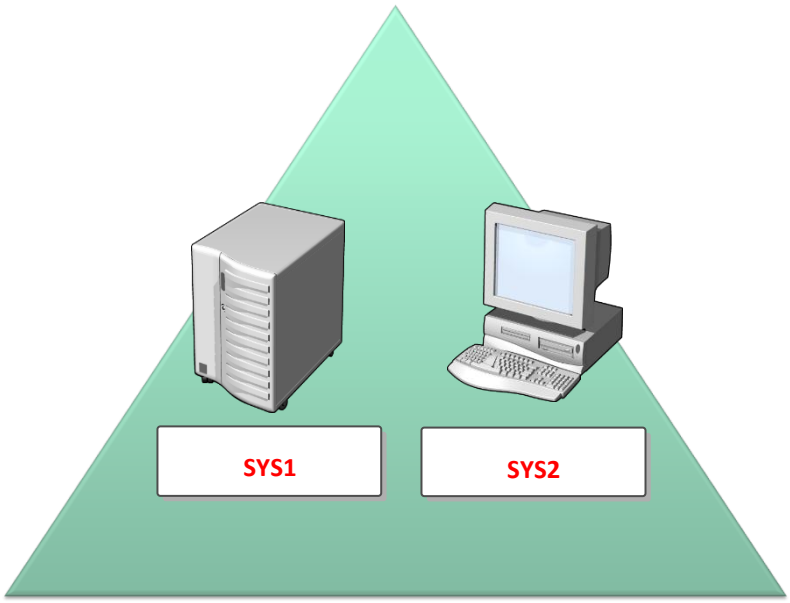
DOMAIN NAMING SYSTEM (DNS)

Prerequisites:

Before working on this lab, you must have

1. A computer running windows 2012 server or Domain Controller.
2. A computer running windows 2012 server.



MICROSOFT.COM

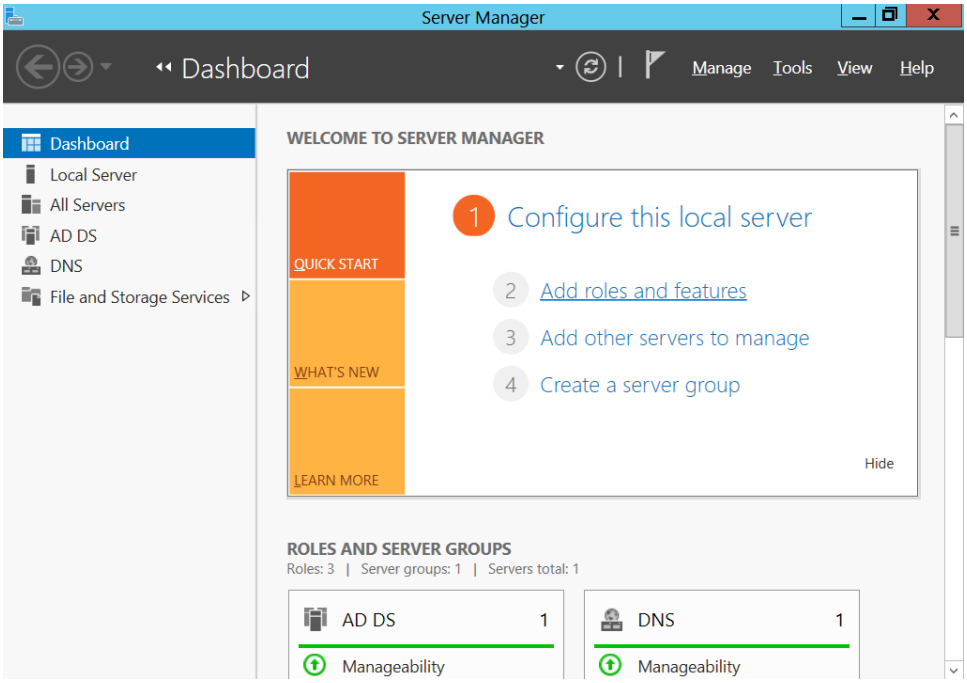
SYS1		**SYS2**	
Domain Controller / DNS Server		**Member Server / DNS Server**	
IP Address	10.0.0.1	IP Address	10.0.0.2
Subnet Mask	255.0.0.0	Subnet Mask	255.0.0.0
Preferred DNS	10.0.0.1	Preferred DNS	10.0.0.2

Lab – 1: Installing DNS Service

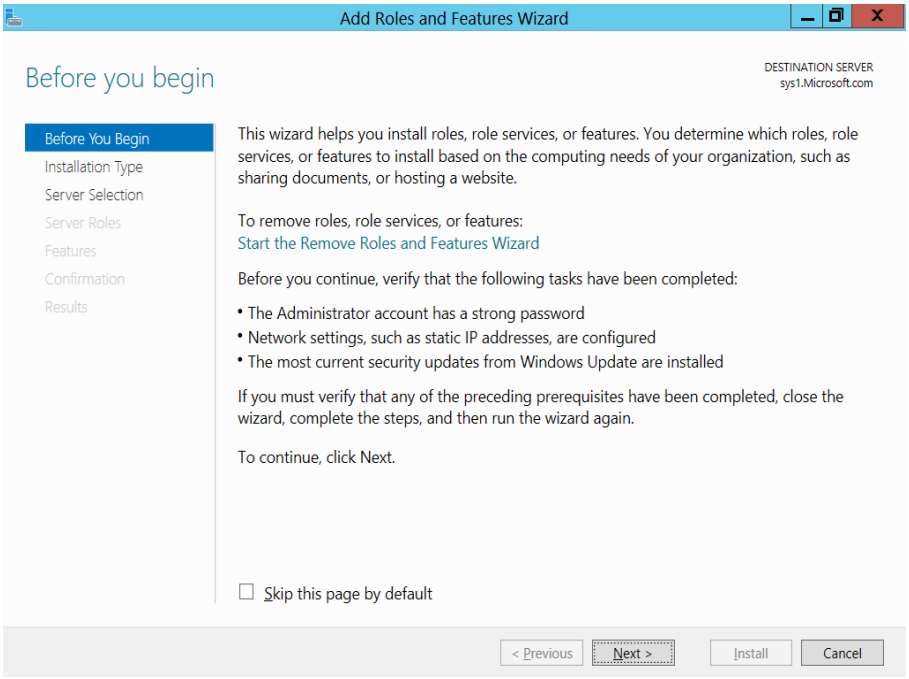
SYS1 -CONFIGURATION

1. Select Click **Server Manager.**

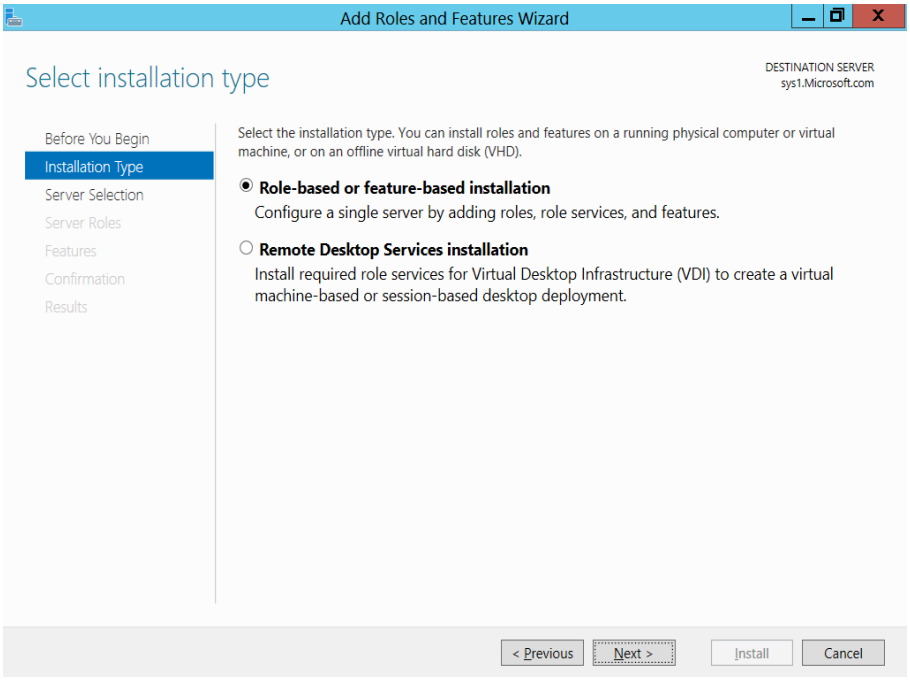
2. In the Server Manager Console, Select **Add roles and features**



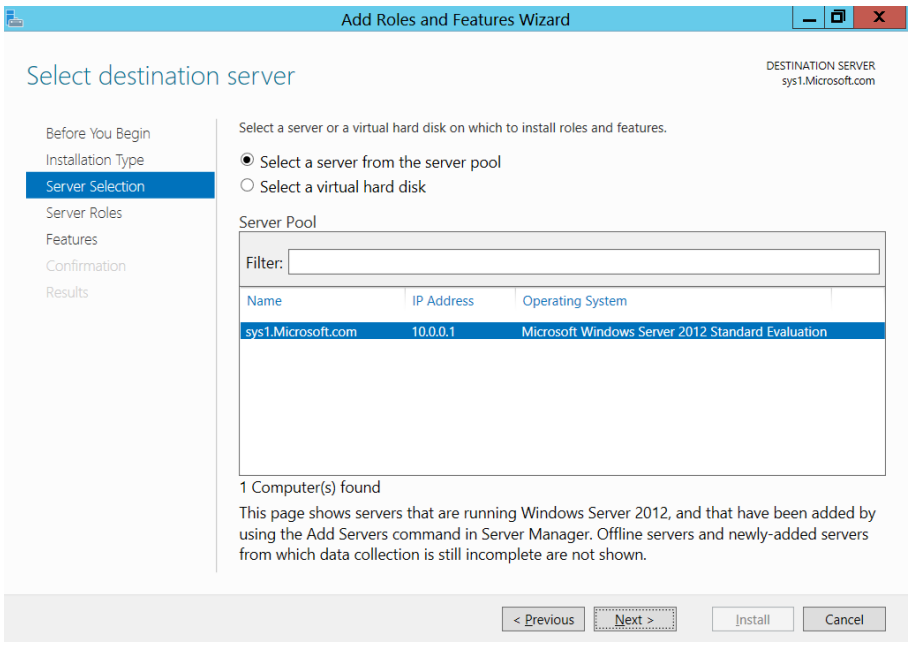
3. In Before you begin page, click **Next.**



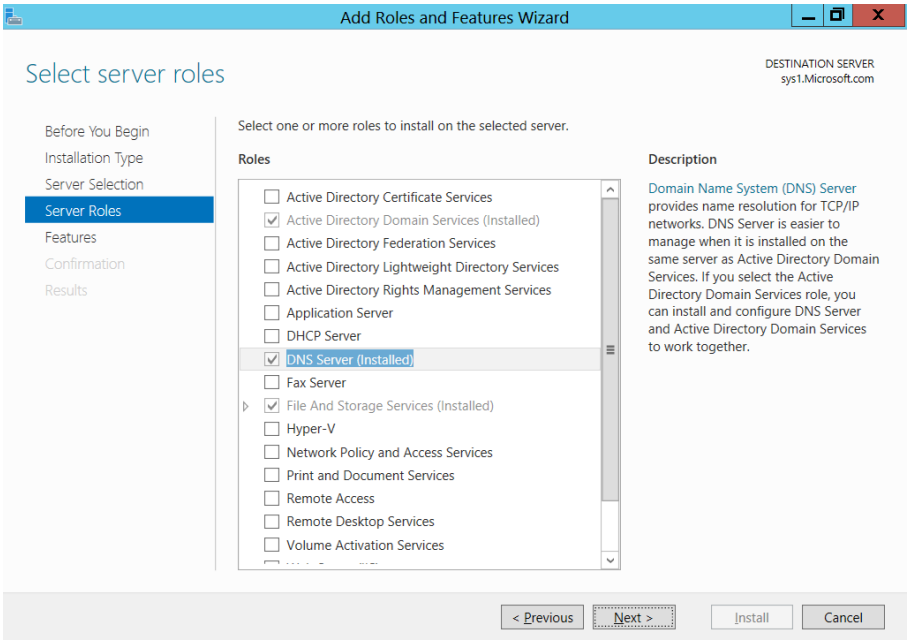
4. Select Role-based or feature-based installation and click **Next**.



5. Select a server (**sys1.Microsoft.com**) from the server pool and click **Next**.



6. Check box **DNS Server,** click **Next →Next→ Install → Finish.**

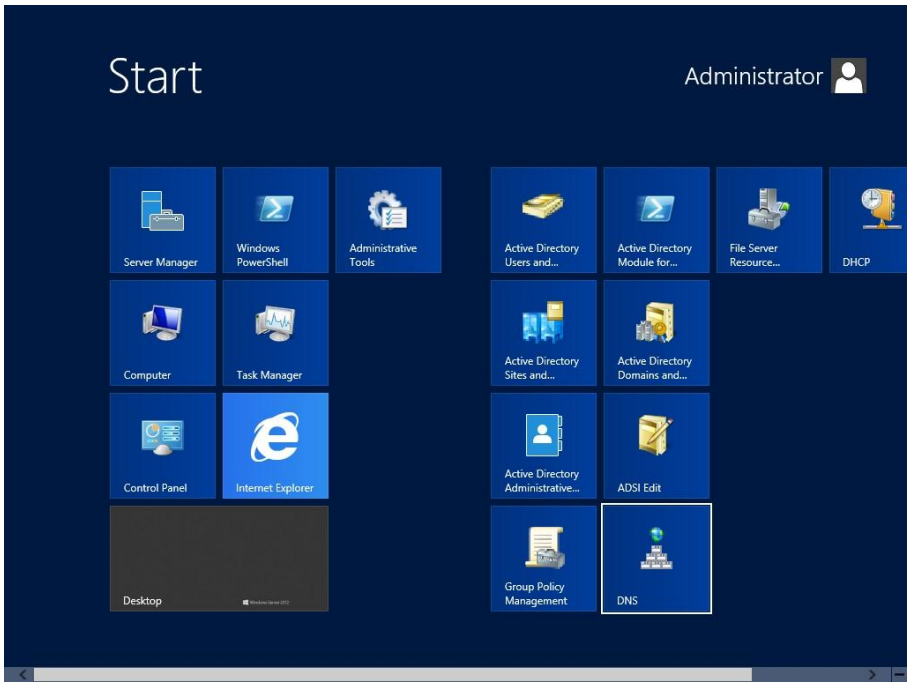


Note: On **Domain Controller**, by default DNS Server Role will be installed**.**

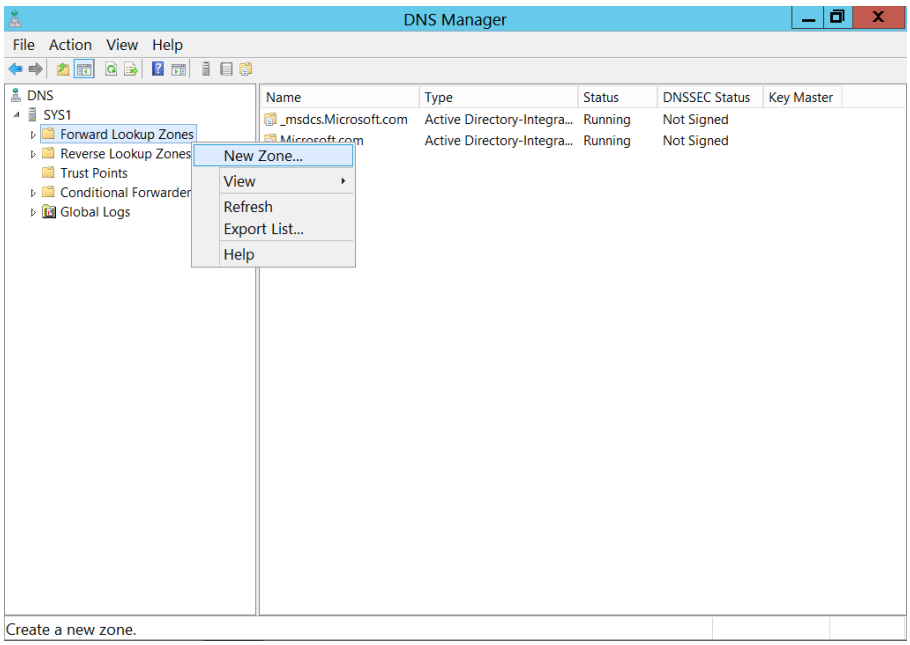
On **Member Server** we have to install the DNS Server Role Manually using the same process.

Lab – 2: Creating Standard Primary - Forward Lookup Zone

1. Go to Start, select **DNS.**

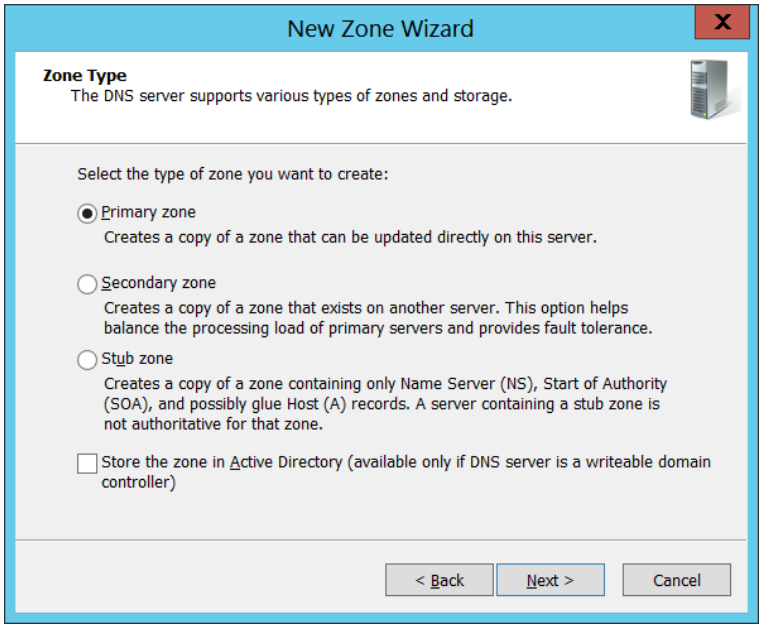


2. In the DNS dialog box, Expand the **DNS →Server name** in the left pane, right click the **Forward Lookup Zones →**select **New Zone**

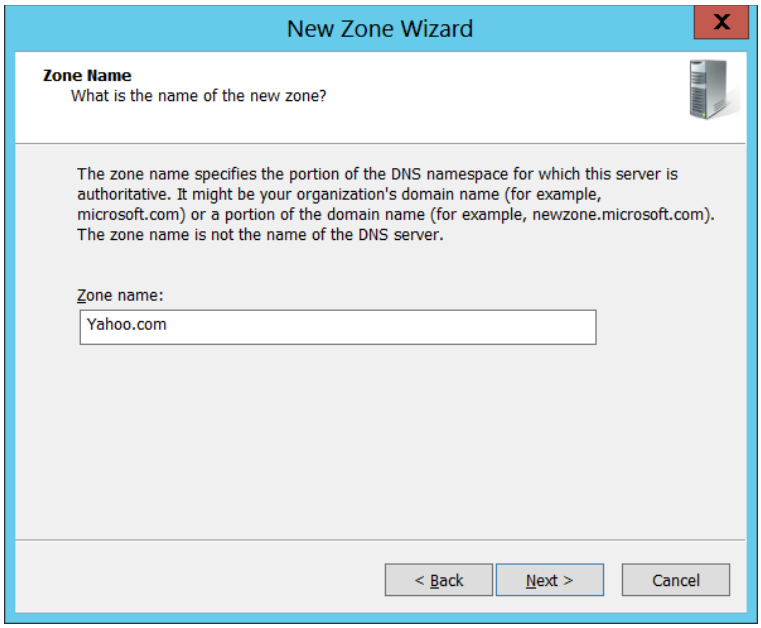


3. In the welcome to new zone wizard click **Next**

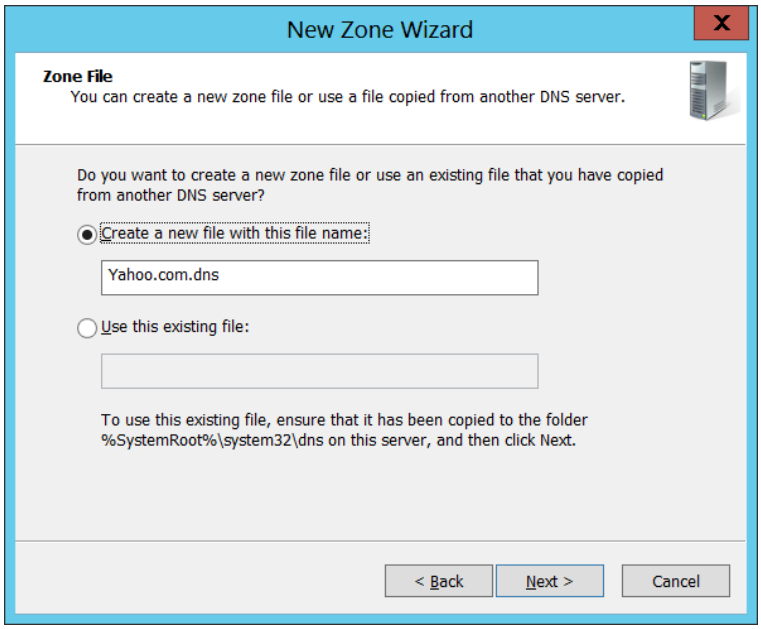
4. Select **“Primary Zone”** and Remove the check box for **"Store the zone in Active Directory"**, click **Next.**



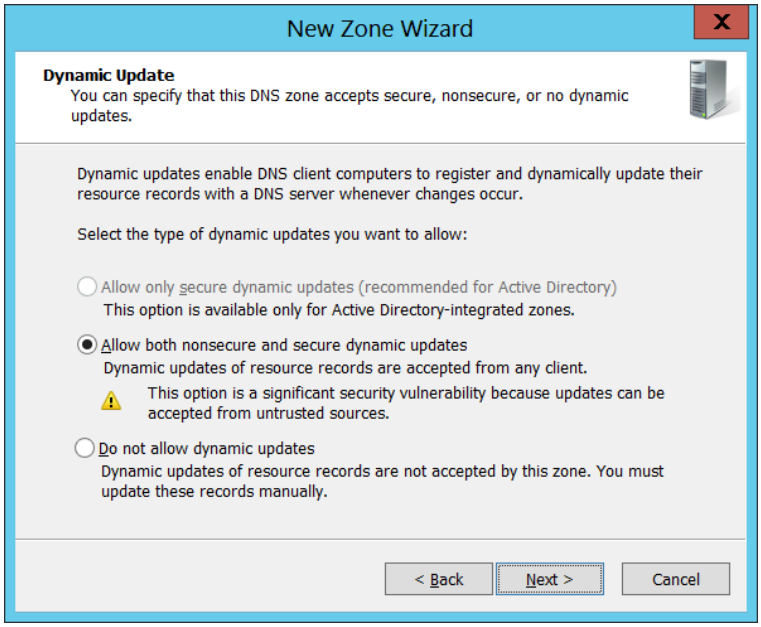
5. In the Zone Name screen, type in the name of the zone you are creating. This name is usually the FQDN of the DNS domain that the zone will contain, such as **YAHOO.COM** →click **Next.**



6. The Zone File screen appears. In this screen, you can either create a new zone file for the new zone, or configure the new zone to use an existing file. Click **Next.**



7. In dynamic Update Select **"Allow both non-secure and secure dynamic update"**→click **Next.**

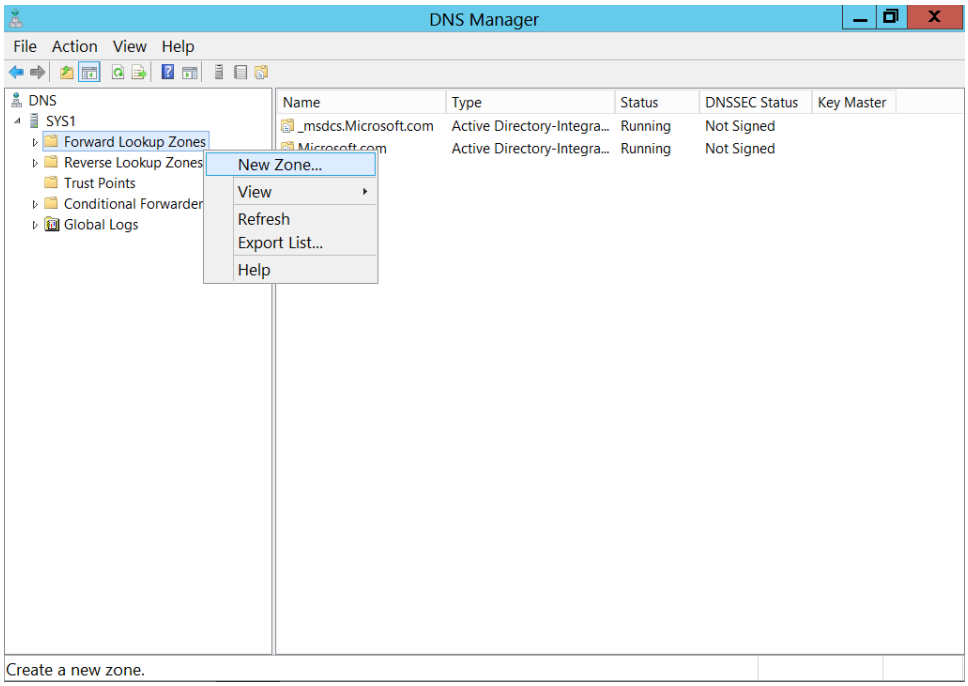


8. The Completing the New Zone Wizard screen appears. Click **Finish.**

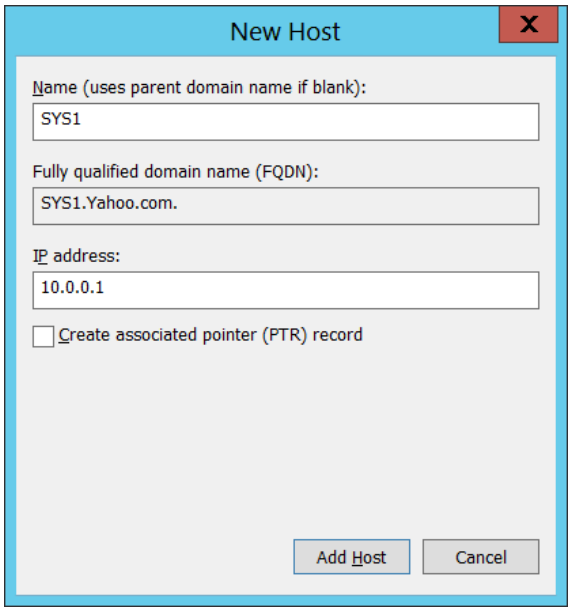
9. In the DNS Console, the new zone you created appears in the right pane.

Creating Host Records for the standard primary zone

1. Go to Start, select **DNS.**
2. Right click the zone and select **New Host.**

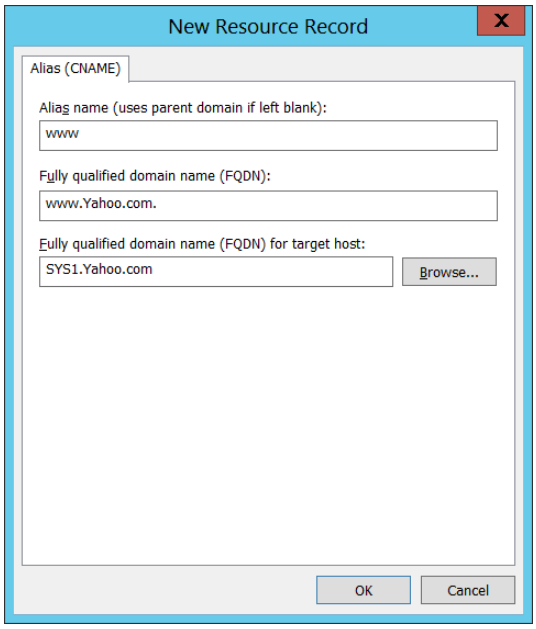


3. Enter the **Host name** for which you are configuring the record Ex: **SYS1,** enter the **corresponding IP address of the host →**click **Add Host →OK →Done.**



Creating an Alias record for the host record

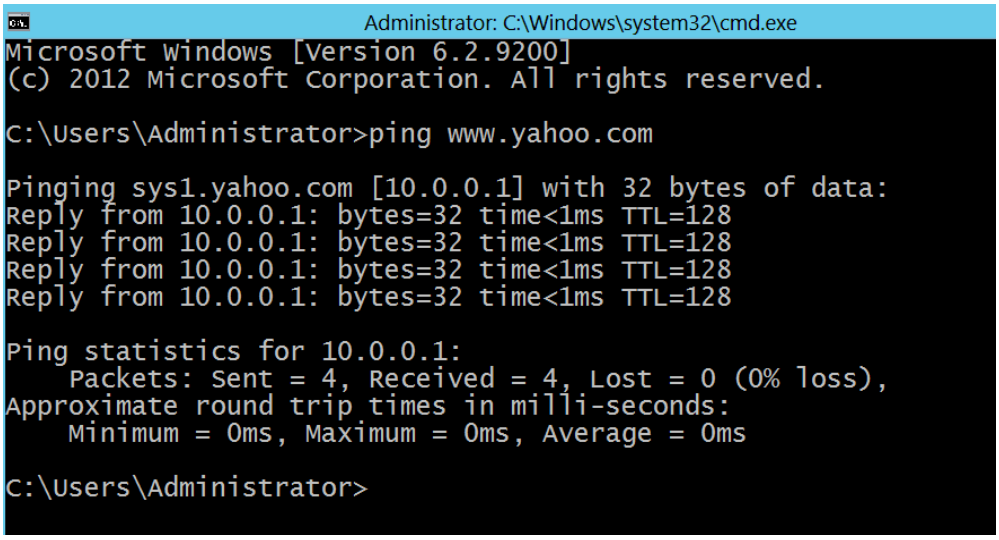
1. Go to Start, select **DNS.**
2. Right click the zone and select **New Alias.**
3. Enter the name in the **'Alias Name'** dialog box Ex: www
4. Click Browse →Double click system name →double click Forward Lookup Zone →double click the zone name →select the host name →click **OK →OK**



VERIFICATION:

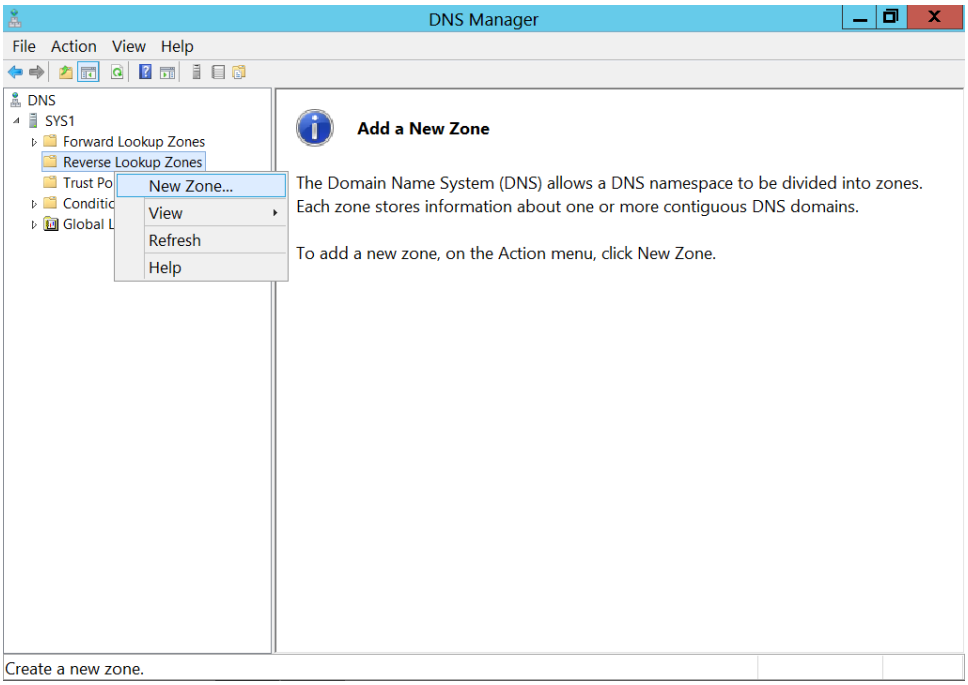
1. Open **Command Prompt** →type **ping FQDN** (Fully Qualified Domain Name)

   Ex: Ping SYS1.YAHOO.COM (or) Ping WWW.YAHOO.COM
2. Name should be resolved into IP Address.



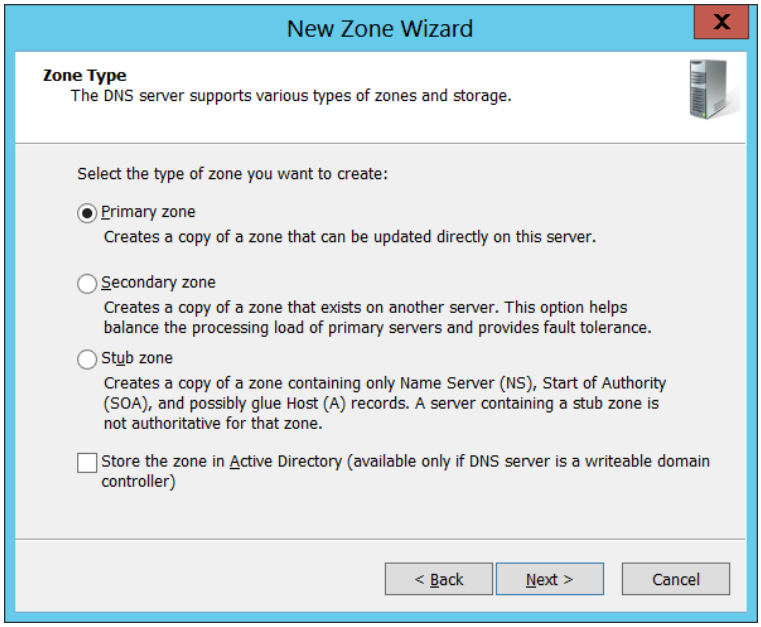
Lab – 3: Creating Standard Primary - Reverse Lookup Zone

1. Go to Start, select **DNS.**
2. In the DNS dialog box, expand the **DNS server's name** in the left pane →right click the **Reverse Lookup Zones** →Select **New Zone.**

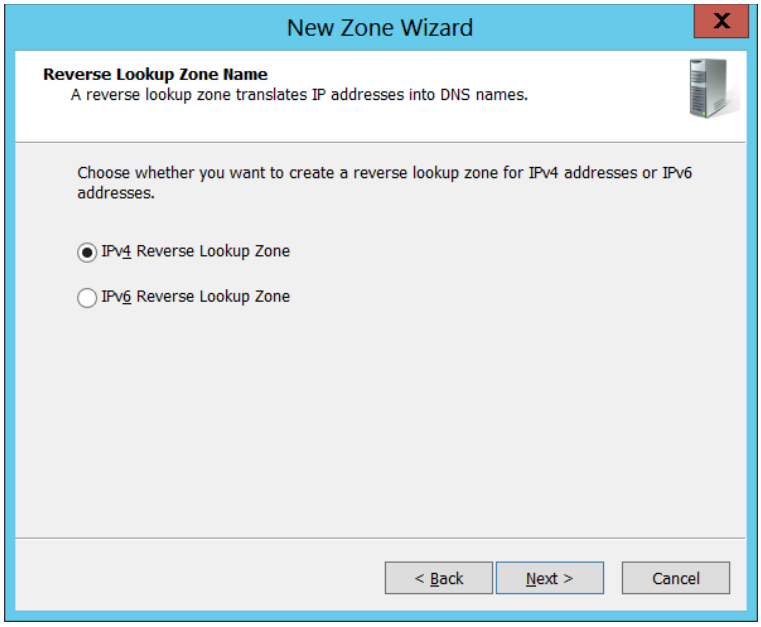


3. Click **Next**

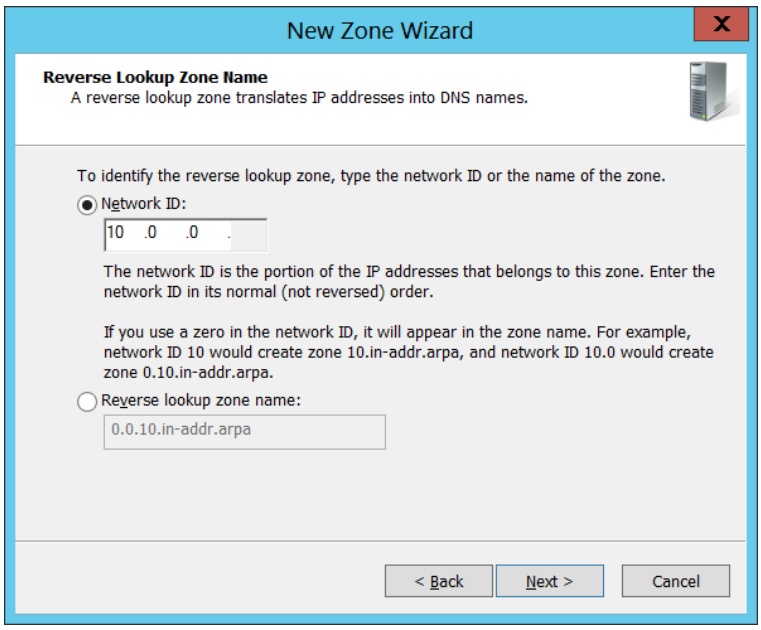
4. Select **“Primary Zone”** and Remove the check box for **"Store the zone in Active Directory"**, click **Next.**



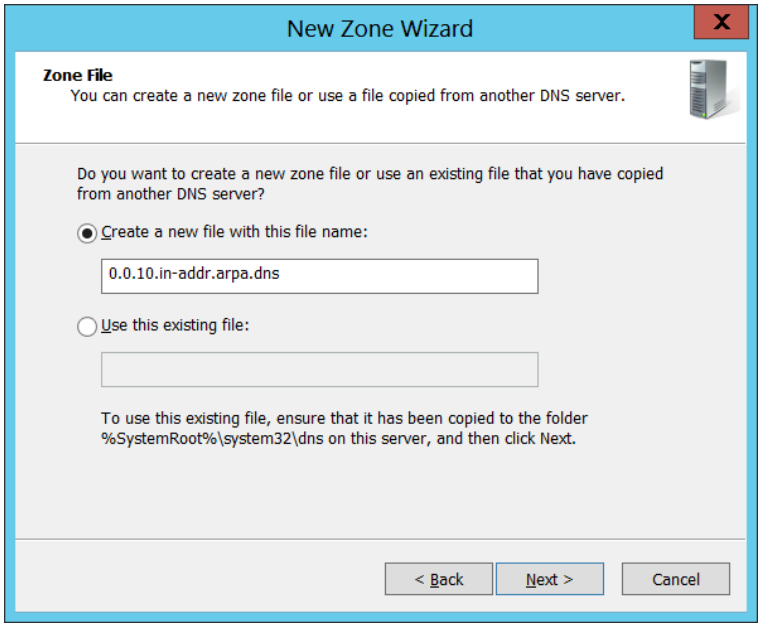
5. Check **IPv4** Reverse Lookup Zone



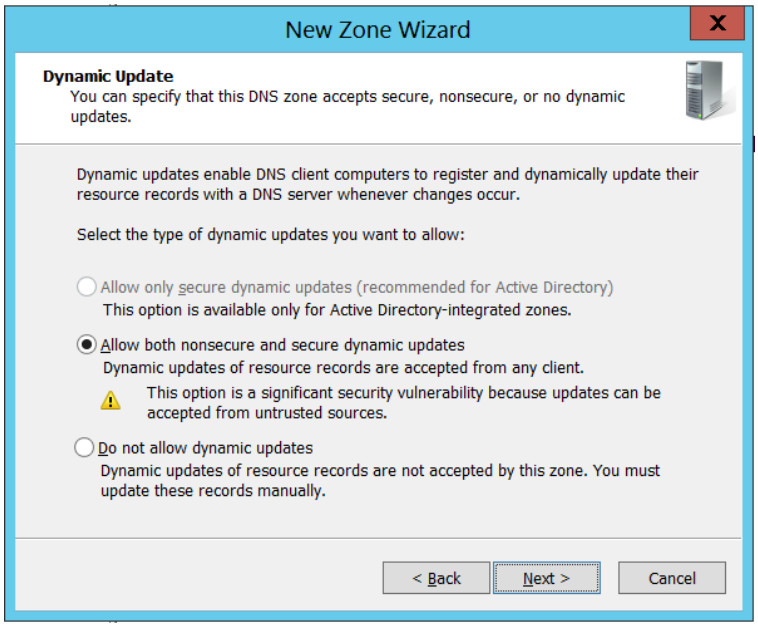
6. In the network ID give the first three octets Ex: 10.0.0→**Next**



7. Click **Next**

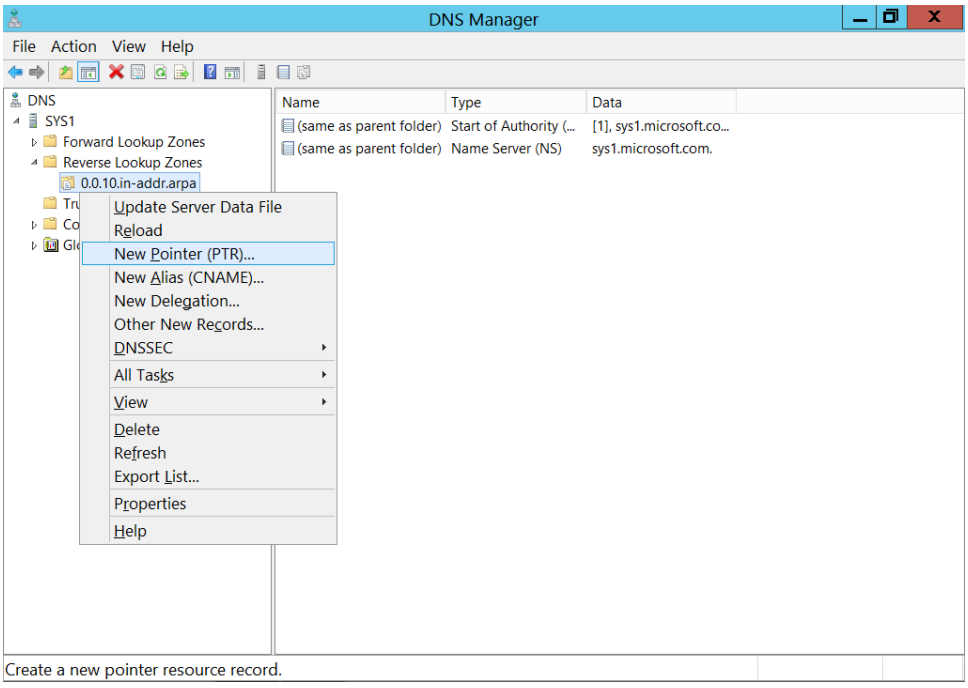


8. In dynamic Update Select **"Allow both non-secure and secure dynamic update"** →click **Next** →**Finish**

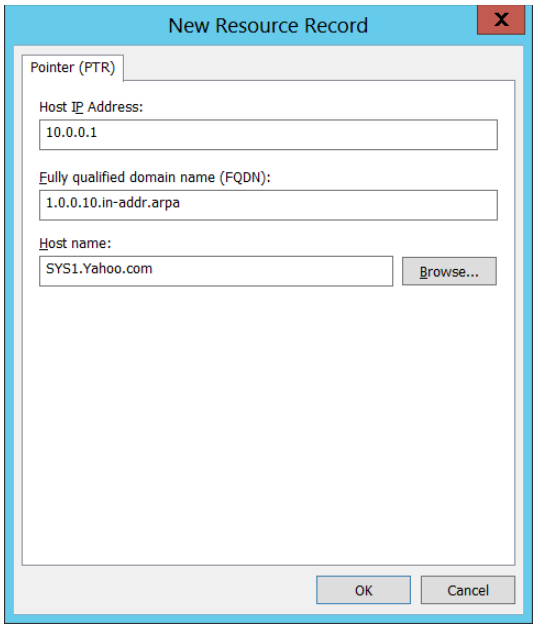


Creating pointer record

1. Go to Start, select **DNS**.
2. Expand Reverse lookup zone and Right click the zone →select **New Pointer**

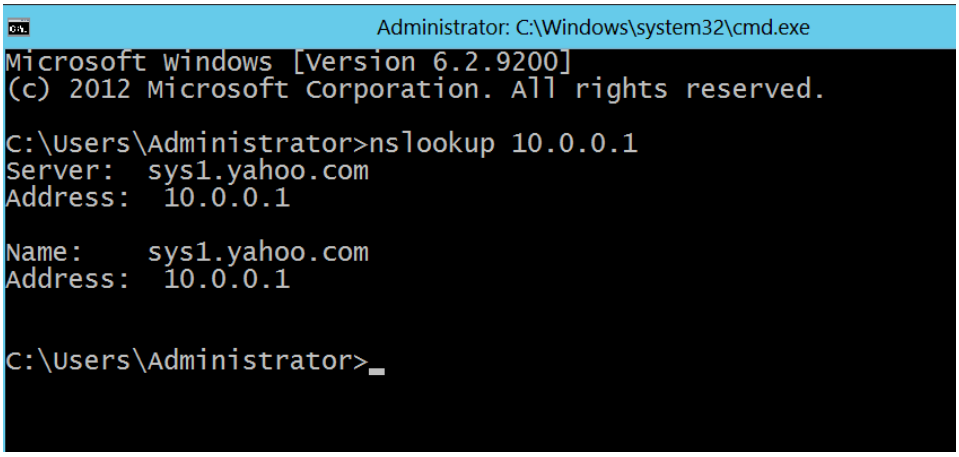


3. In the pointer record give the fourth octet →click browse →double click server name (SYS1) →double click Forward Lookup Zone →double click the zone name (Yahoo.com) →double click the host name (SYS1) →**OK**



Verification:

1. Open the command prompt and type **nslookup 10.0.0.1**



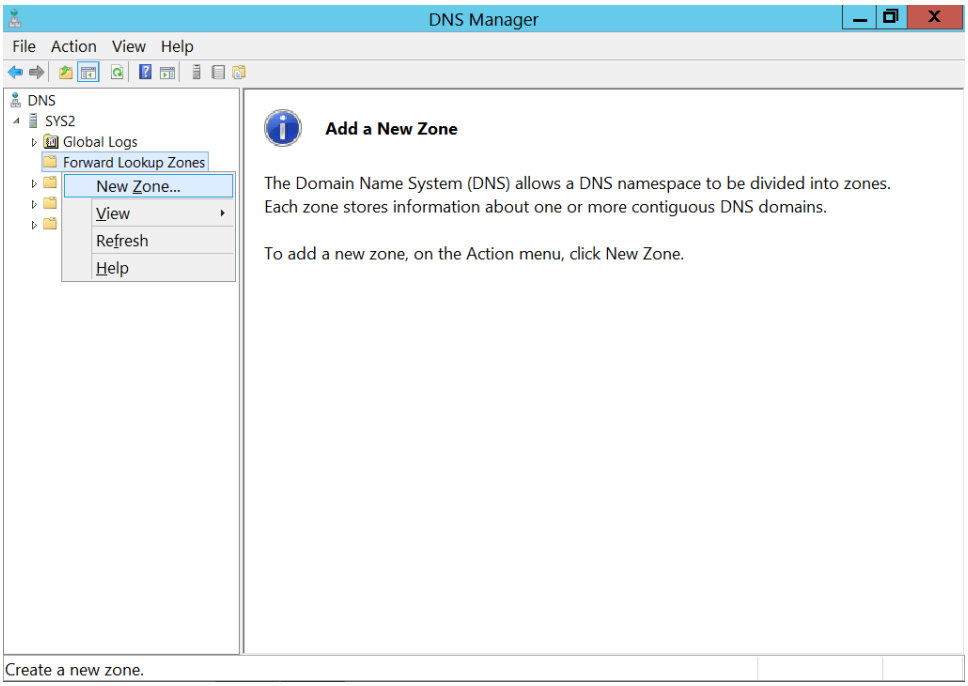
Lab – 4: Creating secondary zone

SYS1 - CONFIGURATION

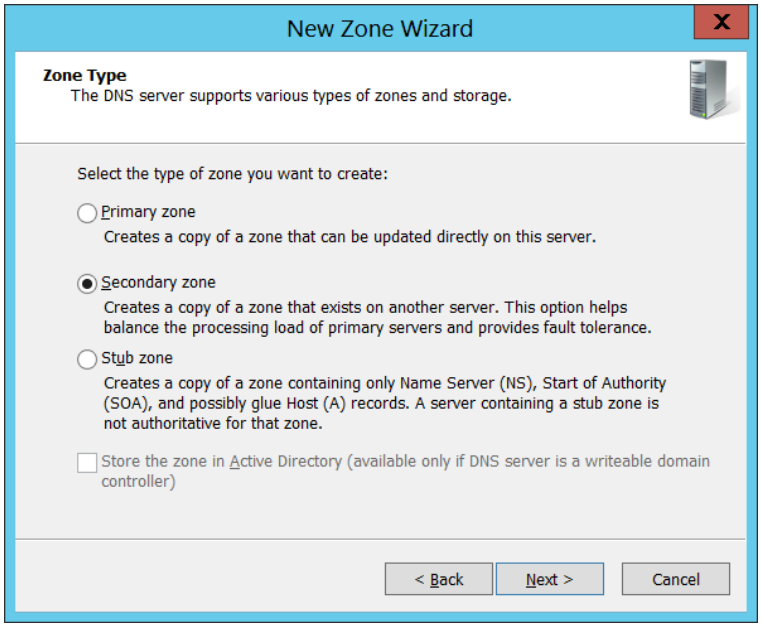
1. In **SYS1** one primary zone should be present. E.g.: Yahoo.com

SYS2 - CONFIGURATION

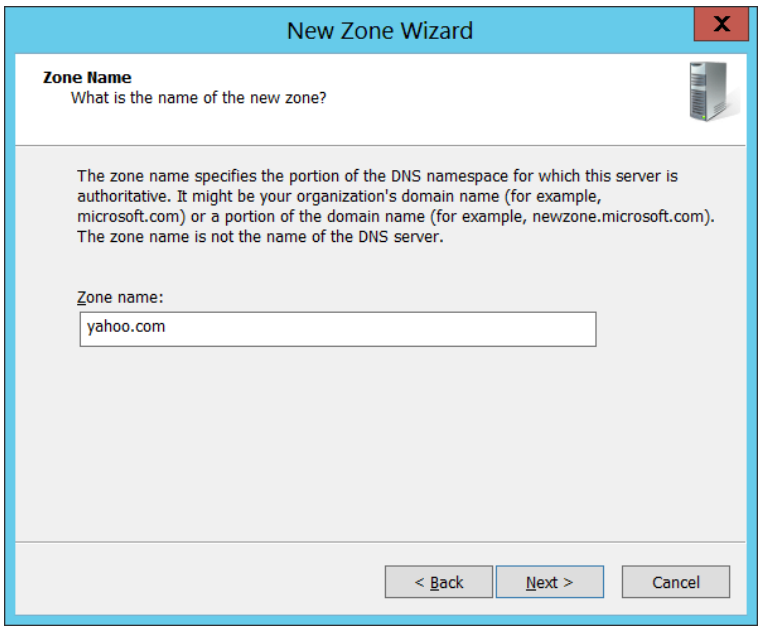
2. Go to Start, select **DNS.**
3. In the DNS dialog box, expand the DNS server's name in the left pane. Right click **Forward Lookup Zones →**select **New Zone →Next**



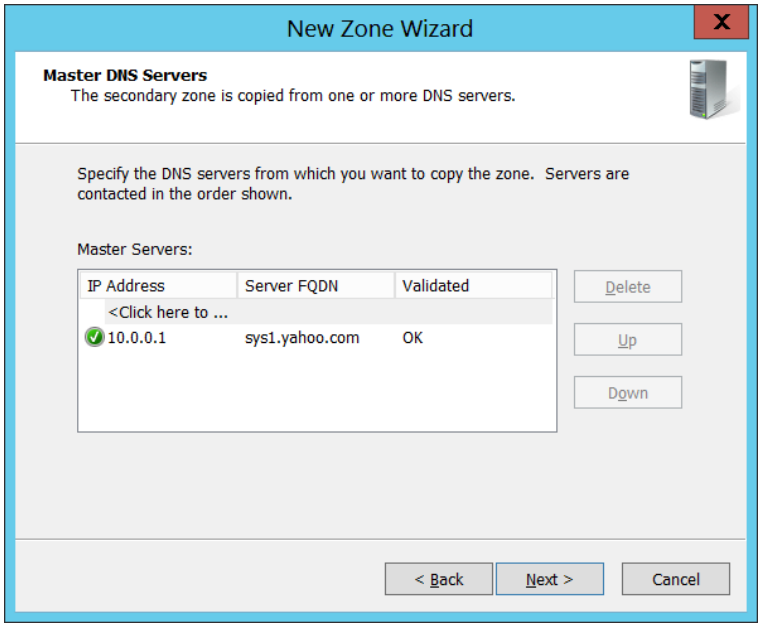
4. Select **Secondary zone →Next.**



5. Give the name of **primary zone** →click **Next.**



6. Give the **IP address of primary zone** Ex: 10.0.0.1→click **Next.**

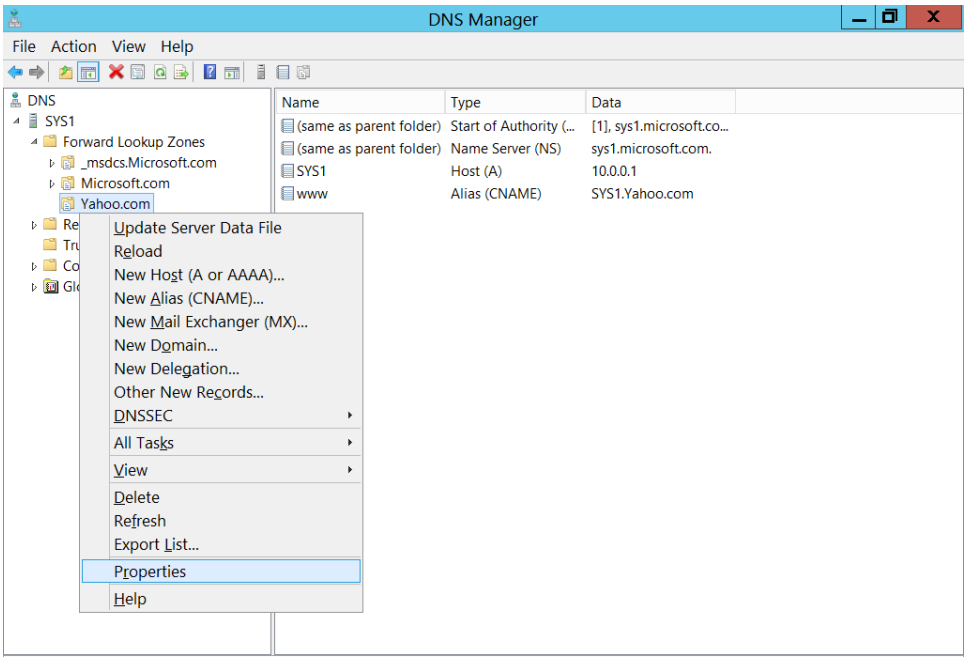


7. Click **Next →Finish.**

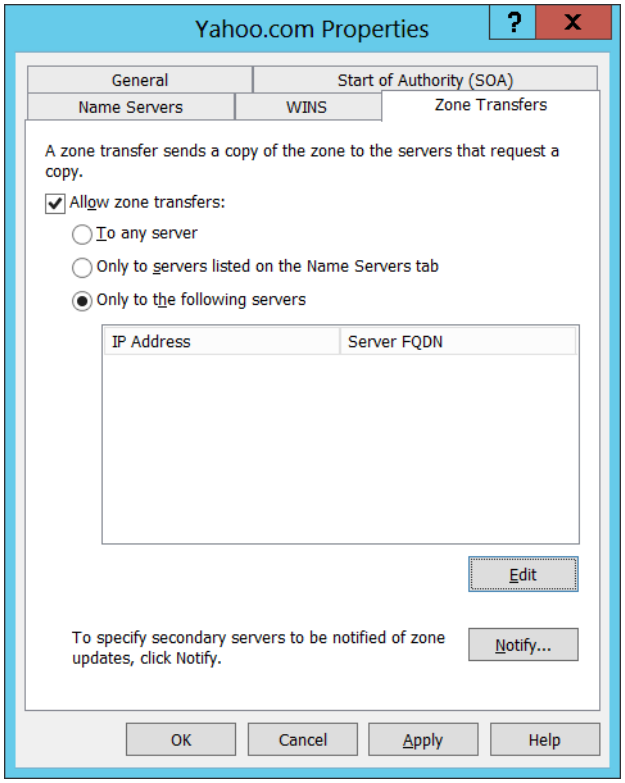
Allow zone transfers to secondary zone

SYS1-CONFIGURATION

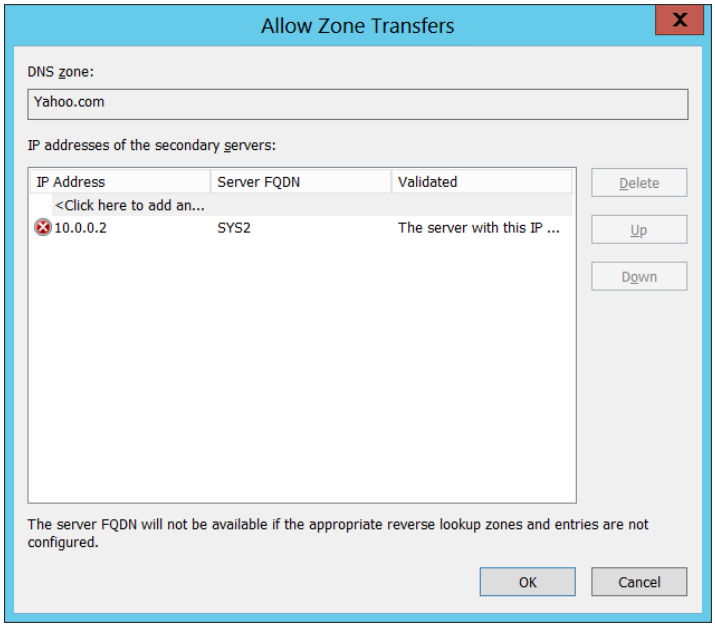
1. Go to Start, select **DNS.**
2. In the DNS dialog box, expand the DNS server's name in the left pane → Expand Forward Lookup Zone →right click **primary zone** →select **Properties**.



3. Select **Zone Transfers** Tab →check the box for **Allow zone transfers** →select **Only to the following servers.**



4. Click **Edit** and mention the **Computer IP Address of secondary zone.** Click Notify →Select **to the following servers** →and mention the **Computer IP Address of secondary zone.**



5. Click Apply →**OK** →Again Click Apply →**OK.**

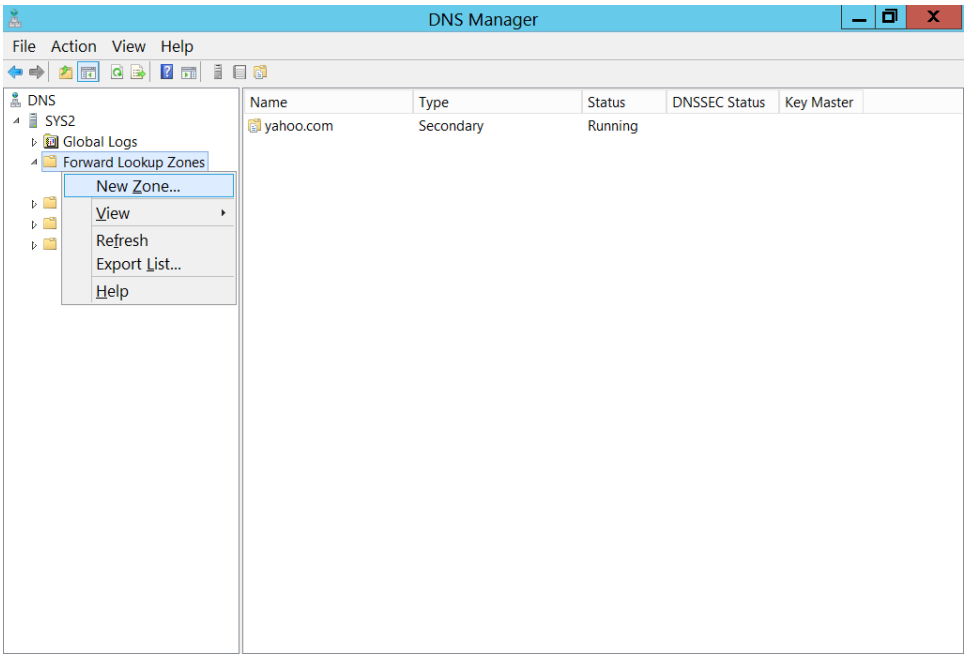
Lab – 5: Creating Stub zone

SYS1-CONFIGURATION

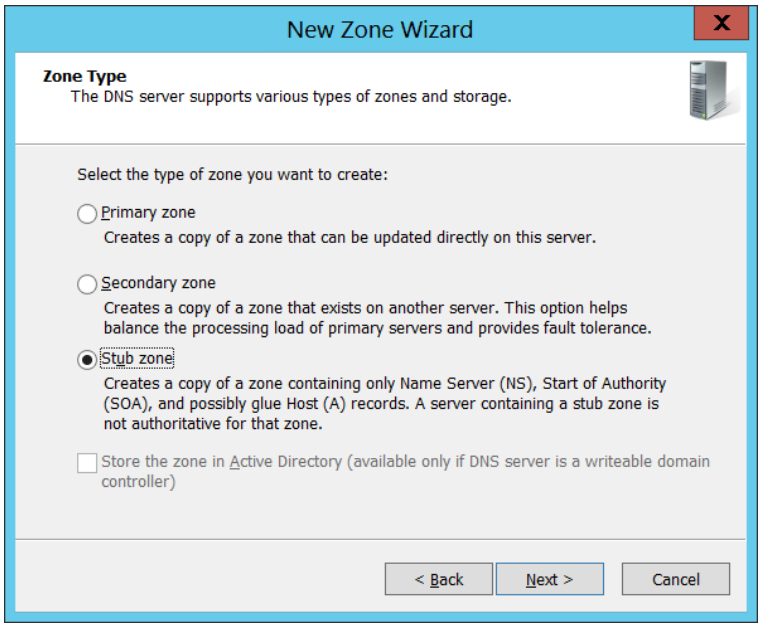
1. Log on to **SYS1** and create a primary zone **Msn.com** along with host and alias records.

SYS2-CONFIGURATION

1. Log on to **SYS2** and Go to Start, select **DNS.**
2. In the DNS dialog box, Expand **DNS Server name** in the left pane, right click **Forward Lookup Zones** →Select **New Zone** →**Next**

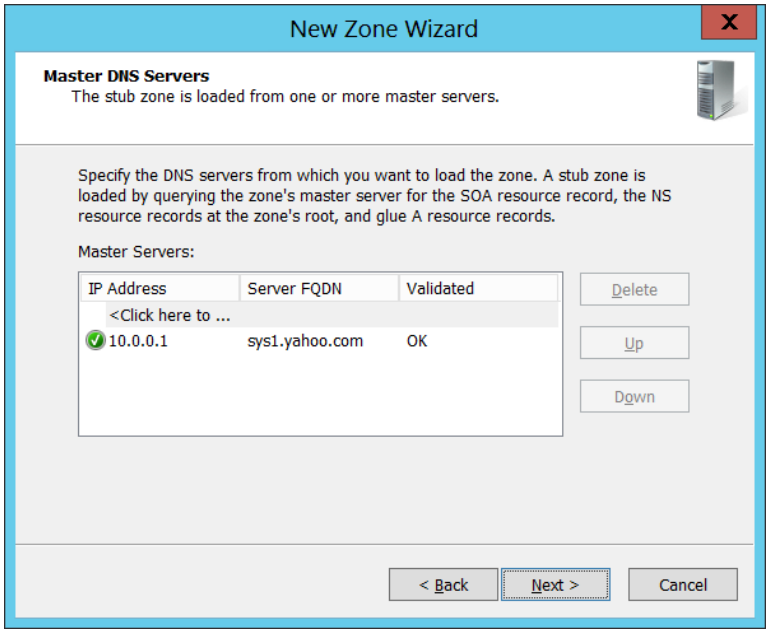


4. Select **Stub zone** →**Next**



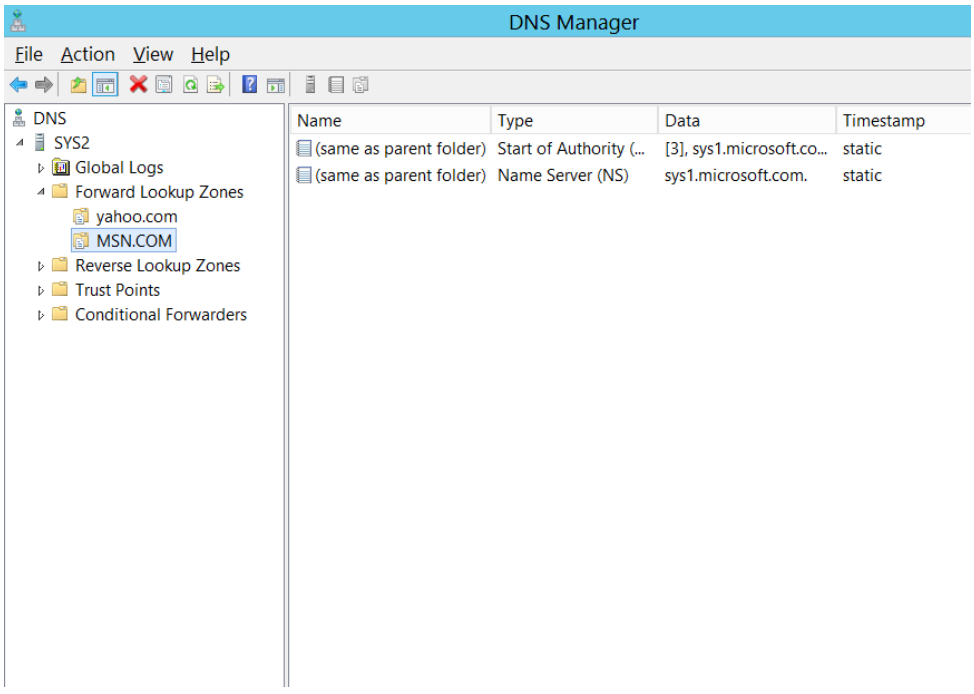
5. Give the name of **primary zone (Msn.com)** →click **Next.**

6. Give the **IP address of primary zone** Ex: 10.0.0.1→click **Next.**



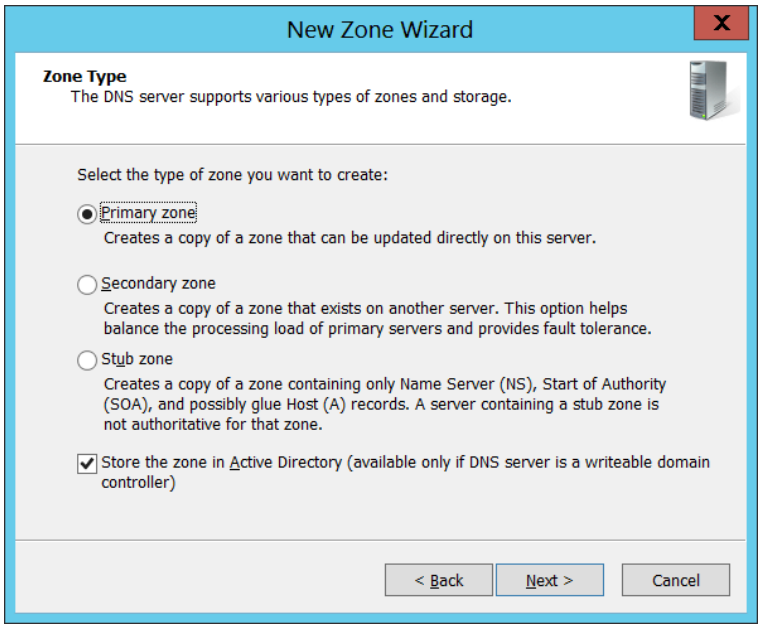
8. Click Next →**Finish.**

9. **Refresh the stub zone** and verify for records.

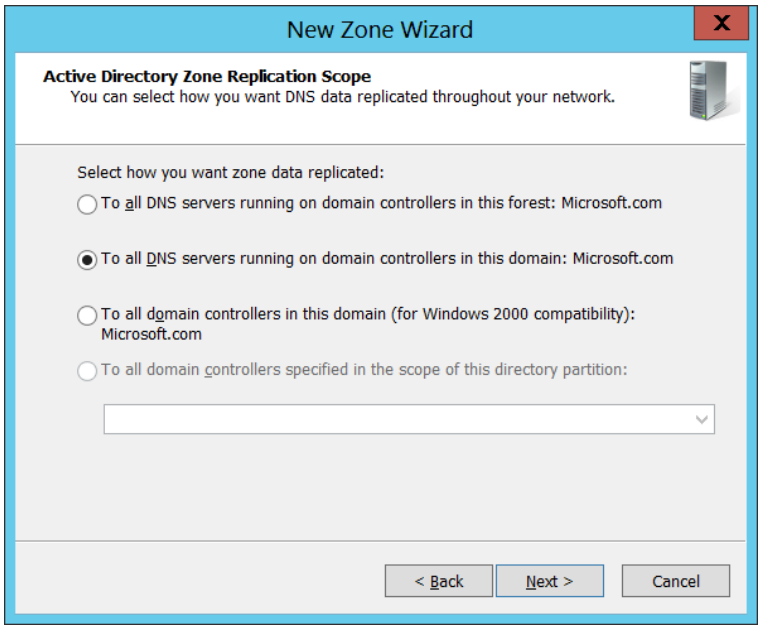


Lab – 6: Creating Active Directory Integrated Primary zone

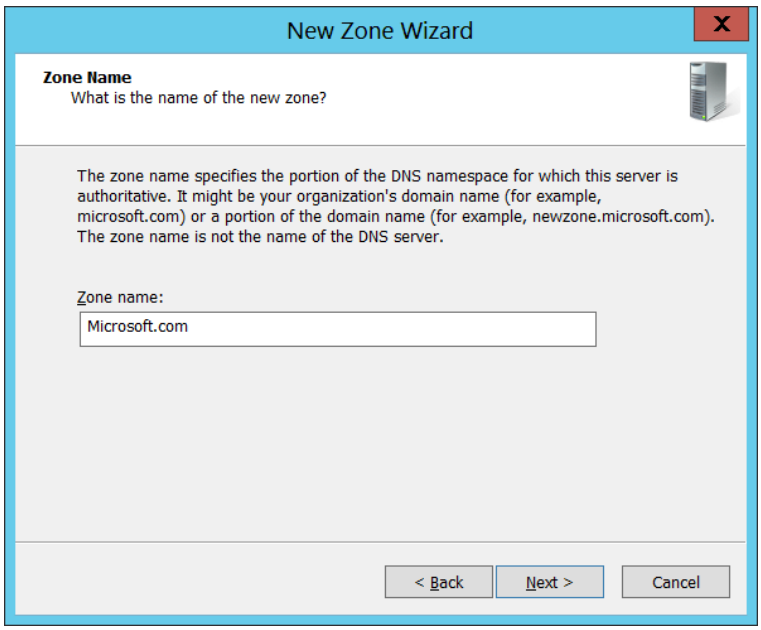
1. Go to Start, select **DNS.**
2. In the DNS dialog box, expand the DNS server's name in the left pane, right click **Forward Lookup Zones** →select **New Zone**
3. Click **Next**→ Accept the default option of **"Primary Zone"** and Select the check box for **"Store the zone in Active Directory"**→click **Next.**



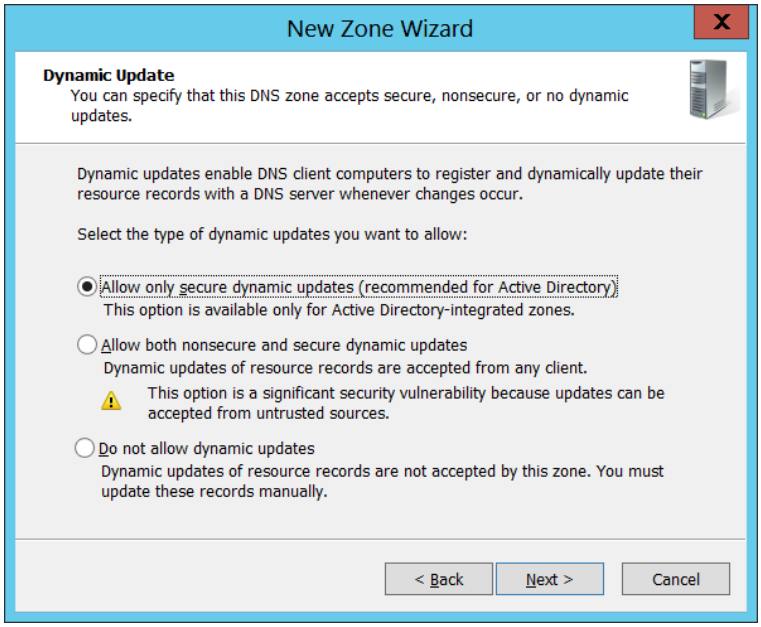
4. In AD Zone Replication Scope, Select the **"To all DNS servers in Active directory domain"**→click **Next.**



5. Give the Zone Name same as the **Domain Name** (Ex: Microsoft.com), click **Next.**



6. Select **"Allow only secure and dynamic update"** →click **Next** →**Finish.**

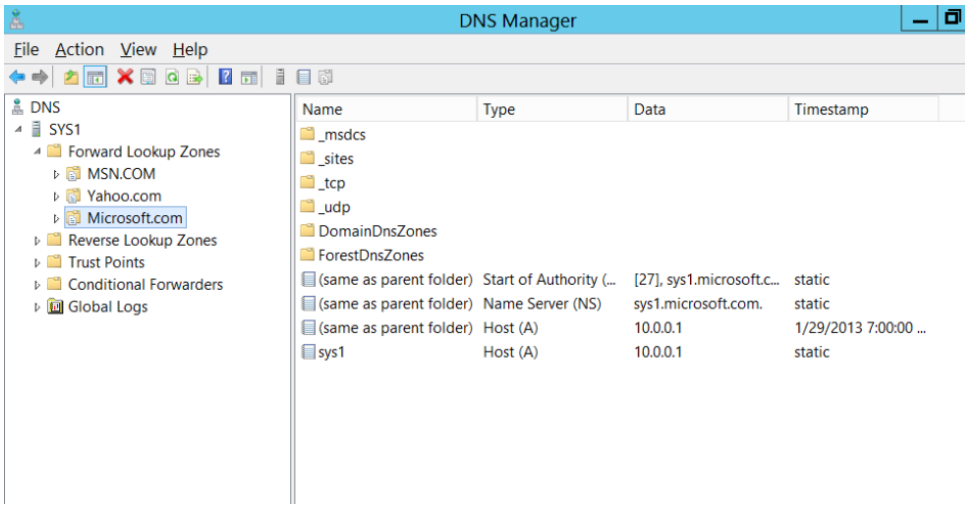


Verification:

1. Verify for the Service records in Microsoft.com zone.

   NOTE: Service records are available only for the zone with the domain name.

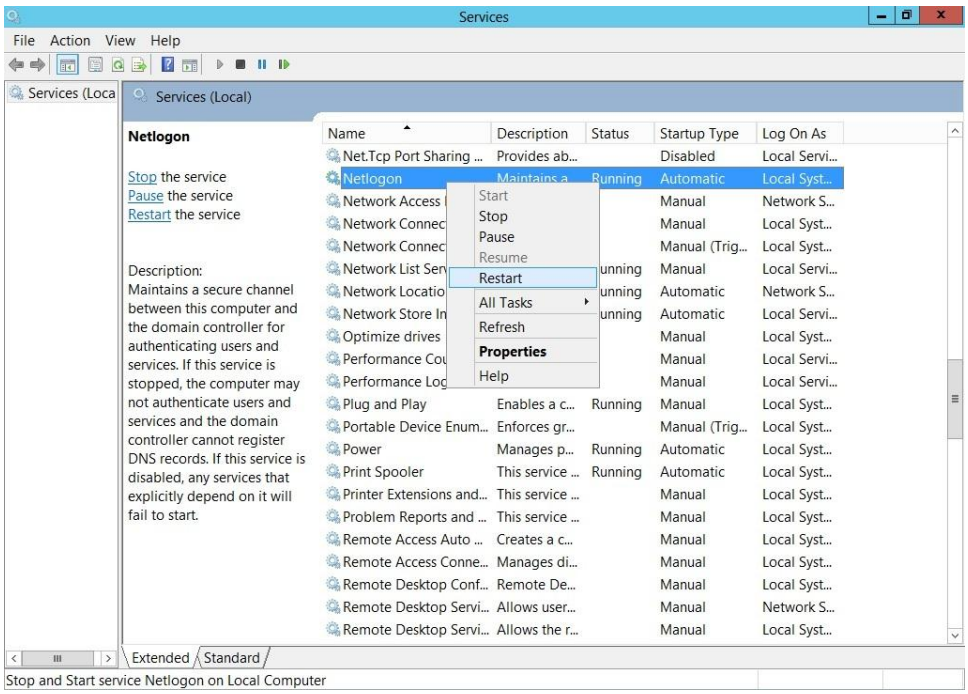
2. In **DC** by default the service records are created in the DNS server in the zone with domain name.



Note: To get the missing records restart the services **Netlogon and DNS Server.**

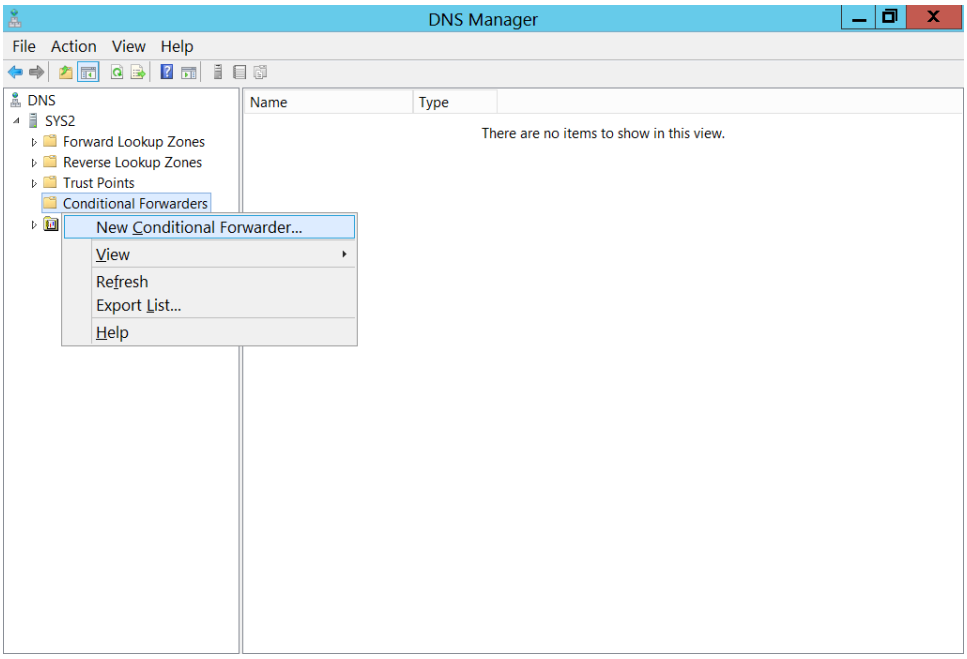
3. Go to Start, type Services in Search Apps, and select Services

4. Right click **Netlogon** and click **Restart,** Right click **DNS Server** and click **Restart.**

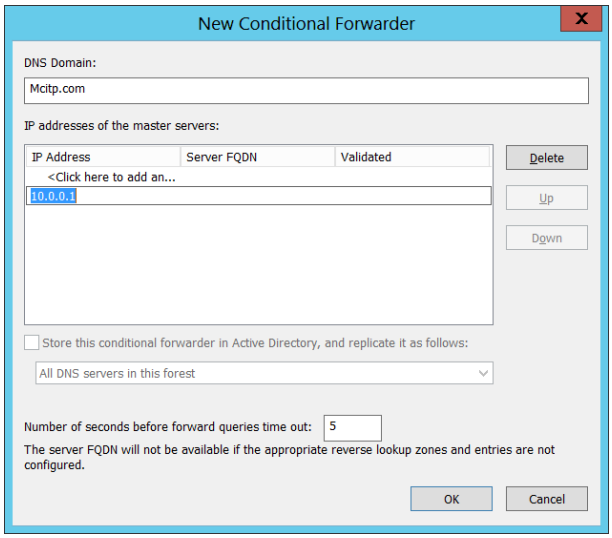


Lab – 7: Conditional Forwarders

1. In **SYS1** create a zone with the name Ex: **MCITP.COM** with host and alias records.
2. In **SYS1** open the command prompt and type ping www.MCITP.COM
3. There will be a reply from 10.0.0.1
4. In **SYS2** assign the **IP Address** and **Preferred DNS** as **10.0.0.2**
5. In **SYS2** open the command prompt and type ping www.MCITP.COM
6. There will not be any reply because the information is in 10.0.0.1
7. If **SYS2** has to resolve the query then configure forwarders in **SYS2** properties.
8. Go to DNS dialog box in **SYS2**→Right click **conditional forwarders** →select **New conditional forwarders**



9. Mention the DNS Domain as **MCITP.COM** and add the IP address of primary zone.

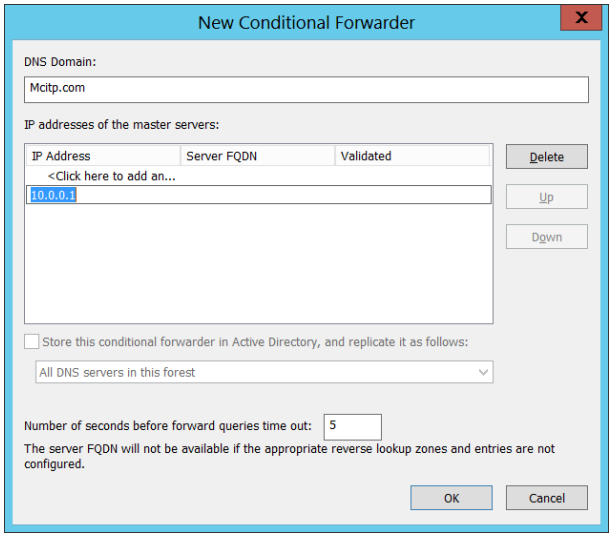


10. In **SYS2** open the command prompt and type ping www.MCITP.COM
11. There will be a reply from 10.0.0.1

Note: Only MCITP.COM names can be resolved with the above process.

Lab – 8: Forwarders

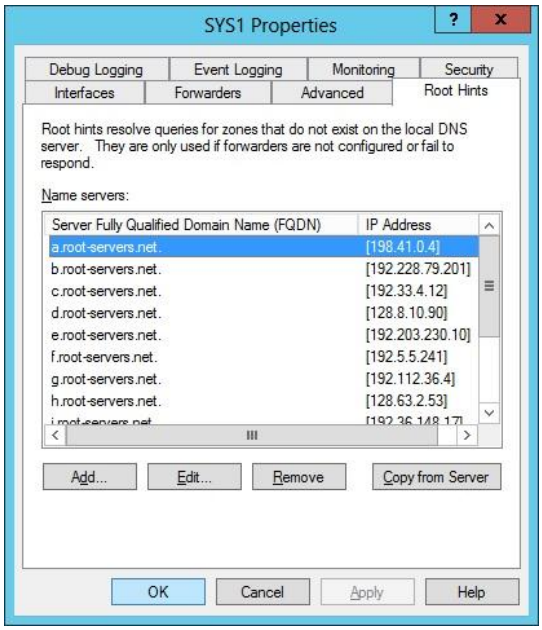
1. In **SYS1** create a zone with the domain name Ex: **Microsoft.com** with host and alias records.
2. In **SYS1** open the command prompt and type ping www.Microsoft.com
3. There will be a reply from 10.0.0.1
4. In **SYS2** assign the **IP Address** and **Preferred DNS** as **10.0.0.2**
5. In **SYS2** open the command prompt and type ping www.Microsoft.com
6. There will not be any reply because the information is in 10.0.0.1
7. If **SYS2** has to resolve the query then configure forwarders in **SYS2** properties.
8. Open DNS in **SYS2** →Right click **SYS2** →select properties →select forwarders →click Edit.
9. Mention the IP address of primary zone →click **OK** →click **OK**.



10. In **SYS2** open the command prompt and type ping www.Microsoft.com
11. There will be a reply from 10.0.0.1

Lab – 9: Root Hints

1. Root hints contain the information of 13 root servers
2. Open DNS →Right click the system name →select Properties →select **Root Hints**



Lab – 10: Cache server

1. To see the information present in the cache type the command

   "Ipconfig /displaydns"

2. To clear the cache information type the command

   "Ipconfig /flushdns"