



Efficient Methods of Data Storage

Reclaiming Network Space



Introduction

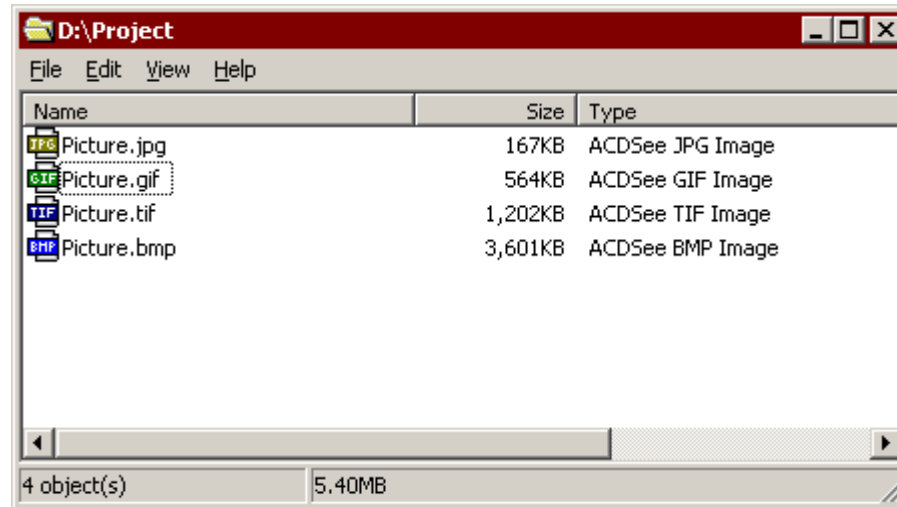
- Despite what many may think, company computing resources are finite in size. As a result, the IS team is constantly required to work on maintaining storage capacity and bandwidth.
- There are some practices that you can adopt to help reduce the need for continual upgrades.
- This presentation is intended to help you understand the storage requirements (sizes) of different file types and how they affect network storage resources.
- The user experience is also improved with some fore-thought and requires very little extra effort.



What you can do

- So, what can you do to save network storage space?
 1. Choose an appropriate file format for graphics and documents (JPG and PDF).
 2. Choose the right dimensions for graphics files (reduce their dimensions for screen viewing).
 3. Avoid embedding images in other document formats.
 4. ZIP groups of related files for archiving.
 5. Identify stale or low-value data and delete or archive it to removable media.

Photo Image File Types

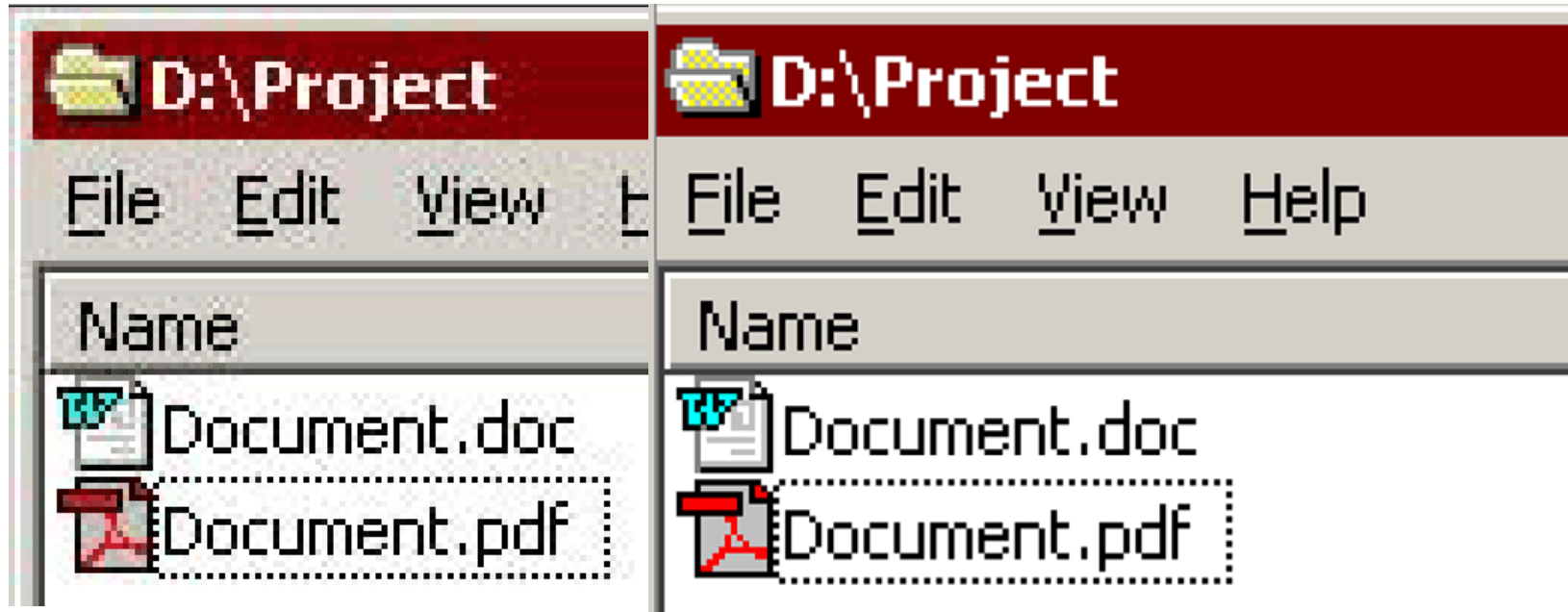


The screenshot shows a Windows Explorer window titled 'D:\Project'. The window displays a list of four image files with their names, sizes, and types. The files are: Picture.jpg (167KB, ACDSee JPG Image), Picture.gif (564KB, ACDSee GIF Image), Picture.tif (1,202KB, ACDSee TIF Image), and Picture.bmp (3,601KB, ACDSee BMP Image). The status bar at the bottom indicates '4 object(s)' and '5.40MB'.

Name	Size	Type
Picture.jpg	167KB	ACDSee JPG Image
Picture.gif	564KB	ACDSee GIF Image
Picture.tif	1,202KB	ACDSee TIF Image
Picture.bmp	3,601KB	ACDSee BMP Image

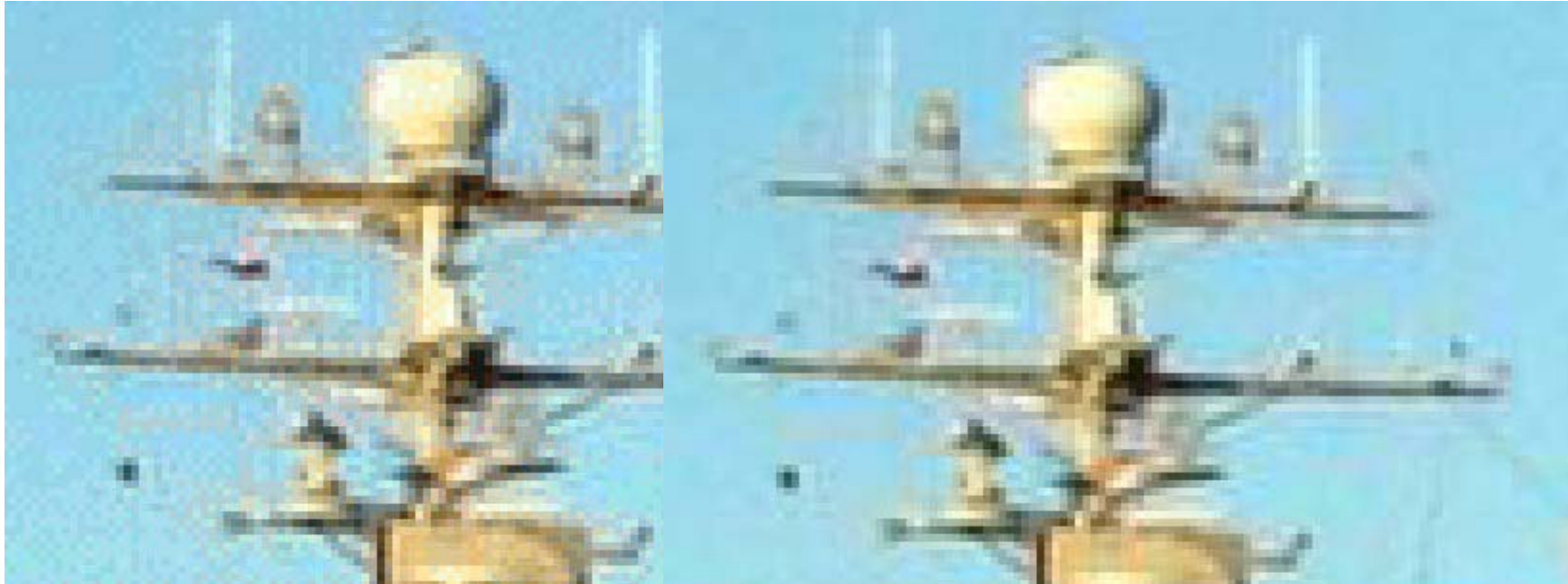
- The same photo can be stored in many formats. However, some formats are much more efficient than others.
- JPG is the best choice for saving photo images (although it permanently discards some image information). It should be used instead of BMP where possible. In the above example it is over 20 times smaller.
- Unfortunately, BMP is the default format for many productivity applications, so, please check for alternative formats (preferably JPG) when saving photo files.
- GIF should not be used for photos because it is limited to just 256 colours. It is best suited to images with solid colour such as logos and screen-captures (see next slide).
- TIF is a professional format for print media. It is much larger than JPG and is not supported by as many office applications as JPG.

Compression Issues - 1



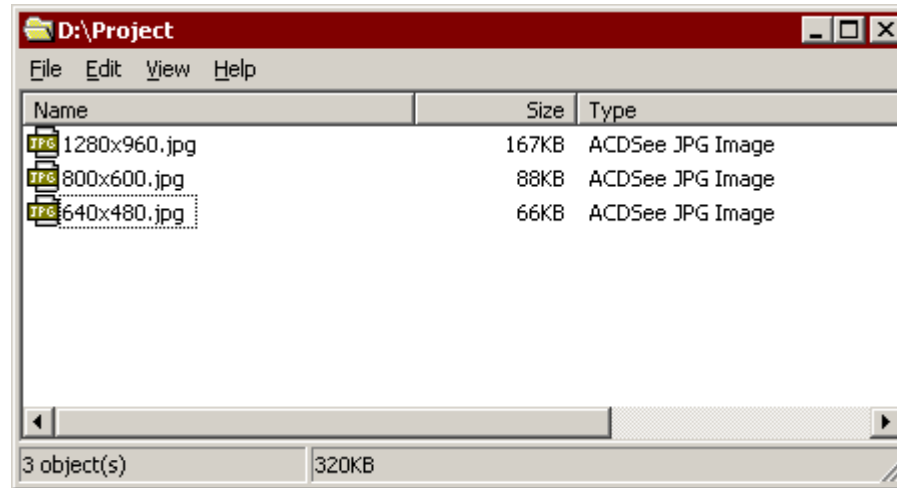
- As mentioned in the previous slide, GIF is a better format than JPG for images with solid colour.
- The image at right is saved as GIF format; it is smaller and much clearer than the JPG image at left.
- Because of the compression algorithm used in JPG images, high contrast areas generate undesirable “artefacts” (as seen above) within the image. This is not so apparent with continuous tone images such as photos.

Compression Issues - 2



- Because of the limited colours in GIF files, it is not suited to continuous-tone images such as photos.
- The GIF image at left is limited to just 256 colours, hence you can see a prominent dithering effect.
- The JPG image at right looks considerably smoother.

Image Dimensions



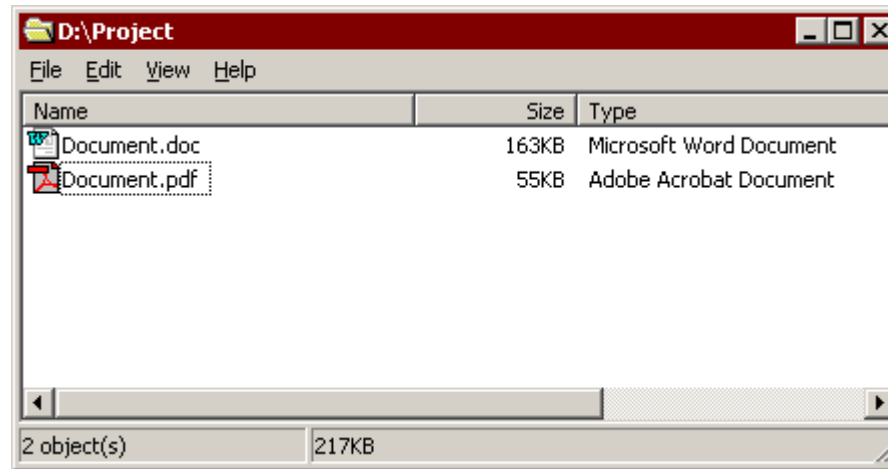
The screenshot shows a Windows Explorer window titled "D:\Project". The window displays a list of three image files:

Name	Size	Type
1280x960.jpg	167KB	ACDSee JPG Image
800x600.jpg	88KB	ACDSee JPG Image
640x480.jpg	66KB	ACDSee JPG Image

The status bar at the bottom of the window indicates "3 object(s)" and "320KB".

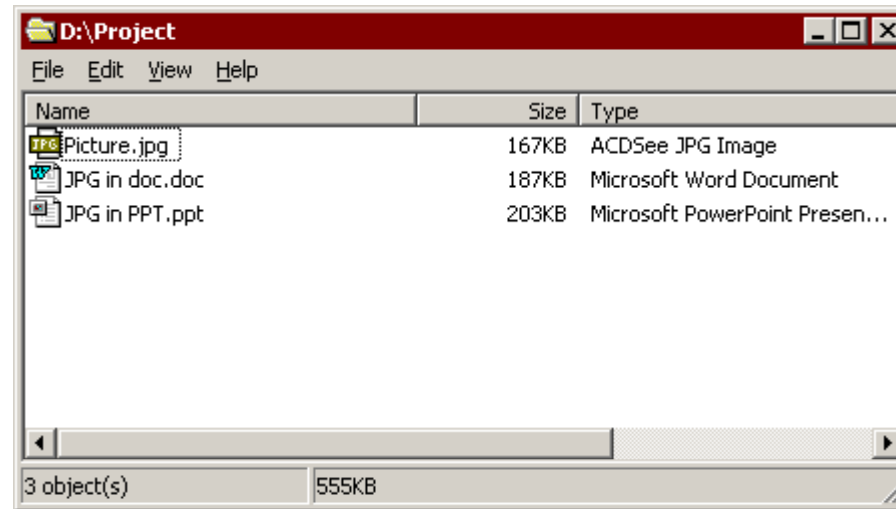
- The above screenshot shows the same photo image saved at different resolutions.
- Significant savings in file storage needs can be achieved by changing the image dimensions.
- If the image is to be viewed on screen, there is no need for it to be any larger than 800x600 pixels (as it will often be too large to fit on some screens without the need to scroll it).
- As you can see from the above example, the 800x600 pixel image uses half the storage space of the 1280x960 image.

Document Formats



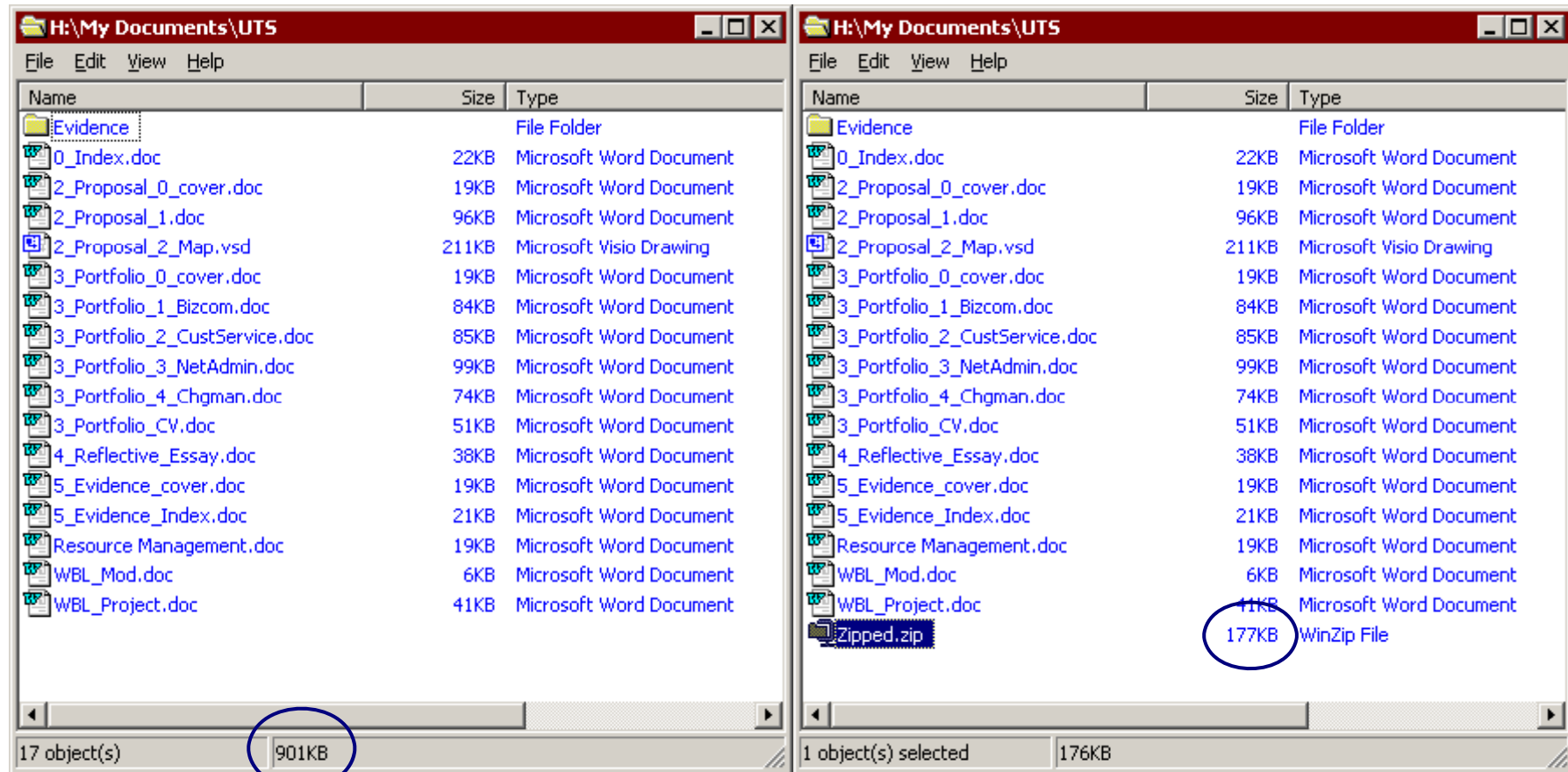
- For documents that do not need to be updated regularly or are for reference only (say, on the corporate Public drive) can benefit from being saved as PDF (Adobe's Portable Document Format).
- The PDF file format also helps to prevent accidental editing and it is ideal for sending out via e-mail (because of its smaller size). The above example is 1/3 the size of the original Microsoft Word document.
- Please ask your IS team how to create PDF files.

Embedded Graphics



- When embedding graphics in other file types (such as Word Documents or PowerPoint Presentations) the file size is increased.
- Some people do this to ensure their picture will fit on screen. As mentioned in a previous slide, it is better to change the image dimensions rather than embed it in another file type.
- Embedding the graphics also assumes that the recipient has the application required to open the document. Even though this is not a problem on the DRN, external recipients may be inconvenienced.
- Almost every computer has a browser that can view JPG files.

ZIP files for Archiving



- A folder full of files taking up 901Kilobytes of space has been zipped down to just 177Kilobytes. That's a saving of over 80%!
- ZIP files can also be treated just like a standard folder; you can drag new or updated files into the archive.



Identifying low-value data

- One of the best ways to save space on any system is to remove low-value data.
- Many people find it difficult to delete data because they think they “may need it some day”. It is important to understand that some data is not worth keeping.
- Your IT Dept should not have the authority to delete user data, however, it should be responsible for ensuring the system is used effectively.
- It is not difficult to navigate through your folders and find multiple versions of the same document, empty folders and files or old documents that have not been accessed in a long time.
- Tools such as CloneSpy can be used to find unnecessary duplicates.



Dealing with low-value data

- Data such as 3-year-old pictures of a Christmas party should be archived off to removable media. So that others can still access these images, a single document left in the folder should have details of the images as well as information as to who holds the archive.
- Jokes, movies and other e-mailed “humour” should never be stored on any company computing resource.
- Jokes and movies, etc. received via e-mail should never be forwarded or stored.
- Please read the Company IT Policies for further information.