

Experiment: 01

AIM:

Execute Basic TCP/IP utilities and commands. (Eg: ping, ipconfig, tracert, arp, host, netstat, nslookup, ftp, telnet)

Solution:

1. ARP: -

Short for Address Resolution Protocol, ARP is used with the IP for mapping a 32-bit Internet Protocol address to a MAC Address.

Syntax: -

ARP -s inet_addr eth_addr [if_addr]

Example: -

```
C:\>arp /?
Displays and modifies the IP-to-Physical address translation tables used by
address resolution protocol (ARP).

ARP -s inet_addr eth_addr [if_addr]
ARP -d inet_addr [if_addr]
ARP -a [inet_addr] [-N if_addr]

-a          Displays current ARP entries by interrogating the current
           protocol data. If inet_addr is specified, the IP and Physical
           addresses for only the specified computer are displayed. If
           more than one network interface uses ARP, entries for each ARP
           table are displayed.
-g          Same as -a.
inet_addr   Specifies an internet address.
-N if_addr   Displays the ARP entries for the network interface specified
           by if_addr.
-d          Deletes the host specified by inet_addr. inet_addr may be
           wildcarded with * to delete all hosts.
-s          Adds the host and associates the Internet address inet_addr
           with the Physical address eth_addr. The Physical address is
           given as 6 hexadecimal bytes separated by hyphens. The entry
           is permanent.
eth_addr    Specifies a physical address.
if_addr     If present, this specifies the Internet address of the
           interface whose address translation table should be modified.
           If not present, the first applicable interface will be used.

Example:
> arp -s 157.55.85.212 00-aa-00-62-c6-09 .... Adds a static entry.
> arp -a                                .... Displays the arp table.

C:\>_
```

2. IPCONFIG: -

Ipconfig is a DOS utility can be used from MS-DOS and an MS-DOS shell to display the network settings currently assigned and given by a network.

Syntax: -

```
ipconfig [/? | /all | /release [adapter] | /renew [adapter] | /flushdns | /registerdns | /showclassid  
adapter |/setclassid adapter [classidtoset] ]
```

Example: -

```
C:\Windows\system32>ipconfig  
Windows IP Configuration  
  
Ethernet adapter Local Area Connection 3:  
  
Connection-specific DNS Suffix . . . . .  
Link-local IPv6 Address . . . . . : fe80::11e9:1816:4dc7:db89%19  
IPv4 Address . . . . . : 192.168.1.100  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.1.1  
  
Ethernet adapter Bluetooth Network Connection:  
  
Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . . . . .  
  
Ethernet adapter Local Area Connection:  
  
Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . . . . .  
  
Tunnel adapter isatap.{F261D5B7-8990-44A5-91CA-224F6DE8A632}:  
  
Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . . . . .  
  
Tunnel adapter isatap.{8197F1CB-6317-415F-8523-162520BD5118}:  
  
Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . . . . .  
  
Tunnel adapter isatap.{C3C3B36C-EEFF-4D79-A0E0-43A12FEA39D2}:  
  
Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . . . . .  
  
Tunnel adapter Teredo Tunneling Pseudo-Interface:  
  
Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . . . . .
```

3. NBTSTAT: -

The nbtstat MS-DOS utility that displays protocol statistics and current TCP/IP connections using NBT.

Syntax: -

NBTSTAT [[-a RemoteName] [-A IP address] [-c] [-n] [-r] [-R] [-RR] [-s] [-S] [interval]]

Example: -

```

C:\>nbtstat -c
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

Z:\>nbtstat -c
Broadcom 440x 10-100 Integrated Controller:
NodeIpAddress: [10.0.11.32] Scope Id: []
NetBIOS Remote Cache Name Table
  Name      Type      Host Address    Life [sec]
  HOME-SERVER.SMI<54>  UNIQUE      10.0.11.20      42
Intel PRO Wireless 3945ABG Network Connection:
NodeIpAddress: [0.0.0.0] Scope Id: []
  No names in cache
Z:\>

```

4. NSLOOKUP: -

MS-DOS utility that enables a user to look up an IP address of a domain or host on a network.

Syntax: -

nslookup [-opt ...] # interactive mode using default server

nslookup [-opt ...] - server # interactive mode using 'server'

nslookup [-opt ...] host # just look up 'host' using default server nslookup [-opt ...] host server # just look up 'host' using 'server'

Example: -

```

C:\>nslookup -q=mx microsoft.com

Non-authoritative answer:
microsoft.com  MX preference = 10, mail exchanger = mail.messaging.microsoft.co
m
mail.messaging.microsoft.com  internet address = 65.55.88.22
mail.messaging.microsoft.com  internet address = 94.245.120.86
C:\>

```

5. TRACERT: -

The tracert command is used to visually see a network packet being sent and received and the amount of hops required for that packet to get to its destination.

Syntax: -

```
tracert [-d] [-h maximum_hops] [-j host-list] [-w timeout] [-R] [-S srcaddr] [-4] [-6]
target_name
```

Example: -

```
04 Command Prompt
C:\Users\Chris>tracert howtogeek.com
Tracing route to howtogeek.com [208.43.115.82]
over a maximum of 30 hops:
 1   3 ms    4 ms    2 ms  192.168.1.254
 2   13 ms   9 ms    7 ms  10.246.112.1
 3   10 ms   8 ms    8 ms  96.1.253.134
 4   11 ms   9 ms   13 ms  173.182.214.134
 5   *        *        * Request timed out.
 6   15 ms   11 ms   12 ms  75.154.217.103
 7   13 ms   12 ms   13 ms  tel-5.bbr01.wb01.sea01.networklayer.com [206.81.80.140]
 8   49 ms   47 ms   48 ms  ae0.bbr01.cs01.den01.networklayer.com [173.192.1.8.145]
 9   49 ms   48 ms   48 ms  ae7.bbr02.cs01.den01.networklayer.com [173.192.1.8.169]
10   67 ms   66 ms   97 ms  ae0.bbr02.eq01.chi01.networklayer.com [173.192.1.8.130]
11  177 ms   83 ms   83 ms  ae0.bbr02.eq01.wdc02.networklayer.com [173.192.1.8.154]
12   94 ms   82 ms   83 ms  ae1.dar01.sr01.wdc01.networklayer.com [173.192.1.8.193]
13   84 ms   85 ms   84 ms  po1.fcr01.sr01.wdc01.networklayer.com [208.43.11.8.134]
14   85 ms   84 ms   84 ms  howtogeek.com [208.43.115.82]
Trace complete.
```

6. NETSTAT: -

The netstat command is used to display the TCP/IP network protocol statistics and information.

Syntax: -

```
NETSTAT [-a] [-e] [-n] [-s] [-p proto] [-r] [interval]
```

Example: -

Active Connections			
Proto	Local Address	Foreign Address	State
TCP	0.0.0.0:135	0.0.0.0:0	LISTENING
TCP	0.0.0.0:445	0.0.0.0:0	LISTENING
TCP	127.0.0.1:1027	0.0.0.0:0	LISTENING
TCP	192.168.1.100:139	0.0.0.0:0	LISTENING
TCP	192.168.1.100:2558	207.68.172.236:80	CLOSE_WAIT
TCP	192.168.1.100:2916	204.14.90.25:21	CLOSE_WAIT
TCP	192.168.1.100:2923	69.65.109.55:80	TIME_WAIT
TCP	192.168.1.100:2924	204.245.162.25:80	ESTABLISHED
TCP	192.168.1.100:2925	66.150.96.119:80	ESTABLISHED
TCP	192.168.1.100:2930	204.245.162.27:80	ESTABLISHED
UDP	0.0.0.0:445	*.*	
UDP	0.0.0.0:500	*.*	
UDP	0.0.0.0:1030	*.*	
UDP	0.0.0.0:1040	*.*	
UDP	0.0.0.0:1155	*.*	
UDP	0.0.0.0:1175	*.*	
UDP	0.0.0.0:4500	*.*	
UDP	127.0.0.1:123	*.*	
UDP	127.0.0.1:1036	*.*	
UDP	127.0.0.1:1900	*.*	
UDP	127.0.0.1:2922	*.*	
UDP	192.168.1.100:123	*.*	
UDP	192.168.1.100:137	*.*	
UDP	192.168.1.100:138	*.*	
UDP	192.168.1.100:1900	*.*	

Experiment: 02

AIM:

Installing and Configuring Virtual Machine VMware.

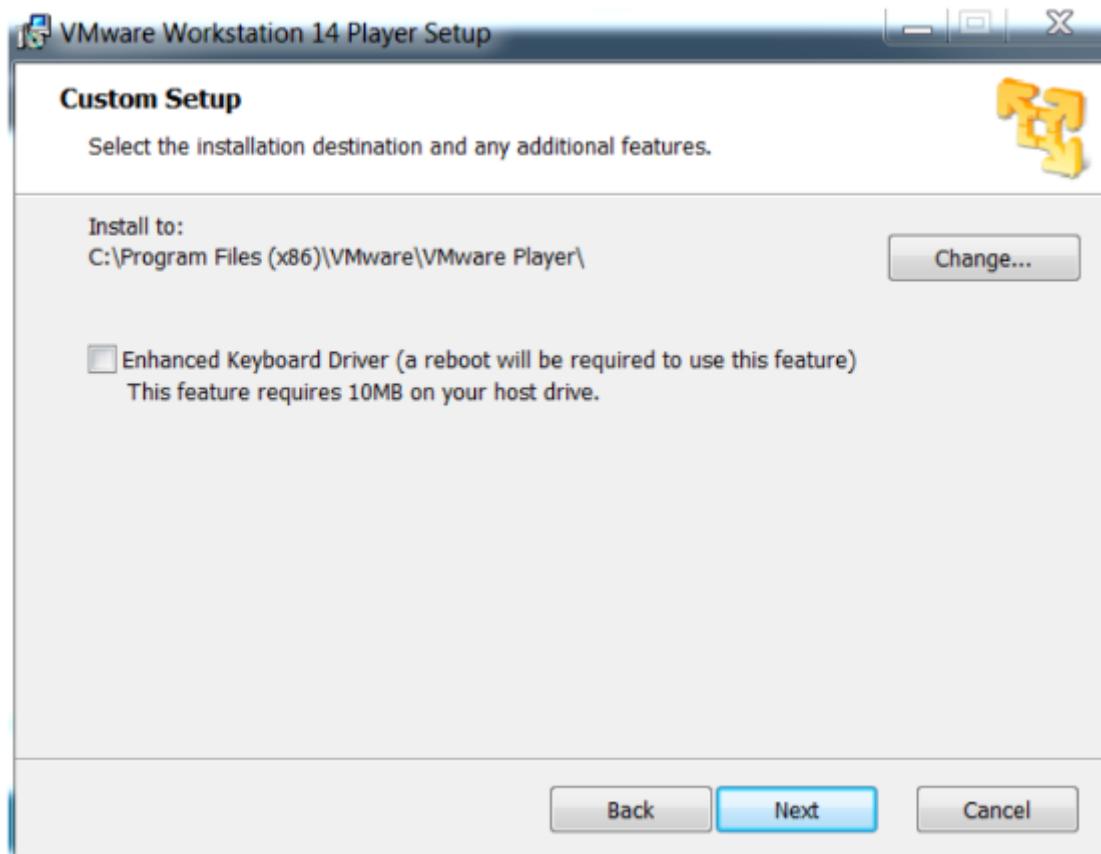
Solution:

Download VMware player 14.1.8 from the below link: Press Ctrl + Click

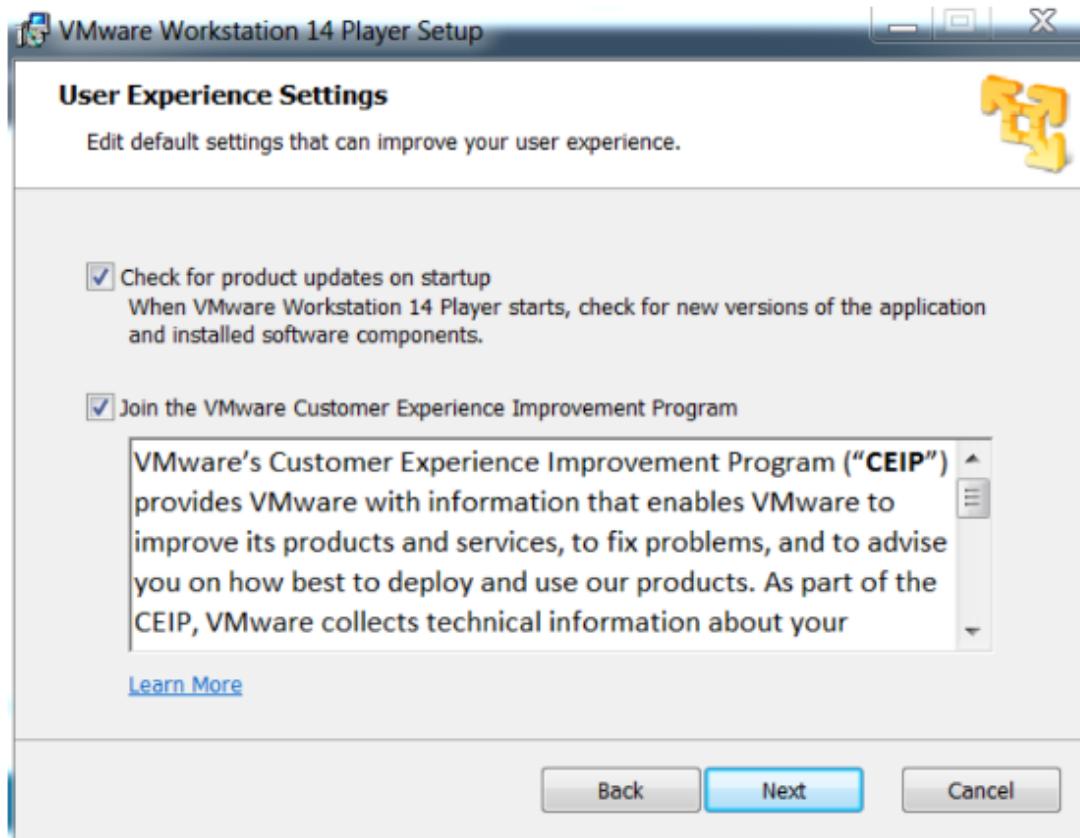
<https://customerconnect.vmware.com/en/downloads/details?downloadGroup=PLAYER-1418&productId=687&rPId=39188>

Step 1: Click on the “Download Now” button and run the exe file as administrator.

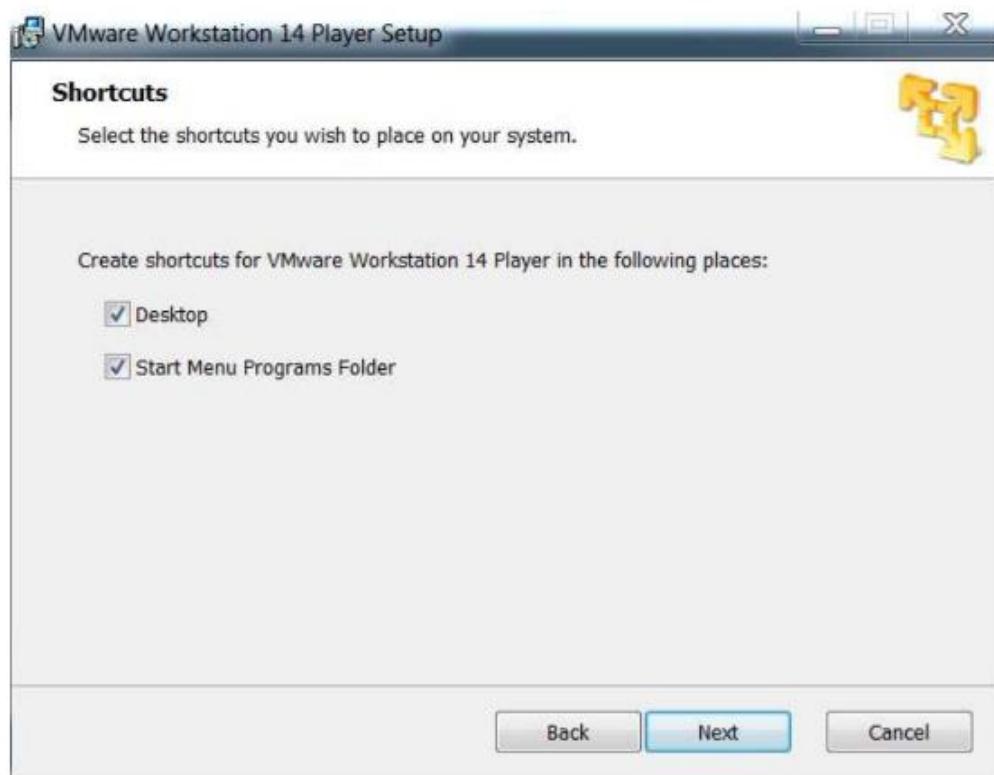


Step 2: Click on “Next”**Step 3:** Click “Next” (Note: Do not check Enhanced Keyboard Driver check box)

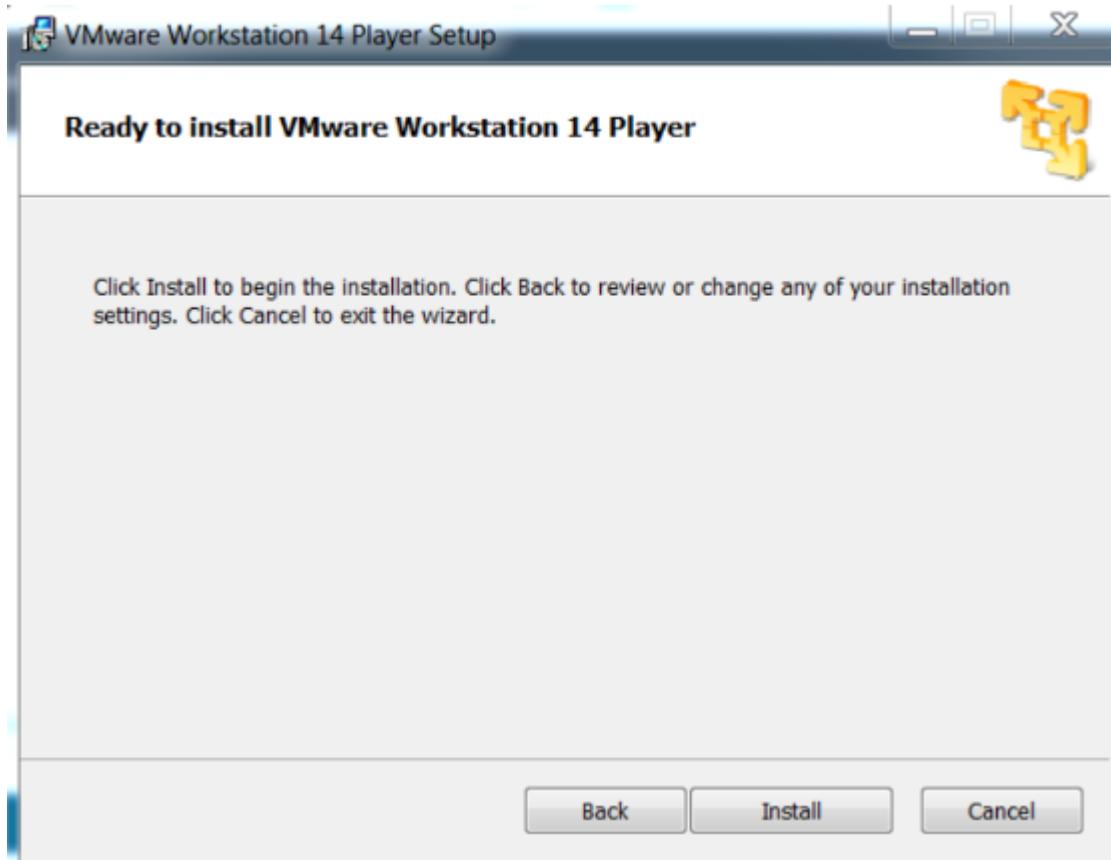
Step 4: Check the Product Updates and VMware Customer Experience and Click “Next”.



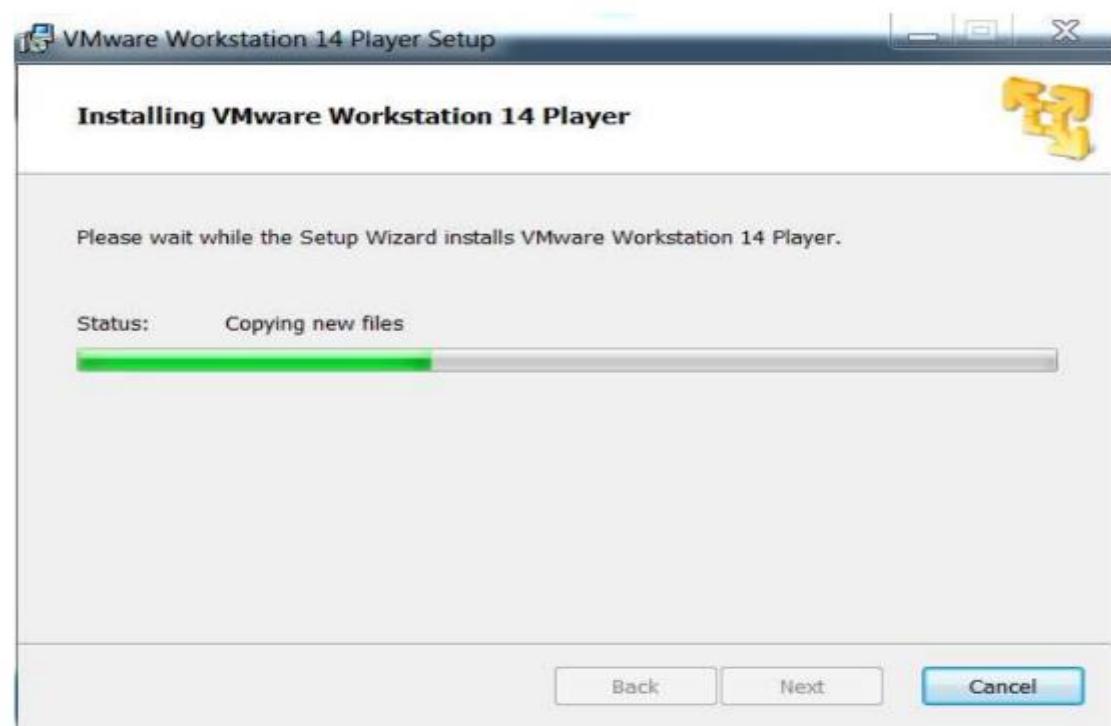
Step 5: Check Desktop and Start Menu Program Folder and Click “Next”.



Step 6: Click “Install”.



Step 7: Installing window will be completed and do not press “Cancel” button



Step 8: Click “Finish”**Step 9:** Open VMware Workstation and select VMware Workstation Player for free and click “Continue”

Step 10: VMware Workstation Home screen page will appear.



Experiment: 03

AIM:

Create a Windows Server Boot Disk.

Solution:

Windows Server boot disk can be created using following 3 ways

1. Using Microsoft's official tool (Windows 7 USB DVD Download)
2. Using command prompt
3. Using third party software's

1. Using Microsoft's official tool (Windows 7 USB DVD Download)

Microsoft provided Windows 7 USB/DVD download tool also known by Windows USB/DVD download tool with window 7 release. This tool can be used to make bootable device in four steps for following windows OS either client or server.

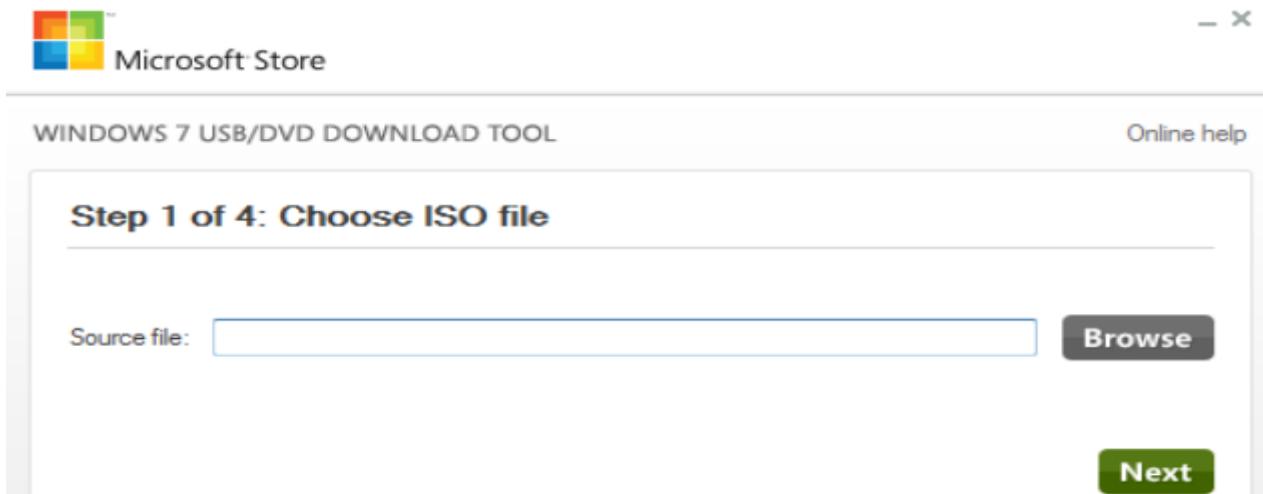
1. Windows Server 2012 R2
2. Windows Server 2012
3. Windows Server 2008 R2
4. Windows 10
5. Windows 8.1
6. Windows 8
7. Windows 7

Steps to create bootable disk are

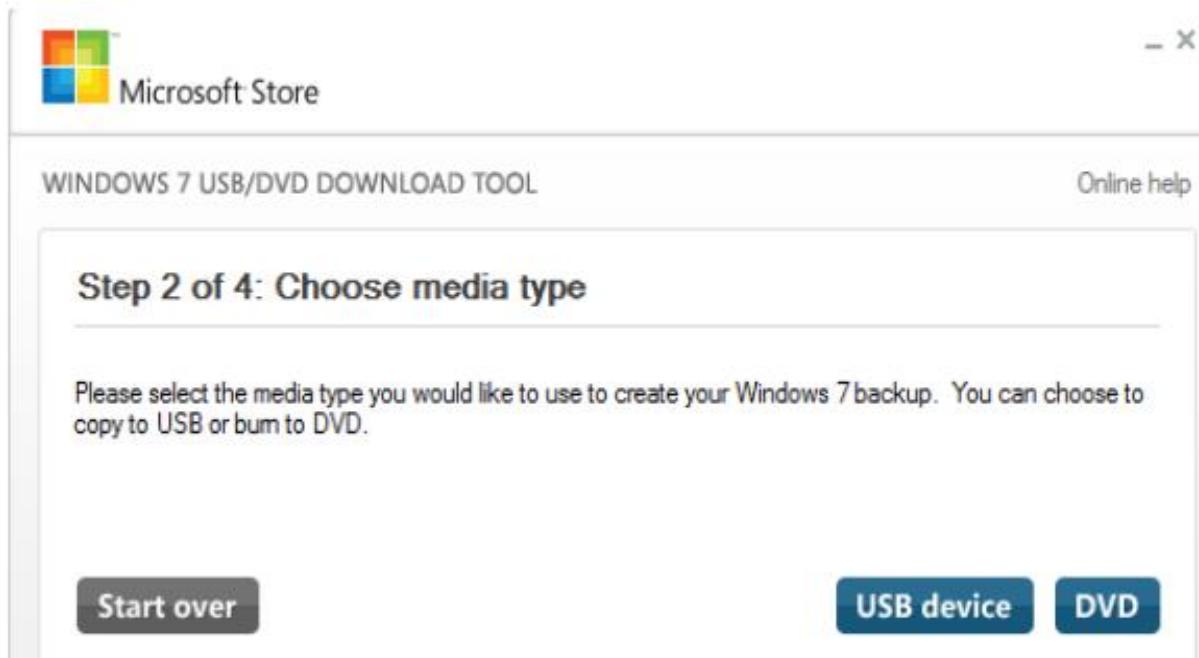
1. Download Windows 7 USB/DVD Download tool from link

<https://www.microsoft.com/en-us/download/windows-usb-dvd-download-tool>

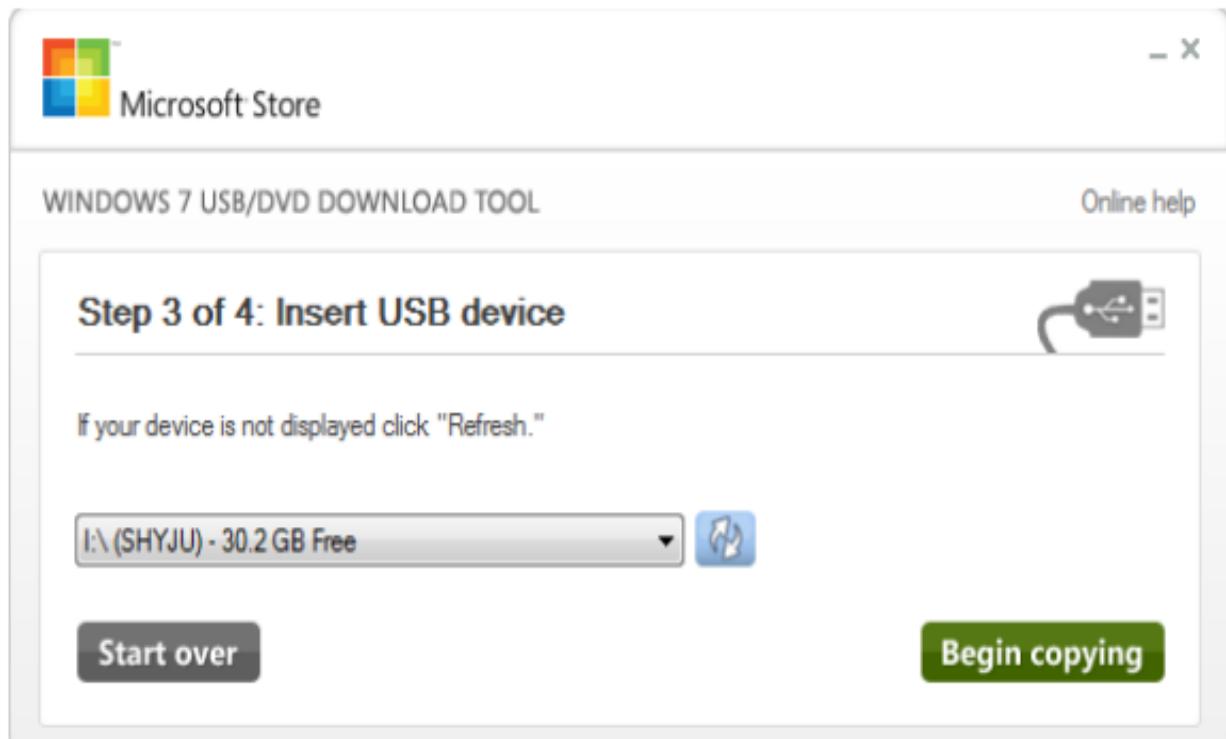
2. Choose ISO file: Run the tool and Click on the Browse button to select the ISO file. Click Next



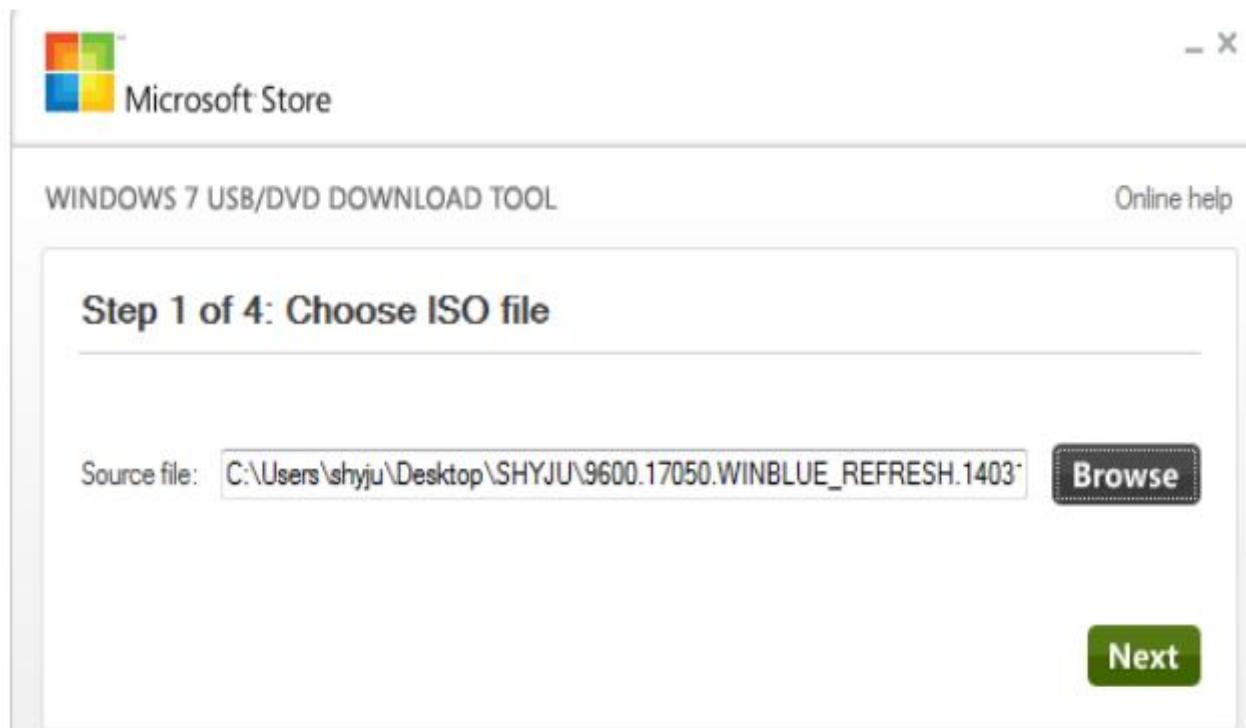
3. Choose Media Type: USB device or DVD. In Step two, we need to decide whether we need to copy the windows server 2012 R2 installation files to a DVD disc or a USB stick.



4. Select drive and Begin Copying: Select USB/DVD drive and click on Begin Copying.



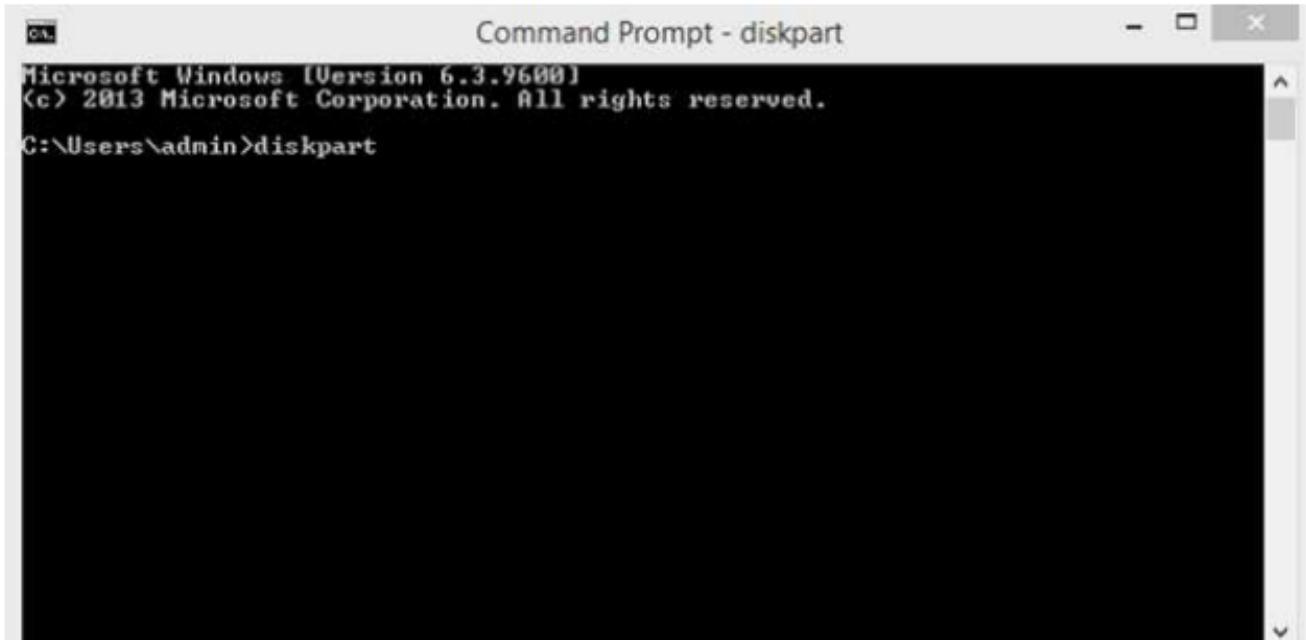
5. Format and Create bootable Drive: a After the last step it will ask to format the drive to make enough space. Click Yes to start formatting. After formatting it will start creating bootable DVD/USB device.



2. Using Command Prompt

Follow the Steps

1. Open command prompt (cmd) in administrator mode
2. Type diskpart [to open disk management utility using command prompt]



```
Command Prompt - diskpart
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\admin>diskpart
```

3. DISKPART> list disk [It will show the no of disks attached with your system. Here we have 2 drives: SSD and pen drive]
4. DISKPART> select disk X [your disk no X that is to make bootable]
5. DISKPART> clean
6. DISKPART> create partition primary [Create the bootable partition]
7. DISKPART> select partition 1 [Select the partition you just created]
8. DISKPART> active
9. DISKPART> format fs = ntfs [It Start formatting the selected disk]

```

Microsoft DiskPart version 6.3.9600
Copyright (C) 1999-2013 Microsoft Corporation.
On computer: NIKHIL

DISKPART> list disk
Disk ## Status Size Free Dyn Gpt
Disk 0 Online 223 GB 0 B
Disk 1 Online 15 GB 0 B

DISKPART> select disk 1
Disk 1 is now the selected disk.

DISKPART> clean
DiskPart succeeded in cleaning the disk.

DISKPART> create partition primary
DiskPart succeeded in creating the specified partition.

DISKPART> select partition 1
Partition 1 is now the selected partition.

DISKPART> active
DiskPart marked the current partition as active.

DISKPART> format fs=ntfs
    1 percent completed

```

```

Disk 1 is now the selected disk.

DISKPART> clean
DiskPart succeeded in cleaning the disk.

DISKPART> create partition primary
DiskPart succeeded in creating the specified partition.

DISKPART> select partition 1
Partition 1 is now the selected partition.

DISKPART> active
DiskPart marked the current partition as active.

DISKPART> format fs=ntfs
    100 percent completed
DiskPart successfully formatted the volume.

DISKPART>

```

10. DISKPART> assign

11. Go to the location where windows server 2012 R2 ISO file is stored in your system → Right click on it –> select 7-zip → Select your DVD/USB drive and extract the ISO File.

3. Using Third Party Software

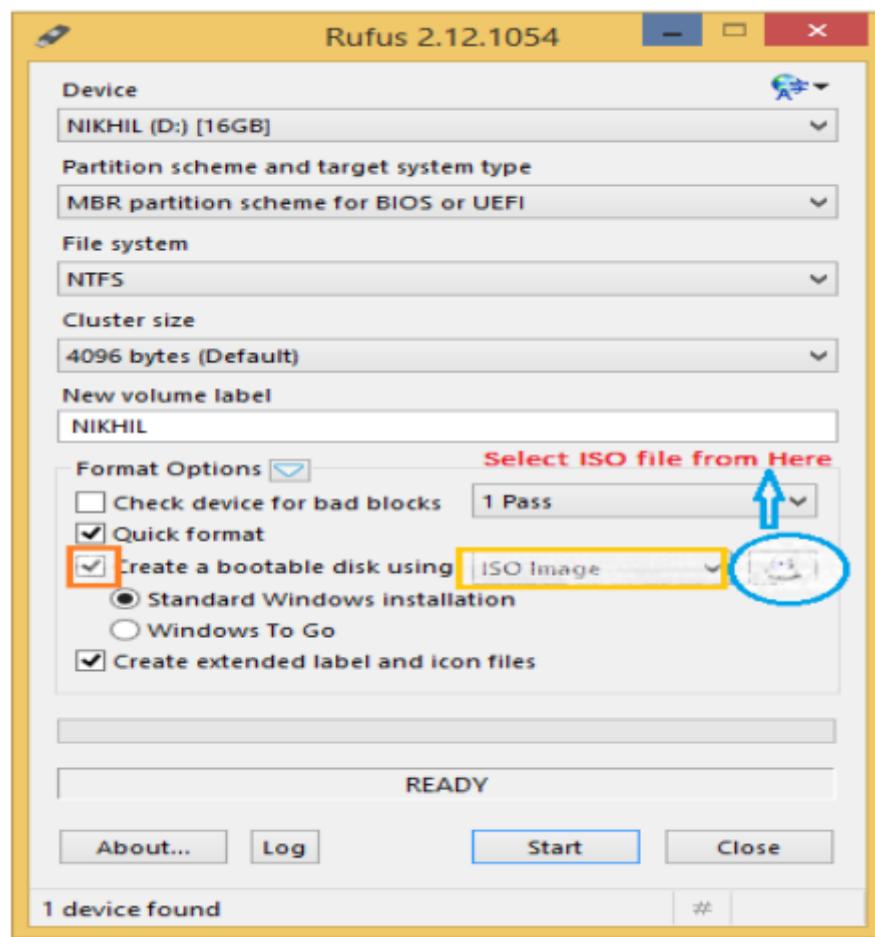
There are number of software's available to make a bootable drive like: Rufus, PowerISO, Nero, UltraISO etc.

Steps using Rufus software are

1. Download RUFUS from following link

<https://rufus.akeo.ie/>

2. Insert your DVD/USB Drive and run Rufus
3. Tick on Create a bootable USB Drive and Select ISO Image option.
4. Select the ISO file and Click on start.



Experiment: 04

AIM:

Perform installation of Windows Server 2012 R2 on VMWare.

Solution:

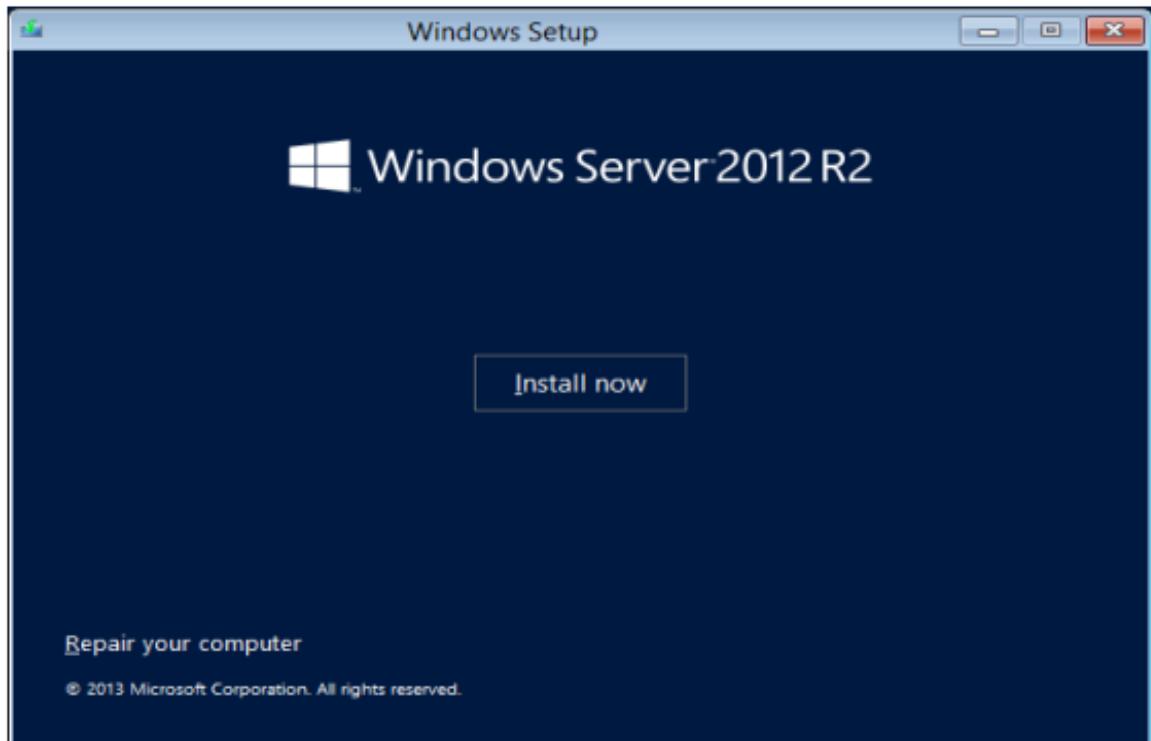
- Steps to install Windows Server 2012 are
 1. Once booted, you should see Windows loading the necessary setup files.



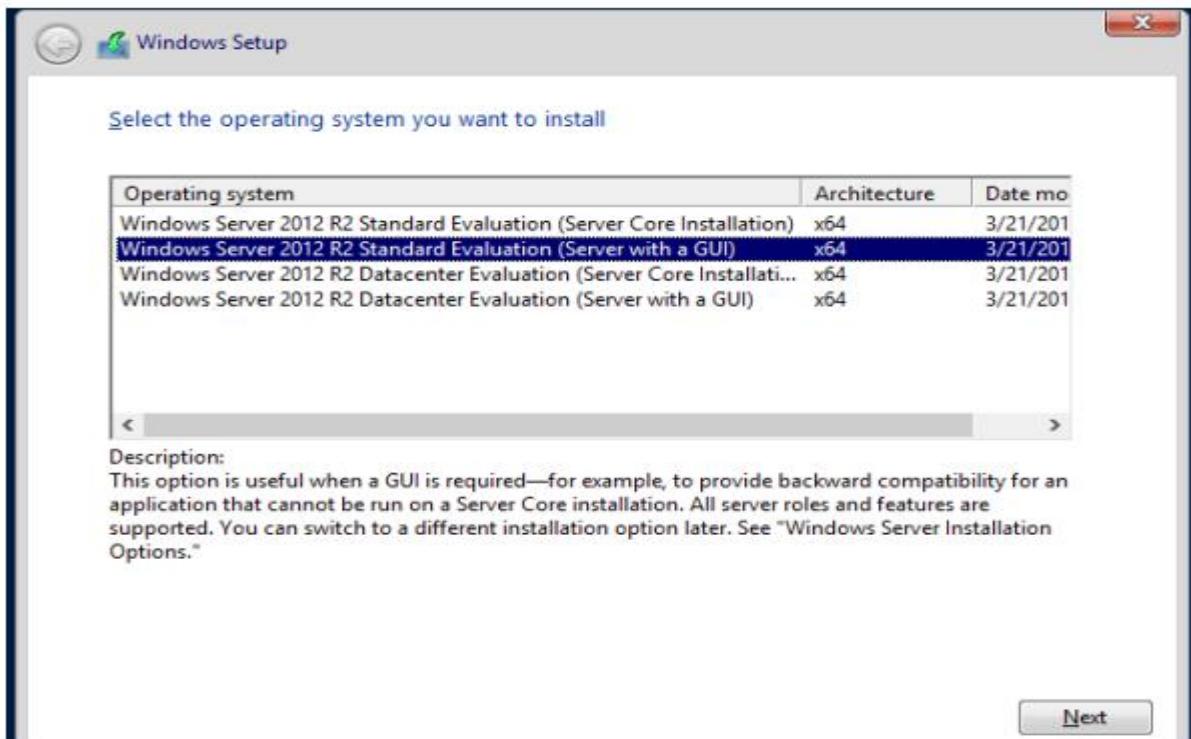
2. In the Windows Setup dialog, set the language, time and currency format, keyboard and input method then press Next.



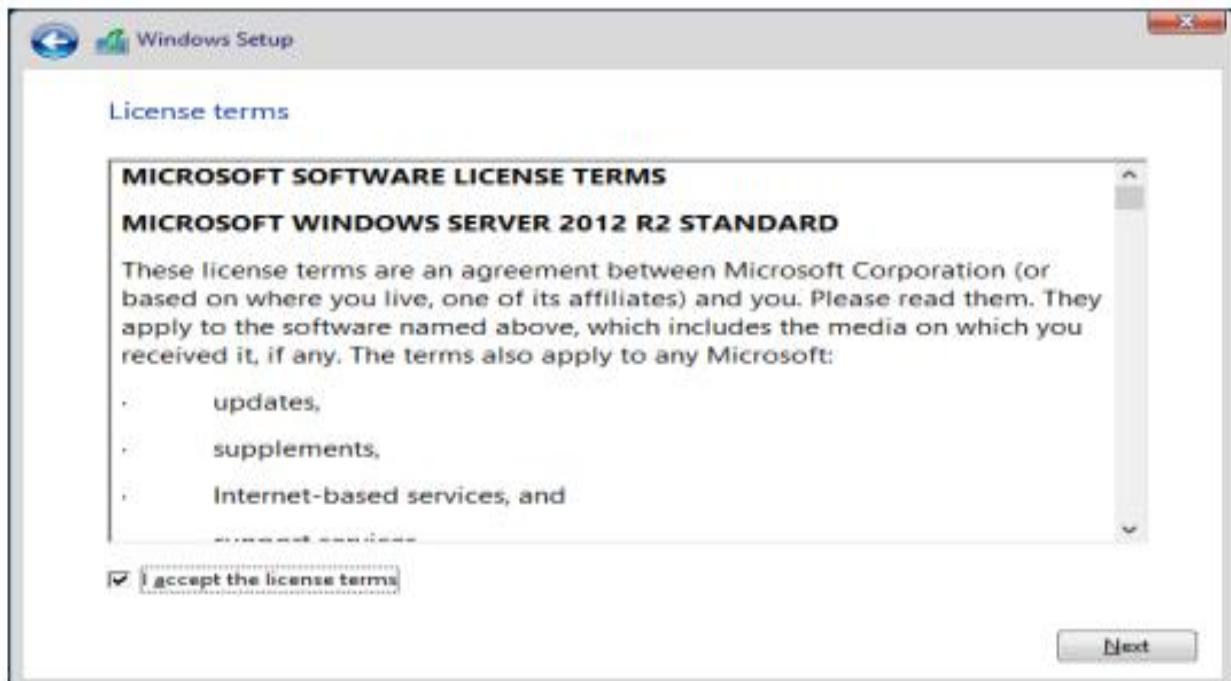
3. Click on Install now



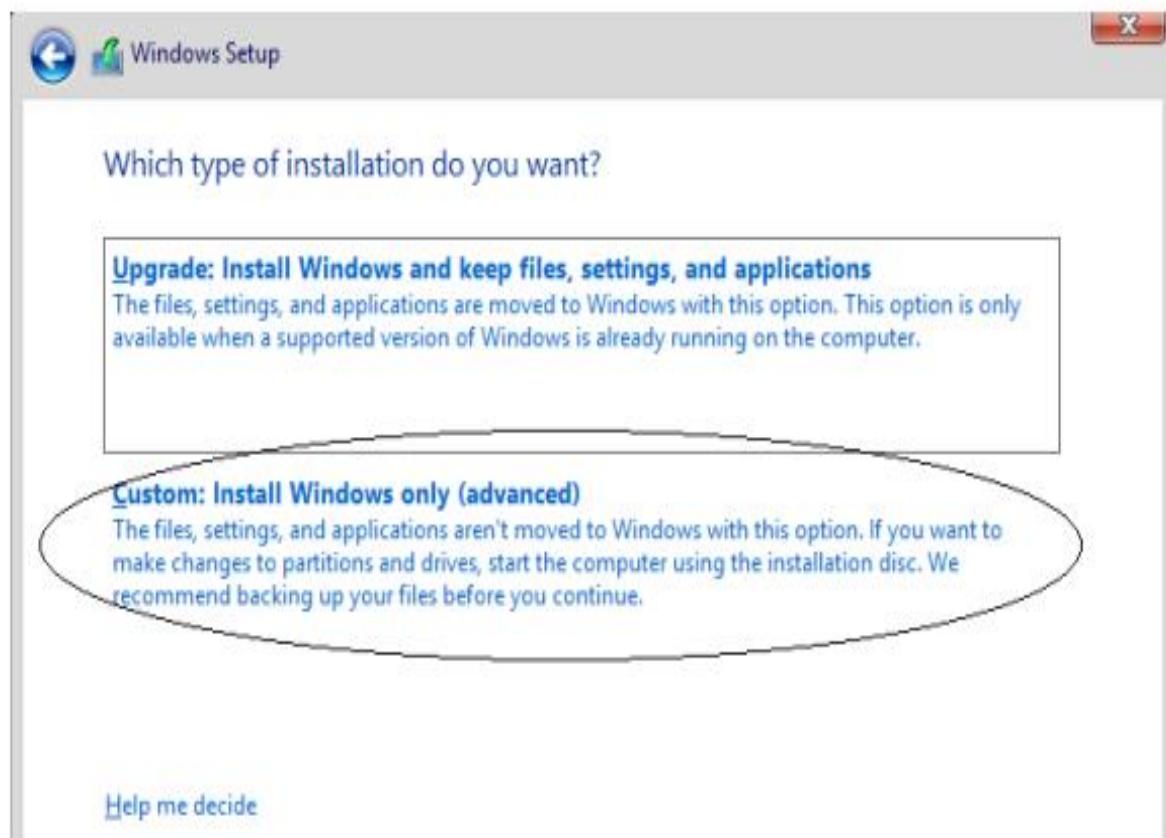
4. Select the operating system that you wish to install. Regardless if you install the Server 2012 R2 Datacenter or the 2012 R2 Standard version, you want the installing package that includes the GUI. Otherwise, you end up with just the Server 2012 Core and no GUI.



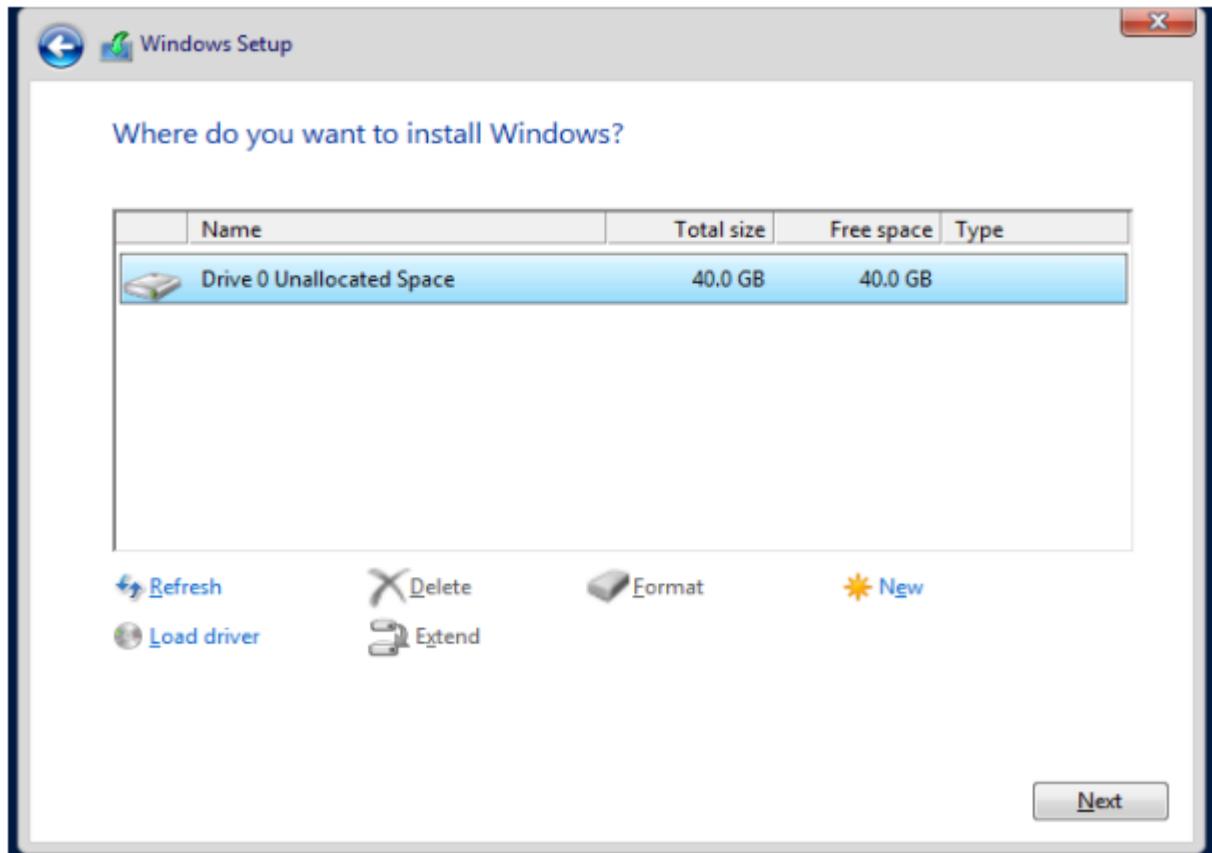
- Accept the license agreement.



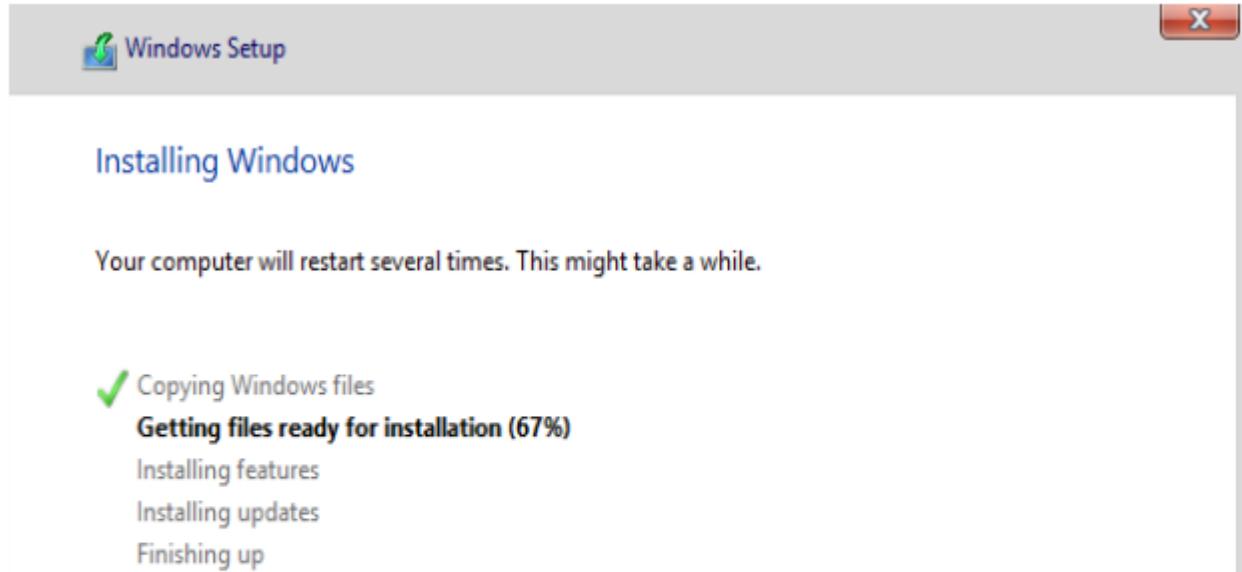
- Select Custom Install Windows only (advanced).



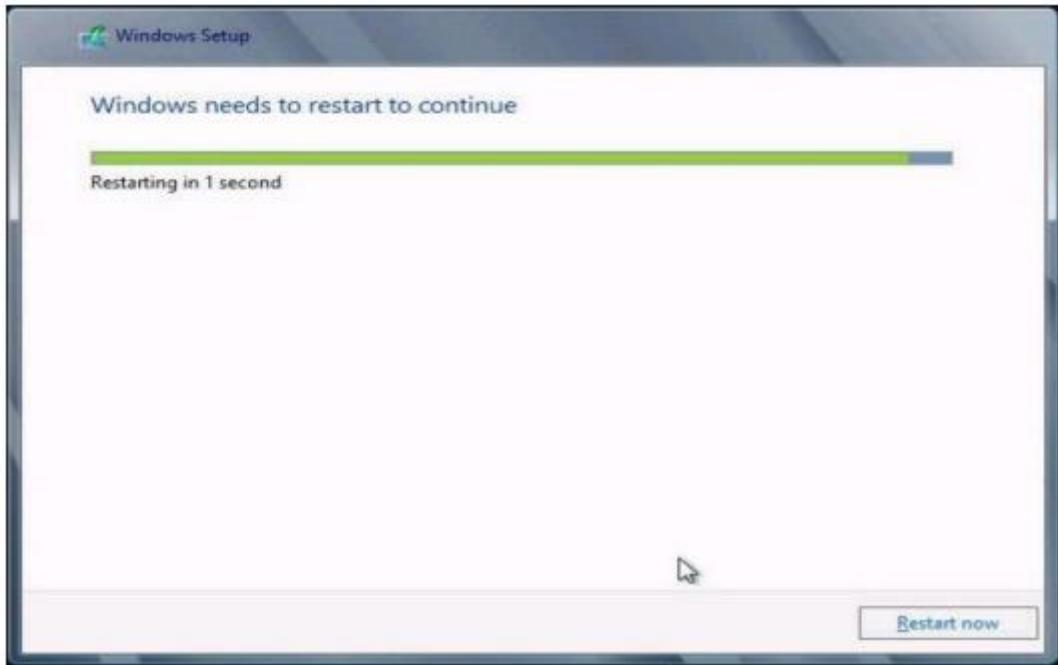
7. Click Next.



8. Server 2012 R2 begins the file copy process.



9. The server will restart automatically and installation will continue further.



10. Before Server 2012 will allow you to log in, you must configure the password for the administrator account.

11. Click Finish. Welcome to Windows Server 2012 R2!



Experiment: 05

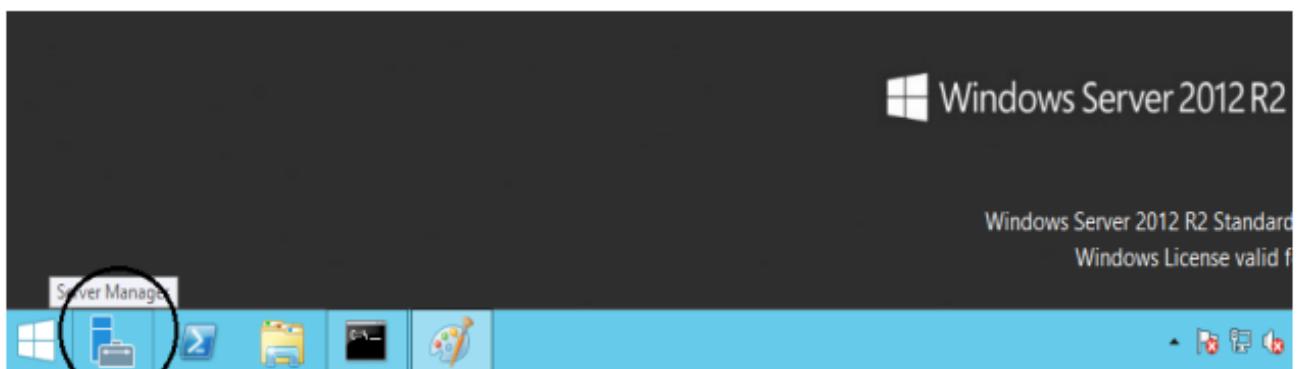
AIM:

Configure Windows Server 2012 R2 on VMware.

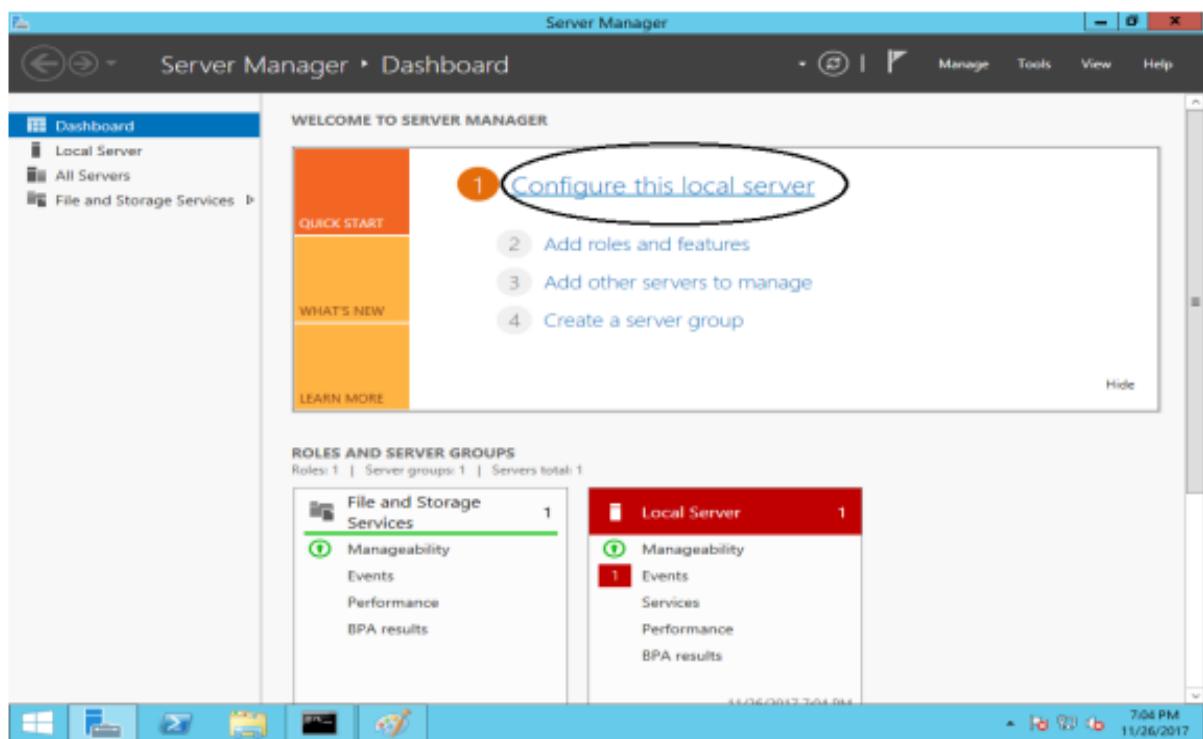
➤ Changing Server Name

Steps to change server name (computer name) are

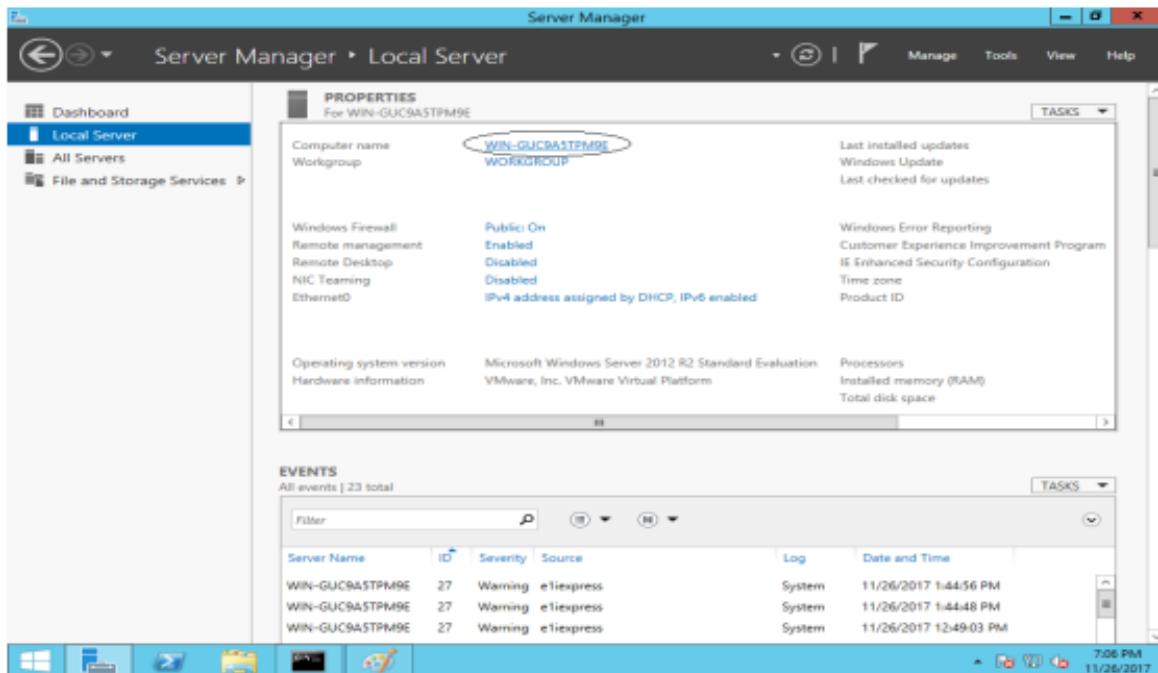
1. Open Server manager



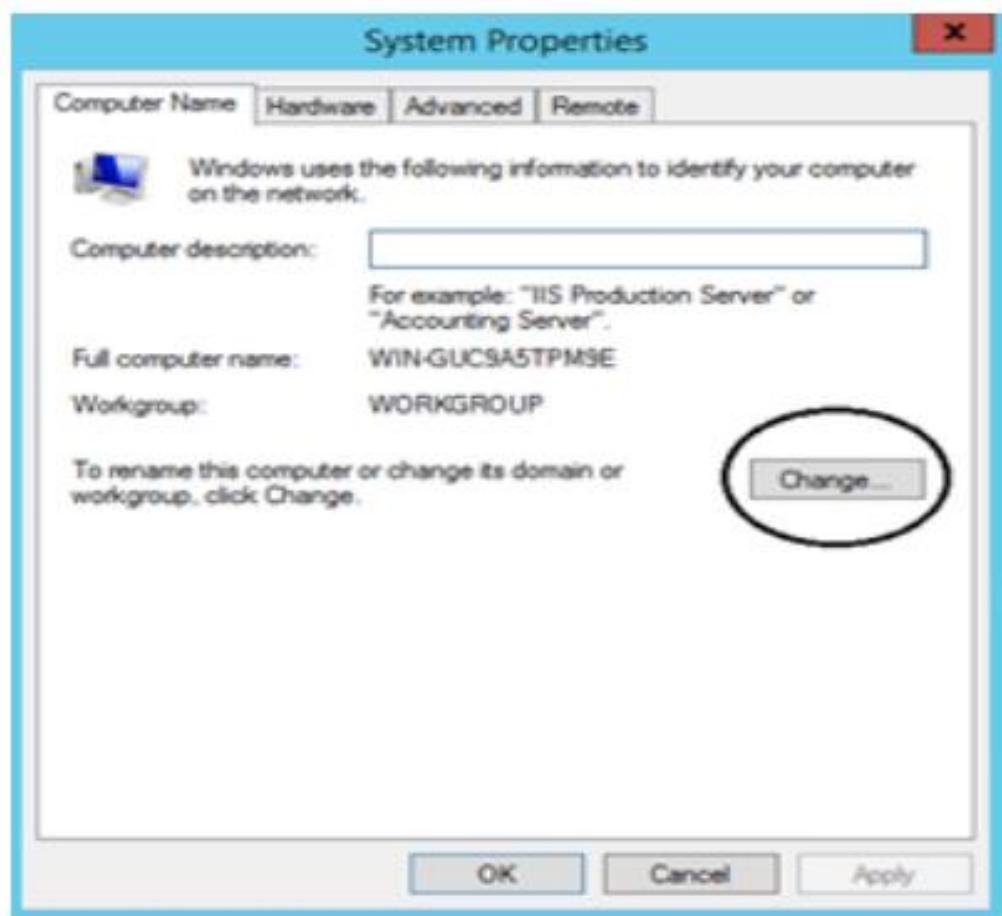
2. Click on Configure this local server



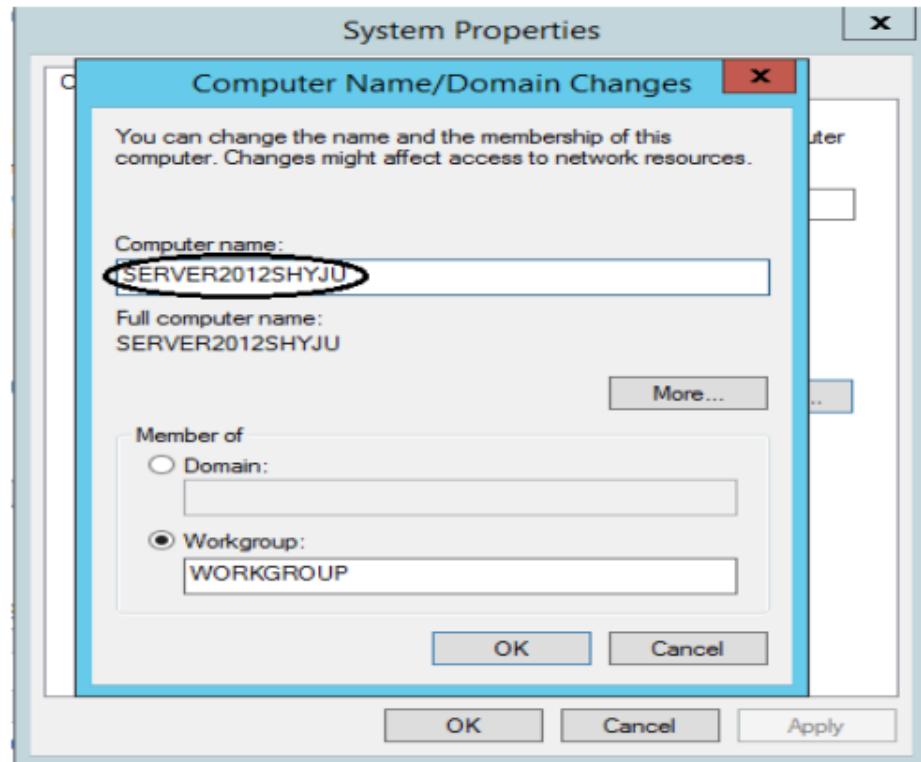
3. Click on default Computer name which was given while server 2012 was installed



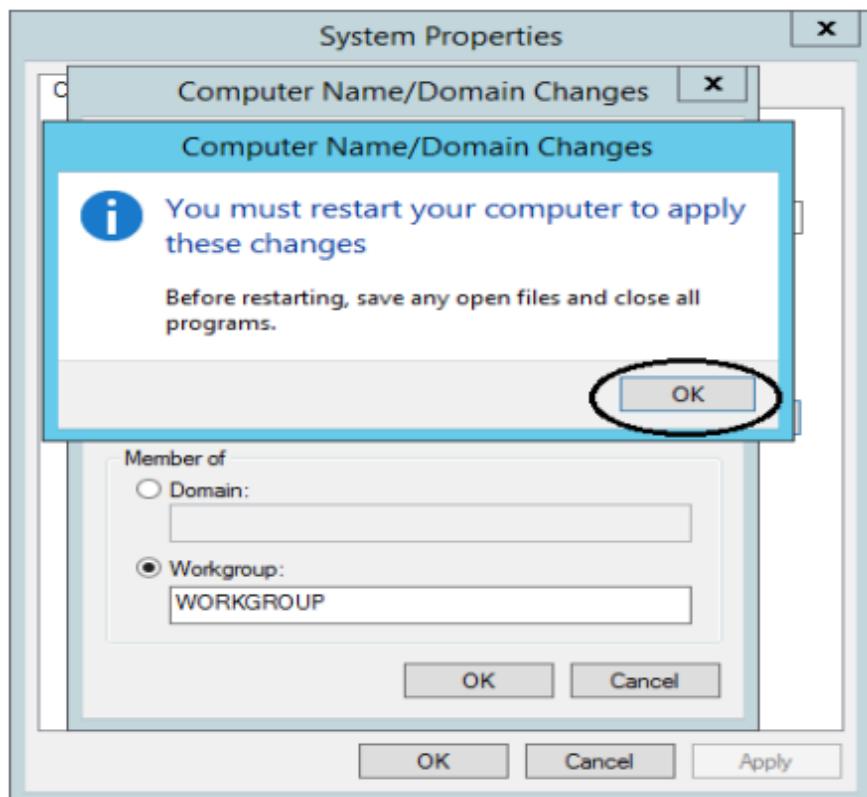
4. Click Change in System Properties window



5. Give new Computer name which is easy to remember. I had given new Computer name as SERVER2012SHYJU



6. Click OK and Restart your computer



7. After Restarting your computer server name will be changed

The screenshot shows the Windows Server Manager interface. On the left, there's a navigation pane with options: Dashboard, Local Server (which is selected and highlighted in blue), All Servers, and File and Storage Services. The main content area has two tabs: PROPERTIES and EVENTS.

PROPERTIES: This tab displays various system settings for the server. A circled red box highlights the "Computer name" field, which is set to "SERVER2012SHYJU". Other visible properties include Workgroup (WORKGROUP), Windows Firewall (Public: On), Remote management (Disabled), Remote Desktop (Disabled), NIC Teaming (Disabled), Ethernet0 (IPv4 address assigned by DHCP, IPv6 enabled), Last installed updates (Windows Update), and Last checked for updates.

EVENTS: This tab shows a list of 25 events. The table has columns for Server Name, ID, Severity, Source, Log, and Date and Time. The events listed are all of type "Warning" from the source "e1express" and log "System", occurring on 11/26/2017 at different times: 12:52:14 PM, 12:49:03 PM, and 1:44:48 PM.

Server Name	ID	Severity	Source	Log	Date and Time
SERVER2012SHYJU	27	Warning	e1express	System	11/26/2017 12:52:14 PM
SERVER2012SHYJU	27	Warning	e1express	System	11/26/2017 12:49:03 PM
SERVER2012SHYJU	27	Warning	e1express	System	11/26/2017 1:44:48 PM

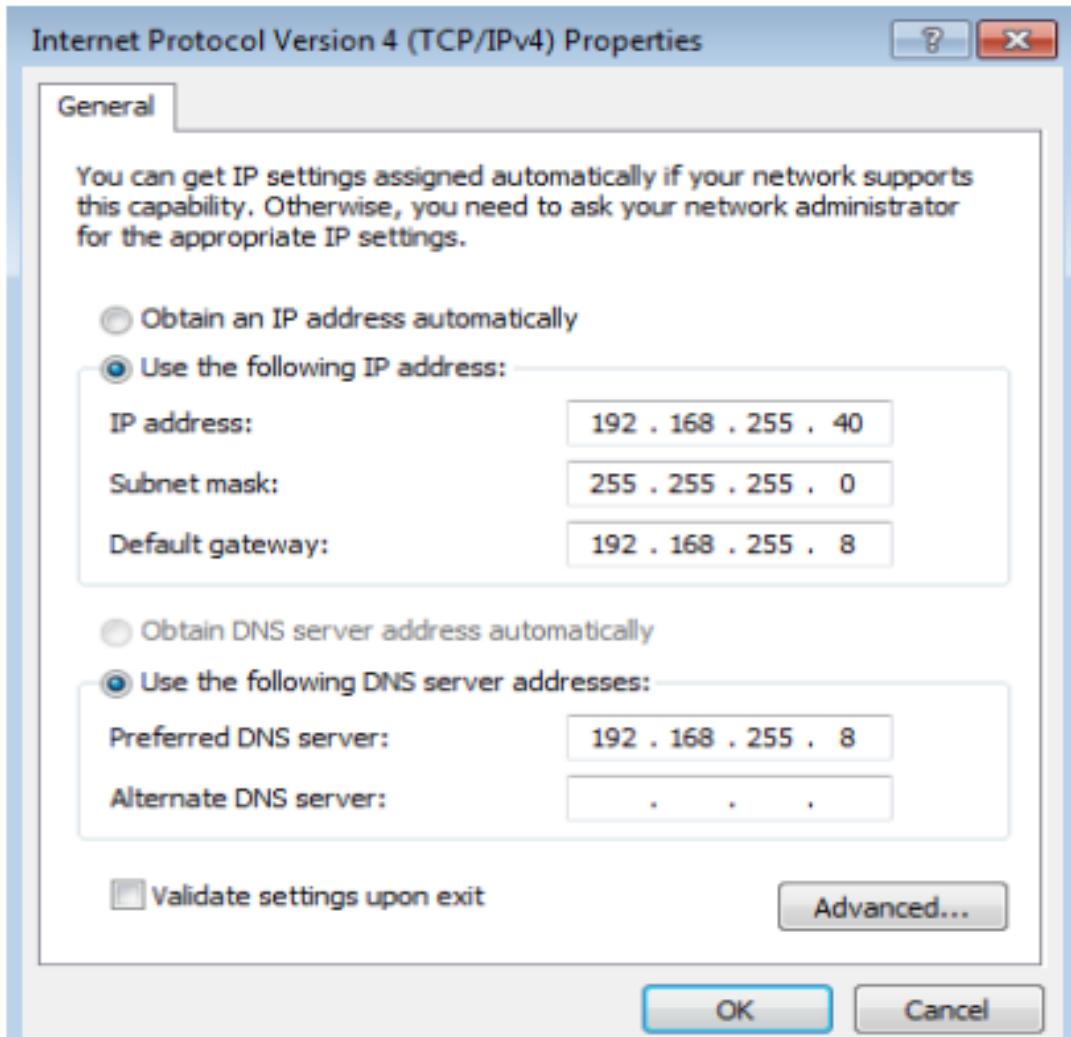
Experiment: 06

AIM:

Perform installation of Windows 7 or Windows 10 Operating System on VMWare.

Solution:

- Before configuring client , make sure that Internet Protocol Version 4 (TCP/IPv4) Properties of client machine are configured properly in accordance with Domain Controller of Server 2012.

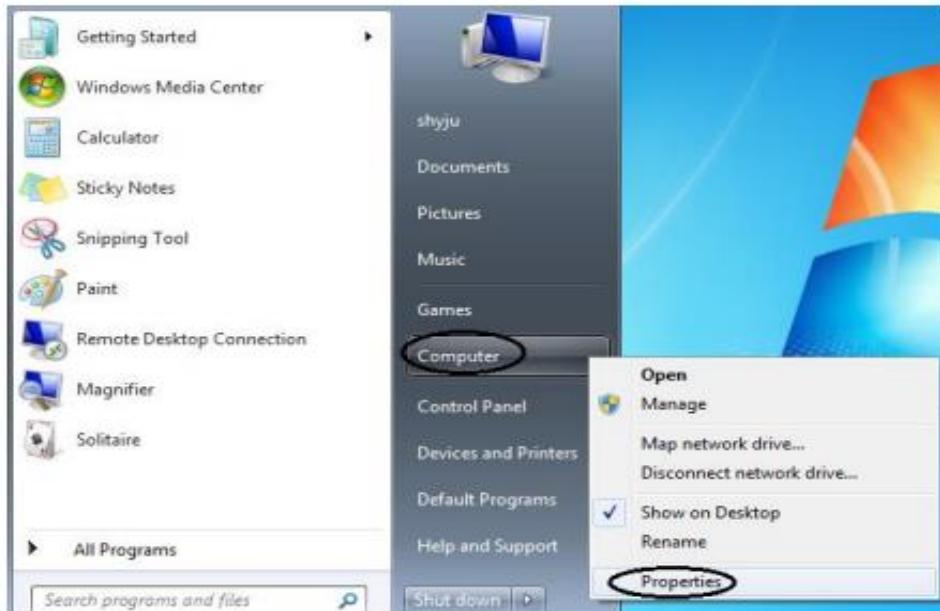


- IP address of client machine should be of same class as IP address of Domain Controller (Windows Server 2012)

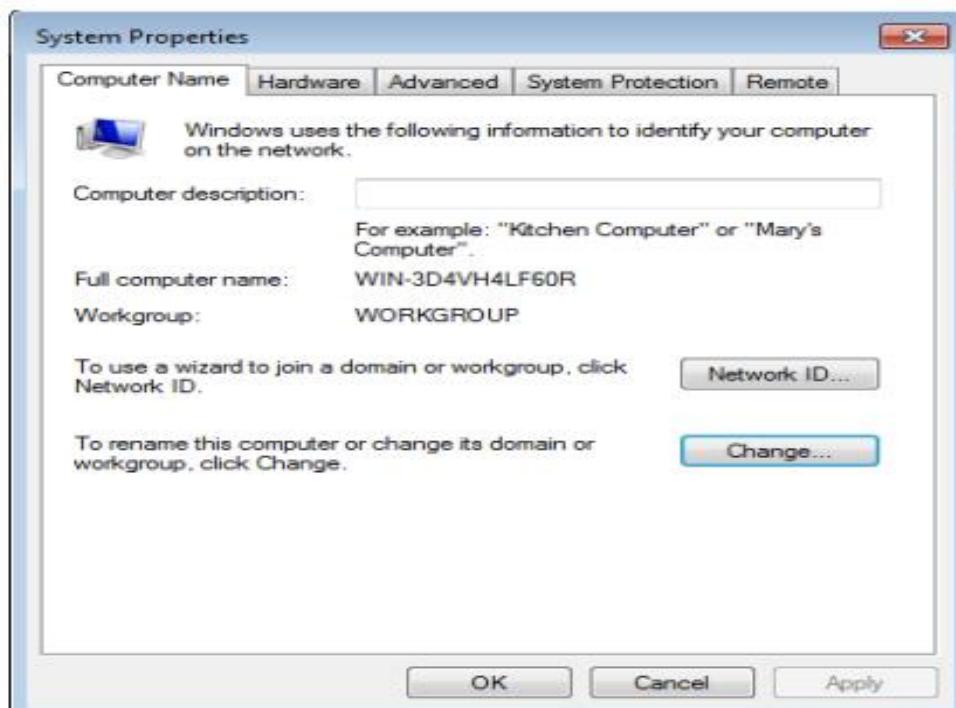
- Default gateway and Preferred DNS server address should be same as static IP address given to Domain Controller machine (Windows Server 2012)

Steps to join client machine to domain are

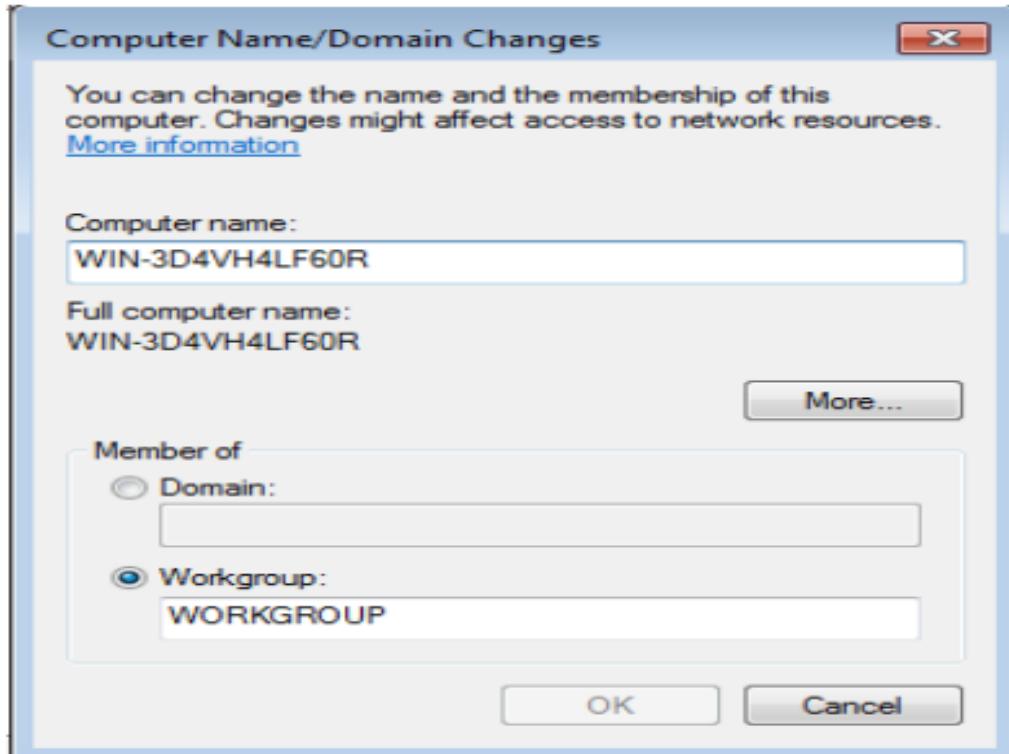
1. Log on to your client machine
2. Click on Start , Right click on Computer icon , select Properties



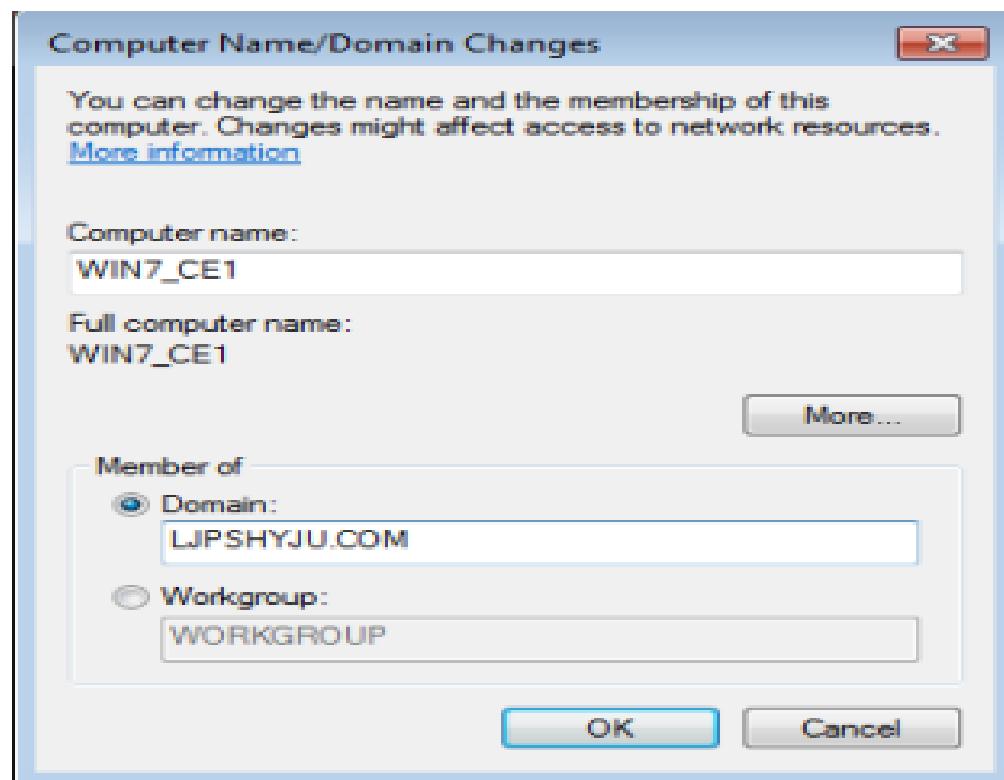
3. Click on Change settings , System Properties dialog box appears



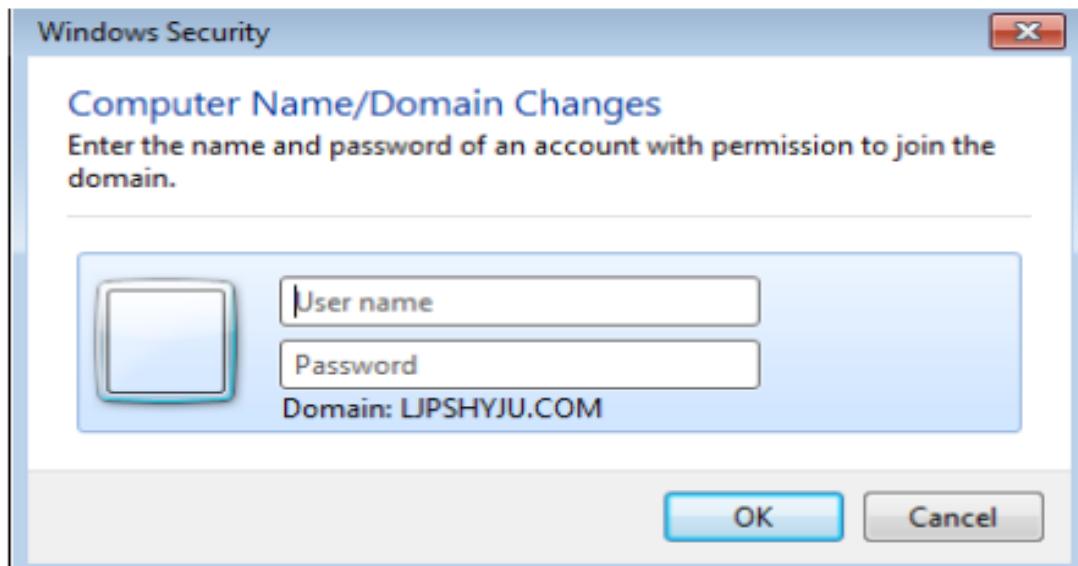
4. Click Change in Computer Name tab , Computer Name/Domain Changes dialog box appears.



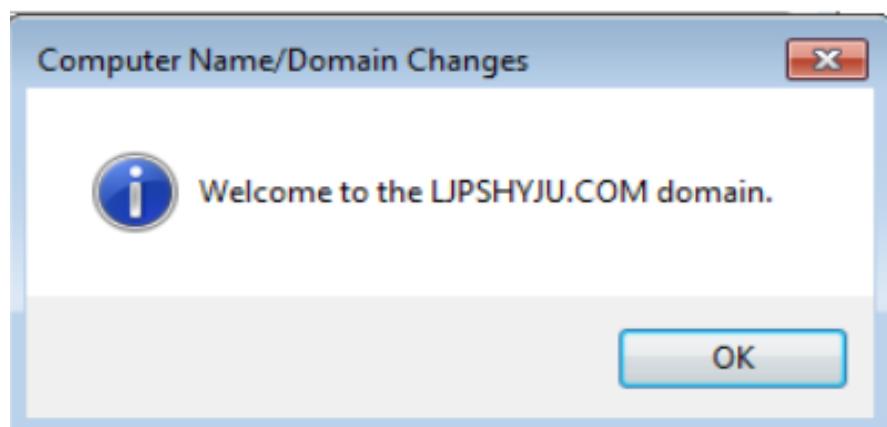
5. Give some user friendly name to the client machine (WIN7_CE1) and select Domain: radio button , write desired domain name (LJPSHYJU.COM) in the text box provided.



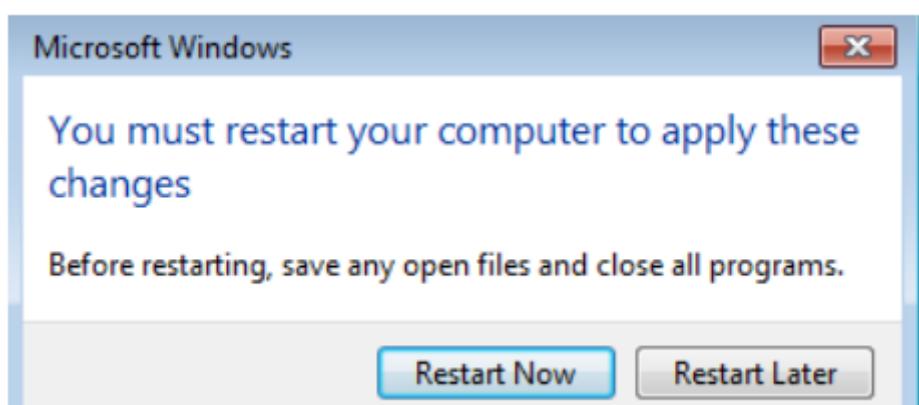
6. When you hit enter, or click ok, you will be asked for the domain administrator's username and password. This is the username and password you use to log onto your Server 2012 R2 Domain Controller.



If you specify the correct credentials, you will be welcomed to the Domain.



7. Restart your computer to apply changes



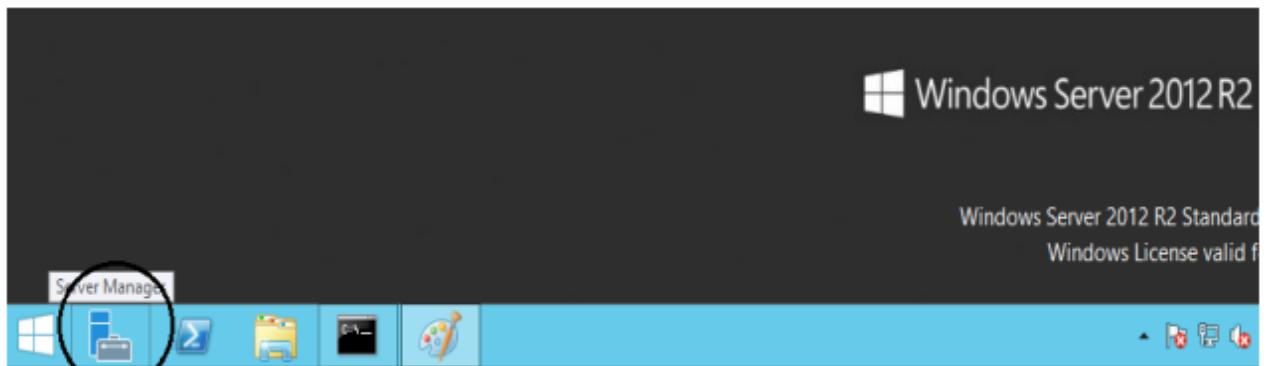
Experiment: 07

AIM:

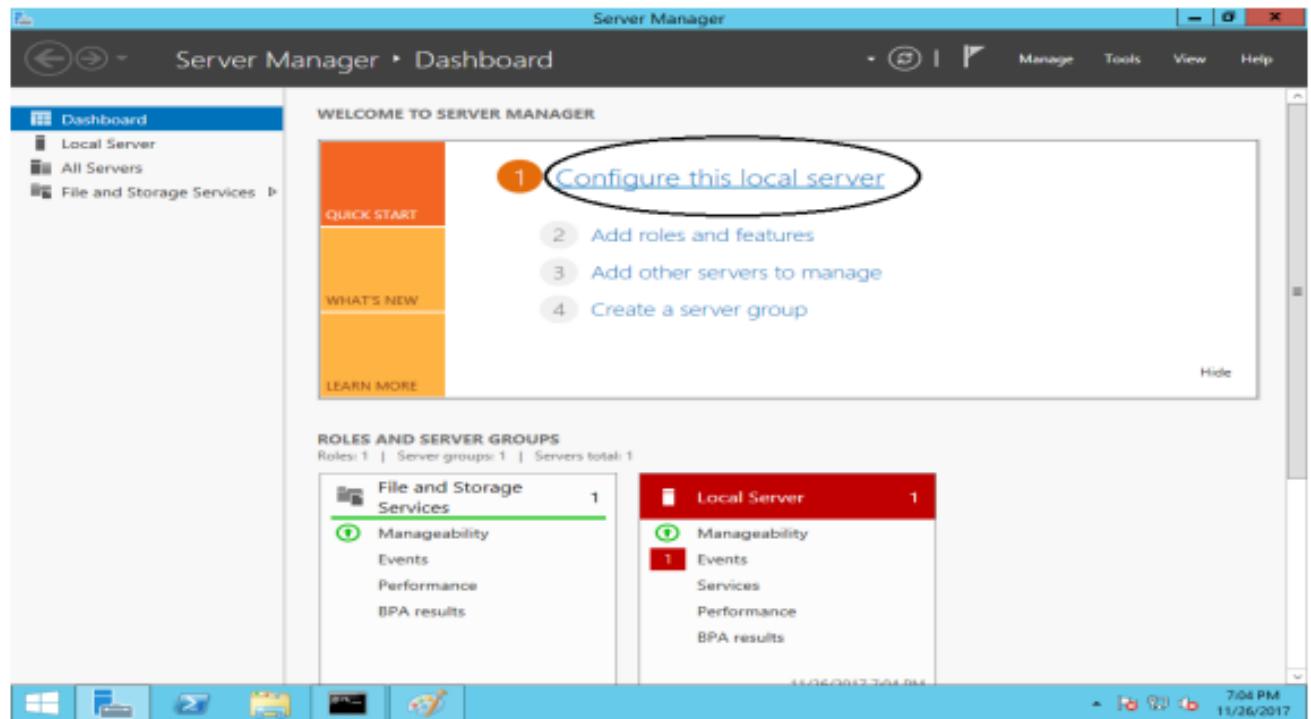
Configure Windows 7 or Windows 10 Operating System on VMWare.

Solution:

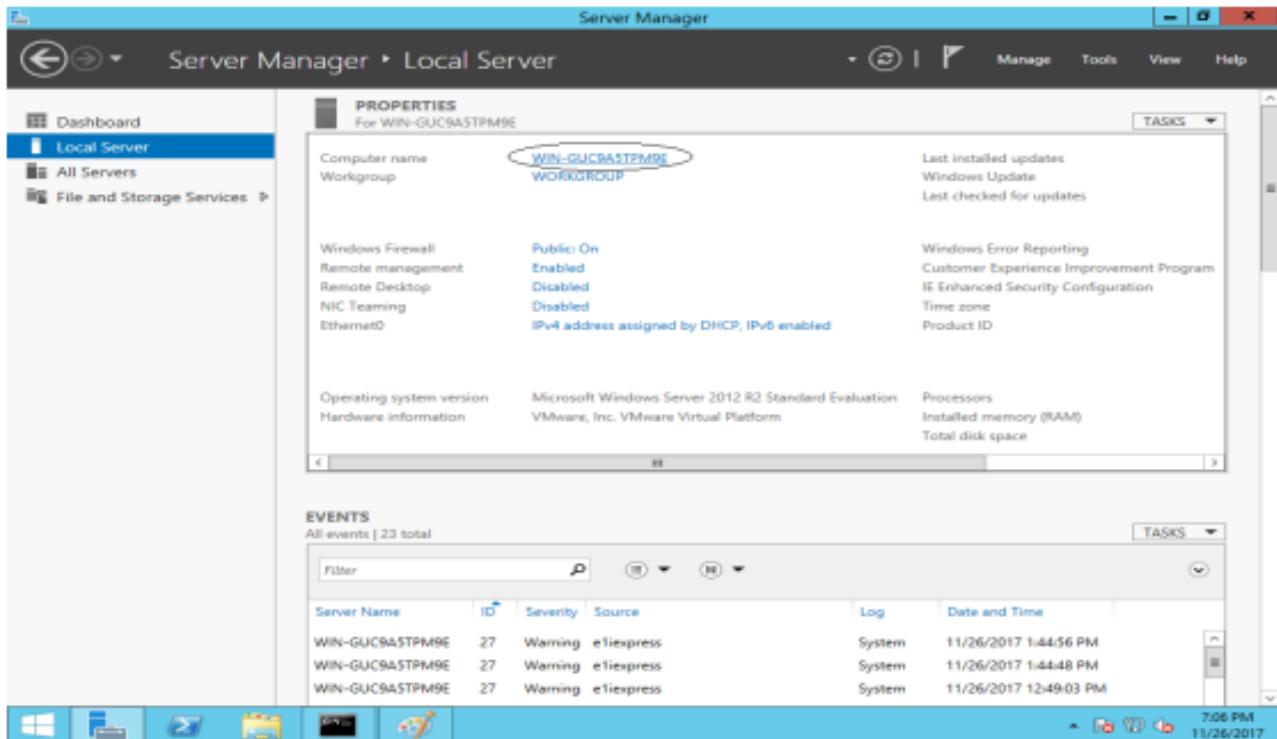
1. Open Server manager



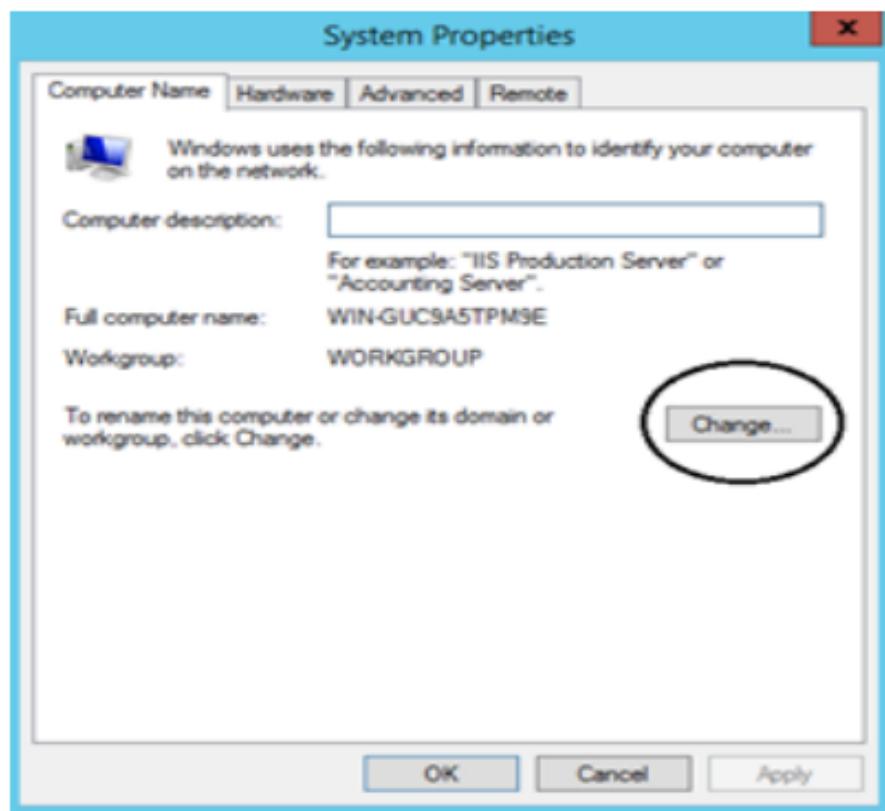
2. Click on Configure this local server



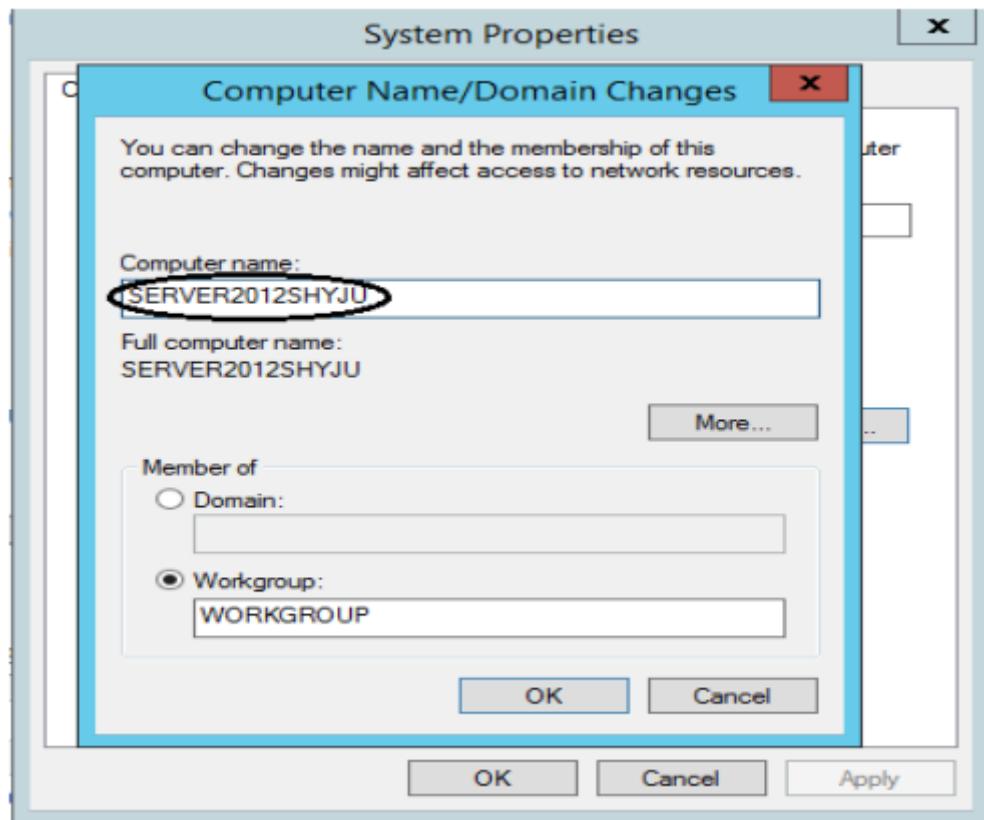
3. Click on default Computer name which was given while server 2012 was installed



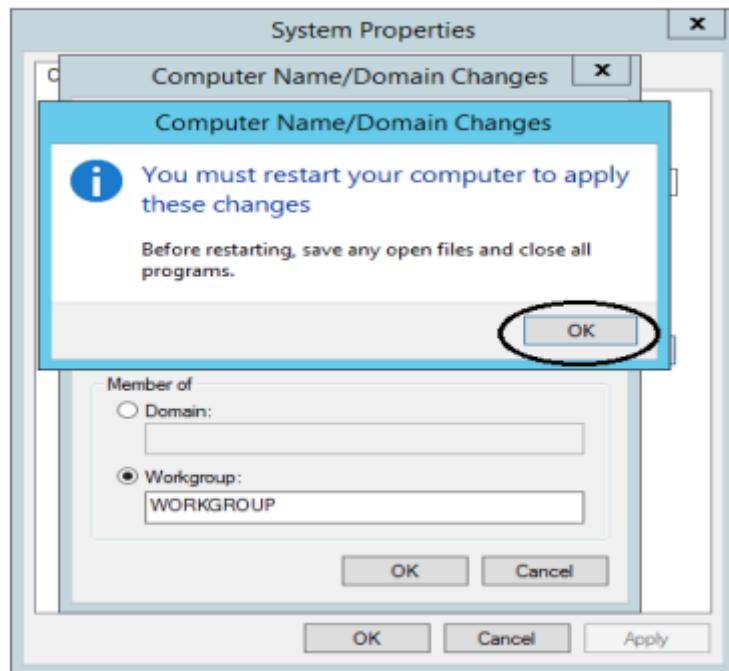
4. Click Change in System Properties window



5. Give new Computer name which is easy to remember. I had given new Computer name as SERVER2012SHYJU



6. Click OK and Restart your computer



7. After Restarting your computer server name will be changed

The screenshot shows the Windows Server Manager interface. On the left, there's a navigation bar with 'Dashboard', 'Local Server' (which is selected and highlighted in blue), 'All Servers', and 'File and Storage Services'. The main area is titled 'PROPERTIES' for SERVER2012SHYJU. It shows the 'Computer name' is SERVER2012SHYJU and the 'Workgroup' is WORKGROUP. Other settings include Windows Firewall (Public: On), Remote management (Disabled), Remote Desktop (Disabled), NIC Teaming (Disabled), and Ethernet0 (IPv4 address assigned by DHCP, IPv6 enabled). To the right of these properties are links to 'Last installed updates', 'Windows Update', 'Last checked for updates', 'Windows Error Reporting', 'Customer Experience Improvement Program', 'IE Enhanced Security Configuration', 'Time zone', and 'Product ID'. Below the properties, sections for 'Operating system version' (Microsoft Windows Server 2012 R2 Standard Evaluation) and 'Hardware information' (VMware, Inc. VMware Virtual Platform) are shown, along with 'Processors', 'Installed memory (RAM)', and 'Total disk space'. At the bottom, the 'EVENTS' section displays three warning events from the System log, all timestamped at 11/26/2017 12:52:14 PM, originating from the eliexpress source.

Server Name	ID	Severity	Source	Log	Date and Time
SERVER2012SHYJU	27	Warning	eliexpress	System	11/26/2017 12:52:14 PM
SERVER2012SHYJU	27	Warning	eliexpress	System	11/26/2017 12:49:03 PM
SERVER2012SHYJU	27	Warning	eliexpress	System	11/26/2017 1:44:48 PM

Experiment: 8

AIM:

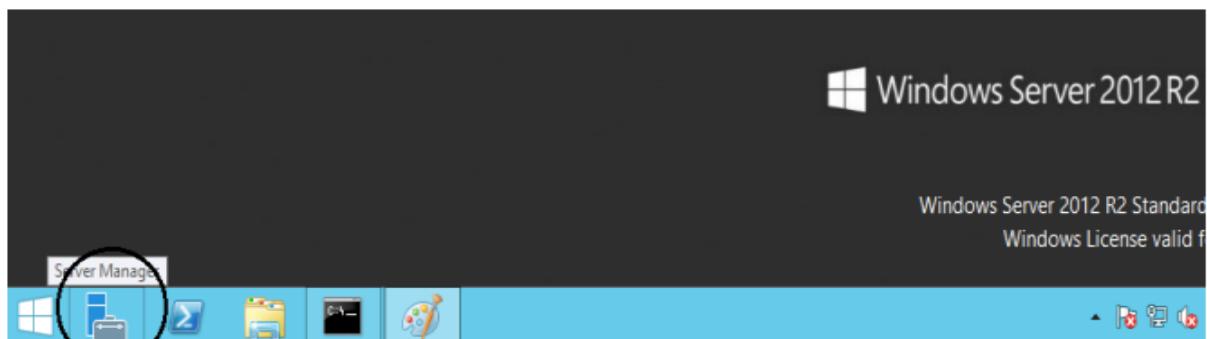
Installing Active Directory Using Server Manager on Windows server.

Solution:

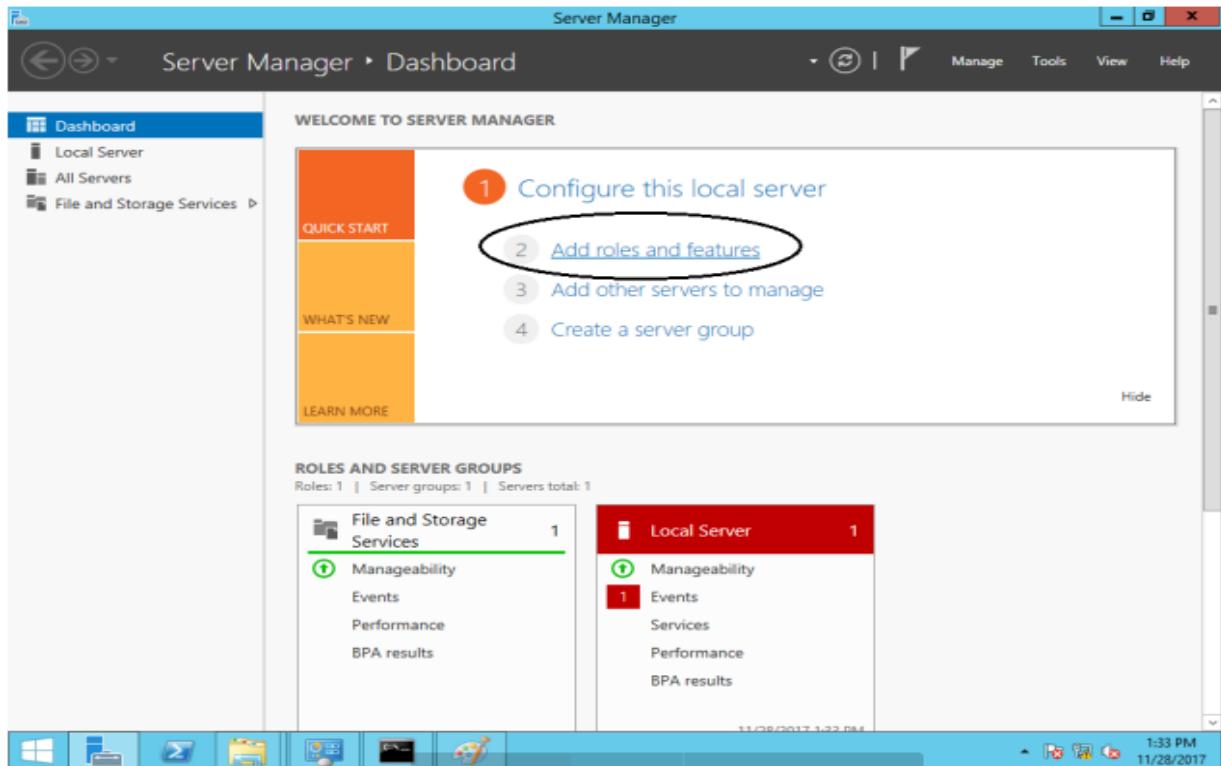
Domain controllers hold the domain's Active Directory information and authenticate users and access to resources. Most Windows Server 2012 networks have at least one domain and, therefore, need at least one domain controller.

- Steps to install Domain controller on Windows Server 2012 are

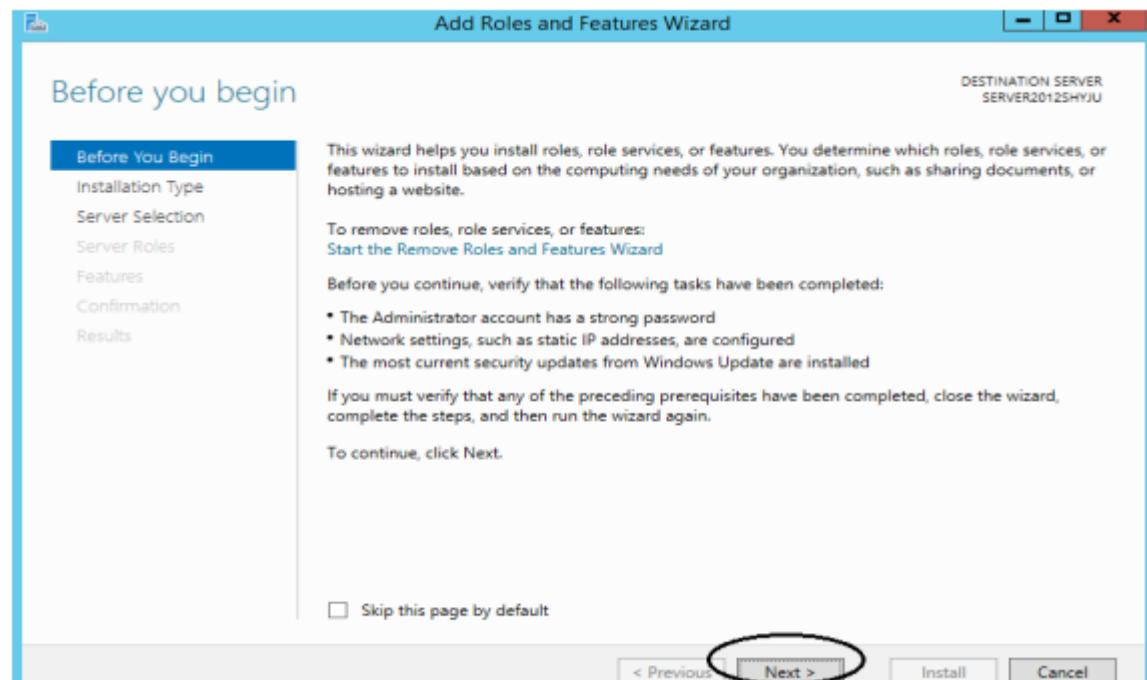
1. Open the Server Manager from taskbar.



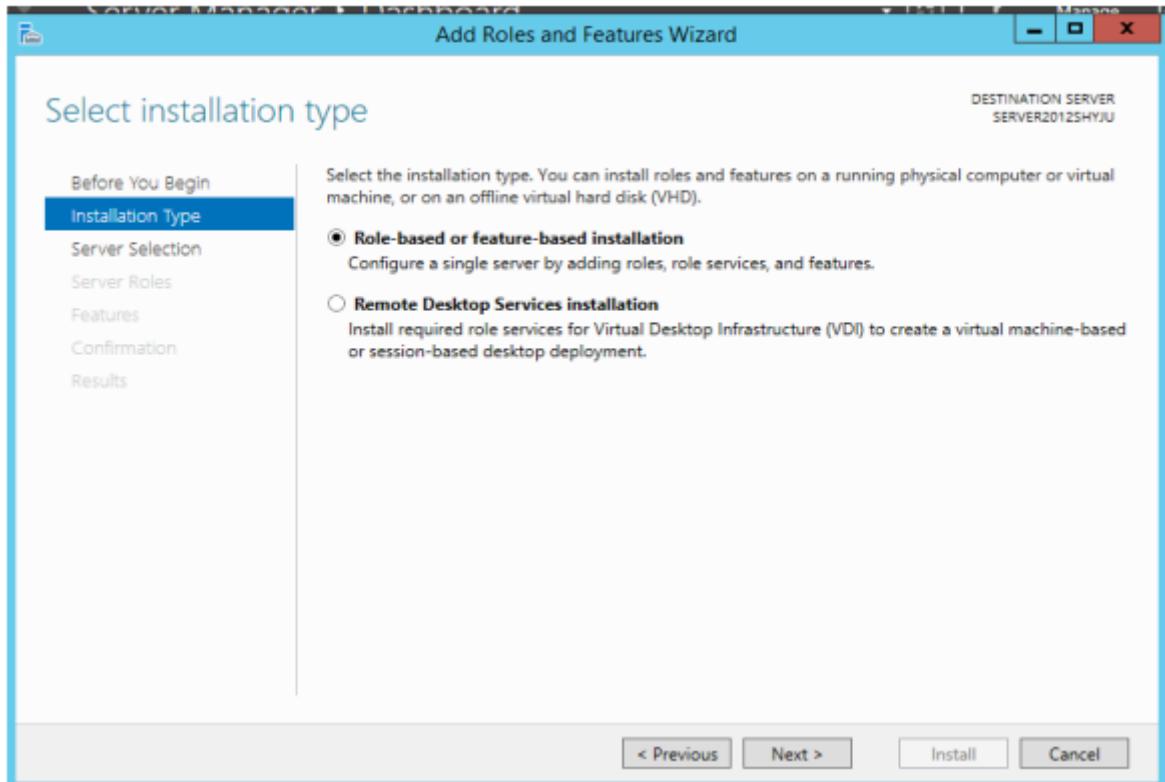
2. Click on “Add roles and features” from the Dashboard



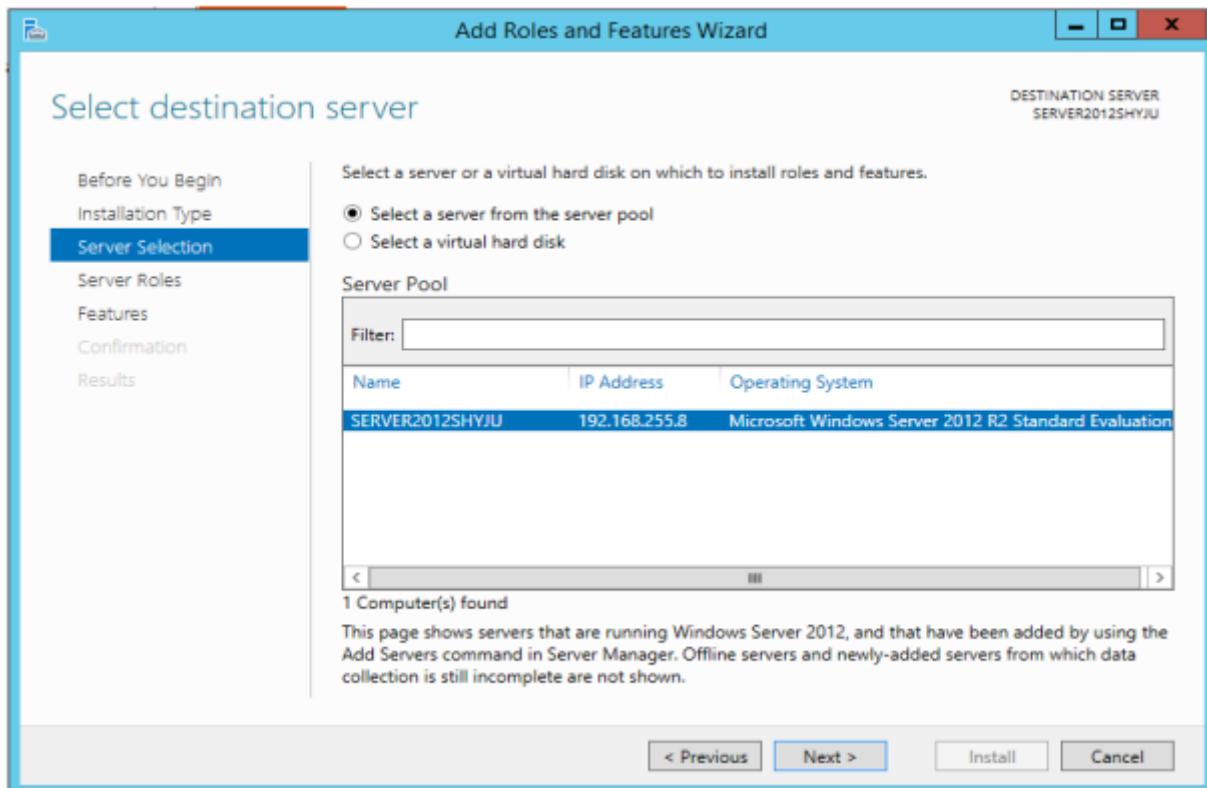
3. Click Next on the “Add Roles and Features Wizard” Welcome page.



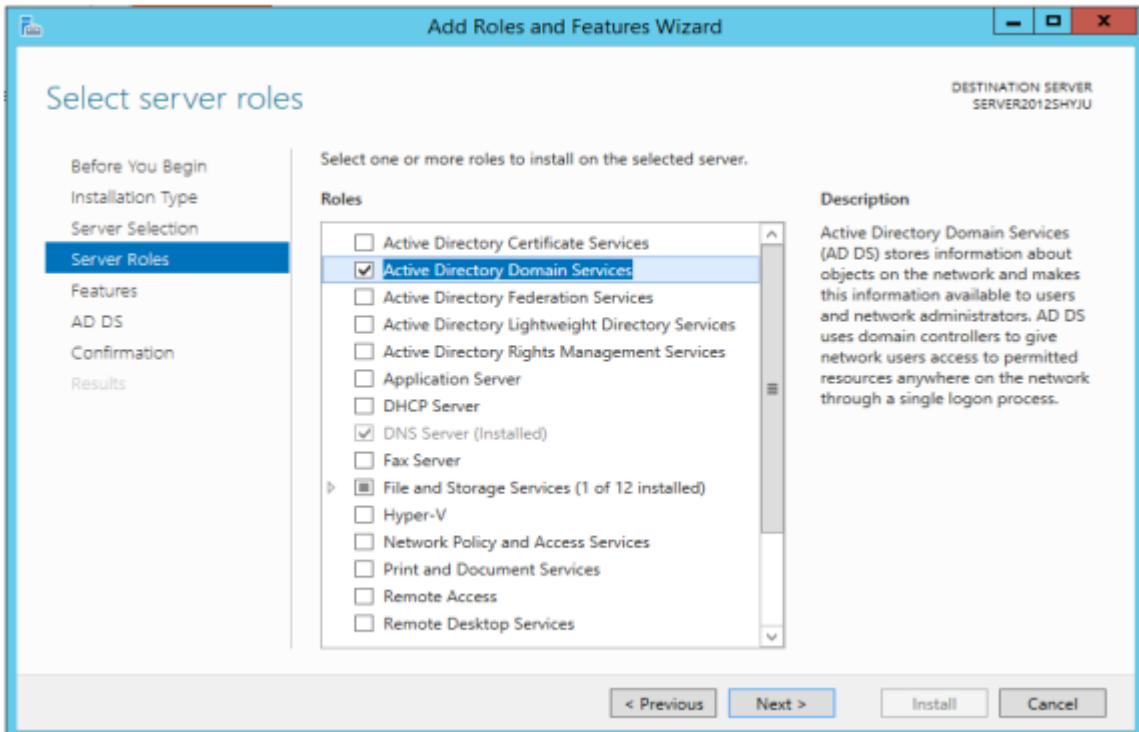
4. Make sure “Role-based or feature-based installation” option is selected.



5. Select the destination server where this new role would be installed.



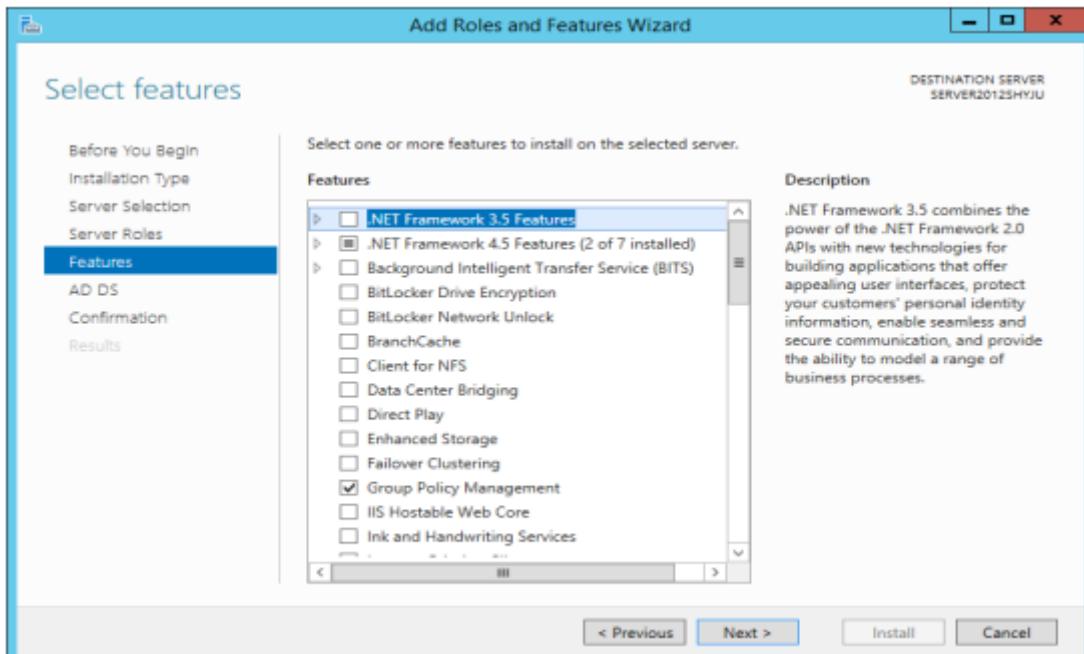
6. Select the checkbox Active Directory Domain Services.



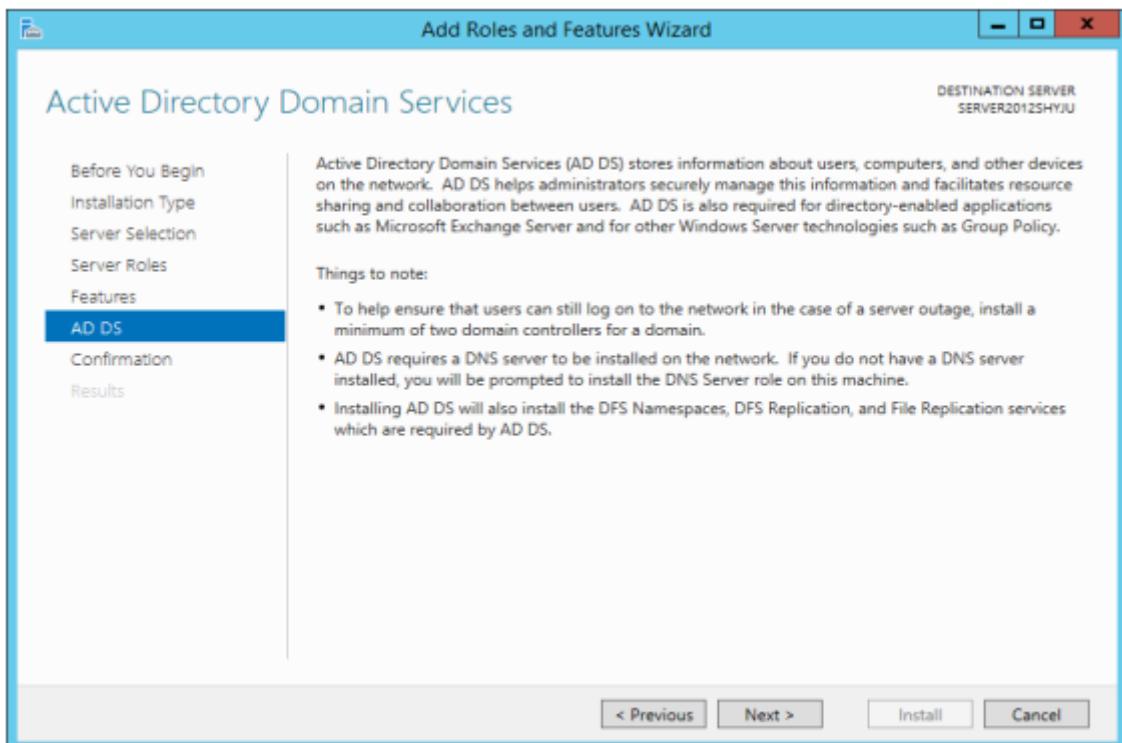
7. Confirm the features required to installation Active Directory role. Confirm the same and click on Add Features to proceed.



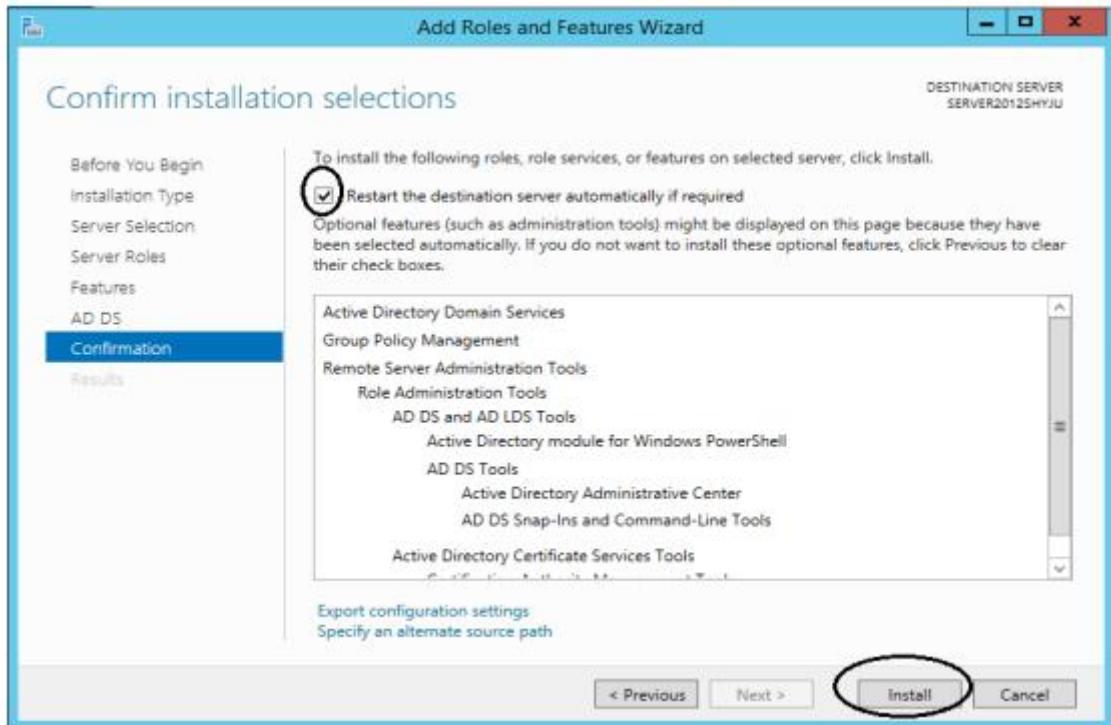
8. Select any other features that need to be installed along with Active Directory.



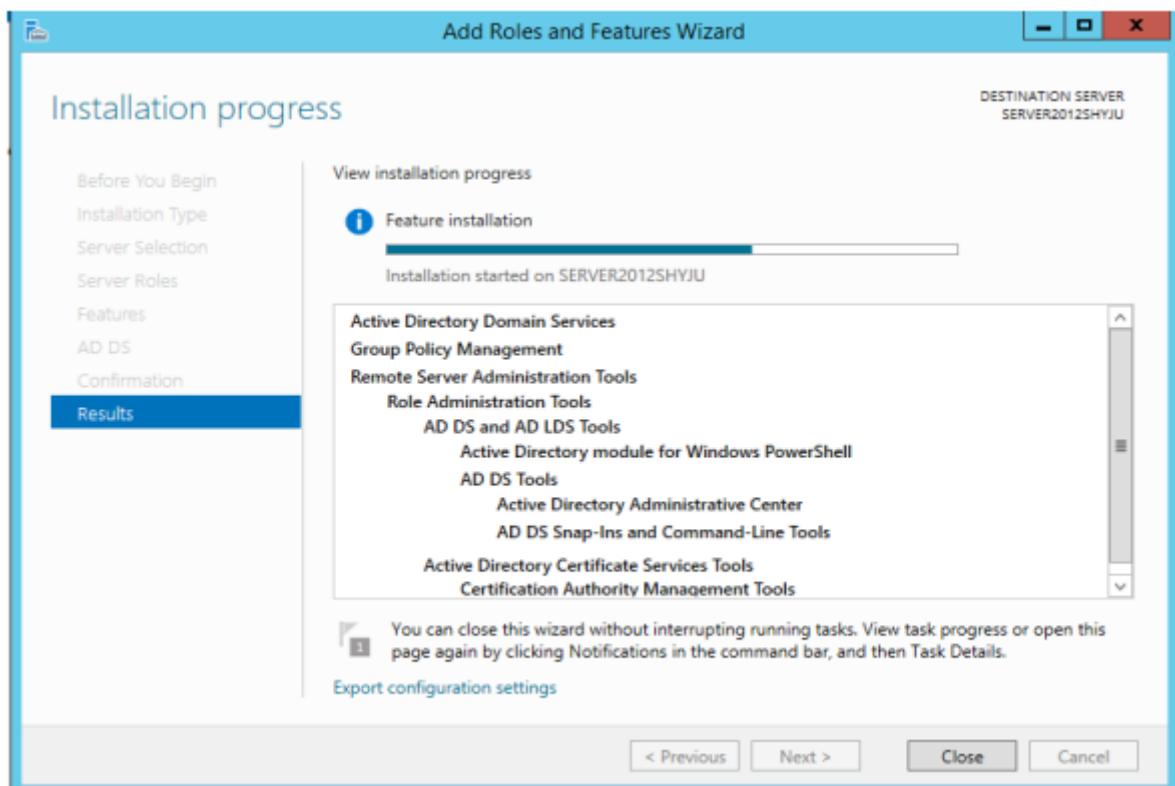
9. Review the notes and click Next.



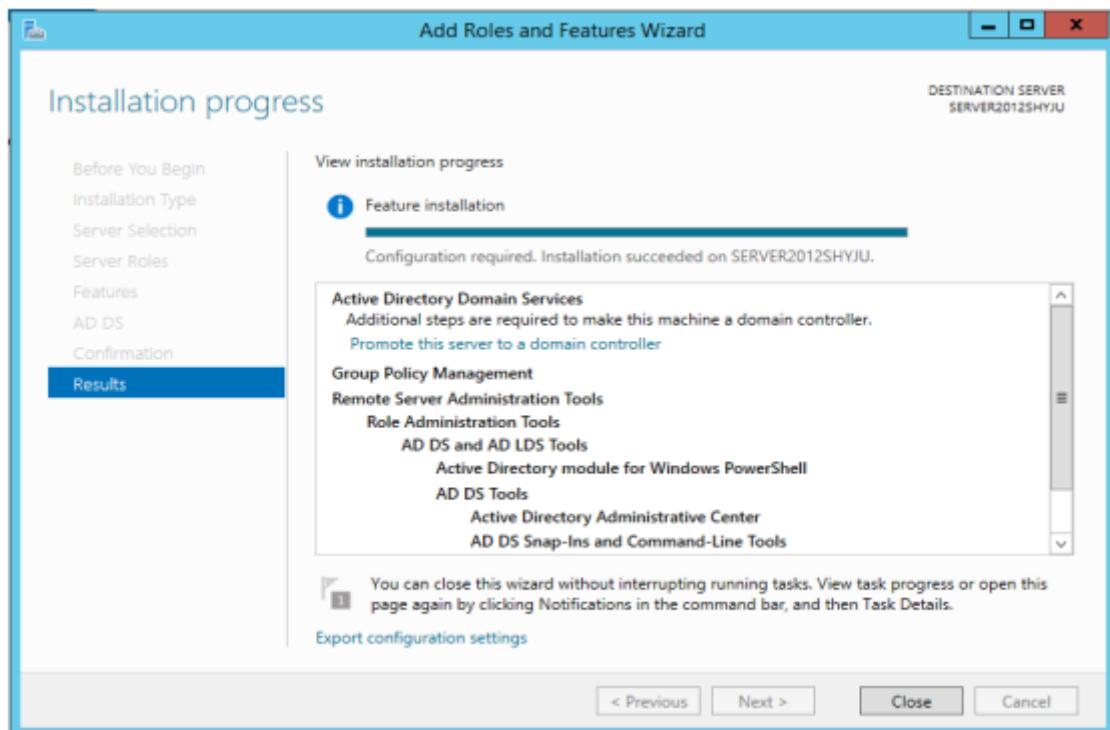
10. A restart may require once installation is completed. Select the checkbox to restart the server, if required.



11. Once you click Install, the process of installing active directory begins.



12. After successful completion of installing role Active Directory Domain Services following screen will be displayed



Experiment: 9

AIM:

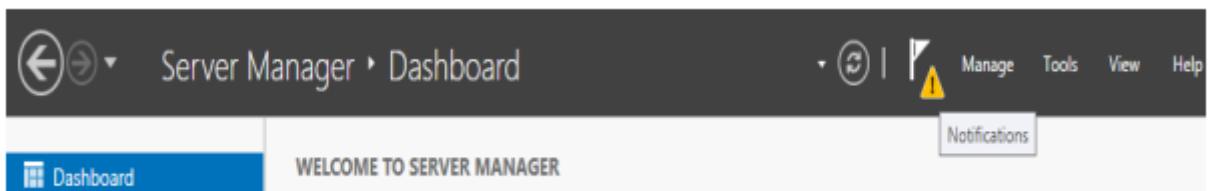
Promoting Server to Domain Controller.

Solution:

Promoting Server 2012 R2 to a Domain Controller

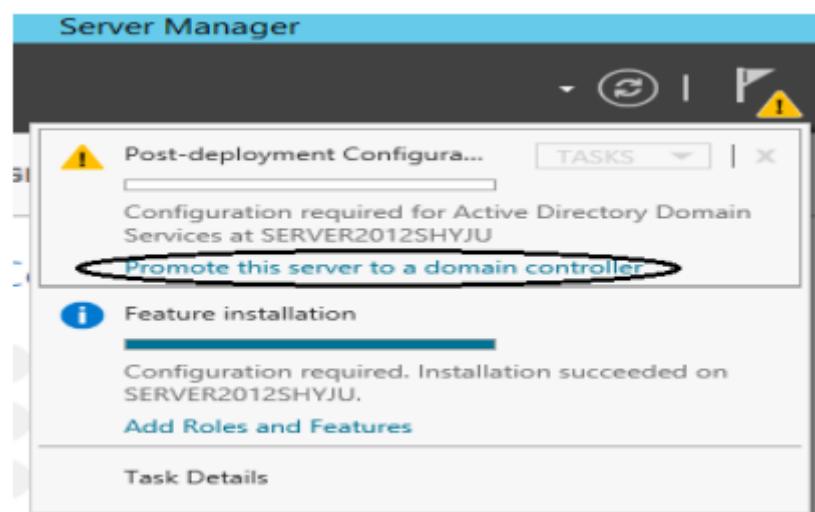
- Once Active Directory Domain Services role has been installed, we can promote our server to a Domain Controller by following the below steps.

 - When we return to Server Manager, there is an information message waiting for us. This is the second part of the role installation that converts the server to a domain controller.

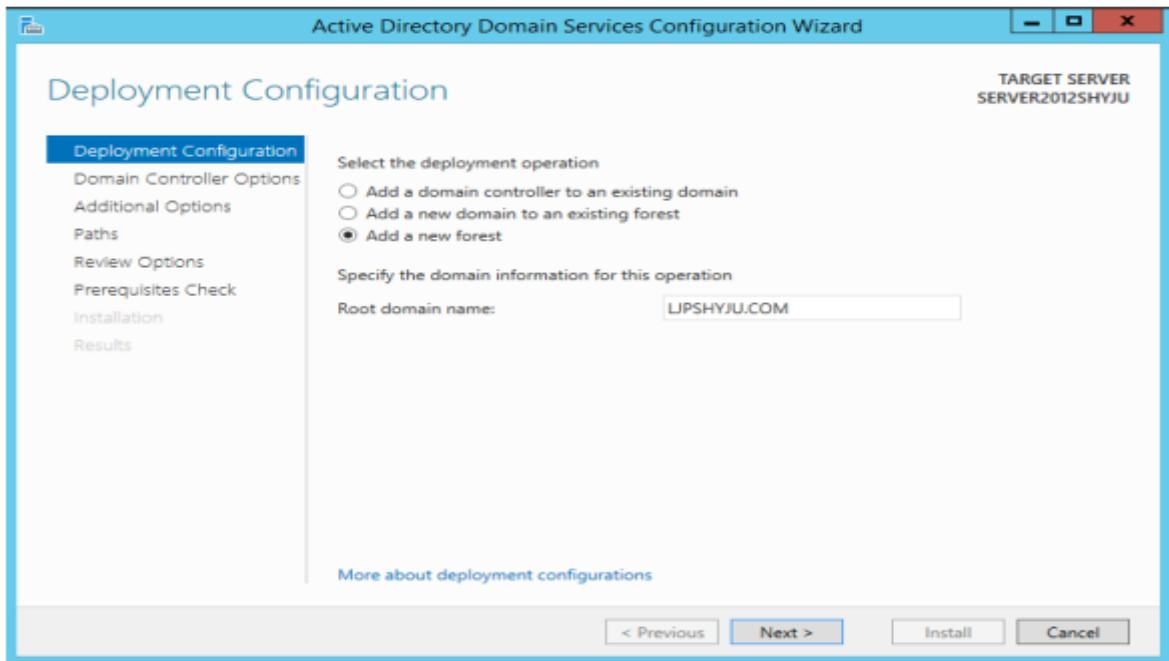


- Click on Notification you will see the option “Promote this server to a domain controller.” Click on this link for role promotion.

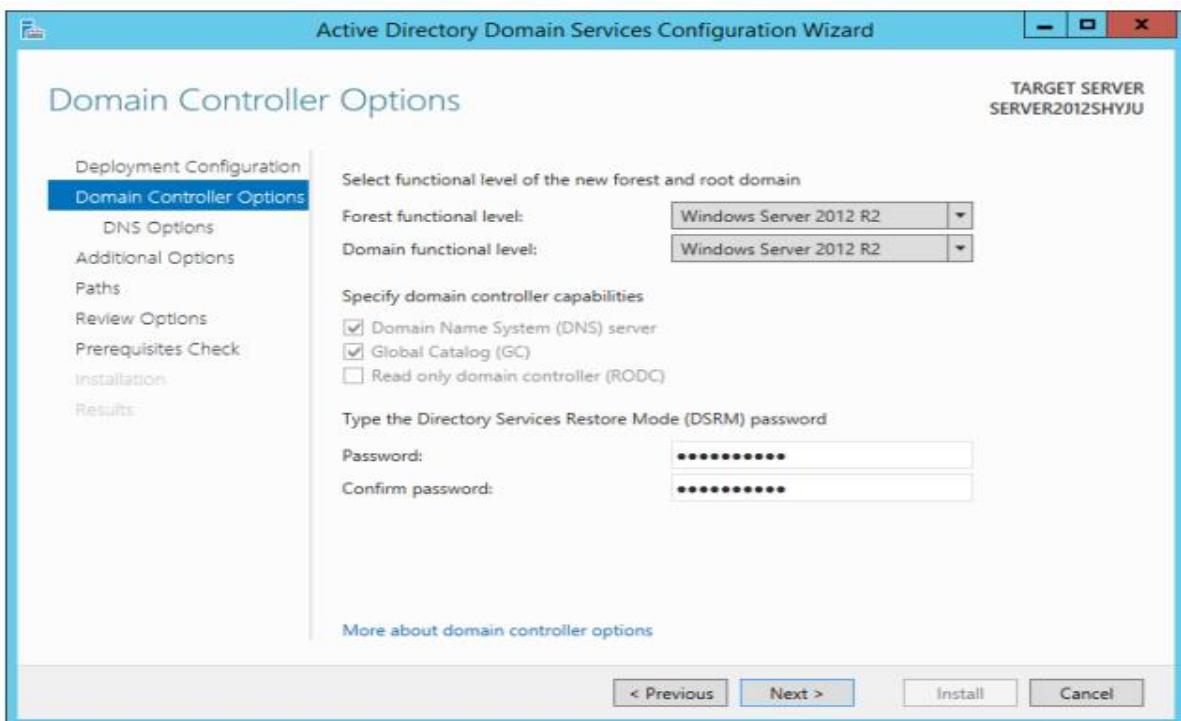
If we click on the message, “Promote this server to a domain controller” the second wizard will start.



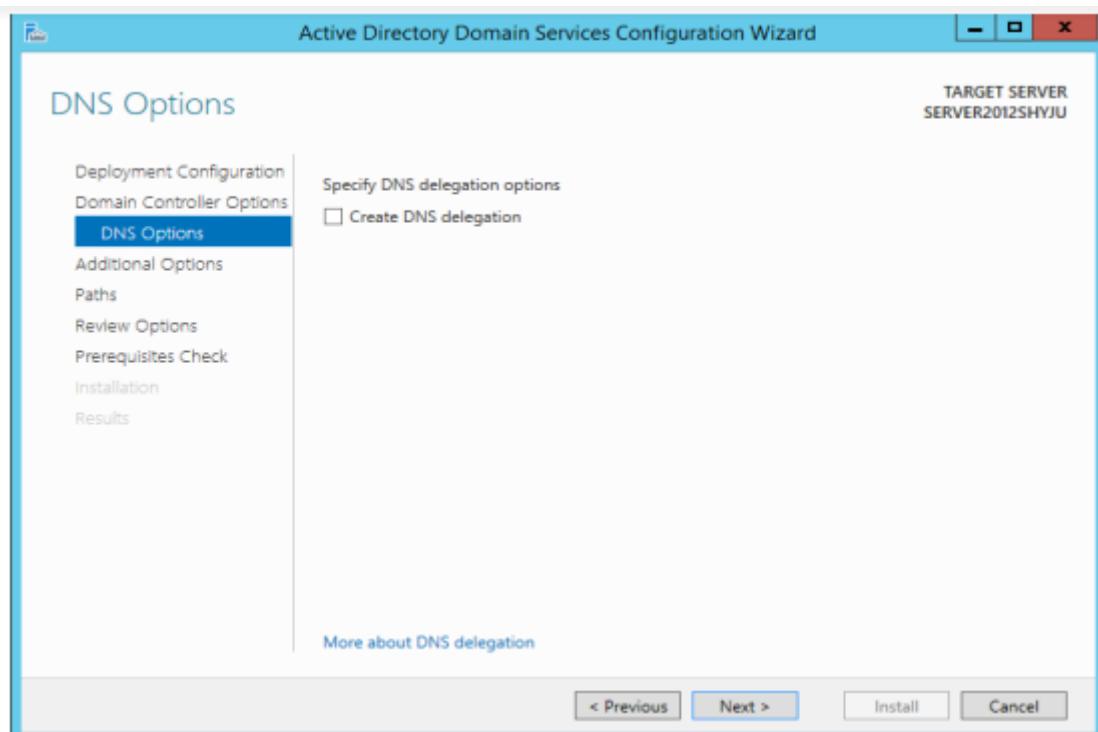
3. Click on the “Add a new forest” radio button and enter the name of the new root domain. Click Next



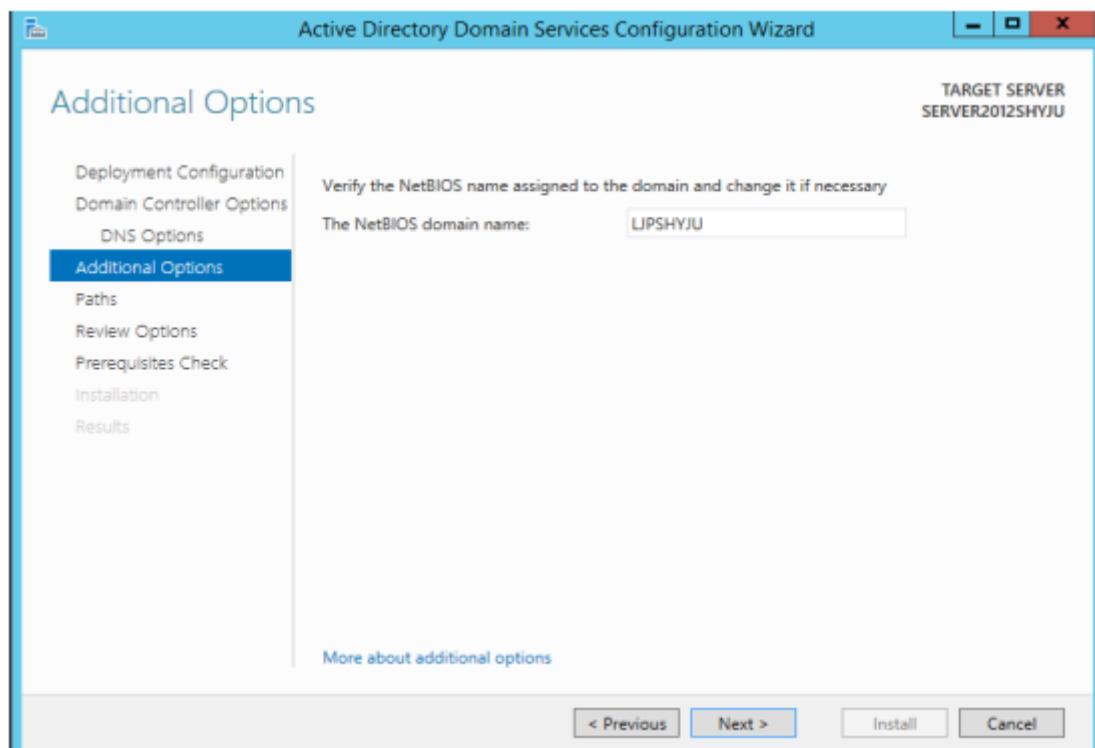
4. If we did not have DNS installed, the option to install DNS would be provided. Check the box to install DNS as it is a requirement for Active Directory. If it is grayed out, you already have it installed and running. Leave the function for Server 2012 R2 as is. If we had server 2008 running on the network, we downgrade the function to accommodate the need for a backward capability. Type the Directory Services Restore Mode (DSRM) password in the Domain Controller Options window.



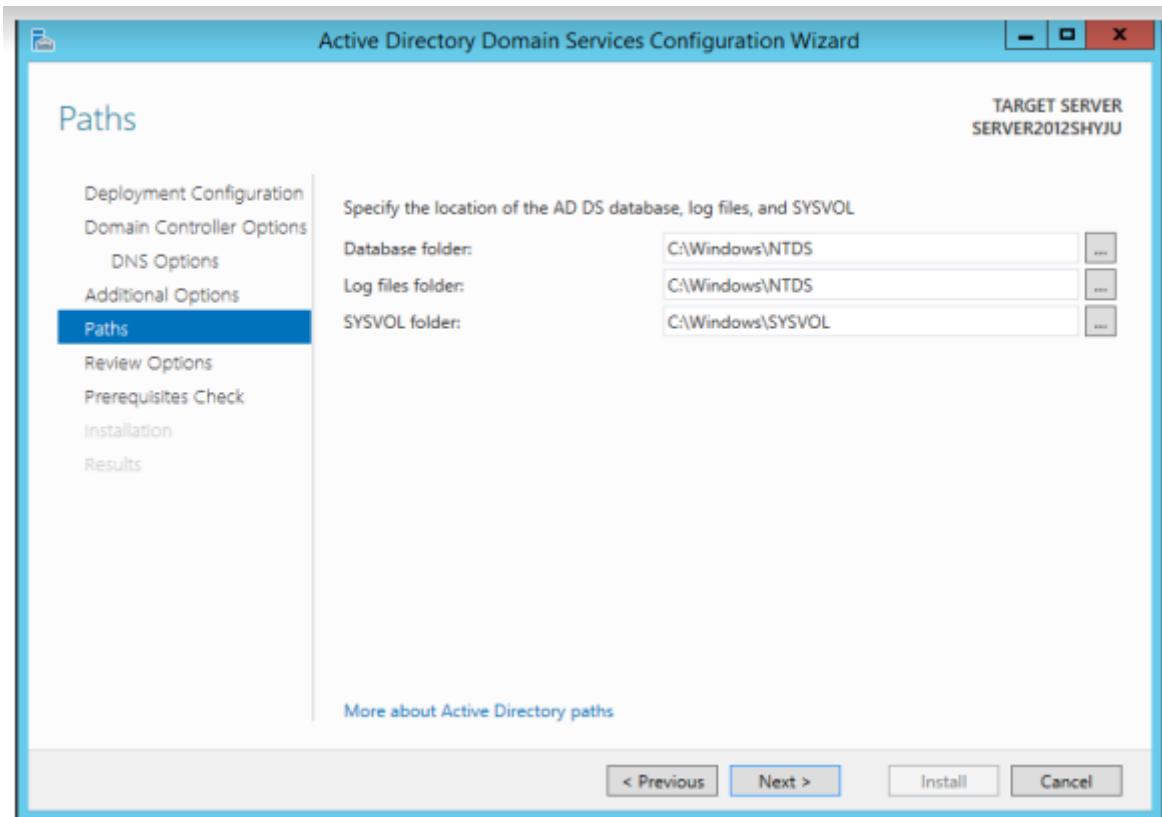
5. Uncheck the box DNS delegation if authoritative zone is available. Click next.



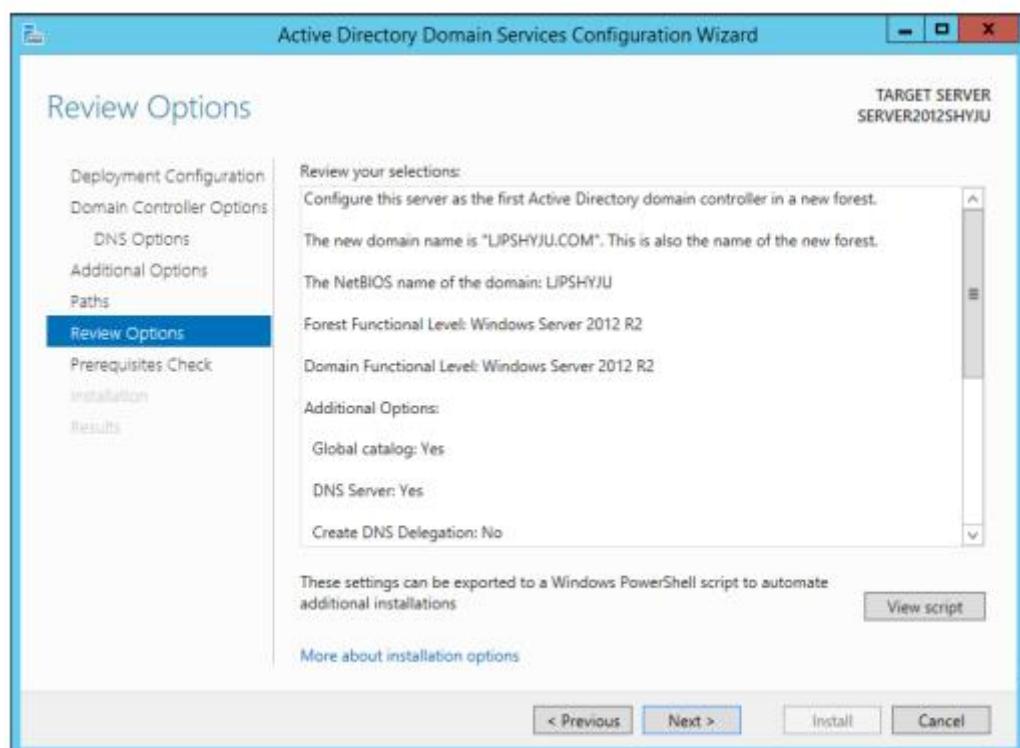
6. Setup will find the NetBIOS domain name. Once found, click on Next.



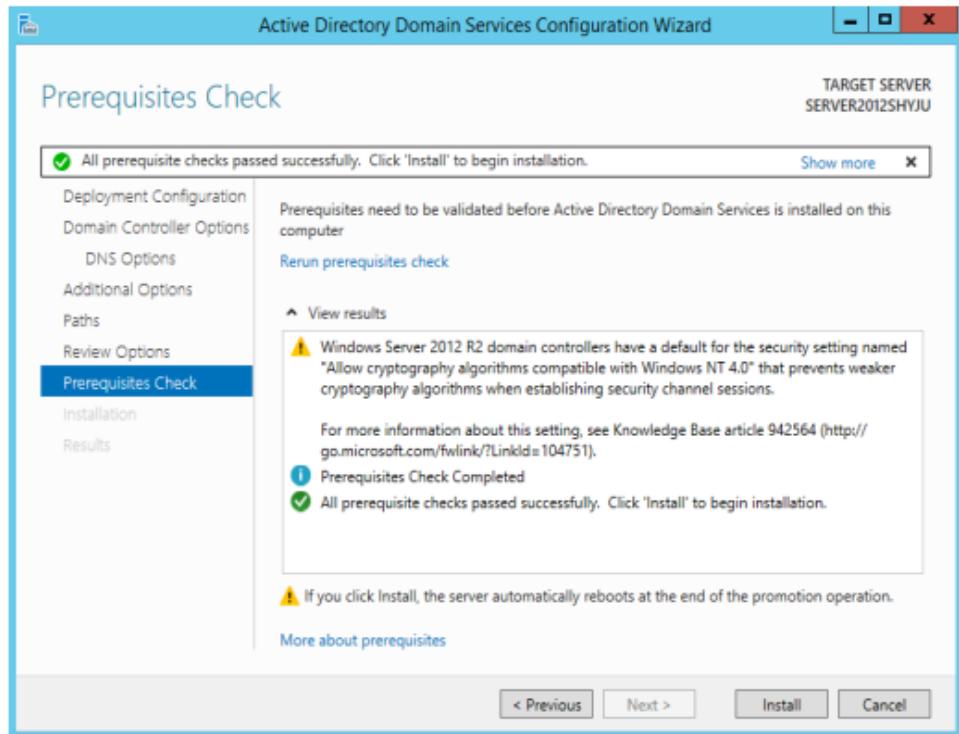
7. Confirm the location of the database, log files and SYSVOL folders.



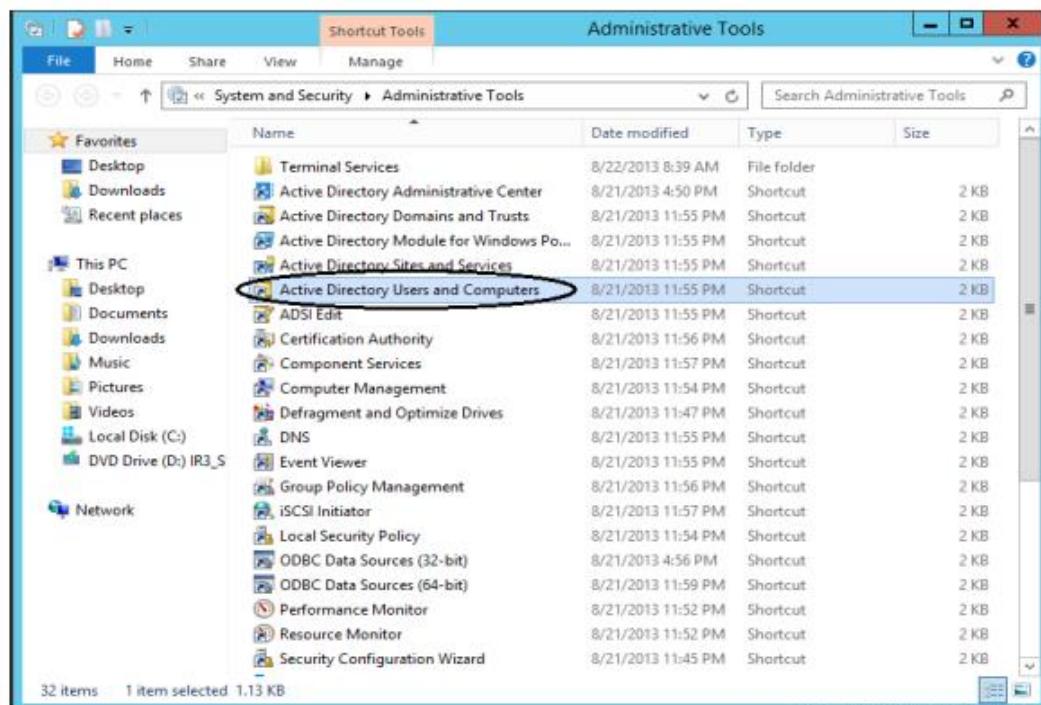
8. Review the summary and click Next to promote the server to Domain Controller.



9. Once prerequisites have passed successfully, click on Install.



10. The system may restart once installation is completed. Be patient! When the machine restarts and comes back up, you will have an Active Directory Domain controller. To verify if Active Directory tools have been installed, click on start button, and the Administrative Tools tile. Check out your Active Directory tools! The main snap-in for managing users and computers is the Active Directory Users and Computers snap-in.



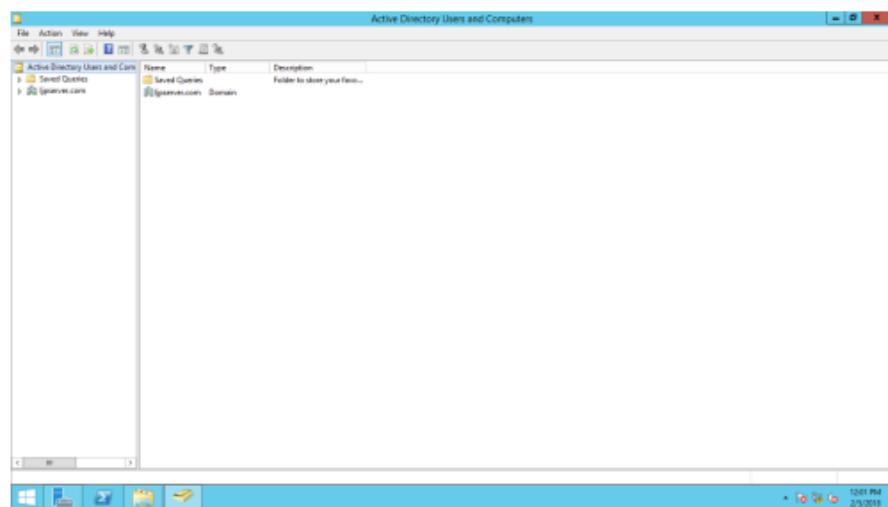
Experiment: 10

AIM:

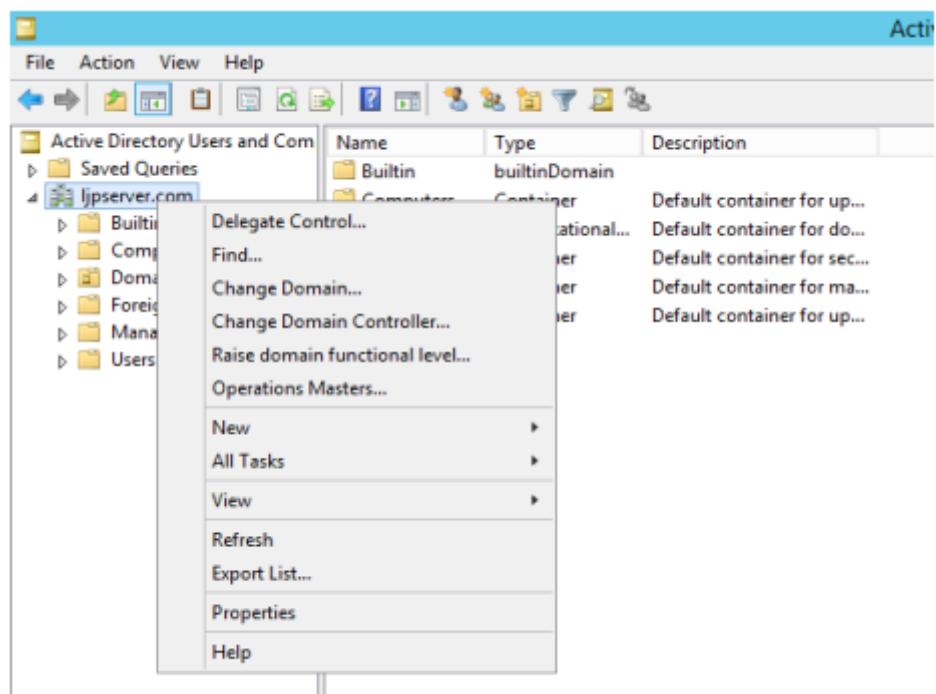
Creating Active Directory Objects.

Creating Organizational Units

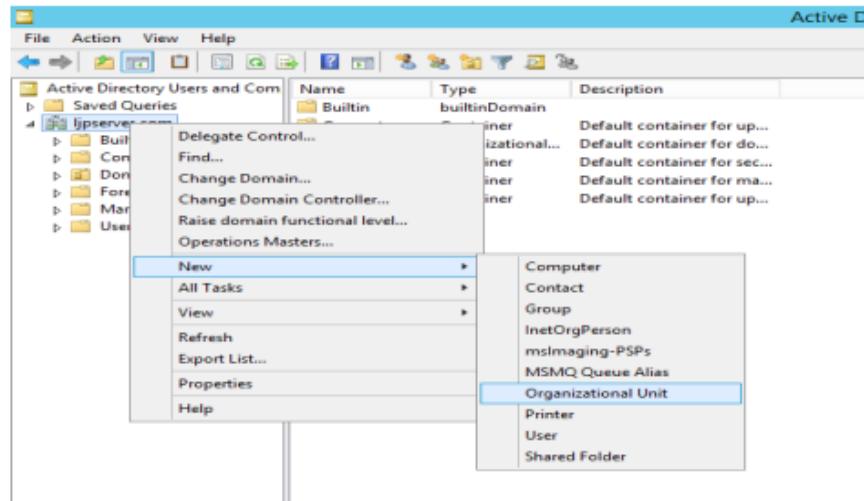
1. Open the Active Directory User and Computers snap-in from Administrative Tools.



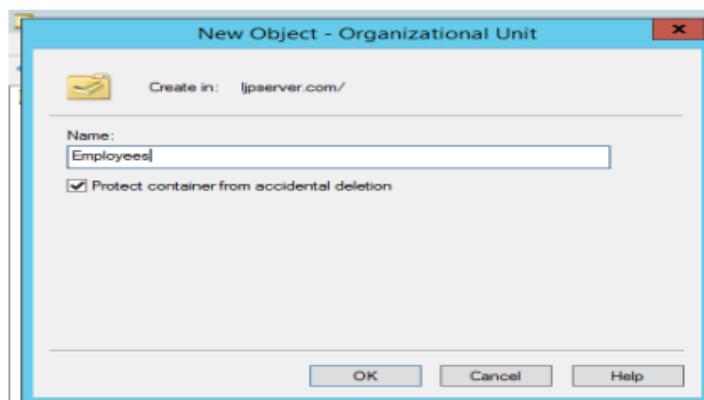
2. Expand your domain name. And Right-Click your domain name.



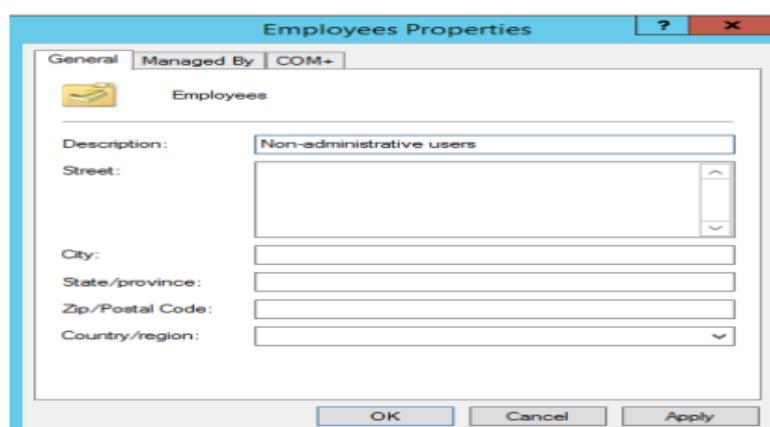
3. Choose New and Select Organizational Unit.



4. Type the name of the Organizational Unit: Employees.
 5. Check Protect Container from Accidental Deletion.
 6. Click OK.

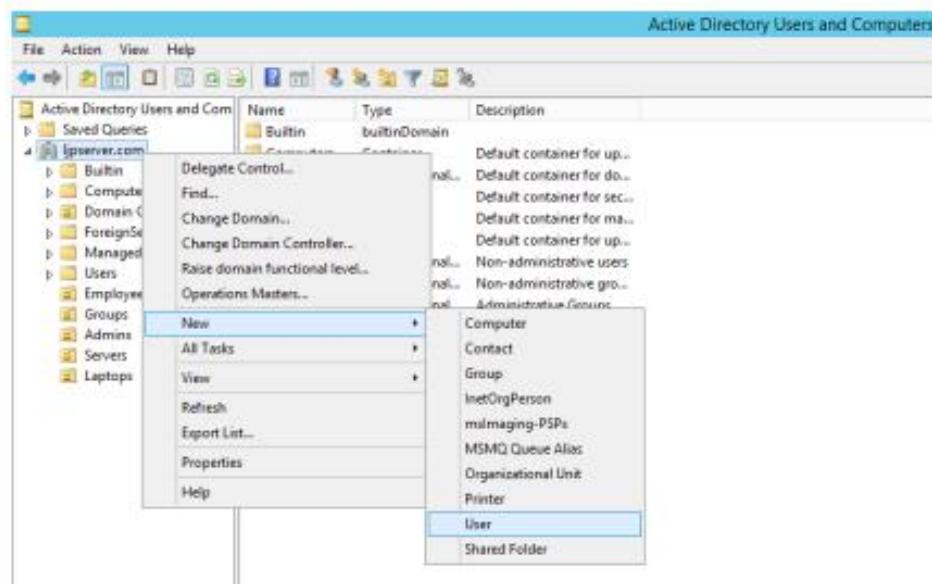


7. Right-Click the OU and Choose Properties.
 8. In the Description Field, type Non-administrative users.
 9. Click OK.

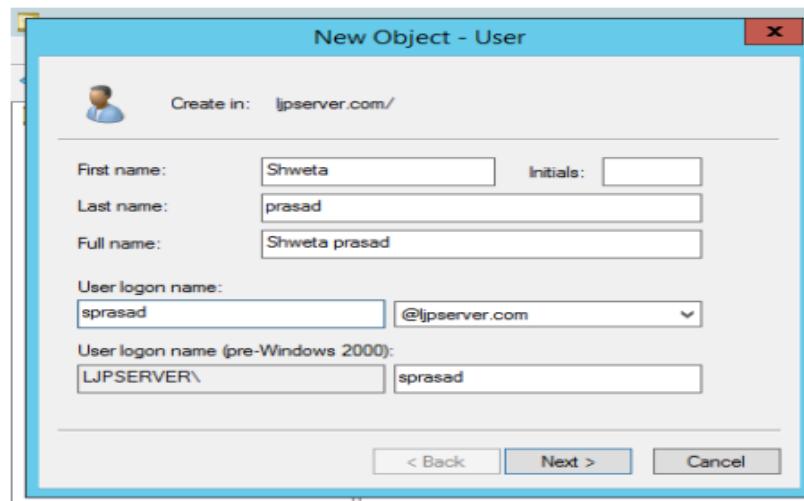


- Creating Users

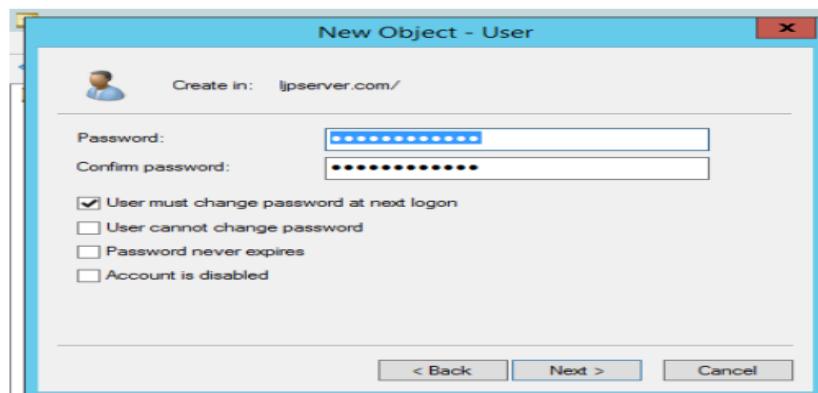
1. Right-Click your domain name and Select New and then User.



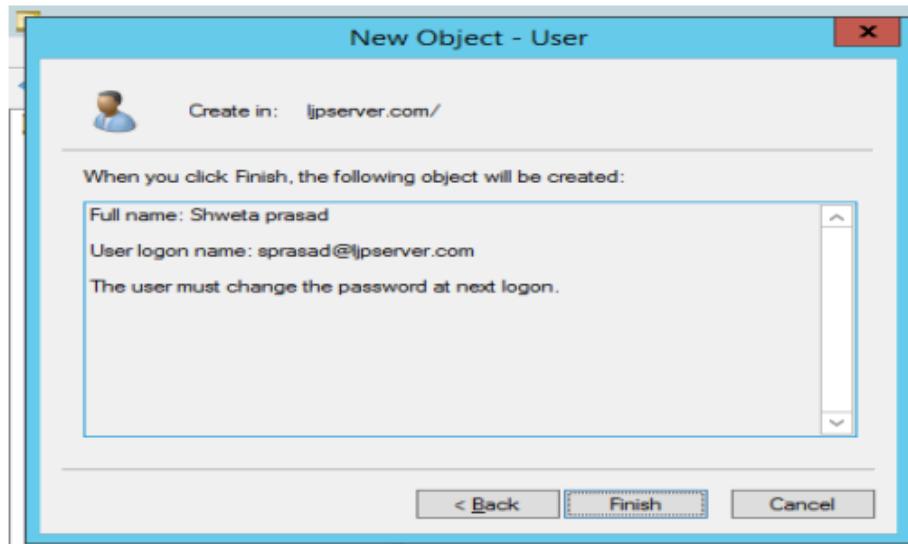
2. Provide all the details of the User.



3. Give password for the user, as defined in the table given below.

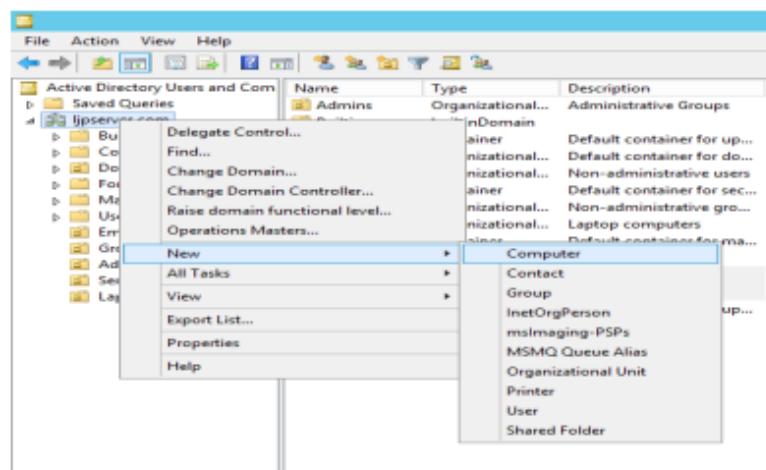


4. Here the information of User is displayed. Click finish.

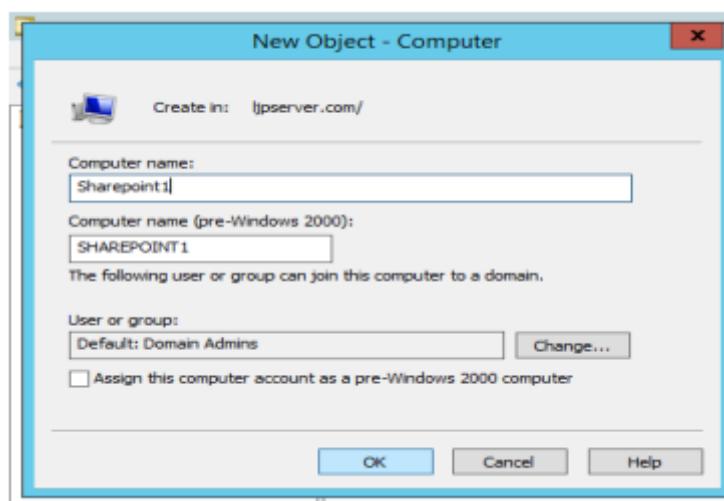


- Creating Computers

1. Right-Click Servers OU and Select New and then Computer.



2. In the Computer name box, type Sharepoint1 and Click Ok.

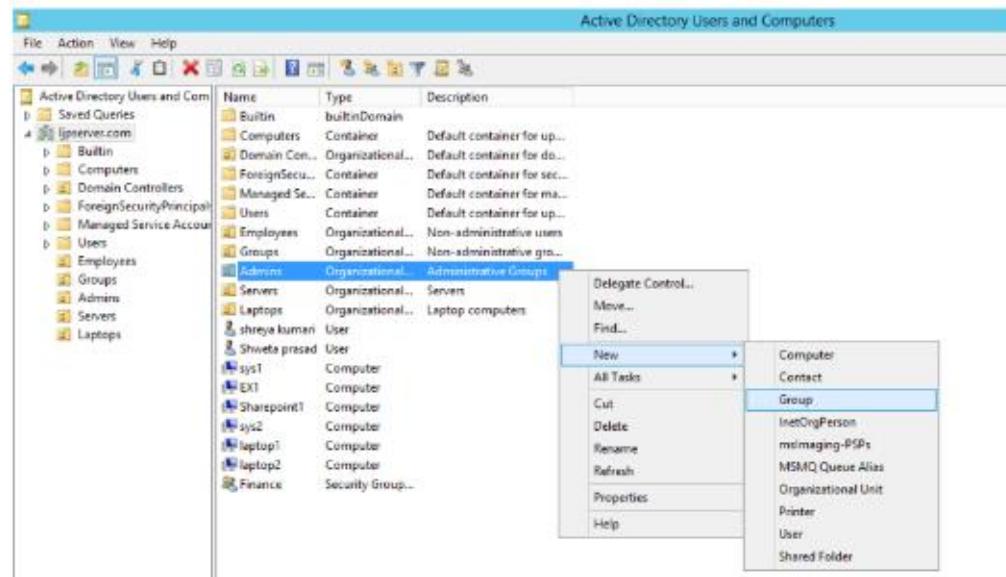


3. Create the following computers:

Computer Name	OU
EX1	Server
SharePoint01	Server
Desktop01	Desktops
Desktop02	Desktops
Laptop01	Laptops
Laptop02	Laptops

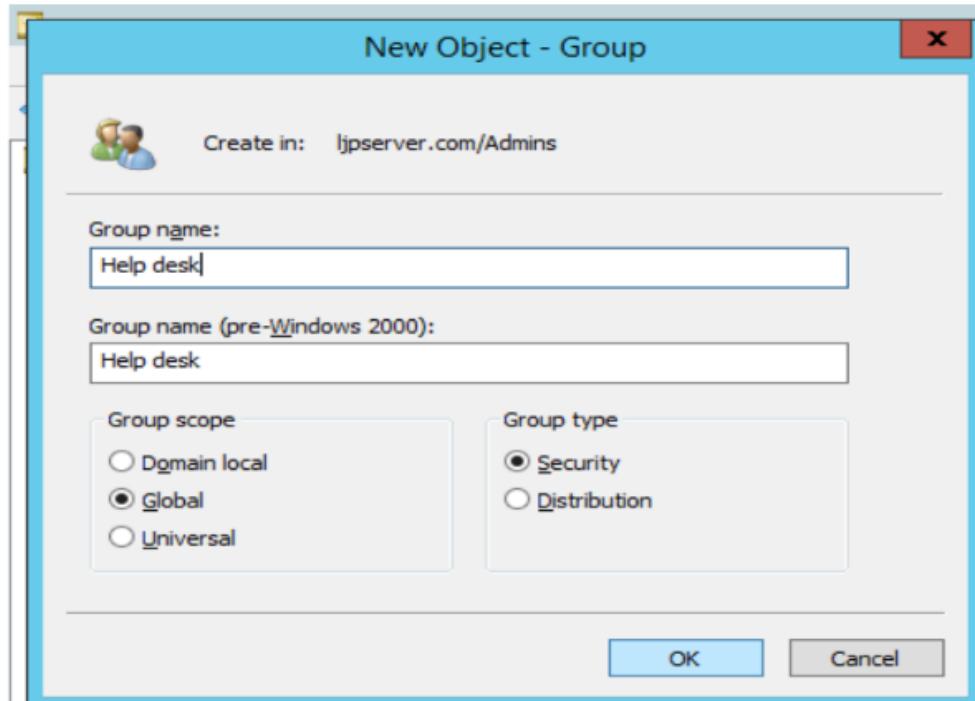
- Create Groups

1. Right-Click the Admins OU and Select New and then Group.



2. Type Help desk for the Group Name.
3. Do not change the name of the Group Name (Pre-Windows 2000).
4. Select Security for Group Type.
5. Select Global for the Group Scope.

6. Click OK.

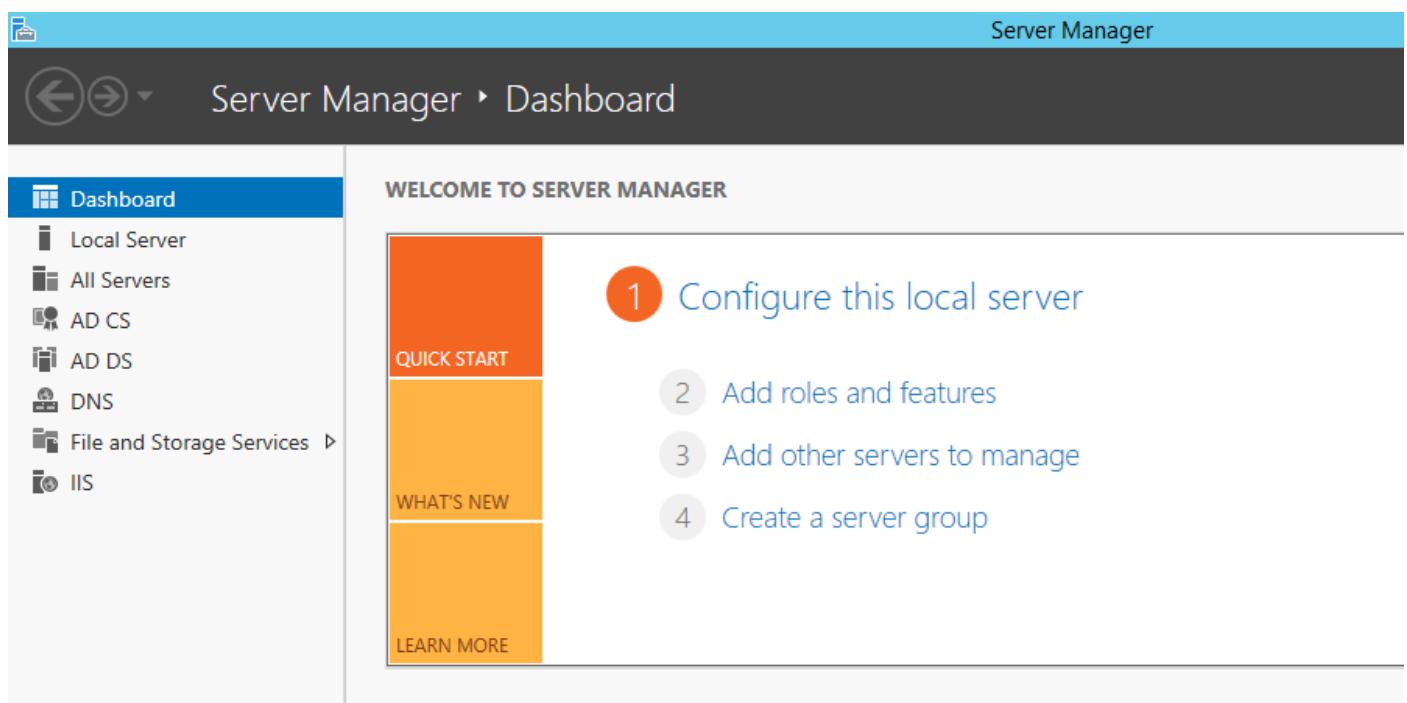


Experiment: 11

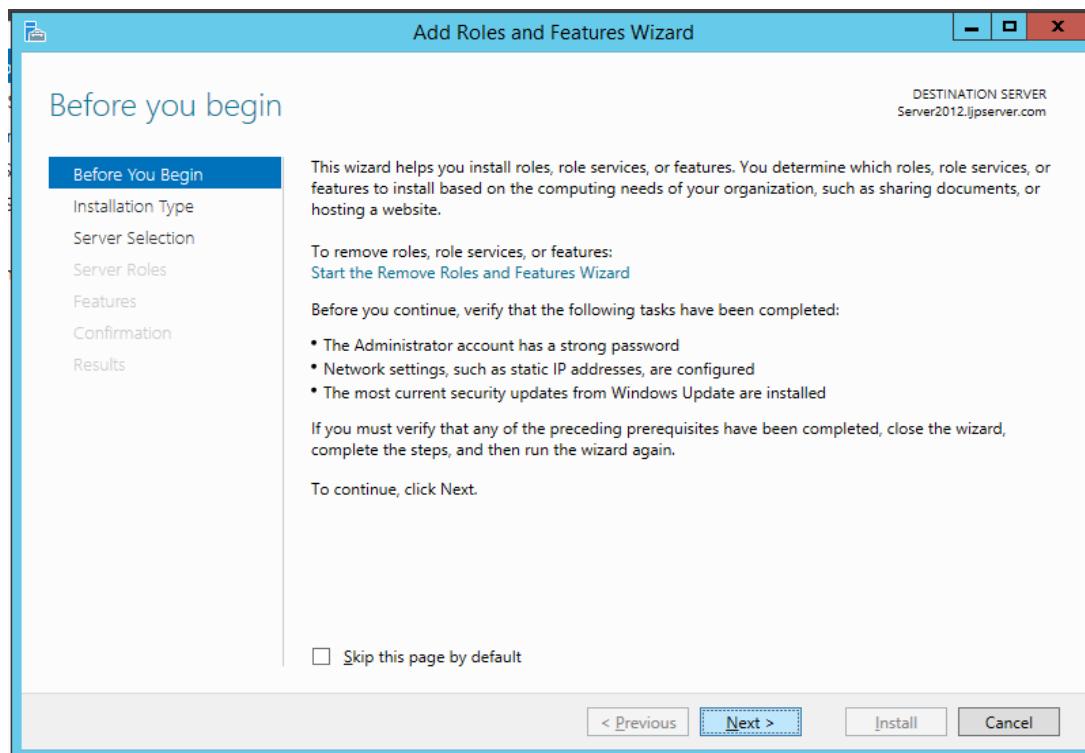
AIM:

Install and Configure DHCP on Server 2012.

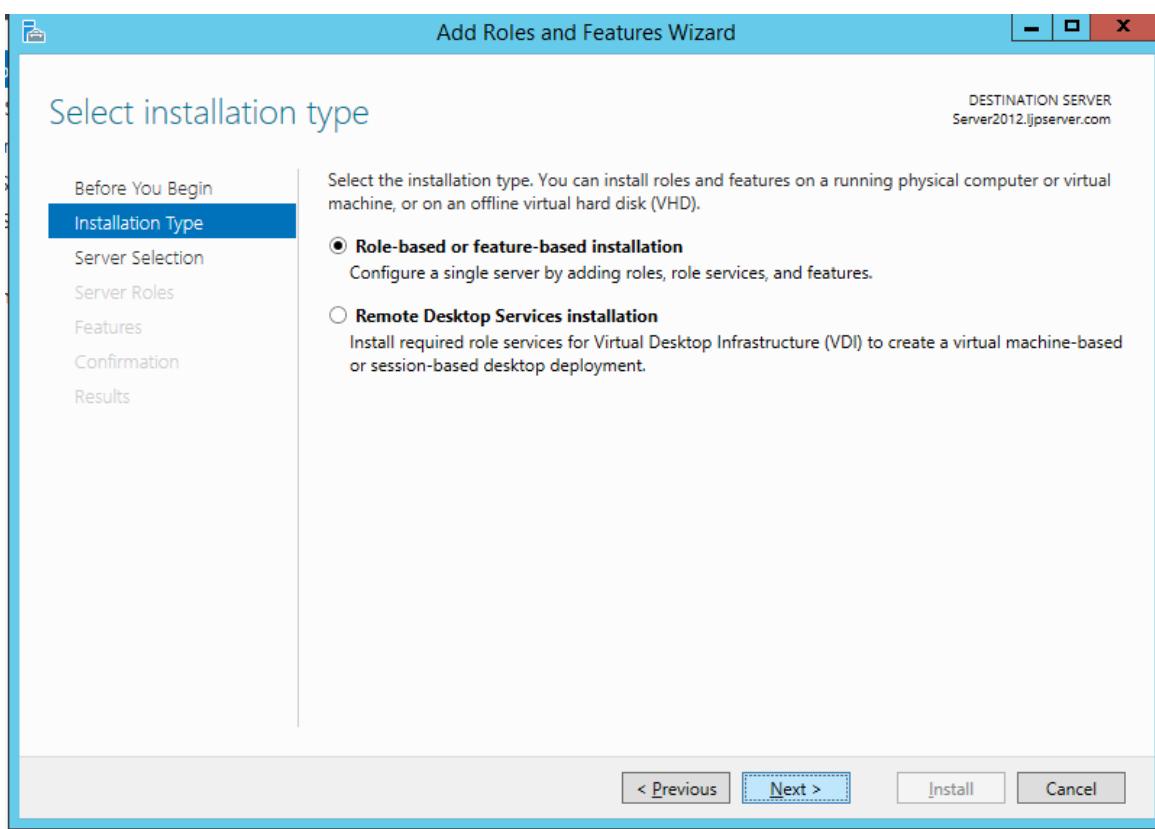
1. Log on to your root domain controller. Open Server Manager and click Add Roles and Features.



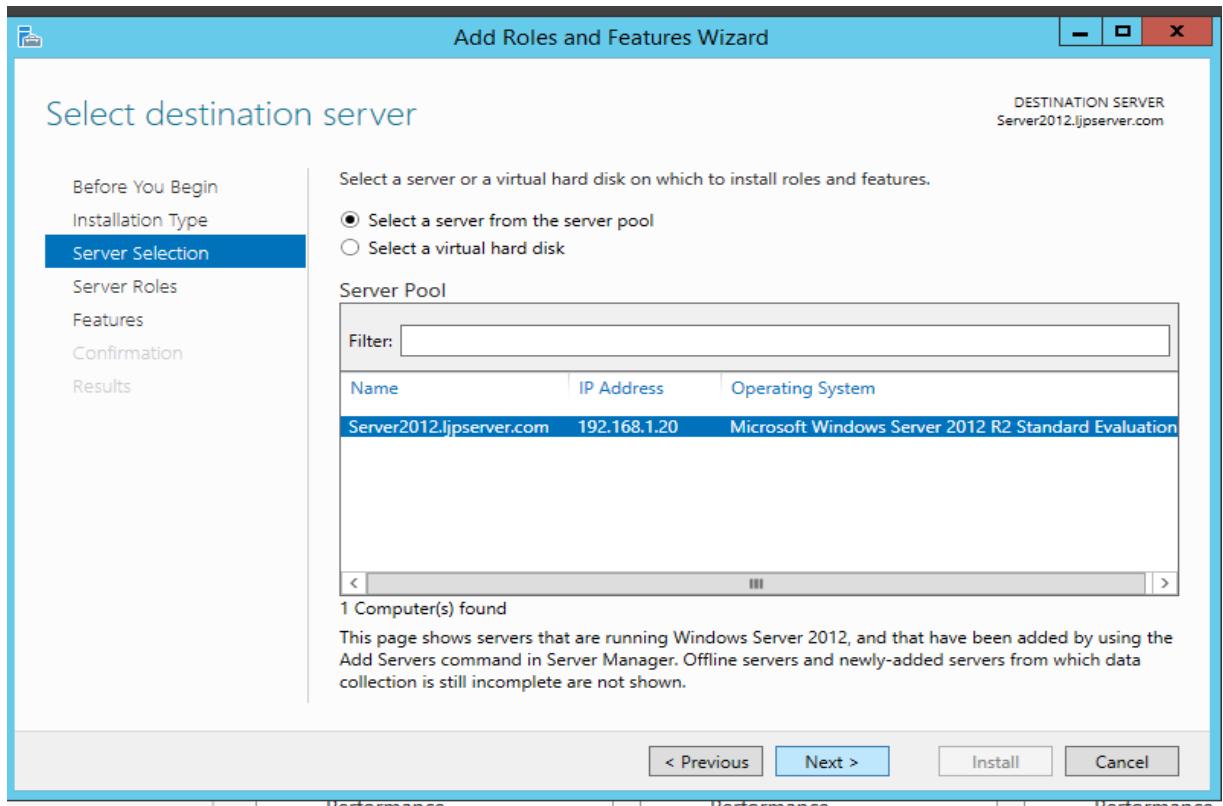
2. In the Add Roles and Features Wizard, click Next.



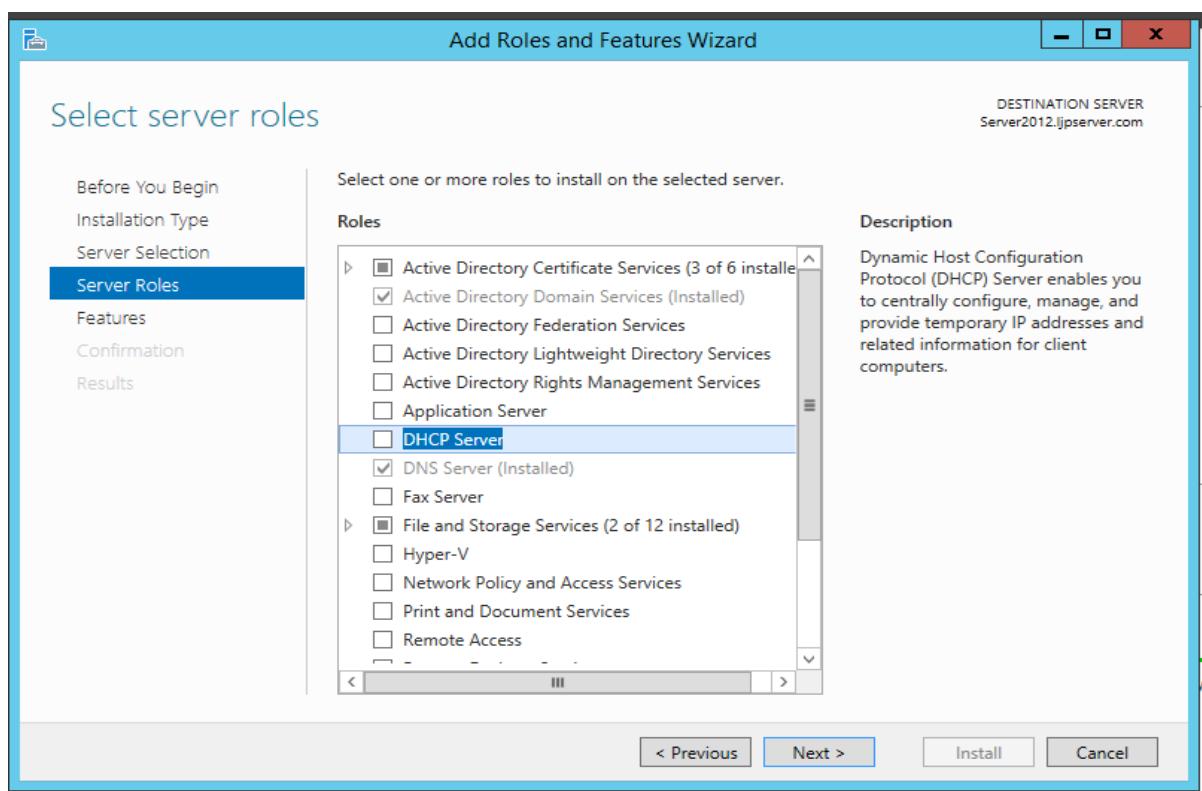
3. In the Select Installation type page, select Role-based or feature-based Installations, and click Next.



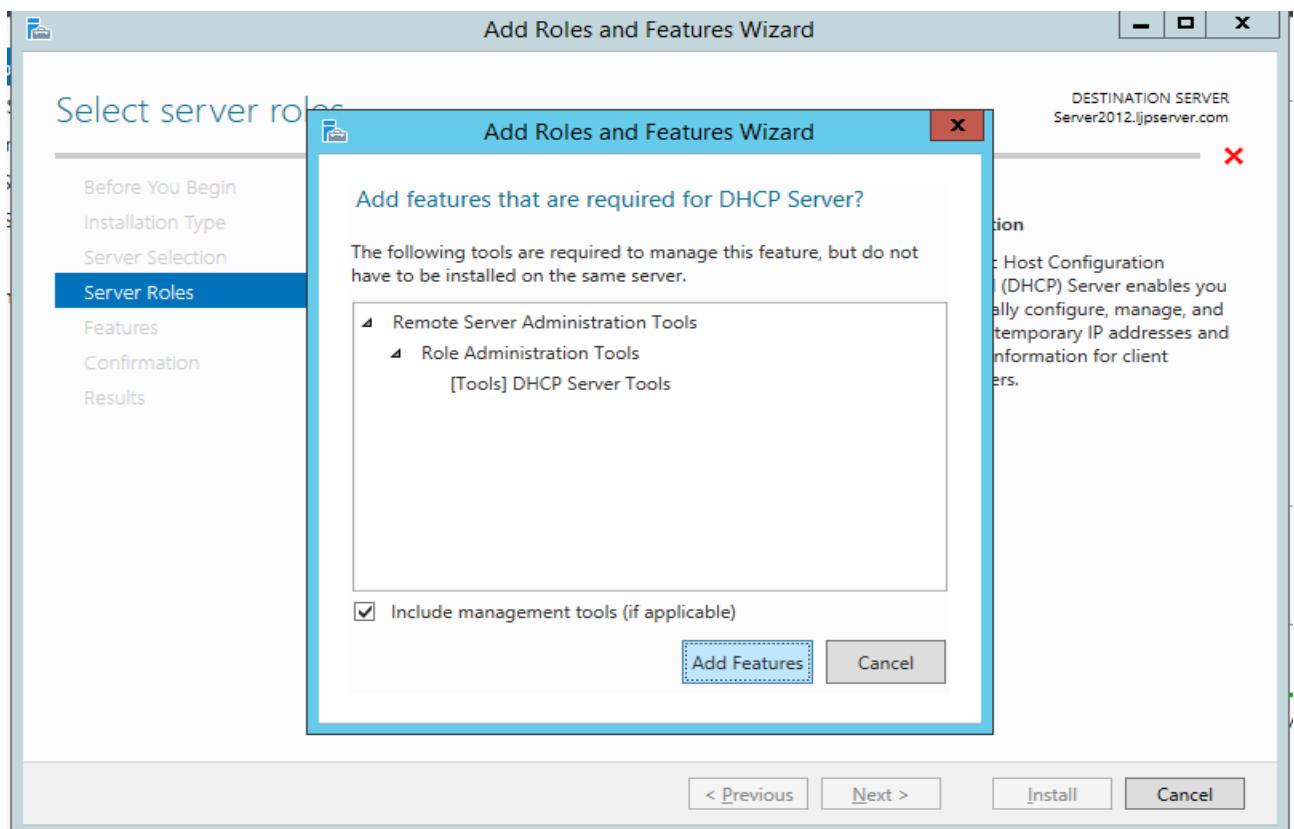
4. On the Select Destination Server page, select your server name and then click Next.



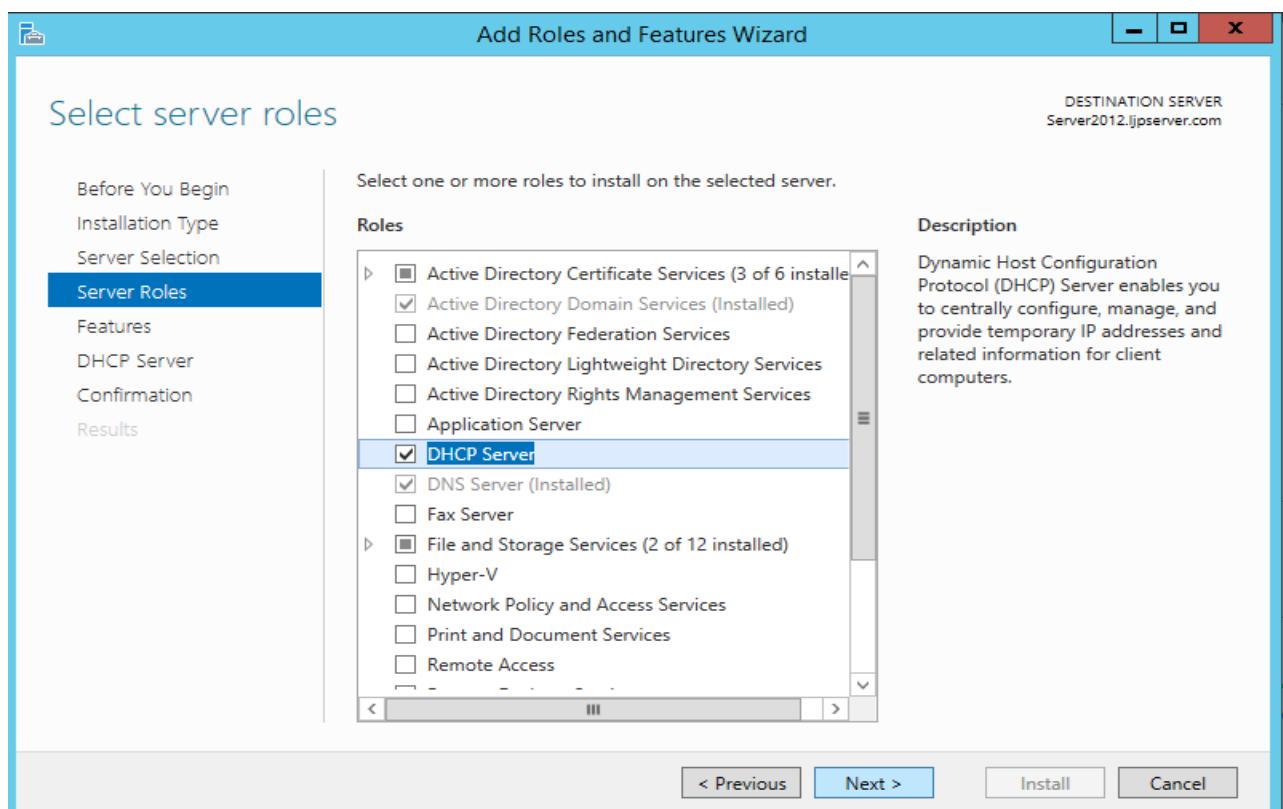
5. On the Select Server Roles page, select the DHCP Server check box.



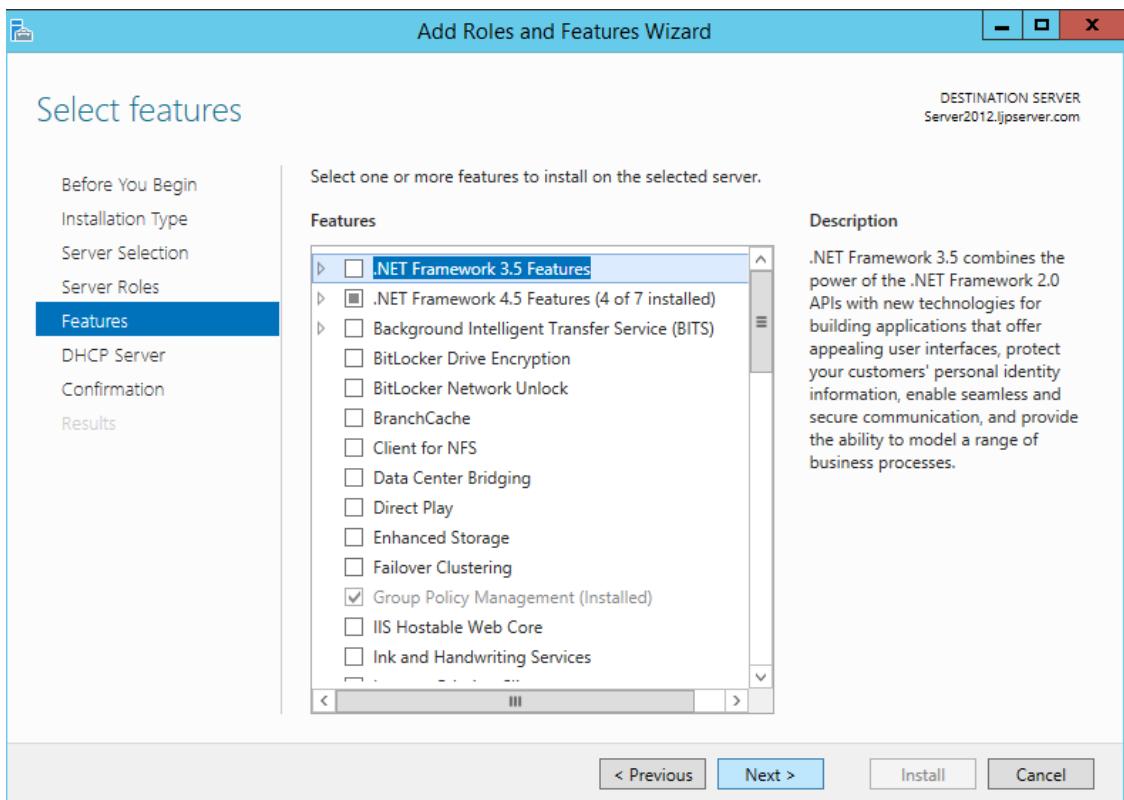
6. In the Add Roles and Features Wizard, click Add Features.



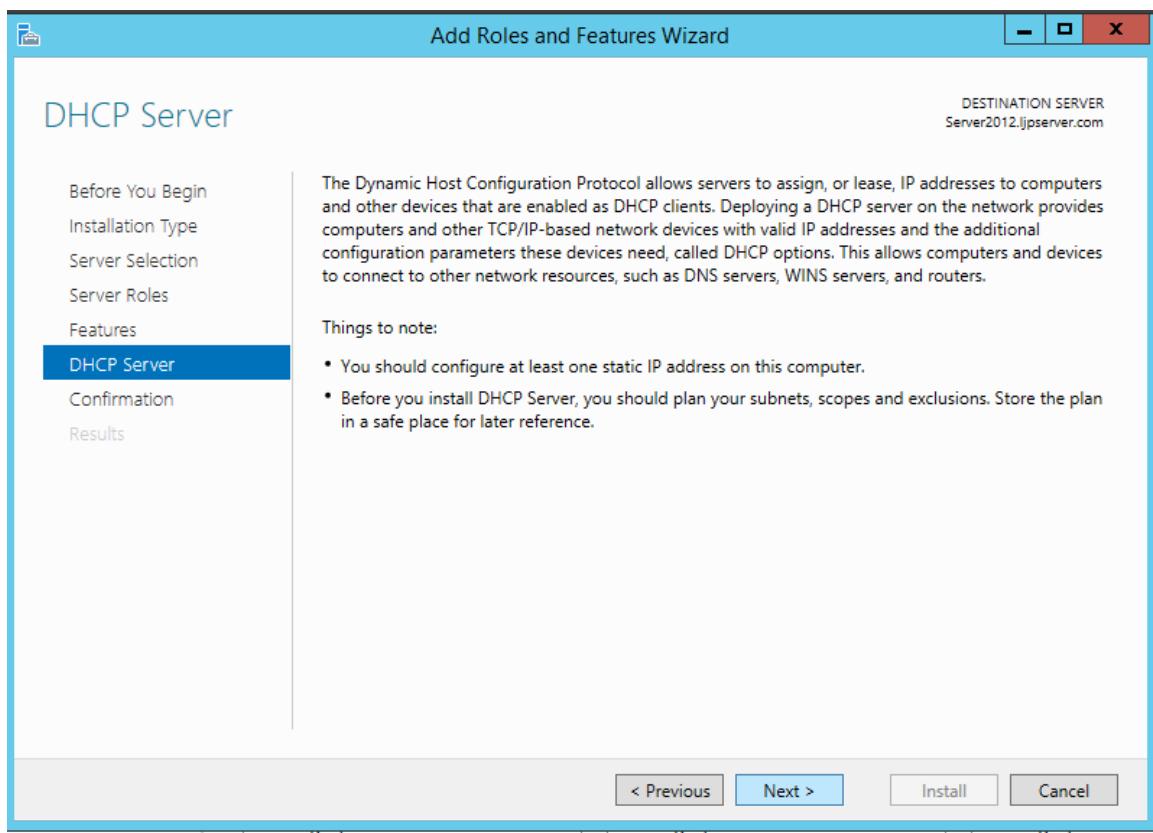
7. On the Select Server Roles page, click Next.



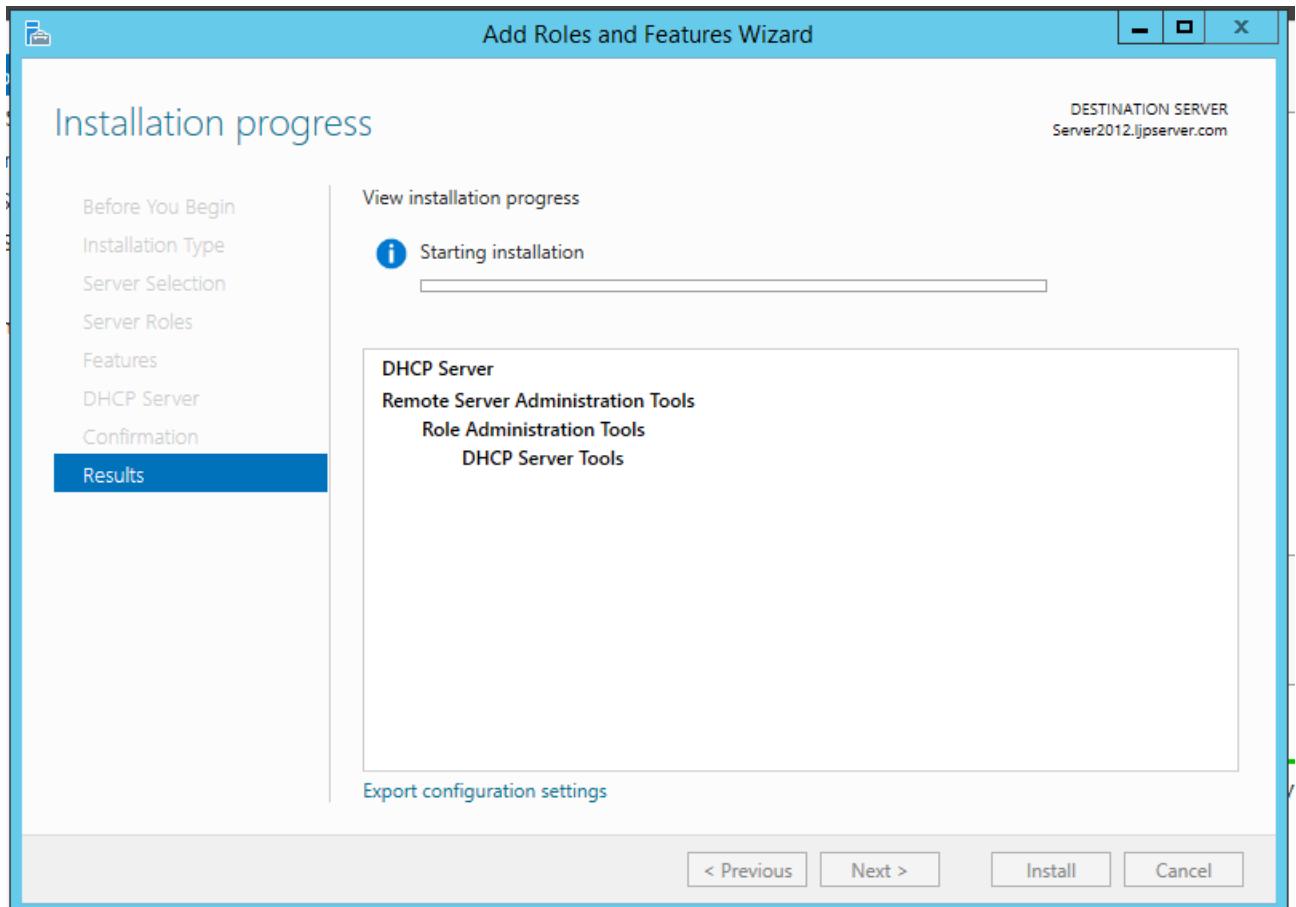
8. On the Select Features page, click Next.



9. On the DHCP Server page, click Next.



10. On the Confirm installation selections page, click Install.
11. On the Installation progress page, wait until the Installation succeeds.



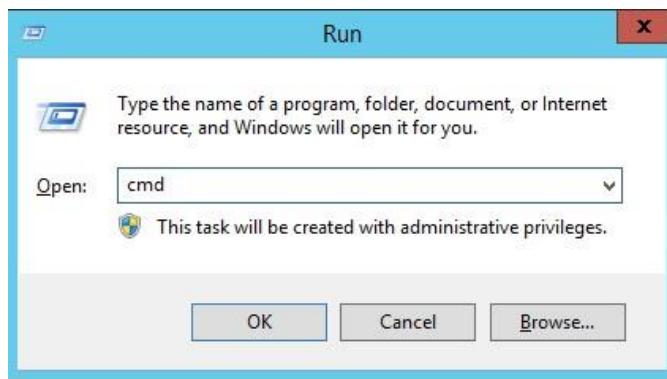
Experiment: 12

AIM:

Install and Configure DNS on Server 2012.

Configure a Static IP Address

- From the desktop, use the keyboard combination of the **Win+r** keys to bring up the run Prompt. In the open box, type **cmd** and click OK.



- At the command prompt, type **ipconfig**. This brings up the dynamic IP address assigned to your network adapter. Take note of the circled information as you will need it to configure your adapter statically.

```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet0:
  Connection-specific DNS Suffix . . . . . fe80::59aa:9f56:ba19:93b%12
  Link-local IPv6 Address . . . . . 192.168.225.131
  IPv4 Address . . . . . 192.168.225.0
  Subnet Mask . . . . . 255.255.255.0
  Default Gateway . . . . . 192.168.225.2

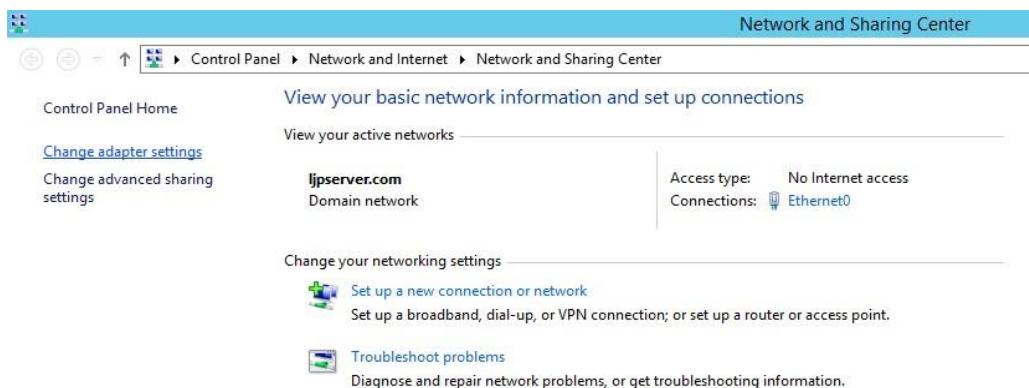
Tunnel adapter isatap.{AB8C9F7D-3175-422E-86E3-3A001BB24625}:
  Media State . . . . . Media disconnected
  Connection-specific DNS Suffix . . . . . 

C:\Users\Administrator>
```

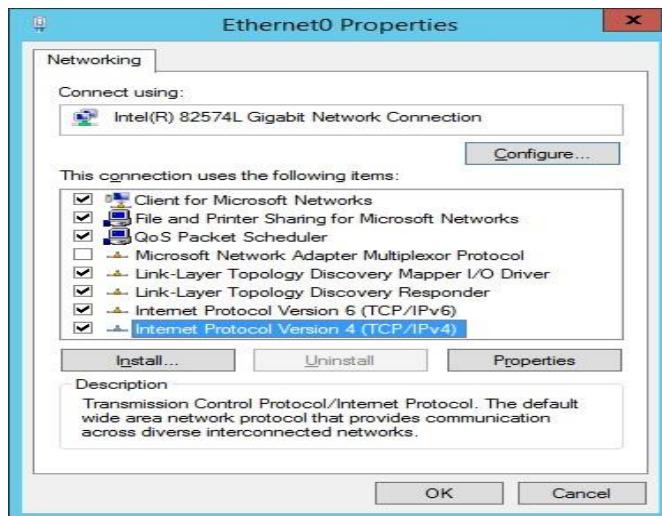
3. From the lower right of your taskbar, right click on your network status icon and select '**Open Network and Sharing Center.**'



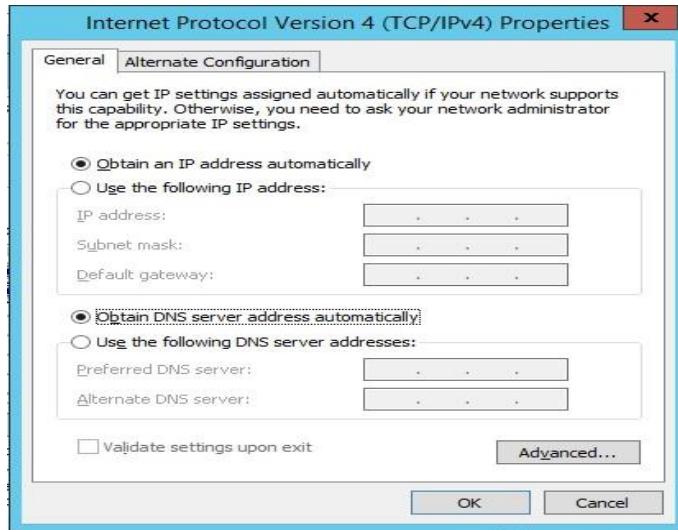
4. Once the Network and Sharing Center opens, from the left menu click on '**Change adapter settings.**'



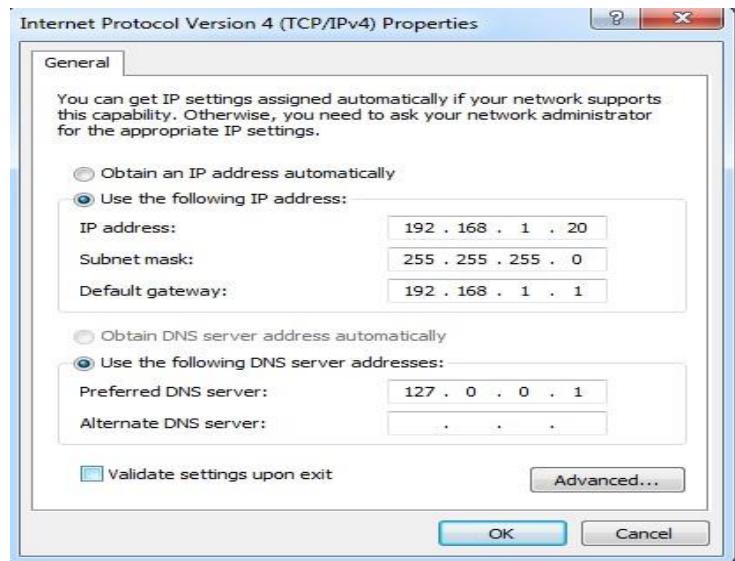
5. From the properties page of your Ethernet adapter double click **Internet Protocol Version 4 (TCP/IPv4).**



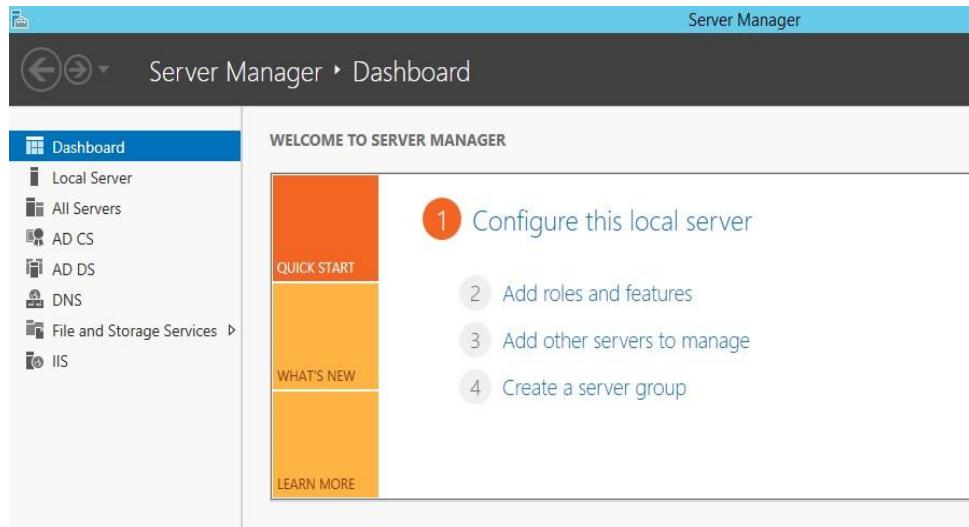
6. This brings up the TCP/IP v4 properties page. Select the radio button for, “Use the following IP Address”.



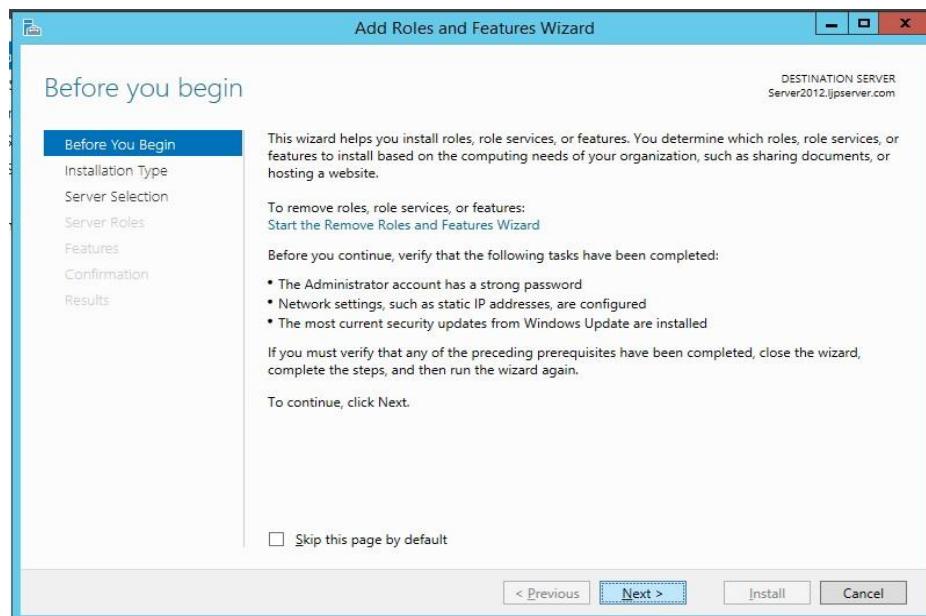
7. Provide IP address: Subnet mask: Default gateway: Preferred DNS server: Etc. Then click **OK**. One more time **Ok** to close Ethernet0 properties.



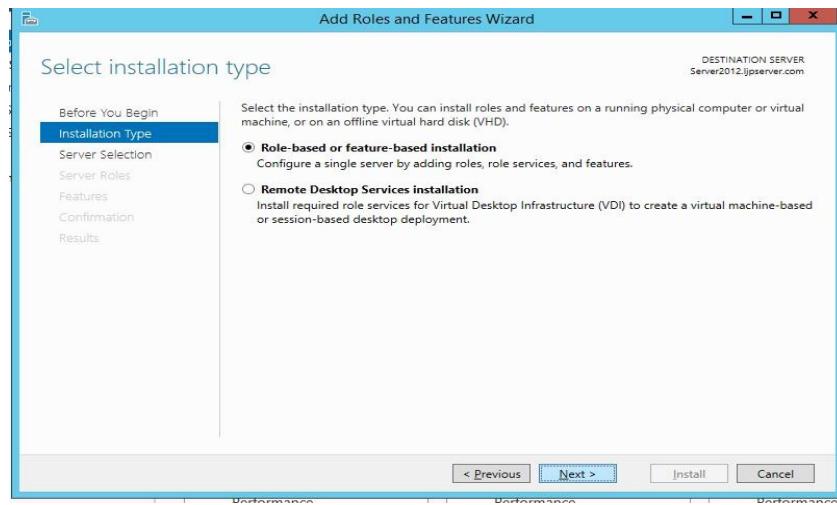
1. Launch your **Server Manager**. On Dashboard, click on “**Add roles and features**.”



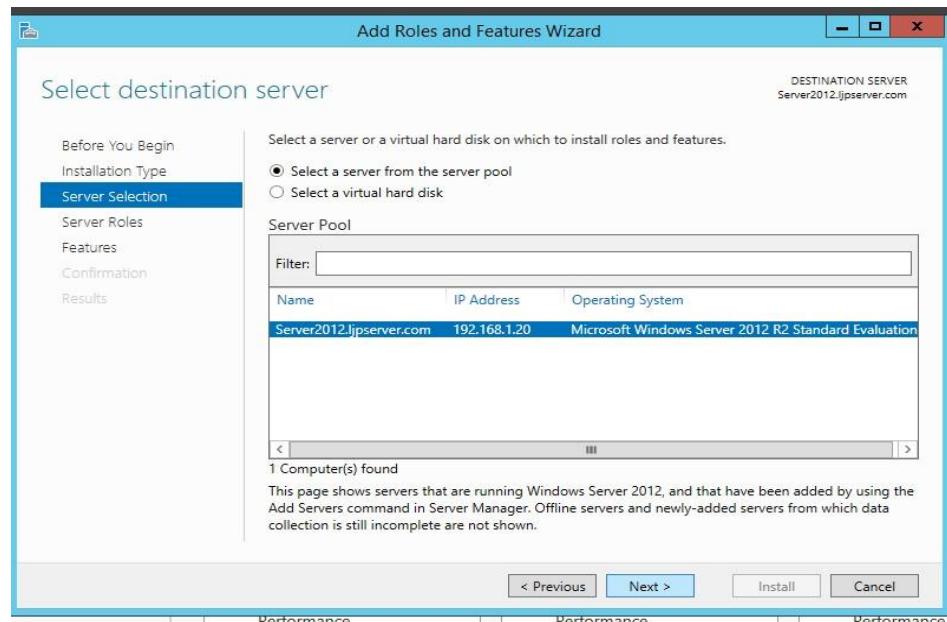
2. You will get the “**Add Roles and Features Wizard**,” click **Next**.



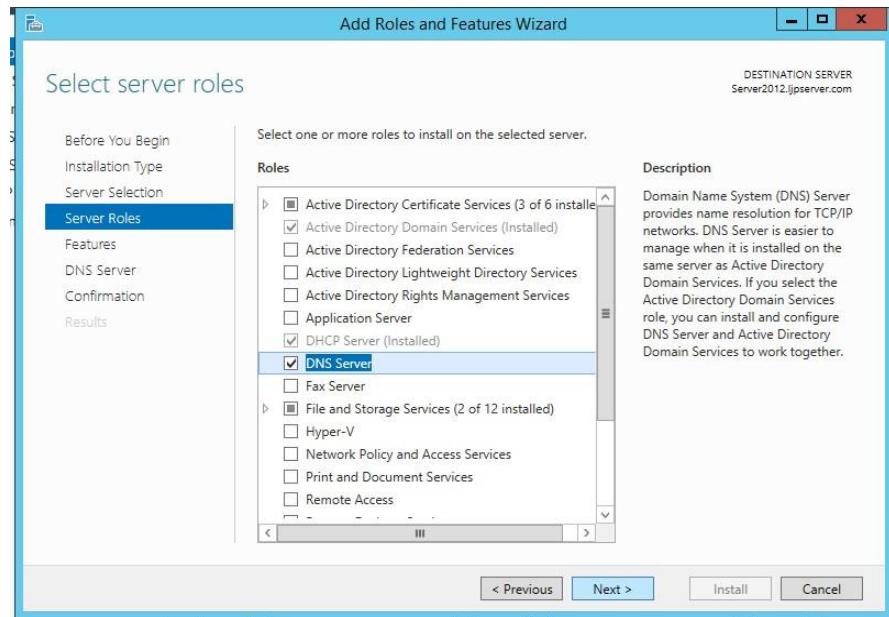
3. Select “Role-based or feature-based installation,” click Next.



4. In “Select destination server” screen, most likely you will only see one selection, which is the server you are on if not, select the server you want to add the DNS role to and click Next.



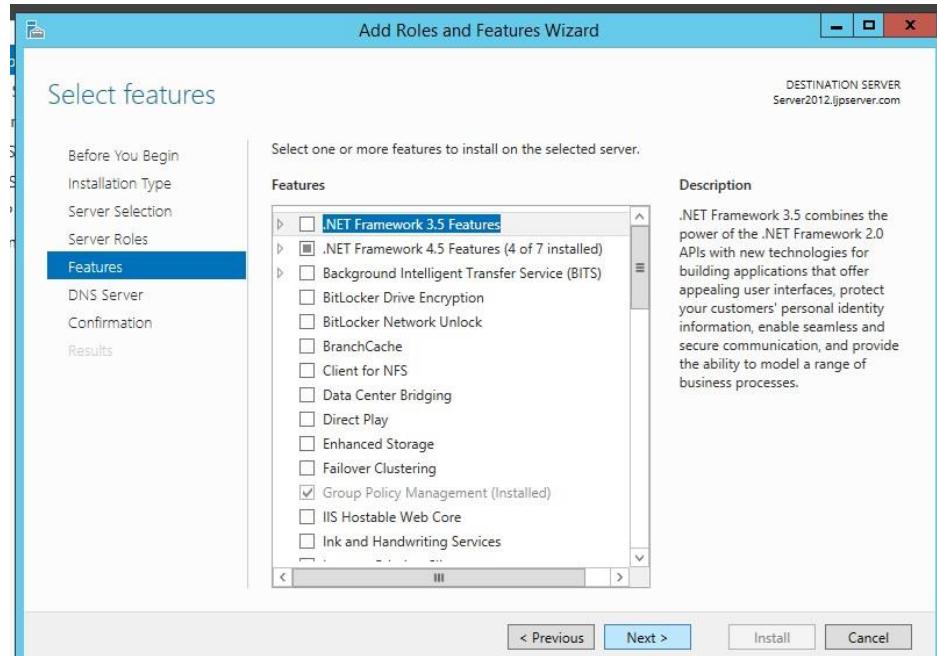
5. Check the “DNS Server” box.



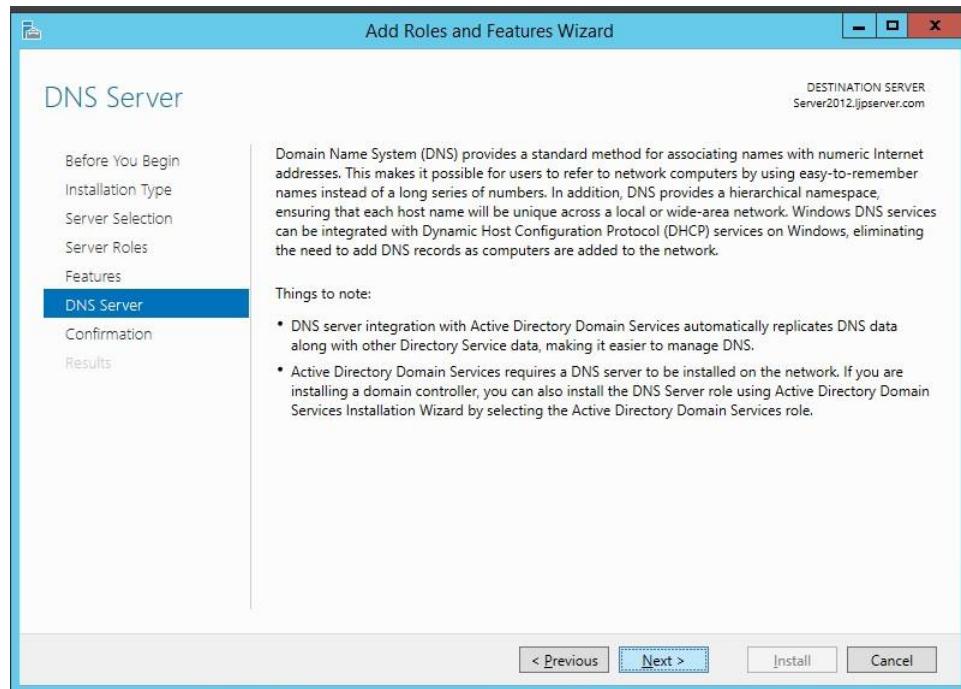
6. A smaller window will launch to confirm that there are other features that need to be installed with your DNS role, click on “Add Features” then click Next.



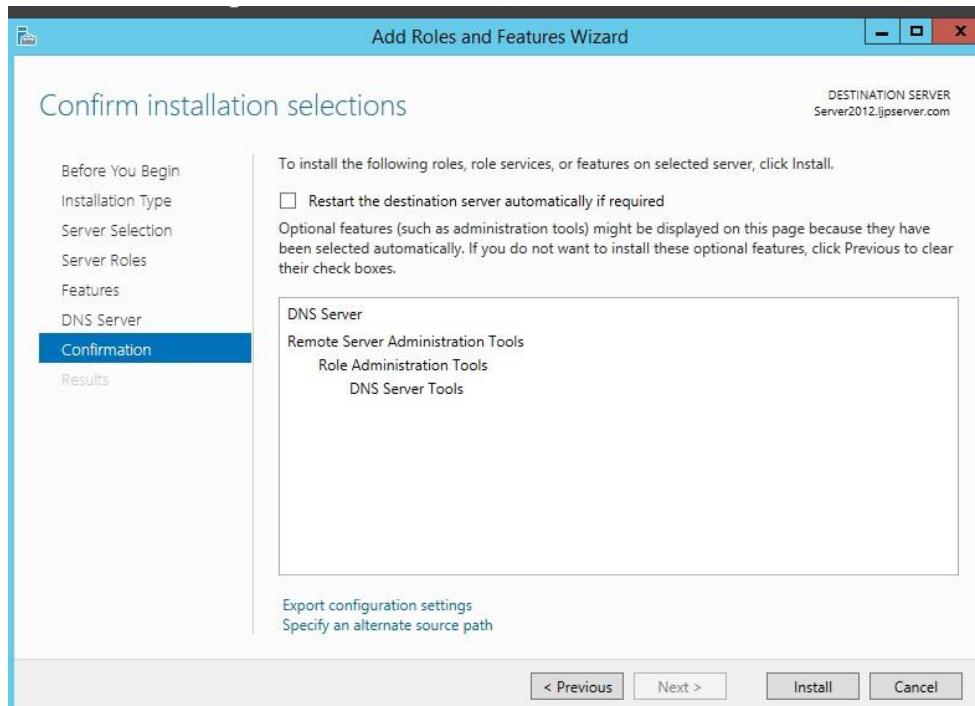
7. You do not have to select anything in the “Select features” screen, click **Next**.



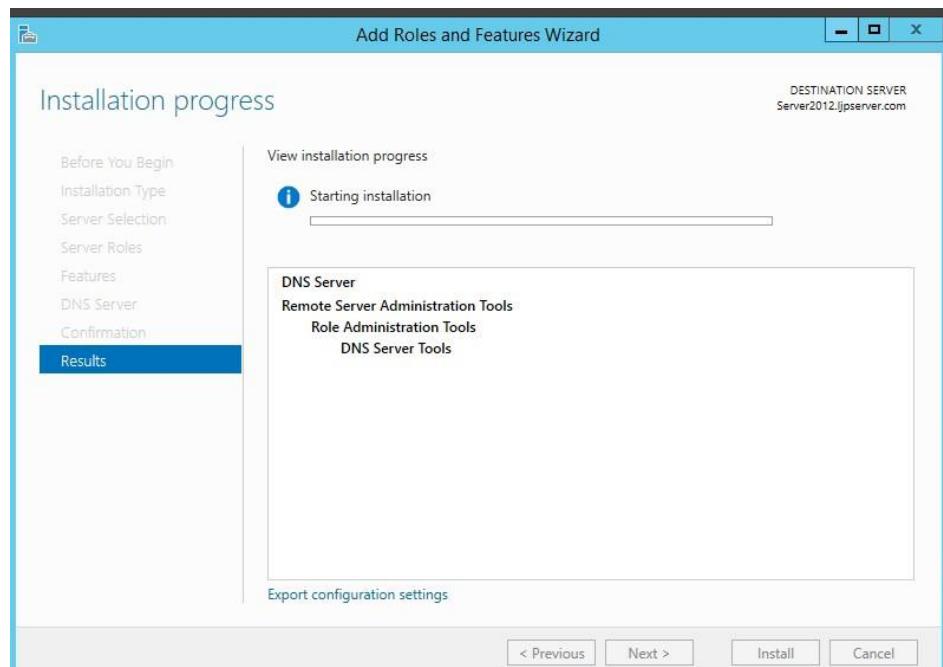
8. In DNS Server page click **Next**.



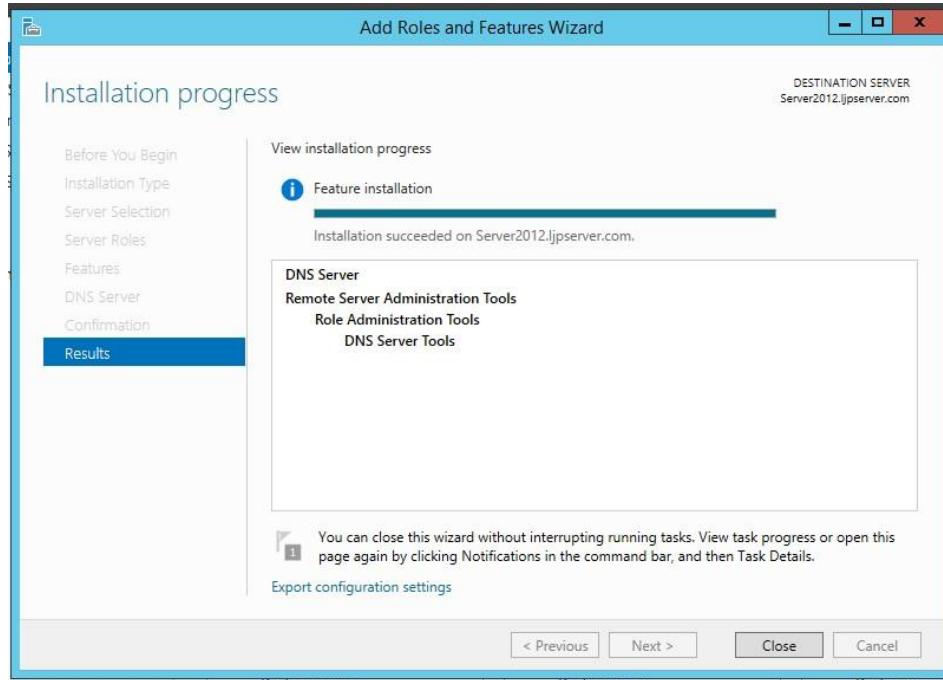
9. Here we just have a confirmation of what we are installing and what features, click **Install**.



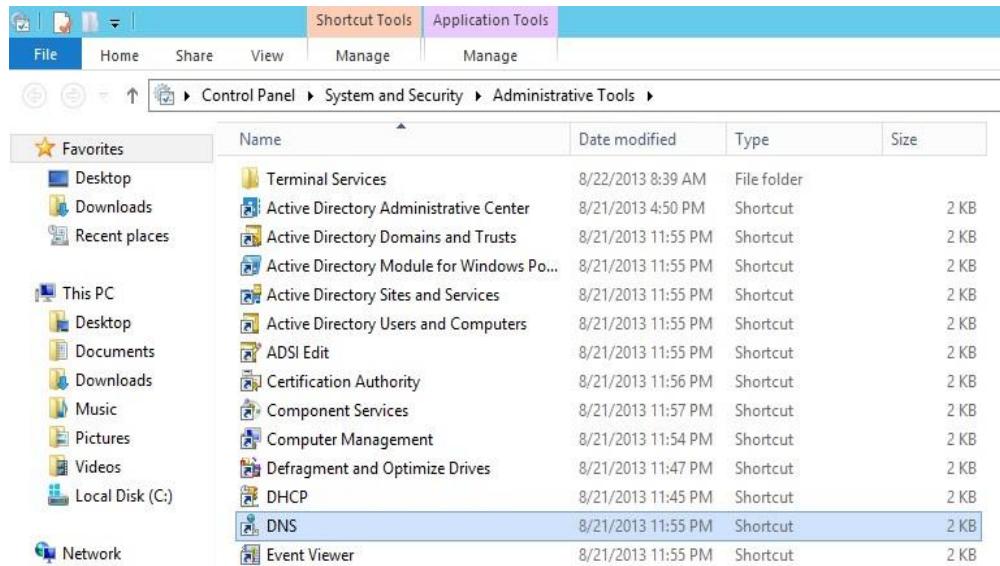
10. You will see the installation progress here.



11. Once installation is completed, click **Close**.



12. Once the installation is done, DNS should be installed; you will also notice an entry for **DNS** inside the context menu for **Administrative tools**.



Experiment: 13

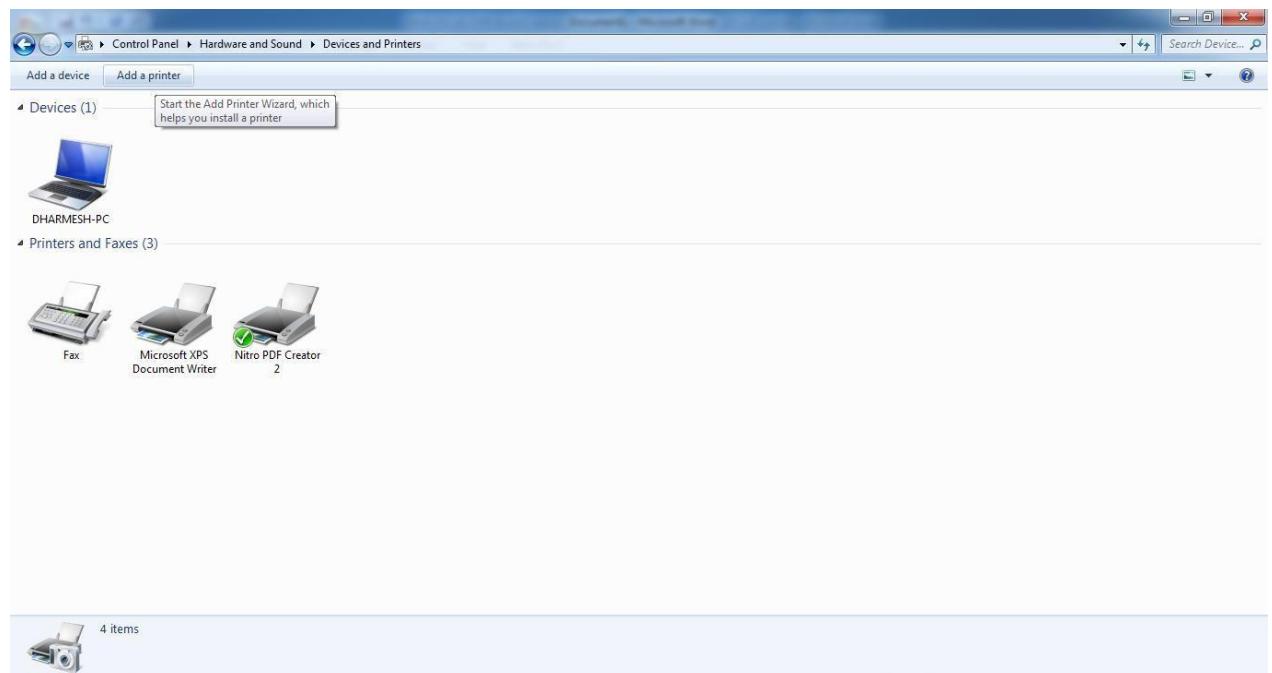
AIM:

Setting up and Configuring local print device.

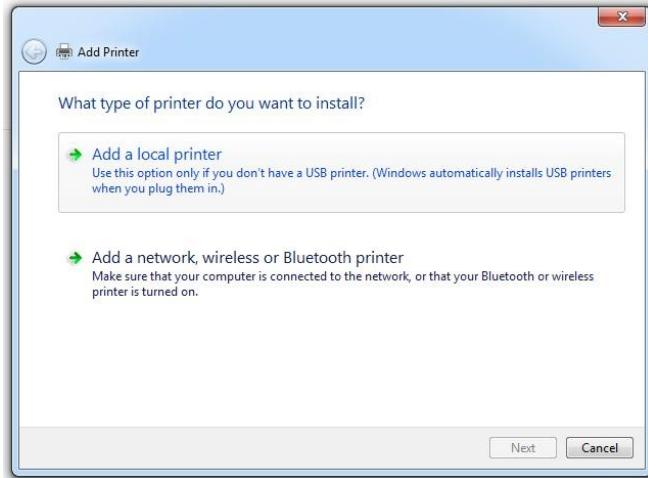
1. Go to control panel.
2. Click on view devices and printers.



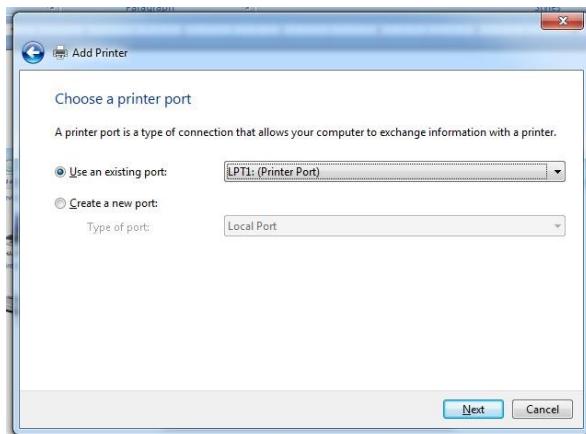
3. Click on add a printer.



4. Choose Add a local printer

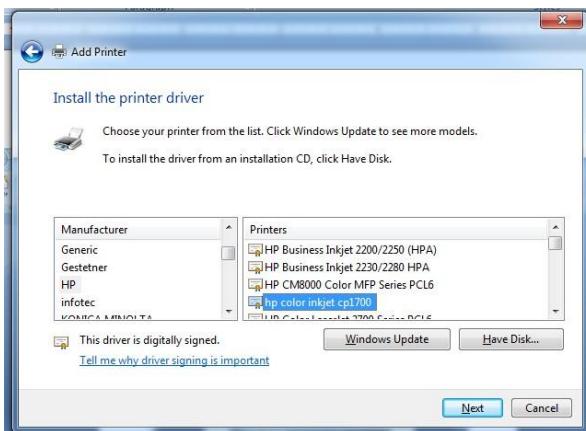


5. Choose a port for printer. Select Use an existing port→LPT1→Next.

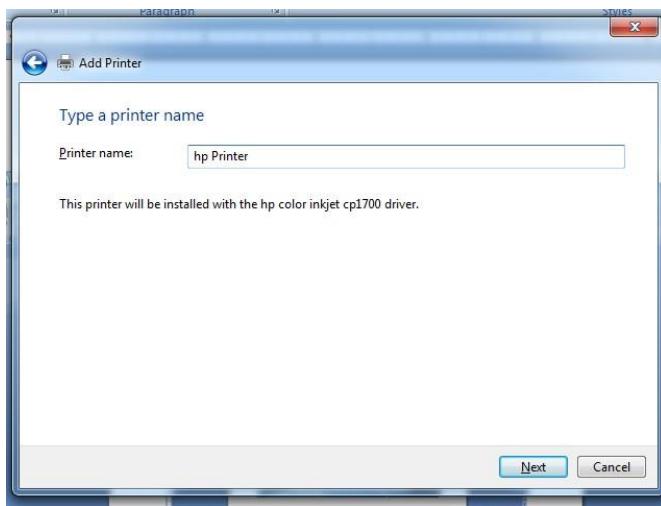


6. Select the printer Manufacturer in left Pane.

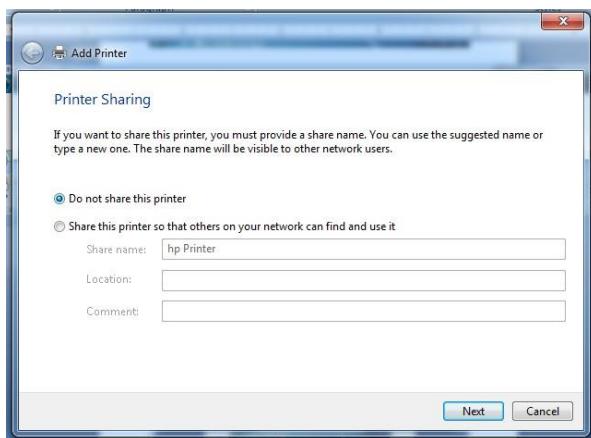
7. All the printers of that manufacturer will be displayed in the right pane. Select appropriate printer→ Next.



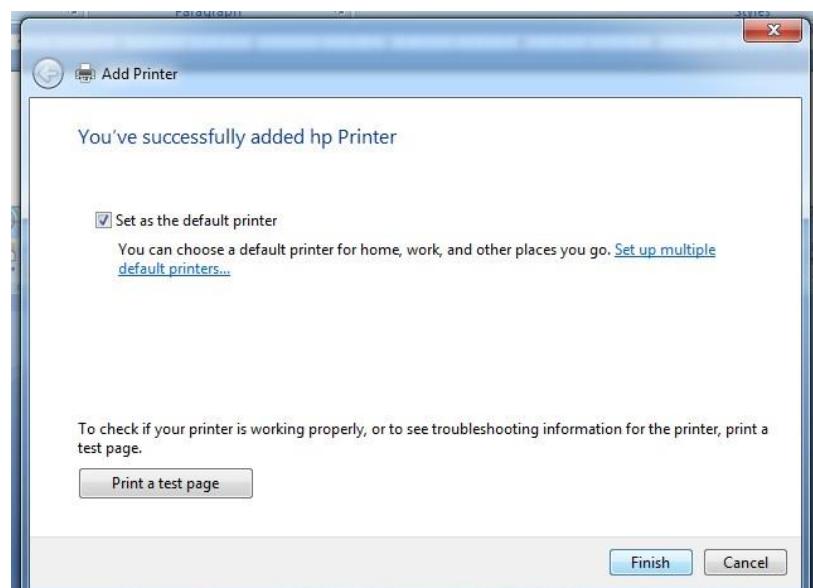
8. Give a name to the printer→ Next.



9. In Printer Sharing select → Do not share this printer→ Next.

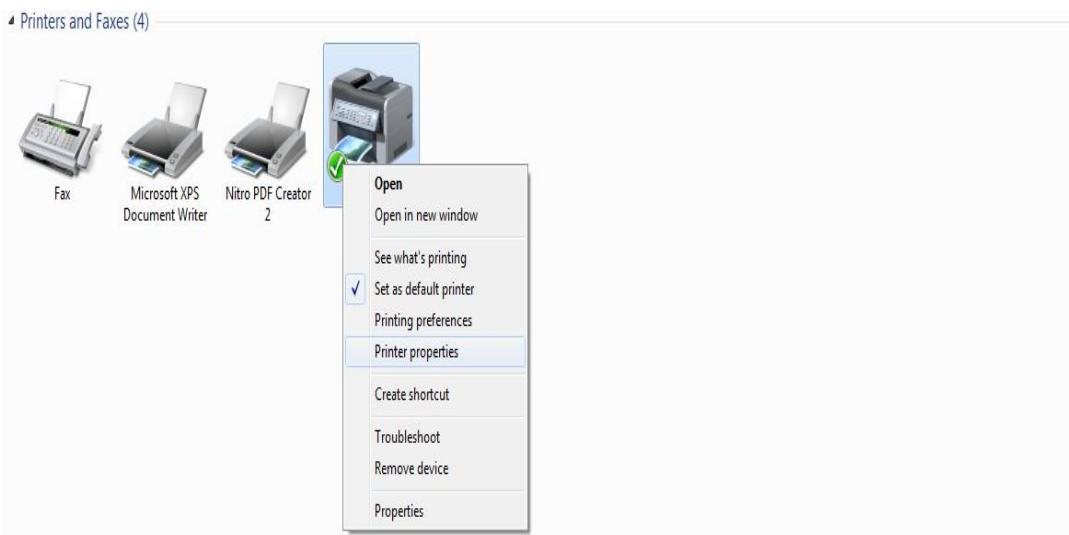


10. If you want to set it as default then select **Set as default printer**. Otherwise do not select it. Then click on **Finish**.

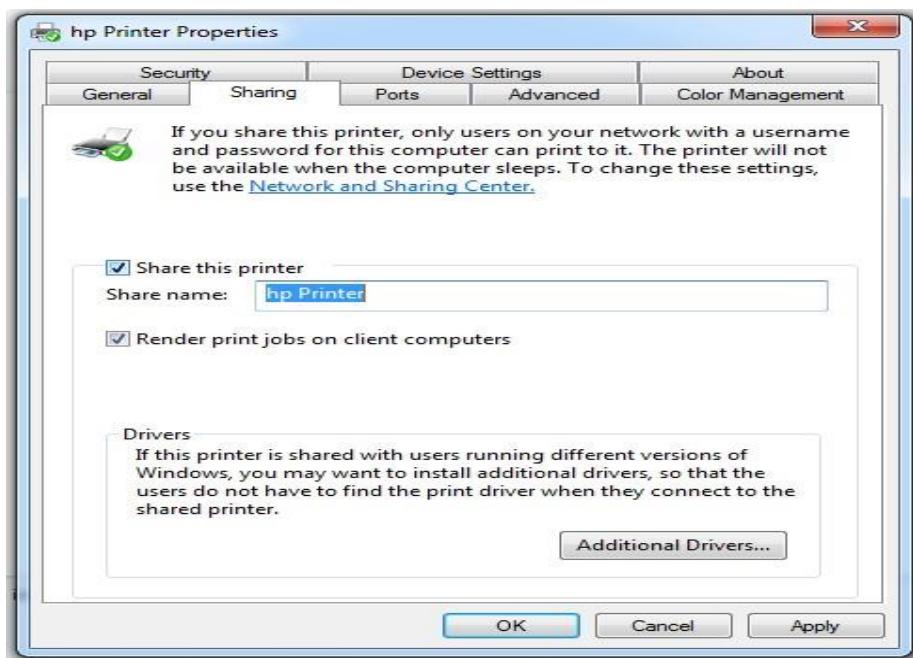


Sharing the local Printer

1. Go to control panel then select “view devices and printers”. Right click the Printer and choose Printer Properties.



2. Go to sharing tab and enable the option “Share this printer”. You can set its Share name. Now click on Apply and then OK.



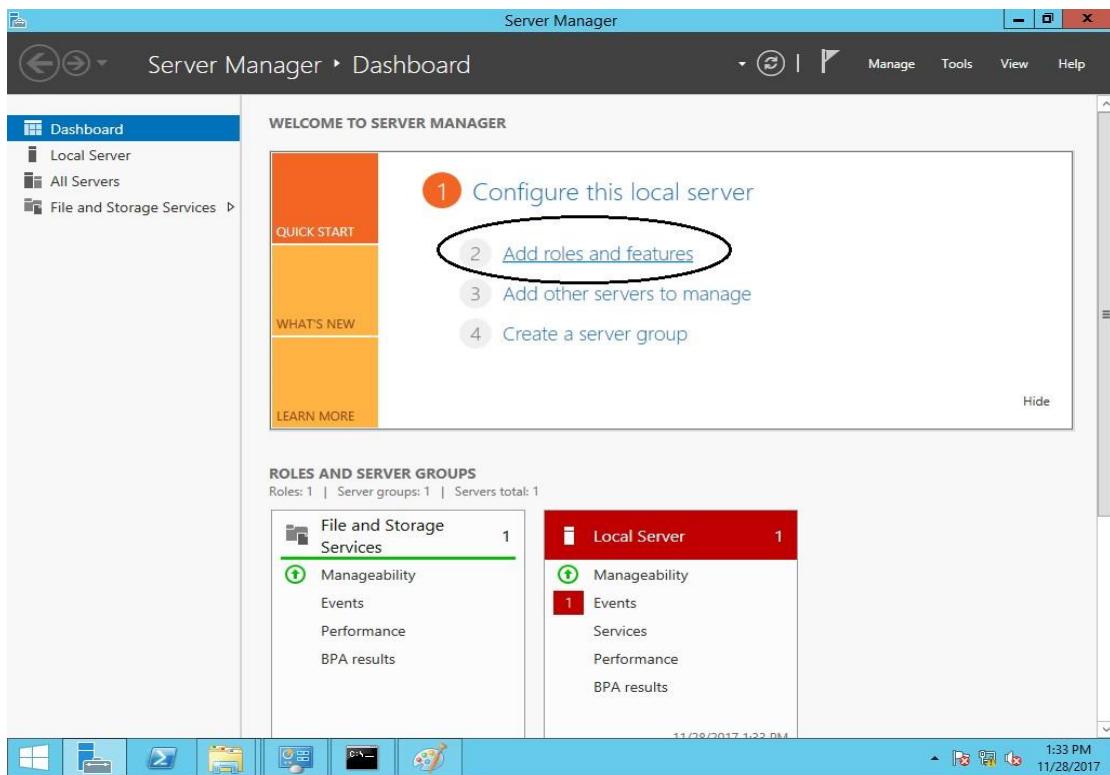
Experiment: 14

AIM:

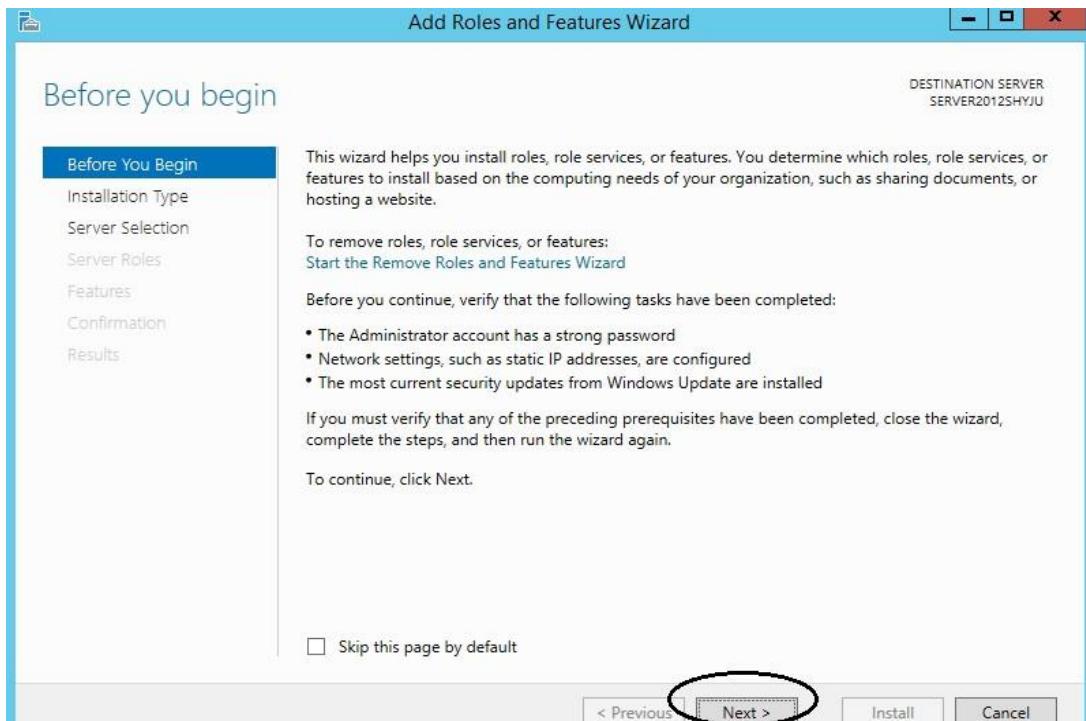
Setting up and Configuring network print device.

Install Print and Document Services role

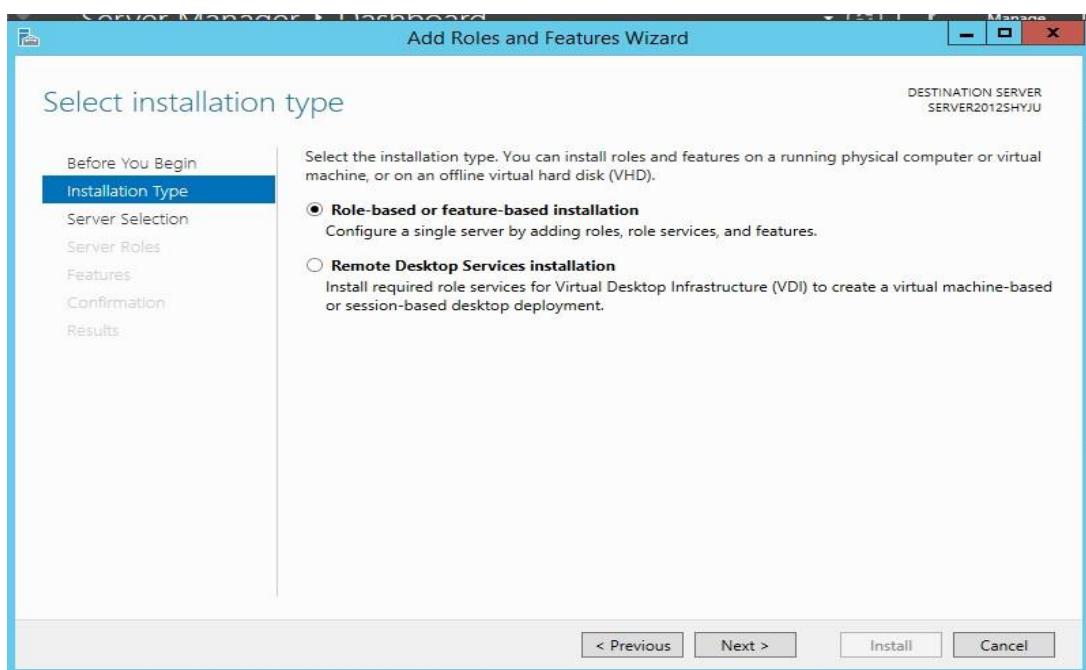
1. Login to your 2012 R2 server as an administrator. Your Server 2012 domain must have the following roles present.
 1. Active Directory
 2. DHCP Server
 3. DNS Server
2. Click on “Add roles and features” from the Dashboard



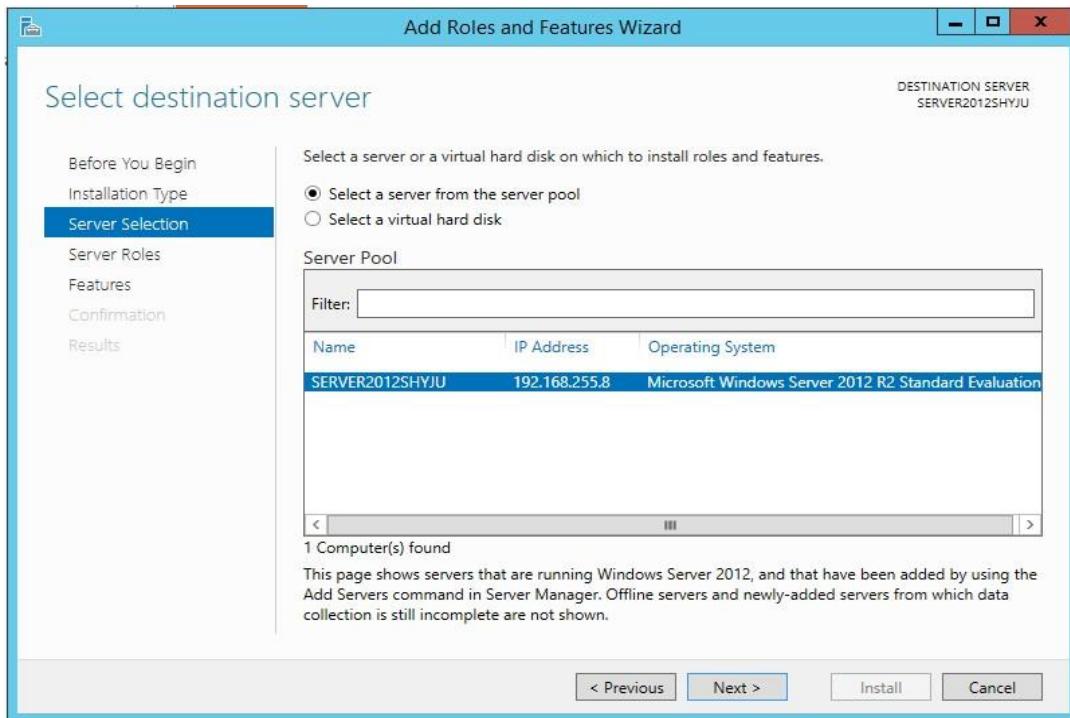
3. Click Next on the “Add Roles and Features Wizard” Welcome page.



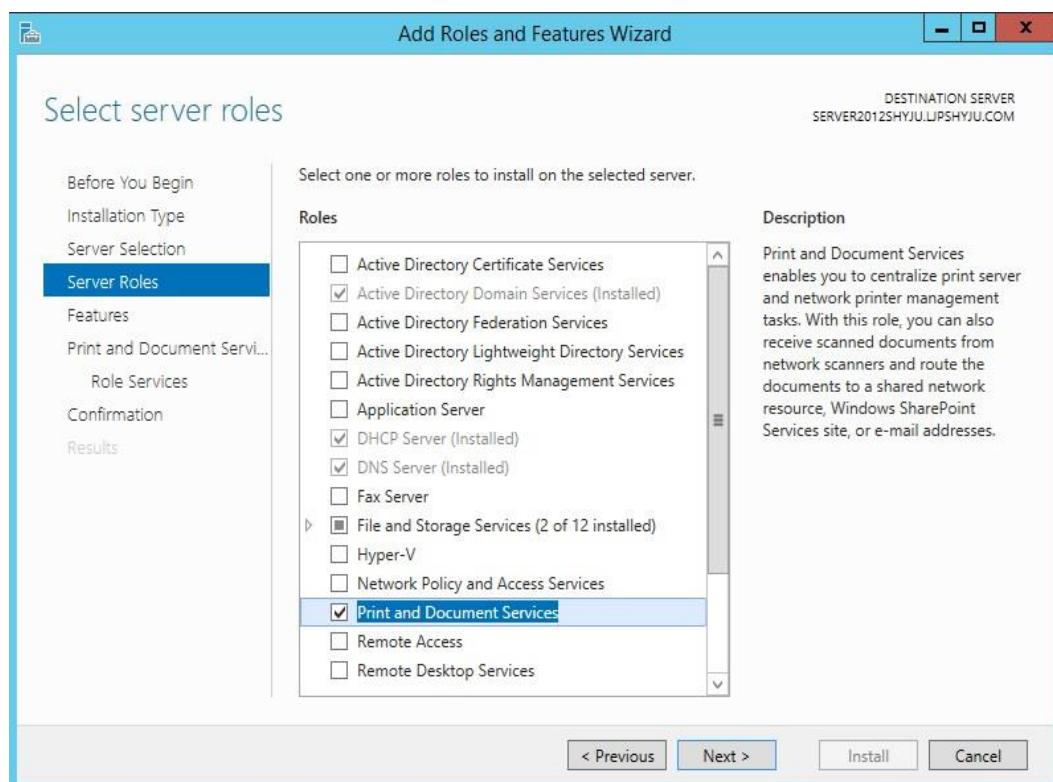
4. Make sure “Role-based or feature-based installation” option is selected.



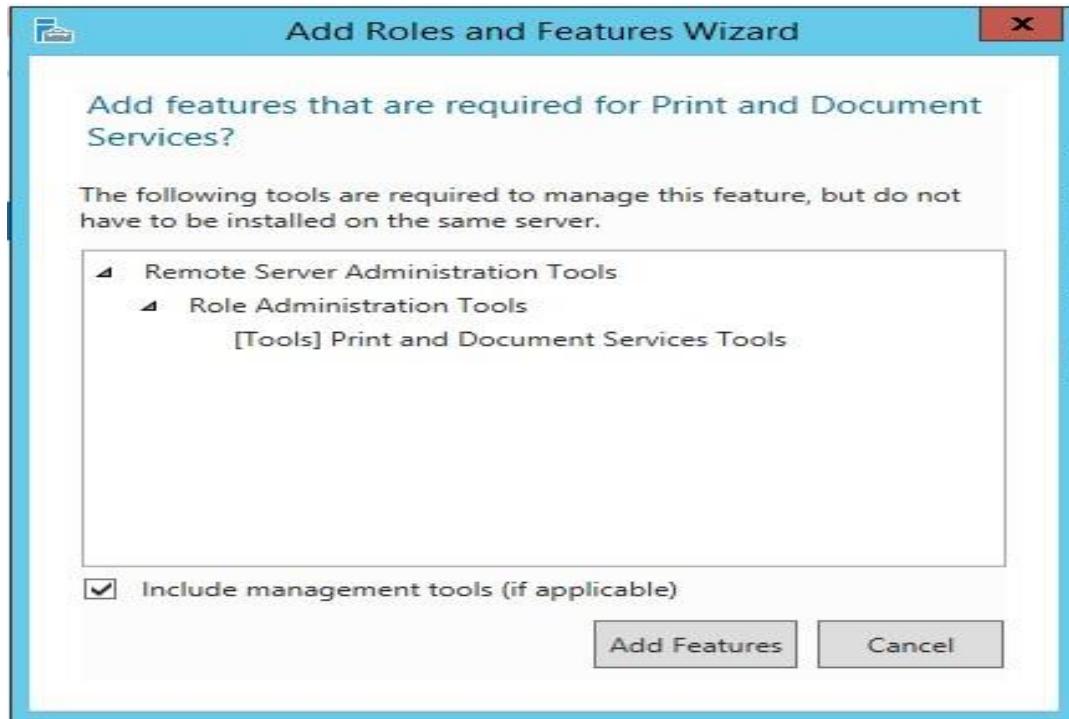
5. Select the destination server where this new role would be installed.



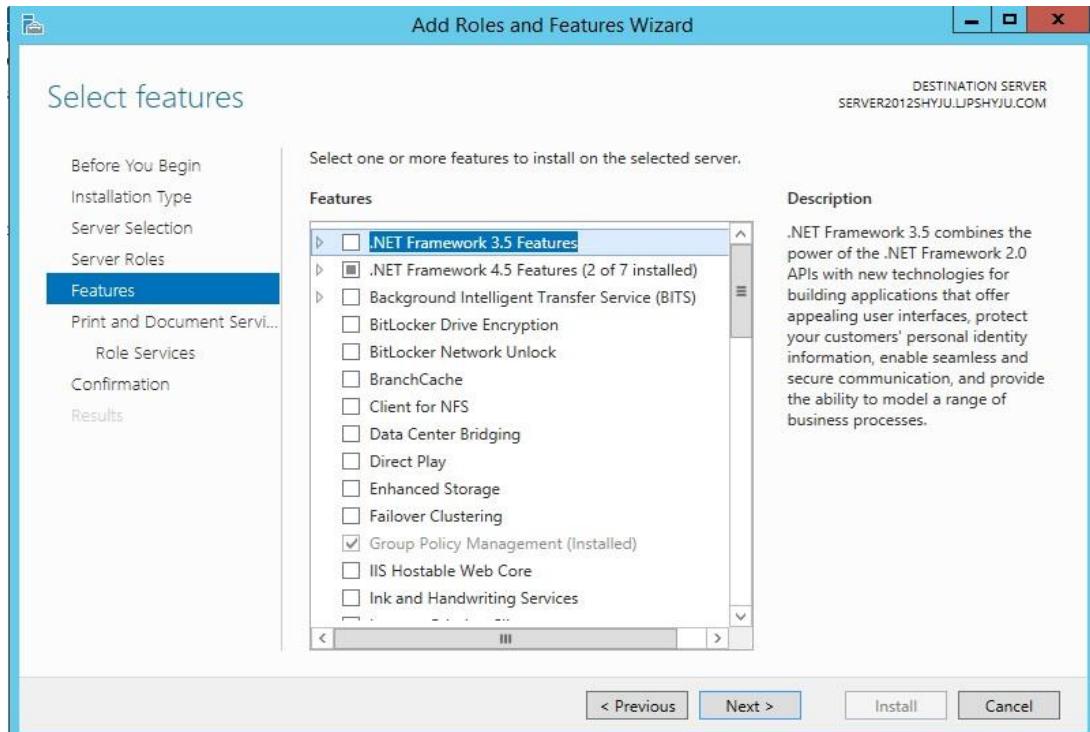
6. Select and tick the checkbox of Print and Document Services on the Server Roles page.



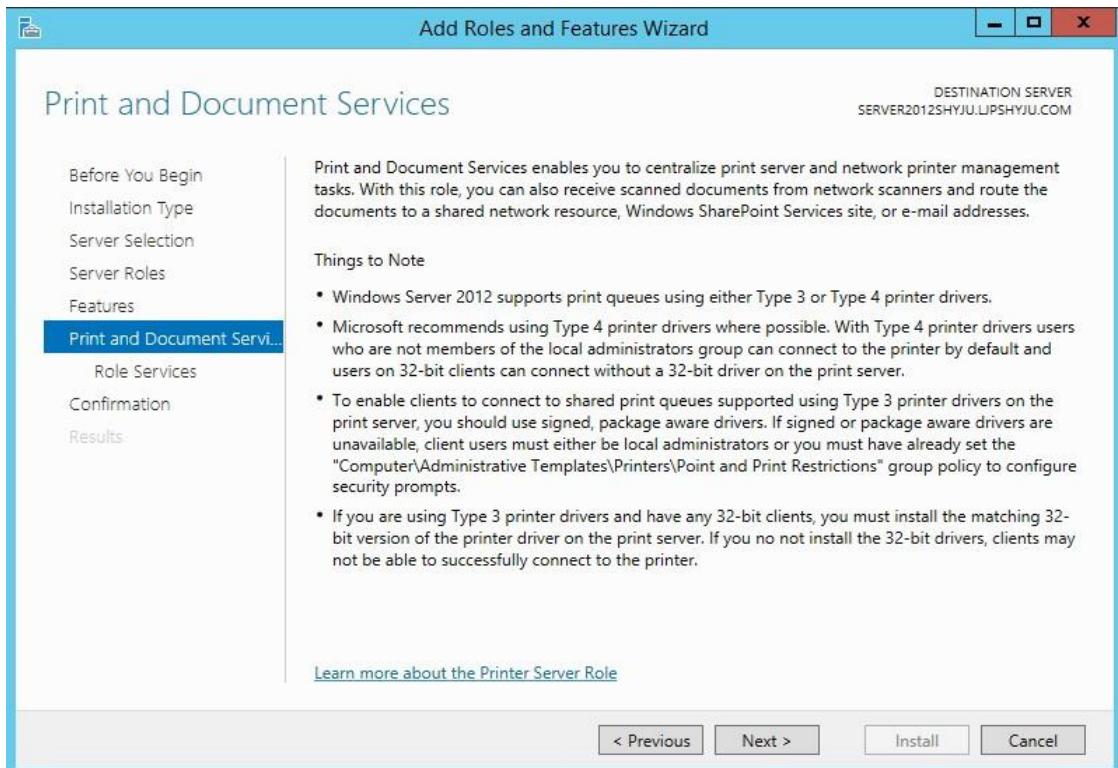
7. Click Add Features on Add Roles and Features Wizard.



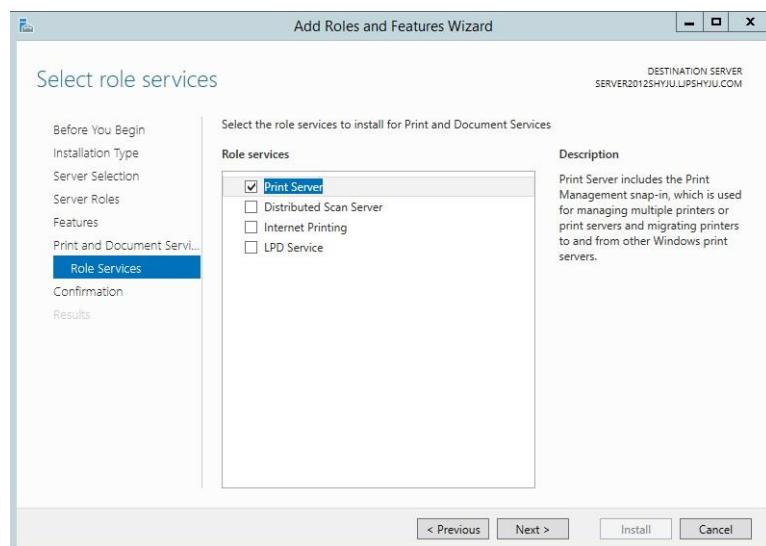
8. Click Next , no additional features are need to be installed



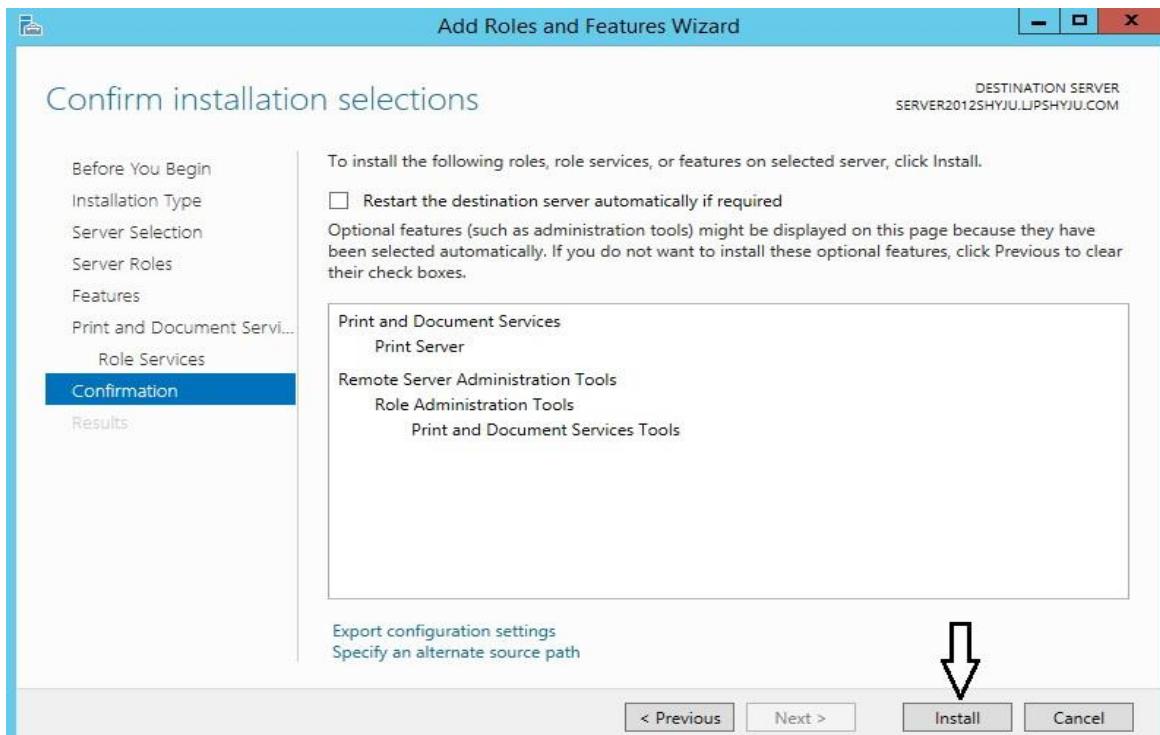
9. Click Next on Print and Document Services role description page.



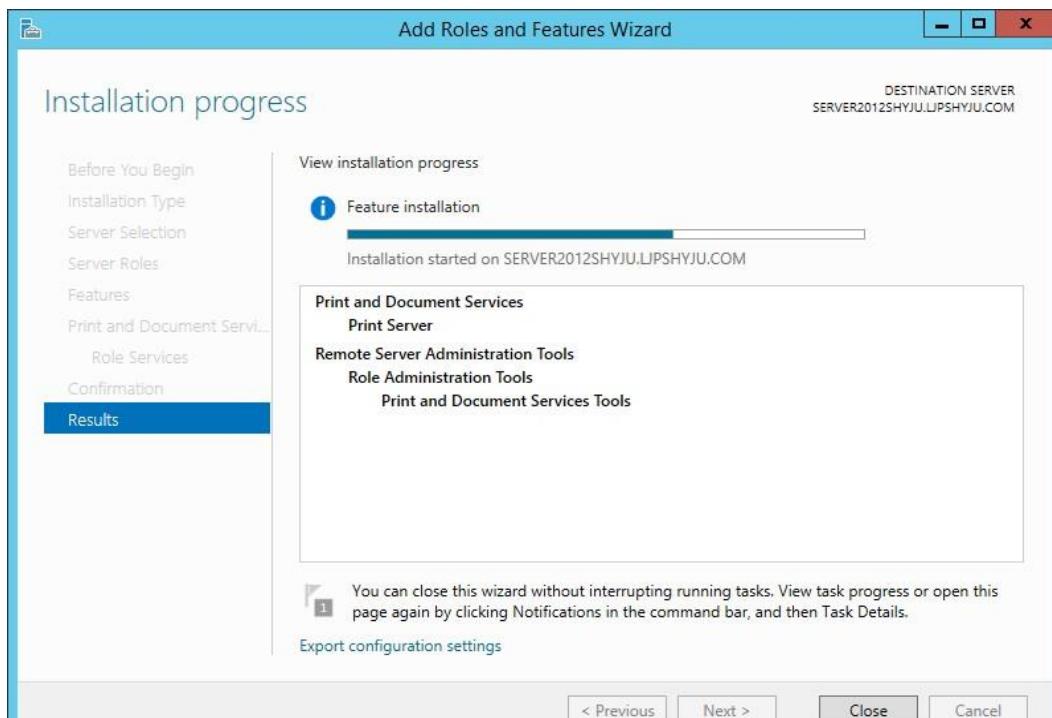
10. Select the Print Server on Role services page.



11. Confirm Installation and click Install



12. Installation Progress page appears as below.



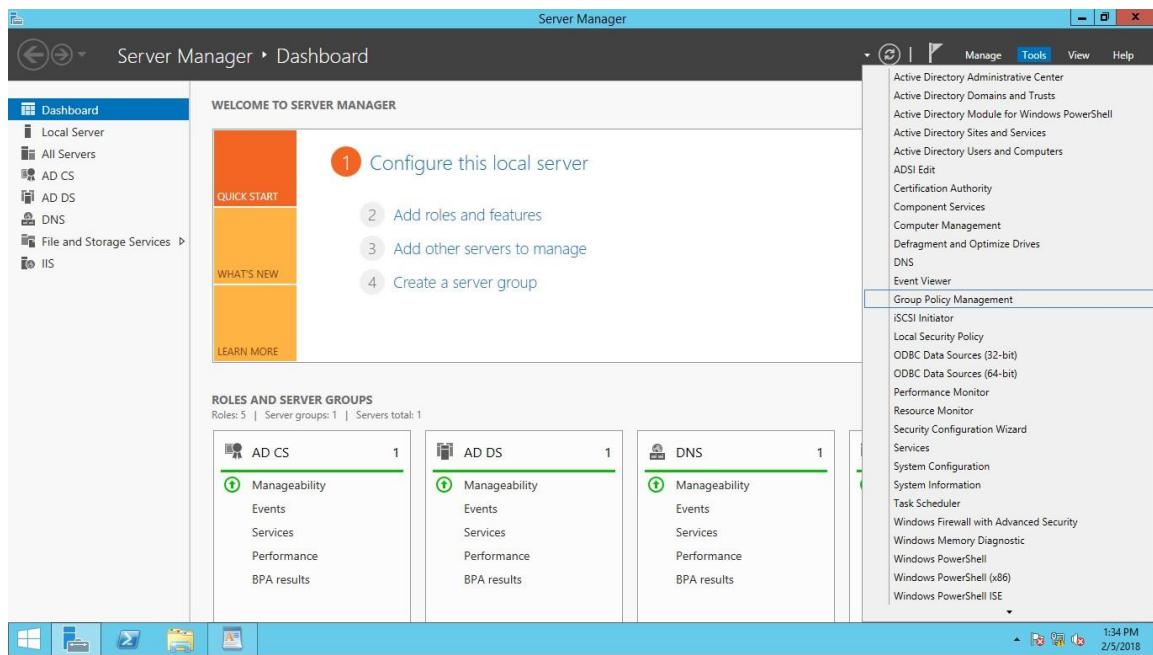
13. Click Close after installation succeeds

Experiment: 15

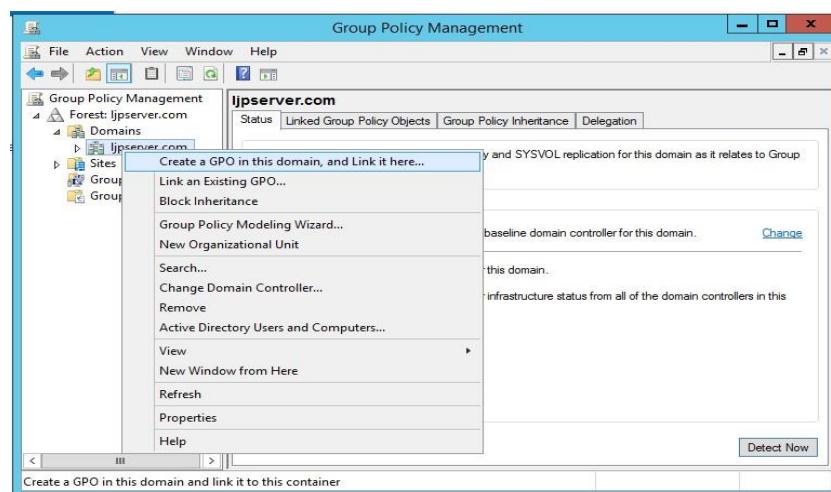
AIM:

Implementing Group Policy in Windows Server 2012 R2.

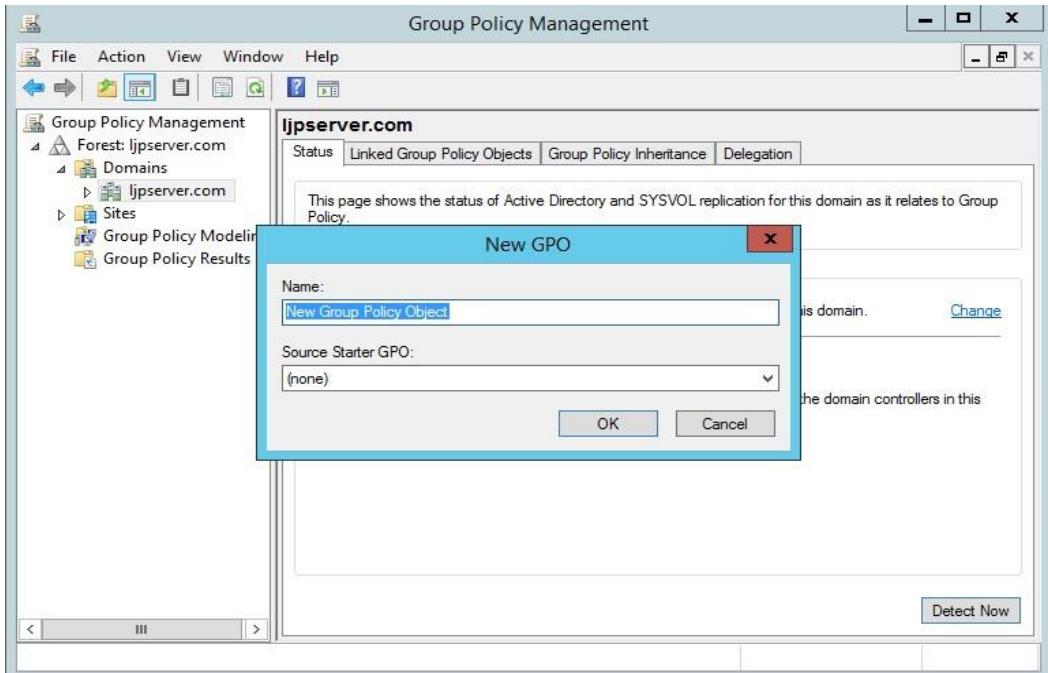
1. Open Server Manager. Then click on Tools and then select Group Policy Management.



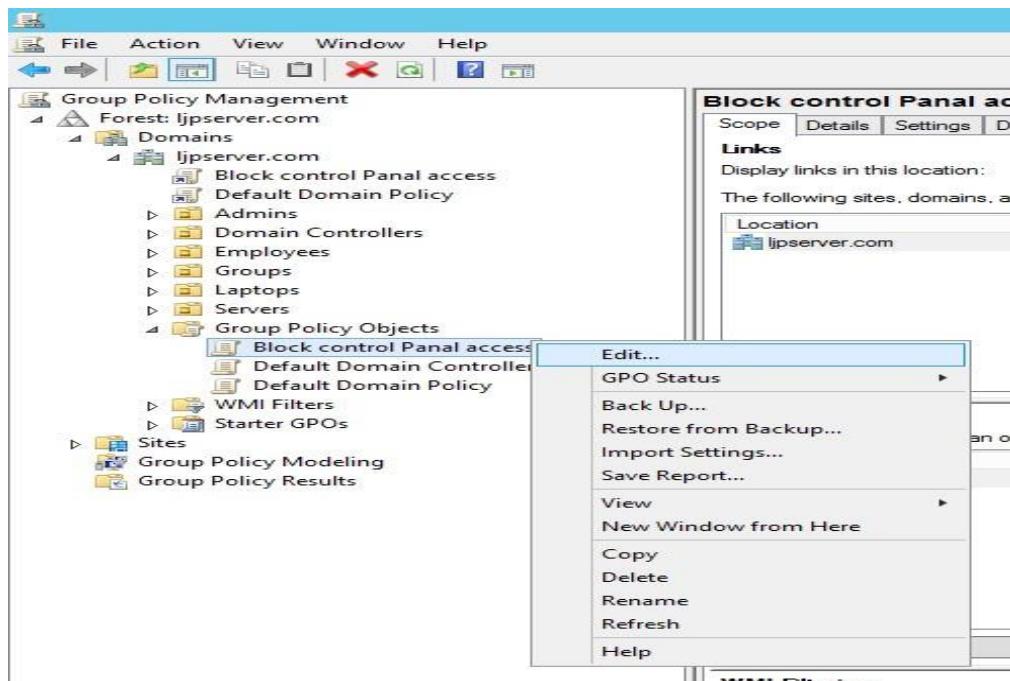
2. Right click on the name of your domain and from the context menu select, **Create a GPO in this domain and Link it here.**



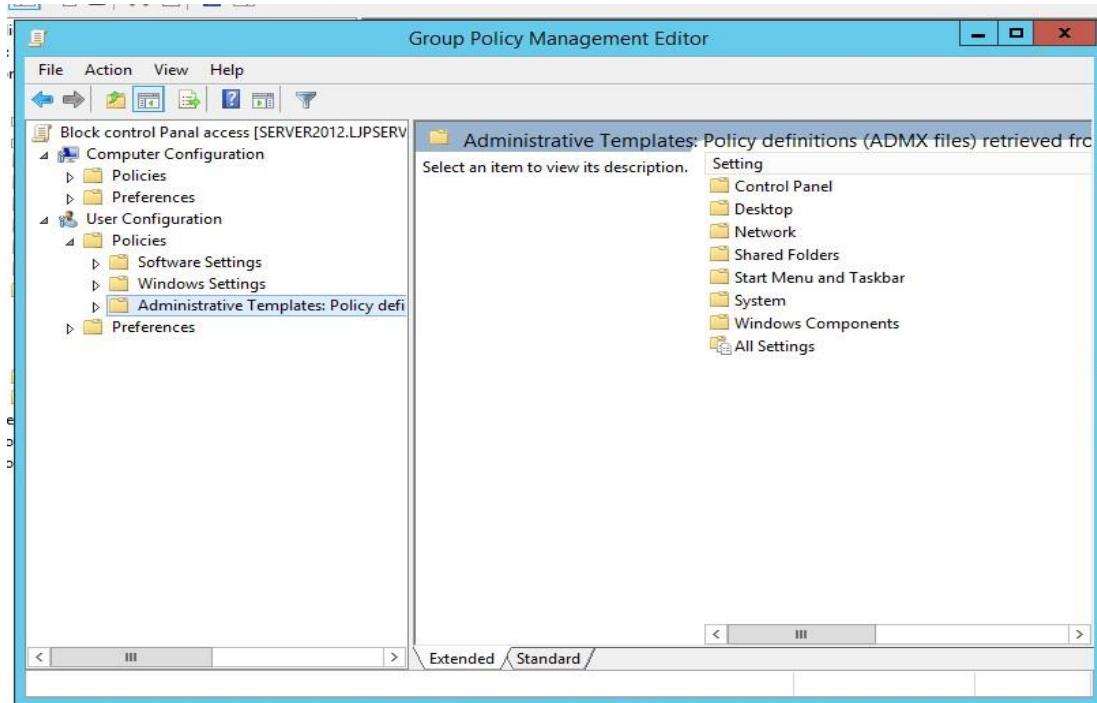
3. Name the new GPO “Block Control Panel Access.” And click OK.



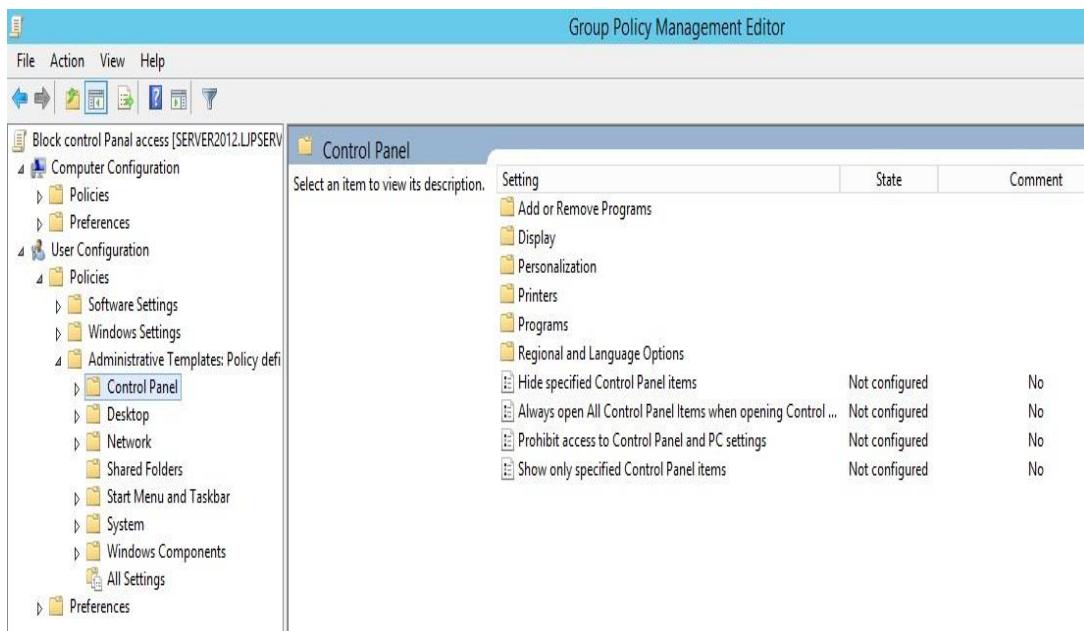
4. Under Group Policy Objects, right click on the new GPO just created and select Edit.



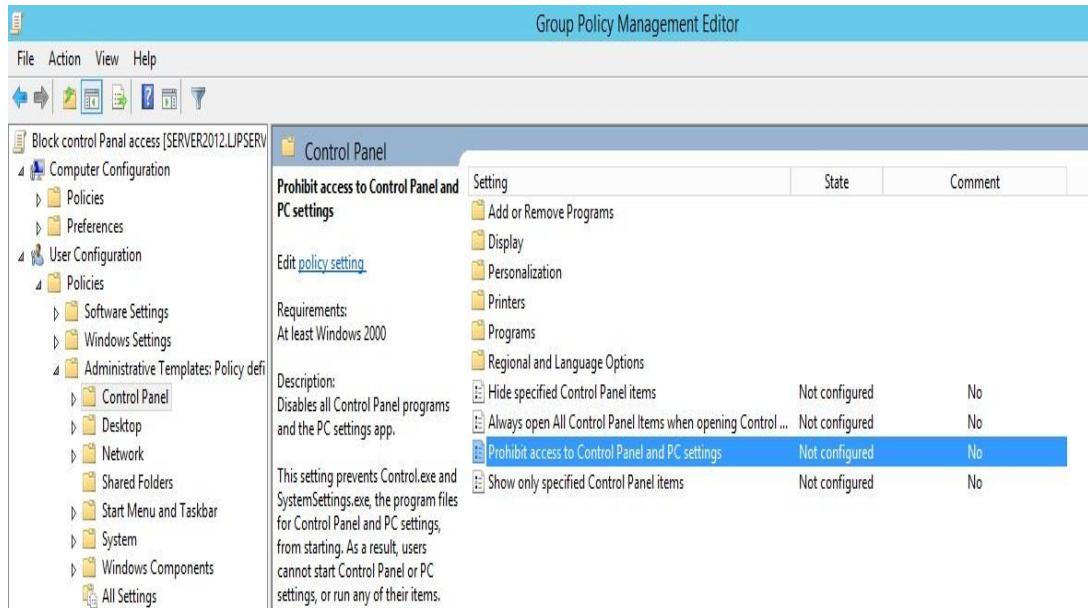
5. Under Block Control Panel access, expand User Configuration then expand Policies and then select Administrative Templates Policy definition.



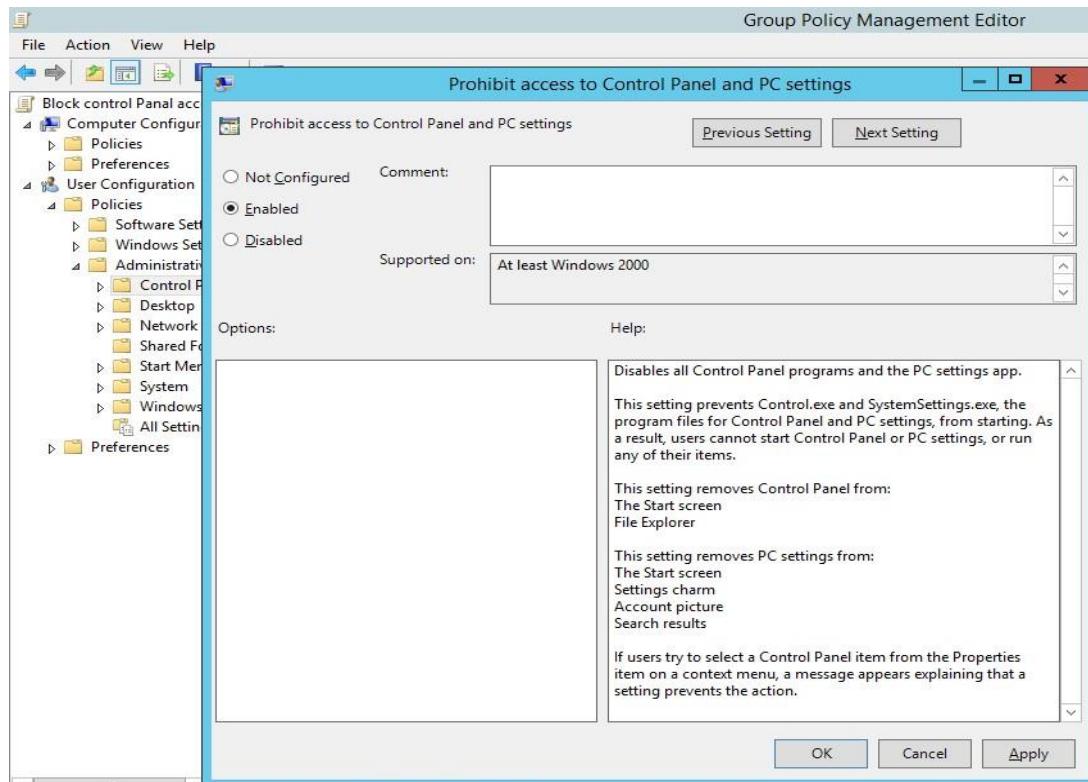
6. Expand Administrative Templates Policy definition, select Control Panel.



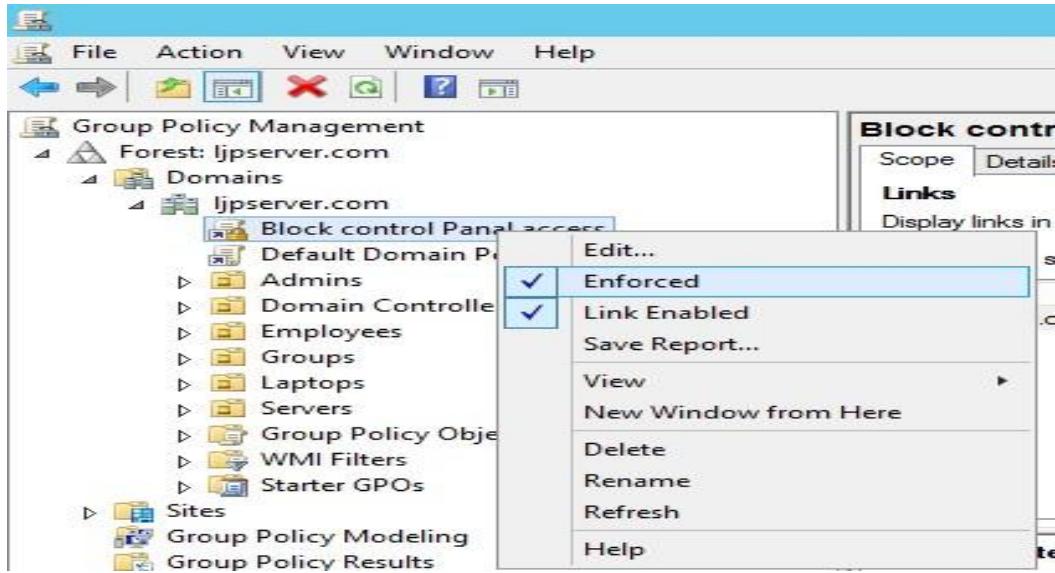
7. From right panel, select **Prohibit access to Control panel and PC settings**.



8. Now click on **Enable**. Then **Apply** and **OK**.



9. To ensure that the new setting takes effect, you can right click on your new GPO and ensure that it is linked to the domain and it is being enforced. Unless click on **Enforced**.



Experiment: 16

AIM:

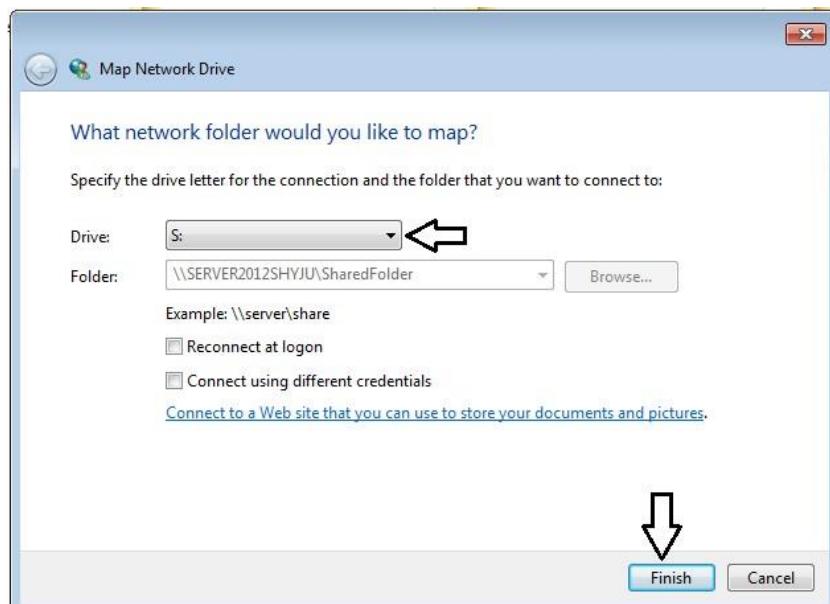
Creating Mapped Drive using Group Policy.

Mapping Drives

- Shares can be used by opening them through Network Neighborhood, My Network Places, or Network, and they function just like the folders in My Computer.
- Frequently you might want to simulate a connected hard disk on your computer with a share from the network. For example, many applications that store files on the network require that the network folders be accessible as normal drive letters.

Steps for creating map drive are

1. Open Network from the client computer.
2. Locate the share you want to map, right-click it, and choose Map Network Drive. In the dialog box that appears, the name of the domain and share will already be filled in for you. Simply select an appropriate drive letter for the mapping and click Finish.

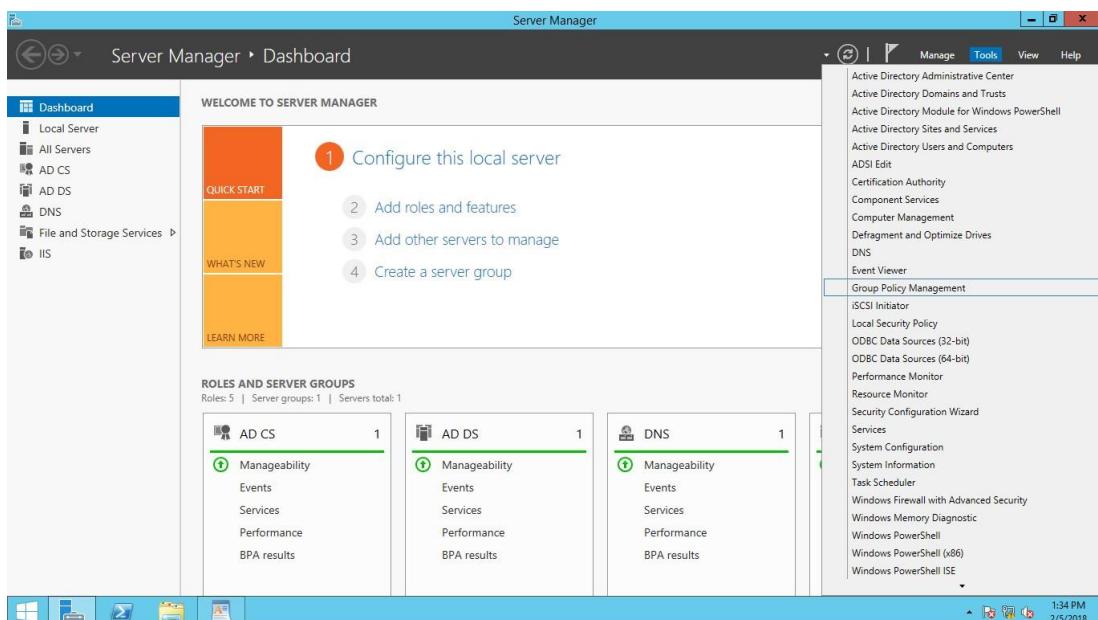


Experiment: 17

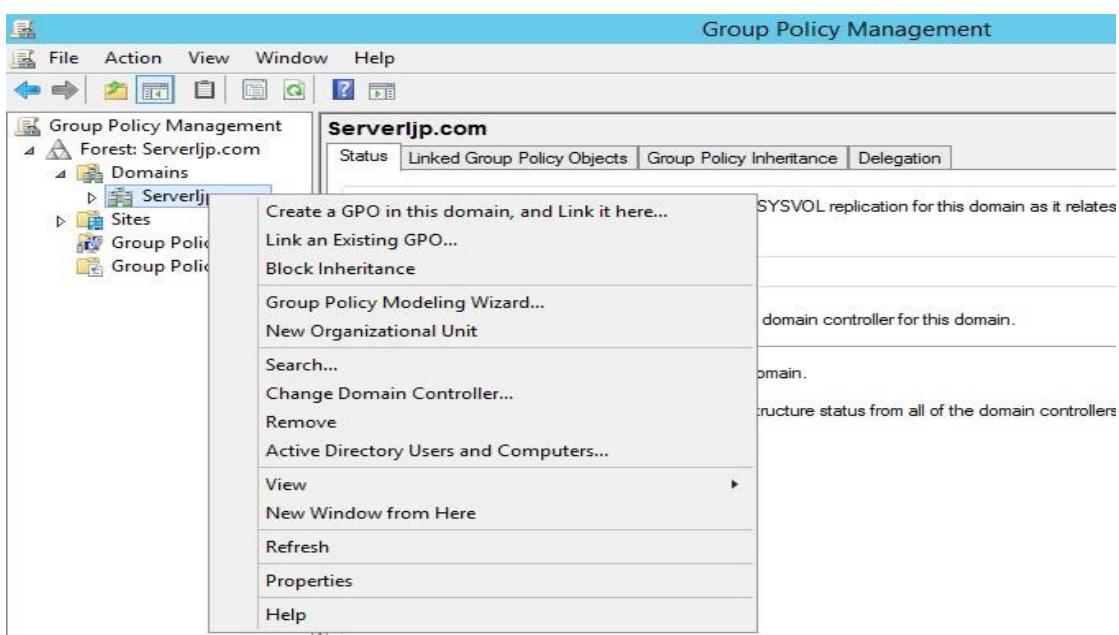
AIM:

Creating Desktop Configuration using Group Policy.

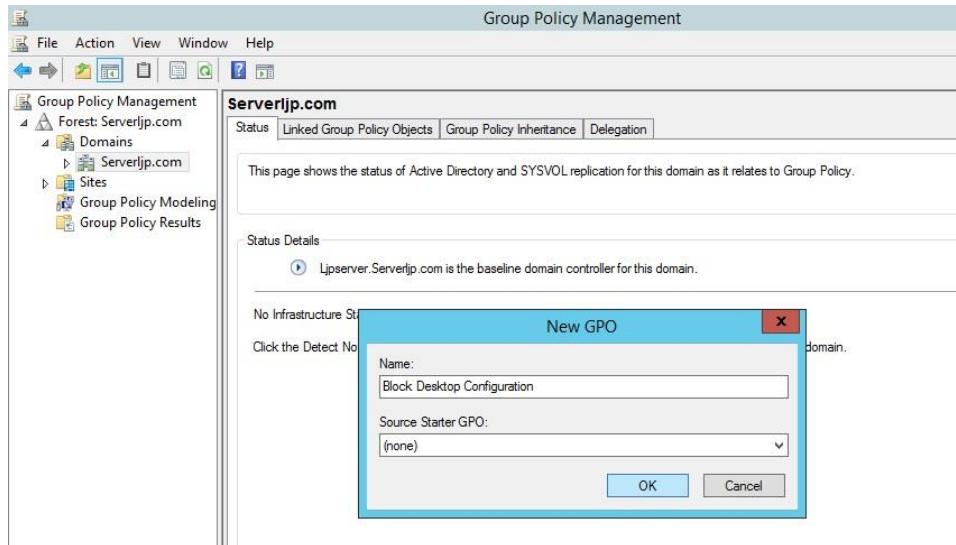
1. Open Server Manager. Then click on Tools and then select Group Policy Management.



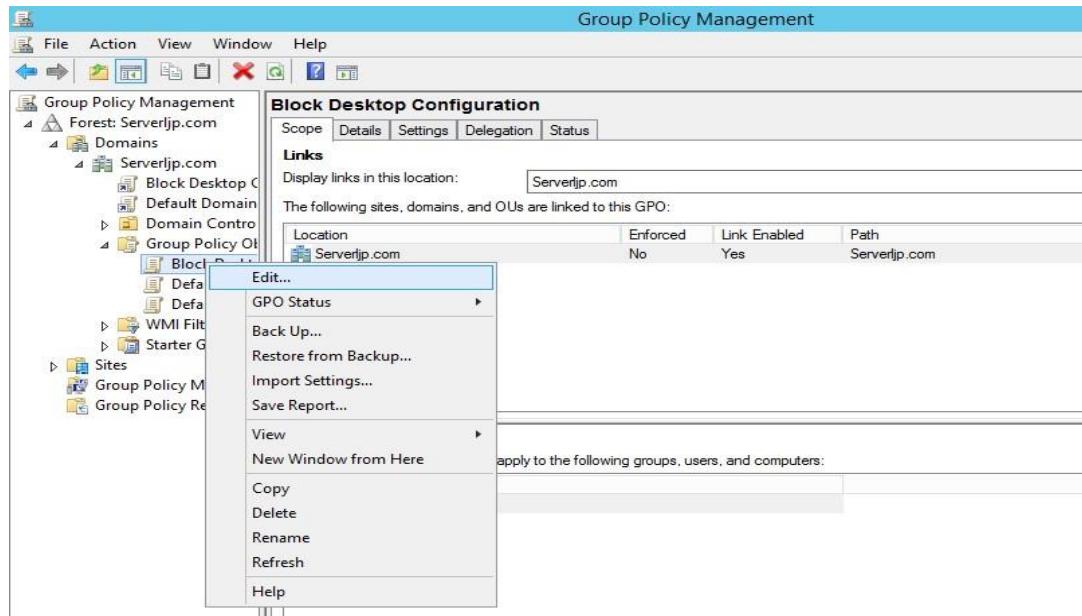
2. Right click on the name of your domain and from the context menu select, Create a GPO in this domain and link it here.



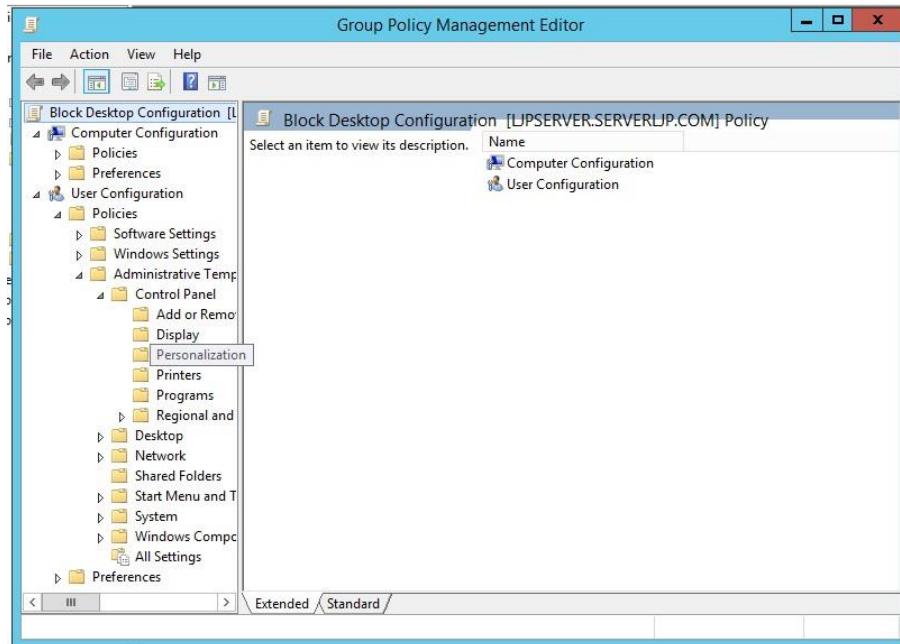
3. Name the new GPO “Block Desktop Configuration” And click OK.



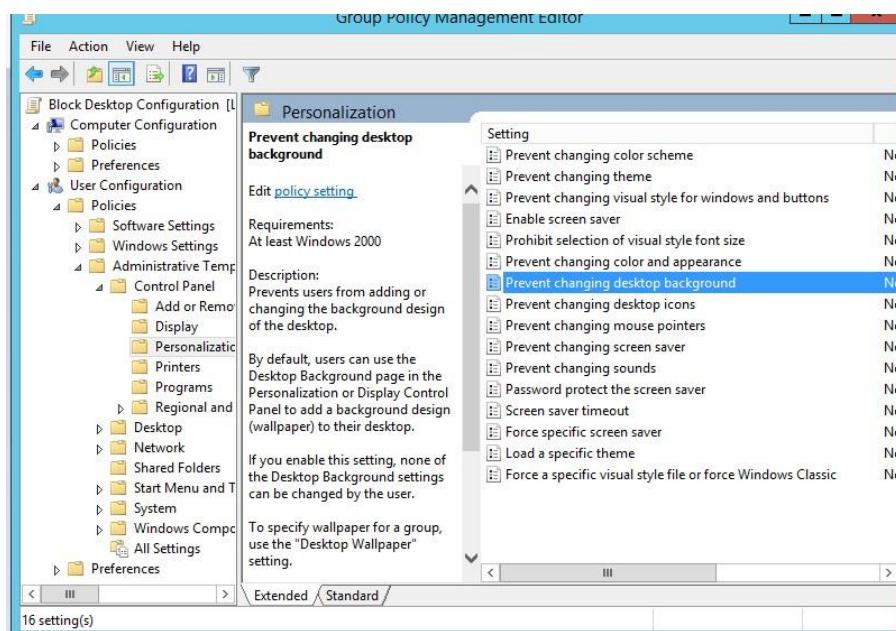
4. Under Group Policy Objects, right click on the new GPO just created and select Edit.



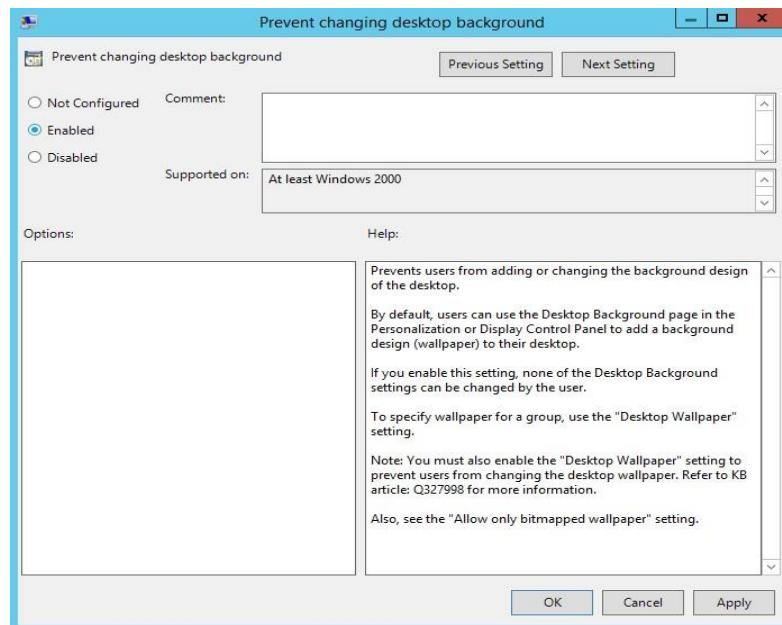
5. Under Block Desktop Configuration, expand User Configuration then expand Policies and then select Administrative Templates Policy definition.



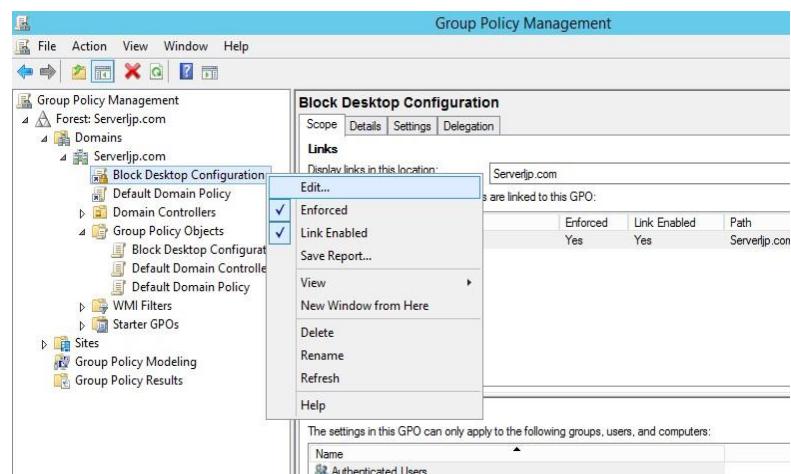
6. Expand Administrative Templates Policy definition, expand Control Panel and select personalization.
From right panel select Prevent changing desktop configuration.



7. Now click on Enable. Then Apply and OK.



8. To ensure that the new setting takes effect, you can right click on your new GPO and ensure that it is linked to the domain and it is being enforced. Unless click on Enforced.



Experiment: 18

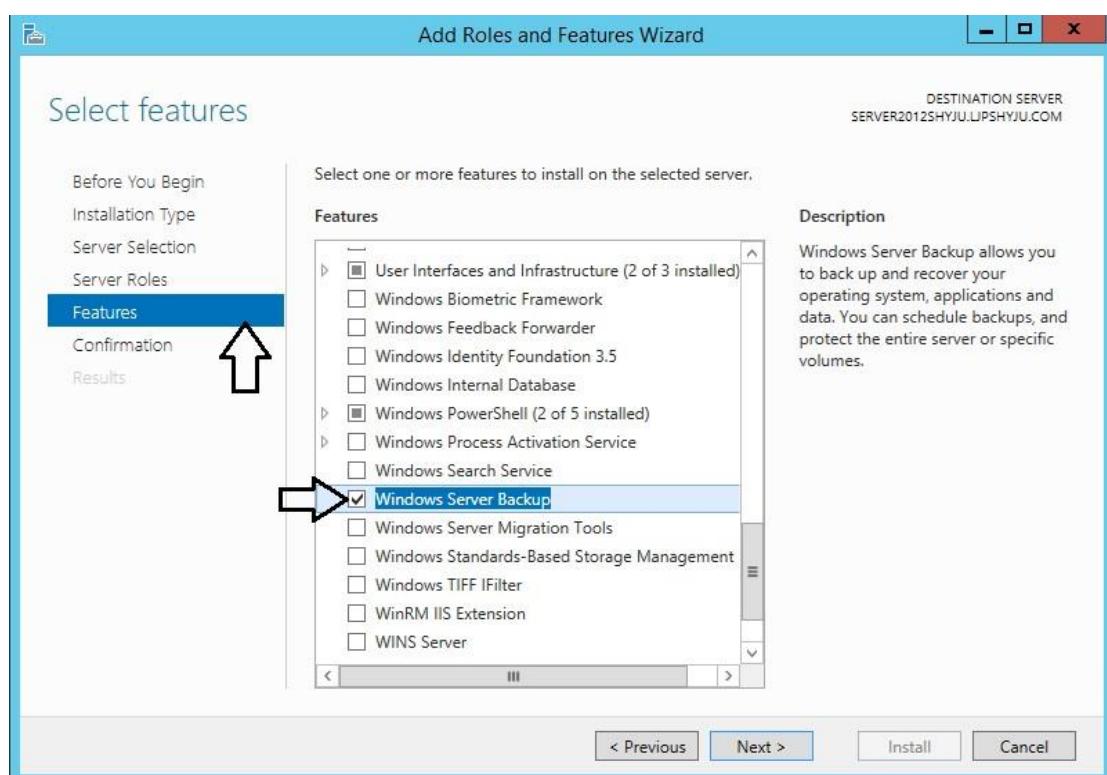
AIM:

Installing and Configuring Backup Services.

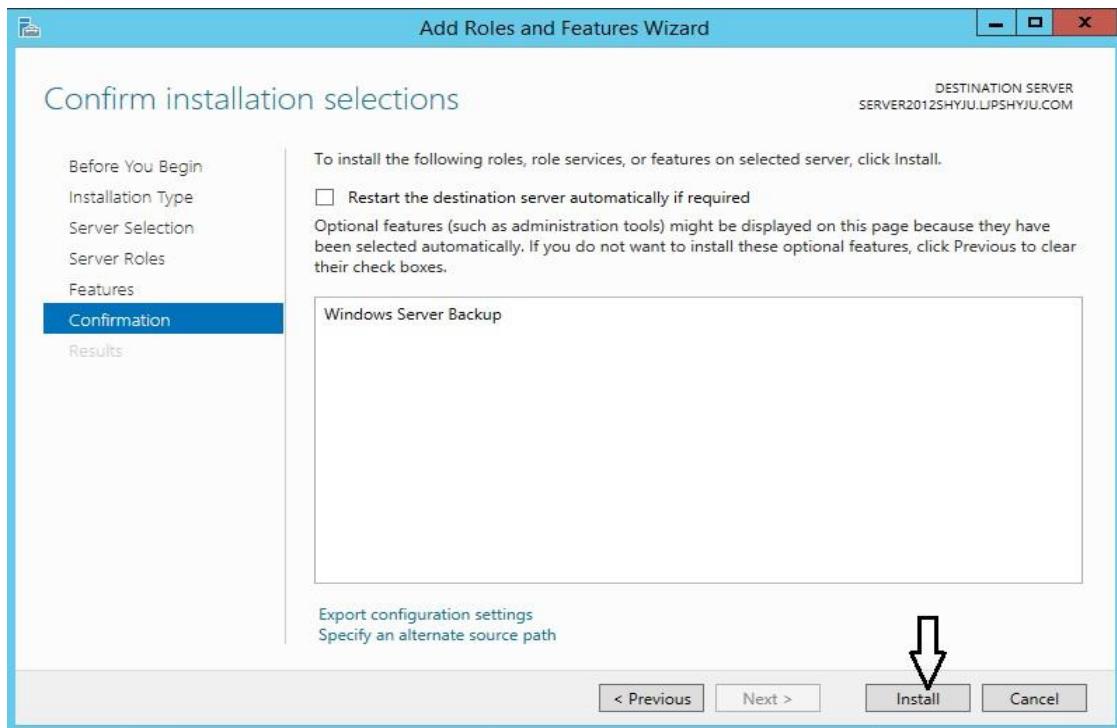
Backup – Using Windows Servers Backup Software

Steps to install and configure Windows Server Backup Software are

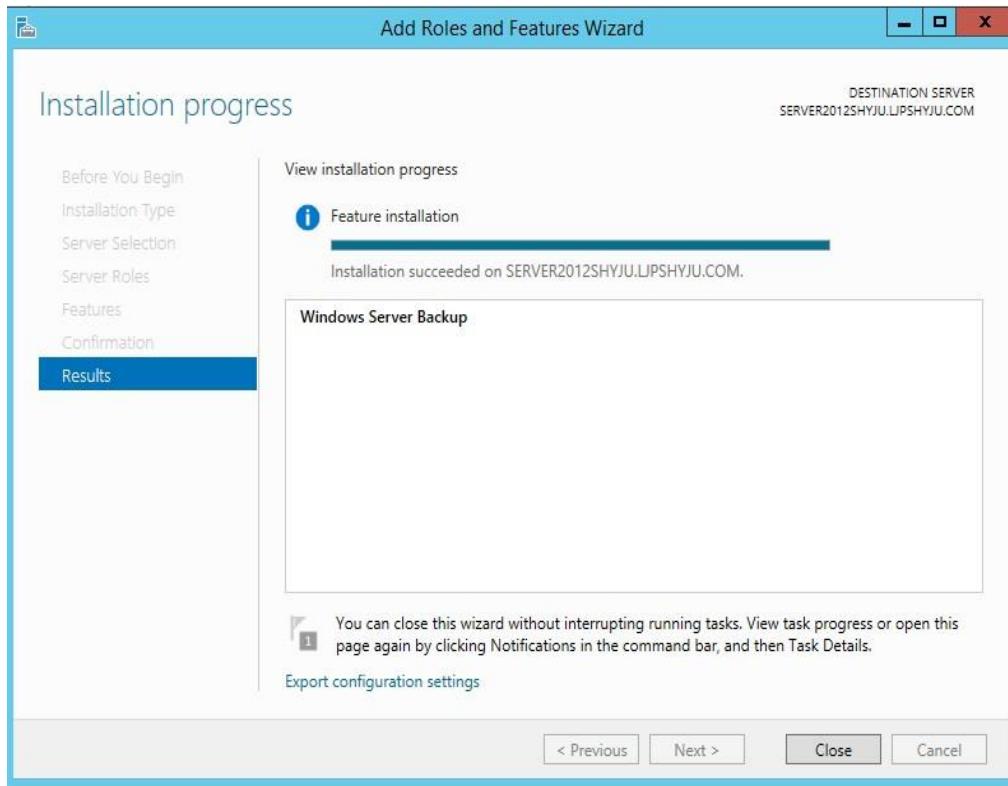
1. Open the Server Manager from taskbar.
2. Click on “Add roles and features” from the Dashboard.
3. Click Next on the “Add Roles and Features Wizard” Welcome page.
4. Select “Role-based or feature-based installation” option.
5. Select the destination server where this new role would be installed.
6. Click Next on Server Roles selection page (Nothing to select here).
7. On the features page, scroll down to the Windows Server Backup feature, select the box and click next.



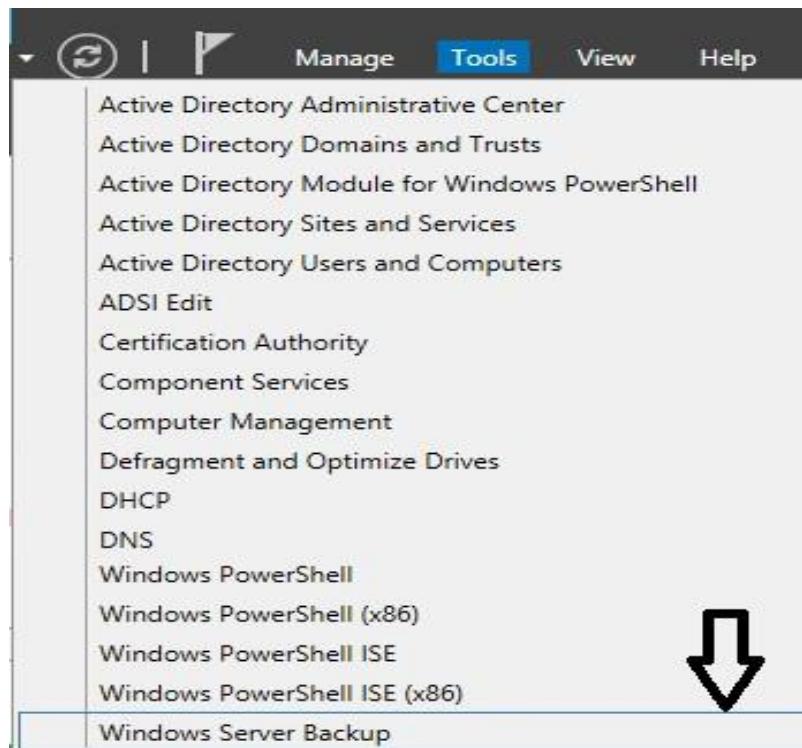
8. Confirm your selection and click install.



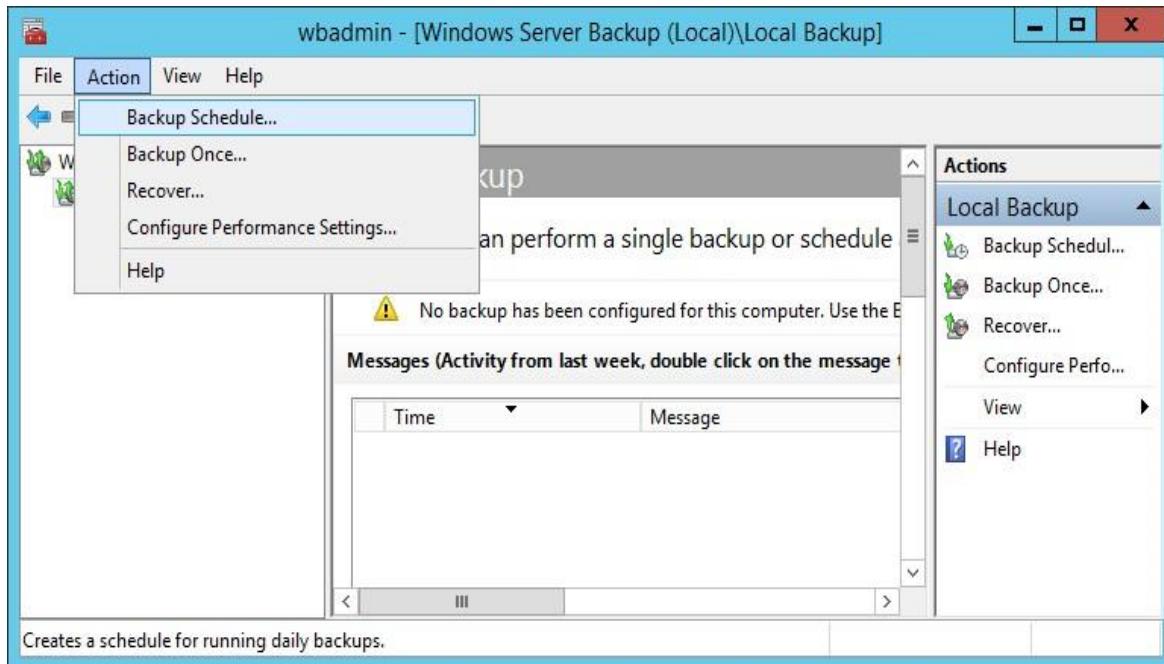
9. Allow the install to complete and click on close.



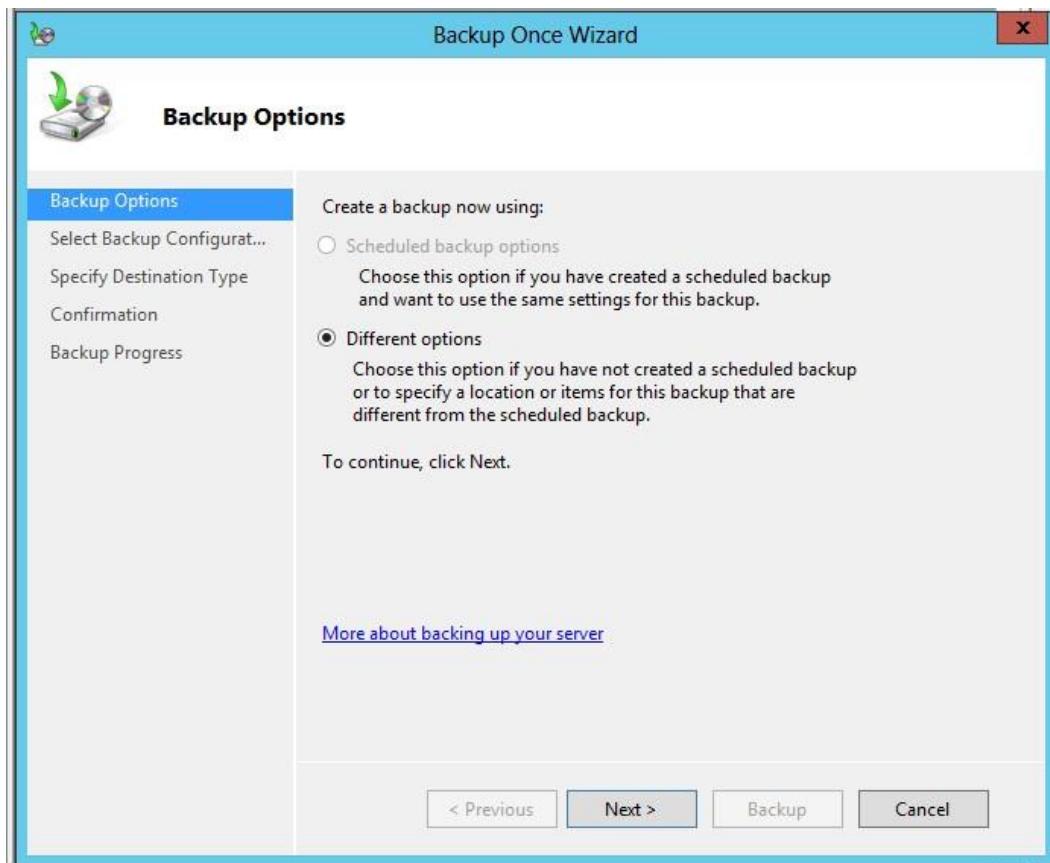
10. Go back at Server Manager, click on Tools, scroll to the bottom of the list and click on Windows Server Backup.



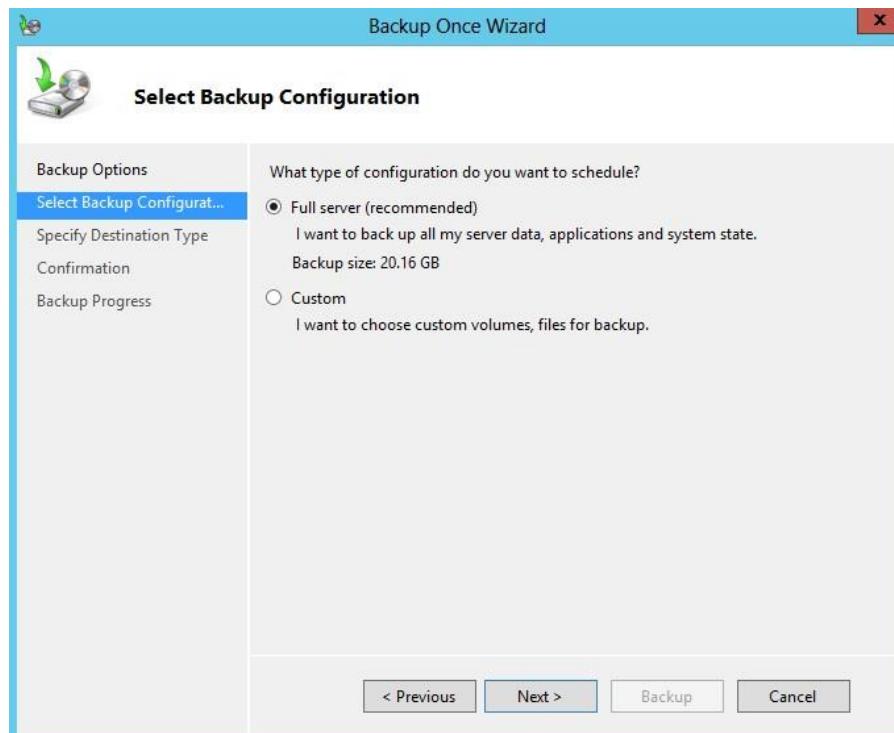
11. From the left window pane select Local backup and from the toolbar, click on Action and from the context menu select Backup once.



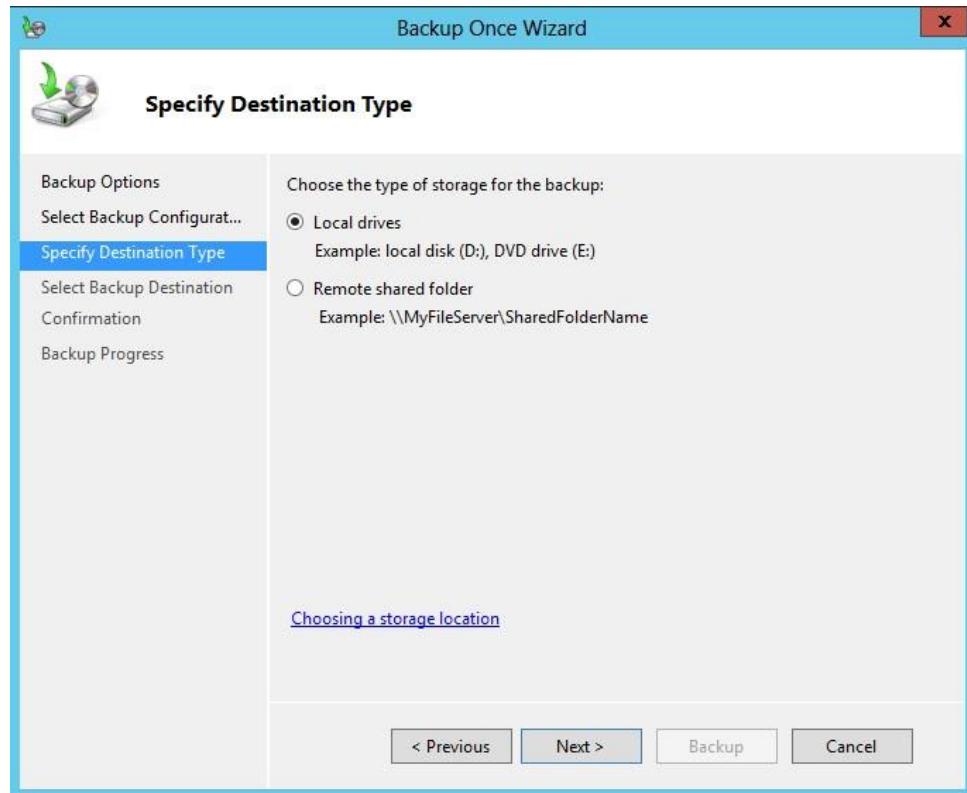
12. Open backup option and select different option , click next.



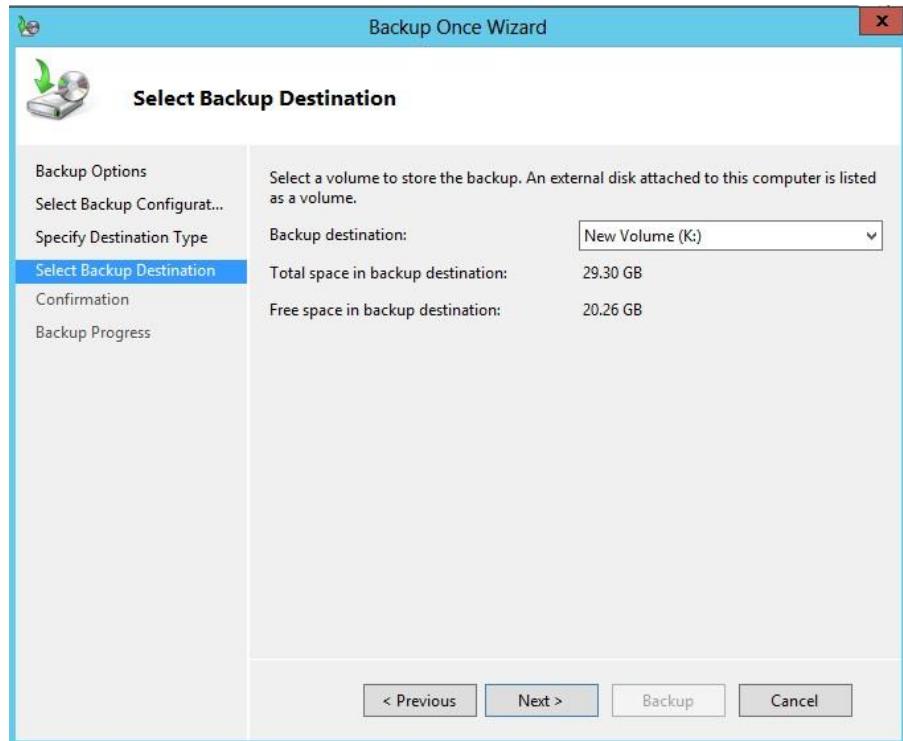
13. On the Select Backup Configuration page accept the defaults (Full server) and click next.



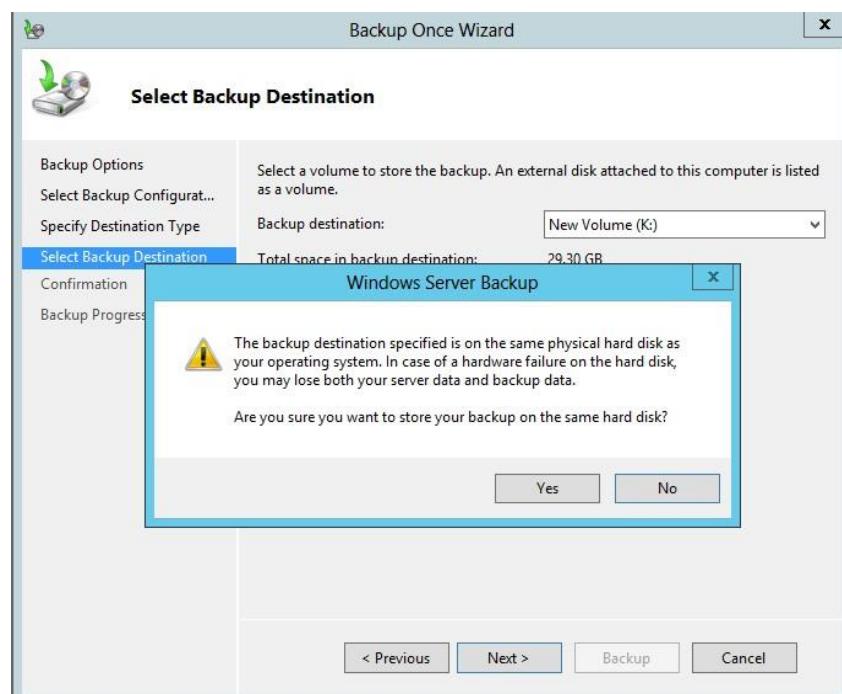
14. On the Specify Destination Type, select Backup up to a hard disk that is dedicated for backups. Click Next.

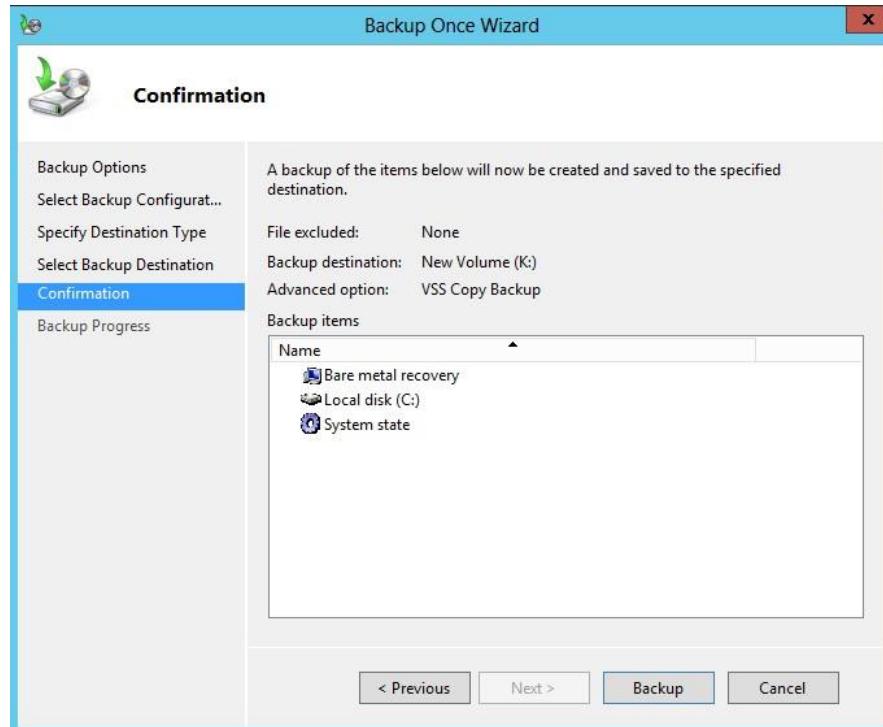


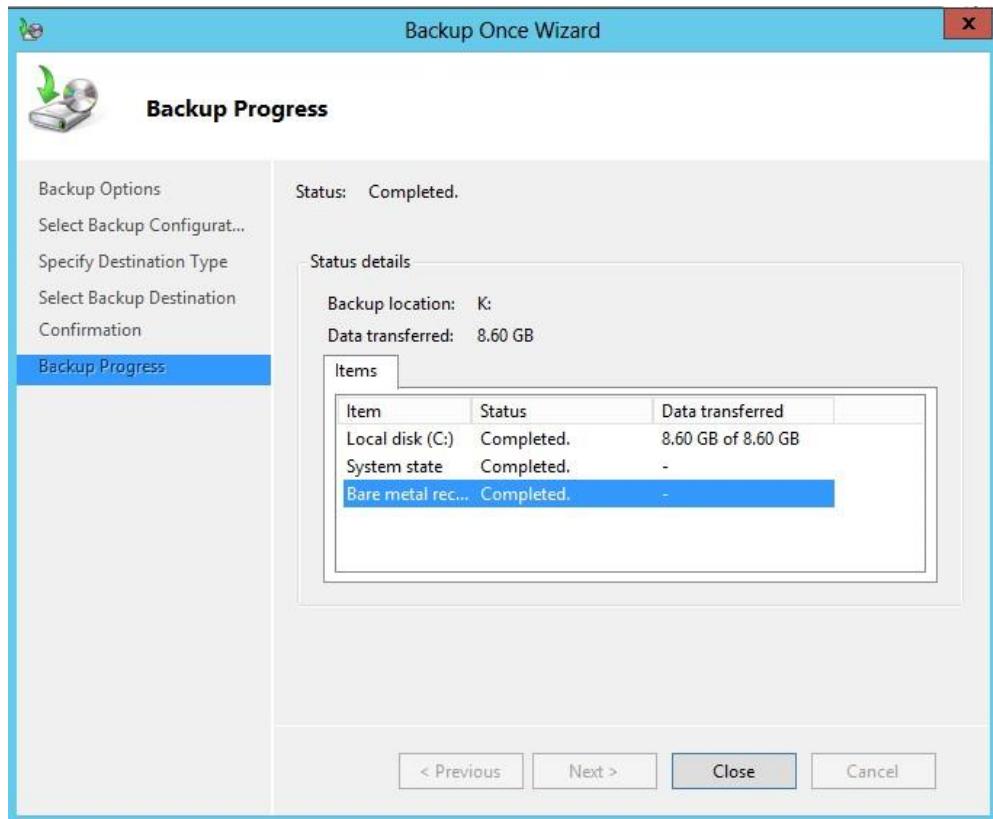
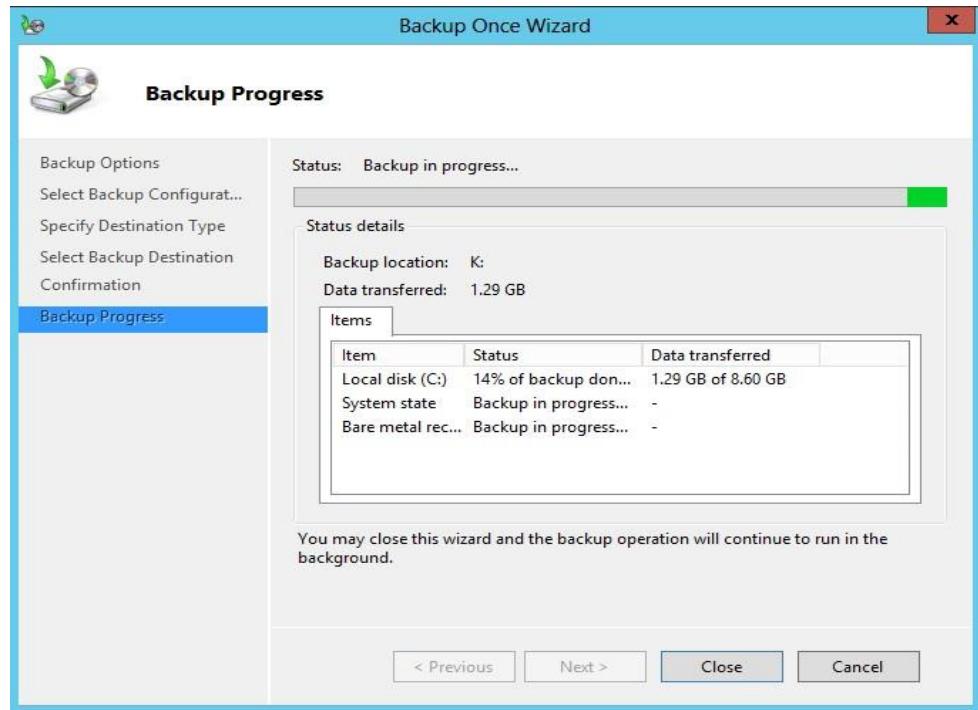
15. Select backup destination and click next.



16. If you get the following warning, click OK. Window Backup must format the volume so that is can be used as the designated backup. Click Yes.



17. Click Backup

18. Backup progress and backup schedule is successfully created.

19. Open Computer Management and launch your disk Management tool. Look at the 60GB disk created early. It now shows as backup disk for the server. Note the time stamp of the last full backup. This will change with each backup.

