JAIN DEEMED-TO-BE UNIVERSITY
SCHOOL OF COMPUTER SCIENCE AND IT
JGI Knowledge Campus, Jayanagar 9th Block, Bengaluru – 69

Department of Computer Science and IT

MCA PROGRAMME

Server Operating System– 23MCASC205

ACTIVITY

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JAIN DEEMED-TO-BE UNIVERSITY
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Certificate

This is to certify that Surya G satisfactorily completed the course of Activity prescribed by the Jain (Deemed-to-be University) for the 2nd semester I M.C.A degree course in the year 2023– 2024.

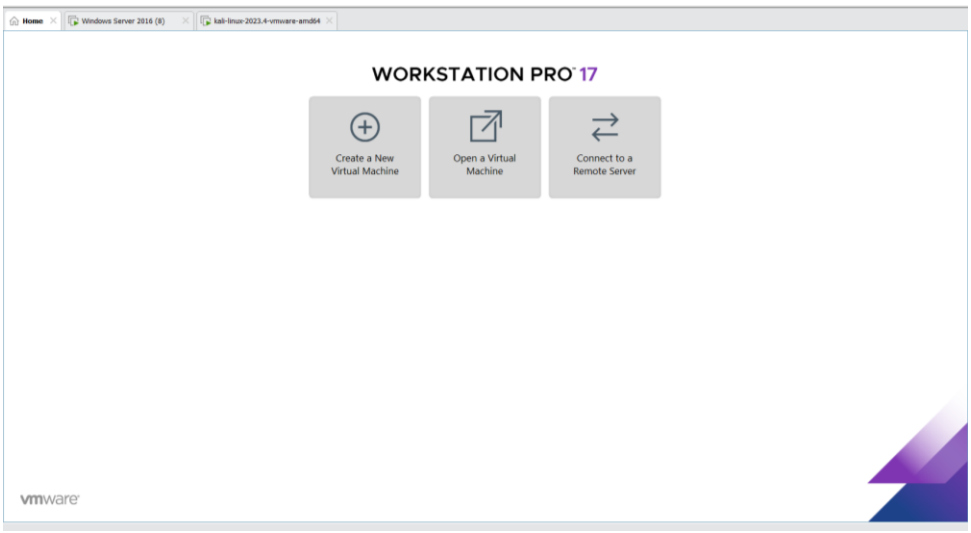
Date:

Signature of Student

Signature of Faculty Incharge

Step 1 Install windows server:

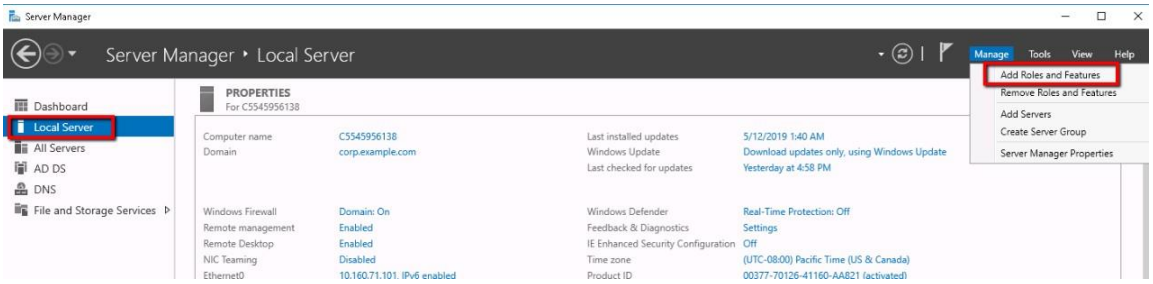
1. **Create a New Virtual Machine:**
    - Open VMware Workstation and click on "File" > "New Virtual Machine".
    - Select "Typical" and click "Next".
    - Choose "I will install the operating system later" and click "Next".
    - Select "Microsoft Windows" as the guest operating system and choose "Windows Server 2016" version. Click "Next".
    - Enter the name for your virtual machine and choose the location to store it. Click "Next".
    - Customize the hardware settings as needed and click "Finish".
2. **Customize Hardware Settings:**
    - Before powering on the virtual machine, you can customize the hardware settings such as CPU, RAM, network adapter, disk size, etc.
    - Click on "Edit virtual machine settings" and adjust the hardware settings according to your requirements.
3. **Mount the Windows Server 2016 ISO File:**
    - Right-click on the virtual machine in the VMware Workstation library and select "Settings".
    - In the Hardware tab, select the CD/DVD (SATA) option.
    - Choose "Use ISO image file" and browse to select the Windows Server 2016 ISO file.
    - Click "OK" to save the settings.
4. **Install Windows Server 2016:**
    - Power on the virtual machine.
    - The Windows Server 2016 installation process will start. Follow the on-screen instructions to proceed with the installation.
    - Select the language, time and currency format, and keyboard or input method.
    - Click "Install Now" to begin the installation.
    - Enter the product key if required and accept the license terms.
    - Choose the installation type (Custom: Install Windows only).
    - Select the disk where you want to install Windows Server 2016 and click "Next".
    - The installation process will begin, and the virtual machine will restart once the installation is complete.
    - Follow the setup prompts to set up your user account, password, and other settings.
5. **Complete the Installation:**
    - Once the installation is complete, you will be taken to the Windows Server 2016 desktop.
    - Install VMware Tools for better integration between the host and guest operating system.



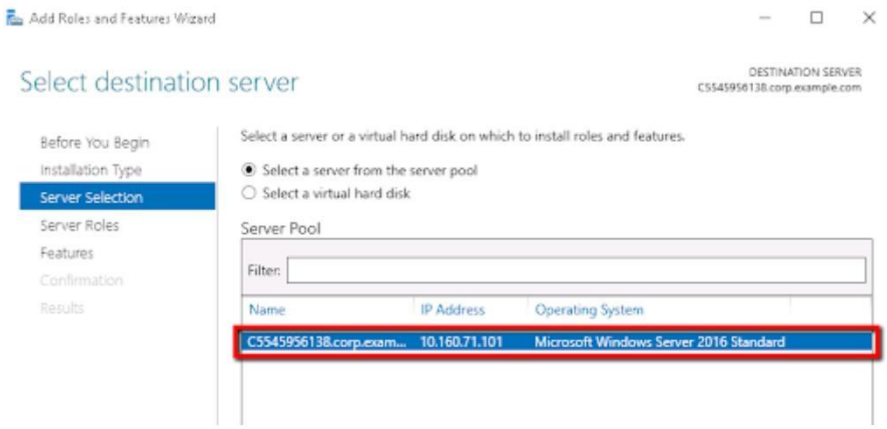
Step 2 Install and Configure ADDS

Create an Active Directory Domain on Windows Server 2016

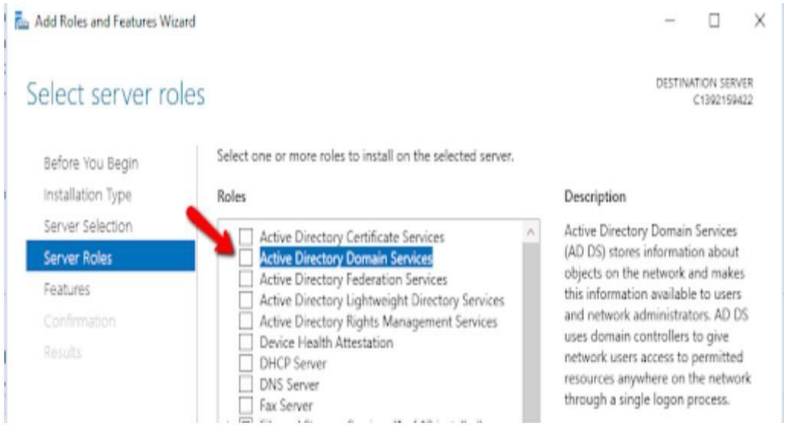
1. Log in to your Windows Server and start the **Server Manager**.
2. Navigate to the Local Server tab and select **Manage > Add Rolesand Features** from the command menu at the top right of the window:



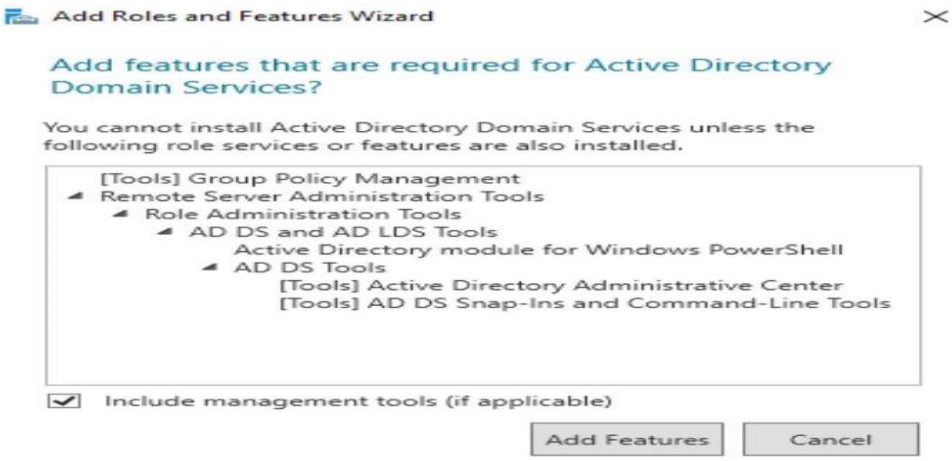
1. The *Add Roles and Features* Wizard will be displayed.
2. Click **Next**. The Wizard will proceed to the *InstallationType* option.
3. Select the *Role-based or feature-based installation* type.
4. Click **Next**. The *Select destination server* panel is displayed:



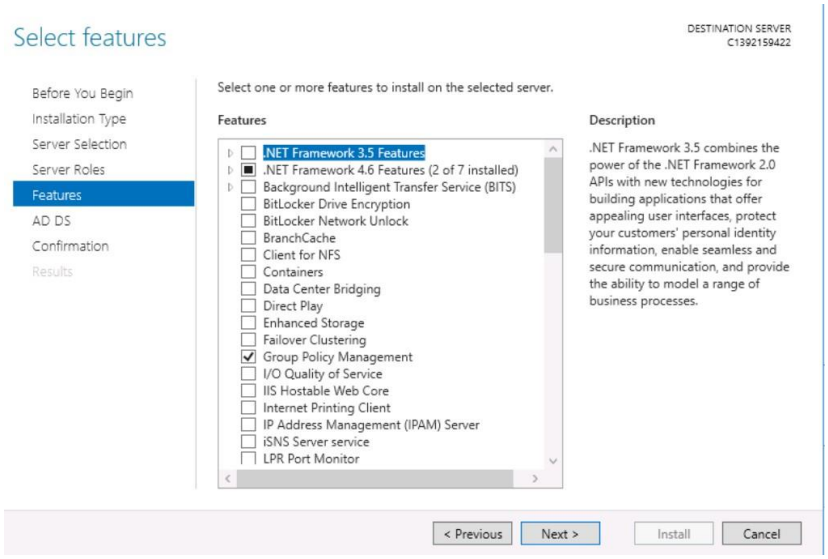
By default, the server to apply the installation should already be selected.
Confirm that the intended server has been selected from the server pool (or select the desired server) and click **Next**.
The *Select serverroles* panel is displayed:



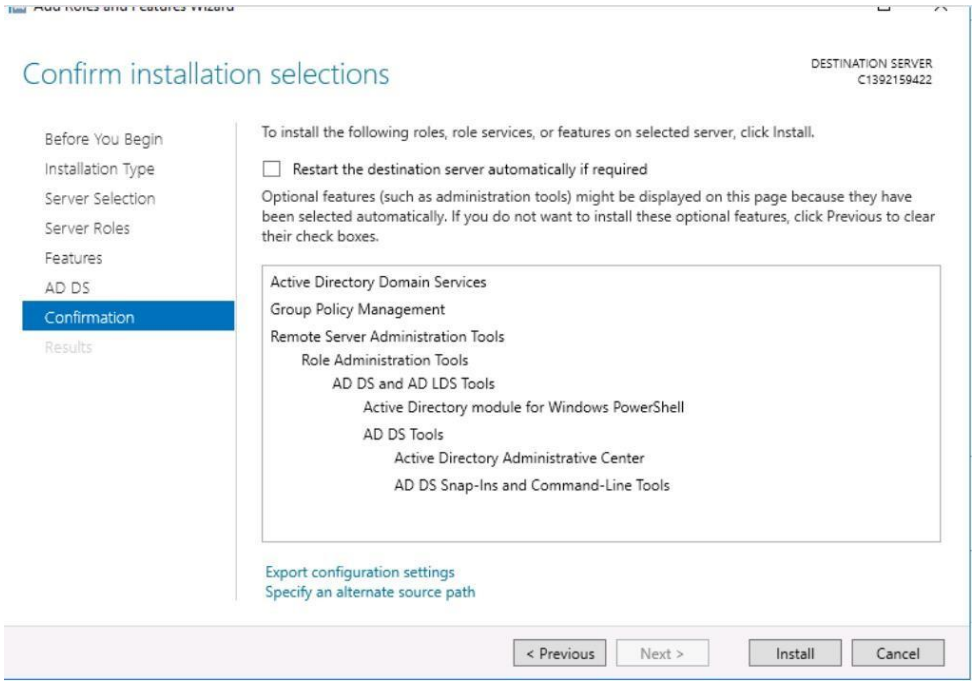
1. Click the **Active Directory Domain Services** checkbox to activateit as the role to use with the server.
2. Click **Next**. The required features list is display.



Click **Add Features** to add the required features to the server. The *Selectfeatures* panel is displayed:



1. Optionally select any additional features that may be required foryour server.
2. Click **Next**. The *Confirm installation selections* panel is displayed:



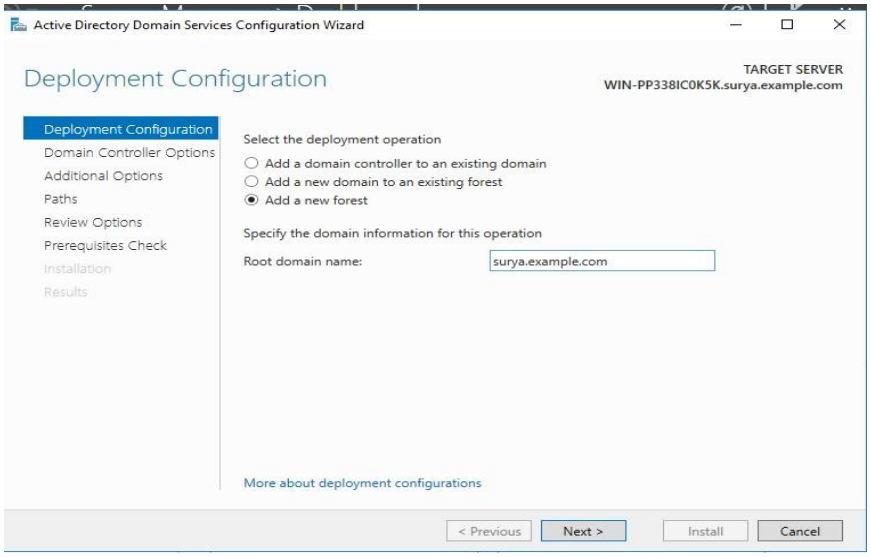
1. If all selections are correct, click **Install**.
2. Wait for the installation process to finish successfully, thenclick **Close** to close the wizard.

Configure Active Directory Domain Controller on Windows Server2016

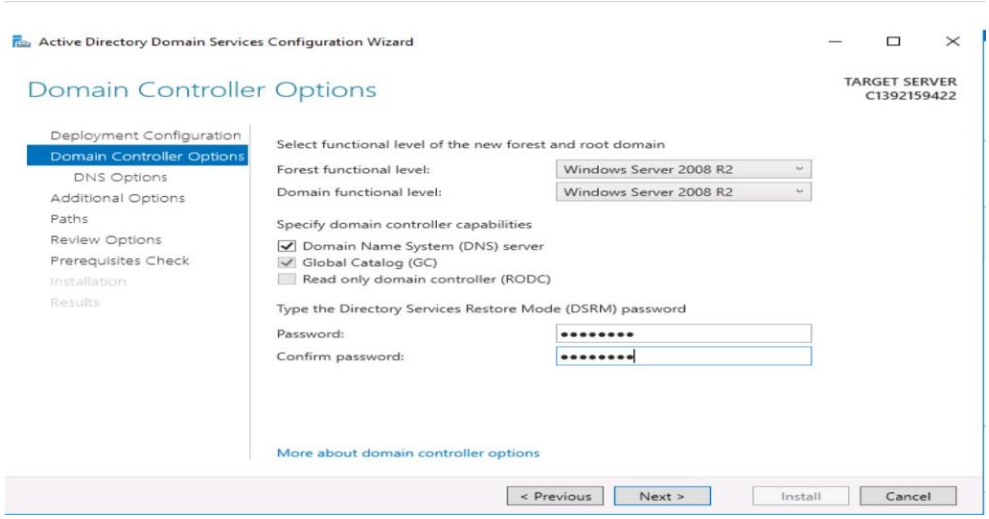
After the Active Directory Domain is created successfully, you need toconfigure the service on the server. To do that, we set up the **Active Directory Domain Services**.

1. After the AD DS server has been added, an alert notificationappears in the *Server Manager*. Click the notification flag.

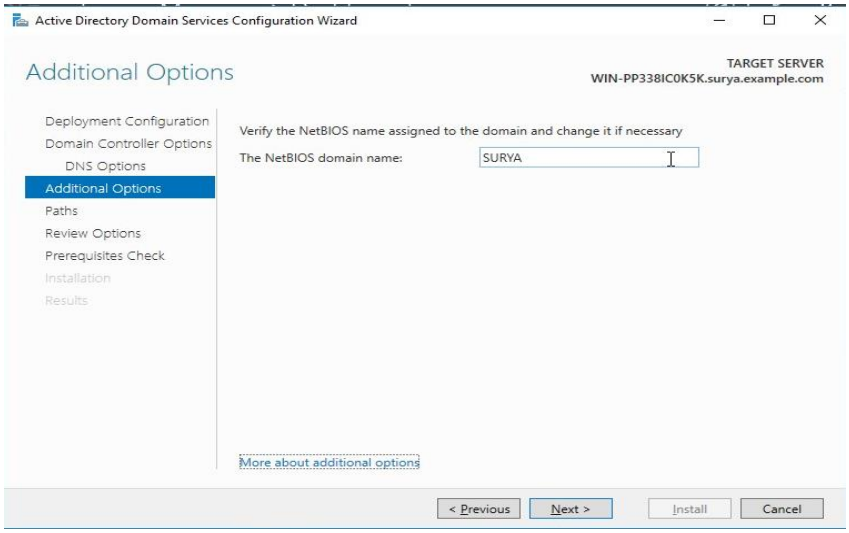
2. From the dropdown menu at the top right corner of the window, click **Promote this server to a domain controller**. The *DeploymentConfiguration* panel is displayed:



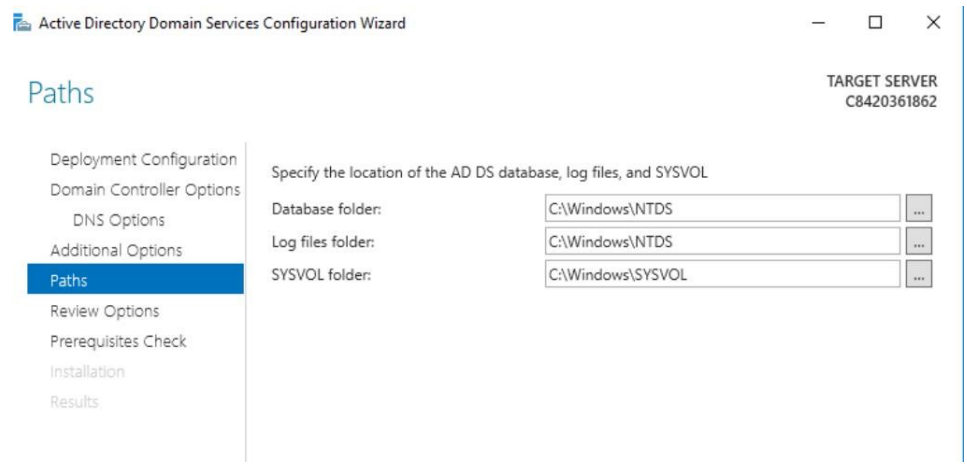
1. Select the option **Add a new forest** and enter a value in the *Rootdomain name* field.
2. Click **Next**. The *Domain Controller Options* panel is displayed:



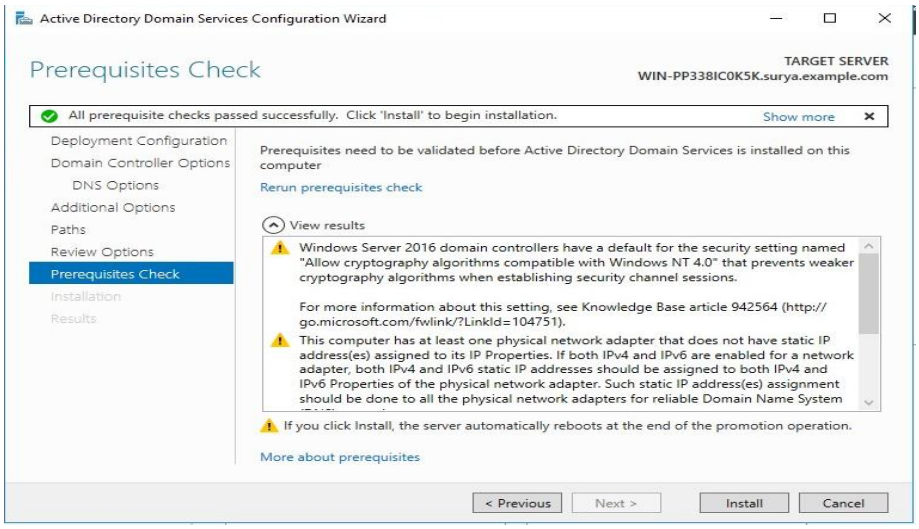
1. From the *Forest functional level* and *Domain functional level* dropdown lists, select the oldest operating system in your network. This option provides backwards compatibility for variousfeatures.
2. If your Domain Controller is a standalone server, you need notactivate the *DNS Name Server* checkbox. Otherwise, it's recommended to leave it checked.
3. Enter the *Directory Services Restore Mode (DSRM) password* andre-enter it in the *Confirm password* field.
4. Click **Next** twice. (There is no need to specifiy a DNS delegation.)The *Additional Options* panel is displayed:



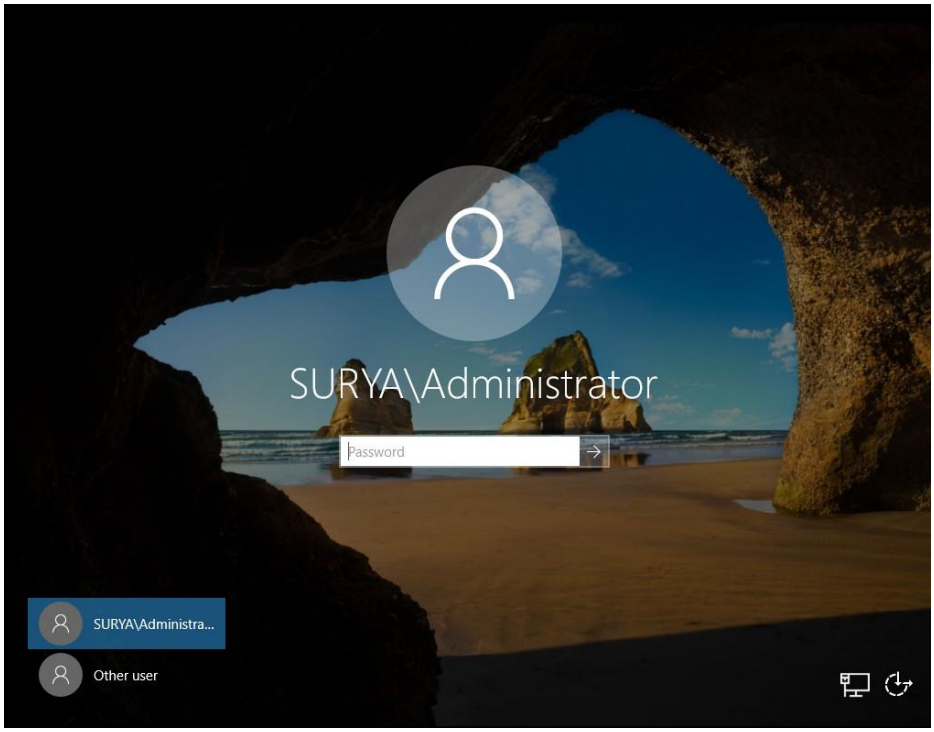
1. The value of the *NetBIOS domain name* field should automaticallyappear.
2. Click **Next**. The *Paths* panel is displayed:



1. Browse and select the Active Directory Controller paths foreach: *Database folder*, *Log files folder* and *SYSVOL folder*.
2. Click **Next**.
3. Confirm all your selected options and click **Next**. A prerequisitecheck will be performed. Although some warnings may be displayed, the check should complete successfully and a confirmation message will appear:



1. Click **Install**. When the wizard finishes configuring the settings,you will be prompted to log out of your current session.
2. Log out and then reboot the machine.



Step 3 Install Linux

Step 1: Download Kali Linux Image

1. Go to the Kali Linux downloads page and download the latest version of Kali Linux (e.g., Kali Linux 2022.2).
2. Choose the appropriate version based on your system architecture (32-bit or 64-bit) and download the image file (e.g., kali-linux-2022.2-vmware-amd64.7z).

Step 2: Extract the Image File

1. Extract the downloaded image file using a tool like 7-Zip or WinRAR. You will get a .ova file after extraction.

Step 3: Open VMware Workstation Pro

1. Launch VMware Workstation Pro on your Windows 11 machine.

Step 4: Import Kali Linux Image

1. Click on File in the VMware Workstation menu.
2. Select Open and navigate to the location where you extracted the Kali Linux .ova file.
3. Choose the .ova file and click Open.
4. Click Import in the Import Virtual Machine wizard.
5. Review the settings and click Import to start the import process.

Step 5: Configure Kali Linux Settings

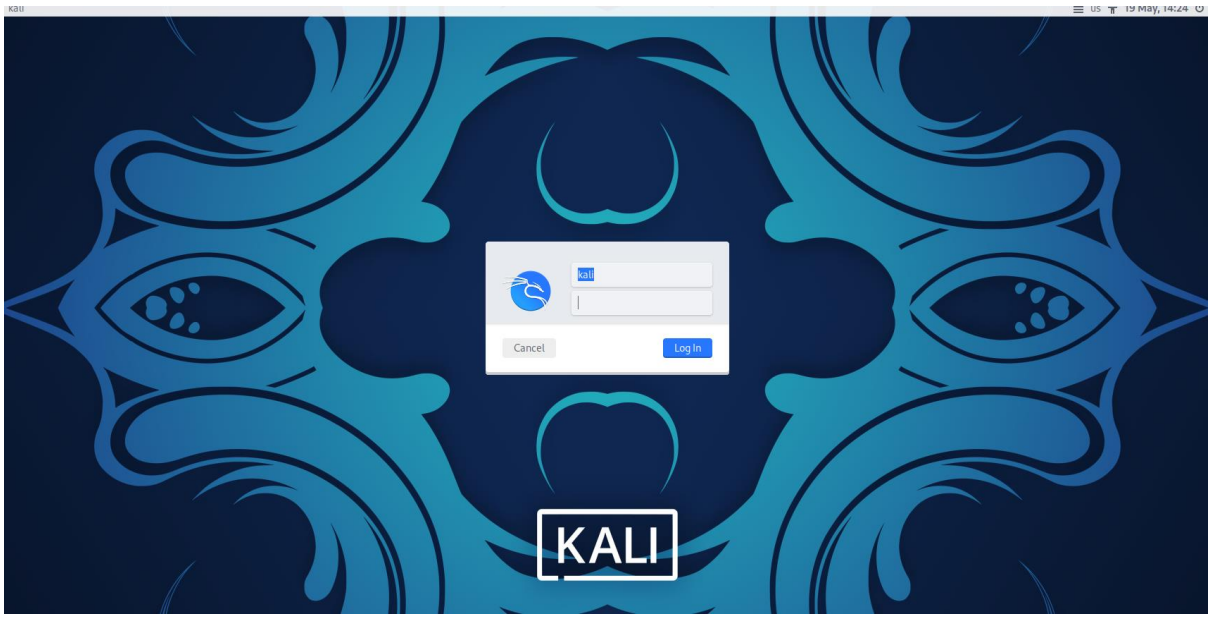
1. Customize the virtual machine settings if needed (e.g., RAM, CPU cores, network settings).
2. Click Finish to complete the import process.

Step 6: Power On Kali Linux VM

1. Select the imported Kali Linux virtual machine from the VMware Workstation library.
2. Click Play virtual machine to power on the Kali Linux VM.

Step 7: Set Up Kali Linux

1. Follow the on-screen instructions to set up Kali Linux, create a user account, and configure the system.
2. Make sure to change the default password to enhance security.

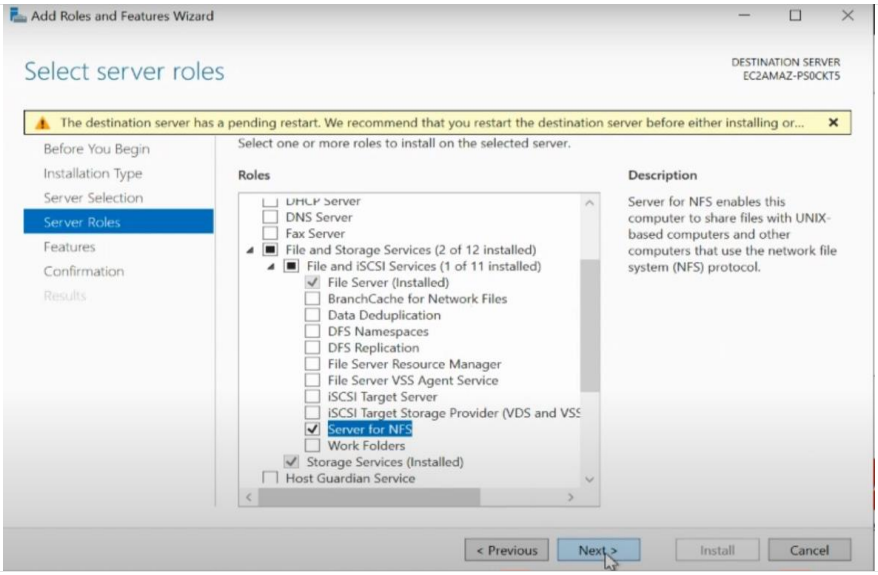


Step 4 Share files from windows to Linux using NFS Server

Step 1: Install and Configure NFS Server on Windows Server

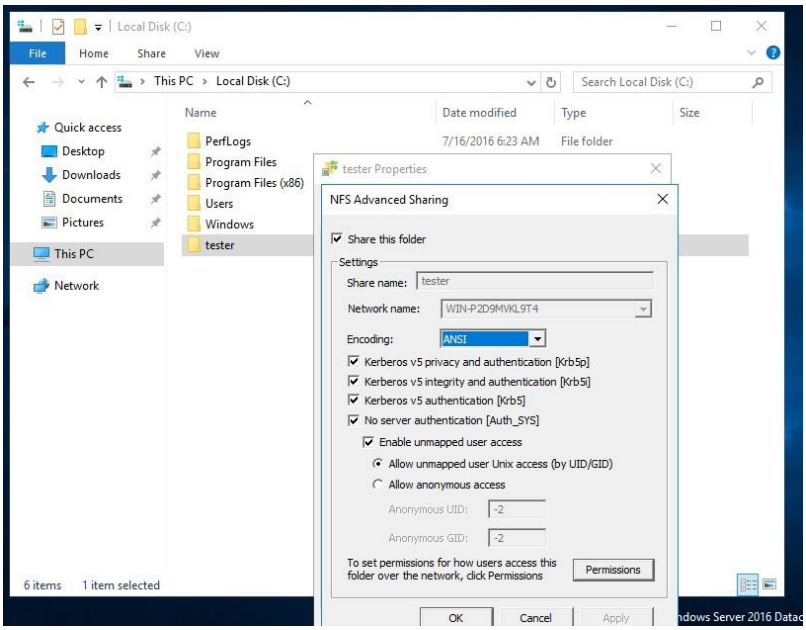
1. **Install NFS Server on Windows Server:**

   - Open **Server Manager**.
   - Click on **Add Roles and Features**.
   - Click **Next** through the initial steps until you reach the **Server Roles** section.
   - Scroll down and select **Server for NFS** under **File and Storage Services** > **File and iSCSI Services**.
   - Click **Next** and then **Install**.



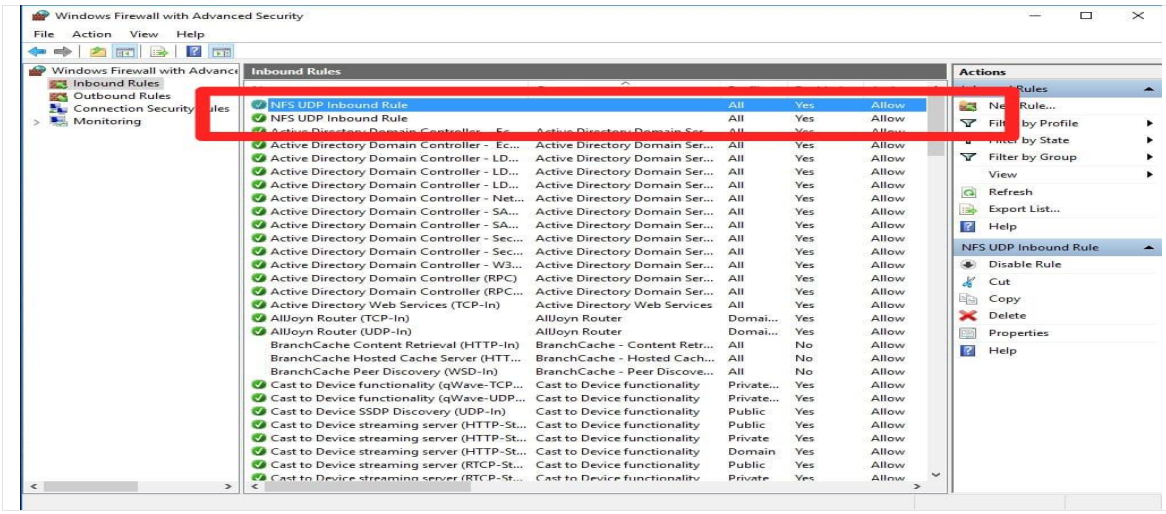
2. Configure NFS Shares:

- Open **File Explorer** and navigate to the folder you want to share.
- Right-click the folder and select **Properties**.
- Go to the **NFS Sharing** tab.
- Click **Manage NFS Sharing**.
- In the **NFS Advanced Sharing** dialog, check **Share this folder**.
- Optionally, set the **Share name** and configure the **Share permissions**. Ensure that you allow the necessary permissions (read/write) for the Linux clients.
- Click **OK** to apply the changes.

3. 

4. Configure Permissions:

- Ensure that the Windows firewall allows NFS traffic. Open **Windows Firewall with Advanced Security** and create inbound rules to allow NFS.
- Configure the share permissions and security settings to allow access from the Linux client. This typically involves setting appropriate permissions for the user accounts that will access the share.



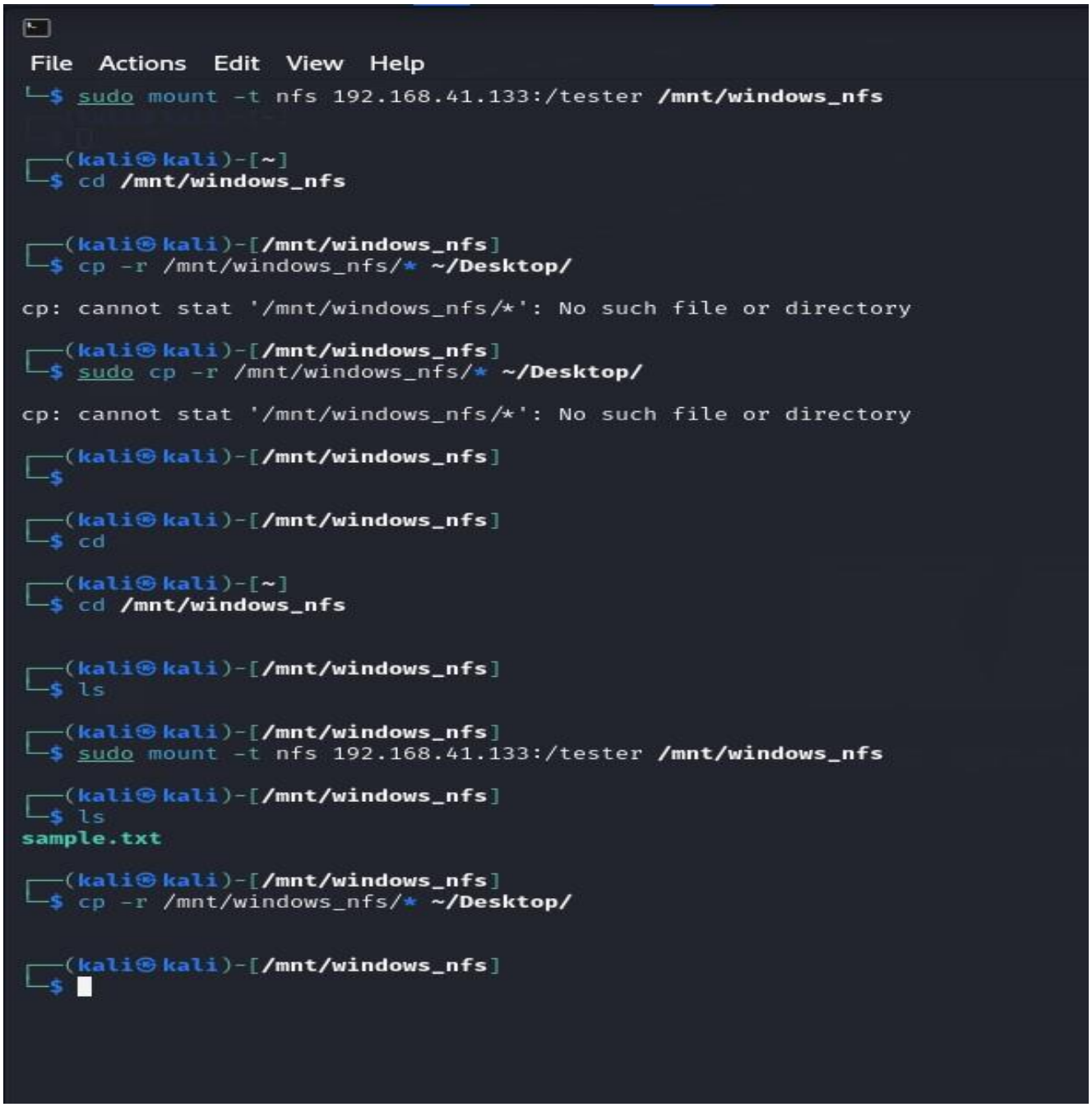
Step 2: Configure NFS Client on Linux

1. **Install NFS Client Utilities:**

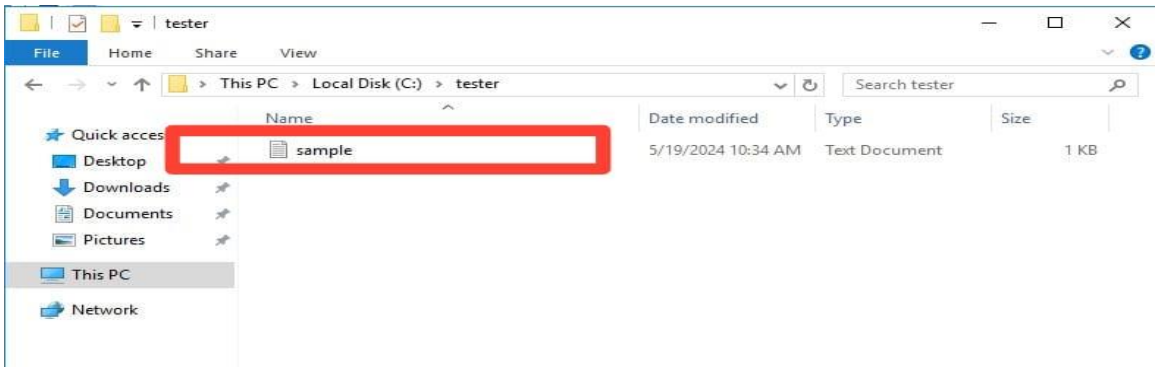
```
File  Actions  Edit  View  Help
┌──(kali㉿kali)-[~]
└─$ sudo apt update
[sudo] password for kali:
Hit:1 http://http.kali.org/kali kali-rolling InRelease
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
1747 packages can be upgraded. Run 'apt list --upgradable' to see them.

┌──(kali㉿kali)-[~]
└─$ sudo apt install nfs-common
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
nfs-common is already the newest version (1:2.6.4-3).
0 upgraded, 0 newly installed, 0 to remove and 1747 not upgraded.

┌──(kali㉿kali)-[~]
└─$ sudo mkdir -p /mnt/windows_nfs

┌──(kali㉿kali)-[~]
└─$ sudo mount -t nfs 192.168.41.133:/tester /mnt/windows_nfs
```

```
┌──(kali㉿kali)-[~]
└─$ showmount -e 192.168.41.133
Export list for 192.168.41.133:
/tester (everyone)

┌──(kali㉿kali)-[~]
└─$ ls /mnt/windows_nfs

┌──(kali㉿kali)-[~]
└─$ sudo nano /etc/fstab

┌──(kali㉿kali)-[~]
└─$ sudo mount -t nfs 192.168.41.133:/tester /mnt/windows_nfs

mount: (hint) your fstab has been modified, but systemd still uses
       the old version; use 'systemctl daemon-reload' to reload.

┌──(kali㉿kali)-[~]
└─$ systemctl daemon-reload

┌──(kali㉿kali)-[~]
└─$ sudo mount -t nfs 192.168.41.133:/tester /mnt/windows_nfs


┌──(kali㉿kali)-[~]
└─$ cd /mnt/windows_nfs
```

Step 5: Copy the files and paste it on desktop (Linux)



File in window server



File is copied to linux using NFS server