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Level 5 – CT5052 Network Operating System

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Student Name: Nirjala Shrestha

London Met ID: 23048844

College ID: NP04CP4A230219

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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1. Introduction

Active Directory (AD) is Microsoft system which us used to manage and organize resources, such as users, computers, and devices within a network. It functions similar to a central database that helps manager to properly control of resource access. In an Active Directory environment, everything is structured. There is a field at the top that consists of objects like users and computers.

In AD, authentication and authorization are done using a server called domain controller (DC). Moreover, when a user logs in, AD goes and checks their username and password to make sure it is correct and once we have accepted, the account gives access to resources according on their rights. The key features of AD are Centralized Management, Security, Scalability. In Centralized Management, everything can be managed all from one place. In Security, What you are allowed to see and do is you can control using permissions and policies. As for the Scalability, It handles both Small organizations and large businesses.

Azure Active Directory is often referred to as a cloud version of AD DS, but this is completely wrong. It is like comparing an iPhone with a Samsung phone. Both can be used to make calls, take pictures, watch videos, and so on. Some apps are also available for both types of devices. But you can't replace one with another as each has its uniqueness. AD DS and Azure Active Directory are the same. They have their similarities and differences. (Francis, Nov 30, 2021)

2. Steps to install Active Directory Domain Services:

Step 1: – Accessing to Windows server 2022 as an administrator and start the Server Manager as described below:

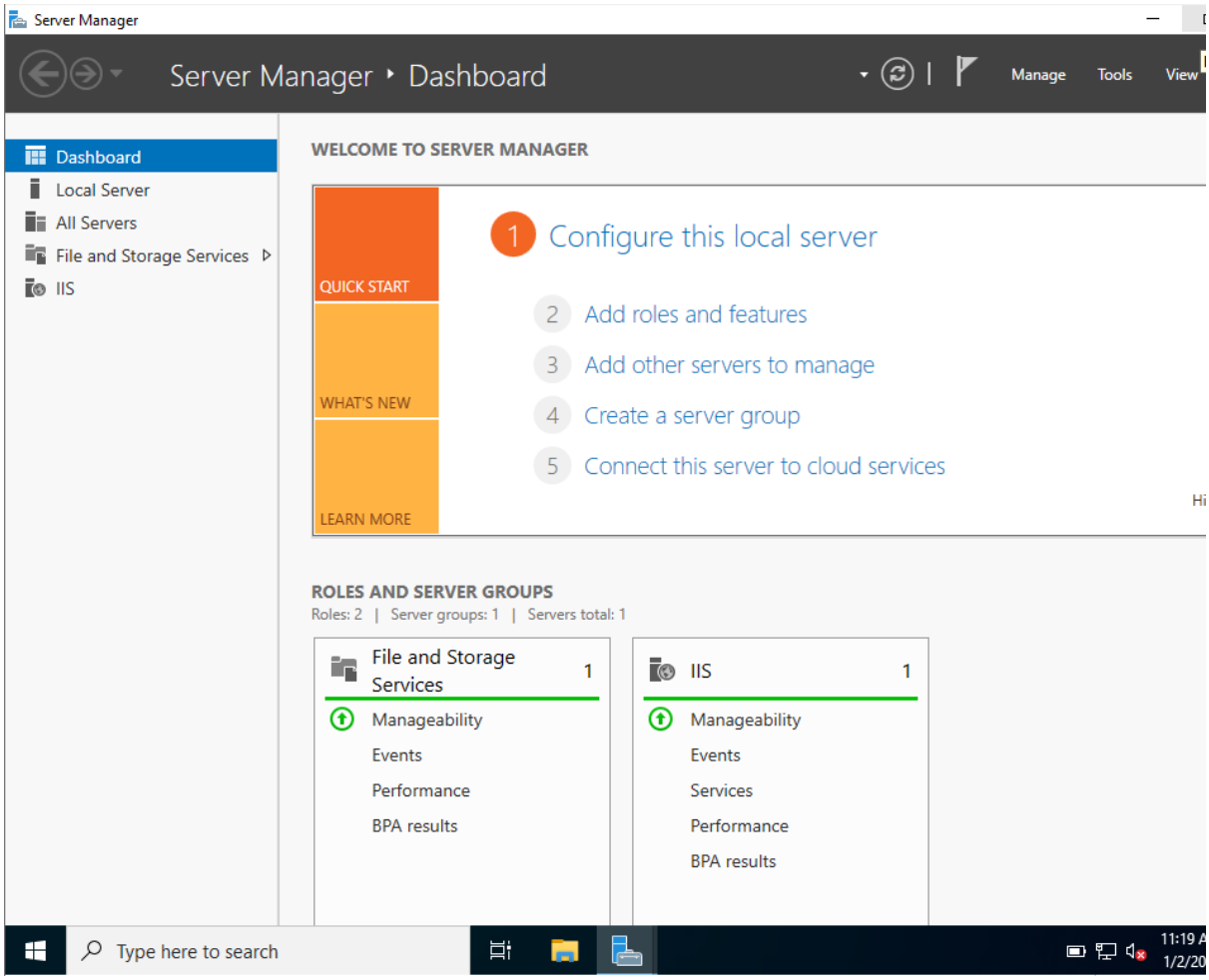

Figure 1: Sever Manager Dashboard

Step 2: Select "Add Roles and Features." Then, the Add Roles and Features Wizard will be opened as described below:

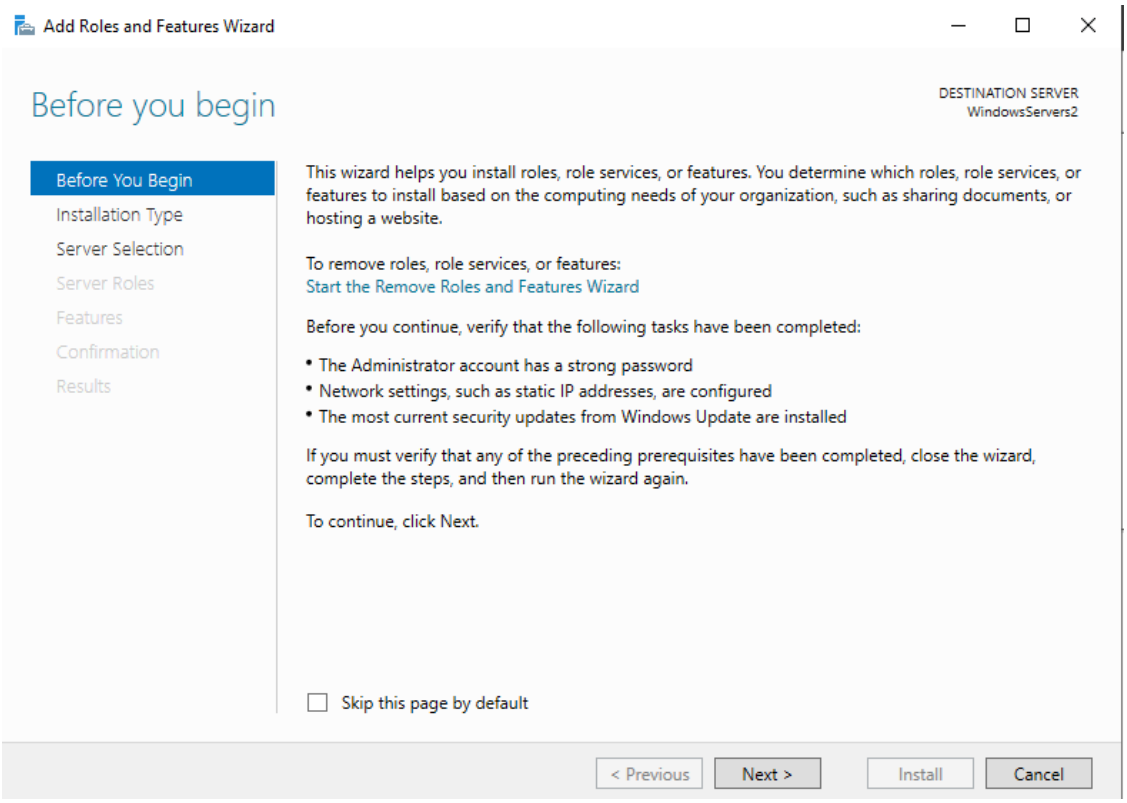

Figure 2: Add roles and feature Wizard

Step 3: Tap the “Next” button. You are going to be asked to pick the installation type as displayed below.

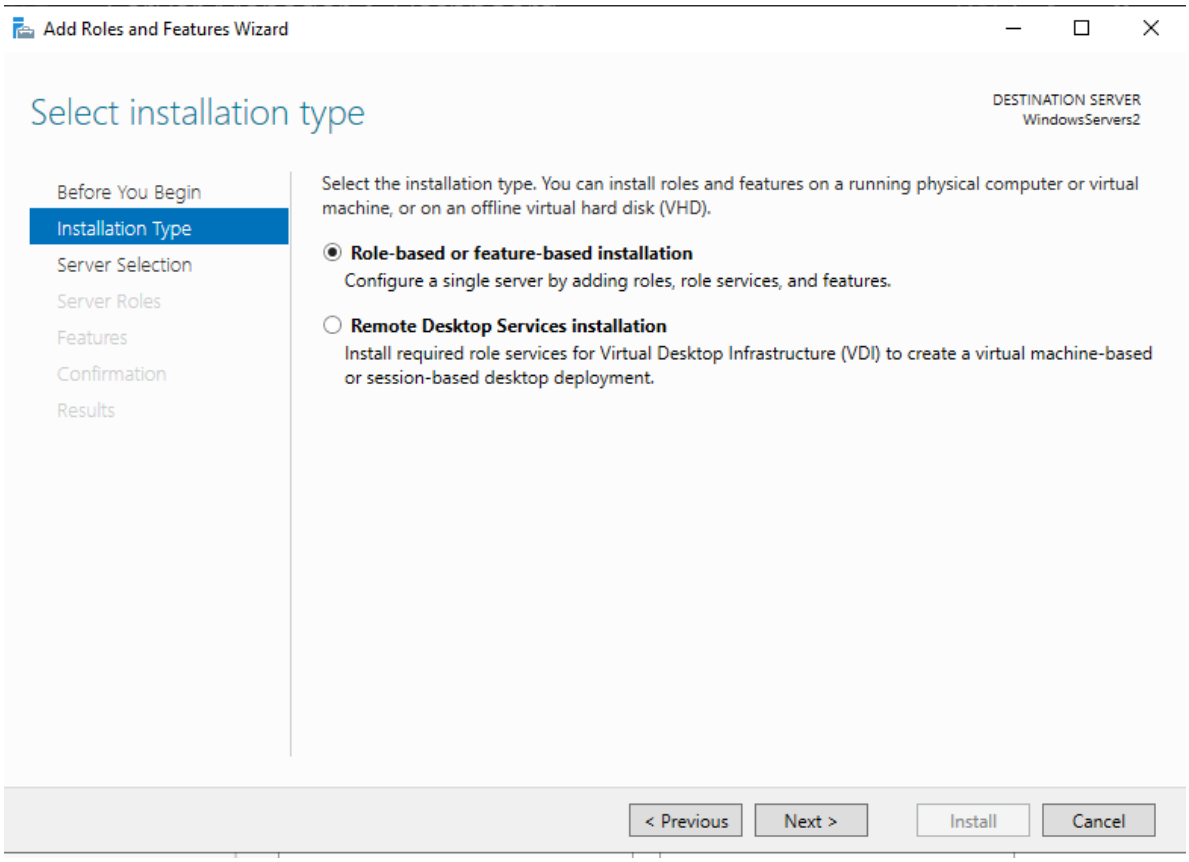

Figure 3: Select installation type

Step 4: After choosing Add Roles and Features Wizard, press the Next button. Then, you are asked to choose a destination server, as displayed below.

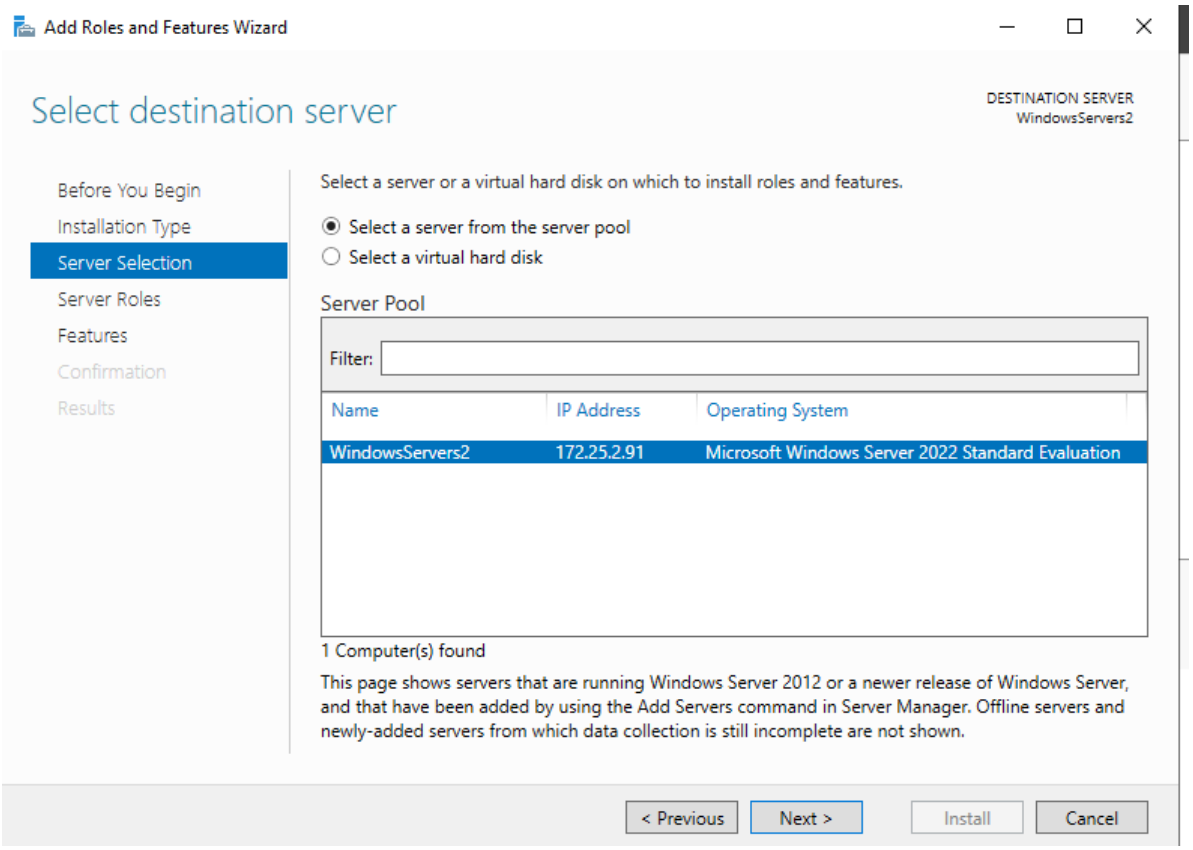

Figure 4: Select destination server

Step 5: Hit the Next button after clicking “Select a server from the server pool”. Then, you will be asked to choose from server roles as displayed below:’

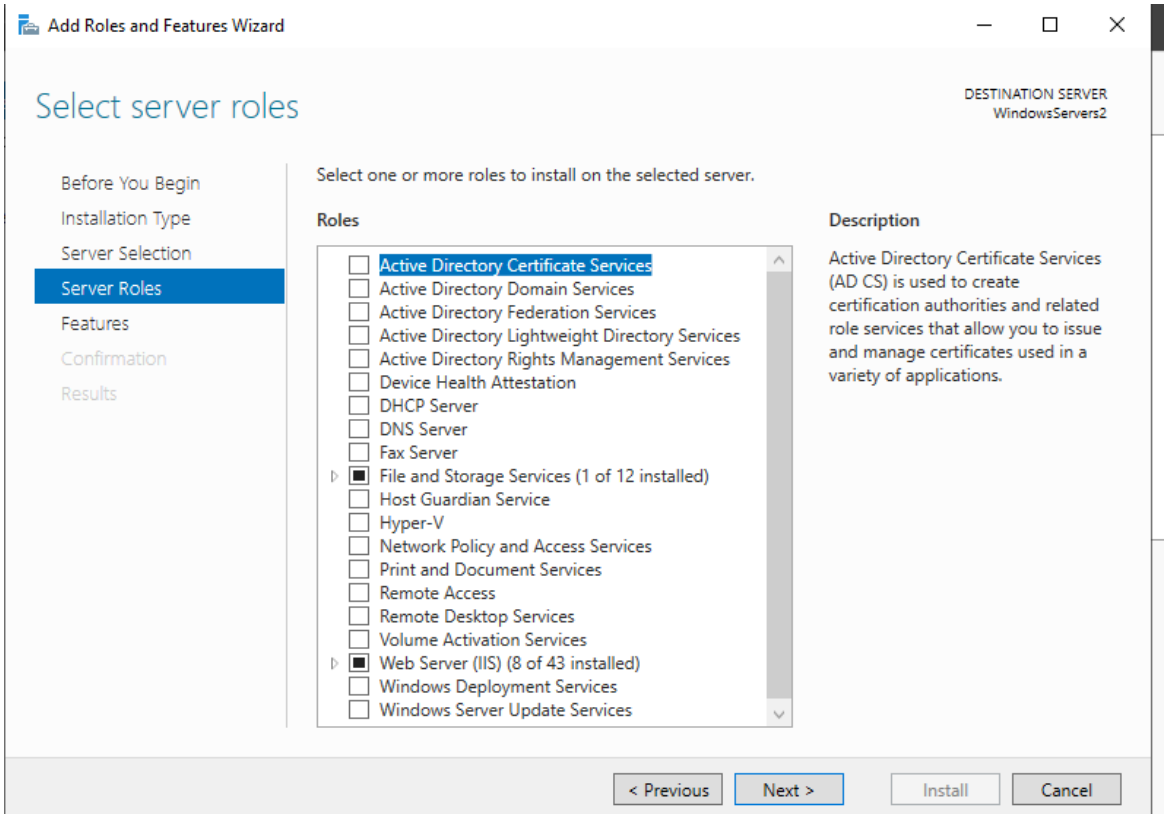

Figure 5: Selecting a server from the server pool

Step 6: Press Next after selecting Active Directory Domain Services. You will be asked to choose the features listed below:

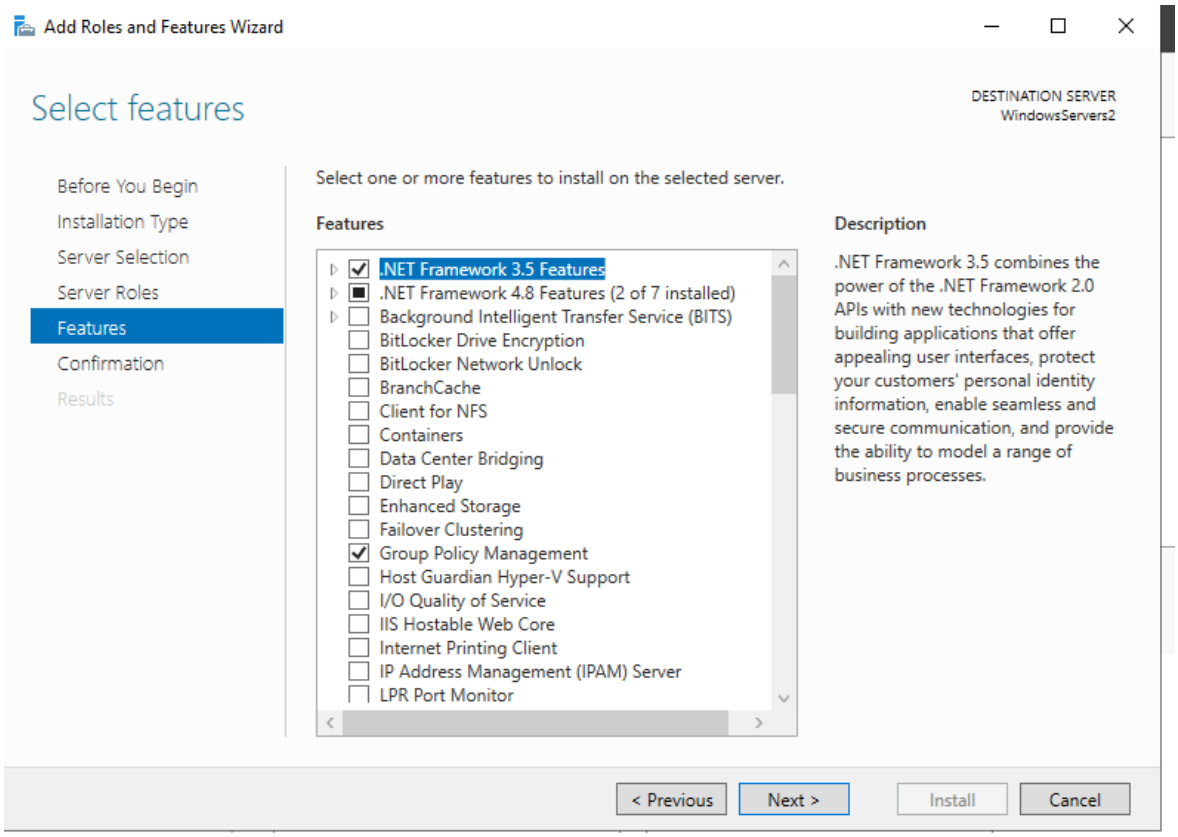

Figure 6: Select Active Directory Domain Services

Step 7: Hit the Next button after leaving all default settings. Then, confirmation installations selections page should open.

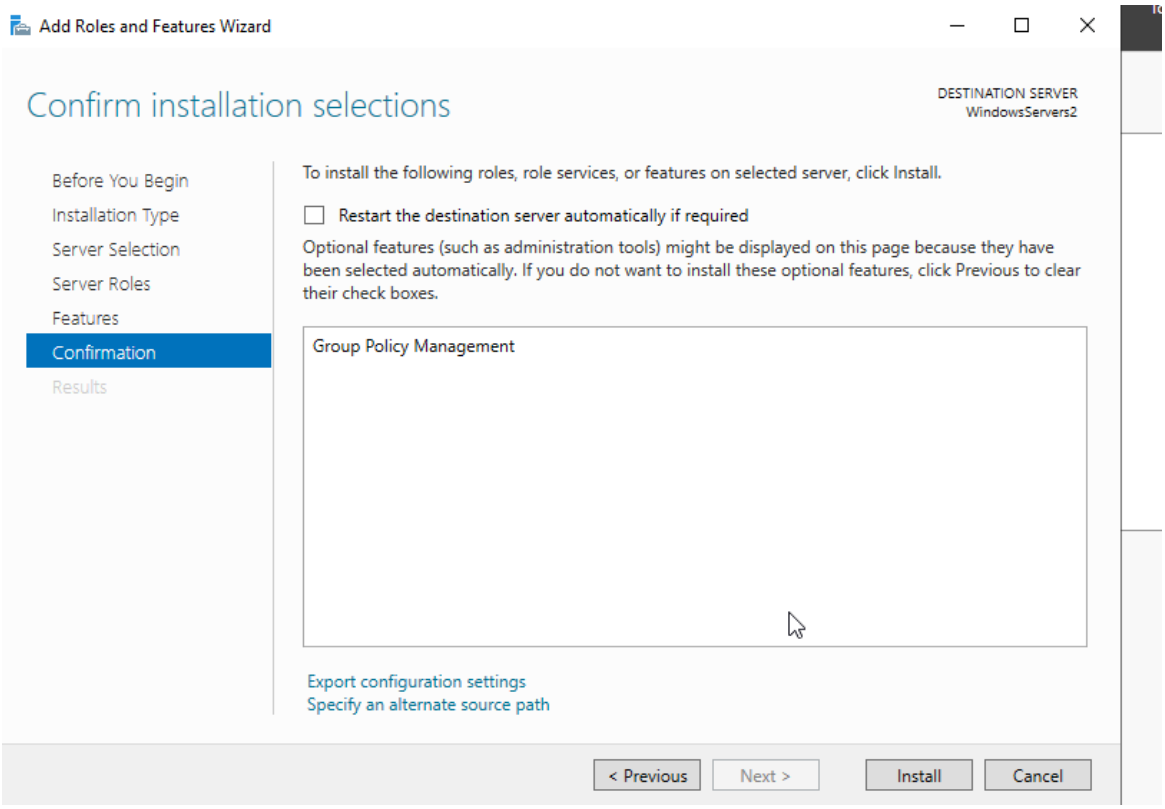

Figure 7: Confirm installation selections

Step 8: Press the Install button and then begin with the installation process. After doing so. You will see this page.

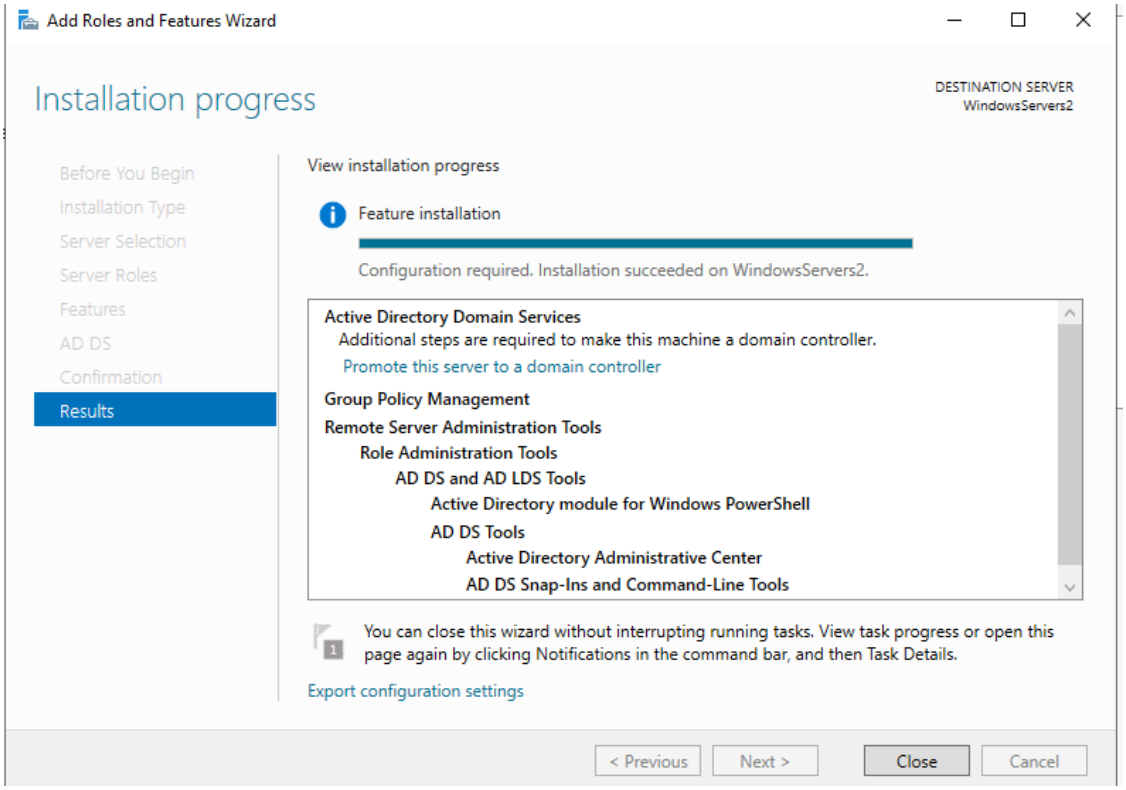

Figure 8: Installation process

Step 9: After, Selecting on the Close button. You should end up on this page.

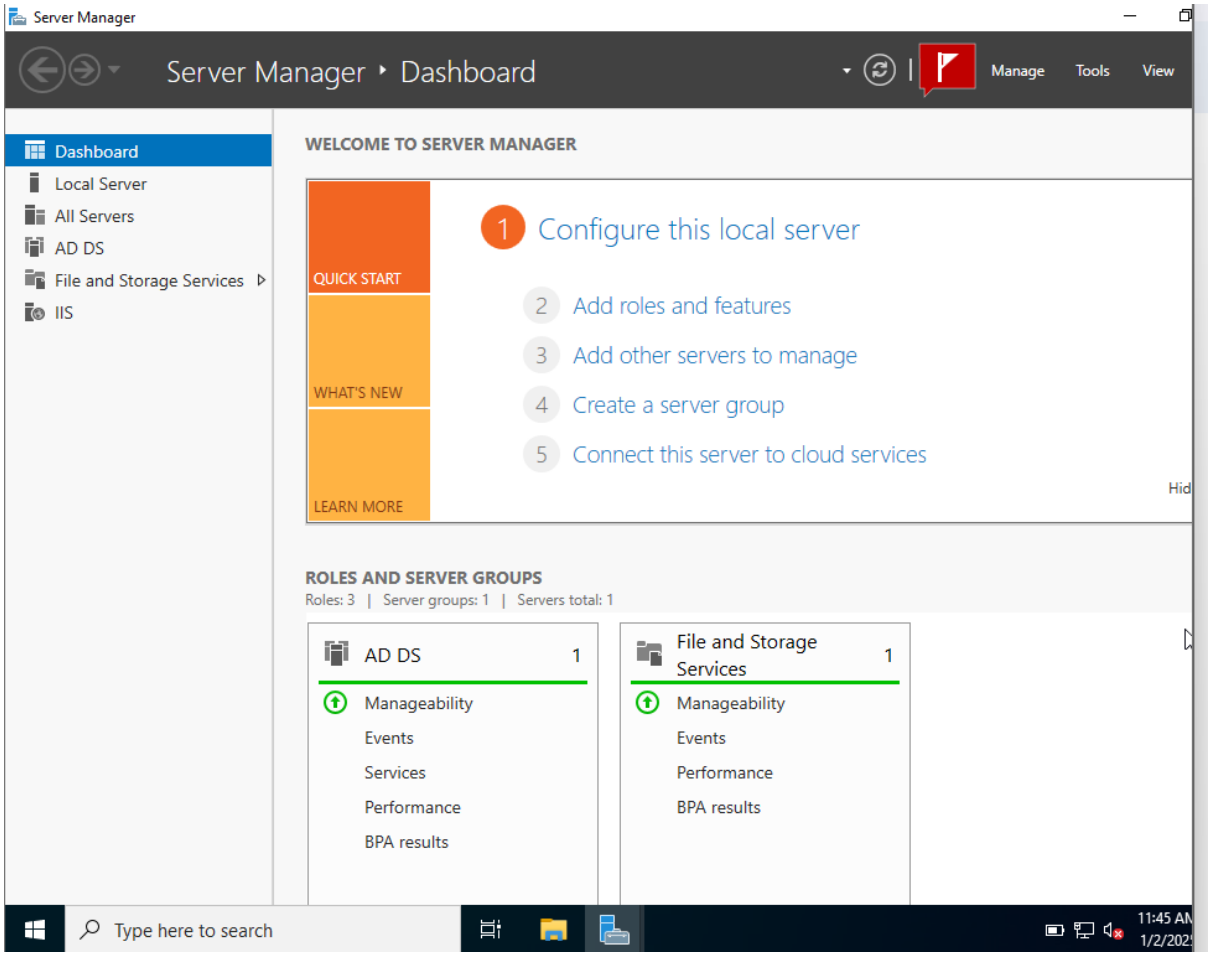

Figure 9: Server Manager dashboard after installing

Step 10: In step 10, Select on the yellow notification symbol. You need to look at the page below:

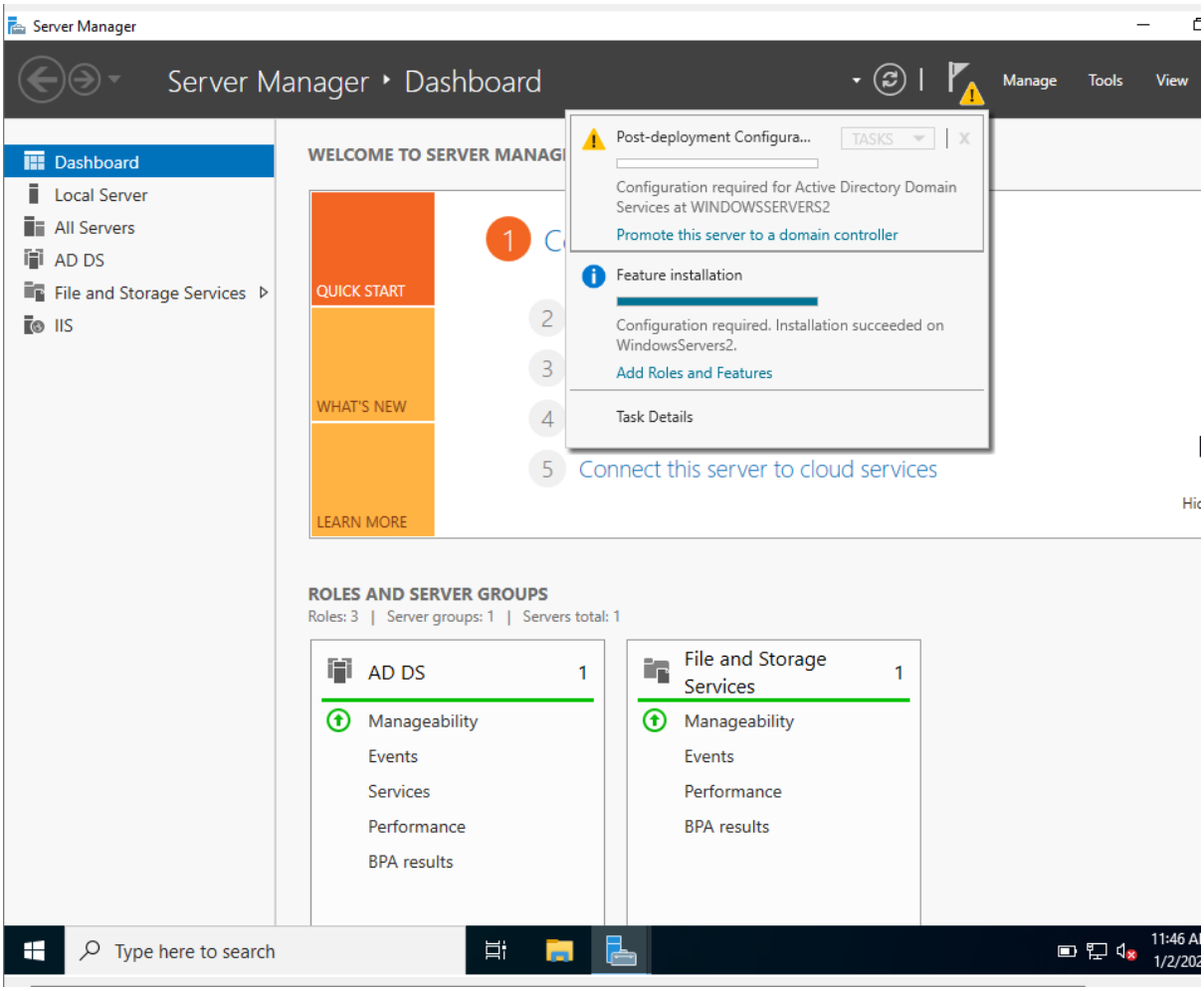

Figure 10: Select on Yellow Notification icon

Step 11: Select on Promote this server to a domain controller in step 11. Then, The deployment configuration page will show up as described in below:

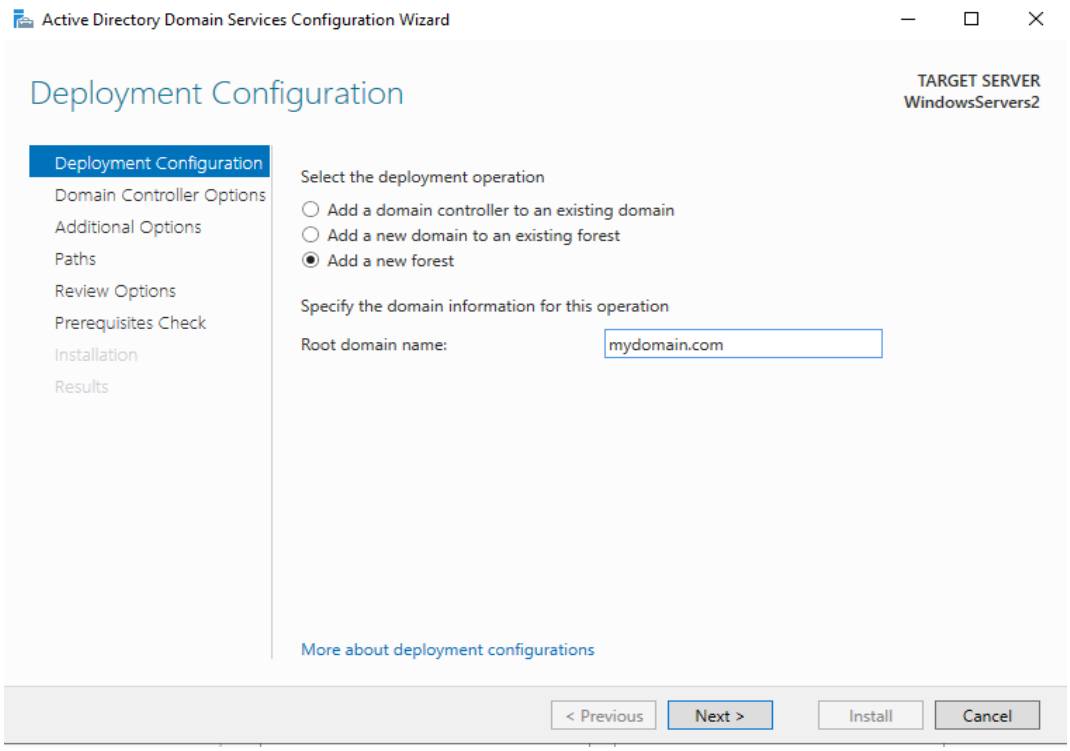

Figure 11: Deployment Configuration

Step 12: Hit the Next button after choosing to add a new forest and entering your domain name. Then, the domain controller options page will show up as displayed below:

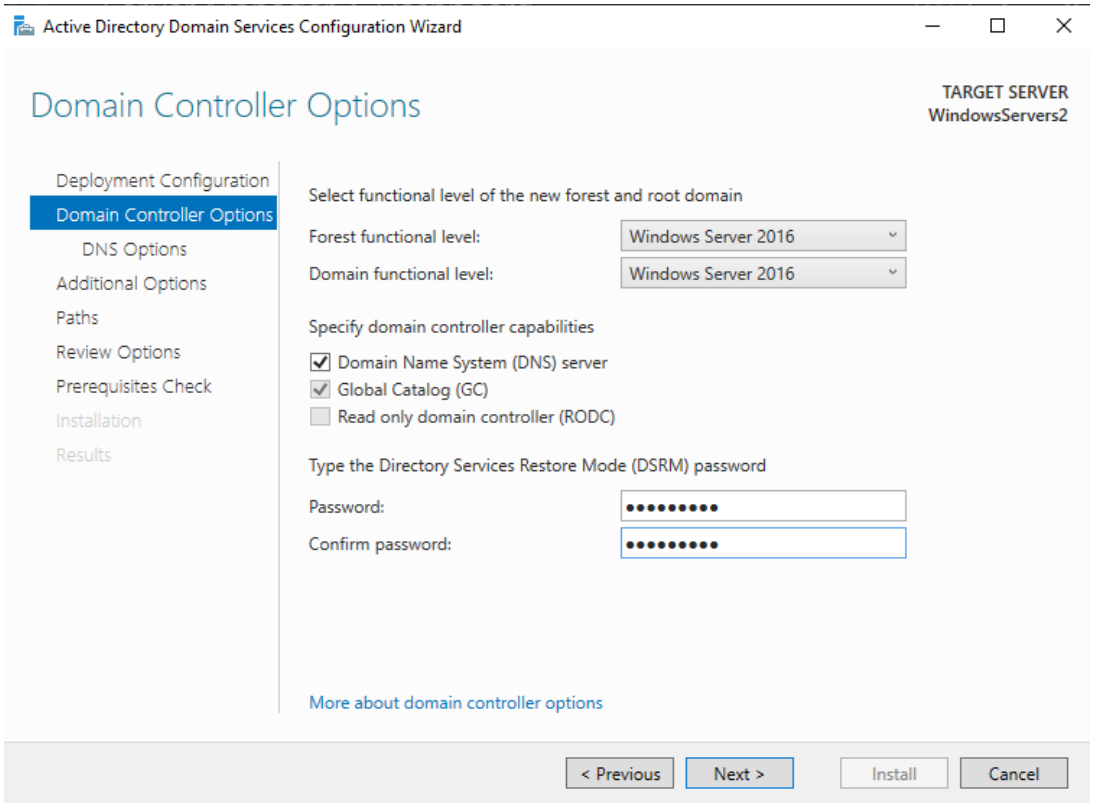

Figure 12: Domain Controller Options

Step 13: Press on the Next button after entering your directory service restore mode password. Then, the DNS options page will show up as displayed below:

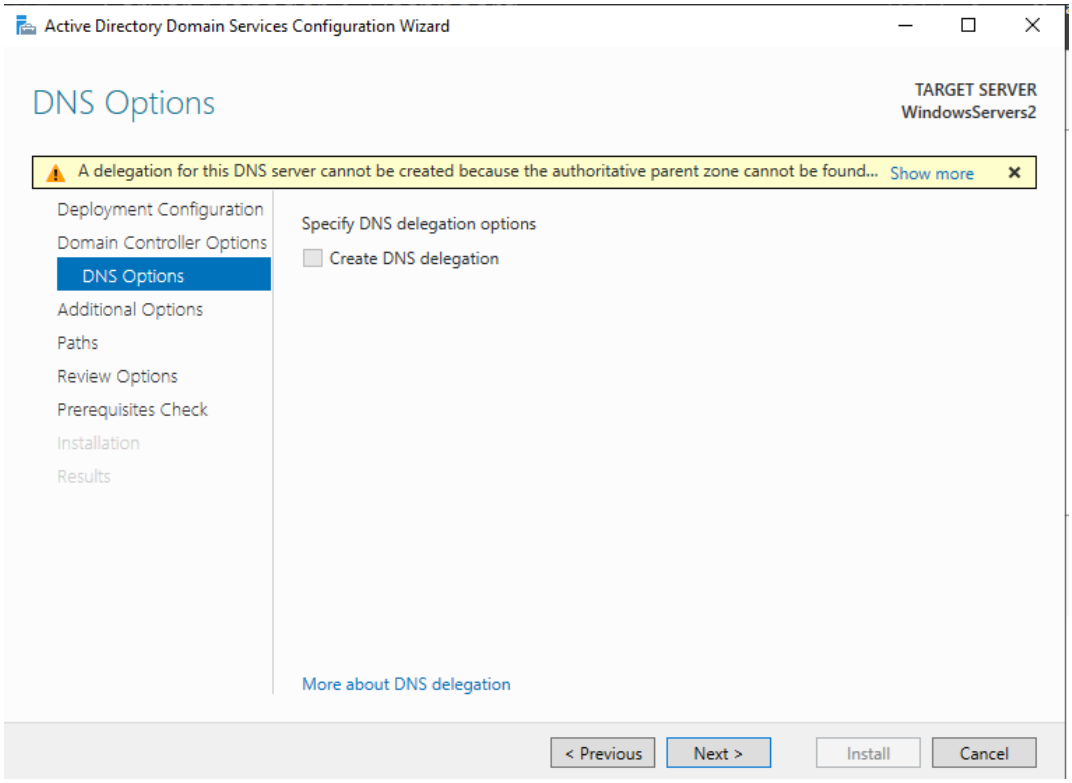

Figure 13: DNS Options

Step 14: We select the Next button to leave from the default setup configuration. You will be asked to enter a NetBIOS name as described below:

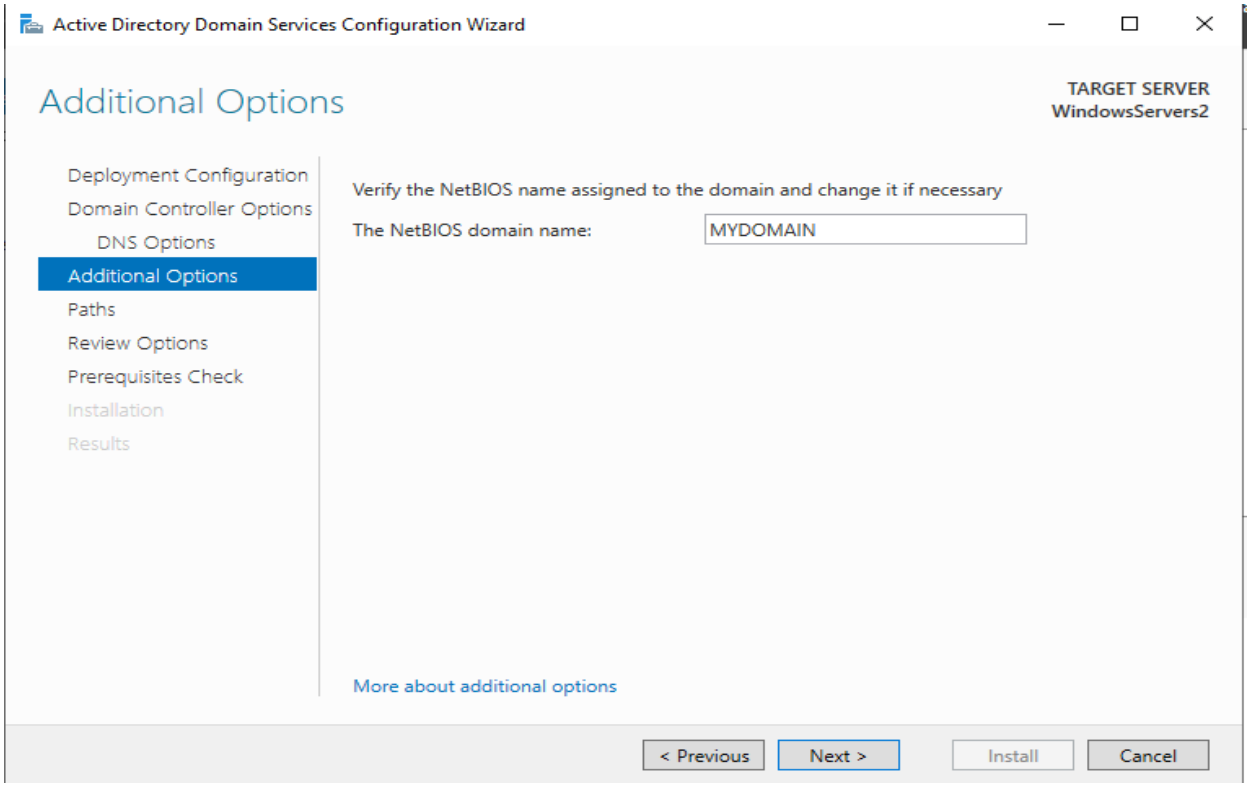

Figure 14: Additional options

Step 15: Select the Next button after choosing your NetBIOS name. You will be asked to enter the location of the AD DS database path as shown up below:

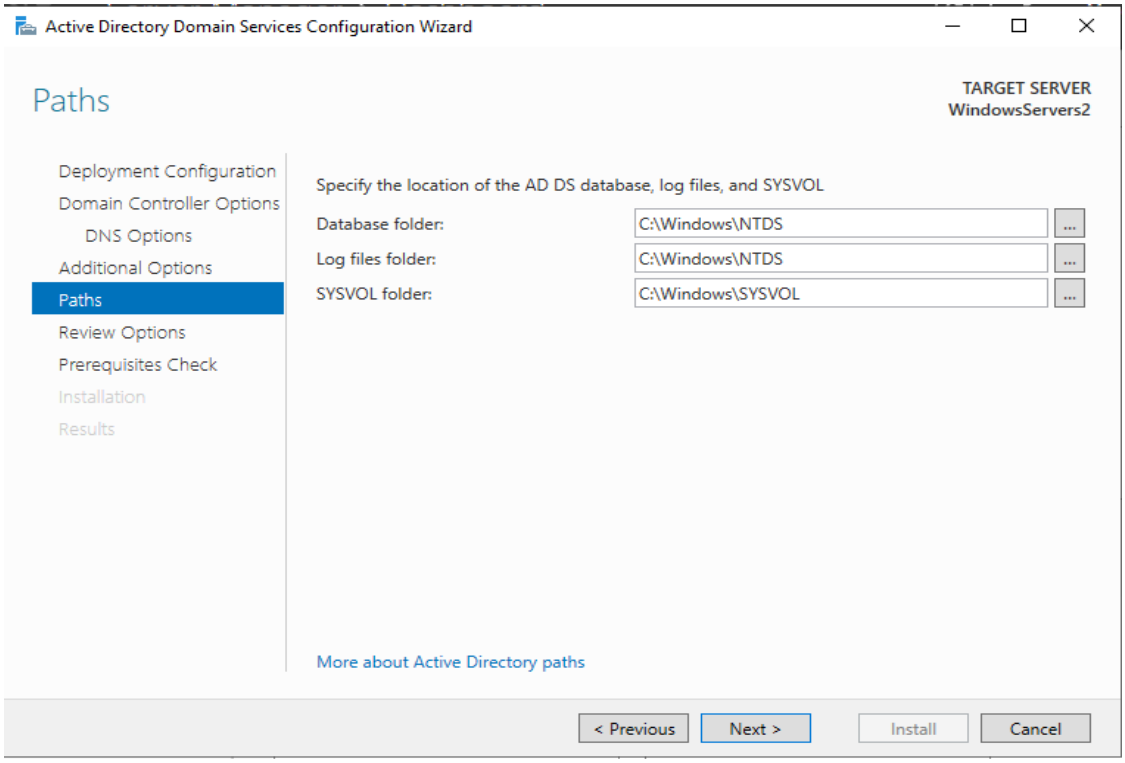

Figure 15: Path location for AD DS database

Step 16: Select the Next button after leaving the default path unchanged. Then, you must look at the page that reviews every option as displayed below:

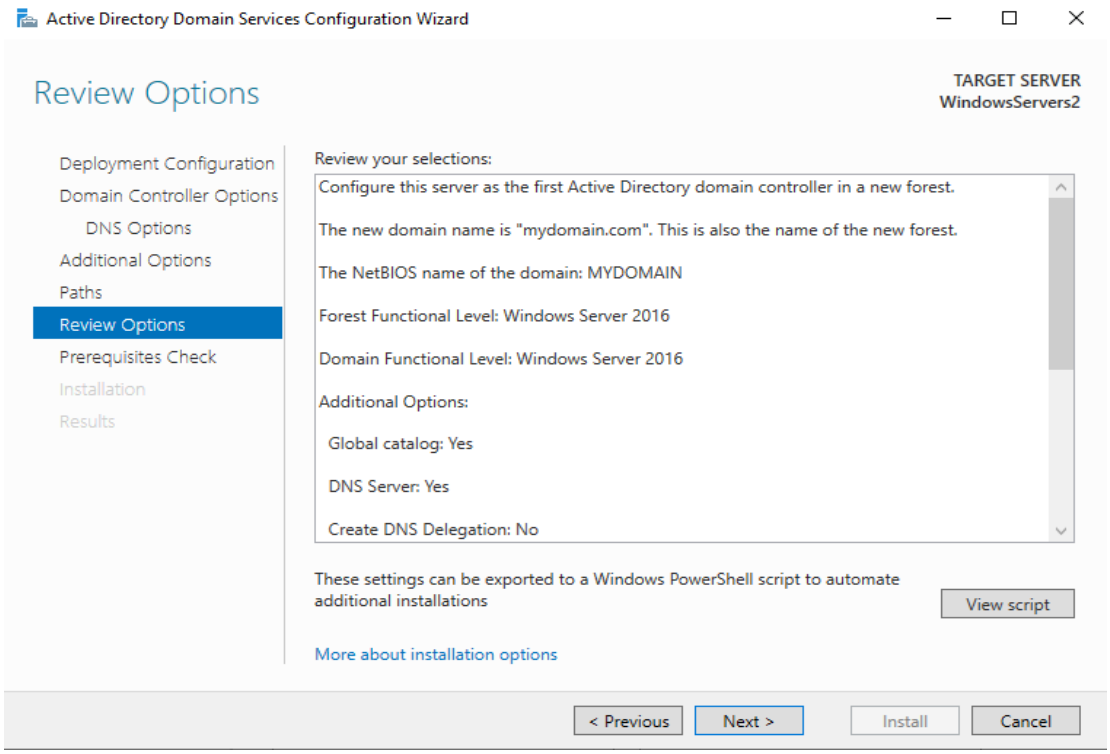

Figure 16: Review Options

Step 17: Select on the Next button after reviewing every configuration. Then, the prerequisites check page will show up as displayed below:

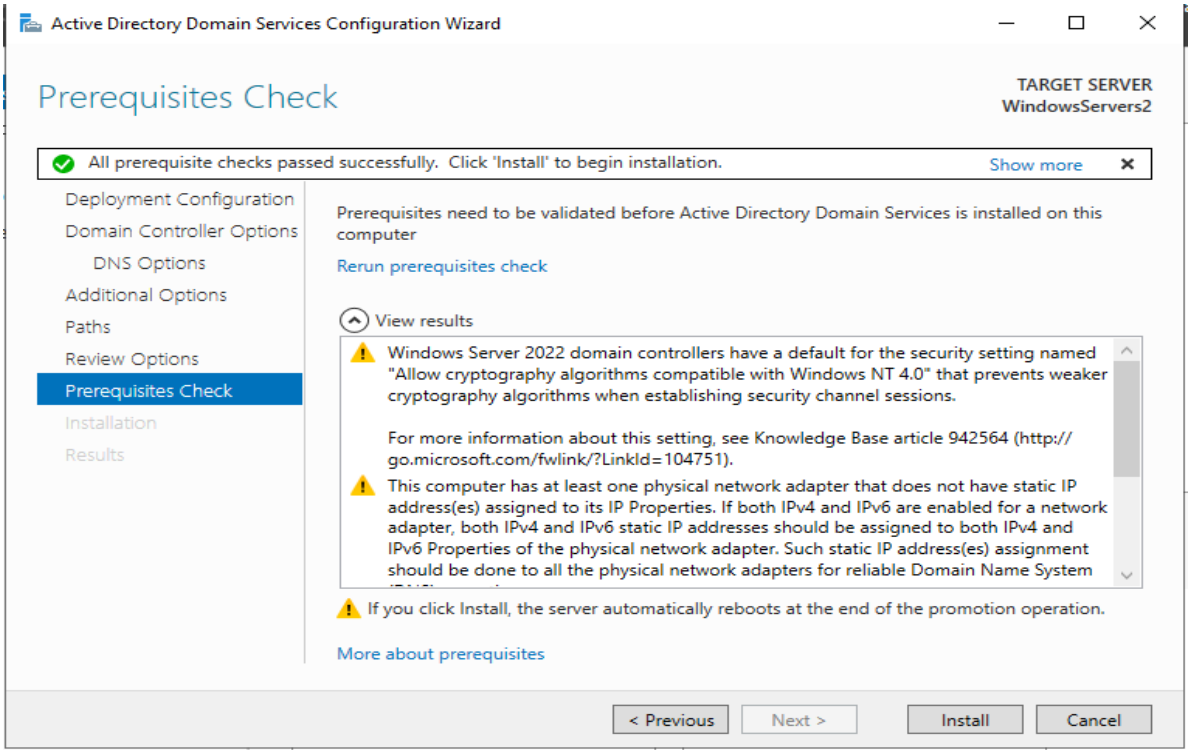

Figure 17: Prerequisite Check

Step 18: Select the Install button after making sure that all prerequisite checks have been finished. Then, your computer will restart properly after the installation process is done successfully.

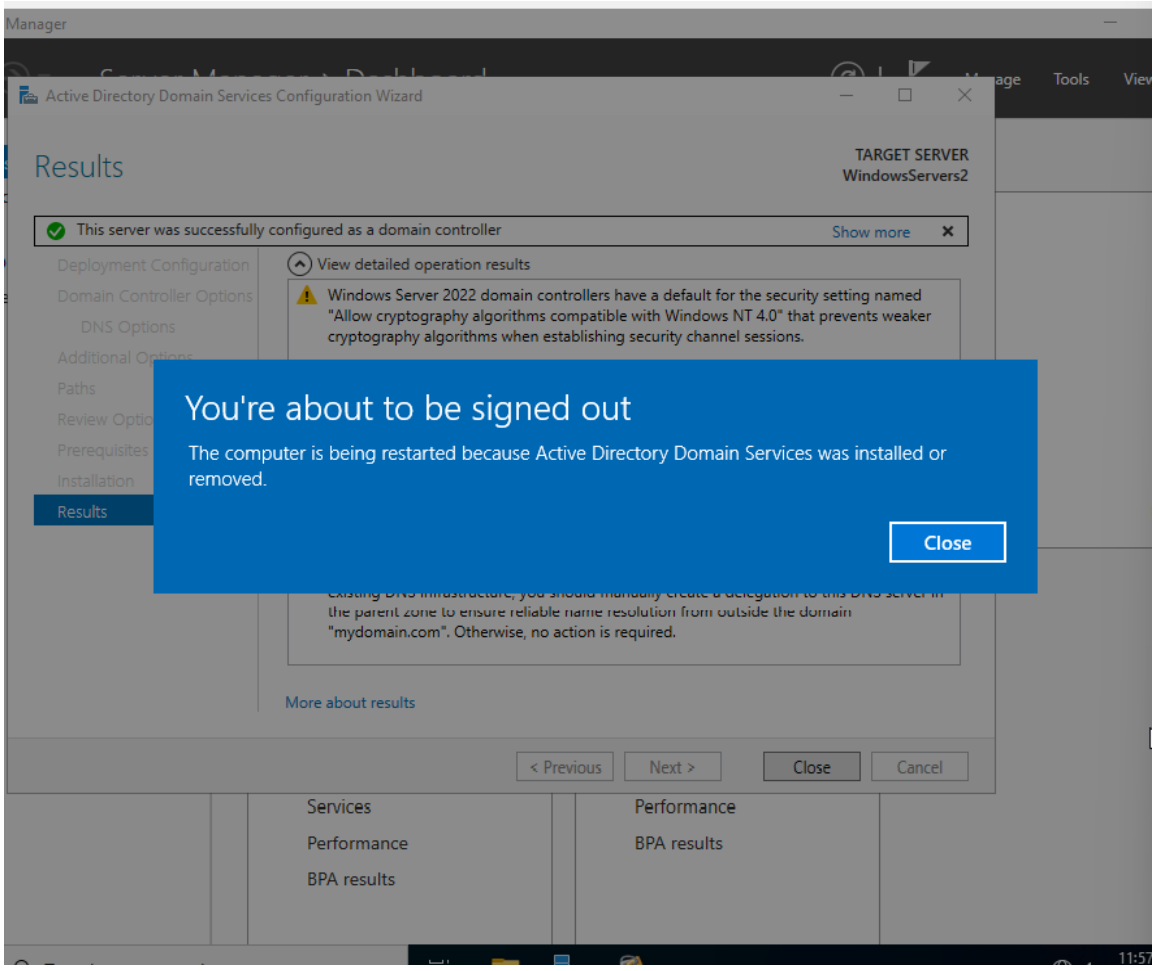

Figure 18: Automatically being restart

Verify Domain Controller

In, Verify Domain Controller you will have to make sure if the Domain Controller is properly set up or not. You can even show it from PowerShell again. If you get the confirmation that the services were installed successfully to run the following command in Windows PowerShell.

The command is: Get-Service adws,kdc,netlogon,dns.

This output of this command will be displayed on screen:

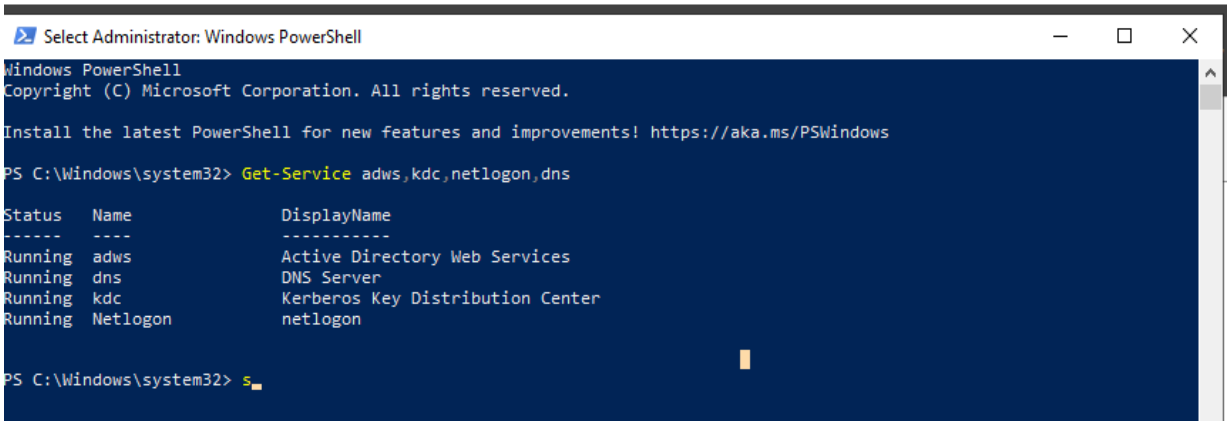

Figure 19: The status, name and display name

Execute the command that is displayed below to access every information of the domain controller's configuration.

The command is: Get-ADDomainController

The output of this command will be displayed on screen:

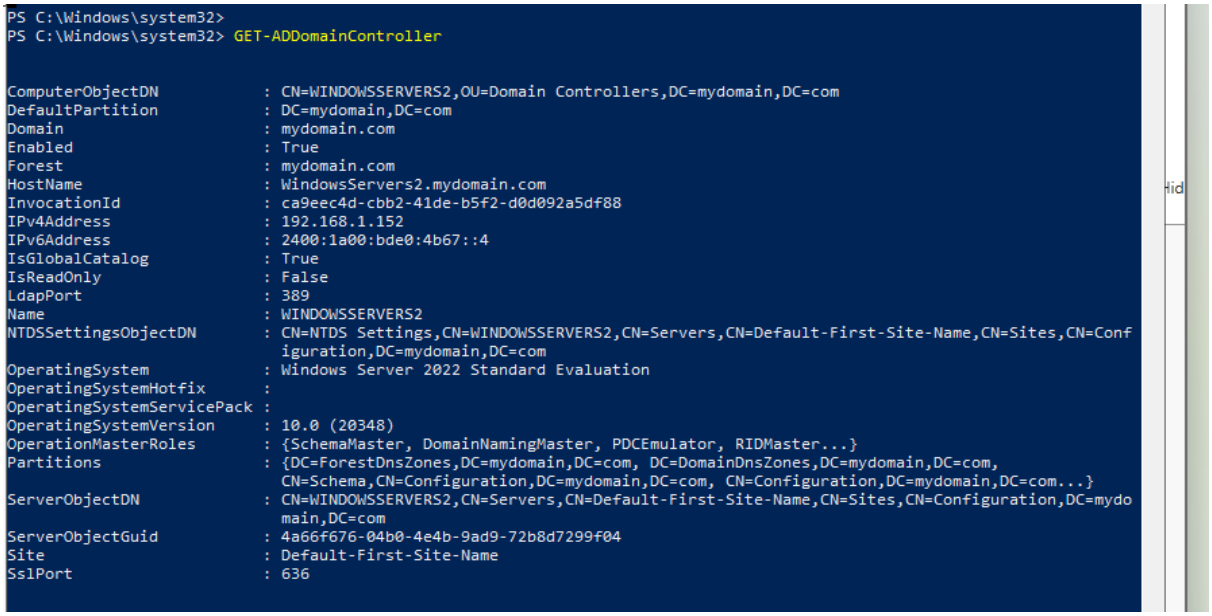

Figure 20: Get-ADDomainController command

Execute the command that is displayed below to get complete domain information:

Get-ADDomain mydomain.com

The output of this command will show up on screen:

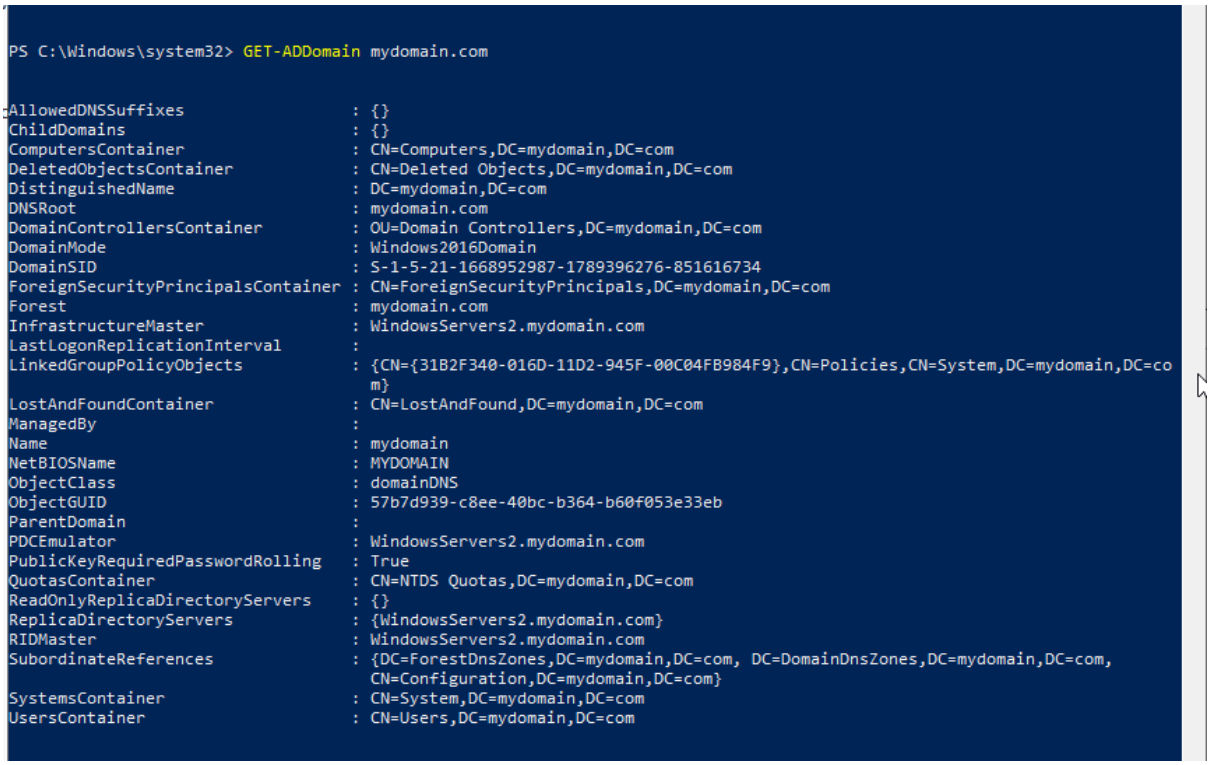

Figure 21: Get -ADDomain mydomain.com command

Execute the command that is described below to access your Active Directory Forest information:

The command is: Get-ADForest mydomain.com

The output of this command will show up on the screen:

Figure 22: Get-ADForest mydoaim.com

3. References

Francis, D. (Nov 30, 2021). *Mastering Active Directory: Design, deploy, and protect Active Directory Domain Services for Windows Server 2022.* UK: Packt Publishing Ltd.

4. Conclusion

Active Directory (AD) is known as an important tool for controlling the network user, device, and permission management. It is safe to access, easy to manage, and good for the business as well. AD does this by gathering authority, which makes things easier to manage resources and the security of them. Any organization that depends on an organized IT environment will find, it must be important.