UNIT 4 WINDOWS XP NETWORKING

Structure **Page Nos.**

4.0 INTRODUCTION

Windows XP is a network operating system. Microsoft introduced Windows XP so that it can be used in small networks as well as in networks spanning a large area. Windows XP comes with Windows XP Home Edition and Windows XP Professional. Home Edition supports workgroup networking but does not support domain networking. Windows XP also supports most of the networking features that were there in Windows 2000. Our objective in this unit is to highlight the features of Windows XP professional edition.

4.1 OBJECTIVES

After going through this unit you should be able to describe:

- Windows XP networking features;
- file sharing features in Windows XP;
- folder sharing in Windows XP;
- disk sharing features in Windows XP;
- file Encryption in Windows XP, and
- offline features in Windows XP.

4.2 INTRODUCTION TO WINDOWS XP NETWORKING

In this subsection we will take up some standard protocols supported by Windows XP system.

4.2.1 TCP/IP Protocol Setting for Windows XP

TCP/ IP Protocol is a suit of protocols that provides a set of vast networking capabilities. In Windows networking environments TCP/IP is the default protocol for

both user group and domains. Windows XP has many built in features for configuring and monitoring TCP/IP.

Configuring IP settings in Windows XP:

TCP/IP protocol suite is the default installation on all Windows XP systems.

To access TCP/IP properties:

1. Initially log as administrator
2. Open network Connections:
   From windows XP start menu, choose connect to
3. Right click local area connection icon, choose properties from shortcut menu.
4. On the general tab, select Internet Protocol (TCP/IP) and click properties.

The *Internet Protocol (TCP/IP)* Properties dialog box opens. Through this dialog box the computer can be configured to use static or dynamic addressing.

A new feature in Windows XP is Alternate IP Configuration tab in *Internet Protocol* (*TCP/IP*) Properties dialog box.

It allows an automatically assigned:

- IP addresses if a DHCP server is available.
- Static IP configuration when a DHCP server is not available.

Thus this option enables the user to connect to two different networks and get address assigned.

4.2.2 To Select a Network Protocol

Click the network protocol that you wish to work on (as shown in *Figures 1 & 2*):

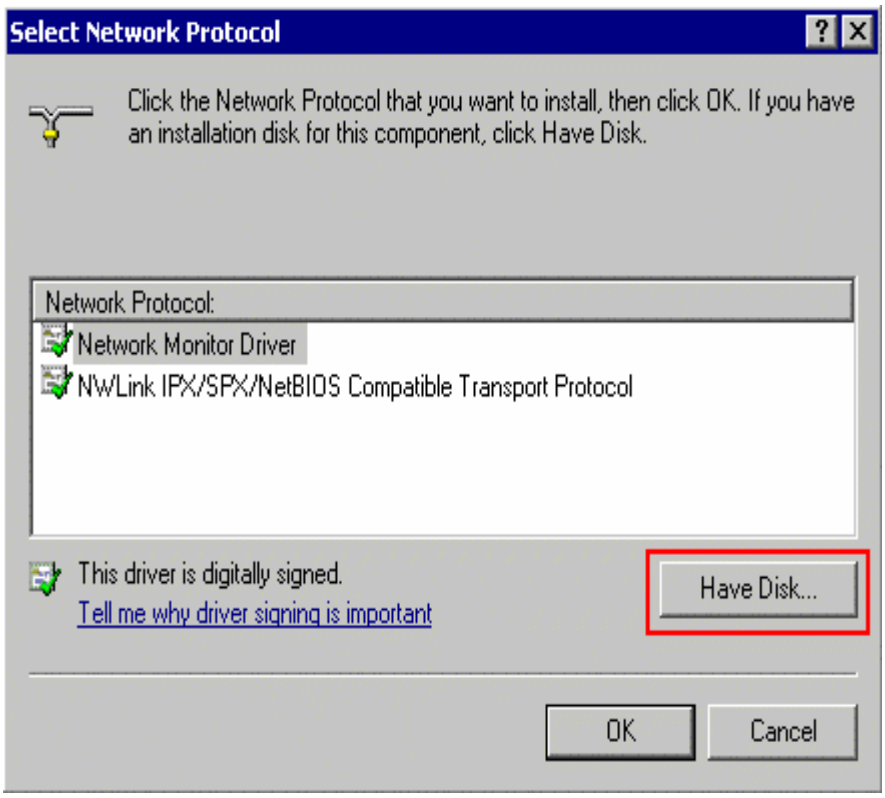

Figure 1: Network Selection Screen

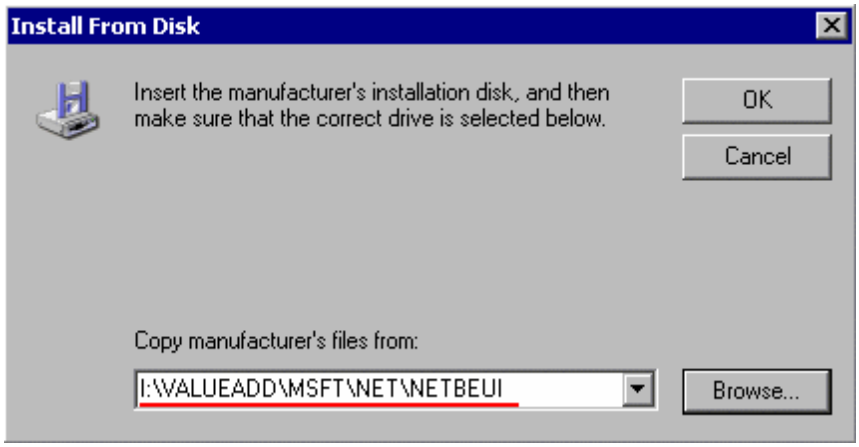

Figure 2: Installation Screen

If we right click on My Network Places to display network properties, this window (*Figure 3*) appears on the screen,

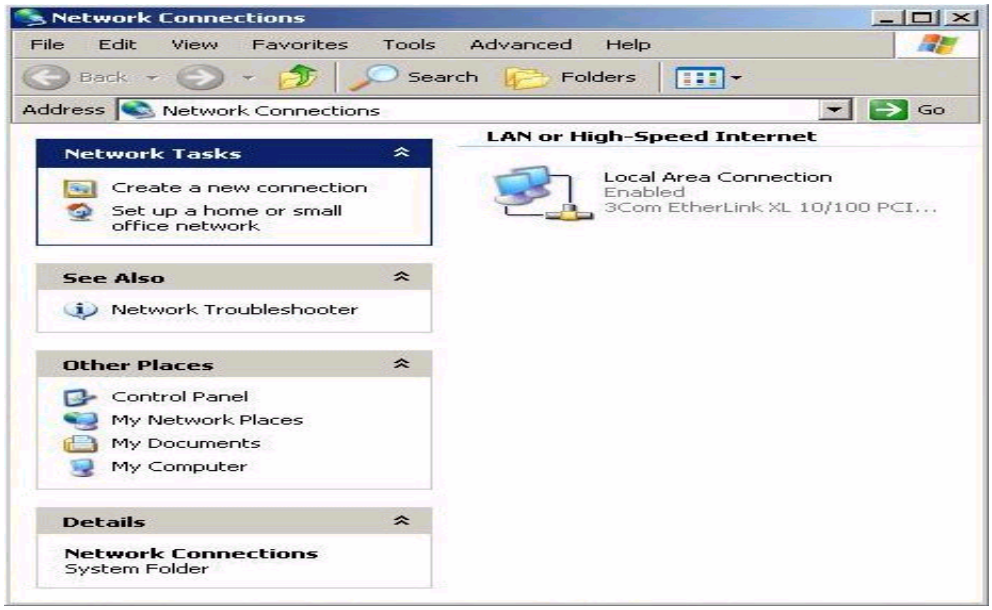

Figure 3: Network Connection Screen

Then the following windows (*Figure 4*) for LAN connection properties appear:

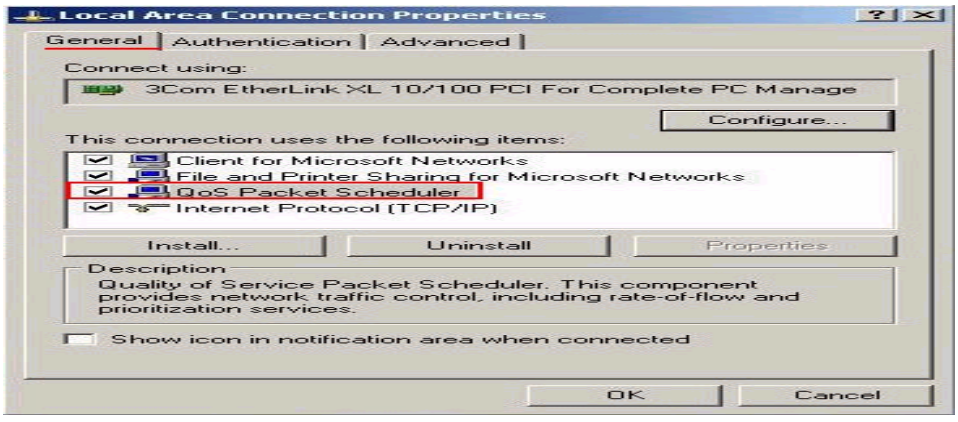

Figure 4: LAN Connection Properties Screen

Windows 2000

For authenticated network access the following screen (*Figure 5*) is used.

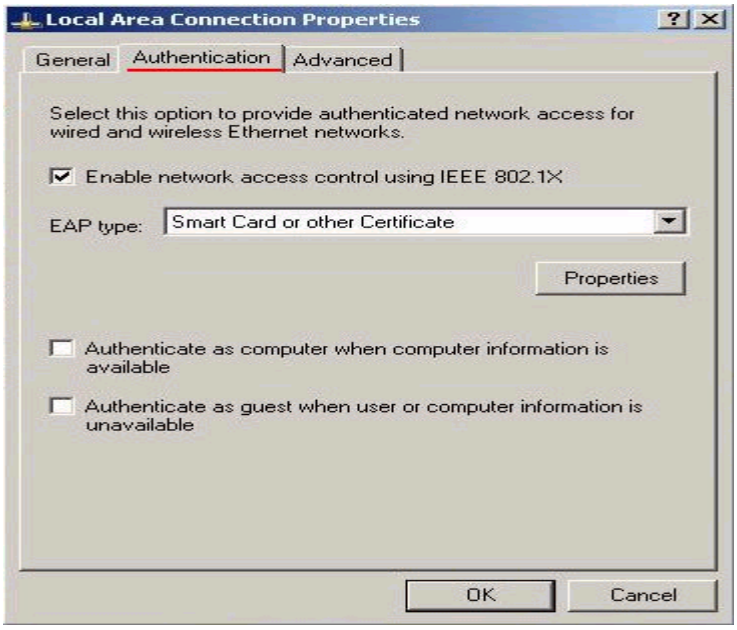

Figure 5: LAN Properties Screen

For selecting network components that you wish to install on your network use the following screens (*Figure 6):*

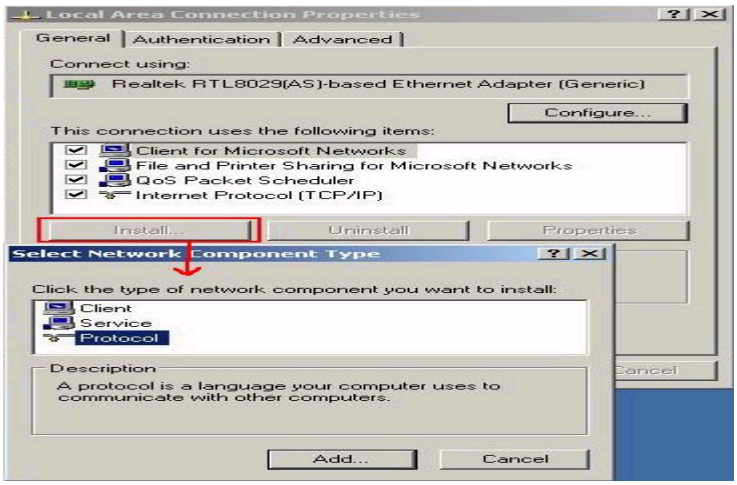

Figure 6: Network Component(s) Selection Screen

The NetBEUI Protocol is not available in Windows XP:

Support for the NetBIOS Extended User Interface (NetBEUI) network protocol has been discontinued in Windows XP. This protocol is not available for installation in Windows XP.

If you upgrade from a previous version of Microsoft Windows with NetBEUI installed, the Compatibility Wizard displays the following message:

The currently installed driver for the NETBEUI Transport Protocol is not compatible with Microsoft Windows XP and will be uninstalled during the upgrade. This protocol is removed from this new version of Windows as shown in *Figure 7*.

Figure 7: Network Protocol Selection Screen

For more information about this driver, visit the manufacturers Web site at http://www.microsoft.com. Web addresses can change, so you may be unable to connect to this Web site.

For a list of protocols supported by Windows XP, see the Microsoft Windows Whishtis Protocols Compatibility List at the Microsoft Web site.

4.2.3 Virtual Private Networks and Remote Networking

Windows supports Virtual private networks connection to access machines remotely. A VPN connection lets one system connect securely to another machine over the network. A VPN is an extension of a private network that comprises links across shared or public networks. But here in VPN, local network data is encrypted and is secure (referred to as tunneling), for security considerations. For VPN connection either use Point to Point (PPTP) or Layer 2 tunneling protocol (L2TP).

4.3 WINDOWS XP IN FILE SYSTEMS

File Systems manage the way in which system resources are shared. All network file sharing are based on it. By default NTFS is the file system for fixed storage in Windows XP.

To connect a drive to NTFS, follow these steps:

1. Choose Start, Run, Type cmd and click Ok.
2. At command prompt, type convert C:\FS: NTFS where C is the letter of the your drive.
3. Press enter to run the command.

Note: If any of the files on a disk volume are open then volume won't be converted.

File Encryption

Windows XP Professional lets the user encrypt any of the files or folders using EFS. The user can still use that file or folder but no one else will be able to access it, if that file is not shared.

To encrypt a file or folder:

1. Right click the file and choose properties.
2. On the General tab, click the Advanced option.
3. In the Advanced Attributes dialog box, select Encrypt contents to secure data and click OK.

This EFS service in Windows XP includes a new feature that allows sharing an encrypted file or folder.

1. Right click the encrypted file and choose properties.
2. On the General tab, click advanced button, then click details button in Advanced Attributes Dialog Box.
3. In encryption Details Dialog box, click the Add for multiple users.
4. In select user's dialog box select the additional users and then click ok.

☞ Check Your Progress 1

1) _____ allows users to keep copies of network files on a local machine.
2) By Default windows XP computers contain _____file-sharing feature.
3) By Default _____is the file system for fixed storage in Windows XP.
4) Command line option in any environment lets the user interact with the _____.

4.4 SHARING NETWORK RESOURCES IN WINDOWS XP

In the subsection we will describe the process of sharing files, folders and devices in Windows XP.

4.4.1 Sharing Files in a Windows XP

By default, Windows XP computers that do not belong a domain use a new feature called Simple File Sharing.

New Feature in Windows XP:

Simple File sharing makes NTFS permissions easy for users to manage.

While sharing a resource with simple file sharing enable others users have read only access to the file. Also Full Control can be given to the users.

But Windows XP computers that belong to a domain cannot use simple File sharing.

4.4.2 Sharing Folders in Windows XP

To share a folder with **Simple File Sharing** enabled, you first need to ensure that the folder does not currently reside in a private folder. If the folder does, it is either removed from the parent folder or to another location (as in *Figure 8*(*a*)).

To share the folder, follow these steps:

1. Right click the folder that user wishes to share. Choose sharing and security.
2. On the sharing tab, select share this folder on the network; give a name for the folder in the share name box.

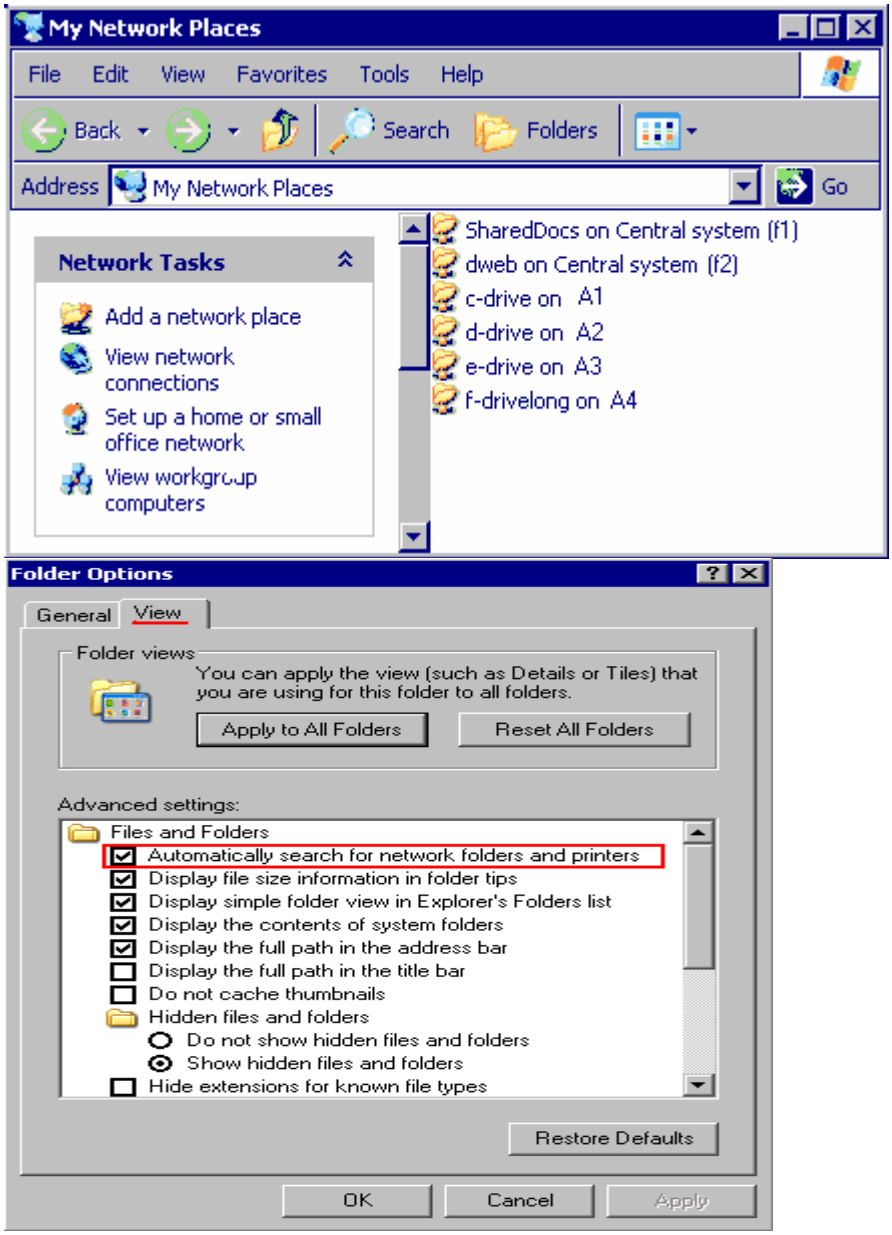

Figure 8(a): Sharing Folder Screen(s)

Following *Figure 8*(*b*) is a list *of shares* (shares refer to shared resources over the network) on the network: if the permission for sharing has not been granted then a dialog box appears as it is shown in *Figure 8 (b)*.

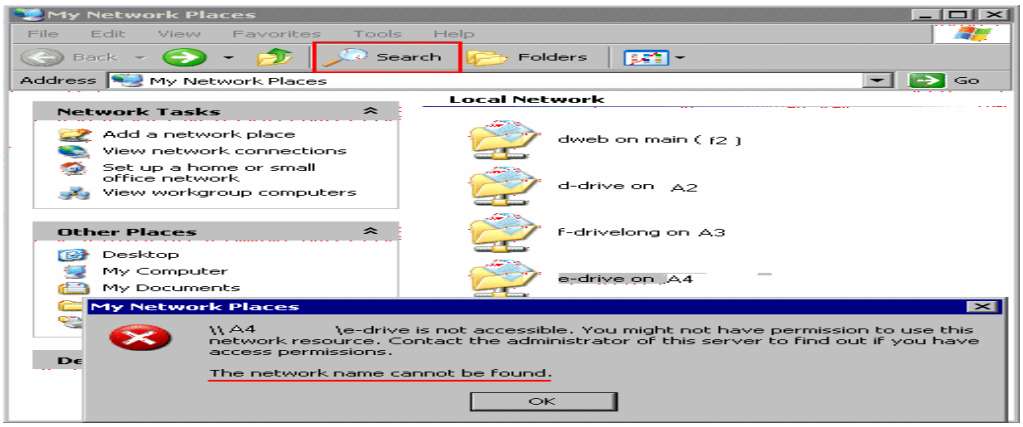

Figure 8(b): Drive Mapping Screen

Windows 2000

The following screen (*Figure 8*(*c*)) & (*Figure 9)* share a given folder on the network.

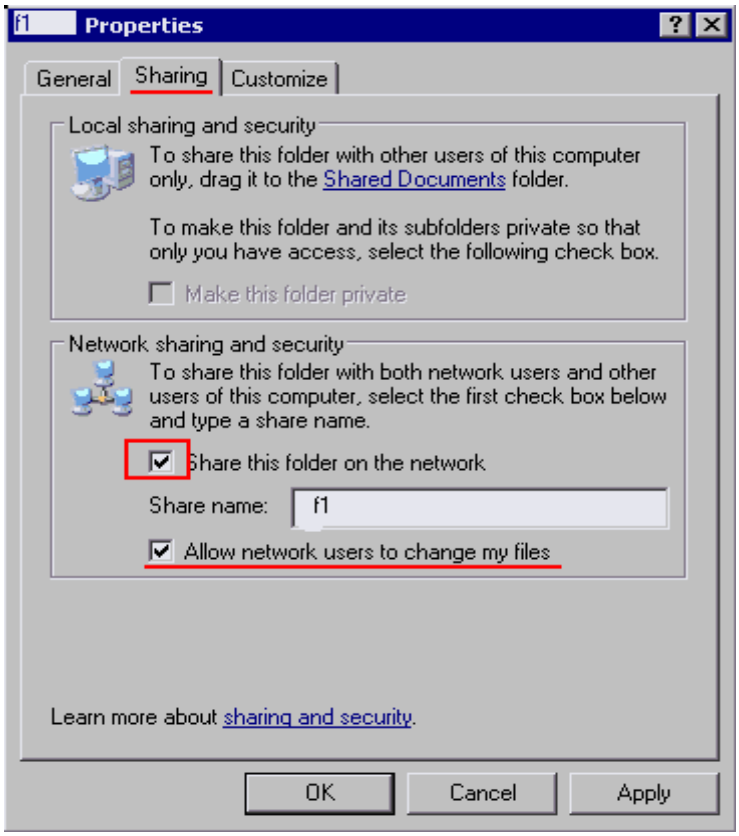

Figure 8(c): Resource Properties Screen

When this folder f1 is now shared using the "Simple File Sharing " then also the security settings are modified. Thus the option – Allow Network Users to change my files is enabled and users will have full control to edit and delete files. But if you want users to be able to read your files only, clear this check box.

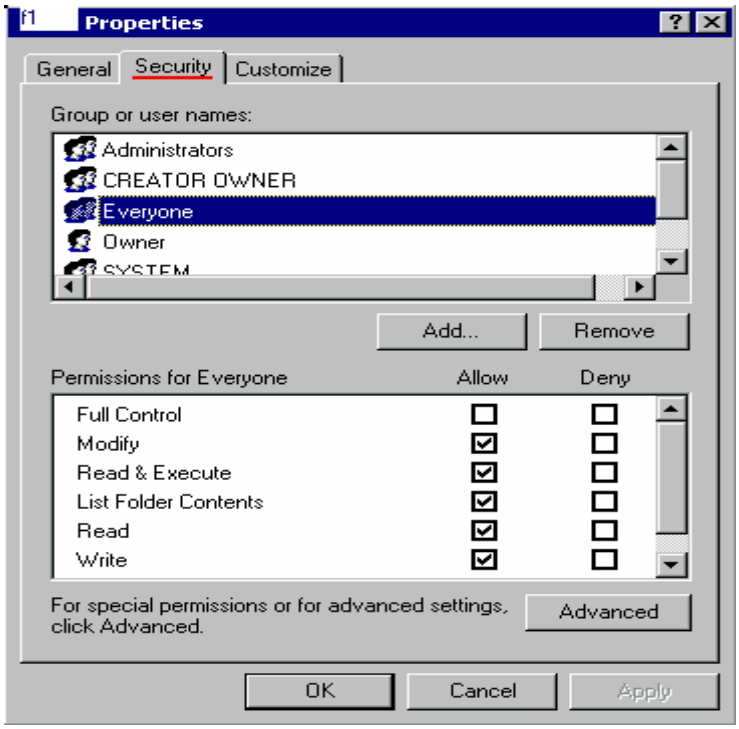

Figure 9: Advanced Properties Screen

4.4.3 Sharing Drives in Windows XP

To share a drive (*Figure 10*),

1. Right click the drive letter that the user wishes to share.
2. Choose sharing and Security.

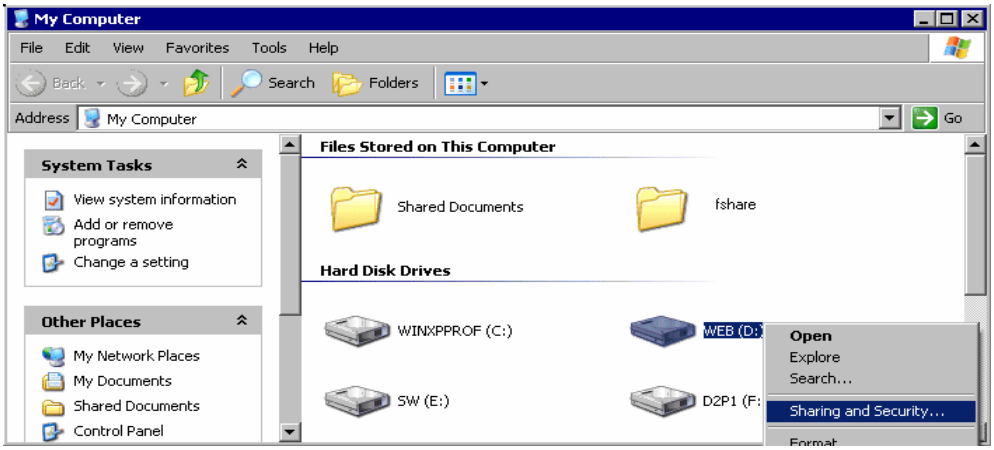

Figure 10: Drive Sharing Screen

Windows XP lets the user handle security issues (*Figure 11*)

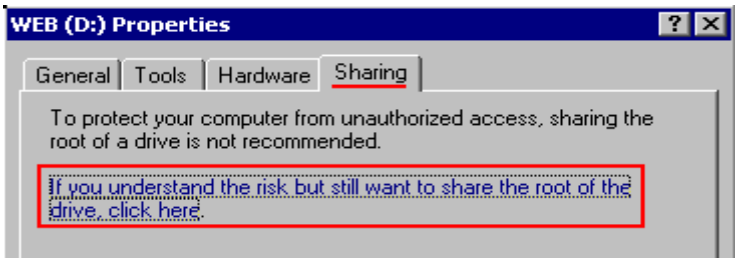

Figure 11: Web (D:) Properties

1) Select the desired folder from the share.
2) Right click on the folder and select "Sharing and Security".

or

3) On the left side select "Share this Folder" (*Figures 12 and 13*).

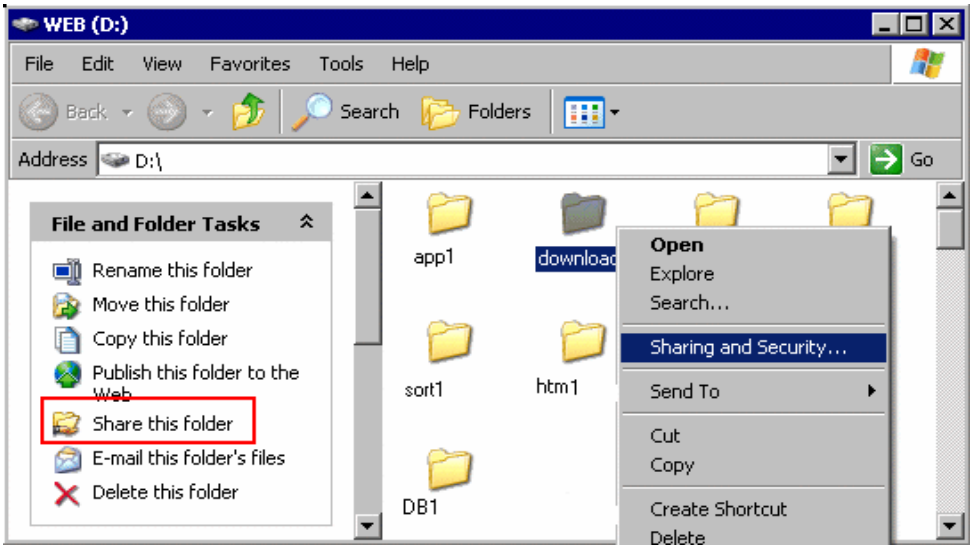

Figure 12: Web (D:)

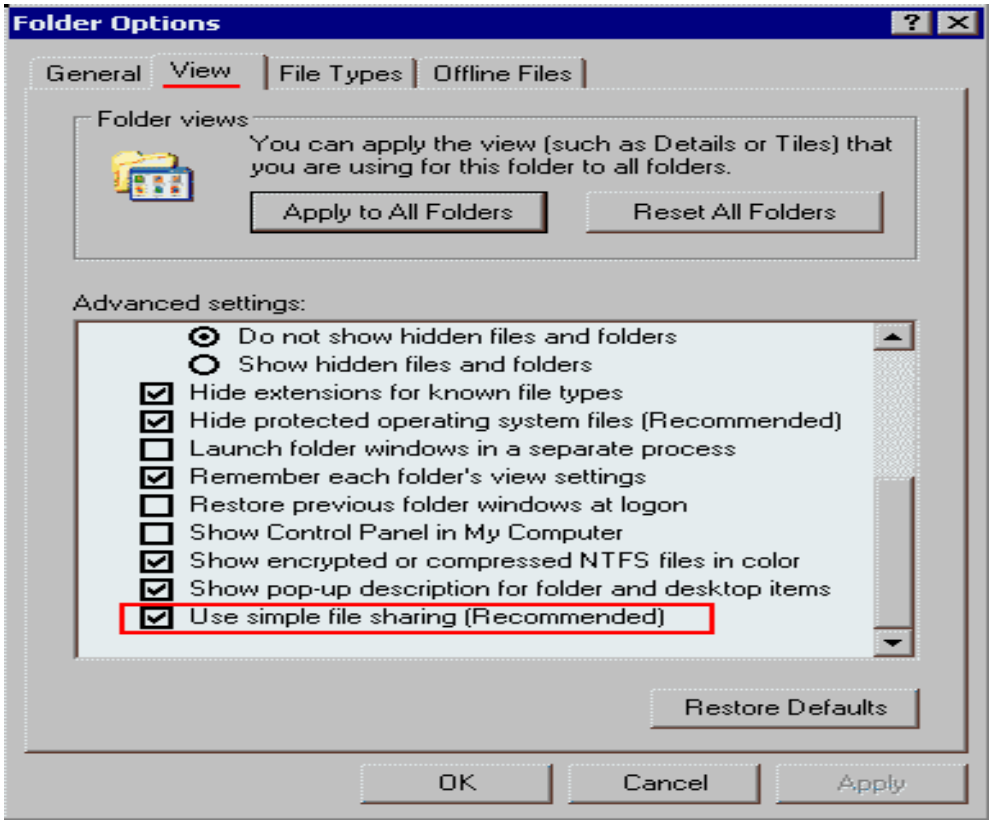

Figure 13: Folder Option Screen

The process of sharing a disk is identical (*Figure 14*) to the procedure used on Windows NT4 and Windows 2000.

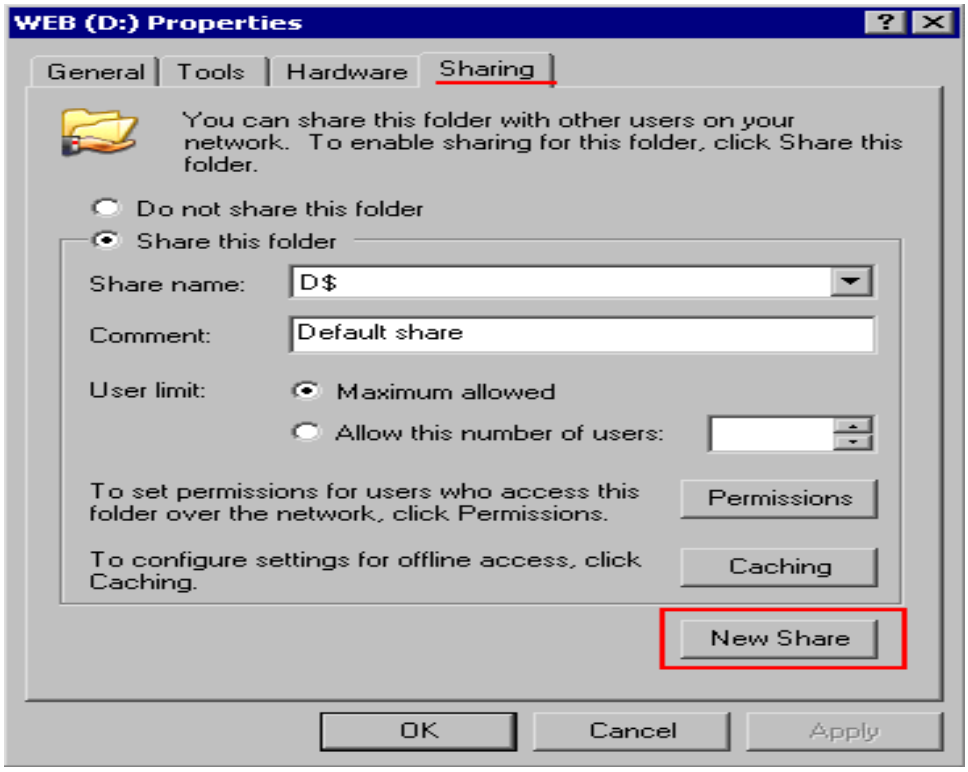

Figure 14: Web (D:) Properties

Enter the name of the share, as to be used on the network and as to be displayed in the Network Neighborhood as given in the above screen (*Figure 15*).

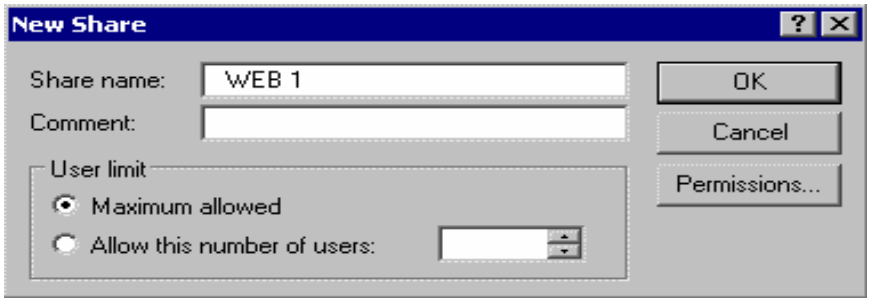

Figure 15: New Share Screen

By default all users in a network have access for a share, Even this group can be reduced (*Figure 16*).

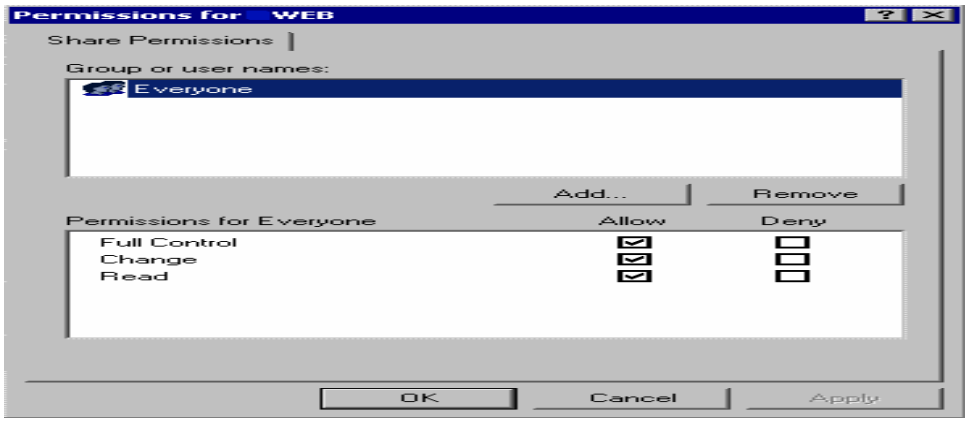

Figure 16: Share Permission Screen 1

To view/modify the permissions or to remove the sharing you can select the share names from the drop down list as shown in *Figure 17*:

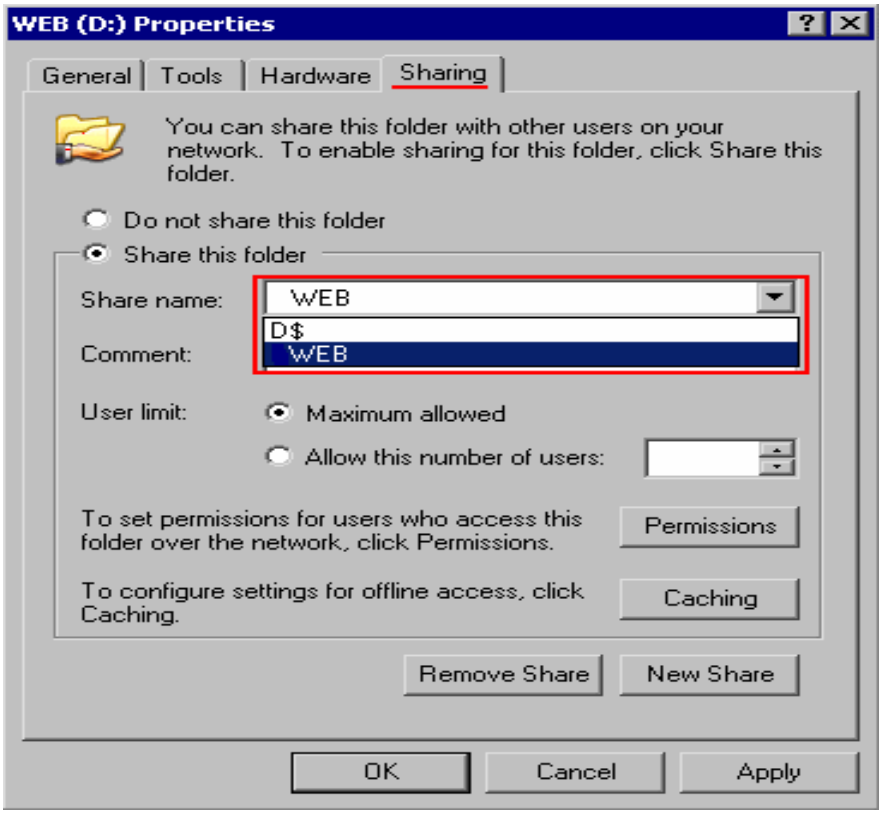

Figure 17: Share Permission Screen 2

Then the following screen *Figure 18* shows Files and the Hard disk drives on the shared network.

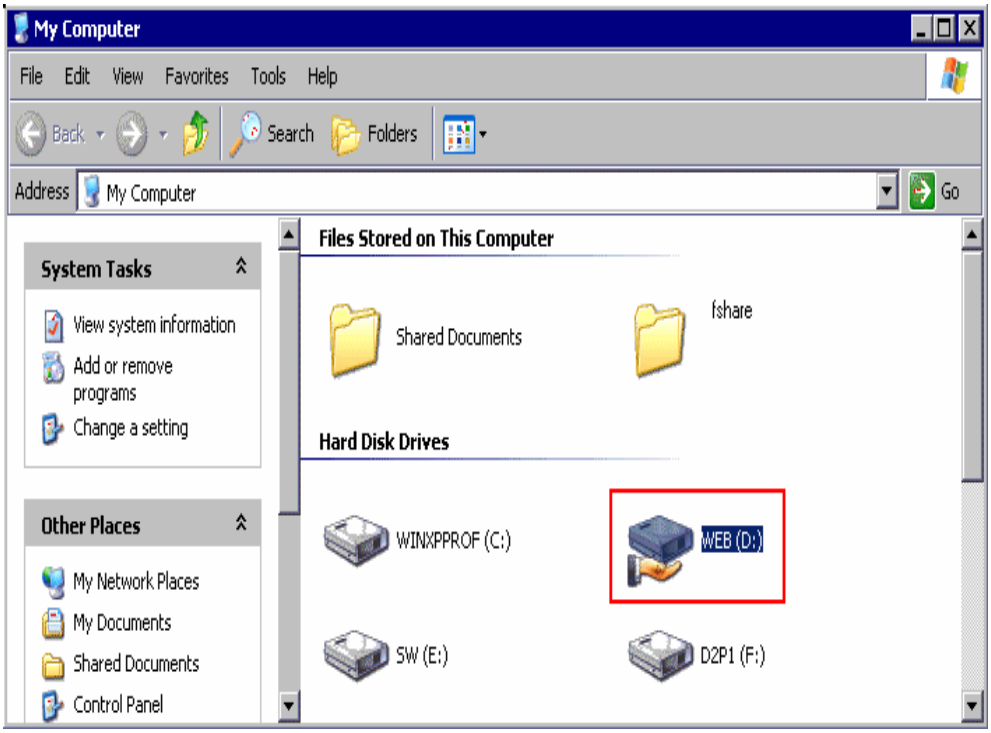

Figure 18: My Computer

While sharing a drive system warning is invoked that sharing an entire drive is not recommended but sharing the entire drive is recommended for several situations as well. But under circumstances, access should be given to everyone group (as shown in *Figure 16*), but doing so makes the shared drive highly vulnerable.

4.5 ENABLING OFFLINE FILE FEATURES

Offline file allows users to keep copies of network files on a local machine. When say not connected to network, the user can use cached copy. When the user again reconnects to the network, offline file is synchronized with the online copy.

If changes have been made to the offline copy, offline file is copied to the network copy. If network version is changed but offline copy has not changed, the online copy is copied over the users offline versions.

If both online and offline versions of the file have changed, a dialog box appears that lets the user select either of the two versions and also gives an option to retain both the versions of different filenames with the same name.

This feature is useful for:

1. Users working on a network.
2. Mobile Users
3. Users with an unreliable network connection

In order to make a file offline **fast user switching** feature has to be disabled first. This new Windows XP feature lets one or more additional users logon to the local computer without the other users logging off.

This **fast user switching** option is to be turned off first before making a network file offline.

1. From Start, Control Panel chooses open folder option.
2. Select offline file option
3. Here select drive, ok.

While working with offline files (in Windows XP environment) following options can be set:

1. **Synchronize all offline files when logging on:** If the users choose this option it synchronizes all files as the user logs on to the network.

2. **Synchronize all offline files before logging off:** This is by default i.e. before logging off all files are synchronized. This option makes sure that all users' files are synchronized before logging off from the networks. For most users, this option is the best while working with offline files.

3. **Display a reminder every x minutes:** A balloon reminder appears in the notification areas, when the user is working offline. By default, this message appears every hour. This time interval can be adjusted.

4. **Create an offline File shortcut on the Desktop:** In order to make shortcut to the Offline files folder on your desktop you can easily access any offline files.

5. **Encrypt offline files to secure data:** This option facilitates the encryption of files on the local hard disk.

6. **Amount of disk space to use for temporary offline files:** This option lets the user control the amount of disk space that is allocated for temporary offline files.

4.6 SUMMARY

Windows XP provides networking features that are capable of supporting a wide range of networks. In this unit Windows XP networking has been discussed, since TCP/IP is the de facto protocol for the Internet so it is also considered the favoured protocol for Windows XP machines. Windows XP does not support NetBEUI. File sharing, disk sharing folder sharing is very much similar to Windows and Windows 2000 environment. Also supported with this network operating system is file Encryption. Offline features are very useful for mobile users. And a window XP does support many offline features.

☞ Check Your Progress 2

1) Which operating systems support NTFS file system? Two computers are connected using a Local Area Network; Machine A is running on a 98 second Edition with FAT 32 file system. Machine B is running on XP Pro with NTFS file system. Will the Machine A be able to view and access files on XP, which are shared. Assume ideal situations with no group policies. Also answer, if not why?

2) Mrs. Smith had Windows XP Pro on her Office desktop. She had some critical data on his computer as password protected and secure. Due to some error, she called a technician, who did a parallel installation of Windows XP on different folder and removed the initial installation of XP. Will Mrs. Smith still be able to access the shared File/Folders (assuming no recovery systems installed)? If not,

can you enable it? Also what difference had it been if we had FAT32 or XP Home Edition and why?

3) Mr. Smith wants to computerize his office. He has a Medium Scale business with plans of growing in near future. What type of operating system and network structure would you design for them?

4.7 SOLUTIONS /ANSWERS

Check Your Progress 1

1) Offline file feature
2) Simple file sharing
3) NTFS
4) Operating system

Check Your Progress 2

1) Operating systems that support NTFS are:
   Windows 2000
   Windows XP
   Yes, although win 98 sec does not support NTFS, yet it is not reading physically.
   XP is reading the disk physically and transferring data using NIC card. There fore, 98 Sec can read NTFS of XP.

2) No, there is no way to access them.
   In FAT32, we could access using a different machine
   We can physically attach the drive as secondary drive to a system and access the files; this is because NTFS uses file encryption.
   In XP home, we don't have File Encryption.

3) Ideal Operating system: Windows XP
   Ideal Network Structure: Server Based.

   Reasons:

   1. Not computerized at all: XP's easy user interface would be better than 9X or 2000.
   2. Plan to grow in near future: Server based is better over peer-to-peer with more security and ease in increasing users and handling them.

4.8 FURTHER READINGS

1. www. microsoft.com
2. *Survey of operating system*. John Holcombe & Charles Holcombe, Tata McGraw Hill.