Microsoft Windows 7

4 – Data storage on your computer

CORPORATE LEARNING & DEVELOPMENT

DATA STORAGE ON YOUR COMPUTER

Windows 7 relies on storage devices, such as the hard drive, CD-ROM drive, DVD drive, network drives and so on, to store files and folders safely.

There are several ways to access and work with drives, folders and files in Windows 7. Most common is by using either *Windows Explorer* or *Computer*, which provide easy access to your drives, folders and files. In Windows Explorer and Computer, all of your drives, folders and files are displayed in a hierarchical structure.

In this session we will show you how to:

- gain an understanding of storage devices on your computer
- gain an understanding of the Windows Explorer window
- view storage devices on your computer
- view network connections
- gain an understanding of how to use a USB flash drive.

UNDERSTANDING DATA STORAGE IN WINDOWS 7

Computers basically perform two functions: they **process** and **store** data. For example, when you write a letter on the computer you are word processing. If you want to keep that letter you will need to **store** the letter. Data is stored as **files** – the computer equivalent of files stored in a filing cabinet. Files are stored in **folders** and folders are stored within **drives**.

1 Storage Devices

A **storage device** is a device that is capable of storing and retaining data even when the computer has been switched off. Here are some examples of storage devices.

Hard Disk Drives: a device that **reads** and **writes** data to the hard disk. Data is copied from the computer's main memory (random-access memory or RAM), and then written to the hard disk. The **drive** is the mechanical device that writes the data to the disk. Hard disks can store up to 2TB (terabytes) of data, and are considered 'fixed' (permanent) drives as they cannot be removed from the computer unlike other storage devices.

CD-ROMs: (compact disk – read-only memory) a type of optical disk that is capable of storing up to 1GB of data (although the most common CD-ROMs store up to 650MB).

DVD-ROMs: (known as a read-only disk) usually used to store commercial programs and data. You can't add or delete information on a DVD-ROM. The usual capacity for a DVD-ROM is 4.7GB (gigabytes).

Network Drives: a **network** is a group of two or more computers that are linked together. A **file server** is a computer on the network that is dedicated to storing computer files. Any users on the network can read and write data to the server.

USB Flash Drives: consists of a **flash memory** data storage device to enable data transfer between computers and other digital devices. This device is integrated with a USB (Universal Serial Bus) for use with USB ports. USB flash drives are rewritable, allow for fast transfer of data, are about the size of a stick of chewing gum, and can store up to 256GB of data.

2 Folders – the Key to Organised Filing

When you save stuff (letters, pictures, songs, and so on) on a computer the stuff is saved as **files**. To make it easier to locate and retrieve your files, they are placed into **folders**.

You can save data almost anywhere on the computer. However, just like a modern office should have a proper and efficient filing system, your computer should be organised into efficient compartments known as **folders**. A **folder** itself may contain folders – these are referred to as **subfolders**. And, subfolders can have more subfolders, and they can have subfolders, and so on.

Folders are organised into a hierarchical structure beginning at the drive level. Folders can be created within folders so that you have structures similar to the following:
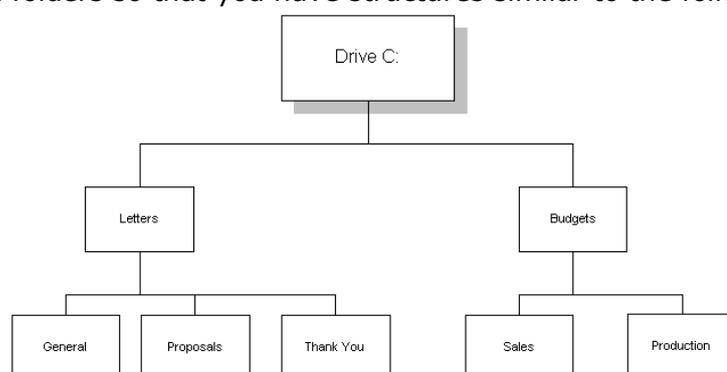

3 Files

Files are the storage units in which your data is stored. Files are given a unique name and are then placed in a folder on a drive. Two files in the same folder cannot have the same name, but two files with the same name can exist in different folders.

UNDERSTANDING WINDOWS EXPLORER

Windows Explorer provides access to drives, folders and files on your computer. As its name suggests, it allows you to **explore** the structure of your computer's filing system and to ultimately organise that system the way that you want. Basically, there are two panes. The left pane is known as the **Navigation** pane, while the right pane displays files and folders.
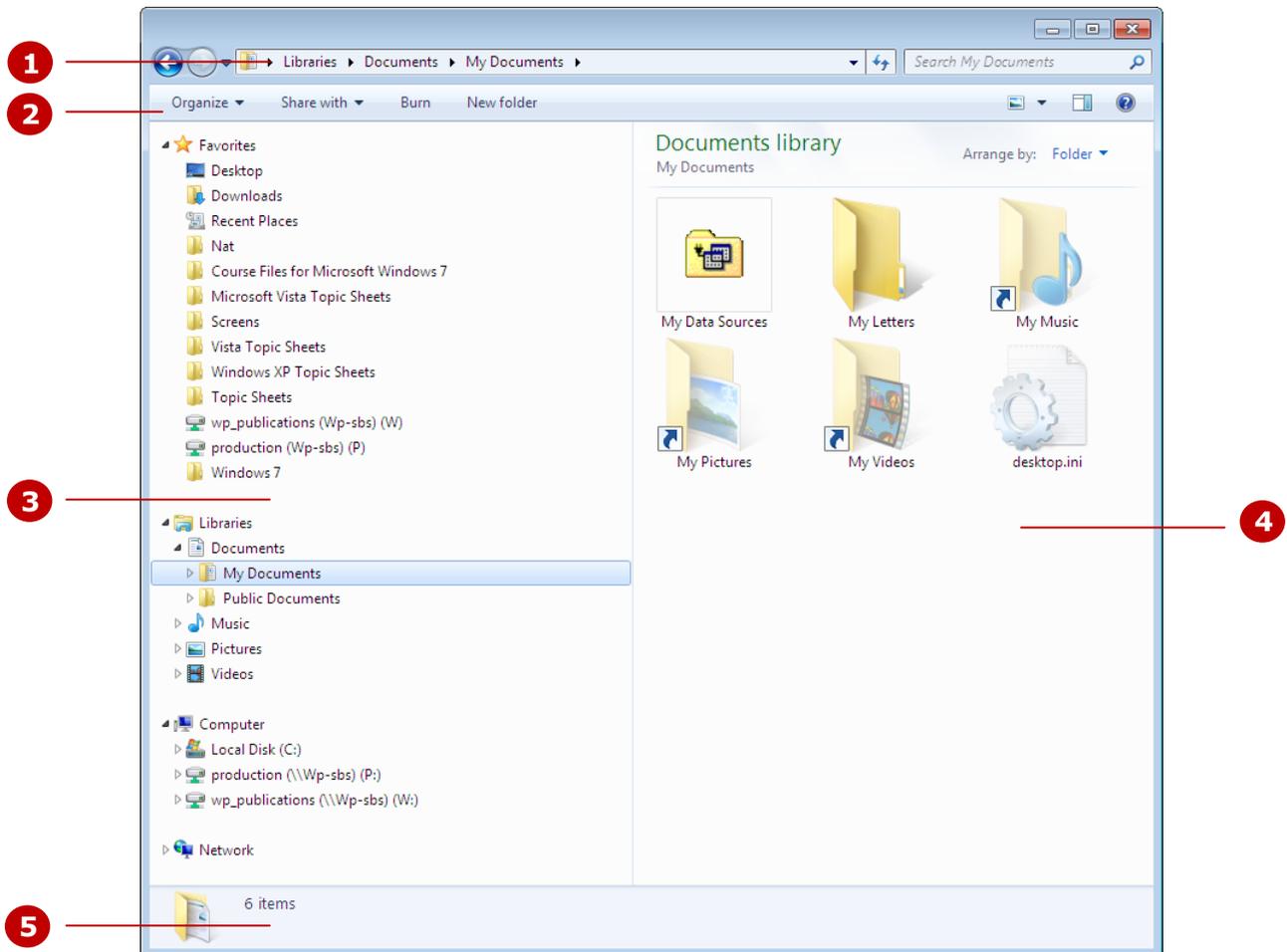
The Windows Explorer Screen

1 The **Address** bar displays the location (address) of the currently selected item. You can click on any 'wedge' in the Address bar to go to that folder or location. In the above example, there are three wedges in the Address bar: Libraries, Documents and **My Documents**. Click on the arrow to the right of the 'wedge' to display a menu of items within that location.

2 The **toolbar** contains a menu and commands relevant to the currently selected item. In the example above, the toolbar displays the **Organise** menu and other commands relevant to **Libraries** (the selected item).

3 The **Navigation** pane is the left pane in the Explorer window, and displays a list of locations on your computer, including drives, folders and 'virtual' folders (such as the **Library** and **Favourites**). Click on an item in the **Navigation** pane to display its contents in the right pane.

4 The **right** pane displays the contents, including folders and files, of the item selected in the **Navigation** pane.

5 The **Status** bar displays information about the selected item. In the above example, the **Status** bar shows the number of items within **Libraries**.

VIEWING STORAGE DEVICES ON YOUR COMPUTER

Windows Explorer is one way to explore your computer's storage devices, such as the hard disk, CD or DVD drives and network locations. You can also access other devices that might be connected to your computer, such as USB flash drives and digital cameras. In Windows Explorer, you can also work with folders and files to organise the structure the way you want.

Try This Yourself:

Before starting this exercise ensure that the desktop is displayed...

1 Click on **Windows Explorer** in the Taskbar

The Windows Explorer window is displayed...

2 Click on **Computer** in the **Navigation** pane

The Navigation pane shows that Computer is selected, the right pane displays the contents (in this case, the drives) of your Computer...

3 Click on **Local Disk (C:)** in the **Navigation** pane to display its contents in the right pane

A list of folders within (C:) drive is displayed...

4 Click on **Computer** in the **Navigation** pane to display the computer's drives

Note that the options in the toolbar change when you select different items...

5 Click on **[Organise]** in the toolbar to display a menu of commands relevant to the selected item

6 Click on **close** ❎ to close the **Windows Explorer** window
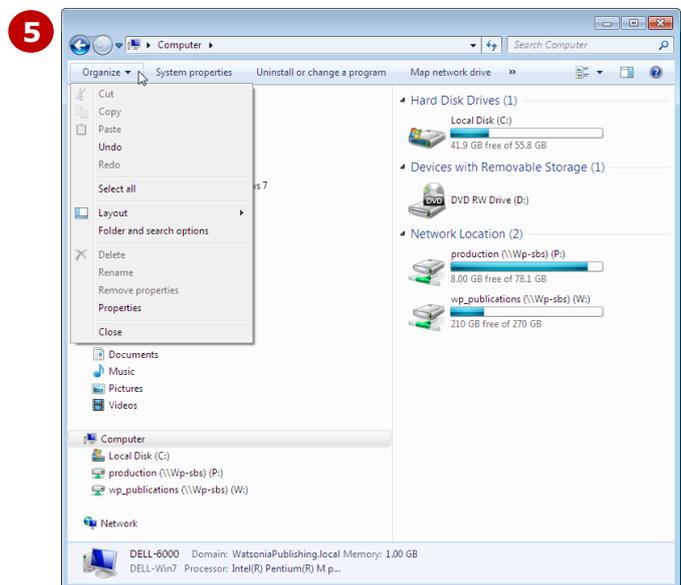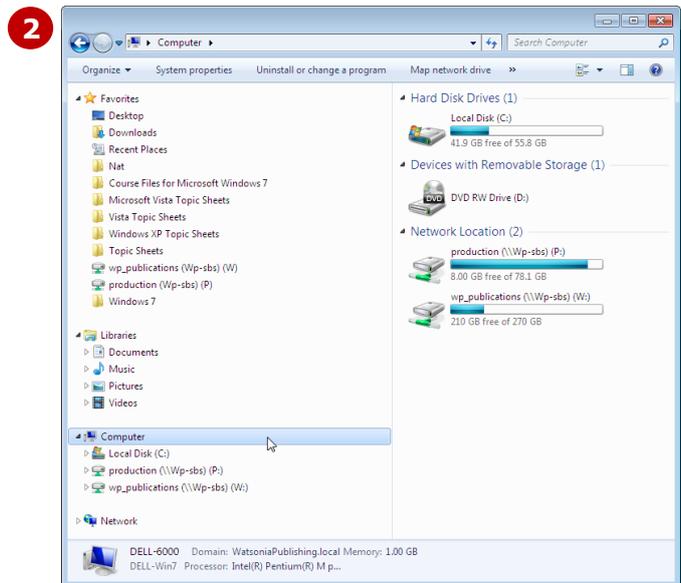
For Your Reference...

To view storage devices on your computer
- Click on **Windows Explorer** in the **Taskbar**
  or
- Select **Start** > **Computer**

Handy to Know...

- Windows 7 shows the total space for each device and the amount used (stored data). It shows this information graphically, using a colour bar to represent the percentage used for each device. For more information about a device's usage, right-click on the device and select **Properties**.

VIEWING NETWORK CONNECTIONS

If your computer is part of a network, you can view a list of networked computers (servers and users) and devices (shared printers and so on) on that network. You can access the network via **Windows** **Explorer**, and if your network administrator has provided you with authorised access, you may also be able to explore the contents of networked computers.

Try This Yourself:

Before starting this exercise make sure you are viewing the desktop...

1 Click on **Windows Explorer** in the Taskbar to open **Windows Explorer**

2 Click on **Network** in the **Navigation pane** to display the contents in the right pane

A list of computers attached to the network is displayed...

**3** Click on the arrow beside **Network** in the **Navigation pane** to expand **Network**

The list of networked computers and devices is displayed below Network in the Navigation pane...

4 If you are attached to a network, click on each networked computer or device to display a list of shared folders
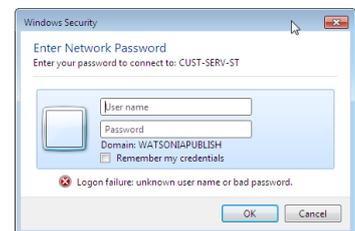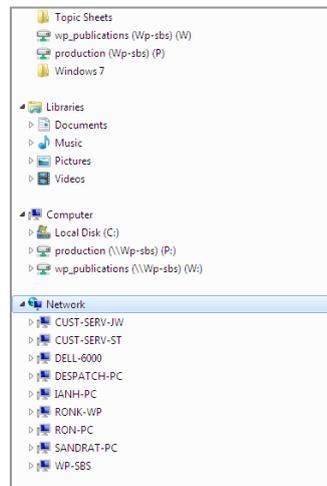
You may also receive a message asking for a password before you can view the contents of a networked computer...

5 Click on **close** to close the window
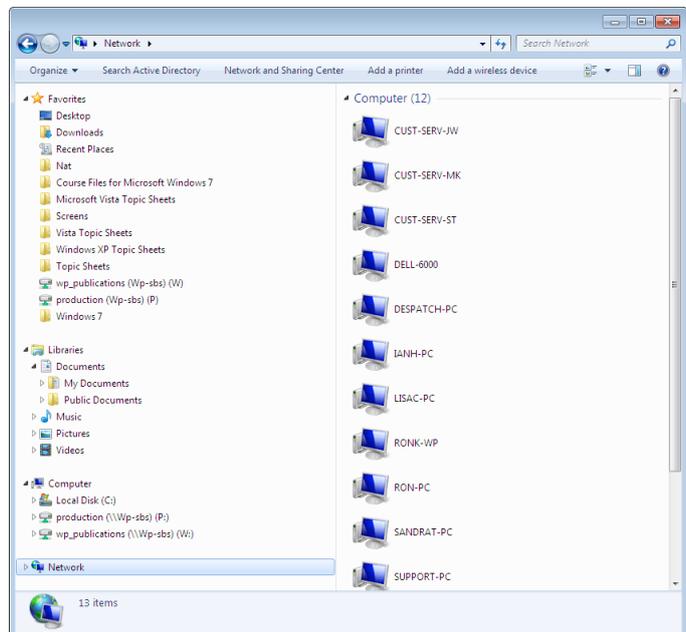
For Your Reference...

To view network connections:
1. Click on **Windows Explorer** in the **Taskbar**
2. Click on **Network** in the **Navigation** pane

Handy to Know...

- Depending on your computer and the network(s) you are attached to, it may take a few minutes for Windows 7 to display all the available network devices and connections.

UNDERSTANDING USB FLASH DRIVES

USB flash drives have fast become the preferred method over other types of removable storage device, to back up and transfer data between computers. This is due mainly to their ease of use and their ability to store large amounts of data. A flash drive is about the size of a stick of chewing gum and can hold as much data as your computer's hard disk (and a whole lot more).

What Is A USB Flash Drive?

A USB flash drive (also referred to as a memory stick, USB stick or mass-storage device) is a small, portable device used to store and transfer data between computers and other digital devices (such as cameras).

A USB flash drive uses USB technology. USB (Universal Serial Bus) technology enables any USB device to be plugged into the computer. This includes printers, cameras, scanners, a mouse, keyboards, in fact, any device that has a USB cable. For many devices, USB has become the standard connection to enable communication between the device and the computer.

At the time of publication, USB flash drives can hold up to 256GB of data. That's possibly bigger than the size of your hard disk!

How Do You Use A USB Flash Drive?

The real benefit of the USB flash drive is its ease of use. You can plug the device into any computer with available USB ports (and pretty much all computers produced over the last few years will have these), and the computer will (usually) recognise the device, which will then appear as a drive in the **Computer** window.

Then, it's just a matter of saving files to the device, or copying or moving files between the device and your computer's hard drive (or another drive).

What Happens When I Plug My USB Flash Drive Into The Computer?

Most computers will acknowledge that a device has been found when you plug the USB flash drive into an available port in the computer. In Windows 7, you may hear a sound and then the **AutoPlay** dialog box will appear asking what you'd like to do with the device. Not all USB ports will recognise the flash drive. If this occurs, you'll need to try another USB port.

What Do I Do When I've Finished Using the USB Flash Drive?

Once you have finished saving work to your USB flash drive, or copied or moved your files onto the flash drive, you then need to eject the device.

To ensure that the data you have transferred or saved onto the device remains intact and free from corruption, do not simply pull the device out of the computer when you have finished.

Instead, make sure you eject the device properly. To do this, click on the arrow that appears in the Notifications area of the Taskbar to display hidden icons.

The USB flash drive is represented by a picture of a USB head with a green tick . Click on this icon to display a menu, which includes an option to eject the device. If all files on the flash drive have been closed, you will receive a message stating that you can safely remove the device. However, if the flash drive contains files that are still open, you will be informed that the device is currently in use and you need to close any programs or windows that might be using the device.
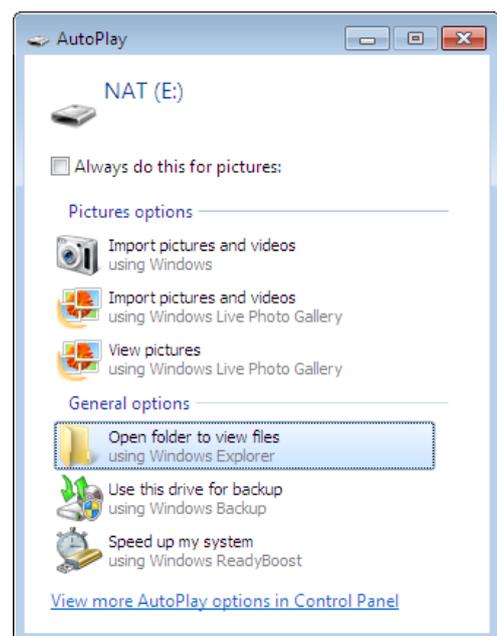
The **AutoPlay** dialog box will appear if Windows 7 recognises the device...

CONCLUDING REMARKS

Congratulations!

You have now completed the **Data storage on your computer** booklet. This booklet was designed to get you to the point where you can competently perform a variety of operations as outlined in the task list on on page 2.

We have tried to build up your skills and knowledge by having you work through specific tasks. The step by step approach will serve as a reference for you when you need to repeat a task.

Where To From Here...

The following is a little advice about what to do next:

- Spend some time playing with what you have learnt. You should reinforce the skills that you have acquired and use some of the application's commands. This will test just how much of the concepts and features have stuck! Don't try a big task just yet if you can avoid it - small is a good way to start.
- Some aspects of the course may now be a little vague. Go over some of the points that you may be unclear about. Use the examples and exercises in these notes and have another go - these step-by-step notes were designed to help you in the classroom and in the work place!

Here are a few techniques and strategies that we've found handy for learning more about technology:

- visit CLD's e-learning zone on the Intranet
- read computer magazines - there are often useful articles about specific techniques
- if you have the skills and facilities, browse the Internet, specifically the technical pages of the application that you have just learnt
- take an interest in what your work colleagues have done and how they did it - we don't suggest that you plagiarise but you can certainly learn from the techniques of others
- if your software came with a manual (which is rare nowadays) spend a bit of time each day reading a few pages. Then try the techniques out straight away - over a period of time you'll learn a lot this way
- and of course, there are also more courses and booklets for you to work through
- finally, don't forget to contact CLD's IT Training Helpdesk on **01243-752100**