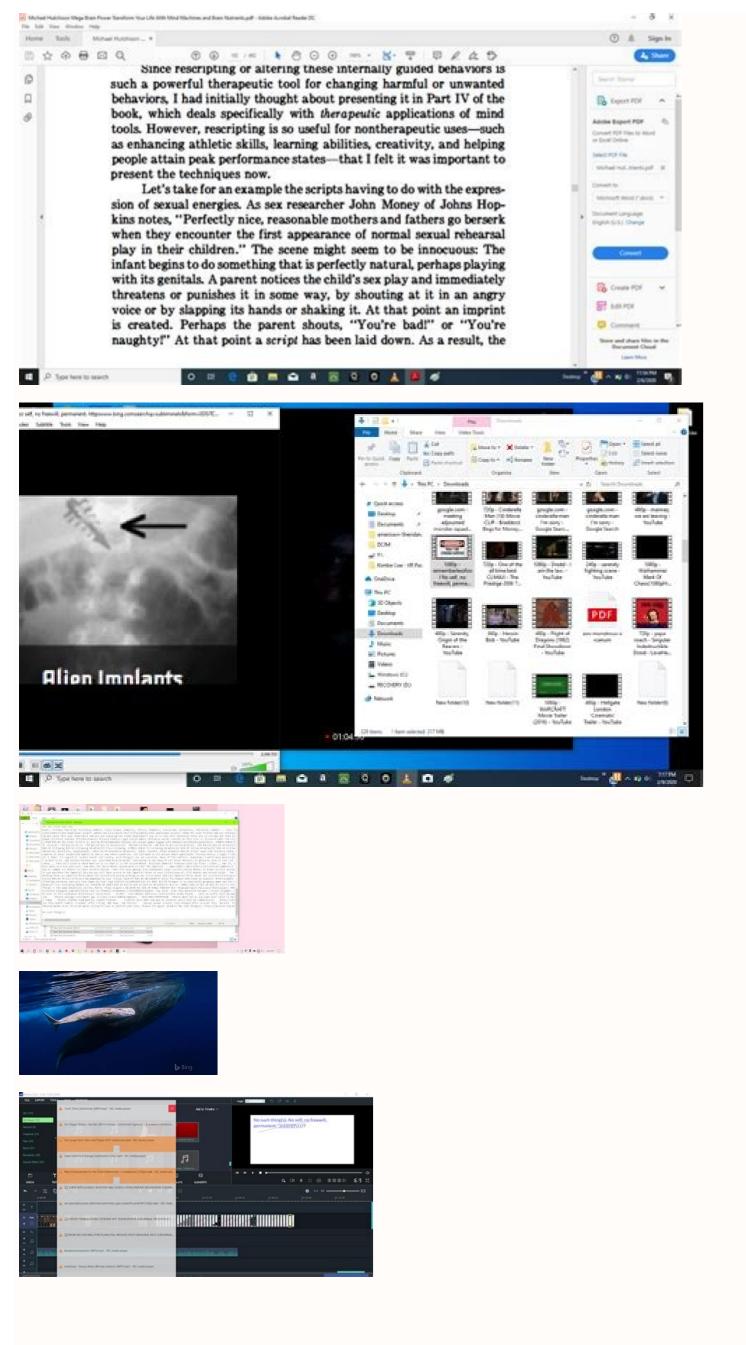
I'm not robot!



Best vpn for mozilla firefox. Mozilla firefox 42.0 2 download. Best theme for mozilla firefox.

Experience a fast, smart and personal Web. Firefox is the independent, people-first browser made by Mozilla, voted one of the Most Trusted Internet Company for Privacy. Upgrade today and join hundreds of millions who depend on Firefox for a more personal browsing experience. FAST. SMART. YOURS. Firefox is made with you in mind and gives you the power to take back control of your Web experience. That's why we design the product with smart features that take the guesswork out of browsing. SEARCH INTELLIGENTLY & GET THERE FASTER - Firefox anticipates your needs and intuitively provides multiple suggested and previously searched results across your favorite search engines - every time. - Easily access shortcuts to search providers NEXT LEVEL PRIVACY - Your privacy has been upgraded. Private Browsing with Tracking Protection blocks parts of Web pages that may track your browsing activity. SYNC FIREFOX ACROSS YOUR DEVICES - With a Firefox Account, access your history, bookmarks and open tabs from your

desktop on your smartphone and tablet. - Firefox can also remember your passwords across devices so you don't have to. INTUITIVE VISUAL TABS - Intuitive visual and numbered tabs easily let you find content for future reference. - Open as many tabs as you like without losing track of your open Web pages. EASY ACCESS TO YOUR TOP SITES -Spend your time reading your favorities sites instead of looking for them. ADD-ONS FOR EVERYTHING - Take control of your Web experience by personalizing Firefox with add-ons like ad blockers, password and download managers and more. QUICK SHARE - Firefox remembers your most recently used apps to help you easily share content TAKE IT TO THE BIG SCREEN - Send video and Web content from your smartphone or tablet to any TV equipped with support.mozilla.org/mobile - Read about Firefox permissions: mzl.la/Permissions - Learn more about what's up at Mozilla: blog.mozilla.org - Like Firefox on Facebook: mzl.la/FXFacebook - Follow Firefox on Twitter: mzl.la/FXTwitter ABOUT MOZILLA Mozilla exists to build the Internet as a public resource accessible to all because we believe open and free is better than closed and controlled. We build products like Firefox to promote choice and transparency and give people more control over their lives online. Learn more at mozilla.org Privacy Policy: Instantly share code, notes, and snippets. You can't perform that action at this time. You signed in with another tab or window. Reload to refresh your session. Windows Mac WebApps Español Stay up to date with latest software releases, news, software discounts, deals and more. Subscribe Free and open-source web browser by Mozilla This article is about the web browser developed at the University of Chicago, see Phoenix (tkWWW-based browser). Mozilla FirefoxFirefox 100 on Windows 11Developer(s) Mozilla Foundation and its contributors Mo 2022; 8 days ago (26 July 2022) Extended Support Release 291.12.0esr[3] / 26 July 2022; 8 days ago (2022-07-26) Preview release(s) [±] Beta & Developer Edition104.0beta[4] / 26 July 2022; 8 days ago (25 July 2022; 8 days ago (25 July 2022; 8 days ago (26 July 2022) Nightly105.0a1[5] / 25 July 2022; 9 days ago (26 July 2022) Repositoryhg.mozilla.org/moz Assembly and others; [7] JavaScript (and HTML, CSS) for UIEnginesGecko, Quantum, SpiderMonkeyOperating system LinuxmacOS Sierra or laterWindows 7 or laterWindows 8 or laterWindows 8 or laterWindows 9 or laterWi systemsStandard(s)HTML5, CSS3, AtomAvailable in 97 languages[17]TypeWeb browserLicenseMPL 2.0[18][19]Websitewww.mozilla.org/en-US/firefox, or simply Firefox, or simp rendering engine to display web pages, which implements current and anticipated web standards.[21] In 2017, Firefox began incorporating new technology under the code name Quantum to promote parallelism and a more intuitive user interface.[22] Firefox is available for Windows 7 and later versions, macOS, and Linux. Its unofficial ports are available for various Unix and Unix-like operating systems, including FreeBSD,[9] OpenBSD,[10] NetBSD,[11] illumos,[12] and Solaris Unix.[14] It is also available for Android and iOS. However, as with all other iOS web browsers, the iOS version uses the WebKit layout engine instead of Gecko due to platform requirements. An optimized version is also available on the Amazon Fire TV, as one of the two main browsers available with Amazon's Silk Browser. [23] Firefox was created in 2002 under the Mozilla Application Suite bundle. During its beta phase, it proved to be popular with its testers and was praised for its speed, security, and add-ons compared to Microsoft's then-dominant Internet Explorer 6. It was released on November 9, 2004,[24] and challenged Internet Explorer's dominance with 60 million downloads within nine months.[25] It is the spiritual successor of Netscape Navigator, as the Mozilla community was created by Netscape in 1998 before their acquisition by AOL.[26] Firefox usage share grew to a peak of 32.21% in November 2009,[27] with Firefox 3.5 overtaking Internet Explorer 7, although not all versions of Internet Explorer as a whole; [28][29] its usage then declined in competition with Google Chrome. [27] As of July 2022[update], according to StatCounter, it has 7.8% usage share as a desktop web browser, making it the fourth-most popular desktop web browser after Google Chrome (65.87%), Safari (18.61%), and Edge (4.13%).[31] History See also: Firefox early version history and Firefox version history The project began as an experimental branch of the Mozilla project by Dave Hyatt, Joe Hewitt, and Blake Ross. They believed the commercial requirements of Netscape's sponsorship and developer-driven feature creep compromised the utility of the Mozilla browser.[32] To combat what they saw as the Mozilla Suite's software bloat, they created a standalone browser, with which they intended to replace the Mozilla Organization announced that it planned to change its focus from the Mozilla Suite to Firefox and Thunderbird. [35] Screenshot of Phoenix 0.1 on Windows XP The Firefox project has undergone several name changes. [36] The nascent browser was originally named Phoenix, after the mythical bird that rose triumphantly from the ashes of its dead predecessor (in this case, from the "ashes" of Netscape Navigator, after it was sidelined by Microsoft Internet Explorer in the "First Browser War"). Phoenix was renamed in 2003 due to a trademark claim from Phoenix Technologies. The replacement name, Firebird database software project.[37][38] The Mozilla Foundation reassured them that the browser would always bear the name Mozilla Firebird to avoid confusion. After further pressure, Mozilla Firefox on February 9, 2004.[39] The name Firefox was said to be derived from a nickname of the red panda,[40] which became the mascot for the newly named project.[41] For the abbreviation of Firefox, Mozilla prefers Fx or fx, although it is often abbreviated as FF.[42] The Firefox project went through many versions before version 1.0 and had already gained a great deal of acclaim from numerous media outlets, such as Forbes[43] and The Wall Street Journal.[44] Among Firefox's popular features were the integrated pop-up blocker, tabbed browsing, and an extension mechanism for adding functionality. Although these features have already been available for some time in other browsers such as the Mozilla Suite and Opera, Firefox was the first of these browsers to have achieved large-scale adoption.[citation needed] Firefox was the first of these browsers to have achieved large-scale adoption. detractors cite IE's lack of support for certain Web standards, use of the potentially dangerous ActiveX component, and vulnerability to spyware and malware installation. [citation needed] Microsoft responded by releasing Windows XP Service Pack 2, which added several important security features to Internet Explorer 6.[45] Version 1.0 of Firefox was released on November 9, 2004.[46] This was followed by version 3.5 in June 2009, version 3.5 in June 2009, version 3.6 in June 2009, version 3.6 in June 2009, version 3.6 in June 2009, version 3.7 in June 2009, version 3.8 in June 2009, version 3.8 in June 2009, version 3.8 in June 2009, version 3.9 stable release was version 9, and by the end of 2012 it reached version 17.[47] Major redesigns of its graphical user interface occurred on versions 4.0 in March 2011, 29.0 "Australis" in April 2014, 57.0 "Quantum" in November 2017, and 89.0 "Proton" in June 2021. In 2016, Mozilla announced a project known as Quantum, which sought to improve Firefox's Gecko engine and other components to improve the browser's performance, modernize its architecture, and transition the browser to a multi-process model. These improvements came in the wake of decreasing market share to Google Chrome, as well as concerns that its performance was lapsing in comparison. Despite its improvements, these changes required existing add-ons for Firefox to be made incompatible with newer versions, in favor of a new extension system that is designed to be similar to Chrome and other recent browsers. Firefox 57, which was released in November 2017, was the first version to contain enhancements from Quantum, and has thus been named Firefox Quantum. A Mozilla executive stated that Quantum was the "biggest update" to the browser since version 1.0.[48][49][50] Unresponsive and crashing pages only affect other pages loaded within the same process. While Chrome uses separate processes for each loaded tab, Firefox distributes tabs over four processes by default since Quantum in order to balance memory consumption and performance. The process count can be adjusted, where more processes increase performance at the cost of memory, therefore suitable for computers with larger RAM capacity.[51][52] On May 3, 2019, the expiration of an intermediate signing certificate on Mozilla servers caused Firefox to automatically disable and lock all browser extensions (add-ons).[53][54] Mozilla began the roll-out of a fix shortly thereafter, using their Mozilla Studies component.[53][54] On January 13, 2022, an issue with Firefox's HTTP/3 implementation resulted in a widespread outage for multiple hours.[55] Features Main article: Features of Firefox Features of the desktop edition include tabbed browsing, full-screen mode, spell checking, incremental search, smart bookmarks, bookmarks, bookmark exporting, [59] offline mode, [60] a screenshot tool, web development tools, a "page info" feature which shows a list of page metadata and multimedia items, [61] a sophisticated configuration menu at about: config for power users, and more location-aware browsing (also known as "geolocation") based on a Google service, [62] and an integrated search system, which uses Google by default in most markets. [63] Additionally, Firefox provides an environment for web developers in which they can use built-in tools, such as the Error Console or the DOM Inspector, and extensions, such as Firefox Hello was an implementation of WebRTC, added in October 2014, which allows users of Firefox and other compatible systems to have a video call, with the extra feature of screen and file sharing by sending a link to each other. Firefox Hello was scheduled to be removed in September 2016.[64] Former features include a File Transfer Protocol (FTP) client for browsing file servers, the ability to block images from individual domains (until version 72),[65] a 3D page inspector (versions 11 to 46), tab grouping (until version 44), and the ability to add customized extra toolbars (until version 28).[66][67][68] Browser extensions Functions can be added through add-ons created by third-party developers. Add-ons are primarily coded using an HTML, CSS, JavaScript, with API known as WebExtensions, which is designed to be compatible with Google Chrome and Microsoft Edge extension systems. [69] Firefox previously supported add-ons using the XUL and XPCOM APIs, which allowed them to directly access and manipulate much of the browser's internal functionality. As compatibility was not included in the multi-process architecture, XUL add-ons have been deemed Legacy add-ons and are no longer supported on Firefox 57 "Quantum" and newer. [70][71] Themes Firefox can have themes added to it, which users can create or download from third parties to change the appearance of the browser. The Firefox add-on website also gives users the ability to add other applications such as games, adblockers, screenshot apps, and many other apps. [72][73] Guest session Firefox for Android was equipped with a guest session feature, introduced in 2013, which, when initiated, would memorize ordinary browsing data such as tabs, cookies, and history, but for the duration of the guest session. The guest session data would be kept even when restarting the browser or device, while deleted only upon a manual exit. The feature was removed, for which Mozilla claims to "streamline the experience".[74][75] Standards The result of the Acid3 test on Firefox implements many web standards, including HTML4 (almost full HTML5), XML, XHTML, MathML, SVG 1.1 (full),[76] SVG 2 (partial),[77][78] CSS (with extensions),[79] ECMAScript (JavaScript), DOM, XSLT, XPath, and APNG (Animated PNG) images with alpha transparency.[80] Firefox also implements standards proposals created by the WHATWG such as client-side storage,[81][82] and the canvas element.[83] These standards are implemented through the Gecko layout engine, and SpiderMonkey JavaScript engine. Firefox 4 was the first release to introduce significant HTML5 and CSS3 support. Firefox has passed the Acid2 standards-compliance test since version 3.0.[84] Mozilla had originally stated that the SVG fonts part of the test had become outdated and irrelevant, due to WOFF being agreed upon as a standard by all major browser makers. [85] Because the SVG font tests were removed from the Acid3 test in September 2011, Firefox 4 and greater scored 100/100. [86][87] Firefox also implements "Safe Browsing," [88] a proprietary protocol [89] from Google used to exchange data related with phishing and malware protection. Since version 38 on Windows Vista and newer, Firefox supports the playback of video content protected by HTML5 Encrypted Media Extensions (EME). For security and privacy reasons, EME is implemented within a wrapper of open-source code that allows execution of a proprietary DRM module by Adobe Systems—Adobe Primetime Content Decryption Module (CDM). CDM runs within a "sandbox" environment to limit its access to the system and provide it a randomized device ID to prevent services from uniquely identifying the device for tracking purposes. The DRM module, once it has been downloaded, is enabled, and disabled in the same manner as other plug-ins. Since version 47,[90] "Google's Widevine CDM on Windows and Mac OS X so streaming services like Amazon Video can switch from Silverlight to encrypted HTML5 video" is also supported. Mozilla justified its partnership with Adobe and Google by stating: Firefox downloads and enables the Adobe Primetime and Google Widevine CDMs by default to give users a smooth experience on sites that require DRM. Each CDM runs in a separate container called a sandbox and you will be notified when a CDM is in use. You can also disable each CDM and opt-out of future updates—Watch DRM content on Firefox[91] and that it is "an important step on Mozilla's roadmap to remove NPAPI plugin support."[92] Upon the introduction of EME support, builds of Firefox on Windows were also introduced that exclude support EME.[93] Security See also: Browser security Firefox allowed for a sandbox security model to manage privileges accorded to JavaScript code, but that feature has since been deprecated. [96] It limits scripts from accessing data from other websites based on the same-origin policy. [97] It also provides support for smart cards to web applications, for authentication purposes. servers using strong cryptography when using the HTTPS protocol.[99] The freely available HTTPS everywhere add-on enforces HTTPS, even if a regular HTTP URL is entered. Firefox now supports HTTPS, even if a regular HTTP URL is entered. Firefox now supports HTTPS, even if a regular HTTP URL is entered. Firefox.[101] Official guidelines for handling security vulnerabilities discourage early disclosure of vulnerabilities so as not to give potential attackers an advantage in creating exploits.[102] Because Firefox generally has fewer publicly known security vulnerabilities than Internet Explorer (see Comparison of web browsers), improved security is often cited as a reason to switch from Internet Explorer to Firefox.[103][104][105][106] The Washington Post reported that exploit code for known, critical security vulnerabilities in Firefox was available for nine days before Mozilla issued a patch to remedy the problem.[107] A 2006 Symantec study showed that, although Firefox had surpassed other browsers in the number of vendor-confirmed vulnerabilities that year through September, these vulnerabilities being fixed on average one day after the exploit code was made available, as compared to nine days for Internet Explorer. [108] Symantec later clarified their statement, saying that Firefox still had fewer security vulnerabilities than Internet Explorer, as counted by security researchers. [109] In October 2009, Microsoft's security engineers acknowledged that Firefox was vulnerable to a security issue found in the 'Windows Presentation Foundation' browser plug-in into Firefox.[110] This vulnerable plug-in into Firefox.[111] In 2010, a study of the National Institute of Standards and Technology (NIST), based on data compiled from the National Vulnerability Database (NVD), Firefox was listed as the first.[112] InfoWorld has cited security experts saying that, as Firefox becomes more popular, more vulnerabilities will be found, [113] a claim that Mitchell Baker, president of the Mozilla Foundation, has denied. "There is this idea that market share alone will make you have more vulnerabilities. It is not relational at all," she said.[114] As of February 11, 2011[update], Firefox 3.6 had no known unpatched security vulnerabilities according to Secunia.[115] Internet Explorer 8 had five unpatched security vulnerabilities; the worst being rated "Less Critical" by Secunia.[117] Firefox 11, released in January 2012, introduced a 3D page inspector that visualizes web pages' document object model three-dimensionally through WebGL. The feature was accessible from the developer tools.[118] On January 28, 2013, Mozilla was recognized as the most trusted internet company for privacy in 2012.[119] This study was performed by the Ponemon Institute and was a result of a survey from more than 100,000 consumers in the United States. In February 2013, plans were announced for Firefox 22 to disable third-party cookies by default. However, the introduction of the feature was then delayed so Mozilla developers could "collect and analyze data on the effect of blocking some third-party cookies." Mozilla also collaborated with Stanford University's "Cookie Clearinghouse" project to develop a blacklist and whitelist of sites that will be used in the filter.[120][121] Version 23, released in August 2013, followed the lead of its competitors by blocking iframe, stylesheet, and script resources served from non-HTTPS servers embedded on HTTPS pages by default. Additionally, JavaScript could also no longer be disabled through Firefox's preferences, and JavaScript was automatically re-enabled for users who upgraded to 23 or higher with it disabled. The change was made due to its use across the majority of websites, the potential repercussions on inexperienced users who are unaware of its impact, along with the availability of extensions such as NoScript, which can disable JavaScript in a more controlled fashion. The following release added the ability to disable JavaScript through the developer tools for testing purposes. [122][123][124] In January 2015, TorrentFreak reported that using Firefox when connected to the internet using a VPN can be a serious security issue due to the browser's support for WebRTC. [125] Beginning with Firefox 48, all extensions must be signed by Mozilla to be used in release and beta versions of Firefox. Firefox 43 blocked unsigned extensions but allowed enforcement of extensions but allowed enforcement of extensions must be submitted to Mozilla Add-ons and be subject to code analysis in order to be signed, although extensions do not have to be listed on the service to be signed. [126][127] On May 2, 2019, Mozilla announced that it would be strengthening the signature enforcement with methods that included the retroactive disabling of old extensions being disabled. This was found to be the result of an overlooked certificate and not the policy change set to go into effect on June 10.[128] In Firefox versions prior to 7.0, an information bar appears on the browser's first start asking users whether they would like to send performance statistics, or "telemetry", to Mozilla. It is enabled by default in development versions of Firefox, but not in release versions.[129] According to Mozilla's privacy policy,[130] these statistics are stored only in aggregate format, and the only personally identifiable information transmitted is the user's IP address. In November 2018, Firefox began using a sandbox to isolate web tabs from each other and from the rest of the system. Its lack of such a feature had previously earned it negative comparisons with Google Chrome and Microsoft Edge.[131][132] Since version 60 Firefox includes the option to use DNS over HTTPS (DoH), which causes DNS lookup requests to be sent encrypted over the HTTPS protocol. To use this feature the user must set certain preferences beginning with "network.trr" (Trusted Recursive Resolver) in about:config: if network.trr.mode is 0. DoH is disabled: 1 activates DoH in addition to unencrypted DNS: 2 causes DoH to be used before unencrypted DNS: to use only DoH, the value must be 3. By setting network.trr.uri to the URL 1.1.1.1[permanent dead link], special Cloudflare servers will be activated.[133][134] Mozilla has a privacy agreement with this serve host that restricts their collection of information about incoming DNS requests. [135] On May 21, 2019, Firefox was updated to include the ability to block scripts that track their activity across the web, however it does not resist fingerprinting on its own. [136] On July 2, 2019, Mozilla introduced a mechanism to allow Firefox to automatically trust OS-installed certificates to prevent TLS errors. [137] In October 2019, ZDNet reported Firefox version 68 ESR passed all minimum requirements for mandatory security features during an exam by the Federal Office for Information Security of Germany. [138] In Mozilla Foundation Security Advisory 2020-03, the company reported that the CVE-2019-17026 vulnerability in IonMonkey) had been detected in the wild and was being actively exploited. [139] [140] In March 2021, Firefox launched SmartBlock in version 87 to offer protection against cross-site tracking, without breaking the websites users visit.[141] Also known as state partitioning or "total cookie protection", works via a feature in the browser that isolates data from each site visited by the user to ensure that cross-site scripting is very difficult if not impossible. The feature also isolates local storage, service workers and other common ways for sites to store data.[142] Localizations Firefox is a widely localized web browser. The first official release in November 2004 was available in 24 different languages and for 28 locales, including British English, American English, European Spanish, Argentine Spanish, Chinese in Traditional Chinese characters and Simplified Chinese characters and 91.12.0esr are available in 97 locales (88 languages).[17] Platform availability The desktop version of Firefox is available and supports Microsoft Windows, macOS, and Linux, while Firefox for Android is available for Android (formerly Firefox for mobile, it also ran on Maemo, MeeGo and Firefox for iOS is available for Android or iOS apps can also run Firefox for iOS is available for iOS. Smartphones that support Linux but don't support Android or iOS apps can also run Firefox for iOS is available for iOS. viewtalkedit OSfamily Latest release Minimum OSversion required Support date Version Date Windows Current stable version; 103.0.1 [1] (ARM64) 2022-08-01 10 v1709 2019- Older version, yet still maintained: 102.1.0esr [2] (ARM64) 2022-08-01 10 v1709 2019- Older version, yet still maintained: 103.0.1 [1] (x64) 2022-08-01 7, Server 2008 R2 2009- Older version, yet still maintained: 102.1.0esr [2] (ARM64) 2022-08-01 10 v1709 2019- Older version version version version. maintained: 102.1.0esr [2] (x64) 2022-07-26 Current stable version, no longer maintained: 52.9.0esr (IA-32)[144] 2018-06-26 XP SP2, Server 2003 SP1, Windows Vista 2004-2018 Old version, no longer maintained: 52.0.2 (IA-32)[145][146] 2017-03-28 2004-2017 Old version, no longer maintained: 10.0.12esr[147] 2013-01-08 2000 2004-2013 Old version, no longer maintained: 1.5.0.12 2007-05-30 95 2004-2007 macOS 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and ARM64 for Windows[165]) Any x86 version 384 MB? Data storage device free space 200 MB 80 MB? Operating system Windows 7 or laterServer 2008 R2 or later[162] Minimum GTK 3.14 or newer glibc 2.17 or newer glibc 2.17 or newer glibc 2.17 or newer glibc 2.17 or newer glibc 2.18 or newer glibc 2.18 or newer glibc 2.19 or n newer libxtst 1.2.3 or newer macOS 10.12 or newer 5.0 or Windows 7 and Server 2008 R2.[168] Starting from version 49.0, Firefox, optimized for touchscreen use, on the "Aurora" release channel. However, on 14 March 2014, Mozilla cancelled the project because of a lack of user adoption.[169][170][171] In April 2017, users of Firefox 52.0.2 on Windows Version of Firefox 52.0 on Windows Version of F the Firefox website and downloading an installer package, depending on the desired localization and system architecture. In November 2021, Mozilla made Firefox available on Microsoft Store. The Store-distributed package does not interfere with the traditional installation.[173][174] macOS Firefox 57 on macOS High Sierra The first official release (Firefox version 1.0) supported macOS (then called Mac OS X) on the PowerPC architecture became available via a universal binary which debuted with Firefox 1.5.0.2 in 2006. Starting with version 4.0 also dropped support for PowerPC architecture, although other projects continued development of a PowerPC version of Firefox 1.5 and 10.4 in Firefox 1.5 and 10.4 in Firefox 4 dropped support for Mac OS X 10.0 and higher.[177] The minimum OS then increased to Mac OS X 10.2 in Firefox 1.5 and 10.4 in Firefox 4 dropped support for Mac OS X 10.0 and higher.[177] The minimum OS then increased to Mac OS X 10.2 in Firefox 4 dropped support for Mac OS X 10.4 and PowerPC Macs, and Firefox 17 dropped support for Mac OS X 10.5 entirely. [180] [181] The system requirements were left unchanged until 2016, when Firefox 49 dropped support for Mac OS X 10.5 entirely. [180] [181] The system requirements were left unchanged until 2016, when Firefox 79, with those users being support for Mac OS X 10.5 entirely. [180] [181] The system requirements were left unchanged until 2016, when Firefox 79 are also as a firefox 79 are also as a firefox 79. With those users being support for Mac OS X 10.5 entirely. [180] [181] The system requirements were left unchanged until 2016, when Firefox 49 dropped support for Mac OS X 10.5 entirely. [180] [181] The system requirements were left unchanged until 2016, when Firefox 79 are also as a firefox 79 are a fire until November 2021.[184][185][186] Linux Firefox 96 on Arch Linux Opening wikipedia main page with Mozilla Firefox 99 on Ubuntu 20.04 Since its inception, Firefox for Linux Supported the 32-bit memory architecture of the IA-32 instruction set. 64-bit builds were introduced in the 4.0 release [175] The 46.0 release replaced GTK 2.18 with 3.4 as a system requirement on Linux and other systems running X.Org.[187] Starting with 53.0, the 32-bit builds require the SSE2 instruction set. Firefox also can run on number of other architectures on Linux, including ARM, AArch64, PowerPC, POWER, Sparc, HPPA, MIPS, s390, and in the past Alpha, IA-64 (Intel Itanium) and m68k. Firefox for mobile Main articles: Firefox for Android and Firefox for mobile is a web browser for mobile is a web browser for mobile phones, tablets, and PDAs. It was originally first released for the Nokia Maemo operating system, specifically the Nokia Maemo operating system. release of the mobile version, the browser's version number was bumped from 2 to 4, synchronizing it with all future desktop releases of Firefox because the rendering engines used in both browsers are the same.[190] Version 7 was the last release for Maemo on the N900.[191] The former Firefox for Android (codenamed Fennec), was a web browser for Android devices, such as mobile phones and tablets. Its user interface was optimized for small screens and tablets. It included the Awesome Bar, tabbed browsing, add-on support, a password manager, location-aware browsing, and the ability to synchronize with the user's other devices with Mozilla Firefox Sync.[192] It was criticized for being slow,[193] however, in part due to its poor port of Gecko.[194] At the end of its existence, it had a marketshare of 0.5% on Android.[195] In April 2013, then-Mozilla CEO Gary Kovacs said that Firefox would not come to iOS 8, Apple had supplied third-party browsers with an inferior version of their JavaScript engine which hobbled their performance on the iOS platform.[196] Apple later opened their "Nitro" JavaScript engine to third-party browsers.[197] In 2015, Mozilla announced it was moving forward with Firefox for iOS, with a preview release made available in New Zealand in September of that year.[198][199][200] It fully released in November 2016, Firefox Focus, a private web browser.[202] In August 2020, Mozilla launched a new version of its Firefox for Android app, named Firefox Daylight to the public [203] and codenamed Fenix, [204] after a little over a year of testing. [194] It boasted higher speeds with its new GeckoView engine, which is described as being "the only independent web engine browser available on Android". It also added Enhanced Tracking Protection 2.0, a feature that blocks many known trackers on the Internet.[205] It also added the ability to place the address bar on the bottom, and a new Collections features.[208] However, it was criticized for only having nine Add-ons with time.[209] Firefox on MeeGo OSFirefox on Firefox OSFirefox for Android 93 on Android 93 on Android viewtalkedit Operating system Latest stable version: 103.1.0 (ARM64)[210] 2018- Current stable version: 103.1.0 (IA-32 and ARMv7)[210] 2014- 4.1-4.4 Old version, no longer maintained: 68.11.0 (x64)[211] 2018-2020 Old version, no longer maintained: 68.11.0 (IA-32) 2013-2020 Old version, no longer maintained: 55.0.2 (ARMv7) 2011-2017 3.0-3.2 Old version, no longer maintained: 68.11.0 (x64)[212][213] 2013-2020 Old version, no longer maintained: 55.0.2 (IA-32)[213][213] 2013-2020 Old version, no longer maintained: 68.11.0 (x64)[213] 2013-2020 Old version, no longer maintained: 55.0.2 (x64)[213] 2013-2020 Old version, no longer maintained: 68.11.0 (x64)[213] 2013-2020 Old versio 45.0.2 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2013 Old version, no longer maintained: 31.3.0esr (ARMv6) 2012-2013 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 31.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old version, no longer maintained: 47.0 (ARMv7)[212] 2011-2016 2.3 Old versio (ARMv7) 2011-2013 2.0 Old version, no longer maintained: 33/34 2014-2015 2.0 Old version, no longer maintained: 31/32 Maemo Old version, no longer maintained: 31/32 M maintainedLatest versionLatest preview versionFuture release Notes Firefox for iOS is not listed in this table as its version numbers would be misleading; it uses version numbers that do not correspond to any of the other Firefox versions. Those share a core component, the Gecko rendering engine, and track its version numbers, whereas the version for the iOS operating system uses the operating system uses the operating system's rendering engine (WebKit), rather than Mozilla's (Gecko). Firefox Reality headsets in September 2018.[216] It supports traditional web-browsing through 2D windows and immersive VR pages through Web VR. Firefox Reality is available on HTC Vive, Oculus, Google Daydream and Microsoft Hololens headsets. Unofficial ports Firefox has also been ported to FreeBSD,[217] NetBSD,[218] OpenBSD,[218] OpenBSD,[ Timberwolf has been available for AmigaOS 4.[citation needed] An unofficial continuation of the Mac OS X PowerPC release was actively developed as TenFourFox until October 5, 2021.[228] The Firefox port for OpenBSD is maintained by Landry Breuil since 2010. Firefox is regularly built for the current branch of the operating system, the latest versions are packaged for each release and remain frozen until the next release. In 2017, Landry began hosting packages of newer Firefox versions for OpenBSD releases from 6.0 onwards, making them available to installations without the ports system. [229] The Solaris port of Firefox (including OpenSolaris) was maintained by the Oracle Solaris Desktop Beijing Team, [230][231] until March 2017 when the team was disbanded, [citation needed] There was also an unofficial port of Firefox 3.6.x to IBM AIX[232][233] and of v1.7.x to UnixWare, [234] viewtalkedit Operating system Latest stable version Support status Solaris 11 Older version, yet still maintained: 91.11.0esr (x64,SPARC V9) 2011-10 and OpenSolaris Old version, no longer maintained: 52.9.0esr (IA-32,x64,SPARC V9) 2005-2018 8-9 Old version, no longer maintained: 2.0.0.20 (IA-64,PA-RISC) N/A OpenBSD -current Current Stable version: 102.0 (x64,ARM64) 2019- Older version, yet still maintained: 91.11.0esr (x64,ARM64) Old version, no longer maintained: 88.0.1 (IA-32) 2019-2021 Old version, no longer maintained: 91.11.0esr (x64,ARM64) 2022 6.9 Old version, no longer maintained: 88.0.1 (IA-32) 2021 Old version, no longer maintained: 78.14.0esr (IA-32) 5.8 Old version, no longer maintained: 38.7.1esr (PPC) 2015-2016 5.7 Old version, no longer maintained: 31.6.0esr (SPARC V9) 2015 -release 5.8 39.0.3 (PPC) 5.4 3.6.28 (Alpha) 4.7 3.0.18 (ARMv7) Legend: Old version, still maintained test version and test preview release Experimental builds and ESR Besides official releases, Mozilla provides development builds of Firefox in distribution channels named, in order of most to least stable, "Beta", "Developer Edition" (formerly "Aurora", renamed on November 10, 2014[235][236]), and "Nightly".[237] Starting from Firefox 54, "Developer Edition" is based on the "Beta" build.[238] Firefox ESR (Extended Support Release) is a version of Firefox for organizations and other groups that need extended support for mass deployments. Each ESR release, based on the regular ("rapid") releases, ESRs are not updated with new features and performance enhancements every four weeks, but rather are updated with only high-risk-reduction or high-impact security fixes or major stability fixes or major stability fixes with most of it being released under the Mozilla Public License (MPL) version 2.0. [19] This license permits anyone to view, modify, or redistribute the source code. As a result, several publicly released applications have been built from it, such as Netscape, Flock, Miro, GNU IceCat, Iceweasel, Songbird, Pale Moon, Waterfox, and Comodo IceDragon.[citation needed] In the past, Firefox was licensed solely under the MPL, then version 1.1,[241] which the Free Software Foundation criticized for being weak copyleft, as the licensed most of Firefox under the trilicense scheme of MPL 1.1, GPL 2.0, or LGPL 2.1. Since the re-licensing, developers were free to choose the license under which they received most of the code, to suit their intended use: GPL or LGPL linking and derivative works) if they chose

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the MPL.[241] However, on January 3, 2012, Mozilla released the GPL-compatible MPL 2.0,[244] and with the release of Firefox 13 on June 5, 2012, Mozilla used it to replace the tri-licensing scheme.[245] The crash reporting service was initially closed-source but switched with version 3 from a program called Talkback to the open-source Breakpace.
(and Socorro server).[citation needed] Trademark and logo See also: Mozilla software rebranded by Debian The name "Mozilla Firefox logo, it may only be used under certain terms and conditions. Anyone may redistribute the official binaries in unmodified form and use the Firefox name and conditions.
branding for such distribution, but restrictions are placed on distributions which modify the underlying source code. [246] The name "Firefox" derives from a nickname of the red panda. [41] Mozilla has placed the Firefox logo files under open-source licenses, [247] [248] but its trademark guidelines do not allow displaying altered [249] or similar
 logos[250] in contexts where trademark law applies.[citation needed] Logo used for Iceweasel There has been some controversy over the Mozilla Foundation's intentions in stopping certain open-source distributions from using the "Firefox" trademark.[20] Open-source browsers "enable greater choice and innovation in the market rather than aiming
for mass-market domination."[251] Mozilla Foundation Chairperson Mitchell Baker explained in an interview in 2007 that distributions could freely use the Firefox trademark if they did not modify source code, and that the Mozilla Foundation's only concern was with users getting a consistent experience when they used "Firefox".[252] To allow
distributions of the code without using the official branding, the Firefox build system contains a "branding switch". This switch, often used for alphas ("Auroras") of future Firefox versions, allows the code to be compiled without the official logo and name and can allow a derivative work unencumbered by restrictions on the Firefox trademark to be
produced. In the unbranded build, the trademarked logo and name are replaced with a freely distributable generic globe logo and the name of the release series from which the modified version was derived. [citation needed] Distributing modified versions of Firefox under the "Firefox" name required explicit approval from Mozilla for the changes
 made to the underlying code, and required the use of all of the official branding. For example, it was not permissible to use the name "Firefox logo in 2006 (because Mozilla's copyright restrictions at the time were incompatible with Debian's
guidelines), they were told by a representative of the Mozilla Foundation that this was not acceptable and was asked either to comply with the published trademark guidelines or cease using the "Firefox" name in their distribution. [253] Debian switched to branding their modified version of Firefox "Iceweasel" (but in 2016 switched back to Firefox)
 along with other Mozilla software. GNU IceCat is another derived version of Firefox distributed by the GNU Project, which maintains its separate branding and visual identity. The Firefox software and builds of official distribution partners. [255] For this
reason, software distributors who distributors who distribute modified versions of Firefox do not use the icon.[citation needed] Early Firefox do not use the icon.[citation n
authored an article covering everything he considered to be wrong with Mozilla's visual identity [256] Shortly afterwards, the Mozilla Foundation invited Garrity to head up the new branding efforts. Included were new icon designs by silverorange, a
group of web developers with a long-standing relationship with Mozilla. The final renderings are by Jon Hicks, who had worked on Camino. [257] The animal shown in the logo is a stylized fox, although "firefox" is usually a common name for the red
 panda. The panda, according to Hicks, "didn't really conjure up the right imagery" and was not widely known.[258] In June 2019, Mozilla unveiled a revised Firefox logo, which was officially implemented on version 70. The new logo is part of an effort to build a brand system around Firefox and its complementary apps and services, which are now
 being promoted as a suite under the Firefox brand. Logo history Logo of "Phoenix" and "Firefox 23-56, from August 6, 2013 Firefox 1.0-3.0, from November 9, 2004 to June 29, 2009 Firefox 3.5-22, from June 30, 2009 to August 5, 2013 Firefox 23-56, from August 6, 2013 to
November 13, 2017[260] Firefox 57-69, from November 14, 2017 to October 21, 2019 Firefox 70 and later, since October 22, 2019 Other logos, used for nightly logo The 2011 Nightly logo The 2011 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2013 Nightly logo The 2017 Nightly logo The 2019 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2011 Nightly logo The 2019 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2011 Nightly logo The 2019 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2011 Nightly logo The 2019 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2011 Nightly logo The 2019 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2011 Nightly logo The 2019 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2011 Nightly logo The 2019 Nightly logo Other logos, used for nightly builds of pre-alpha versions The 2011 Nightly logo The 2019 Nightly logo Other logos, used for nightly logo.
developer/aurora versions The 2011 Aurora logo, used to represent an alpha release The 2013 Aurora logo of the 2015 Developer Edition logo of the 2017 Developer Edition logo of the 2018 Aurora logo of the 2018 Developer Edition logo of the 2019 Developer Editio
brand of products and services, as of July 2019. It appears as if the fox was removed, but this is not the logo for the browser itself. Promotion Firefox mascot at the FISL 16 (2015), Brazil Firefox was adopted rapidly, with 100 million downloads in its first year of availability. [262] This was followed by a series of aggressive marketing campaigns starting
in 2004 with a series of events Blake Ross and Asa Dotzler called "marketing weeks". [263] Firefox continued to heavily market itself by releasing a marketing portal dubbed "Spread Firefox Continued to heavily marketing weeks". [263] Firefox Continued to heavily marketing weeks".
techniques. The release of their manifesto stated that "the Mozilla project is a global community of people who believe that openness, innovation and opportunity are key to the continued health of the Internet." [251] A two-page ad in the edition of December 16 of The New York Times, placed by Mozilla Foundation in coordination with Spread Firefox
featured the names of the thousands of people worldwide who contributed to the Mozilla Foundation's fundraising campaign to support the launch of the Firefox 1.0 web browser. [265] SFX portal enhanced the "Get Firefox" button program, giving users "referrer points" as an incentive. The site lists the top 250 referrers. From time to time, the SFX
team or SFX members launch marketing events organized at the Spread Firefox website. As a part of the Spread Firefox campaign, there was an attempt to break the world download record with over eight million downloads. [267] In February 2011, Mozilla
announced that it would be retiring Spread Firefox (SFX). Three months later, in May 2011, Mozilla officially closed Spread Firefox. Mozilla wrote that "there are currently plans to create a new iteration of this website [Spread Firefox] at a later date." [268] In celebration of the third anniversary of the founding of the Mozilla Foundation, the "World
Firefox Day" campaign was established on July 15, 2006,[269][270] and ran until September 15, 2006,[270][270] 
has also engaged in the promotion of their web browser. In 2006, some of Firefox's contributors from Oregon, near the intersection of Lafayette Highway and Walnut Hill Road. [272] After Firefox reached 500 million downloads on February 21, 2008, the Firefox
community celebrated by visiting Freerice to earn 500 million grains of rice. [273] Other initiatives included Live Chat - a service Wozilla launched in 2007 that allowed users to seek technical support from volunteers. [274] The service was later retired. [275] To promote the launch of Firefox Quantum in November 2017, Mozilla partnered with Reggies and the service was later retired.
Watts to produce a series of TV ads and social media content. [276] Performance 2000s. In December 2005, Internet Week ran an article in which many readers reported high memory usage in Firefox 1.5. [277] Mozilla developers said that the higher memory usage in Firefox 1.5 was at least partially due to the new fast backwards-and-forwards
(FastBack) feature.[278] Other known causes of memory problems were malfunctioning extensions of Adobe Acrobat Reader.[280] When PC Magazine in 2006 compared memory usage of Firefox 2, Opera 9, and Internet Explorer 7, they found that
Firefox used approximately as much memory as each of the other two browsers, [281] In 2006, Softpedia noted that Firefox 1.5 took longer to start up than other browsers, [282] which was confirmed by further speed tests. [283] Internet Explorer 6 launched more swiftly than Firefox 1.5 on Windows XP since many of its components were built into the
OS and loaded during system startup. As a workaround for the issue, a preloader application was created that loaded components of Firefox on startup, similar to Internet Explorer. [284] A Windows Vista feature called SuperFetch performs a similar to Internet Explorer. [284] A Windows Vista feature called SuperFetch performs a similar to Internet Explorer.
Zimbra in 2006 indicated that Firefox 2 used less memory than Internet Explorer 7. [285][286] Firefox 3 used less memory than Internet Explorer 7, Opera 9.50 Beta, Safari 3.1 Beta, and Firefox 2 in tests performed by Mozilla, CyberNet, and The Browser World. [287][288] In mid-2009, BetaNews benchmarked Firefox 3.5 and declared that it
performed "nearly ten times better on XP than Microsoft Internet Explorer 7".[290] 2010s In January 2010, Lifehacker compared the performance of Firefox 3.5, Firefox 3.6, Google Chrome 4 (stable and Dev versions), Safari 4, and Opera (10.1 stable and 10.5 pre-alpha versions).
 (both right after boot-up and after running at least once already), timed how long browsers took to load nine tabs at once, tested JavaScript speeds using Windows 7's process manager. They concluded that Firefox 3.5 and
3.6 were the fifth- and sixth-fastest browsers, respectively, on startup, 3.5 was third- and 3.6 was sixth-fastest to load nine tabs at once, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest to load nine tabs at once, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was sixth- and 3.6 was fifth-fastest browsers, respectively, on startup, 3.5 was fifth-fastest browsers, respectively, and 3.6 was 
performance tested Chrome 17, Firefox 10, Internet Explorer 9, Opera 11.61, and Safari 5.1.2 on Windows 7. Tom's Hardware summarized their tests into four categories: Performance, Efficiency, Reliability, and Conformance at their tests into four categories: Performance, Efficiency, Reliability, and Conformance at their tests into four categories: Performance, Efficiency, Reliability, and Conformance at their tests into four categories: Performance, Efficiency, Reliability, and Conformance at their tests into four categories: Performance, Efficiency, Reliability, and Conformance at their tests into four categories: Performance, Efficiency, Reliability, and Conformance at their tests into four categories: Performance at their tests into four categories at their tests into four categories at their tests into four categories at the performance at the
current as of version 51; and Java and Silverlight stop working as of version 52)—they also tested startup time and page load time. The performance tests showed that Firefox was either "acceptable" or "strong" in most categories, winning three categories, winning three categories, winning three categories (HTML5, HTML5 hardware acceleration, and Java) only finishing "weak" in CSS performance. In
the efficiency tests, Tom's Hardware tested memory usage and management. In this category, it determined that Firefox was only "acceptable" at performing light memory usage, while it was "strong" amount of proper page loads. In the final category,
conformance, it was determined that Firefox had "strong" conformance for JavaScript and HTML5. In conclusion, Tom's Hardware determined that Firefox was the best browser for Windows 7 OS, but that it only narrowly beat Google Chrome 27, Opera 12, and
Internet Explorer 10. They found that Firefox slightly edged out the other browsers in their "performance" index, which measured memory efficiency, reliability.
security, and standards conformance, finishing ahead of Chrome, the runner-up. Tom's Hardware concluded by declaring Firefox the "sound" winner of the performance benchmarks. [293] In January 2014, a benchmark testing the memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory usage of Firefox 29, Google Chrome 34, and Internet Explorer 11 indicated that Firefox used the least memory u
when a substantial number of tabs were open.[294] In benchmark testing in early 2015 on a "high-end" Windows machine, comparing Microsoft Edge, Internet Explorer, Firefox, Chrome, and Opera, Firefox achieved the highest score on three of the seven tests. Four different JavaScript performance tests gave conflicting results. Firefox surpassed all
other browsers on the Peacekeeper benchmark but was behind the Microsoft products when tested with Mozilla's Kraken, it came second place to Chrome, while on Google's Octane challenge it took third behind Chrome and Opera. Firefox took the lead with WebXPRT, which runs several typical HTML5 and JavaScript
tasks. Firefox, Chrome, and Opera all achieved the highest possible score on the Oort Online test, measuring WebGL rendering speed (WebGL 2 is now current). In terms of HTML5 compatibility testing, Firefox was ranked in the middle of the group. [295] A similar set of benchmark tests in 2016 showed Firefox's JavaScript performance on Kraken
and the newer Jetstream tests trailing slightly behind all other tested browsers except Internet Explorer (IE), which performed relatively poorly. On Octane, Firefox came ahead of IE and Safari, but again slightly behind the rest, including Vivaldi and Microsoft Edge. Edge took overall first place on the Jetstream and Octane benchmarks. [296] Firefox
Quantum As of the adoption of Firefox 57 and Mozilla's Quantum project entering production browser in a May 2019 report
[299] Usage share Further information: Usage share of web browsers Usage share of web browsers according to StatCounter Downloads have continued at an increasing rate since Firefox 1.0 was released on November 9, 2004, and as of 31 July 2009[update] Firefox had already been downloaded over one billion times. [300] This number does not
include downloads using software updates or those from third-party websites. [301] They do not represent a user count, as one download may be installed on many machines, one person may download the software multiple times, or the software multiple times, or the software may be obtained from a third-party. [citation needed] In July 2010, IBM asked all employees (about
400,000) to use Firefox as their default browser. [302] Firefox was the second-most used web browser until November 2011, when Google Chrome surpassed it. [303] According to Mozilla, Firefox was the second-most widely used desktop browser, and
that position made it the third-most popular with 3.82% of worldwide usage share of web browser satistics Google Chrome 66.97% Safari 9.97% Microsoft Edge 8.84% Mozilla Firefox 8.07% Opera 2.45% Other 3.69% Desktop web browser market share according to StatCounter for March
2021[307] According to the Firefox Public Data report by Mozilla, the active monthly count of Desktop clients has decreased from around 310 million in 2017 to 260 million in 2019.[308] From Oct 2020, the desktop market share of Firefox started to decline in countries where it used to be the most popular. In Eritrea, it dropped from 50% in Oct 2020
to 9.32% in Sept 2021. In Cuba, it dropped from 54.36% in Sept 2020 to 38.42% in Sept 2020. [310] Third-party forks Web browser, Ghostery Dawn, [316] [317] Pale Moon, [318] Basilisk, Wild Fox, [319] Abrowser, [320] K-Meleon, Mull
Browser,[321] Comodo IceDragon, Waterfox,[322] GNU IceCat, Parrotgeek Firefox Legacy (for Mac OS X),[323] Classilla, and TenFourFox.[324][325] See also Internet portal Linux portal Free and open-source software packages Mozilla Prism
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builds for Solaris". Archived from the original on November 1, 2018. Archived from the original on August 31, 2021. A a b "Mozilla Firefox Web Browser for OpenVMS Integrity servers (based on Mozilla Firefox Web Browser for OpenVMS Integrity servers).
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languageWorking stateHistorical, now developed as ArcaOSSource modelClosed sourceInitial releaseDecember 1987; 34 years ago (1987-12)Latest release4.52 / December 2001; 20 years ago (2001-12)Marketing targetProfessionals, serversAvailable inChinese, English, French, German, Italian, Japanese, Korean, Spanish, Portuguese
RussianPlatformsx86, PowerPCKernel typeHybrid kernelInfluenced byMS-DOS, IBM PC DOSDefaultuser interfaceWorkplace Shell Graphical user interfaceWorkplace Shell Graphi
Microsoft and IBM under the leadership of IBM software designer Ed Iacobucci.[2] As a result of a feud between the two companies over how to position OS/2 development fell to IBM exclusively.[4] The name stands for
"Operating System/2", because it was introduced as part of the same generation change release as IBM's "Personal System/2 (PS/2)" line of second-generation were released until December 2001. OS/2 was intended as a protected-mode successor of
PC DOS. Notably, basic system calls were modeled after MS-DOS calls; their names even started with "Dos" and it was possible to create "Family Mode" applications - text mode applications that could work on both systems.[5] Because of this heritage, OS/2 shares similarities with Unix, Xenix, and Windows NT. IBM discontinued its support for OS/2
on 31 December 2006.[6] Since then, OS/2 has been developed, supported and sold by two different third-party vendors under license from IBM - first by Serenity Systems as eComStation since 2001,[7] and later by Arca Noae LLC as ArcaOS since 2017.[8][9][10] Development history 1985-1989; Joint development OS/2 1.0 featured a text-mode
interface similar to MS-DOS. The development of OS/2 began when IBM and Microsoft signed the "Joint Development Agreement" in August 1985.[11][12] It was code-named "CP/DOS" and it took two years for the first product to be delivered. OS/2 1.0 was announced in April 1987 and released in December. The original release is textmode-only, and
a GUI was introduced with OS/2 1.1 about a year later. OS/2 features an API for controlling the video and keyboard APIs as linkable
libraries so that family mode programs are able to run under MS-DOS,[citation needed] and, in the OS/2 Extended Edition v1.0, a database engine called Database engine so that family of database engines for Unix and Unix-like operating systems).[13] A task-switcher named
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Program Selector was available through the Ctrl-Esc hotkey combination, allowing the user to select among multitasked text-mode sessions (or screen groups; each can run multiple programs).[14] Communications and database-oriented extensions were delivered in 1988, as part of OS/2 1.0 Extended Edition: SNA, X.25/APPC/LU 6.2, LAN Manager,
Query Manager, SQL. OS/2 1.1 was the first version to feature the Presentation Manager GUI. The promised user interface to Windows 2.1, which was released in May of that year. (The interface was replaced in versions 1.2 and 1.3 by a look
closer in appearance to Windows 3.0). The Extended Edition of 1.1, sold only through IBM sales channels, introduced distributed database systems and SNA communications support to IBM mainframe networks. In 1989, Version 1.2 introduced Installable Filesystems and, notably, the HPFS filesystem. HPFS provided a
number of improvements over the older FAT file system, including long filenames and a form of alternate data streams called Extended Attributes. [16] In addition, extended attributes were also added to the FAT file system. [17] Installation Disk A of Microsoft OS/2 1.3 (3½-inch floppy disk) The Extended Edition of 1.2 introduced TCP/IP and Ethernet
support. OS/2- and Windows-related books of the late 1980s acknowledged the existence of both systems and promoted OS/2 as the system of the future.[18] 1990: Breakup The collaboration between IBM and Microsoft unravelled in 1990, between the releases of Windows 3.0 and OS/2 1.3. During this time, Windows 3.0 became a tremendous
success, selling millions of copies in its first year.[19] Much of its success was because Windows 3.0 (along with MS-DOS) was bundled with most new computers.[20] OS/2, on the other hand, was available only as an additional stand-alone software package. In addition, OS/2 lacked device drivers for many common devices such as printers,
particularly non-IBM hardware. [21] Windows, on the other hand, supported a much larger variety of hardware. The increasing popularity of Windows prompted Microsoft to shift its development focus from cooperating on OS/2 with IBM to building its own business based on Windows. [22] Several technical and practical reasons contributed to this
breakup. The two companies had significant differences in culture and vision. Microsoft to drop features, such as fonts, that IBM's hardware did not support. Microsoft to drop features, such as fonts, that IBM's hardware did not support.
also became frustrated with IBM's bureaucracy and its use of lines of code to measure productivity. [23] IBM developers complained that IBM's code was bloated. [24] The two products have significant differences in API. OS/2 was
announced when Windows 2.0 was near completion, and the Windows API already defined. However, IBM requested that this API be significantly changed for OS/2. [25] Therefore, issues surrounding application compatibility appeared immediately. OS/2 designers hoped for source code conversion tools, allowing complete migration of Windows
application source code to OS/2 at some point. However, OS/2 1.x did not gain enough momentum to allow vendors to avoid developing for both OS/2 and Windows in parallel. OS/2 1.x targets the Intel 80286 processor and DOS fundamentally doesn't. IBM insisted
on supporting the 80286 processor, with its 16-bit segmented memory mode, because of commitments made to customers who had purchased many 80286-based PS/2s as a result of IBM's promises surrounding OS/2.[26] Until release 2.0 in April 1992, OS/2 ran in 16-bit protected mode and therefore could not benefit from the Intel 80386's much
simpler 32-bit flat memory model and virtual 8086 mode features. This was especially painful in providing support for DOS applications, including expanded memory (EMS) emulation, OS/2 1.3, released in 1991, was still limited to one 640 kB "DOS box"
Given these issues, Microsoft started to work in parallel on a version of Windows which was more future-oriented and more portable. The hiring of Dave Cutler, former VAX/VMS architect, in 1988 created an immediate competition with the OS/2 team, as Cutler did not think much of the OS/2 technology and wanted to build on his work on the MICA
project at Digital rather than creating a "DOS plus". His NT OS/2 was a completely new architecture. [27] IBM grew concerned about the delays in development of OS/2 2.0, while Microsoft would continue development of OS/2 3.0. In the
end, Microsoft decided to recast NT OS/2 3.0 as Windows NT, leaving all future OS/2 development to IBM. From a business perspective, it was logical to concentrate on a consumer line of operating systems based on DOS and Windows, and to prepare a new high-end system in such a way as to keep good compatibility with existing Windows
applications. While it waited for this new high-end system to develop, Microsoft would still receive licensing money from Xenix and OS/2 sales. Windows NT's OS/2 heritage can be seen in its initial support for the HPFS filesystem, text mode OS/2 sales. Windows NT's OS/2 heritage can be seen in its initial support for the HPFS filesystem, text mode OS/2 sales. Windows NT's OS/2 heritage can be seen in its initial support for the HPFS filesystem, text mode OS/2 sales. Windows NT's OS/2 heritage can be seen in its initial support for the HPFS filesystem, text mode OS/2 sales.
copyright notices embedded in the software.[citation needed] One example of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT could also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT and also support of NT OS/2 1.x Presentation Manager and AVIO applications with the addition of the Windows NT addition of the Windows
release of OS/2, and the first to feature the Workplace Shell. OS/2 2.0 was released in April 1992. At the time, the suggested retail price was US$195, while Windows retailed for $150.[29] OS/2 2.0 provided a 32-bit API for native programs, though the OS itself still contained some 16-bit code and drivers. It also included a new OOUI (object-oriented
user interface) called the Workplace Shell. This was a fully object-oriented interface that was a significant departure from the previous GUI. Rather than merely providing an environment in which the user could manage programs, files and devices by
manipulating objects on the screen. With the Workplace Shell, everything in the system is an "object" to be manipulated. DOS compatibility OS/2 2.0 was touted by IBM as "a better DOS than DOS and a better Windows than Windows".[30] It managed this by including the fully-licensed MS-DOS 5.0, which had been patched and improved upon. For the
first time, OS/2 was able to run more than one DOS application at a time. This was so effective, that it allowed OS/2 to run a modified copy of Windows 3.0, itself a DOS extender, including Windows 3.0 applications. Because of the limitations of the Intel 80286 processor, OS/2 1.x could run only one DOS program at a time, and did this in a way that
allowed the DOS program to have total control over the computer. A problem in DOS mode could crash the entire computer. In contrast, OS/2 2.0 could leverage the virtual 8086 mode of the Intel 80386 processor to create a much safer virtual machine in which to run DOS programs. This included an extensive set of configuration options to optimize
the performance and capabilities given to each DOS program. Any real-mode operating system (such as 8086 Xenix) could also be made to run using OS/2's virtual machine capabilities, subject to certain direct hardware access limitations. The OS/2 2.0 upgrade box Like most 32-bit environments, OS/2 could not run protected-mode DOS programs.
using the older VCPI interface, unlike the Standard mode of Windows 3.1; it only supported programs written according to DPMI. (Microsoft discouraged the use of VCPI under Windows 3.1; it only supported programs written according to DPMI. (Microsoft discouraged the use of VCPI under Windows 3.1; it only supported programs written according to DPMI. (Microsoft discouraged the use of VCPI under Windows 3.1) and the use of VCPI under Windows 3.1; it only supported programs written according to DPMI. (Microsoft discouraged the use of VCPI under Windows 3.1) are used to be used to 
any DOS program could deadlock the machine in this way. OS/2 could, however, use a hardware watchdog on selected machines (notably IBM machines) to break out of such a deadlock. Later, release 3.0 leveraged the enhancements of newer Intel 80486 and Intel Pentium processors—the Virtual Interrupt Flag (VIF), which was part of the Virtual
Mode Extensions (VME)—to solve this problem. Further information: VME (CONFIG.SYS directive) Windows 3.1 (and later Windows 3.1) was achieved by adapting Windows code was
included with OS/2 itself: Windows 3.0 in OS/2 2.0, and Windows 3.1 in OS/2 2.1. Later, IBM developed versions of OS/2 that would use whatever Windows version the user had installed previously, patching it on the fly, and sparing the cost of an additional Windows license.[32] It could either run full-screen, using its own set of video drivers, or
"seamlessly," where Windows programs would appear directly on the OS/2 desktop. The process containing Windows was given fairly extensive access to hardware, especially video, and the result was that switching between a full-screen WinOS/2 session and the Workplace Shell could occasionally cause issues.[33] Because OS/2 only runs the user
mode system components of Windows, it is incompatible with Windows device drivers (VxDs) and applications run by default in a single Windows applications run by default in a single Windows 3.x. However, to achieve true isolation
between Windows 3.x programs, OS/2 can also run multiple copies of Windows in parallel, with each copy residing in a separate VDM. The user can then optionally place each program either in its own Windows session - with preemptive multitasking and full memory protection between sessions, though not within them - or allow some applications to
run together cooperatively in a shared Windows session while isolating other applications in one or more separate Windows sessions. At the cost of additional hardware resources, this approach can protect each program in any given Windows sessions. At the cost of additional hardware resources, this approach can protect each program in any given Windows sessions.
session (though not from other programs running in the same Windows session).[34] Whether Windows applications are running in full-screen or windows applications, and OLE between Windows applications only.[35] IBM's OS/2 for Windows
product, also known as "OS/2, Special Edition", was interpreted as a deliberate strategy "of cashing in on the pervasive success of the Microsoft platform" but risked confusing consumers with the notion that the product was a mere accessory or utility running on Windows such as Norton Desktop for Windows when, in fact, it was "a complete, modern
multi-tasking, pre-emptive operating system", itself hosting Windows as a prerequisite for installing the product, also being confined to its original FAT partition, whereas the product apparently supported the later installation
of Windows running from an HPFS partition, particularly beneficial for users of larger hard drives. Windows compatibility, relying on patching specific memory locations, was reportedly broken by the release of Windows 3.11, prompting accusations of arbitrary changes to Windows in order to perpetrate "a deliberate act of Microsoft sabotage"
against IBM's product.[34] 1994: OS/2 Warp Connect 3.0, showing the Windows 3.1 Program Manager, QBASIC in a DOS window, and the LaunchPad (bottom center) Released in 1994, OS/2 Version 3.0 was labelled as OS/2 Warp to highlight the new performance benefits, and generally to freshen the product image. "Warp" had originally
been the internal IBM name for the release: IBM claimed that it had used Star Trek terms as internal use as well. At the launch of OS/2 Warp in 1994, Patrick Stewart was to be the Master of Ceremonies; however Kate Mulgrew[36] of the then-upcoming series Star Trek.
Voyager substituted him at the last minute.[37][38]: p. 108 OS/2 Warp offers a host of benefits over OS/2 2.1, notably broader hardware support, greater multimedia capabilities, Internet-compatible networking, and it includes a basic office application suite known as IBM Works. It was released in two versions: the less expensive "Red Spine" and the
more expensive "Blue Spine" (named for the color of their boxes). "Red Spine" was designed to support Microsoft Windows applications by utilizing any existing installation of Windows applications without a Windows installation.
As most computers were sold with Microsoft Windows pre-installed and the price was less, "Red Spine" was the more popular product.[citation needed] OS/2 Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full LAN client support built-in—followed in mid-1995. Warp Connect—which has full built-in—followed in mid-1995. Warp Connect—
In OS/2 2.0, most performance-sensitive subsystems, including the graphics (Gre) and multimedia (MMPM/2) systems, were updated to 32-bit windowing system, while Warp 4 introduced the object-oriented 32-bit GRADD display driver model. 1996: Warp 4 In
1996, Warp 4 added Java and speech recognition software. [39] IBM also released server editions of Warp 3 and Warp 4 which bundled IBM's LAN Server product directly into the operating system installation. A personal version of Lotus Notes was also included, with a number of template databases for contact management, brainstorming, and so
forth. The UK-distributed free demo CD-ROM of OS/2 Warp essentially contained the entire OS and was easily, even accidentally, cracked[clarification needed], meaning that even people who liked it did not have to buy it. This was seen as a backdoor tactic to increase the number of OS/2 users, in the belief that this would increase sales and demand
for third-party applications, and thus strengthen OS/2's desktop numbers.[citation needed] This suggestion was bolstered by the fact that this demo versions of various applications.[citation needed] In 2000, the July edition of Australian Personal
Computer magazine bundled software CD-ROMs, included a full version of Warp 4 that required no activation and was essentially a free release. Special versions of OS/2 2.11 and Warp 4 that required no activation and was essentially a free release.
by the early 1990s, it was overtaken by Microsoft Windows NT. While OS/2 was arguably technically superior to Microsoft Windows 95, OS/2 failed to develop much penetration in the consumer and stand-alone desktop PC segments; there were reports that it could not be installed properly on IBM's own Aptiva series of home PCs.[40] Microsoft made
an offer in 1994 where IBM would receive the same terms as Compaq (the largest PC manufacturer at the time) for a license of Windows, as IBM aimed to drive sales of its own software as
well as hardware. By 1995, Windows 95 negotiations between IBM and Microsoft, which were already difficult, stalled when IBM purchased Lotus SmartSuite, which would have directly competed with Microsoft Office. As a result of the dispute, IBM signed the license agreement 15 minutes before Microsoft's Windows 95 launch event, which was
later than their competitors and this badly hurt sales of IBM PCs. IBM officials later conceded that OS/2 would not have been a viable operating system to keep them in the PC business.[41][42] Workplace OS This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced
material may be challenged and removed. (April 2012) (Learn how and when to remove this template message) Main article: Workplace OS. This was an entirely new product, brand new code, that borrowed only a few sections of code from both the existing
OS/2 and AIX products. It used an entirely new microkernel "personalities". It also including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features included major new architectural features including OS/2) as microkernel "personalities". It also included major new architectural features in
developed solely for POWER platforms, and IBM intended to market a full line of PowerPCs in an effort to take over the market from Intel. A mission was formed to create prototypes of these machines and they were disclosed to several corporate customers, all of whom raised issues with the idea of dropping Intel. Advanced plans for the new code
base would eventually include replacement of the OS/400 operating system by Workplace OS, as well as a microkernel product that would have been used in industries such as telecommunications and set-top television receivers. A partially functional pre-alpha version of Workplace OS was demonstrated at Comdex, where a bemused Bill Gates
stopped by the booth. The second and last time it would be shown in public was at an OS/2 user group in Phoenix, Arizona; the pre-alpha code refused to boot. It was released in 1995. But with $990 million being spent per year on development of this as well as Workplace OS, and no possible profit or widespread adoption, the end of the entire
Workplace OS and OS/2 product line was near. Downsizing This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed. (March 2013) (Learn how and when to remove this template message) A project was launched internally by IBM to evaluate
the looming competitive situation with Microsoft Windows 95. Primary concerns included the major code quality issues in the existing OS/2 product (resulting in over 20 service packs, each requiring more diskettes than the original installation), and the ineffective and heavily matrixed development organization in Boca Raton (where the consultants
reported that "basically, everybody reports to everybody") and Austin. That study, tightly classified as "Registered Confidential" and printed only in numbered copies, identified untenable weaknesses and failures across the board in the Personal Systems Division as well as across IBM as a whole. This resulted in a decision being made at a level above
the Division to cut over 95% of the overall budget for the entire product line, end all new development (including Workplace OS), eliminate the Boca Raton development individuals (as well as sales and support personnel). $990 million had been spent in the last
full year. Warp 4 became the last distributed version of OS/2. 2001: Fading out Although a small and dedicated community remains faithful to OS/2,[44] OS/2 failed to catch on in the mass market and is little used outside certain niches where IBM traditionally had a stronghold. For example, many bank installations, especially automated teller
machines, run OS/2 with a customized user interface; French SNCF national railways used OS/2 in some voicemail systems. Also, OS/2 was used for the host PC used to control the Satellite Operations Support System equipment installed at NPR
member stations from 1994 to 2007, and used to receive the network's programming via satellite.[citation needed] Although IBM began indicating shortly after the release of Warp 4 that OS/2 would eventually be withdrawn, the company did not end support until December 31, 2006.[45] Sales of OS/2 stopped on December 23, 2005. The latest IBM
OS/2 Warp version is 4.52, which was released for both desktop and server systems in December 2001. IBM is still delivering defect support for a fee.[45][46] IBM urges customers to migrate their often highly complex application is completed, IBM
recommends migration to a different operating system, suggesting Linux as an alternative.[47][48][49] Third-party development Main articles: eComStation and ArcaOS ArcaOS is the most recent OS/2-based operating system development Main articles: eComStation and ArcaOS ArcaOS is the most recent OS/2-based operating system.
future development of the operating system. The OS/2 software vendor Stardock made such a proposal to IBM in 1999, but it was not followed through by the company. [50] Serenity Systems succeeded in negotiating an agreement with IBM, and began reselling OS/2 as eComStation in 2001. [51] eComStation is now sold by XEU.com, the most recent
version (2.1) was released in 2011.[52] In 2015, Arca Noae, LLC announced that they had secured an agreement with IBM to resell OS/2.[8] They released operating system in 2017 as ArcaOS.[10] As of 2021, there have been multiple releases of ArcaOS, and it remains under active development.[53] Petitions for
open source Many people hoped that IBM would release OS/2 or a significant part of it as open source. Petitions were held in 2005 and 2007, but IBM refused them, citing legal and technical reasons.[54] It is unlikely that the entire OS will be open at any point in the future because it contains third-party code to which IBM does not have copyright,
and much of this code is from Microsoft. IBM also once engaged in a technology transfer with Commodore, licensing Amiga technology for OS/2 2.0 and above, in exchange for the REXX scripting language. [55] [unreliable source?] This means that OS/2 may have some code that was not written by IBM, which can therefore prevent the OS from being
re-announced as open-sourced in the future.[56][failed verification][57] On the other hand, IBM donated Object REXX for Windows and OS/2 to the Open Object REXX project maintained by the REXX Language Association on Source operating systems such
as Linux have already profited from OS/2 indirectly through IBM's release of the improved JFS file system, which was ported from the OS/2 code base. As IBM didn't release the source of the os/2 JFS driver, developers ported from the OS/2 code base. As IBM didn't release the source of the improved JFS driver has been
integrated into eComStation v2.0, and later into ArcaOS 5.0. Summary of releases Release dates refer to the US English editions unless otherwise noted.[59][60] Date Version December 1987 OS/2 1.0 November 1988 OS/2 1.1 October 1990 OS/2 1.2 December 1990 OS/2 1.3 October 1991 OS/2 2.0 LA (Limited Availability) April 1992 OS/2 2.0
October 1992 OS/2 2.00.1 May 1993 OS/2 2.1 November 1993 OS/2 Warp Server 4 September 1996 OS/2 Warp 4 September 1996 OS/2 Warp Server Advanced
SMP November 1997 WorkSpace On-Demand 1.0 October 1998 WorkSpace On-Demand 2.0 April 1999 OS/2 Warp Server for e-Business (version 4.51) November 2001 OS/2 Convenience Pack 1 (version 4.51) November 2001 OS/2 Convenience Pack 1 (version 4.51) November 2001 OS/2 Convenience Pack 2 (version 4.52) Features and technology User interface The graphic system has a layer named
Presentation Manager that manages windows, fonts, and icons. This is similar in functionality to a non-networked version of X11 or the Windows GDI. On top of this lies the Workplace Shell (WPS) introduced in OS/2 2.0. WPS is an object-oriented shell allowing the user to perform traditional computing tasks such as accessing files, printers, launchinges windows, fonts, and icons. This is similar in functionality to a non-networked version of X11 or the Windows GDI. On top of this lies the Workplace Shell (WPS) introduced in OS/2 2.0. WPS is an object-oriented shell allowing the user to perform traditional computing tasks such as accessing files, printers, launchinges windows, fonts, and icons.
legacy programs, and advanced object oriented tasks using built-in and third-party application objects that extended the shell in an integrated fashion not available on any other mainstream operating system. WPS follows IBM's Common User Access user interface standards. WPS represents objects such as disks, folders, files, program objects, and
printers using the System Object Model (SOM), which allows code to be shared among applications, possibly written in different computers to communicate. DSOM is based on CORBA. The object oriented aspect of SOM is similar to, and a direct competitor to,
Microsoft's Component Object Model, though it is implemented in a radically different manner; for instance, one of the most fundamental concepts of OO programming)—COM does not have such support. SOM and DSOM are no longer being developed. The
multimedia capabilities of OS/2 are accessible through Media Control Interface commands. The last update (bundled with the IBM version of Netscape Navigator plugins) added support for MPEG files. Support for newer formats such as PNG, progressive IPEG, DivX, Ogg, and MP3 comes from third parties. Sometimes it is integrated with the
multimedia system, but in other offers it comes as standalone applications. Commands OS/2 Window (cmd.exe) on Microsoft OS/2 Version 1.3 The following list of commands is supported by cmd.exe on OS/2.[61][62] ansi append assign attrib backup boot break cache call cd chcp chdir chkdsk cls cmd codepage command comp copy createdd date
ddinstal debug del detach dir diskcomp diskcopy doskey dpath eautil echo endlocal erase exit extproc fdisk fdiskpm find for format fsaccess goto graftabl help if join keyb keys label makeini md mem mkdir mode more move patch path pause picview pmrexx print prompt pstat rd recover rem ren rename replace restore rmdir set setboot setcom40
setlocal share shift sort spool start subst syslevel syslog time trace tracebuf tracefmt tree type undelete unpack ver verify view vmdisk vol xcopy Networking This section needs expansion. You can help by adding to it. (April 2019) The TCP/IP stack is based on the open source BSD stack as visible with SCCS what compatible tools. IBM included tools
cards, IBM licensed a reduced version of the Scitech display drivers, allowing users to choose from a wide selection of cards supported through Scitech's modular driver design. [63] Virtualization OS/2 has historically been more difficult to run in a virtual machine than most other legacy x86 operating systems because of its extensive reliance on the
full set of features of the x86 CPU; in particular, OS/2's use of ring 2 prevented it from running in early versions of VMware provide official support for OS/2, specifically for eComStation.[65] VirtualPC from Microsoft (originally Connectix) has been able to run OS/2 without hardware virtualization support for many
years. It also provided "additions" code which greatly improves host-guest OS interactions in OS/2. The additions are not provided with a release may still be used with current version of VirtualPC in addition to a guest. Note that OS/2 runs
only as a guest on those versions of VirtualPC that use virtualPC for Mac). VirtualPC for Mac) and not those doing full emulation (VirtualPC for Mac). VirtualPC for Mac).
eComStation can still be difficult, if not impossible, because of the strict requirements of VT-x/AMD-V hardware-enabled virtualBox, VMware ESXi and VMWare Workstation.[67] It ships with VirtualBox Guest
Additions, and driver improvements to improve performance as a guest operating system. [68] The difficulties in efficiently running OS/2 have, at least once, created an opportunity for a new virtualization software is an easy
way around this, the company desired to run OS/2 under a hypervisor. Once it was determined that VMware was not a possibility, it hired a group of Russian software developers to write a host-based hypervisor that would officially support OS/2. Thus, the Parallels, Inc. company and their Parallels Workstation product was born.[69] Security niche
OS/2 has few native computer viruses;[70] while it is not invulnerable by design, its reduced market share appears to have discouraged virus writers. There are, however, OS/2-based antivirus programs, dealing with DOS viruses and Windows viruses that could pass through an OS/2 server.[71] Problems Some problems were classic subjects of
comparison with other operating systems: Synchronous input queue (SIQ): if a GUI application was not servicing its window messages, the entire GUI system could get stuck and a reboot was required. This problem was considerably reduced with later Warp 3 fixpacks and refined by Warp 4, by taking control over the application after it had not
responded for several seconds.[72][73]:565 No unified object handles (OS/2 v2.11 and earlier): The availability of threads probably led system designers to overlook mechanisms which allow a single thread to wait for different types of asynchronous events at the same time, for example the keyboard and the mouse in a "console" program. Even
though select was added later, it only worked on network sockets. In case of a console programs in the same "session". As a result, console programs usually polled the keyboard and the mouse
alternately, which resulted in wasted CPU and a characteristic "jerky" reactivity to user input. In OS/2 3.0 IBM introduced a new call for this specific problem.[74] Historical uses This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and
removed. (June 2011) (Learn how and when to remove this template message) OS/2 has been widely used in Iran Export Bank (Bank Saderat Iran) in their teller machines, ATMs and local servers (over 30,000 working stations). As of 2011, the bank moved to virtualize and renew their infrastructure by moving OS/2 to Virtual Machines running over
Windows. OS/2 was widely used in Brazilian banks. Banco do Brasil had a peak 10,000 machines running OS/2 Warp in the 1990s. OS/2 was used in automated teller machines and attendant computers have been migrated to Linux.[75] An ATM in Australia revealing during a reboot that it is
based on OS/2 Warp OS/2 has been used in the banking industry. Suncorp bank in Australia still ran its ATM network on OS/2 as late as 2002. ATMs at Perisher Blue used OS/2 as late as 2009, and even the turn of the decade.[76] OS/2 was widely adopted by accounting professionals and auditing companies. In mid-1990s native 32-bit accounting
software were well developed and serving corporate markets. OS/2 ran the faulty baggage handling system at Denver International Airport. The OS was eventually scrapped, but the software written to run on the OS was. The
baggage handling system was eventually removed. OS/2 was used by radio personality Howard Stern. He once had a 10-minute on-air rant about OS/2 versus Windows 95 and recommended OS/2. He also used OS/2 on his IBM 760CD laptop. OS/2 was used as part of the Satellite Operations Support System (SOSS) for NPR's Public Radio Satellite
System. SOSS was a computer-controlled system using OS/2 that NPR member stations used to receive programming feeds via satellite. SOSS was introduced in 1994 using OS/2 3.0, and was retired in 2007, when NPR switched over to its successor, the ContentDepot. OS/2 was used to control the SkyTrain automated light rail system in Vancouver,
Canada until the late 2000s when it was replaced by Windows XP. OS/2 was used in the London Underground Jubilee Line Extension Signals Control System (JLESCS) in London, England. This control system delivered by Alcatel was in use from 1999 to 2011 i.e. between abandonment before opening of the line's unimplemented original automatic
train control system and the present SelTrac system. JLESCS did not provide automatic train operation only manual train supervision. Six OS/2 local site computers were distributed along the railway between Stratford and Westminster, the shunting tower at Stratford Market Depot, and several formed the central equipment located at Neasden
Depot. It was once intended to cover the rest of the line between Green Park and Stanmore but this was never introduced. OS/2 has been used by the
Stop & Shop supermarket chain (and has been installed in new stores as recently as March 2010). OS/2 has been used in New York City's subway system for MetroCards.[77] Rather than interfacing with the user, it connects simple computers and the mainframes. When NYC MTA
finishes its transition to contactless payment, OS/2 will be removed.[78] OS/2 was used in checkout systems at Safeway supermarkets.[77] OS/2 was used by Trenitalia, both for the Automatic Ticket Counters and for the Automatic Ticket Counters with OS/2 were more reliable than the current
ones running a flavor of Windows, [citation needed] OS/2 was used as the main operating system for Abbey National General Insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products using the PMSC Series III insurance motor and home direct call centre products and home direct call centre products and home direct c
that it "is today where the Macintosh was in 1984: It's a development platform in search of developers". The magazine predicted that "When it's complete and bug-free, when it can really use the 80386, and when more desktops sport OS/2-capable PCs, OS/2 will—deservedly—supersede DOS. But even as it stands, OS/2 is a milestone product".[79] In
March 1995 OS/2 won seven awards[80] InfoWorld Product of the Year. [81] Five Awards at CeBIT. PC Professional Magazine awards (CHIP Magazine awards (S/2 Warp the Operating System of the Year. 1+1 Magazine awarded it with the Software
Marketing Quality award. Industrie Forum awarded it with its Design Excellence. SPA Best Business Software Award. IBM products utilizing OS/2 IBM has used OS/2 in a wide variety of hardware products, effectively as a form of embedded operating system.
for the Library Manager (LM) that controlled the tape accessor (robot)[82] IBM 3745 Communications Controller Used as the operating system for the Service Processor (NNP).[83] IBM 3890 Document Processor (NNP).[83] IBM 3890 Document Processor (SP) and if installed, the Network Node Processor (NNP).[83] IBM 3890 Document Processor (SP) and if installed, the Network Node Processor (NNP).[83] IBM 3890 Document Processor (NNP).[83] IBM 3890 Docume
Edition[84] on a PS/2 Model 80 to emulate the stacker control software that previously ran on a System/360. IBM later switched to OS/2 Warp.[85] IBM 473x ATM Used in a range of Automatic Teller Machines manufactured by IBM. Was also used in later 478x ATMs manufactured with Diebold. IBM 9672 Mainframe Used as the operating system for
the Support Element (SE),[86] Was also used in later mainframe models such as the IBM 2064 and 2074.[87] See also History of the graphical user interface Multiple Virtual DOS Machine (MVDM) - OS/2 virtual DOS machine and seamless Windows integration OpenDoc - Software componentry framework standard System Object Model Team OS/2
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