

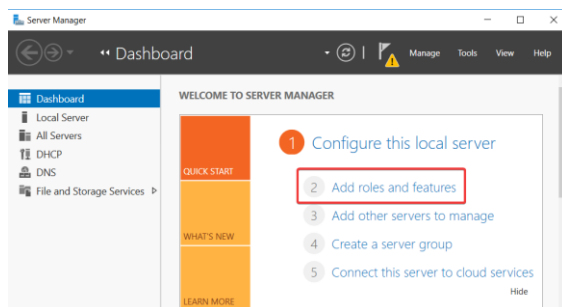
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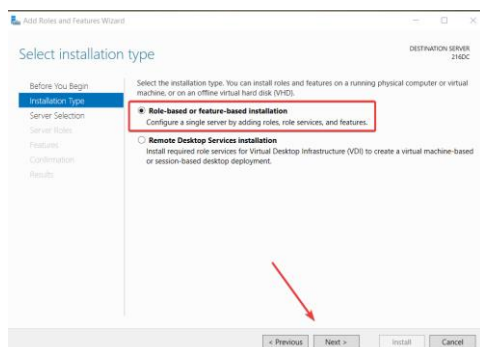
## 1. Installing Active Directory Domain Services Role.

### 1.1 Installing Active Directory

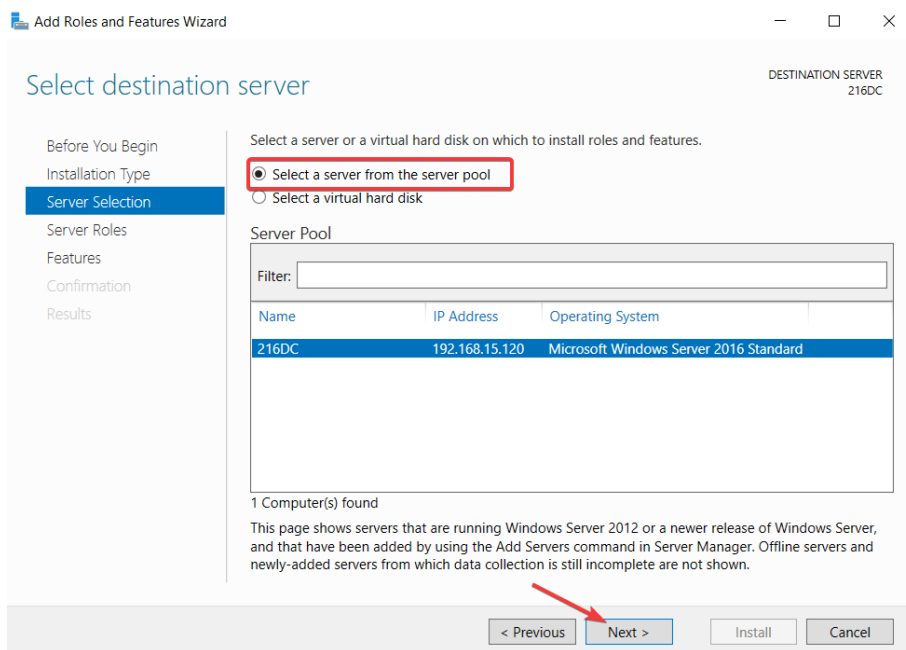
1. First we will be installing the Active Directory Domain Services Role, to do this open Server Manager on our 216DC machine and select **Add roles and features**. *Active Directory Domain Services is a Microsoft directory service that stores information about the identities of users, computers, and services. It also provides authentication for users and computers, and authentication for users and computers to access network resources.*



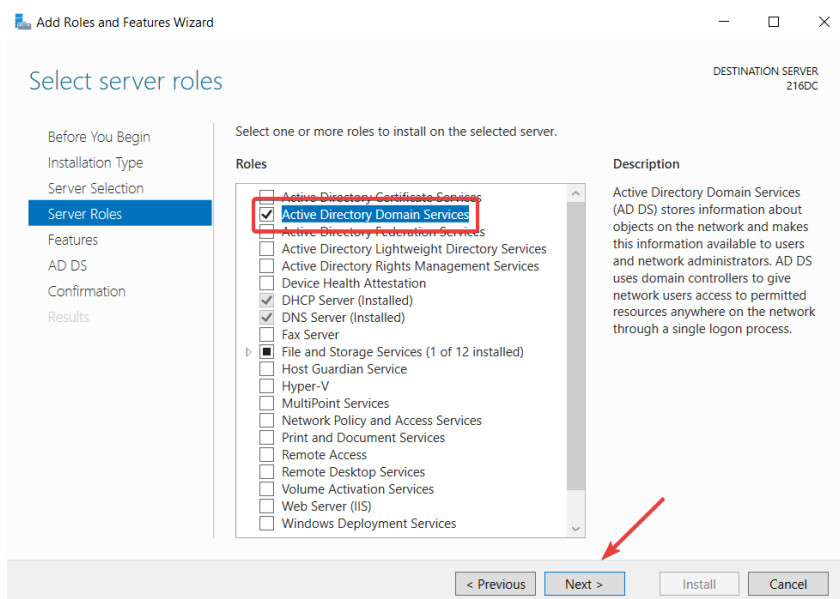
2. Click **Next** on the Add Roles and Features page, then **Role-based or feature-based installation** is selected and click **Next**.



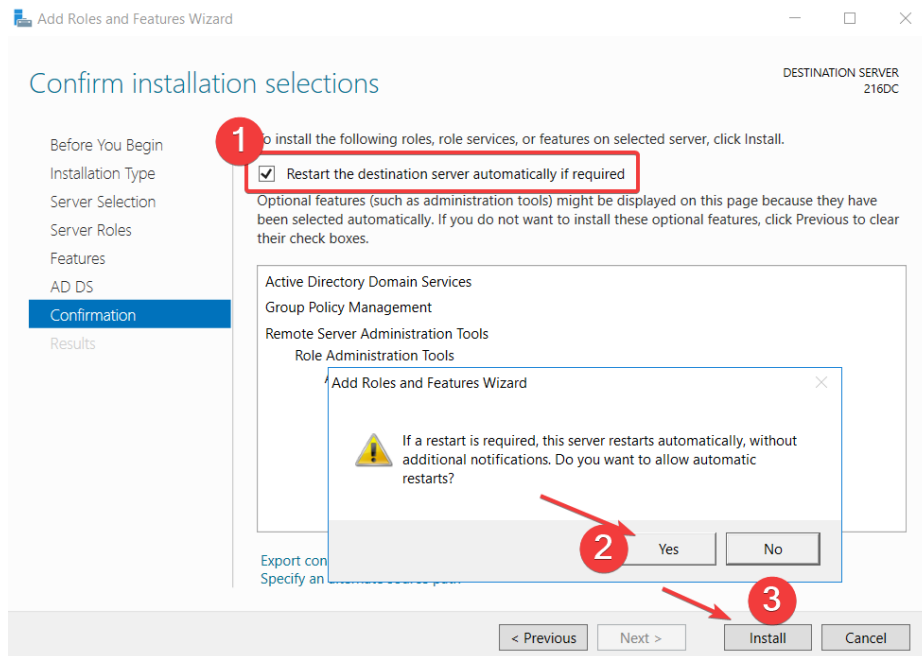
3. On the Select destination server screen leave **Select a server from the server pool** checked and click **Next**.



4. On the Select server roles page put a check mark in **Active Directory Domain Services**. That will bring up the Add features that are required for Active Directory Domain Services, click on **Add Features** then hit **Next**. Then select **Next** on the Select features Screen and on the following Active Directory Domain Services page.



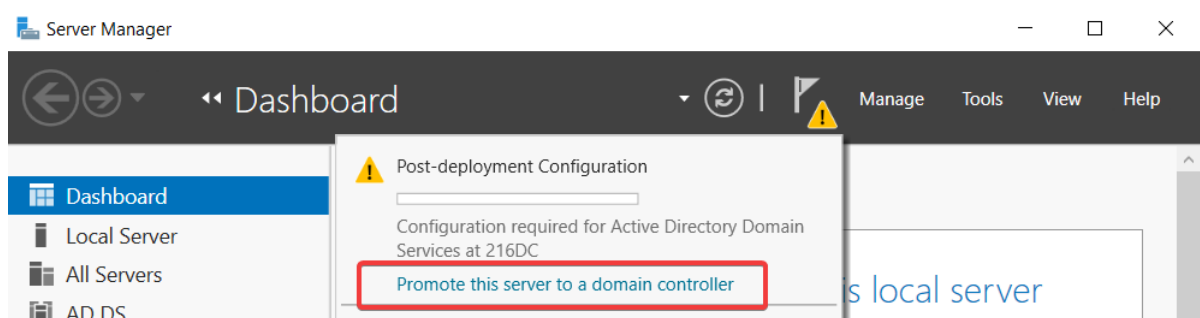
5. Once you get to the Confirm installation selections page, put a check in **Restart the destination server automatically if required** and click **Yes** when it asks you if you allow automatic restarts. Then click **Install**.



## 2. Promoting 216DC to a Domain Controller

### 2.1 Promoting the server to a Domain Controller

1. To promote the server to a domain controller we will need to click on the exclamation point at the top of Server Manager and click on **Promote this server to a domain controller**. A *domain controller* is a server that contains the Active Directory database.



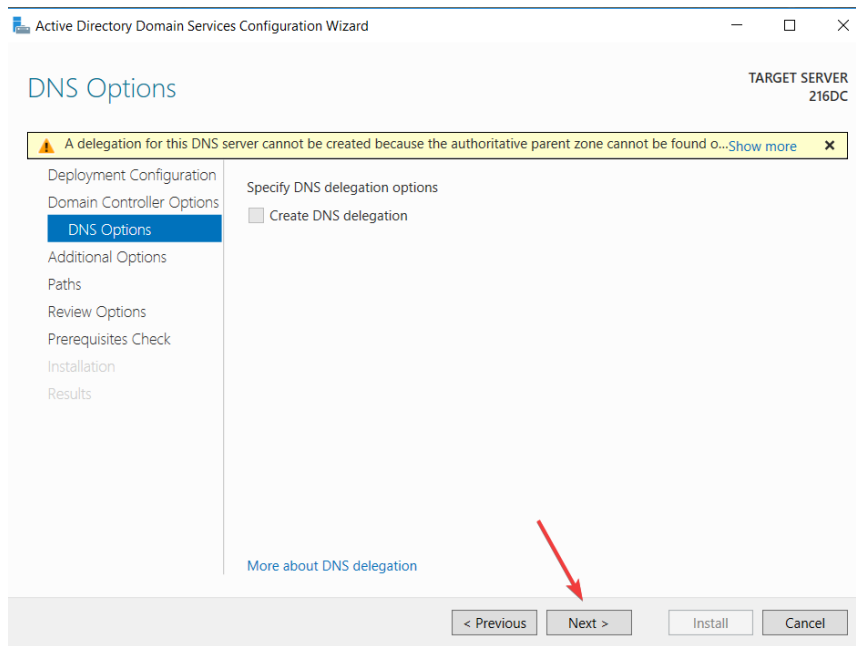
2. From the Deployment Configuration page we will select **Add a new forest** and for a Root domain name we will use **contoso.com**, then click **Next**.

The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window. The title bar includes standard window controls and the text 'Active Directory Domain Services Configuration Wizard'. The main title is 'Deployment Configuration'. On the right, it says 'TARGET SERVER 216DC'. A left-hand navigation pane lists several steps: 'Deployment Configuration' (highlighted in blue), 'Domain Controller Options', 'Additional Options', 'Paths', 'Review Options', 'Prerequisites Check', 'Installation', and 'Results'. The main content area is titled 'Select the deployment operation' and contains three radio button options: 'Add a domain controller to an existing domain', 'Add a new domain to an existing forest', and 'Add a new forest' (which is selected and highlighted with a red rectangle). Below this, a section titled 'Specify the domain information for this operation' contains a text box labeled 'Root domain name:' with 'contoso.com' entered; this text box is also highlighted with a red rectangle. At the bottom, there are four buttons: '< Previous', 'Next >' (highlighted with a red arrow), 'Install', and 'Cancel'. A link 'More about deployment configurations' is located above the 'Next >' button.

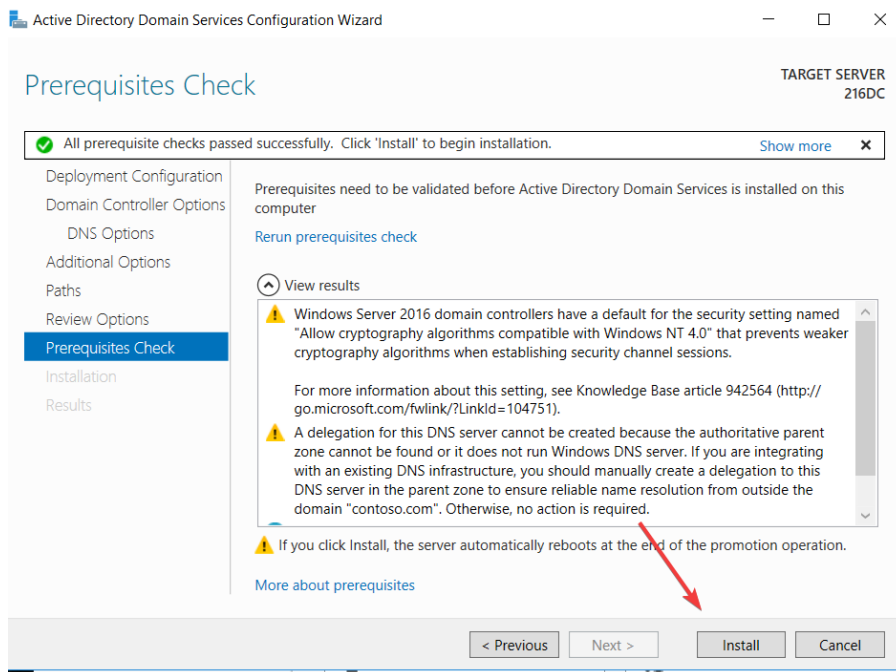
3. On the Domain Controller Options page under Directory Service Restore Mode (DSRM) put in a secure password. *DSRM is similar to Safe Mode that lets you restore the Active Directory database.* Once password is filled in select **Next**.

The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window at the 'Domain Controller Options' step. The title bar and window title are the same as in the previous screenshot. The left-hand navigation pane now has 'Domain Controller Options' highlighted in blue. The main content area is titled 'Select functional level of the new forest and root domain' and contains two dropdown menus: 'Forest functional level:' and 'Domain functional level:', both set to 'Windows Server 2016'. Below these, a section titled 'Specify domain controller capabilities' contains three checkboxes: 'Domain Name System (DNS) server' (checked), 'Global Catalog (GC)' (checked), and 'Read only domain controller (RODC)' (unchecked). The next section is titled 'Type the Directory Services Restore Mode (DSRM) password' and contains two text boxes: 'Password:' and 'Confirm password:'. Both text boxes are filled with masked characters (dots) and are highlighted with a red rectangle. At the bottom, there are four buttons: '< Previous', 'Next >' (highlighted with a red arrow), 'Install', and 'Cancel'. A link 'More about domain controller options' is located above the 'Next >' button.

4. On the DNS Options page click **Next** also click **Next** on the Additional Options page.



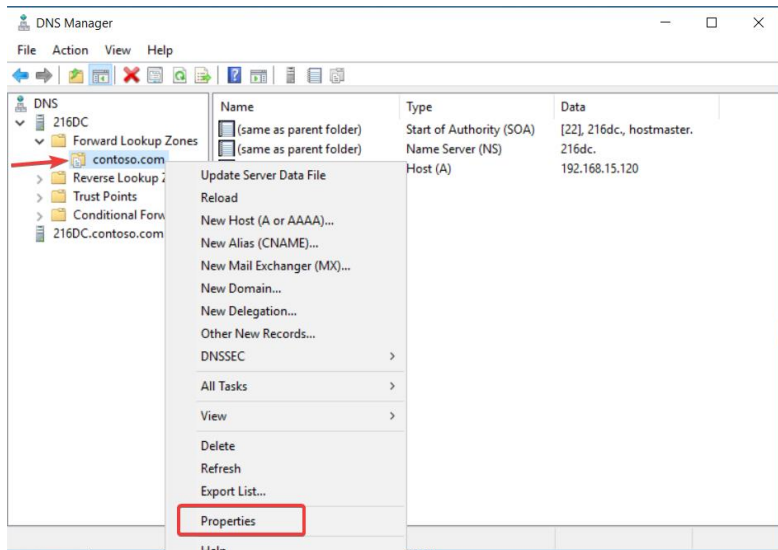
5. On the Paths page click **Next** and under Review Options click **Next**. On Prerequisites Check click **Install**.



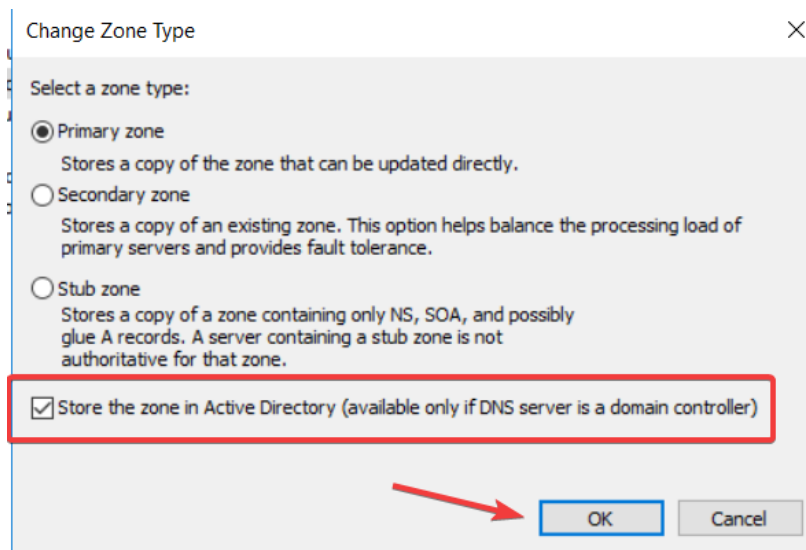
### 3. Connecting the 216Client to the Domain

#### 3.1 Configuring the Domain

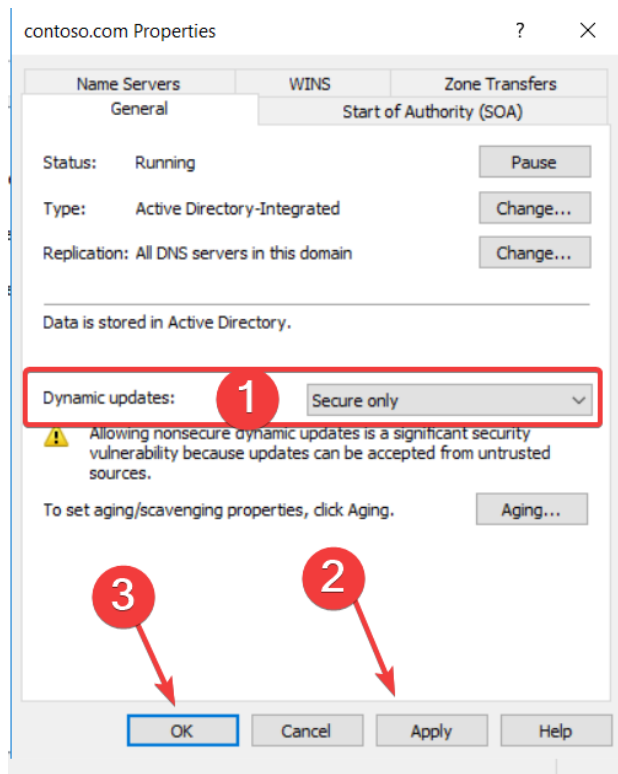
1. To configure the domain so that clients can connect, we need to right click contoso.com under the DNS MMC and select **properties**.



2. Under the General Tab select Change the zone and make sure Store the zone in Active Directory is checked and click **OK**.



3. On the drop-down box for Dynamic Updates select **Secure only** and click **Apply** and **OK**. This allows clients to automatically update their resource records through DNS.



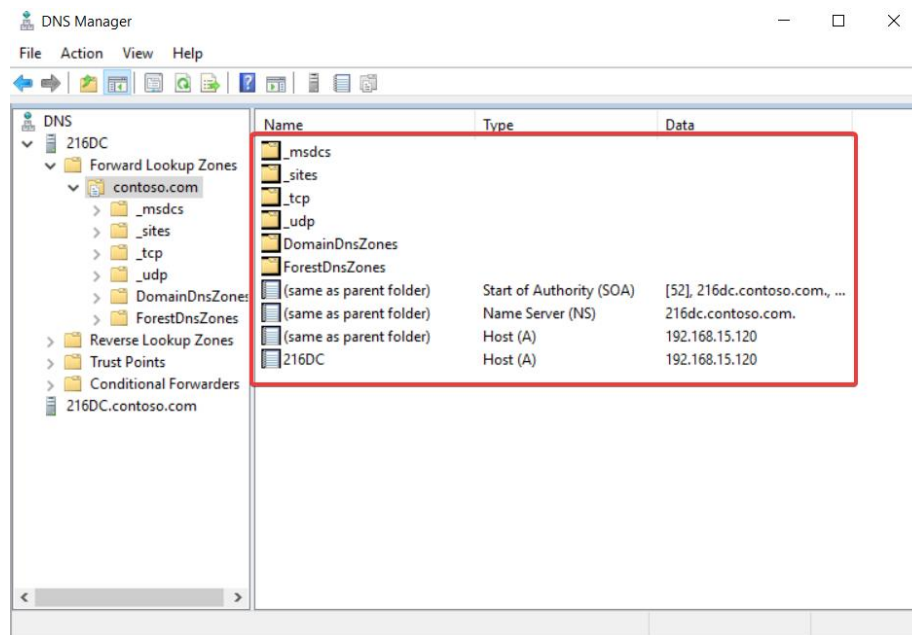
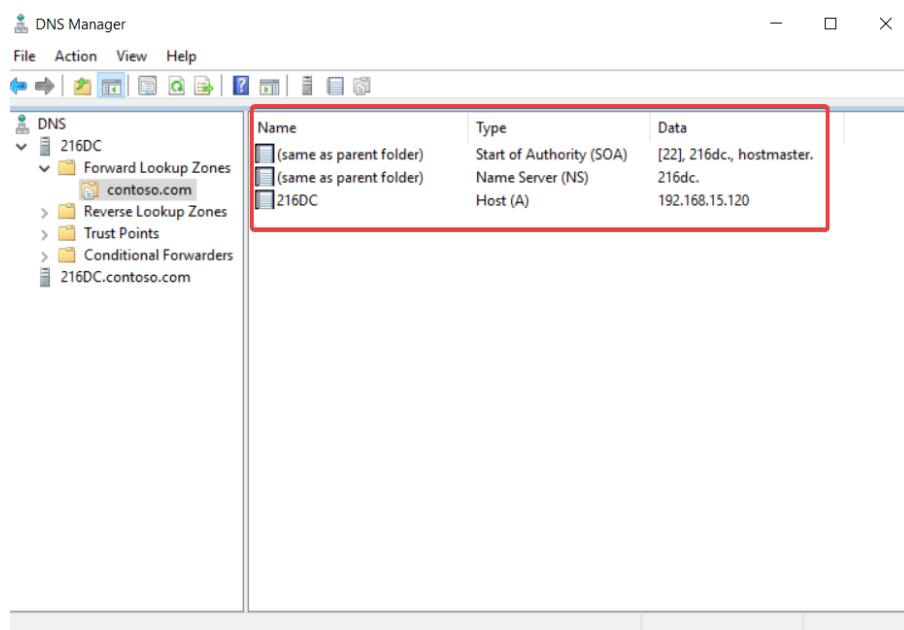
4. Now we need to register the domain controller by stopping and starting the Netlogon service. **Netlogon** is a process used by Windows Server that authenticates users and other services within a domain. Since netlogon never stops we have to manually stop and restart it for any changes to take effect. This will also add the SRV records to the domain controller. To do this open up PowerShell and type the command: **net stop netlogon; net start netlogon** and hit enter. Also type the command **ipconfig /flushdns; ipconfig /registerdns** and hit enter.

```
PS C:\Users\Administrator> net stop netlogon; net start netlogon
The Netlogon service is stopping.
The Netlogon service was stopped successfully.

The Netlogon service is starting.
The Netlogon service was started successfully.

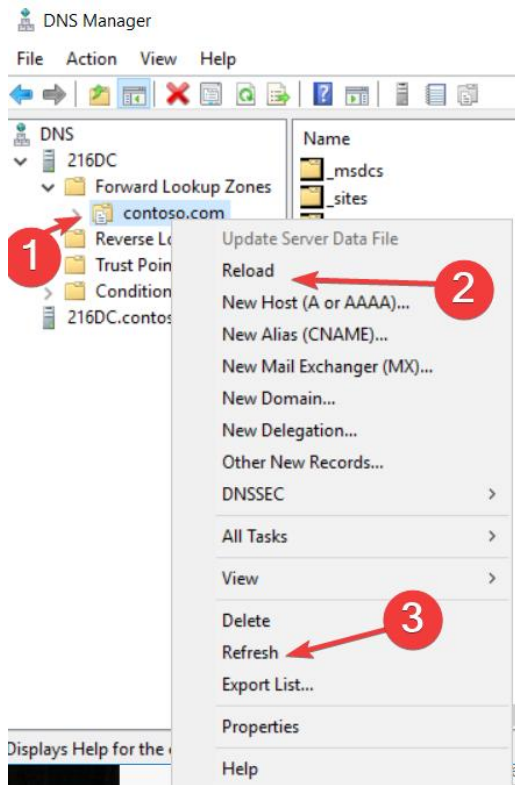
PS C:\Users\Administrator> ipconfig /flushdns; ipconfig /registerdns
Windows IP Configuration
Successfully flushed the DNS Resolver Cache.
Windows IP Configuration
Registration of the DNS resource records for all adapters of this computer has been initiated. Any errors will be reported in the Event Viewer in 15 minutes.
PS C:\Users\Administrator>
```

5. Take notice of the next two screenshots, the first one is before Secure only Dynamic updates were applied and the 2<sup>nd</sup> is after Secure only updates are applied and netlogon was restarted. Notice how the SRV Records are added in the 2<sup>nd</sup> screenshot. **DNS servers and Active Directory need SRV Records to function properly. SRV Records map the name of a service to the name of the server that is offering that particular service. Active Directory also uses SRV Records to determine the IP address of domain controllers.**

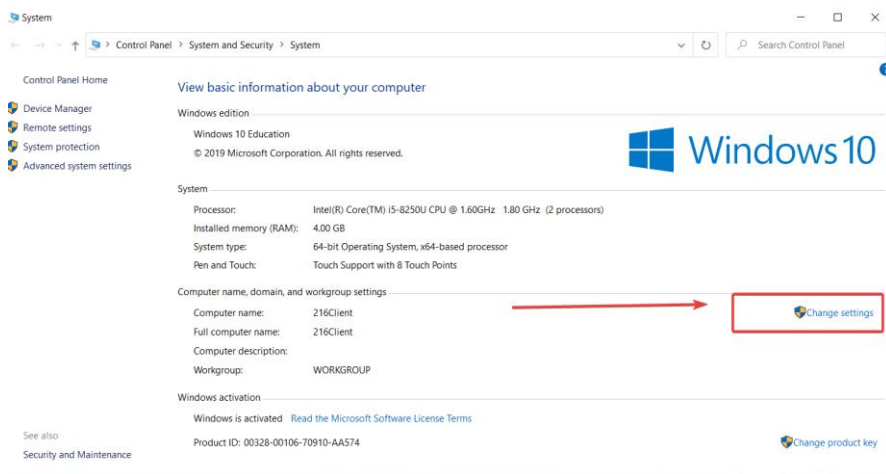




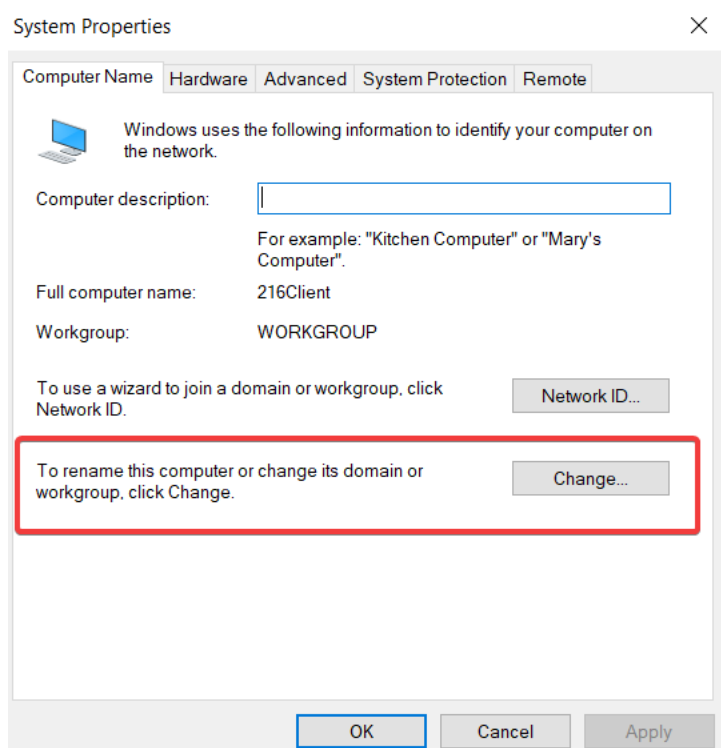
6. Now we need to navigate back the DNS MMC and Reload and Refresh contoso.com. To do this right click on contoso.com and select **Reload**, and then **Refresh**. Select **Yes** when it asks you if you want to Reload.



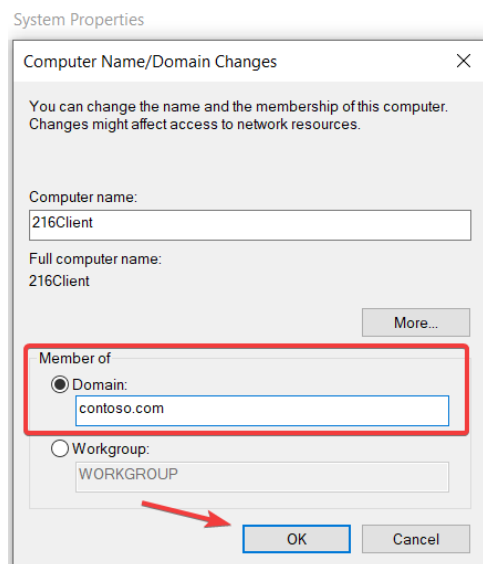
7. Now logon to the 216Client machine and open file explorer and right click on **This PC>Properties**. Go to **Change settings** next to Computer name, domain, and workgroup settings.



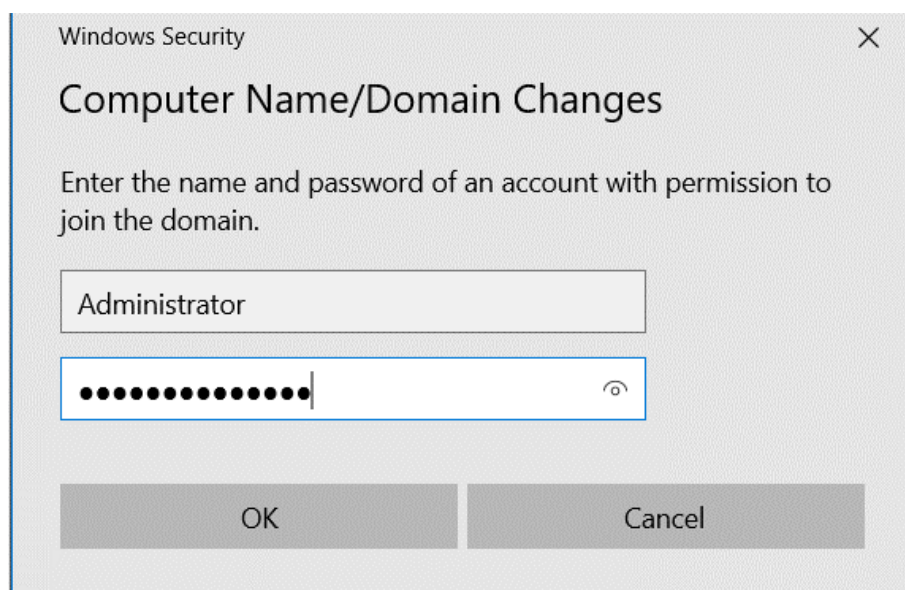
8. On the Computer Name tab under System Properties click on **Change** next to “To rename this computer or change its domain or workgroup”.



9. Click on Domain and type in our domain name of **contoso.com** and hit **OK**.



10. When the logon box pops up, login with your admin credentials from 216DC and hit **OK**.



Windows Security

### Computer Name/Domain Changes

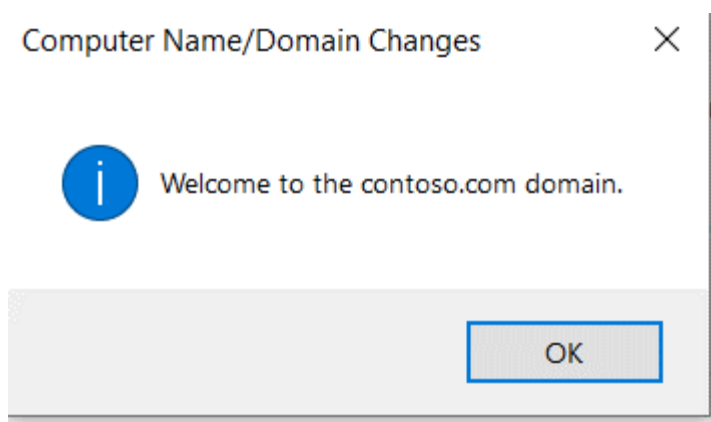
Enter the name and password of an account with permission to join the domain.

Administrator


●●●●●●●●●●●●●●●●

OK Cancel

11. You are now able to login to the contoso.com domain.



Computer Name/Domain Changes

 Welcome to the contoso.com domain.

OK