Unit 9 : Mapped Drive and Data Recovery Management

Mapping (sometimes called "mounting") a drive means you assign a drive letter on your computer to the server path. You can then connect to the server without having to remember and type the path every time.

This is useful if you're using a data discovery tool to scan a server volume or folder. Once you have mapped the drive, you can scan it using the procedure to scan an external drive.

Microsoft Windows is the most popular operating system among individuals and working professionals in organizations. Windows Operating system use File Allocation Table (FAT) or New Technology File System (NTFS) file system to systematically store/fetch data from hard disk or other storage media like PEN drive. The data stored on hard disk or any other storage media using FAT/NTFS file system is susceptible to loss due to reasons like virus attack, registry corruption, hard disk formatting, loss of MBR, unexpected system shut down, etc.

We've all done it – deleted files when we didn't mean to. Whether it's accidentally dropping them in the Recycle Bin, hitting Delete instead of Save or deleting something in DOS without thinking things through first, we've experienced that jaw-dropping realization that we've lost work. And you may have experienced even more horror at a hard-drive crash.

Lesson 1 :Using Mapped Drive, Disconnecting a Mapped Drive

1.1. Learning Objectives

On completion of this lesson you will be able to describe:

- ❖ The mapped drive.
- ❖ The way to connect and disconnect a mapped drive.

1.2. Introduction

Almost all desktop computers and laptops have built-in storage devices, commonly referred to as "drives." These can include hard drives (i.e., disk drives), optical drives for CDs and/or DVDs, and perhaps even drives for soon-to-be-extinct floppy disks. You may also have removable flash memory devices, sometimes called jump drives or USB drives.

It is also possible to make use of storage that is not attached to your computer or laptop, such as that provided over a network. For example, every Medical ID

Almost all desktop computers and laptops have built-in storage devices, commonly referred to as "drives."

Operating System

holder has a personal home directory, and usually one or more shared directories that reside on storage devices located in our secure data center.
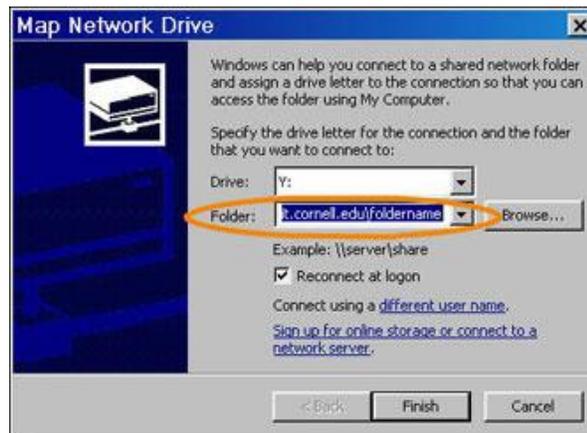
1.3. Map a Drive using Windows XP

To map a drive using windows XP follow the following steps:

1. On the **Start** menu, right-click **My Computer**, and then click **Map Network Drive**.
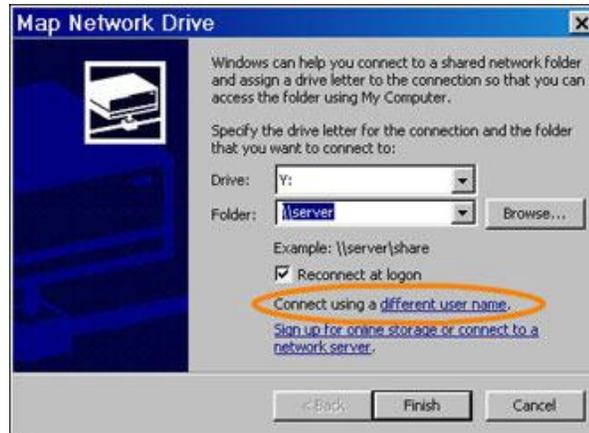

2. In the **Folder** box, type the path to the server,

    For example `\\servername.cit.cornell.edu\foldername` or

    `\\myserver.mydomain.cornell.edu\e$`.

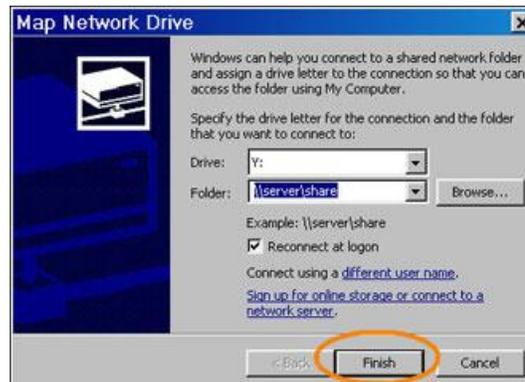3. Click **Connect Using Different User Name**.

4. In the **User** name box, type your login name for the domain. (The domain will be different for different servers. If you're unsure of the domain, contact your local technical support provider.)
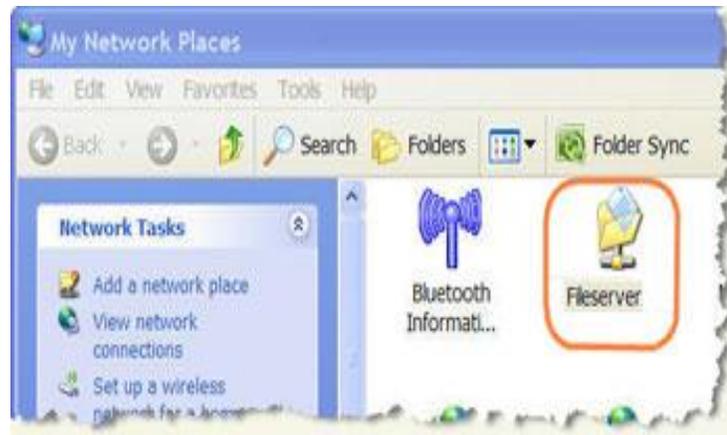

5. In the **Password** box, type your password for the domain, and then click **OK**.

6. In the **Map Network Drive** box, click **Finish**.

In the future, when you want to connect to this server, the mapped drive should be available. On the **Start** menu, click **My Network Places**. In the next window, click the server.

Note: To map a drive using the command-line, type:
```
net use x: \\myserver.cit.cornell.edu\sharename *
/user:domain\netid
```

1.4.   Map a Drive using Windows 7

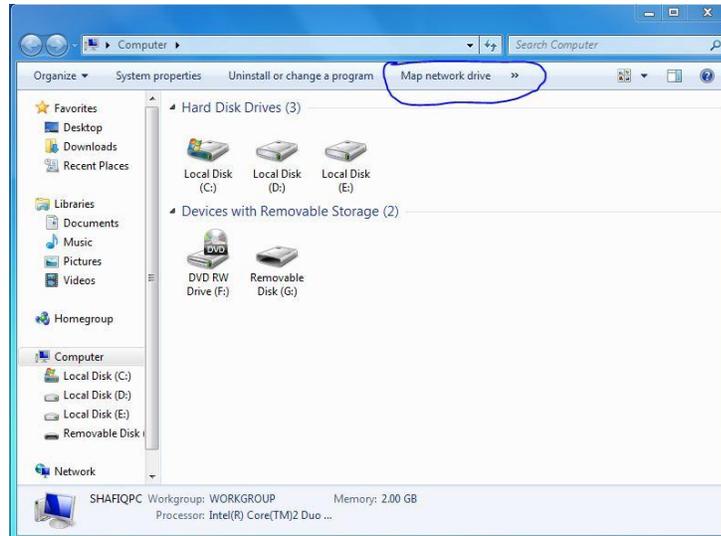To map a drive using windows 7 follow the following steps:

1.   On the **Start** menu, click **Computer**.

2.   In the next window, click **Map Network Drive**.
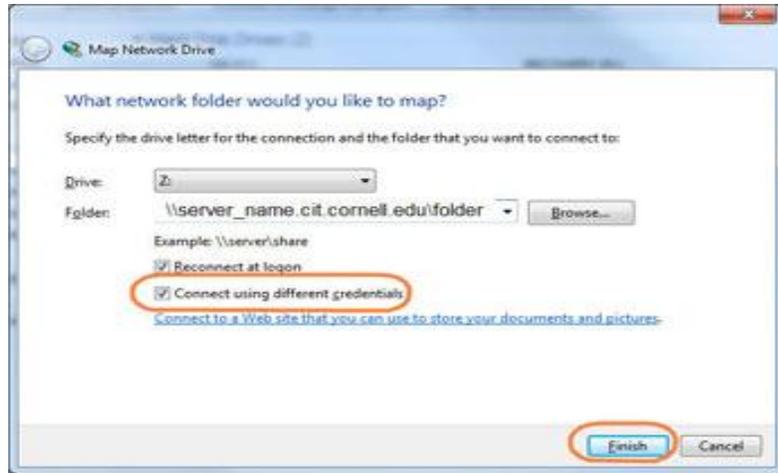
3.   In the **Folder** box, type the path to the server, for example`\\servername.cit.cornell.edu\foldername` or `\\myserver.mydomain.cornell.edu\e$`.
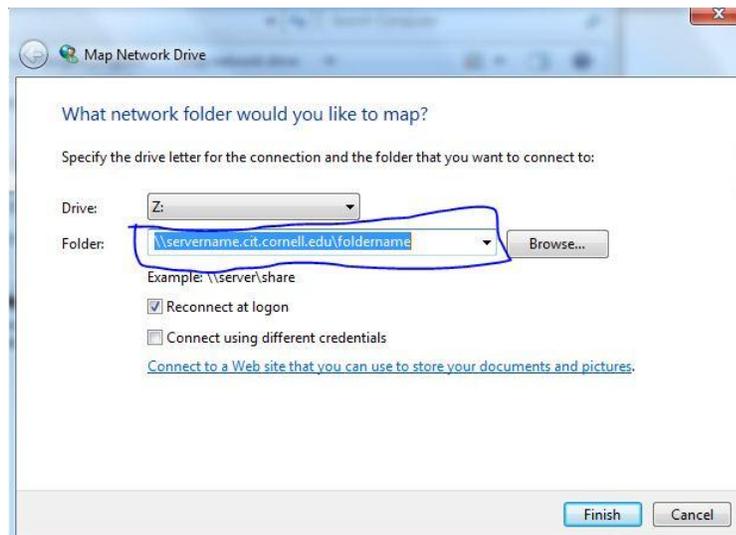
4.   Click **Connect Using Different Credentials**, and then click **Finish**.

5.   In the **User** name box, type your login name for the domain. (The domain will be different for different servers. It may be displayed under the **Password** box. If you're unsure of the domain, contact your local technical support provider.)

6.   In the **Password** box, type your password for the domain, and then click **OK**.

In the future, when you want to connect to this server, the mapped drive should be available. On the **Start** menu, click **Computer**. In the next window, click the server.

Note: To map a drive using the command-line, type:

net use x: \\myserver.cit.cornell.edu\sharename *

/user:domain\netid

1.5.   Map Drive Access

Map Drive is just like a regular hard drive on your computer; simply clicking on the drive allows you to access files as you would through any desktop folder. The only difference is that files you see on Map Drive actually reside in the cloud.

Whether working from home or the office, easy file access is the key to being productive and efficient. Many cloud solutions allow you to access files quickly through a web browser, but Egnyte goes a step further by also offering seamless

access to company files right through your desktop using Map Drive. Any file changes you make are immediately updated in the cloud. Map Drive performs this synchronization automatically anywhere you have an internet connection, and is available for both Windows and Mac.
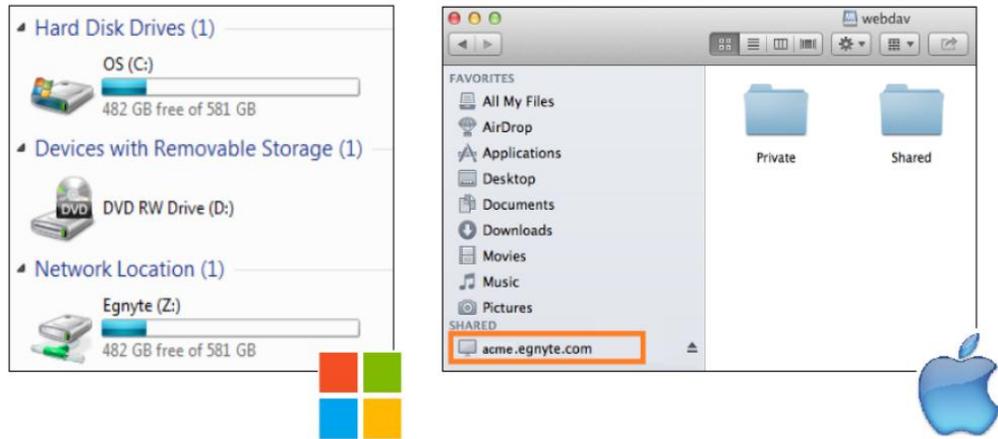
1.6.   Disconnect from a mapped drive

You can use the net use command for batch files and scripts. To use the net use command to disconnect a drive:

1.   Click **Start**, and then click **Run**.

2.   In the **Open** box, type **cmd**.

3.   Type **net use** *x: /***delete**, where *x:* is the drive letter of the shared resource.
        Or

1.   Click **Start**, and then click **My Computer**.

2.   Right-click the **icon for the mapped drive**.

3.   Click **Disconnect**.
        Or

1.   Open any folder.

2.   Onthe **menu bar,** select **Tools.** Then select **Disconnect Network Drive**.

        Select the drive you want to disconnect. Then click **OK**. Windows disconnects the mapped network drive.

1.7.   Exercises

1.7.1.   Multiple choice questions

a.   Mapping a drive means you assign a drive letter on your computer to the

(i)   client path
(ii)   server path
(iii)   workstation path
(iv)   workgroup path

b.   The files you see on Map Drive actually reside in

(i)   cloud
(ii)   other PC
(iii)   both (i) and (ii)
(iv)   none of the above

1.7.2.   Questions for short answers

a)   What is a mapping?
b)   What is mapped drive?
c)   How can you use a mapped drive?

1.7.3.   Analytical questions

a)   Describe all the possible ways of disconnecting a mapped drive.

Lesson 2 : Data Recovery Management

2.1. Learning Objectives

On completion of this lesson you will be able to describe:

- ❖ The process of data lost and recovery methods.
- ❖ Different data recovery tools.

2.2. Introduction

If the partition of hard disk get corrupted, it becomes nearly impossible for the users to recover lost files and Data that are corrupt, lost or formatted. The corrupted partition of hard disk drive needs to be immediate recovered because it contains many crucial window files. In simple way, we have advanced Windows Data Recovery software Tool to repair files and recover data from hard disk partitions. This is an easy to use recovery tool which makes the crucial task or damaged data recovery simple and fast. What's more, it also let you to locate the lost data, which was lost due to mistaken format, virus attack, software malfunctioning or unexpected power cut, to recover it with its wonderful non-destructive and read only utility.

2.3. Recovering lost data in Windows

Recovering lost data in Windows

You've accidentally deleted or lost a file. Here's how you can recover it. This can be the most annoying kind of data loss, simply because the file has usually been deleted because of user error. The important thing here, as with any kind of data recovery, is to keep calm, and think about what you're doing. Act rashly and you make it harder to recover that file.

2.3.1 The Restoration

An option you have at your disposal is to use an Undelete utility. To understand how these work, it helps if you have a little background knowledge of what happens when you delete a file. Windows stores file data in clusters, with the size of those clusters being determined by the type of file allocation table (FAT) you've set up to use. The FAT stores the links between clusters, which when connected together, make up each file. Some of the most basic file errors occur when this file becomes corrupt, and simple utilities such as ScanDisk can usually piece together the file.

2.3.2   Hanging Around

When it comes to file deletion, the important thing to realize is that the file isn't actually removed from your hard drive. All that happens is that the files directory location is changed so that it points at the Recycle Bin instead. The data clusters for the file aren't changed at all. You may think that this information is deleted when you empty the Recycle Bin, or when you bypass the Recycle Bin. But again, the actual data in the clusters is left intact, only this time the entry for the file in the FAT is updated so that those clusters are now free to be used and the first character of the file name is changed to reflect this.

2.3.3   A Quick Recovery

Programs that can recover these files do so by searching through the FAT for entries that have been flagged, and also by scanning the hard drive for clusters that look like they may be files. The most basic of these programs used to be part of the Microsoft OS, namely the Undelete.exe, but since the introduction of the Recycle Bin, Microsoft has stopped supplying the program. There are loads of utilities out there that will perform a similar function under more recent versions of Windows.

2.4.   Recover data in DOS

How to rescue your files when you can't even get into Windows? You may find that you turn on your machine and it crashes - it just won't go into Windows. If you're lucky you'll be able to pop into Safe mode and back up your files from there, but occasionally you won't even be able to do that.

There's no denying that your options for moving files around are a lot more limited in DOS. It's very rare for external drives to come with DOS drivers, and it's even rarer for you to have those drivers to hand – and you can't go on the Internet to download those drivers once your machine refuses to boot. If you do have an external drive, it's worth checking now to see if there are any DOS drivers for the device on the developer's Web site. Iomega, for instance, has a large selection of drivers for its drives; if you have an Iomega device, then backing up should be pretty painless in DOS.

If you only have a CD-RW drive, then the chances of being able to use it in DOS crises are pretty thin – even if you find drivers, there's not much software out there to make use of it. Most heavy duty back-up devices come with their own DOS drivers, so you should be safe there – as long as you know where the drivers are.

If you've partitioned your drive, or if you have more than one hard drive in your machine, then the easiest way out of this situation is to use DOS Navigator to copy

files from one logical drive to another. As long as you don't have a physical problem with your hard drive, the move will be safe from any formatting you need to do on your main drive.

The one device that everyone should have access to for backing up data is the humble floppy drive. It may not be impressive on the capacity front these days, but it's universally supported in every operating system, including DOS.

2.5. Recovering data from a corrupt hard drive

You may be a little anxious as you turn your machine back on – it crashed, forcing you to perform a cold reboot. Maybe the power went down, maybe you kicked the power cable; whatever the reason, you could now be facing one of the most heart-stopping experiences your computer can offer: it doesn't recognize the hard drive. Once you've checked that the hard drives are automatically detected in the BIOS, you're faced with the thorny problem of getting all of your data off the drive before having to re-partition it and re-install Windows.

Things may look pretty bleak, but you actually have a number of options. Your first is to use the Emergency Boot Disk. Slide this into your floppy drive and reboot; if you're lucky you should be able to change directory to your hard drive. If you can see it this way, then it appears that your main drive's Master Boot Record has been damaged – something that can be rectified by typing fdisk /mbr. Your data is safe as it is, although it's a good idea to back up your data once you reload Windows.

There are a few reasons that you may have lost your MBR, and if your system didn't crash, then there's a chance that a virus has infected your machine. Use the boot disk that comes with your virus protection program to give your system a clean bill of health before continuing. If you have a virus, it's worth bearing in mind that all removable media that has come into contact with your machine has probably been infected, and this includes any backups you may have made. It's a good idea to perform several scans of your system after you've discovered a virus to make sure that you don't get infected again.

2.5.1   Partition Magic

If you've been sensible enough to save your data files on to a separate partition, then don't forget that you can access that data even if you can't see the main drive. When you boot from the Startup disk, just check that the data partition is visible; unless you're using some form of proprietary drive format or compression system, you don't need to boot from your main hard drive first. It's a good idea to make a backup of your most important data, using floppies if necessary, while you

investigate the cause of the partition failure. It could be a problem that spreads later, so exercise caution.

Solving your problem is a little more complicated if you can't see any of your partitions, although all is not lost just yet. There are tools that can be used to recover data that has become inaccessible due to a hard-drive failure. For these tools to be useful, your drive needs to be mechanically operational, so the first thing to check is that your hard drive is rotating and that the problem is down to a power-supply problem (try the drive in another machine to make sure). You can tell whether a drive is spinning up properly by carefully holding the non-electronic side of the case as the drive boots up. You should be able to pick up the subtle vibrations as the platter spins.

If you don't think the drive is spinning up properly, or it's significantly louder than normal, then the drive heads may have impacted with the platters. Further use could cause more damage, especially if the platter has been broken or warped. You'll need to use a data-recovery specialist, such as Ontrack, to recover the data. This is a costly way of recovering data, and is only financially viable if the missing data would take weeks – if not months – to recreate.

2.5.2   Tools of the Trade

Once you're sure the drive isn't mechanically damaged, or the prohibitive cost of professional recovery leaves you with nothing to lose, you can start looking at low-level utilities. These tools read the hard-drive's contents beneath the normal file-system level, thus they don't need a working MBR or FAT for you to be able to examine the hard drive. There are a multitude of tools out there that enable you to look at your hard drive in this way, with Norton Utilities probably being the best known, and Ontrack'sEasyRecovery being one of the most professional.

2.5.3   Kernel for Windows Data Recovery

Kernel for Windows Data Recovery is an output-driven, amazing, and sophisticated FAT and NTFS data recovery software enables you to recover all data that have been lost from the hard disk drive of your computer system. This powerful Windows Data Recovery software can even recover the file(s) or folder(s) that are permanently deleted by pressing the SHIFT + DELETE key. The deleted files that are recovered using Windows Data Recovery - FAT and NTFS software are displayed in Red color for their easy recognition. The software is embedded with different scanning modes to help you absolutely recover the every bit of lost data

based on various data loss situations. Scanning modes included in the Windows Data Recovery software are:

❖ **Quick Scan**: It is a fastest recovery mode, which assures data recovery of deleted files lost due to bad sectors, boot sector corruptions, FAT corruptions, index corruptions, partition deletions, virus attacks, media errors, MFT corruptions etc. The recently deleted file(s) are efficiently recovered by this mode of recovery.

❖ **Extensive Scan**: It is an advanced recovery mode, which recovers data lost due to partition format, partition deletion, and re-formatting of hard disk partitions. This mode should be preferred when you want to recover the files and folders that were deleted long time ago. You can also select this mode when the Quick scan mode does not recover the required files and folders.

❖ **File Trace**: It is the slowest but the most effective mode among all the available scanning modes in the software. This mode searches hard disk sector by sector to search lost data. This mode should be selected when both Quick Scan and Extensive Scan modes get failed to recover the lost data.

Kernel for Windows Data Recovery software enables you to scan and recover the data from physical devices attached to your computer or from the existing logical drives. Based on the scanning mode you select, amazing Windows Data Recovery software searches data on selected physical device or logical drive. On completion of the scanning process, the software displays the recoverable data in a tree like structure to simplify the process of searching folders amongst the recoverable data.

After completing the scanning process the software displays thousands of files and folders. Searching a specific file or files based on a specific file format can be tedious and time consuming. Therefore, to reduce the time required to search a particular file or files based on a particular file format, Find Files and File Filter options are entrenched in the software. Using these options, you can easily find specific files from thousands of the files recovered by the software.

Kernel for Windows Data Recovery software also offers you preview of the selected file. The software settings that you can arrange are:

❖ Sectors to be read in one attempt
❖ Rename, overwrite, or skip the duplicate files
❖ Contain deleted files in the search, exclude deleted files from recovered files, or only recover the deleted files
❖ Number of retries on bad sectors

2.6.   Recover Office files

There are some specific options if you've managed to delete an Office file. Here's the lowdown. So, you've managed to undelete your file, but now it won't open in Word or Excel. Or perhaps your system's crashed and ScanDisk finds some problems and fixes them, but now you can't open the PowerPoint presentation. How do you get back the information in that file?

The problem here is that the file formats used by Office applications are extremely complex and not too logical either. For instance, a Word document containing a single word still takes up 20k, as all those other bytes are used to store formatting, view types and even a history of modifications to the document. If you open up such a file in Notepad you'll realize just how hard it is to piece a document together.

That's not to say that it's impossible, it's just that you'll need a little help if you want to do it in a reasonable amount of time. You may have noticed that Office applications try to recover files if your system has crashed already, but there are limits to what they can recover, which is why there are programs that have been developed specifically for this task. The OfficeRecovery suite is probably the most comprehensive of these, but it doesn't come cheap. ExcelFix is a good alternative.

The oddly named 'XVI32' is particularly good and can handle large file sizes. Just retrieve what you can from the corrupted file using this utility.

1.   If you can open the corrupt file, then saving it using a different file format can filter out some of the junk and present you with more of your original data.
2.   There are utilities that can recover more information out of these files, far beyond what Office itself can normally do.
3.   Failing that, you can always try working your way through the file yourself using the XVI32 hex editor.

2.7. **Exercises**

2.7.1 **Multiple choice questions**

a.   Which scanning modein the Windows Data Recovery software is the slowest but the most effective?

(i)   Extensive Scan
(ii)   File Trace
(iii)   Quick Scan
(iv)   All the above

2.7.2. **Questions for short answers**

b.   What is a restoration?

2.7.2 **Analytical questions**

a.   Describe Kernel for Windows Data Recovery.