



## *Operating systems and software*

Software is broken down into two categories, application software (that is, all of the programs a user has on their computer) and systems software (all of the software that makes a computer work).

The operating system of a computer is the most important type of systems software. Without the operating system, a computer would not be able to operate and devices would not function properly. In its most basic terms, it is the interface between the user and their computer.

Firmware is the specialised software which integrates hardware components, such as printers, hard drives and monitors with a computer's operating system. This software is also referred to as 'drivers'.

Drivers are specifically-written programs for hardware components. The driver allows the interface with the operating system by translating instructions given by the operating system to the device.

### ***Functions of the operating system***

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Three main functions are performed by the operating system. These are automatically carried out and do not require any input from the user. They are:

1. management of the hardware – such as handling the inputs from the keyboard and mouse, displaying outputs on the monitor, saving files to secondary storage devices and the like
2. management of the applications software – such as ensuring only one program is using the resources of the computer at any one time
3. providing the user interface – such as the graphical user interface (GUI).

#### **Operating system crashes**

A 'crash' occurs when the operating system of a computer becomes unstable due to a programming error (bug) within it.

When developers create an operating system, testing occurs continually. However, they do not necessarily have access to all versions of hardware and software, and sometimes errors result. The operating system then seems to shut down and freeze.





With some operating systems, it is possible to close only the application that caused the error, then try running the application again. If problems continue, a computer repair technician may be required to solve the problem.

Most operating systems developers provide updates for their programs on the Internet. This can solve many problems that arise without the need for a computer technician. It is recommended that computer users regularly update their computers' operating systems with these updates. Some operating systems will automatically do this when the user is accessing web sites on the Internet.

### **Configuration/updating an operating system**

Patches or updates for system software are frequently produced by software developers. These updates often fix the 'bugs' that have been identified in a program or add extra functions to software packages.

Updates are available for particular operating systems by visiting the manufacturer's web site.

### **Maintenance**

If you are using a Windows® operating system, '**Scandisk**' and '**Defrag**' are important tools that can help maintain the system and ensure its smooth operation.

'Scandisk' checks the hard drive to make sure there aren't any problems with it, and 'Defrag' (short for 'disk defragmenter') organises the file system to help the operating system read files faster.

'Scandisk' and 'Defrag' can be found by:

- clicking on *Start*
- then *Programs*
- then *Accessories*
- and finally *System Tools*.

Built into these system tools are 'wizards' that will configure and automate these procedures.



## ***Application software***

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Application software allows a user to carry out one or more tasks on their computer, such as creating documents, playing games, manipulating photographs and other graphics, etc.

Examples include:

- word processing software
- accounting software
- communication software
- media players.

Applications software is referred to as 'programs'. These two terms are interchangeable, with many programs grouped according to their function, for example, personal productivity or multimedia.

### **Suites**

Software is often bundled together in **suites**. The applications in a suite usually have similarities in their interface and can be used to create integrated products, for example, integrating a spreadsheet and graph into a presentation. For instance, Microsoft® Office® or ClarisWorks® is a suite containing word processing, spreadsheet, presentation and other software.

### **Cross-platform applications**

Some software is now being produced as cross-platform applications. These are designed to run on different operating systems and allow files created in one operating system to be easily transferred to another operating system. An example of a cross-platform application is Adobe® Acrobat®.

### **Installing application software**

Application software is complex. When a new software program is installed, a number of different files need to be copied to the computer's hard drive in various locations and changes need to be made to existing files, including the registry.





## ***Obtaining software***

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Many computer packages include suites of software as part of the cost. However, sometimes extra software is required for specific tasks or for upgrading a computer system. Like hardware, application software can be purchased from a variety of sources.

Some examples are:

- **mail order or Internet sites**

Software Time: [www.softwaretime.com.au](http://www.softwaretime.com.au)

Buy Quick: [www.buyquick.com.au/shop/default.asp](http://www.buyquick.com.au/shop/default.asp)

- computer or electronic retail stores

Harvey Norman

Harris Technology

- **directly from the manufacturer**

Macromedia <http://macromedia.com.au>

## ***Freeware, shareware and open source***

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Not all software needs to be purchased.

### **Freeware**

Freeware, as implied by the name, is software which is free of charge. The term 'free', however, usually refers *only* to the price. Users are usually not able to copy or to distribute copies of the software and are not given access to the source code.

### **Shareware**

Shareware is software which is accessed, usually from the Internet, and is initially free of charge. The user is often given access for a trial period, after which payment must be made to keep accessing the software or to access additional features.





## Open source

Open-source software is sometimes referred to as 'free software'. As opposed to freeware, the software, complete with code, is supplied free of charge and the user is free to use, modify or distribute the software. There are, however, some licence agreements associated with open-source software.

## *Piracy*

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