INFORMATION TECHNOLOGY SUPPORT SERVICE

Level II

Learning Guide # 23

Unit of Competence:-	Administer Network Hardware and Peripheral
Module Title:-	Administering Network Hardware and Peripheral
LG Code:-	ICT ITS1 M06 LO6
TTLM Code:-	ICT ITS1 TTLM06 1019

LO6: Administer and support peripheral services

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:-

- Assigning Priority to control queues
- Configuring settings on network.
- Demonstrating methods to use peripherals services.

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to:-

- Priority is assigned to control queues based on organizational requirement.
- Settings on the network are configured to create maintenance schedules, usage logs, and cost center.
- Usage statistics Methods are demonstrated to the user for using.
- Peripheral services from their application or workstation.

Learning instruction:

1. Read the specific objectives of this Learning Guide.
2. Follow the instruction describe below 1
3. Read the information written in the information "sheet 1, sheet 2 and sheet3 " , "in page 3.5.6.7 and 8" respectively
4. Accomplish the "self-check 1, self-check 2,self-check 3" "in page 4,9,and 11"
   Respectively
5. If you earned a satisfactory evaluation from the "self-check" proceed to "operation sheet 1and operation sheet 2" "in page 10, 16 and 17,32"
6. Do the" LAB "Test in page "33"

*Your teacher will evaluate your output either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work. But if satisfactory you can proceed to the next topic.

6.1. Assigning Priority to control queues

Physical versus logical printers

The priority of printers is normally controlled by the operating system. To understand priorities, you first need to know the terms that operating systems use to distinguish between physical and logical printers (the latter refers to the software name). Some operating systems also use the concept of a **queue**. Software such as Windows uses the term **print device** when referring to the **physical printer**. The term **printer** is then used as the logical name that will be used to connect to a physical printer.

Very often, the same name may be used to describe a printer and a print device, since it is a one-to-one chain. However, it is possible to have multiple printer names refer to the same print device. This facility allows you to allocate priorities. You set up a single print device, but allocate two or more printers to it. Each printer then has a different priority. You then use the security and sharing features of each printer to only allow appropriate users or groups to access each one.

For example, if you have three printers called:

- Laser High

- Laser Normal

- Laser Low.

You set appropriate **priorities to each printer** that uses the same print device. For example, you can allow:

- Executives to access Laser High

- Managers to access Laser Normal, and

- Everyone can access Laser Low.

If an executive sends a print job to their printer it will take priority over any lower priority jobs in the queue.

Self cheek – 1	Written Test

Name:_____ Date:_____

Direction: **filling** the appropriate answer for the following question in the specie provided, if you have some clarifications- feel free to ask your teacher.

1. The priority of printers is normally controlled by the _____.

2. Operating systems also use the concept of a _____.

3. There are three printer _____,_____ and _____

6.2 Configuring settings on network

Network configuration is the process of setting a network's controls, flow and operation to support the network communication of an organization and/or network owner. This broad term incorporates multiple configuration and setup processes on network hardware, software and other supporting devices and components.

6.2.1 Create maintenance schedules

Printers, in particular, have many moving parts subject to wear as well as consumables that run out. They require more maintenance than purely electronic or solid state components.

Device manuals normally specify maintenance schedules. Some maintenance is time-based and other forms are usage-based, such as with printer toner, the need to replace which is shown by a warning light on the printer, or in the case of a large network printer with management software, an automatic email may be sent to the administrator. Paper can be considered a time-based consumable because if packets of it are left open for more than a few weeks it can dry or be subject to moisture,

Humidity or dust. These changes alter the friction between each sheet and contribute to misfeeds and paper jams. It is important estimate replacement times for things such as toner and paper so to ensure stock and minimise user disruption. You do not want to overstock, as some consumables are expensive and subject to falling quality over time. Laser printer developers, for instance, usually have a limited working life.

Reflection activity

1   List what you would expect to find in the maintenance schedule that services peripherals in your workplace, or in another workplace to which you have access.

2   Compare the actual workplace maintenance schedule with your own list.

3   Might you improve the workplace maintenance schedule?

6.2.2 Creating templates and forms

Templates and forms can make it easier to follow a maintenance schedule.by using templates, an organisation can lift the standard of documentation and it becomes easier to find information in documents. Templates can speed the process of creating new documents, as much work is already done.

Consistency of layout and design helps clients easily recognise where the document has originated. For example, the header may always have the page number and document name, with the section name of the document, the version number and date completed in the footer. The start of the document may contain the heading page, contents, author and introduction.

Templates are useful for enforcing consistency of style also and in some cases provide much of the text, which may then only require a small amount of editing. This is most common in specification documents, which may all contain similar information with only a small amount of information needing to be tailored for a specific job.

Many organisations store templates in a networked or shared area. The user opens the template, and then saves it as a normal document in their individual folder. As an example, a template for the LAN administrators of an IT department to record their maintenance schedules may include: dates; parts for maintenance; frequency of maintenance; whether an automatic or manual schedule; the date that the next maintenance is to be performed.

The information may be stored directly in a database to then view the maintenance history of a piece of hardware. Usually, a paper copy of the maintenance task is required with the signature of the technician who performed it, but an electronic signature is now possible also.

Reflection activity

Consider a place where you have access to computers and peripheral equipment. It may be a learning place such as TAFE, or a workplace where you are employed or have access. Answer the following questions.

1   Are templates used in the organisation to create standard documents?

2   What are the benefits of using the templates for the organisation? Can you think of more templates that could be created for the organisation?

Conducting maintenance

Once you have maintenance schedule organised you then follow the instructions as the need for maintenance that arises. Most peripherals have detailed instruction books, including diagrams that show you how to perform routine maintenance tasks. Proper care of peripherals will improve their long-term functioning and reliability.

It is important to follow the instructions in the manuals, especially any health and safety warnings. You should also dispose of any spent consumables in accordance with the manufacturer's recommendations. For example, you should wear gloves when changing any printer toner. When disposing of the empty cartridge, place it in the container it arrived in and either put it in the bin or organise a recycling company to collect it.

The care of computer equipment usually falls under three categories:

1. External components

2. Internal components

3. Software.

6.2.2 **Usage logs**

Monitoring usage

Some organisations are keen to track the usage of peripherals, especially printers. For example, it can be done as part of an accounting procedure, to ensure sufficient capacity, or to keep track of consumable items.

Most printers allow a **report** to be produced, or the printer may have a **counter**. With many, the configuration report displays the number of pages printed. It also lists the number of pages printed at a higher fuser temperature (at which the toner is melted onto paper) if this mode has been selected.

Research activity

Consider a place where you have access to computers and peripheral equipment. It may be a learning place such as TAFE, or a workplace where you are employed or have access. Answer the following questions.

1   What software monitors usage of a peripheral you have access to?

2   What reports does that software produce and how are they used?

6.2.3 Cost center usage statistics

Use the transactions and for create change and display cost centre master data. A cost centre is created at the request of the party responsible for the cost centre. The cost centre is used **to** collect costs and is distinguished by area of responsibility or accounting method.

6.3 Demonstrating methods to use peripherals services

There are also devices that function as both input and output devices, such as: external hard drives. Media card readers.

What are some examples of computer peripheral devices?

- Keyboard
- mouse
- Touch screen.
- Pen tablet
- Joystick
- MIDI keyboard.
- Scanner.
- Digital camera.

Self Check 2	Written Test

Name: _____   Date: _____

Instruction: Choose the best answer for the following question, if you have some clarifications – feel free to ask your teacher.

1. Network configuration is a
   A. Process of setting a network's controls
   B. Adding peripheral device
   C. Controlling of operating
   D. All

2. Multiple configuration of networking is
   A. Network hardware
   B. Software
   C. Supporting devices and components.
   D. All

3. IT department to record their maintenance schedules may include
   A. Parts for maintenance
   B. Frequency of maintenance
   C. Automatic or manual schedule
   D. All

4. One of the following is care of computer equipment usually falls under three categories
   A. Frequency of maintenance
   B. Internal components and software
   C. Network hardware
   D. Supporting devices and components

Note: **Satisfactory rating - 3 points   Unsatisfactory - below 3 points.**

Operation Sheet – 1	Installation and connection

Practical Learning: Installing the Server Operating System

1. If the computer doesn't have an operating system but it meets all the requirements and it can boot from the CD, start the computer. You may receive a message stating operating system missing or something like that. Open the CD drive, put the CD in the drive, and close it. Restart the computer. You should receive a message stating **Press Any Key To Boot From CD** (or something like that)

2. Press any key to start the installation.
   If your computer already has an operating system, start it. Open the CD drive, put the CD in it, and close its door. If the operating system cannot be upgraded, a message box and display and let you know. Accept to perform a new installation and click Next

3. When the installation starts, it will display a blue screen with **Windows Setup** on top and some messages on the status bar (bottom of screen).
   After a while, the screen will change and display a new title based on the version of operating system you are installing. For example, if you are installing Microsoft Windows Server 2003 Enterprise Edition, the title would display
   Windows Server 2003, Enterprise Edition Setup
   The body of the screen will present options to you. To continue the installation, press Enter

4. The next screen will show the Windows Licensing Agreement. Read it. Since it is long, to navigate up and down, you can press Page Up or Page Down. After reading it, if you accept the terms of the license, press F8. If you don't like what it says, press ESC and stop the installation.

5. The next screen asks you to select the partition you want to use to install the operating system:
   o If you have only one partition and it looks small, such as less than 8 GB, simply select it
   o If you have only one partition and that, regardless of its size, you want to use it wholly to install the OS, select it
   o If you have only one partition but it is large and you want to create various partitions, first make sure it is selected it. Then, press C to partition it. The next screen would ask how much space you want to use for the new partition. By default, it will propose the total space for it. To reduce it, first press Backspace a few times to delete the numbers, then type the desired number of megabytes, and press Enter. Press the down arrow key to select the

Unpartitioned Space option and press C. Continue in the same way until you have created the desired partitions

- o If you have many partitions already, to specify which one will be used to hold the operating system, use the up and down arrow keys to select it

6. After selecting the partition you will use, press Enter to install the OS in it

7. The next screen will ask you to format the selected partition and specify the type of file system you want to use. Select the **Format The Partition Using The NTFS File System** option and press Enter

8. In the next screen, the partition will get formatted. This may take a few minutes.

   Once the formatting is over, the installation will continue by copying files.

   After a while, a wizard, titled Windows Setup, will come up. Its first page presents you with two options.

   The first choice consists of changing the Regional and Language Options. The default options will be selected depending on your version of the CD. For example, if you bought the OS intended for a US use, the US English would be selected. If you want to change the language, click the Customize button. Another dialog box, titled Regional and Language Options, would come up with English (United States) selected. You can then click the arrow of its combo box to change the language. After making your selection, you can click OK. If you don't intend to change anything, you can click Cancel.

   The second option consists of making changes to the way the keyboard will interpret text. Once again, if you are installing the OS intended for a US audience, the US English is selected by default. If you want to change it, click Details. This would open the Text Services and Input Languages dialog box. You can change the language by clicking the arrow of the combo box. After making the change, you can click OK. To ignore any change, you can click Cancel or press Esc.

   After dealing with the Windows Setup dialog box, click Next

9. The next screen request that you enter your name or the name of the primary person who will be using the computer. You must type a name other than Administrator or Guest

10. The other text box, Organization, expects the name of the company. Make sure that you provide this information

11. After entering the name and the organization, click Next or press Enter

12. The next page of the wizard requests the Product Key, which you must enter

13. After typing the product key, click Next

14. The next page of the wizard shows the options available for licensing. You should accept the Per Server option and click Next

15. The next page of the wizard, expects you to type the computer name. It also suggests a default, based on the company name you would have entered previously as the Organization. You can accept the suggested name, which you can still change later on, or you can type a new name

16. We haven't mentioned "user accounts" yet but during installation, a user object is created and it is named Administrator. When setting up the operating system, you must give a password to this account. Obviously the password should not be too easy. Fortunately you can give it temporary password and change it later on as your network, skills, and concerned improve. You must enter the password in the Administrator Password text box and type it again in the Confirm Password text box. Make sure you remember this password because you will need it just after the installation

17. After specifying the password, click Next

18. The next page of the wizard allows you to set the date, the time, and the time zone that the server will use. Most of the time, the computer finds out the right date and the right time and it selects them. On the other hand, you should adjust the time zone if the default is not the right one. This page of the wizard also allows you the let the computer adjust its clock when daylight time is switched during the year. The option to change this is selected by default. If you don't want the computer to take care of that, you can remove the check mark on the check box.
After changing the options or making sure that they are right, click Next

19. After clicking next, the wizard is closed and the installation continues copying files.
After a few minutes, a new wizard, titled Windows Setup, comes up. This time, it will ask you to accept or change the network settings of the server. The first option allows you to let the installation take care of networking details. The second option allows you to manually set them. Because we will review the details of this wizard in later lessons, accept the Typical Settings option and click Next

20. The next page of the wizard allows you to actually make this computer into a server.
Accept the first option not to "join" a domain.
The wizard suggests WORKGROUP as the name of the "domain". If you don't like that name,

change it. If you can't come up with a domain, you can use the one we will use. For our lessons, our domain will be called Neptune. In this case, in the top text box, type **NEPTUNE**

21. After entering the name of the domain, click Next

22. After clicking Next, the wizard will start copying the files, again.

Once the installation has finished copying the files, the computer will start. When the computer comes back, you will be asked to log in.

Press Ctrl + Alt + Delete to log in

23. Accept the User Name as Administrator.

In the Password text box, type the password you entered during the installation

24. Click OK.

If you see a window titled Manage Your Server, congratulations: you have finished installed Microsoft Windows Server 2003

25. If the computer doesn't have an operating system but it meets all the requirements and it can boot from the CD, start the computer. You may receive a message stating operating system missing or something like that. Open the CD drive, put the CD in the drive, and close it. Restart the computer. You should receive a message stating **Press Any Key To Boot From CD** (or something like that)

26. Press any key to start the installation.

If your computer already has an operating system, start it. Open the CD drive, put the CD in it, and close its door. If the operating system cannot be upgraded, a message box and display and let you know. Accept to perform a new installation and click Next

27. When the installation starts, it will display a blue screen with **Windows Setup** on top and some messages on the status bar (bottom of screen).

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The body of the screen will present options to you. To continue the installation, press Enter

28. The next screen will show the Windows Licensing Agreement. Read it. Since it is long, to navigate up and down, you can press Page Up or Page Down. After reading it, if you accept the terms of the license, press F8. If you don't like what it says, press ESC and stop the installation.

29. The next screen asks you to select the partition you want to use to install the operating system:

- o If you have only one partition and it looks small, such as less than 8 GB, simply select it
- o If you have only one partition and that, regardless of its size, you want to use it wholly to install the OS, select it
- o If you have only one partition but it is large and you want to create various partitions, first make sure it is selected it. Then, press C to partition it. The next screen would ask how much space you want to use for the new partition. By default, it will propose the total space for it. To reduce it, first press Backspace a few times to delete the numbers, then type the desired number of megabytes, and press Enter. Press the down arrow key to select the **Unpartitioned Space** option and press C. Continue in the same way until you have created the desired partitions
- o If you have many partitions already, to specify which one will be used to hold the operating system, use the up and down arrow keys to select it

30. After selecting the partition you will use, press Enter to install the OS in it
31. The next screen will ask you to format the selected partition and specify the type of file system you want to use. Select the **Format The Partition Using The NTFS File System** option and press Enter
32. In the next screen, the partition will get formatted. This may take a few minutes.

Once the formatting is over, the installation will continue by copying files.

After a while, a wizard, titled Windows Setup, will come up. Its first page presents you with two options.

The first choice consists of changing the Regional and Language Options. The default options will be selected depending on your version of the CD. For example, if you bought the OS intended for a US use, the US English would be selected. If you want to change the language, click the Customize button. Another dialog box, titled Regional and Language Options, would come up with English (United States) selected. You can then click the arrow of its combo box to change the language. After making your selection, you can click OK. If you don't intend to change anything, you can click Cancel.

The second option consists of making changes to the way the keyboard will interpret text. Once again, if you are installing the OS intended for a US audience, the US English is selected by default. If you want to change it, click Details. This would open the Text Services and Input Languages dialog box. You can change the language by clicking the arrow of the combo box.

After making the change, you can click OK. To ignore any change, you can click Cancel or press Esc.

After dealing with the Windows Setup dialog box, click Next

33. The next screen request that you enter your name or the name of the primary person who will be using the computer. You must type a name other than Administrator or Guest

34. The other text box, Organization, expects the name of the company. Make sure that you provide this information

35. After entering the name and the organization, click Next or press Enter

36. The next page of the wizard requests the Product Key, which you must enter

37. After typing the product key, click Next

38. The next page of the wizard shows the options available for licensing. You should accept the Per Server option and click Next

39. The next page of the wizard, expects you to type the computer name. It also suggests a default, based on the company name you would have entered previously as the Organization. You can accept the suggested name, which you can still change later on, or you can type a new name

40. We haven't mentioned "user accounts" yet but during installation, a user object is created and it is named Administrator. When setting up the operating system, you must give a password to this account. Obviously the password should not be too easy. Fortunately you can give it temporary password and change it later on as your network, skills, and concerned improve. You must enter the password in the Administrator Password text box and type it again in the Confirm Password text box. Make sure you remember this password because you will need it just after the installation

41. After specifying the password, click Next

42. The next page of the wizard allows you to set the date, the time, and the time zone that the server will use. Most of the time, the computer finds out the right date and the right time and it selects them. On the other hand, you should adjust the time zone if the default is not the right one. This page of the wizard also allows you the let the computer adjust its clock when daylight time is switched during the year. The option to change this is selected by default. If you don't want the computer to take care of that, you can remove the check mark on the check box.

After changing the options or making sure that they are right, click Next

43. After clicking next, the wizard is closed and the installation continues copying files.

    After a few minutes, a new wizard, titled Windows Setup, comes up. This time, it will ask you to accept or change the network settings of the server. The first option allows you to let the installation take care of networking details. The second option allows you to manually set them. Because we will review the details of this wizard in later lessons, accept the Typical Settings option and click Next

44. The next page of the wizard allows you to actually make this computer into a server.

    Accept the first option not to "join" a domain.

    The wizard suggests WORKGROUP as the name of the "domain". If you don't like that name, change it. If you can't come up with a domain, you can use the one we will use. For our lessons, our domain will be called Neptune. In this case, in the top text box, type **NEPTUNE**

45. After entering the name of the domain, click Next

46. After clicking Next, the wizard will start copying the files, again.

    Once the installation has finished copying the files, the computer will start. When the computer comes back, you will be asked to log in.

    Press Ctrl + Alt + Delete to log in

47. Accept the User Name as Administrator.

   In the Password text box, type the password you entered during the installation

48. Click OK.

    If you see a window titled Manage Your Server, congratulations: you have finished installed Microsoft Windows Server 2003

| Operation Sheet – 2	The Role of a Server

The Role of a Server

After you have installed Microsoft Windows Server 2003 as we did above, it is primarily a regular computer. To use it as a server, you must properly transform. Fortunately, this is an easy process. When the computer comes up and displays the desktop, the first window you see, titled Manage Your Server, allows you define the "role" of the computer. A convenient link is available in the middle of the window.
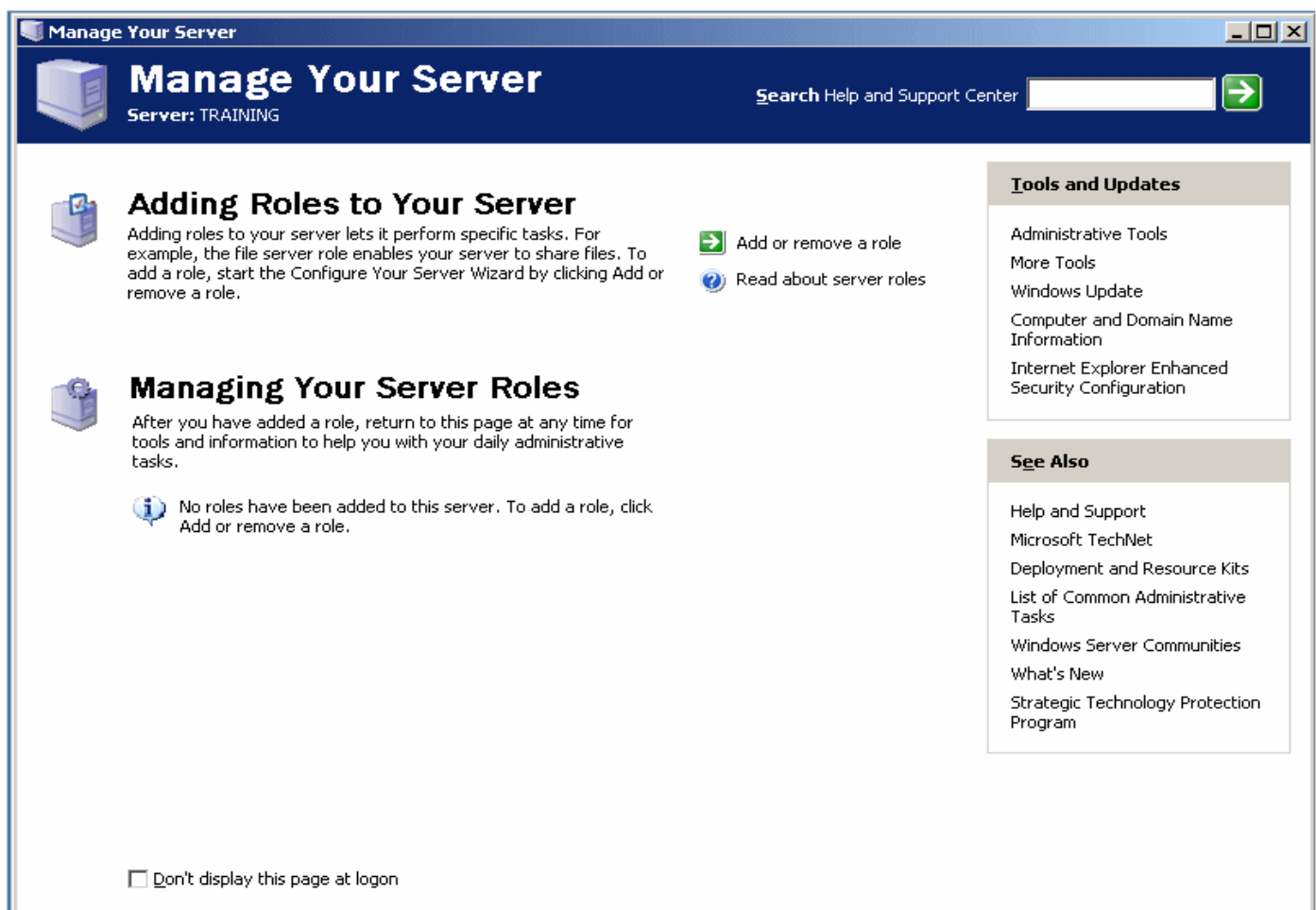
Practical Learning: Configuring Active Directory

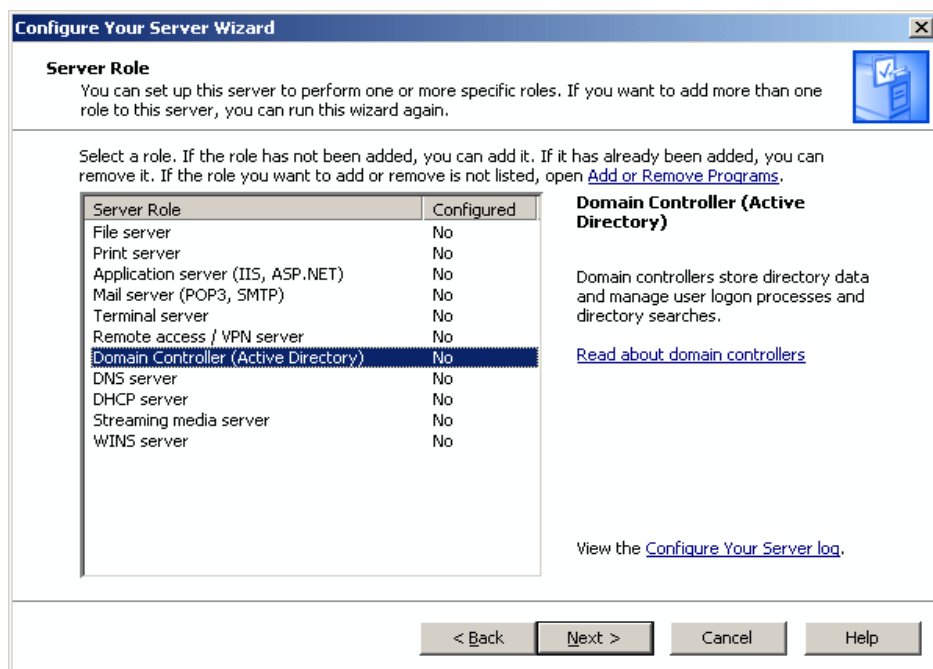1. Read the text in the window and click Add Or Remove A Role

2. The first page of the wizard presents a summary of the actions you must have taken before continuing:
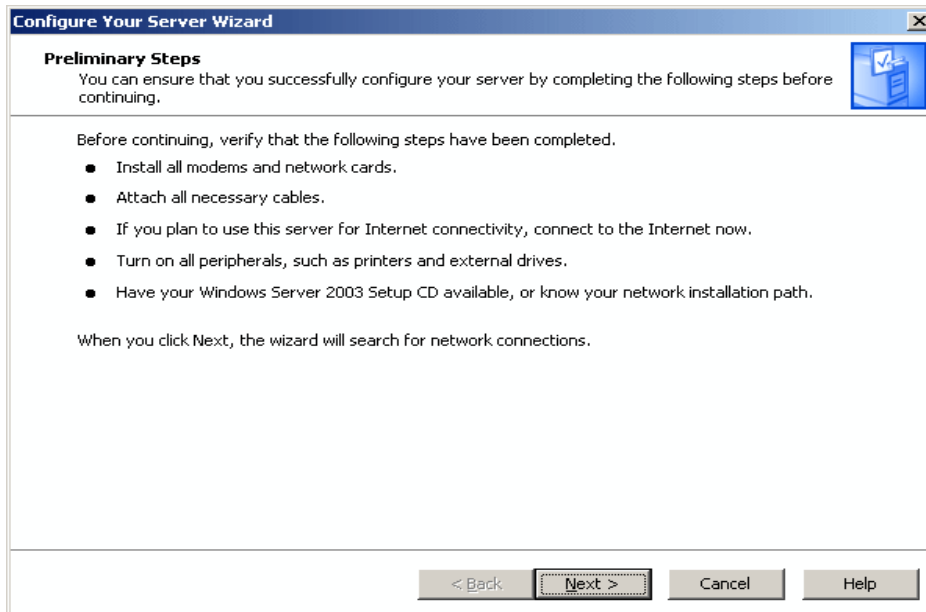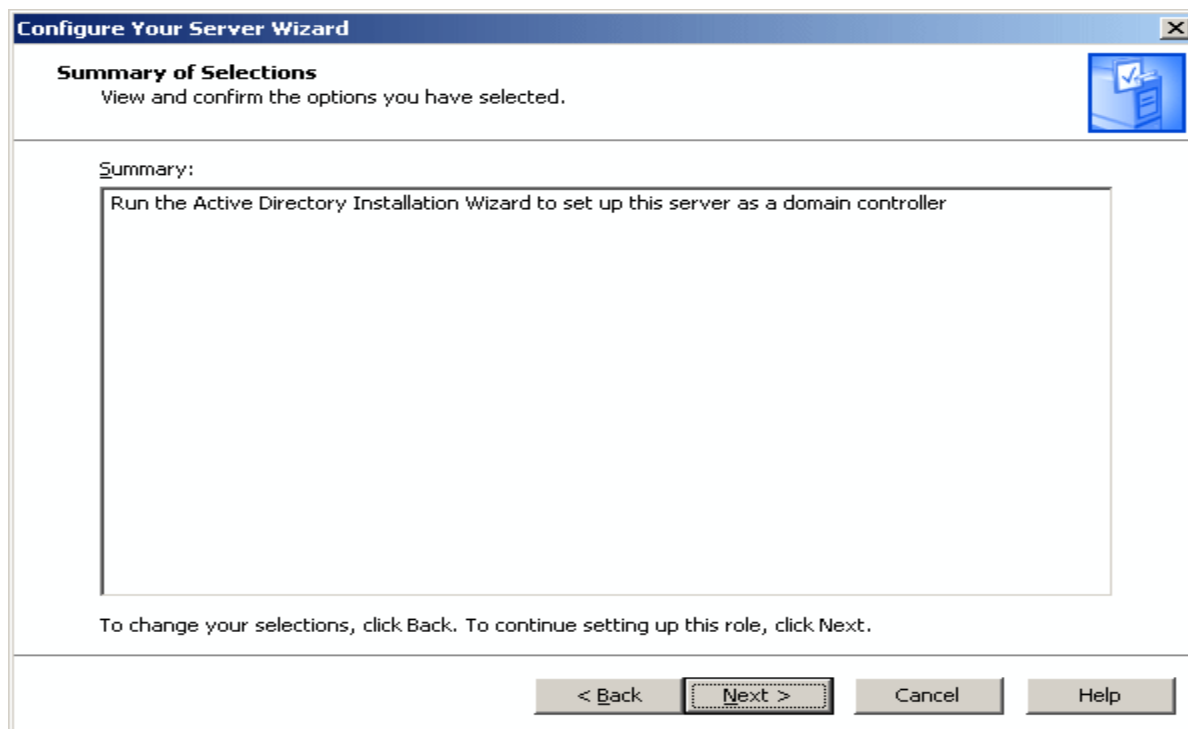

Read it and click Next

3. A dialog box will display briefly and then display a list of the roles you can assign to the server.

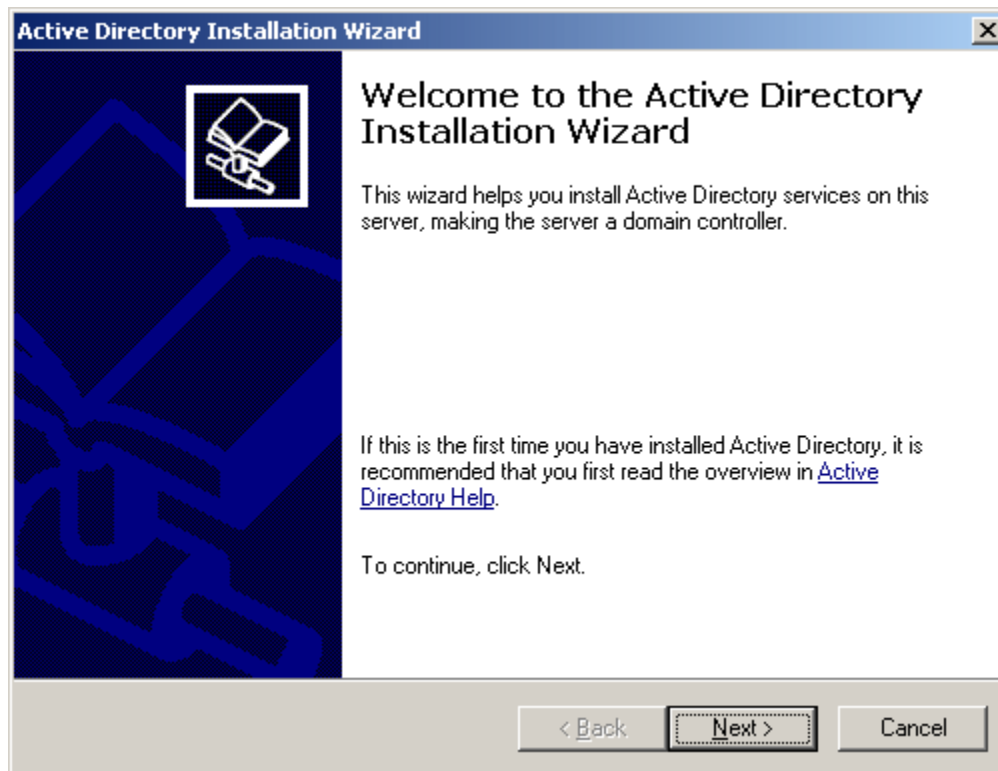   In the list, click Domain Controller (Active Directory)
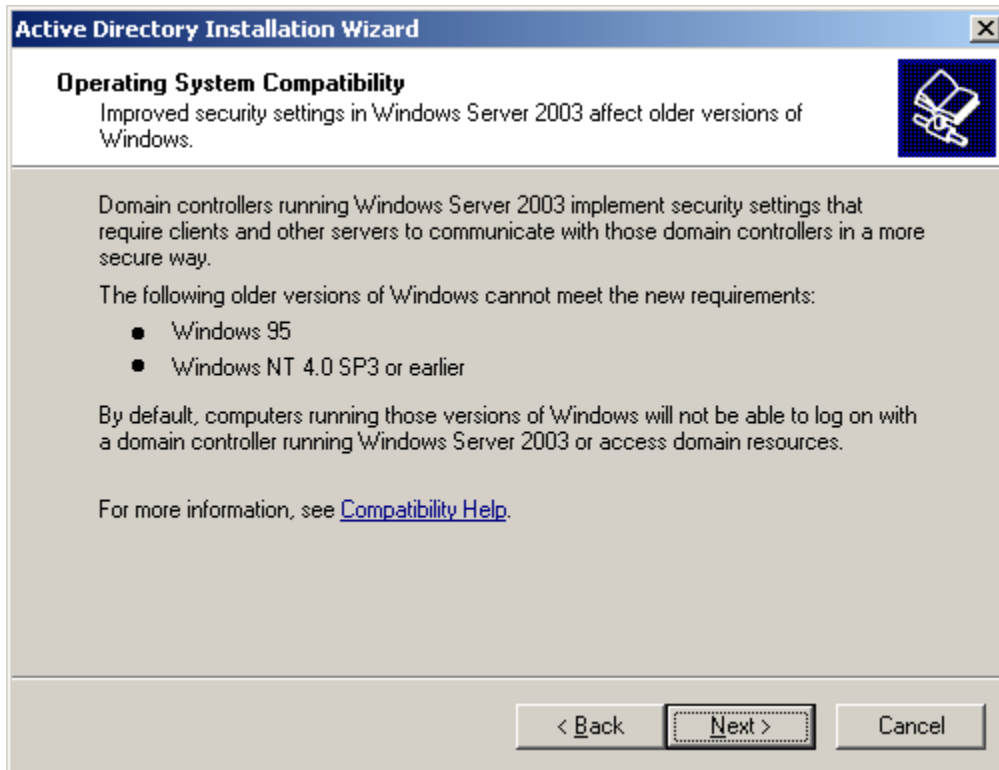
4. Click Next

5. Click Next to Run The Active Directory Installation Wizard

6. Another wizard, titled Active Directory Installation Wizard, comes up. Read its text and
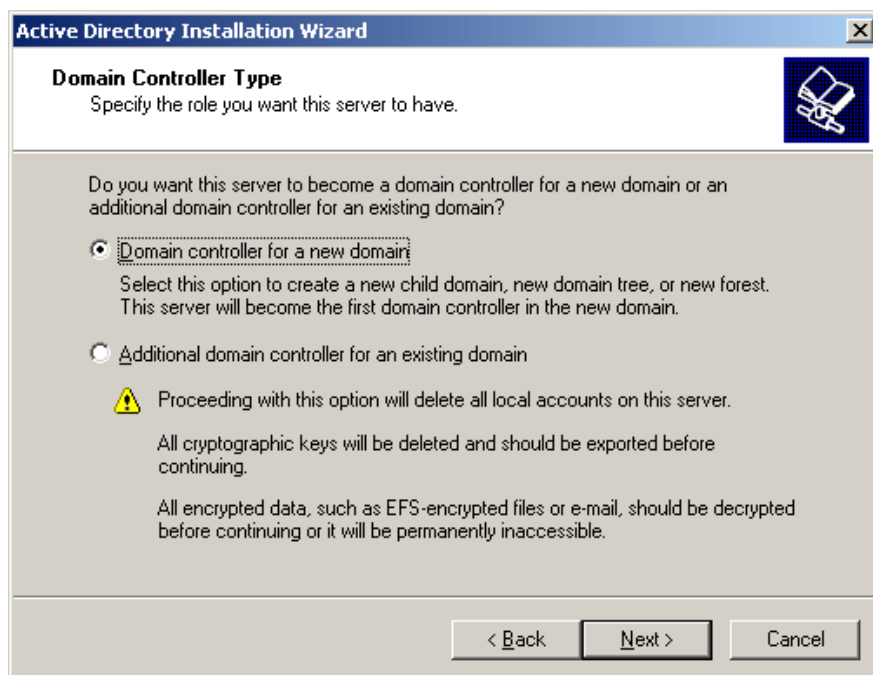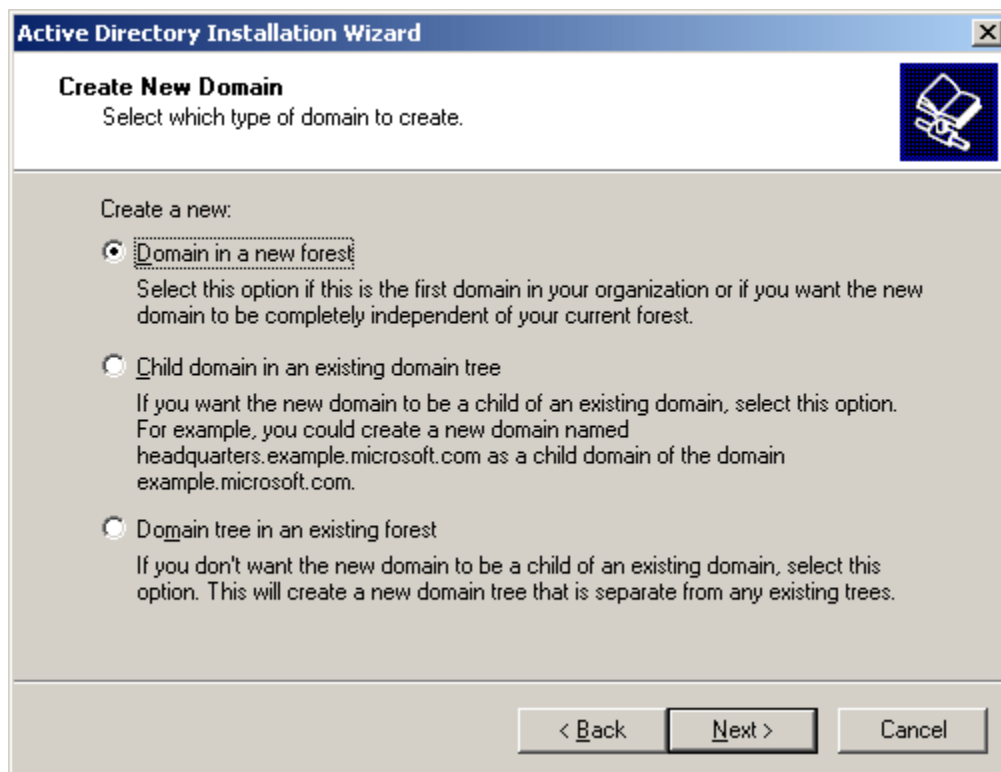
click Next

7. In the second page of the wizard, read the text again, and click Next

8. In the third page of the wizard, you must specify whether this is the first or an additional domain controller. As this is the first, accept the first radio button and click Next
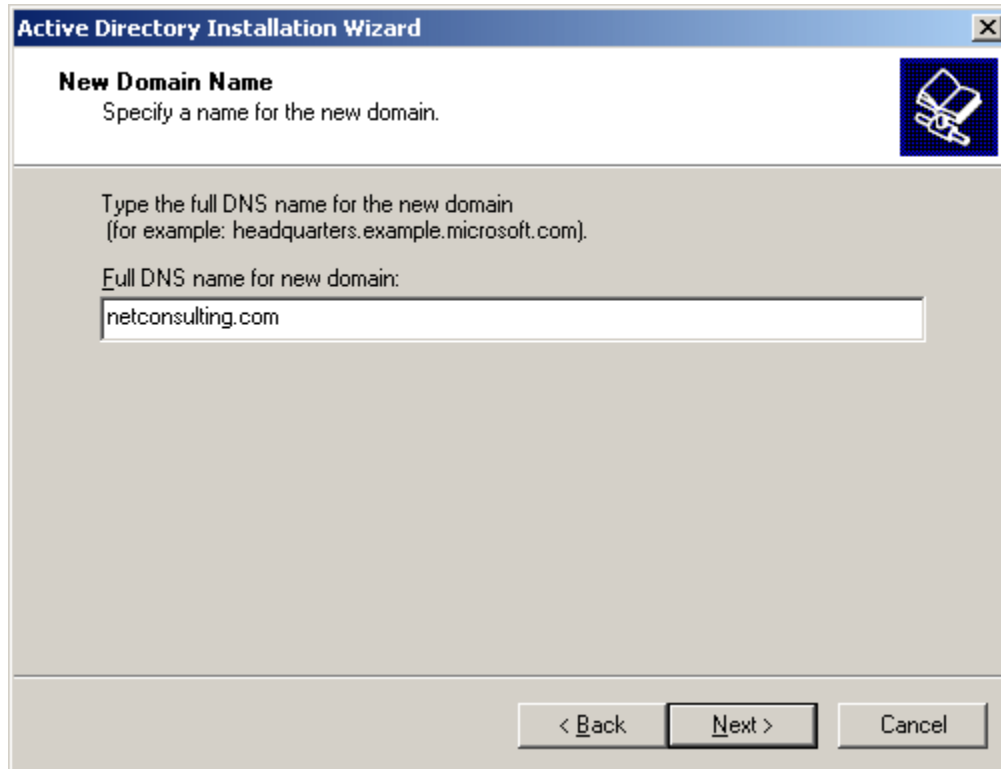
Active Directory Installation Wizard

Domain Controller Type
Specify the role you want this server to have.

Do you want this server to become a domain controller for a new domain or an additional domain controller for an existing domain?

⦿ Domain controller for a new domain

Select this option to create a new child domain, new domain tree, or new forest. This server will become the first domain controller in the new domain.

○ Additional domain controller for an existing domain

⚠ Proceeding with this option will delete all local accounts on this server.

All cryptographic keys will be deleted and should be exported before continuing.

All encrypted data, such as EFS-encrypted files or e-mail, should be decrypted before continuing or it will be permanently inaccessible.

< Back | Next > | Cancel

9. In the fourth page of the wizard, accept the first radio button and click Next

Active Directory Installation Wizard

Create New Domain
Select which type of domain to create.

Create a new:

⦿ Domain in a new forest

Select this option if this is the first domain in your organization or if you want the new domain to be completely independent of your current forest.

○ Child domain in an existing domain tree

If you want the new domain to be a child of an existing domain, select this option. For example, you could create a new domain named headquarters.example.microsoft.com as a child domain of the domain example.microsoft.com.

○ Domain tree in an existing forest

If you don't want the new domain to be a child of an existing domain, select this option. This will create a new domain tree that is separate from any existing trees.

< Back | Next > | Cancel

10. In the fifth page, you must enter the name of the domain. The name should be

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followed by an Internet domain name (**.com**, **.net**, **.org**, **.us**, etc). If you have a domain in mind, type it. If you don't have a domain in mind, for our lessons, type **netconsulting.com**
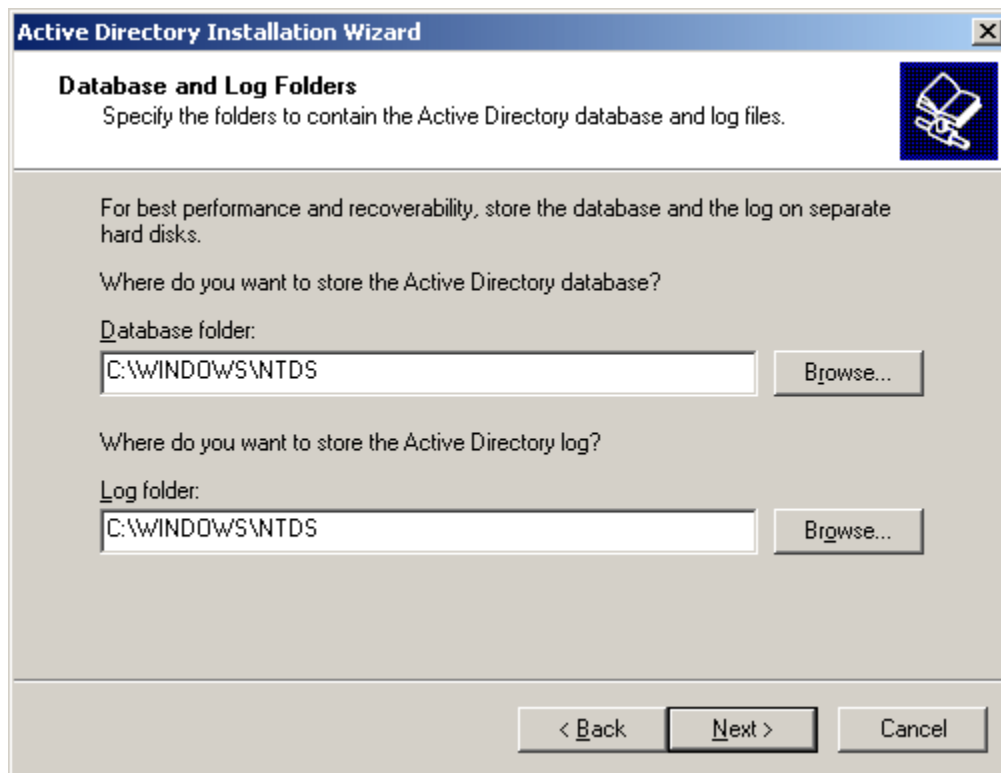

11. Click Next

12. In the next page of the wizard, a suggested NetBIOS name displays, intended for earlier versions of Windows":
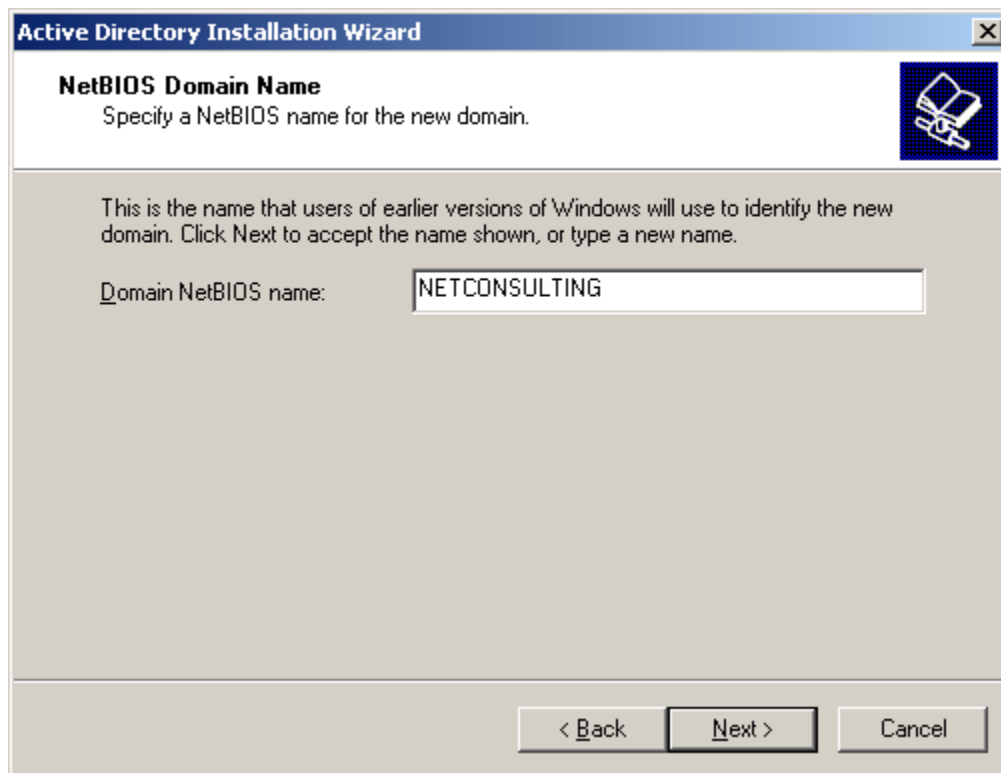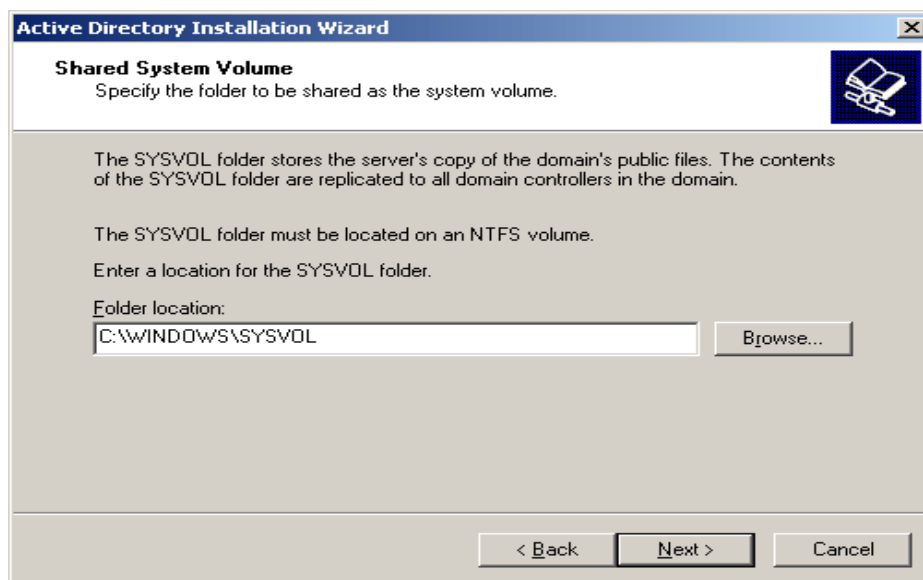
Accept it and click Next

13. The next page allows you to specify where the Active Directory information would be stored:

Active Directory Installation Wizard

Database and Log Folders
Specify the folders to contain the Active Directory database and log files.

For best performance and recoverability, store the database and the log on separate hard disks.

Where do you want to store the Active Directory database?

Database folder:

`C:\WINDOWS\NTDS`   Browse...

Where do you want to store the Active Directory log?

Log folder:

`C:\WINDOWS\NTDS`   Browse...

< Back   Next >   Cancel

Accept the default and click Next

14. The next page specifies where the domain's public files would be stored:

Active Directory Installation Wizard

Shared System Volume
Specify the folder to be shared as the system volume.

The SYSVOL folder stores the server's copy of the domain's public files. The contents of the SYSVOL folder are replicated to all domain controllers in the domain.

The SYSVOL folder must be located on an NTFS volume.

Enter a location for the SYSVOL folder.

Folder location:

`C:\WINDOWS\SYSVOL`   Browse...

< Back   Next >   Cancel

Accept the default and click Next

15. After a few seconds, the next page allows you to install DNS.
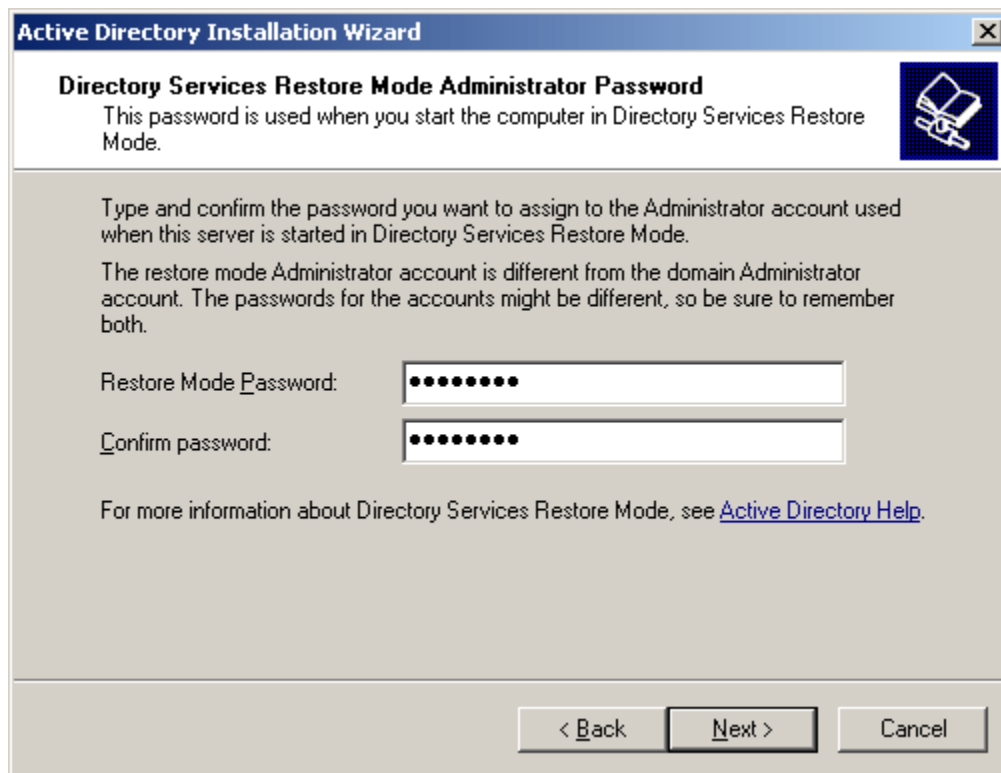
    Read the options:
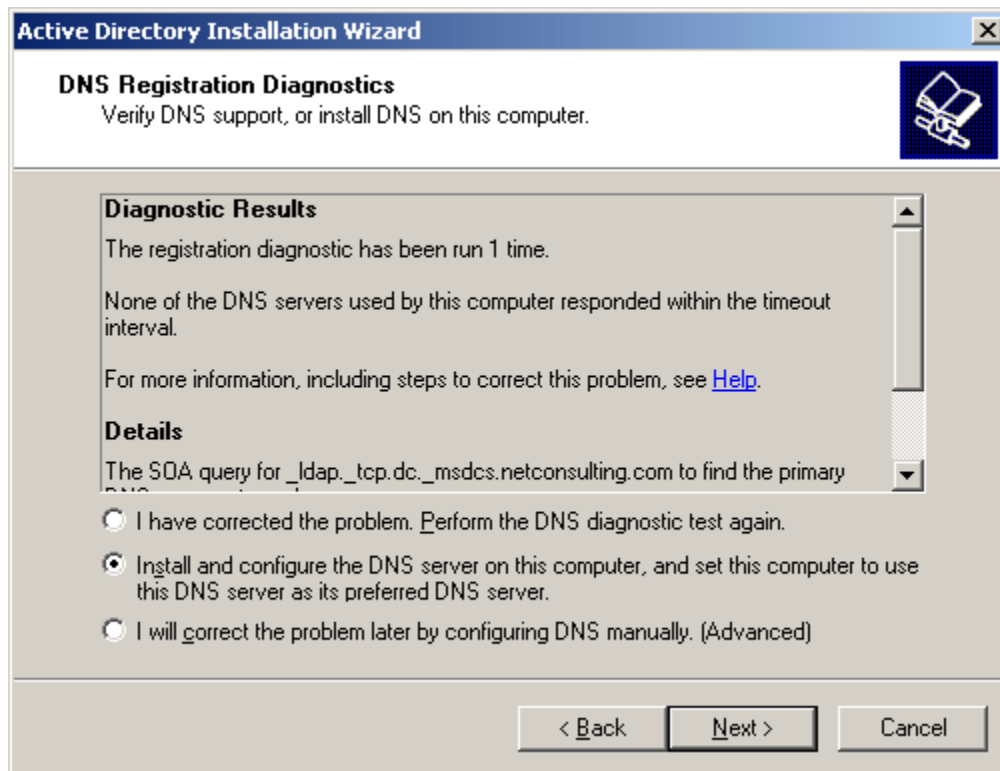
Accept the suggested second radio button and click Next

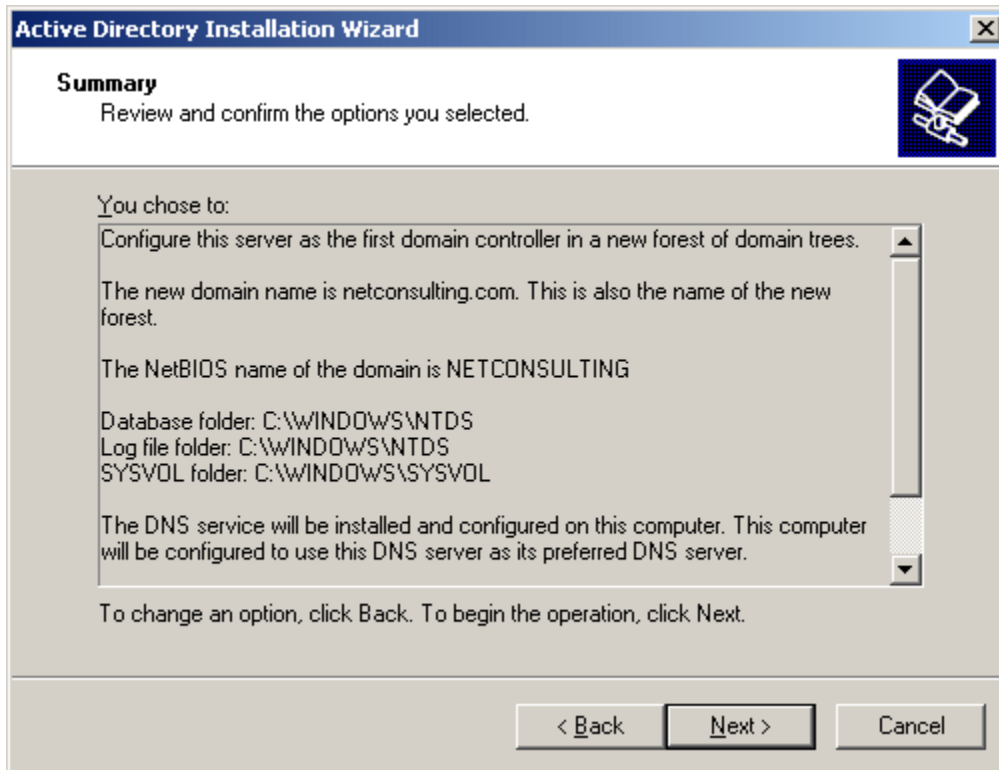16. The next page allows you to set the default permissions:

Accept the suggested second radio button and click Next

17. The next page prompts you to create a password used to start the server in "Restore Mode". Enter a password in both text boxes:
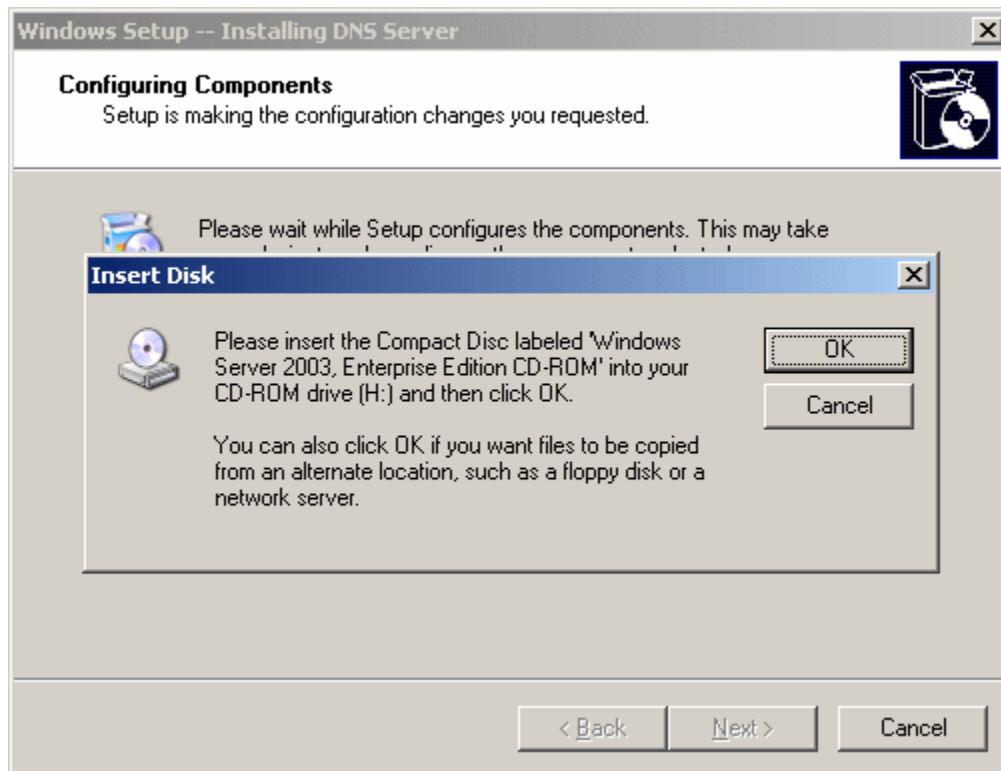
18. Click Next

19. The next page displays a summary of your selections:

Read the text and click Next

20. The wizard will start creating and configuring Active Directory:

After a while, if you don't have the Microsoft Windows Server 2003 CD in the drive,

you may be be prompted to supply it:

Do so

After a few seconds, you may receive a message box informing you that your computer has a static IP address. Click OK
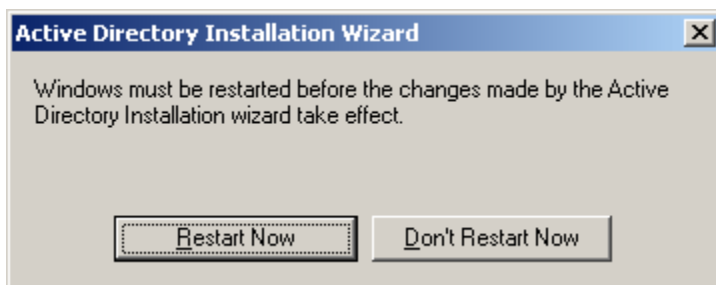
When the dialog box comes up, simply click OK

Another message box will come up. Click it and click OK. The wizard will continue copying files.

After a few seconds, the last page of the wizard will display. Read its summary and click Finish
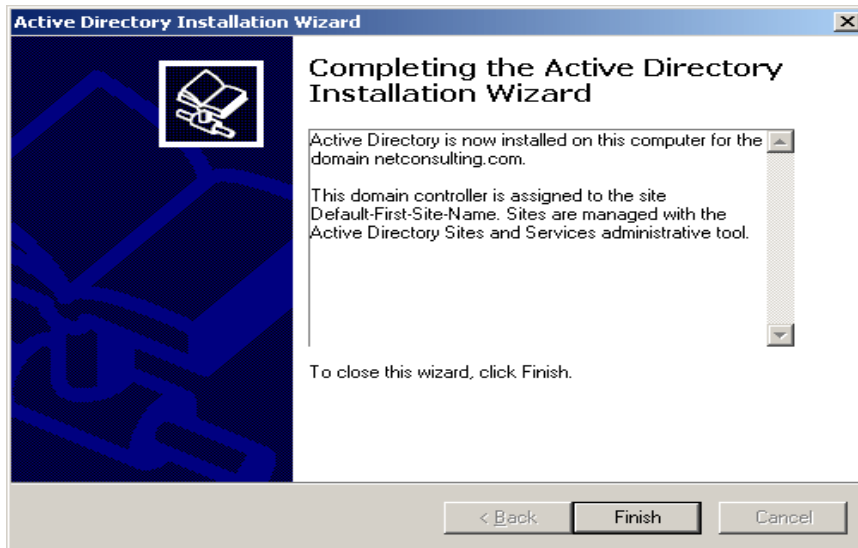
21. You will be asked to restart the computer:

If you have a CD in the CD drive, remove it and click Restart New

22. When the computer comes up, click the Options button and make sure that the name of the domain is selected in the Log On To text box.
Make sure that Administrator is specified in the User Name text box.
Enter your administrator's password

23. Click OK

24. After the computer displays the desktop, a dialog box titled Configure Your Server will let you know whether the installation of Active Directory was successful:

Click Finish

Lap Test	Practical Demonstration

Name: _____   Date: _____
Time started: _____   Time finished: _____

Instructions: You are required to perform the following individually with the presence of your teacher.

➢ *Your teacher will evaluate your output either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work. But if satisfactory, you can proceed to the next topic.*

1. Installing network administration operating system?

2. Configuring network administration software in network?

List of reference material

1. Book

   - Beginners-intro-email-part1.
   - Computer Hardware_ Hardware Components and Internal PC Connection.
   - Computer Networking & Hardware Concepts.
   - Computer-Networks--Introduction_Computer_Networking(1)
   - Internet-Access-Education_2017120
   - Principles_of_Network_and_System_Administration_(2ed)

2. Web adders links

   - www.wikipidia.com
   - www.google.com
   - web1.keira-h.school.nsw.edu.au/faculties/IT/