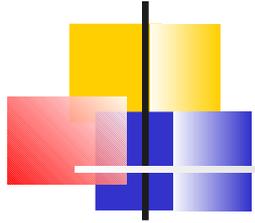


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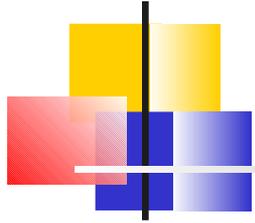
Managing Disk Space



Managing Disk Space

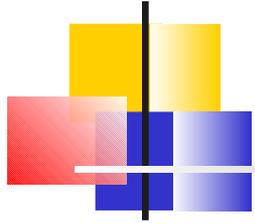
“I have a new computer system with a lot of memory. I will never have to worry about running out of disk space again...”

- **Does this statement sound familiar?** Chances are, within several years, the user will run out of disk space if files are not backed up and removed from the computer system.
- **Reasons for Running out of Disk Memory:**
 - **Downloading Music**
 - **Downloading images / videos from digital devices**
 - **Installation of many games**



Managing Disk Space

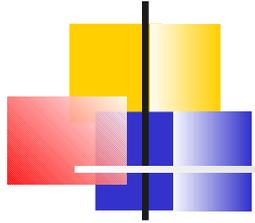
- File management is such an important element of having a properly-run computer system.
- Unfortunately, the typical computer user does not take the time to periodically backup and archive computer files on a permanent and safe storage media such as a CD, DVD, or USB stick.
- **CONSEQUENCES OF NOT ARCHIVING FILES:**
 - Loss of data from computer crash...
 - Wiping out large segments of data that are shared in same directory...
 - Reduced computer run time while system searches for file among many files...



Managing Disk Space

Archiving Files

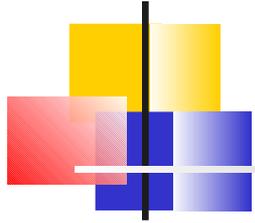
- The process of **archiving** files allows files to be “*compressed*” which take up less space on your computer system.
- When the file is required, the compress file can be “*decompressed*” (or “*restored*”) back into its original size and can be used.
- It is common for websites that have files for download to “package” and compress these packaged files to save on disk size on their web servers.... The users that download those files are then expected to “decompress” those files themselves...



Managing Disk Space

Archiving Files – How is this done?

- The process of *archiving* files may seem magical, but it is actually a simple process.
- In many cases, an algorithm referred to as “**active pattern substitution**” is used to replace large common character strings with shorter symbols. A type of dictionary is used to interpret these symbols.
- When a file is decompressed, then the dictionary or algorithm is used to replace the symbols with the larger pieces of text, thus restoring the file to its original state.

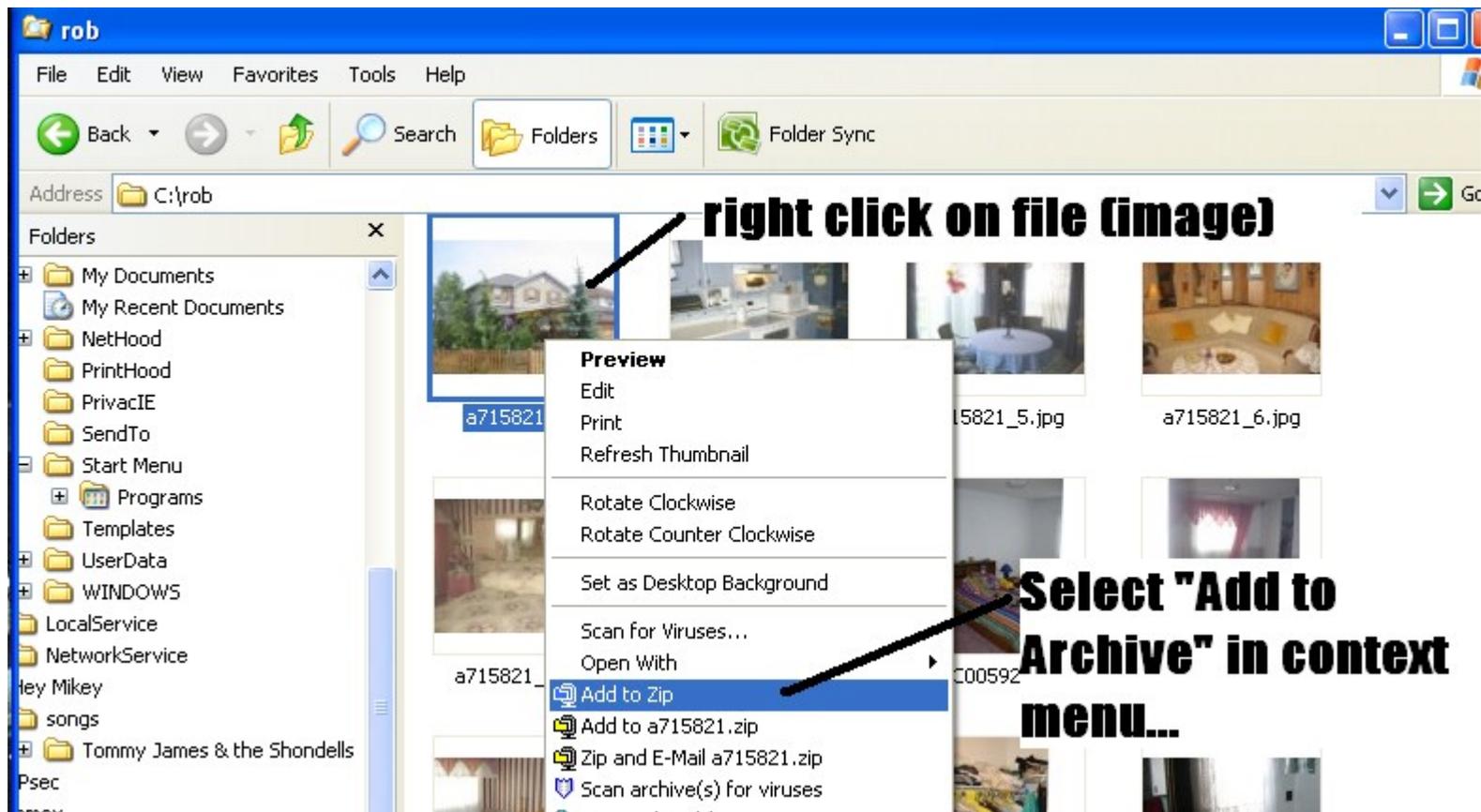


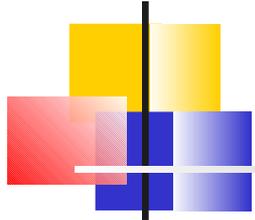
Managing Disk Space

Archiving Files – MS Windows

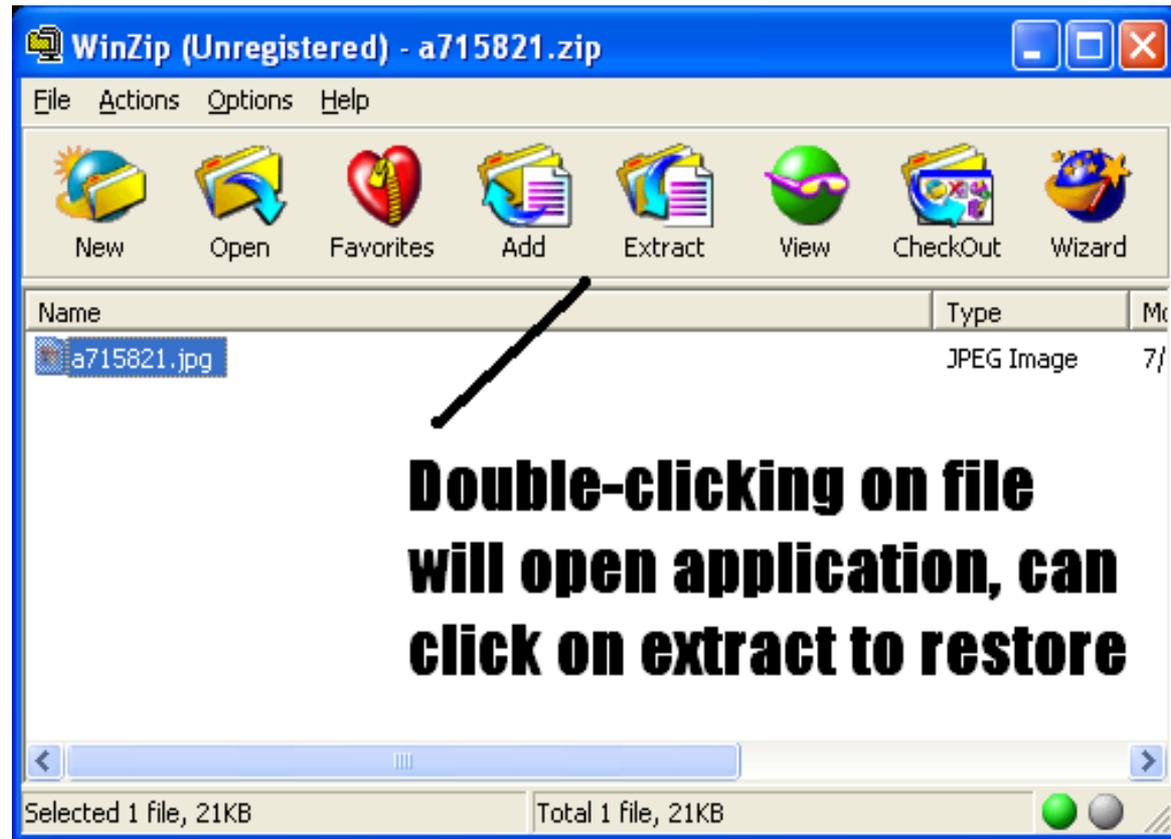
- In **MS Windows**, the process to archive files has become easier in newer releases of their operating system.
- My using MS Explorer (you can access by right-clicking on START menu and select “Explorer), users may simply archive their files by right-clicking and selecting “archive” from the context menu.
- For older MS Windows versions, third-party applications such as **WinZip** can be downloaded and then installed. When run, these applications can be used to compress and extract (decompress) files.

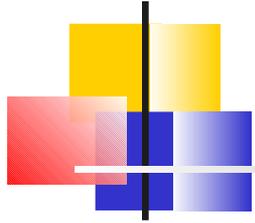
MS Windows - Compress





MS Windows - Restore

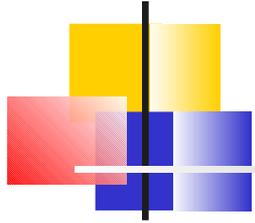




Managing Disk Space

Archiving Files – Linux

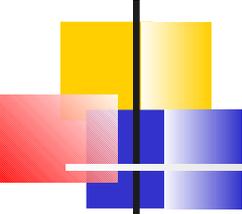
- In Linux, there are several approaches to archiving computer files including:
 - Creating repositories (stored archived locations) to download applications.
 - Using RPM Redhat Package Manager to compress and install files.
 - Creating “Zipped Tarbals” to archive large quantities of files.



Managing Disk Space

Archiving Files – Linux

- Which one to Use? That depends on what you want to do. For installing files, it is better to use some sort of “**install program**” system application that comes with your Linux distribution to automatically download and install a compressed file from a “**repository**”
- **Redhat package manager (rpm)** - useful for archiving and restoring files, but those archives usually are only compatible for your current version and type of Linux distribution.
- **Zipped Tarball** - More steps involved to create, but compressed file can be decompressed on many different operating systems...



Managing Disk Space

Operation Compress File

Zipped Tarball

Steps:

```
tar -cf archivename.tar file(s)  
Gzip archivename.tar
```

(will produce a filename like:
archivename.tar.gz)

Restore File

Steps:

Either:

```
tar -xfvz archivename.tar.gz
```

Or:

```
gunzip archivename.tar.gz  
Tar -xvf archivename.tar
```

Redhat Package Manager

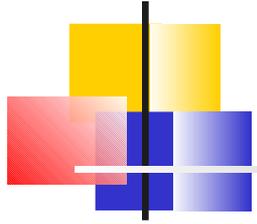
Steps:

```
rpm file(s)
```

(will produce a filename with an
Extension .rpm)

Steps:

```
rpm -i filename.rpm
```



Managing Disk Space

Transferring Files - sftp

- Another method of saving file storage space is simply to move the file away from your computer system to either another computer system or a more permanent storage media such as a CD / DVD/ USB stick.
- There are many sftp applications that are available, but this course teaches the following ones:
 - MS Windows – SSH application
 - Linux – command line sftp

Windows - SSH

Login with SSH into your server (Matrix)

SSH Secure Shell 3.2.4
Copyright (c) 2000-2001
y Corp - <http://www.ssh.com>

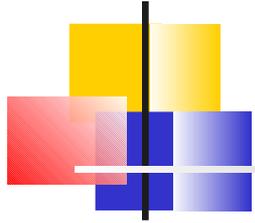
This copy of SSH S...
version.
This version does...
ctionality.

Last login: Sun Se...
0f564ef-cm0011ae00...
Have a lot of fun...
[m

Click Window "New File Transfer" and drag file(s) between computer systems...

Local Name	Size	Type	Remote Name	Size	Typ
My Documents		System	Asgm1.073		Folk
My Computer		System	Asgm2.073		Folk
My Network Places		System	asn1		Folk
Recycle Bin		System	asst2		Folk
		System	atest		Folk
	976	Shortc	backup-april29		Folk
	626	Shortc	bak		Folk
	1,708	Shortc	bif703		Folk
	1,627	Shortc	bif703_wed		Folk
		File Fc	bif713		Folk
		File Fc	BIF713		Folk

Connected to matrix.senecac.on.ca - /h/ SSH2 - aes128-cbc - hmac-md5 - none 624 items (19.6 MB)

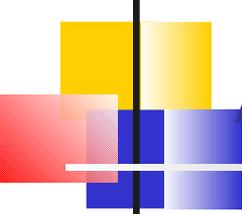


Managing Disk Space

sftp command - Linux

- Connect into system by issuing command (like):
`ssh userid@matrix.senecac.on.ca`
(enter password)
- Issue commands (like you have been doing for Linux OS to get or put files from/to remote server.
 - Here is link to common sftp commands:

<http://www.cs.unc.edu/help/sftp/commands.html>



Additional Resources

- http://en.wikipedia.org/wiki/File_archiver This slide-show provides the minimum amount of Linux and Windows concepts that could appear on a test or final exam.
- Here are some Related-Links for Interest Only:

File Archiver

http://en.wikipedia.org/wiki/File_archiver