# Linux

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*This article is about the operating system. For the kernel, see*[*Linux kernel*](https://en.wikipedia.org/wiki/Linux_kernel)*. For other uses, see*[*Linux (disambiguation)*](https://en.wikipedia.org/wiki/Linux_(disambiguation))*.*

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| **Linux** | |
| [Tux the penguin](https://en.wikipedia.org/wiki/File:Tux.svg)  [Tux](https://en.wikipedia.org/wiki/Tux) the penguin, mascot of Linux[[1]](https://en.wikipedia.org/wiki/Linux#cite_note-LinuxOnLine2008-1) | |
| [**Developer**](https://en.wikipedia.org/wiki/Software_developer) | Community |
| [**Written in**](https://en.wikipedia.org/wiki/Programming_language) | Primarily [C](https://en.wikipedia.org/wiki/C_(programming_language)) and [assembly](https://en.wikipedia.org/wiki/Assembly_language) |
| **OS family** | [Unix-like](https://en.wikipedia.org/wiki/Unix-like) |
| **Working state** | Current |
| **Source model** | Mainly [open-source](https://en.wikipedia.org/wiki/Open-source), [proprietary software](https://en.wikipedia.org/wiki/Proprietary_software) is also available. |
| **Initial release** | September 17, 1991; 25 years ago |
| **Marketing target** | [Personal computers](https://en.wikipedia.org/wiki/Personal_computer), [mobile devices](https://en.wikipedia.org/wiki/Mobile_device), [embedded devices](https://en.wikipedia.org/wiki/Embedded_device), [servers](https://en.wikipedia.org/wiki/Server_(computing)), [mainframes](https://en.wikipedia.org/wiki/Mainframe_computer), [supercomputers](https://en.wikipedia.org/wiki/Supercomputer) |
| [**Available in**](https://en.wikipedia.org/wiki/Natural_language) | Multilingual |
| **Platforms** | [Alpha](https://en.wikipedia.org/wiki/DEC_Alpha), [ARC](https://en.wikipedia.org/wiki/Synopsys_ARC), [ARM](https://en.wikipedia.org/wiki/ARM_architecture), [AVR32](https://en.wikipedia.org/wiki/AVR32), [Blackfin](https://en.wikipedia.org/wiki/Blackfin), [C6x](https://en.wikipedia.org/wiki/C6x), [ETRAX CRIS](https://en.wikipedia.org/wiki/ETRAX_CRIS), [FR-V](https://en.wikipedia.org/wiki/FR-V), [H8/300](https://en.wikipedia.org/wiki/H8/300), [Hexagon](https://en.wikipedia.org/wiki/Qualcomm_Hexagon), [Itanium](https://en.wikipedia.org/wiki/Itanium), [M32R](https://en.wikipedia.org/wiki/M32R), [m68k](https://en.wikipedia.org/wiki/M68k), [META](https://en.wikipedia.org/wiki/Imagination_META), [Microblaze](https://en.wikipedia.org/wiki/Microblaze), [MIPS](https://en.wikipedia.org/wiki/MIPS_architecture), [MN103](https://en.wikipedia.org/wiki/MN103), [Nios II](https://en.wikipedia.org/wiki/Nios_II), [OpenRISC](https://en.wikipedia.org/wiki/OpenRISC), [PA-RISC](https://en.wikipedia.org/wiki/PA-RISC), [PowerPC](https://en.wikipedia.org/wiki/PowerPC), [s390](https://en.wikipedia.org/wiki/S390), [S+core](https://en.wikipedia.org/wiki/S%2Bcore), [SuperH](https://en.wikipedia.org/wiki/SuperH), [SPARC](https://en.wikipedia.org/wiki/SPARC), [TILE64](https://en.wikipedia.org/wiki/TILE64), [Unicore32](https://en.wikipedia.org/wiki/Unicore32), [x86](https://en.wikipedia.org/wiki/X86), [Xtensa](https://en.wikipedia.org/wiki/Xtensa) |
| [**Kernel**](https://en.wikipedia.org/wiki/Kernel_(operating_system))**type** | [Monolithic](https://en.wikipedia.org/wiki/Monolithic_kernel) ([Linux kernel](https://en.wikipedia.org/wiki/Linux_kernel)) |
| [**Userland**](https://en.wikipedia.org/wiki/Userland_(computing)) | [GNU](https://en.wikipedia.org/wiki/GNU) and various others[[a]](https://en.wikipedia.org/wiki/Linux#cite_note-7) |
| **Default**[**user interface**](https://en.wikipedia.org/wiki/User_interface) | Many |
| [**License**](https://en.wikipedia.org/wiki/Software_license) | [GPLv2](https://en.wikipedia.org/wiki/GPLv2)[[7]](https://en.wikipedia.org/wiki/Linux#cite_note-8) and other free and open-source licenses, except for the "Linux" trademark[[b]](https://en.wikipedia.org/wiki/Linux#cite_note-10) |

**Linux** (pronounced [Listen](https://upload.wikimedia.org/wikipedia/commons/0/03/Linus-linux.ogg)[**i**](https://en.wikipedia.org/wiki/File:Linus-linux.ogg)[/ˈlɪnəks/](https://en.wikipedia.org/wiki/Help:IPA_for_English) [***lin****-əks*](https://en.wikipedia.org/wiki/Help:Pronunciation_respelling_key)[[9]](https://en.wikipedia.org/wiki/Linux#cite_note-pronunciation-2-11)[[10]](https://en.wikipedia.org/wiki/Linux#cite_note-Foldoc09Jun06-12) or, less frequently, [/ˈlaɪnəks/](https://en.wikipedia.org/wiki/Help:IPA_for_English) [***lyn****-əks*](https://en.wikipedia.org/wiki/Help:Pronunciation_respelling_key)[[10]](https://en.wikipedia.org/wiki/Linux#cite_note-Foldoc09Jun06-12)[[11]](https://en.wikipedia.org/wiki/Linux#cite_note-pronunciation-1-13)) is a [Unix-like](https://en.wikipedia.org/wiki/Unix-like) computer [operating system](https://en.wikipedia.org/wiki/Operating_system) assembled under the model of [free and open-source software](https://en.wikipedia.org/wiki/Free_and_open-source_software) development and distribution. The defining component of Linux is the [Linux kernel](https://en.wikipedia.org/wiki/Linux_kernel),[[12]](https://en.wikipedia.org/wiki/Linux#cite_note-14) an [operating system kernel](https://en.wikipedia.org/wiki/Kernel_(computing)) first released on September 17, 1991 by [Linus Torvalds](https://en.wikipedia.org/wiki/Linus_Torvalds).[[13]](https://en.wikipedia.org/wiki/Linux#cite_note-15)[[14]](https://en.wikipedia.org/wiki/Linux#cite_note-16)[[15]](https://en.wikipedia.org/wiki/Linux#cite_note-17) The [Free Software Foundation](https://en.wikipedia.org/wiki/Free_Software_Foundation) uses the name [**GNU**](https://en.wikipedia.org/wiki/GNU)**/Linux** to describe the operating system, which has led to some [controversy](https://en.wikipedia.org/wiki/GNU/Linux_naming_controversy).[[16]](https://en.wikipedia.org/wiki/Linux#cite_note-gnu_linux_faq-18)[[17]](https://en.wikipedia.org/wiki/Linux#cite_note-linux-and-gnu-19)

Linux was originally developed for [personal computers](https://en.wikipedia.org/wiki/Personal_computer) based on the [Intel x86](https://en.wikipedia.org/wiki/Intel_x86) architecture, but has since been [ported](https://en.wikipedia.org/wiki/Porting) to more [platforms](https://en.wikipedia.org/wiki/Computer_hardware_platforms) than any other operating system.[[18]](https://en.wikipedia.org/wiki/Linux#cite_note-20) Because of the dominance of [Android](https://en.wikipedia.org/wiki/Android_(operating_system)) on [smartphones](https://en.wikipedia.org/wiki/Smartphone), Linux has the [largest](https://en.wikipedia.org/wiki/Usage_share_of_operating_systems) [installed base](https://en.wikipedia.org/wiki/Installed_base) of all general-purpose operating systems.[[19]](https://en.wikipedia.org/wiki/Linux#cite_note-marketshare.hitslink.com-21) Linux is also the leading operating system on [servers](https://en.wikipedia.org/wiki/Server_(computing)) and other [big iron](https://en.wikipedia.org/wiki/Big_iron) systems such as [mainframe computers](https://en.wikipedia.org/wiki/Mainframe_computer), and is used on 99.6% of the [TOP500](https://en.wikipedia.org/wiki/TOP500) [supercomputers](https://en.wikipedia.org/wiki/Supercomputer).[[20]](https://en.wikipedia.org/wiki/Linux#cite_note-22)[[21]](https://en.wikipedia.org/wiki/Linux#cite_note-rules_supercomputers-23) It is used by around 2.3% of [desktop computers](https://en.wikipedia.org/wiki/Desktop_computer).[[22]](https://en.wikipedia.org/wiki/Linux#cite_note-Netmarketshare.com-24)[[23]](https://en.wikipedia.org/wiki/Linux#cite_note-25) The [Chromebook](https://en.wikipedia.org/wiki/Chromebook), which runs on [Chrome OS](https://en.wikipedia.org/wiki/Chrome_OS), dominates the US [K–12](https://en.wikipedia.org/wiki/K%E2%80%9312) education market and represents nearly 20% of the sub-$300 [notebook](https://en.wikipedia.org/wiki/Notebook) sales in the US.[[24]](https://en.wikipedia.org/wiki/Linux#cite_note-26) Linux also runs on [embedded systems](https://en.wikipedia.org/wiki/Embedded_system) – devices whose operating system is typically built into the [firmware](https://en.wikipedia.org/wiki/Firmware) and is highly tailored to the system. This includes [TiVo](https://en.wikipedia.org/wiki/TiVo) and similar [DVR](https://en.wikipedia.org/wiki/Digital_video_recorder) devices, network [routers](https://en.wikipedia.org/wiki/Router_(computing)), facility automation controls, televisions,[[25]](https://en.wikipedia.org/wiki/Linux#cite_note-27)[[26]](https://en.wikipedia.org/wiki/Linux#cite_note-28) [video game consoles](https://en.wikipedia.org/wiki/Video_game_console) and [smartwatches](https://en.wikipedia.org/wiki/Smartwatch).[[27]](https://en.wikipedia.org/wiki/Linux#cite_note-LinuxDevices-29) Many smartphones and [tablet computers](https://en.wikipedia.org/wiki/Tablet_computer) run Android and other Linux derivatives.[[28]](https://en.wikipedia.org/wiki/Linux#cite_note-30)

The development of Linux is one of the most prominent examples of free and open-source software collaboration. The underlying [source code](https://en.wikipedia.org/wiki/Source_code) may be used, modified and distributed—​​commercially or non-commercially—​​by anyone under the terms of its respective licenses, such as the [GNU General Public License](https://en.wikipedia.org/wiki/GNU_General_Public_License). Typically, Linux is [packaged](https://en.wikipedia.org/wiki/Package_management_system) in a form known as a [*Linux distribution*](https://en.wikipedia.org/wiki/Linux_distribution) (or *distro* for short) for both desktop and server use. Some of the most popular mainstream Linux distributions[[29]](https://en.wikipedia.org/wiki/Linux#cite_note-31)[[30]](https://en.wikipedia.org/wiki/Linux#cite_note-32)[[31]](https://en.wikipedia.org/wiki/Linux#cite_note-33) are [Arch Linux](https://en.wikipedia.org/wiki/Arch_Linux), [CentOS](https://en.wikipedia.org/wiki/CentOS), [Debian](https://en.wikipedia.org/wiki/Debian), [Fedora](https://en.wikipedia.org/wiki/Fedora_(operating_system)), [Gentoo Linux](https://en.wikipedia.org/wiki/Gentoo_Linux), [Linux Mint](https://en.wikipedia.org/wiki/Linux_Mint), [Mageia](https://en.wikipedia.org/wiki/Mageia), [openSUSE](https://en.wikipedia.org/wiki/OpenSUSE) and [Ubuntu](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)), together with commercial distributions such as [Red Hat Enterprise Linux](https://en.wikipedia.org/wiki/Red_Hat_Enterprise_Linux) and [SUSE Linux Enterprise Server](https://en.wikipedia.org/wiki/SUSE_Linux_Enterprise_Server). Distributions include the Linux kernel, supporting [utilities](https://en.wikipedia.org/wiki/System_software) and [libraries](https://en.wikipedia.org/wiki/Library_(computer_science)), many of which are provided by the [GNU Project](https://en.wikipedia.org/wiki/GNU_Project), and usually a large amount of application software to fulfil the distribution's intended use.

Desktop Linux distributions include a windowing system, such as [X11](https://en.wikipedia.org/wiki/X11), [Mir](https://en.wikipedia.org/wiki/Mir_(software)) or a [Wayland](https://en.wikipedia.org/wiki/Wayland_(display_server_protocol)) implementation, and an accompanying [desktop environment](https://en.wikipedia.org/wiki/Desktop_environment) such as [GNOME](https://en.wikipedia.org/wiki/GNOME) or the [KDE Software Compilation](https://en.wikipedia.org/wiki/KDE_Software_Compilation); some distributions may also include a less resource-intensive desktop, such as [LXDE](https://en.wikipedia.org/wiki/LXDE) or [Xfce](https://en.wikipedia.org/wiki/Xfce). Distributions intended to run on servers may omit all graphical environments from the standard install, and instead include other software to set up and operate a [solution stack](https://en.wikipedia.org/wiki/Solution_stack) such as [LAMP](https://en.wikipedia.org/wiki/LAMP_(software_bundle)). Because Linux is freely redistributable, anyone may create a distribution for any intended use.

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