

Windows GUI/CLI Active Directory Install  
Chris Gaynor  
15 Feb 2024

1) Using CLI to check if IP address is static or dynamically assigned.

IPv4

DHCP enabled = Dynamic IP

IP Address = 10.0.0.15

Subnet = 255.255.255.0

Default Gateway = 10.0.0.1

DNS = (P)75.75.75.75

(S)75.75.75.76

```
C:\Users\Administrator>ipconfig /all
```

```
Windows IP Configuration
```

```
Host Name . . . . . : WIN-KG868040K0B
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : hsd1.co.comcast.net
```

```
Ethernet adapter Ethernet:
```

```
Connection-specific DNS Suffix . : hsd1.co.comcast.net
Description . . . . . : Intel(R) PRO/1000 MT Desktop Adapter
Physical Address. . . . . : 08-00-27-B0-65-65
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IPv6 Address. . . . . : 2601:281:d87e:6aa0::56a(Preferred)
Lease Obtained. . . . . : Wednesday, February 14, 2024 8:22:30 AM
Lease Expires . . . . . : Sunday, February 18, 2024 12:49:56 AM
IPv6 Address. . . . . : 2601:281:d87e:6aa0:a066:22c9:f2f1:9f2e(Preferred)
Link-local IPv6 Address . . . . . : fe80::dfdc:64db:3713:56e0%5(Preferred)
IPv4 Address. . . . . : 10.0.0.15(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Thursday, February 15, 2024 10:22:57 AM
Lease Expires . . . . . : Saturday, February 17, 2024 10:22:57 AM
Default Gateway . . . . . : fe80::82da:c2ff:fe91:35d7%5
                             10.0.0.1
DHCP Server . . . . . : 10.0.0.1
DHCPv6 IAID . . . . . : 84410407
DHCPv6 Client DUID. . . . . : 00-01-00-01-2D-3C-C7-8C-08-00-27-B0-65-65
DNS Servers . . . . . : 2001:558:feed::1
                             2001:558:feed::2
                             75.75.75.75
                             75.75.76.76
                             2001:558:feed::1
                             2001:558:feed::2
NetBIOS over Tcpip. . . . . : Enabled
```

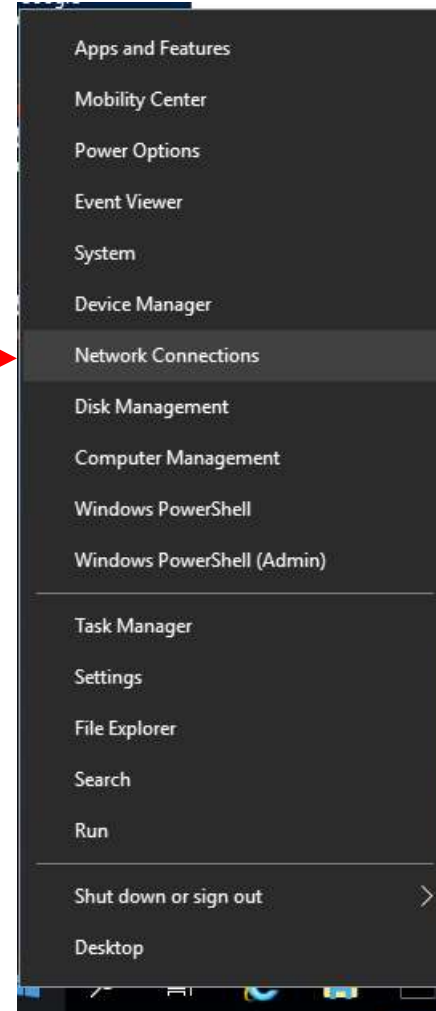
2) Before we set a Static IP, we want to avoid any chance of a conflict. We check currently assigned IP's using the CLI command: arp -a

arp = address resolution protocol  
-a to show all assigned to the network

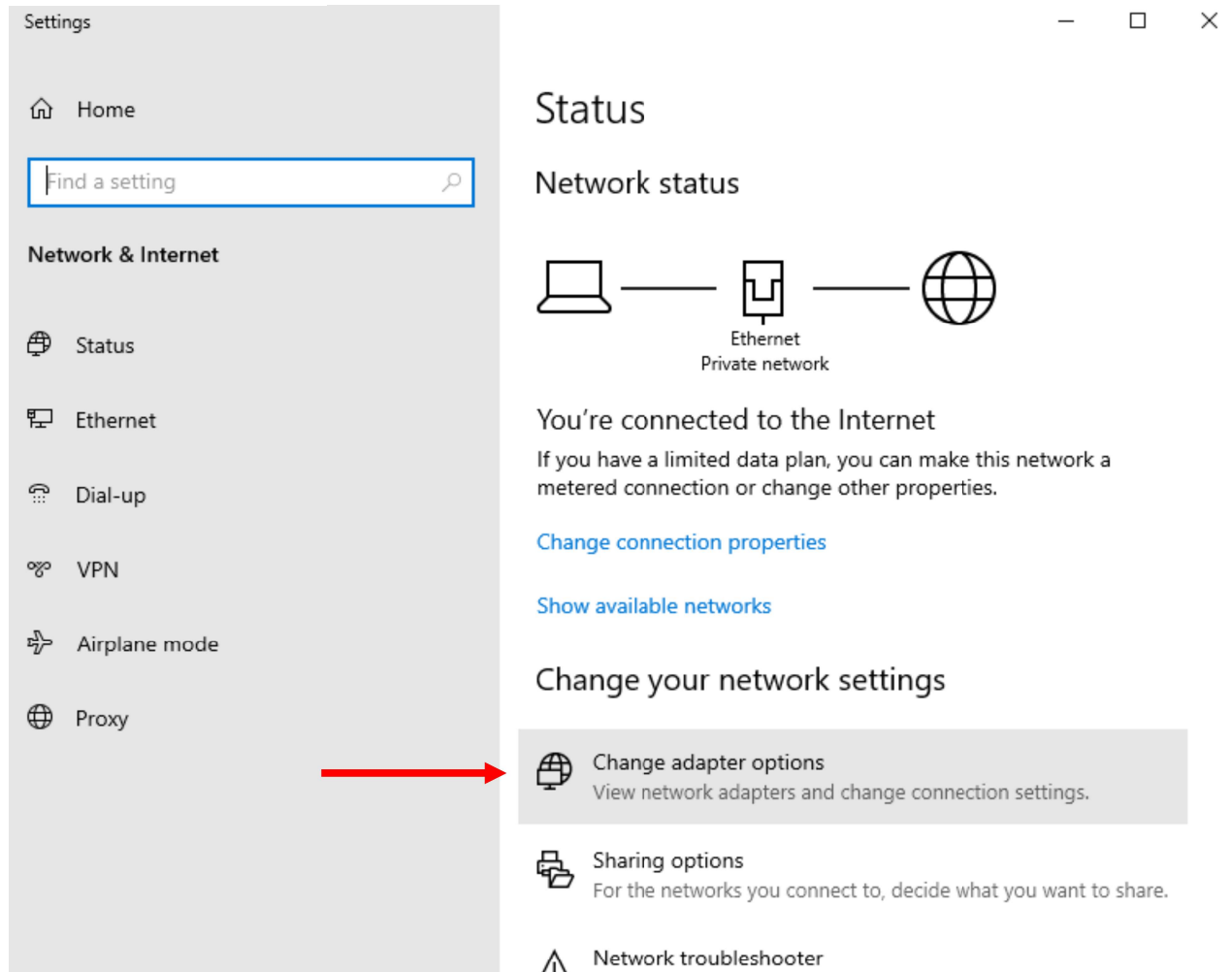
```
C:\Users\Administrator>arp -a

Interface: 10.0.0.15 --- 0x5
Internet Address      Physical Address      Type
10.0.0.1              80-da-c2-91-35-d7     dynamic
10.0.0.255            ff-ff-ff-ff-ff-ff     static
224.0.0.2             01-00-5e-00-00-02     static
224.0.0.22            01-00-5e-00-00-16     static
224.0.0.251           01-00-5e-00-00-fb     static
224.0.0.252           01-00-5e-00-00-fc     static
239.255.255.250       01-00-5e-7f-ff-fa     static
255.255.255.255       ff-ff-ff-ff-ff-ff     static
```

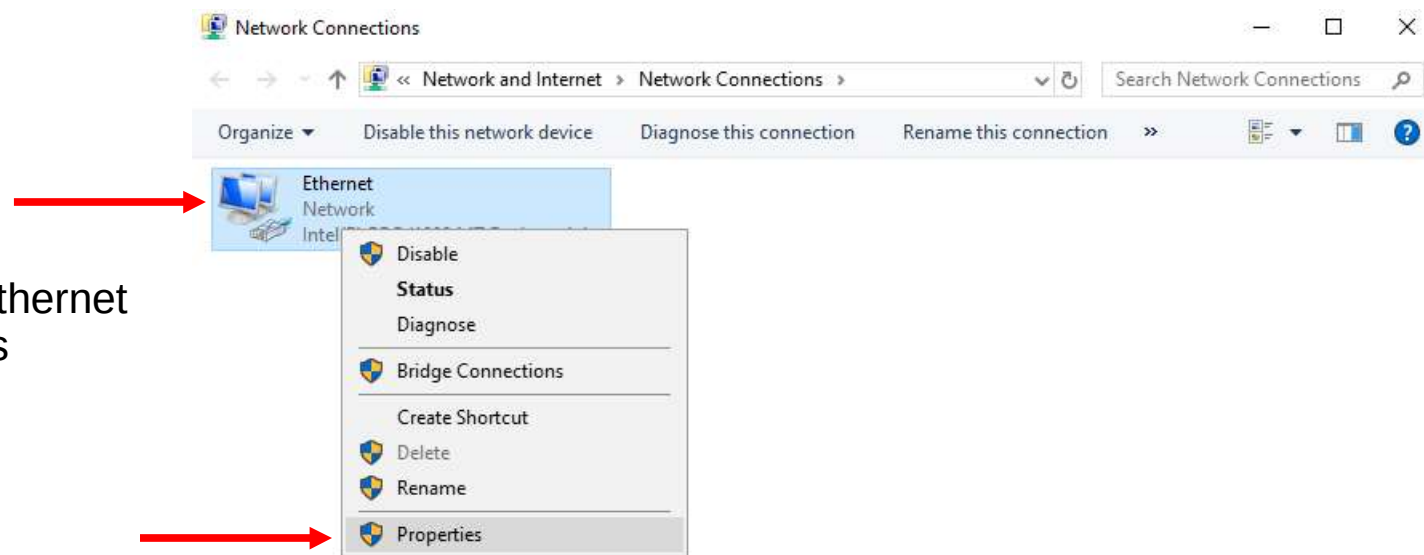
3) Now that we know we are on a dynamic IP we then navigate to the desktop and right click on the windows start icon and select Network Connections



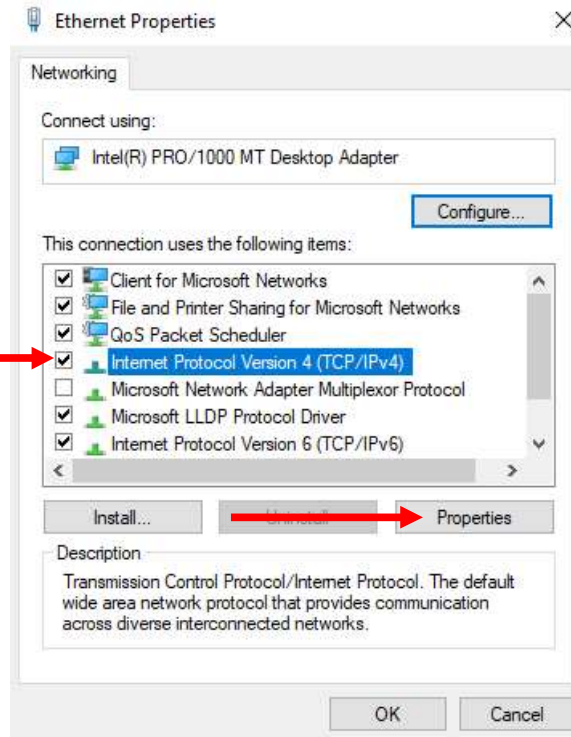
4) Next, select Change adapter options



5) Next, we right click on Ethernet and select Properties

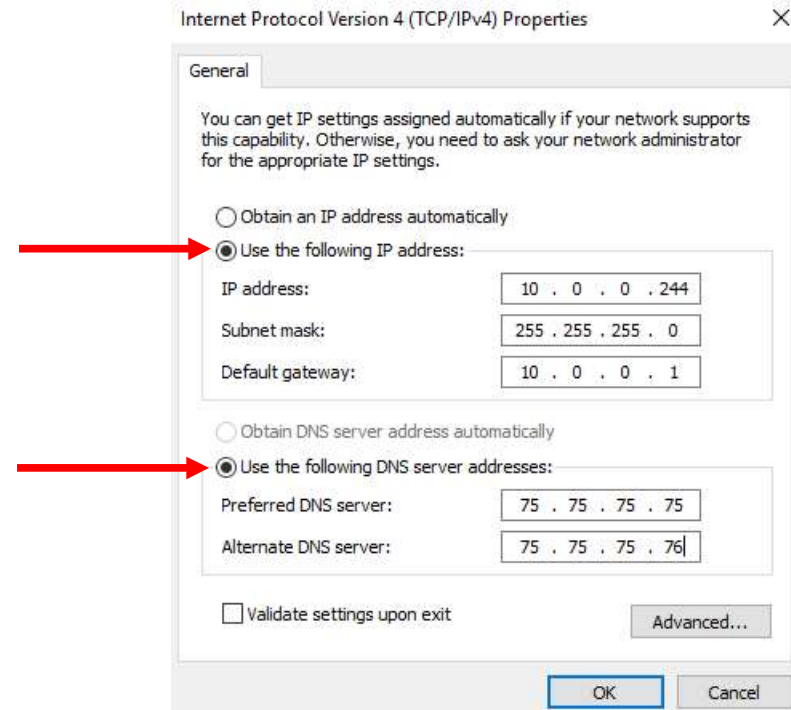


6) Next, we will right click on Internet Protocol Version 4 (TCP/IPv4)



7) We then select Use the following IP address:  
Input the IP, Subnet, Gateway which we know from the initial ipconfig /all

Then select Use the following DNS server address:  
Again, input from what we learned from ipconfig /all



\*Remember IP's from arp-a to not assign an IP that will cause a conflict

8) Using CLI to check if IP address is static or dynamically assigned.

IPv4

DHCP enabled = Dynamic IP

IP Address = 10.0.0.15

Subnet = 255.255.255.0

Default Gateway = 10.0.0.1

DNS = (P)75.75.75.75

(S)75.75.75.76

```
C:\Users\Administrator>ipconfig /all

Windows IP Configuration

Host Name . . . . . : WIN-KG868040K0B
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

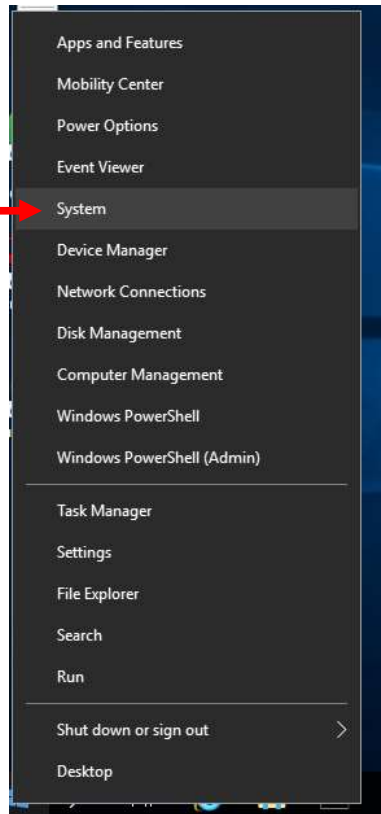
Ethernet adapter Ethernet:

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Link-local IPv6 Address . . . . . : fe80::dfdc:64db:3713:56e0%5(Preferred)
IPv4 Address. . . . . : 10.0.0.244(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : fe80::82da:c2ff:fe91:35d7%5
                             10.0.0.1
DHCPv6 IAID . . . . . : 84410407
DHCPv6 Client DUID. . . . . : 00-01-00-01-2D-3C-C7-8C-08-00-27-B0-65-65
DNS Servers . . . . . : 2001:558:feed::1
                          2001:558:feed::2
                          75.75.75.75
                          75.75.75.76
                          2001:558:feed::1
                          2001:558:feed::2
NetBIOS over Tcpip. . . . . : Enabled
```

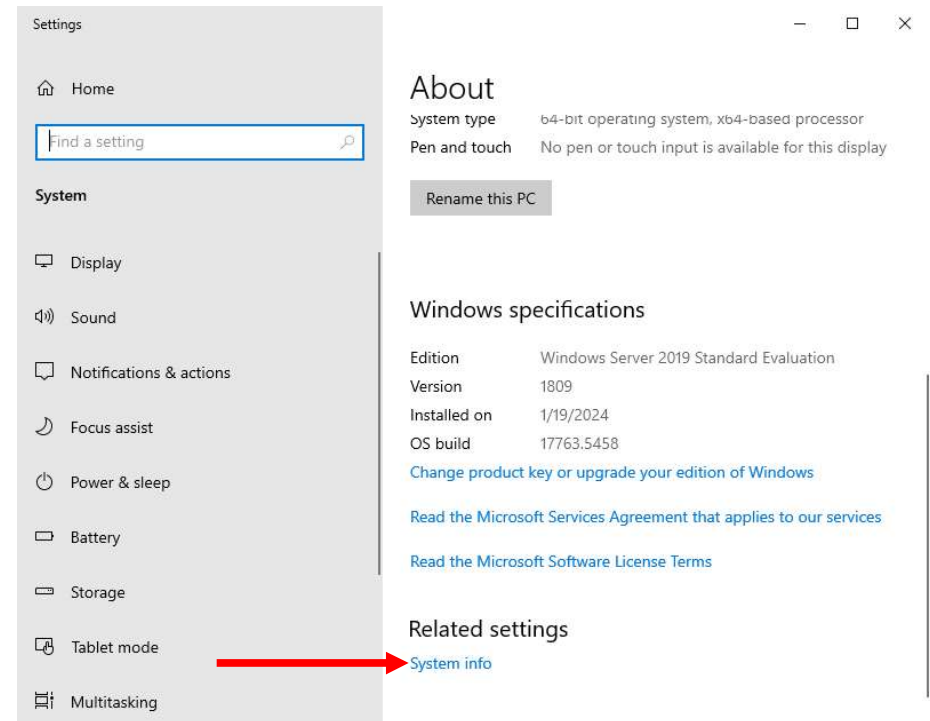


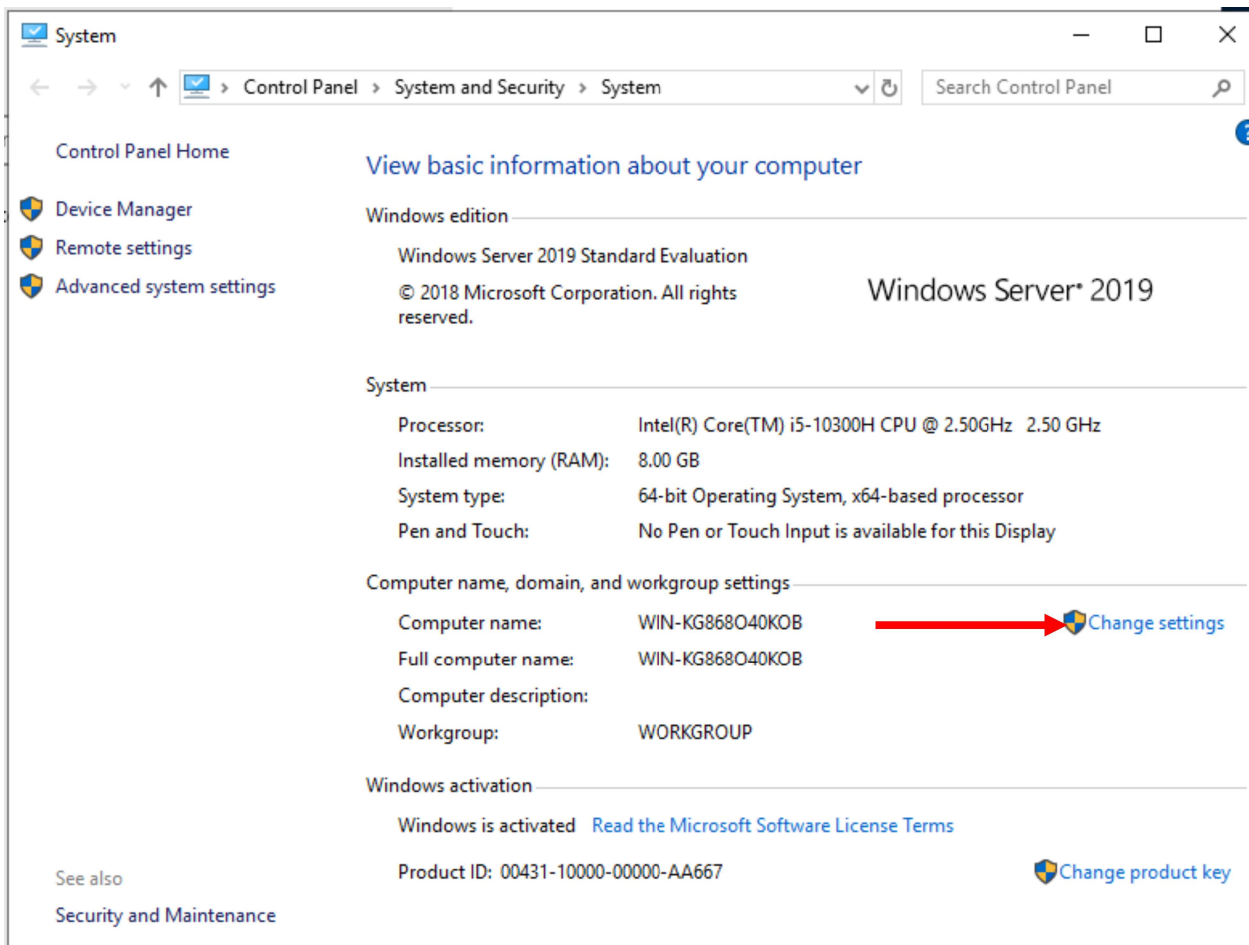
9) Now that we have assigned a static IP let's begin the next step to installing Active Directory.

10) Right click on windows icon from the desktop and select System



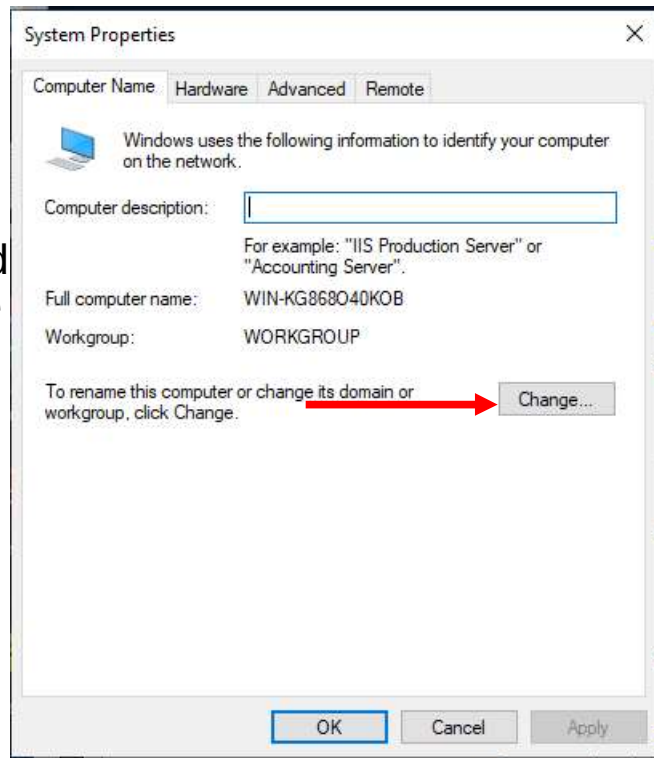
11) Then select System info



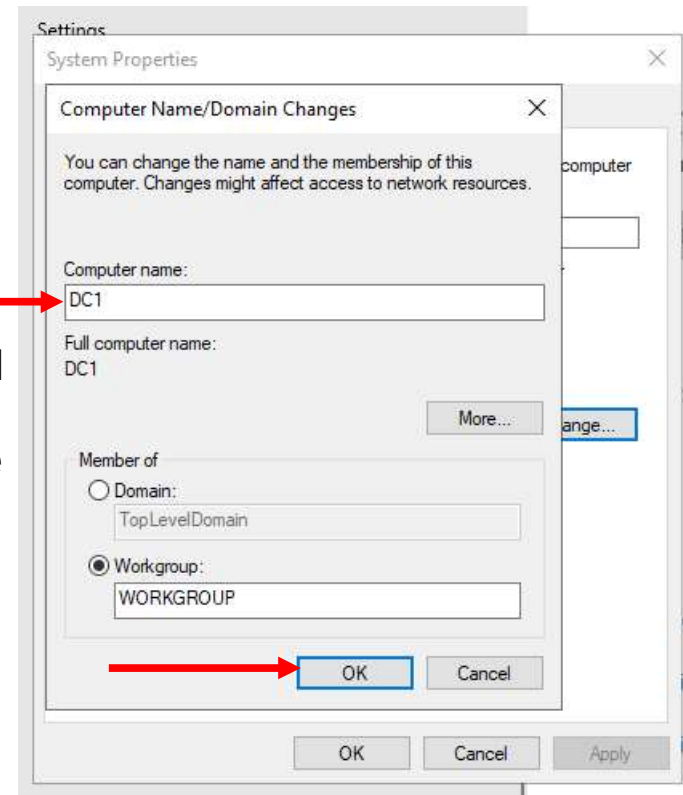


12) Next, we are going to select Change settings

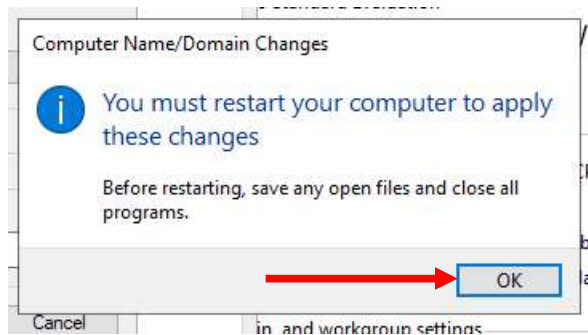
13) Next we need to select Change



14) Then we will input the new Computer name followed by selecting OK



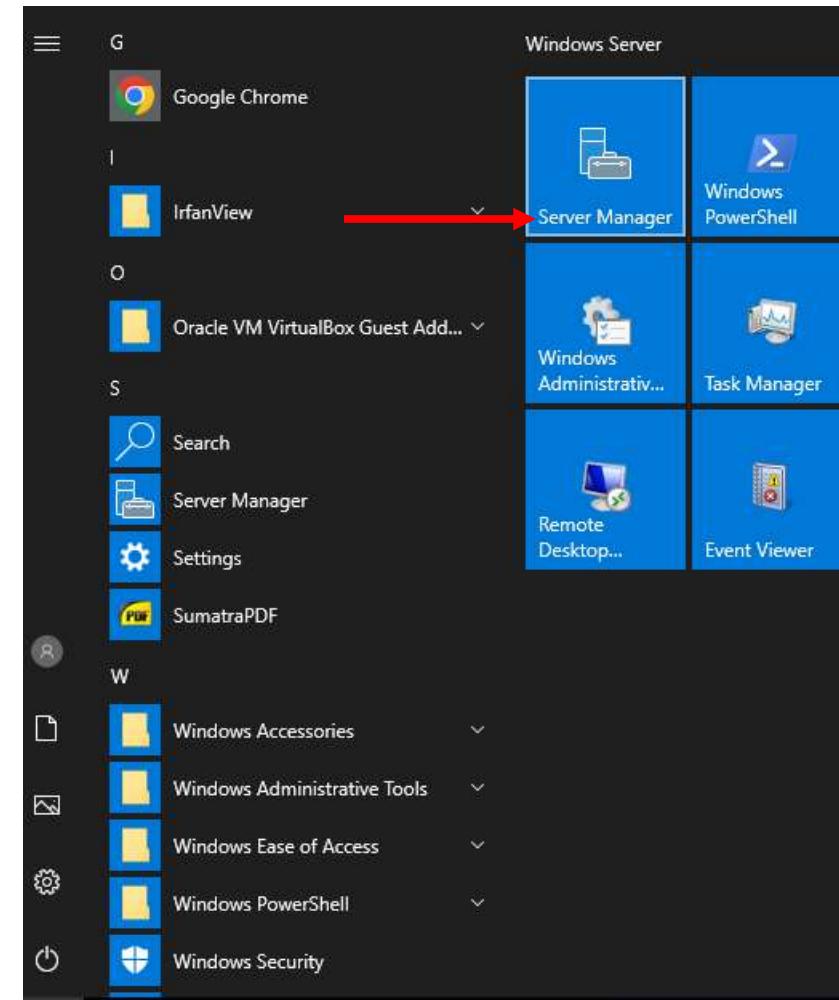
15) Restart for the new name to take hold



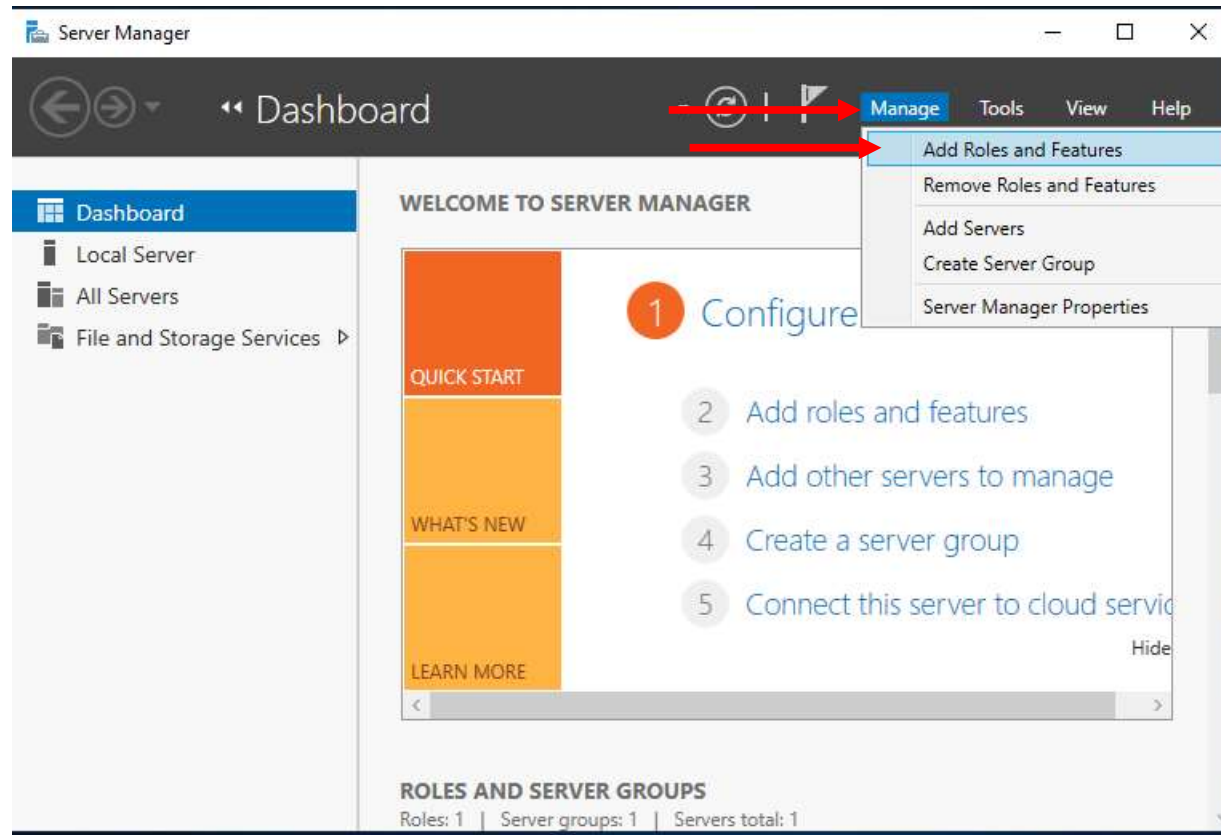
16) Upon restart, let's confirm quick through the CLI and input hostname. If you have followed along correctly up to this point it should return the name you input

```
C:\Users\Administrator>hostname  
DC1
```

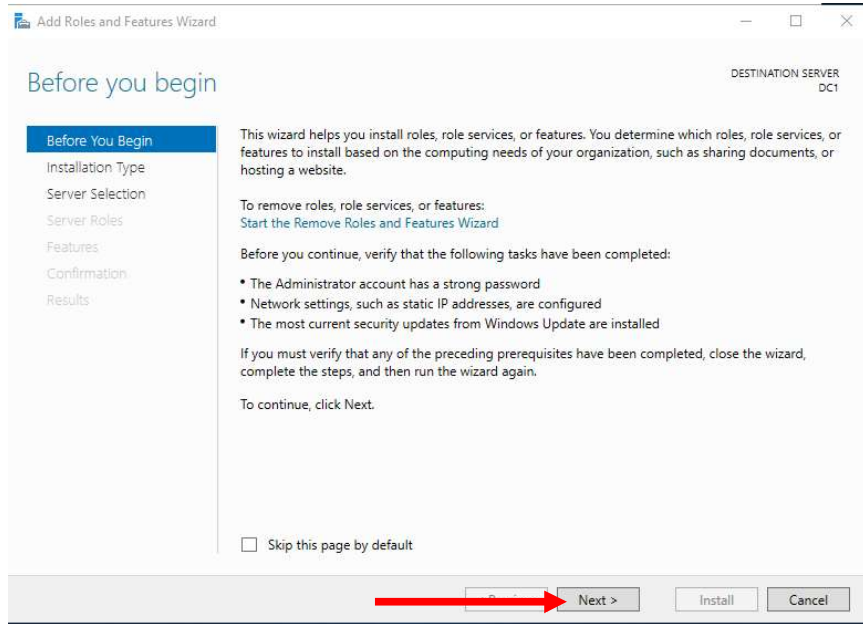
17) Let's continue and left click the windows desktop icon and select Server Manager



18) Select Manage  
and then Add Roles  
and Features

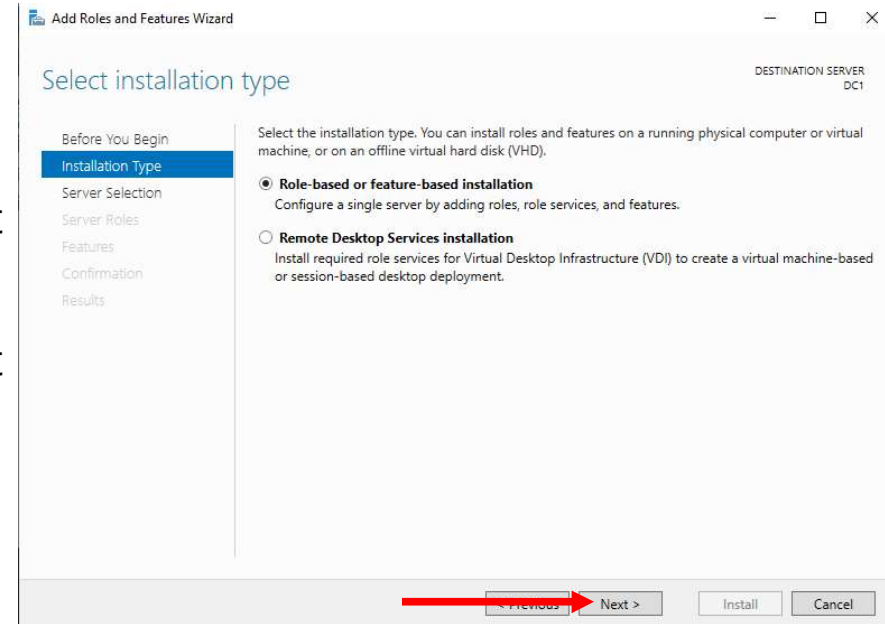


\*As we progress into the install remember Windows install = next next next...finish (It's ok, we all do it)\*



19) Next

20) Next



21) Next again, as you can see we only have the one option

Add Roles and Features Wizard

DESTINATION SERVER  
DC1

### 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

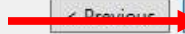
Server Pool

Filter:

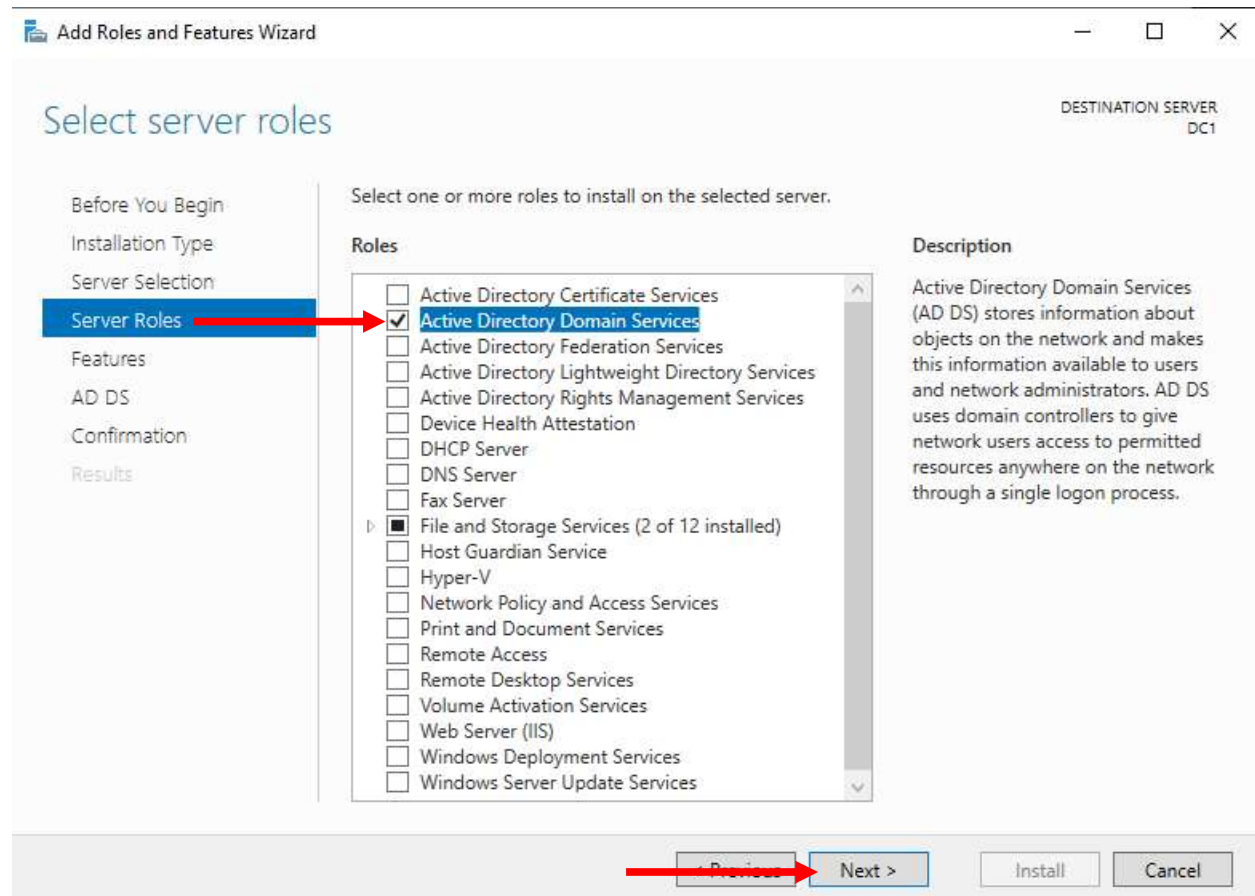
Name	IP Address	Operating System
DC1	10.0.0.244	Microsoft Windows Server 2019 Standard Evaluation

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.

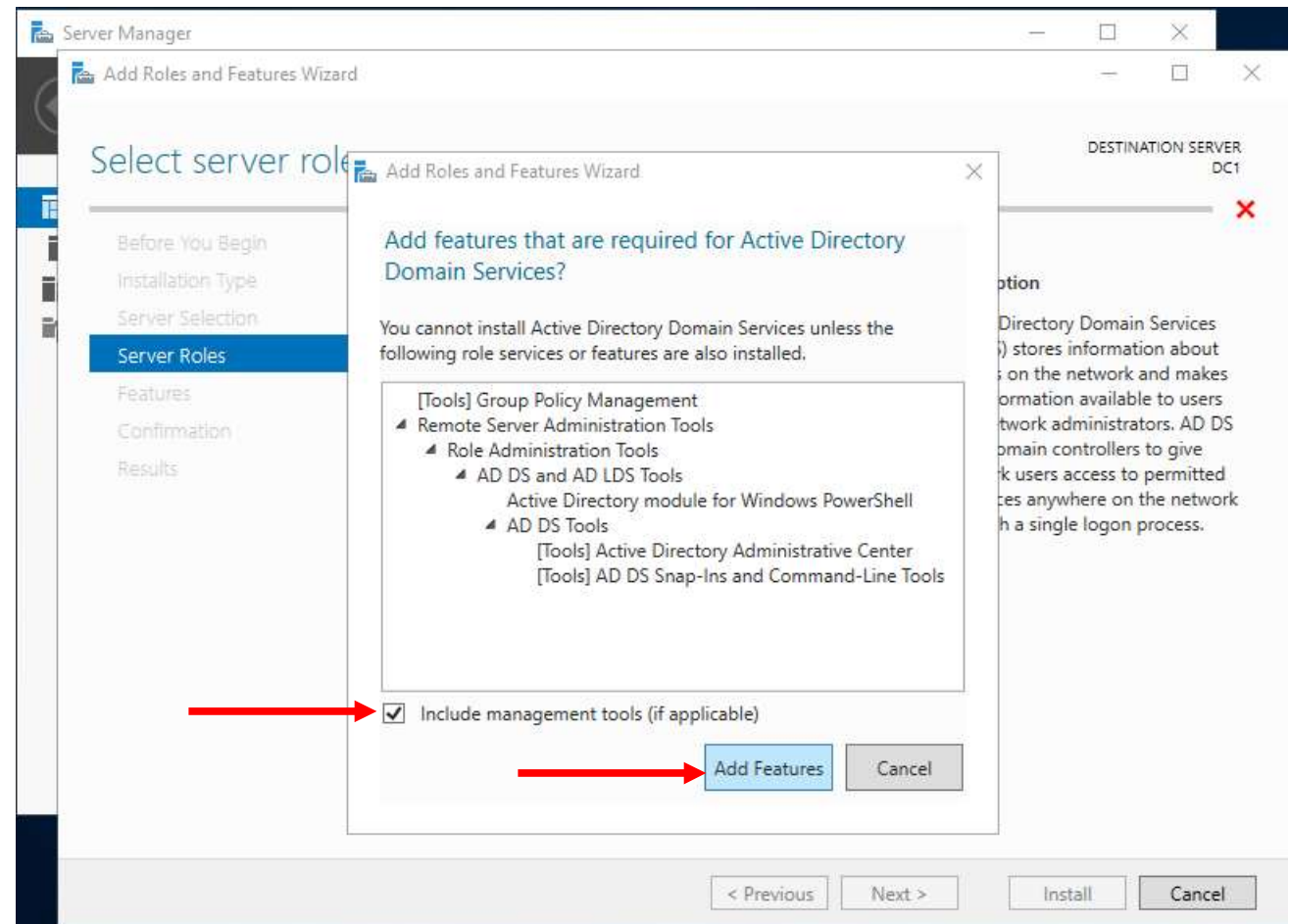
 < Previous   Next >   Install   Cancel

## 22) Select Active Directory Domain Services

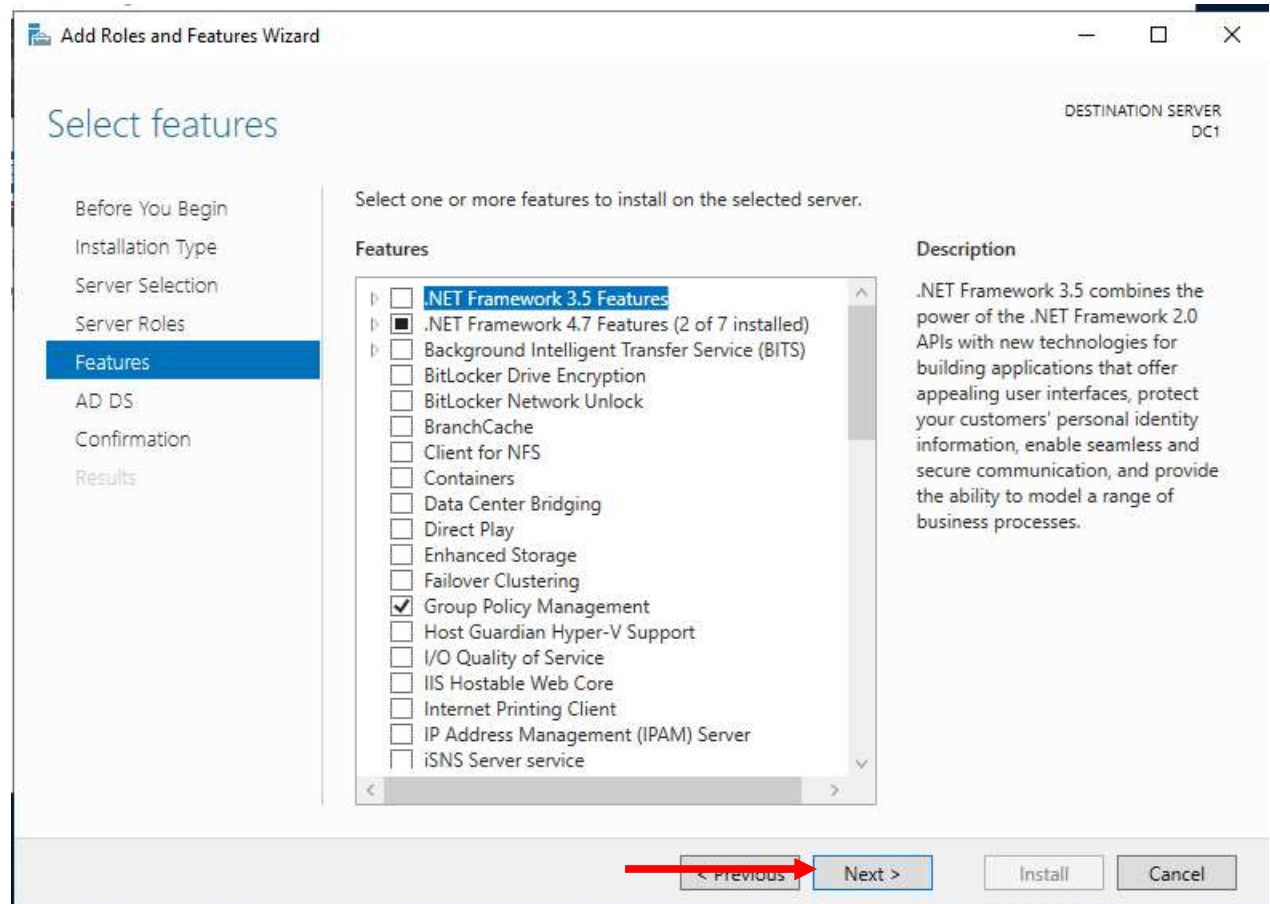




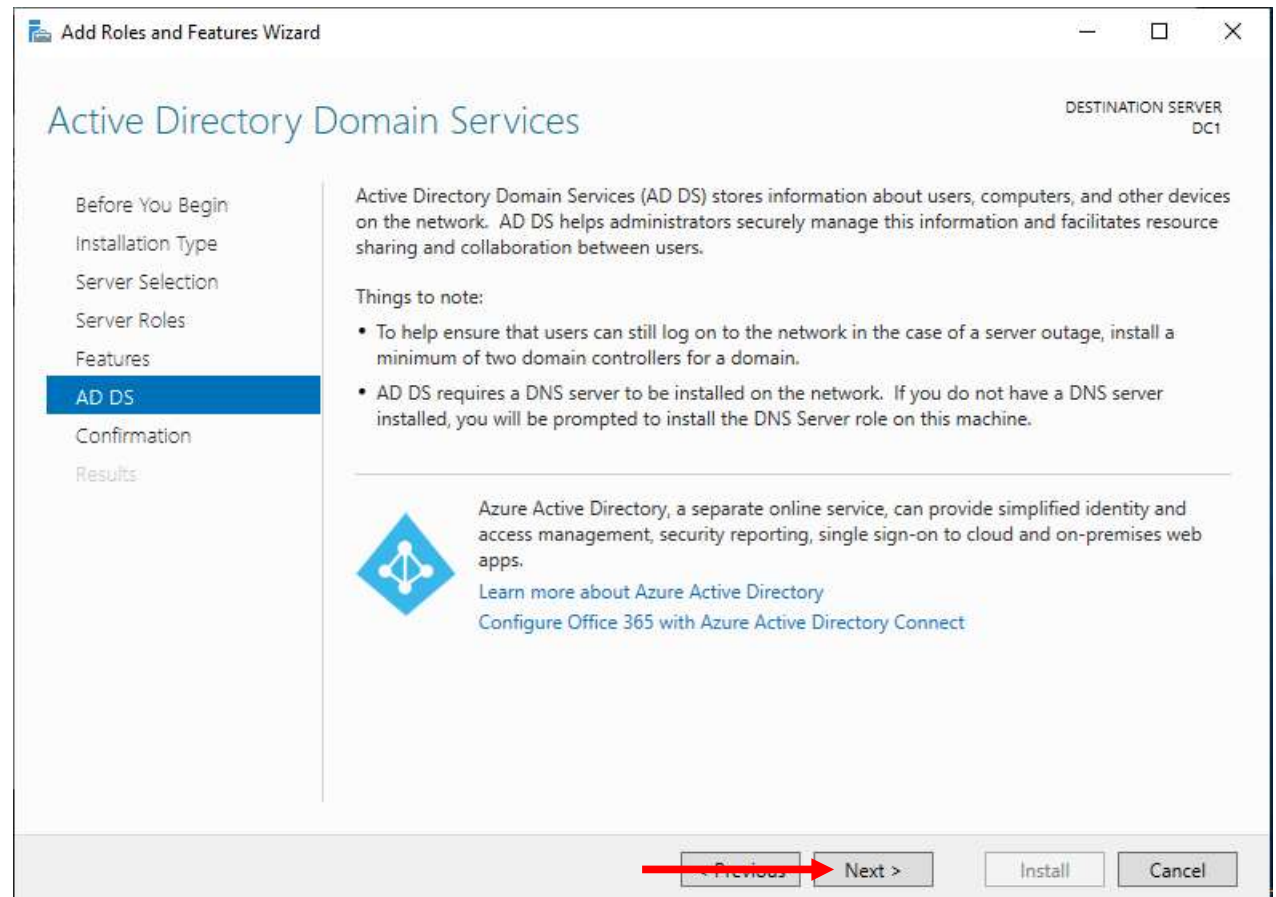
23) If added features are needed also ensure to include management tools and select add Features



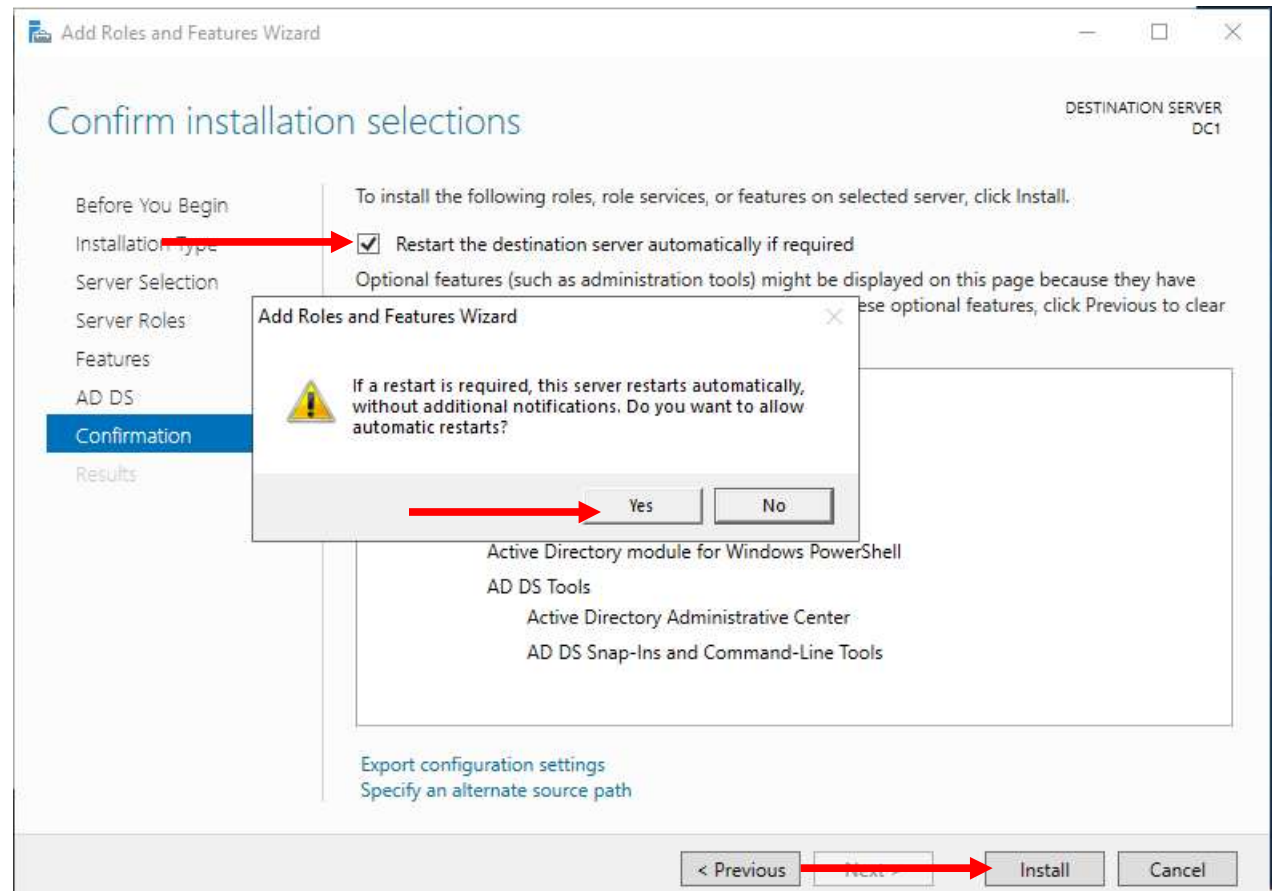
24) Next again, here it is showing you the features you are adding



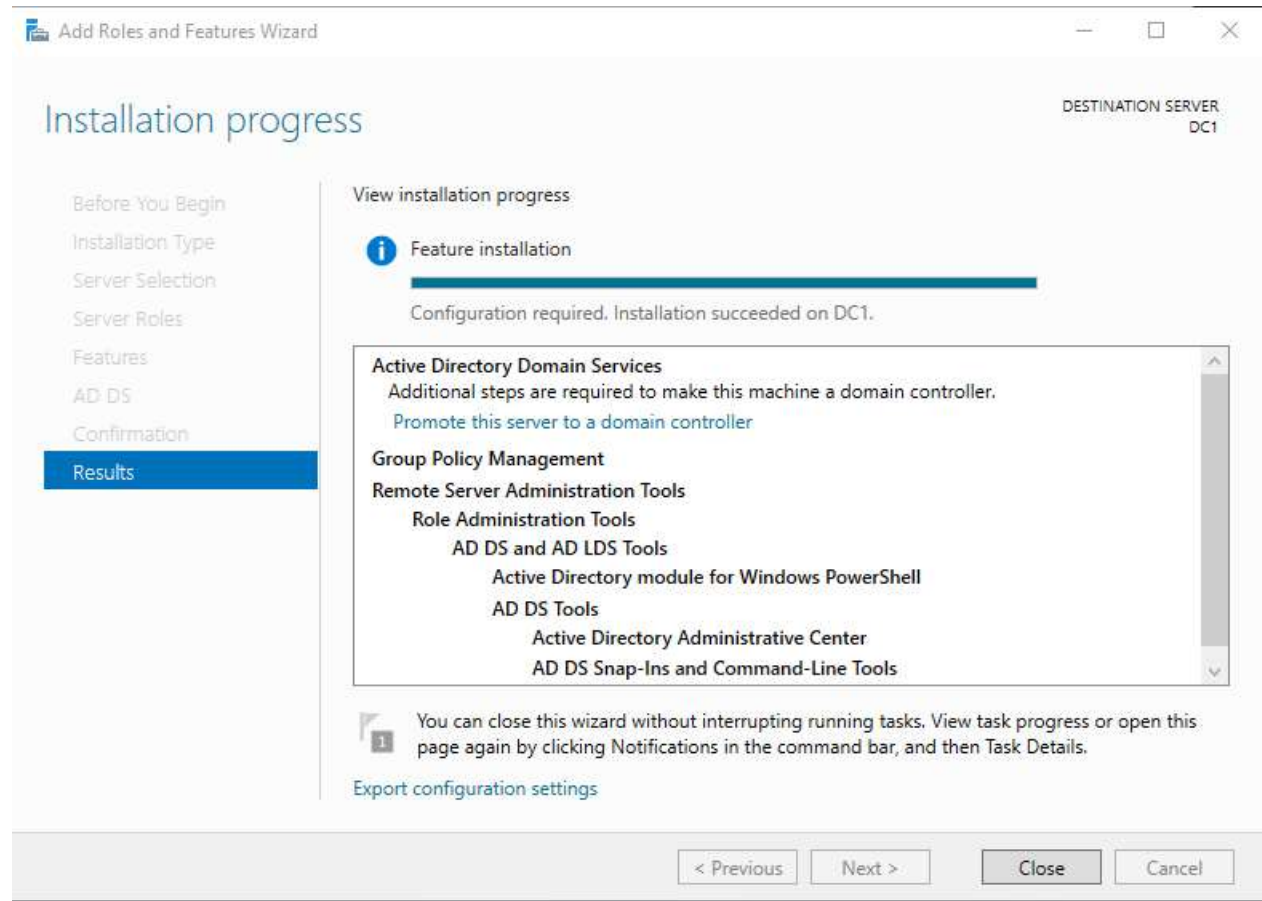
25) Next again



26) Select Restart, yes, and then install

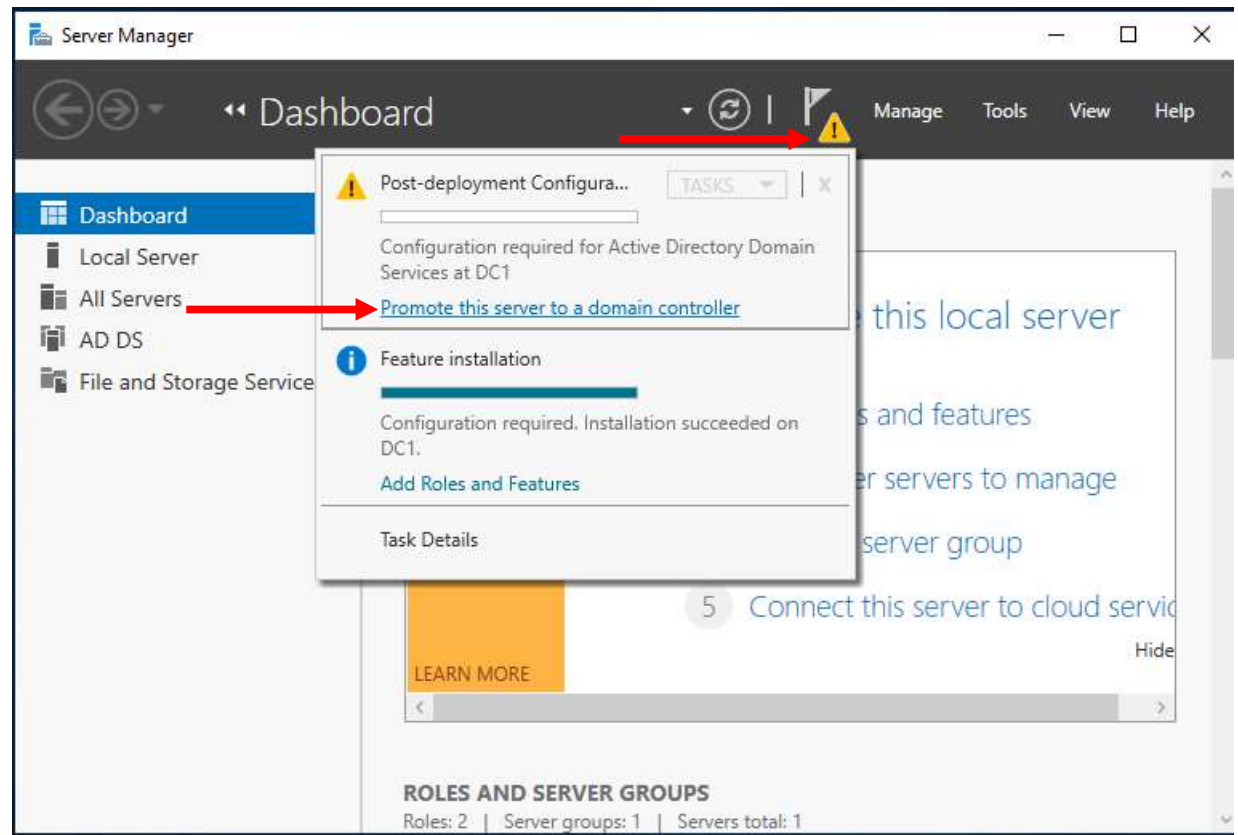


27) Install should be occurring at this point



28) Post restart we will again select server manager and select the yellow triangle alert

29) Then promote this server to a domain controller



30) Add a new forest and  
input the Root domain  
name – Here I have input  
TopLevel.local

\*Note I have used .local for  
purpose of the example but  
real world may  
be .com, .gov, .io, etc  
depending on the purpose  
and domain level

The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window. The title bar includes the Windows logo, the text 'Active Directory Domain Services Configuration Wizard', and standard window controls. The main area is titled 'Deployment Configuration'. On the left, a vertical list of steps includes 'Deployment Configuration' (highlighted in blue), 'Domain Controller Options', 'Additional Options', 'Paths', 'Review Options', 'Prerequisites Check', 'Installation', and 'Results'. A red arrow points from the 'Paths' step to the 'Add a new forest' radio button. The main content area has two sections: 'Select the deployment operation' with two radio buttons ('Add a domain controller to an existing domain' and 'Add a new domain to an existing forest'), and 'Specify the domain information for this operation' with a text box for 'Root domain name:' containing 'TopLevel.local'. A red arrow points from the text box to the 'Next >' button. At the bottom, there are buttons for '< Previous', 'Next >', 'Install', and 'Cancel'. A link 'More about deployment configurations' is located below the 'Specify the domain information' section.

Active Directory Domain Services Configuration Wizard

TARGET SERVER  
DC1

### Deployment Configuration

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: TopLevel.local

[More about deployment configurations](#)

< Previous

Next >

Install

Cancel

31) Here you will enter the password for recovery purposes which must be different then administrator password

Additionally, if you do need any backwards compatibility you will select it in the function levels. Be aware this may increase your attack surface, so select out of necessity and with caution.

The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window. The title bar includes the Windows logo, the text 'Active Directory Domain Services Configuration Wizard', and standard window controls. The main title is 'Domain Controller Options'. In the top right corner, it says 'TARGET SERVER DC1'. On the left is a navigation pane with the following items: 'Deployment Configuration', 'Domain Controller Options' (highlighted in blue), 'DNS Options', 'Additional Options', 'Paths', 'Review Options', 'Prerequisites Check', 'Installation', and 'Results'. The main content area is titled 'Select functional level of the new forest and root domain'. It contains two dropdown menus: 'Forest functional level:' and 'Domain functional level:', both set to 'Windows Server 2016'. Below these is the section 'Specify domain controller capabilities' with three checkboxes: 'Domain Name System (DNS) server' (checked), 'Global Catalog (GC)' (checked), and 'Read only domain controller (RODC)' (unchecked). The next section is 'Type the Directory Services Restore Mode (DSRM) password', which has two password input fields labeled 'Password:' and 'Confirm password:'. At the bottom of the main content area is a link that says 'More about domain controller options'. The bottom of the window features a navigation bar with four buttons: '< Previous' (disabled), 'Next >' (highlighted in blue), 'Install', and 'Cancel'. Red arrows point to the 'Domain functional level' dropdown, the 'Confirm password' field, and the 'Next >' button.





32) Next again

Active Directory Domain Services Configuration Wizard

TARGET SERVER  
DC1

## DNS Options


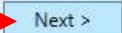


 A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found... [Show more](#) 

- 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](#)

32) Input the NetBIOS name and if you remember I used TopLevel.local for root domain so here I will input TopLevel

Active Directory Domain Services Configuration Wizard

Additional Options

TARGET SERVER  
DC1

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

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

The NetBIOS domain name

[More about additional options](#)

33) Next

Active Directory Domain Services Configuration Wizard

Paths

TARGET SERVER  
DC1

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

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

[More about Active Directory paths](#)

< Previous Next > Install Cancel

### 34) Review and ensure correct

Active Directory Domain Services Configuration Wizard

TARGET SERVER  
DC1

## 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 "TopLevel.local". This is also the name of the new forest.

The NetBIOS name of the domain: TOPLEVEL

Forest Functional Level: Windows Server 2016

Domain Functional Level: Windows Server 2016

Additional Options:

Global catalog: Yes

DNS Server: Yes

Create DNS Delegation: No

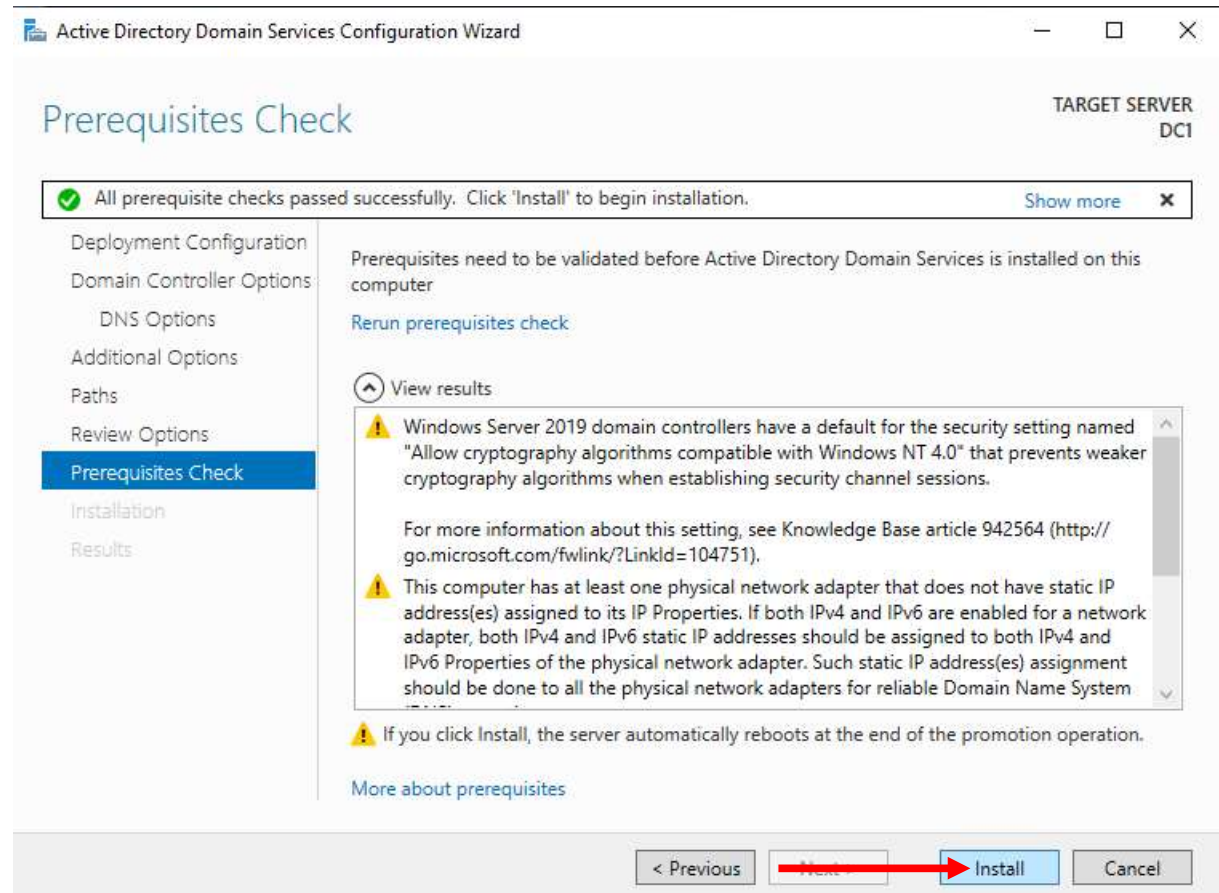
These settings can be exported to a Windows PowerShell script to automate additional installations

[View script](#)

[More about installation options](#)

[< Previous](#) [Next >](#) [Install](#) [Cancel](#)

35) Info about the pending install, if ready select Install



36) Congratulations, if you are here then your install went correctly and upon reboot you now have installed Active Directory

