

## Chapter 1 : The History of Windows Operating Systems - Webopedia

*This is a list of operating systems from [www.nxgvision.com](http://www.nxgvision.com). Operating systems can be categorized by technology, ownership, licensing, working state, usage, and by many other characteristics.*

And sometimes a feature of the OS just grabs your attention and forces you to dig further, understand how it works, and master all it can do. Each OS has some nugget that we can enjoy, learn from and build on. So here, in no particular order, are 10 different features I love in 10 different OSes. In fact, for several years I used Live Sync formerly Foldershare, now called Live Mesh to create real-time offsite backups of my most important files. Time Machine is easy to configure and pretty much operates as a set-and-forget service. As long as your backup volume is available, Time Machine creates hourly, daily and weekly incremental backups of your system. When trouble strikes, you can go into the Time Machine and recover previous versions of individual files or even the entire system. Unix, The Shell Terminal The terminal was my first experience of computing. The shell was also, for a long time, my portal to the Internet. Command line computing lives on, and is even making something of a comeback among users of graphical UI operating systems. Linux and Mac OS X still have their terminal fanboys. But as Max Steenberg writes in his article "Commands Lines: Even applications like Google Chrome and Wolfram Alpha are blurring the line between textual search and command-line scripting. Bringing the command line full-circle, a clever coder even built a personal Web site that hosts a command line in the browser window. Retro, or a step into the future? Ubuntu, Simplified Linux Setup Much of the Linux revolution has been powered by hackers of the first order. Of course, once you figure those details out, you end up with a powerful, highly customizable and secure system that runs well even on modest hardware. Over the years, increasingly easy access to configuration and installation information via the internet has helped Linux reach a broader audience. A large and growing list of high-quality, free, open-source software for Linux also contributes to its appeal. Still, the learning curve has been steep and the availability of over two hundred different Linux distros makes the choice of where to start difficult. That is until the release of the Debian-derived Ubuntu in 2004. The Ubuntu installation includes a lot of software, so you can start playing or working with right away: And of course, Linux offers a cornucopia of tools for the developer. The Ubuntu Software Center gives you one-click access to a huge library of apps, and updating your software is simple and automatic and much less intrusive than Windows Update. At the time, BeOS featured some pretty radical technology. Designed from the ground up as an efficient, lightweight multithreaded system with preemptive multitasking, it was very fast on modest hardware and scaled up to take advantage of any processors on the system in those days, rarely more than two, but still. The file system included with BeOS, however, is one of its truly cool features. The ability to query and sort against file metadata gave BFS some relational database-like quality similar to what we may finally see via WinFS in Windows 8. The bit address space gave BFS the theoretical ability to support volumes of more than eight exabytes and files over 30 GB. This at a time when 30 GB hard drives were hardly commonplace. This made BeOS well-suited for audio and video manipulation, a task that it still accomplishes today in high-end media production systems. Software is available from the BeBits repository. In addition, the Haiku project is an ongoing community effort to build a source-compatible open-source version of BeOS. I recall some Indy and Indigo boxes arriving at the office and a lot of oohing and ahing among the staff. But as the eager young kid in the office I was given the exciting job of helping to set up the machines, which for the most part meant loading up applications from various tapes. While waiting for the tapes to load up and spill their data, I did have a chance to explore the system. And one of the items I discovered hidden in the demos was a little gem called Dogfight. This little app was a 3D flight simulator that featured IP multicast-based multiplayer air combat over our humble little Ethernet network. No need to look it up, just right-click and see what the options are. You could say the context menus provide useful task hints and shortcuts not unlike Tab command completion in a terminal or IDE. That said, there are problems with the right-click context menu as currently implemented. First, the Windows context menu is getting rather unwieldy as it fills up with useful -- and esoteric -- options. Install a few applications that have shell integration and you can end up with a menu that contains nearly 20 items. On

top of that, the APIs for shell integration make customizing the context menu difficult for anyone but programmers and superusers. More recently, Microsoft DevLabs released an updated Windows interpretation of QBasic called Small Basic, which is intended to be used as a tool for teaching and experimentation. It was the first opportunity to explore programming for a generation of computer users. Hats off to Microsoft for democratizing the art of programming Windows 3. Seems kind of obvious now, but it was a pretty radical step forward at the time. Of course, with multiple windows open, how do you switch apps? Well, you can click the window you want to bring forward, or maybe click the app icon in the taskbar. Enter Alt-Tab task switching. If Wikipedia is to be believed, Alt-Tab task switching has always been a feature of Windows and was first introduced to the world in Windows 1. Pressing the Alt and Tab keys brings up a window that displays an icon for each open window present on the system even if minimized. The currently active window is highlighted by default. Holding down the Alt key, you release and press the Tab key to move the highlight to the next window, thereby making it the active window and bringing it to the front. This is activated by pressing the Windows key and Tab and it shows the open windows in an orthogonal 3D view. Pretty, but of questionable utility. On some other desktop environments, Alt-Tab simply iterates through the open windows, bringing each to the foreground as you hit Tab. In fact, workable touch computing systems -- albeit crude by current standards -- were produced by IBM and Control Data in the late s and early s. The introduction of what we now know as iOS for the iPhone in , however, represented the first chance for many of us to have a hands-on experience with multi-touch. Of course, Google and Microsoft were not too far behind with both Android and Windows Phone 7 featuring their own multi-touch interfaces. The ability to scroll, slide, select, pinch, turn and expand items on screen with just a few fingers is mind blowing -- and highly intuitive. My not-quite-two year old child has already figured out how to turn on and unlock the iPad, start and close apps, look at photos, or page through a story. Time will tell how developers leverage these interface methods to usher in a new era of computing. Windows 7, Start Menu and Taskbar One thing you can count on is that each new version of Windows will be better than the last. Even Vista, for all its flaws, included a lot of good ideas that were riffed on and improved upon in Windows 7. The Start menu and taskbar as we know them in Windows today debuted in Windows . With each new release of Windows, new features have been added: Vista added the ability to type a string into the search box and get a list of files and applications matching that string. Windows 7 made that feature actually work properly mostly through more efficient file indexing and added per-application recently used file listings. Windows 7 brought some other features that made the taskbar more useful. Among these is Aero Peek, which displays thumbnail views of open windows when you mouse over an app icon in the taskbar. And of course the shut down button and options have been happily simplified from Vista. The Control Panel and Administrative Tools menus take far too long to render. Nor do frequently used control panels or admin tools. There you have it. Did we leave something out that you love? Tell us about it in the comments.

*Top Ten Best Operating Systems eddie Best AntiVirus Software Companies Best Web Browsers dragon Best Microsoft OST to PST Conversion Tools Best OST Recovery Software Companies Best NSF to PST Software mikeclaark Top Ten PC Video Players MatrixGuy Best Linux Based OS shreyastare Best Forum Software Programs Best Graphic Design Software.*

Subsequent versions have become increasingly sophisticated as they incorporated features of minicomputer operating systems. In Microsoft released Windows 2. This version added desktop icons, keyboard shortcuts and improved graphics support. This version is the first release that provides the standard "look and feel" of Microsoft Windows for many years to come. Microsoft released Windows 3. Windows 95 August Windows 95 was released in and was a major upgrade to the Windows operating system. This OS was a significant advancement over its precursor, Windows 3. In addition to sporting a new user interface, Windows 95 also includes a number of important internal improvements. Perhaps most important, it supports bit applications, which means that applications written specifically for this operating system should run much faster. This has meant removal of many of the old DOS limitations, such as K of main memory and 8-character filenames. Other important features in this operating system are the ability to automatically detect and configure installed hardware plug and play. Its most visible feature, though, is the Active Desktop, which integrates the Web browser Internet Explorer with the operating system. This version also removed the "boot in DOS" option. Windows NT New Technology is a bit operating system that supports preemptive multitasking. There are actually two versions of Windows NT: Windows February Often abbreviated as "W2K," Windows is an operating system for business desktop and laptop systems to run software applications, connect to Internet and intranet sites, and access files, printers, and network resources. Microsoft released four versions of Windows Professional for business desktop and laptop systems , Server both a Web server and an office server , Advanced Server for line-of-business applications and Datacenter Server for high-traffic computer networks. Along with a redesigned look and feel to the user interface, the new operating system is built on the Windows kernel, giving the user a more stable and reliable environment than previous versions of Windows. Windows XP comes in two versions, Home and Professional. Microsoft focused on mobility for both editions, including plug and play features for connecting to wireless networks. The operating system also utilizes the Windows Vista November Windows Vista offered an advancement in reliability, security, ease of deployment, performance and manageability over Windows XP. New in this version was capabilities to detect hardware problems before they occur, security features to protect against the latest generation of threats, faster start-up time and low power consumption of the new sleep state. Windows Vista simplifies and centralizes desktop configuration management, reducing the cost of keeping systems updated. Windows 7 October, Windows 7 was released by Microsoft on October 22, as the latest in the year-old line of Windows operating systems and as the successor to Windows Vista which itself had followed Windows XP. Enhancements and new features in Windows 7 include multi-touch support, Internet Explorer 8, improved performance and start-up time, Aero Snap, Aero Shake, support for virtual hard disks, a new and improved Windows Media Center, and improved security. Windows 8 Windows 8 was released on August. Windows 8 will replace the more traditional Microsoft Windows OS look and feel with a new "Metro" design system interface that first debuted in the Windows Phone 7 mobile operating system. The Metro user interface primarily consists of a "Start screen" made up of "Live Tiles," which are links to applications and features that are dynamic and update in real time. Windows 10 debuted on July 29, , following a "technical preview" beta release of the new operating system that arrived in Fall and a "consumer preview" beta in early Microsoft claims Windows 10 features fast start up and resume, built-in security and the return of the Start Menu in an expanded form. Any qualified device such as tablets, PCs, smartphones and Xbox consoles can upgrade to Windows 10, including those with pirated copies of Windows. Microsoft Operating Systems for Servers and Mobile Devices Aside from operating systems designed for use on personal computers PCs and laptops, Microsoft has also developed operating systems for services, handheld devices, and mobile phones. The Windows Server name made its debut with

the release of Windows Server and continues with the current release, Windows Server R2, which shares its codebase with Windows 7. Windows Server R2 debuted in October Home Server allows you to share files such as digital photos and media files, and also allows you to automatically backup your home networked computers. Windows Mobile April A mobile operating system for smartphones and mobile devices from Microsoft based on the Windows CE kernel and designed to look and operate similar to desktop versions of Microsoft Windows. Unlike Windows Mobile, Windows Phone 7 also referred to as WinPhone7 is targeted more to the consumer market than the enterprise market, and it replaces the more traditional Microsoft Windows OS look and feel with a new "Metro" design system user interface. Its successors include Windows Phone 8 and Windows 10 Mobile.

### Chapter 3 : Forget Windows, Linux or MacOS: Try these alternative operating systems | TechRadar

*An operating system or OS is a software on the hard drive that enables the computer hardware to communicate and operate with the computer [www.nxgvision.com](http://www.nxgvision.com) a computer operating system, a computer and software programs would be useless.*

An operating system is the most important software that runs on a computer. Without an operating system, a computer is useless. Watch the video below to learn more about operating systems. The operating system coordinates all of this to make sure each program gets what it needs. Types of operating systems Operating systems usually come pre-loaded on any computer you buy. Modern operating systems use a graphical user interface, or GUI pronounced gooey. A GUI lets you use your mouse to click icons, buttons, and menus, and everything is clearly displayed on the screen using a combination of graphics and text. However, modern operating systems are designed to be easy to use, and most of the basic principles are the same. Microsoft Windows Microsoft created the Windows operating system in the mids. Over the years, there have been many different versions of Windows, but the most recent ones are Windows 10 released in , Windows 8 , Windows 7 , and Windows Vista Windows comes pre-loaded on most new PCs, which helps to make it the most popular operating system in the world. Check out our tutorials on Windows Basics and specific Windows versions for more information. It comes preloaded on all new Macintosh computers, or Macs. One reason for this is that Apple computers tend to be more expensive. Linux Linux pronounced LINN-ux is a family of open-source operating systems, which means they can be modified and distributed by anyone around the world. This is different from proprietary software like Windows, which can only be modified by the company that owns it. The advantages of Linux are that it is free, and there are many different distributionsâ€”or versionsâ€”you can choose from. Mobile devices such as phones, tablet computers, and MP3 players are different from desktop and laptop computers, so they run operating systems that are designed specifically for mobile devices. In the screenshot below, you can see iOS running on an iPad. However, you can still do a lot of things with them, like watch movies, browse the Web, manage your calendar, and play games. To learn more about mobile operating systems, check out our Mobile Devices tutorials.

## Chapter 4 : Operating system software (Free download)

*PCWorld helps you navigate the PC ecosystem to find the products you want and the advice you need to get the job done.*

Many of its features such as windows and icons would later become commonplace in GUIs. The first microcomputers did not have the capacity or need for the elaborate operating systems that had been developed for mainframes and minis; minimalistic operating systems were developed, often loaded from ROM and known as monitors. In the s, Apple Computer Inc. The introduction of the Intel CPU chip in October , [12] with bit architecture and paging capabilities, provided personal computers with the ability to run multitasking operating systems like those of earlier minicomputers and mainframes. Steve Jobs , a co-founder of Apple Inc. While the project was highly successful in duplicating the functionality of various parts of UNIX, development of the GNU Hurd kernel proved to be unproductive. In , Finnish computer science student Linus Torvalds , with cooperation from volunteers collaborating over the Internet, released the first version of the Linux kernel. It was soon merged with the GNU user space components and system software to form a complete operating system. Unix Evolution of Unix systems Unix was originally written in assembly language. B was replaced by C , and Unix, rewritten in C, developed into a large, complex family of inter-related operating systems which have been influential in every modern operating system see History. The name " UNIX " is a trademark of The Open Group which licenses it for use with any operating system that has been shown to conform to their definitions. Unix-like systems run on a wide variety of computer architectures. They are used heavily for servers in business, as well as workstations in academic and engineering environments. The POSIX standard can be applied to any operating system, although it was originally created for various Unix variants. These operating systems are most commonly found on web servers , although they can also function as a personal computer OS. The Internet owes much of its existence to BSD, as many of the protocols now commonly used by computers to connect, send and receive data over a network were widely implemented and refined in BSD. In , University of California, Berkeley installed its first Unix system. Over time, students and staff in the computer science department there began adding new programs to make things easier, such as text editors. Steve Jobs , upon leaving Apple Inc. Developers like Keith Bostic encouraged the project to replace any non-free code that originated with Bell Labs. Unlike its predecessor, macOS is a UNIX operating system built on technology that had been developed at NeXT through the second half of the s and up until Apple purchased the company in early . Since then, six more distinct "client" and " server " editions of macOS have been released, until the two were merged in OS X . With Mac OS X v The server tools are now offered as an application. He posted information about his project on a newsgroup for computer students and programmers, and received support and assistance from volunteers who succeeded in creating a complete and functional kernel. Because of its open license model, the Linux kernel code is available for study and modification, which resulted in its use on a wide range of computing machinery from supercomputers to smart-watches. Although estimates suggest that Linux is used on only 1. Linux has superseded Unix on many platforms and is used on most supercomputers including the top . Linux is also commonly used on other small energy-efficient computers, such as smartphones and smartwatches. Microsoft Windows Main article: Microsoft Windows Microsoft Windows is a family of proprietary operating systems designed by Microsoft Corporation and primarily targeted to Intel architecture based computers, with an estimated . In , Windows 7 overtook Windows XP as most common version in use. Windows ME , released in , was the last version in the Win9x family. Later versions have all been based on the Windows NT kernel. In the past, Windows NT supported additional architectures. Server editions of Windows are widely used. In recent years, Microsoft has expended significant capital in an effort to promote the use of Windows as a server operating system. Some are still used in niche markets and continue to be developed as minority platforms for enthusiast communities and specialist applications. Yet other operating systems are used almost exclusively in academia, for operating systems education or to do research on operating system concepts. A typical example of a system that fulfills both roles is MINIX , while for example Singularity is used purely for research. Components The components

of an operating system all exist in order to make the different parts of a computer work together. All user software needs to go through the operating system in order to use any of the hardware, whether it be as simple as a mouse or keyboard or as complex as an Internet component. Kernel computing A kernel connects the application software to the hardware of a computer. Program execution Main article: Process computing The operating system provides an interface between an application program and the computer hardware, so that an application program can interact with the hardware only by obeying rules and procedures programmed into the operating system. The operating system is also a set of services which simplify development and execution of application programs. Executing an application program involves the creation of a process by the operating system kernel which assigns memory space and other resources, establishes a priority for the process in multi-tasking systems, loads program binary code into memory, and initiates execution of the application program which then interacts with the user and with hardware devices. Interrupt Interrupts are central to operating systems, as they provide an efficient way for the operating system to interact with and react to its environment. Interrupt -based programming is directly supported by most modern CPUs. Interrupts provide a computer with a way of automatically saving local register contexts, and running specific code in response to events. Even very basic computers support hardware interrupts, and allow the programmer to specify code which may be run when that event takes place. The amount of code being run depends on the priority of the interrupt for example: Device drivers may then relay information to a running program by various means. A program may also trigger an interrupt to the operating system. The kernel then processes the request. User mode and Supervisor mode Privilege rings for the x86 microprocessor architecture available in protected mode. Operating systems determine which processes run in each mode. CPUs with this capability offer at least two modes: In general terms, supervisor mode operation allows unrestricted access to all machine resources, including all MPU instructions. User mode operation sets limits on instruction use and typically disallows direct access to machine resources. CPUs might have other modes similar to user mode as well, such as the virtual modes in order to emulate older processor types, such as bit processors on a bit one, or bit processors on a bit one. At power-on or reset, the system begins in supervisor mode. Once an operating system kernel has been loaded and started, the boundary between user mode and supervisor mode also known as kernel mode can be established. Supervisor mode is used by the kernel for low level tasks that need unrestricted access to hardware, such as controlling how memory is accessed, and communicating with devices such as disk drives and video display devices. User mode, in contrast, is used for almost everything else. Application programs, such as word processors and database managers, operate within user mode, and can only access machine resources by turning control over to the kernel, a process which causes a switch to supervisor mode. Typically, the transfer of control to the kernel is achieved by executing a software interrupt instruction, such as the Motorola TRAP instruction. The software interrupt causes the microprocessor to switch from user mode to supervisor mode and begin executing code that allows the kernel to take control. In supervisor mode, instruction execution restrictions are typically removed, allowing the kernel unrestricted access to all machine resources. Attempts to alter these resources generally causes a switch to supervisor mode, where the operating system can deal with the illegal operation the program was attempting, for example, by forcibly terminating "killing" the program. Memory management Main article: Memory management Among other things, a multiprogramming operating system kernel must be responsible for managing all system memory which is currently in use by programs. This ensures that a program does not interfere with memory already in use by another program. Since programs time share, each program must have independent access to memory. This system of memory management is almost never seen any more, since programs often contain bugs which can cause them to exceed their allocated memory. If a program fails, it may cause memory used by one or more other programs to be affected or overwritten. With cooperative memory management, it takes only one misbehaved program to crash the system. Various methods of memory protection exist, including memory segmentation and paging. In both segmentation and paging, certain protected mode registers specify to the CPU what memory address it should allow a running program to access. Attempts to access other addresses trigger an interrupt which cause the CPU to re-enter supervisor mode , placing the kernel in charge. This is called a segmentation violation or Seg-V for short, and since it is both difficult to assign a meaningful result to

such an operation, and because it is usually a sign of a misbehaving program, the kernel generally resorts to terminating the offending program, and reports the error. A general protection fault would be produced, indicating a segmentation violation had occurred; however, the system would often crash anyway. Virtual memory Further information: Page fault Many operating systems can "trick" programs into using memory scattered around the hard disk and RAM as if it is one continuous chunk of memory, called virtual memory. The use of virtual memory addressing such as paging or segmentation means that the kernel can choose what memory each program may use at any given time, allowing the operating system to use the same memory locations for multiple tasks. See section on memory management. Under UNIX this kind of interrupt is referred to as a page fault. When the kernel detects a page fault it generally adjusts the virtual memory range of the program which triggered it, granting it access to the memory requested. In modern operating systems, memory which is accessed less frequently can be temporarily stored on disk or other media to make that space available for use by other programs. This is called swapping , as an area of memory can be used by multiple programs, and what that memory area contains can be swapped or exchanged on demand. Context switch , Preemptive multitasking , and Cooperative multitasking Multitasking refers to the running of multiple independent computer programs on the same computer; giving the appearance that it is performing the tasks at the same time. An operating system kernel contains a scheduling program which determines how much time each process spends executing, and in which order execution control should be passed to programs. Control is passed to a process by the kernel, which allows the program access to the CPU and memory. Later, control is returned to the kernel through some mechanism, so that another program may be allowed to use the CPU. This so-called passing of control between the kernel and applications is called a context switch. An early model which governed the allocation of time to programs was called cooperative multitasking. In this model, when control is passed to a program by the kernel, it may execute for as long as it wants before explicitly returning control to the kernel. This means that a malicious or malfunctioning program may not only prevent any other programs from using the CPU, but it can hang the entire system if it enters an infinite loop. Modern operating systems extend the concepts of application preemption to device drivers and kernel code, so that the operating system has preemptive control over internal run-times as well.

### Chapter 5 : Operating System Version | Microsoft Docs

*Often abbreviated as OS, an operating system is a powerful, and usually large, program that controls and manages the hardware and other software on a computer. All computers and computer-like devices have operating systems, including your laptop, tablet, desktop, smartphone, smartwatch, router you name it.*

### Chapter 6 : [www.nxgvision.com](http://www.nxgvision.com): Microsoft Windows - Operating Systems: Software

*Look under Windows for the version and edition of Windows that your PC is running. Look under PC for System type to see if you're running a bit or bit version of Windows. The Start screen can also help you know which operating system you're using.*

### Chapter 7 : Top 10 Features in 10 Different Operating Systems -- [www.nxgvision.com](http://www.nxgvision.com)

*The operating system's job. Your computer's operating system (OS) manages all of the software and hardware on the [www.nxgvision.com](http://www.nxgvision.com) of the time, there are several different computer programs running at the same time, and they all need to access your computer's central processing unit (CPU), memory, and storage.*

### Chapter 8 : To continue using [www.nxgvision.com](http://www.nxgvision.com), please upgrade your browser.

*And Ubuntu isn't just for the desktop, it is used in data centres around the world powering every kind of server imaginable and is by far, the most popular operating system in the cloud. Find out more about our partners.*

## Chapter 9 : Operating Systems

*It's completely open source, using no proprietary Windows code, yet ReactOS is designed to be (and in some cases actually is) compatible with Windows drivers and applications.*