

Informatika, 2. maila

# **Active Directory (AD) Instalazioa**

1

## **Beharrezko baldintzak**

# Beharrezko baldintzak

1. Zerbitzariari IP helbide estatiko bat esleituta edukitzea.
2. Zerbitzariari izen bat esleitzea.
3. AD-arekin batera, DNS zerbitzaria instalatzea.  
\*AD-aren instalazioarekin batera egiten da.
  - Baldin eta domeinuaren lehen AD-a bada.
  - AD batek beti izan behar du DNS zerbitzari bat.

# Zergatik behar da DNS zerbitzaria instalatzea?

AD-k beharrezkoa du DNS-a hainbat funtzio kritikoetarako:

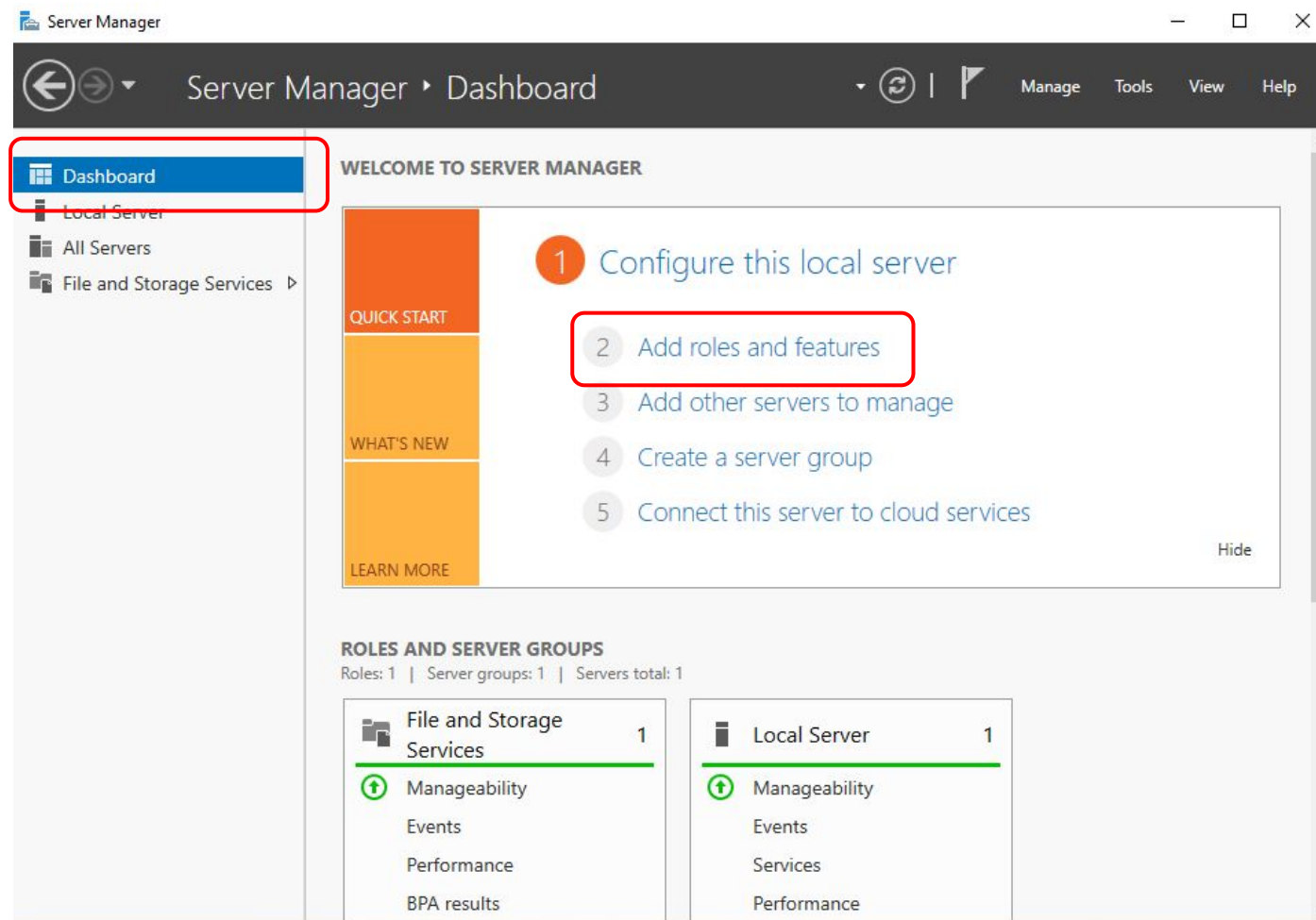
1. **Domeinu Kontrolatzailea aurkitzea:** AD bezeroak eta beste domeinu kontrolatzaileek DNS erabiltzen dute domeinu kontrolatzaileak aurkitzeko AD ingurunean. SRV erregistroak DNS-en funtsezkoak dira prozesu honetarako.
2. **Zerbitzua aurkitzea:** AD zerbitzu desberdinek, hala nola Kerberos, LDAP eta Global Catalog, DNS zerbitzuaren (SRV) erregistroak erabiltzen dituzte bezeroek eta beste domeinu kontrolatzaileek aurkitzeko.
3. **Izenen ebazpena:** AD DNS-rekin guztiz integratzen da domeinuaren barruan izenen ebazpenerako. DNS gabe, AD objektuak (hala nola ordenagailuak eta erabiltzaileak) ezin dira izenez aurkitu, eta horrek AD ingurunea funtzionamendu gabe utziko luke.

2

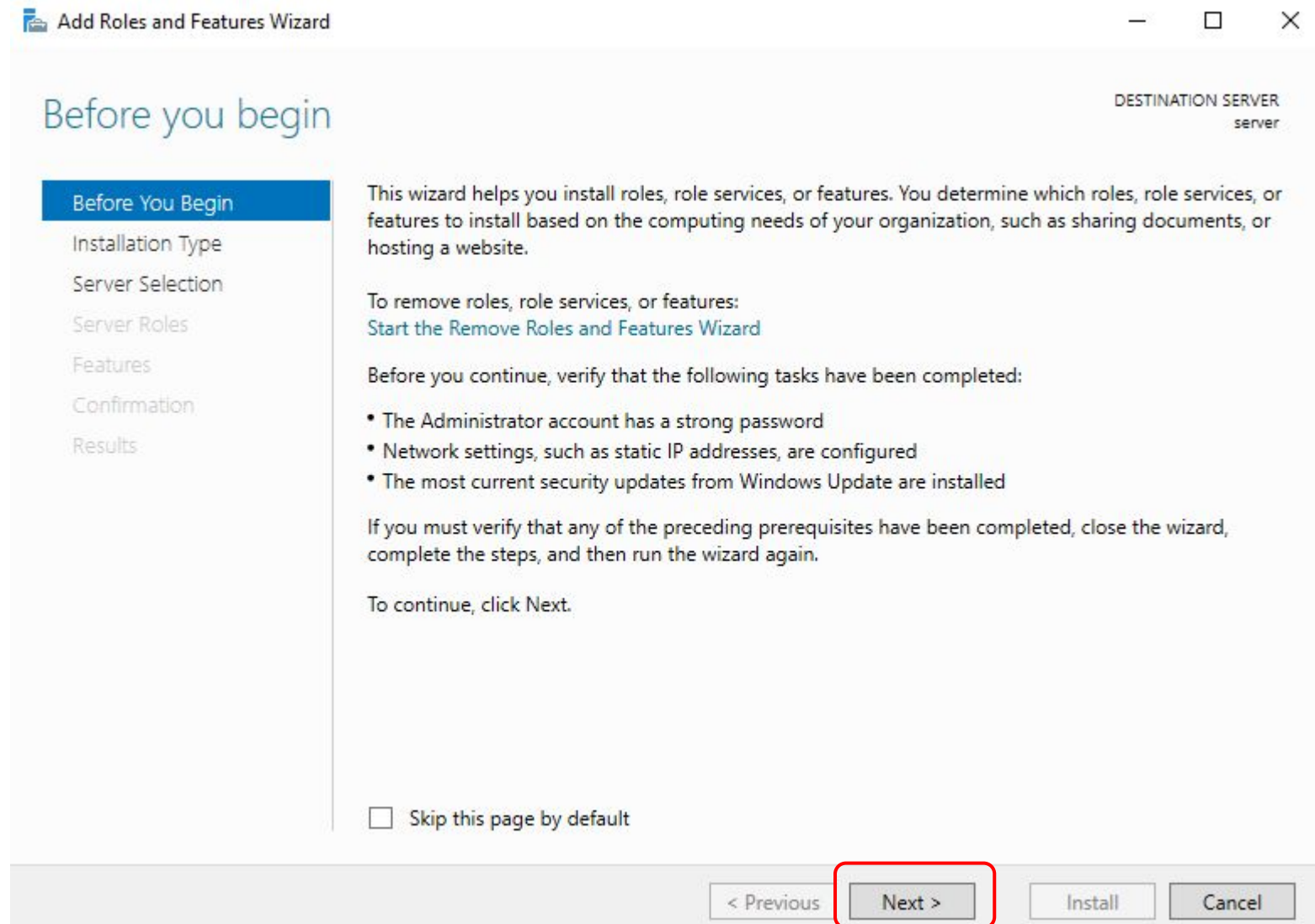
## **AD - GUI bidezko instalazioa**

# AD - GUI Instalazioa

- Server Manager → Dashboard → Add roles and features



# AD - GUI Instalazioa



DESTINATION SERVER  
server

## Before you begin

**Before You Begin**

- Installation Type
- Server Selection
- Server Roles
- Features
- Confirmation
- Results

This wizard helps you install roles, role services, or features. You determine which roles, role services, or features to install based on the computing needs of your organization, such as sharing documents, or hosting a website.

To remove roles, role services, or features:  
[Start the Remove Roles and Features Wizard](#)

Before you continue, verify that the following tasks have been completed:

- The Administrator account has a strong password
- Network settings, such as static IP addresses, are configured
- The most current security updates from Windows Update are installed

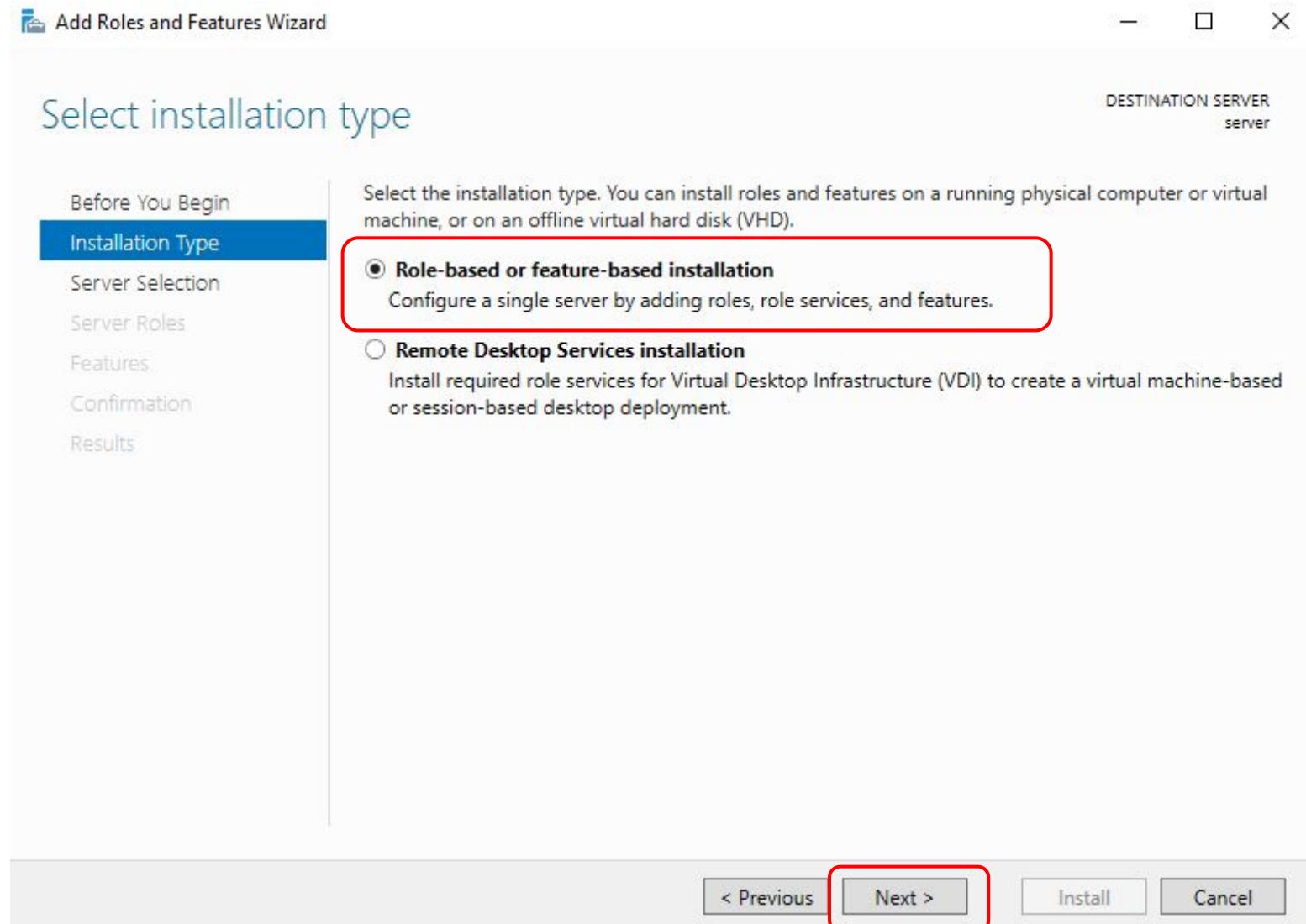
If you must verify that any of the preceding prerequisites have been completed, close the wizard, complete the steps, and then run the wizard again.

To continue, click Next.

☐ Skip this page by default

< Previous **Next >** Install Cancel

# AD - GUI Instalazioa





# AD - GUI Instalazioa

Add Roles and Features Wizard

Select destination server

DESTINATION SERVER  
server

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
server	192.168.1.100	Microsoft Windows Server 2025 Standard Evaluation

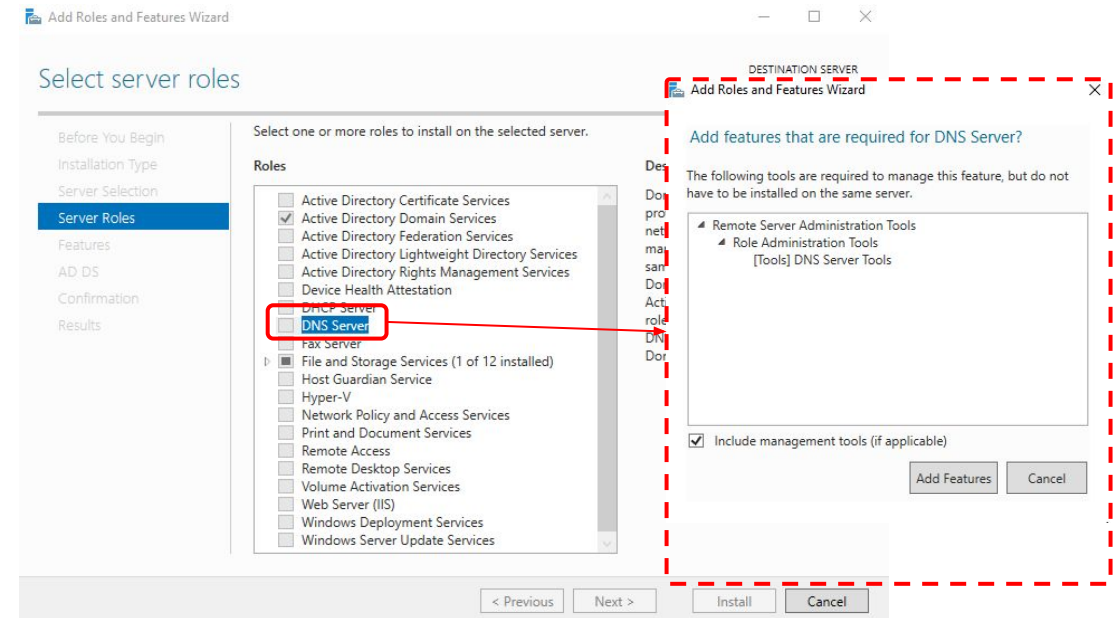
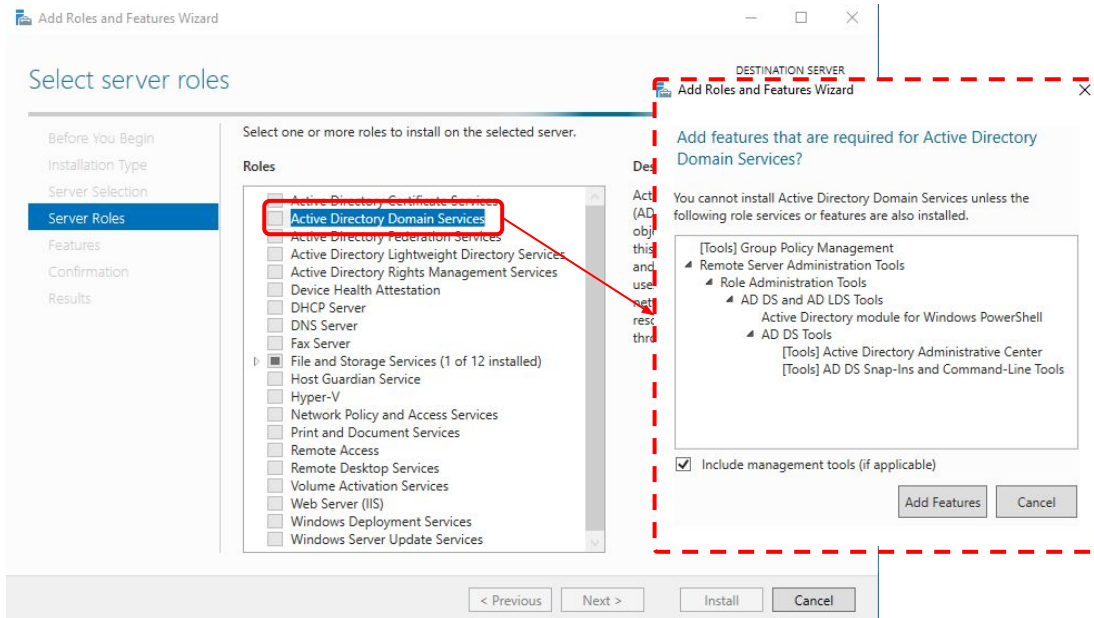
1 Computer(s) found

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.

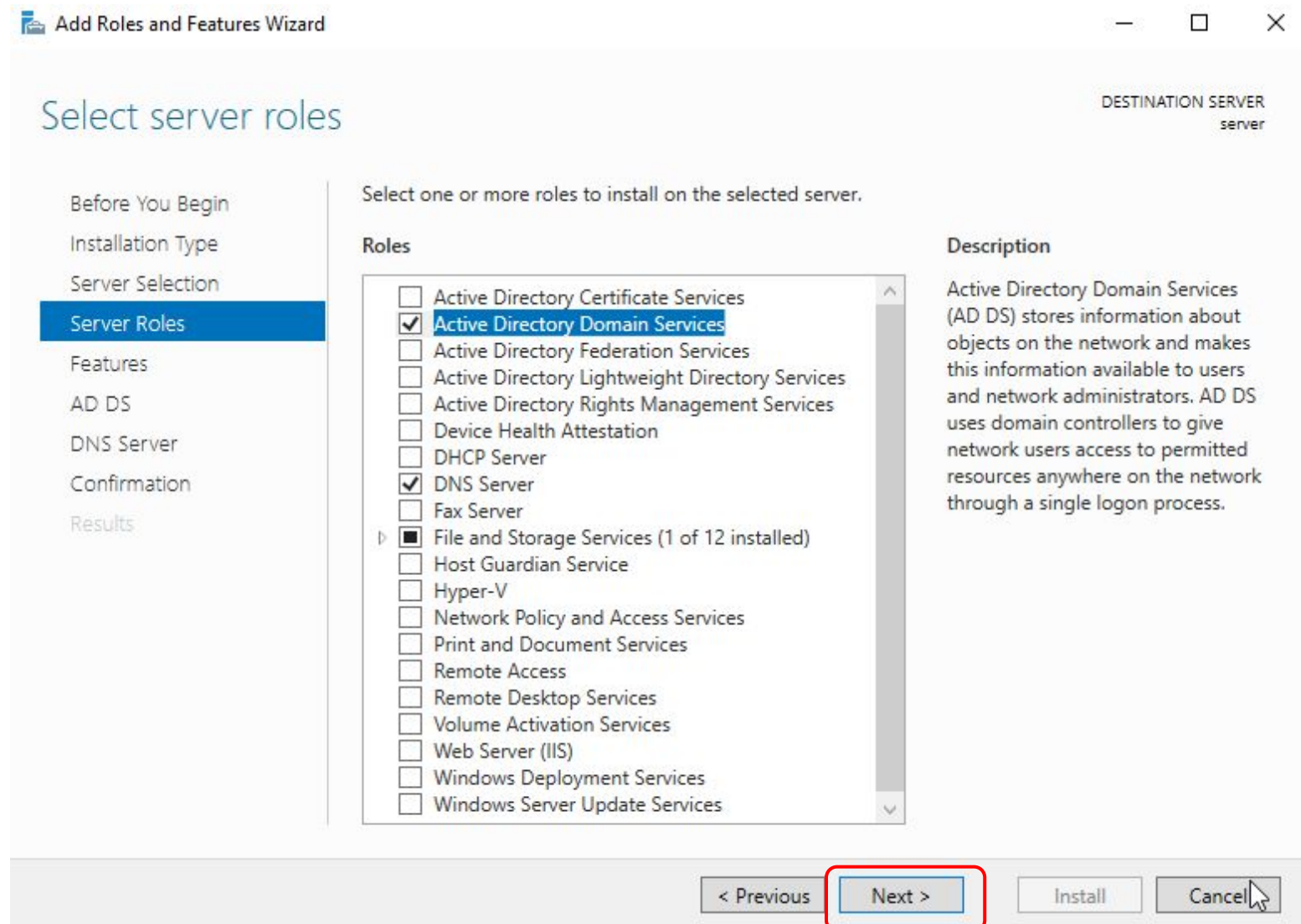
< Previous **Next >** Install Cancel

# AD - GUI Instalazioa

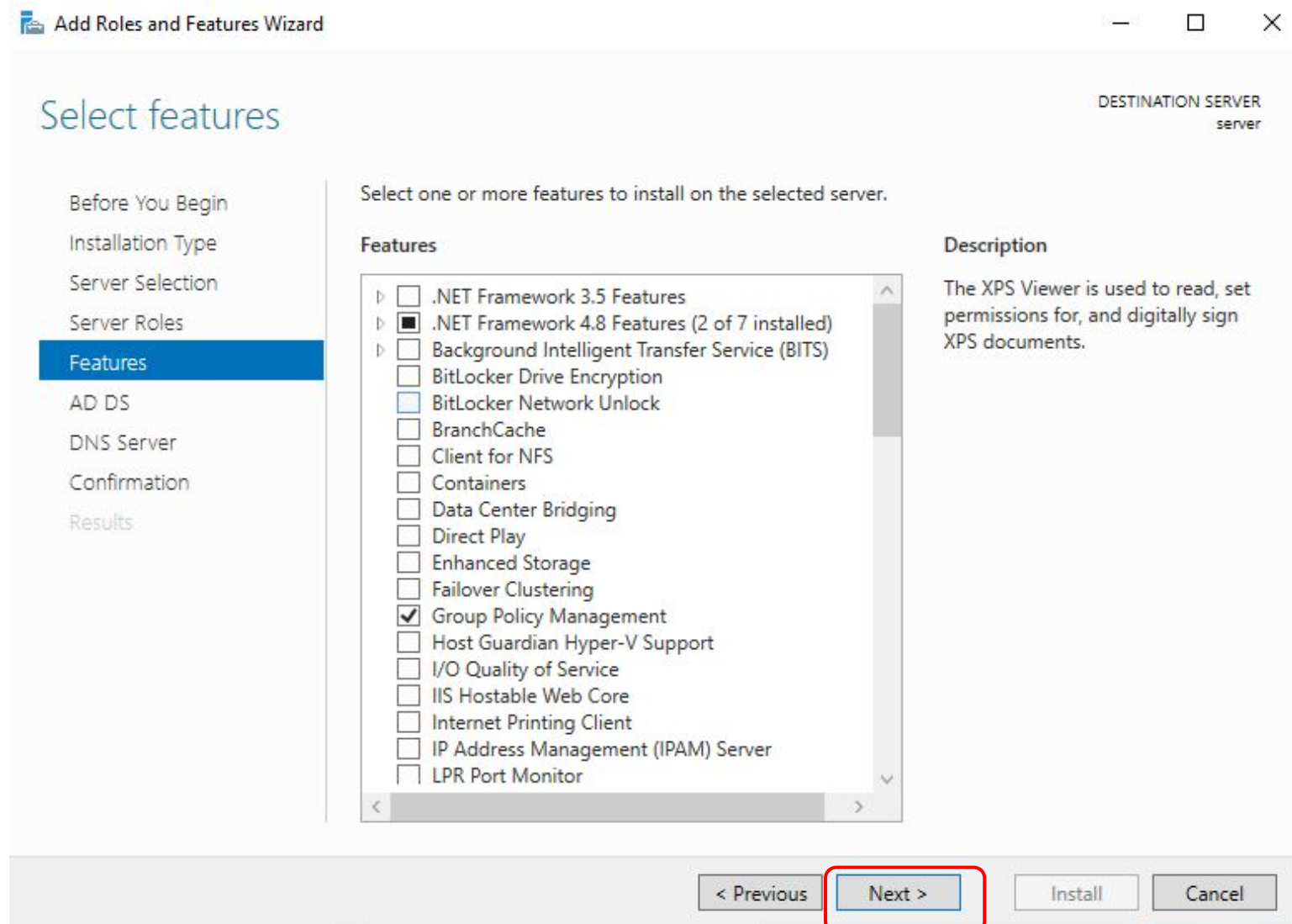
- “Server Roles”-en, **Active Directory Domain Services** eta **DNS Server** rolak aukeratu behar dira.
  - Horietako bakoitza aukeratzean leiho bat irekiko da, rolarekin batera instalatuko diren ezaugarriak erakutsiz.
  - Leiho honetan **Add Features** sakatu.



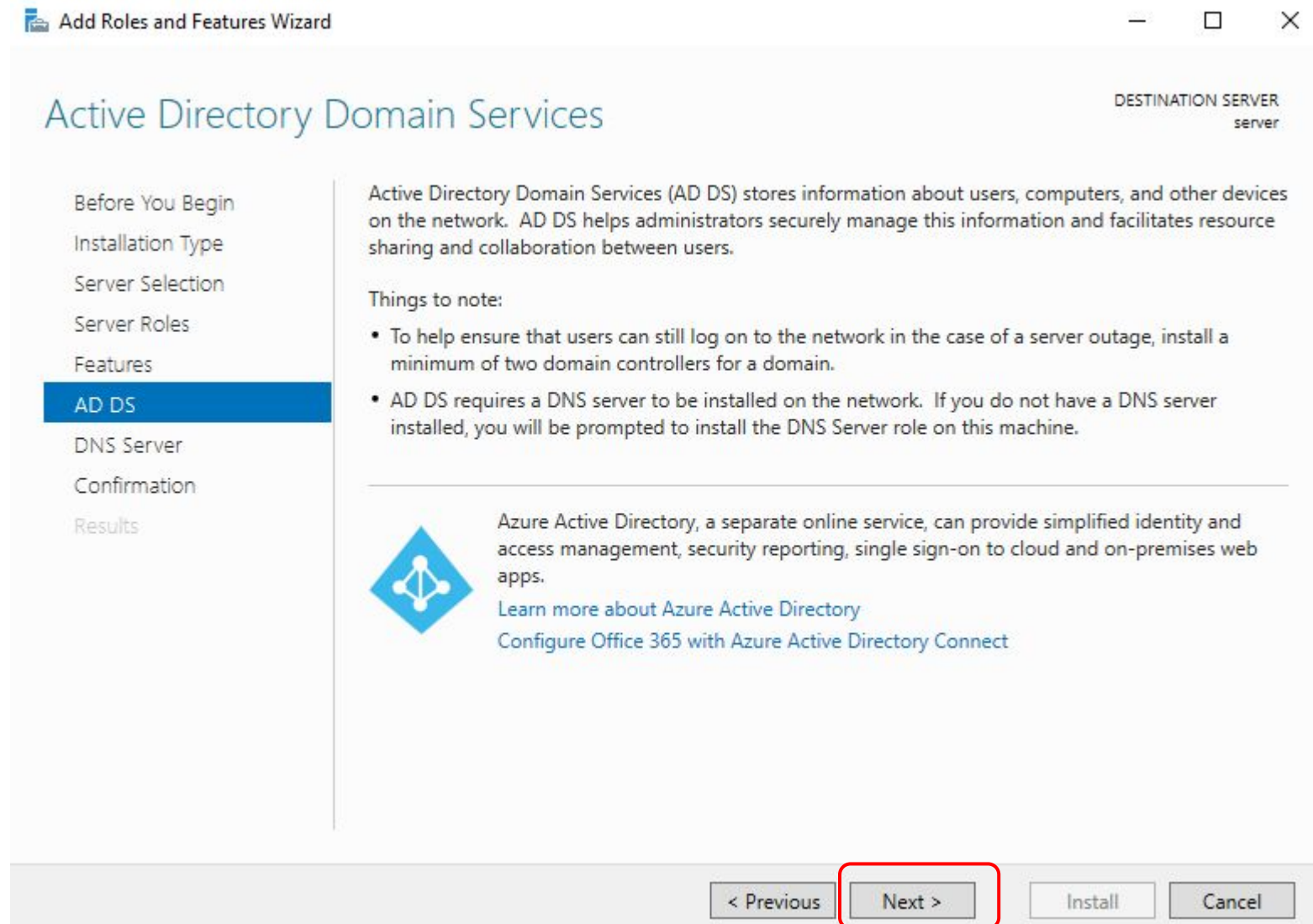
# AD - GUI Instalazioa



# AD - GUI Instalazioa

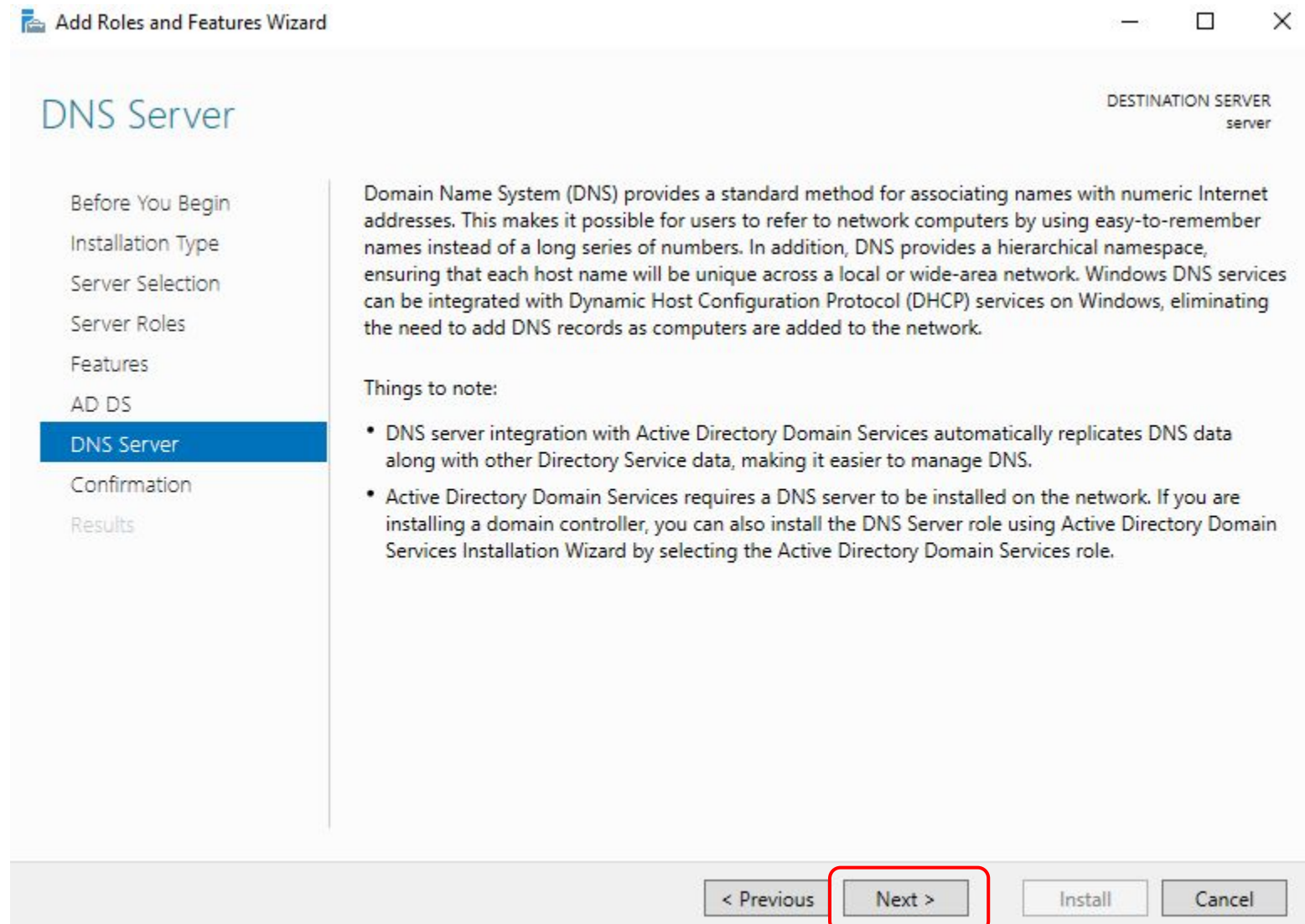


# AD - GUI Instalazioa

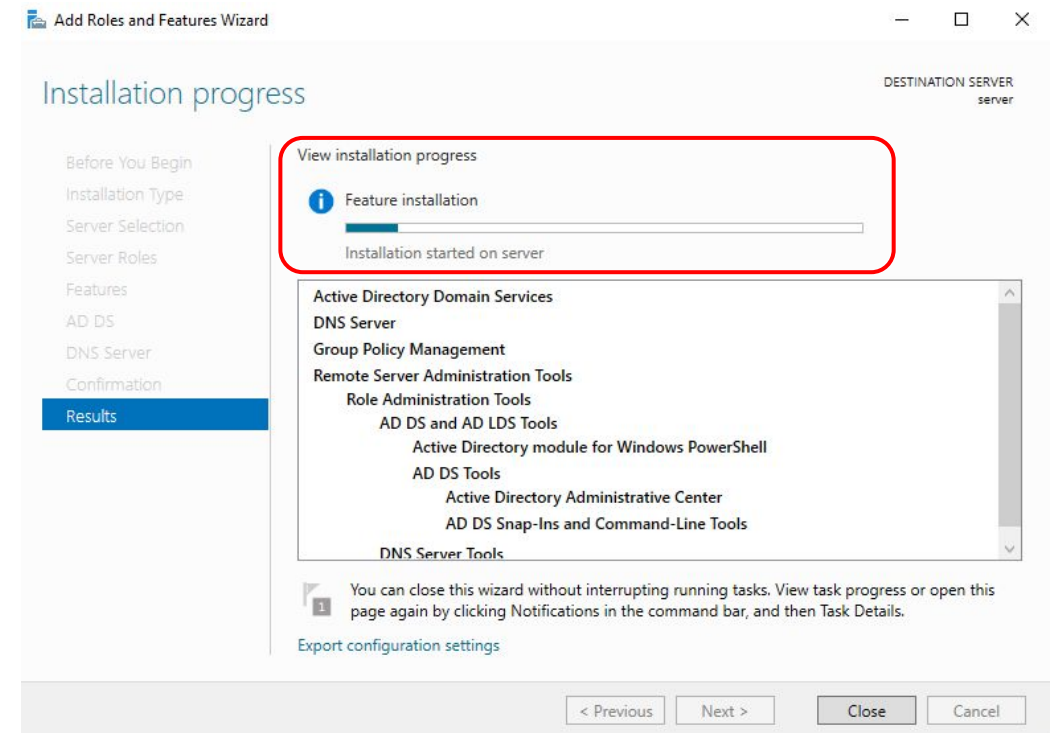
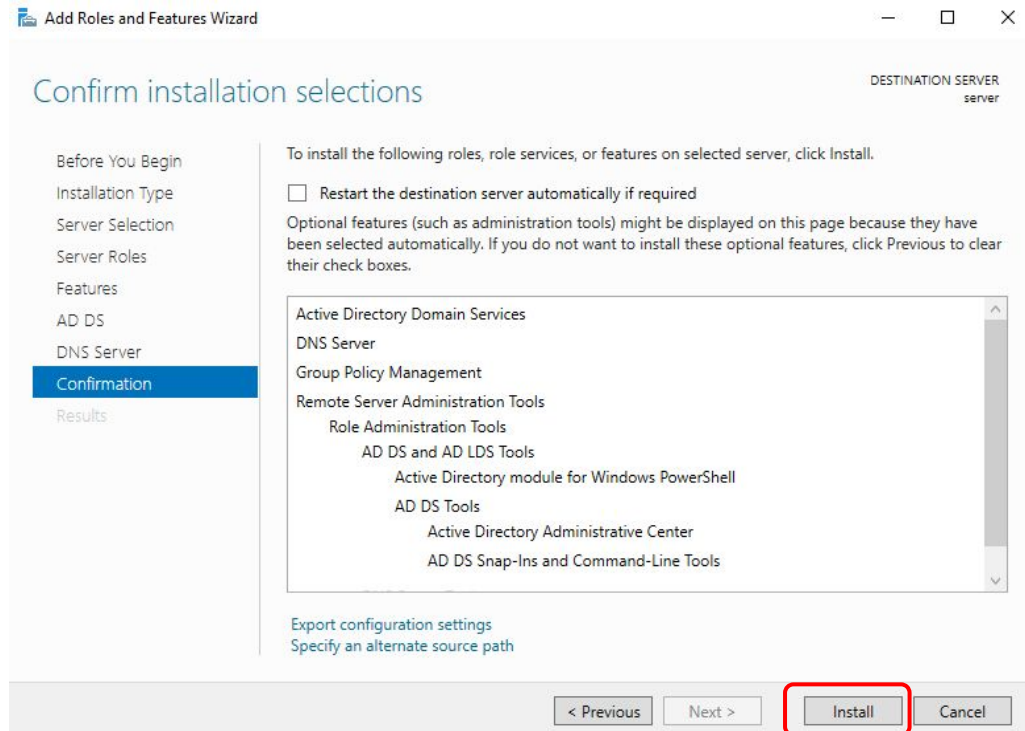




# AD - GUI Instalazioa



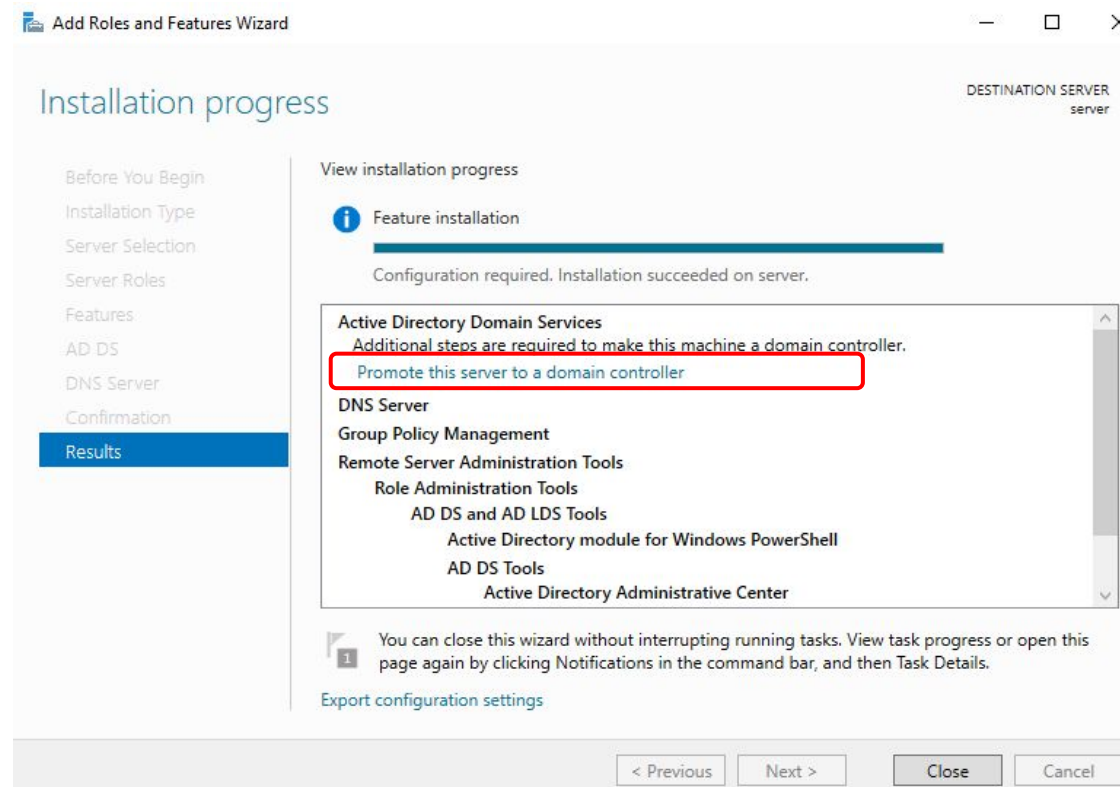
# AD - GUI Instalazioa



Itxaron instalazioa amaitu arte.

# AD - GUI Instalazioa

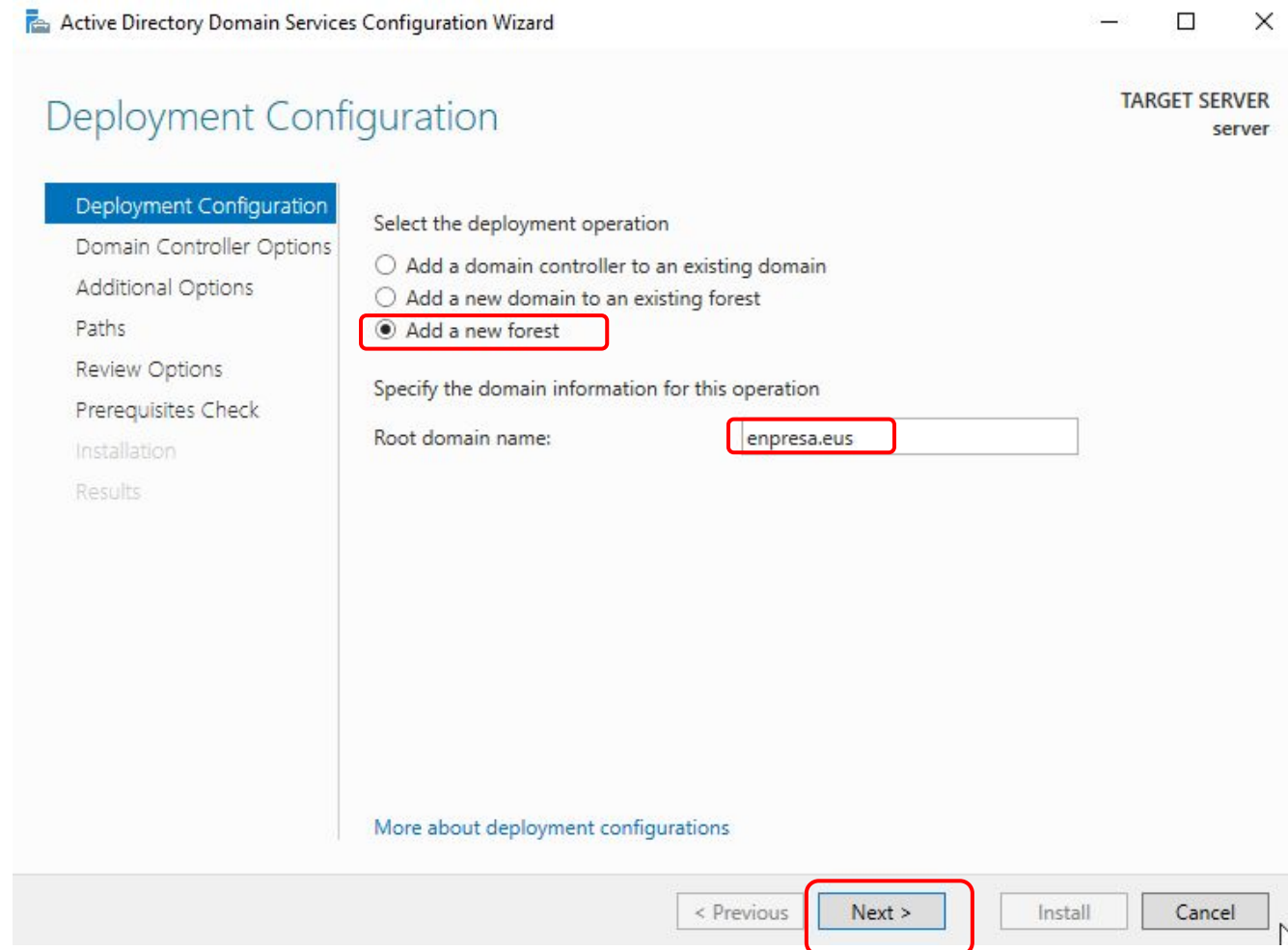
- Instalazioa amaitzean, zerbitzaria **domeinu-kontrolatzaile** sustatu behar da.
  - Autentifikazio-eskaerei erantzuten dien zerbitzaria.
  - Erabiltzaileak egiaztatzeaz arduratzen da.
  - Datuak antolatuta eta seguru mantentzen ditu.
  - Domeinu-kontrolatzaile bat baino gehiago egon daiteke domeinu batean.





# AD - GUI Instalazioa

- Nola ez den aurretik domeinurik muntatu → **Add new forest**
- Sortu nahi den domeinuaren izena idatzi. Guk **enpresa.eus** izena emango diogu.



Active Directory Domain Services Configuration Wizard

Deployment Configuration

TARGET SERVER  
server

Deployment Configuration

Domain Controller Options

Additional Options

Paths

Review Options

Prerequisites Check

Installation

Results

Select the deployment operation

☐ Add a domain controller to an existing domain

☐ Add a new domain to an existing forest

☒ Add a new forest

Specify the domain information for this operation

Root domain name:

[More about deployment configurations](#)

< Previous

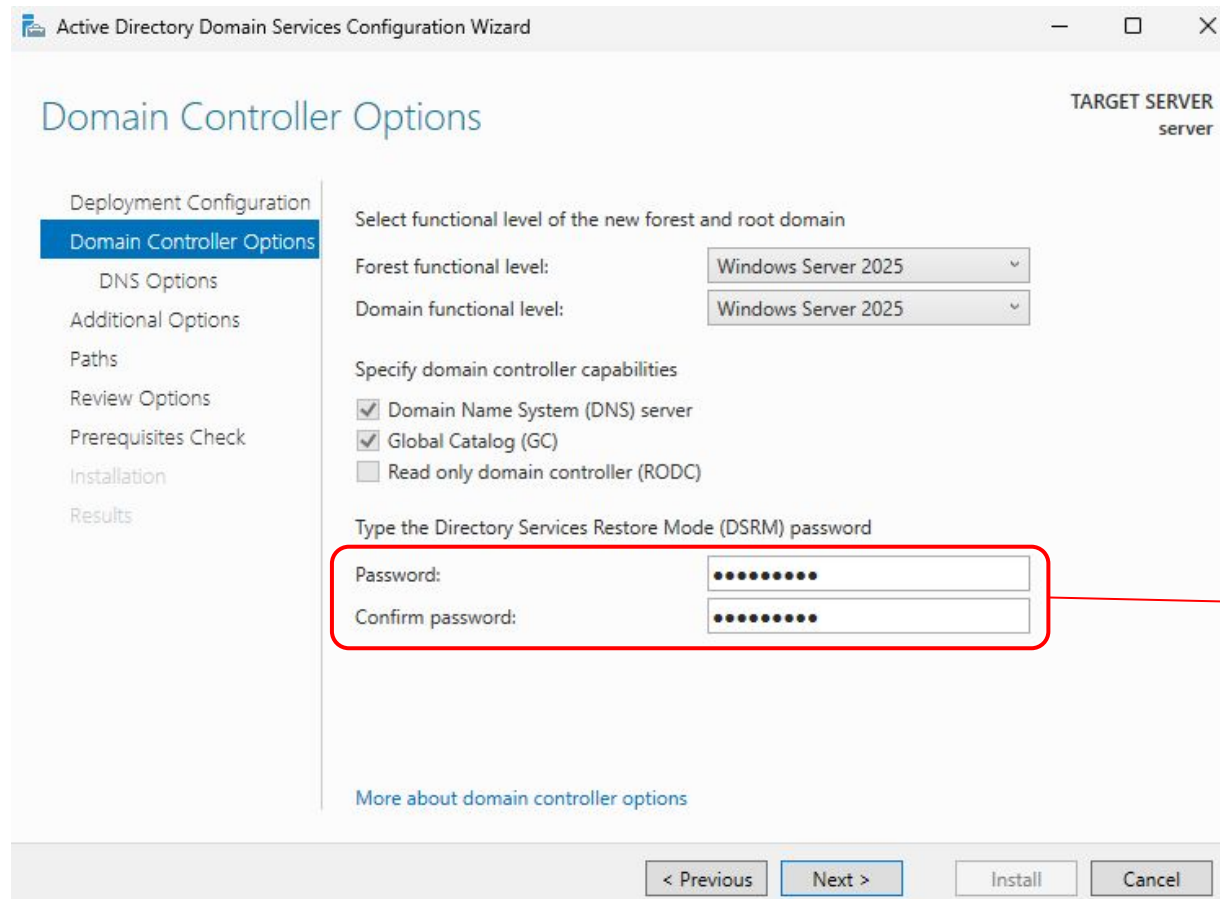
Next >

Install

Cancel

# AD - GUI Instalazioa

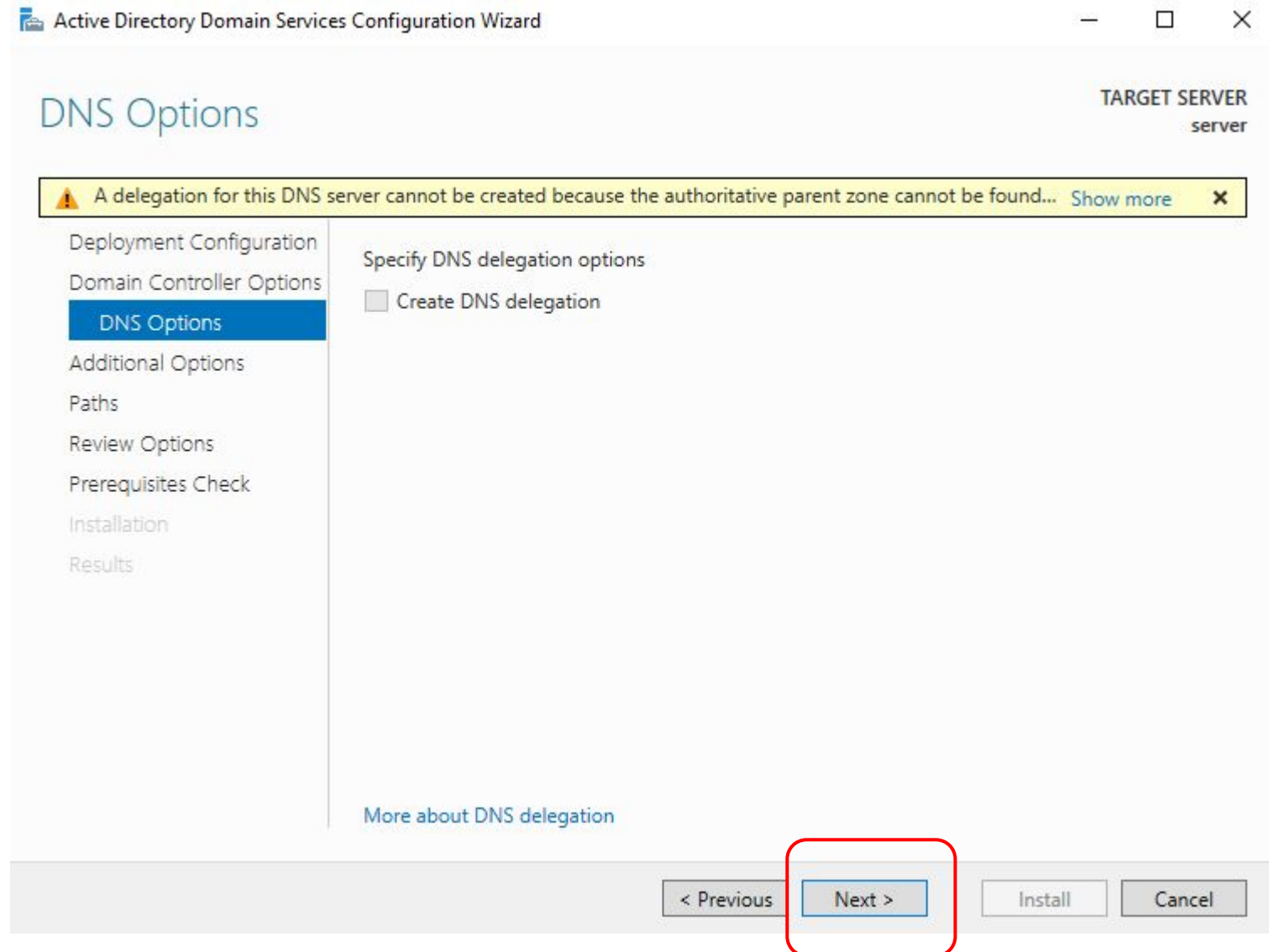
- **Functional level** → Windows Server-en aurreko bertsioekiko bateragarritasuna.
  - Windows Server-en bertsio zaharrak erabiliko badira domeinu kontrolatzaile gisa.
- **DSRM** → Sistemak huts eginez gero AD-a berrezartzeko pasahitza



The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window. The 'Domain Controller Options' tab is selected in the left-hand navigation pane. The main area is titled 'Domain Controller Options' and includes a 'TARGET SERVER' label with the text 'server'. The 'Select functional level of the new forest and root domain' section has two dropdown menus, both set to 'Windows Server 2025'. The 'Specify domain controller capabilities' section has three checkboxes: 'Domain Name System (DNS) server' (checked), 'Global Catalog (GC)' (checked), and 'Read only domain controller (RODC)' (unchecked). The 'Type the Directory Services Restore Mode (DSRM) password' section has two password fields, 'Password:' and 'Confirm password:', both containing masked characters. A red rectangle highlights these two fields, and a red arrow points from the rectangle to the text 'Pasahitza: Admin123\*'. At the bottom of the window, there are four buttons: '< Previous', 'Next >', 'Install', and 'Cancel'.

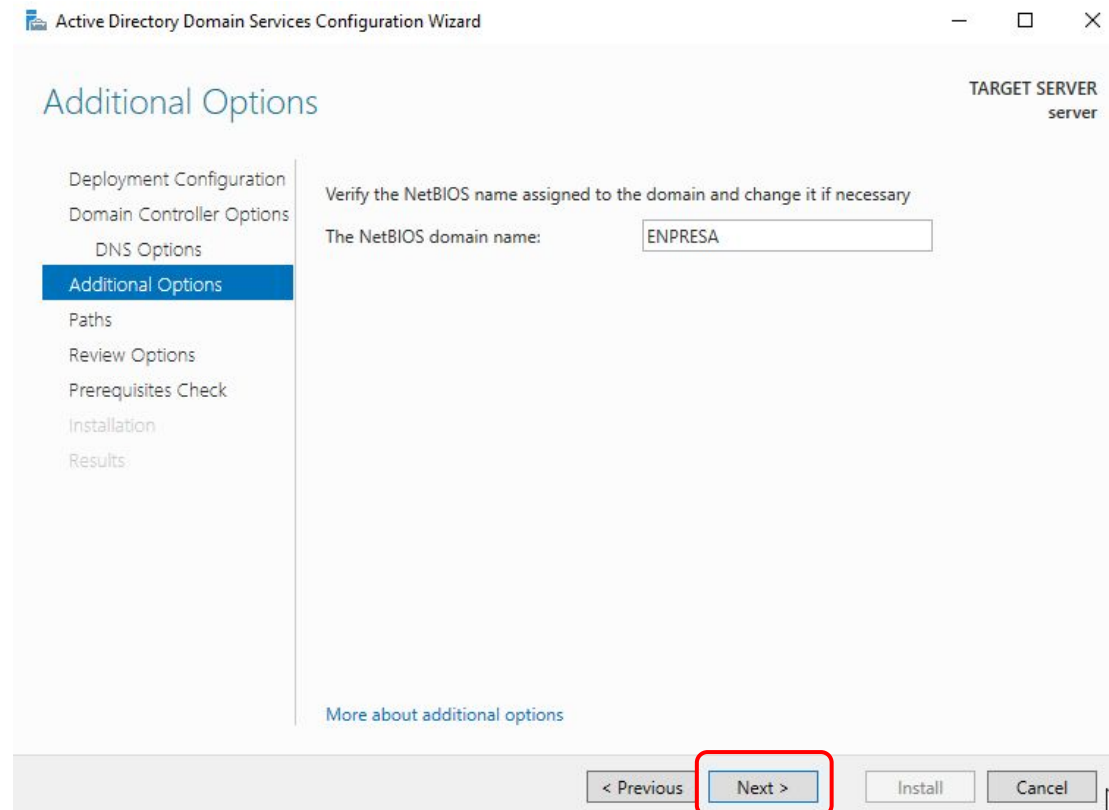
Pasahitza:  
**Admin123\***

# AD - GUI Instalazioa



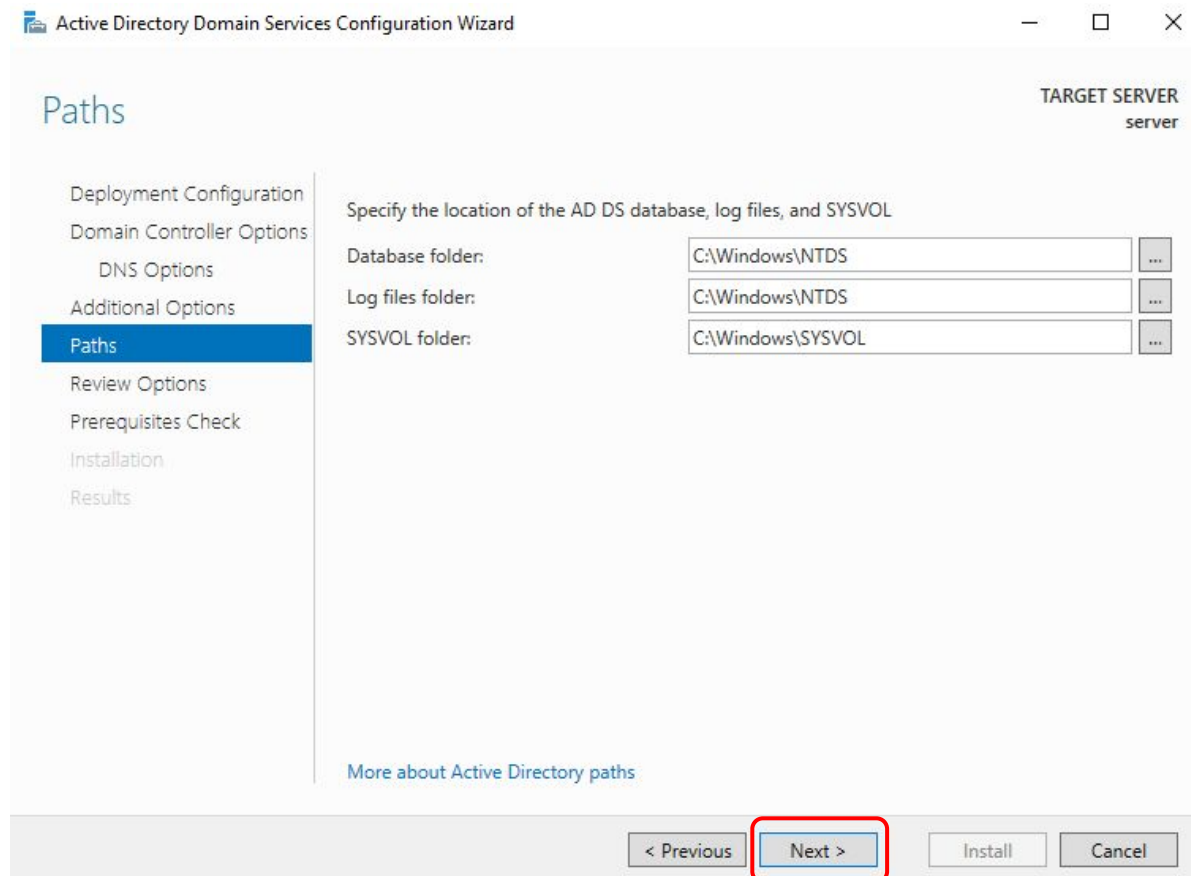
# AD - GUI Instalazioa

- **NetBIOS domain name** → Windows 2000 baino lehenagoko bertsioekin bateragarritasuna izateko erabilitako izena.
  - Gehienez 15 karaktere.



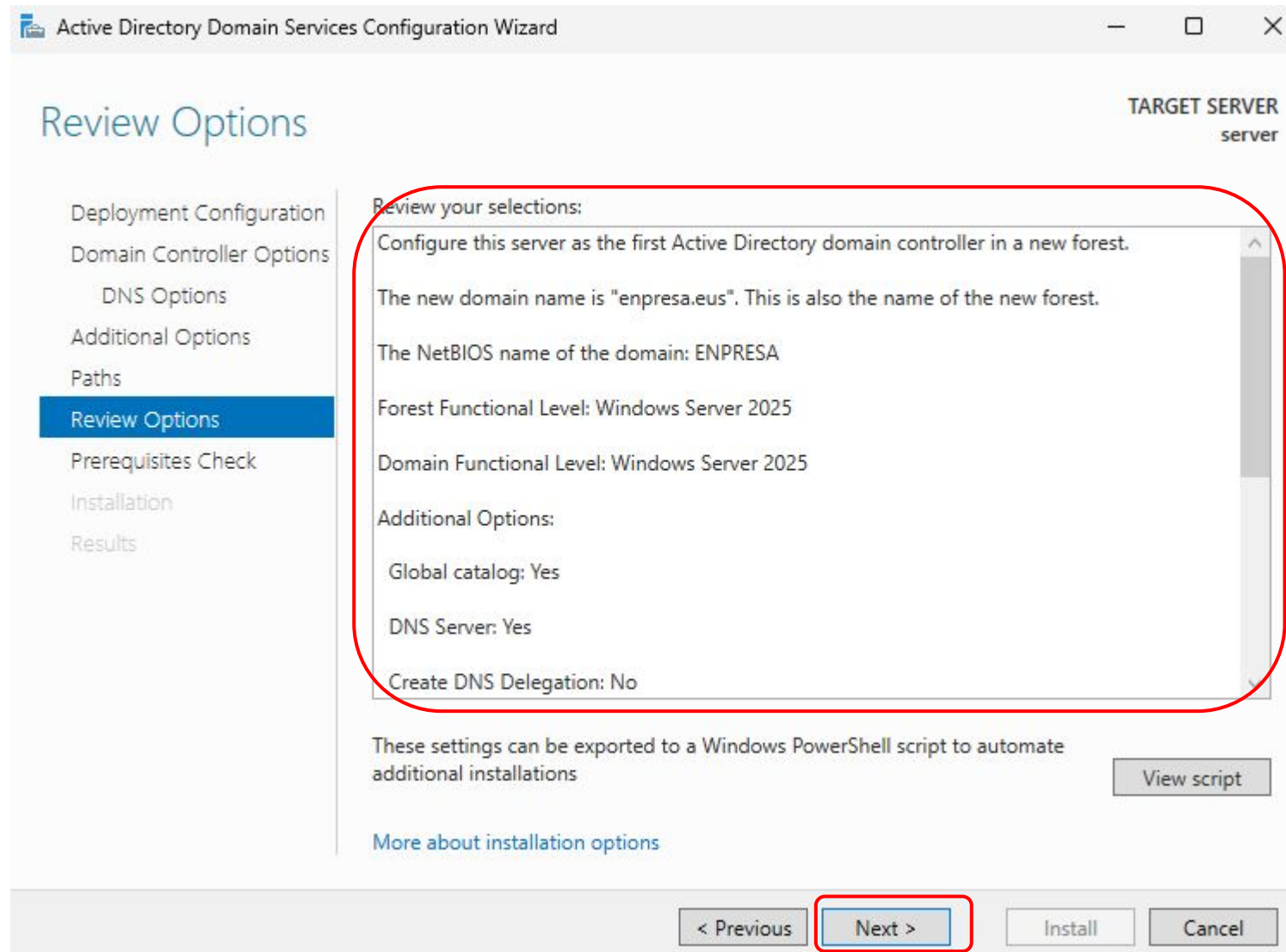
# AD - GUI Instalazioa

- AD-aren datu-baseak eta erregistroak instalatzeko direktorioak.



The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window, specifically the 'Paths' step. The left sidebar contains a list of steps: Deployment Configuration, Domain Controller Options, DNS Options, Additional Options, Paths (highlighted), Review Options, Prerequisites Check, Installation, and Results. The main area is titled 'Paths' and contains the instruction 'Specify the location of the AD DS database, log files, and SYSVOL'. Below this, there are three input fields with browse buttons (three dots): 'Database folder:' set to 'C:\Windows\NTDS', 'Log files folder:' set to 'C:\Windows\NTDS', and 'SYSVOL folder:' set to 'C:\Windows\SYSVOL'. In the top right corner, there is a section for 'TARGET SERVER' with a dropdown menu currently set to 'server'. At the bottom of the window, there are four buttons: '< Previous', 'Next >' (which is highlighted with a red rectangle), 'Install', and 'Cancel'. A link 'More about Active Directory paths' is located at the bottom left of the main content area.

# AD - GUI Instalazioa



The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window. The title bar includes the Windows icon, the text 'Active Directory Domain Services Configuration Wizard', and standard window controls. The main area is titled 'Review Options' and has a 'TARGET SERVER' label with the value 'server'. On the left is a navigation pane with the following items: 'Deployment Configuration', 'Domain Controller Options', 'DNS Options', 'Additional Options', 'Paths', 'Review Options' (highlighted in blue), 'Prerequisites Check', 'Installation', and 'Results'. The main content area is titled 'Review your selections:' and contains a scrollable list of configuration details: 'Configure this server as the first Active Directory domain controller in a new forest.', 'The new domain name is "enpresa.eus". This is also the name of the new forest.', 'The NetBIOS name of the domain: ENPRESA', 'Forest Functional Level: Windows Server 2025', 'Domain Functional Level: Windows Server 2025', 'Additional Options:', 'Global catalog: Yes', 'DNS Server: Yes', and 'Create DNS Delegation: No'. Below this list, there is a note: 'These settings can be exported to a Windows PowerShell script to automate additional installations' and a 'View script' button. At the bottom of the window is a navigation bar with four buttons: '< Previous', 'Next >' (highlighted with a red box), 'Install', and 'Cancel'. A red rounded rectangle highlights the main content area of the wizard.

Active Directory Domain Services Configuration Wizard

TARGET SERVER  
server

Review Options

Deployment Configuration  
Domain Controller Options  
DNS Options  
Additional Options  
Paths  
Review Options  
Prerequisites Check  
Installation  
Results

Review your selections:

Configure this server as the first Active Directory domain controller in a new forest.

The new domain name is "enpresa.eus". This is also the name of the new forest.

The NetBIOS name of the domain: ENPRESA

Forest Functional Level: Windows Server 2025

Domain Functional Level: Windows Server 2025

Additional Options:

Global catalog: Yes

DNS Server: Yes

Create DNS Delegation: No

These settings can be exported to a Windows PowerShell script to automate additional installations

View script

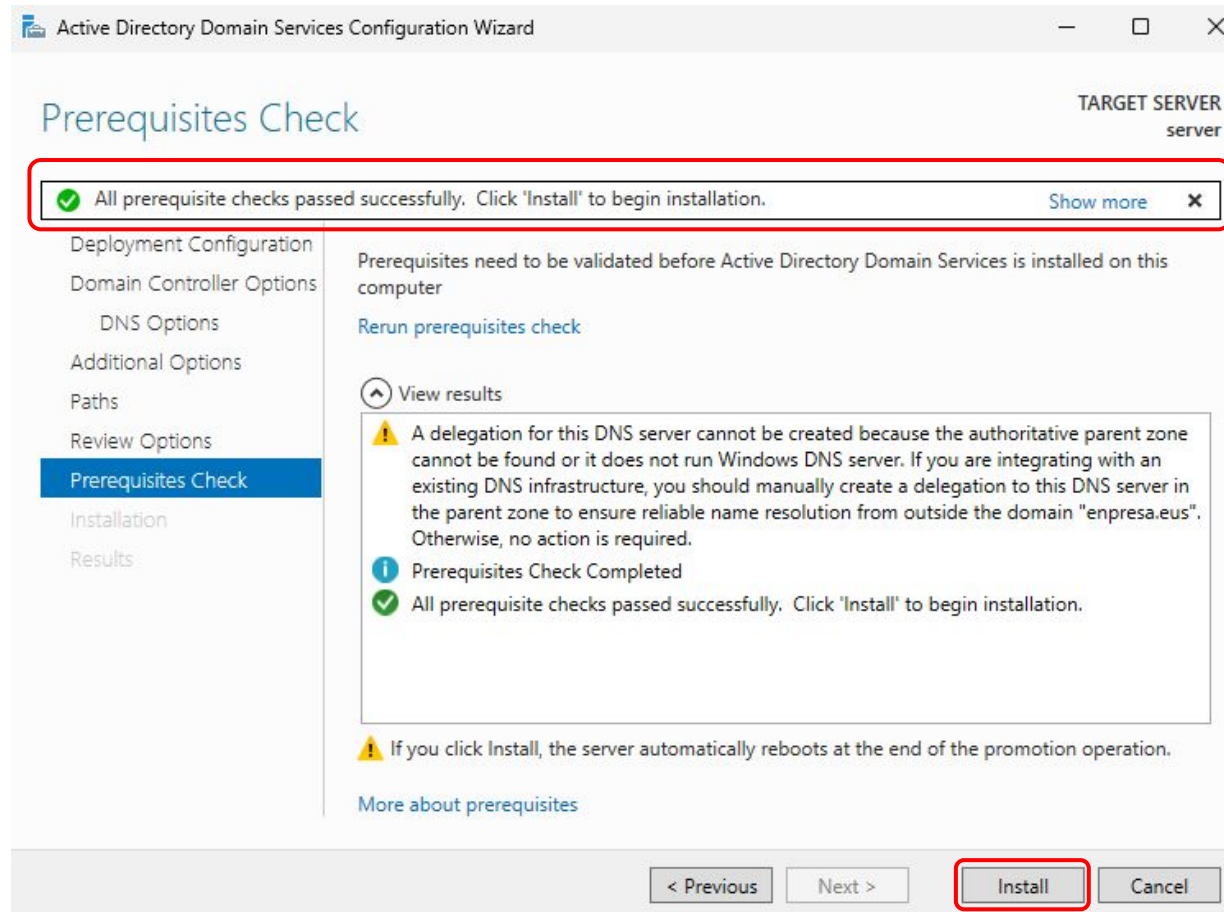
More about installation options

< Previous Next > Install Cancel

Errebisatu dena ondo dagoen.

# AD - GUI Instalazioa

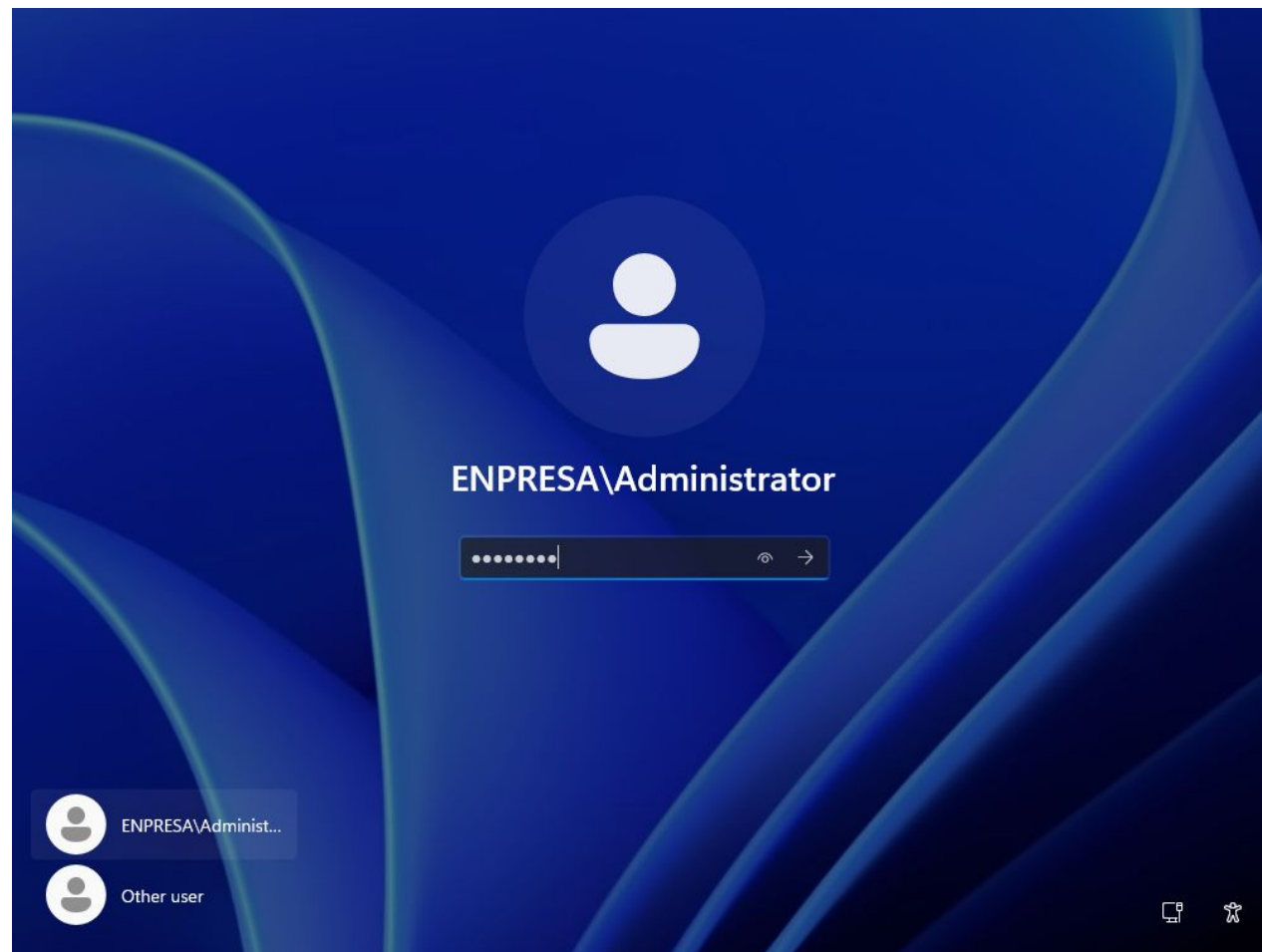
- Dena ondo dagoela esan behar digu.
- Ondoren, Install sakatu. Instalazio-prozesua amaitzean, zerbitzariak saioa itxiko du.





# AD - GUI Instalazioa

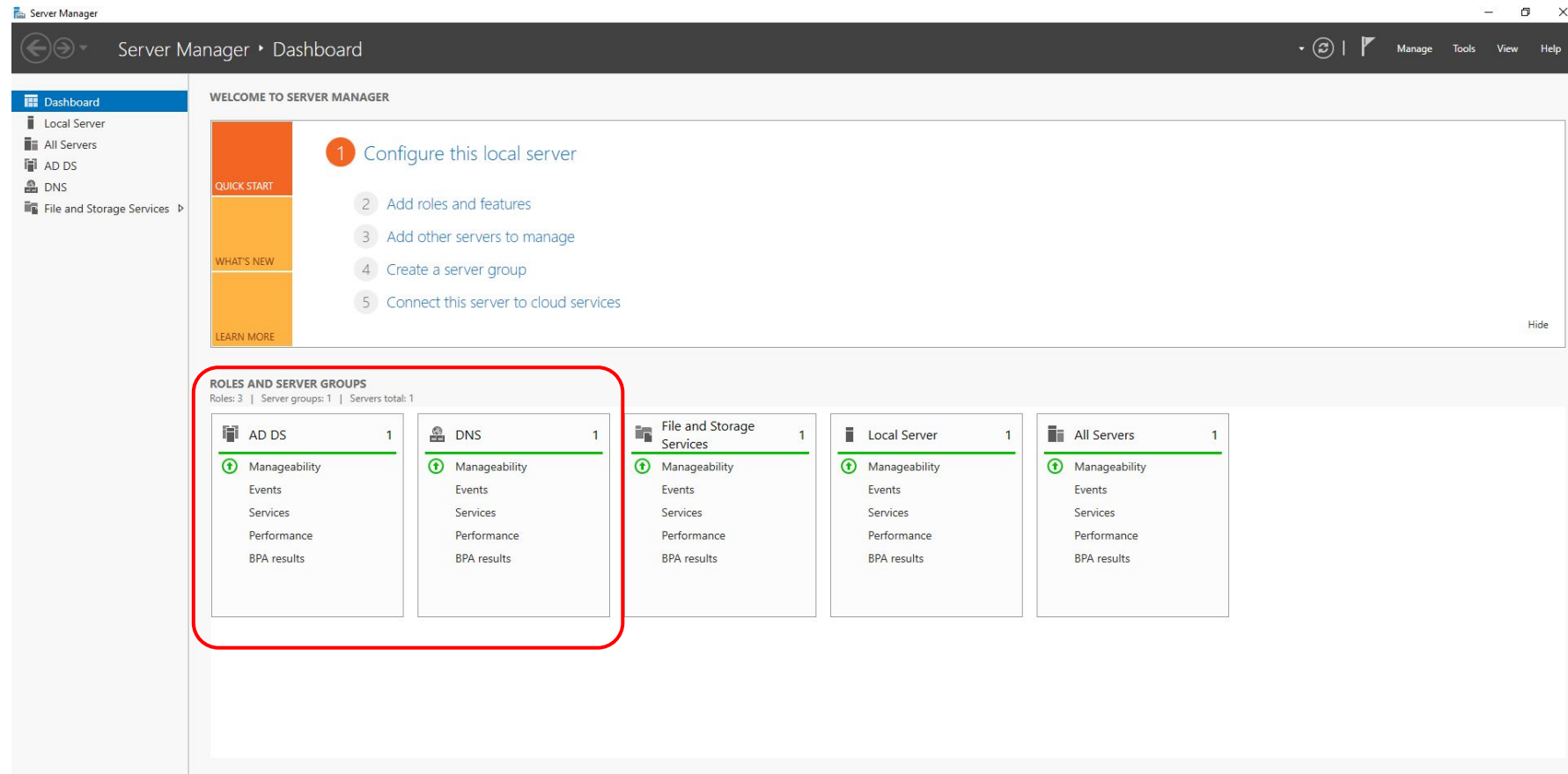
- Instalazio-prozesua amaitzean, zerbitzariak saioa itxiko du.
- Saioa berriz hastean, erabiltzaile-izena honako formatu honetan aterako da:  
**Domeinua\Erabiltzailea**





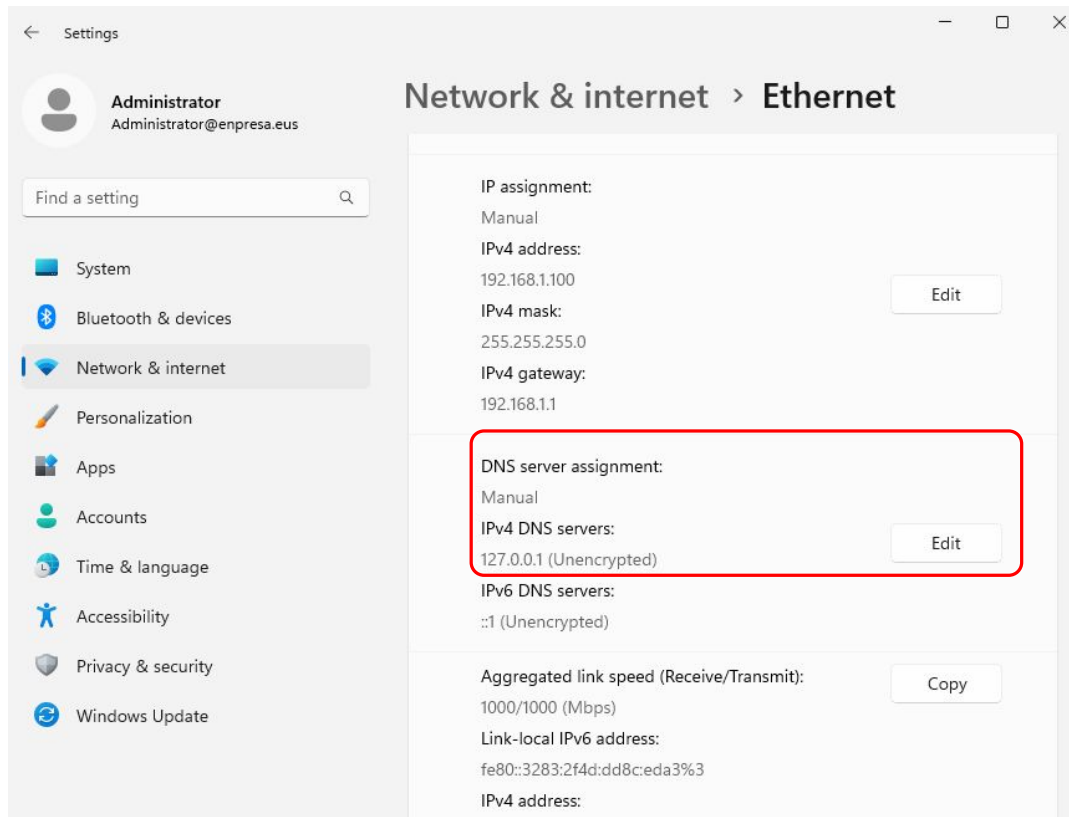
# AD - GUI Instalazioa (Egiaztapena 1)

- AD eta DNS zerbitzuak ondo instalatu direla koonprobatzeko, 2 rol berri erantsi izan direla begiratu → **AD DS** eta **DNS**
- Zerbitzaria piztean, denbora bat itxaron behar da rolak berdez agertzeko.



# AD - GUI Instalazioa (Egiaztapena 2)

- Sareko txartelaren konfigurazioa irekitzean, DNS gogokoena localhost (127.0.0.1) dela konprobatu.

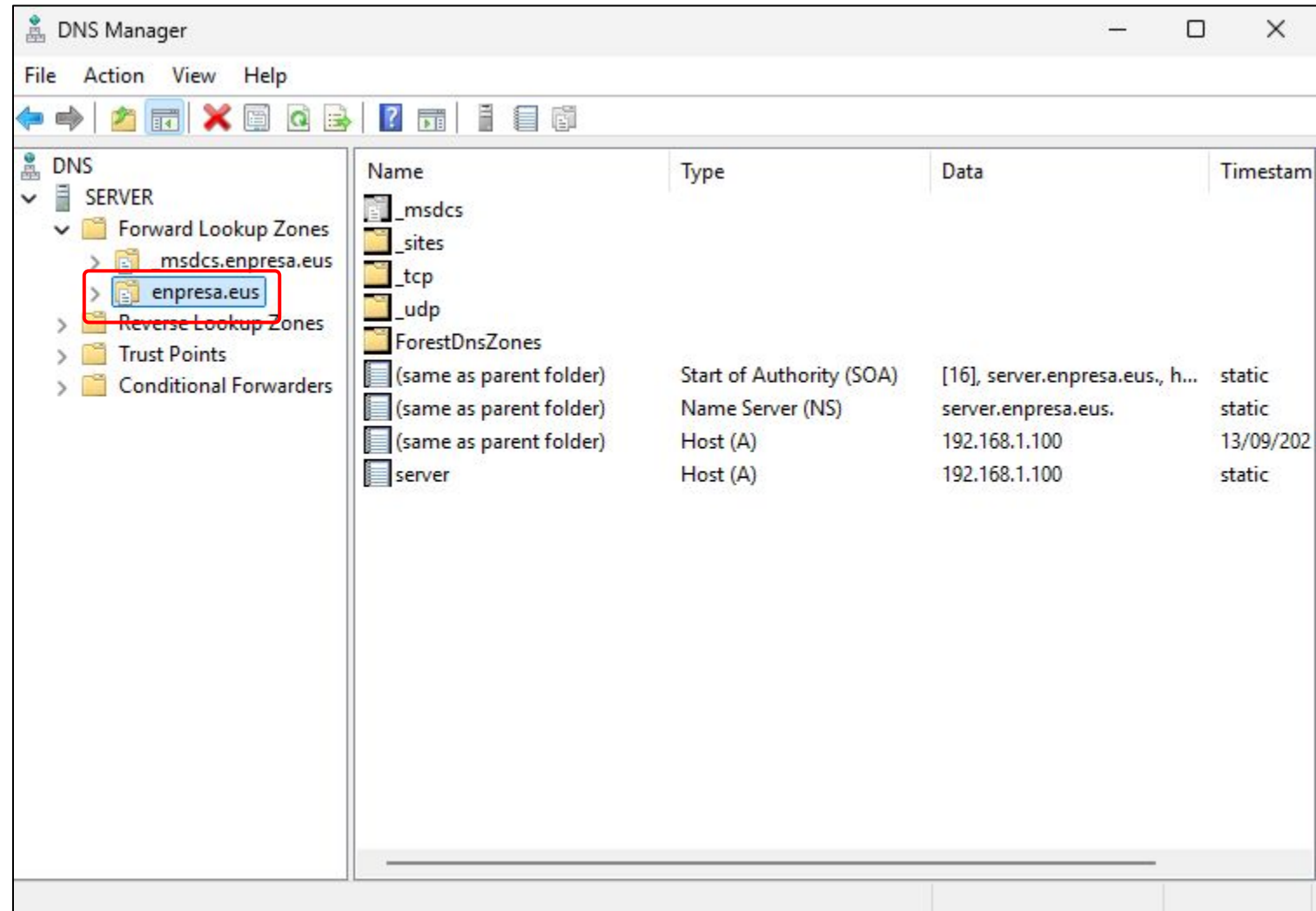


```
Ethernet adapter Ethernet:

Connection-specific DNS Suffix . : 
Description . . . . . : Intel(R) PRO/1000 MT Desktop Adapter
Physical Address. . . . . : 08-00-27-C2-48-AB
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::3283:2f4d:dd8c:eda3%3(Preferred)
IPv4 Address. . . . . : 192.168.1.100(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . : 101187623
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-56-55-6B-08-00-27-C2-48-AB
DNS Servers . . . . . : ::1
                          127.0.0.1
NetBIOS over Tcpip. . . . . : Enabled
```

# AD - GUI Instalazioa (Egiaztapena 3)

- **DNS manager** zabaltezan gure zerbitzariaren sortu berri dugun domeinua agertu beharko litzateke.



**3**

## **AD - PowerShell bidezko instalazioa**

# AD - PowerShell Instalazioa

3 zerbitzu instalatu behar ditugu.

1. **AD DS (Active Directory Domain Services):** AD zerbitzua eta konfigurazio herramintak.

```
Add-WindowsFeature -Name "ad-domain-services" -IncludeAllSubFeature -IncludeManagementTools
```

2. **DNS (Domain Name Systems):** DNS zerbitzua eta konfigurazio herramintak. Beharrezkoa AD-ak ondo funtzionatzeko.

```
Add-WindowsFeature -Name "dns" -IncludeAllSubFeature -IncludeManagementTools
```

3. **GPMC (Group Policy Management Console):** Talde politikak kudeatzeko zerbitzua eta herraminta.

```
Add-WindowsFeature -Name "gpmc" -IncludeAllSubFeature -IncludeManagementTools
```

# AD - PowerShell Instalazioa

AD baso bat sortu (forest)

```
Install-ADDSForest `
  -CreateDnsDelegation:$false `
  -DatabasePath "c:\windows\NTDS" `
  -DomainMode "WinThreshold" `
  -DomainName "enpresa.eus" `
  -SafeModeAdministratorPassword (ConvertTo-SecureString "Admin123*" -AsPlainText -Force) `
  -DomainNetbiosName "ENPRESA" `
  -ForestMode "WinThreshold" `
  -InstallDns:$true `
  -LogPath "c:\windows\NTDS" `
  -NoRebootOnCompletion:$false `
  -SysvolPath "c:\windows\SYSVOL" `
  -Force:$true
```

# AD - PowerShell Instalazioa

AD zuhaitz bat sortu (tree) aurretik sortutako baso baten:

```
# First, get the necessary credentials for an Enterprise Admin in the existing forest
$credential = Get-Credential

Install-ADDSDomain `
  -DomainType Tree `
  -NewDomainName "newcorp.com" `
  -ParentDomainName "enpresa.eus" `
  -Credential $credential `
  -InstallDns:$true `
  -DomainMode "WinThreshold" `
  -SafeModeAdministratorPassword (ConvertTo-SecureString "Admin123*" -AsPlainText -Force)
```

# AD - PowerShell Instalazioa

AD azpi-domeinu bat sortu (child domain)

```
# First, get the necessary credentials for a Domain Admin in the parent domain
$credential = Get-Credential

Install-ADDSDomain `
  -DomainType Child `
  -NewDomainName "sales" `
  -ParentDomainName "enpresa.eus" `
  -Credential $credential `
  -InstallDns:$true `
  -DomainMode "WinThreshold" `
  -SafeModeAdministratorPassword (ConvertTo-SecureString "Admin123*" -AsPlainText -Force)
```



# AD - PowerShell instalazioa (Egiaztapena 1)

- Egiaztatu Active Directory Domain Services (AD DS) exekutatzen ari dela:
  - Status = 'Running'

```
Get-Service -Name NTDS
```

```
PS C:\Users\Administrator> Get-Service -Name NTDS
```

Status	Name	DisplayName
Running	NTDS	Active Directory Domain Services

- Egiaztatu domeinu-kontrolatzailea eskuragarri dagoela:

```
Test-Connection -ComputerName (Get-ADDomainController).Hostname
```

```
PS C:\Users\Administrator> Test-Connection -ComputerName (Get-ADDomainController).Hostname
```

Source	Destination	IPv4Address	IPv6Address	Bytes	Time(ms)
SERVER	server.enpre...	192.168.1.100	fe80::bd4f:27b7:4423:47e2%2	32	0
SERVER	server.enpre...	192.168.1.100	fe80::bd4f:27b7:4423:47e2%2	32	0
SERVER	server.enpre...	192.168.1.100	fe80::bd4f:27b7:4423:47e2%2	32	0
SERVER	server.enpre...	192.168.1.100	fe80::bd4f:27b7:4423:47e2%2	32	0

## AD - PowerShell instalazioa (Egiaztapena 2)

- Egiaztatu sare txartelean konfiguratutako DNS zerbitzaria 127.0.0.1 dela:

```
# View network adapters
Get-NetAdapter

# Get network adapter configuration
Get-NetIPConfiguration -InterfaceAlias "YourAdapterName"
```

```
PS C:\Users\Administrator> Get-NetIPConfiguration -InterfaceAlias "Ethernet"

InterfaceAlias      : Ethernet
InterfaceIndex      : 2
InterfaceDescription : Intel(R) PRO/1000 MT Desktop Adapter
NetProfile.Name      : Network 2
IPv4Address          : 192.168.1.100
IPv6DefaultGateway  :
IPv4DefaultGateway  : 192.168.1.1
DNSServer            : ::1
                    127.0.0.1
```

# AD - PowerShell instalazioa (Egiaztapena 3)

- Egiaztatu DNS zerbitzaria exekutatzen ari dela:

```
Get-Service -Name DNS
```

```
PS C:\Users\Administrator> Get-Service -Name DNS
```

Status	Name	DisplayName
Running	DNS	DNS Server

- Probatu DNS kontsulten ebazpena:

```
Resolve-DnsName -Name enpresa.eus -Server (Get-ADDomainController).Hostname
```

```
PS C:\Users\Administrator> Resolve-DnsName -Name enpresa.eus -Server (Get-ADDomainController).Hostname
```

Name	Type	TTL	Section	IPAddress
enpresa.eus	A	600	Answer	192.168.1.100

```
PS C:\Users\Administrator> _
```

# Ariketa: Active Directory instalatzen

1. PowerShell erabiliz, egin Active Directory-aren instalazioa.
2. Egin konprobaketak GUI eta PowerShell erabiliz instalazioa ondo egin dela.

**Eskerrik asko**

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