

Task: Above-and-Beyond 0

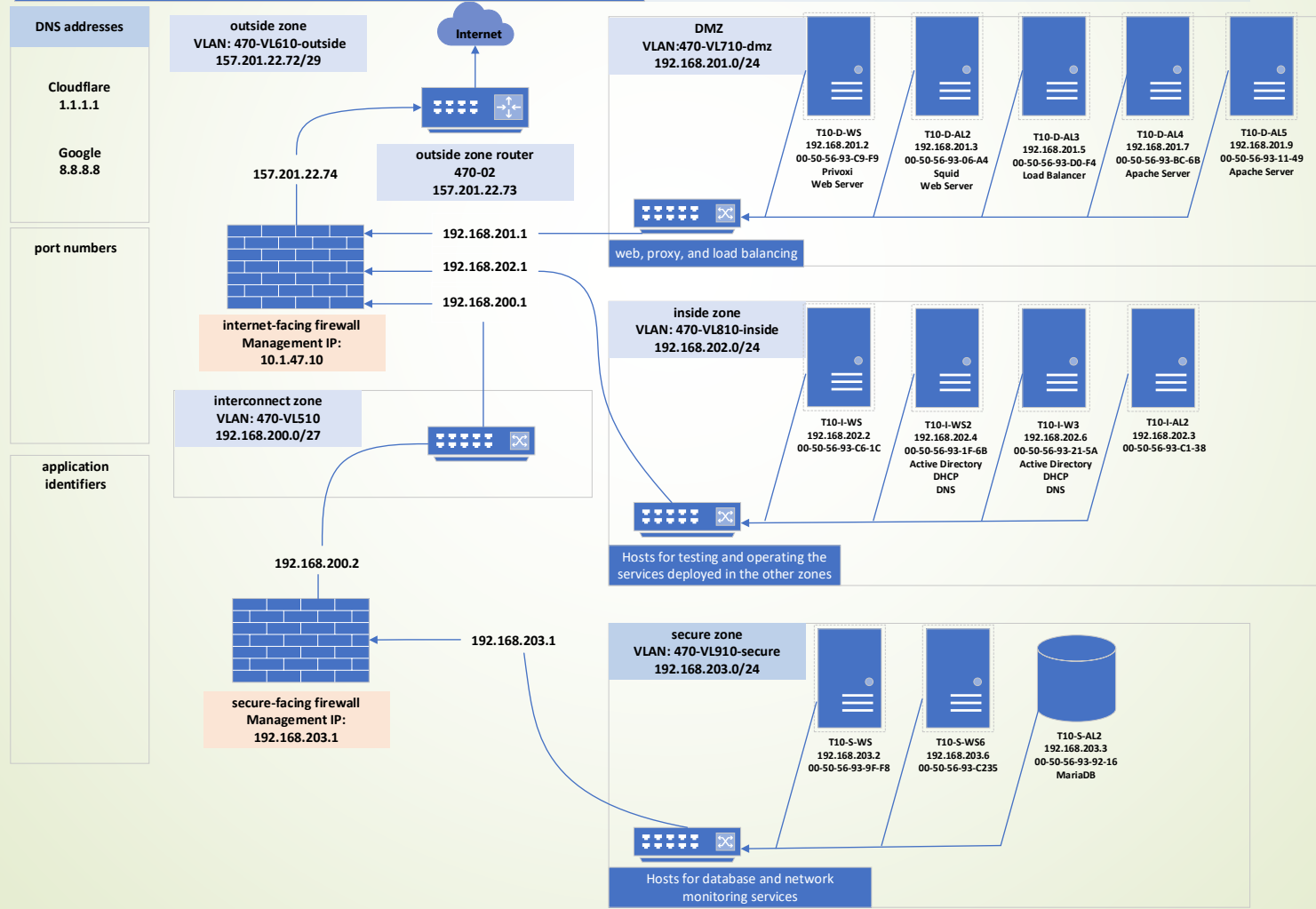


Task: Above-and-Beyond 0

cit470 Task: Diagram

Team 10 Layer 3: outside zones' public IPv4 address assignments

public space (IPv4 subnet ID)	router	firewall (dynamic NAT)	static NAT	(broadcast)
157.201.22.72/29	157.201.22.73	157.201.22.74 470t10ra.cit.byui.edu	157.201.22.75- 157.201.22.78	157.201.22.79



Active Directory Installation



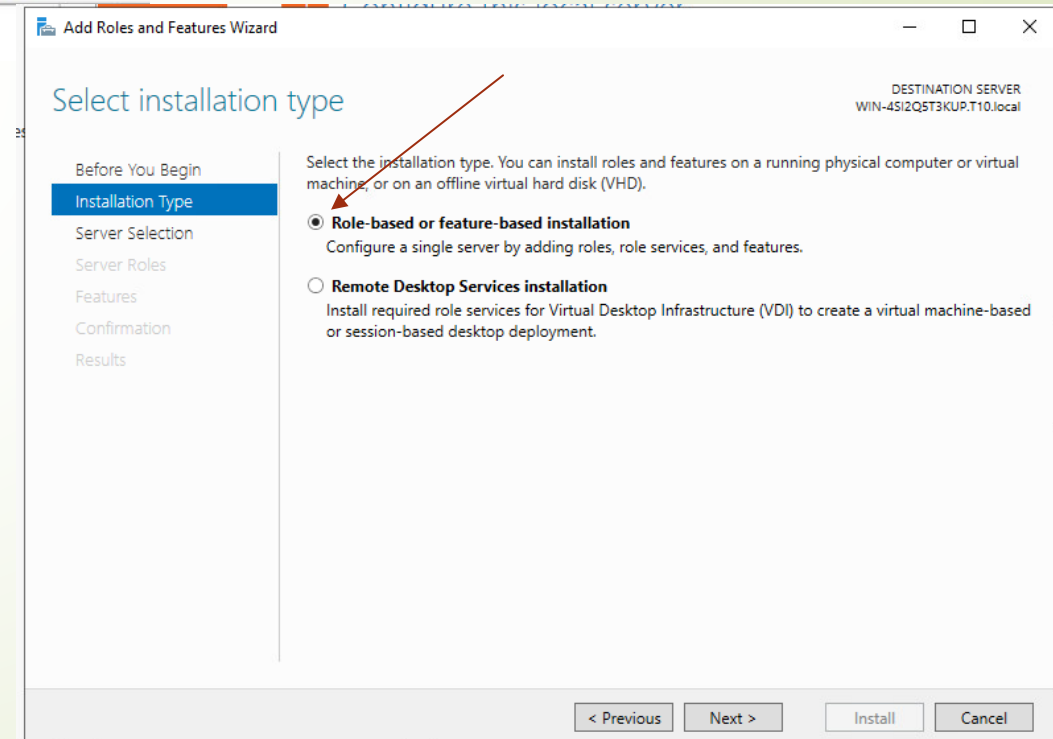
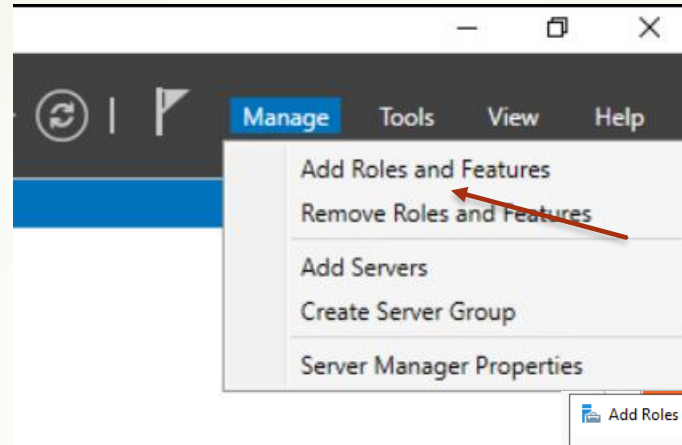
Active Directory Installation

Open server
manager

Select the
“Manage” Tab

Select “Roles and
Features”

Select the default
and click “Next”



Select destination server

DESTINATION SERVER
T10-D-WS

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: <input type="text"/>			
Name	IP Address	Operating System	
T10-D-WS	192.168.201.2	Microsoft Windows Server 2022 Standard	

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

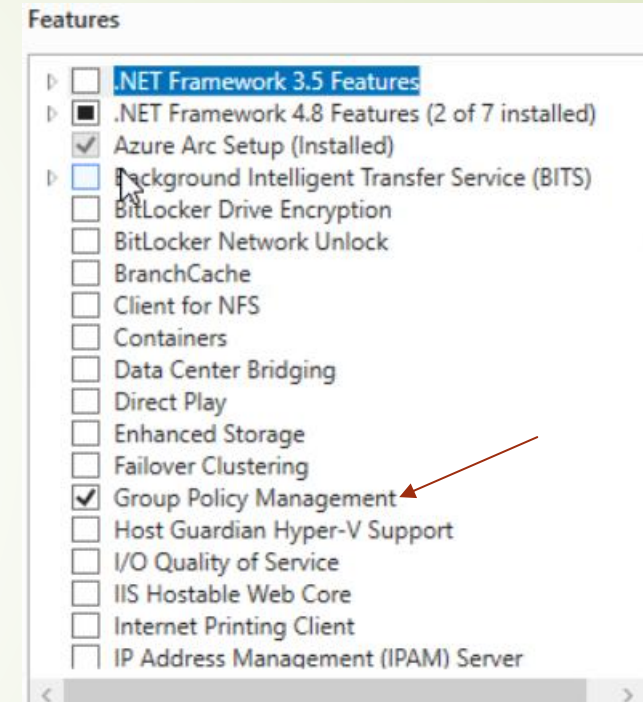
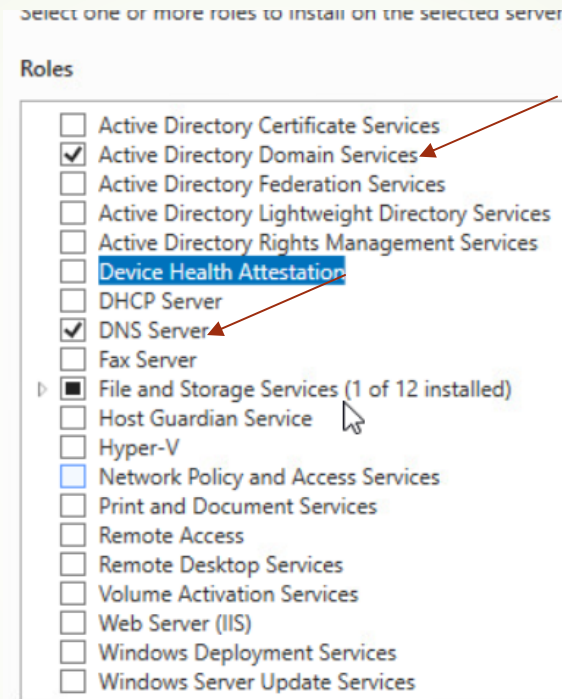
Cancel

Active Directory Installation

Under “Roles”
Select the “Active Directory Domain Services” and the “DNS Server” options.

Under “Features”
make sure that
“Group Policy Manager” is
selected.

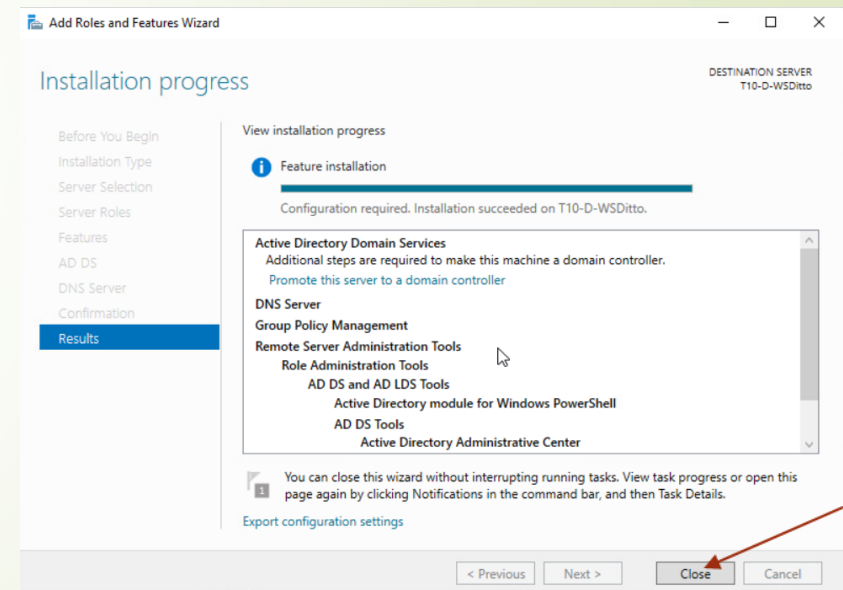
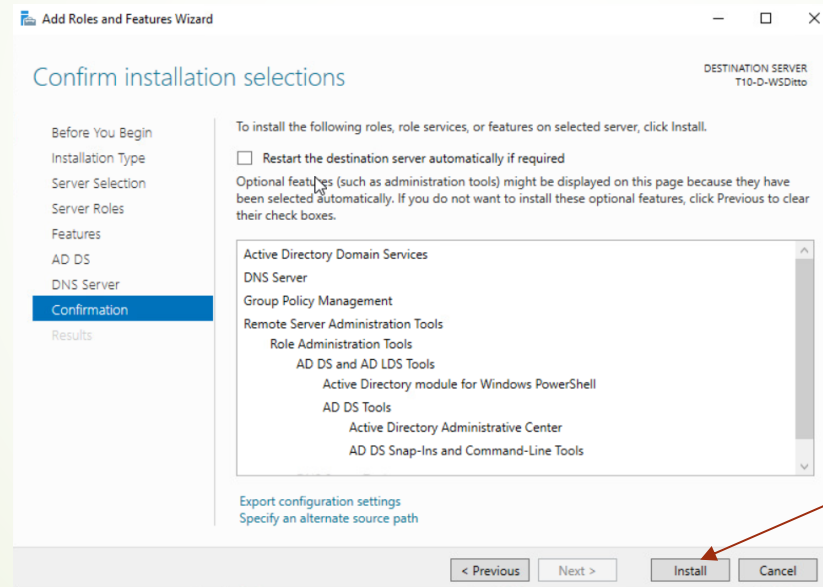
Click Next and then
click Next on the
following two
pages.



Active Directory Installation

Click "Install"

Once the
Installation
has finished
Click "Close"

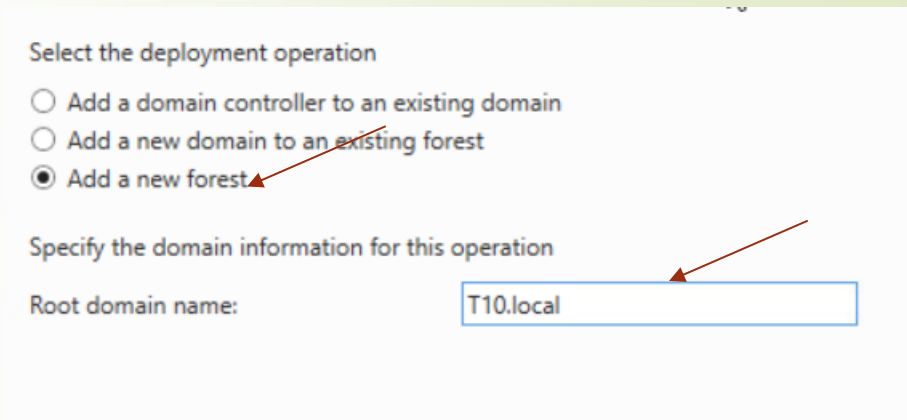
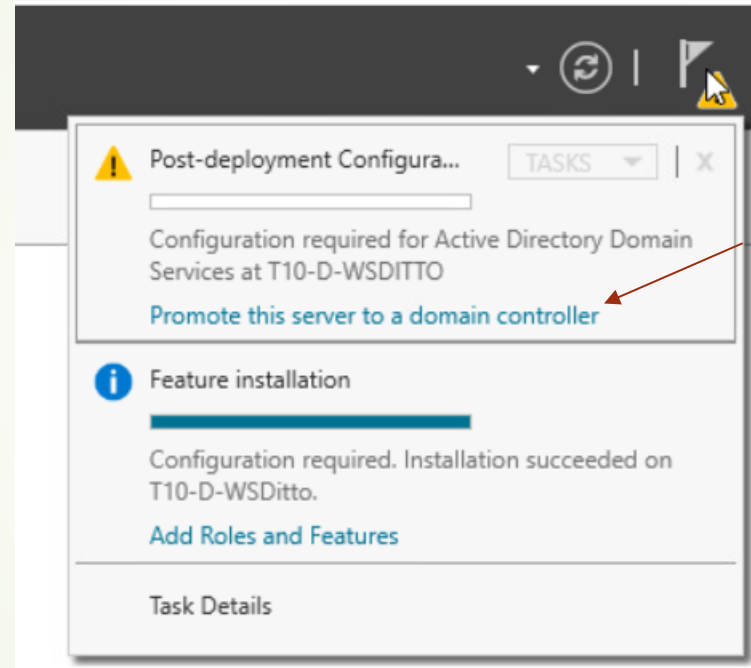


Active Directory Installation

Click on the exclamation flag and then select "Promote this server to domain controller".

When the Active Directory Domain Services Configuration Wizard opens, Select "Add a new forest".

Enter your Domain name and click "Next".



Active Directory Installation

Enter a
DSRM
Password

Click "Next"

On the DNS
Options
page click
"Next"

The screenshot displays the 'DNS Options' page of the Active Directory Installation Wizard. The left pane shows the 'Forest functional level' and 'Domain functional level' both set to 'Windows Server 2016'. Under 'Specify domain controller capabilities', the 'Domain Name System (DNS) server' and 'Global Catalog (GC)' are checked, while 'Read only domain controller (RODC)' is unchecked. The 'Type the Directory Services Restore Mode (DSRM) password' section has two password fields, both masked with dots. The right pane shows the 'DNS Options' tab selected in the left navigation pane. A warning message at the top states: 'A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found...'. Below this, the 'Specify DNS delegation options' section has a 'Create DNS delegation' checkbox which is unchecked. At the bottom right, the 'Next >' button is highlighted with a red arrow.

Select functional level of the new forest and root domain

Forest functional level: Windows Server 2016

Domain functional level: Windows Server 2016

Specify domain controller capabilities

- ☒ Domain Name System (DNS) server
- ☒ Global Catalog (GC)
- ☐ Read only domain controller (RODC)

Type the Directory Services Restore Mode (DSRM) password

Password:

Confirm password:

DNS Options

TARGET SERVER
T10-D-WSditto

A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found... Show more X

Deployment Configuration

Domain Controller Options

DNS Options

Additional Options

Paths

Review Options

Prerequisites Check

Installation

Results

Specify DNS delegation options

☐ Create DNS delegation

More about DNS delegation

< Previous Next > Install Cancel

Active Directory Installation

On the other Options Page and the Paths page leave the default settings and click "Next".

Verify the NetBIOS name assigned to the domain and change it if necessary

The NetBIOS domain name:

T10

Specify the location of the AD DS database, log files, and SYSVOL

Database folder:

C:\Windows\NTDS

Log files folder:

C:\Windows\NTDS

SYSVOL folder:

C:\Windows\SYSVOL

Active Directory Installation

Review options then click “Next”.

Once Prerequisite Check is completed click “Install”.

The Server will automatically restart.

Review your selections:

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

The new domain name is "T10.local". This is also the name of the new forest.

The NetBIOS name of the domain: T10

Forest Functional Level: Windows Server 2016

Domain Functional Level: Windows Server 2016

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](#)

Prerequisites Check

TARGET SERVER
T10-D-WSDitto

✓ All prerequisite checks passed successfully. Click 'Install' to begin installation. [Show more](#)

Deployment Configuration

Domain Controller Options

DNS Options

Additional Options

Paths

Review Options

Prerequisites Check

Installation

Results

Prerequisites need to be validated before Active Directory Domain Services is installed on this computer

[Rerun prerequisites check](#)

View results

⚠ Windows Server 2022 domain controllers have a default for the security setting named "Allow cryptography algorithms compatible with Windows NT 4.0" that prevents weaker cryptography algorithms when establishing security channel sessions.

For more information about this setting, see Knowledge Base article 942564 (<http://go.microsoft.com/fwlink/?Linkid=104751>).

⚠ 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, you should manually create a delegation to this DNS server in the parent zone to ensure reliable name resolution from outside the domain "T10.local". Otherwise, no action is required.

⚠ If you click Install, the server automatically reboots at the end of the promotion operation.

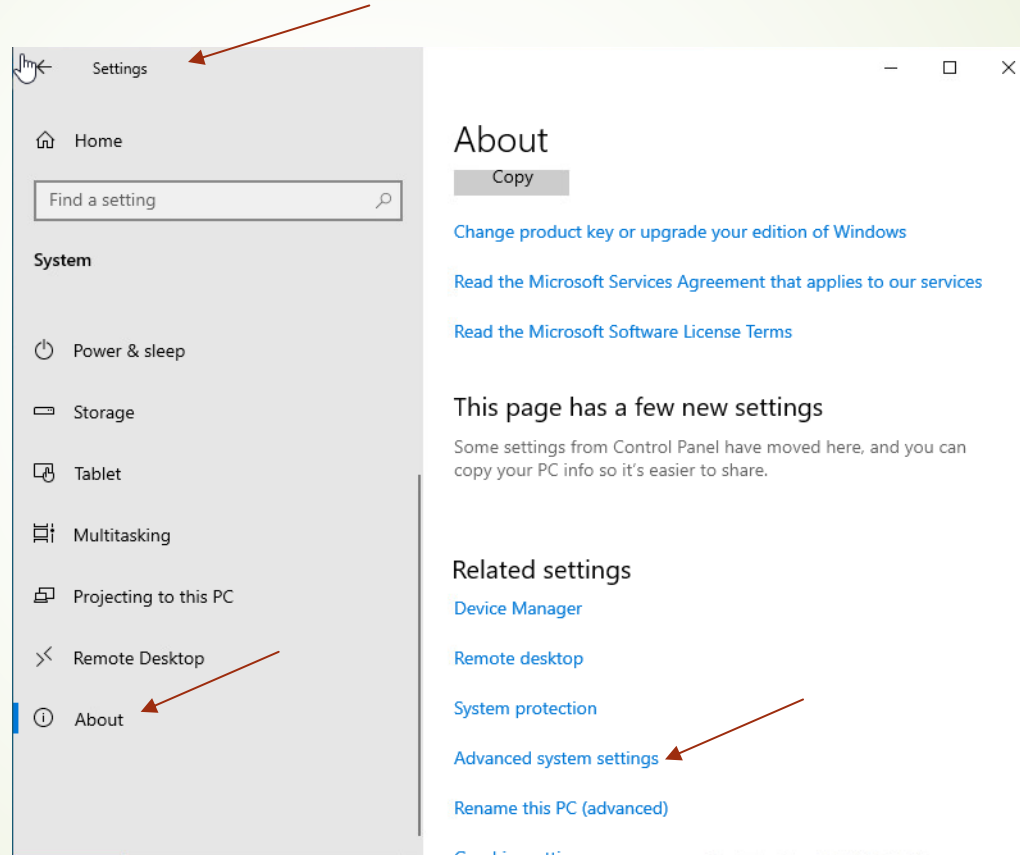
[More about prerequisites](#)

< Previous Next >

Install Cancel

Join Windows Computer to a Domain

On the Windows computer you want to join to the domain, go to Settings > About > Advanced System Settings



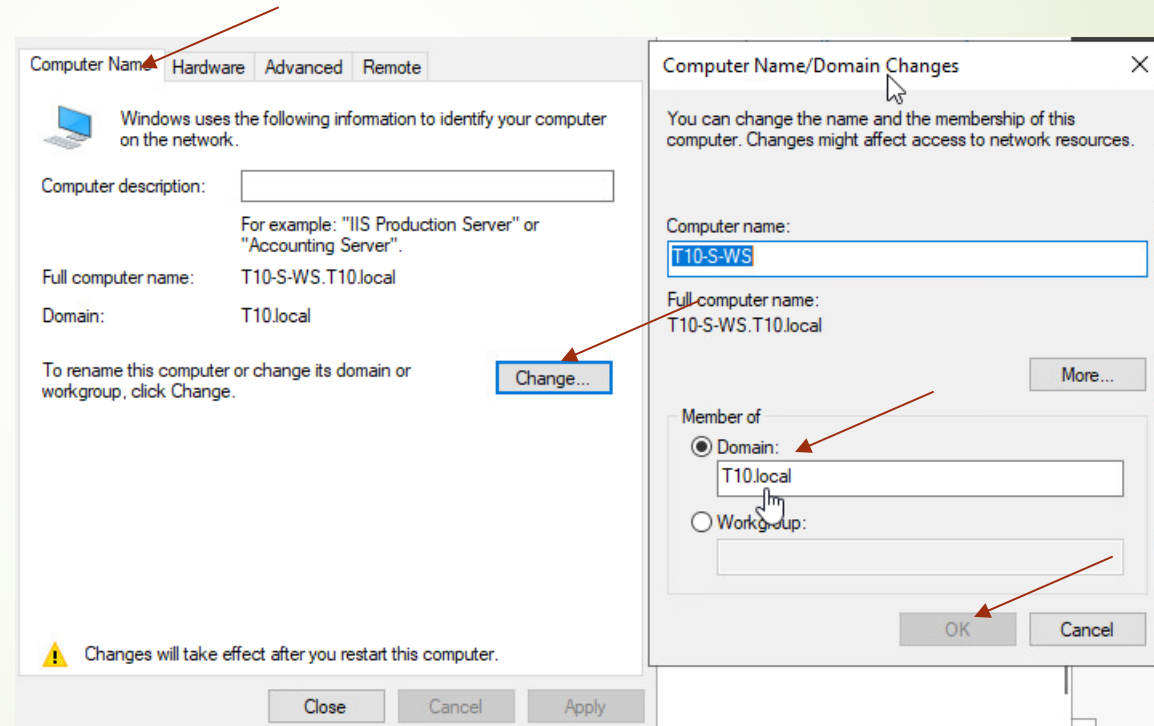
Join Windows Computer to a Domain

Select the
"Computer
Name" tab

Click "Change" to
rename the
computer or
change its
domain or
workgroup

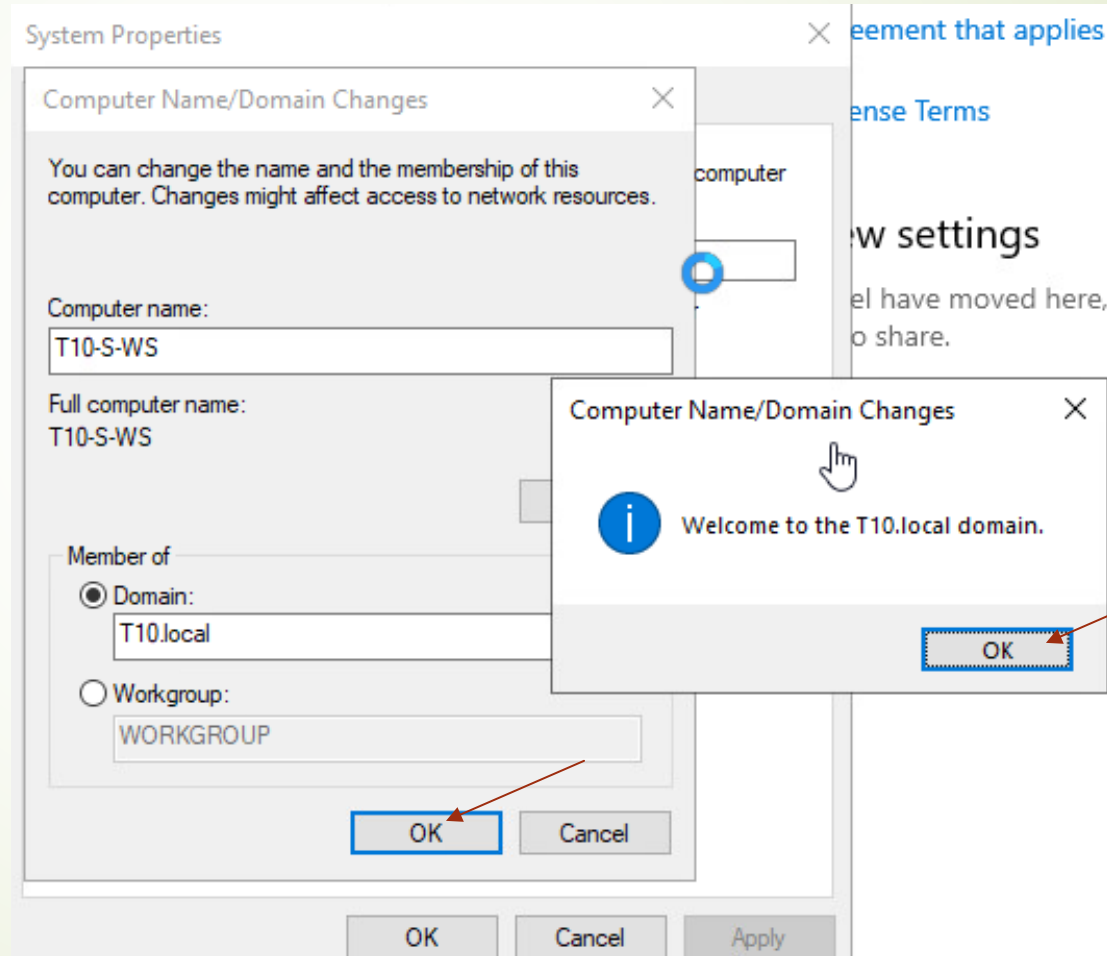
Select "Domain"
then enter the
domain name

Select OK



Join Windows Computer to a Domain

Once welcome confirmation is received, click OK, then OK



Install Cockpit

```
[cditto@T10-D-AL3 ~]$ sudo dnf install cockpit-podman cockpit-machines cockpit-networkmanager cockpit-packagekit
```

```
[cditto@T10-D-AL3 ~]$ sudo systemctl enable --now cockpit.socket
```

```
[cditto@T10-D-AL3 ~]$ sudo systemctl start cockpit cockpit.socket
```

```
[cditto@T10-D-AL3 ~]$ sudo systemctl status cockpit
```

```
● cockpit.service - Cockpit Web Service
   Loaded: loaded (/usr/lib/systemd/system/cockpit.service; static; vendor preset: enabled)
   Active: active (running) since Fri 2024-02-16 19:39:06 CST; 8s ago
     Docs: man:cockpit-ws(8)
   Process: 532788 ExecStartPre=/usr/libexec/cockpit-certificate-ensure --for-cockpit (code=0)
  Main PID: 532795 (cockpit-tls)
    Tasks: 1 (limit: 23500)
   Memory: 700.0K
    CGroup: /system.slice/cockpit.service
            └─532795 /usr/libexec/cockpit-tls
```

```
Feb 16 19:39:06 T10-D-AL3.localdomain systemd[1]: Starting Cockpit Web Service.
```

```
Feb 16 19:39:06 T10-D-AL3.localdomain systemd[1]: Started Cockpit Web Service.
```

```
[cditto@T10-D-AL3 ~]$ sudo firewall-cmd --permanent --add-service=cockpit
```

```
[cditto@T10-D-AL3 ~]$ sudo firewall-cmd --reload
```

Join a Linux Machine to a Domain Using Cockpit

Check IP configuration to make sure DNS is pointing to the DNS server the Domain is using
(Once DNS and DHCP is set up in active Directory this step should already be done for you)

Get The IP address of the machine cockpit is installed on

Open a web-browser and enter the <IP Address>:9090

New Profile

Identity **IPv4** IPv6 Security

IPv4 Method

- ☐ Automatic (DHCP)
- ☒ Manual
- ☐ Link-Local Only
- ☐ Disable

Addresses

Address	Netmask	Gateway
192.168.201.5	255.255.255.0	192.168.201.1

DNS

Automatic ☐ OFF

192.168.201.4

Separate IP addresses with commas

Routes

Automatic ☒ ON

Address	Netmask	Gateway	Metric

Forever-Fix x Firefox Privacy Not...

Q https://192.168.201.5:9090

https://192.168.201.5:9090/

This time, search with: Google Amazon

Join a Linux Machine to a Domain Using Cockpit

Sign in using
credentials
for the
machine

Change
limited
access
settings and
turn on
administrator
access

Scroll down
and select
"join Domain"

https://192.168.201.5:9090

Web console is running in limited access mode. [Turn on administrative access](#)

T10-D-AL3.localdomain running AlmaLinux 8.9 (Midnight Oncilla)

Configuration

Hostname	T10-D-AL3.localdomain edit
System time	Feb 16, 2024, 7:23 PM
Domain	Join domain
Performance profile	virtual-guest
Cryptographic policy	Default
Secure shell keys	Show fingerprints

AlmaLinux

User name

cditto

Password

Other options

Log in

Server: T10-D-AL3.localdomain

Log in with your server user account.

Join a Linux Machine to a Domain Using Cockpit

Enter
Domain
credentials
then click
“Join”

Join a domain

Domain address

T10.local

Domain administrator name

Administrator

Domain administrator password

●●●●●●●●●●

Join

Cancel

Configuration

Hostname	T10-D-AL3.localdomain
System time	Feb 16, 2024, 7:26 PM
Domain	T10.local
Performance profile	virtual-guest
Cryptographic policy	Default
Secure shell keys	Show fingerprints

Check Active Directory for Joined Computers

On the Domain Controller go to server manager

In the right hand corner select the "Tools" tab

Select "Active Directory User and Computers"

Select desired Domain and then the "Computer" folder

All domain computers should be listed.

