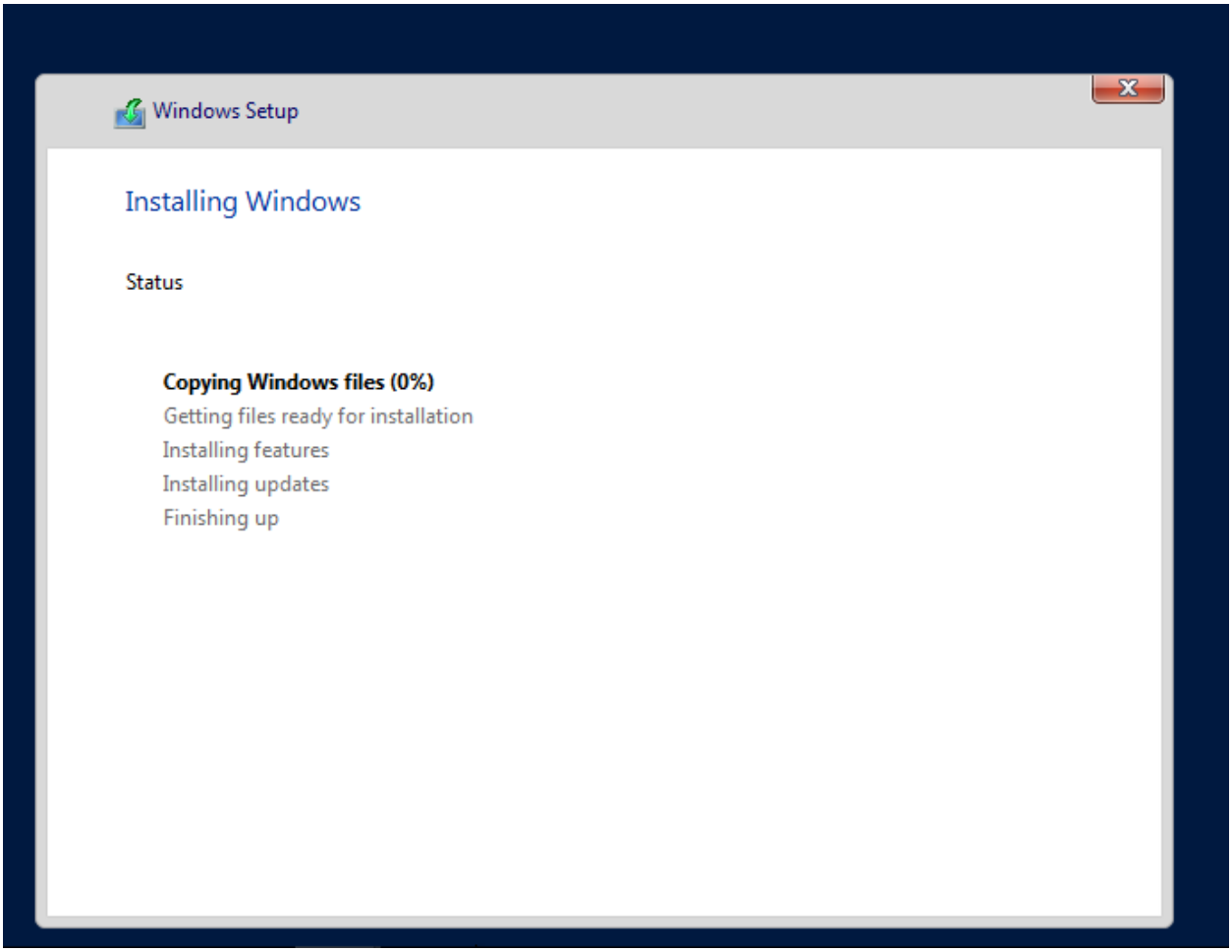

New Virtual Machine Wizard
Installation Options
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
You can install an operating system now if you have access to the setup media, or you can install it later.
Install an operating system later
Install an operating system from a bootable CD/DVD-ROM
Media
Physical CD/DVD drive:
E:
Image file (.iso):
ECT\Disc Images (ISO)\Windows Server 2016.iso
Browse...
Install an operating system from a bootable floppy disk
Media
Virtual floppy disk (.vfd):
Browse...
Install an operating system from a network-based installation server
< Previous
Next >
Finish
Cancel

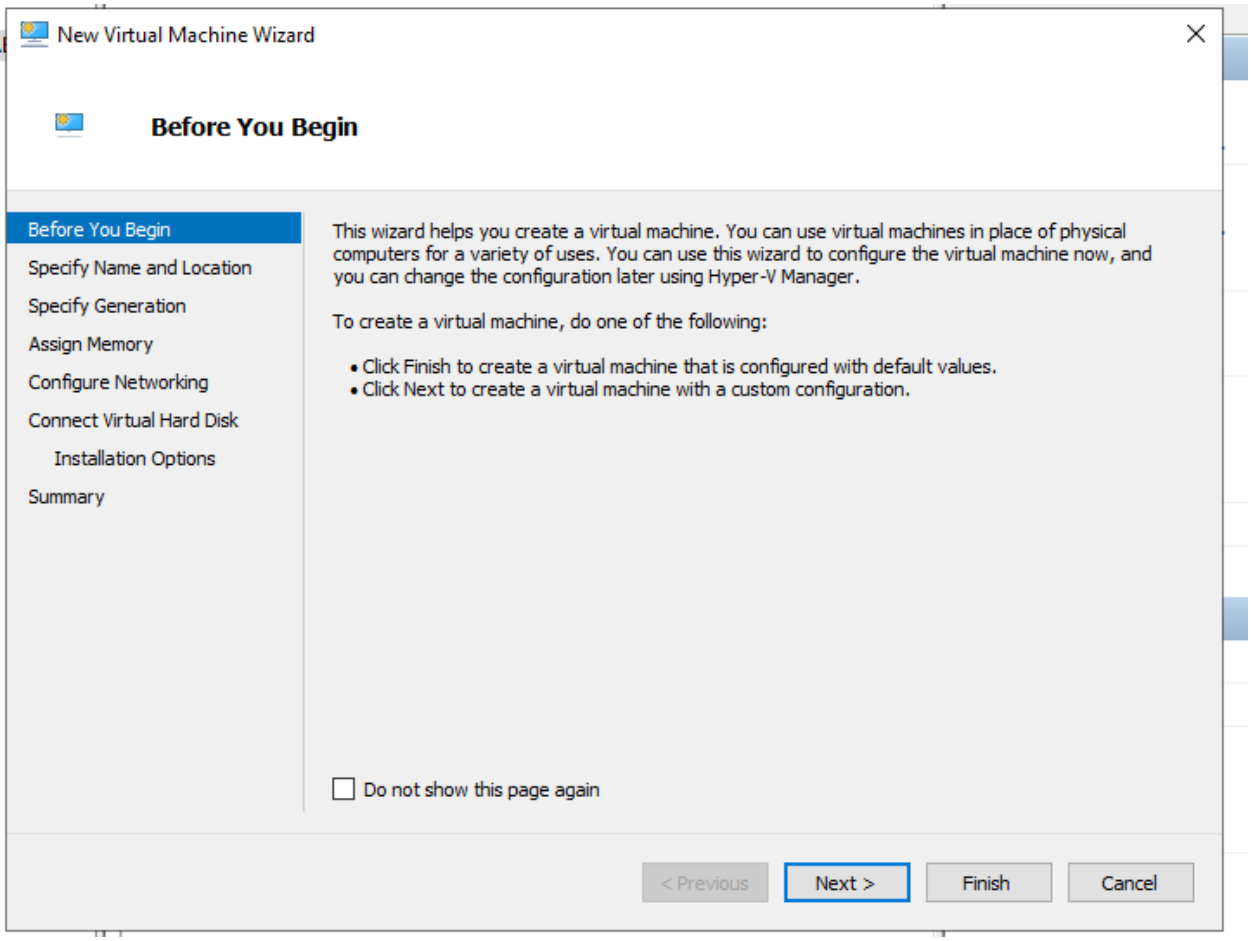

New Virtual Machine Wizard
Completing the New Virtual Machine Wizard
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine.
Description:
Name: Windows Server 2016
Generation: Generation 1
Memory: 1024 MB
Network: Ethernet (Port 0)
Hard Disk: C:\Users\Admin-User\Desktop\ITSC311-PROJECT\Windows Server 2016\Virtual H
Operating System: Will be installed from C:\Users\Admin-User\Desktop\ITSC311-PROJECT\Disc Imag
To create the virtual machine and close the wizard, click Finish.
< Previous
Next >
Finish
Cancel

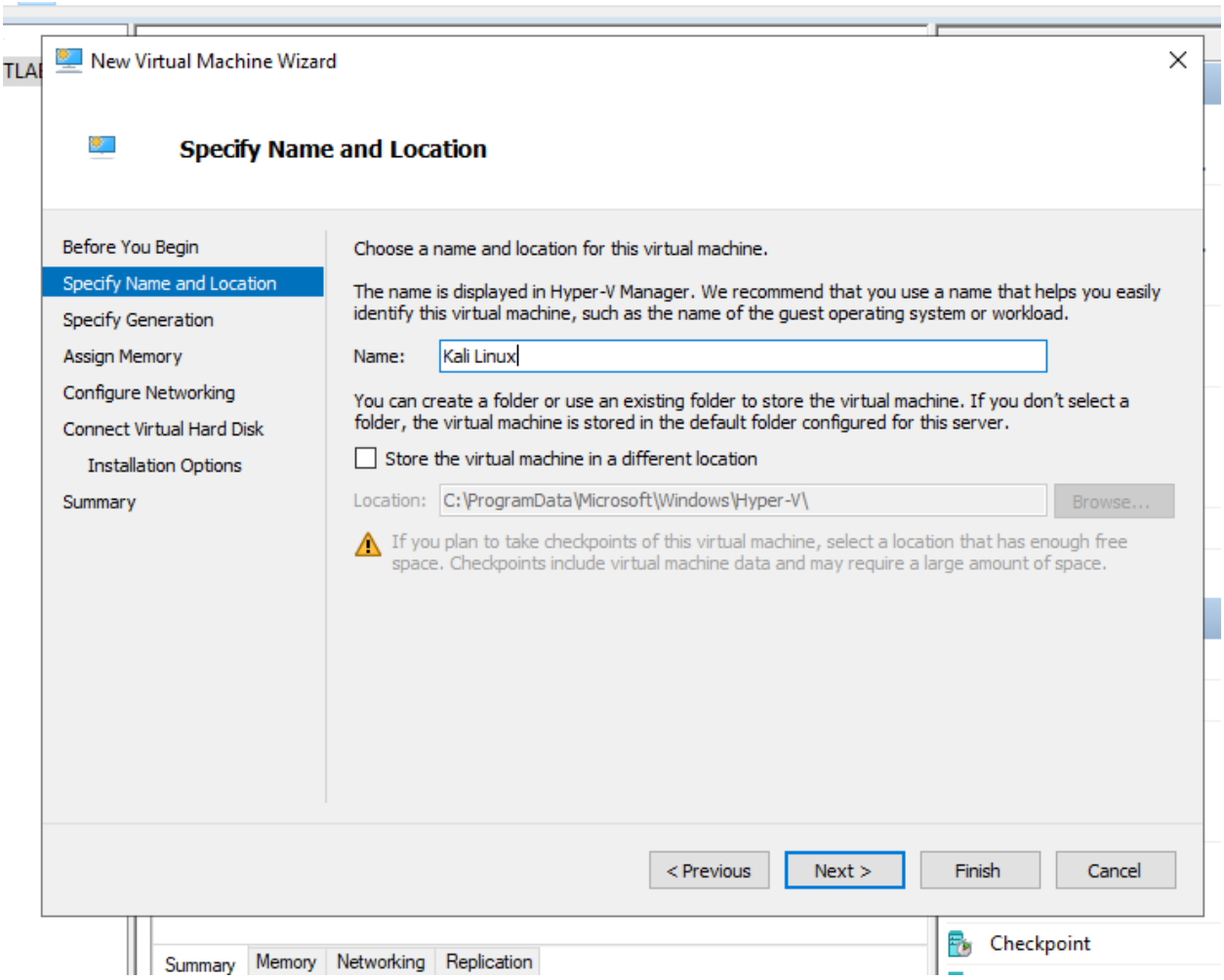

Windows Server 2016 on GNS3-PROJECTLAB - Virtual Machine Connection
File Action Media Clipboard View Help
Windows Setup
Windows Server 2016
Language to install: English (United States)
Time and currency format: English (United States)
Keyboard or input method: US
Enter your language and other preferences and click "Next" to continue.
© 2016 Microsoft Corporation. All rights reserved.
Next

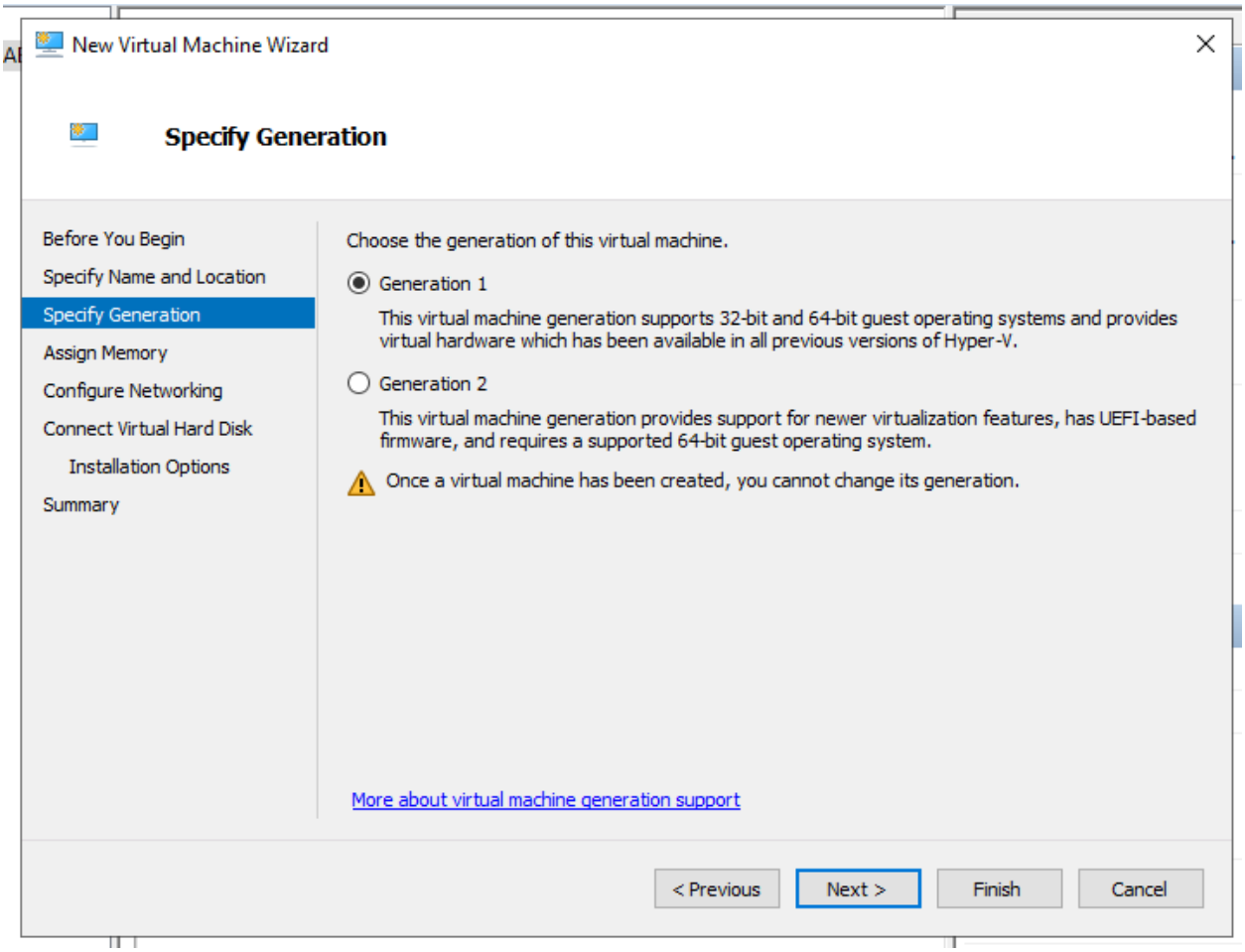

Windows Server 2016 on GNS3-PROJECTLAB - Virtual Machine Connection
File Action Media Clipboard View Help
Windows Setup
Windows Server 2016
Install now
Repair your computer
© 2016 Microsoft Corporation. All rights reserved.

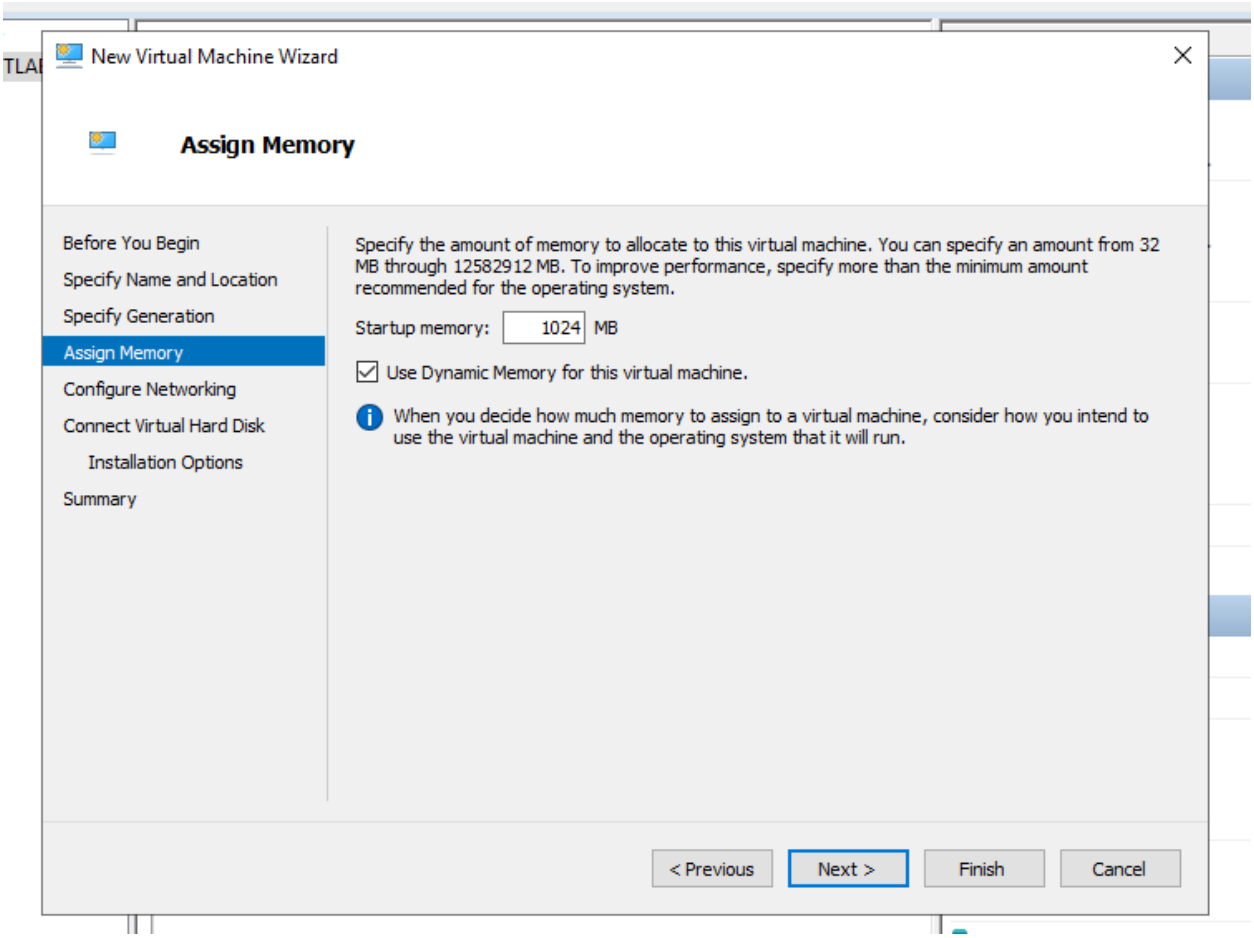

Windows Setup
Select the operating system you want to install
Operating system
Architecture
Date modified
Windows Server 2016 Standard
x64
2/4/2018
Windows Server 2016 Standard (Desktop Experience)
x64
2/4/2018
Windows Server 2016 Datacenter
x64
2/4/2018
Windows Server 2016 Datacenter (Desktop Experience)
x64
2/4/2018
Description:
This option is useful when a GUI is required—for example, to provide backward compatibility for an application that cannot be run on a Server Core installation. All server roles and features are supported. For more details see "Windows Server Installation Options."
Next

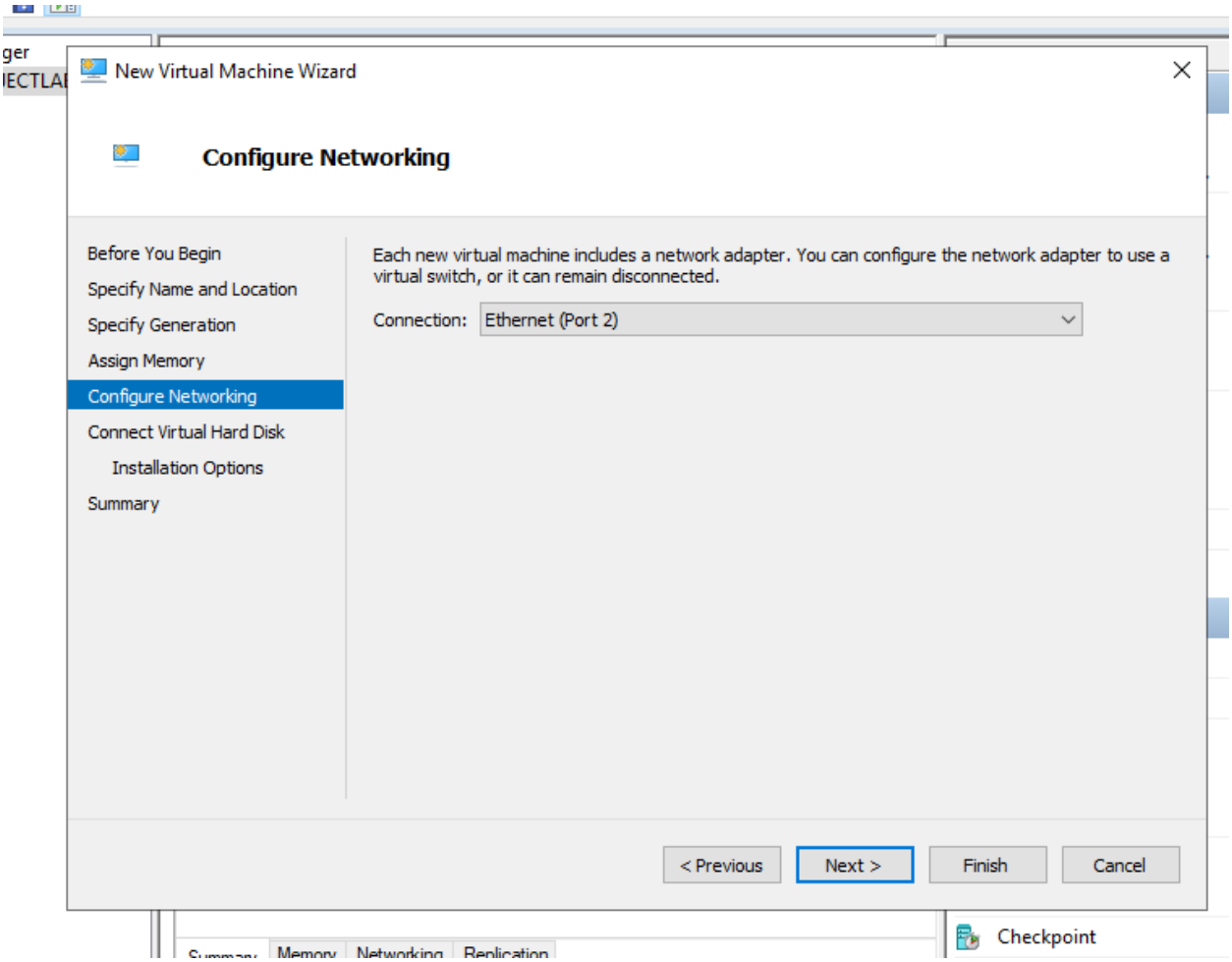

Windows Setup
Installing Windows
Status
Copying Windows files (0%)
Getting files ready for installation
Installing features
Installing updates
Finishing up

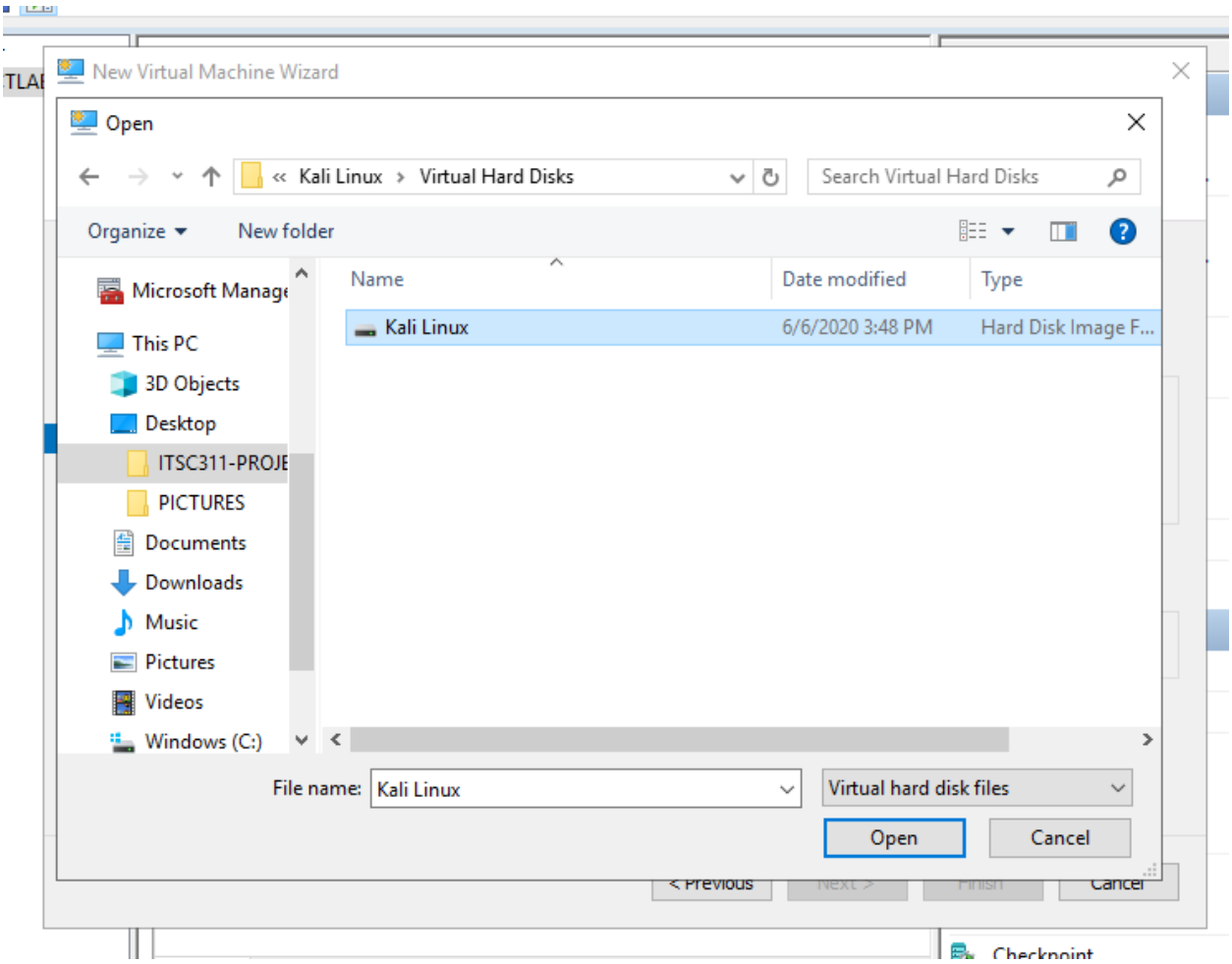

New Virtual Machine Wizard
Before You Begin
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
This wizard helps you create a virtual machine. You can use virtual machines in place of physical computers 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

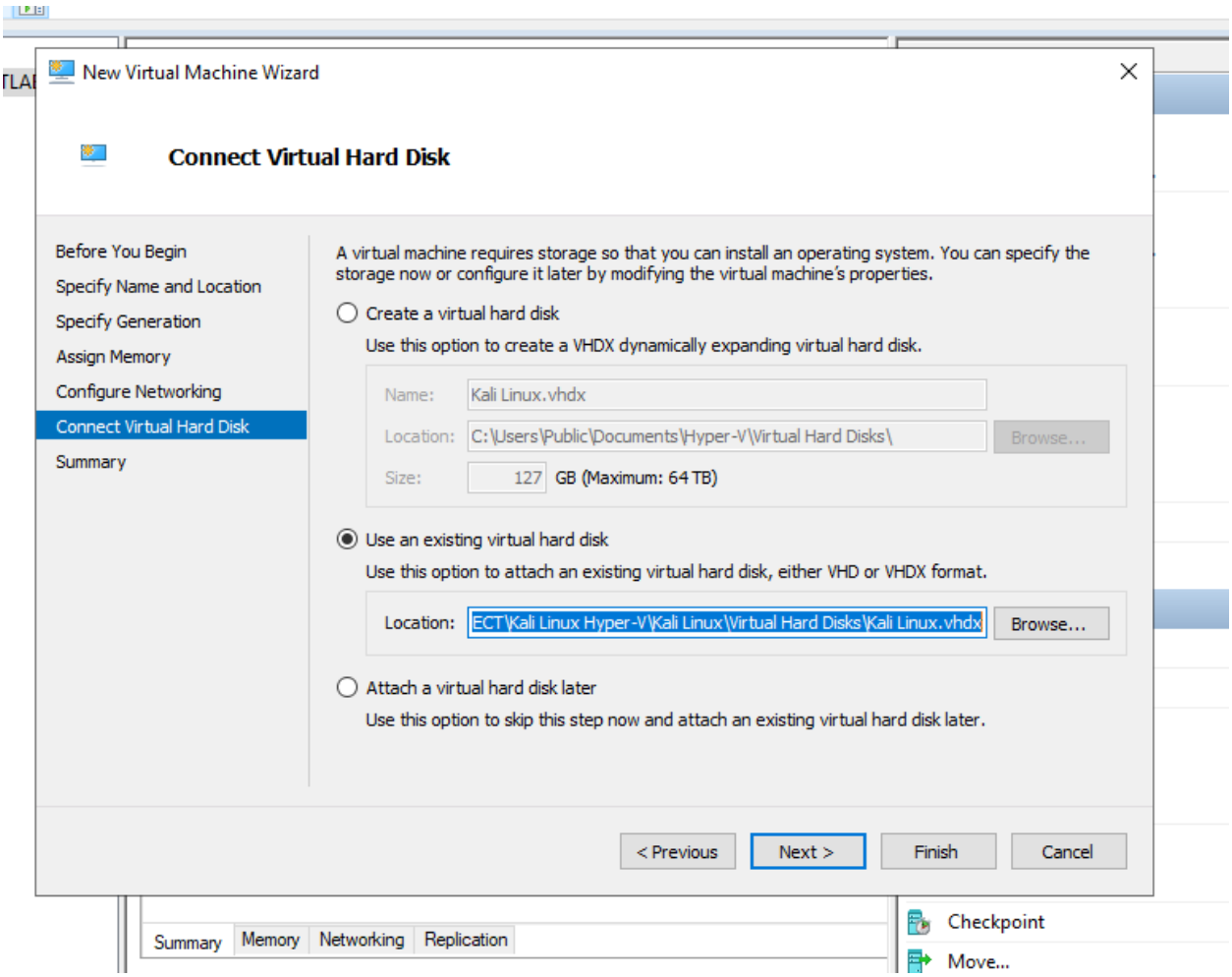

New Virtual Machine Wizard
Specify Name and Location
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose a name and location for this virtual machine.
The name is displayed in Hyper-V Manager. We 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:
Kali Linux
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:
C:\ProgramData\Microsoft\Windows\Hyper-V\
Browse...
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.
< Previous
Next >
Finish
Cancel
Summary
Memory
Networking
Replication
Checkpoint

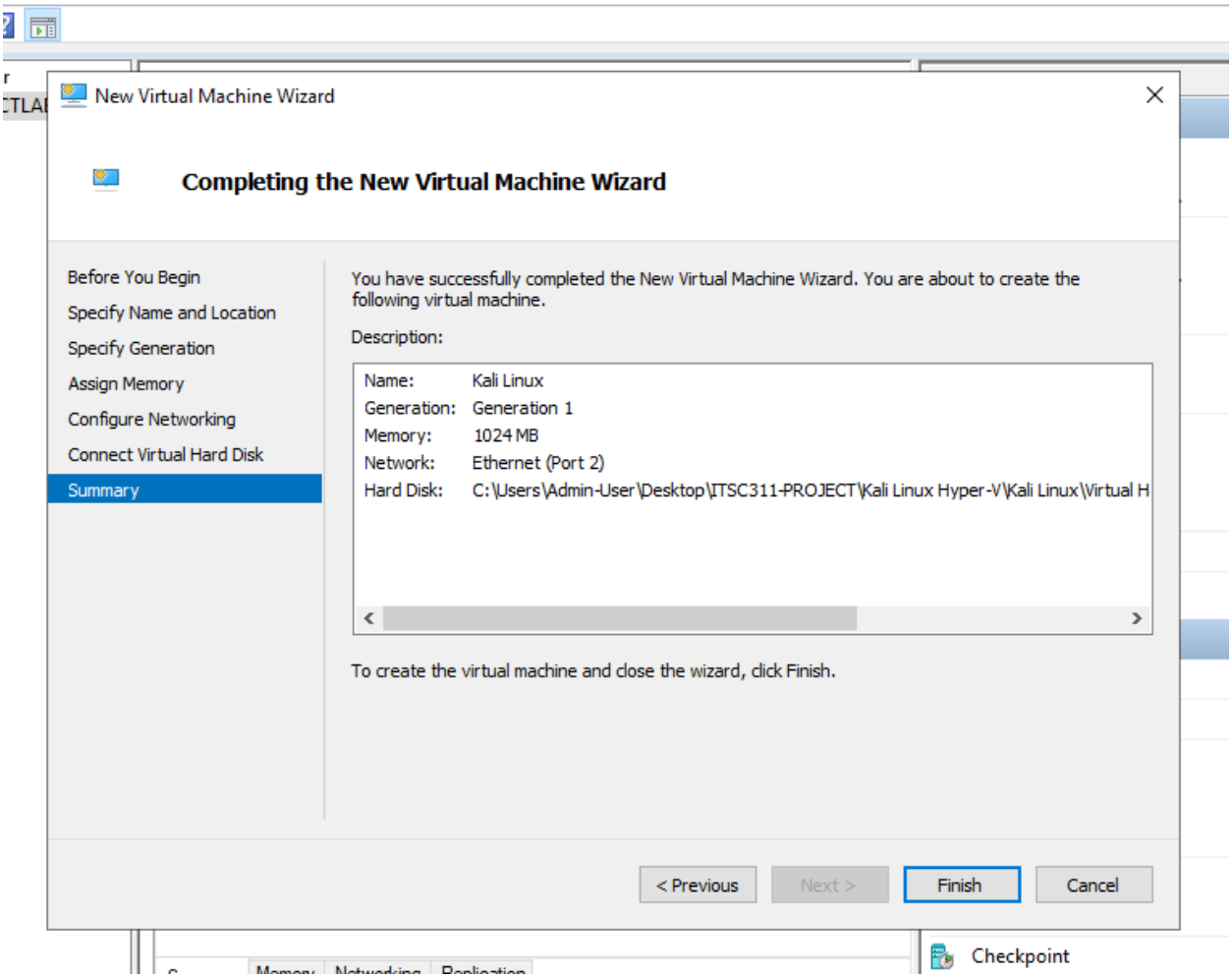

New Virtual Machine Wizard
Specify Generation
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose the generation of this virtual machine.
Generation 1
This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.
Generation 2
This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.
Once a virtual machine has been created, you cannot change its generation.
More about virtual machine generation support
< Previous
Next >
Finish
Cancel

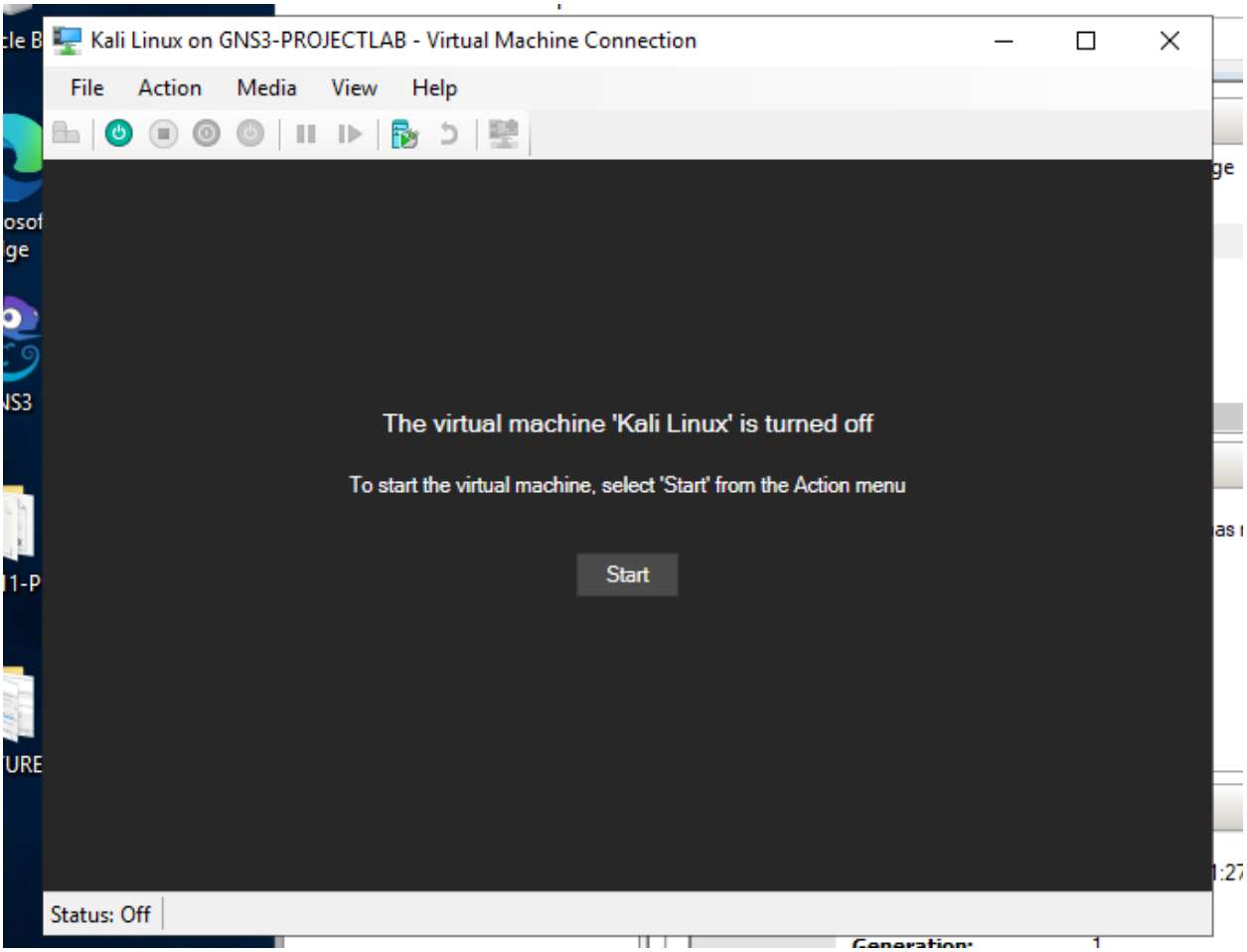

New Virtual Machine Wizard
Assign Memory
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912 MB. To improve performance, specify more than the minimum amount recommended for the operating system.
Startup memory: 1024 MB
Use Dynamic Memory for this virtual machine.
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

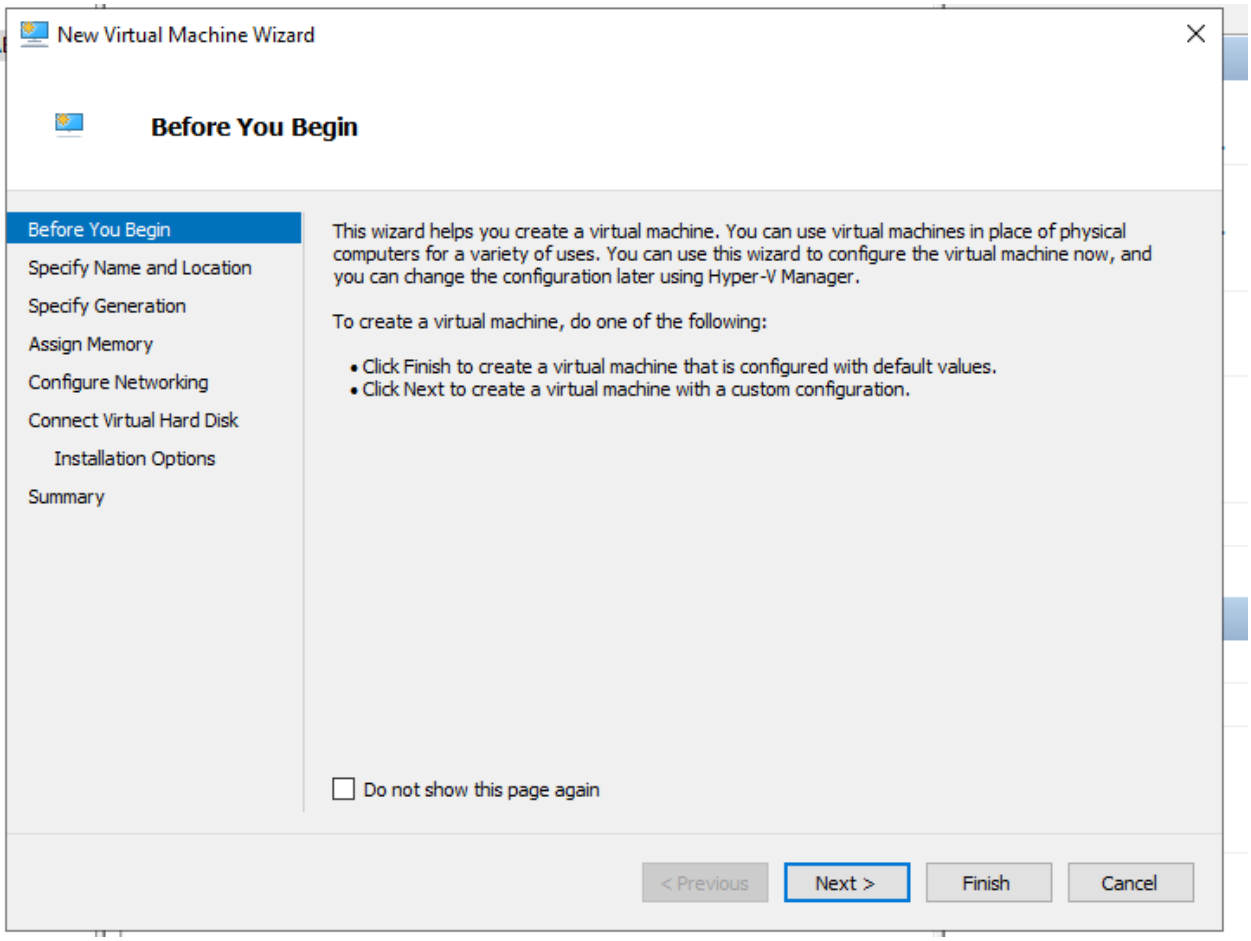

New Virtual Machine Wizard
Configure Networking
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.
Connection:
Ethernet (Port 2)
< Previous
Next >
Finish
Cancel
Checkpoint

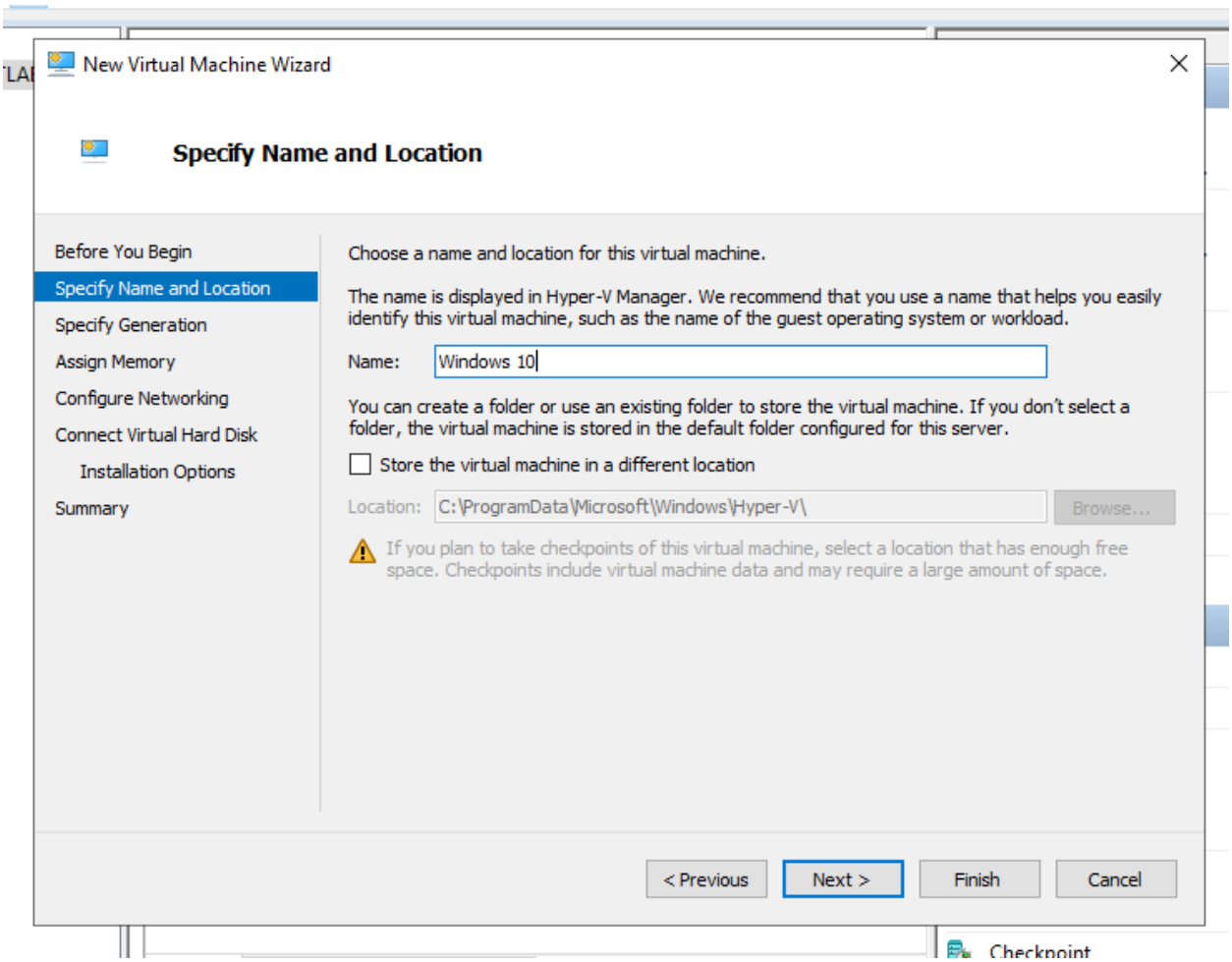

New Virtual Machine Wizard
Open
« Kali Linux › Virtual Hard Disks
Search Virtual Hard Disks
Organize
New folder
Microsoft Manage
This PC
3D Objects
Desktop
ITSC311-PROJE
PICTURES
Documents
Downloads
Music
Pictures
Videos
Windows (C:)
Name
Date modified
Type
Kali Linux
6/6/2020 3:48 PM
Hard Disk Image F...
File name:
Kali Linux
Virtual hard disk files
Open
Cancel
< Previous
Next >
Finish
Cancel
Checkpoint

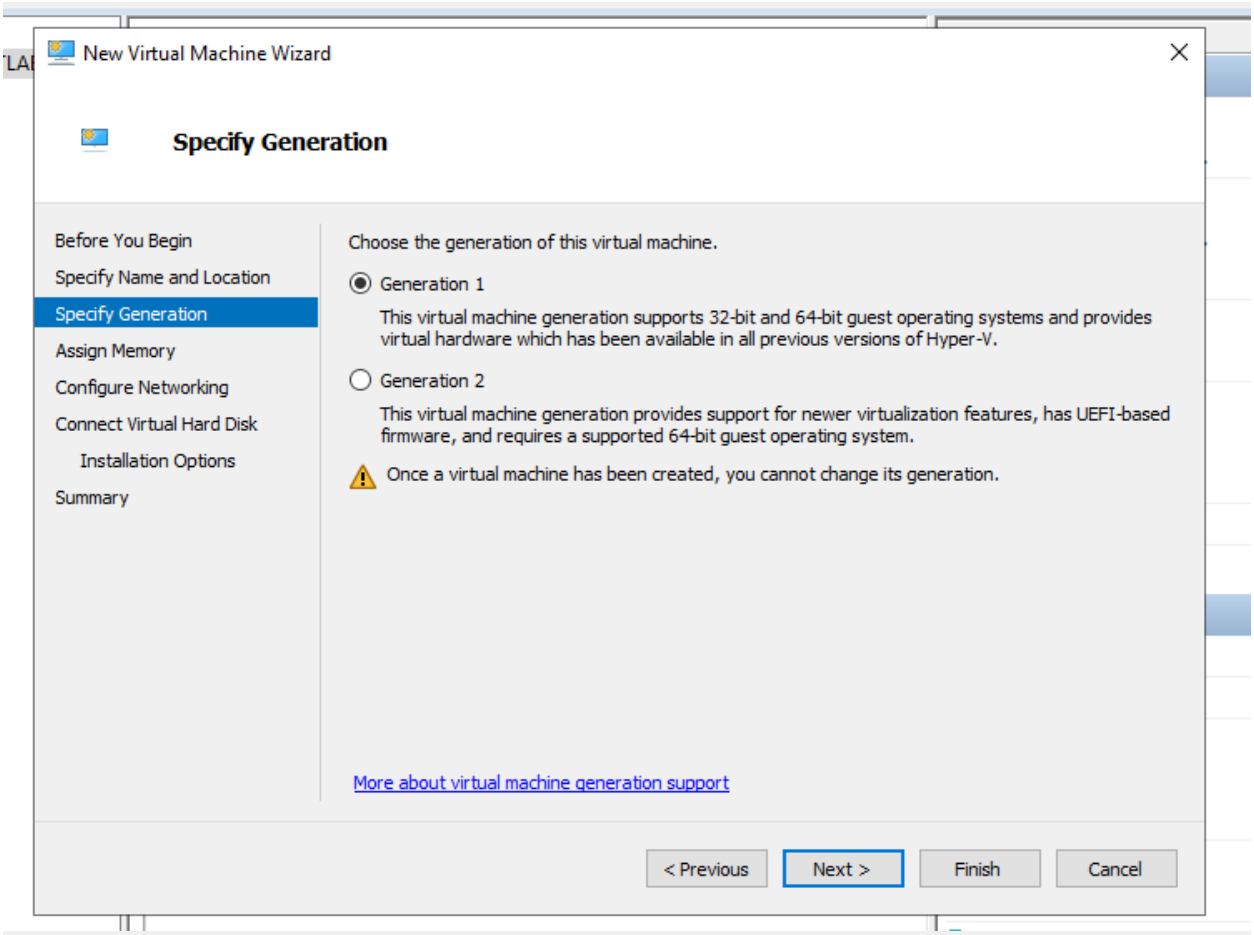

New Virtual Machine Wizard
Connect Virtual Hard Disk
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Summary
A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure 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: Kali Linux.vhdx
Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\
Browse...
Size: 127 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: ECT\Kali Linux Hyper-V\Kali Linux\Virtual Hard Disks\Kali Linux.vhdx
Browse...
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
Summary
Memory
Networking
Replication
Checkpoint
Move...

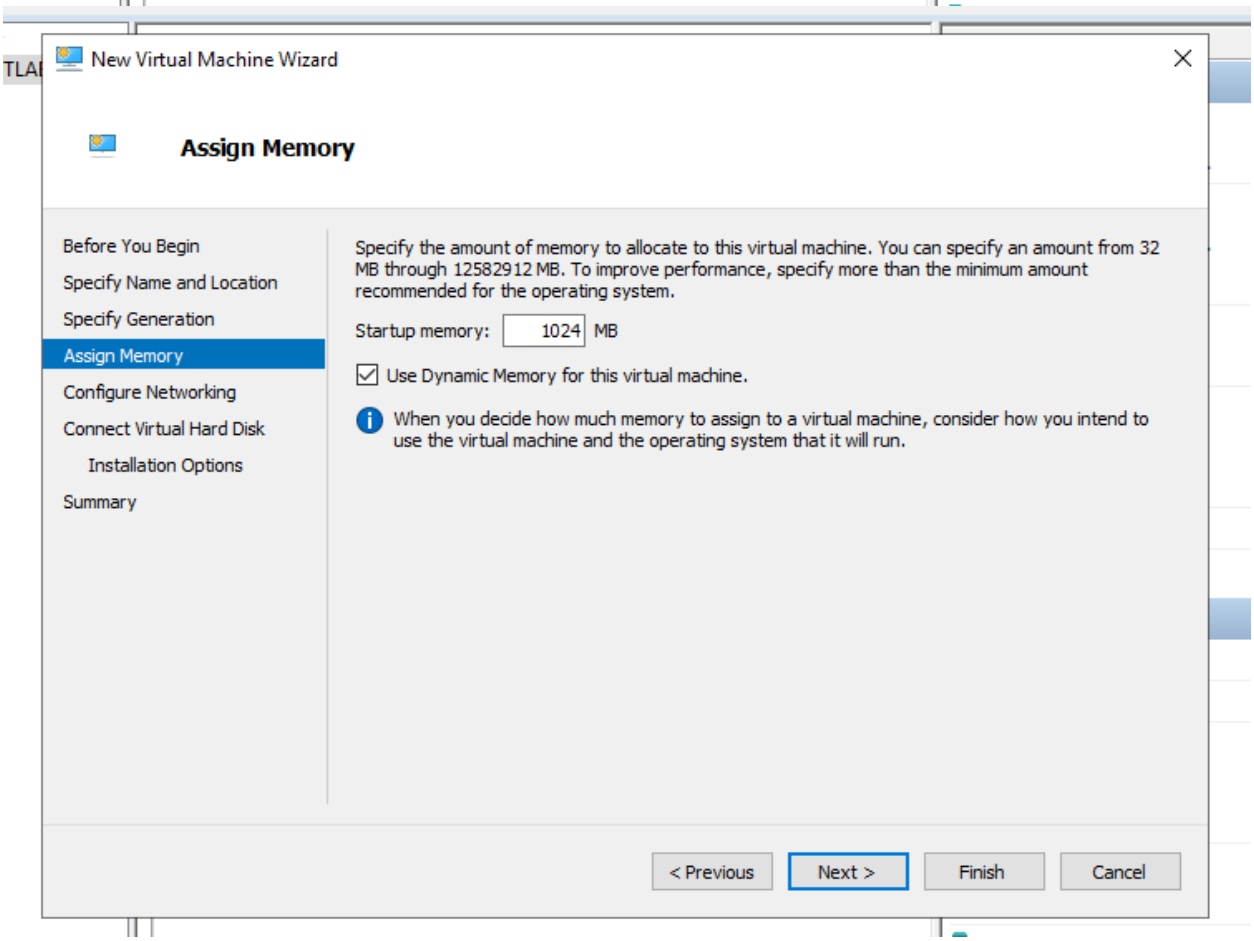

New Virtual Machine Wizard
Completing the New Virtual Machine Wizard
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Summary
You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine.
Description:
Name: Kali Linux
Generation: Generation 1
Memory: 1024 MB
Network: Ethernet (Port 2)
Hard Disk: C:\Users\Admin-User\Desktop\ITSC311-PROJECT\Kali Linux Hyper-V\Kali Linux\Virtual H
To create the virtual machine and close the wizard, click Finish.
< Previous
Next >
Finish
Cancel
Checkpoint

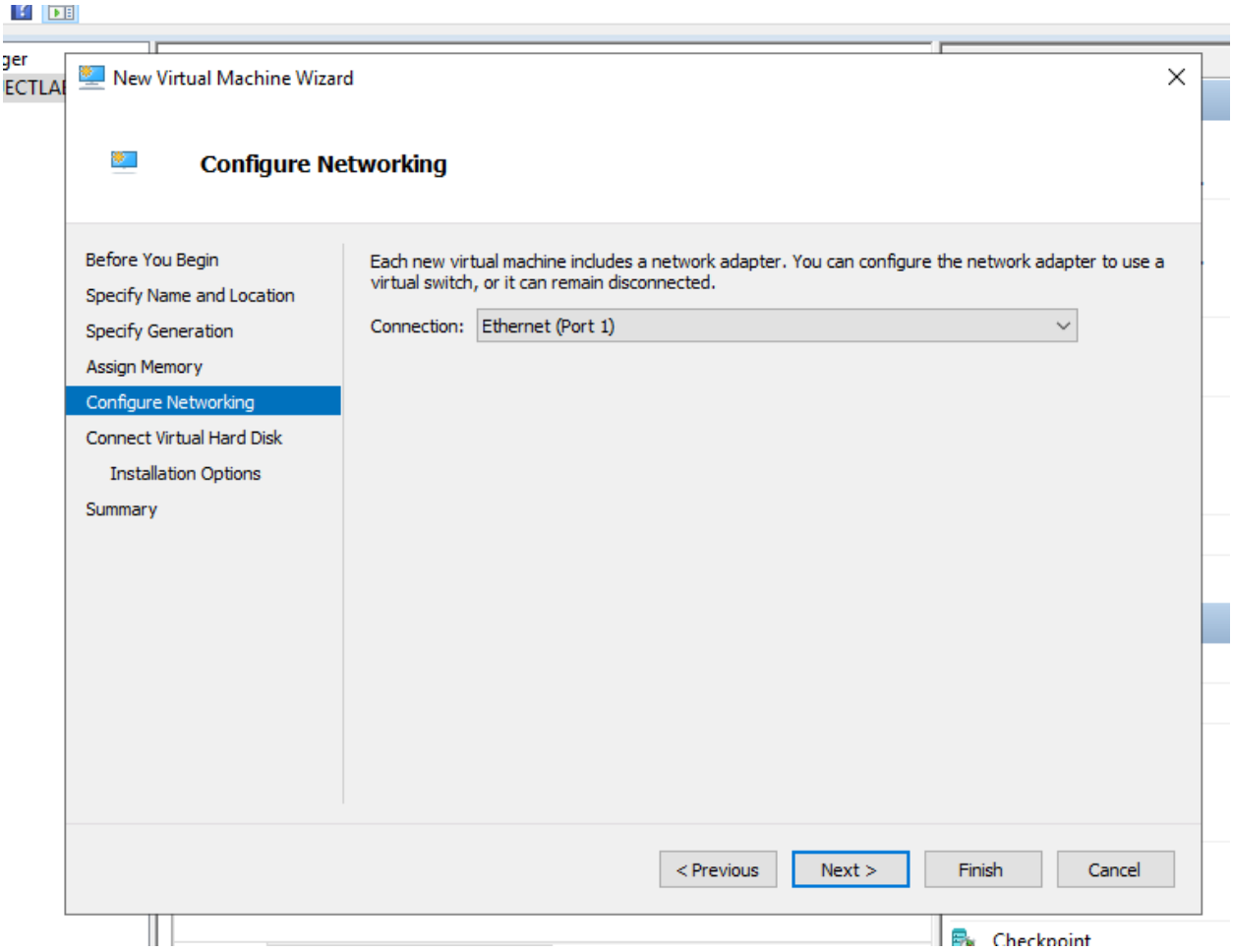

Kali Linux on GNS3-PROJECTLAB - Virtual Machine Connection
File
Action
Media
View
Help
The virtual machine 'Kali Linux' is turned off
To start the virtual machine, select 'Start' from the Action menu
Start
Status: Off

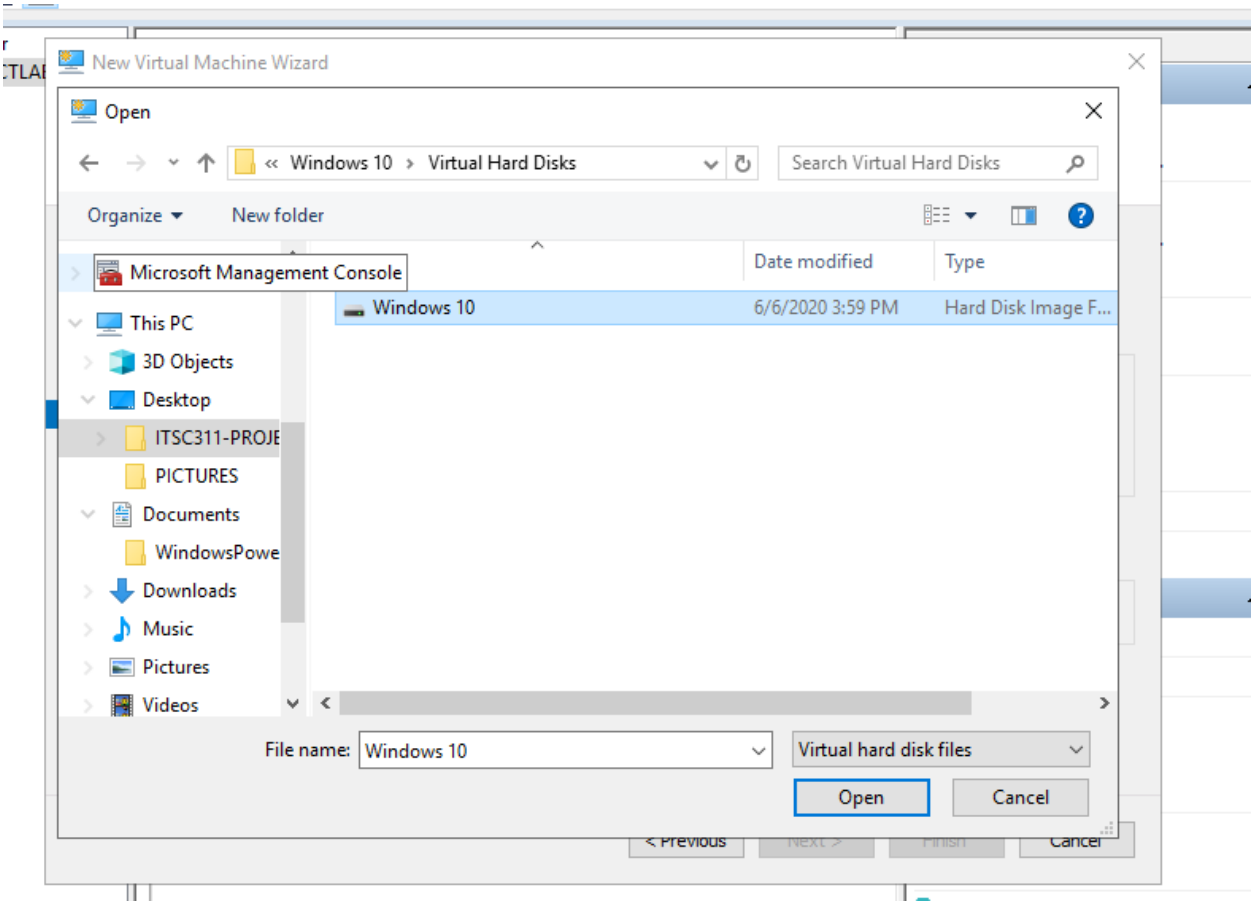

New Virtual Machine Wizard
Before You Begin
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
This wizard helps you create a virtual machine. You can use virtual machines in place of physical computers 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

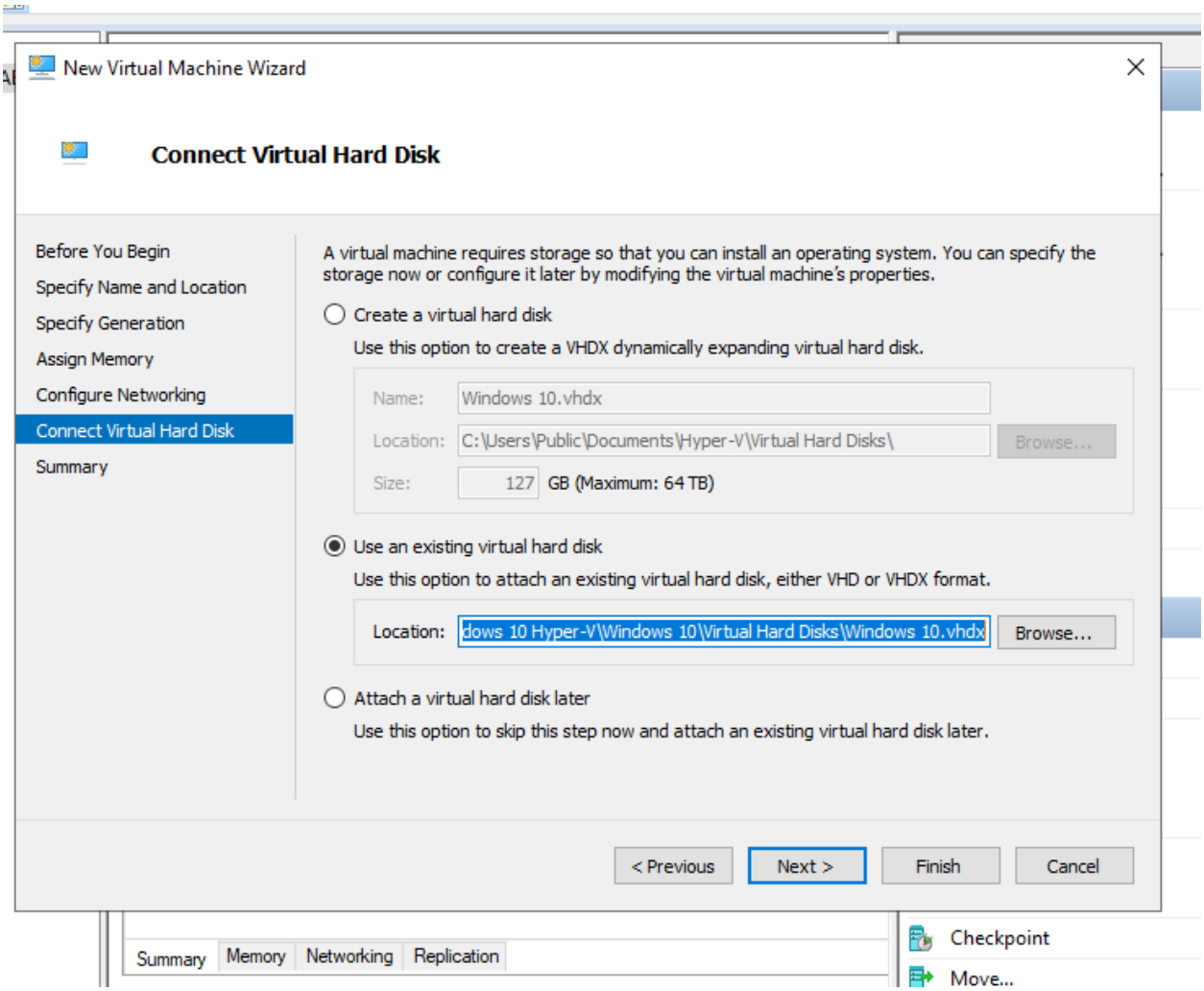

New Virtual Machine Wizard
Specify Name and Location
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose a name and location for this virtual machine.
The name is displayed in Hyper-V Manager. We 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:
Windows 10
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:
C:\ProgramData\Microsoft\Windows\Hyper-V\
Browse...
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.
< Previous
Next >
Finish
Cancel
Checkpoint

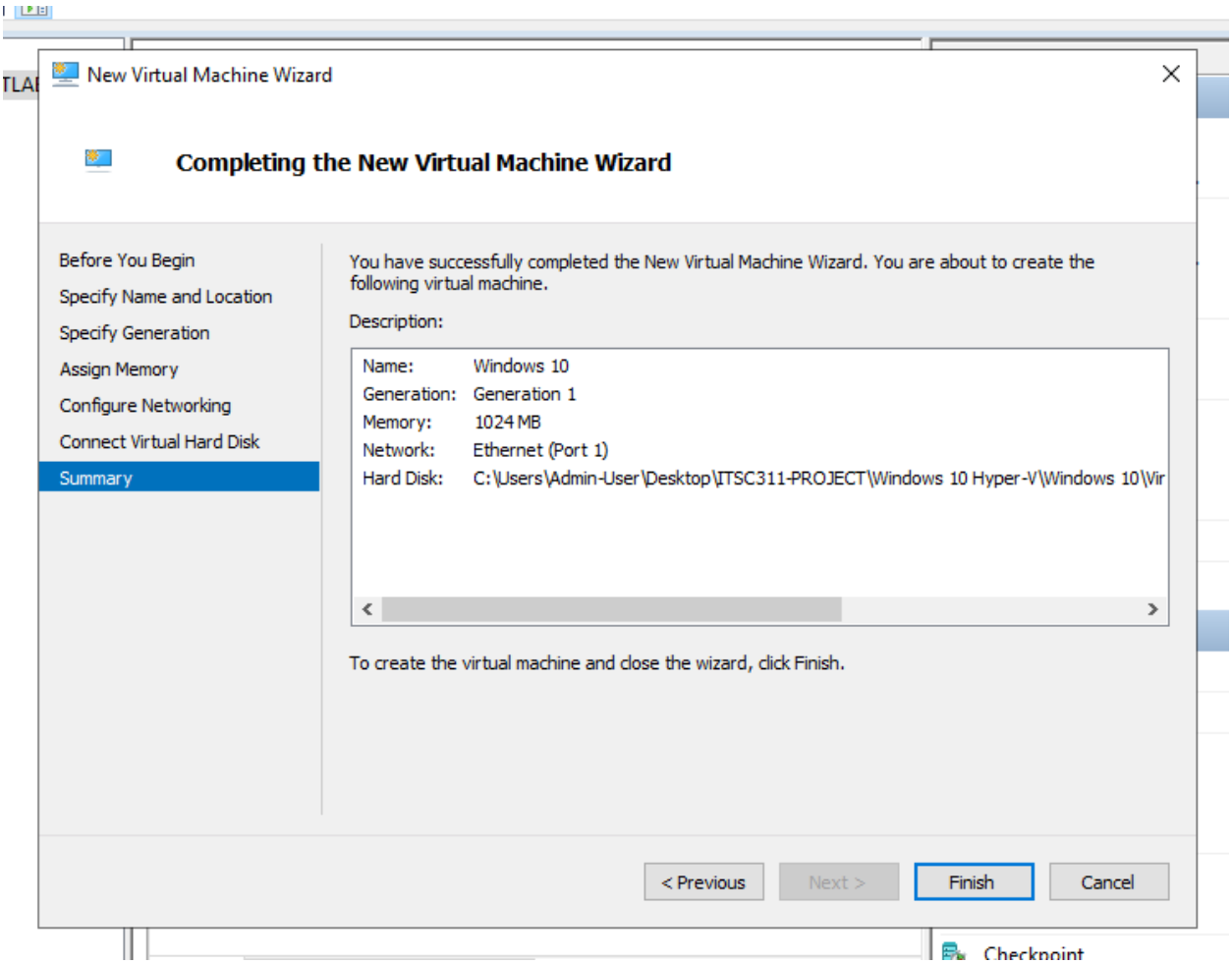

New Virtual Machine Wizard
Specify Generation
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose the generation of this virtual machine.
Generation 1
This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.
Generation 2
This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.
Once a virtual machine has been created, you cannot change its generation.
More about virtual machine generation support
< Previous
Next >
Finish
Cancel

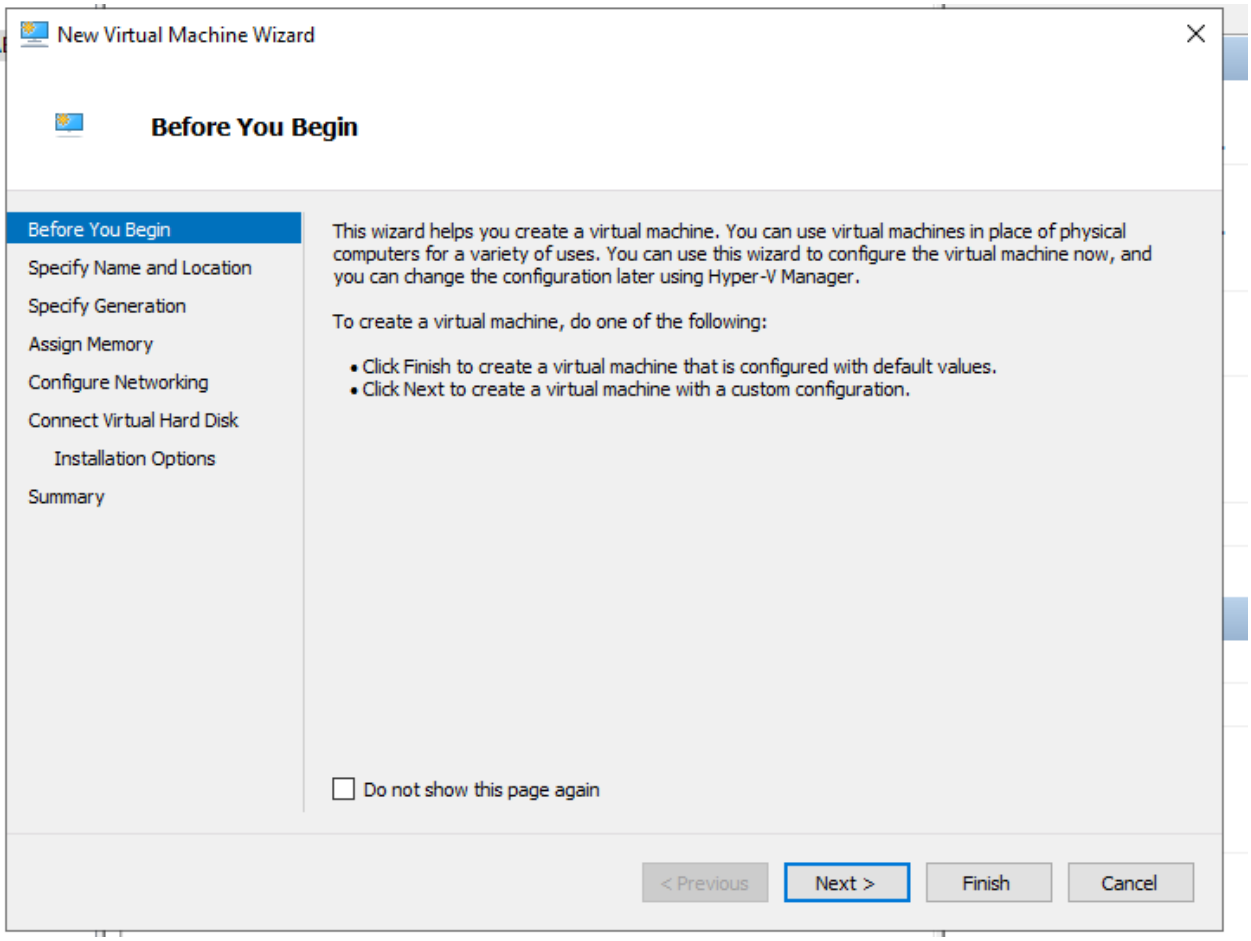

New Virtual Machine Wizard
Assign Memory
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912 MB. To improve performance, specify more than the minimum amount recommended for the operating system.
Startup memory: 1024 MB
Use Dynamic Memory for this virtual machine.
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

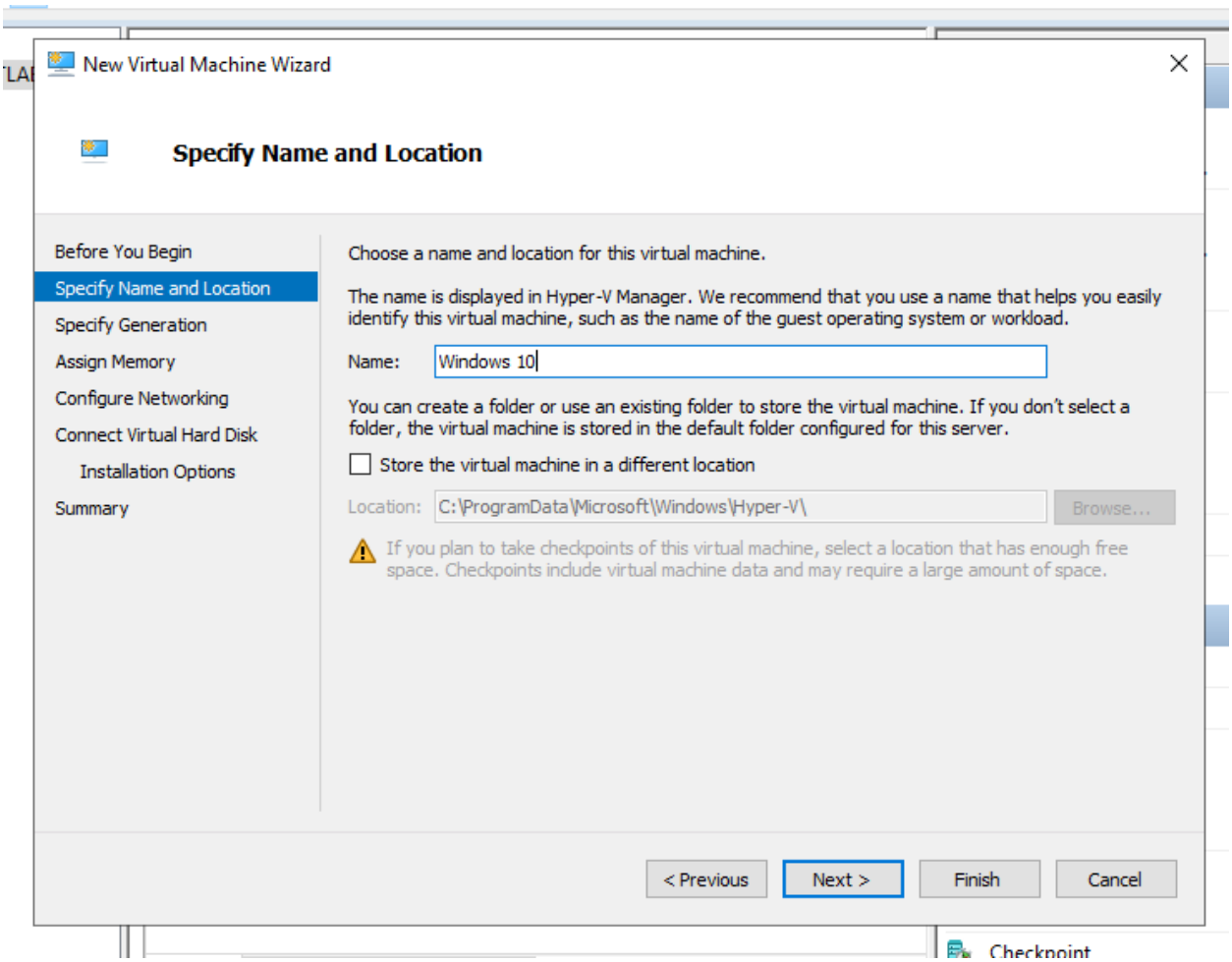

New Virtual Machine Wizard
Configure Networking
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.
Connection:
Ethernet (Port 1)
< Previous
Next >
Finish
Cancel
Checkpoint

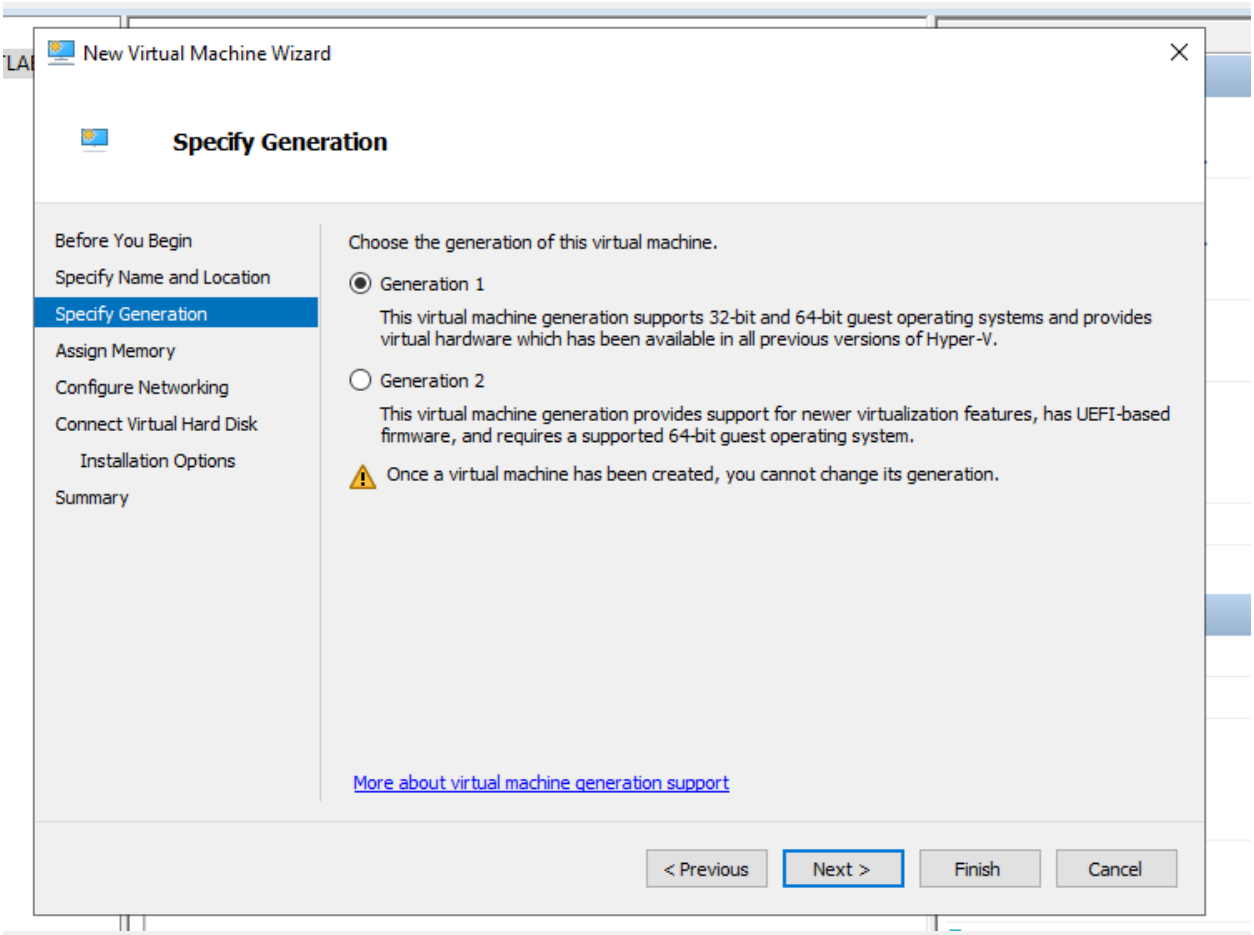

New Virtual Machine Wizard
Open
« Windows 10 › Virtual Hard Disks
Search Virtual Hard Disks
Organize
New folder
Microsoft Management Console
This PC
3D Objects
Desktop
ITSC311-PROJE
PICTURES
Documents
WindowsPowe
Downloads
Music
Pictures
Videos
Date modified
Type
Windows 10
6/6/2020 3:59 PM
Hard Disk Image F...
File name:
Windows 10
Virtual hard disk files
Open
Cancel
< Previous
Next >
Finish
Cancel

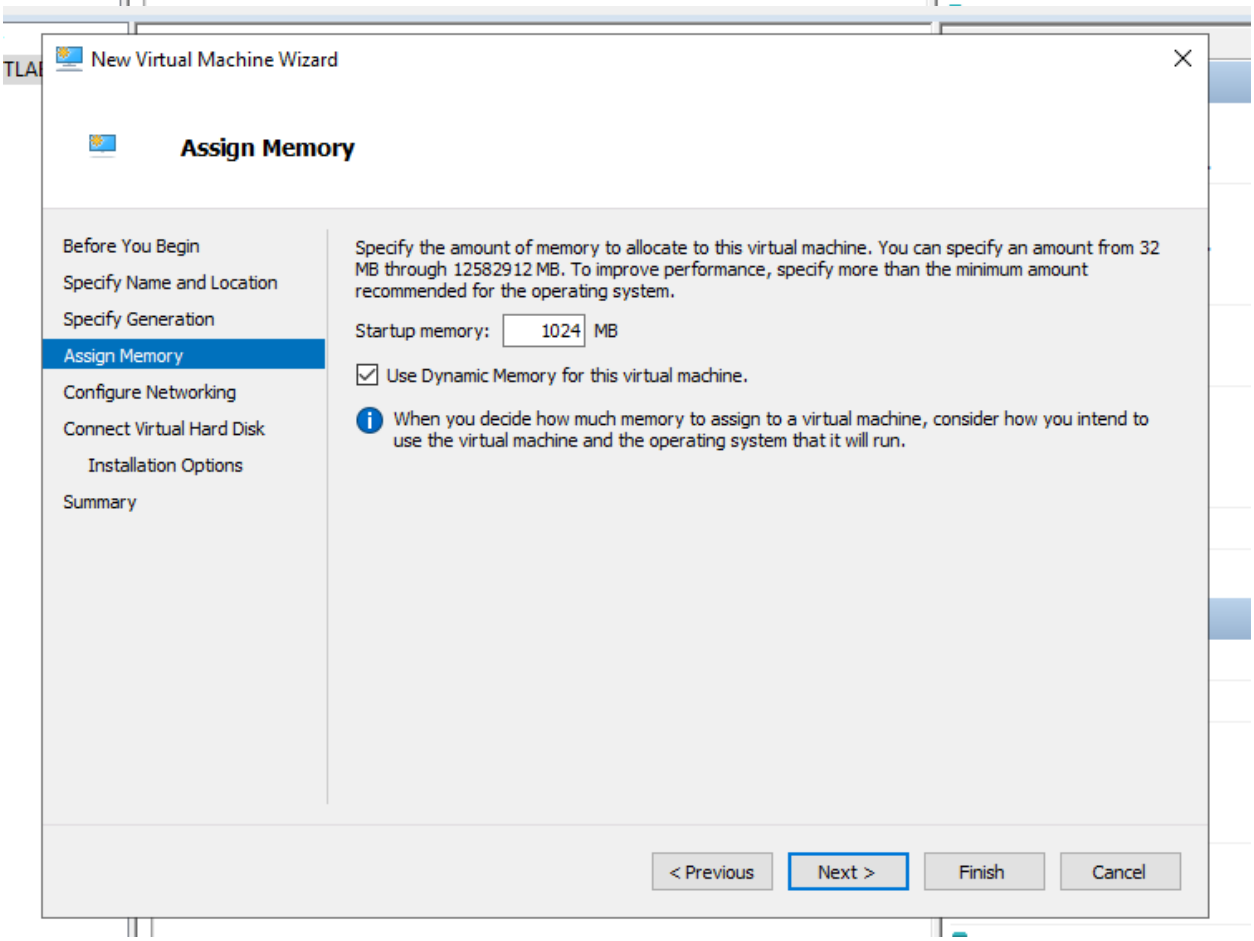

New Virtual Machine Wizard
Connect Virtual Hard Disk
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Summary
A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure 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: Windows 10.vhdx
Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\
Browse...
Size: 127 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: dows 10 Hyper-V\Windows 10\Virtual Hard Disks\Windows 10.vhdx
Browse...
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
Summary
Memory
Networking
Replication
Checkpoint
Move...

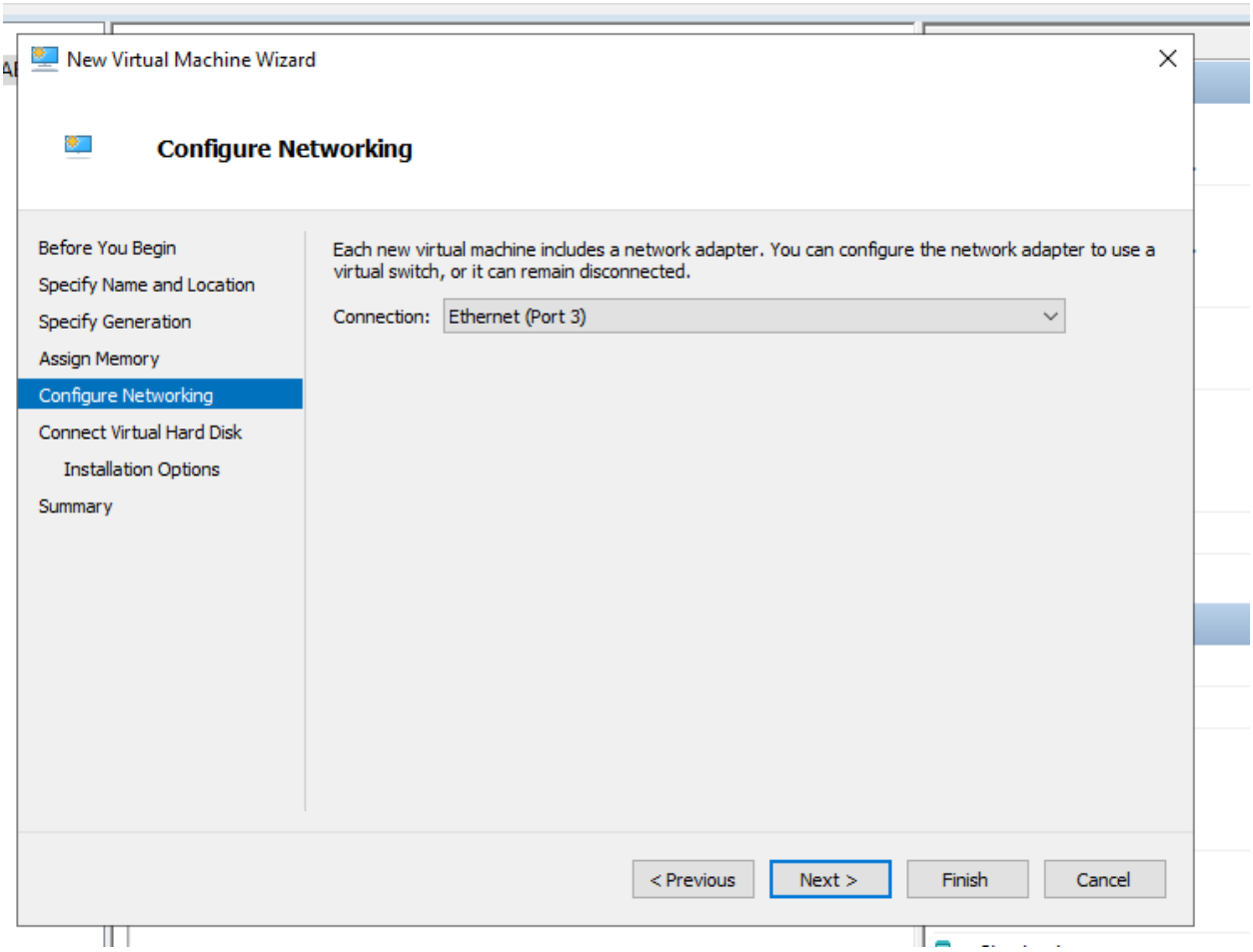

New Virtual Machine Wizard
Completing the New Virtual Machine Wizard
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Summary
You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine.
Description:
Name: Windows 10
Generation: Generation 1
Memory: 1024 MB
Network: Ethernet (Port 1)
Hard Disk: C:\Users\Admin-User\Desktop\ITSC311-PROJECT\Windows 10 Hyper-V\Windows 10\Vir
To create the virtual machine and close the wizard, click Finish.
< Previous
Next >
Finish
Cancel
Checkpoint

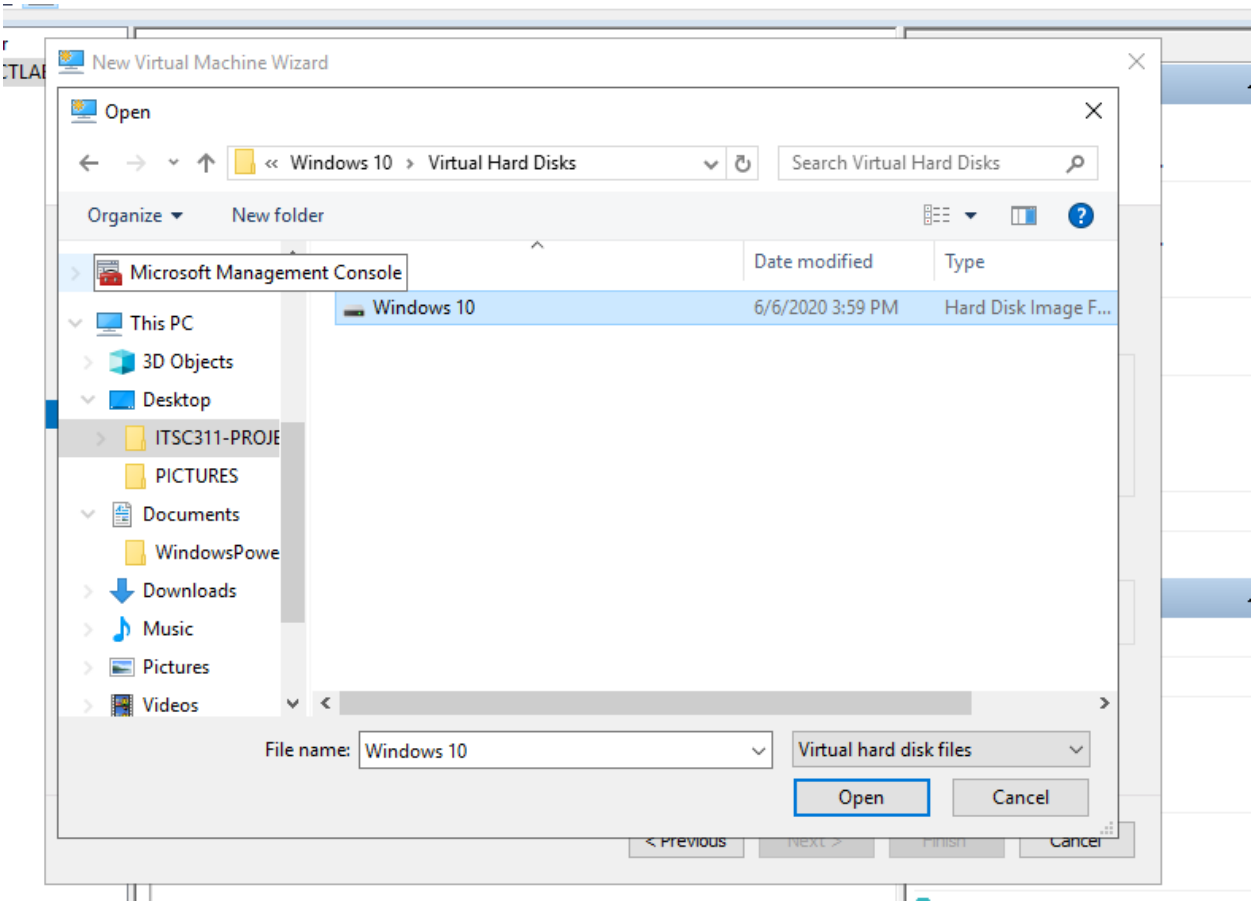

New Virtual Machine Wizard
Before You Begin
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
This wizard helps you create a virtual machine. You can use virtual machines in place of physical computers 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

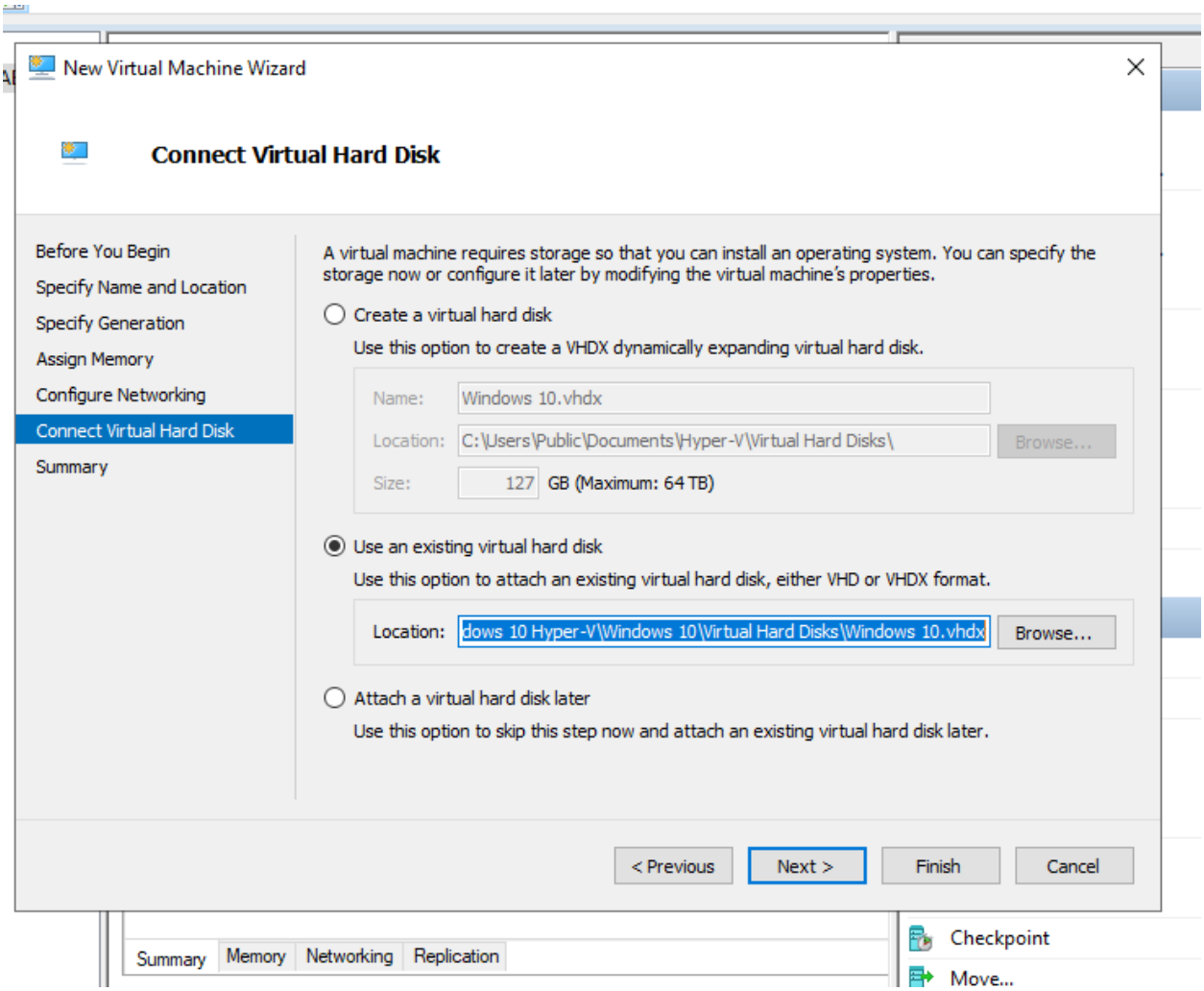

New Virtual Machine Wizard
Specify Name and Location
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose a name and location for this virtual machine.
The name is displayed in Hyper-V Manager. We 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:
Windows 10
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:
C:\ProgramData\Microsoft\Windows\Hyper-V\
Browse...
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.
< Previous
Next >
Finish
Cancel
Checkpoint

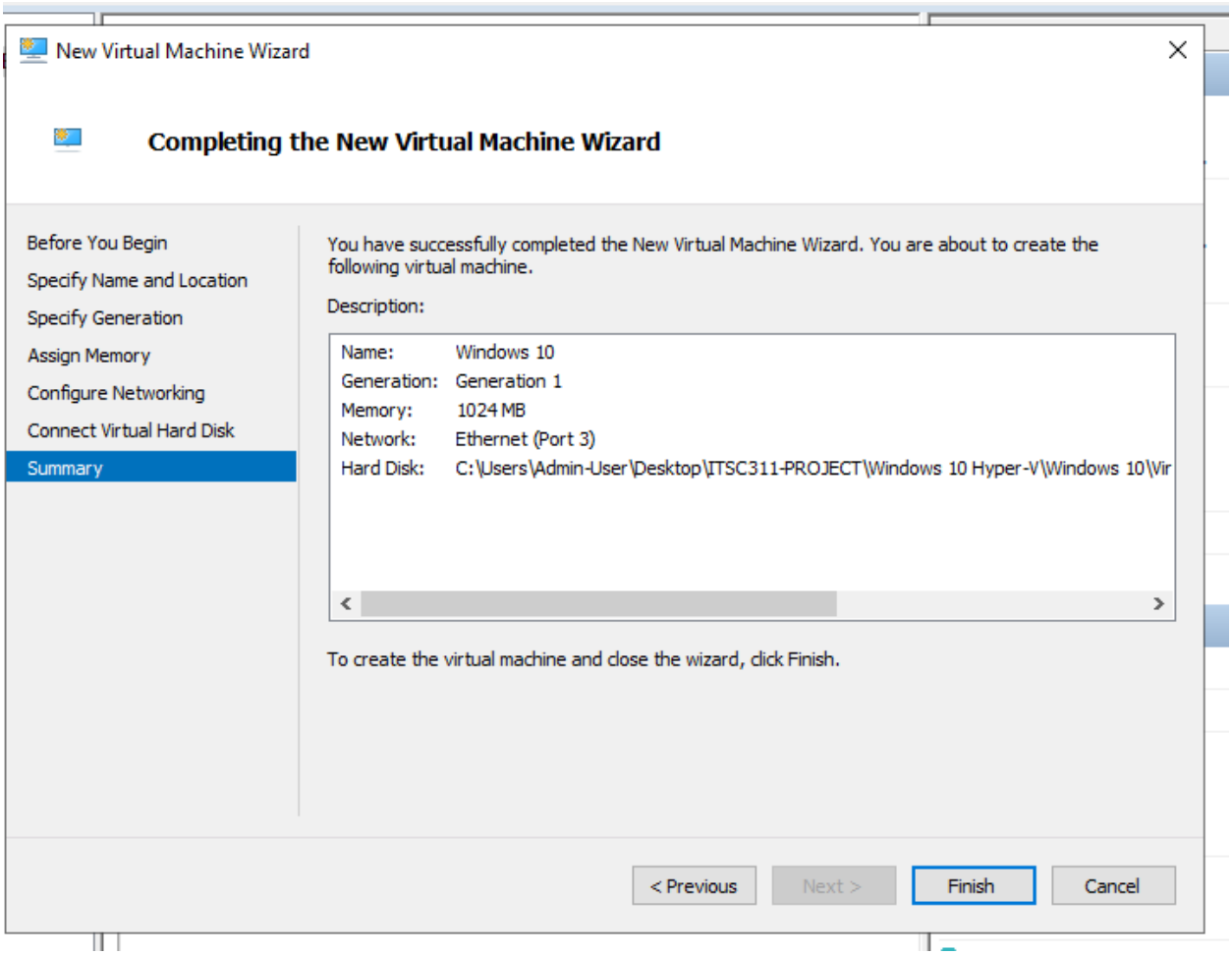

New Virtual Machine Wizard
Specify Generation
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Choose the generation of this virtual machine.
Generation 1
This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.
Generation 2
This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.
Once a virtual machine has been created, you cannot change its generation.
More about virtual machine generation support
< Previous
Next >
Finish
Cancel

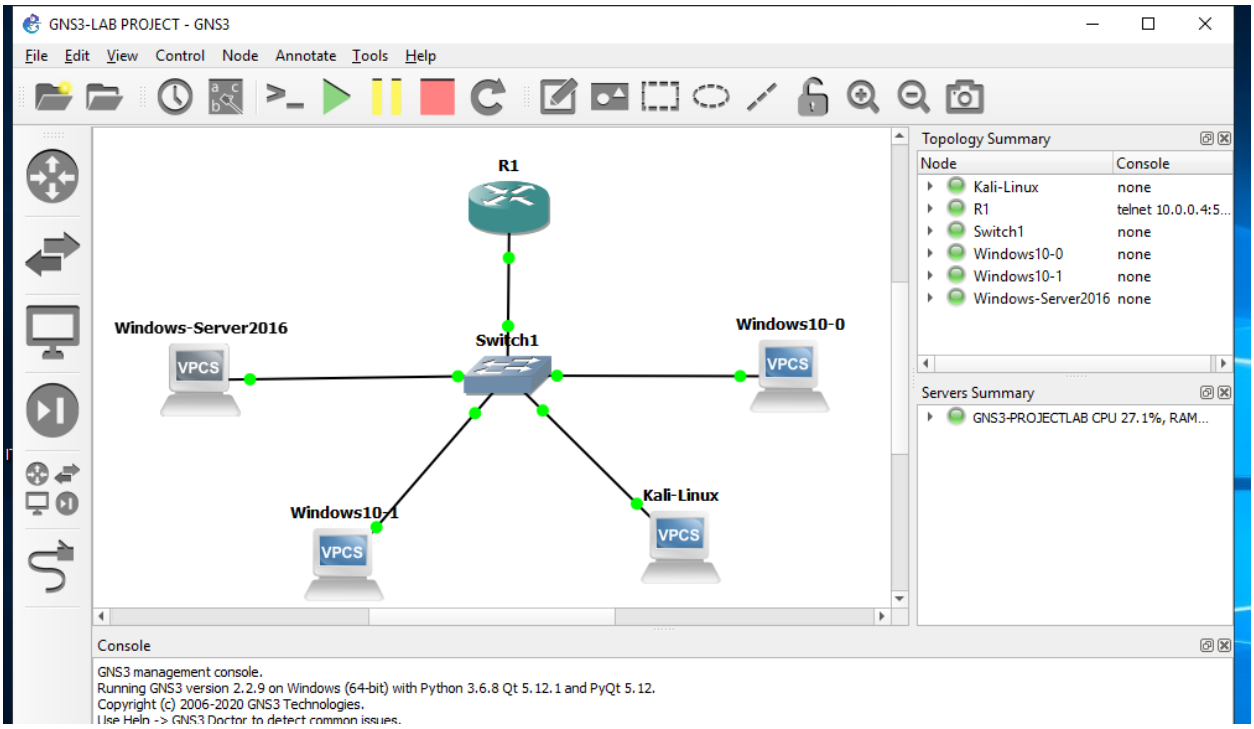

New Virtual Machine Wizard
Assign Memory
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912 MB. To improve performance, specify more than the minimum amount recommended for the operating system.
Startup memory: 1024 MB
Use Dynamic Memory for this virtual machine.
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

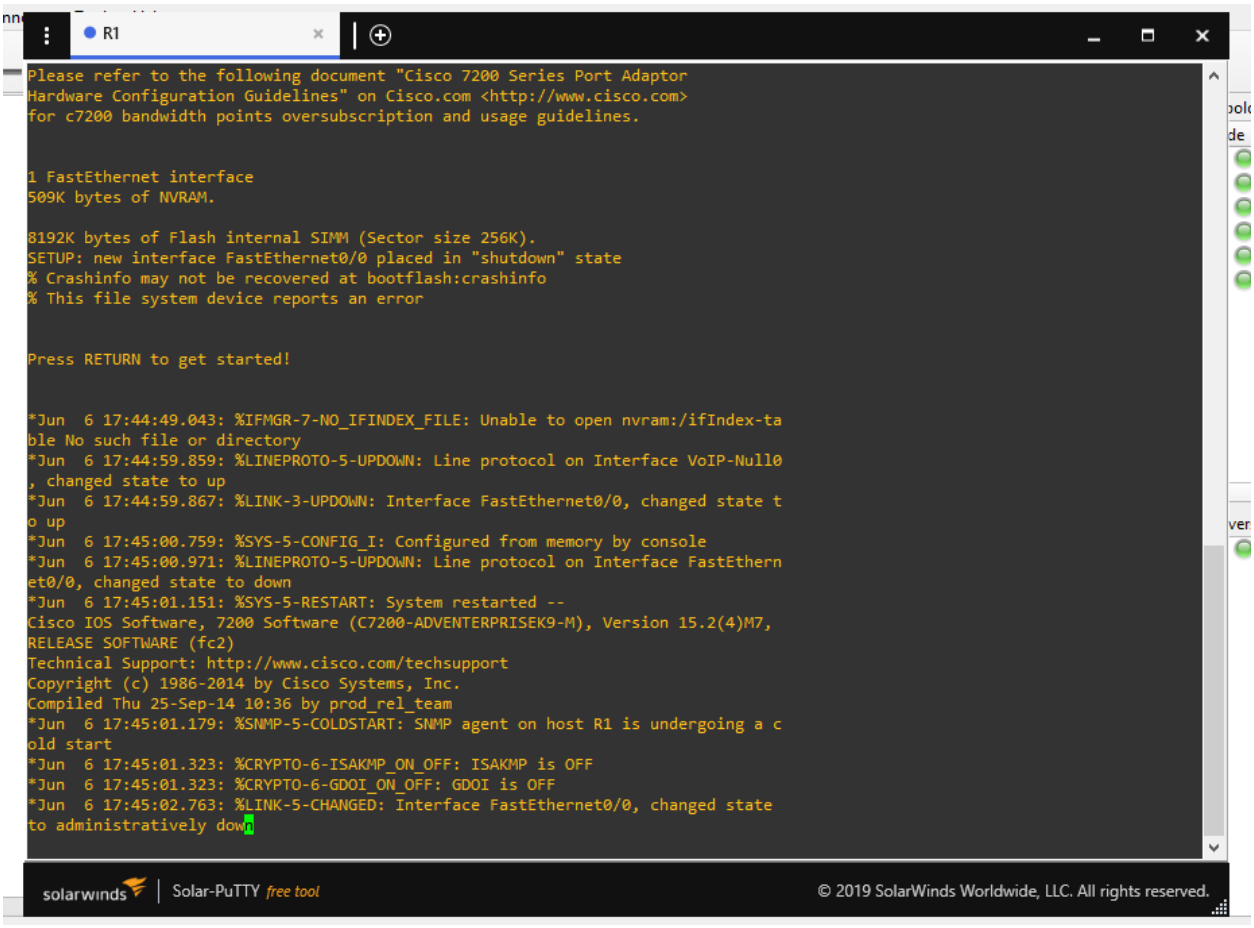

New Virtual Machine Wizard
Configure Networking
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary
Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.
Connection:
Ethernet (Port 3)
< Previous
Next >
Finish
Cancel


New Virtual Machine Wizard
Open
« Windows 10 › Virtual Hard Disks
Search Virtual Hard Disks
Organize
New folder
Microsoft Management Console
This PC
3D Objects
Desktop
ITSC311-PROJE
PICTURES
Documents
WindowsPowe
Downloads
Music
Pictures
Videos
Date modified
Type
Windows 10
6/6/2020 3:59 PM
Hard Disk Image F...
File name:
Windows 10
Virtual hard disk files
Open
Cancel
< Previous
Next >
Finish
Cancel

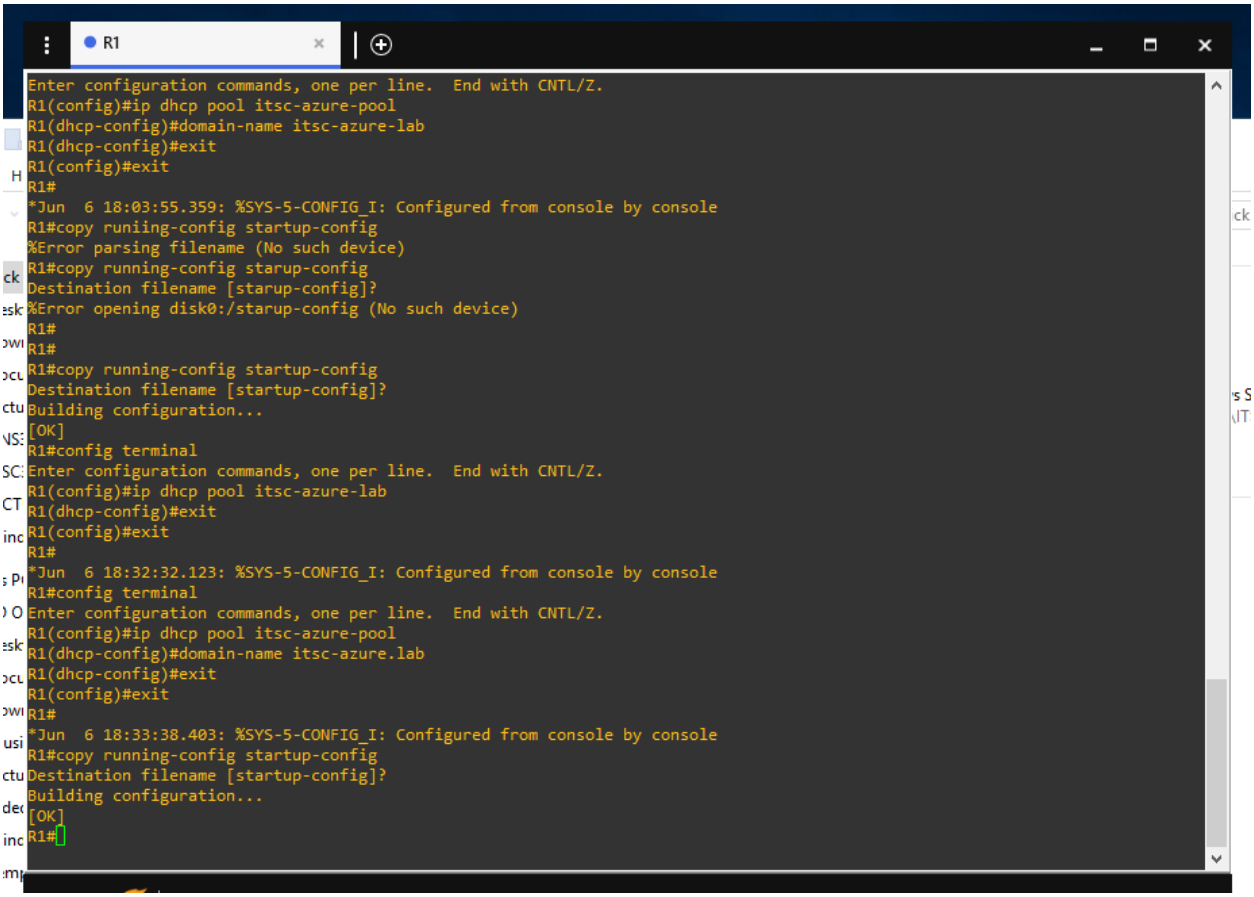

New Virtual Machine Wizard
Connect Virtual Hard Disk
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Summary
A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure 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: Windows 10.vhdx
Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\
Browse...
Size: 127 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: dows 10 Hyper-V\Windows 10\Virtual Hard Disks\Windows 10.vhdx
Browse...
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
Summary
Memory
Networking
Replication
Checkpoint
Move...

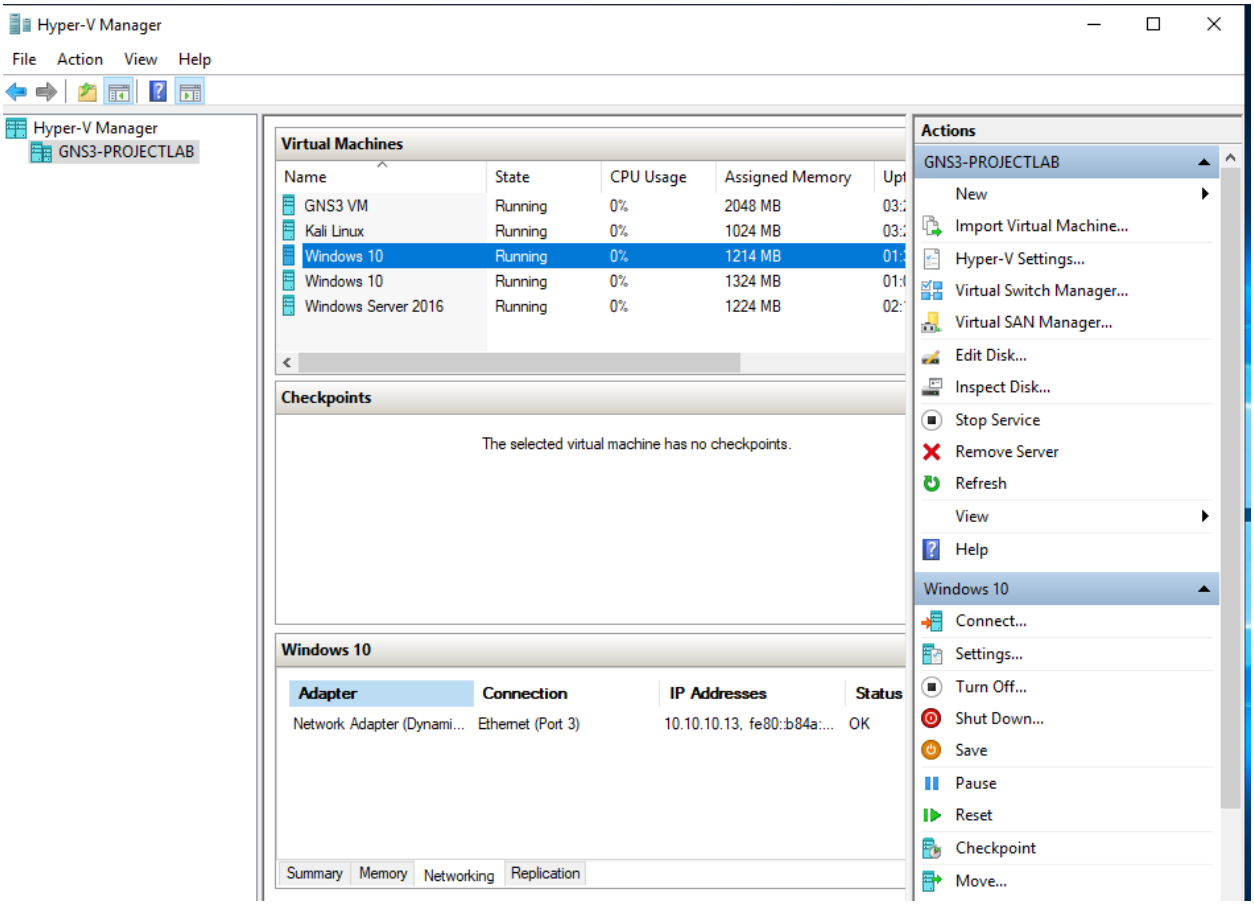

New Virtual Machine Wizard
Completing the New Virtual Machine Wizard
Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Summary
You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine.
Description:
Name: Windows 10
Generation: Generation 1
Memory: 1024 MB
Network: Ethernet (Port 3)
Hard Disk: C:\Users\Admin-User\Desktop\ITSC311-PROJECT\Windows 10 Hyper-V\Windows 10\Vir
To create the virtual machine and close the wizard, click Finish.
< Previous
Next >
Finish
Cancel

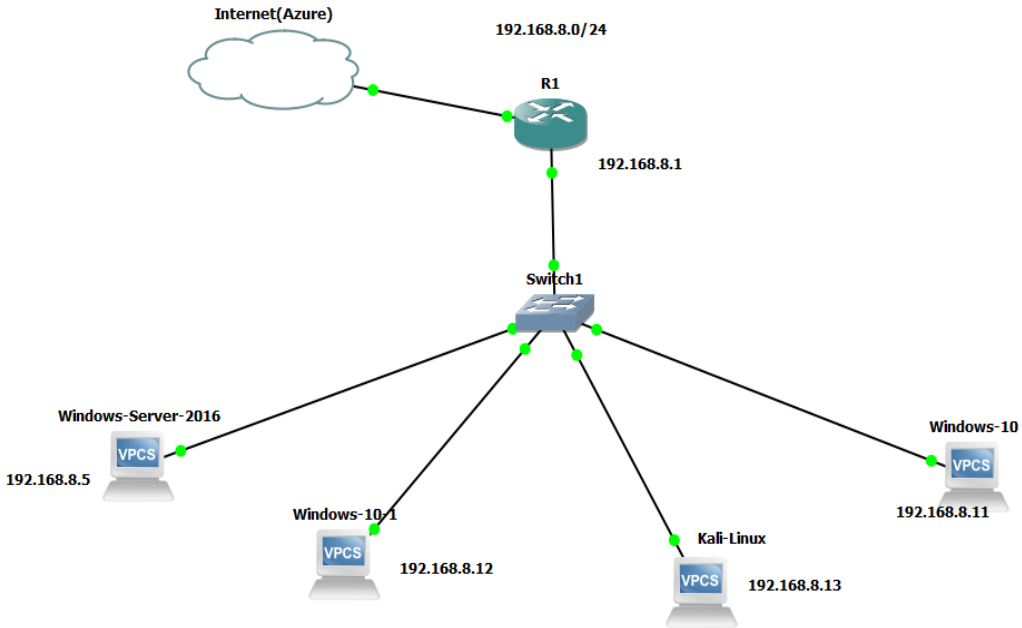

GNS3-LAB PROJECT - GNS3
File Edit View Control Node Annotate Tools Help
R1
Switch1
Windows-Server2016
Windows10-0
Windows10-1
Kali-Linux
VPCS
Topology Summary
Node
Console
Kali-Linux none
R1 telnet 10.0.0.4:5...
Switch1 none
Windows10-0 none
Windows10-1 none
Windows-Server2016 none
Servers Summary
GNS3-PROJECTLAB CPU 27.1%, RAM...
Console
GNS3 management console.
Running GNS3 version 2.2.9 on Windows (64-bit) with Python 3.6.8 Qt 5.12.1 and PyQt 5.12.
Copyright (c) 2006-2020 GNS3 Technologies.




```
to administratively down
R1#
R1#enable
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface fa0/0
R1(config-if)#ip address 10.10.10.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Jun  6 17:51:04.103: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Jun  6 17:51:05.103: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#^Z
R1#
*Jun  6 17:51:56.171: %SYS-5-CONFIG_I: Configured from console by console
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip dhcp pool itsc-azure-pool
R1(dhcp-config)#network 10.10.10.0 255.255.255.0
R1(dhcp-config)#default-router 10.10.10.1
R1(dhcp-config)#dns-server 10.10.10.5
R1(dhcp-config)#exit
R1(config)#ip dhcp excluded-address 10.10.10.1 10.10.10.10
R1(config)#exit
R1#
*Jun  6 17:57:20.971: %SYS-5-CONFIG_I: Configured from console by console
R1#copy runnin-config startup-config
%Error parsing filename (No such device)
R1#copy running-config startup-config
Destination filename [startup-config]?
Warning: Attempting to overwrite an NVRAM configuration previously written
by a different version of the system image.
Overwrite the previous NVRAM configuration?[confirm]
Building configuration...
[OK]
R1#
```


R1
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip dhcp pool itsc-azure-pool
R1(dhcp-config)#domain-name itsc-azure-lab
R1(dhcp-config)#exit
R1(config)#exit
R1#
*Jun  6 18:03:55.359: %SYS-5-CONFIG_I: Configured from console by console
R1#copy runiing-config startup-config
%Error parsing filename (No such device)
R1#copy running-config starup-config
Destination filename [starup-config]?
%Error opening disk0:/starup-config (No such device)
R1#
R1#
R1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip dhcp pool itsc-azure-lab
R1(dhcp-config)#exit
R1(config)#exit
R1#
*Jun  6 18:32:32.123: %SYS-5-CONFIG_I: Configured from console by console
R1#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip dhcp pool itsc-azure-pool
R1(dhcp-config)#domain-name itsc-azure.lab
R1(dhcp-config)#exit
R1(config)#exit
R1#
*Jun  6 18:33:38.403: %SYS-5-CONFIG_I: Configured from console by console
R1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1#


Hyper-V Manager
File Action View Help
Hyper-V Manager
GNS3-PROJECTLAB
Virtual Machines
Name State CPU Usage Assigned Memory
GNS3 VM Running 0% 2048 MB
Kali Linux Running 0% 1024 MB
Windows 10 Running 0% 1214 MB
Windows 10 Running 0% 1324 MB
Windows Server 2016 Running 0% 1224 MB
Checkpoints
The selected virtual machine has no checkpoints.
Windows 10
Adapter Connection IP Addresses Status
Network Adapter (Dynami... Ethernet (Port 3) 10.10.10.13, fe80::b84a:... OK
Summary Memory Networking Replication
Actions
GNS3-PROJECTLAB
New
Import Virtual Machine...
Hyper-V Settings...
Virtual Switch Manager...
Virtual SAN Manager...
Edit Disk...
Inspect Disk...
Stop Service
Remove Server
Refresh
View
Help
Windows 10
Connect...
Settings...
Turn Off...
Shut Down...
Save
Pause
Reset
Checkpoint
Move...


Internet(Azure)
192.168.8.0/24
R1
192.168.8.1
Switch1
Windows-Server-2016
VPCS
192.168.8.5
Windows-10-1
VPCS
192.168.8.12
Kali-Linux
VPCS
192.168.8.13
Windows-10
VPCS
192.168.8.11