# Commonly Used Operating System

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There are various types of Operating Systems used throughout the world and this depends mainly on the type of operations performed. These Operating Systems are manufactured by large multinational companies like Microsoft, Apple, etc. Let's look at the few most commonly used OS in the real world:

1. Windows
2. UNIX
3. LINUX
4. BOSS
5. SOLARIS

## Windows

Generally referred to as Microsoft Windows, these OS are manufactured and developed by the tech-giant Microsoft and are the most commonly used OS for personal computers and to some extent in mobile phones or the Windows phone. Microsoft Windows is a collection of many graphics-oriented operating systems, first developed and launched in 1985 by the name Windows 1.0. When it started it had the aim to provide a graphical shell to the then-famous MS-DOS which had a character user interface, but it didn't gain much popularity then. Slowly with the implementation of innovative features, the OS gained popularity and soon dominated the market of the Computer Industry, owing to its freedom of use and user-friendly environment. Let's look at the advantages and disadvantages of using Microsoft Windows.

### Advantages of Windows

1. **Hardware compatibility:** Almost every computer hardware manufacturing industry supports Microsoft Windows. This makes the users buy any random computer manufacturing brand and get the latest version of pre-loaded Microsoft Windows 11 in it.
2. **Pre-loaded and available Software:** Windows comes with much more user-friendly software to make everyday task easier and if the software is not available then one can easily get it from the Internet and run it.
3. **Ease of Use:** Microsoft Windows has developed by far the most user-friendly OS in the market, keeping in mind that it serves the purpose of most types of markets in the world. It's the most preferred OS for personal computers.
4. **Game Runner:** Windows supports a plethora of games manufactured till date and comes with all the supporting base software to drive the game engine. So it's the most popular OS among the game lovers.

## Disadvantages of Windows

- **Expensive:** Microsoft is a closed-source OS and the license cost is really high. It's not possible for every class of society to buy a new license every time one is expired. The latest Windows 11 costs around 8000 to 12000 INR.
- **Poor Security:** Windows is much more prone to viruses and malware in comparison to other OS like Linux or Mac in the market (microsoft defender antivirus is also introduced in the nwe version).
- **Not reliable:** Windows starts to lag with time and eventually needs booting every time and now to get back the initial speed.

There are many versions of Windows that have been developed since 1985, but few that revolutionized the industry of Operating Systems are:

1. Windows 95
2. Windows 98
3. Windows NT

4. Windows XP

5. Windows Vista

6. Windows 7

7. Windows 8

8. Windows 8.1

9. Windows 10

10. Windows 11(latest version)

According to Net Applications, which tracks use based on web use, Windows is the most-used operating system family for personal computers as of July 2017 with close to 90% usage share and rising.

# UNIX

Developed in 1970 in the Bell Lab research center UNIX became a multitasking and multiuser operating system, reaching numerous platforms for use. It was developed by Ken Thompson, Dennis Ritchie, and a few others and later AT&T licensed UNIX to the development of many variants of Unix, serving academic and business purposes at the University of California, Berkley Software Distribution, IBM, Microsoft, and Sun Microsystem. The OS is totally written in C language allowing it to serve in various platforms. It provides a set of simple and dedicated tools to perform a well-defined task using basic functions, shell scripting, and command languages. As of 2014, the Unix version with the largest installed base is Apple's macOS.

## Advantages of UNIX

- The OS is available on a wide variety of machines that are the most truly portable operating system.
- It has a Very efficient virtual memory system, which allows many programs to run simultaneously with a modest amount of physical memory and time.
- The OS was primarily built to serve the complete multitasking purpose without crashing of data, and it served well along with the protected memory.
- Has a high-level authentication system along with a fully secured environment.

## Disadvantages of UNIX

- This OS was primarily designed for programmers and techies and not for personal and casual use.
- It is a command-driven OS with commands being supplied by the shell kernel and often has cryptic names which normal users find difficult to keep up with.

- To work comfortably with the UNIX system, one needs to understand the main design features and how to command and interact with the OS.

# Linux

Primarily derived from the concept of Unix, Linux became the most-prominent free and open-source OS available to everyone in the world. It is built around the Linux kernel and served for both desktop and server use. Linux was originally developed for personal computers based on the Intel x86 architecture but since then it was ported to more platforms than any other operating system. Linux has the largest installed base of all general-purpose operating systems. It is also the leading operating system on servers and other big iron systems such as mainframe computers, and the only OS used on TOP500 Supercomputers. The top Linux OS are Ubuntu, Fedora, OpenSUSE, RedHat, and many more.

**Advantages of LINUX**

- The OS is open-source and available free of cost to every computer user. There are large repositories from which anyone can freely download high-quality software for almost any task.
- Linux provides high performance for a longer time and does not require a periodic reboot to maintain the system.
- It is one of the most secure OS and does not permit any unwanted malware and virus into the system.
- It is designed to multitask and can perform multiple processes at the same time, without hampering the performance of the OS.
- The OS is highly compatible and flexible to run on all modern PCs and networks.

**Disadvantages of LINUX**

- It is not as user-friendly as Windows and users need to struggle for a few days before adapting to the behavior of OS.
- It is not meant for gamers since it does not support any high graphics game.
- Since there are no standard editions available for Linux, it comes with many versions, confusing the users about what to adapt and what not.

## Solaris

This OS was originally developed by Sun Microsystems and is a type of Unix OS. Solaris was developed as proprietary software. Solaris is known for its scalability, especially on SPARC systems, and for originating many innovative features such as DTrace, ZFS, and Time Slider. It is registered as compliant with the Single UNIX Specification. As of today, Solaris is supported by HP, Dell, Intel and Fujitsu Siemens architecture. OpenSolaris is the available open-source version of Solaris OS. Oracle Solaris 10 is the latest version of Solaris OS.

### Advantages of Solaris

- It provides good and high performance.
- It provides complete protection against viruses and malware.
- It is a multitasking OS and allows multiple tasks at the same time.
- Known for its good and powerful backup tools.

### Disadvantages of Solaris

- Although the OS provides a graphic interface, it is not as good as other graphical user interfaces.
- The OS is available free of cost but the updates are not available for free, so not completely open-source.
- The OS is not user-friendly.

## BOSS

It stands for *Bharat Operating System Solutions* designed specifically by India for Indians. It was developed by C-DAC(Centre for Development of Advanced Computing), Chennai, to benefit the Free/Open Source Software in India. It has an enhanced Desktop Environment integrated with multiple Indian language support and other software. This project has been approved, supported, and endorsed by the Government of India. The OS is the product of Linux Distribution and has been derived from Debian Linux. BOSS Linux provides advanced features such as a web server, proxy server, database server, mail server, network server, file and print server, SMS Service, and many more. The latest versions are called *BOSS 5.0 (ANOKHA)* and *BOSS 6.0 (ANOOP)*.

### Advantages of BOSS

- It is easily available and free to install and use.
- It is a very stable OS and provides free access to many software.
- It supports multiple Indian languages, so user-friendly at least for Indian society.

### Disadvantages of BOSS

- Since it is Linux OS, it does not support Windows programs and shares the same disadvantages as other Linux-based OS.

## Other Commonly Used Operating Systems

1. **Microsoft Windows:** This is the most widely used operating system for personal computers. Windows is known for its user-friendly interface and compatibility with a wide range of hardware and software.
2. **macOS:** This operating system is used exclusively on Apple's Macintosh computers. It is known for its sleek design and integration with other Apple products, such as the iPhone and iPad.

3. **Linux:** Linux is an open-source operating system that is popular among programmers and developers. It is highly customizable and can be used on a wide range of devices, from smartphones to supercomputers.

4. **Android:** This operating system is designed specifically for mobile devices such as smartphones and tablets. It is based on the Linux kernel and is open source, which means that it can be modified and customized by anyone.

5. **iOS:** This is the operating system that runs on Apple's iPhone, iPad, and iPod touch devices. It is known for its security and ease of use.

6. **Chrome OS:** This is an operating system developed by Google and is designed to be used with the company's Chromebook laptops. It is based on the Linux kernel and is optimized for web browsing and cloud computing.

These are just a few examples of commonly used operating systems, and there are many others available as well. Overall, the choice of the operating system depends on the specific needs and preferences of the user, as well as the device being used.

## Features of OS

Various tasks are carried out by an operating system. Let's research them. These are a few of the OS's features:

### 1. Memory Control

It is the control of the primary or main memory. Furthermore, the main memory must contain the program that is being run. Consequently, more than one program may be active at once. Consequently, managing memory is necessary. operating system memory is allocated and released.

keeps track of who uses which area of primary memory and how often.enables memory distribution while multiprocessing.

## 2. Management and Scheduling of Processors

When a system has multiple processes running, the OS determines how and when each process will use the CPU. So, CPU Scheduling is another name for it.

## 3. File Management

The files on a system are stored in different directories. The OS:

1. Keeps records of the status and locations of files.
2. Responsible for the Allocation and deallocation of resources.

# Frequently Asked Questions (FAQs)

### 1. What is an Operating System?

*Operating System is software which interacts with hardware and GUI (graphical interface) of the system.*

### 2. What is Need for Operating Systems/What are Uses of Operating System?

*The following tasks require an operating system:*

1. *The means by which a user and a computer interact.*
2. *Booting*
3. *Input/output device management*
4. *Multitasking*
5. *The foundation for additional software applications*
6. *Controls memory*

*7. Memory management*

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