

**GOVERNMENT POLYTECHNIC
AHMEDABAD
PROGRAM: DIPLOMA IN COMPUTER
ENGG**

**NETWORK MANAGEMENT AND
ADMINISTRATION (3360703)**

**UNIT-3
Network Planning and Implementation**

Designing of Network

Large network design projects are normally divided into three distinct steps

- Step 1: Identify the network requirements
 - The network designer works closely with the customer to document the goals of the project.
 - Business goals
 - Focus on how the network can make the business more successful
 - Technical requirements
 - Focus on how the technology is implemented within the network

Designing of Network

Large network design projects are normally divided into three distinct steps

- Step 2: Characterizing the Existing Network:
 - Information about the current network and services is gathered and analyzed.
 - It is necessary to compare the functionality of the existing network with the defined goals of the new project.
 - The designer determines whether any existing equipment, infrastructure, and protocols can be reused, and what new equipment and protocols are needed to complete the design.

Designing of Network

Large network design projects are normally divided into three distinct steps

- Step 3: Designing the Network Topology
 - A common strategy for network design is to take a top-down approach.
 - In this approach, the network applications and service requirements are identified, and then the network is designed to support them.
 - When the design is complete , a prototype or proof-of-concept test is performed.

Accessing Network Needs

- Before you even think about any specific network topology; network operating system (NOS) platform; a structure for hubs, bridges, and routers; or the grade of wiring—you must first know what the network needs to accomplish.
- When assessing needs, you are trying to come up with detailed answers to the following questions:
 - How much storage space is required?
 - How much bandwidth is required?
 - What network services are required?
 - What is the budget for the project?

Cont..

Develop the structure of new internetwork.

- Determine the type of network that best fits a company's needs.
- Choose appropriate media and hardware with which to construct a successful network.
- Design a scalable and simple topology, determine the hard and software to be deployed and select the network management strategy.
- Estimate the expected performance of the new internetwork using simulation and modeling tools.
- Assess the costs of your design.
- Implement your design.
- Monitor your new internetwork. Is it working like you expected? Are there bottlenecks? Did any applications stop working? Is the utilization on all links like you expected?

Applications

- Decide on the applications requirements in the network based on following factors:
 - How many applications will be installed and accessed?
 - Where they will be installed? On Server or at client side?
 - Who can access which application?
 - Establish authentication and authorization procedures required for access permissions for applications in the network?
- The following is a list of applications
 - Word processor
 - Spreadsheet
 - End–user database
 - Presentation graphics
 - E–mail
 - Accounting
 - Distribution and inventory control
 - Manufacturing/material requirements planning (MRP)

Users

- Users are one of the most important stack holder for any network.
 - Decide how many users will be in the network?
 - How many Roles and rights to manage?
 - How to create and implement groups and establish policies?
- A server-based network can support thousands of users. This type of network would be impossible to manage as a peer-to-peer network, but current monitoring and network management utilities make it possible to operate a server-based network for large numbers of users.

Network Services

- ❖ A very basic network might need only file and print services, plus perhaps Internet connectivity.
- A more complex network will need many additional services.
 - File and print services
 - Backup and restore services
 - Internet web browsing
 - FTP and Telnet
 - Internet or external e-mail
 - Internet security services
 - Remote access to the LAN through a VPN or a modem pool
 - Dynamic Host Configuration Protocol (DHCP) services
 - Centralized virus-protection services
 - Voice over IP (VoIP)
- For each service, you must answer a number of questions. First, you need to know the storage and bandwidth requirements for each service, and any other impacts they might have.
- Second, you need to know how the service is to be provided.
- Third, you need to know what users or groups of users need which Services.

Security and Safety

- Security and safety concern the company's need to keep information secure—both inside and outside an organization and to keep the company's data safe from loss.
- No network is ever totally secure and no data is ever totally safe from loss. However, different companies and departments have different sensitivities to these issues, indicating that more or less money should be spent on these areas.
- Some applications might be perfectly well suited to keeping their data on a striped RAID 0 array of disks, RAID 1 or RAID 10 arrays and online tape backup systems updating a backup tape every hour or for every transaction.
- Similarly, some companies might work with data that is so sensitive that they must install the best firewalls

Growth and Capacity Planning

- A network designed for a rapidly growing company looks different from one for a slowly growing company, even if both companies start out at the same size.
- In the former case, you want a design that you can quickly and easily expand without needing to replace much of the existing hardware and software.
- Once the network starts to become saturated, performance begins to drop rapidly.
- The server load for a complex e-mail system might increase only by a small amount if you doubled the number of users, because the system's overhead generates most of the load.
- You need to know how different applications scale with increased use.

Meeting Network Needs

- *Choosing Network Type*
 - The type of network you choose to implement will depend on factors such as the:
 - Size of the organization.
 - Level of security required.
 - Type of business.
 - Level of administrative support available.
 - Amount of network traffic.
 - Needs of the network users.
 - Network budget.

Choosing Network Type

Consideration	Peer-to-Peer Network	Server-Based Network
Size	Good for 10 or fewer computers hardware	Limited only by server and network
Security	Security established by the user each computer	Extensive and consistent resource of and user security
Administration	Individual users responsible for their own administration; no full-time administrator necessary	Centrally located for network control; requires at least one knowledgeable administrator

Table: Comparison of Network Types

Choosing Network Structure

- Choosing network structure requires to decide on:
 - Weather to use wired or wireless network?
 - Type of media to use to establish the network?
 - Which network topologies to use?
 - Network standards to use?
- When choosing a network technology, consider the location of your computers and the desired speed of your network.
- You should consider two aspects of the network: the physical layout, including the location of each piece of hardware and how it relates to the others, and the physical and logical topology of the proposed network.
- ✓ The second step is to create a layout of the network topology. Don't forget to include printers and other peripherals, such as scanners and modems.

Choosing Servers

- When choosing servers for a network, start by determining which NOS you will use.
- For PC–centric networks, the decision is usually between Novell NetWare and Windows family of servers. Whenever possible, avoid using both, because supporting two NOS systems makes managing the servers much more difficult.
- The choice of right type of server is based on the needs of services the network is built for.
- For example, if the requirement of the network is to store and share files and directories among the users then file server should be used.
- If users need to print documents frequently like checkout counters at any mall or market then print server should be installed.
- Similarly database server should be used for network applications like banking and stocks requiring fast and secure installed database management software.
- Also the configuration of the server depends on the demand of the network users.
- For example, if file server is installed in the network then it is to be equipped with more storage space and fast processor. If it is just a print server then investment in storage space is not important.

Difference Between Network Management and Network Administration

- Network management means Managing bandwidth, strategic planning, WANs, monitoring network devices, worrying about security, upgrades to the network, and the tools like SNMP and network management workstations and applications. It's all about the infrastructure and getting bandwidth to the users.
- Network Administration, on the other hand, has more to do with making sure that users have access to the network, that their network accounts work properly, things like that. Has more to do with the services that run on the network, and often times more on the server administration side of things, like Active Directory integration, etc. It's all about the services and getting those services to the user.

INSTALLING AND CONFIGURING WINDOWS SERVER

Preparing for installation

installing any version of Microsoft windows server, you first must prepare the server computer that you will use and make important discussion about the installation.

1. Check system hardware requirements, visit Microsoft's site and review the system requirement for windows server you want to install.
2. Make sure server is properly configured to support windows server 2012
3. Carry out any needed pre installation testing on the server hardware
4. Survey the Hardware prior to performing the installation
5. Decide how to install windows server 2012 after gathering configuration information
6. Backup the system prior to upgrade.

MINIMUM REQUIREMENTS

1. Processor: 1.4 GHz
2. Memory: 512 MB
3. Available disk space: 32 GB
4. Display: super VGA 800*600 monitor

PRE-INSTALLATION TASK

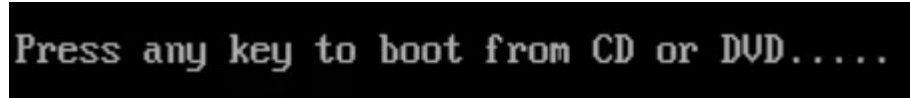
1. Disconnect UPS.
2. Backup your data.
3. Disable antivirus software.
4. Test RAM.
5. Save drivers in CD, DVD, floppy disk, USB drive or external hard disk.
6. Turn on windows firewall.

CONFIGURE BIOS

1. Reboot the system.
2. While booting, go into BIOS configuration screen by hitting F1,F2,Del or Esc.
3. Select BOOT.
4. Make sure USB/DVD drive as primary boot device and exit.

INSTALLING WINDOWS SERVER

1. Press ENTER to boot from DVD.



2. Once booted from USB/DVD drive , Files will start loading.



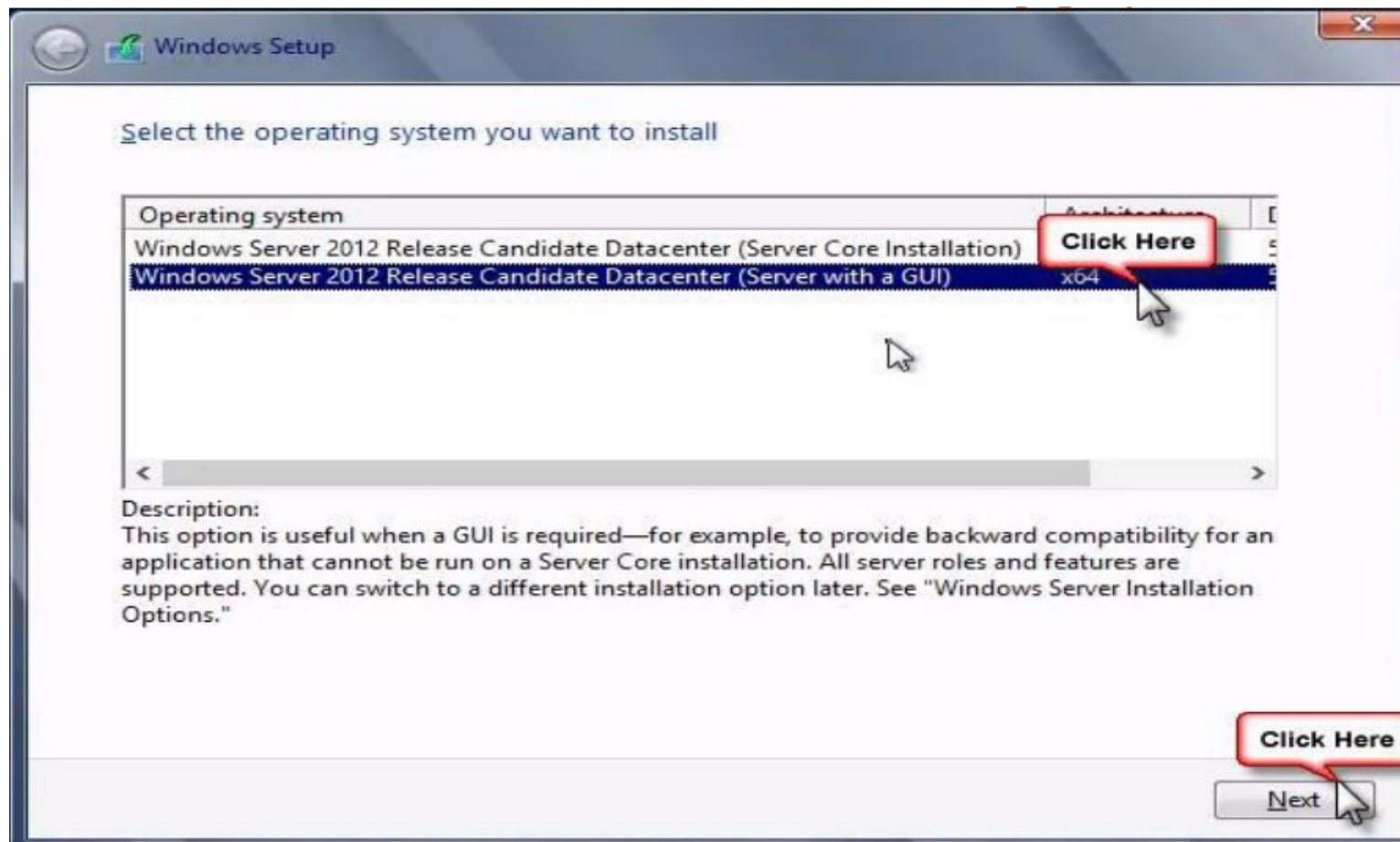
3. Take the defaults on the Language screen, and click Next.



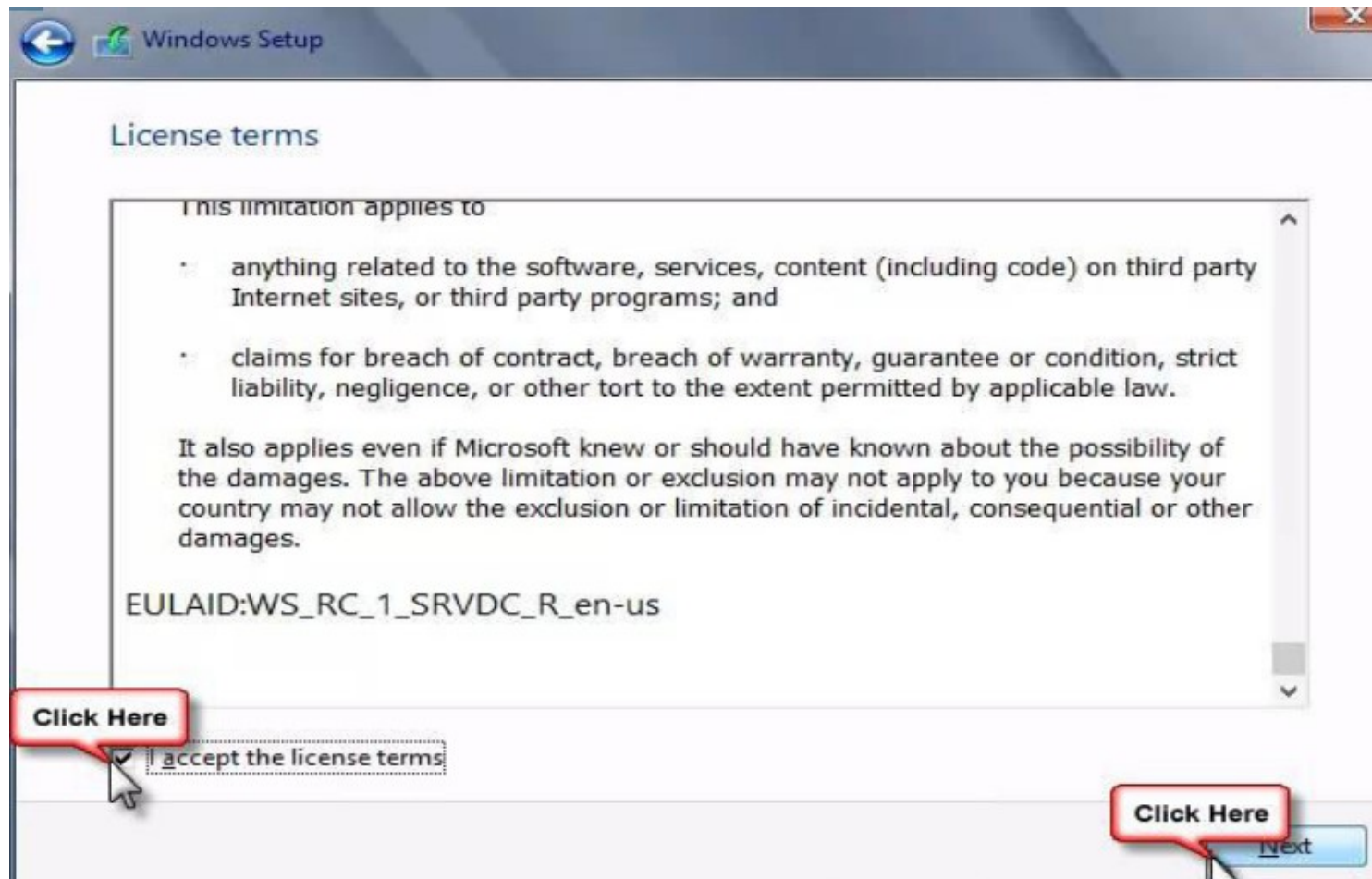
4. Click Install now on the install screen.



5. Click the second line item for the GUI. The default install is now Server Core. Then click Next.



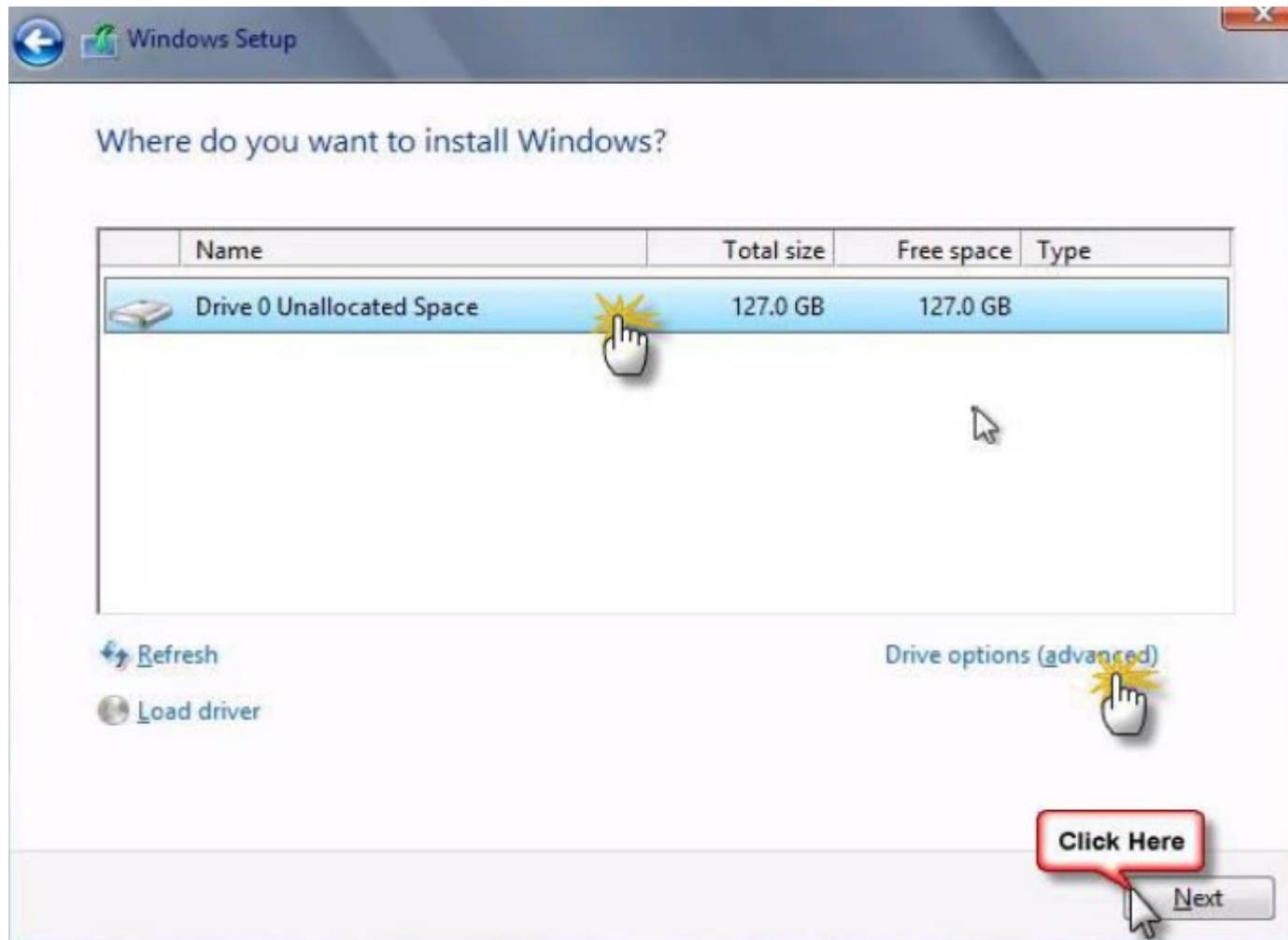
6. Read License Agreement, Turn on Checkbox “I accept the license terms,” and then click Next.



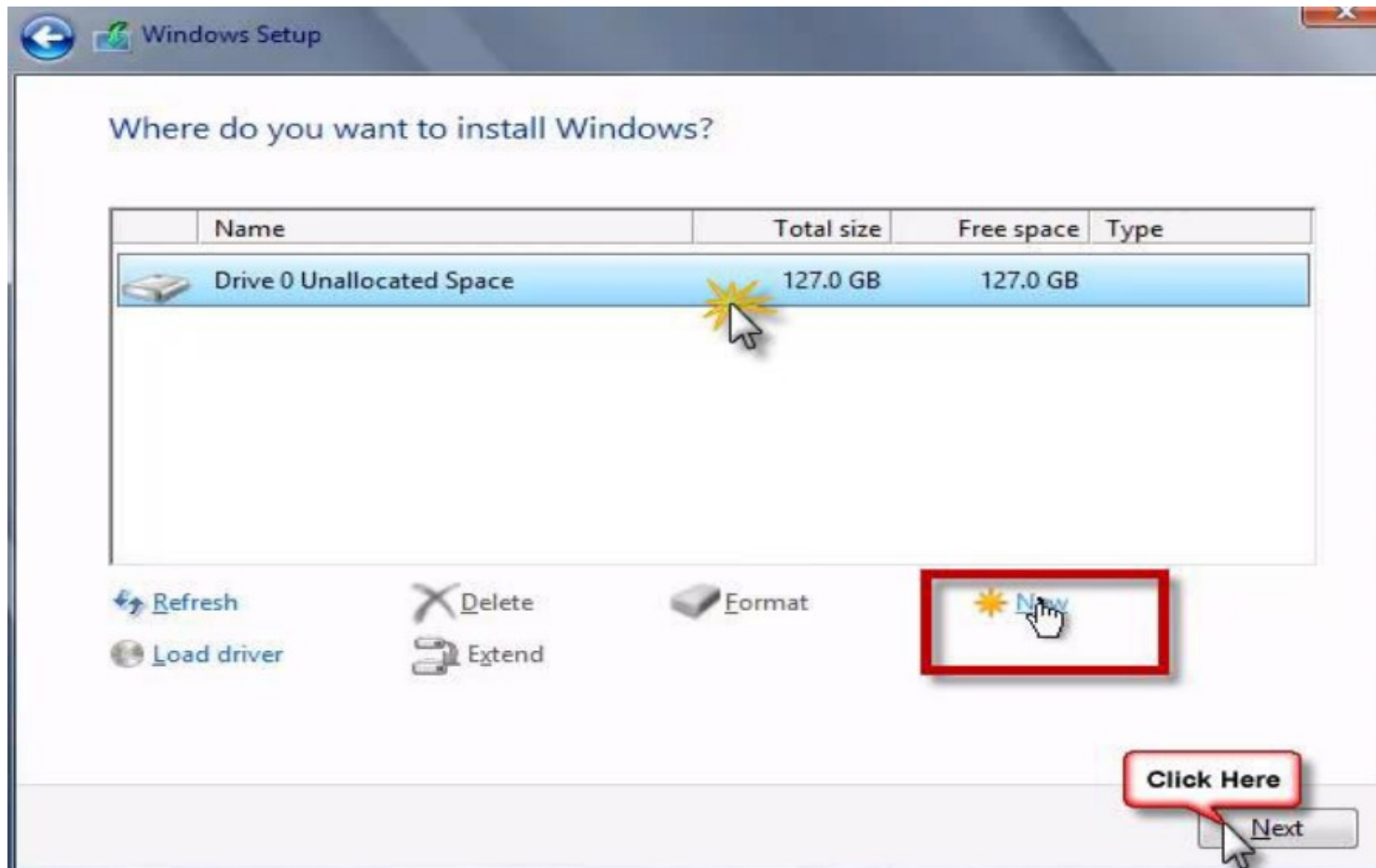
7. Click Custom: Install Windows only (Advanced).



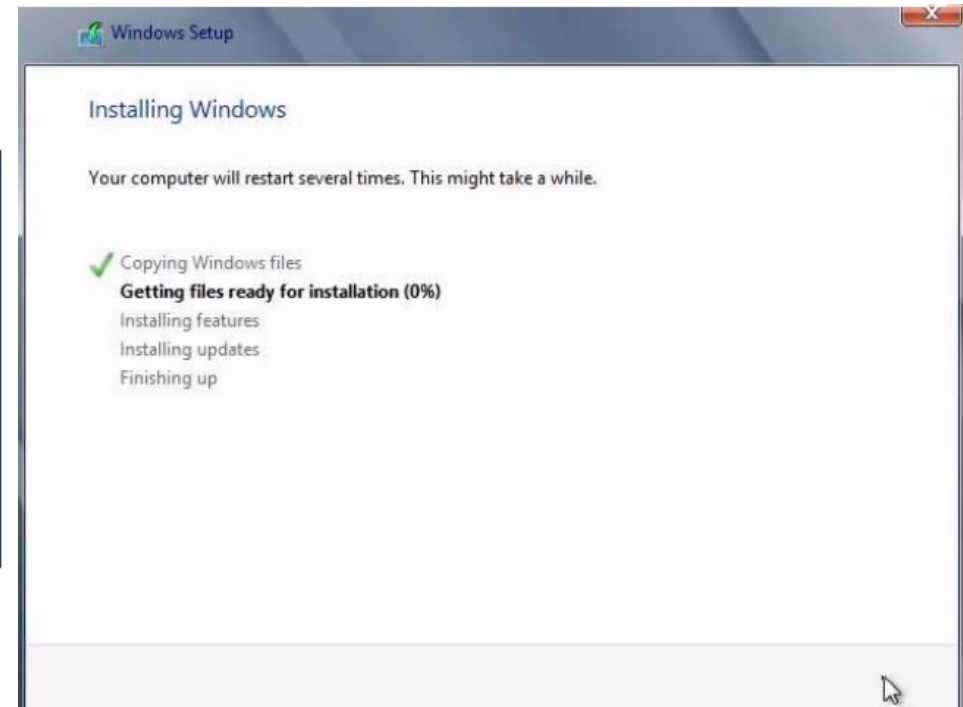
8. The disk you are using should be listed. If not, you will need to Load driver. Select the disk you will be installing on. If you do not want to change drive options (optional), Click Next. If you want to use Dual boot using Native Boot To VHD (Boot2VHD), see below



9. [Optional:] Click drive options; then you can create custom partitions.



10. It will then start copying files. This will take a while (could be 20 mins or so depending on hardware performance).It will reboot a couple times (automatically). After the first reboot, it will no longer be running off of the DVD



11. In the Password box, enter a new password for this computer. It must meet complexity requirements. Re-enter the password in the second password box, and then click Finish.

Settings

Type a password for the built-in administrator account that you can use to sign in to this computer.

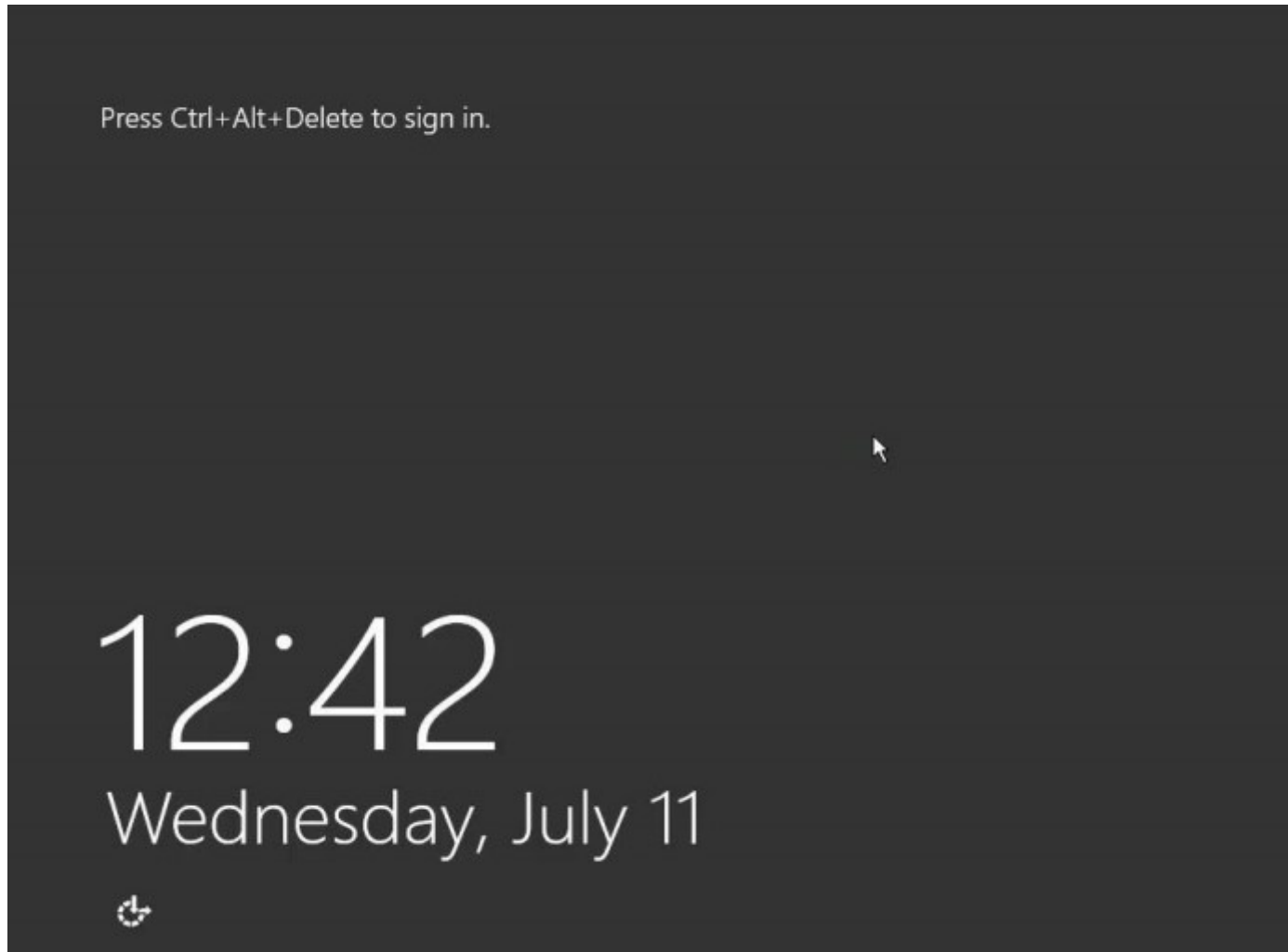
User name

Password 

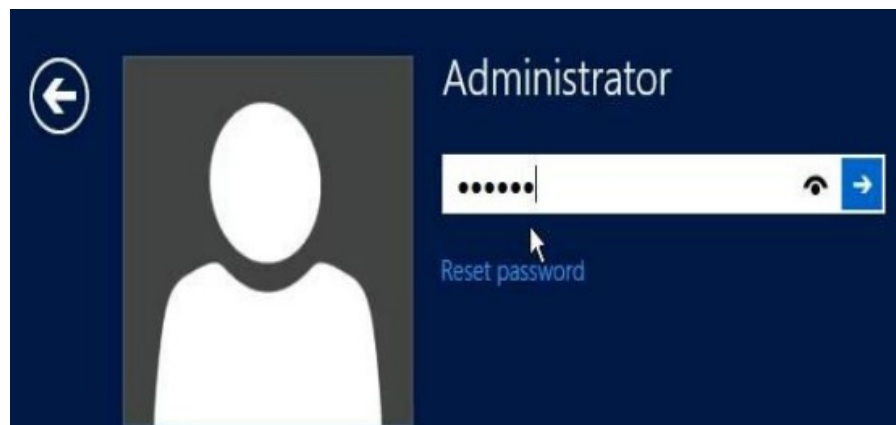
Reenter password



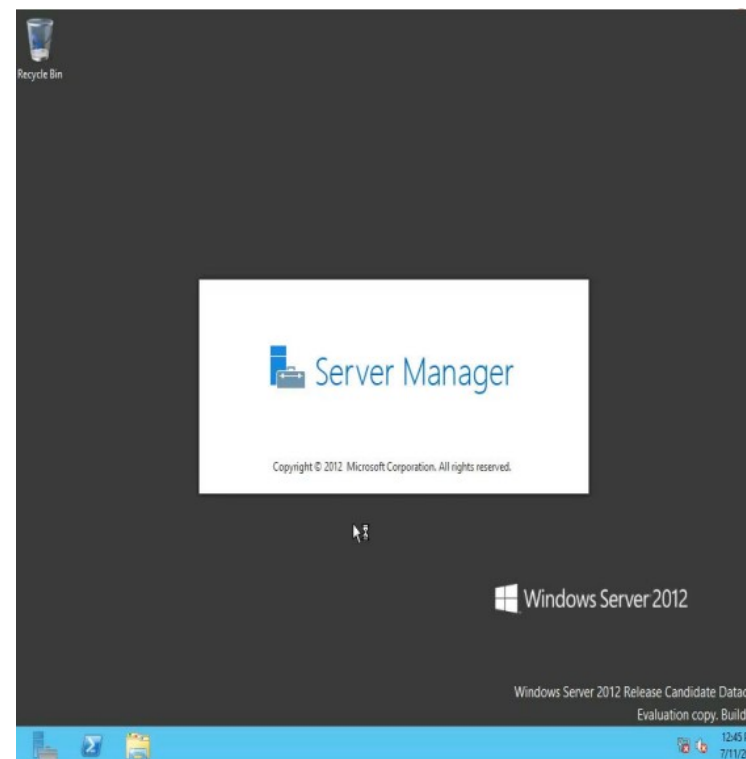
12. Press Ctrl-Alt-Delete at the same time to get the login screen



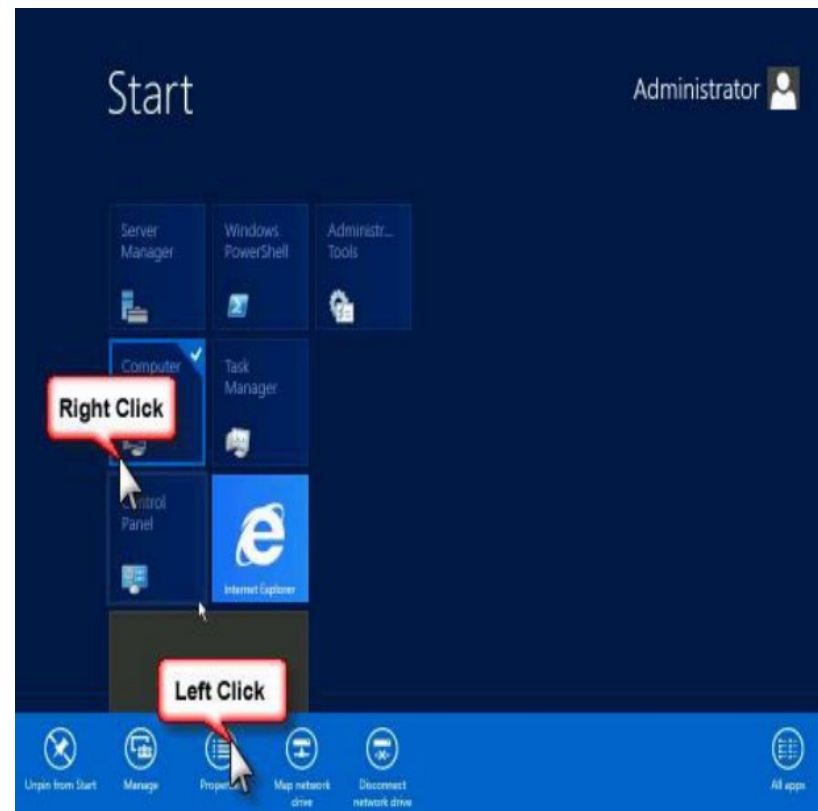
13. Enter password and press enter.



14. The Desktop will be displayed and Server Manager will be opened automatically



15. Pressing Windows Key on the keyboard will bring up the start screen (formerly known as Start Menu). If you Right-Click on Computer, you will see the new right-click menu is on the bottom of the screen instead of in a dropdown box. Select Properties.



CONFIGURING SERVER/CLIENT

- Steps to changing server name
 - 1. Open server manager
 - 2. Click on configure local server
 - 3. Click on default computer name
 - 4. Click change in system properties window
 - 5. Give new computer name
 - 6. Click ok and restart the computer
 - 7. After restart you can see the server name changed.

CONFIGURING SERVER/CLIENT CONTINUE...

- Steps to assign static IP address to server
- 1. At lower corner of your screen, right click on computer icon and select 'open network and sharing center'.
- 2. Click 'change adapter settings'.
- 3. Find Ethernet adapter, right click and select properties.
- 4. Double click on 'internet protocol version 4(TCP/IP 4)
- 5. Select "use the following IP addresses" radio button.
- 6. Fill in the IP address ,subnet mask, default gateway and preferred DNS server.
- 7. Click ok.

CONFIGURING SERVER/CLIENT CONTINUE...

- Steps to Joining client machine to a domain.
- 1. Log on to your client machine.
- 2. Click on start, select properties of computer.
- 3. Click on change settings, system properties dialog box appears
- 4. Click on change computer name tab, it will show you 'computer name/domain changes'
- 5. Give user friendly name to client machine and select domain :radio button ,give domain name in that.
- 6. Click ok and you will be asked for username and password. This detail is used to logon to your server domain controller.
- 7. After that restart the computer.

SETTING WINDOWS SERVER

creating domain controller

1. Open Server Manager, then select Manage and click on “Add Roles and Features”
2. Click Next on the “Before you begin” window
3. Select Role-based or feature-based installation and then click Next
4. Click Select a server from the server pool, click the name of the server to install Active Directory Domain Services to, and then click Next.
5. Click Active Directory Domain Services. When the Add Roles and Features Wizard dialog box opens, select Add Features, then Next
6. On the Active Directory Domain Services page, review the information and then click Next
7. On the Confirm installation selections page, click Install
8. On the Results page, verify Installation succeeded, and click Promote this server to a domain controller to start the Active Directory Domain Services Configuration Wizard

SETTING WINDOWS SERVER CONTINUE...

- Promoting windows server 2012 to a domain controller.
 1. Choose your Deployment Configuration.
 1. To install a domain controller to an existing domain, specify the domain name.
 2. To install a new domain in existing forest, choose “Child” or “Tree” domain, then browse for forest structure.
 3. To install a new forest, specify the new forest name.
 4. Then click Next.

SETTING WINDOWS SERVER CONTINUE...

2. Choose your Domain Controller Options.

1. To create a new forest or domain, select the functional levels, click Domain Name System (DNS) server, specify the Directory Services Restore Mode password, and then click Next.
2. To add a DC to a domain, choose Domain Name System (DNS) server, Global Catalog (GC), or Read Only Domain Controller (RODC) as needed, choose the site name, and type the Directory Services Restore Mode password and then click Next.

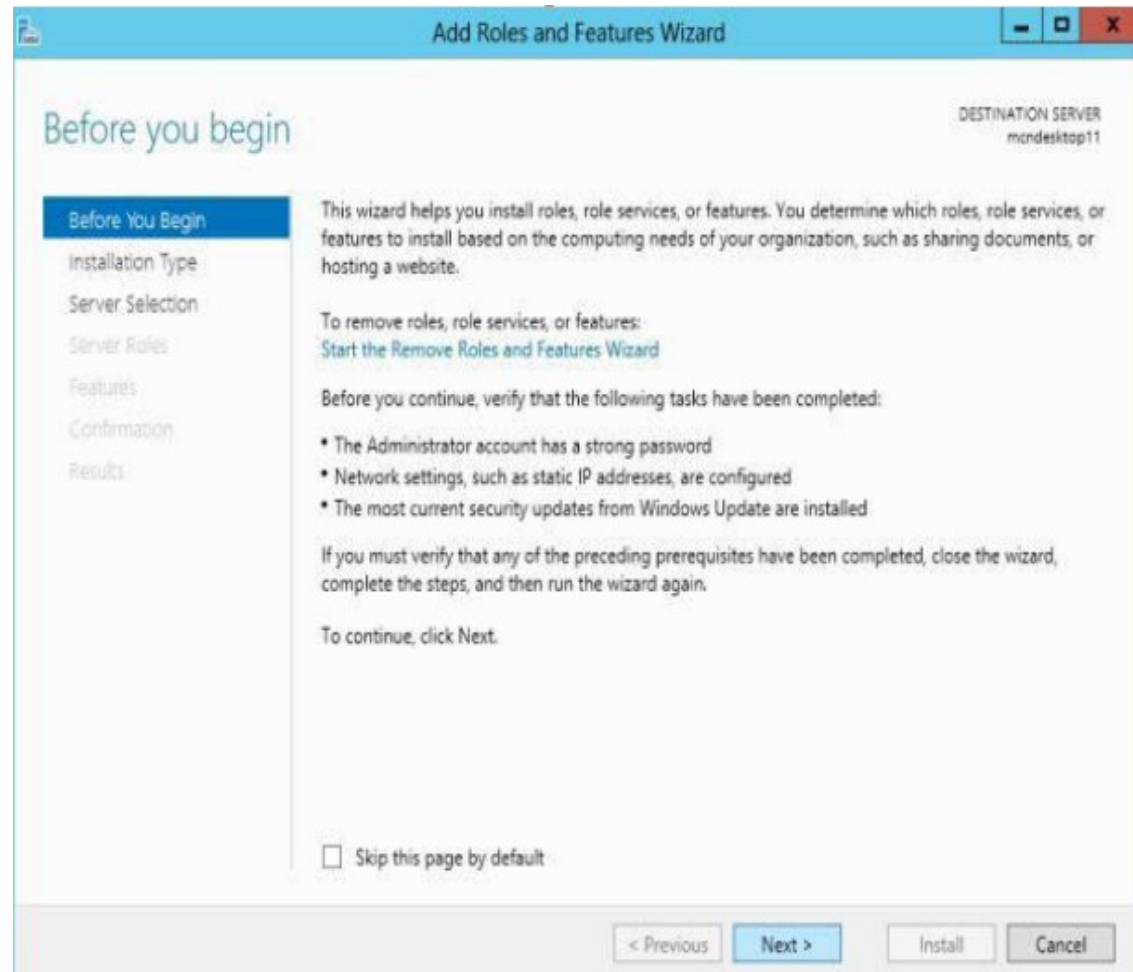
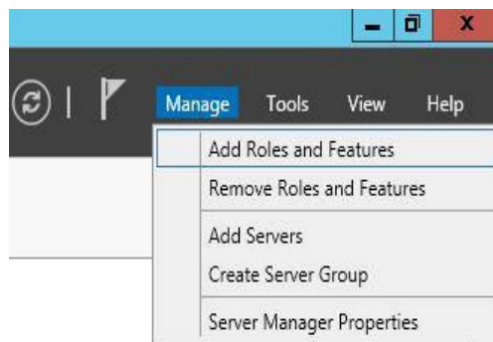
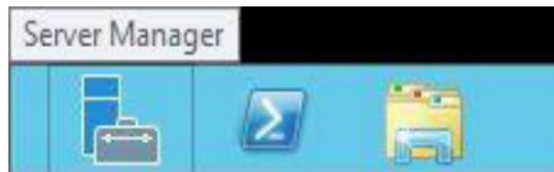
3.If installing a DNS Server, you may need to Update DNS delegation. To update, enter credentials with permission to create DNS delegation records in the parent DNS zone.

SETTING WINDOWS SERVER CONTINUE...

4. If installing a Read Only Domain Controller (RODC), specify the group that will manage the RODC. Add or remove accounts to the Allowed or Denied password replication groups. Click Next.
5. On the Additional Options page, choose one of the following options:
 1. To create a new domain, type or verify the NetBIOS name of the domain.
 2. To add a DC to a domain, select a domain controller to replicate the AD DS installation data from (or the wizard can select “any”).
6. Specify where the directories for the Active Directory database, the log files, and the SYSVOL folder will be. Click Next.
7. Verify your server was successfully promoted on the results page, then click Close.
8. A reboot is required and it happens automatically by default.

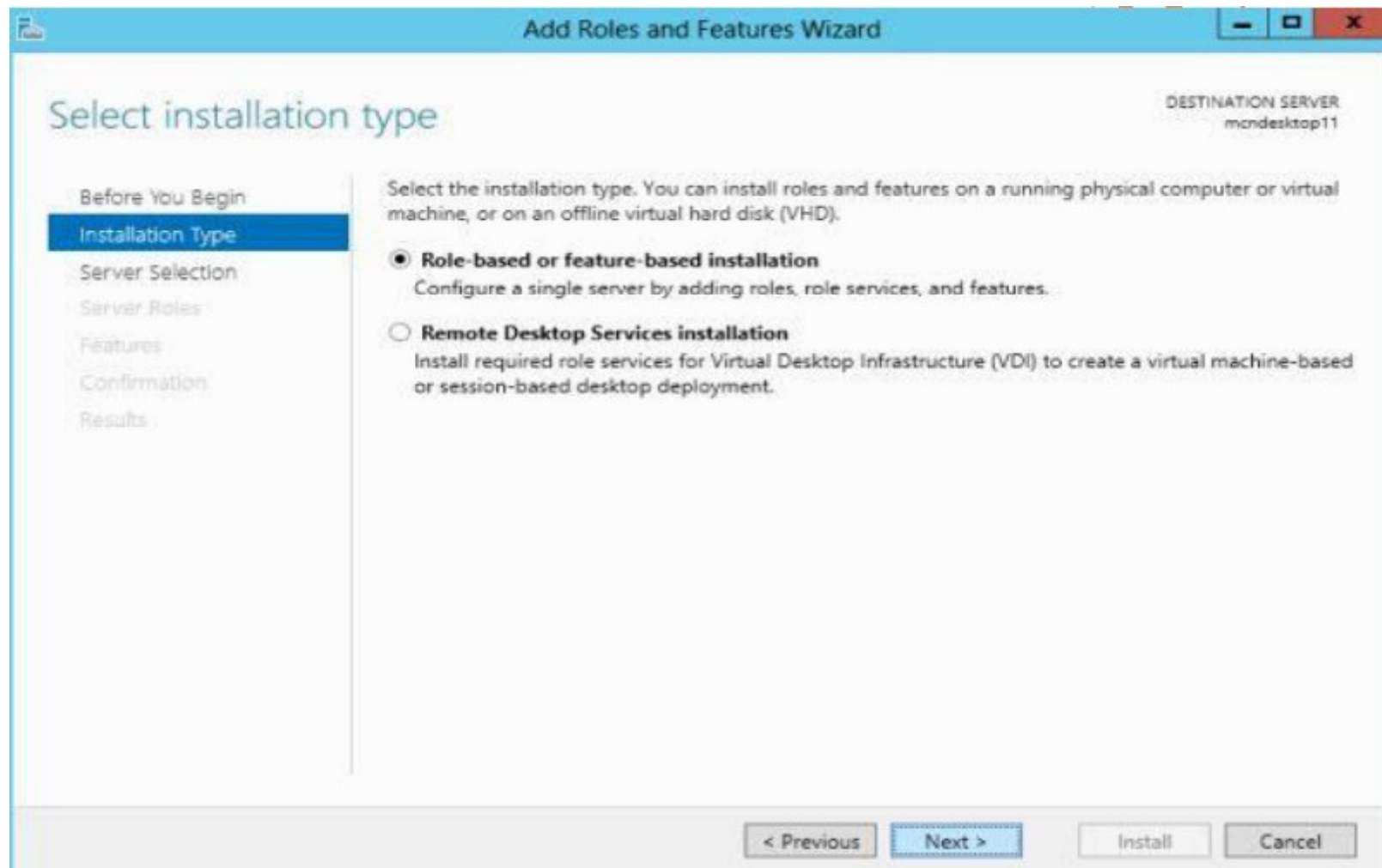
ADDING DHCP ROLE

1. To install DHCP Serve go to Dashboard on Server Manager and click Manage then click Add Roles and Features.



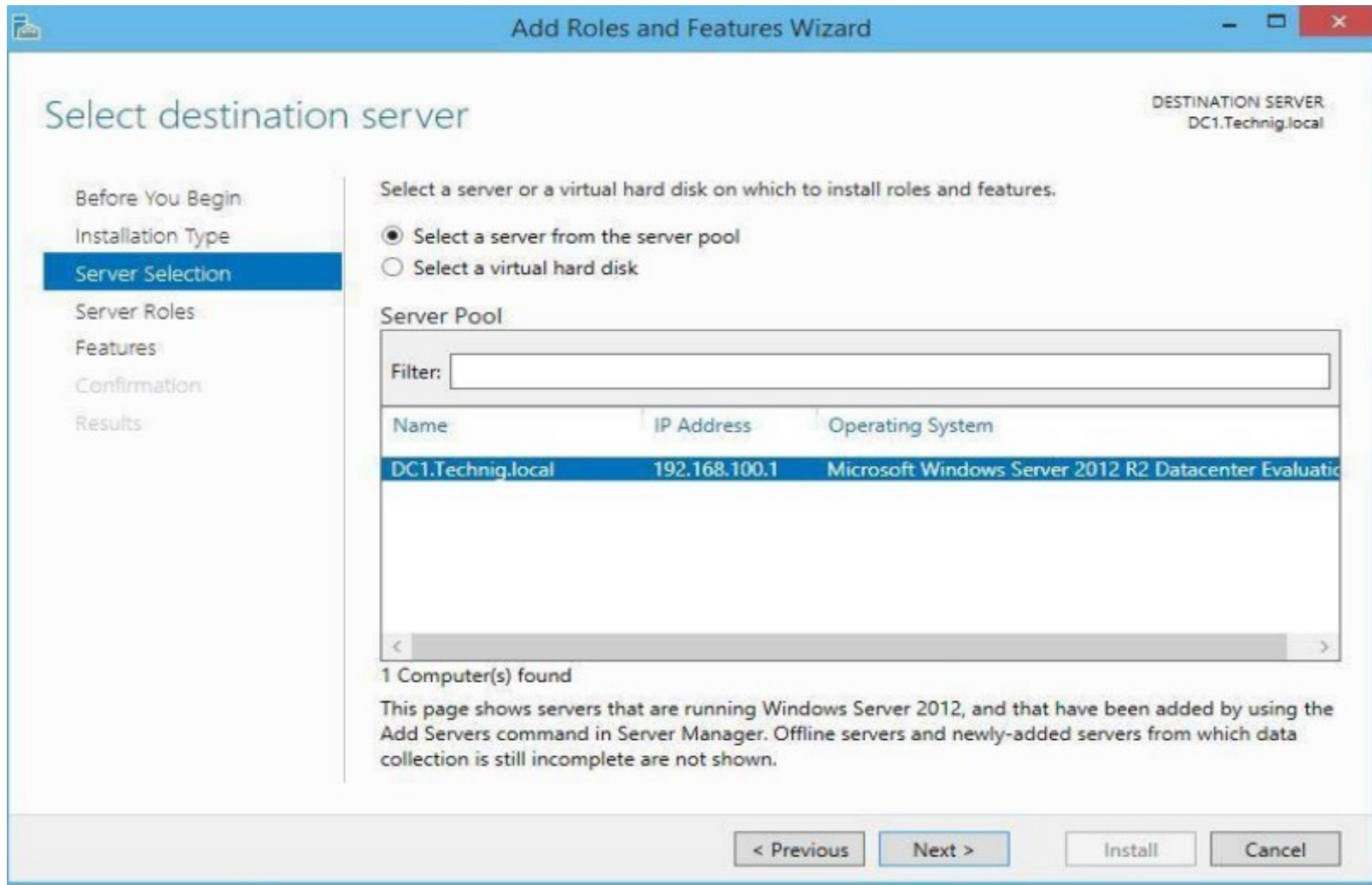
ADDING DHCP ROLE CONTINUE...

2. In the Role installation window select Role-based or feature-based installation the click Next.



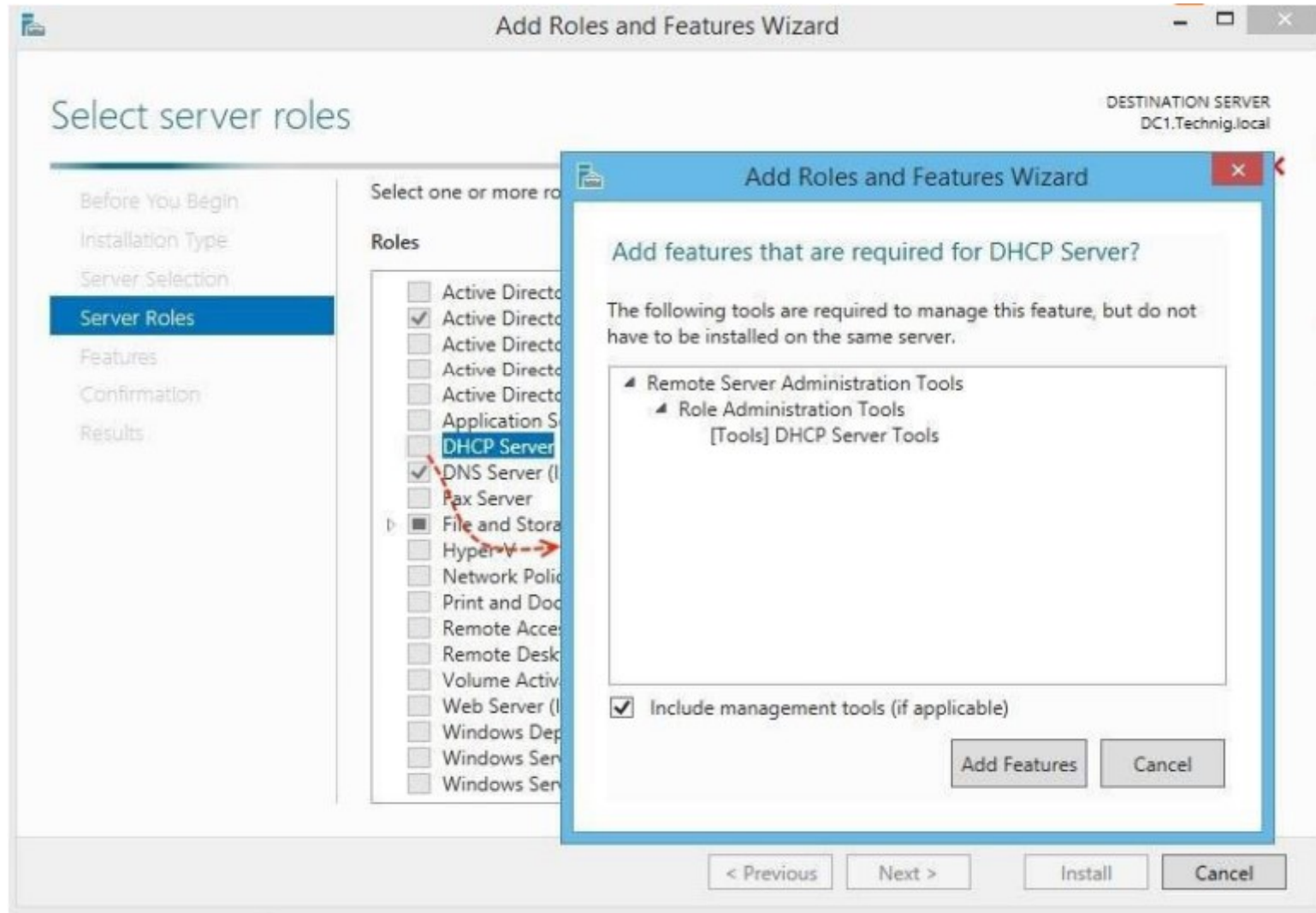
ADDING DHCP ROLE CONTINUE...

3. Choose the server you want to install DHCP from the Server pool. Here we have one server and select by default.



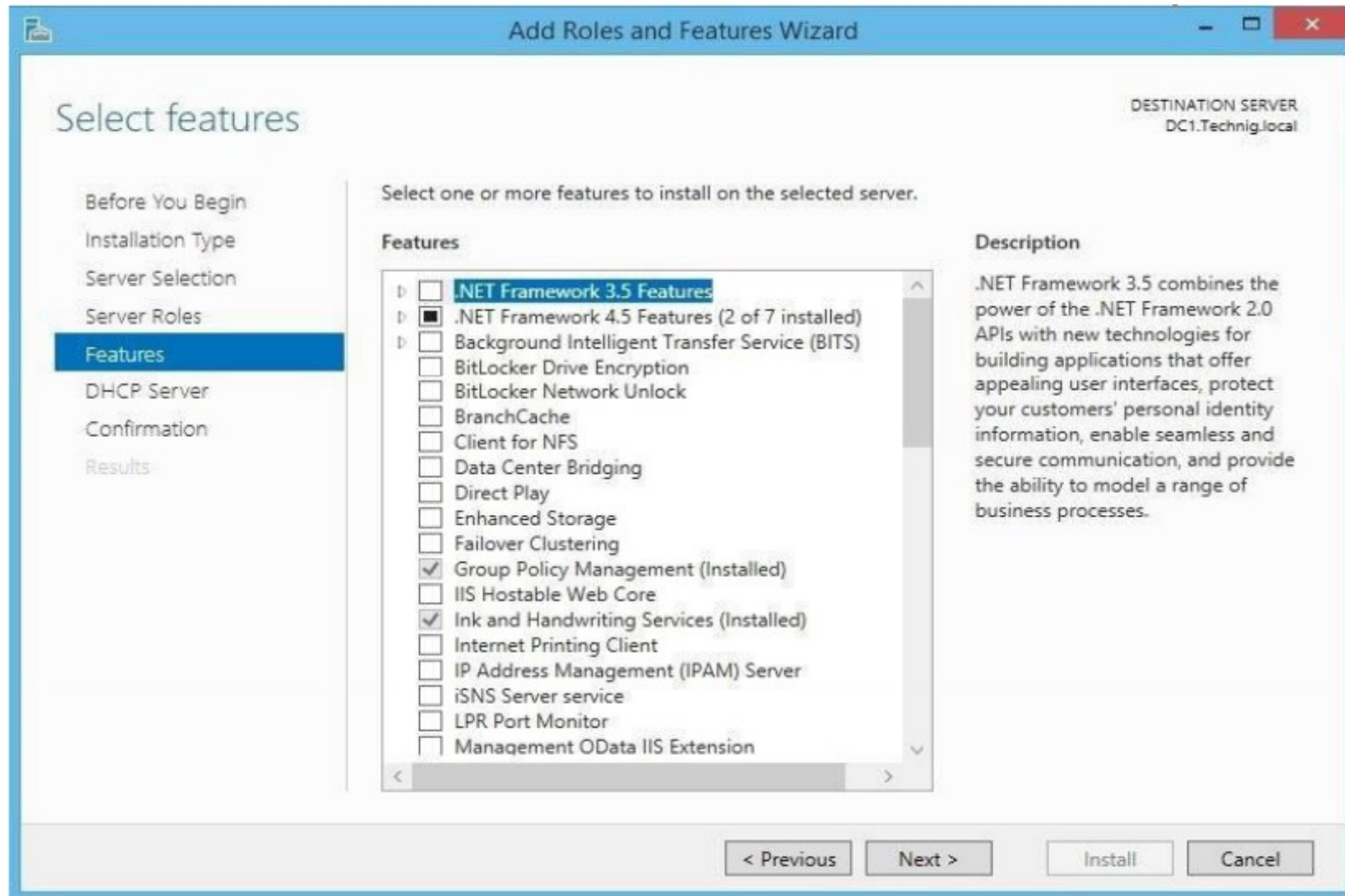
ADDING DHCP ROLE CONTINUE...

4. Open Add Roles and Features Wizard Page, click Add Features then Click Next.



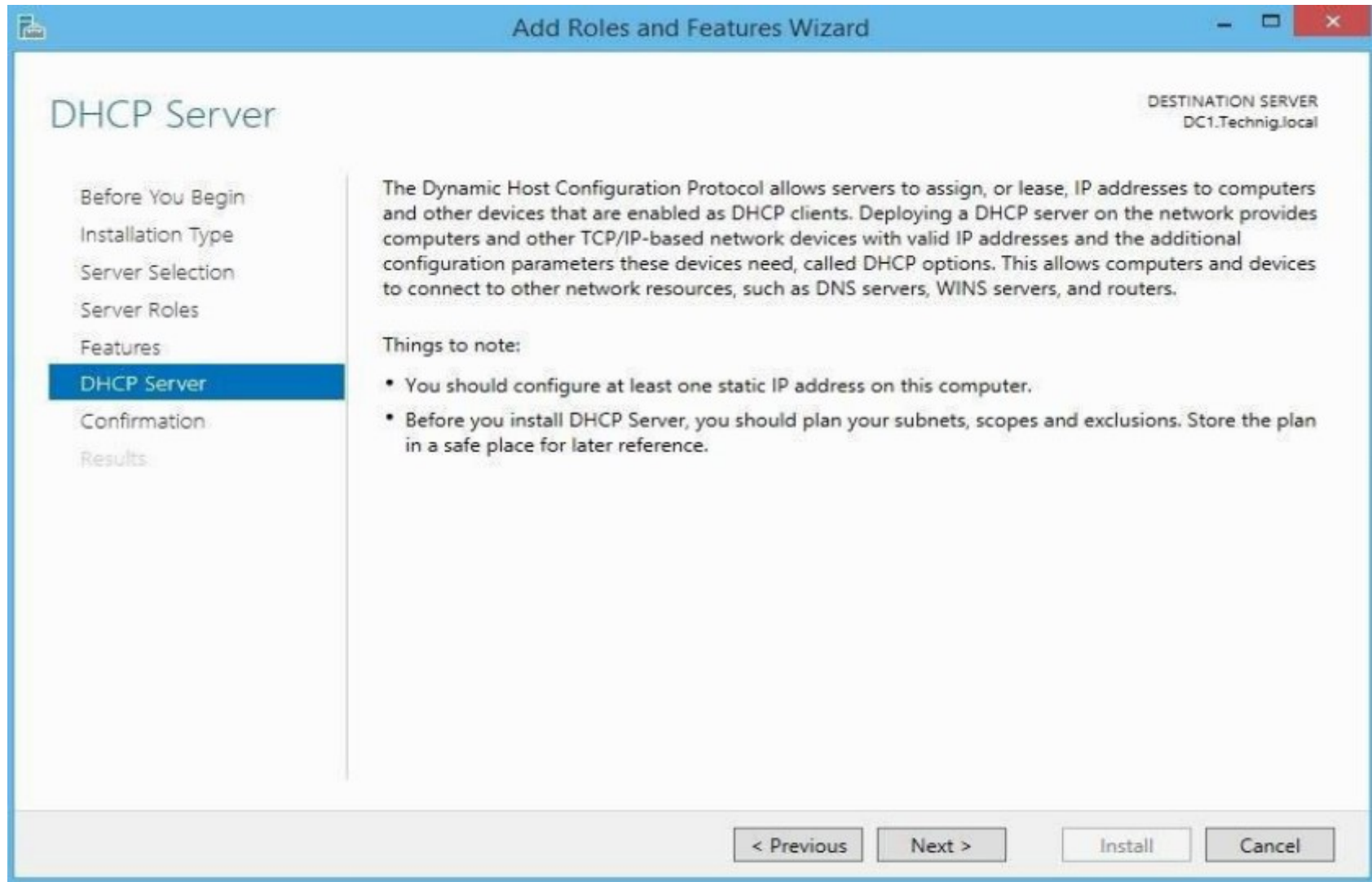
ADDING DHCP ROLE CONTINUE...

5. Install required features for DHCP Server and click next.



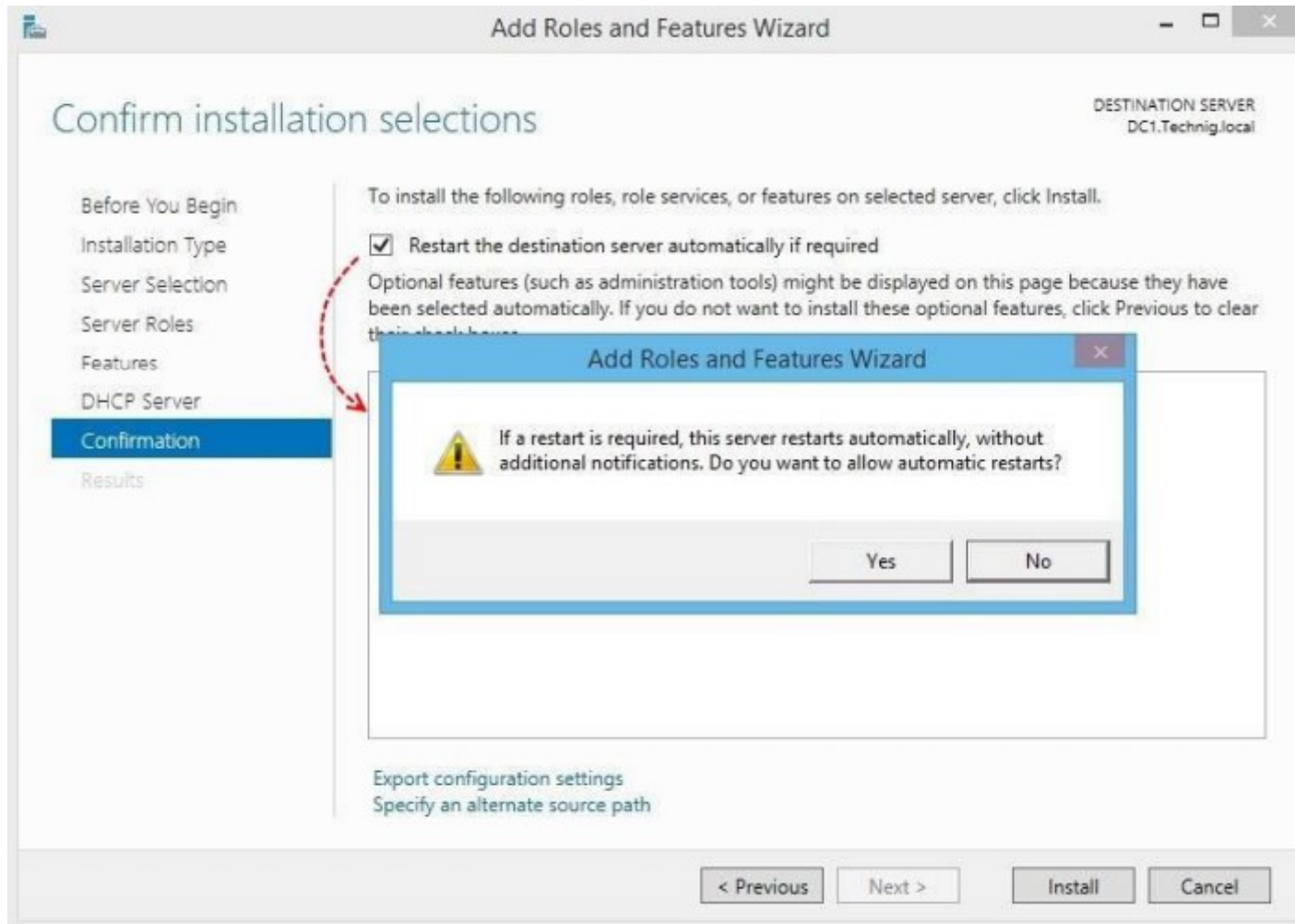
ADDING DHCP ROLE CONTINUE...

6. Once read the information about DHCP Server and click Next button.



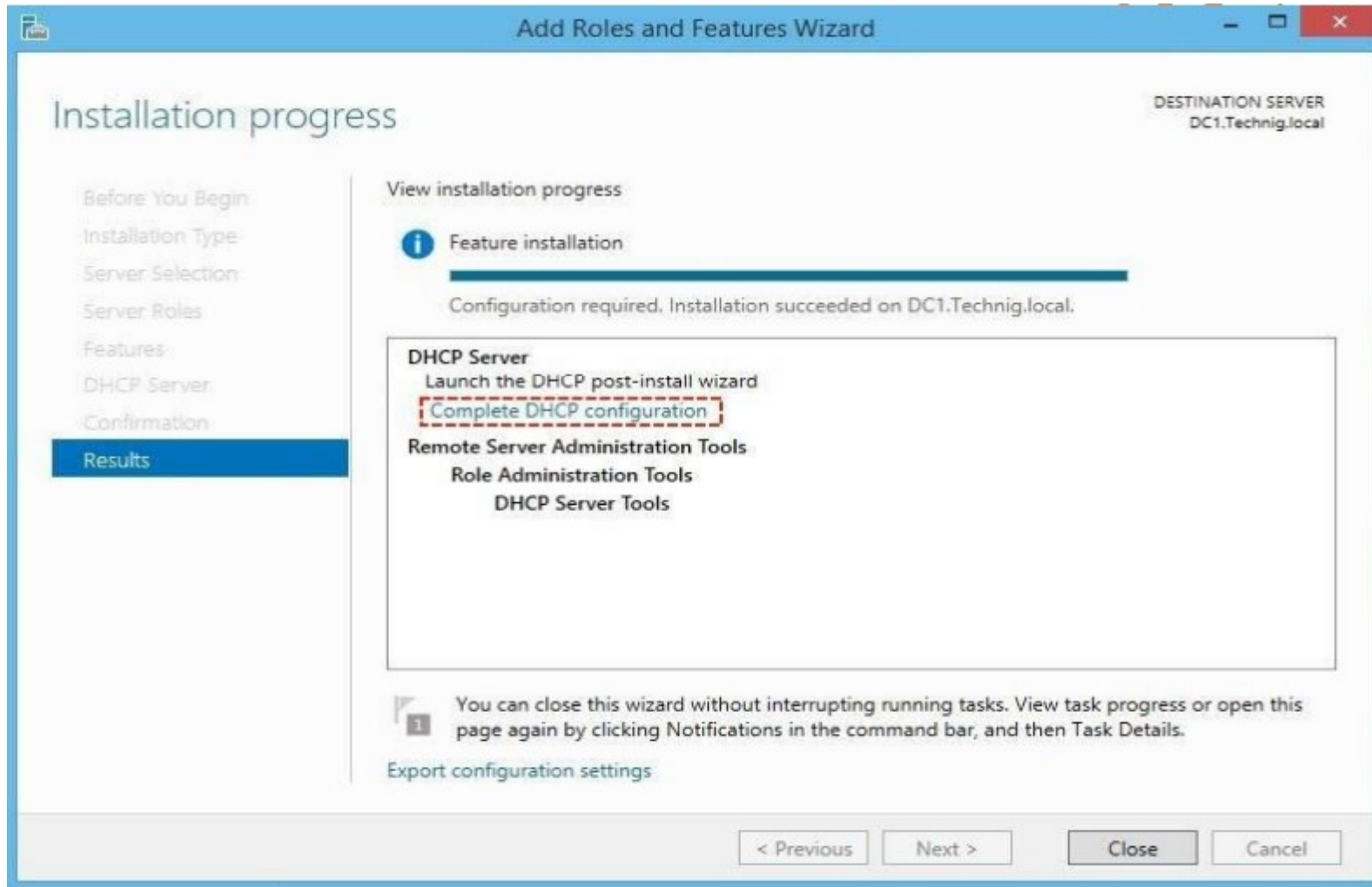
ADDING DHCP ROLE CONTINUE...

7. In the Confirm Installation page, select Restart the destination server automatically if required. Click Yes the warning window and click Install.



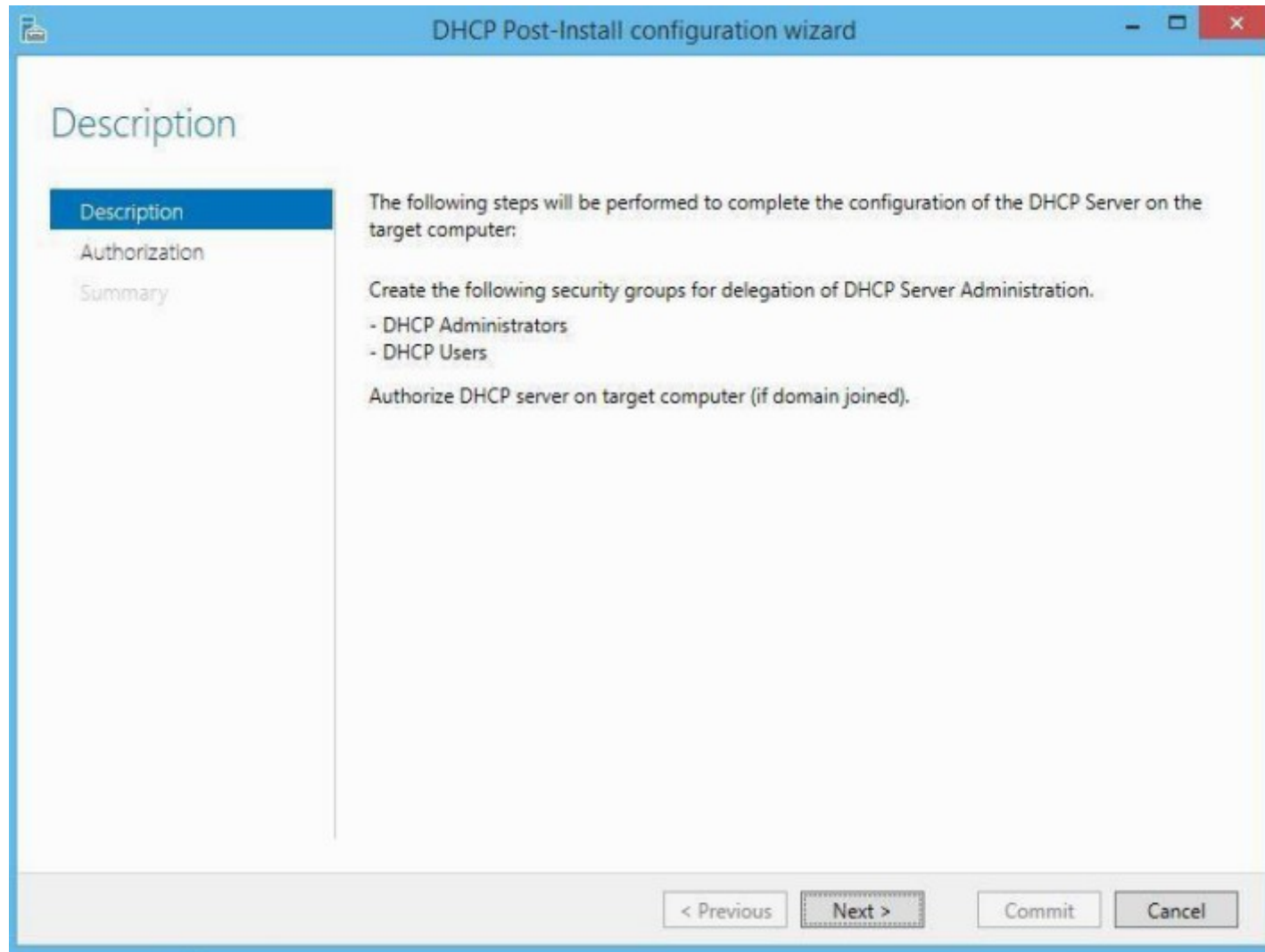
ADDING DHCP ROLE CONTINUE...

8. The installation will take a minute, when it has completed successfully click Complete DHCP Configuration link.



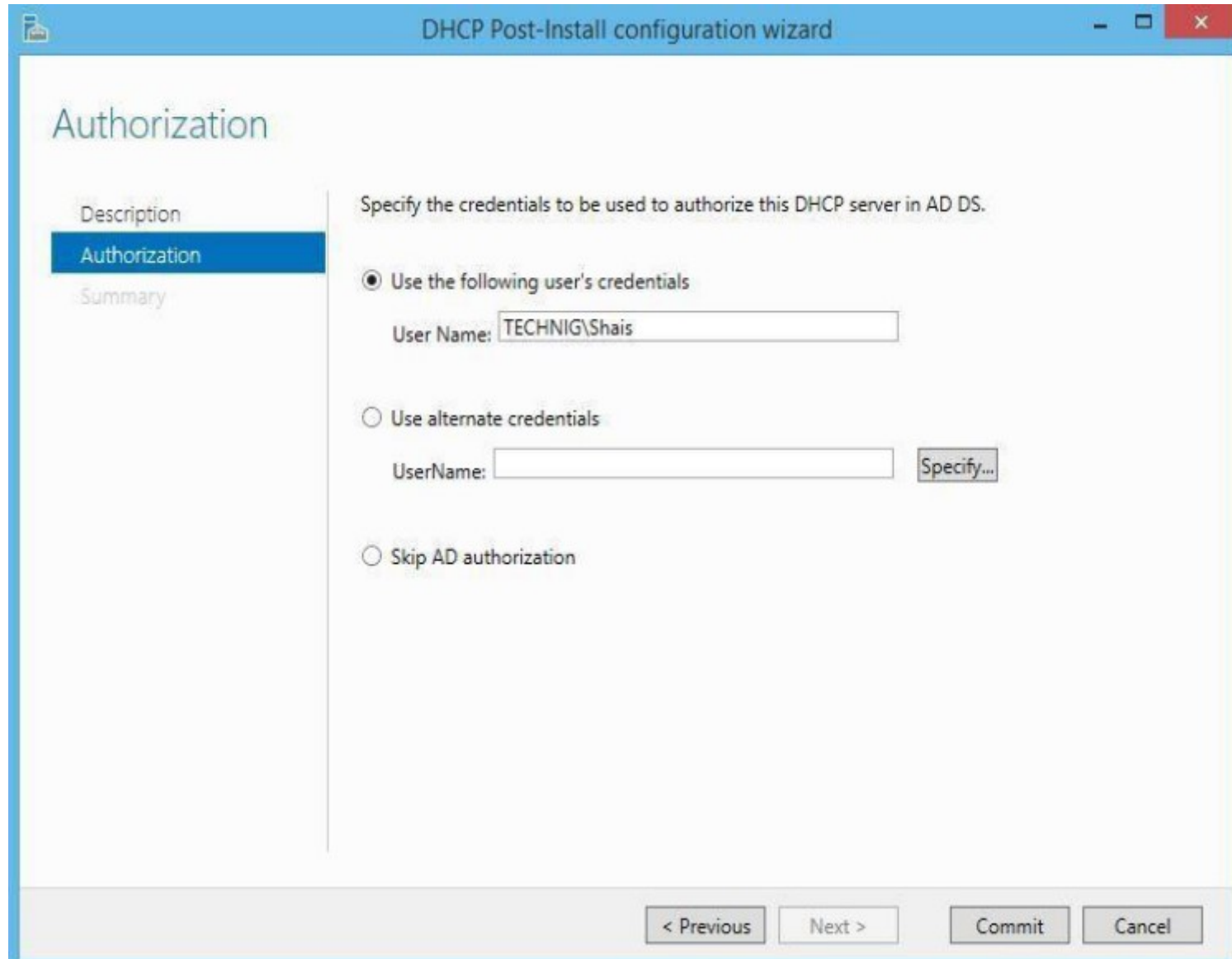
ADDING DHCP ROLE CONTINUE...

9. Read DHCP Post-Install configuration wizard description and click Next.



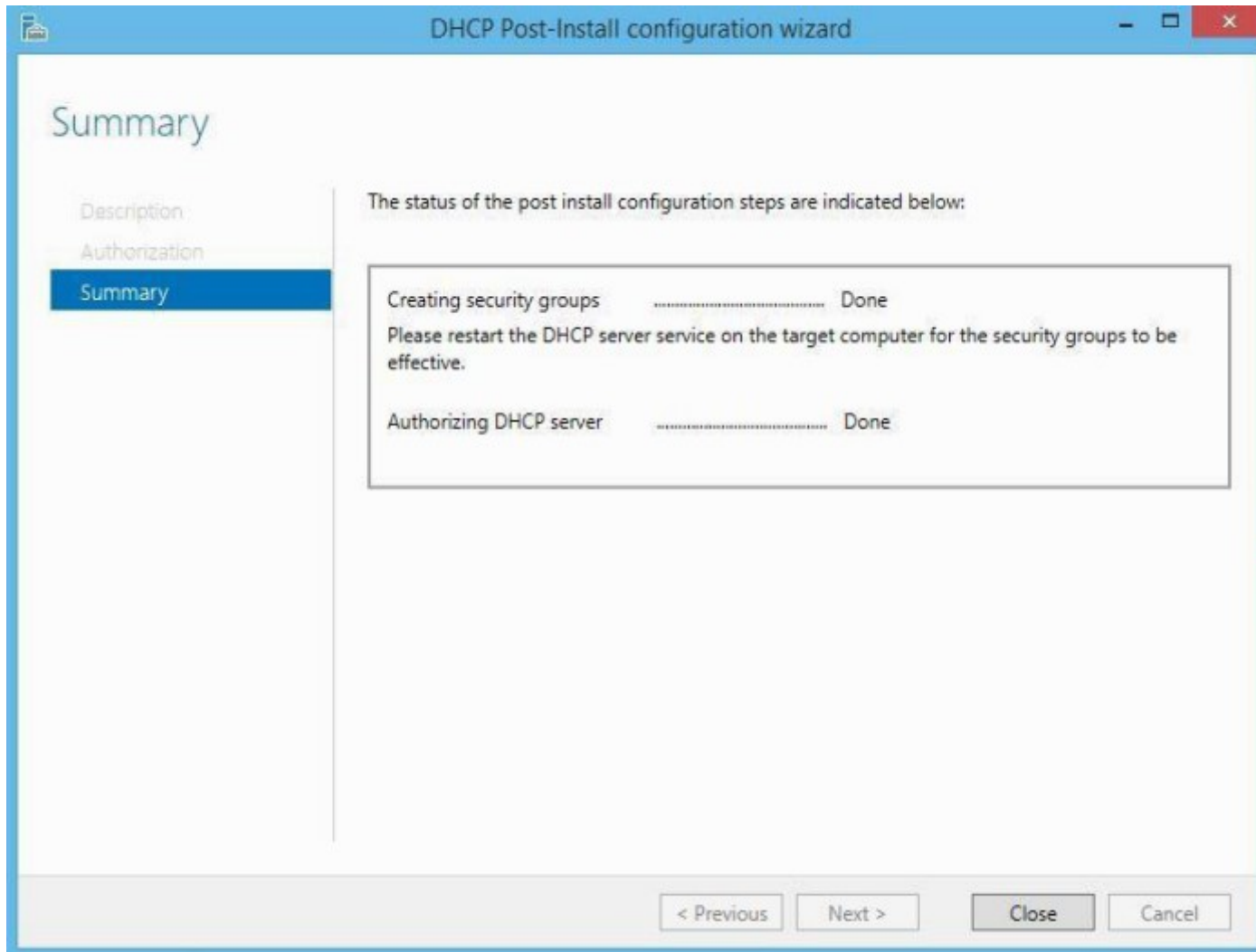
ADDING DHCP ROLE CONTINUE...

10. Set the appropriate user for management of DHCP Server.



ADDING DHCP ROLE CONTINUE...

11. On the DHCP summary window clicks Close and close the DHCP Installation page also.



WINS

- WINS refers to 'Windows Internet name service'.

To Understand WINS is to Understand NetBIOS

Computers communicate through protocols such as TCP/IP using number schemes via IP addresses. To prevent having to remember all of those numbers, a method to “label” those IP addresses with names came up. By assigning names to each computer on a network, one could manage them much easier.

- One of the first ways to map names to IP addresses was Network Basic Input/ Output System or [NetBIOS](#) (Network Basic Input/Output System).
- NetBIOS most notably is non-routable. NetBIOS name resolution cannot happen over multiple networks. To remedy this, Microsoft developed a NetBIOS Naming Service or what most call WINS to resolve names across routed networks.

Cont..

- NetBIOS had a major problem; it couldn't be routed to other networks. Companies were starting to need many networks to segment off traffic and NetBIOS couldn't be routed across those networks. What to do? Introduce a new protocol; [Windows Internet Naming Service \(WINS\)](#).

- Using WINS, admins could now route name traffic across networks because it relied on the TCP/IP protocol. If admins used WINS, they also had a central place all computers could register their names and IP addresses.

- Decades ago, Windows clients identified network devices by their NetBIOS names thus the requirement for WINS. But, nowadays, WINS is not required on modern machines starting with Windows 2000.

WINS is now an obsolete technology that Microsoft has sunset in favor of other protocols like DNS which is more suited for name resolution in environments that run on Windows Servers 2000 and above.

But, if you must support Windows NT servers and workstation applications, you may need it.

WHAT IS WINS?

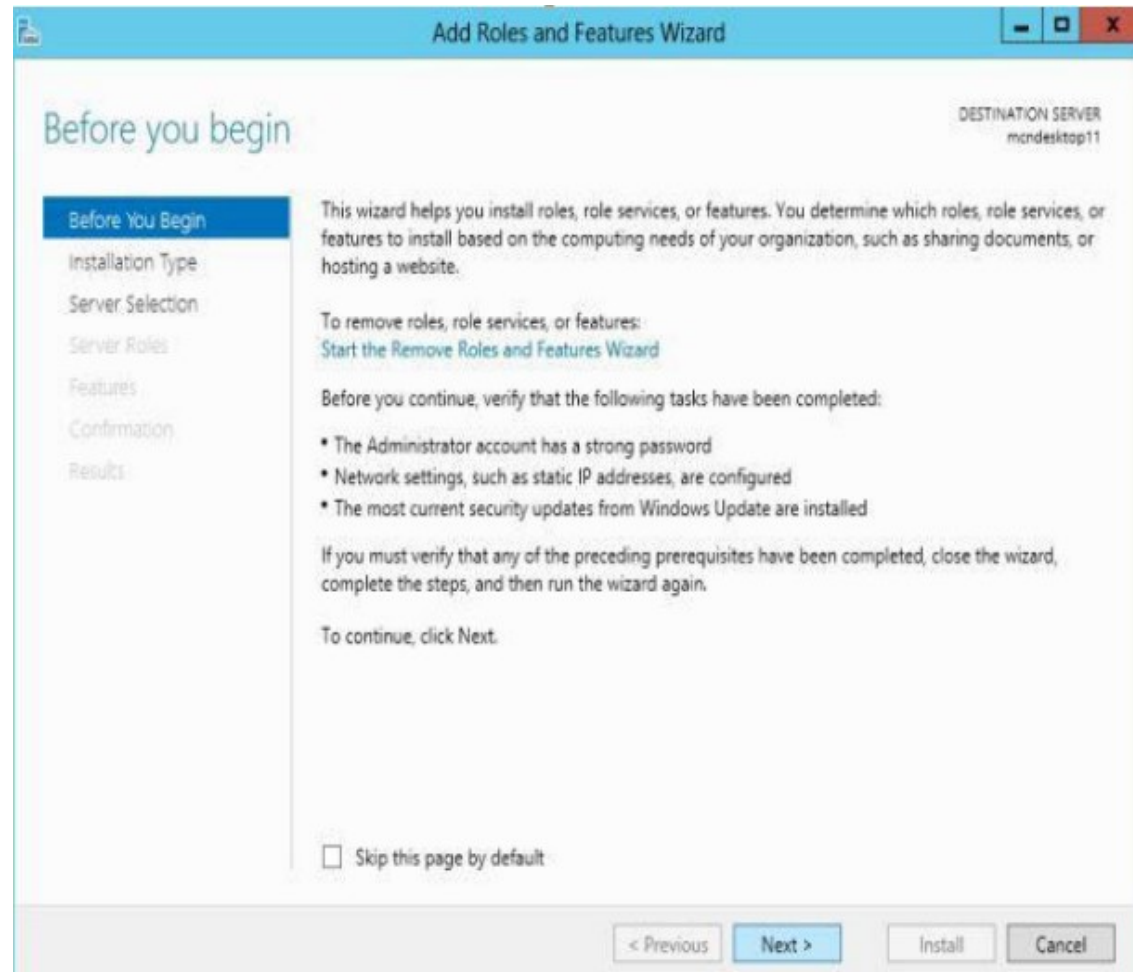
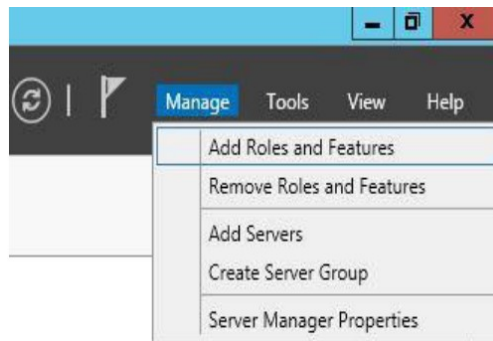
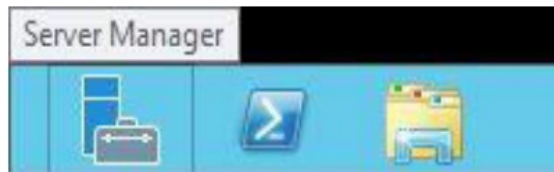
- WINS is a Microsoft NetBIOS Name Server (NBNS).
- WINS provides a dynamic NetBIOS name to IP address database.
- It also interacts with the Browser Service, which assembles and provides the Network Neighborhood.

ADDING WINS ROLE

1. Launch Server Manager from a Windows 2012 server with a full GUI.
2. Select the Dashboard section and click the Add Roles and Features link.
3. Click Next on the Before You Begin page.
4. Leave the default selection Role-Based or Feature-Based Installation and click Next.
5. Select the server from the server pool to add the DNS role and click Next.
6. Click Next to skip the Roles selection.
7. Select the WINS Server Feature check box, click Add Features button, and then click Next.
8. Click Install on the Confirmation page to install the WINS feature.
9. Click Close to exit the Add Roles and Features Wizard.

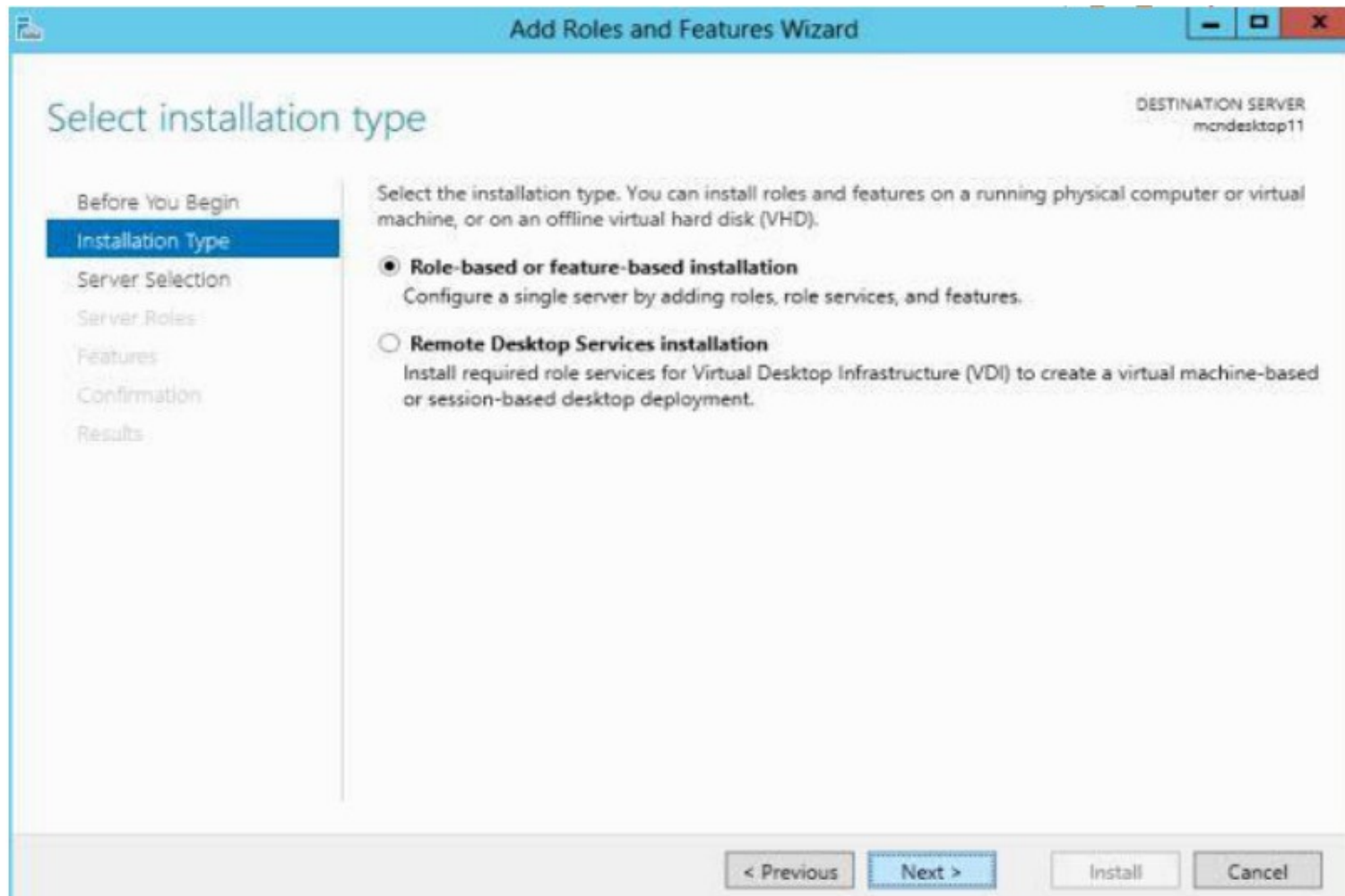
ADDING FILE SERVER ROLE

1. To install file Serve go to Dashboard on Server Manager and click Manage then click Add Rules and Features.



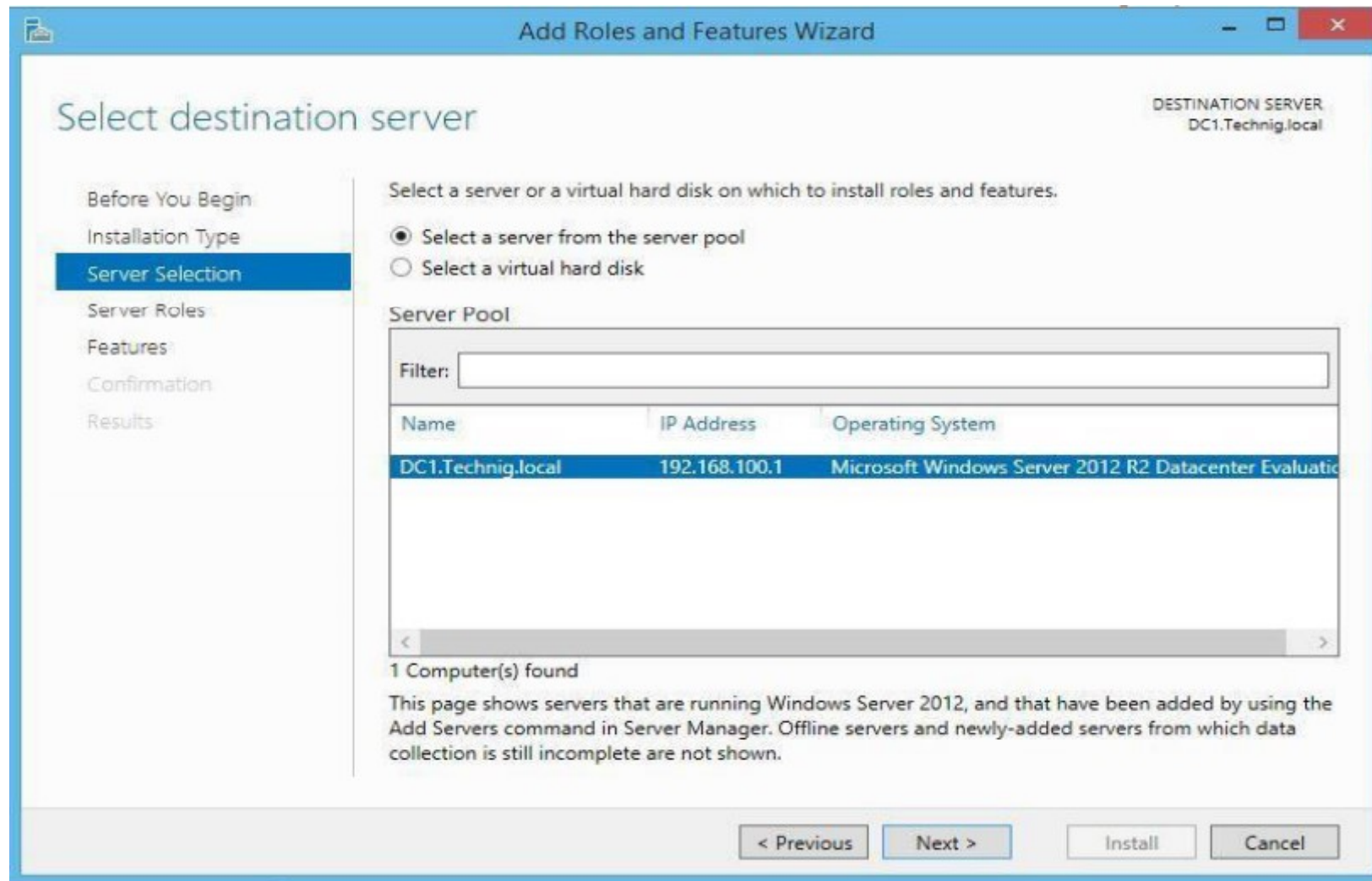
ADDING FILE SERVER ROLE CONTINUE...

2. Now you will be prompted for Installation type, from which you must select the first option and then click on "Next".



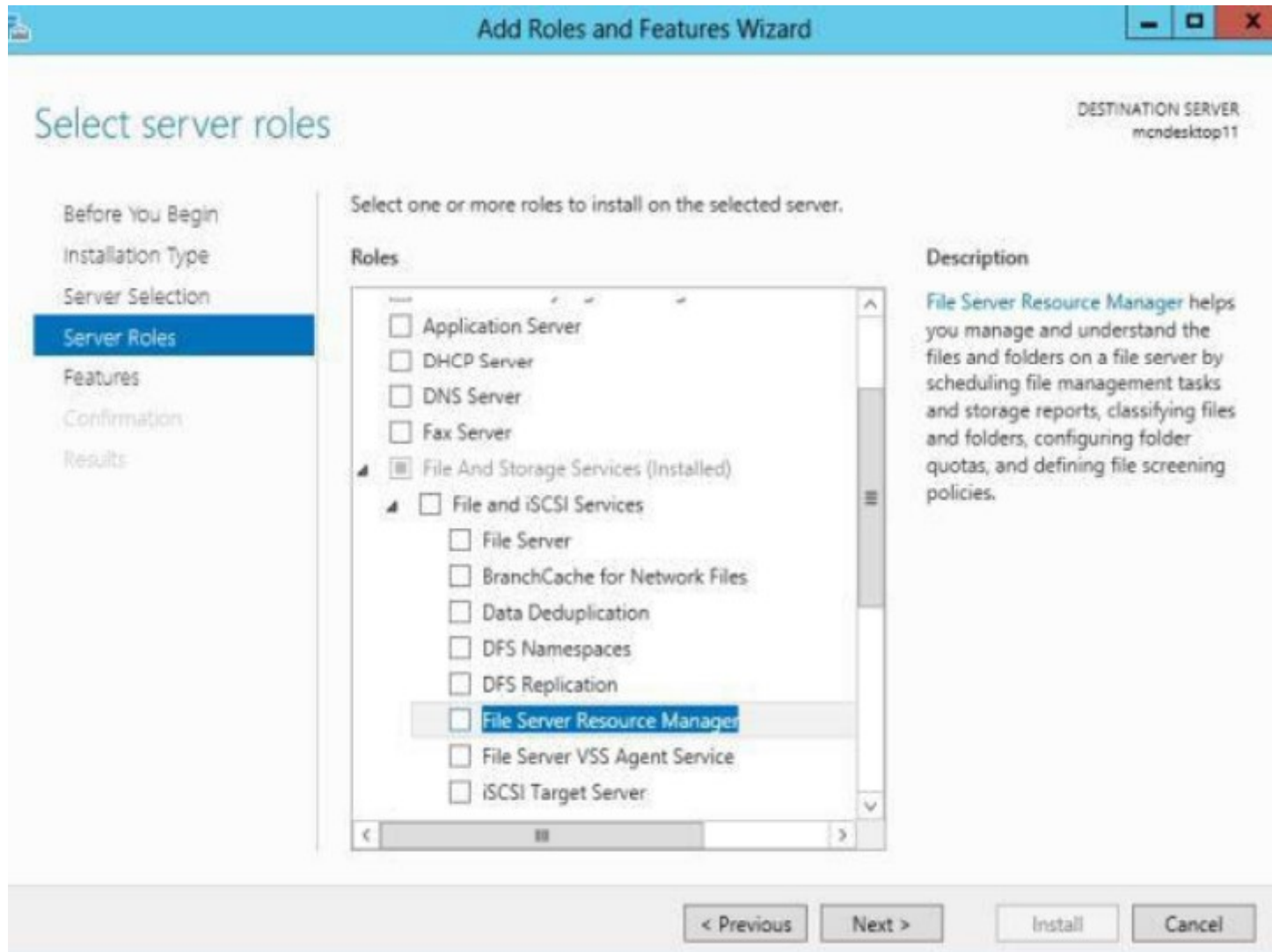
ADDING FILE SERVER ROLE CONTINUE...

3. Choose the server you want to install file server from the Server pool. Here we have one server and select by default.



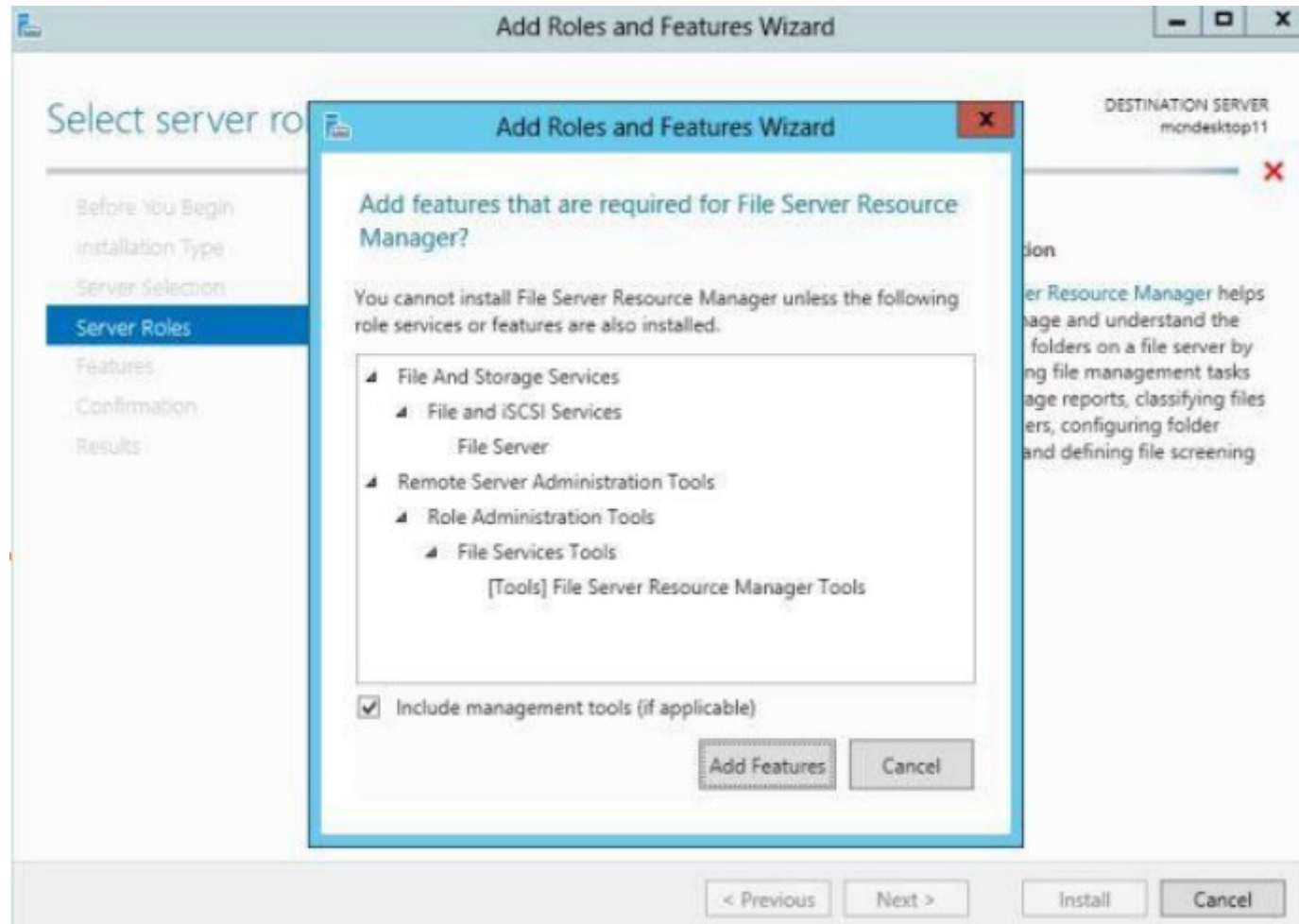
ADDING FILE SERVER ROLE CONTINUE...

4. Find the "File and Storage Services" and then then expand it, then "Files and iSCSI Services" will open, again expand it to find the "File Server Resource Manager".



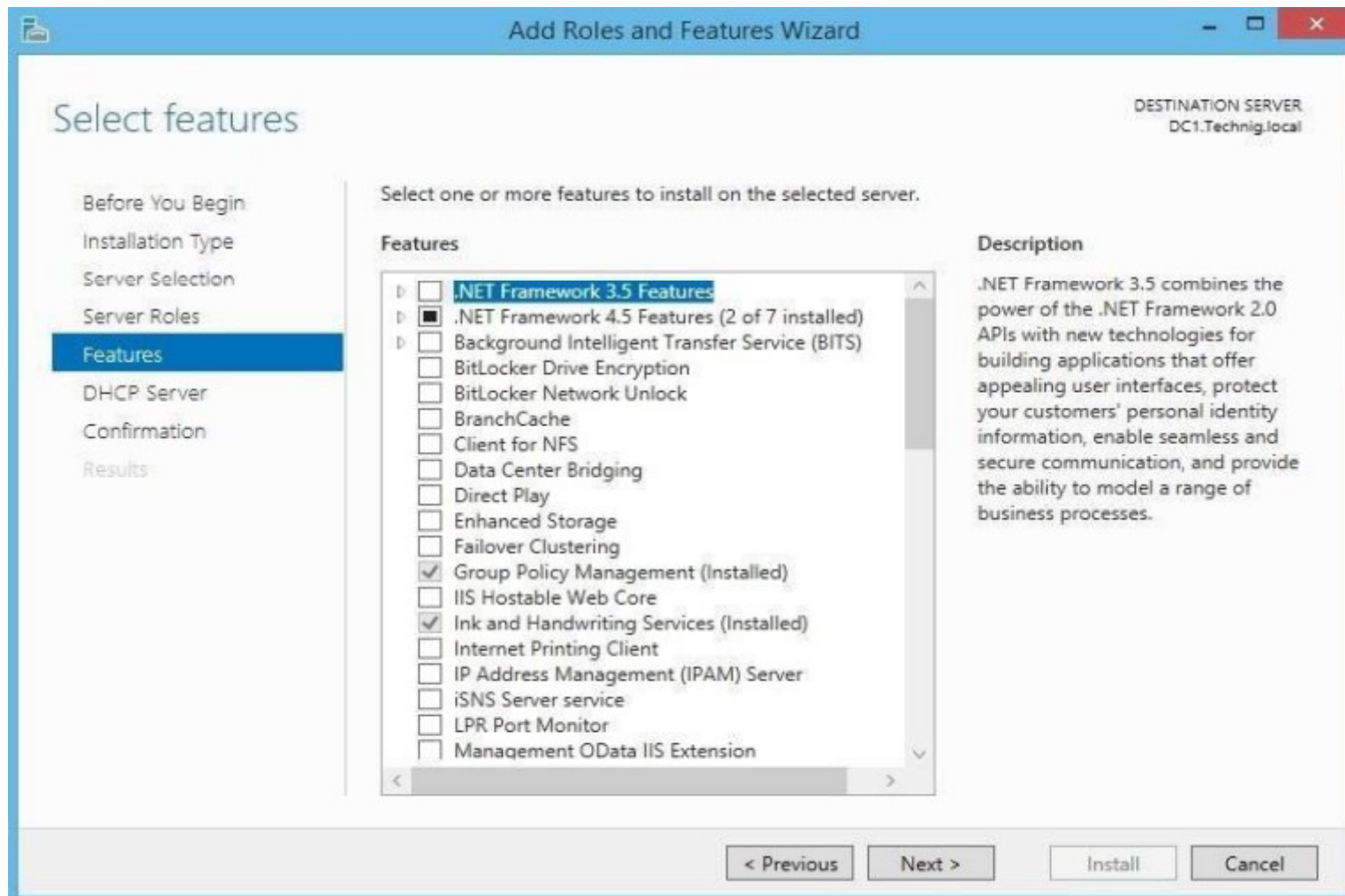
ADDING FILE SERVER ROLE CONTINUE...

5. As you select the File Server Resource Manager a new window will be opened that will ask permission to Add Features. Click on "Add Features" to grant it the permission.



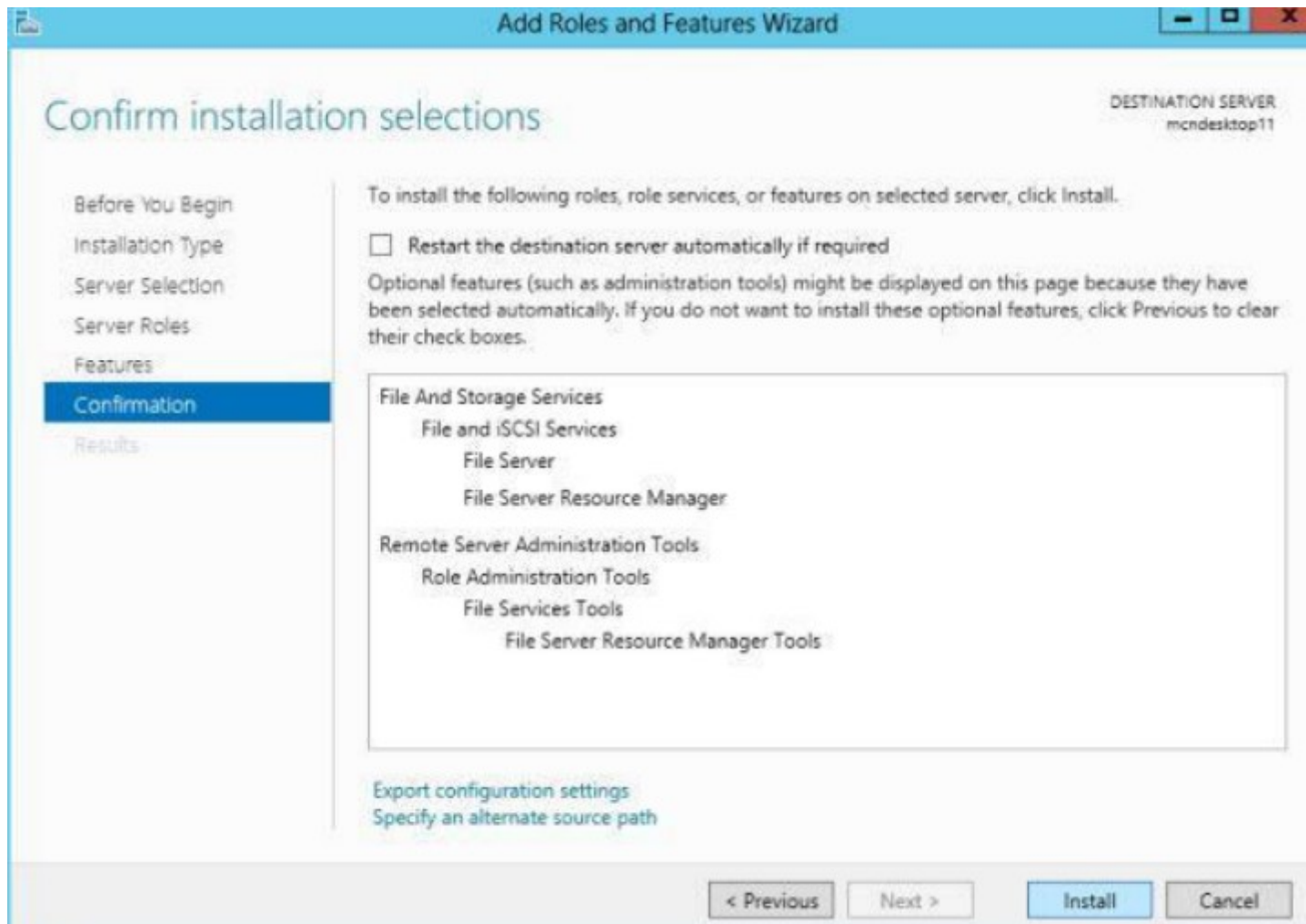
ADDING FILE SERVER ROLE CONTINUE...

6. list of Features will be available for selection, you can select any feature if you want to install and then click on "Next" or simply click on "Next" without selecting any Feature.



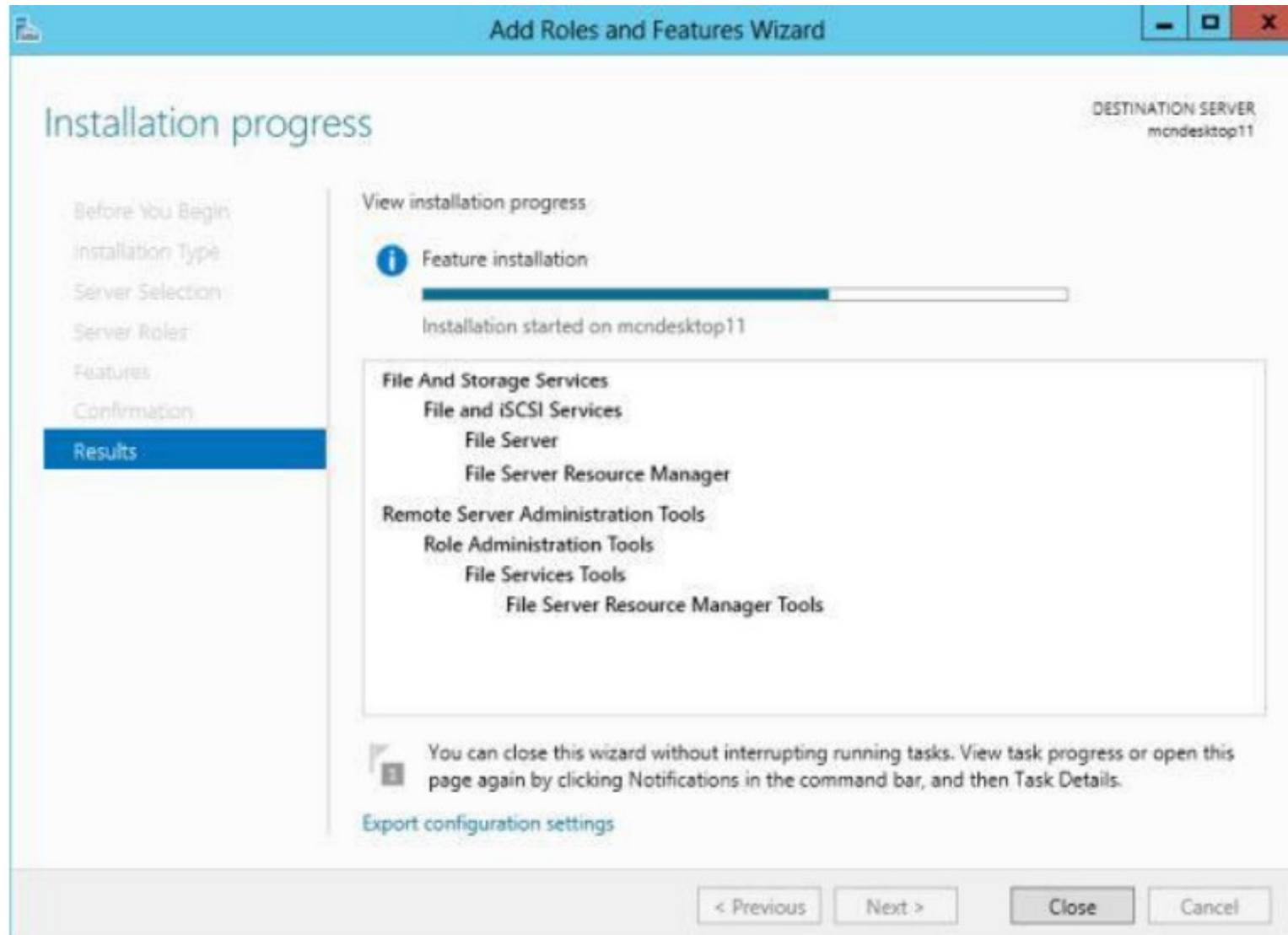
ADDING FILE SERVER ROLE CONTINUE...

7. confirmation page will be opened, where you can give permission to the server to restart if required or you can click on "Install" without giving permission to restart.



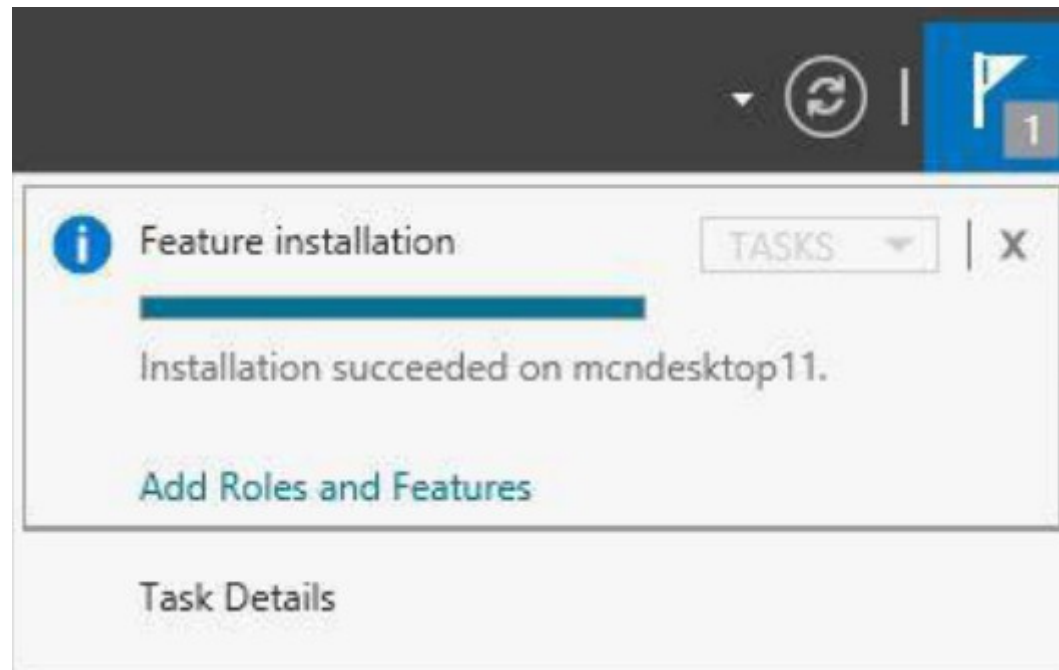
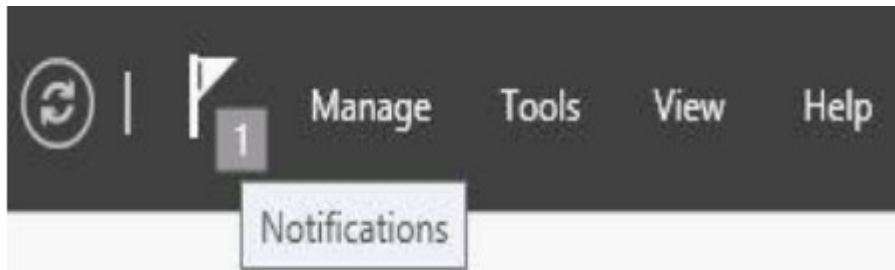
ADDING FILE SERVER ROLE CONTINUE...

8. Now your installation will begin.



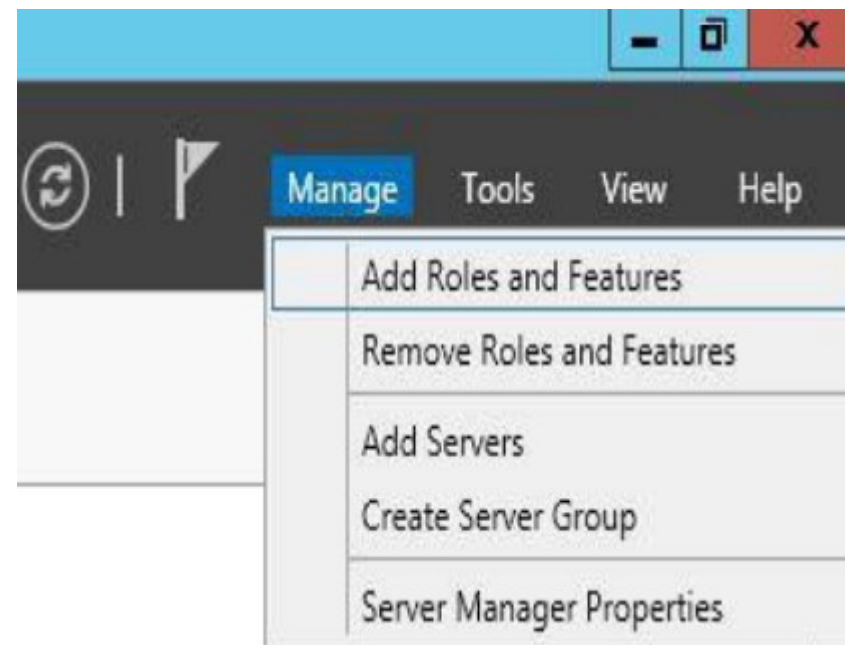
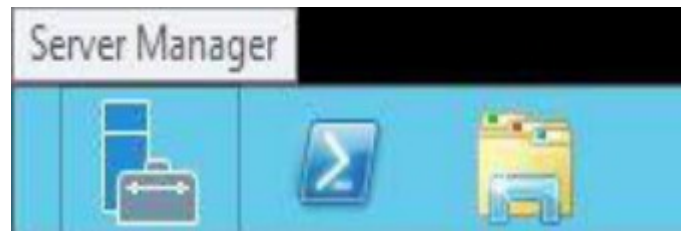
ADDING FILE SERVER ROLE CONTINUE...

9. See that your installation is successfully completed. You can get this confirmation by clicking on the Flag given on the upper-right hand corner.



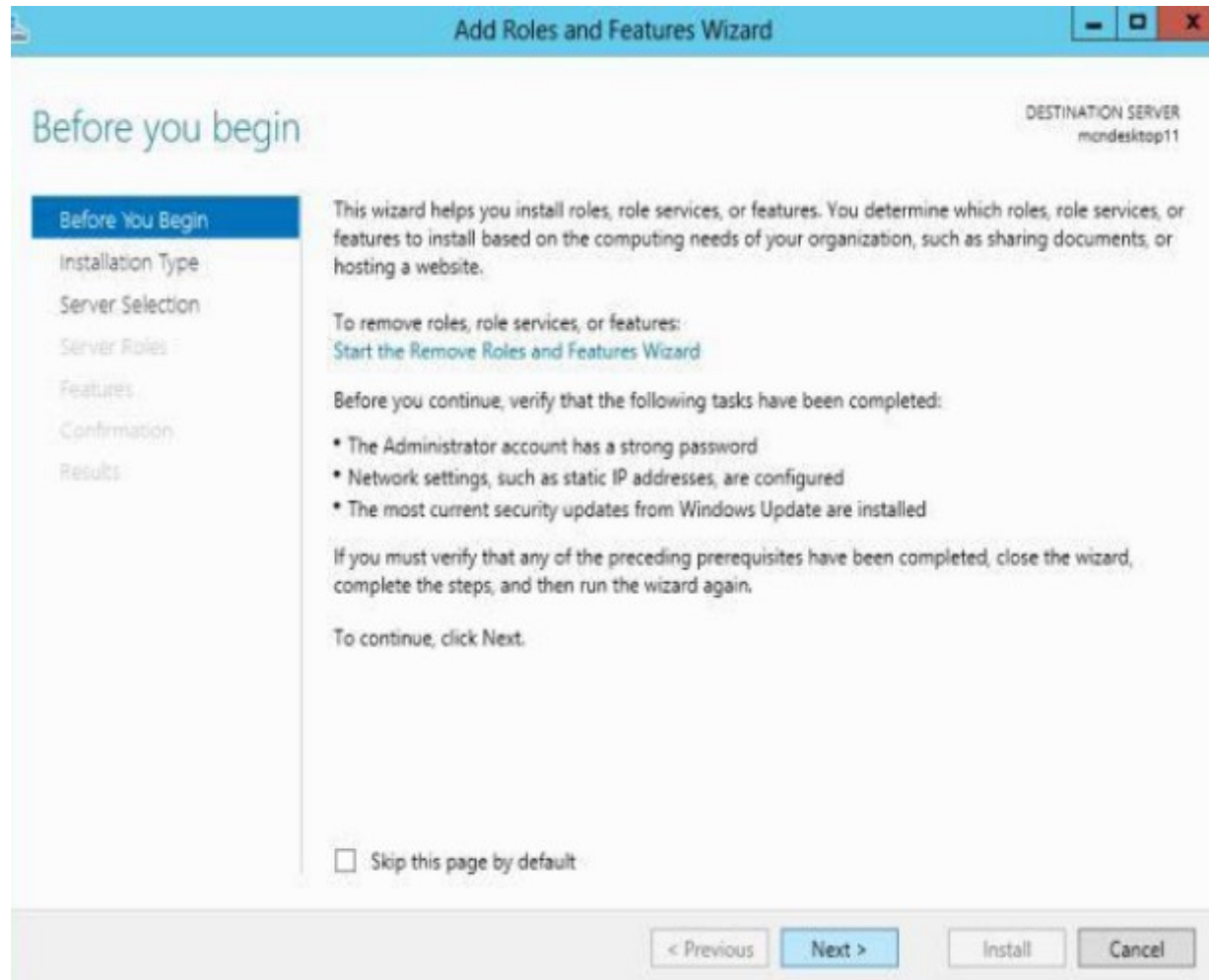
ADDING PRINT SERVER ROLE

1. In Server Manager click on the "Manage" button to open the "Add Roles and Features" to add the new feature.



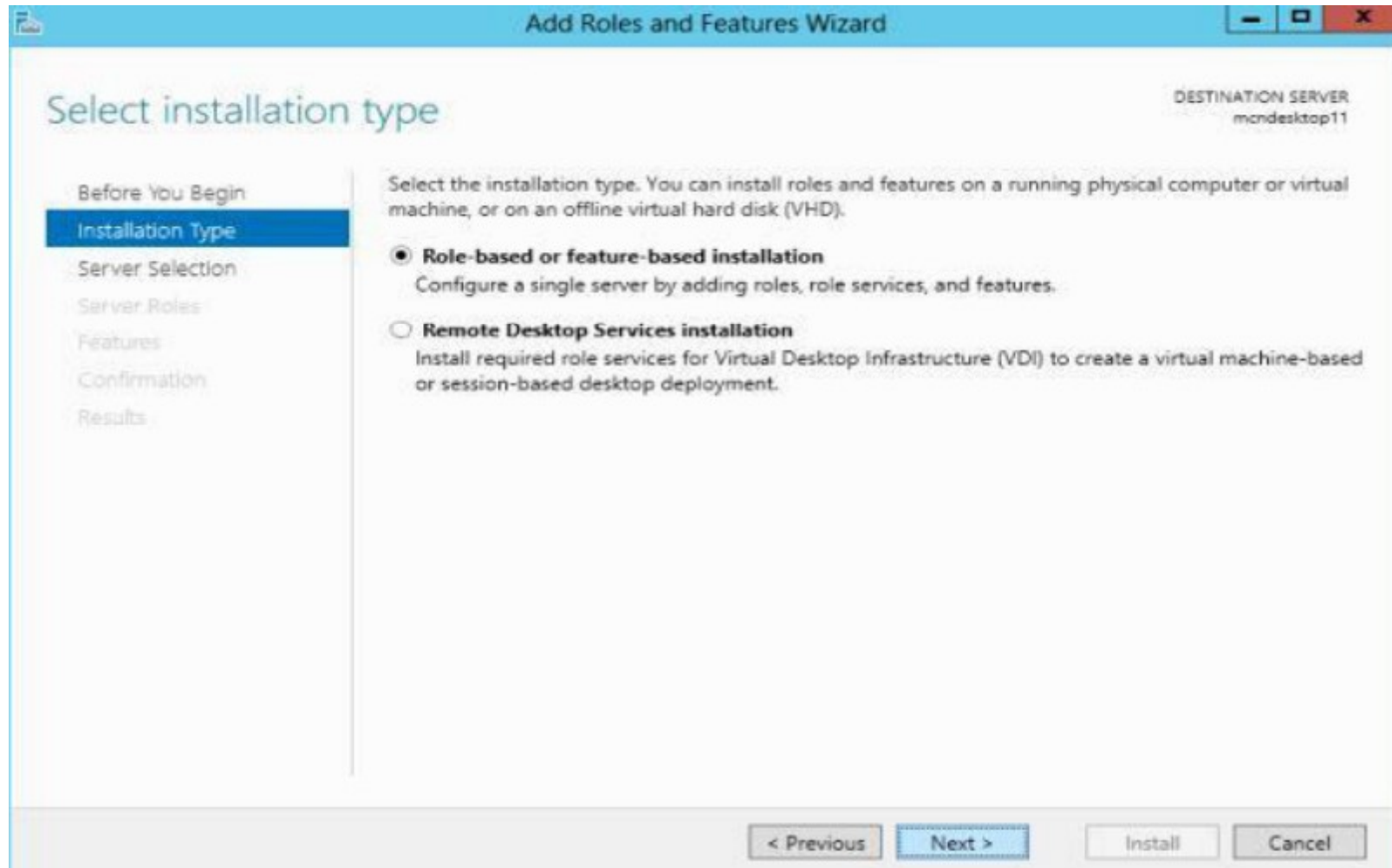
ADDING PRINT SERVER ROLE CONTINUE...

2. Now a new window will be opened in which a few instructions are given; click on "Next".



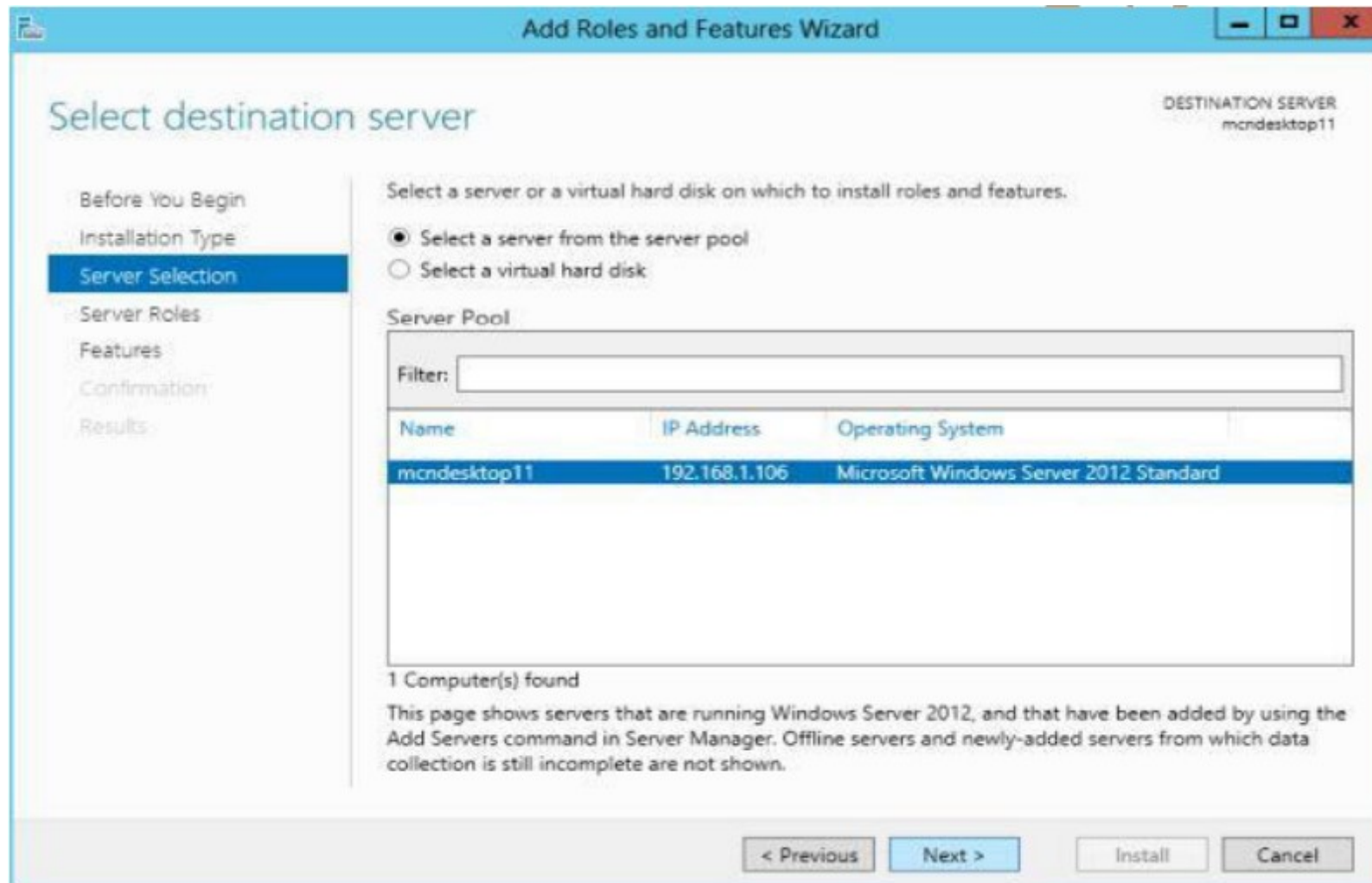
ADDING PRINT SERVER ROLE CONTINUE...

3. Now it will ask for the "Installation Type" from which you must select the first option and then click on "Next".



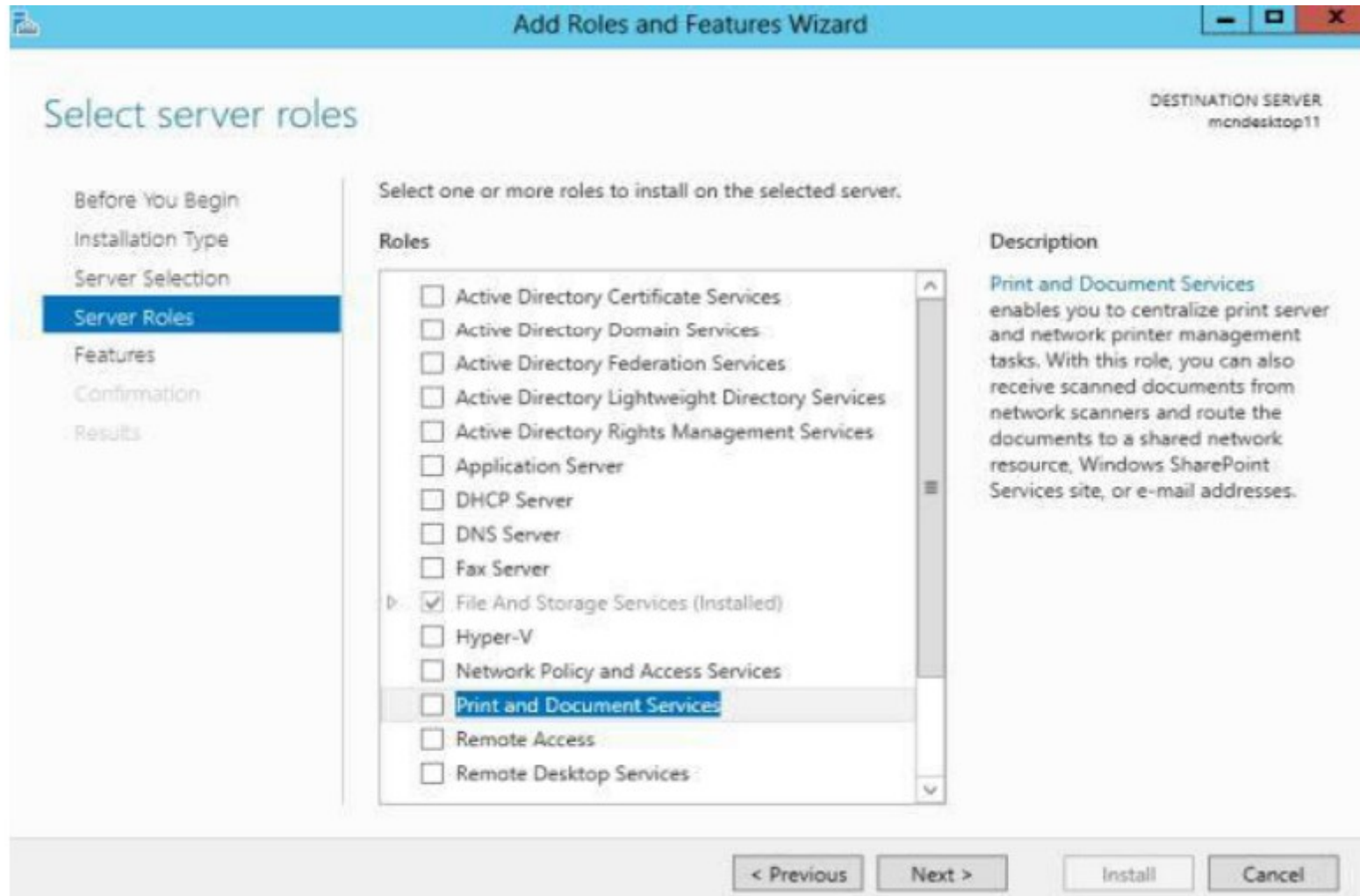
ADDING PRINT SERVER ROLE CONTINUE...

4. Now you must select the server from the Server Pool. Since I have only one server in the Server Pool my server is selected by default.



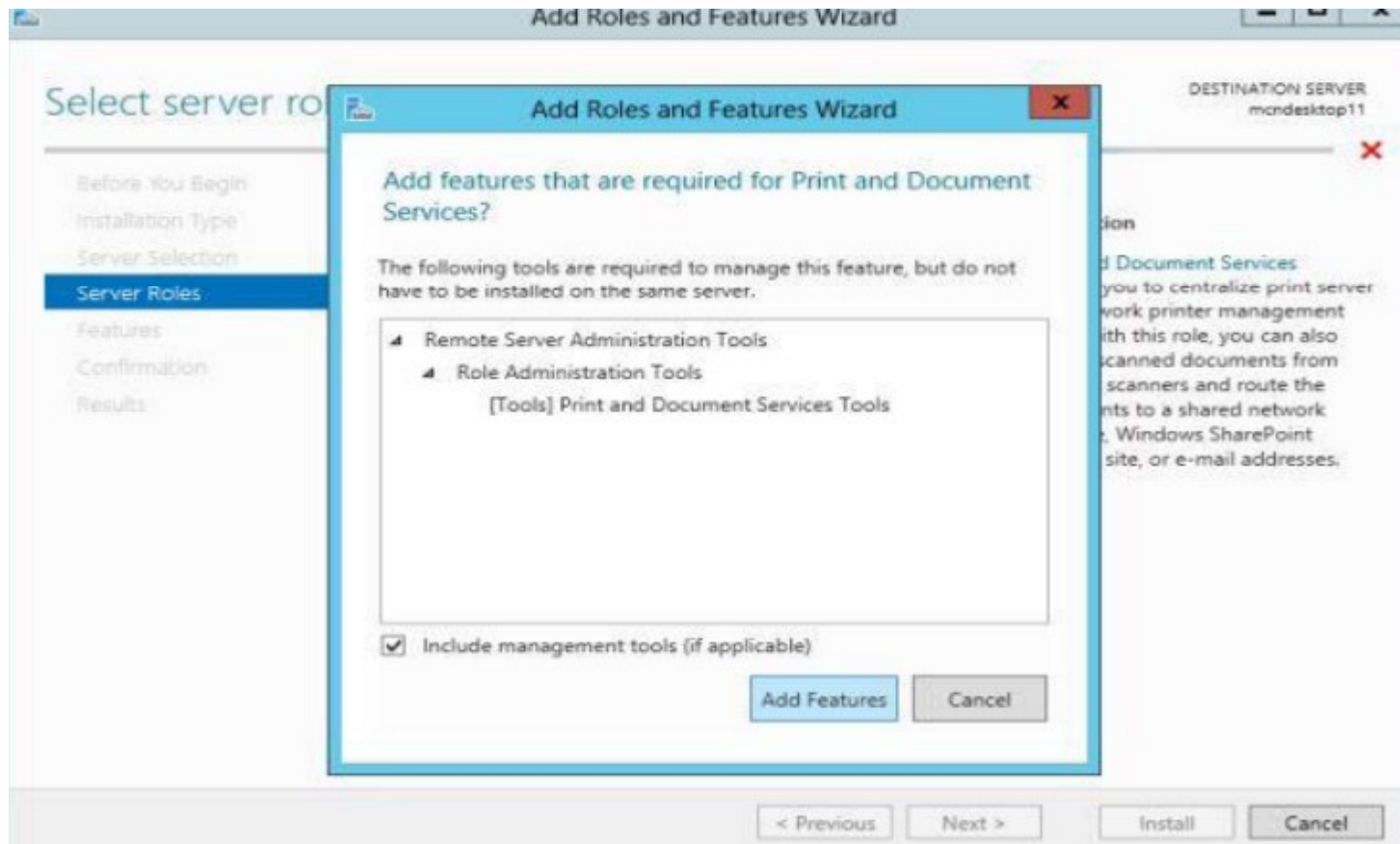
ADDING PRINT SERVER ROLE CONTINUE...

5. Now a List of Roles will appear in front of you, from this list you must select the "Print and Document Services".



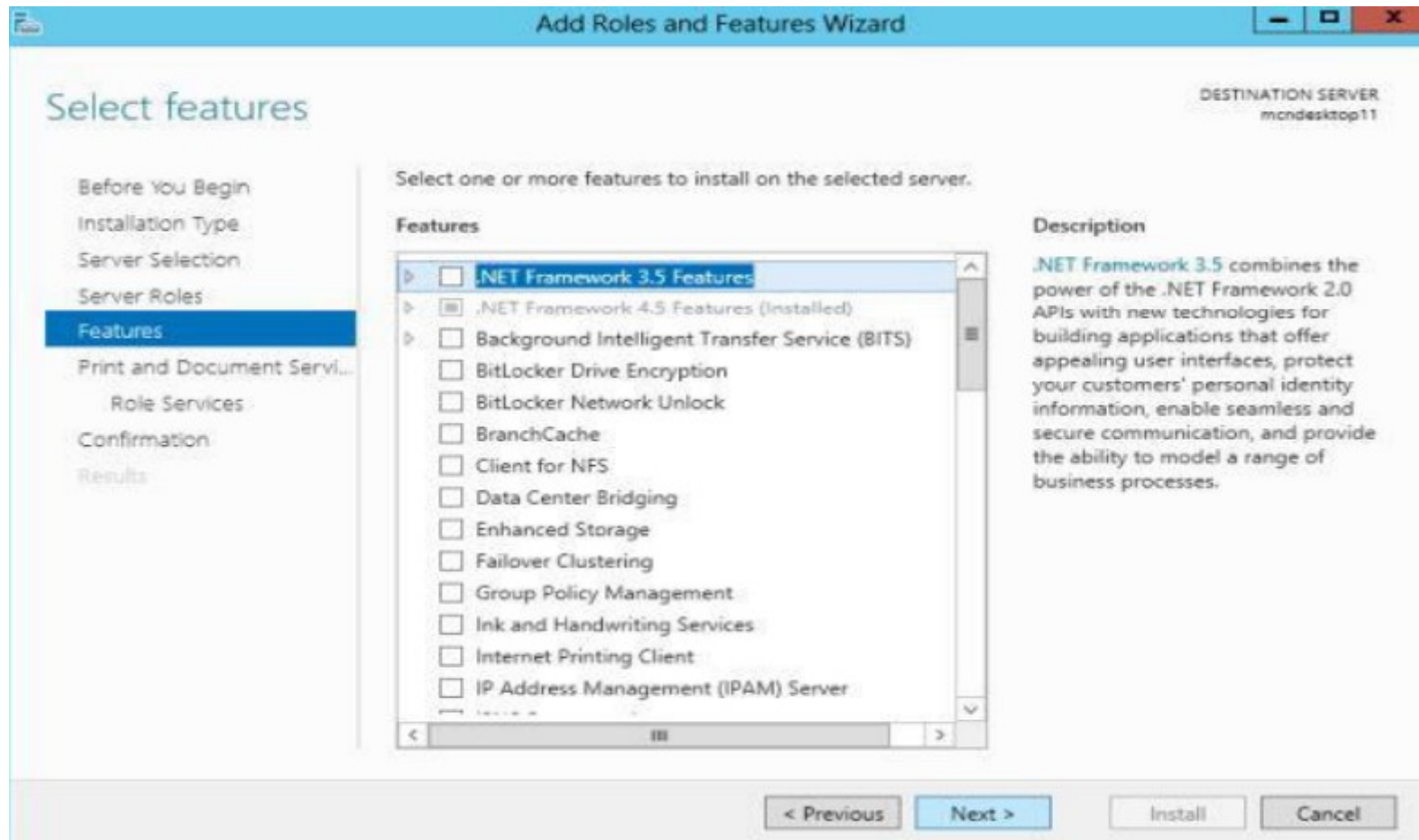
ADDING PRINT SERVER ROLE CONTINUE...

6. As you select the Print and Document Services a new window will be opened that will ask permission to "Add Features". Click on "Add Features" to grant it the permission.



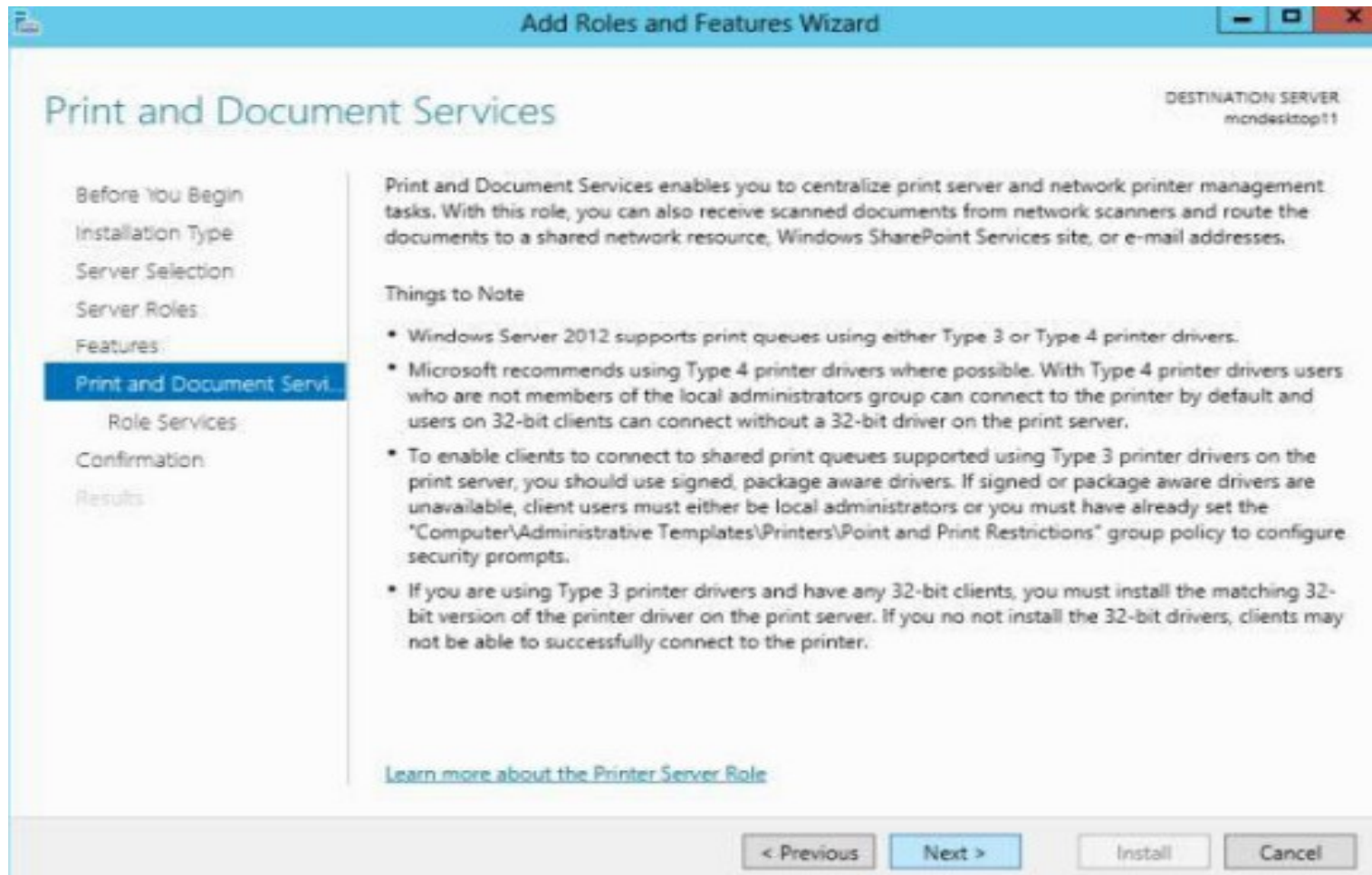
ADDING PRINT SERVER ROLE CONTINUE...

7. Now a list of features will be available for selection, you can select any feature you want to install and then click on "Next" or simply click on "Next" without selecting any feature.



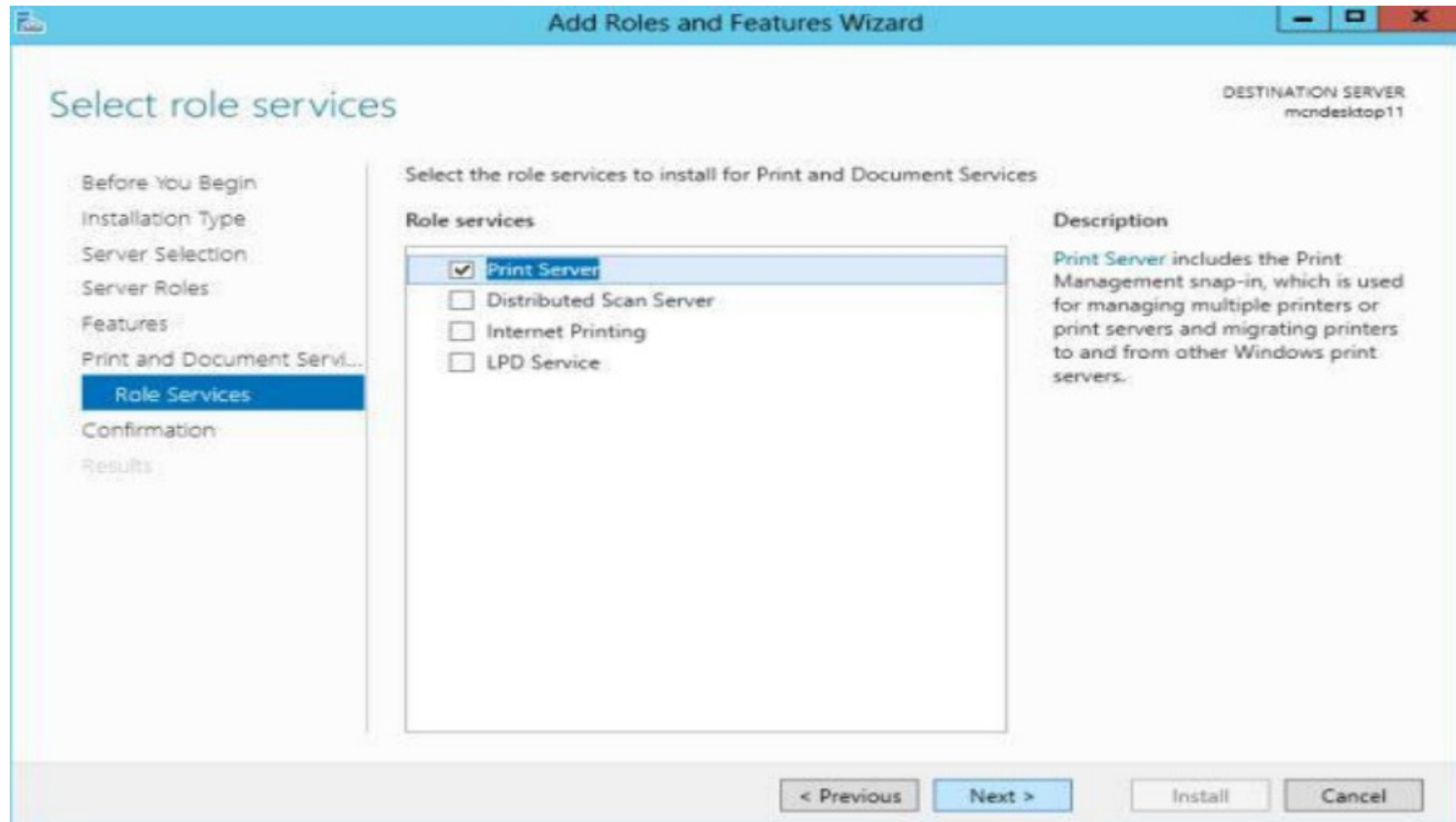
ADDING PRINT SERVER ROLE CONTINUE...

8. Now some information will be shown to you about this service, here also you must click on the "Next" button.



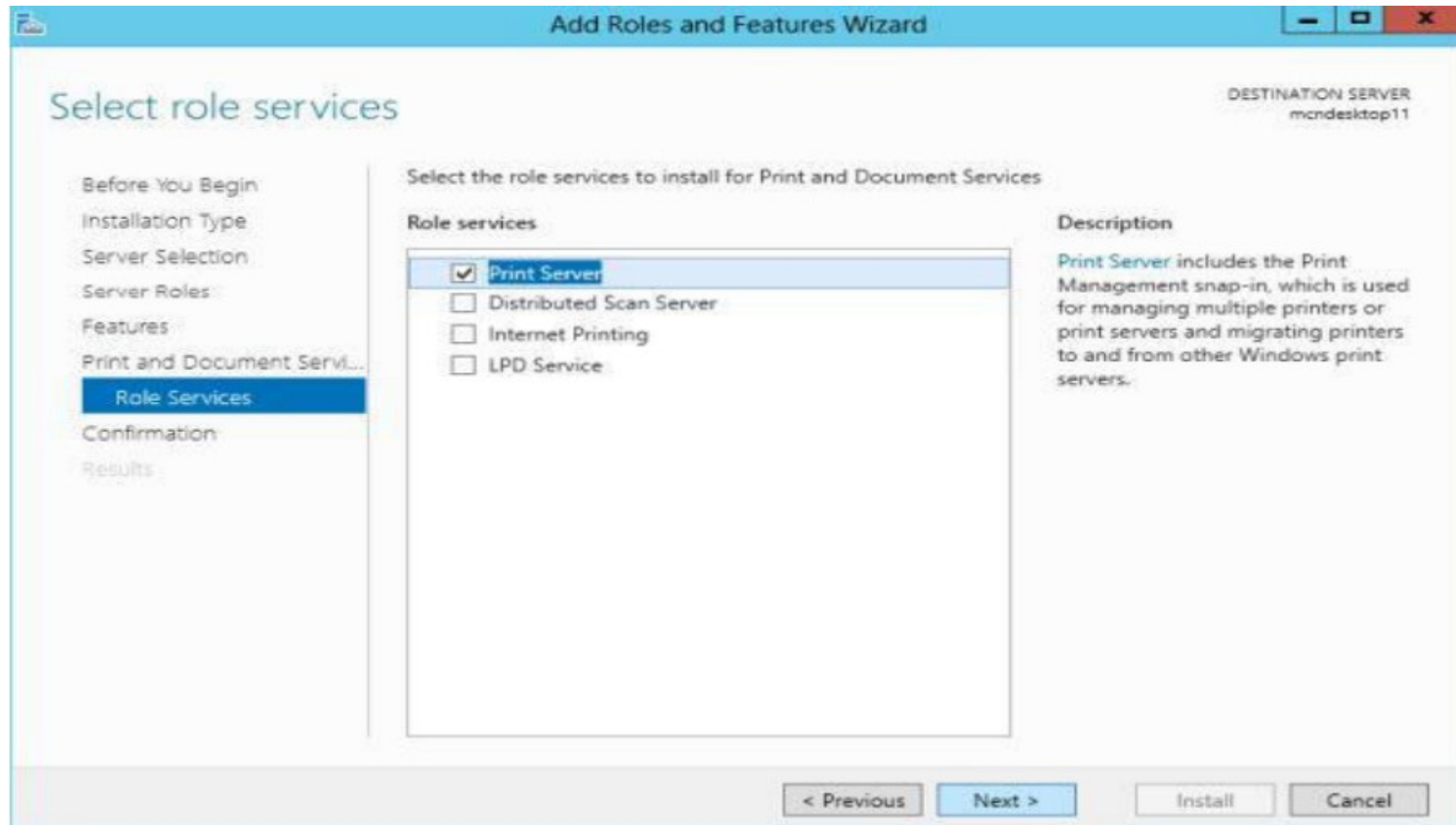
ADDING PRINT SERVER ROLE CONTINUE...

9. Now select the "Role Services" page which will open. In it you must select the first option i.e. "Print Server" and then click on "Next".



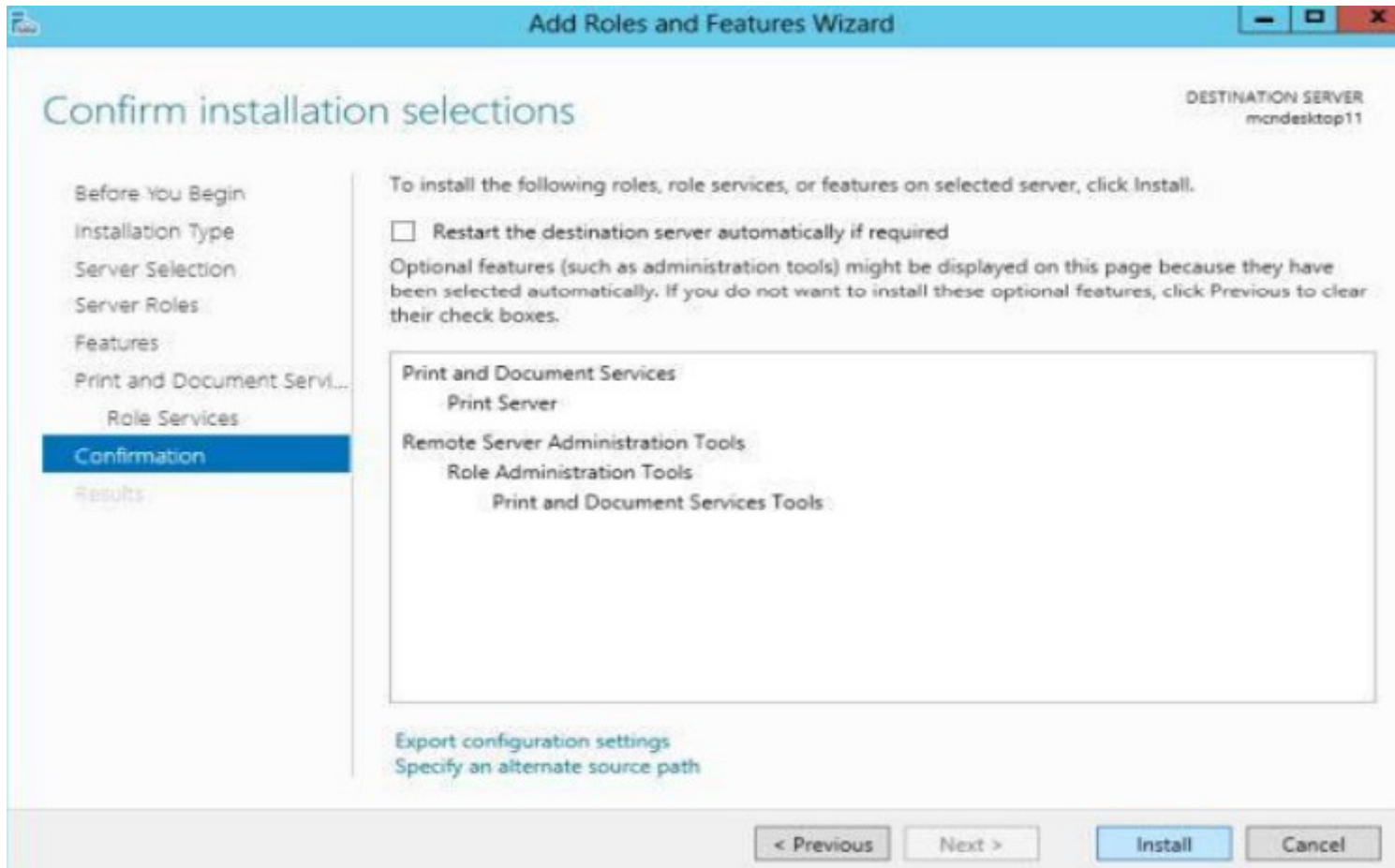
ADDING PRINT SERVER ROLE CONTINUE...

9. Now select the "Role Services" page which will open. In it you must select the first option i.e. "Print Server" and then click on "Next".



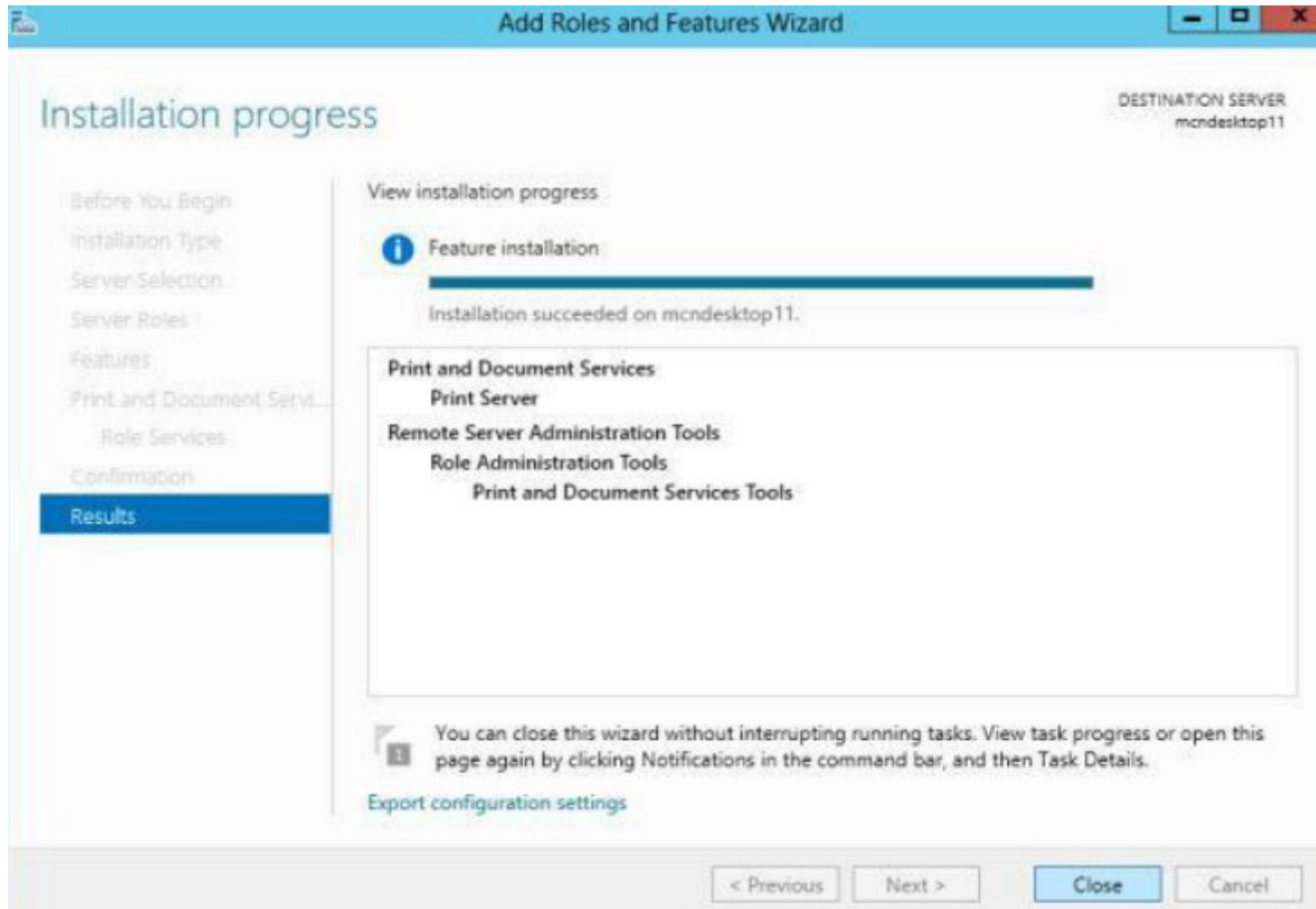
ADDING PRINT SERVER ROLE CONTINUE...

10. Now a confirmation page will be opened, where you can give permission to the server to restart if required or you can click on "Install" without giving permission to restart.



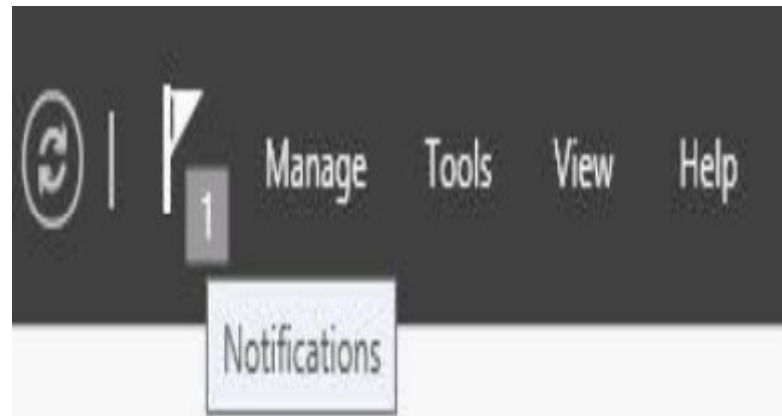
ADDING PRINT SERVER ROLE CONTINUE...

11. Now your installation will begin.



ADDING PRINT SERVER ROLE CONTINUE...

12.If you had provided permission to restart then your server will first restart and then in the Server Manager you will see that your installation is successfully completed. You can get this confirmation by clicking on the Flag given on the upper right hand corner.



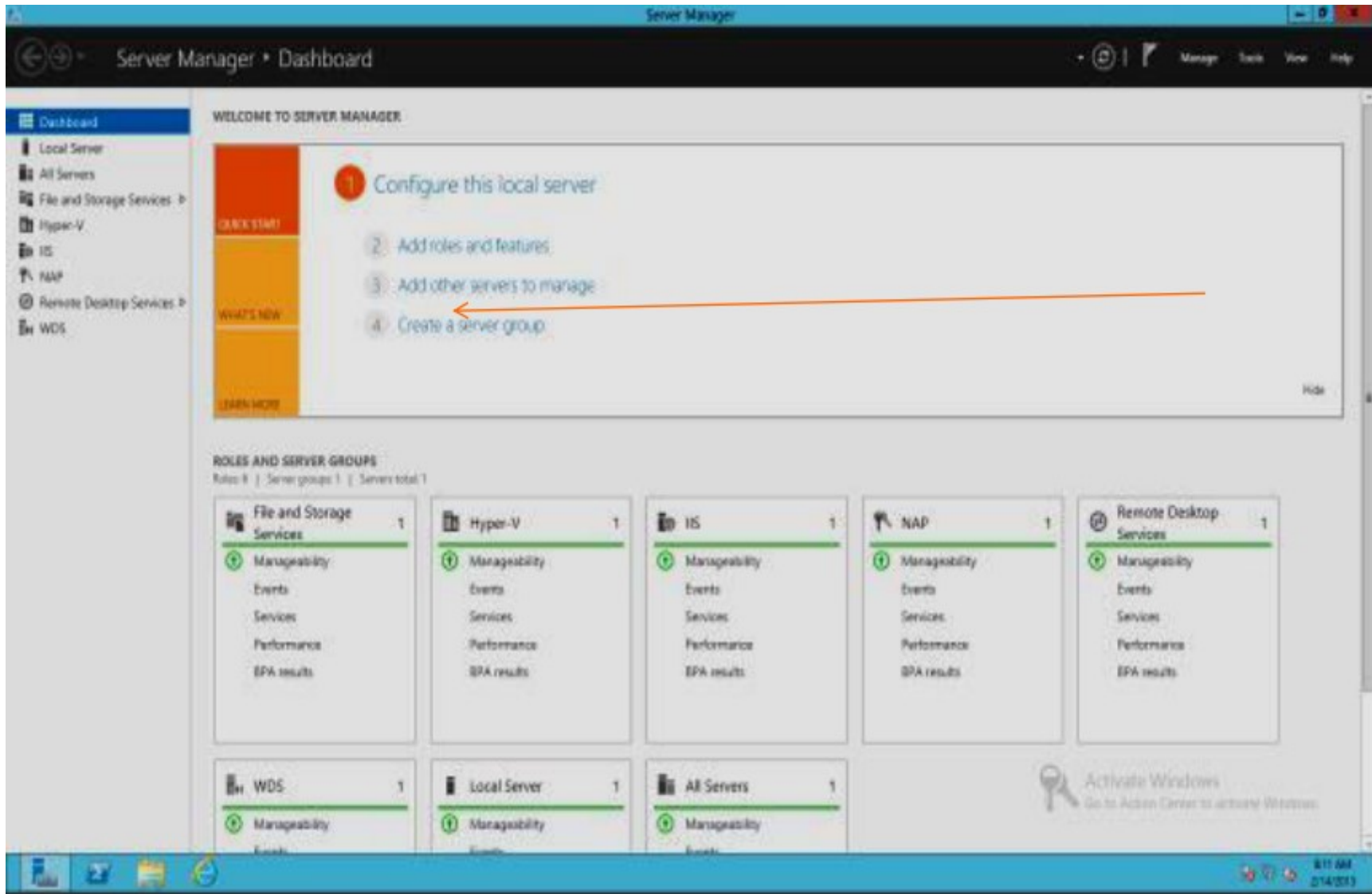
ADDING WEB SERVER(IIS) ADMINISTRATION.

- To install IIS8 on windows server 2012, use following steps
1. Open server manager



ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

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



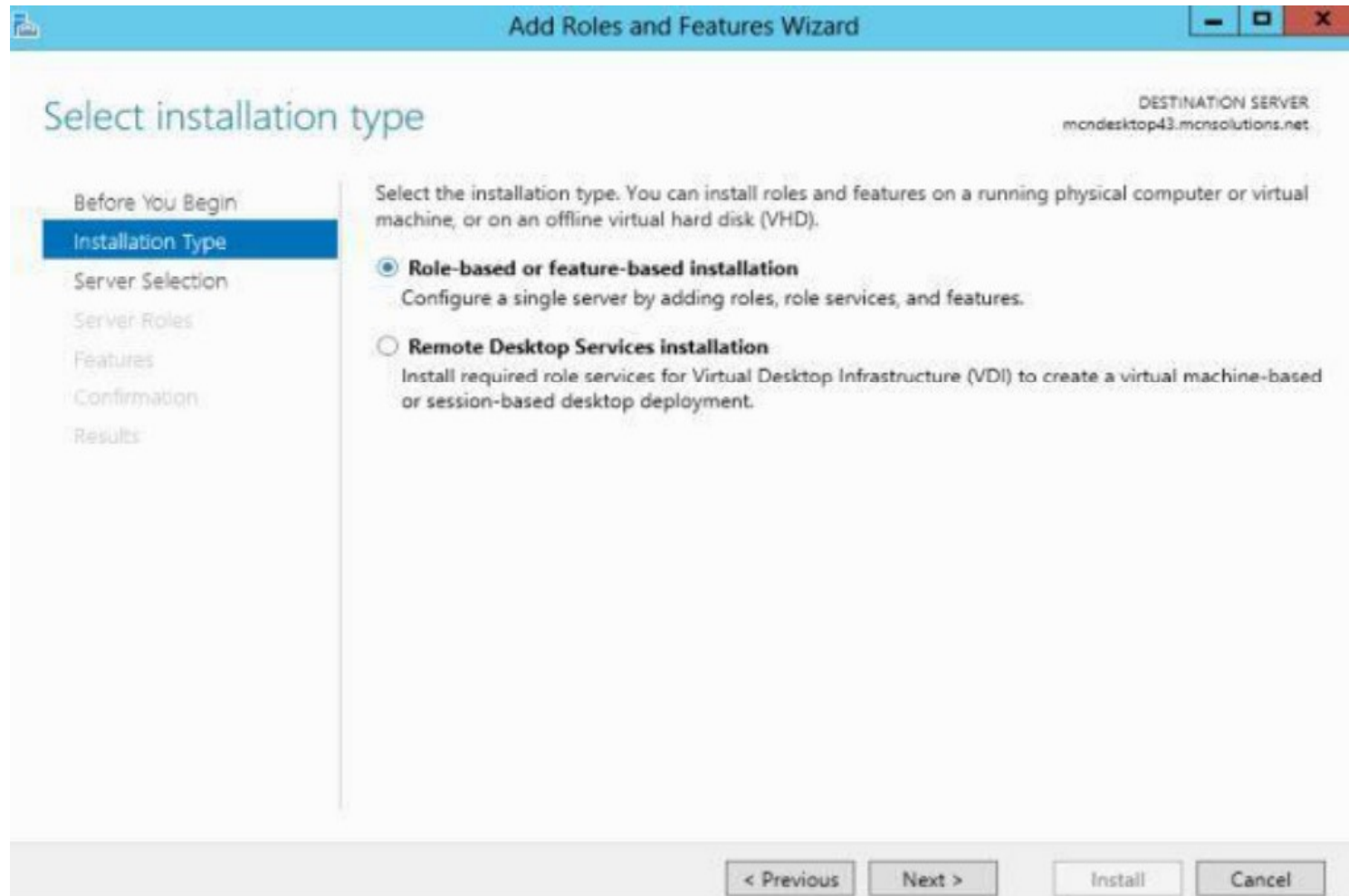
ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

3. Click next on the “Add Roles and Features wizard” Welcome page.



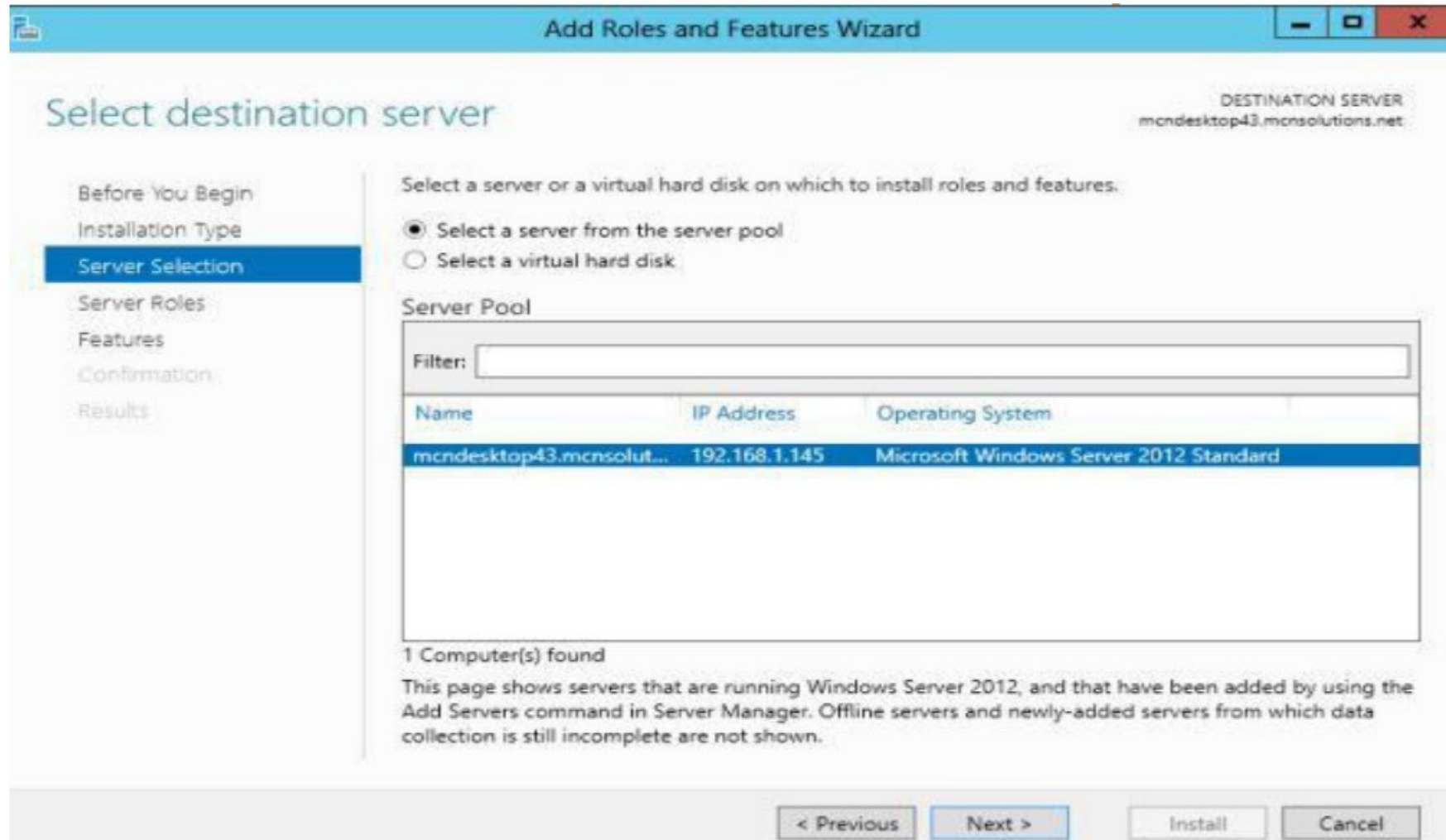
ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

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



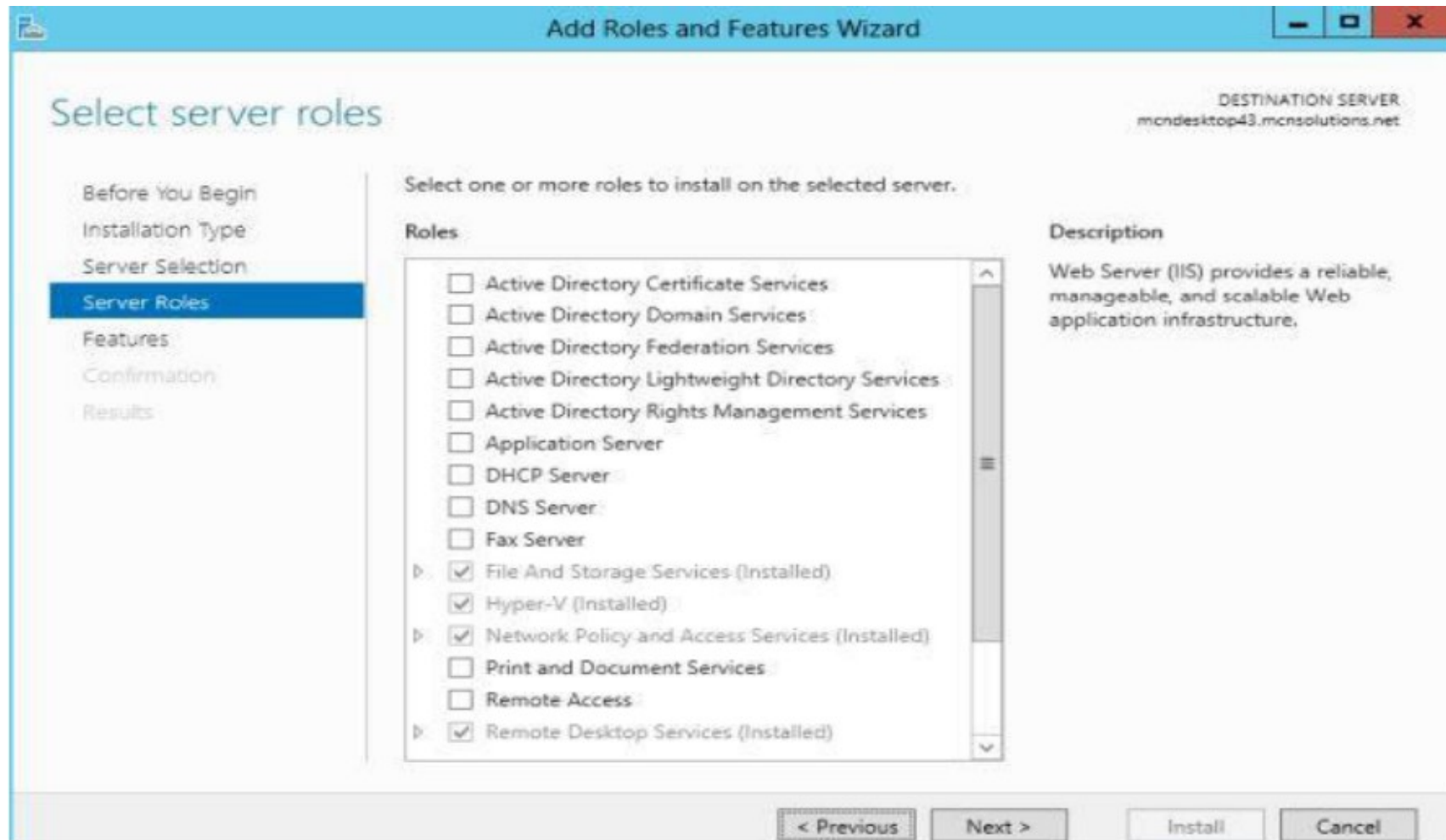
ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

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



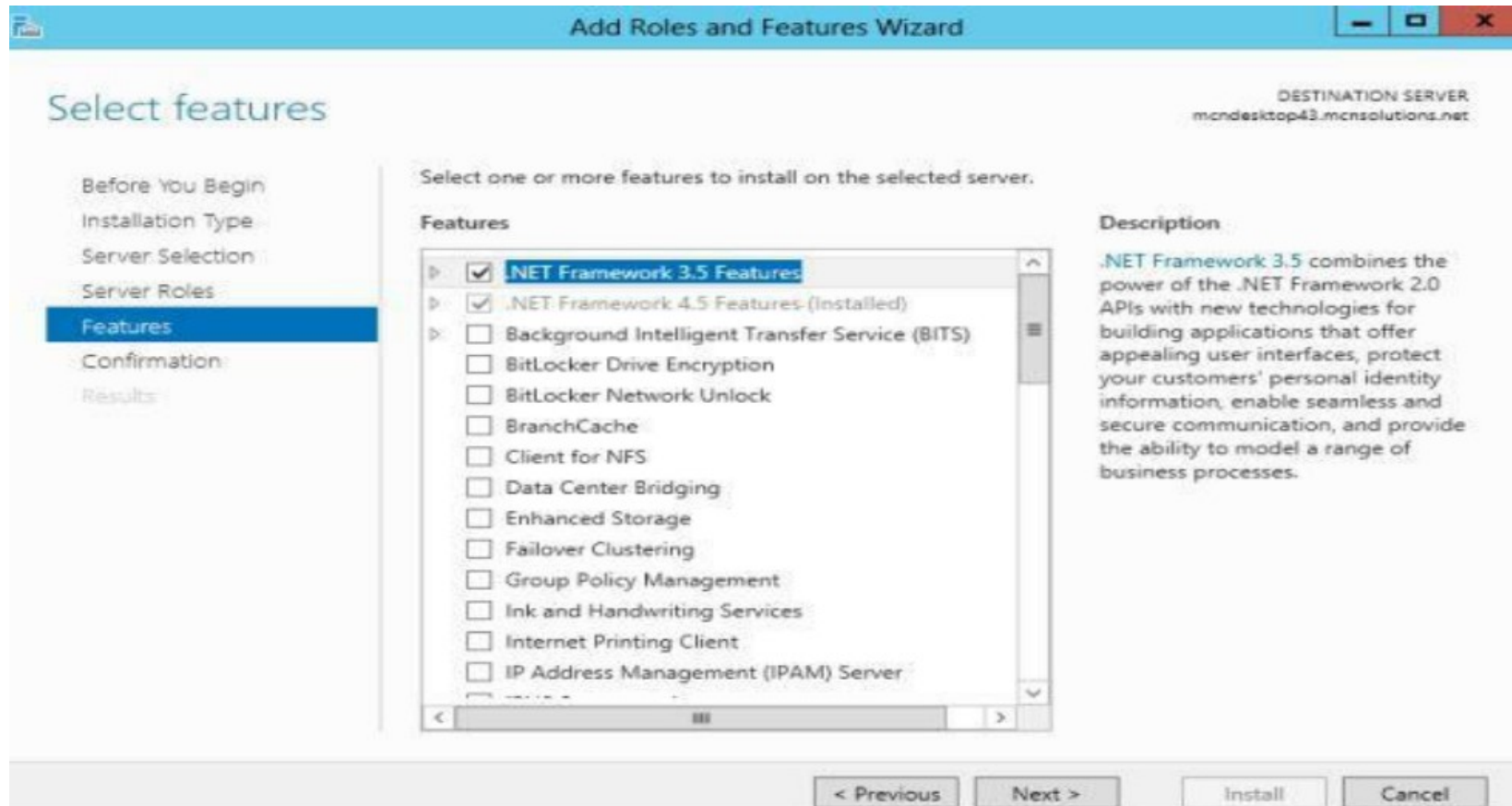
ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

6. Now a list will be displayed in front of you from which you must select the Web Server (IIS).



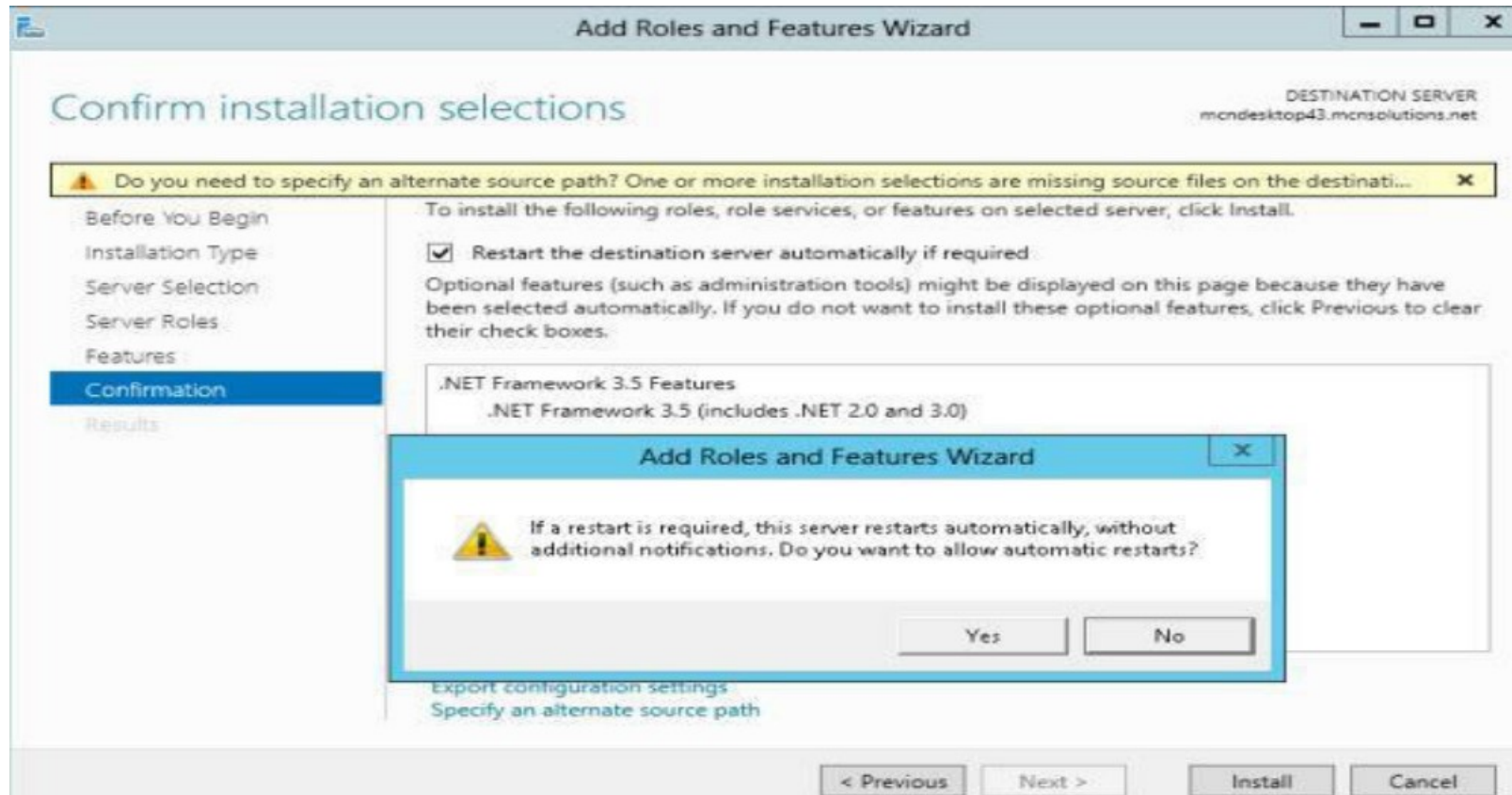
ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

7. Now you must select the features that you want to install on the selected



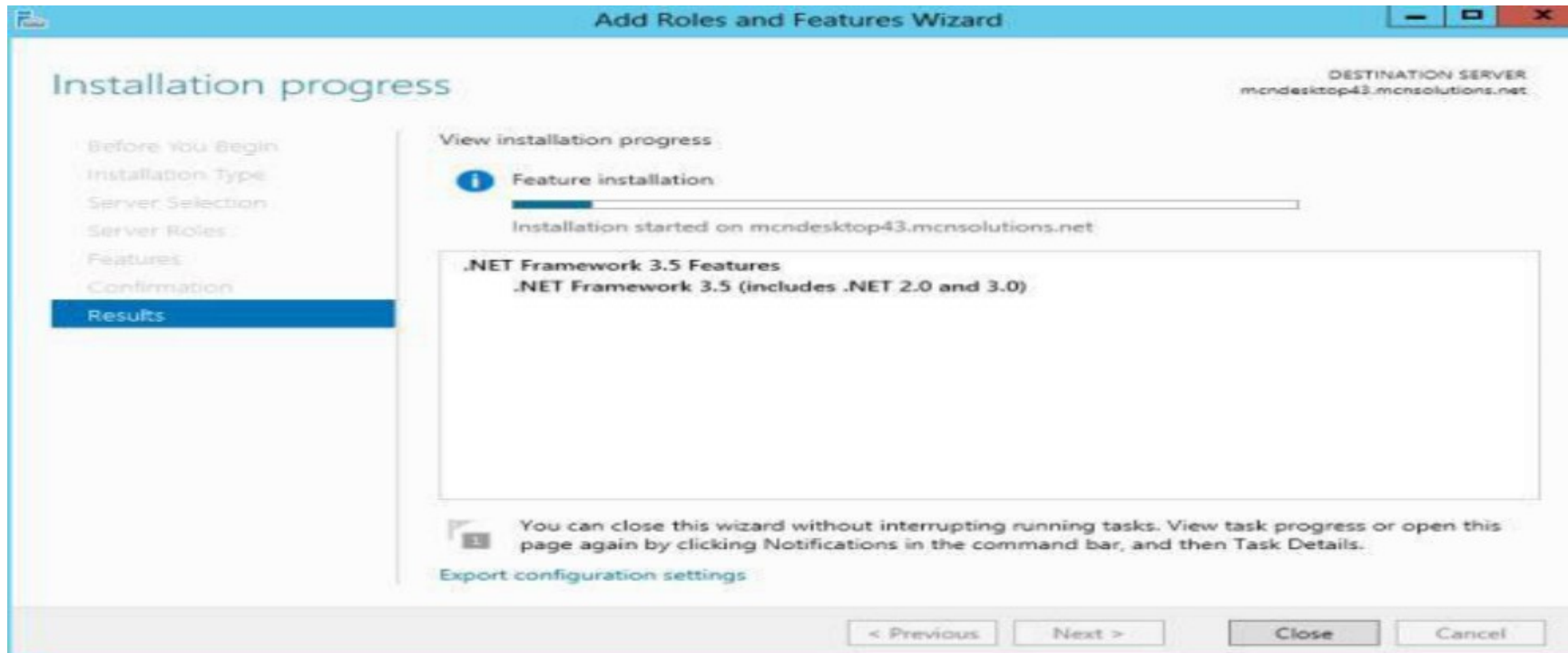
ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

8. Click install on Confirmation window.



ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

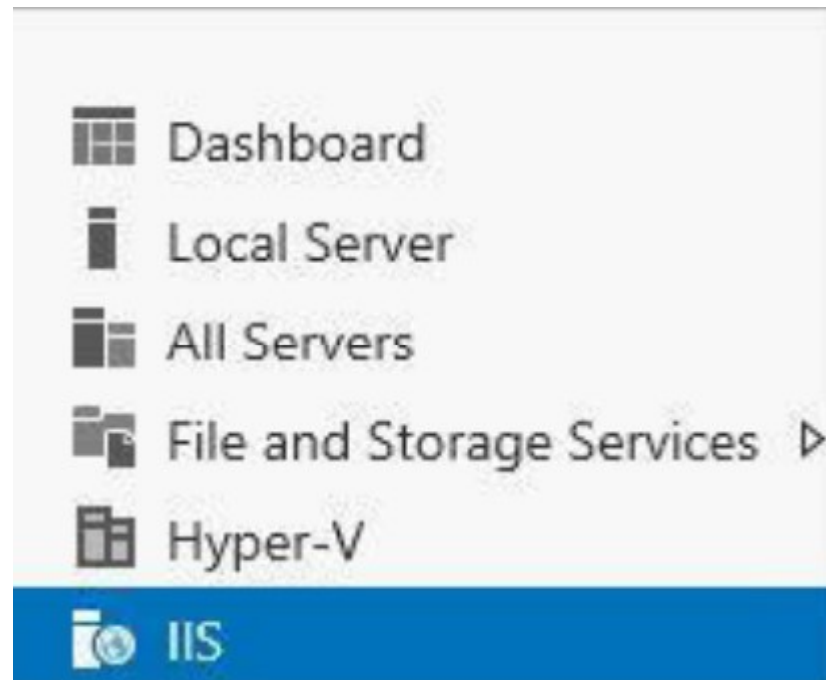
9. When the IIS installation completes, the wizard reflects the installation status.



ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

10. Click Close to exit the wizard.




11. On left hand side of Server Manager Dashboard you will find IIS, click on that



ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

12. On right hand side scroll down and you will find IIS service in running state with name IIS Admin Service

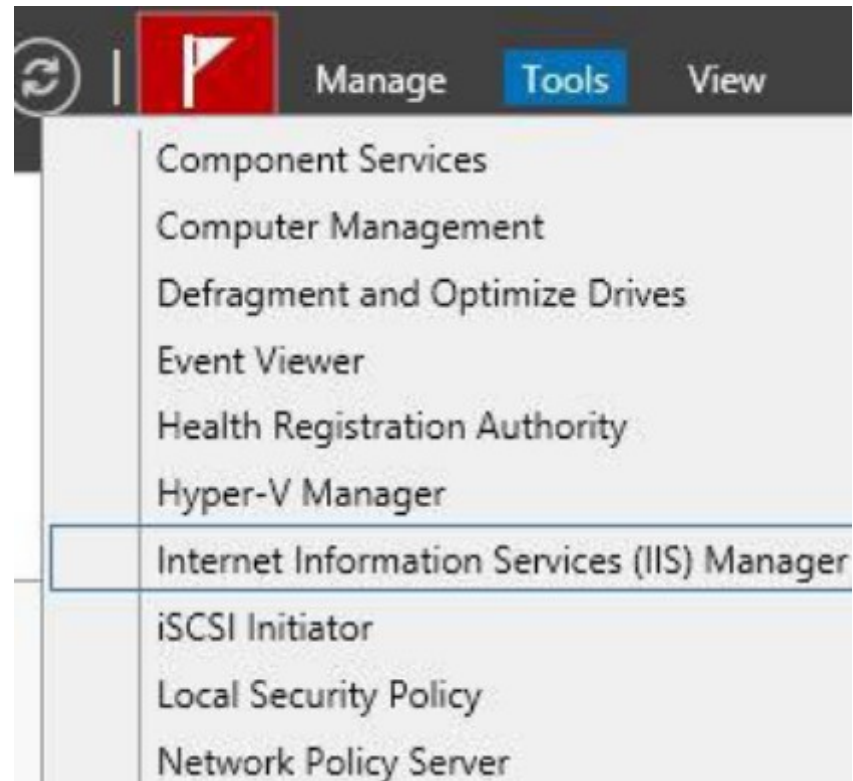
SERVICES
All services | 6 total

Filter   

Server Name	Display Name	Service Name	Status	Start Type
MCNDESKTOP43	IIS Admin Service	IISADMIN	Running	Automatic
MCNDESKTOP43	World Wide Web Publishing Service	W3SVC	Running	Automatic
MCNDESKTOP43	Microsoft FTP Service	ftpsvc	Running	Automatic
MCNDESKTOP43	Web Management Service	WMSVC	Stopped	Manual
MCNDESKTOP43	Application Host Helper Service	AppHostSvc	Running	Automatic
MCNDESKTOP43	Windows Process Activation Service	WAS	Running	Manual

ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

13. Go to tools option and click on IIS Manager.



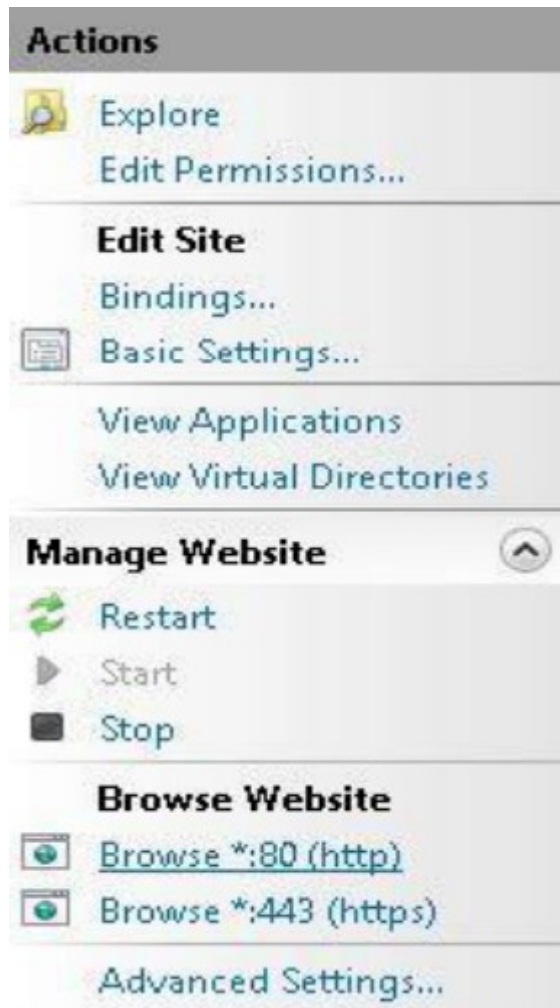
ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

14. On the left hand side under Start page expand your server name, expand Sites here you will find Default Web Site, click on Default Web Site.



ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

15. On right hand side under Actions pane in Browse website section click on Browse *.80(http) , this will open browser default webpage.



ADDING WEB SERVER(IIS) ADMINISTRATION CONTINUE...

16. See your browser default webpage.

