

# Windows Server replication

## Task Overview

This document outlines the steps taken to install Active Directory Domain Services (AD DS) on a Windows Server, add a domain controller to an existing domain (techwave.local), and verify the installation and replication.

## Prerequisites

- Administrative privileges on the Windows Server.
  - The server must be configured with a static IP address.
  - Ensure that the existing domain (techwave.local) is operational.
- 

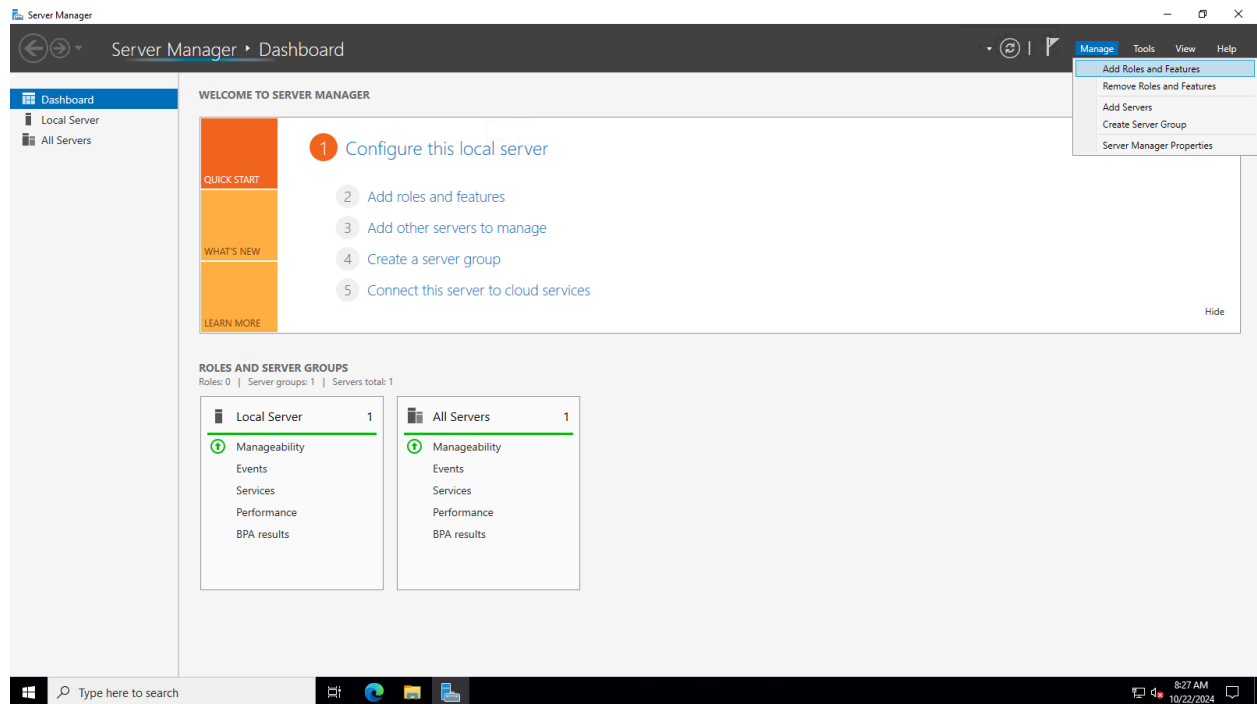
## Steps to Install Active Directory Domain Services and Add a Domain Controller

### Step 1: Open Server Manager

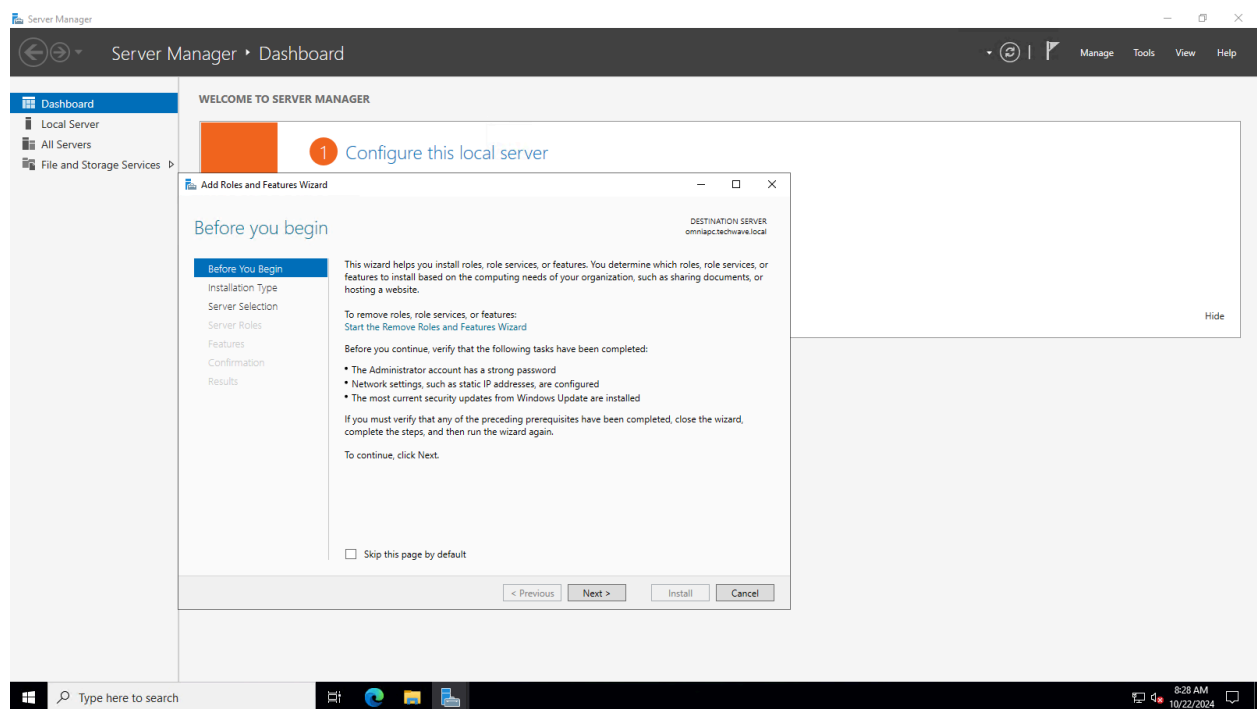
- Log in to the Windows Server.
- 

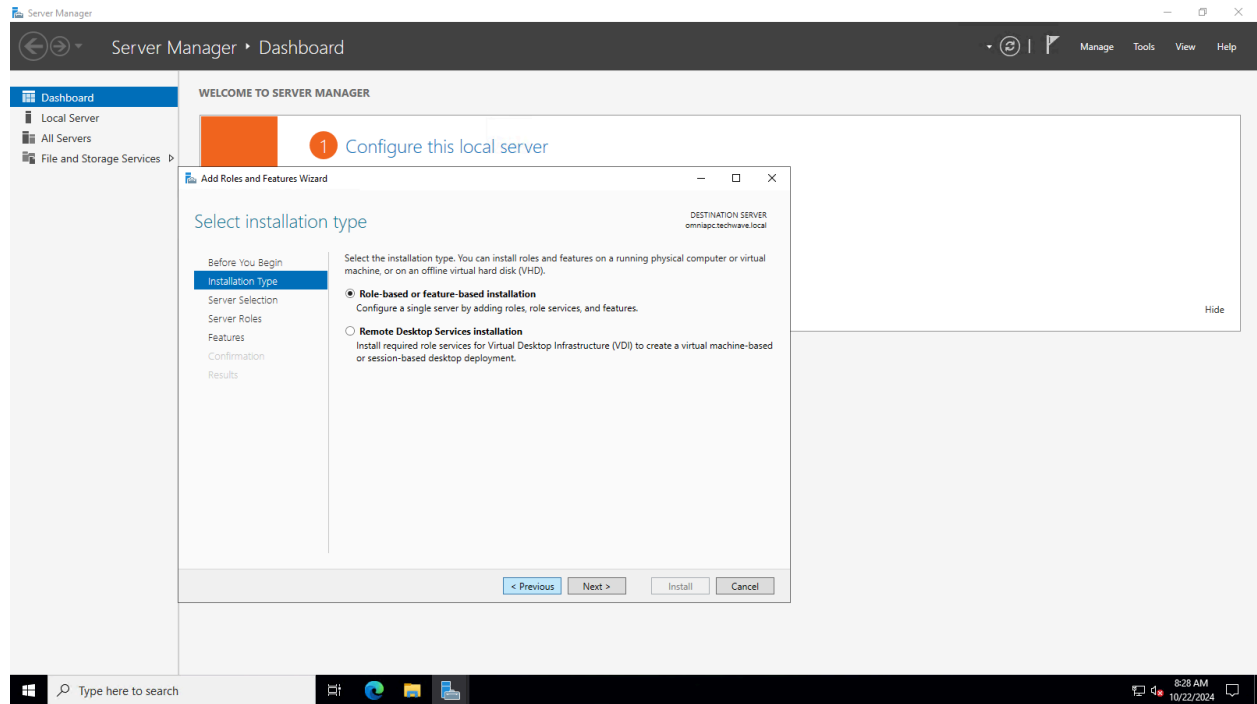
### Step 2: Add Roles and Features

1. In **Server Manager**, click on **Add roles and features**.
2. Choose **Role-based or feature-based installation** and click **Next**.



3. Click **Next** on the Before You Begin page.





Server Manager

Server Manager • Dashboard

Dashboard

- Local Server
- All Servers
- File and Storage Services

WELCOME TO SERVER MANAGER

1 Configure this local server

Add Roles and Features Wizard

Select destination 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
omniapc.techwave.local	172.31.81.28	Microsoft Windows Server 2022 Datacenter

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

Type here to search

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Server Manager

Server Manager • Dashboard

Dashboard

- Local Server
- All Servers
- File and Storage Services

WELCOME TO SERVER MANAGER

1 Configure this local server

Add Roles and Features Wizard

Select server roles

Before You Begin

Installation Type

Server Selection

Server Roles

Features

AD DS

Confirmation

Results

Select one or more roles to install on the selected server.

Roles

- ☐ Active Directory Certificate Services
- ☒ Active Directory Domain Services
- ☐ Active Directory Federation Services
- ☐ Active Directory Lightweight Directory Services
- ☐ Active Directory Rights Management Services
- ☐ Device Health Attestation
- ☐ DHCP Server
- ☐ DNS Server
- ☐ Fax Server
- ☒ File and Storage Services (1 of 12 installed)
  - ☐ Host Guardian Service
  - ☐ Hyper-V
  - ☐ Network Controller
  - ☐ Network Policy and Access Services
  - ☐ Print and Document Services
  - ☐ Remote Access
  - ☐ Remote Desktop Services
  - ☐ Volume Activation Services
  - ☐ Web Server (IIS)
  - ☐ Windows Deployment Services

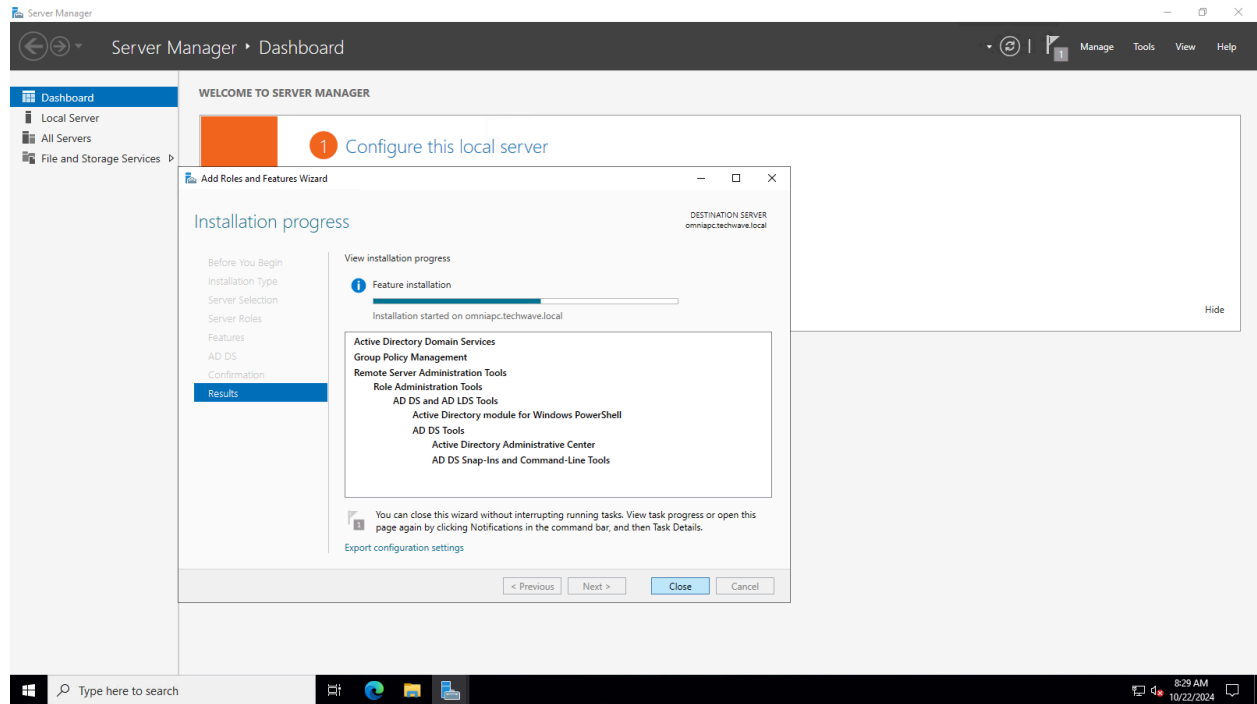
Description

Active Directory Domain Services (AD DS) stores information about objects on the network and makes this information available to users and network administrators. AD DS uses domain controllers to give network users access to permitted resources anywhere on the network through a single logon process.

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### 3. Promote the Server to Domain Controller

1. In Server Manager, a notification will appear indicating that the AD DS role has been installed. Click on the notification flag and select **Promote this server to a domain controller**.
2. Choose the option **Add a domain controller to an existing domain**.
3. Enter the domain name `techwave.local` and provide credentials for a domain administrator.
4. Select the Domain Controller capabilities:
  - a. Check the boxes for the **DNS server** and **Global Catalog** as needed.
  - b. Choose the appropriate replication options.
5. Click **Next**.
6. Review the options you selected and click **Next**.
7. After the validation is completed, click **Install** to begin the promotion process.
8. The server will automatically restart once the promotion is complete.

Server Manager

Server Manager • Dashboard

Dashboard

- Local Server
- All Servers
- AD DS
- File and Storage Services

WELCOME TO SERVER MANAGER

**1** Configure this local server

2 Add roles and features

3 Add other servers to manage

4 Create a server group

5 Connect this server to cloud services

QUICK START

WHAT'S NEW

LEARN MORE

ROLES AND SERVER GROUPS

Roles: 2 | Server groups: 1 | Servers total: 1

AD DS	File and Storage Services	Local Server	All Servers
1	1	1	1
Manageability	Manageability	Manageability	Manageability
Events	Events	Events	Events
Services	Performance	Services	Services
Performance	BPA results	Performance	Performance
BPA results		BPA results	BPA results

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10/22/2024 8:30 AM

Post-deployment Configuration

Configuration required for Active Directory Domain Services at OMNIAPC

Promote this server to a domain controller

Feature installation

Configuration required. Installation succeeded on omniapc.techwave.local.

Add Roles and Features

Task Details

Hide

Type here to search

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Active Directory Domain Services Configuration Wizard

Deployment Configuration

TARGET SERVER  
omniapc.techwave.local

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

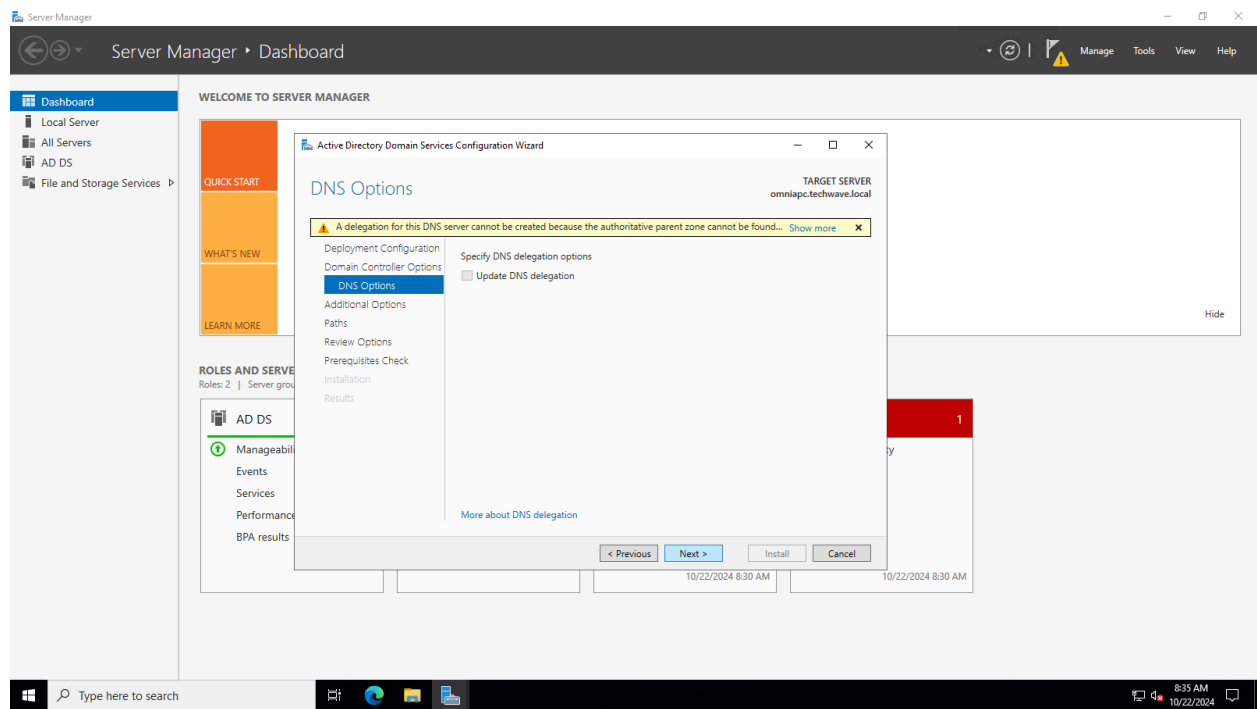
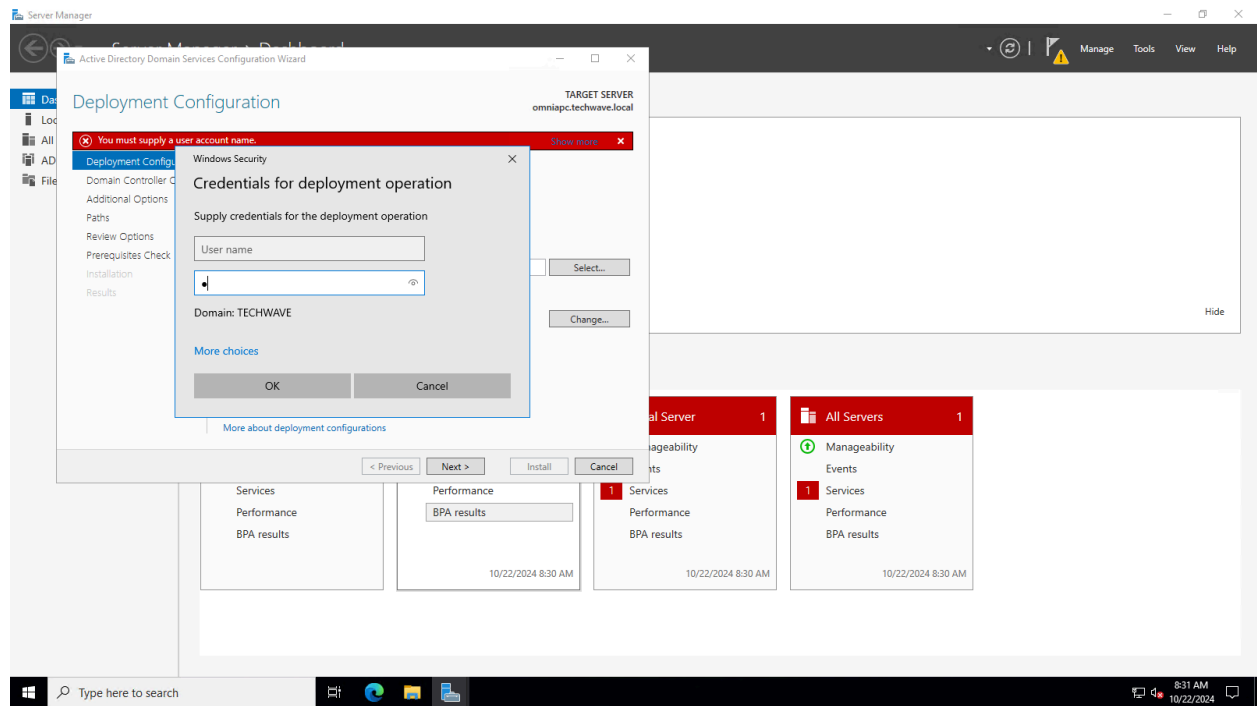
Specify the domain information for this operation

Domain: techwave.local Select...

Supply the credentials to perform this operation

OMNIAPC\Administrator (Current user) Change...

More about deployment configurations



Server Manager

Server Manager • Dashboard

ManageToolsViewHelp

Dashboard

Local Server

All Servers

AD DS

File and Storage Services

QUICK START

WHAT'S NEW

LEARN MORE

ROLES AND SERVICES

Roles 2 | Server groups

AD DS

Manageability

Events

Services

Performance

BPA results

WELCOME TO SERVER MANAGER

Active Directory Domain Services Configuration Wizard

Domain Controller Options

TARGET SERVER  
omniapc.techwave.local

Hide

Deployment Configuration

Domain Controller Options

RODC Options

Additional Options

Paths

Review Options

Prerequisites Check

Installation

Results

Specify domain controller capabilities and site information

☒ Domain Name System (DNS) server

☐ Global Catalog (GC)

☒ Read only domain controller (RODC)

Site name: 

Default-First-Site-Name

Type the Directory Services Restore Mode (DSRM) password

Password: 

••••••••

Confirm password: 

••••••••

[More about domain controller options](#)

< Previous

Next >

Install

Cancel

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Type here to search

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Server Manager

Server Manager • Dashboard

WELCOME TO SERVER MANAGER

Dashboard

- Local Server
- All Servers
- AD DS
- File and Storage Services

QUICK START

WHAT'S NEW

LEARN MORE

ROLES AND SERVICES

Roles: 2 | Server groups: 1

AD DS

Manageability

Events

Services

Performance

BPA results

Active Directory Domain Services Configuration Wizard

RODC Options

Deployment Configuration

Domain Controller Options

RODC Options

Additional Options

Paths

Review Options

Prerequisites Check

Installation

Results

Delegated administrator account

<Not provided>

Select...

Accounts that are allowed to replicate passwords to the RODC

TECHWAVE\Allowed RODC Password Replication Group

Add...

Remove

Accounts that are denied from replicating passwords to the RODC

BUILTIN\Administrators

BUILTIN\Server Operators

BUILTIN\Backup Operators

Add...

Remove

If the same account is both allowed and denied, denied takes precedence.

More about RODC options

< Previous

Next >

Install

Cancel

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Type here to search

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Server Manager

Server Manager • Dashboard

WELCOME TO SERVER MANAGER

Dashboard

- Local Server
- All Servers
- AD DS
- File and Storage Services

QUICK START

WHAT'S NEW

LEARN MORE

ROLES AND SERVICES

Roles: 2 | Server groups: 1

AD DS

Manageability

Events

Services

Performance

BPA results

Active Directory Domain Services Configuration Wizard

Review Options

Deployment Configuration

Domain Controller Options

RODC Options

Additional Options

Paths

Review Options

Prerequisites Check

Installation

Results

Review your selections:

Configure this server as an additional Active Directory domain controller for the domain "techwave.local".

Site Name: Default-First-Site-Name

Additional Options:

Read-only domain controller: Yes

Global catalog: Yes

DNS Server: Yes

Update DNS Delegation: No

Source domain controller: any writable domain controller

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

View script

More about installation options

< Previous

Next >

Install

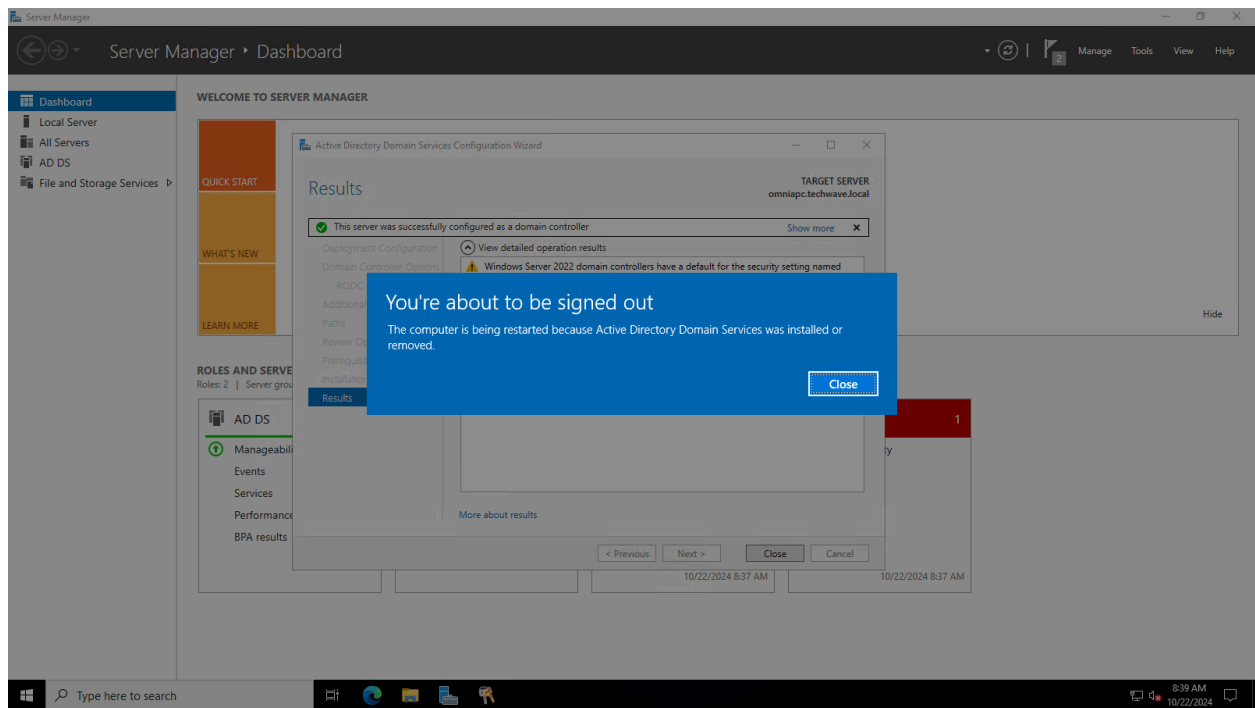
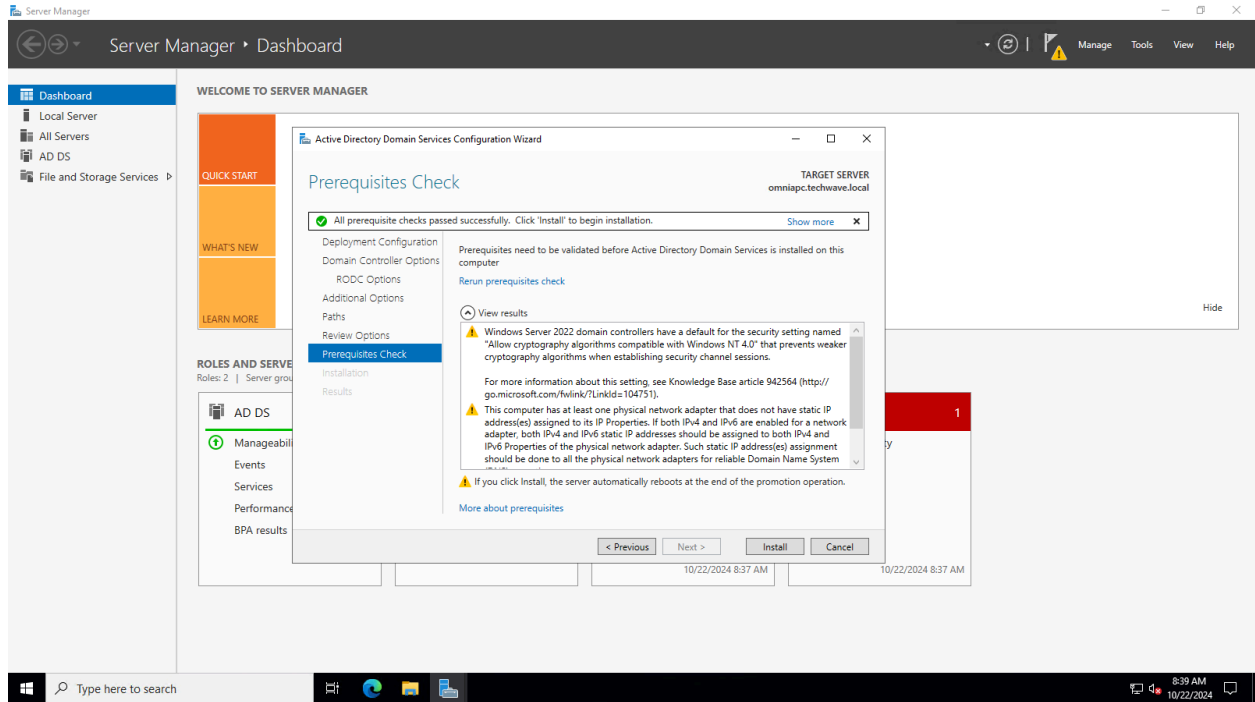
Cancel

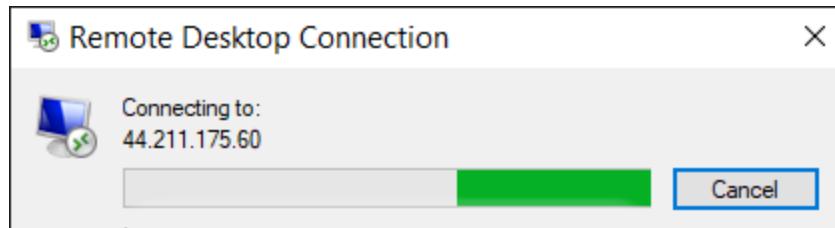
10/22/2024 8:37 AM

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Type here to search

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## Step 10: Verify the Installation and Replication

From windows powershell

Server Manager

Server Manager • AD DS

Dashboard

- Local Server
- All Servers
- AD DS
- DNS
- File and Storage Services

SERVICES

All servers | 1 total

Filter

Server Name	IPv4 Address	Manageability	Last Update	Windows Activation
OMNIAPC	172.31.81.28	Online - Per...	2/22/2024 8:43:43 AM	00000-00000-AA753 (Activated)

EVENTS

All events | 11 total

Filter

Server Name	ID	Severity	Source	Time
OMNIAPC	4614	Warning	DFSR	2/20/2024 8:41:09 AM
OMNIAPC	4013	Warning	Microsoft...	2/20/2024 8:40:55 AM
OMNIAPC	2886	Warning	Microsoft...	2/20/2024 8:40:48 AM
OMNIAPC	3041	Warning	Microsoft...	2/20/2024 8:40:49 AM
OMNIAPC	3054	Warning	Microsoft...	2/20/2024 8:40:39 AM
OMNIAPC	3051	Warning	Microsoft...	2/20/2024 8:40:39 AM
OMNIAPC	1115	Warning	Microsoft...	2/20/2024 8:39:41 AM

SERVICES

All services | 13 total

Filter

Active Directory Sites and Services

- Add Roles and Features
- Shut Down Local Server
- Computer Management
- Remote Desktop Connection
- Windows PowerShell
- Configure NIC Teaming
- Active Directory Administrative Center
- Active Directory Domains and Trusts
- Active Directory Module for Windows PowerShell
- Active Directory Sites and Services
- Active Directory Users and Computers
- ADSI Edit
- Dcdiag.exe
- Dscls.exe
- Dsdbutil.exe
- Dsmgmt.exe
- Gpfixup.exe
- Ldp.exe
- Netdom.exe
- Nltest.exe
- Ntdsutil.exe
- Repadmin.exe
- W32tm.exe
- Manage As ...
- Start Performance Counters
- Refresh
- Copy

Type here to search

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Server Manager

Server Manager • AD DS

Dashboard

- Local Server
- All Servers
- AD DS
- DNS
- File and Storage Services

SERVICES

All servers | 1 total

Filter

Active Directory Sites and Services

File Action View Help

Active Directory Sites and Services

Sites

Name	Location	Type	Description
Default-First-Site-Name		Site	
Inter-Site Transports		Inter-Site Trans...	
Subnets		Subnets Conta...	

OMNIAPC 3051 Warning Microsoft-Windows-ActiveDirectory\_DomainService Directory Service 10/22/2024 8:40:39 AM

OMNIAPC 1115 Warning Microsoft-Windows-ActiveDirectory\_DomainService Directory Service 10/22/2024 8:39:41 AM

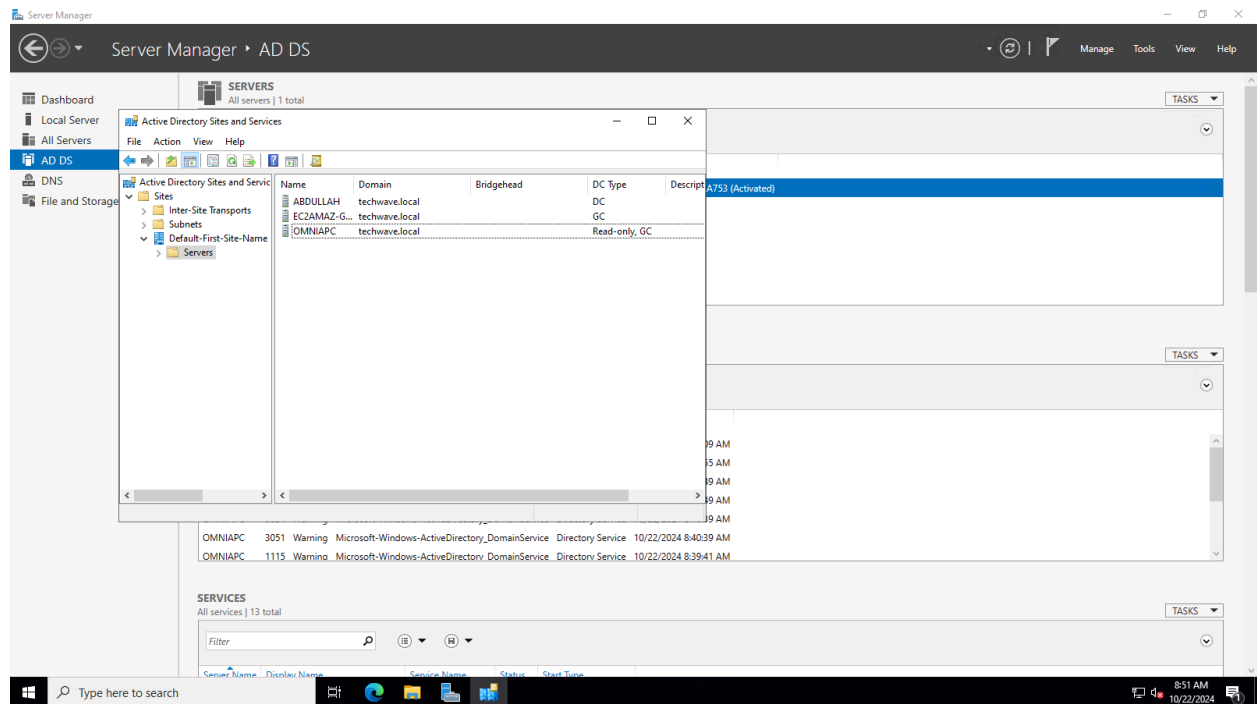
SERVICES

All services | 13 total

Filter

Type here to search

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Run the following command to check the replication status:

```
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.TECHWAVE> repadmin /replsummary
Replication Summary Start Time: 2024-10-22 08:56:05

Beginning data collection for replication summary, this may take awhile:
.....

Source DSA          largest delta    fails/total %%   error
ABDULLAH            10m:20s         0 / 10  0
EC2AMAZ-G8GIFAS    10m:30s         0 / 10  0

Destination DSA     largest delta    fails/total %%   error
ABDULLAH            10m:30s         0 / 5  0
EC2AMAZ-G8GIFAS    10m:20s         0 / 5  0
OMNIAPC             :15s           0 / 10  0
```

## Conclusion

By following the steps outlined in this document, Active Directory Domain Services have been successfully installed, and the server has been promoted to a domain controller within the existing domain (techwave.local). The replication status can be verified using the `repadmin /replsummary` command.