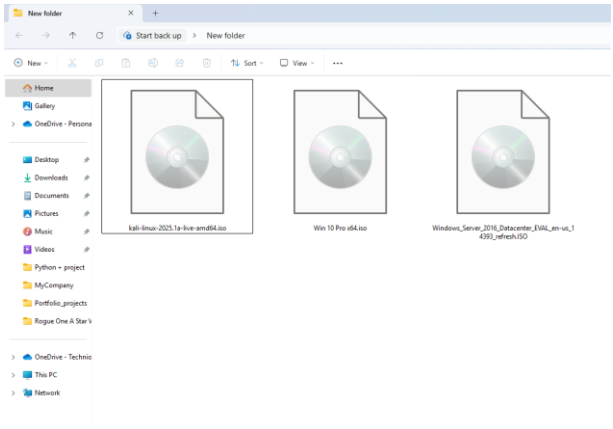
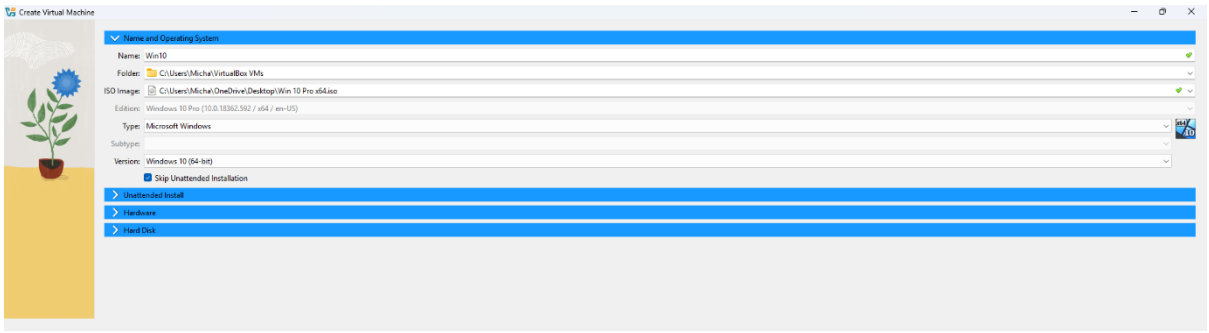
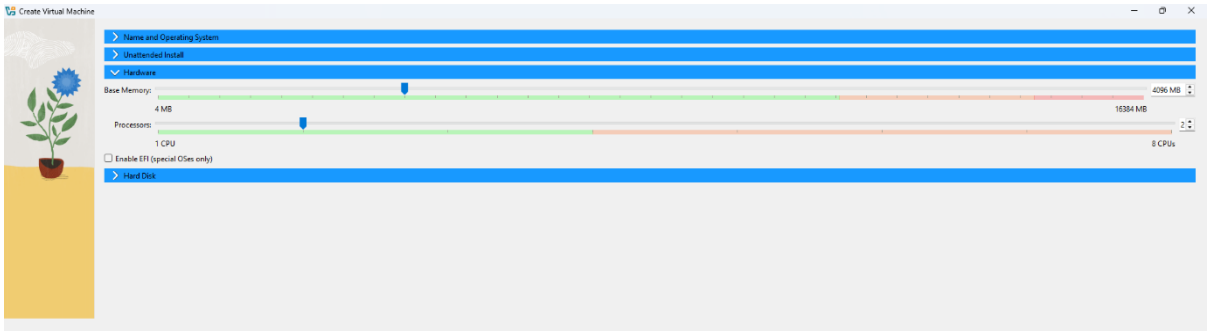
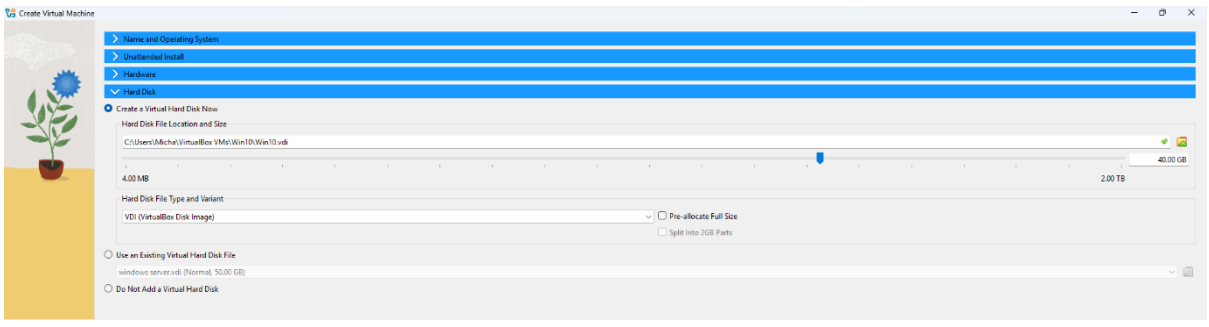
1) Download, create and install windows 10 VM.
    a. Download the Windows 10 installation ISO file



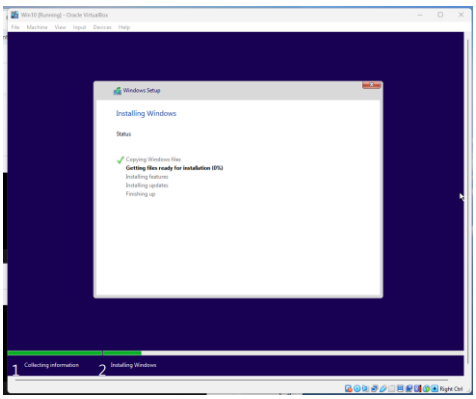
    b. In VirtualBox, create a new VM called: “Win10” then apply the following specs:
        1. Attach the Windows ISO you downloaded.
        2. 4 GB of memory
        3. 2 CPUs.
        4. 40 GB od Disk Space

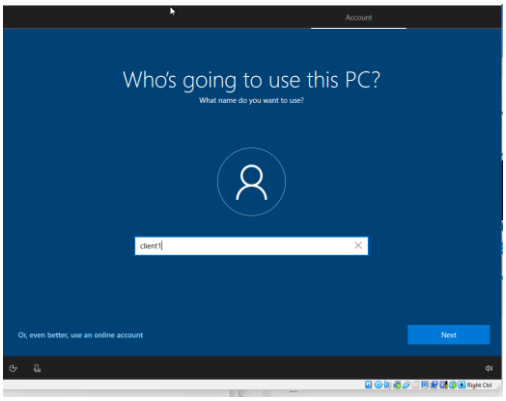




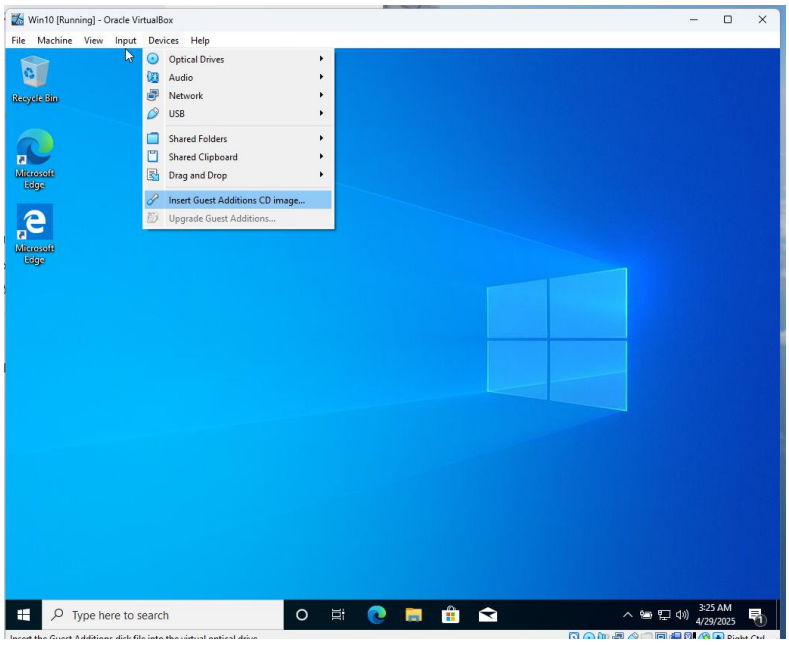


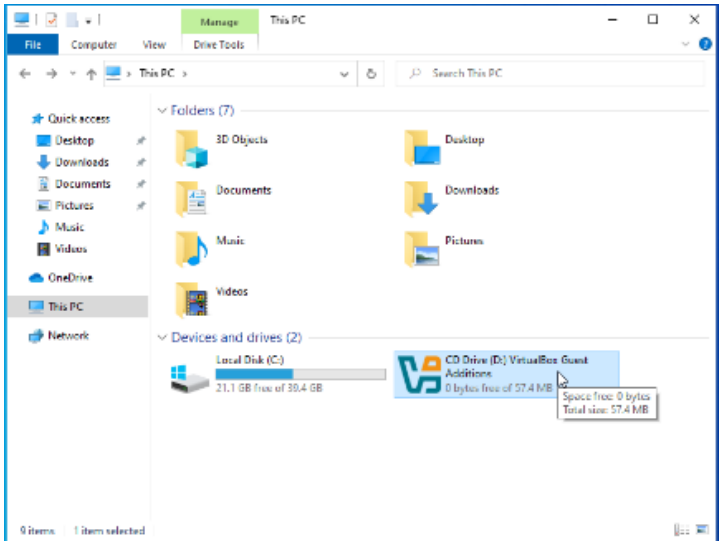
C. Run the VM and install Windows 10.

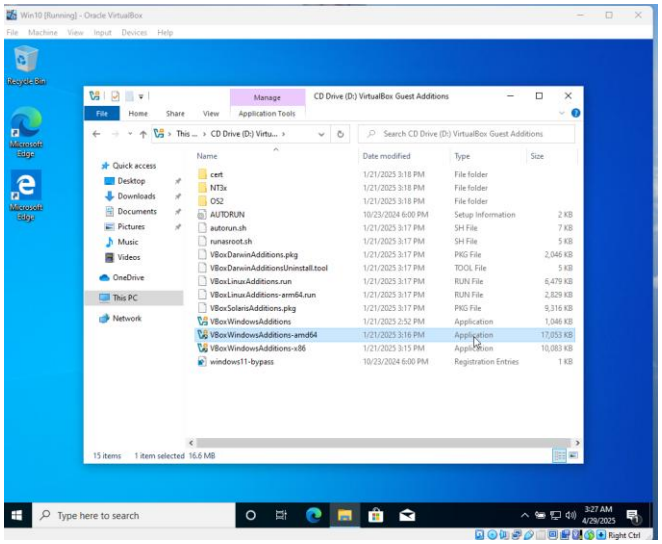


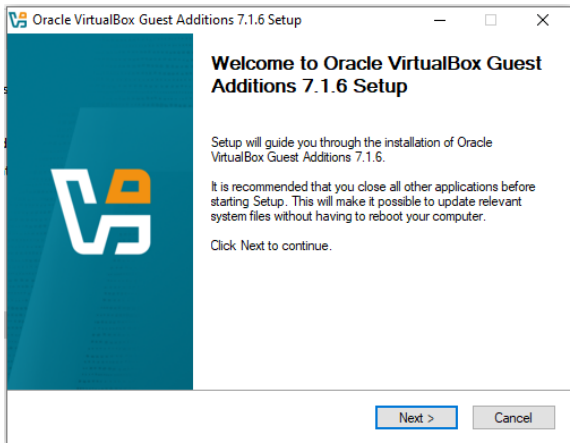


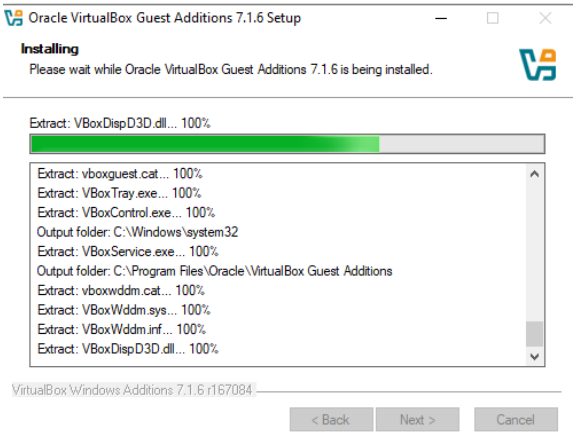
2) Install Guest Editions on your Windows10 VM



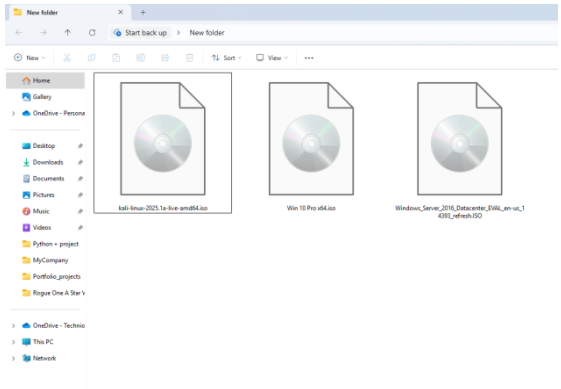




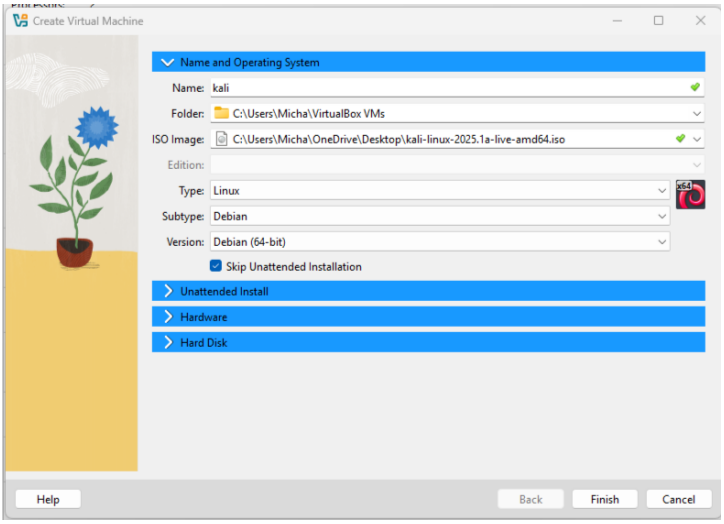


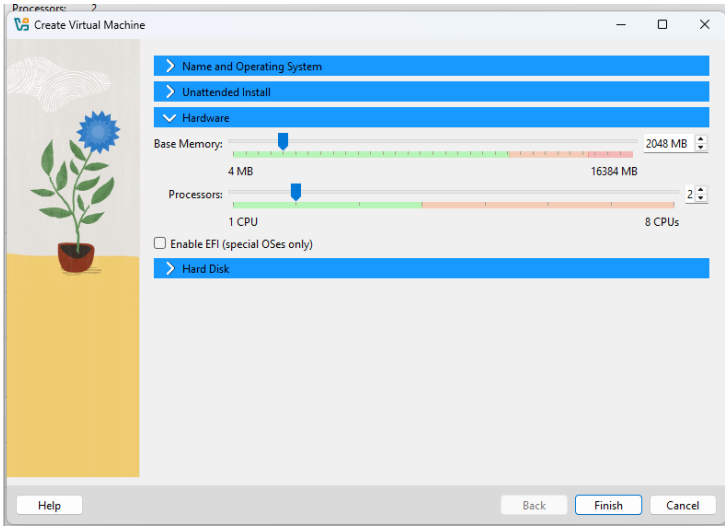


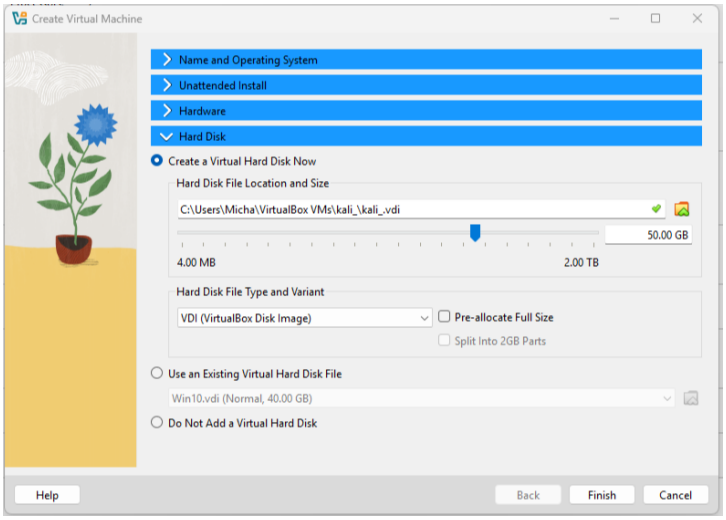
3) Download, extract, create VM, and import kali Linux VM hard drive.
    a. Download the latest 64-bit Kalix Linux VM image for Virtual Box



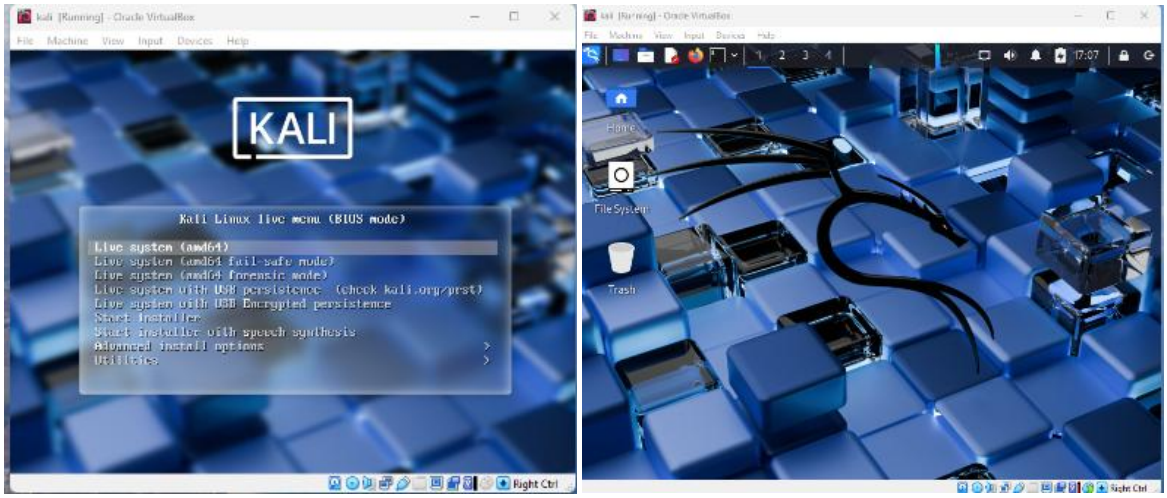
    b. In VirtualBox, create a new VM called: “Kali”. Then apply the following specs:
        1. 2 CPUs.
        2. 2 GB of memory
        3. Extract the downloaded file and import the “.vdi” file as a hard drive


Create Virtual Machine
Name and Operating System
Name: kali
Folder: C:\Users\Micha\VirtualBox VMs
ISO Image: C:\Users\Micha\OneDrive\Desktop\kali-linux-2025.1a-live-amd64.iso
Edition:
Type: Linux
Subtype: Debian
Version: Debian (64-bit)
Skip Unattended Installation
Unattended Install
Hardware
Hard Disk
Help
Back
Finish
Cancel

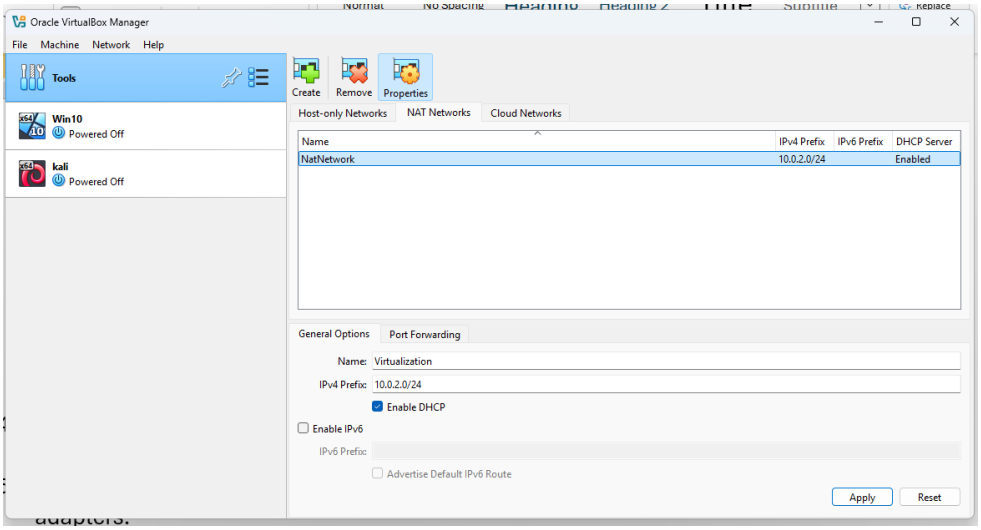

Create Virtual Machine
Name and Operating System
Unattended Install
Hardware
Base Memory: 2048 MB
4 MB
16384 MB
Processors: 2
1 CPU
8 CPUs
Enable EFI (special OSes only)
Hard Disk
Help
Back
Finish
Cancel


Create Virtual Machine
Name and Operating System
Unattended Install
Hardware
Hard Disk
Create a Virtual Hard Disk Now
Hard Disk File Location and Size
C:\Users\Micha\VirtualBox VMs\kali_\kali_.vdi
50.00 GB
4.00 MB
2.00 TB
Hard Disk File Type and Variant
VDI (VirtualBox Disk Image)
Pre-allocate Full Size
Split Into 2GB Parts
Use an Existing Virtual Hard Disk File
Win10.vdi (Normal, 40.00 GB)
Do Not Add a Virtual Hard Disk
Help
Back
Finish
Cancel

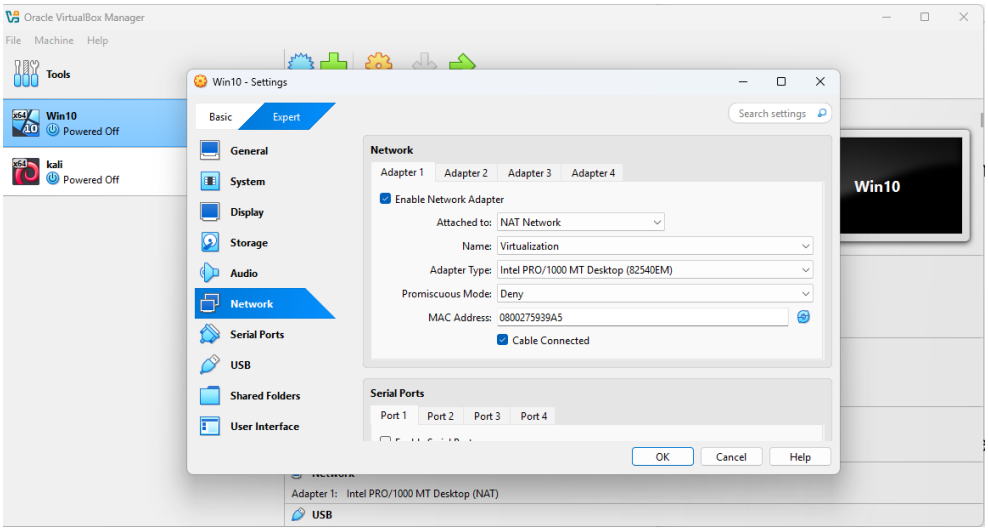
c. Run the VM and install Kali Linux.

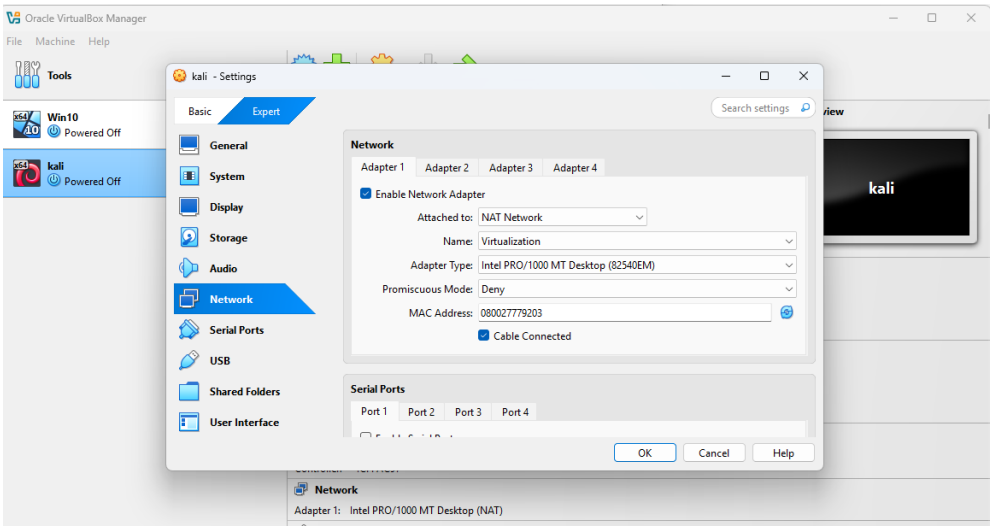


4) In VirtualBox, create a NAT-Network name: “virtaulization”, use an IP address range of 10.0.2.0/24, and ensure that DHCP Server is set to Enabled.

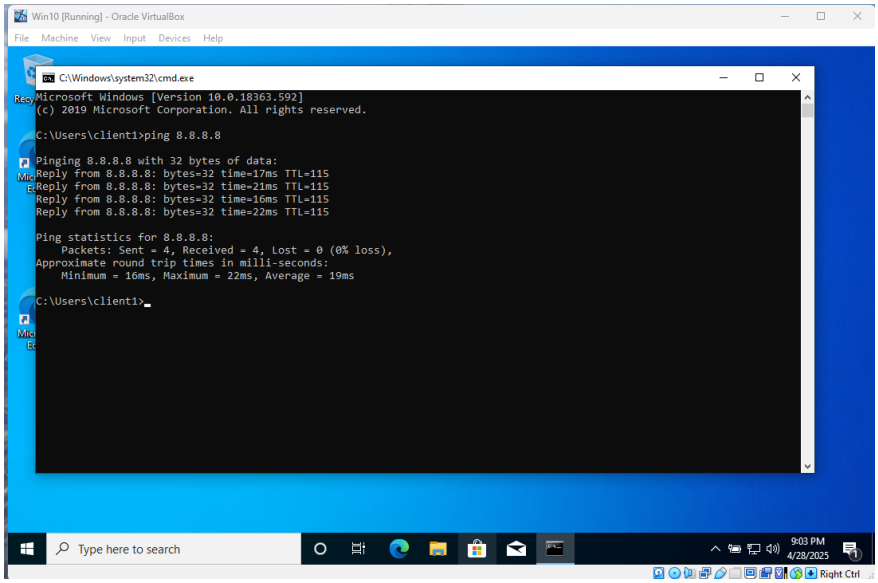


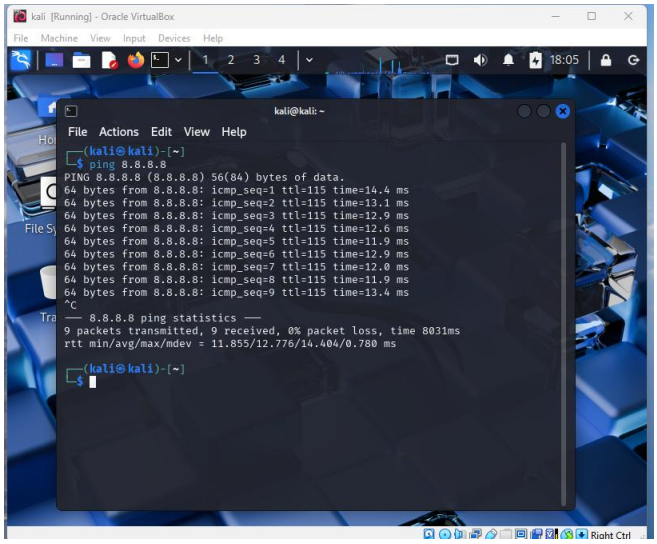
5) Attach the newly created “Virtualization”: NAT-Network to your kali & Windows network adapters.



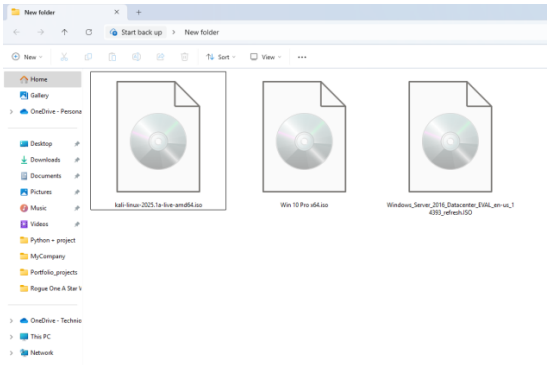


6) In both operating systems, utilize the ping command to assess connectivity between the virtual machines and Google's DNS server [8.8.8.8] to confirm a functioning Wide Area Network [WAN] connection

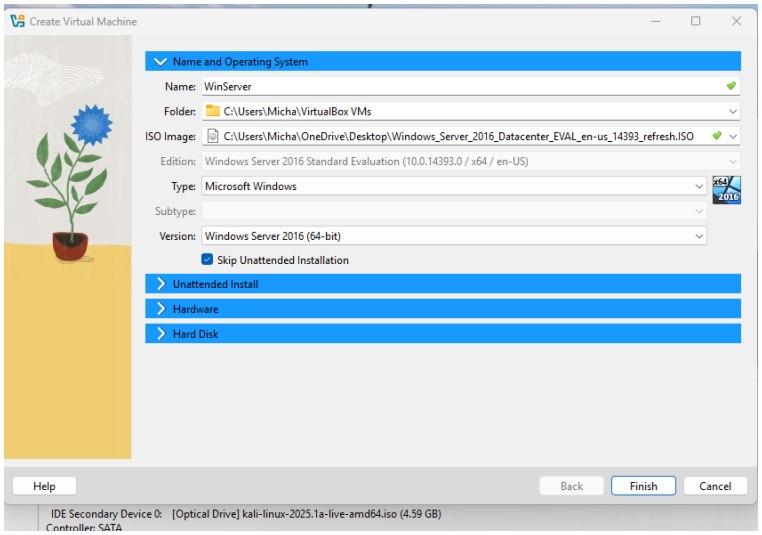


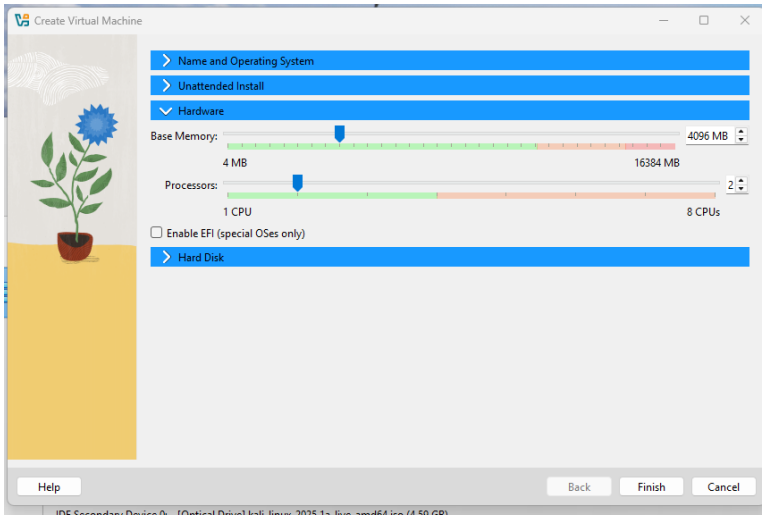


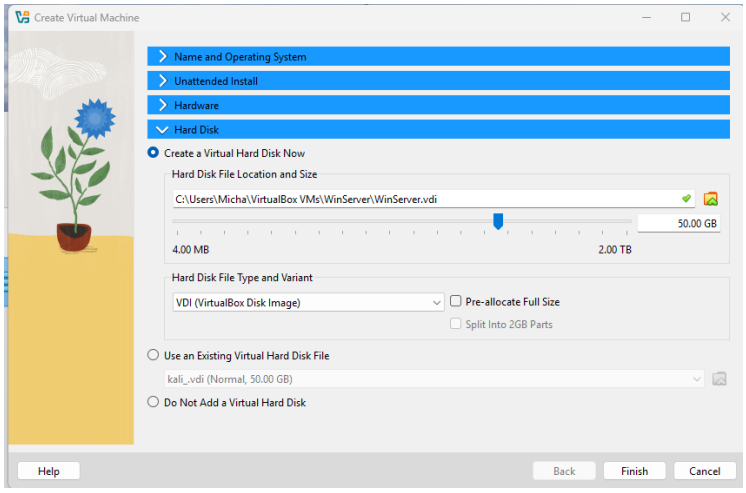
7) Install a **Windows Server 2016** operating system
   a. Download Windows Server 2016 image



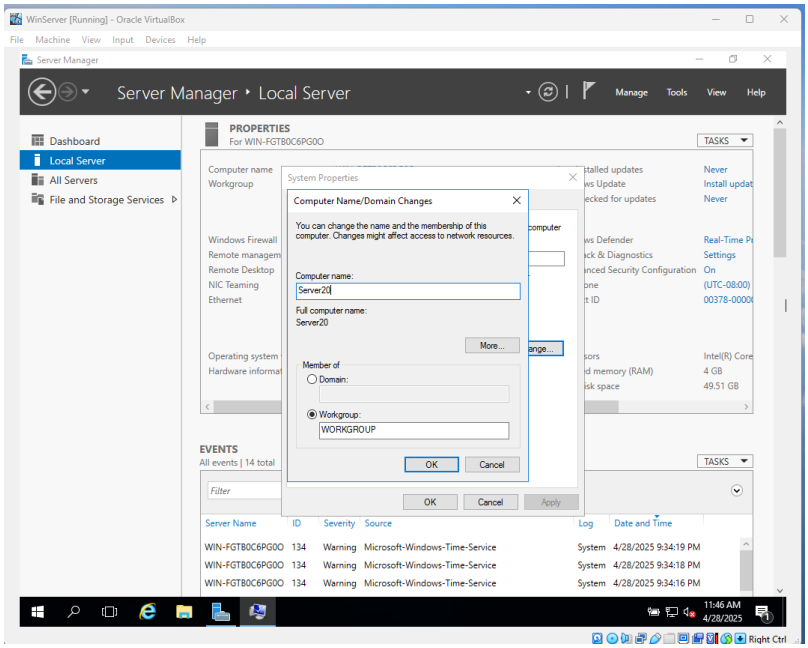
   b. In VirtualBox, create a new VM called: “WinServer’ Then apply the following specs:
      1. Attach the Window ISO you downloaded.
      2. 4 GB of memory
      3. 2 CPUs
      4. 50 GB of Disk Space

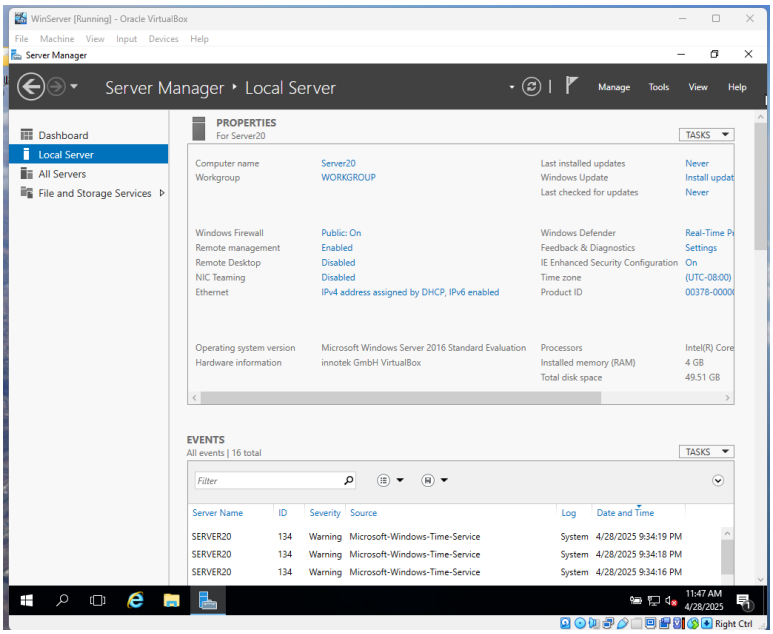




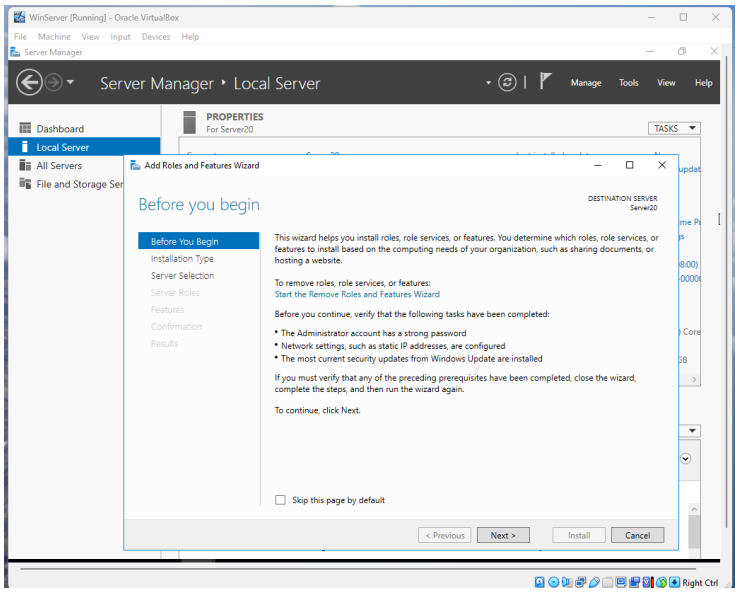


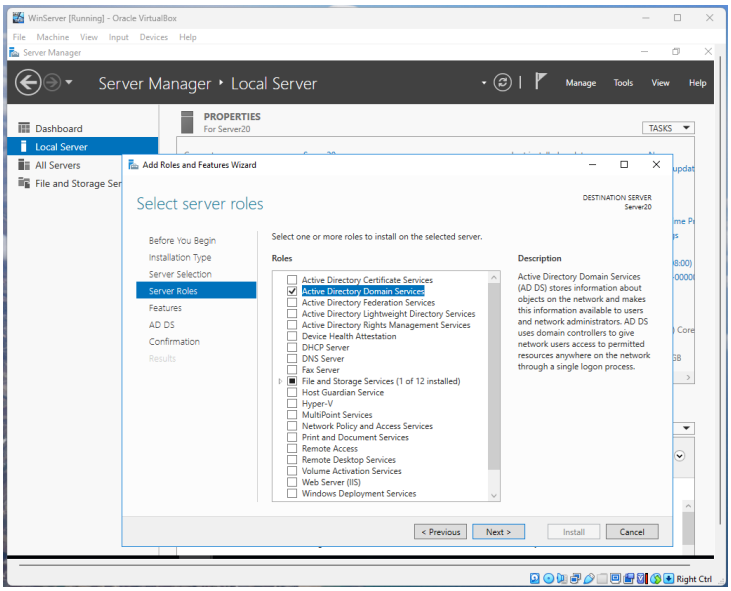
8) Set the name of the Windows server as “Server20”

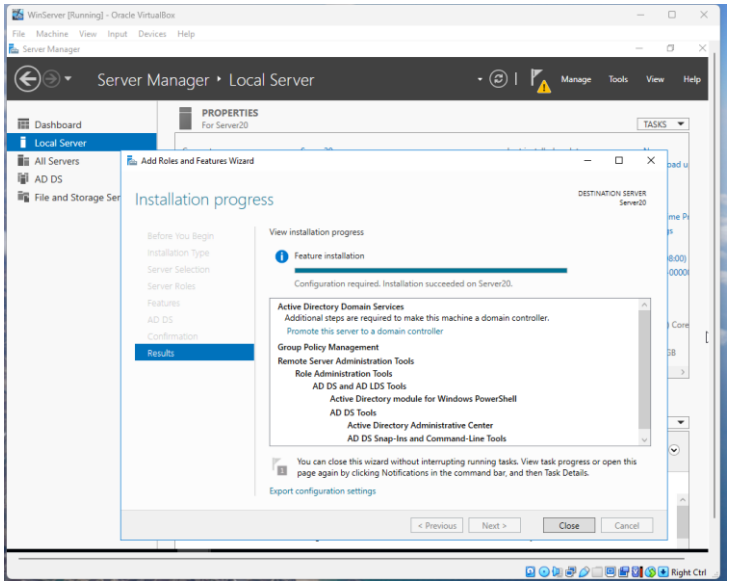




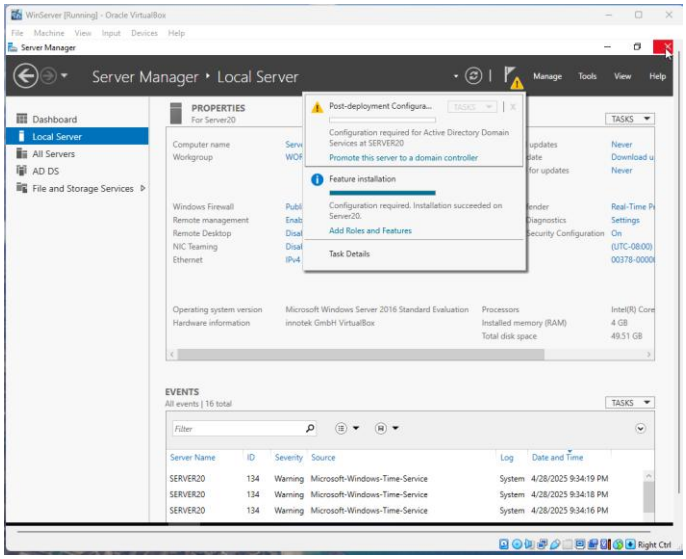
9) Install **Active Directory** services on the machine

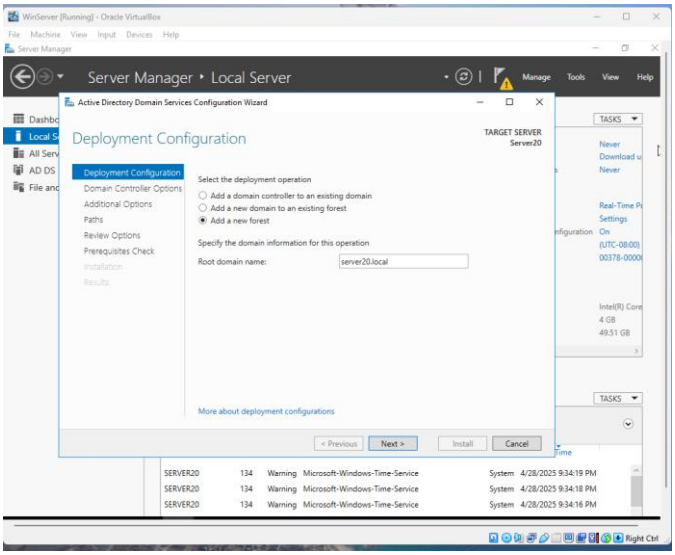


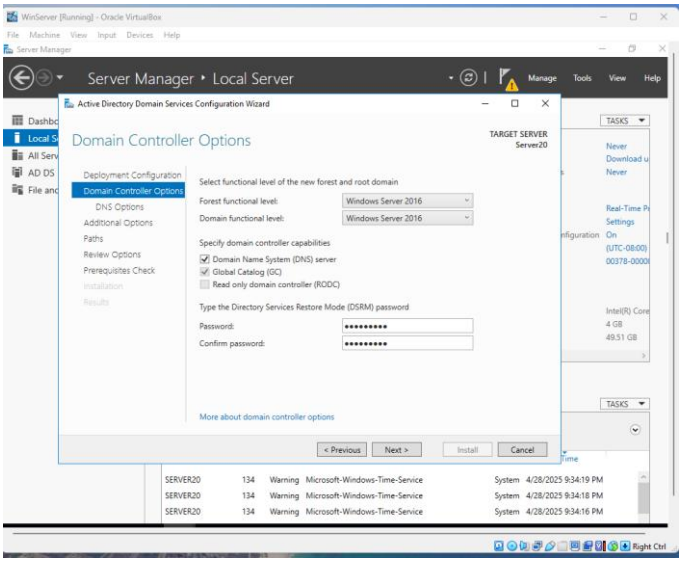


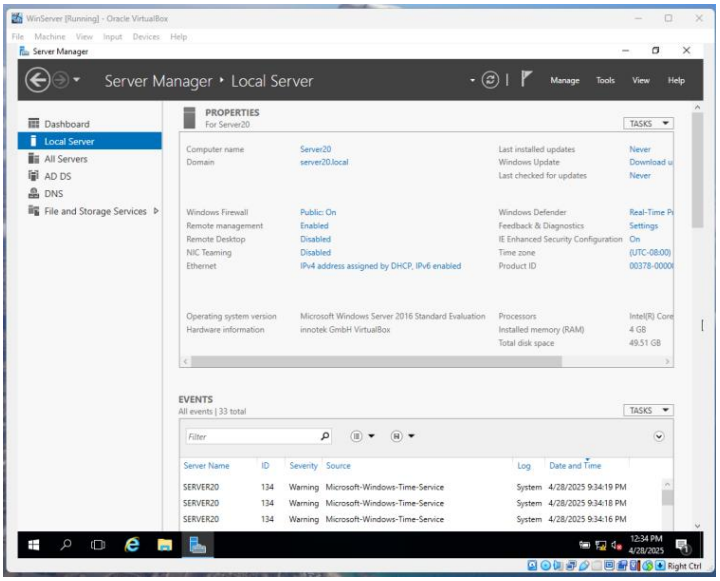


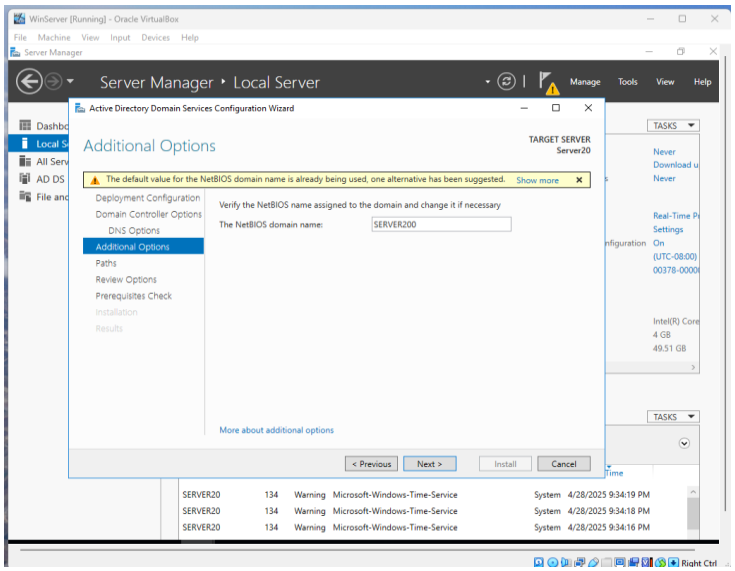
10) Promote the server to a domain.

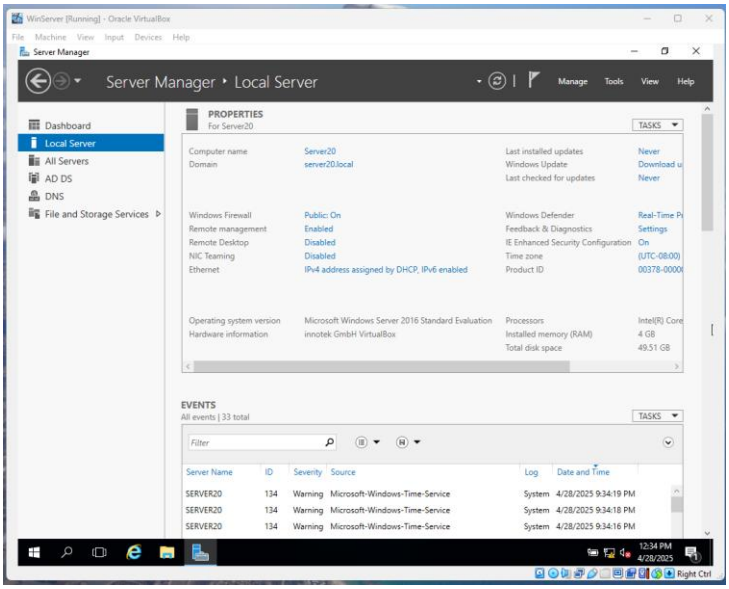


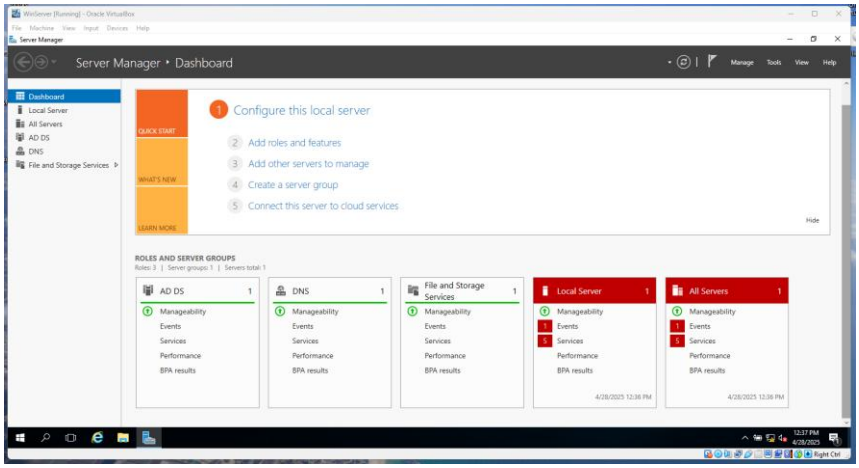




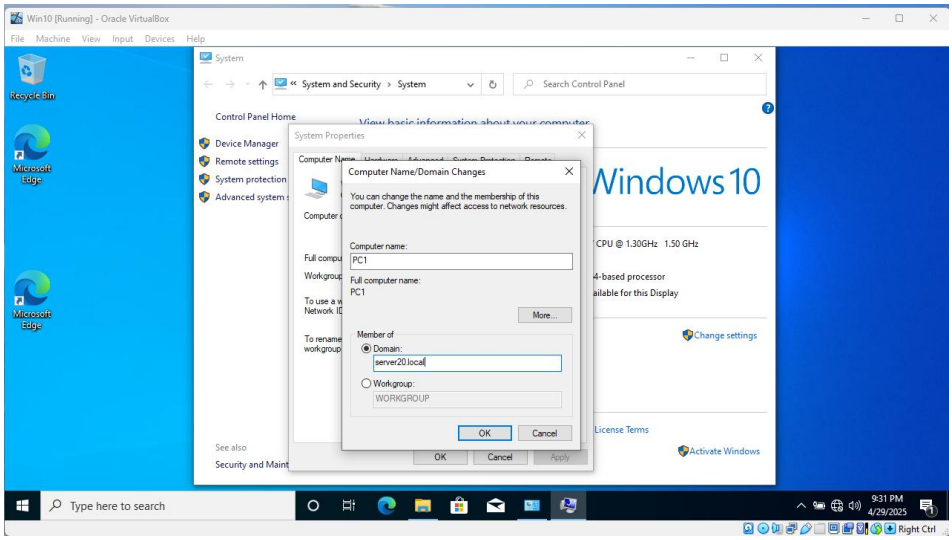

WinServer [Running] - Oracle VirtualBox
Server Manager
Server Manager • Local Server
Manage Tools View Help
Dashboard
Local Server
All Servers
AD DS
DNS
File and Storage Services
PROPERTIES
For Server20
TASKS
Computer name Server20
Domain server20.local
Last installed updates Never
Windows Update Download u
Last checked for updates Never
Windows Firewall Public: On
Remote management Enabled
Remote Desktop Disabled
NIC Teaming Disabled
Ethernet IPv4 address assigned by DHCP, IPv6 enabled
Windows Defender Real-Time P
Feedback & Diagnostics Settings
IE Enhanced Security Configuration On
Time zone (UTC-08:00)
Product ID 00378-0000
Operating system version Microsoft Windows Server 2016 Standard Evaluation
Hardware information innotek GmbH VirtualBox
Processors Intel(R) Core
Installed memory (RAM) 4 GB
Total disk space 49.51 GB
EVENTS
All events | 33 total
Filter
Server Name ID Severity Source Log Date and Time
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:19 PM
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:18 PM
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:16 PM
12:34 PM
4/28/2025
Right Ctrl

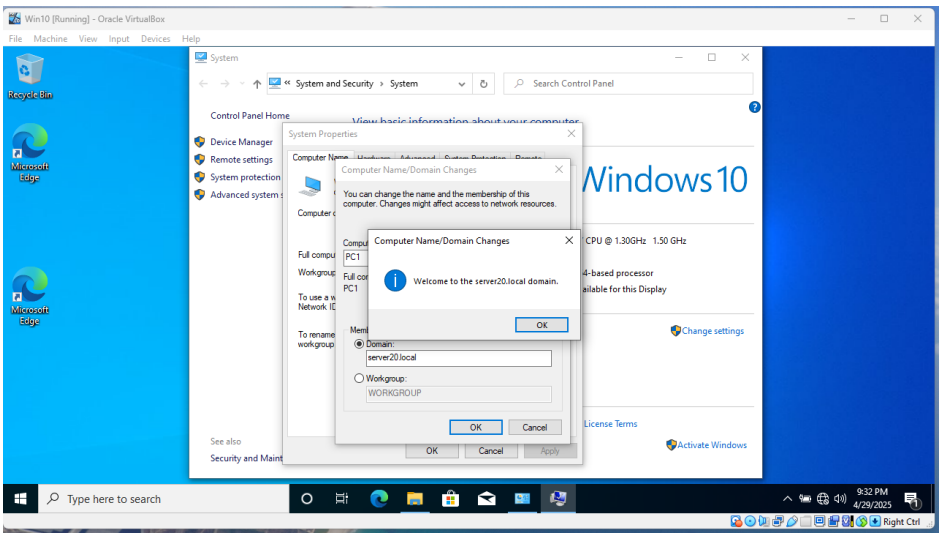

WinServer [Running] - Oracle VirtualBox
Server Manager
Server Manager • Local Server
Manage Tools View Help
Active Directory Domain Services Configuration Wizard
Additional Options
TARGET SERVER
Server20
The default value for the NetBIOS domain name is already being used, one alternative has been suggested. Show more
Deployment Configuration
Domain Controller Options
DNS Options
Additional Options
Paths
Review Options
Prerequisites Check
Installation
Results
Verify the NetBIOS name assigned to the domain and change it if necessary
The NetBIOS domain name: SERVER200
More about additional options
< Previous
Next >
Install
Cancel
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:19 PM
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:18 PM
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:16 PM
Right Ctrl

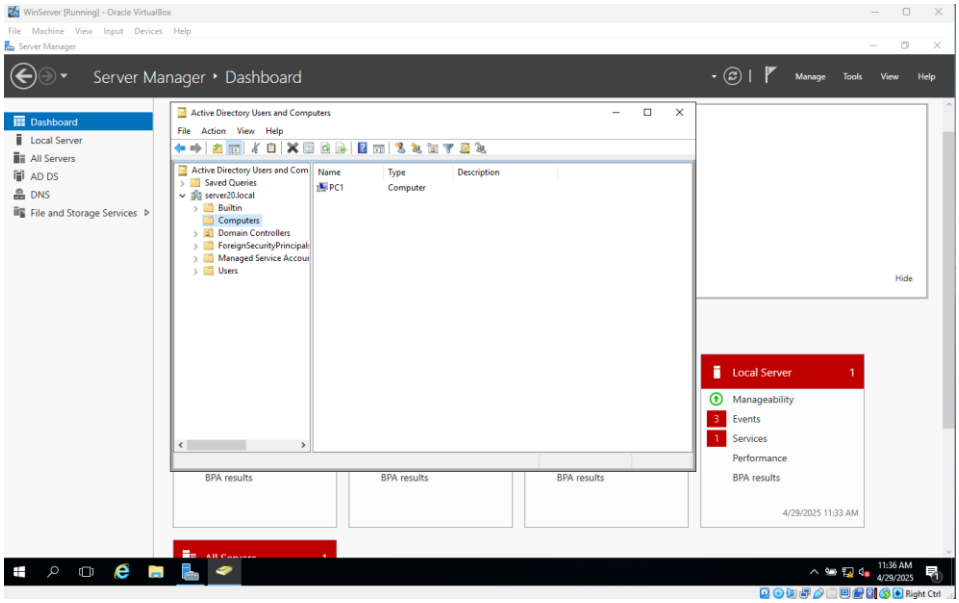

WinServer [Running] - Oracle VirtualBox
Server Manager
Server Manager • Local Server
Manage Tools View Help
Dashboard
Local Server
All Servers
AD DS
DNS
File and Storage Services
PROPERTIES
For Server20
TASKS
Computer name Server20
Domain server20.local
Last installed updates Never
Windows Update Download u
Last checked for updates Never
Windows Firewall Public: On
Remote management Enabled
Remote Desktop Disabled
NIC Teaming Disabled
Ethernet IPv4 address assigned by DHCP, IPv6 enabled
Windows Defender Real-Time P
Feedback & Diagnostics Settings
IE Enhanced Security Configuration On
Time zone (UTC-08:00)
Product ID 00378-0000
Operating system version Microsoft Windows Server 2016 Standard Evaluation
Hardware information innotek GmbH VirtualBox
Processors Intel(R) Core
Installed memory (RAM) 4 GB
Total disk space 49.51 GB
EVENTS
All events | 33 total
Filter
Server Name ID Severity Source Log Date and Time
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:19 PM
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:18 PM
SERVER20 134 Warning Microsoft-Windows-Time-Service System 4/28/2025 9:34:16 PM
12:34 PM
4/28/2025
Right Ctrl



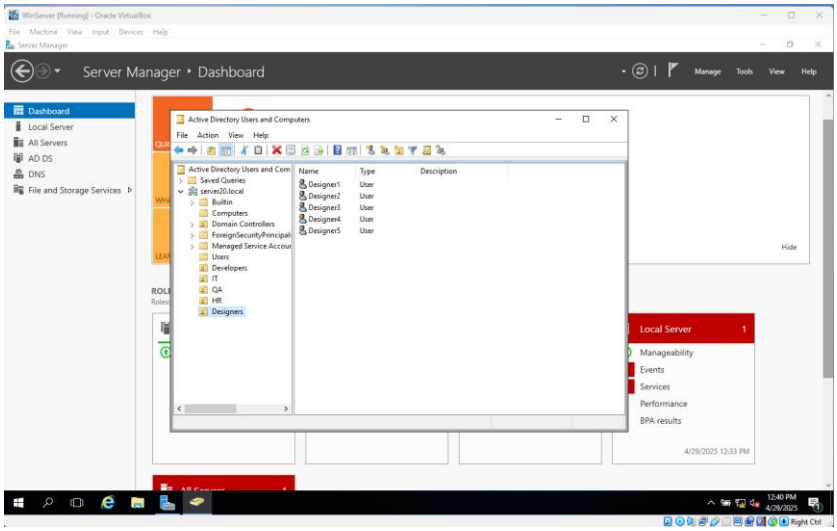
11) Rename the Windows 10 client machine as “PC1” and assign the domain to it.

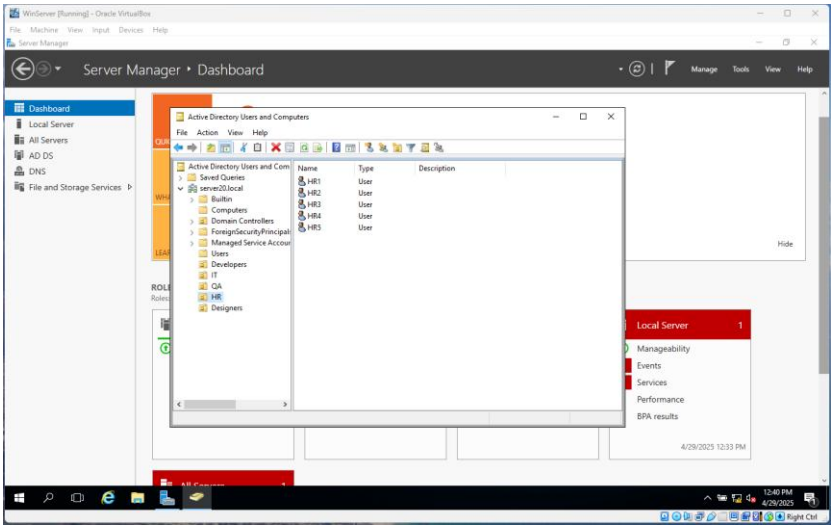


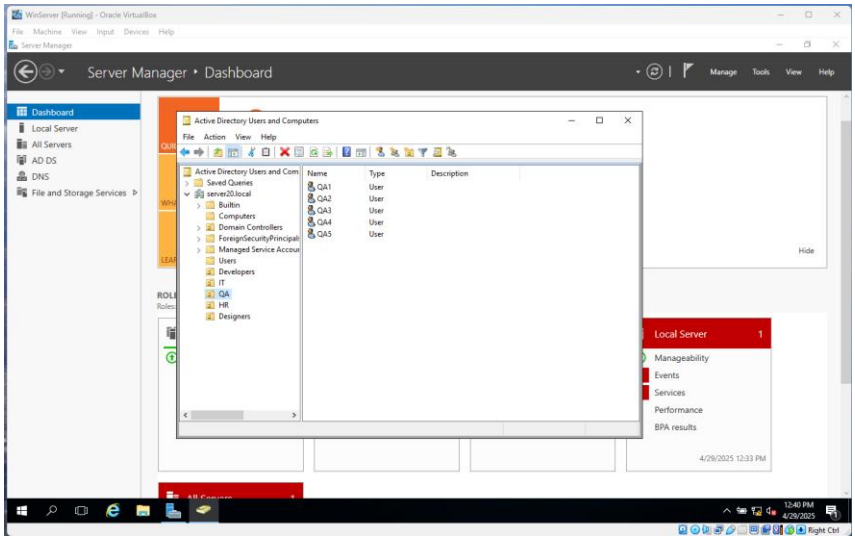


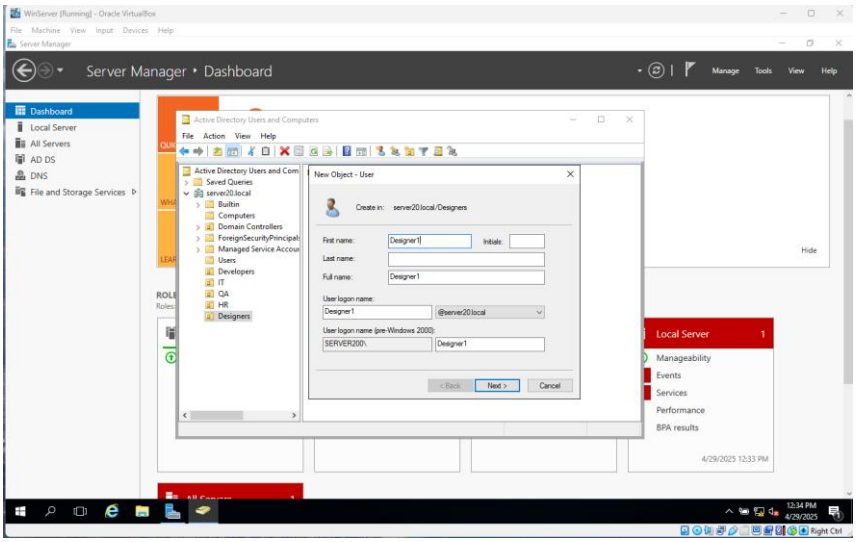


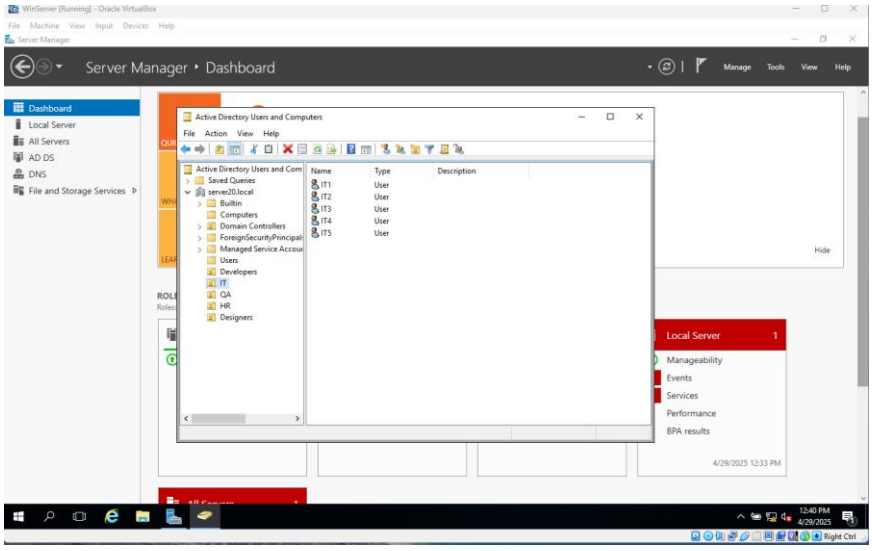
12) Create the following OUs on the DC machine: **Developers**, **IT**, **QA**, **HR** and **Designers**. ADD 5 users for each OU. Create the appropriate groups and assign users to them. Add one user from each department to the **Domain Admins** group

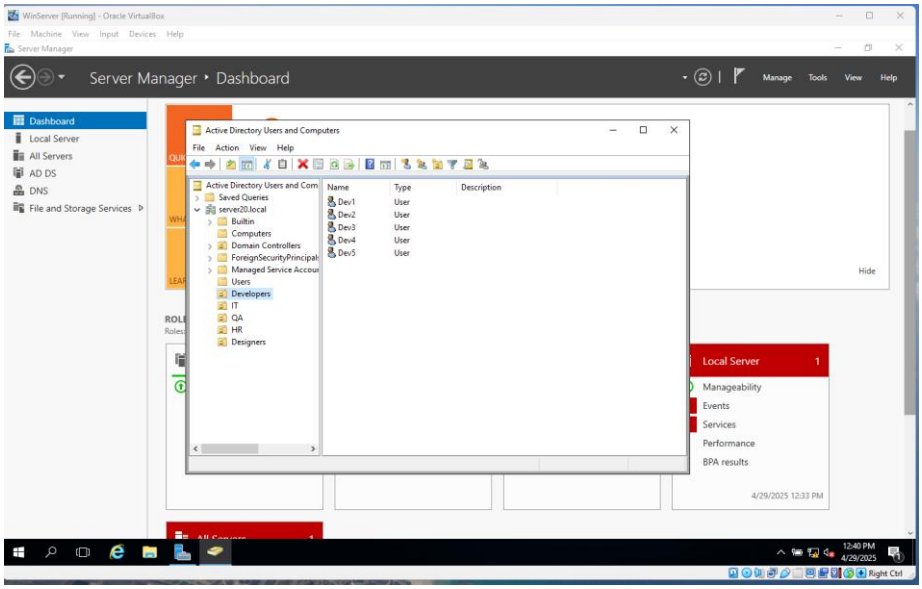


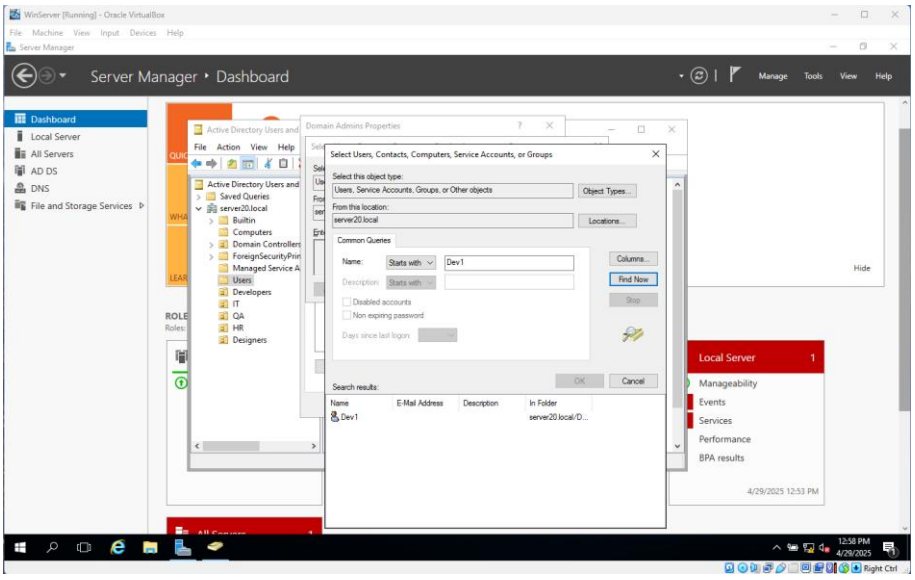


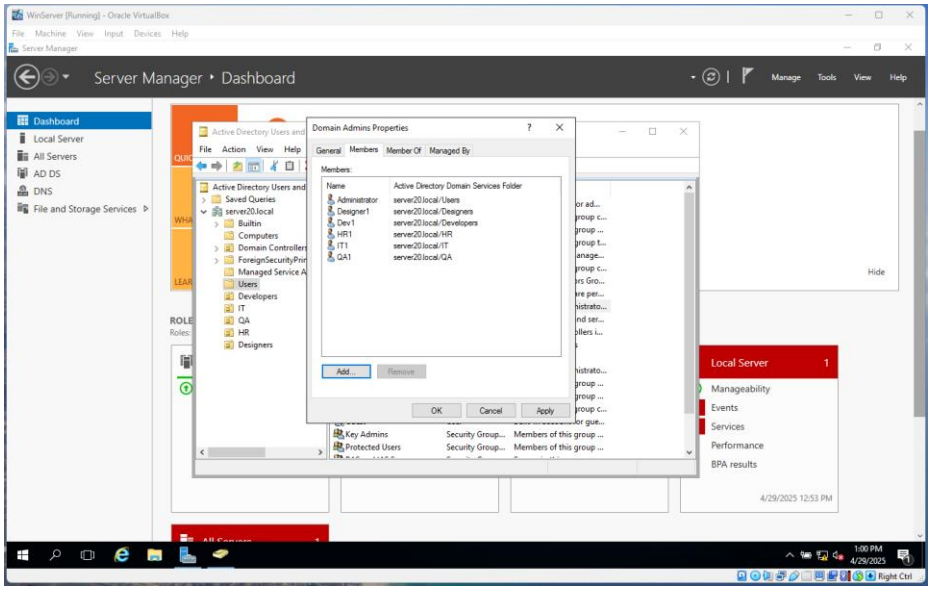

Server Manager • Dashboard
Active Directory Users and Computers
Local Server
Manageability
Events
Services
Performance
BPA results


Server Manager • Dashboard
Active Directory Users and Computers
New Object - User
Local Server
Manageability
Events
Services
Performance
BPA results

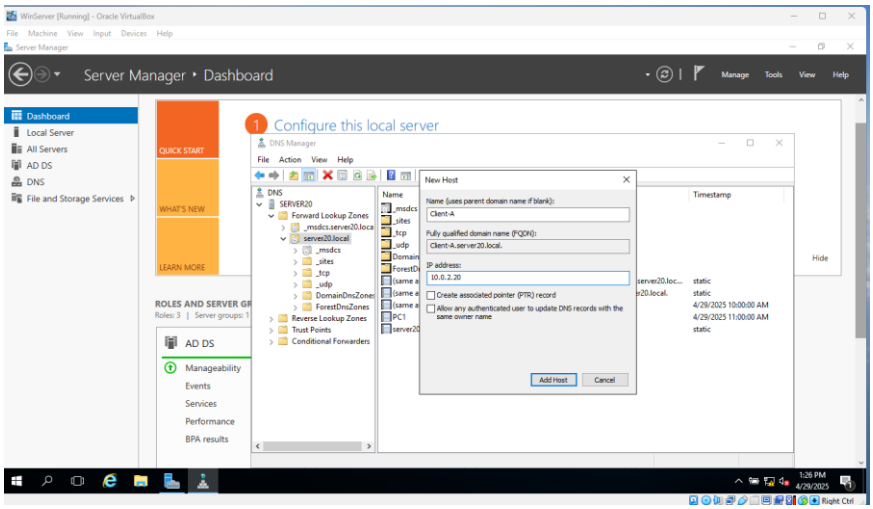

Server Manager • Dashboard
Active Directory Users and Computers
Local Server
Manageability
Events
Services
Performance
BPA results

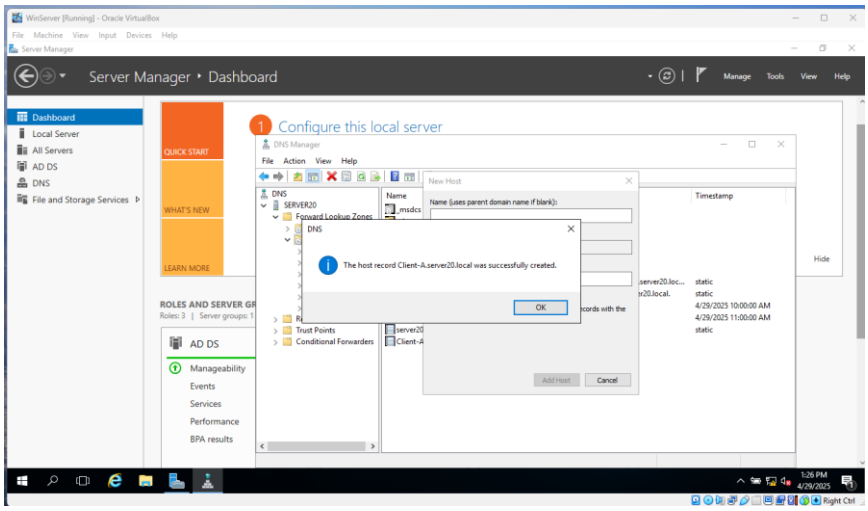

Server Manager • Dashboard
Active Directory Users and Computers
Local Server
Manageability
Events
Services
Performance
BPA results


Server Manager • Dashboard
Domain Admins Properties
Select Users, Contacts, Computers, Service Accounts, or Groups
Local Server
Manageability
Events
Services
Performance
BPA results


Server Manager • Dashboard
Domain Admins Properties
Local Server
Manageability
Events
Services
Performance
BPA results

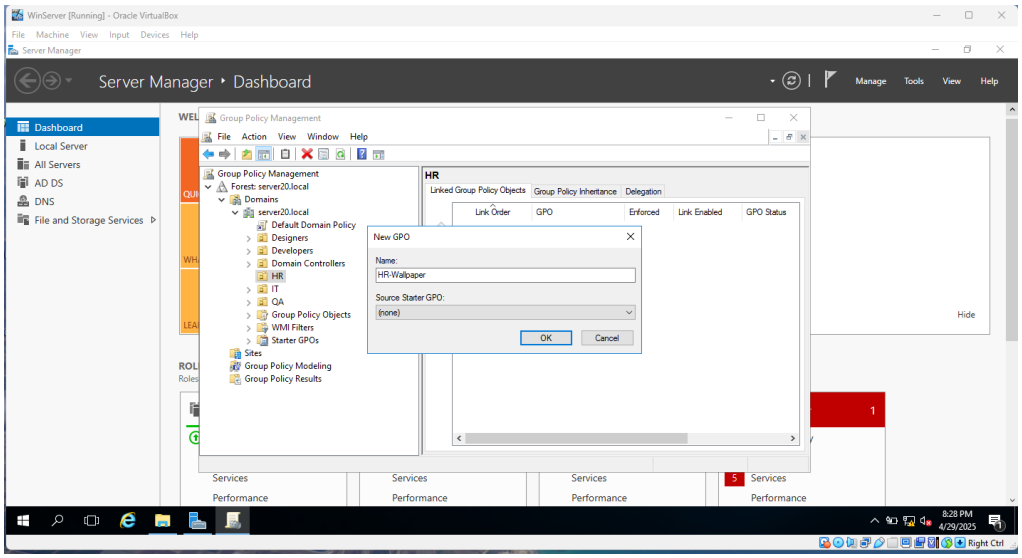
13) Create a DNS record that will identify, the **Windows 10** client machine by the name “Client-A”

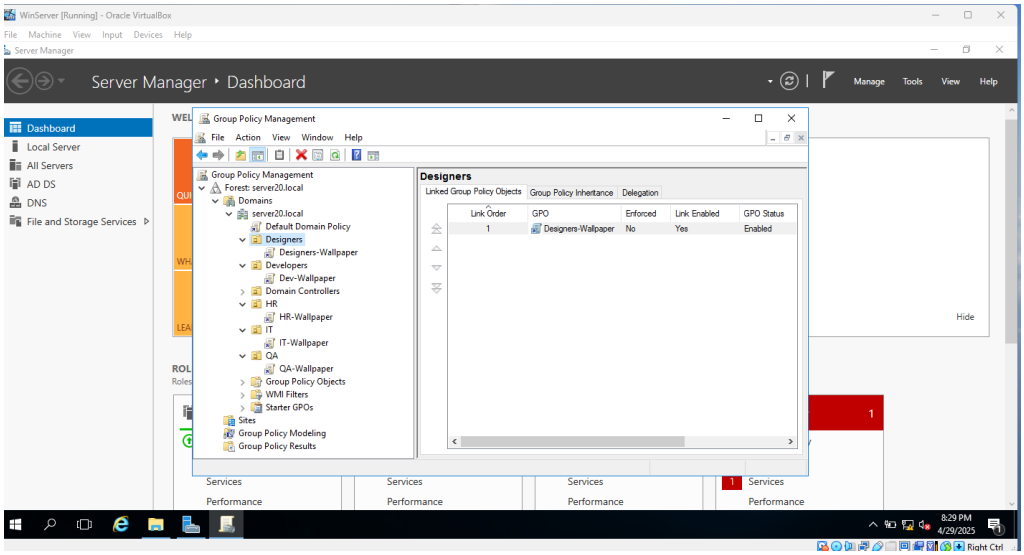


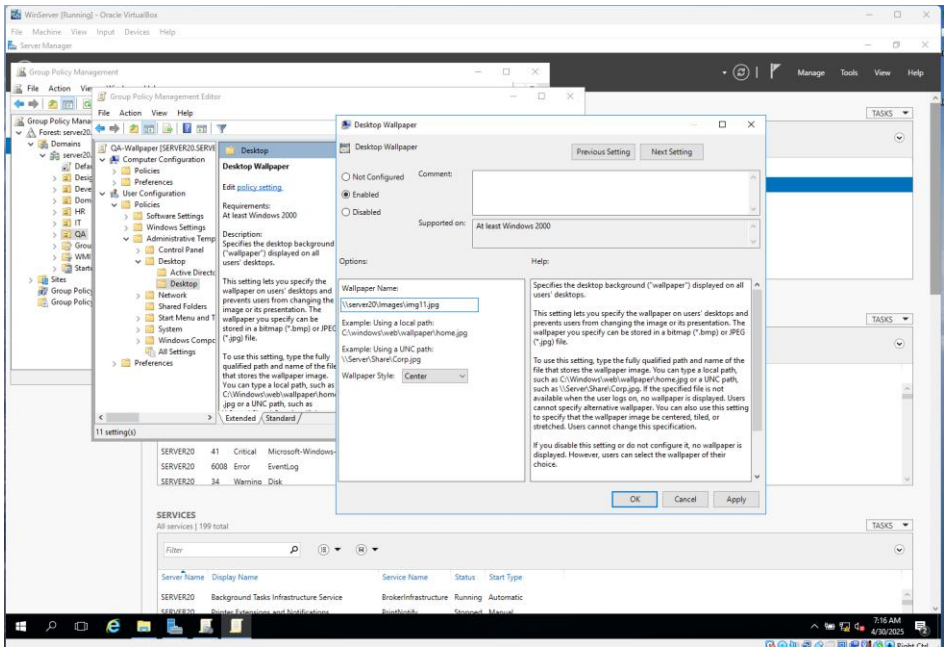


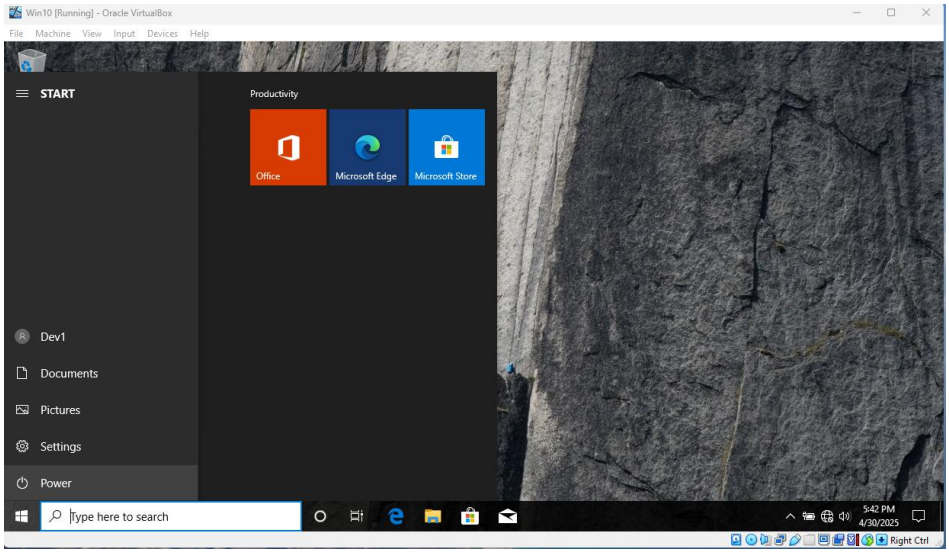
14) Create the following GPOs:

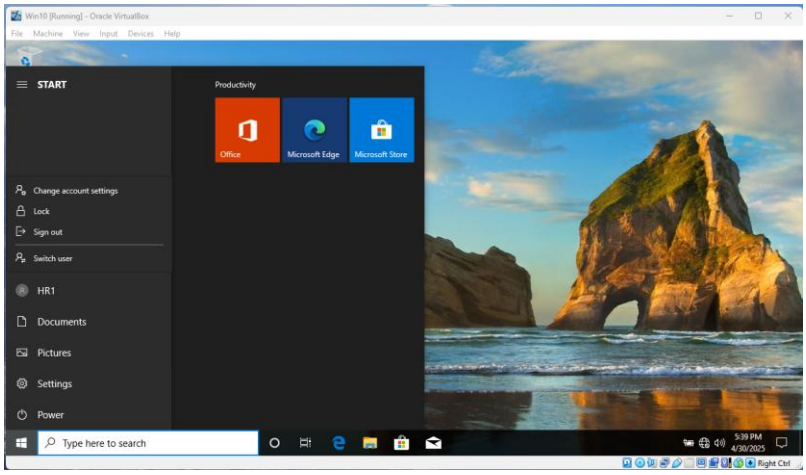
- Set a different wallpaper for each department.

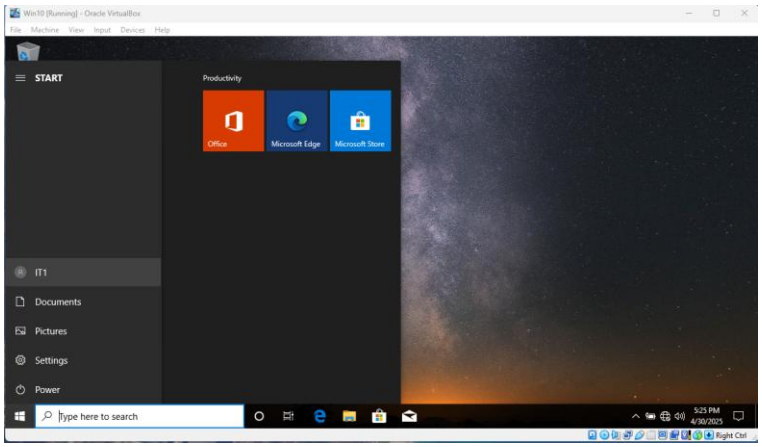


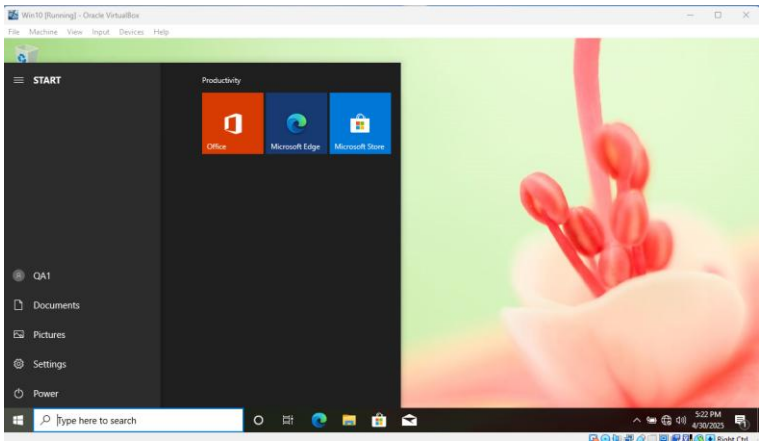

WinServer [Running] - Oracle VirtualBox
Server Manager
Server Manager • Dashboard
Manage Tools View Help
Dashboard
Local Server
All Servers
AD DS
DNS
File and Storage Services
Group Policy Management
File Action View Window Help
Group Policy Management
Forest: server20.local
Domains
server20.local
Default Domain Policy
Designers
Designers-Wallpaper
Developers
Dev-Wallpaper
Domain Controllers
HR
HR-Wallpaper
IT
IT-Wallpaper
QA
QA-Wallpaper
Group Policy Objects
WMI Filters
Starter GPOs
Sites
Group Policy Modeling
Group Policy Results
Designers
Linked Group Policy Objects
Group Policy Inheritance
Delegation
Link Order
GPO
Enforced
Link Enabled
GPO Status
1
Designers-Wallpaper
No
Yes
Enabled
Hide
Services
Performance
8:29 PM
4/29/2025
Right Ctrl

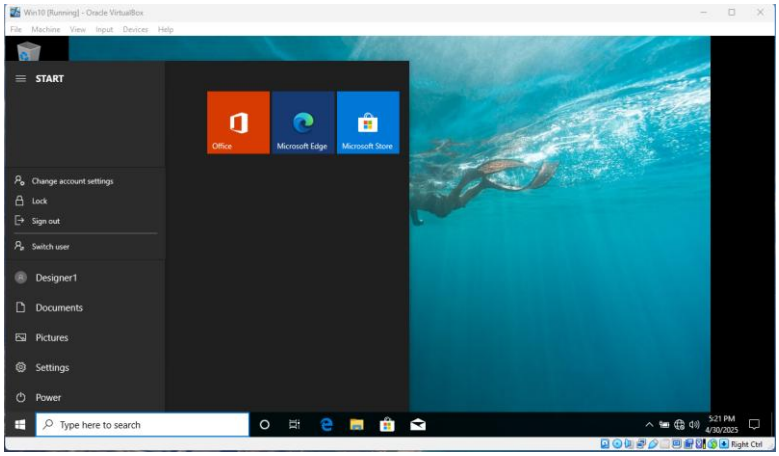

WinServer [Running] - Oracle VirtualBox
Group Policy Management
Group Policy Management Editor
Desktop Wallpaper
Previous Setting
Next Setting
Not Configured
Enabled
Disabled
Comment:
Supported on:
At least Windows 2000
Options:
Help:
Wallpaper Name:
\\server20\Images\img11.jpg
Example: Using a local path:
C:\windows\web\wallpaper\home.jpg
Example: Using a UNC path:
\\Server\Share\Corp.jpg
Wallpaper Style:
Center
Specifies the desktop background ("wallpaper") displayed on all users' desktops.
This setting lets you specify the wallpaper on users' desktops and prevents users from changing the image or its presentation. The wallpaper you specify can be stored in a bitmap (*.bmp) or JPEG (*.jpg) file.
To use this setting, type the fully qualified path and name of the file that stores the wallpaper image. You can type a local path, such as C:\Windows\web\wallpaper\home.jpg or a UNC path, such as \\Server\Share\Corp.jpg. If the specified file is not available when the user logs on, no wallpaper is displayed. Users cannot specify alternative wallpaper. You can also use this setting to specify that the wallpaper image be centered, tiled, or stretched. Users cannot change this specification.
If you disable this setting or do not configure it, no wallpaper is displayed. However, users can select the wallpaper of their choice.
OK
Cancel
Apply
SERVICES
7:16 AM
4/30/2025


Win10 [Running] - Oracle VirtualBox
START
Productivity
Office
Microsoft Edge
Microsoft Store
Dev1
Documents
Pictures
Settings
Power
Type here to search
5:42 PM
4/30/2025
Right Ctrl

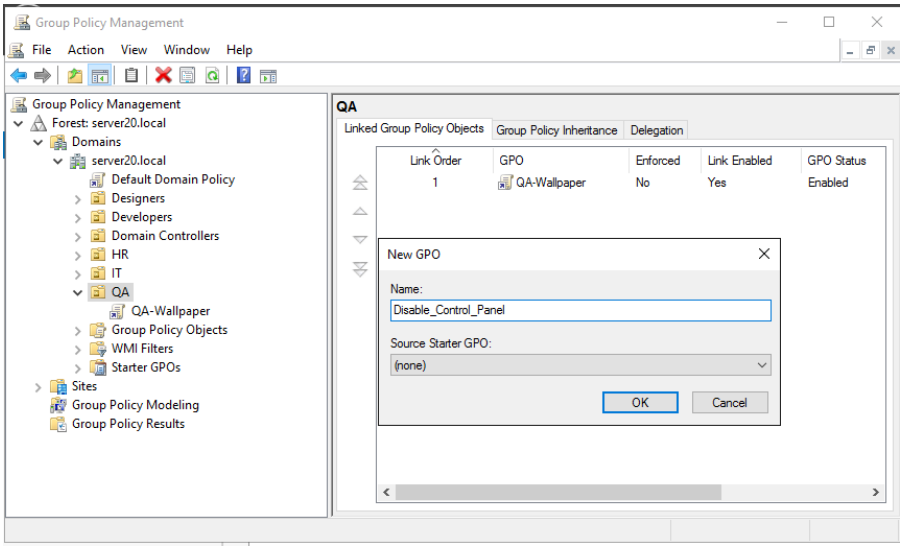

Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
START
Productivity
Office
Microsoft Edge
Microsoft Store
Change account settings
Lock
Sign out
Switch user
HR1
Documents
Pictures
Settings
Power
Type here to search
5:39 PM
4/30/2025
Right Ctrl

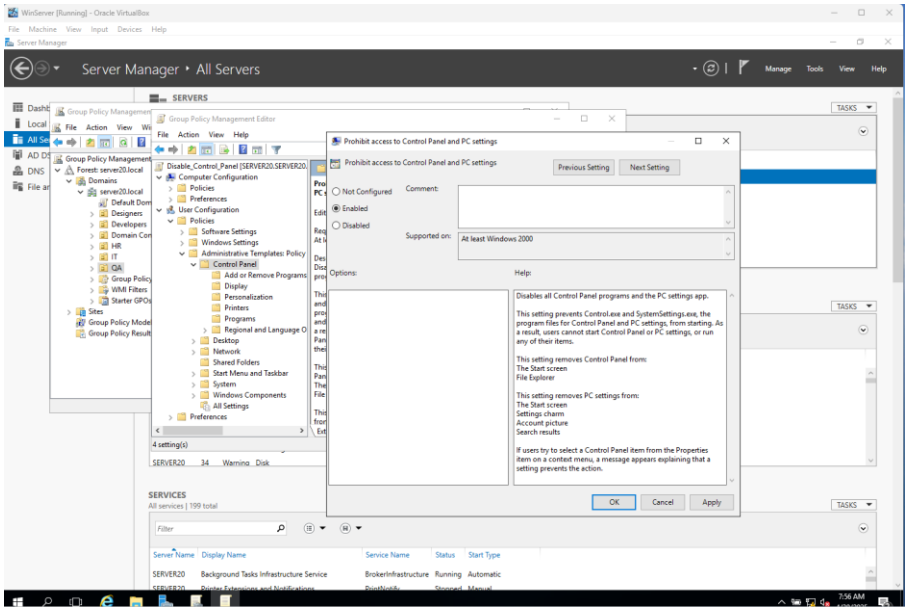

Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
START
Productivity
Office
Microsoft Edge
Microsoft Store
IT1
Documents
Pictures
Settings
Power
Type here to search
5:25 PM
4/30/2025
Right Ctrl

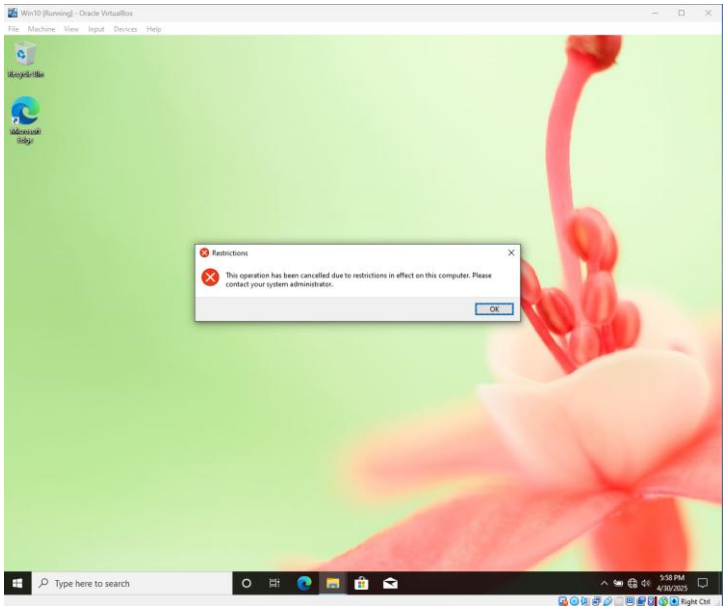

Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
START
Productivity
Office
Microsoft Edge
Microsoft Store
QA1
Documents
Pictures
Settings
Power
Type here to search
5:22 PM
4/30/2025


Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
START
Office
Microsoft Edge
Microsoft Store
Change account settings
Lock
Sign out
Switch user
Designer1
Documents
Pictures
Settings
Power
Type here to search
5:21 PM
4/30/2025
Right Ctrl

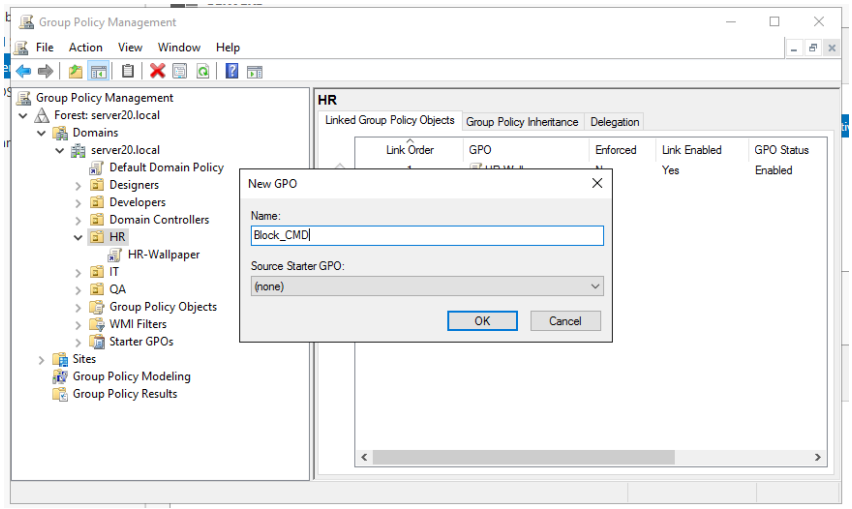
- Prevent the QA department's users from accessing the **Control Panel**

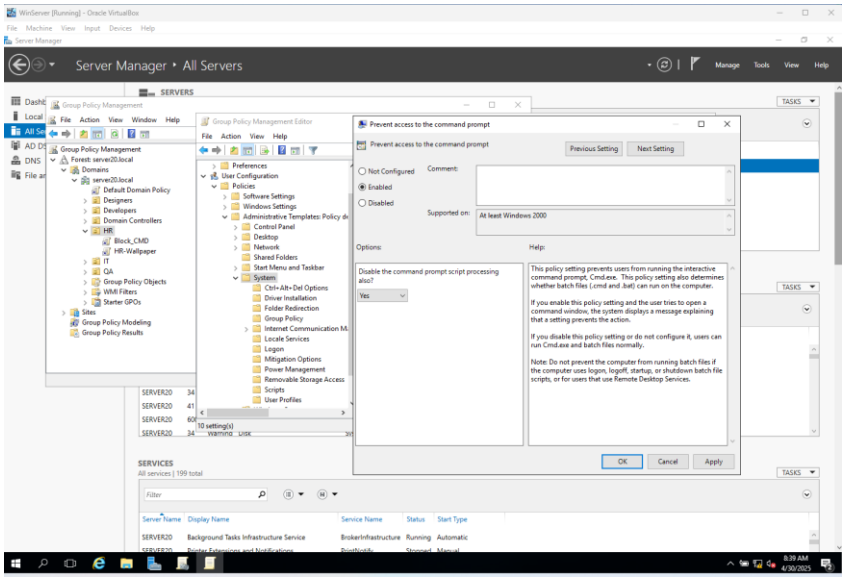


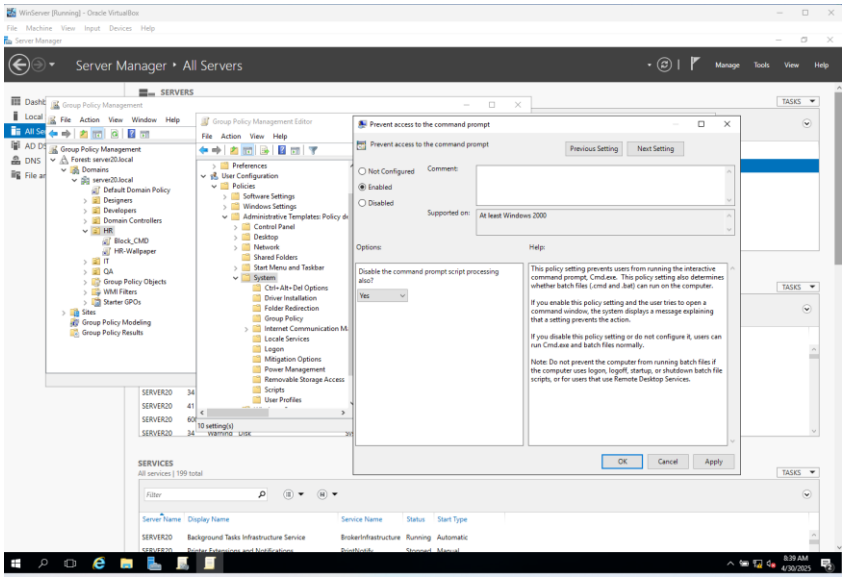


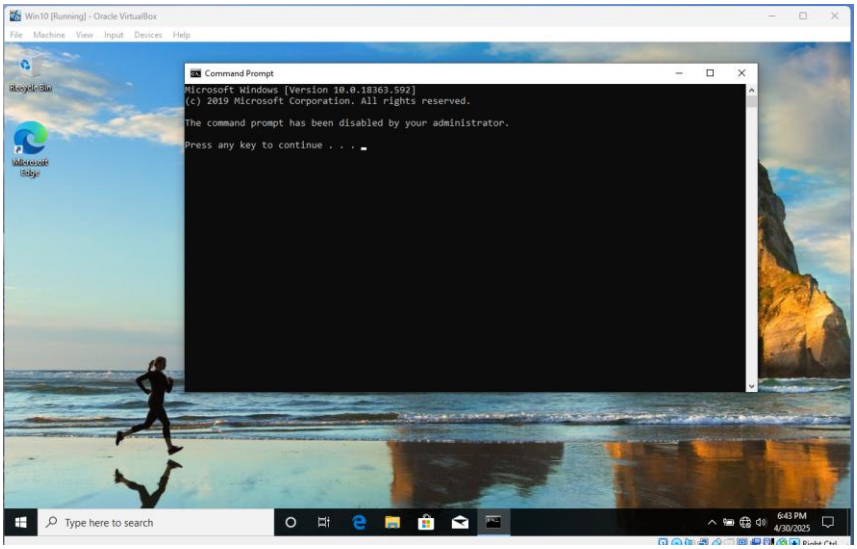


- Prevent the HR department's users from accessing the **CMD**

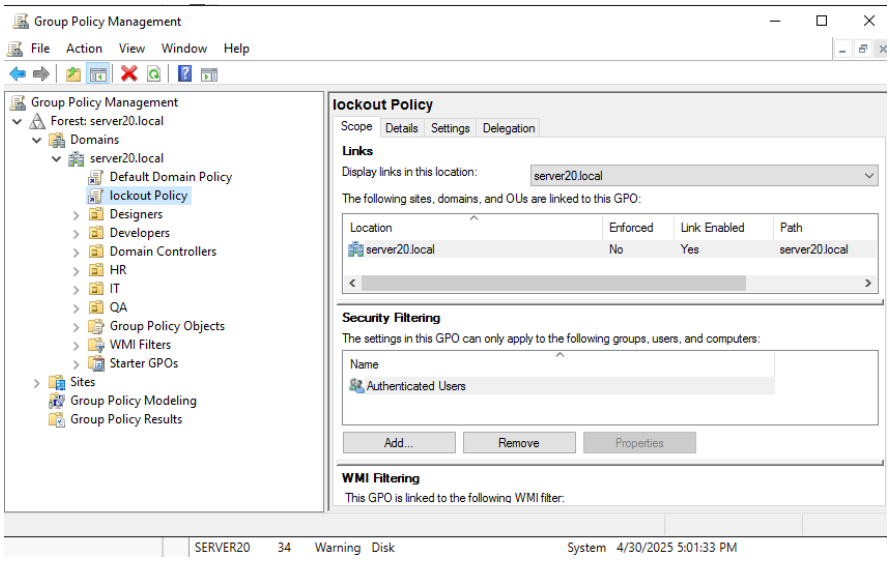


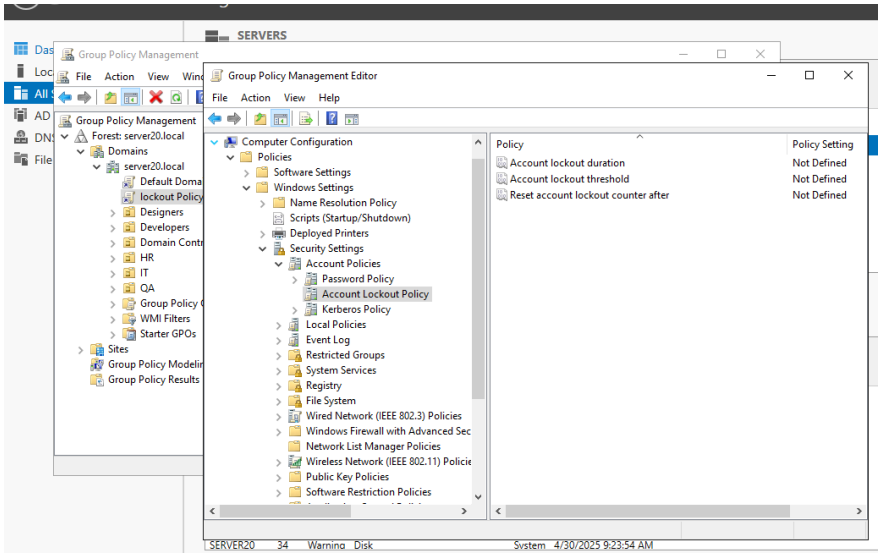


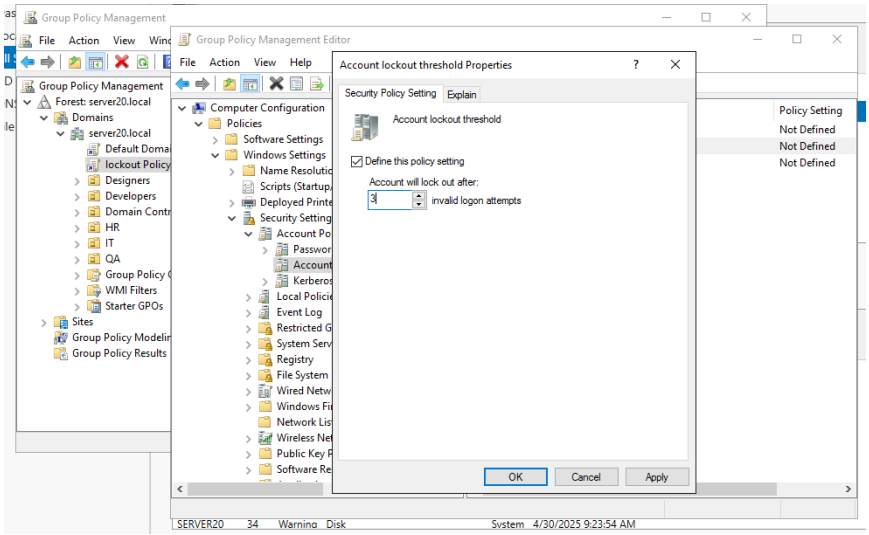


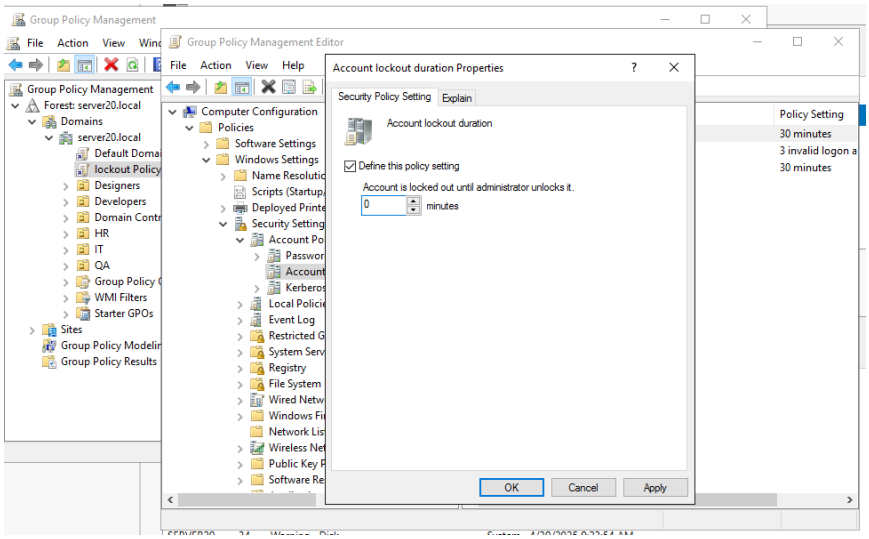


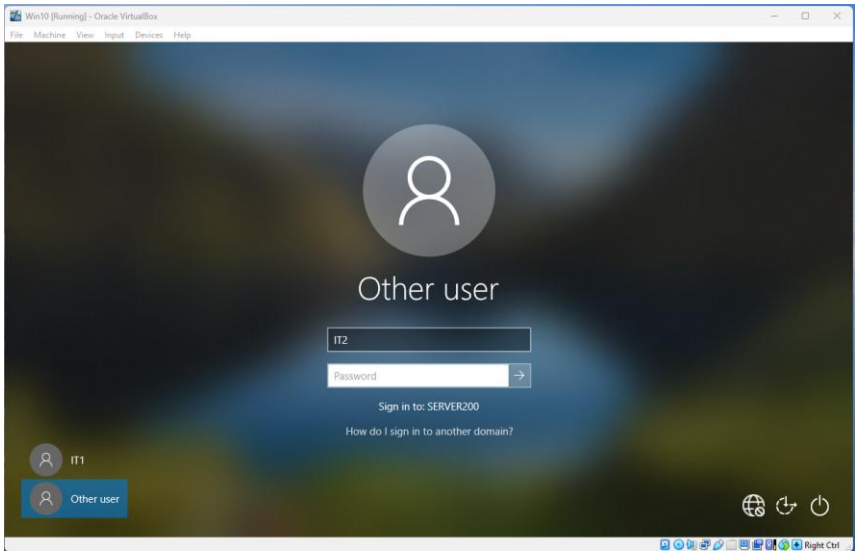
15) Configure the system to lock out users after failed login attempts. Only the administrator will be able to unlock the user account

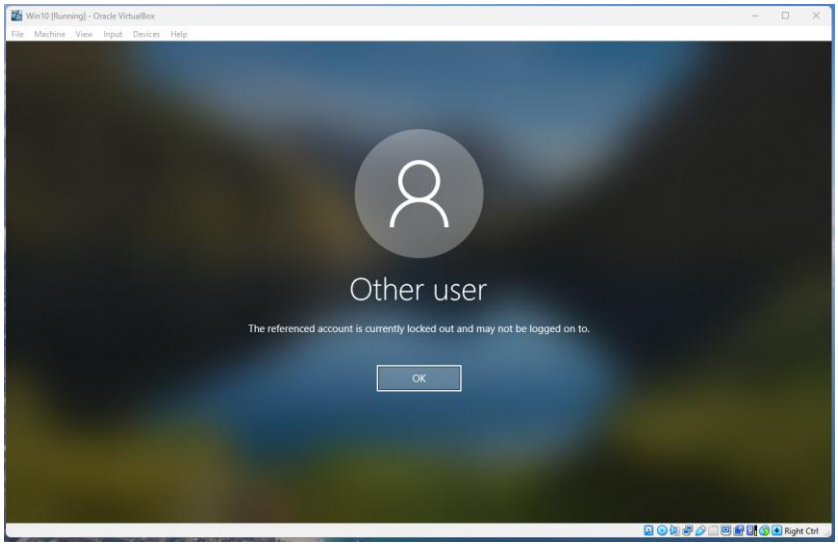




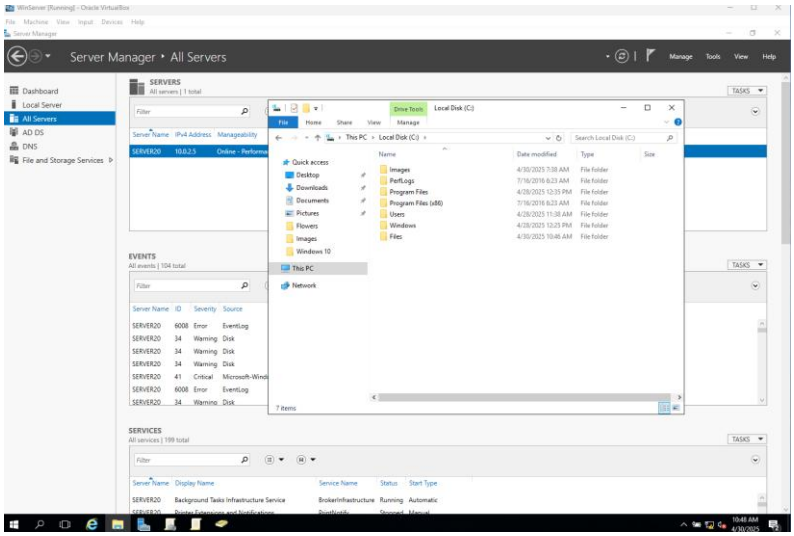

Group Policy Management
Group Policy Management Editor
Account lockout threshold Properties
Security Policy Setting
Explain
Account lockout threshold
Define this policy setting
Account will lock out after:
3
invalid logon attempts
OK
Cancel
Apply
Policy Setting
Not Defined
Not Defined
Not Defined

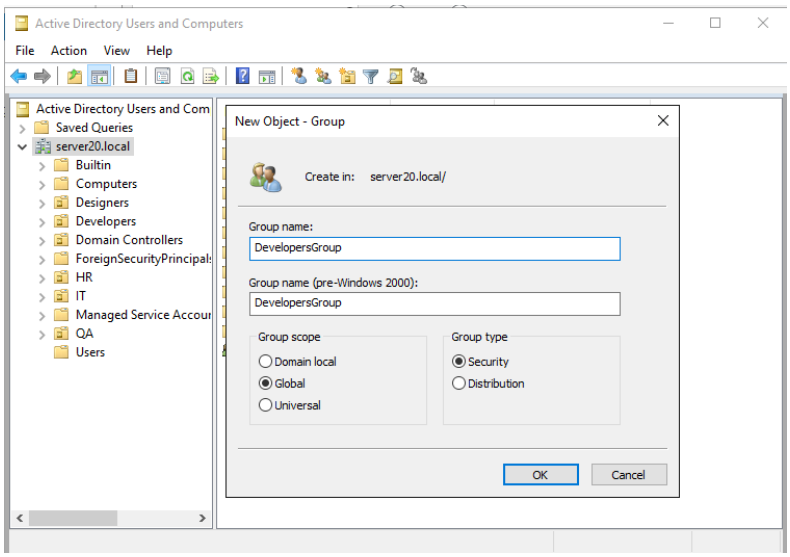

Group Policy Management
Group Policy Management Editor
Account lockout duration Properties
Security Policy Setting
Explain
Account lockout duration
Define this policy setting
Account is locked out until administrator unlocks it.
0
minutes
OK
Cancel
Apply
Policy Setting
30 minutes
30 minutes

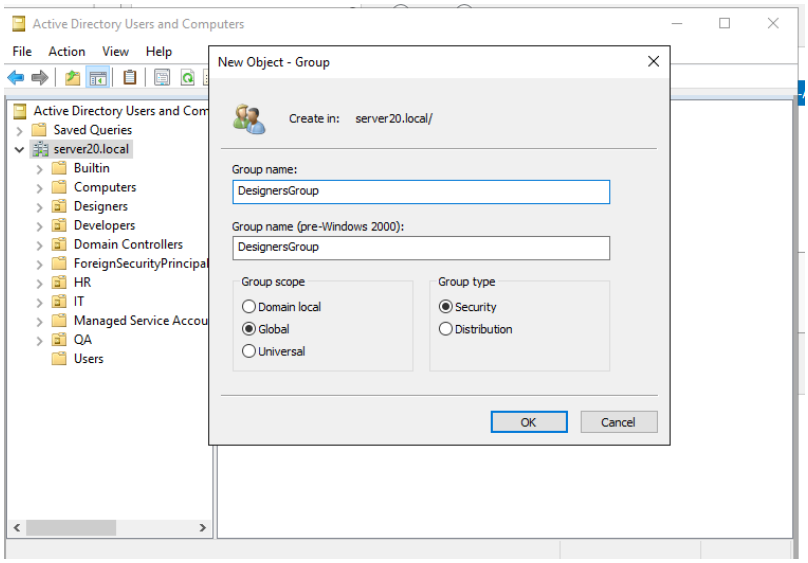

Other user
IT2
Password
Sign in to: SERVER200
How do I sign in to another domain?
IT1
Other user

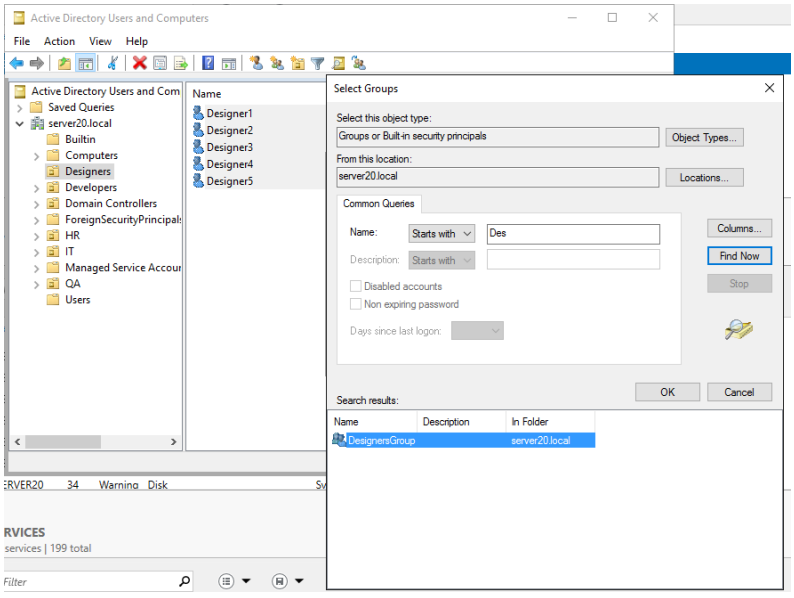


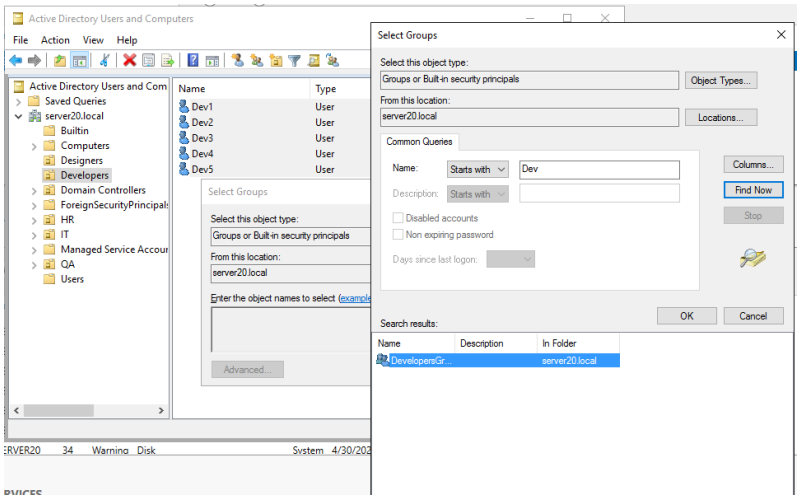
16) Create a shared drive named “Files” that will only be accessible to users of the **Designers** and **Developers** department

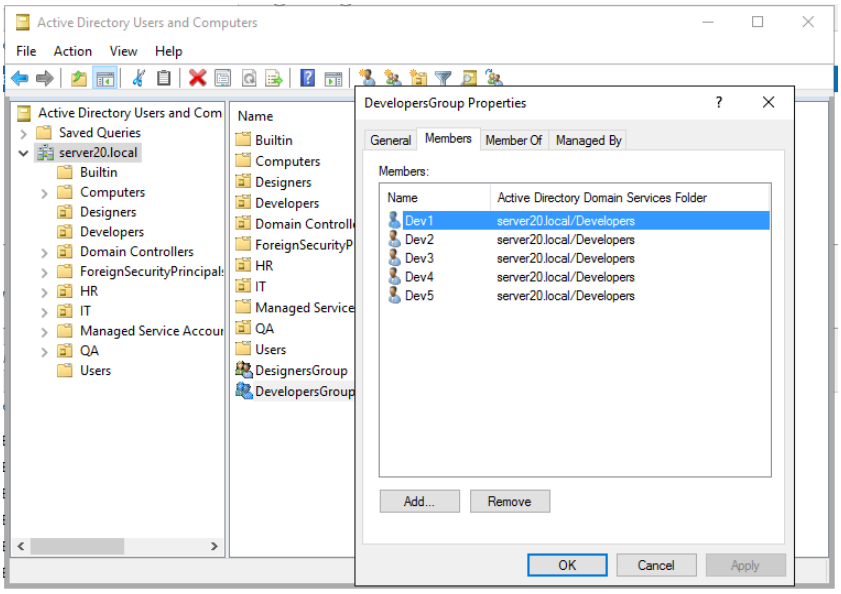


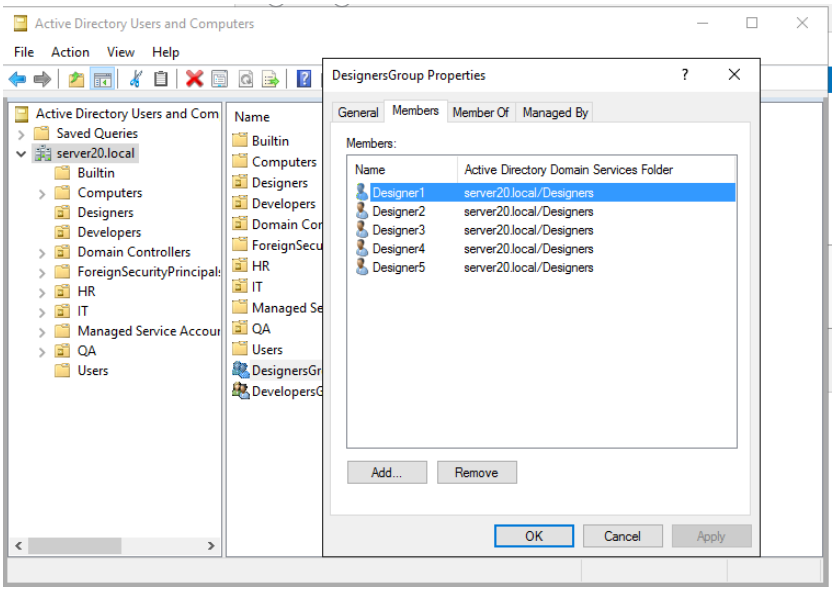


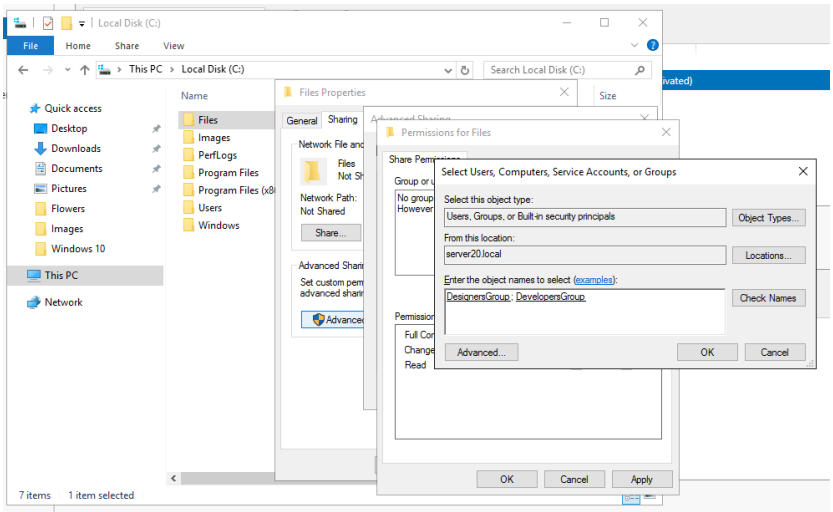

Active Directory Users and Computers
File Action View Help
New Object - Group
Create in: server20.local/
Group name:
DesignersGroup
Group name (pre-Windows 2000):
DesignersGroup
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
OK
Cancel
Active Directory Users and Com
Saved Queries
server20.local
Builtin
Computers
Designers
Developers
Domain Controllers
ForeignSecurityPrincipal
HR
IT
Managed Service Accou
QA
Users

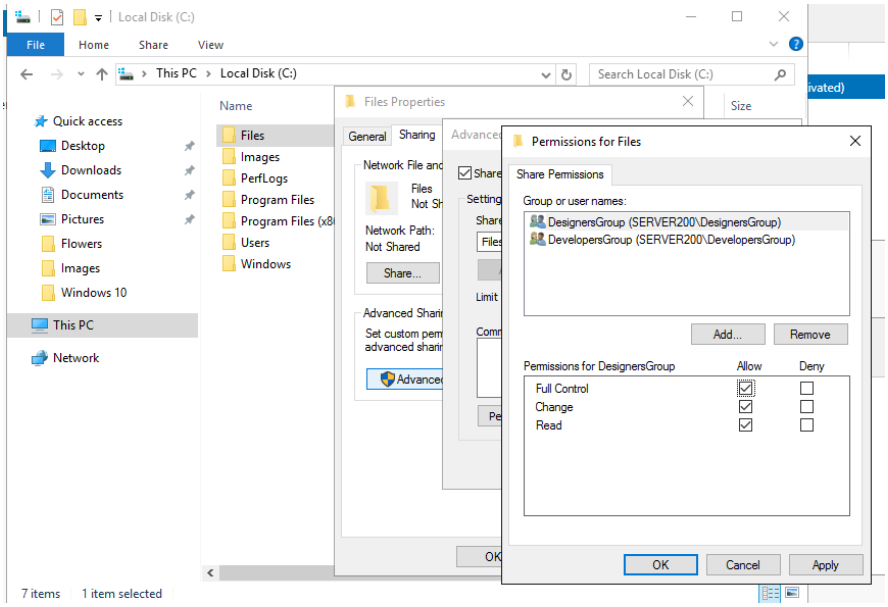

Active Directory Users and Computers
File Action View Help
Select Groups
Select this object type:
Groups or Built-in security principals
Object Types...
From this location:
server20.local
Locations...
Common Queries
Name: Starts with Des
Description: Starts with
Disabled accounts
Non expiring password
Days since last logon:
Columns...
Find Now
Stop
Search results:
OK
Cancel
Name
Description
In Folder
DesignersGroup
server20.local
Designer1
Designer2
Designer3
Designer4
Designer5

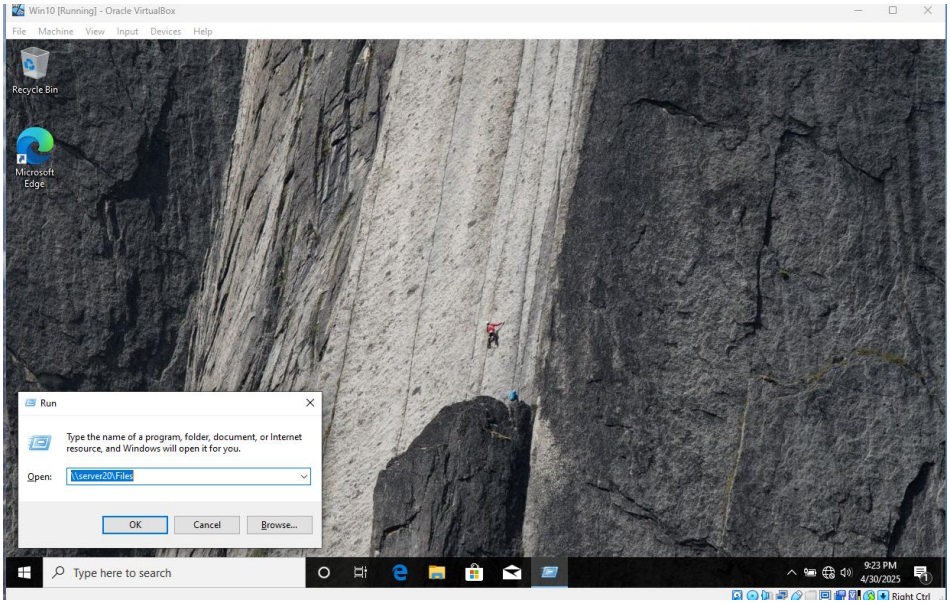

Active Directory Users and Computers
File Action View Help
Select Groups
Select this object type:
Groups or Built-in security principals
Object Types...
From this location:
server20.local
Locations...
Common Queries
Name: Starts with Dev
Description: Starts with
Disabled accounts
Non expiring password
Days since last logon:
Columns...
Find Now
Stop
Search results:
OK
Cancel
Name
Description
In Folder
DevelopersGr...
server20.local
Dev1
Dev2
Dev3
Dev4
Dev5
Developers

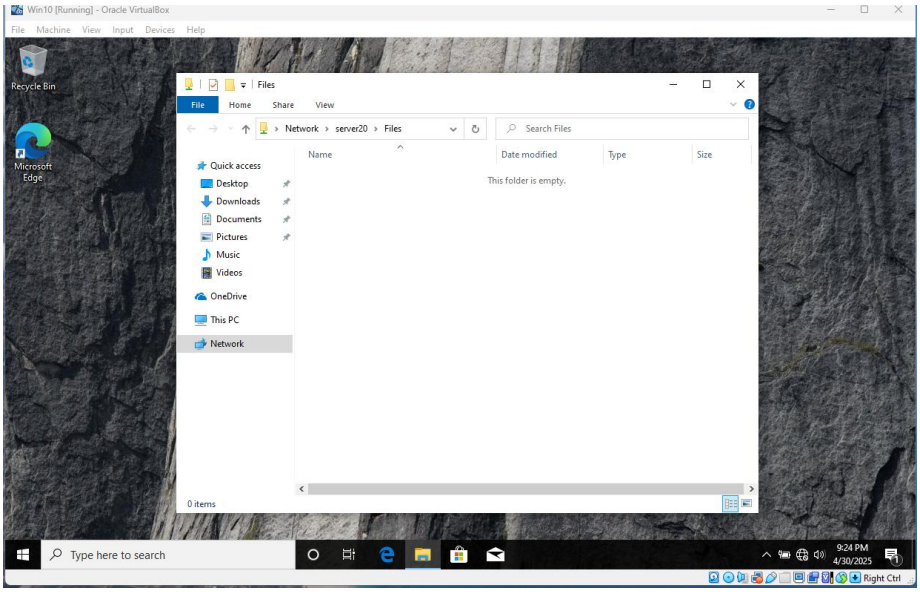

Active Directory Users and Computers
File Action View Help
Active Directory Users and Com
Saved Queries
server20.local
Builtin
Computers
Designers
Developers
Domain Controllers
ForeignSecurityPrincipals
HR
IT
Managed Service Accour
QA
Users
Name
Builtin
Computers
Designers
Developers
Domain Controll
ForeignSecurityP
HR
IT
Managed Service
QA
Users
DesignersGroup
DevelopersGroup
DevelopersGroup Properties
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Dev1 server20.local/Developers
Dev2 server20.local/Developers
Dev3 server20.local/Developers
Dev4 server20.local/Developers
Dev5 server20.local/Developers
Add...
Remove
OK
Cancel
Apply

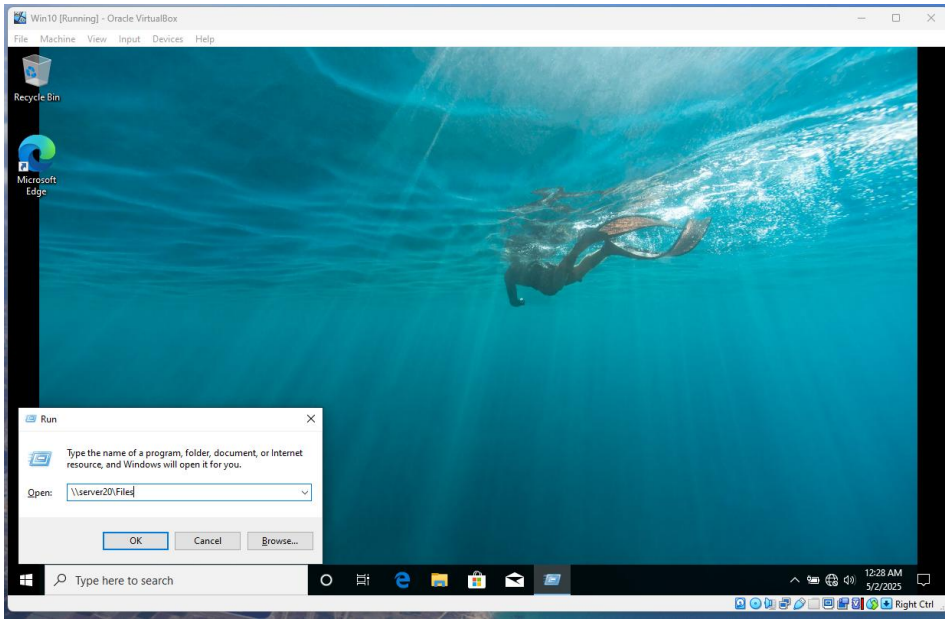

Active Directory Users and Computers
File Action View Help
Active Directory Users and Com
Saved Queries
server20.local
Builtin
Computers
Designers
Developers
Domain Controllers
ForeignSecurityPrincipals
HR
IT
Managed Service Accour
QA
Users
Name
Builtin
Computers
Designers
Developers
HR
IT
QA
Users
DesignersGroup
DevelopersGroup
DesignersGroup Properties
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Designer1 server20.local/Designers
Designer2 server20.local/Designers
Designer3 server20.local/Designers
Designer4 server20.local/Designers
Designer5 server20.local/Designers
Add...
Remove
OK
Cancel
Apply

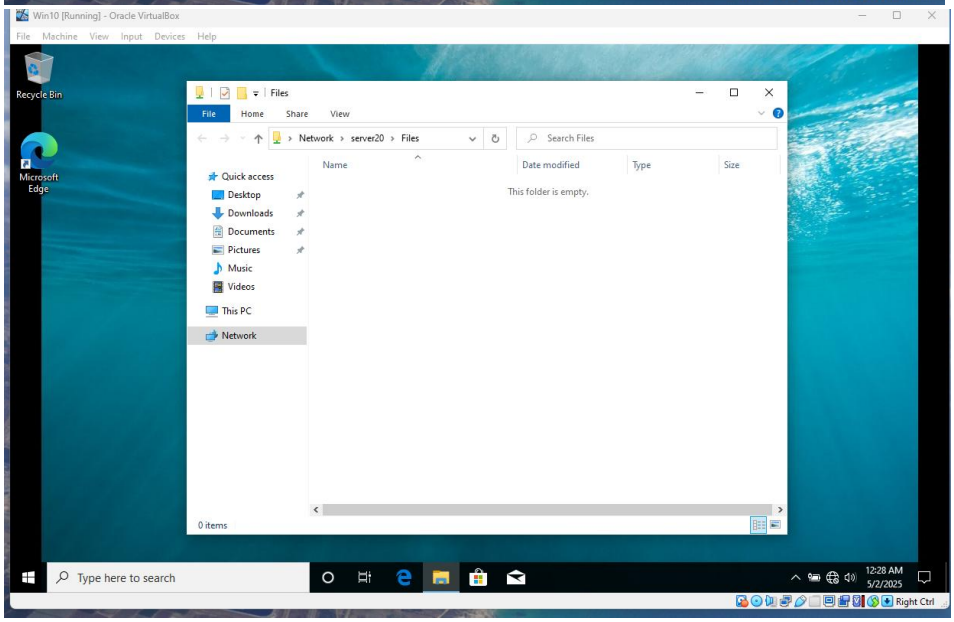

Local Disk (C:)
File
Home
Share
View
This PC
Local Disk (C:)
Search Local Disk (C:)
Quick access
Desktop
Downloads
Documents
Pictures
Flowers
Images
Windows 10
This PC
Network
Name
Files
Images
PerfLogs
Program Files
Program Files (x8
Users
Windows
Files Properties
General
Sharing
Network Path:
Not Shared
Share...
Permissions for Files
Select Users, Computers, Service Accounts, or Groups
Select this object type:
Users, Groups, or Built-in security principals
Object Types...
From this location:
server20.local
Locations...
Enter the object names to select (examples):
DesignersGroup; DevelopersGroup
Check Names
Advanced...
OK
Cancel
Apply
7 items
1 item selected

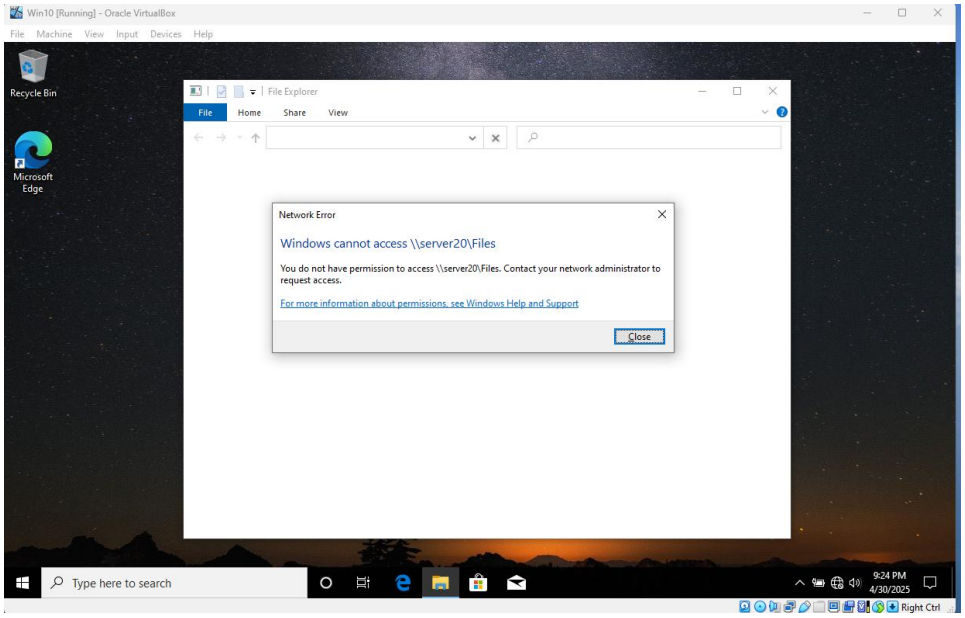

Local Disk (C:)
File
Home
Share
View
This PC › Local Disk (C:)
Search Local Disk (C:)
Quick access
Desktop
Downloads
Documents
Pictures
Flowers
Images
Windows 10
This PC
Network
Name
Files
Images
PerfLogs
Program Files
Program Files (x8
Users
Windows
Size
Files Properties
General
Sharing
Network File and
Files
Not Sh
Network Path:
Not Shared
Share...
Advanced Sharin
Set custom perm
advanced sharin
Advanced
Share
Setting
Share
Files
Limit
Comm
Pe
OK
Permissions for Files
Share Permissions
Group or user names:
DesignersGroup (SERVER200\DesignersGroup)
DevelopersGroup (SERVER200\DevelopersGroup)
Add...
Remove
Permissions for DesignersGroup
Allow
Deny
Full Control
Change
Read
OK
Cancel
Apply
7 items
1 item selected


Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin
Microsoft Edge
Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
\\server20\Files
OK
Cancel
Browse...
Type here to search
9:23 PM
4/30/2025
Right Ctrl


Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin
Microsoft Edge
Files
File
Home
Share
View
Network › server20 › Files
Search Files
Quick access
Desktop
Downloads
Documents
Pictures
Music
Videos
OneDrive
This PC
Network
Name
Date modified
Type
Size
This folder is empty.
0 items
Type here to search
9:24 PM
4/30/2025
Right Ctrl


Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin
Microsoft Edge
Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open: \\server20\Files
OK
Cancel
Browse...
Type here to search
12:28 AM
5/2/2025
Right Ctrl


Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin
Microsoft Edge
Files
File Home Share View
Network > server20 > Files
Search Files
Quick access
Desktop
Downloads
Documents
Pictures
Music
Videos
This PC
Network
Name
Date modified
Type
Size
This folder is empty.
0 items
Type here to search
12:28 AM
5/2/2025
Right Ctrl


Win10 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin
Microsoft Edge
File Explorer
File Home Share View
Network Error
Windows cannot access \\server20\Files
You do not have permission to access \\server20\Files. Contact your network administrator to request access.
For more information about permissions, see Windows Help and Support
Close
Type here to search
9:24 PM
4/30/2025
Right Ctrl