

Server Deployment: TAILWIND-DC1

1. Setup

To create the TAILWIND-DC1 server:

- Navigate to Azure Virtual Machines and select "Create."
- Select your subscription and resource group Azure for Students, AD-Project).
- Enter the VM name: TAILWIND-DC1.
- Select the region: Central India.
- Choose the availability zone and security type.
- Select the image: Windows Server 2022 Datacenter - x64 Gen2.
- Set VM size: Standard_D2s_v3 2 vCPUs, 8 GiB memory).
- Configure administrator username and password e.g., TAILWIND-ADMIN1).
- No public inbound ports enabled for security.

Screenshots:

Create a virtual machine ...

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

i This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Azure for Students ▼

Resource group * ⓘ AD-Project ▼

[Create new](#)

Instance details

Virtual machine name * ⓘ TAILWIND-DC1 ✓

Region * ⓘ (Asia Pacific) Central India ▼

[Deploy to an Azure Extended Zone](#)

Availability options ⓘ Availability zone ▼

Zone options ⓘ

☒ Self-selected zone
Choose up to 3 availability zones, one VM per zone

☐ Azure-selected zone (Preview)
Let Azure assign the best zone for your needs

i Using an Azure-selected zone is not supported in region 'Central India'.

Screenshots:

Create a virtual machine ...

BasicsDisksNetworkingManagementMonitoringAdvancedIagsReview + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

VM disk encryption

Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host ☐

Encryption at host is not registered for the selected subscription. [Learn more](#)

OS disk

OS disk size

OS disk type *

The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Delete with VM ☒

Key management

Enable Ultra Disk compatibility ☐

Data disks for TAILWIND-DC1

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

| LUN | Name | Size (GiB) | Disk type | Host caching | Delete with VM |
|-----|------|------------|-----------|--------------|----------------|
|-----|------|------------|-----------|--------------|----------------|

[Create and attach a new disk](#) [Attach an existing disk](#)

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Next : Networking >

Review + create

Screenshots:

Create a virtual machine ...

Basics

Disks

Networking

Management

Monitoring

Advanced

Tags

Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

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Encryption at host

☐

Encryption at host is not registered for the selected subscription. [Learn more](#)

OS disk

OS disk size

Image default (127 GiB)

OS disk type *

Standard HDD (locally-redundant storage)

The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Delete with VM

☒

Key management

Platform-managed key

Enable Ultra Disk compatibility

☐

Data disks for TAILWIND-DC1

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

| LUN | Name | Size (GiB) | Disk type | Host caching | Delete with VM |
|-----|------|------------|-----------|--------------|----------------|
|-----|------|------------|-----------|--------------|----------------|

Create and attach a new disk

Attach an existing disk

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Next : Networking >

Review + create

2. Review of the Setup

After configuring your VM, Azure provides a comprehensive review section prior to deployment. This is essential for confirming the VM's settings and making sure everything is aligned with the design requirements.

- Basics: Subscription, resource group, VM name, location, image, security settings, VM size, inbound ports, and admin username.

Screenshots:

Basics

| | |
|---------------------------------|---|
| Subscription | Azure for Students |
| Resource group | AD-Project |
| Virtual machine name | TAILWIND-DC1 |
| Region | Central India |
| Availability options | Availability zone |
| Zone options | Self-selected zone |
| Availability zone | 1 |
| Security type | Trusted launch virtual machines |
| Enable secure boot | Yes |
| Enable vTPM | Yes |
| Integrity monitoring | No |
| Image | Windows Server 2022 Datacenter - Gen2 |
| VM architecture | x64 |
| Size | Standard D2s v3 (2 vcpus, 8 GiB memory) |
| Enable Hibernation | No |
| Username | TAILWIND-ADMIN1 |
| Public inbound ports | None |
| Already have a Windows license? | No |
| Azure Spot | No |

Continued....

- Disks: OS disk size/type, managed disk status, ephemeral disk, delete behavior. Networking: VNet name, subnet, public IP assignment, accelerated networking, and NIC behaviors.

Screenshots:

| Disks | |
|------------------------|------------------|
| OS disk size | Image default |
| OS disk type | Standard HDD LRS |
| Use managed disks | Yes |
| Delete OS disk with VM | Enabled |
| Ephemeral OS disk | No |

| Networking | |
|--|-------------------|
| Virtual network | vnet-tailwind-lab |
| Subnet | servers |
| Public IP | None |
| Accelerated networking | On |
| Place this virtual machine behind an existing load balancing solution? | No |
| Delete NIC when VM is deleted | Disabled |

| Advanced | |
|----------------------------|------|
| Extensions | None |
| VM applications | None |
| Cloud init | No |
| User data | No |
| Disk controller type | SCSI |
| Proximity placement group | None |
| Capacity reservation group | None |

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Create

Continued....

- Management & Monitoring: Defender for Cloud tier, managed identity, backup, diagnostics, patching, and alerts.

Screenshots:

Management

| | |
|----------------------------------|---|
| Microsoft Defender for Cloud | Basic (free) |
| System assigned managed identity | Off |
| Login with Microsoft Entra ID | Off |
| Auto-shutdown | Off |
| Backup | Disabled |
| Site Recovery | Disabled |
| Enable periodic assessment | Off |
| Enable hotpatch | Off |
| Patch orchestration options | OS-orchestrated patching; patches will be installed by OS |

Monitoring

| | |
|--------------------------------------|-----|
| Alerts | Off |
| Boot diagnostics | On |
| Enable OS guest diagnostics | Off |
| Enable application health monitoring | Off |

Continued....

3. IP Configuration

Custom DNS Configuration: Set the DNS server for your virtual network to enable internal name resolution and support Active Directory deployment.

- DNS Servers: Custom
 - IP Address: 10.10.10.140 static IP assigned to TAILWIND-DC1 after deployment)
- Screenshot: VNET-IP1)

The screenshot shows the Azure portal interface for configuring the DNS of a virtual network. The breadcrumb navigation at the top reads 'vnet-tailwind-lab | DNS'. Below this, a search bar and a left-hand navigation pane are visible. The left pane lists various network-related settings, with 'DNS' currently selected. The main content area displays the 'DNS servers' configuration. A warning message at the top states: 'Virtual machines and Application gateways(v2 SKU) within this virtual network must be restarted to utilize the updated DNS server settings.' Under the 'DNS servers' section, the 'Custom' option is selected. The 'IP Address' field is populated with '10.10.10.140'. Below this is an 'Add DNS server' input field. At the bottom of the configuration area, there are 'Save' and 'Cancel' buttons. The footer of the page includes the text 'Monitoring' and 'Add or remove favorites by pressing Ctrl+Shift+F'.

vnet-tailwind-lab | DNS

Virtual network

Search

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource visualizer

Settings

Address space

Connected devices

Subnets

Bastion

DDoS protection

Firewall

Microsoft Defender for Cloud

Network manager

DNS

Peerings

Service endpoints

Private endpoints

Properties

Locks

Monitoring

Add or remove favorites by pressing Ctrl+Shift+F

Virtual machines and Application gateways(v2 SKU) within this virtual network must be restarted to utilize the updated DNS server settings.

DNS servers ⓘ

☐ Default (Azure-provided)

☒ Custom

IP Address

10.10.10.140

Add DNS server

Save Cancel

Continued....

Assigning a Static Private IP to TAILWIND-DC1

- Open the network interface settings for TAILWIND-DC1.
- Choose Static under Private IP address allocation.
- Set the desired IP e.g., 10.10.10.140).

Screenshots:

Home > TAILWIND-DC1 | Network settings > tailwind-dc123_z1

tailwind-dc123_z1 | IP configurations

Search Refresh

Overview
Activity log
Access control (IAM)
Tags
Resource visualizer
Settings
IP configurations
DNS servers
Network security group
Properties
Locks
Monitoring
Automation
Help

IP Settings

Enable IP forwarding ☐

Virtual network: vnet-tailwind-lab

Subnet: servers (10.10.10.128/25) 122 free IP addresses

Private and public IP addresses can be assigned to a virtual machine's network interface controller. You can add as many private and public IPv4 addresses as necessary to a network interface, within the limits listed in the Azure limits article. Private IP address prefix types can only be created as a secondary IP configuration. [Learn more](#)

+ Add Make primary Delete

| Name | IP Version | Type | Private IP Address | Public IP Address |
|------------------------------------|------------|---------|------------------------|-------------------|
| <input type="checkbox"/> ipconfig1 | IPv4 | Primary | 10.10.10.132 (Dynamic) | - |

Apply Discard changes

Edit IP configuration

tailwind-dc123_z1

A primary IP configuration already exists. Any additional IP configurations will be secondary. The virtual network this network interface is attached to only supports IPv4. [Learn more](#)

Name: ipconfig1

IP version: IPv4

Type: Primary

Private IP address settings

Allocation: ☐ Dynamic ☒ Static

Private IP address: 10.10.10.10

Static IP address 10.10.10.10 is not in subnet's address spaces (10.10.10.128/25).

Public IP address settings

Associate public IP address: ☐

Save Cancel Give feedback

Validating Allowed Address Range

- Azure will only permit static IPs that fall within the available IP pool of the selected subnet.
- Attempting to assign an address outside the valid or reserved range gives an error.

Screenshots:

Edit IP configuration

tailwind-dc123_z1

A primary IP configuration already exists. Any additional IP configurations will be secondary. The virtual network this network interface is attached to only supports IPv4. [Learn more](#)

Name: ipconfig1

IP version: IPv4

Type: Primary

Private IP address settings

Allocation: ☐ Dynamic ☒ Static

Private IP address: 10.10.10.130

The IP address 10.10.10.130 falls within the reserved IP range of subnet 10.10.10.128/25.

Public IP address settings

Associate public IP address: ☐

Save Cancel Give feedback

Screenshots:

Edit IP configuration

tailwind-dc123_z1

A primary IP configuration already exists. Any additional IP configurations will be secondary. The virtual network this network interface is attached to only supports IPv4. [Learn more](#)

Name *

ipconfig1

IP version

IPv4

Type

Primary

Private IP address settings

Allocation

Dynamic

Static

Private IP address *

10.10.10.140

Public IP address settings

Associate public IP address

Save

Cancel

Give feedback

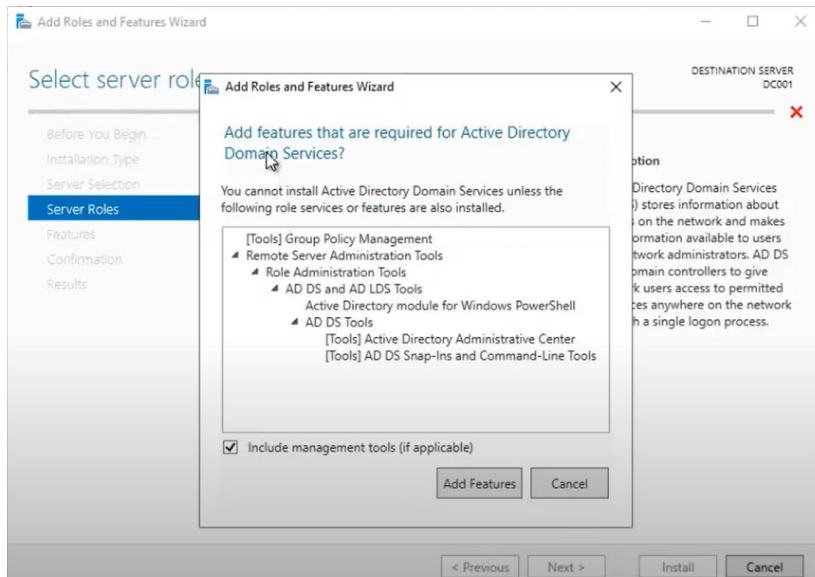
Continued....

4. Promotion to Active Directory Domain Services

a) Install the AD DS Role and Begin Promotion

- Use Server Manager's "Add Roles and Features Wizard."
- Install roles: Active Directory Domain Services, Group Policy Management, AD Admin Center, etc.

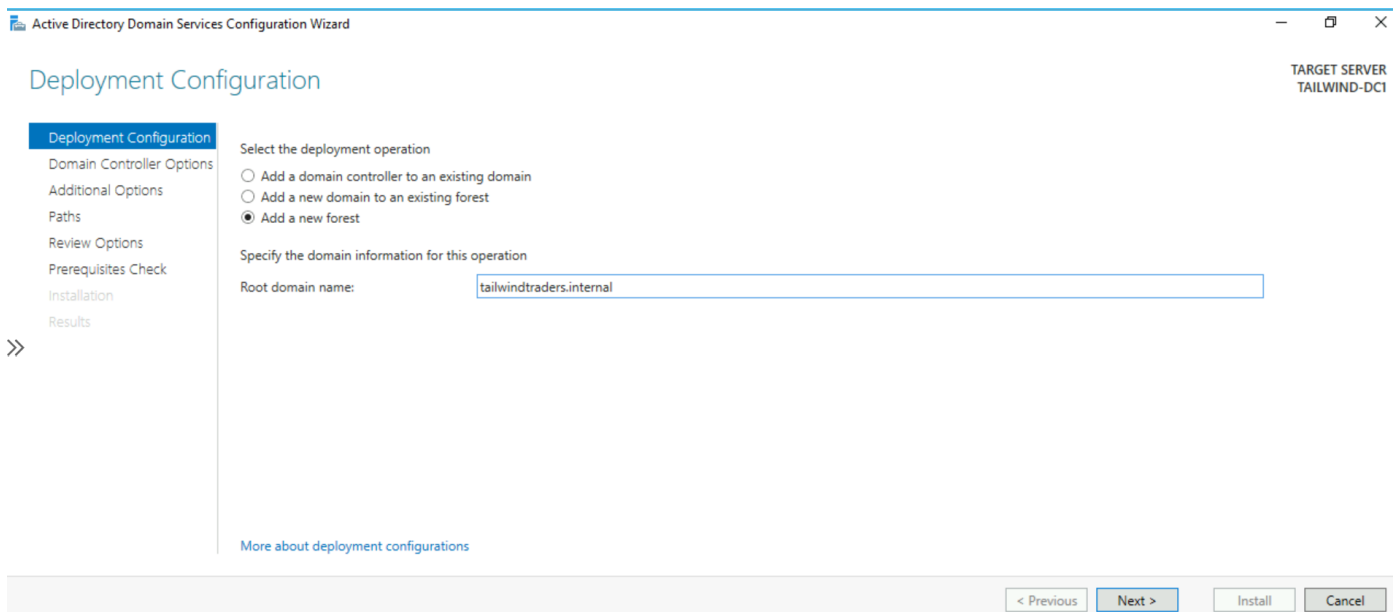
Screenshot:



b) Deployment Configuration New Forest)

- Select: Add a new forest
- Set root domain name: tailwindtraders.internal

Screenshot:



c) Domain Controller Options

- Set forest & domain functional level: Windows Server 2016
- Enable Domain Name System (DNS), Global Catalog (GC)
- Set Directory Services Restore Mode (DSRM) password

Screenshot:

The screenshot shows the 'Domain Controller Options' page of the Active Directory Domain Services Configuration Wizard. The left sidebar lists the steps: Deployment Configuration, Domain Controller Options (selected), DNS Options, Additional Options, Paths, Review Options, Prerequisites Check, Installation, and Results. The main area is titled 'Domain Controller Options' and contains the following sections:

- Select functional level of the new forest and root domain:** Two dropdown menus are set to 'Windows Server 2016'.
- Specify domain controller capabilities:** Three checkboxes are shown: 'Domain Name System (DNS) server' (checked), 'Global Catalog (GC)' (checked), and 'Read only domain controller (RODC)' (unchecked).
- Type the Directory Services Restore Mode (DSRM) password:** Two text boxes labeled 'Password:' and 'Confirm password:' are shown, both containing masked characters (dots).

At the bottom right, there are four buttons: '< Previous', 'Next >', 'Install', and 'Cancel'. The target server is identified as 'TAILWIND-DC1'.

d) DNS Options

- Decide on DNS delegation (usually unchecked)
- Review warning if parent zone isn't on Windows DNS

Screenshot:

The screenshot shows the 'DNS Options' page of the Active Directory Domain Services Configuration Wizard. The left sidebar lists the steps: Deployment Configuration, Domain Controller Options, DNS Options (selected), Additional Options, Paths, Review Options, Prerequisites Check, Installation, and Results. The main area is titled 'DNS Options' and contains the following sections:

- Specify DNS delegation options:** A checkbox labeled 'Create DNS delegation' is shown and is unchecked.

A yellow warning banner at the top of the main area states: 'A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found or it does not run Windows DNS server. If you are integrating with an existing DNS infrastructure, y... Show more'. At the bottom right, there are four buttons: '< Previous', 'Next >', 'Install', and 'Cancel'. The target server is identified as 'TAILWIND-DC1'.

e) Additional Options

- Verify or change NetBIOS name (e.g., TAILWINDTRADERS)

Screenshot:

The screenshot shows the 'Additional Options' step of the Active Directory Domain Services Configuration Wizard. The left sidebar lists the steps: Deployment Configuration, Domain Controller Options, DNS Options, Additional Options (selected), Paths, Review Options, Prerequisites Check, Installation, and Results. The main area is titled 'Additional Options' and contains the instruction 'Verify the NetBIOS name assigned to the domain and change it if necessary'. Below this, there is a text box labeled 'The NetBIOS domain name:' with the value 'TAILWINDTRADERS' entered. At the bottom right, there are buttons for '< Previous', 'Next >', 'Install', and 'Cancel'. The target server is listed as 'TAILWIND-DC1'.

f) Paths

- Set database, log, and SYSVOL paths as needed defaults: C:\Windows\NTDS, C:\Windows\SYSVOL)

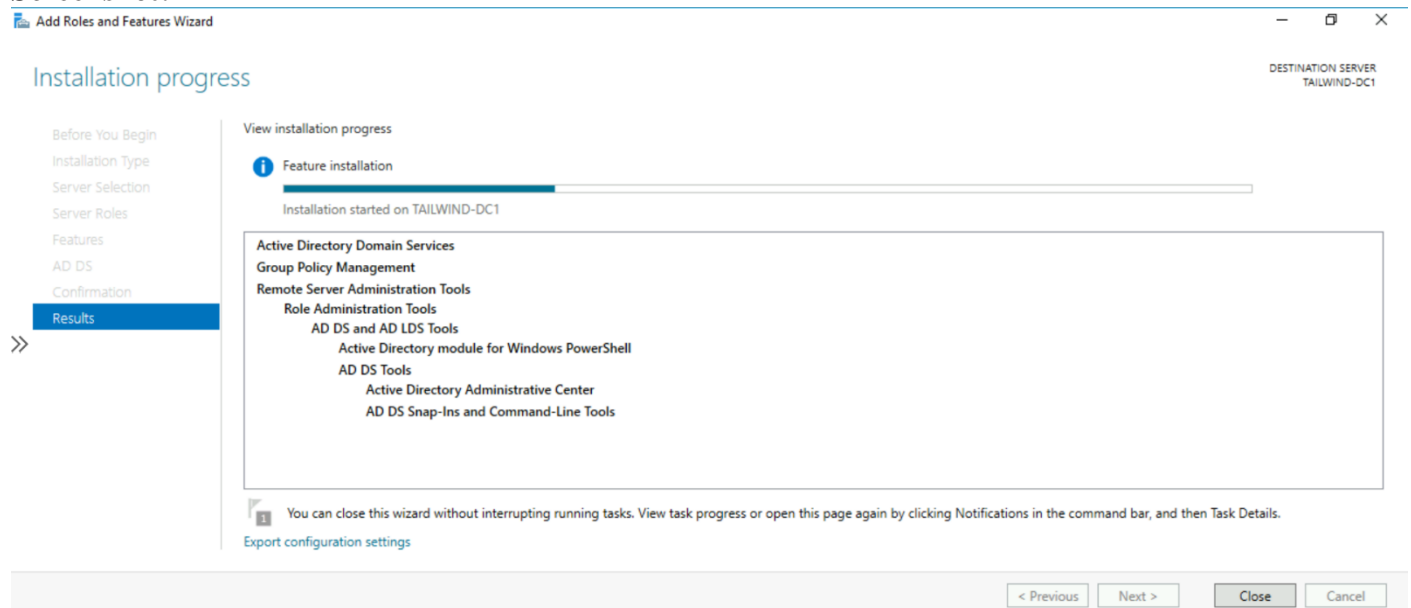
Screenshot:

The screenshot shows the 'Paths' step of the Active Directory Domain Services Configuration Wizard. The left sidebar lists the steps: Deployment Configuration, Domain Controller Options, DNS Options, Additional Options, Paths (selected), 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 text boxes with labels: 'Database folder:', 'Log files folder:', and 'SYSVOL folder:'. Each text box contains the default path 'C:\Windows\NTDS' or 'C:\Windows\SYSVOL' and has a browse button (three dots) to its right. At the bottom right, there are buttons for '< Previous', 'Next >', 'Install', and 'Cancel'. The target server is listed as 'TAILWIND-DC1'.

g) Review and Install

- Run prerequisites check, then install
- Monitor installation progress

Screenshot:



Continued....

Review Options - AD DS Promotion TAILWIND-DC1)

Carefully review all selected options before installation.

- Configuration summary: first AD domain controller in a new forest.
- New domain: tailwindtraders.internal
- NetBIOS name: TAILWINDTRADERS
- Forest/domain level: Windows Server 2016
- Global Catalog/DNS: Enabled
- Database/log/SYSVOL paths confirmed

Screenshots:

TARGET SERVER
TAILWIND-DC1

Review your selections:

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

The new domain name is "tailwindtraders.internal". This is also the name of the new forest.

The NetBIOS name of the domain: TAILWINDTRADERS

Forest Functional Level: Windows Server 2016

Domain Functional Level: Windows Server 2016

Additional Options:

Global catalog: Yes

DNS Server: Yes

Create DNS Delegation: No

Database folder: C:\Windows\NTDS

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

View script

[More about installation options](#)

< Previous

Next >

Install

Cancel

Screenshots:

TARGET SERVER
TAILWIND-DC1

Review your selections:

Global catalog: Yes

DNS Server: Yes

Create DNS Delegation: No

Database folder: C:\Windows\NTDS

Log file folder: C:\Windows\NTDS

SYSVOL folder: C:\Windows\SYSVOL

The DNS Server service will be configured on this computer.

This computer will be configured to use this DNS server as its preferred DNS server.

The password of the new domain Administrator will be the same as the password of the local Administrator of this computer.

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

View script

[More about installation options](#)

< Previous

Next >

Install

Cancel

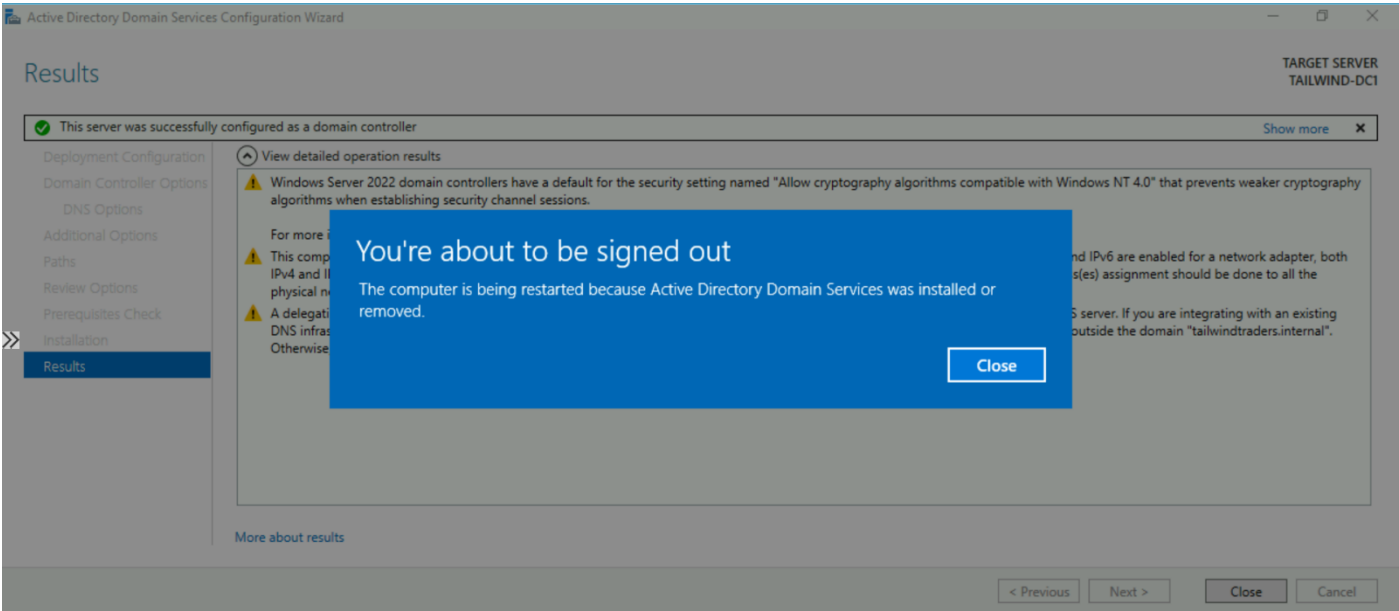
Confirmation and Verification: Successful Promotion to AD DS

After configuration and review, the server is promoted to domain controller.

a) Promotion Confirmation:

- Successful configuration, restart required to finalize.

Screenshot:



b) AD DS Console Verification:

- Server appears online, correct static IP, healthy status.

Screenshot:

