



islington college
(इरिलहटन कलेज)

Module Code & Module Title
Level 5 – Network Operating Systems

Assessment Type

Logbook 6

Semester

2025 Autumn

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Assignment Due Date: Saturday, November 29, 2025

Assignment Submission Date: Tuesday, December 2, 2025

Submitted To: Nischal Pradhan

Word Count (Where required):1106

I confirm that I understand my coursework needs to be submitted online via MST Classroom under the relevant module page before the deadline 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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Introduction To Active Directory and Domain Controller Setup

1 Introduction

Active Directory (AD) is a Microsoft directory service that runs on windows server. AD acts as a centralized database and it allow set of rules, services designed to manage network resources, including users, computers, printers and other devices. AD provides access control, permissions and resources management across organizations network. In this logbook, we explore the fundamental concepts of Active Directory and walk through the step-by-step process of setting up a Domain Controller on windows Server 2022.

2 Aim

To install and configure an Active Directory Domain Controller on windows Server 2022 and confirm or verify the successful installation.

3 Objectives

- To understand the role and importance of Active Directory in a network environment.
- Install Active Directory Domain Services (AD DS) on windows server 2022.
- Configure the essential settings such as Domain name, NetBIOS and restore and set Passwords.
- Verify the successful installation of Domain Controller installation using windows PowerShell commands.

4 Required Tools & Software

- Windows Server 2022
- Server Manager
- Active Directory Domain Services (AD DS)
- Windows PowerShell

5 Key Concepts

- **Active Directory (AD):** AD service for managing network resources.
- **Domain Controller (DC):** A server that responds to security authentication requests within a domain.
- **Forest:** This is the top-level logical container in Active Directory.
- **NetBIOS Name:** A legacy naming system used for network identification.
- **PowerShell:** Commands used to manage and verify AD Services. (e.g. Get-ADDomain, Get-ADForest).

6 Configuration Steps

6.1 Open windows server manager dashboard.

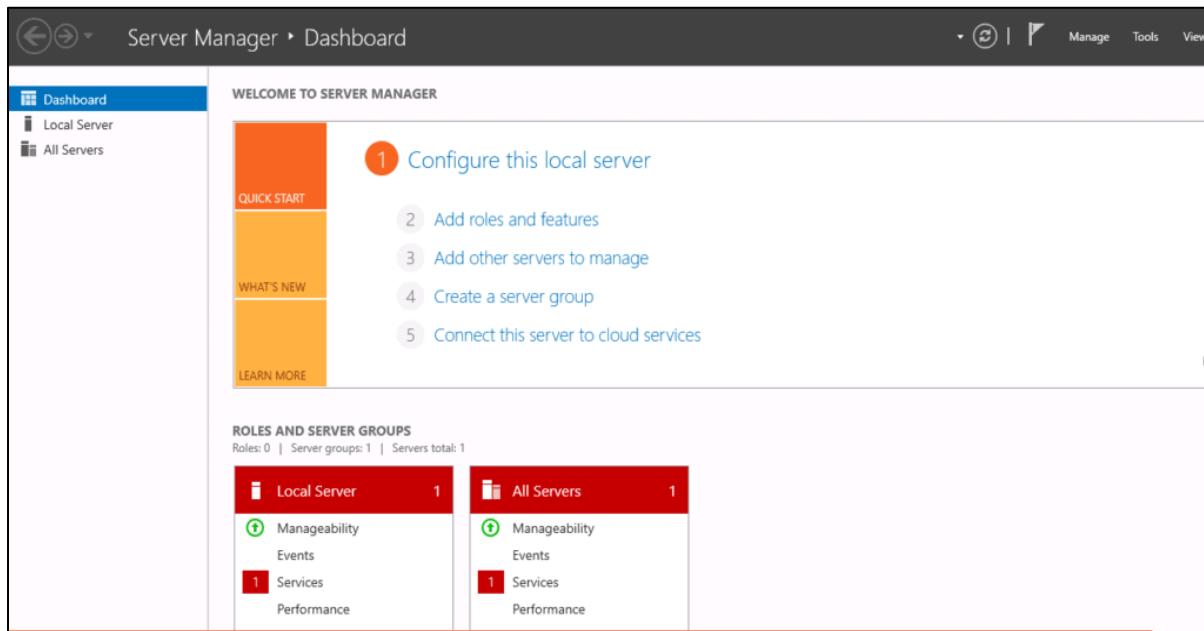


Figure 1 Server Manager Dashboard

6.2 Click on Add Roles and Feature.

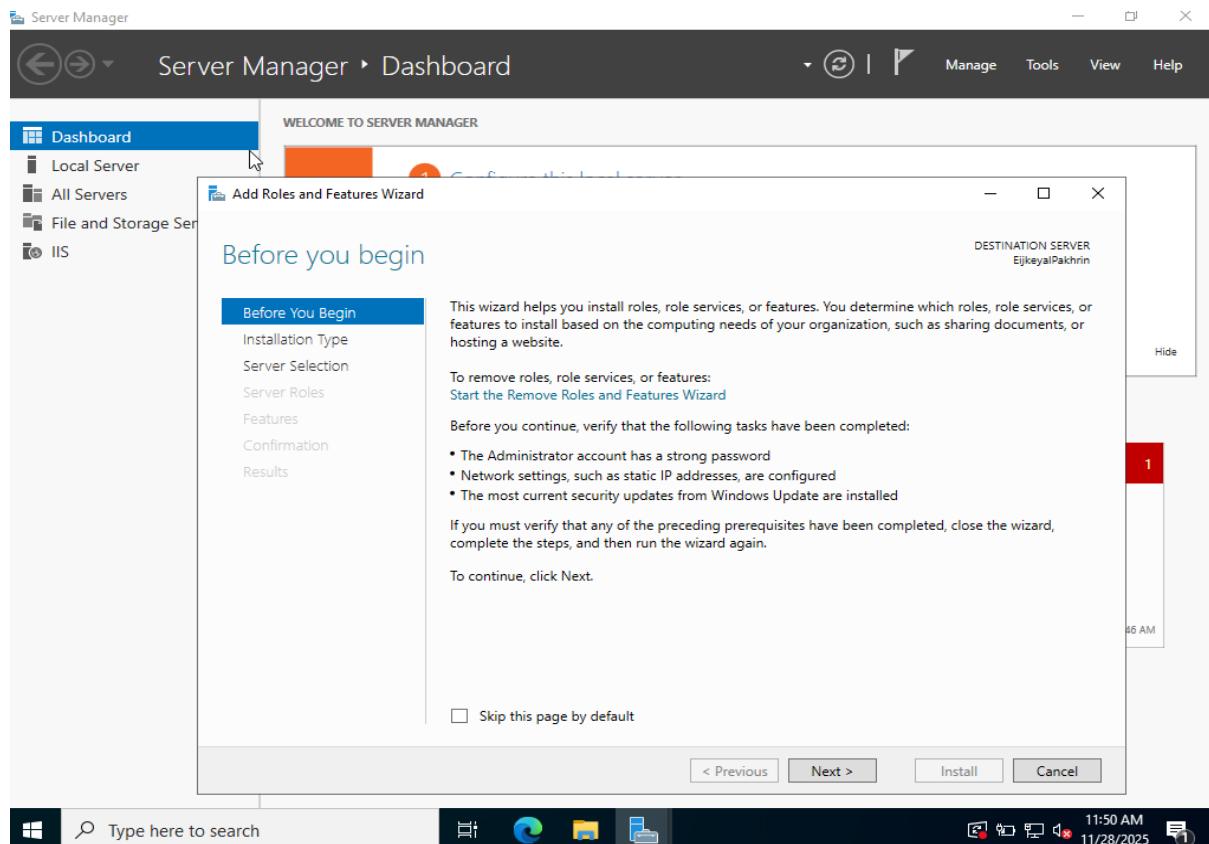


Figure 2 Start the Remove Roles and Features Wizard

6.3 Select on Role-based or feature-based installation.

Click on next.

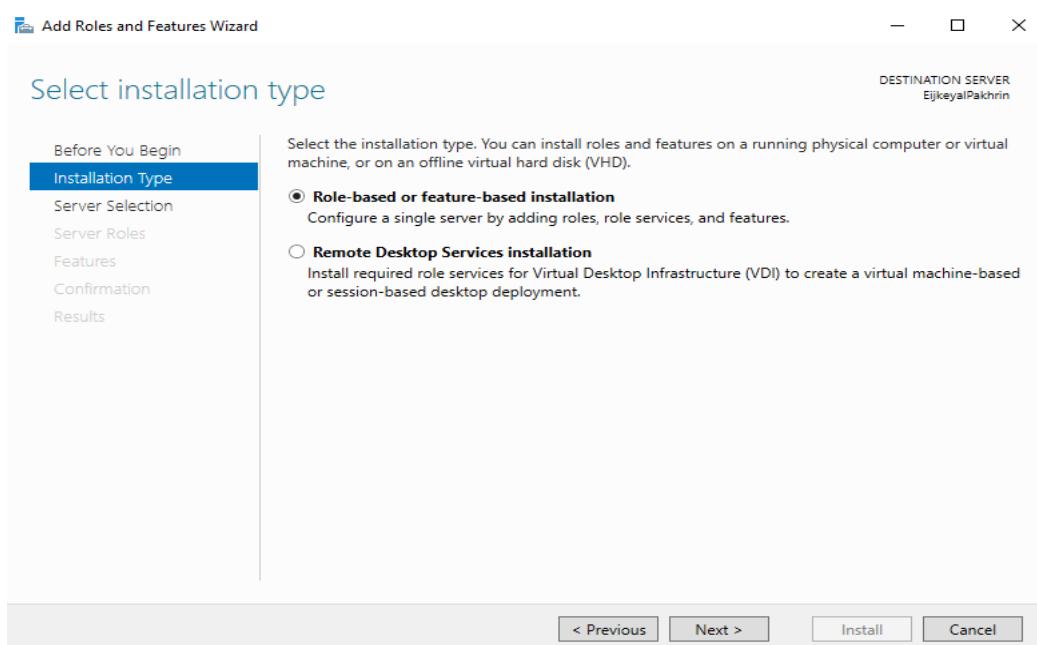


Figure 3 Select Role-based or Feature-based installation

6.4 Select a server from the server pool.

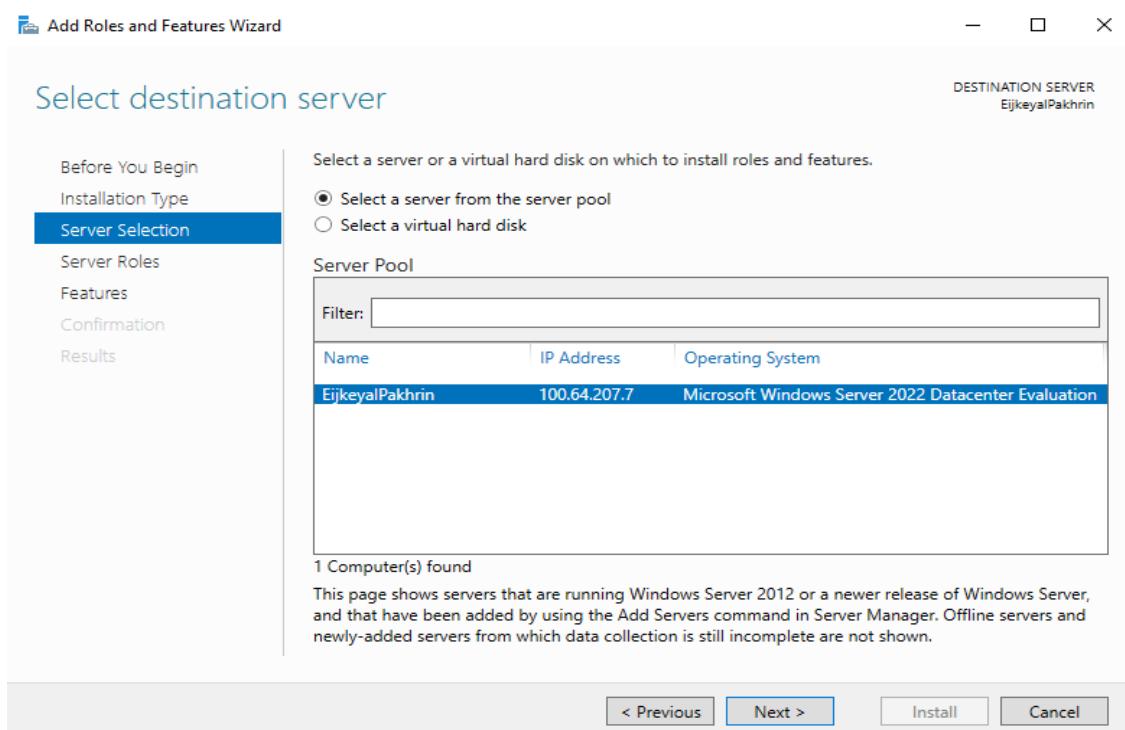


Figure 4 Select a server from the server pool

6.5 Click on Active Directory Domain Services from Server Roles.

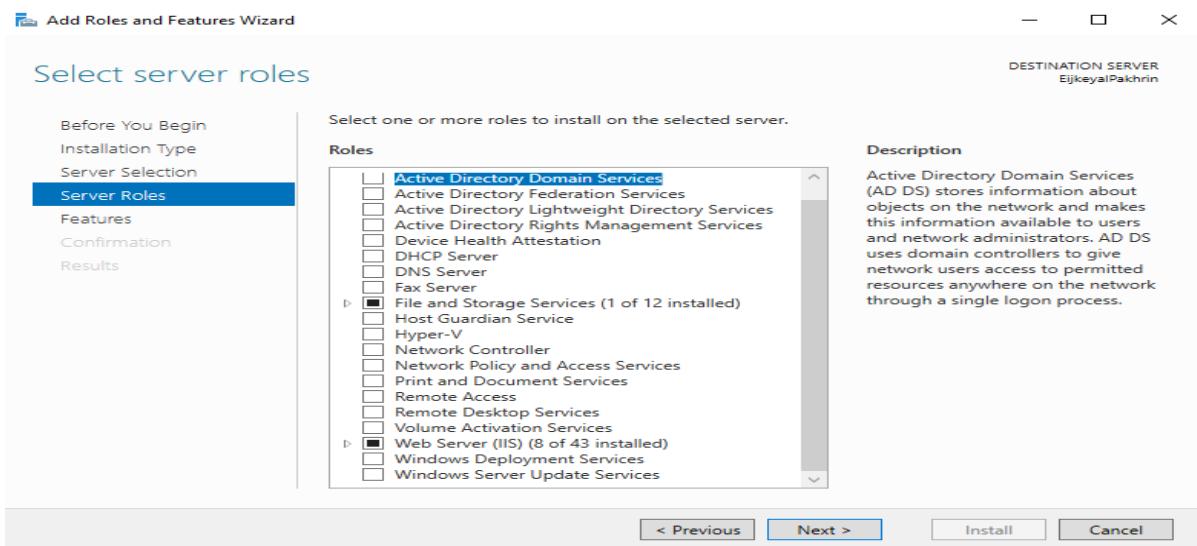


Figure 5 select Active Directory Domain Services

6.6 Click on Add Features from Server Roles.

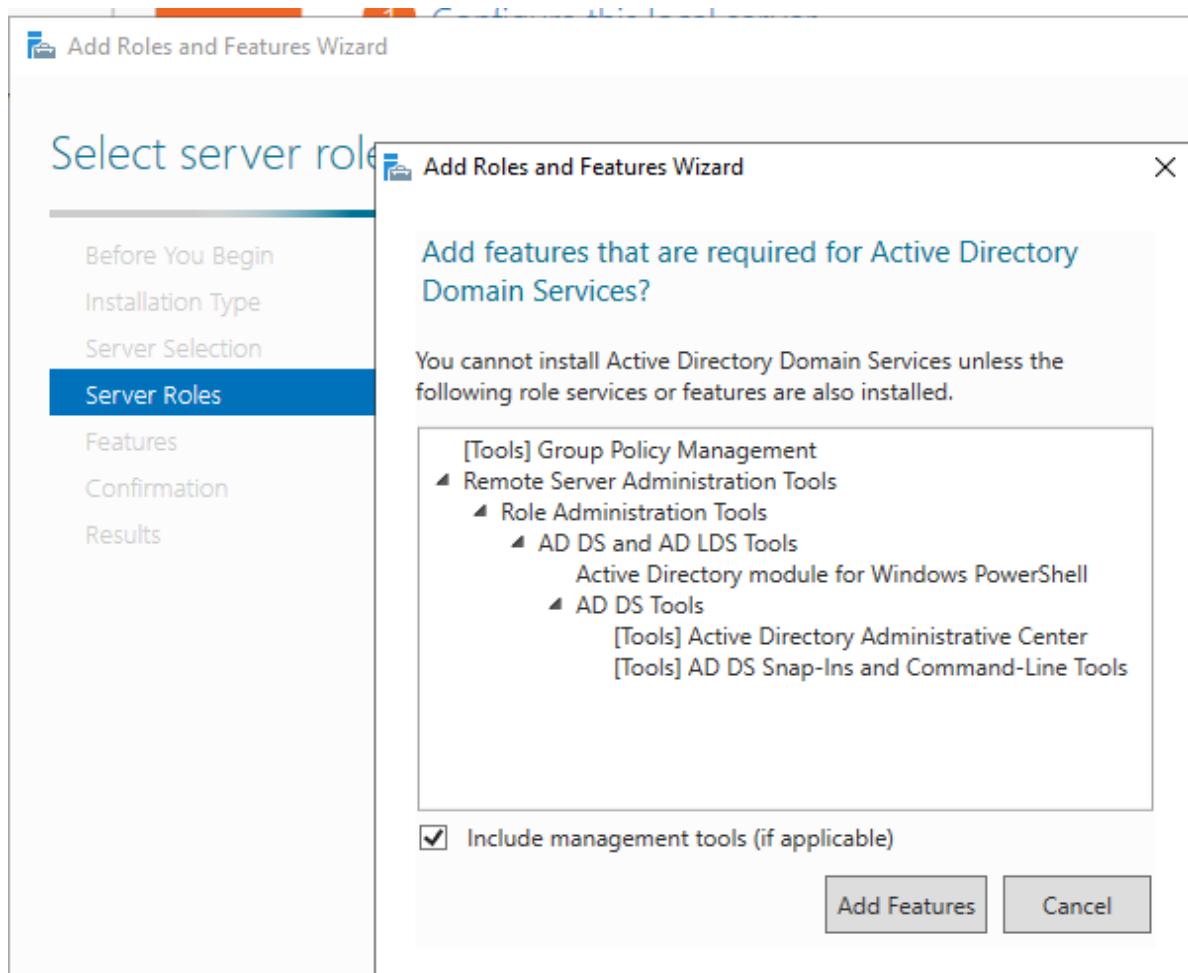


Figure 6 Add Features

6.7 Click on Install Active Directory Domain Services.

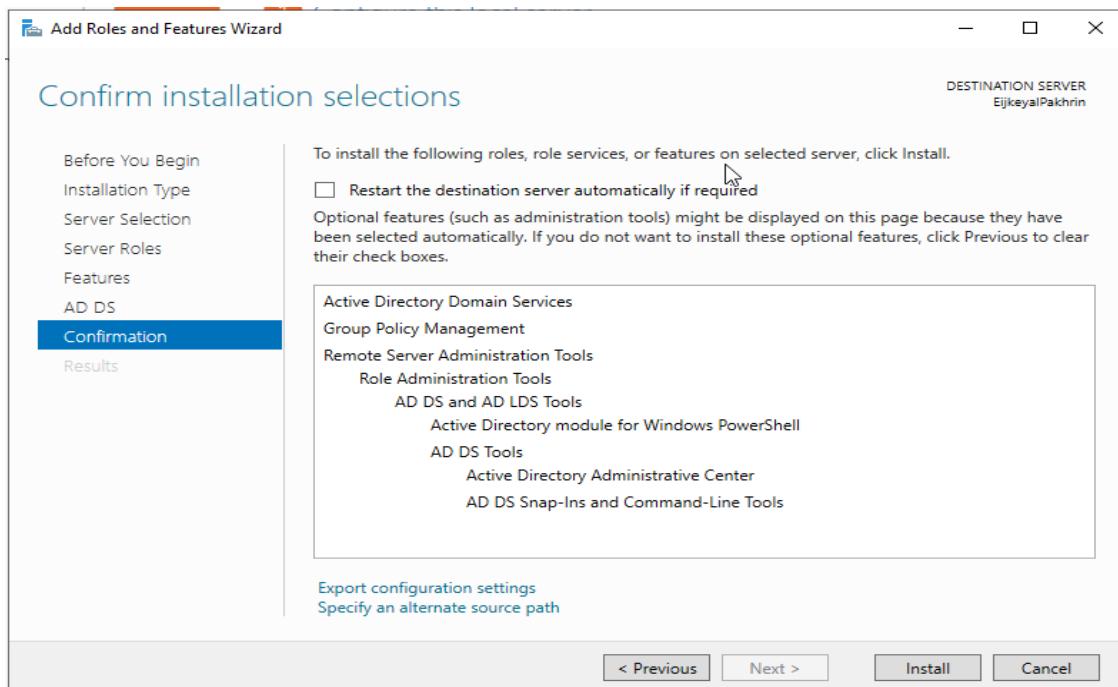


Figure 7 Install the Active Directory Domain Service

6.8 Installation progress is completed.

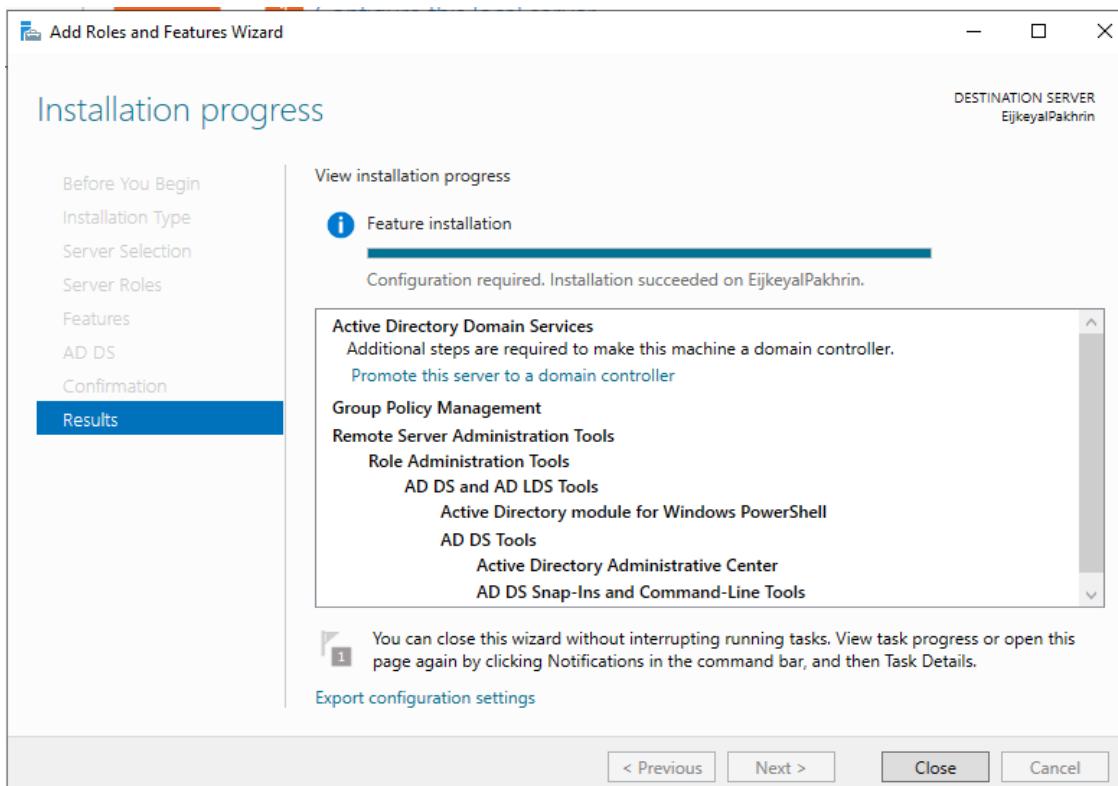


Figure 8 Installing Progress

6.9 Click on the yellow notification icon.

Then open promote this server to a domain controller.

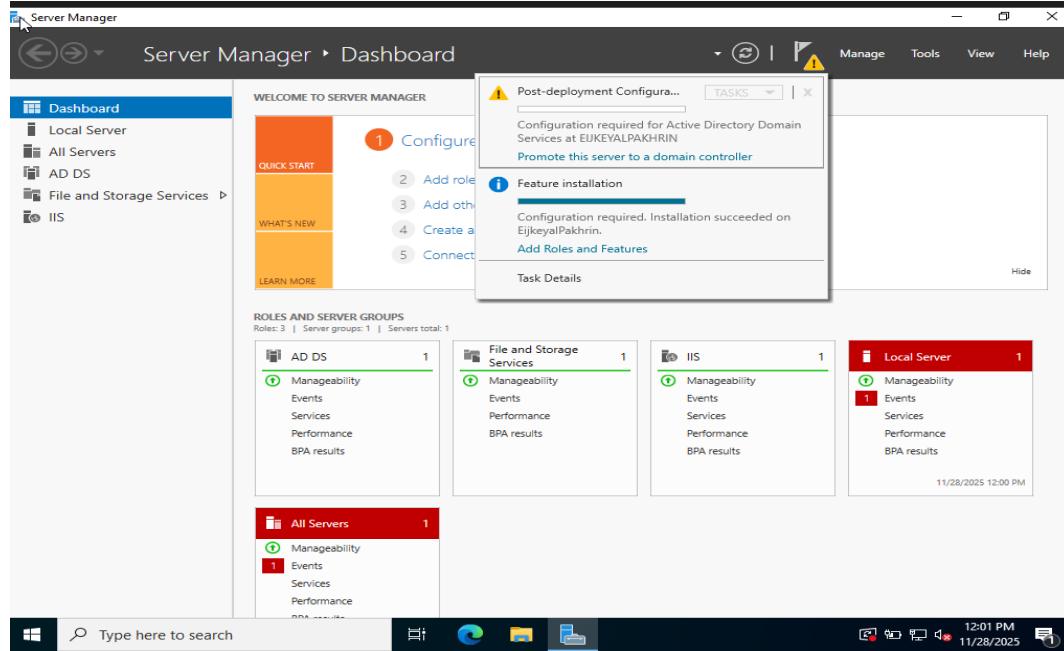


Figure 9 Promote this server to a domain Controller

6.10 Add a new Forest.

Add your root domain name like:" Eijkeyal.com".

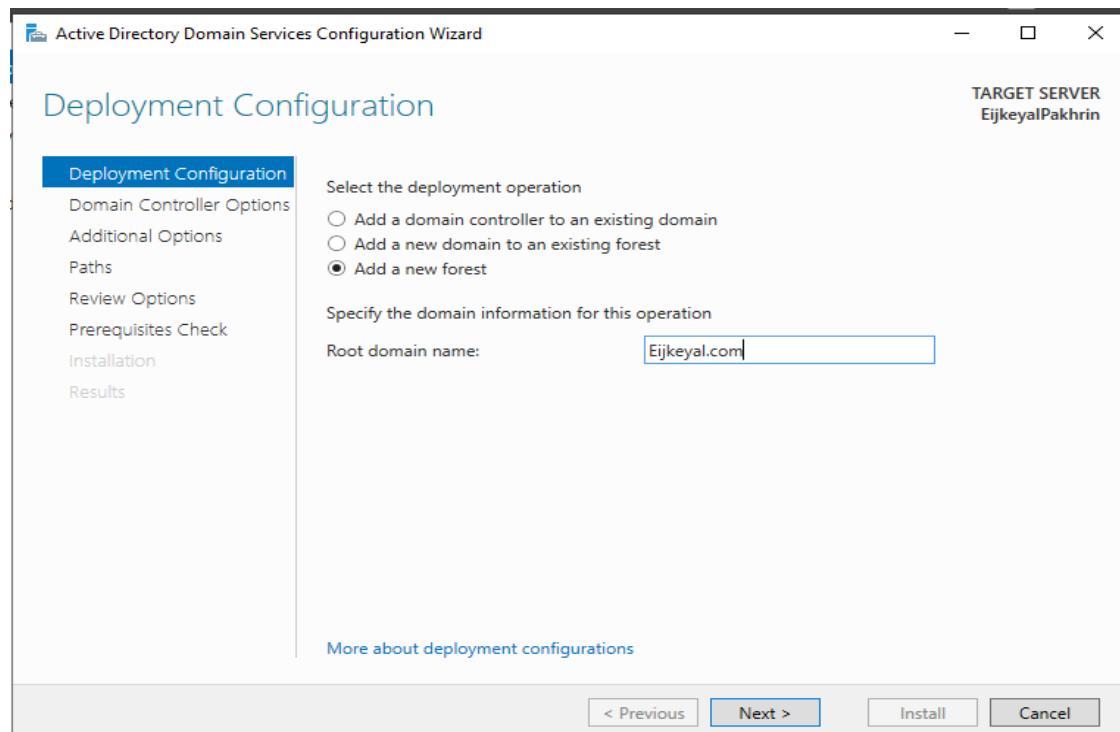


Figure 10 Add a Domain Name

6.11 Set passwords From Domain Controller Options.

Set and confirm passwords in the Directory Restore Mode (DSRM) password.

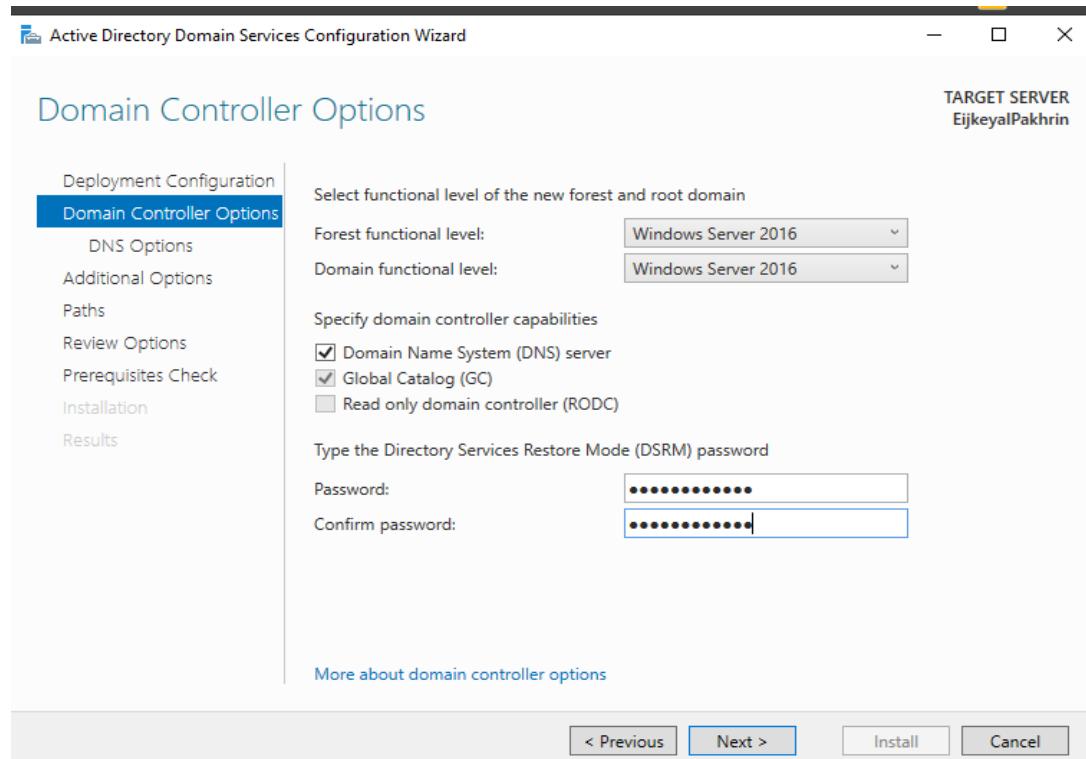


Figure 11 Set passwords to the Domain Controller

6.12 Open DNS options and click on next.

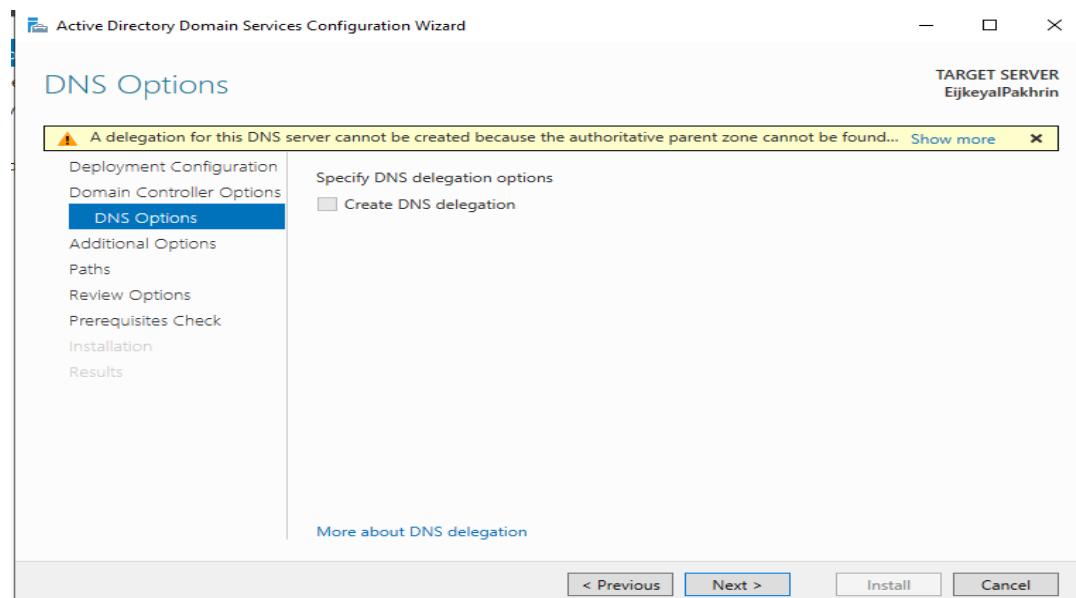


Figure 12 Click on DNS options

6.13 Add Domain Name in NetBIOS domain.

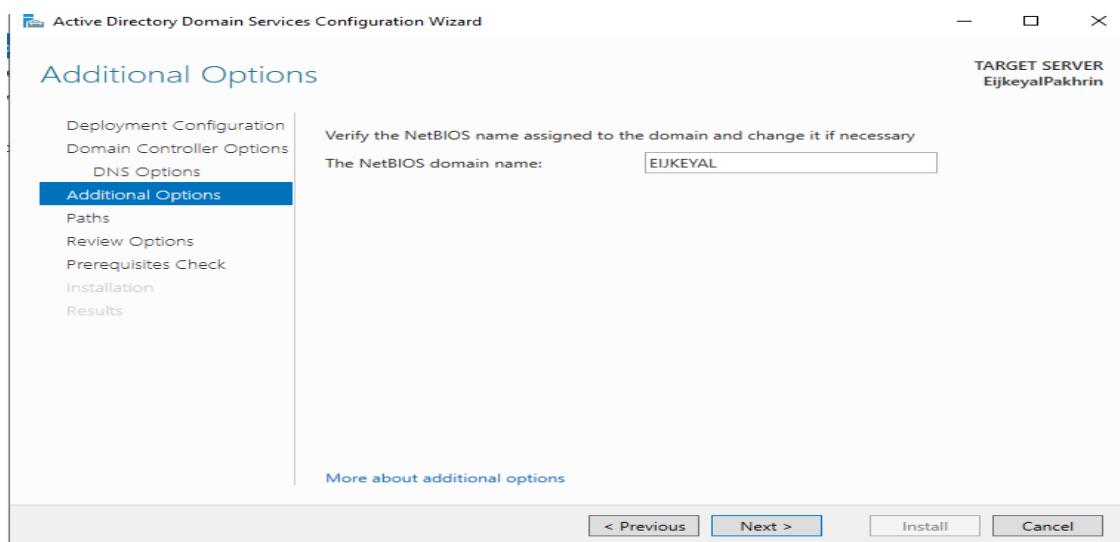


Figure 13 Add Domain Name NetBIOS

6.14 Make default changes in Paths.

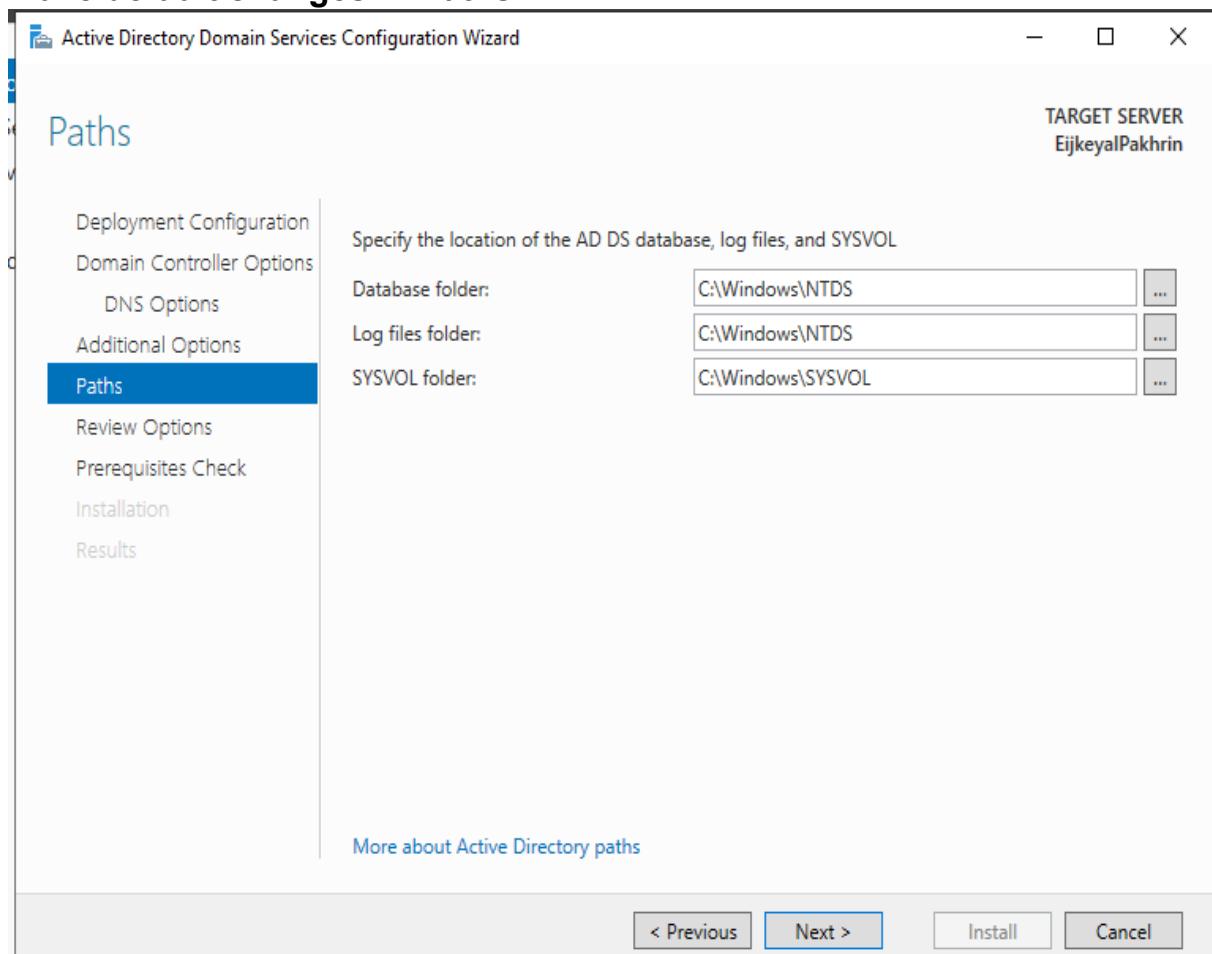


Figure 14 Set Paths

6.15 Click on next from Review Options.

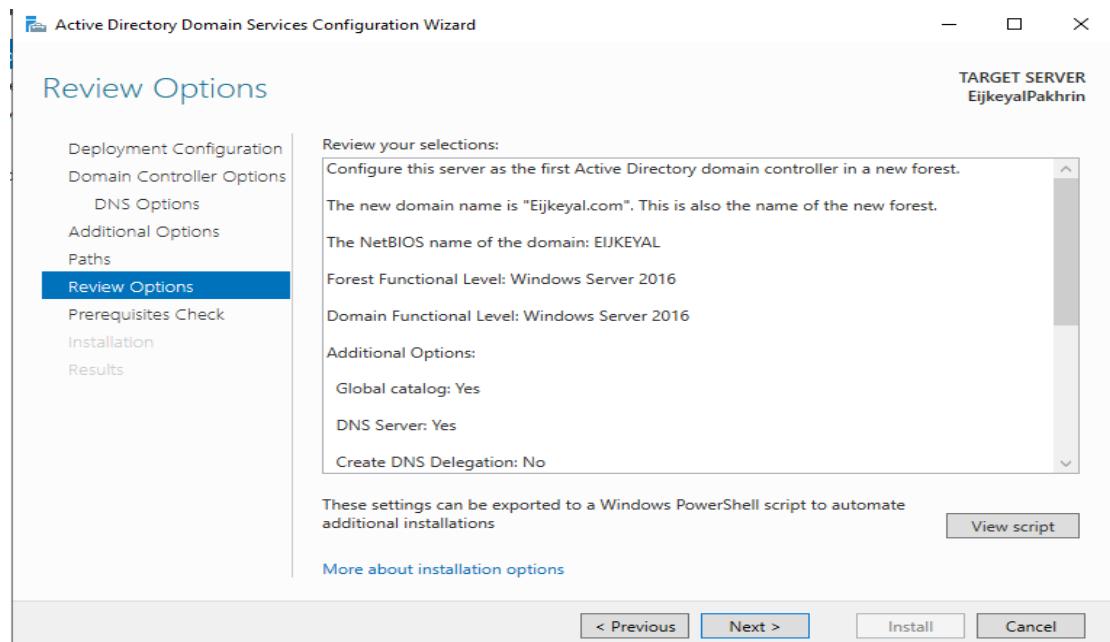


Figure 15 Review Options

6.16 Check all Prerequisites checks passed successfully.

Then, click “install” to begin installation.

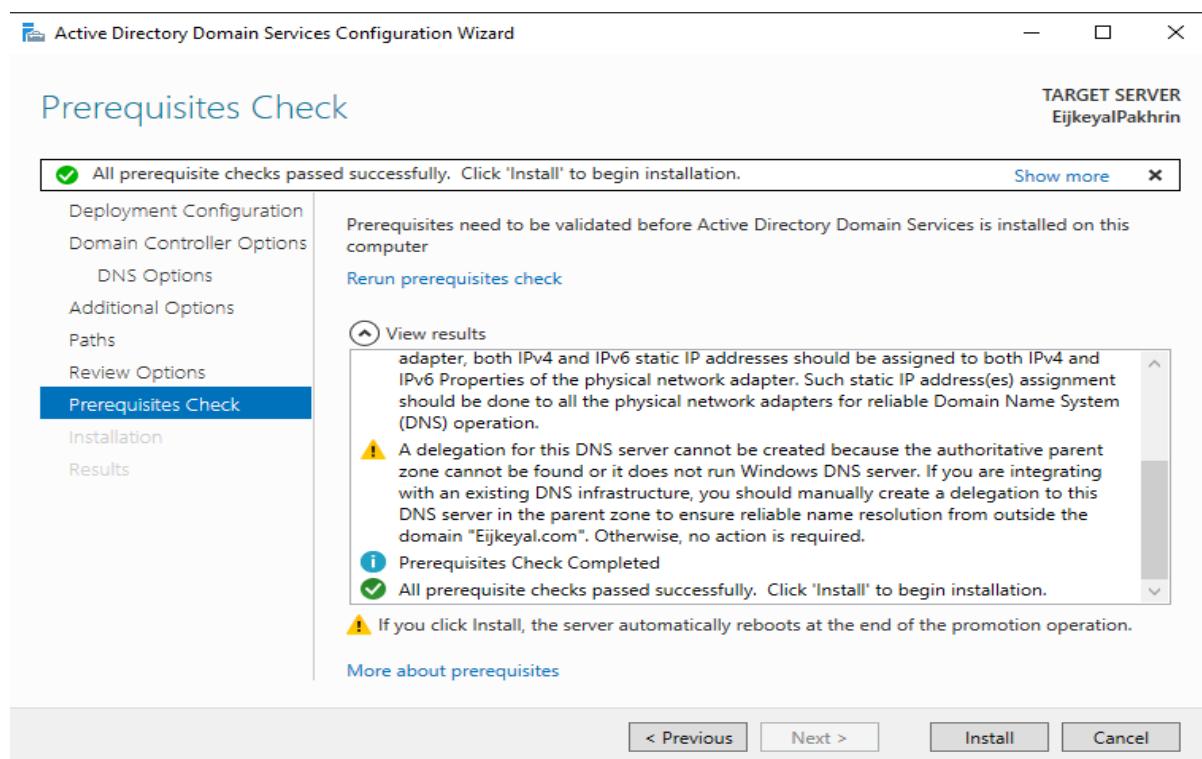


Figure 16 Prerequisites Check

6.17 Verify Domain Controller.

After Successfully installing or Configurations of Active Directory you can verify whether the Domain controller is setup or not. You can cross check from PowerShell.

You can confirm the successful installation of the services, go to the windows PowerShell.

Type this command” Get-Service adws,kdc,netlogon,dns”.

```

Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Administrator> Get-Service adws,kdc,netlogon,dns
Status   Name             DisplayName
-----  --              --
Running  adws            Active Directory Web Services
Running  dns             DNS Server
Running  kdc             Kerberos Key Distribution Center
Running  Netlogon        netlogon

```

Figure 17 Verify Domain Controller

6.18 To check all the configuration details of the domain controller.

run the following command.

“Get-ADDomainController” like the given screen.

```

Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Administrator> Get-ADDomainController
computerObjectDN      : CN=EIJKKEYALPAKHRIN,OU=Domain Controllers,DC=Eljkeyal,DC=com
defaultPartition       : DC=Eljkeyal,DC=com
domain                : Eljkeyal.com
enabled               : True
forest                : Eljkeyal.com
hostName              : EljkeyalPakhrin.Eljkeyal.com
invocationId          : 2001:df4:2b40:ba6d:19bb:c313:35d5:5c15
IPv4Address           : 100.64.207.7
IPv6Address           : 2001:df4:2b40:ba6d:19bb:c313:35d5:5c15
isGlobalCatalog       : True
isReadOnly             : False
ldapPort              :
name                  : EIJKKEYALPAKHRIN
NTDSSettingsObjectDN : CN=NTDS Settings,CN=EIJKKEYALPAKHRIN,CN=Servers,CN=Default-First-Site-Name,CN=Sites,CN=Configuration,DC=Eljkeyal,DC=com
OperatingSystem        : Windows Server 2022 Datacenter Evaluation
operatingSystemHotfix :
operatingSystemServicePack :
operatingSystemVersion : 10.0 (20348)
operationMasterRoles  : {SchemaMaster, DomainNamingMaster, PDCEmulator, RIDMaster...}
partitions             : {CN=ForestDnsZones,DC=Eljkeyal,DC=com, DC=DomainDnsZones,DC=Eljkeyal,DC=com, CN=Configuration,DC=Eljkeyal,DC=com...}
serverObjectDN         : CN=EIJKKEYALPAKHRIN,CN=Servers,CN=Default-First-Site-Name,CN=Sites,CN=Configuration,DC=Eljkeyal,DC=com
serverObjectGuid       : 51cbede7-5f4f-41f0-955d-5b06b4c9b981
site                 : Default-First-Site-Name
sslPort               : 636

```

Figure 18 Check Domain Controller

6.19 Get Detailed information about your domain.

Run this command “Get-ADDomain Eijkeyal.com”.

```
PS C:\Users\Administrator> Get-ADDomain Eijkeyal.com

AllowedDNSSuffixes          : {}
ChildDomains                 : {}
ComputersContainer           : CN=Computers,DC=Eijkeyal,DC=com
DeletedObjectsContainer      : CN=Deleted Objects,DC=Eijkeyal,DC=com
DistinguishedName           : DC=Eijkeyal,DC=com
DNSRoot                      : Eijkeyal.com
DomainControllersContainer   : OU=Domain Controllers,DC=Eijkeyal,DC=com
DomainMode                   : Windows2016Domain
DomainSID                    : S-1-5-21-246777673-3193263218-3801361222
ForeignSecurityPrincipalsContainer : CN=ForeignSecurityPrincipals,DC=Eijkeyal,DC=com
Forest                       : Eijkeyal.com
InfrastructureMaster          : EijkeyalPakhrin.Eijkeyal.com
LastLogonReplicationInterval : 
LinkedGroupPolicyObjects     : {CN={31B2F340-016D-11D2-945F-00C04FB984F9},CN=Policies,CN=System,DC=Eijkeyal,DC=com}
LostAndFoundContainer        : CN=LostAndFound,DC=Eijkeyal,DC=com
ManagedBy                    : 
Name                          : Eijkeyal
NetBIOSName                  : EIJKEYAL
ObjectClass                  : domainDNS
ObjectGUID                   : 7e1d64ba-2e37-4253-b063-bb8cab2853d4
ParentDomain                 : 
PDCEmulator                  : EijkeyalPakhrin.Eijkeyal.com
PublicKeyRequiredPasswordRolling : True
QuotasContainer               : CN=NTDS Quotas,DC=Eijkeyal,DC=com
ReadOnlyReplicaDirectoryServers : {} {EijkeyalPakhrin.Eijkeyal.com}
ReplicaDirectoryServers       : {EijkeyalPakhrin.Eijkeyal.com}
RIDMaster                     : 
SubordinateReferences         : {DC=ForestDnsZones,DC=Eijkeyal,DC=com, DC=DomainDnsZones,DC=Eijkeyal,DC=com, CN=Configuration,DC=Eijkeyal,DC=com}
SystemsContainer               : CN=System,DC=Eijkeyal,DC=com
UsersContainer                : CN=Users,DC=Eijkeyal,DC=com

PS C:\Users\Administrator>
```

Figure 19 Check Your Domain Name

6.20 To see your Active Directory Forest Details.

Run this command “Get-ADForest Eijkeyal.com”.

```
PS C:\Users\Administrator> Get-ADForest Eijkeyal.com

ApplicationPartitions : {DC=ForestDnsZones,DC=Eijkeyal,DC=com, DC=DomainDnsZones,DC=Eijkeyal,DC=com}
CrossForestReferences : {}
DomainNamingMaster    : EijkeyalPakhrin.Eijkeyal.com
Domains              : {Eijkeyal.com}
ForestMode            : Windows2016Forest
GlobalCatalogs        : {EijkeyalPakhrin.Eijkeyal.com}
Name                  : Eijkeyal.com
PartitionsContainer  : CN=Partitions,CN=Configuration,DC=Eijkeyal,DC=com
RootDomain            : Eijkeyal.com
SchemaMaster          : EijkeyalPakhrin.Eijkeyal.com
Sites                : {Default-First-Site-Name}
SPNSuffixes          : {}
UPNSuffixes          : {}
```

Figure 20 Check Your Forest Details

7 Conclusion

This logbook Successfully implements the configuration and implementation of the Active Directory Domain Controller Domain on Windows Server 2022. This Logbook contains the AD DS role, promoting the server, defining a new forest and domain. This setup was verified by using PowerShell commands, confirming the essentials services were running correctly.