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# Firefox version history

Firefox was created by Dave Hyatt and Blake Ross as an experimental branch of the Mozilla browser, first released as Firefox 1.0 on November 9, 2004. Starting with version 5.0, a rapid release cycle was put into effect, resulting in a new major version release every six weeks. This was gradually accelerated further in late 2019, so that new major releases occur on four-week cycles starting in 2020. [3]



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Browser	% of Fx	% of total
Firefox 1	_	_
Firefox 2	_	_
Firefox 3	_	_
Firefox 4	0.61%	0.02%
Firefox 5-9	_	_
Firefox 10-16	0.31%	0.01%
Firefox 17-23	_	_
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Firefox 31–37	_	_
Firefox 38-44	0.61%	0.02%
Firefox 45-51	_	_
Firefox 52-59	1.84%	0.06%
Firefox 60-67	_	_
Firefox 68-77	0.31%	0.01%
Firefox 78-90	2.15%	0.07%
Firefox 91 and 91 ESR	3.07%	0.10%
Firefox 92	_	_
Firefox 93	_	_
Firefox 94	0.92%	0.03%
Firefox 95	0.31%	0.01%
Firefox 96	0.31%	0.01%
Firefox 97	0.61%	0.02%
Firefox 98	0.61%	0.02%
Firefox 99	1.53%	0.05%
Firefox 100	10.12%	0.33%
Firefox 101	66.87%	2.18%
Firefox 102 and 102 ESR	2.76%	0.09%
Firefox 103	_	_
All variants <sup>[2]</sup>	100%	3.26%

## **Current and future releases**

## Current supported official releases Current supported test releases

- Firefox 103.0
- Firefox 102.1.0 ESR
- Firefox 91.12.0 ESR

- Firefox 104.0 Developer Edition
- Firefox 104.0 Beta
- Firefox 105.0 Nightly

#### **Future official releases**

#### **Future test releases**

#### Rapid

- Firefox 104.0
- Firefox 105.0
- Firefox 106.0
- Firefox 107.0

#### **ESR**

- Firefox 91.13 ESR
- Firefox 102.2 ESR
- Firefox 102.3 ESR
- Firefox 102.4 ESR
- Firefox 102.5 ESR

- Firefox 104.0 Developer Edition
- Firefox 104.0 Beta
- Firefox 105.0 Nightly
- Firefox 105.0 Developer Edition
- Firefox 105.0 Beta
- Firefox 106.0 Nightly
- Firefox 106.0 Developer Edition
- Firefox 106.0 Beta
- Firefox 107.0 Nightly
- Firefox 107.0 Developer Edition
- Firefox 107.0 Beta
- Firefox 108.0 Nightly
- Firefox 108.0 Developer Edition
- Firefox 108.0 Beta
- Firefox 109.0 Nightly

## Early versions

## Rapid releases

In April 2011, the development process was split into several "channels", each working on a build in a different stage of development. The most recent available build is called "Nightly Builds" and offers the latest, untested features and updates. The "Aurora" build is up to six weeks behind "Nightly" and offers functionality that has undergone basic testing. As of version 35, the "Aurora" channel has been renamed to the "Developer Edition" channel. [4][5] The "Beta" channel is up to six weeks behind the "Aurora" build, for up to about twelve weeks compared to the most recent "Nightly" build. The "Beta" channel provides improved stability over the "Nightly" builds and is the first development milestone that has the "Firefox" logo. "Release" is the current official version of Firefox. Gecko version numbering is the same as the Firefox build version number, starting with 5.0 on Firefox 5.

The stated aim of this faster-paced process is to get new features to users faster. [6] This accelerated release cycle was met with criticism by users, as it often broke add-on compatibility, [7] as well as those who believe Firefox was simply trying to increase its version number to compare with other browsers such as Google Chrome. [8]

#### Firefox 5 through 9

Firefox 5 was released on June 21, 2011, [9] three months after the major release of Firefox 4. Firefox 5 is the first release in Mozilla's new rapid release plan, matching Google Chrome's rapid release schedule and rapid version number increments. [10] Firefox 5 has significantly improved the speed of web-related tasks, such as loading pages with combo boxes or MathML. Mozilla also integrated the HTML5 video WebM standard into the browser, allowing playback of WebM videos. [11]

Firefox 6 was released on August 16, 2011, introducing a permissions manager, new address bar highlighting (the  $\underline{\text{domain}}$   $\underline{\text{name}}$  is black while the rest of the  $\underline{\text{URL}}$  is  $\text{gray}^{[12]}$ ), streamlining the look of the site identity block, a quicker startup time, a ScratchPad JavaScript compiler, and many other new features. This update also brought the infamous feature that caused JavaScript entered in the address bar to not run. [13]

Firefox 7 was released on September 27, 2011, [14] and uses as much as 50% less [8] than Firefox 4 as a result of the MemShrink project to reduce Firefox memory usage. [15][16][17]

Firefox 7.0.1 was released a few days later, fixing a rare, but serious, issue with add-ons not being detected by the browser. Some URLs are trimmed in the address bar, so the "http://" scheme no longer appears, but "https://" is still displayed. Trailing slashes on domains are also hidden, for example: https://www.example.org/ becomes https://www.example.org. [12][19]

Firefox 8 was released on November 8, 2011<sup>[20]</sup> and prompts users about any previously installed add-ons. Upon installation, a dialog box prompted users to enable or disable the add-ons. Add-ons installed by third-party programs were disabled by default, but user-installed add-ons were enabled by default. Mozilla judged that third-party-installed add-ons were problematic, taking away user control, lagging behind on compatibility and security updates, slowing down Firefox startup and page loading time, and cluttering the interface with unused toolbars.<sup>[21]</sup>

Firefox 9 was released on December 20, 2011, includes various new features such as Type Inference, which boosts JavaScript performance up to 30%, improved theme integration for Mac OS X Lion, added two-finger swipe navigation for Mac OS X Lion, added support for querying Do Not Track status via JavaScript, added support for font-stretch, improved support for text-overflow, improved standards support for HTML5, MathML, and CSS, and fixed several security problems. It also features a large list of bug fixes. [22]

		Release history of Firefox 5-9
Version	Release date <sup>[23]</sup>	Release type and highlights <sup>[t 1]</sup>
		Official Firefox 5.0 release.[9]
5.0	June 21, 2011	<ul> <li>Better standards support for HTML5, CSS3, MathML, XHR, and SMIL</li> <li>Better visibility for the Do not track header preference<sup>[24]</sup></li> <li>Stability and security improvements<sup>[25][26][27]</sup></li> <li>Better tuned HTTP idle connection logic<sup>[24]</sup></li> <li>Improved canvas, JavaScript, memory, and networking performance</li> <li>Improved spell checking for some locales</li> <li>Improved desktop environment integration for Linux users</li> <li>Better WebGL security (WebGL content can no longer load cross-domain textures). [28]</li> <li>Background tabs have setTimeout and setInterval clamped to 1000 ms to improve performance<sup>[29]</sup></li> <li>Gecko version number bumped to 5.0 to match (and from then on stay synced to) Firefox's major version number. [30]</li> <li>Added support for CSS animations.</li> <li>The Do-Not-Track header preference has been moved to increase discoverability.</li> <li>Tuned HTTP idle connection logic for increased performance.</li> <li>Improved canvas, JavaScript, memory, and networking performance.</li> <li>Improved standards support for HTML5, XHR, MathML, SMIL, and canvas.</li> <li>Improved spell checking for some locales.</li> <li>Improved desktop environment integration for Linux users.</li> <li>WebGL content can no longer load cross-domain textures.</li> <li>Background tabs have setTimeout and setInterval clamped to 1000 ms to improve performance.</li> </ul>
5.0.1	July 11, 2011	<ul> <li>Off-cycle stability update for Mac OS X only.</li> <li>Fixed an issue in Mac OS X 10.7 that could cause Firefox to crash[31]</li> <li>Fixed an issue caused by Apple's "Java for Mac OS X 10.6 Update 5" where the Java plugin would not be loaded[32]</li> <li>End-of-life 5.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases</li> </ul>
		5Bjoduinn.2C5D) on August 16, 2011.
6.0	August 16, 2011	Official Firefox 6.0 release.[13]  about:permissions, a permissions manager. The user can choose what information can be shared with sites, e.g. location.  The address bar now highlights the domain of the website you're visiting.  Streamlined the look of the site identity block.  Added support for the latest draft version of WebSockets with a prefixed API.  Added support for EventSource / server-sent events.  Added support for window.matchMedia.  Added Scratchpad, an interactive JavaScript prototyping environment.  Added a new Web Developer menu item and moved development-related items into it.  Improved usability of the Web Console.  Improved the discoverability of Firefox Sync.  Reduced browser startup time when using Panorama.  Fixed several stability and security issues.
6.0.1	August 30, 2011	<ul> <li>Off-cycle security update.</li> <li>Revoked the root certificate for DigiNotar due to fraudulent SSL certificate issuance. [33]</li> </ul>
6.0.2	September 6, 2011	Off-cycle security update.[34]  Removed trust exceptions for certificates issued by Staat der Nederlanden Resolved an issue with gov.uk websites. Last release for Android 2.0  End-of-life 6.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on September 27, 2011.
7.0	September 27, 2011	Official Firefox 7.0 release.[14]  Drastically improved memory handling for certain use cases. Added a new rendering backend to speed up Canvas operations on Windows systems. Bookmark and password changes now sync almost instantly when using Firefox Sync. The http:// URL prefix is now hidden by default. Added support for text-overflow: ellipsis.

		<ul> <li>Added support for the Web Timing specification.</li> <li>Enhanced support for MathML.</li> <li>The WebSocket protocol has been updated from version 7 to version 8.</li> <li>Added an opt-in system for users to send performance data back to Mozilla to improve future versions of Firefox.</li> <li>Fixed several security and stability issues.</li> </ul> Off-cycle security and stability update.[18]
7.0.1	September 29, 2011	<ul> <li>Fixed a rare issue where some users could find one or more of their add-ons hidden after a Firefox update.</li> <li>Last release for Maemo.</li> <li>End-of-life 7.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on November 8, 2011.</li> </ul>
8.0	November 8, 2011	Official Firefox 8.0 release. [20]      Add-ons installed by third-party programs are now disabled by default.      Added a one-time add-on selection dialog to manage previously installed add-ons.      Added Twitter to the search bar.      Added a preference to load tabs on demand, improving startup time when windows are restored.      Improved performance and memory handling when using <audio> and <video> elements.      Added Cross-Origin Resource Sharing (CORS) support for cross-domain textures in WebGL.      Added support for HTML5 context menus.      Added support for insertAdjacentHTML().      Improved CSS hyphen support for many languages.      Improved WebSocket support.  Changes during betas  Removed support for new tab animation due to incompatibilities with some extensions.</video></audio>
8.0.1	November 21, 2011	Off-cycle security and stability update.[35]  Fixed Mac OS X crash that occurred in certain instances when a Java Applet is loaded with Java SE 6 version 1.6.0_29 installed.  Fixed Windows startup crash caused by RoboForm versions older than 7.6.2.  End-of-life 8.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on December 20, 2011.
9.0	December 20, 2011	Official Firefox 9.0 release. [22]  Added type inference, significantly improving JavaScript performance.  Improved theme integration for Mac OS X Lion.  Added two finger swipe navigation for Mac OS X Lion.  Added support for querying Do Not Track status via JavaScript.  Added support for the font-stretch CSS property.  Improved support for the text-overflow CSS property.  Improved standards support for HTML5, MathML, and CSS.
9.0.1	December 21, 2011	Off-cycle security and stability update.[36]  • Fixed crash on Windows, Mac and Linux.  End-of-life 9.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on January 31, 2012.

### Firefox 10 through 16

Firefox 10 and Firefox ESR 10 were released on January 31, 2012. [37][38] Firefox 10 added a full screen API and improved WebGL performance, support for CSS 3D Transforms and for anti-aliasing in the WebGL standard for hardware-accelerated 3D graphics. These WebGL updates mean that more complex site and Web app animations can render smoothly in Firefox, and that developers can animate 2D objects into 3D without plug-ins. [39][40] It also introduced a new CSS Style Inspector, which allow users to check out a site's structure and edit the CSS without leaving the browser. [37] Firefox 10 assumed all addons made for at least Firefox 4 were compatible. The add-on developer is able to alert Mozilla that the add-on is incompatible, overriding compatibility with version 10 or later. This new rule also does not apply to themes. [41]

Firefox 10 ESR is the first *Extended Support Release (ESR)* as previously on January 10, 2012, where the Mozilla Foundation announced the availability of an ESR version of Firefox. [42] Firefox ESR is intended for groups who deploy and maintain the desktop environment in large organizations such as universities and other schools, county or city governments and businesses. During the extended cycle, no new features will be added to a Firefox ESR; only high-risk/high-impact security

vulnerabilities or major stability issues will be corrected.[43]

Firefox 11 was released on March 13, 2012. Firefox 11 introduced many new features, including migration of bookmarks and history from Google Chrome, [45] SPDY integrated services, Page Inspector Tilt (3D View), Add-on Sync, redesigned HTML5 video controls, and the Style Editor (CSS). [46] The update also fixed many bugs, and improved developer tools. [47]

Firefox 12 was released on April 24, 2012. Firefox 12 introduced few new features, but it made many changes and laid the ground work for future releases. Firefox 12 for Windows added the Mozilla Maintenance Service which can update Firefox to a newer version without a <u>UAC</u> prompt. It also added line numbers in the "Page Source" and centered find in page results. There were 89 improvements to Web Console, Scratchpad, Style Editor, Page Inspector, Style Inspector, HTML view and Page Inspector 3D view (Tilt). Many bugs were fixed, as well as



3D page inspector, a feature of versions 11 to 46. [44]

many other minor under-the-hood changes. [50][51] Firefox 12 is the final release to support Windows 2000 and Windows XP RTM & SP1. [52][53]

Firefox 13 was released on June 5, 2012. [54] Starting with this version, Windows support was exclusively for Windows XP SP2/SP3, Windows Vista, and Windows 7. Firefox 13 adds and updates several features, such as an updated new tab [55] and home tab page. [56] The updated new tab page is a feature similar to the Speed Dial already present in Opera, Google Chrome, Apple Safari, and Internet Explorer. The new tab page will display nine of the user's most visited websites, along with a cached image. In addition to the updated new tab and home tab page, Mozilla has added a user profile cleaner/reset, reduced hang times, and implemented tabs on demand. [57] The user profile cleaner/reset provides a way for users to fix Firefox errors and glitches that may occur. [58] Mozilla's tabs on demand restores tabs that were open in the previous session, but will keep the tabs unloaded until the user requests to view the page. [59]

Firefox 14 was released on June 26, 2012, for mobile devices only, just outside the regular release schedule of the web browser. [60] In order to sync the version numbers of the desktop and mobile versions of Firefox, Mozilla decided to release version 14.0.1 for both mobile and desktop on July 17, 2012, instead of Firefox 14 version 14.0 for the desktop and version 14.0.1 for mobile devices. [60]

Firefox 14 introduces a new hang detector (similar to how Mozilla currently collects other data) that allows Mozilla to collect, analyze, and identify the cause of the browser freezing/hanging. Mozilla uses this information to improve the responsiveness of Firefox for future releases. [61] In addition to tackling freezing and not-responding errors that occur because of Firefox, Mozilla implemented opt-in activation for plugins such as <u>Flash</u> and <u>Java</u>. Mozilla wants to reduce potential problems that could arise through the unwanted use of third-party applications (malware, freezing, etc.). [62]

Firefox 15 was released on August 28, 2012, with a "Responsive Design View" developer tool, [63] adds support for the Opus audio format, and adds preliminary native PDF support (disabled by default). [64]

Firefox 15 introduced silent updates, an automatic update that will update Firefox to the latest version without notifying the user, [65] a feature that the web browsers Google Chrome and Internet Explorer 8 and above have already implemented, [66][67] although the user was able to disable that function. [68] The startup time in Firefox 15 was improved for Windows users. [69]

Firefox 16 was released on October 9, 2012, fixing outstanding bugs of the new features in  $\underline{\text{Mac OS X Lion}}$ . There were improvements made to startup speed when a user wants to restore a previous session. [70] Support for viewing  $\underline{\text{PDF}}$  files inline was added in placement of a plugin. Support for web apps was added. Opus audio format is now enabled by default. [71]

The roll-out of Firefox 16 revision 16.0.0 was stopped on October 10, 2012, after Mozilla detected a security flaw and recommended downgrading to 15.0.1 until the issue could be fixed. The security flaw was fixed in version 16.0.1, which was released the following day, October 11, 2012. [73]

	Release history of Firefox 10-16		
Version	Release date <sup>[23]</sup>	Release type and highlights $^{[t\;1]}$	
		Official Firefox 10.0 release.[37]	
10.0	January 31, 2012	<ul> <li>Most add-ons are now compatible with new versions of Firefox by default.</li> <li>Anti-Aliasing for WebGL is now implemented.</li> <li>CSS3 3D-Transforms are now supported.</li> <li>New <bdi></bdi> element for bi-directional text isolation, along with supporting CSS properties.</li> <li>Full Screen APIs allow you to build a web application that runs full screen.</li> </ul>	
10.0.1	February 10, 2012	Off-cycle security and stability update.[74]	
		Official Firefox 17.0 Extended Support Release (ESR).	
10.0esr	January 31,	First Extended Support Release (ESR).[38]	
20.005.	2012	Same changelogs of 10.0	
	- 1 - 10	Off-cycle security and stability update.	
10.0.1esr	February 10, 2012	Same changelogs of 10.0.1	
		Off-cycle security and stability update.[75]	
	February 16,	Fixed Java applets that sometimes caused text input to become unresponsive.	
10.0.2	2012	End-of-life 10.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on March 13, 2012.	
		Off-cycle security and stability update.	
10.0.2esr	February 16, 2012	Same changelogs of 10.0.2	
		Regular security and stability update.[76]	
10.0.3esr	March 13, 2012	<ul> <li>Security fixes<sup>[77]</sup></li> <li>Fixed web workers running out of memory, affecting some add-ons used by organizations.</li> </ul>	
		Regular security and stability update. [78]	
10.0.4esr	April 24, 2012	<ul> <li>Fixed an issue in Firefox ESR 10.0.3 that caused the "Whats New" page to open after an update.</li> <li>Fixed extensions.checkCompatibility.* prefs not working in ESR releases.</li> </ul>	
1005		Regular security and stability update.[79]	
10.0.5esr	June 5, 2012	• Fixed the 10.0.5 Firefox top crash with signature [@ GLEngine@0x620cf ].	
10.0.6esr	July 17, 2012	Regular security and stability update. [80]	
10.0.0631	July 17, 2012	Fixed some text editing inconsistencies.	
		Regular security and stability update.[81]	
10.0.7esr	August 28, 2012	<ul> <li>Fixed contenteditable breaks in 10.0.7 that middle-click to open links.</li> <li>Addressed a fix that allows specifying wildcard that matches all simple netbiosnames in network.automatic-ntlm-auth.trusted-uris.</li> </ul>	
10.0.8esr	October 9, 2012	Regular security and stability update. <sup>[82]</sup>	
10.0.9esr	October 12, 2012	Off-cycle security update.[83]	
10.0.10esr	October 26, 2012	Off-cycle security update.[84]	
10.0.11esr	November 20, 2012	Off-cycle security update.[85]	
10.0.12esr	January 8, 2013	Regular security update. End-of-life 10.0.x ESR product line (https://wiki.mozilla.org/Enterprise/Firefox/Extend edSupport:Proposal Proposal) on February 19, 2013.	
		Official Firefox 11.0 release.[47]	
11.0	March 13, 2012	<ul> <li>Migration of settings from Google Chrome.</li> <li>SPDY protocol support (disabled by default).</li> <li>RFC 6455 WebSocket protocol support with an unprefixed API.</li> </ul>	

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		<ul><li>Page Inspector Tilt (3D View).</li><li>Sync Add-ons.</li></ul>
		Redesigned HTML5 video controls.
		Style Editor (CSS).
		End-of-life 11.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on April 24, 2012.
		Official Firefox 12.0 release.[51]
12.0	April 24, 2012	<ul> <li>Windows: Firefox is now easier to update with one less prompt (User Account Control).</li> <li>Last release for Windows 2000.<sup>[87]</sup></li> <li>Reintroduced on-demand loading of pinned tabs after restoring a session.</li> <li>Page Source now has line numbers.</li> <li>Line breaks are now supported in the title attribute.</li> <li>Improvements to "Find in Page" to center search result.</li> <li>URLs pasted into the download manager window are now automatically downloaded.</li> <li>Support for the text-align-last CSS property has been added.</li> <li>Experimental support for ECMAScript 6 Map and Set objects has been implemented.</li> <li>Some TinyMCE-based editors failed to load.</li> <li>OS X: WebGL performance may be degraded on some hardware.</li> <li>End-of-life 12.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on June 5, 2012.</li> </ul>
		Official Firefox 13.0 release.[54]
13.0	June 5, 2012	<ul> <li>When opening a new tab, users are now presented with their most visited pages.</li> <li>The default home page now has quicker access to bookmarks, history, settings, and more.</li> <li>SPDY protocol now enabled by default for faster browsing on supported sites.</li> <li>Restored background tabs are not loaded by default for faster startup.</li> <li>Smooth scrolling is now enabled by default.</li> <li>72 total improvements to Page Inspector, HTML panel, Style Inspector, Scratchpad and Style Editor.</li> <li>The column-fill CSS property has been implemented.</li> <li>Experimental support for ECMAScript 6 Map and Set objects has been implemented.</li> <li>Support for the CSS3 background-position property extended syntax has been added.</li> <li>The :invalid pseudo-class can now be applied to the element.</li> <li>The CSS turn angle unit is now supported.</li> </ul>
		Off-cycle security and stability update. <sup>[88]</sup>
13.0.1	June 15, 2012	<ul> <li>Fixed an issue when Windows Messenger did not load in Hotmail, and the Hotmail inbox did not auto-update.</li> <li>Fixed the Hebrew text that was sometimes rendered incorrectly.</li> <li>Fixed an issue in Adobe Flash 11.3 that sometimes caused a crash on quit.</li> <li>End-of-life 13.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases</li> </ul>
		5Bjoduinn.2C5D) <i>on July 17, 2012</i> .
		Android
14.0	June 26, 2012	<ul> <li>Android</li> <li>Official Firefox Mobile 14.0 release. [60]</li> <li>Google searches now utilize HTTPS.</li> <li>Full screen support for Mac OS X Lion implemented.</li> <li>Plugins can now be configured to only load on click (about:config).</li> <li>The Awesome Bar now auto-completes typed URLs, a new feature that will suggest a website that user frequently visits for a faster browsing. [89]</li> <li>Improved site identity manager, to prevent spoofing of an SSL connection with favicons.</li> <li>Pointer Lock API implemented.</li> <li>New API to prevent your display from sleeping.</li> <li>New text-transform and font-variant CSS improvements for Turkic languages and Greek.</li> <li>Long URLs now extend the status bar almost to the whole width of the viewport.</li> <li>Optional Gstreamer backend for HTML5 video to allow H.264 playback. [90] This allows playback of H.264 if the codec is installed as a GStreamer plugin. GStreamer support is not enabled in the official builds, but can be enabled at compile time.</li> </ul>
		Desktop
14.0.1	July 17, 2012	Official Firefox Desktop 14.0 release.[91]
		<ul> <li>Fixed the GIF animation that can get stuck when src and image size are changed.</li> <li>Mac OS X: Fixed the nsCocoaWindow::ConstrainPosition that uses wrong screen in multi-display setup.</li> </ul>

		• Fixed the CSS :hover regression when an element's class name is set by JavaScript.  End-of-life 14.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on August 28, 2012.
		Official Firefox 15.0 release. [64]
15.0	August 28, 2012	<ul> <li>Silent update: Background updates.</li> <li>Support for SPDY networking protocol v3.</li> <li>WebGL enhancements, including compressed textures for better performance.</li> <li>Localization in Maithili.</li> <li>Optimized memory usage for add-ons.</li> <li>JavaScript debugger integrated into developer tools.</li> <li>New layout view added to Inspector.</li> <li>High precision event timer implemented.</li> <li>The CSS word-break property has been implemented.</li> <li>New responsive design tool allows web developers to switch between desktop and mobile views of sites.</li> <li>Native support for the Opus audio format added.</li> <li>The <audio> and <video> elements now support the played attribute.</video></audio></li> <li>The source element now supports the media attribute.</li> <li>Fixed the focus rings that keep growing when repeatedly tabbing through elements.</li> </ul>
15.0.1	September 6, 2012	Off-cycle stability update. <sup>[92]</sup> Addressed a fix where sites visited while in Private Browsing mode could be found through manual browser cache inspection.  End-of-life 15.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on October 9, 2012.
16.0	October 9, 2012	Official Firefox 16.0 release.  Firefox on Mac OS X now has preliminary VoiceOver support turned on by default.  Initial web app support (Windows/Mac/Linux).  Acholi and Kazakh localizations added.  Improvements around JavaScript responsiveness through incremental garbage collection.  New Developer Toolbar with buttons for quick access to tools, error count for the Web Console, and a new command line for quick keyboard access.  CSS3 Animations, Transitions, Transforms and Gradients unprefixed.  Recently opened files list in Scratchpad implemented.  Fixed an issue where debugger breakpoints do not catch on page reload.  No longer supporting MD5 as a hash algorithm in digital signatures.  Opus support by default.  Reverse animation direction has been implemented.  Per tab reporting in about:memory.  User Agent strings for pre-release Firefox versions now show only major version.
16.0.1	October 11, 2012	Off-cycle security and stability update.[73]
16.0.2	October 26, 2012	Off-cycle security and stability update. [93]  Final release to support Mac OS X Leopard End-of-life 16.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on November 20, 2012.

### Firefox 17 through 23

Firefox 17 and Firefox ESR 17 were released on November 20,  $2012.^{\boxed{[95]}}$  It was not planned to bring as many user-facing features as previous releases, it brings improved display of location bar results,  $^{\boxed{[96]}}$  improvements to the silent update mechanism for users with incompatible add-ons,  $^{\boxed{[97]}}$  and refinements to the Click-To-Play system introduced in Firefox  $14.^{\boxed{[98]}}$  A new feature for developers, an HTML tree editor  $^{\boxed{[99]}}$  is also included. Firefox 17 is the first version of the browser that uses SpiderMonkey  $17.^{\boxed{[100]}}$ 

Starting with Firefox 17, Mac OS X support is exclusively for Snow Leopard, Lion, and Mountain Lion.

Firefox 18 was released on January 8,  $2013.^{[101]}$  A new feature for Firefox 18 is  $\underline{\text{IonMonkey}}$ , Mozilla's next generation JavaScript engine,  $\underline{^{[102]}}$  it also uses some functions of WebRTC.  $\underline{^{[103]}}$ 

Firefox 19 was released on February 19, 2013, featuring a built-in PDF viewer.[104]



Logo used from Firefox 23 to Firefox 56

Firefox 20 was released on April 2, 2013, introduced a panel-based download manager, [105][106] along with H.264 decoding

on the <video> tag (on Windows only), and per-window private browsing (per-tab private browsing on Android). It also includes a new developer toolbox, that combines all developer tools into one panel.

Firefox 21 was released on May 14, 2013. The Social API now supports multiple providers, and an enhanced three-state UI for Do Not Track (DNT). (107)

Firefox 22 was released on June 25, 2013. WebRTC is now enabled by default. Partial CSS Flexbox support was added (flex-wrap support was scheduled for Firefox  $28^{\boxed{109}}$ ). A new feature for Firefox 22 was OdinMonkey, Mozilla's next generation JavaScript engine.

Firefox 23 was released on August 6, 2013. It includes an updated Firefox logo, mixed content blocking enabled by default to defend against man-in-the-middle attacks, implementation of the <input type="range"> form control attribute in HTML5, dropping support for the <bli>blink> HTML element<br/> as well as the text-decoration:blink CSS element, the restriction to have to "switch to a different search provider across the entire browser", and a global browser console, a new network monitor among other things. JavaScript is automatically enabled by the update, without regard to the previous setting, and the ability to turn it off has been removed from the interface; [110] the "contentious" change was made because many websites depend on JavaScript and it was felt that users unaware that they had disabled JavaScript were attributing the resulting unpredictable layout to software bugs in Firefox. [111]

Release history of Firefox 17-23		
Version	Release date <sup>[23]</sup>	Release type and highlights $^{[t\;1]}$
17.0	November 20, 2012	Official Firefox 17.0 release.[95]  First revision of the Social API and support for Facebook Messenger.  Click-to-play blocklisting implemented to prevent vulnerable plugin versions from running without the user's permission.  Updated Awesome Bar experience with larger icons.  Mac OS X 10.5 is no longer supported.  JavaScript Maps and Sets are now iterable.  SVG FillPaint and StrokePaint implemented.  Improvements that make the Web Console, Debugger and Developer Toolbar faster and easier to use.  New Markup panel in the Page Inspector allows easy editing of the DOM.  Sandbox attribute for iframes implemented, enabling increased security.  Over twenty performance improvements, including fixes around the New Tab page.  Fixed page scrolling on sites with fixed headers.
17.0esr	November 20, 2012	Official Firefox 17.0 Extended Support Release (ESR).
17.0.1	November 30, 2012	Off-cycle stability update.[112]  Reverted user agent change causing some website incompatibilities. Fixed font rendering issue.  End-of-life 17.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on January 8, 2013.
17.0.1esr	November 30, 2012	Off-cycle stability update.
17.0.2esr	January 8, 2013	Regular security and stability updates.  • Fixed improvements to the Click-to-Play vulnerable plugin blocklisting feature. [113]
17.0.3esr	February 19, 2013	Regular security update.[114]
17.0.4esr	March 7, 2013	Regular security update.[115]
17.0.5esr	April 2, 2013	Regular security update.[116]
17.0.6esr	May 10, 2013	Regular security update.[117]
17.0.7esr	June 25, 2013	Regular security update.[118]
17.0.8esr	August 6, 2013	Regular security update.[119]
17.0.9esr	September 17, 2013	Regular security update.[120]
17.0.10esr	October 29, 2013	Regular security update.[121]
17.0.11esr	November 15, 2013	Off-cycle stability update.[122]  • Updated ESR17 to NSS 3.14.5 RTM.  End-of-life 17.0.x ESR product line (https://wiki.mozilla.org/Enterprise/Firefox/ExtendedSupport:Poposal#Proposal) on December 10, 2013.
18.0	January 8, 2013	Official Firefox 18.0 release.[103]  Faster JavaScript performance via lonMonkey compiler.  Support for Retina displays on OS X 10.7 and up.  Preliminary support for WebRTC.  Better image quality with Mozilla's new HTML scaling algorithm.  Performance improvements around tab switching.  Support for new DOM property window.devicePixelRatio.  Improvement in startup time through smart handling of signed extension certificates.  Support for W3C touch events implemented, taking the place of MozTouch events.  Disable insecure content loading on HTTPS pages.  Improved responsiveness for users on proxies.  Changes during Aurora releases

		<ul> <li>Adds a Metro user interface on Windows 8.</li> </ul>
		Off-cycle stability update.[123]
18.0.1	January 18, 2013	<ul> <li>Fixed problems involving HTTP Proxy Transactions.</li> <li>Fixed unity player crashes on Mac OS X.</li> <li>Disabled HIDPI support on external monitors to avoid rendering glitches.</li> </ul>
18.0.2	February 5, 2013	Off-cycle stability update. End-of-life 18.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and _Previous_Releases5Bjoduinn.2C5D) on February 19, 2013.
		Official Firefox 19.0 release.[104]
19.0	February 19, 2013	<ul> <li>Built-in PDF Viewer.</li> <li>Canvas elements can export their content as an image blob using canvas.toBlob().</li> <li>Startup performance improvements.</li> <li>Debugger now supports pausing on exceptions and hiding non-enumerable properties.</li> <li>Remote Web Console is available for connecting to Firefox on Android or Firefox OS (experimental, set devtools.debugger.remote-enabled to true).</li> <li>There is now a Browser Debugger available for add-on and browser developers (experimental, set devtools.chrome.enabled to true).</li> <li>Web Console CSS links now open in the Style Editor.</li> <li>CSS @page is now supported.</li> <li>CSS viewport-percentage length units implemented (vh, vw, vmin and vmax).</li> <li>CSS text-transform now supports full-width.</li> <li>Fixed certain valid WebGL drawing operations that were incorrectly rejected, leaving incomplete rendering in affected pages.</li> <li>Fixed an issue that starting Firefox with -private flag incorrectly claims you are not in Private Browsing mode.</li> <li>Fixed plugins that stop rendering when the top half of the plugin is scrolled off the top of the page, in HiDPI</li> </ul>
	February 27,	mode.  Off-cycle stability update.[125]
19.0.1	2013	<ul> <li>Windows 8 only: Fixed stability issue for some AMD Radeon HD graphics cards.</li> </ul>
19.0.2	March 7, 2013	<ul> <li>Off-cycle security update.[126]</li> <li>Released to address a security vulnerability in the HTML editor.</li> <li>Last release for Android 2.1</li> <li>End-of-life 19.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on April 2, 2013.</li> </ul>
20.0	April 2, 2013	Per-window Private Browsing.  New download experience.  Ability to close hanging plugins, without the browser hanging.  Continued performance improvements around common browser tasks (page loads, downloads, shutdown, etc.).  Continued implementation of draft <a href="ECMAScript">ECMAScript</a> 6 - clear() and Math.imul.  New <a href="JavaScript">JavaScript</a> Profiler tool.  getUserMedia implemented for web access to the user's camera and microphone (with user permission). <a href="Canvas">Canvas</a> now supports blend modes.  Various <a href="Various">Various</a> <a< td=""></a<>
20.0.1	April 11, 2013	Off-cycle security update. <sup>[127]</sup> ■ Windows-only update to handle issues around handling UNC paths.  End-of-life 20.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on May 14, 2013.
21.0	May 14, 2013	Official Firefox 21.0 release.[107]  The Social API now supports multiple providers. Enhanced three-state UI for Do Not Track (DNT). Preliminary implementation of Firefox Health Report. Firefox will suggest how to improve your application startup time if needed. Ability to Restore removed thumbnails on New tab Page. CSS -moz-user-select:none selection changed to improve compatibility with -webkit-user-select:none. Graphics related performance improvements.

		<ul> <li>Removed E4X support from SpiderMonkey.</li> <li>Implemented Remote Profiling.</li> <li>Integrated, Add-on SDK loader and API libraries into Firefox.</li> <li>Added support for <main> element.</main></li> <li>Implemented scoped stylesheets.</li> <li>Fixed: Some function keys may not work when pressed.</li> <li>Fixed: Browsing and Download history clearing needs unification to avoid confusion on clearing download history.</li> <li>End-of-life 21.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on June 25, 2013.</li> </ul>
22.0	June 25, 2013	Official Firefox 22.0 release. [108]  WebRTC is now enabled by default.  Windows: Firefox now follows display scaling options to render text larger on high-res displays.  Mac OS X: Download progress in Dock application icon.  HTML5 audio/video playback rate can now be changed.  Social services management implemented in Add-ons Manager.  asm.js optimizations (OdinMonkey) enabled for major performance improvements.  Improved WebGL rendering performance through asynchronous canvas updates.  Plain text files displayed within Firefox will now word-wrap.  For user security, the  Components  object is no longer accessible from web content.  Improved memory usage and display time when rendering images.  Pointer Lock API can now be used outside of fullscreen.  CSS3 Flexbox implemented and enabled by default.  New Web Notifications API implemented.  Added clipboardData API for JavaScript access to a user's clipboard.  New built-in font inspector.  New HTML5 <data> and <time> elements  Fixed: Scrolling using some high-resolution-scroll aware touchpads feels slow.  End-of-life 22.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on August 6, 2013.</time></data>
23.0	August 6, 2013	In this Version Mozilla changed the Firefox Logo.  Mixed content blocking enabled to protects users from man-in-the-middle attacks and eavesdroppers on HTTPS pages.  Options panel created for Web Developer Toolbox.  "Enable JavaScript" preference checkbox has been removed and user-set values will be reset to the default.  Improved about:memory's functional UI.  Simplified interface for notifications of plugin installation.  Enabled DXVA2 on Windows Vista+ to accelerate H.264 video decoding.  Users can now switch to a new search provider across the entire browser.  CSP policies using the standard syntax and semantics will now be enforced. <input type="file"/> rendering improvements.  Replaced fixed-ratio audio resampler in webrtc.org capture code with Speex resampler and eliminated pseudo-44,000 Hz rate.  "Load images automatically" and "Always show the tab bar" checkboxes removed from preferences and reset to defaults.  HTML5 <input type="range"/> form control implemented.  Write more accessible pages on touch interfaces with new ARIA role for key buttons.  Social share functionality.  Added unprefixed requestAnimationFrame.  Implemented a global browser console.  Dropped blink effect from text-decoration: blink; and completely removed <bli>blink&gt; element.</bli>
23.0.1	August 16, 2013	Pixed rendering glitches on H.264 video only in Firefox 23 on Windows Vista.  Fixed spell checking that was broken with non-ASCII characters in profile path.  Fixed audio static/"burble"/breakup in Firefox to Firefox WebRTC calls.  End-of-life 23.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on September 17, 2013.

### Firefox 24 through 30

Firefox 24 and Firefox 24 ESR were released on September 17, 2013. The release includes support for the new scrollbar style in Mac OS X 10.7 (and newer), closing tabs to the right, an improved browser console for debugging, and improved SVG rendering, among other things. [129] It is the first version of the browser that uses SpiderMonkey 24. [130]

Firefox 25 was released on October 29, 2013. Firefox 25 Nightly was at one point slated to include the Australis theme, but Australis did not actually land on Nightly until Firefox 28, [131] did not make it to Firefox 28 Aurora channel, and was finally available with Firefox 29. [132] This release added support for <iframe srcdoc> attribute, background-attachment:local in CSS, along with Web audio API support, a separate find bar for each tab and many other bug fixes. [133][134][135]



Firefox 29 with Australis interface, running on Windows 8.1

Firefox 26 was released on December 10, 2013. Firefox 26 changed the behavior of Java plugins to "click-to-play" mode instead of automatically running them. It also added support for  $\underline{\text{H.264}}$  on Linux, password manager support for script-generated fields, and the ability for Windows users without advanced write permissions to update Firefox, as well as many bug fixes and developer-related changes.  $\underline{^{[136]}}$ 

Firefox 27 was released on February 4, 2014. It adds improved Social API and SPDY 3.1 support, as well as enabling of TLS 1.1 and 1.2 by default after having been tested through a toggle in about:config since version 24, released on September 17, 2013.<sup>[137]</sup> Also, it brings many bug fixes, security improvements, and developer-related changes.<sup>[138]</sup>

Firefox 28 was released on March 18, 2014. It added support for VP9 video decoding and support for Opus in WebM.  $\frac{[139]}{Android}$ , features such as predictive lookup from the address bar, quick share buttons and support for  $\frac{OpenSearch}{Android}$  were  $\frac{OpenSearch}{Android}$  were

Firefox 29 was released on April 29, 2014, and includes the Australis interface, it also removes the add-on bar and moves its content to the navigation bar. [141] Additionally, it introduced automatic correction of protocol typos to the address bar, meaning that, for example, ttps:// is automatically corrected to https://. [142]

Firefox 30 was released on June 10, 2014. It adds support for  $\underline{\text{GStreamer}}$  1.0 and a new sidebar button, and most plugins are not activated by default. [143][144]

Release history of Firefox 24-30		
Version	Release date <sup>[23]</sup>	Release type and highlights <sup>[t 1]</sup>
24.0	September 17, 2013	<ul> <li>Official Firefox 24.0 release.<sup>[129]</sup></li> <li>Support for new scrollbar style in Mac OS X 10.7 and newer.</li> <li>Implemented Close tabs to the right.</li> <li>Social: Ability to tear-off chat windows to view separately by simply dragging them out.</li> <li>Accessibility related improvements on using pinned tabs.</li> <li>Removed support for Revocation Lists feature.</li> <li>Performance improvements on New Tab Page loads.</li> <li>Major SVG rendering improvements around Image tiling and scaling.</li> <li>Improved and unified Browser console for enhanced debugging experience, replacing existing Error console.</li> <li>Removed support for sherlock files that are loaded from application or profile directory.</li> <li>Replaced fixed-ratio audio resampler in webrtc.org capture code with Speex resampler and eliminated pseudo-44,000 rate.</li> <li>End-of-life 24.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on October 29, 2013.</li> </ul>
24.0esr	September 17, 2013	Official Firefox 24.0 Extended Support Release (ESR).[129]
24.1.0esr	October 29, 2013	Regular security update.[145]
24.1.1esr	November 15, 2013	Off-cycle stability update.[146]  • Updated branches that use 4.10 RTM to 4.10.2 RTM.  • Updated Mozilla to NSS 3.15.3 (new alternative NSS branch) to pick up a few fixes.  • Fixed an issue where some UI strings in Firefox 24.1.0 ESR I10n builds are in English.
24.2.0esr	December 10, 2013	Regular security update.[147]
24.3.0esr	February 4, 2014	Regular security update.[148]
24.4.0esr	March 18, 2014	Regular security update.[149]
24.5.0esr	April 29, 2014	Regular security update.[150]
24.6.0esr	June 10, 2014	Regular security update.[151]
24.7.0esr	July 22, 2014	Regular security update.[152]
24.8.0esr	September 2, 2014	Regular security update.[153]
24.8.1esr	September 24, 2014	Off-cycle security update. End-of-life 24.x.x ESR product line (https://wiki.mozilla.org/Enterprise/Firefox/ExtendedSupport:Proposal#Proposal) on October 14, 2014.
25.0	October 29, 2013	Official Firefox 25.0 release.[133]     Web Audio support.     The find bar is no longer shared between tabs.     If away from Firefox for months, you now will be offered the option to migrate another browser's history and settings.     Resetting Firefox no longer clears your browsing session.     CSS3 background-attachment:local support to control background scrolling.     Many new ES6 functions implemented.     if rame document content can now be specified inline.     Fixed blank or missing page thumbnails when opening a new tab.
25.0.1	November 15, 2013	Off-cycle security and stability update. [155]  • Fixed pages that sometimes wouldn't load without first moving the cursor.  End-of-life 25.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on December 10, 2013.
26.0	December 10, 2013	Official Firefox 26.0 release.[136]  All Java plug-ins are defaulted to 'click to play'.  Password manager now supports script-generated password fields.  Updates can now be performed by Windows users without write permissions to Firefox install directory (requires Mozilla Maintenance Service).

	<ul> <li>Support for H.264 on Linux if the appropriate gstreamer plug-ins are installed.</li> <li>Support for MP3 decoding on Windows XP, completing MP3 support across Windows OS versions.</li> <li>CSP implementation now supports multiple policies, including the case of both an enforced and Report-Only policy, per the specification.</li> <li>Social API now supports Social Bookmarking for multiple providers through its SocialMarks functionality.</li> <li>Math.ToFloat32 takes a JavaScript value and converts it to a Float32, whenever possible.</li> <li>There is no longer a prompt when websites use appcache.</li> <li>Support for the CSS image orientation property.</li> <li>New App Manager allows you to deploy and debug HTML5 webapps on Firefox OS phones and the Firefox OS Simulator.</li> <li>IndexedDB can now be used as an "optimistic" storage area so it doesn't require any prompts and data is stored in a pool with LRU eviction policy, in short temporary storage.</li> <li>Fixed: When displaying a standalone image, Firefox matches the Exif orientation information contained within the JPEG image.</li> <li>Fixed: Text Rendering Issues on Windows 7 with Platform Update KB2670838 (MSIE 10 Prerequisite) or on Windows 8.1.</li> </ul>
	<ul> <li>Improved page load times due to no longer decoding images that are not visible.</li> </ul>
	■ Fixed: AudioToolbox MP3 backend for Mac OS X.  Off-cycle stability mobile release. [156]
December 20, 2013	<ul> <li>Fixed the screen that distorts on some devices after tapping on search suggestion.</li> <li>Fixed: About:home is missing translations in some locales. Most affected are: ca, ga-IE, hu, ko, pt-BR, pt-PT, ro, and uk.</li> <li>Fixed: In some cases, the clip set on the page doesn't update when the addressbar hides.</li> <li>Fixed: Invalid position:fixed rendering.</li> <li>End-of-life 26.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on February 4, 2014.</li> </ul>
	Official Firefox 27.0 release.[138]
February 4, 2014	<ul> <li>You can now run more than one service at a time with Firefox SocialAPI, allowing you to receive notifications, chat and more from multiple integrated services.</li> <li>Enabled TLS 1.1 (RFC 4346) and TLS 1.2 (RFC 5246) by default.</li> <li>Added support for SPDY 3.1 protocol.</li> <li>Ability to reset style sheets using all:unset.</li> <li>You can now choose to deobfuscate javascript in the debugger.</li> <li>Added support for scrolled fieldsets.</li> <li>Implemented allow-popups directive for iframe sandbox, enabling increased security.</li> <li>CSS cursor keywords -moz-grab and -moz-grabbing have been unprefixed.</li> <li>Added support for ES6 generators in SpiderMonkey.</li> <li>Implemented support for mathematical function Math.hypot() in ES6.</li> <li>Dashed line support on Canvas.</li> <li>Had Azure/Skia content rendering working on Linux.</li> </ul>
	Off-cycle stability release.[157]
February 13, 2014	<ul> <li>Fixed stability issues with Greasemonkey and other JavaScript that used ClearTimeoutOrInterval.</li> <li>Fixed: JavaScript math correctness issue.</li> <li>End-of-life 27.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on March 18, 2014.</li> </ul>
	Official Firefox 28.0 release.[139]
March 18, 2014	<ul> <li>VP9 video decoding implemented.</li> <li>Mac OS X: Notification Center support for web notifications.</li> <li>Volume control for HTML5 audio/video.</li> <li>Support for Opus in WebM.</li> <li>Now that SPDY/3 is implemented support for SPDY/2 has been removed and servers without SPDY/3 will negotiate to HTTP/1 without any penalty.</li> <li>Support for MathML 2.0 'mathvariant' attribute.</li> <li>Background thread hang reporting.</li> <li>Support for multi-line flexbox in layout.</li> </ul>
	Android
March 24, 2014	Off-cycle stability mobile update. [158]  ■ Fixed H.264 video playback issues on several Galaxy devices.  ■ Fixed mobile-only security fix for file:paths.
	February 4, 2014  February 13, 2014  March 18, 2014

		End-of-life 28.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on April 29, 2014.
29.0	April 29, 2014	Significant new customization mode. A new menu sits in the right hand corner of Firefox and includes popular browser controls. New tabs provide an overall smoother look and fade into the background when not active. An interactive onboarding tour to guide users through the new Firefox changes. Added the ability to set up Firefox Sync by creating a Firefox account. Gamepad API finalized and enabled. Malay [ma] locale added. Clicking on a W3C Web Notification will switch to the originating tab. 'box-sizing' (dropping the -moz- prefix) implemented. Console object available in web workers. Promises enabled by default. SharedWorker enabled by default. <input type="number"/> implemented and enabled. <input type="number"/> implemented and enabled.implemented and enabled.implemented and enabled.   Enabled ECMAScript Internationalization API. Add-on bar has been removed, content moved to navigation bar. No longer possible to move tabs from the top of the browser without an add-on.
29.0.1	May 9, 2014	Off-cycle stability update. [159]  Fixed: An issue with pdf.js printing white pages. Fixed: Tabs not visible with dark themes under Windows 8.1. Fixed: Session Restore failed with a corrupted sessionstore.js file. Fixed: Seer disabled by default.  End-of-life 29.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on June 10, 2014.
30.0	June 10, 2014	<ul> <li>Official Firefox 30.0 release. [143]</li> <li>Sidebars button in browser chrome enables faster access to social, bookmark, &amp; history sidebars.</li> <li>Mac OS X command-E sets find term to selected text.</li> <li>Support for GStreamer 1.0.</li> <li>Disallowed calling WebIDL constructors as functions on the web.</li> <li>With the exception of those bundled inside an extension or ones that are whitelisted, plugins will no longer be activated by default.</li> <li>Fixes to box-shadow and other visual overflow.</li> <li>Mute and volume available per window when using WebAudio.</li> <li>Background-blend-mode enabled by default.</li> <li>Use of line-height allowed for <input type="reset button submit"/></li> <li>ES6 array and generator comprehensions implemented.</li> <li>Error stack now contains column number.</li> <li>Support for alpha option in canvas context options.</li> <li>Fixed: Ignored autocomplete="off" when offering to save passwords via the password manager.</li> <li>Fixed TypedArrays that don't support new named properties.</li> <li>End-of-life 30.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on July 22, 2014.</li> </ul>

## Firefox 31 through 37

Firefox 31 and Firefox 31 ESR were released on July 22, 2014. Both versions added search field on the new tab page and were improved to block  $\underline{\text{malware}}$  from downloaded files, along with other new features.  $\underline{^{[160]}}$  Firefox 31 ESR is the first ESR to include the Australis interface, unifying the user experience across different Firefox versions. Firefox 24.x.x ESR versions would be automatically updated to ESR version 31 after October 14, 2014.  $\underline{^{[161]}}$ 

Firefox 32 was released on September 2, 2014. It shows off HTTP caching improvements, adds  $\underline{\text{HiDPI}/\text{Retina}}$  support in the Developer Tools UI and widens HTML5 support, among other things. [162][163]

Firefox 33 was released on October 14, 2014. It now has *off-main-thread compositing* (OMTC) enabled by default on Windows (which brings responsiveness improvements),  $^{[164]}$  OpenH264 support, search suggestions on about:home and about:newtab, address bar search improvements, session restore reliability improvements, and other changes.  $^{[165]}$ 

Firefox 33.1 was released on November 10, 2014, celebrating Firefox's 10-year anniversary. [166][167] Firefox 33.1.1 was

released for desktop only on November 14, 2014, fixing a startup crash.[168]

Firefox 34 was released on December 1, 2014. It brings  $Firefox\ Hello$  (a WebRTC client for voice and video chat), an improved search bar, and the implementation of  $\overline{HTTP/2}$  (draft14) and ALPN, together with other features. It also disables SSLv3, and enables the ability to recover from a locked Firefox process and to switch themes and personas directly in the customization mode. [169]



Firefox 35 was released on January 13, 2015. It brings support for a room-based conversations model to the Firefox Hello chat service, and other functions, it also includes security fixes. [170]

Firefox 36 was released for desktop on February 24, 2015, bringing full  $\underline{\text{HTTP/2}}$  support and other smaller improvements and fixes. [171] It was also released for Android three days later on February 27, 2015, adding support for the tablet user interface. [172]

Firefox 37 was released on March 31, 2015, bringing a heartbeat user rating system, which provides user feedback about the Firefox, and improved protection against website impersonation via OneCRL centralized certificate revocation. Also, Bing search is changed to use HTTPS for secure searching, and added is support for opportunistic encryption of the HTTP traffic where the server supports HTTP/2's AltSvc feature. [173][174]

		Release history of Firefox 31-37
Version	Release date <sup>[23]</sup>	Release type and highlights $rac{[t\ 1]}{}$
31.0	July 22, 2014	Official Firefox 31.0 release.[160]  Adds the search field to the new tab page.  mozilla::pkix as default certificate verifier.  Blocks malware from downloaded files.  Partial implementation of the OpenType MATH table.  Support of Prefer:Safe http header for parental control.  audio/video.ogg and .pdf files handled by Firefox if no application specified (Windows only).  Upper Sorbian [hsb] locale added.  Removal of the CAPS infrastructure for specifying site-specific permissions (via capability.policy.* preferences). Most notably, attempts to use this functionality to grant access to the clipboard will no longer work. The sole exception is the checkloaduri permission, which may still be used as before to allow sites to load file:// URIs.  WebVTT implemented and enabled.  CSS3 variables implemented.  Developer Tools: Canvas Debugger.  Developer Tools: Canvas Debugger.  New Array built-in: Array.prototype.fill().  New Object built-in: Object.setPrototypeOf().  CSP 1.1 nonce-source and hash-source enabled by default.  Developer Tools: Eyedropper tool added to the color picker.  Developer Tools: Eyedropper tool added to the color picker.  Developer Tools: Console stack traces.  Developer Tools: Console stack traces.  Developer Tools: Console stack traces.  Developer Tools: Copy as cURL.  Developer Tools: Styled console logs.  navigator.sendBeacon enabled by default.  Dialogs spawned from the onbeforeunload event no longer block access to the rest of the browser.  Fixed: Search for partially selected link text from context menu.  Last release for Android 2.2 for ARMV7 devices.  End-of-life 31.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases_5Bjoduinn.2C_5D) on September 2, 2014.
31.0esr	July 22, 2014	Official Firefox 31.0 Extended Support Release (ESR).[160]
31.1.0esr	September 2, 2014	Regular security update.[175]
31.1.1esr	September 24, 2014	Off-cycle security update.[176]
31.2.0esr	October 14, 2014	Regular security and stability update. [177]  • Fixed: Invalid certificate issue with mozilla::pkix.  • Fixed: Importing an RSA private key fails if p < q.
31.3.0esr	December 1, 2014	<ul> <li>Regular security and stability update. [178]</li> <li>Fixed: @ JS::Handle::operator JSObject* const&amp;() startup crash.</li> <li>Fixed: Intermittent failures in add-ons manager mochitest-browser tests.</li> <li>Fixed: Bad CPU type in executable running mochitests on Mac OS X Yosemite.</li> <li>Fixed: Error building nsChildView.mm on Mac OS X Yosemite.</li> <li>Fixed: Build error on Mac OS X Yosemite.</li> <li>Fixed: Wrong CPU features detection on some x86 CPUs.</li> <li>Fixed: XMLHttpRequest.send({}) should not throw.</li> <li>Last release for Android for ARMv6 devices.</li> </ul>
31.4.0esr	January 13, 2015	Regular security update.[179]
31.5.0esr	February 24, 2015	Regular security update.[180]
31.5.2esr	March 20, 2015	Off-cycle security update.[181]
31.5.3esr	March 21, 2015	Off-cycle security update.[182]
31.6.0esr	March 31, 2015	Regular security update.[183]
31.7.0esr	May 12, 2015	Regular security update.[184]

31.8.0esr	July 2, 2015	Regular security update. End-of-life 31.x.x ESR product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on August 11, 2015.
		Official Firefox 32.0 release.[163]
32.0	September 2, 2014	<ul> <li>New HTTP cache provides improved performance including crash recovery.</li> <li>Integration of generational garbage collection.</li> <li>Public key pinning support enabled.</li> <li>Displays the number of found items in the find toolbar.</li> <li>Easier back, forward, reload, and bookmarking through the context menu.</li> <li>Views historical use information for logins stored in password manager.</li> <li>Lower Sorbian [dsb] locale added.</li> <li>Removed and turned off trust bit for some 1024-bit root certificates.</li> <li>Performance improvements to Password Manager and Add-on Manager.</li> <li>drawFocuslfNeeded enabled by default.</li> <li>CSS position:sticky enabled by default.</li> <li>vibration API updated to latest W3C spec.</li> <li>box-decoration-break enabled by default.</li> <li>ECMAScript 6 built-in method Array#copyWithin implemented.</li> <li>New Array built-in: Array . from()</li> <li>navigator.languages property and languagechange event implemented.</li> <li>CSS box-decoration-break replaces -moz-background-inline-policy.</li> <li>HiDPI support in Developer Tools UI.</li> <li>Inspector button moved to the top left.</li> <li>Hidden nodes displayed differently in the markup-view.</li> <li>New Web Audio Editor.</li> <li>Code completion and inline documentation added to Scratchpad.</li> <li>Fixed: Mac OS X: cmd-L does not open a new window when no window is available.</li> <li>Fixed Text Rendering Issues on Windows 7 with Platform Update KB2670838 (MSIE 10 Prerequisite) or on Windows 8.1.</li> </ul>
32.0.1	September 10, 2014 (Android) September 12, 2014 (desktop)	Desktop <sup>[187]</sup> Fixed stability issues for computers with multiple graphics cards.  Fixed mixed content icon that may be incorrectly displayed instead of lock icon for SSL sites.  Fixed: WebRTC: setRemoteDescription() silently fails if no success callback is specified.  Android <sup>[188]</sup>
		Fixed link tap selection that was offset on some Android devices.
32.0.2	September 18, 2014	Desktop  Off-cycle stability update. [189]  ■ Fixed corrupt installations causing Firefox to crash on update.
32.0.3	September 24, 2014	Off-cycle security update.[190][191]  End-of-life 32.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on October 14, 2014.
33.0	October 14, 2014	<ul> <li>Official Firefox 33.0 release. [165]</li> <li>Windows: OMTC enabled by default.</li> <li>OpenH264 support (sandboxed).</li> <li>Improved search experience through the location bar.</li> <li>Slimmer and faster JavaScript strings.</li> <li>Search suggestions on the Firefox Start (about:home) and new tab (about:newtab) pages.</li> <li>New CSP (Content Security Policy) backend.</li> <li>Support for connecting to HTTP proxy over HTTPS.</li> <li>Improved reliability of the session restoration.</li> <li>Azerbaijani [az] locale added.</li> <li>Proprietary window.crypto properties/functions removed.</li> <li>JSD (JavaScript Debugger Service) removed in favor of the Debugger interface.</li> <li>@counter-style rule from CSS3 Counter Styles specification implemented.</li> <li>DOMMatrix interface implemented.</li> <li>Cubic-bezier curves editor.</li> <li>Displayed which elements have listeners attached.</li> </ul>

		<ul> <li>New sidebar which displays a list of shortcuts to every @media rule in the current stylesheet.</li> <li>Paint flashing for browser content repaints.</li> <li>Editable @keyframes rules in the Rules section of the Inspector.</li> <li>CSS transform highlighter in the style-inspector.</li> <li>Fixed incomplete downloads being marked as complete by detecting broken HTTP1.1 transfers.</li> </ul>
33.0.1	October 24, 2014	Desktop  Off-cycle stability update.[192]  ■ Fixed displaying of a black screen at startup with certain graphics drivers.
33.0.2	October 28, 2014	Desktop  Off-cycle stability update. <sup>[193]</sup> ■ Fixed a startup crash with some combination of hardware and drivers.
33.0.3	November 6, 2014	<ul> <li>Desktop</li> <li>Off-cycle stability update. [194]</li> <li>Blacklisted graphics drivers that were causing black screens with OMTC enabled.</li> <li>Fixed two startup crashes with some combination of hardware and drivers.</li> </ul>
33.1	November 10, 2014	Firefox's 10-year anniversary. [166][195]  Forget button added.  Enhanced tiles.  Privacy tour introduced.  Adding DuckDuckGo as a search option.
33.1.1	November 14, 2014	Desktop  Off-cycle stability update.[196]  • Fixed a startup crash.  End-of-life 33.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on December 1, 2014.
34.0	December 1, 2014	Default search engine changed to Yandex for Belarusian, Kazakh, and Russian locales.  Improved search bar (en-US only). Firefox Hello real-time communication client. Easily switch themes/personas directly in the Customizing mode. Wikipedia search now uses HTTPS for secure searching (en-US only). Implementation of HTTP/2 (draft.14) and ALPN. Recover from a locked Firefox process in the "Firefox is already running" dialog on Windows. Disabled SSLv3. Proprietary window.crypto properties/functions re-enabled (to be removed in Firefox 35). Firefox signed by Apple OS X version 2 signature. ECMAScript 6 WeakSet Implemented. JavaScript Template Strings Implemented. CSS3 Font variants and features control (e.g. kerning) implemented. WebCrypto:  RSA-OAEP, PBKDF2, ECDH, and AES-KW support. wrapKey and unwrapKey implemented. Import/export of JWK-formatted keys. matches() DOM API implemented (formerly mozMatchesSelector()). Performance.now() for workers implemented. WebIDE: Create, edit, and test a new Web application from your browser. Highlight all nodes that match a given selector in the Style Editor and the Inspector's Rules panel. Improved User Interface of the Profiler. console, table function added to web console. Fixed: CSS transitions start correctly when started at the same time as changes to display, position, overflow, and similar properties.
34.0.5	December 1, 2014	Desktop  Official Firefox 34.0.5 release. [197]  ■ Default search engine changed to Yahoo! for North America.

		End-of-life 34.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) <i>on January 13, 2015</i> .
		Official Firefox 35.0 release.[170]
35.0	January 13, 2015	<ul> <li>Official Firefox 35.0 release. [170]</li> <li>Firefox Hello with new rooms-based conversations model.</li> <li>New search UI improved and enabled for more locales.</li> <li>Access the Firefox Marketplace from the Tools menu and optional toolbar button.</li> <li>Built-in support for H264 (MP4) on Mac OS X Snow Leopard (10.6) and newer through native APIs.</li> <li>Use of tiled rendering on Mac OS X.</li> <li>Improved high quality image resizing performance.</li> <li>Improved handling of dynamic styling changes to increase responsiveness.</li> <li>Implemented HTTP Public Key Pinning Extension (for enhanced authentication of encrypted connections).</li> <li>Added support for the CSS Font Loading API.</li> <li>Resource Timing API implemented.</li> <li>CSS filters enabled by default.</li> <li>Changed JavaScript 'let' semantics to match the ES6 specification.</li> <li>Support for inspecting ::before and ::after pseudo elements.</li> <li>Computed view: Nodes matching the hovered selector are now highlighted.</li> </ul>
		<ul> <li>Network Monitor: New request/response headers view.</li> <li>Added support for the EXT_blend_minmax WebGL extension.</li> <li>Fixed: Show DOM Properties context menu item in inspector.</li> <li>Reduced resource usage for scaled images.</li> <li>PDF.js updated to version 1.0.907.</li> <li>Non-HTTP(S) XHR now returns correct status code.</li> <li>Changes during Developer Edition releases</li> <li>Renamed to Firefox Developer Edition for alpha "Aurora" releases since November 10, 2014. [198][199]</li> </ul>
35.0.1	January 26, 2015 (desktop) February 5, 2015 (Android)	<ul> <li>Off-cycle stability update.[200][201]</li> <li>Fixed a crash with the Enhanced Steam extension.</li> <li>Fixed a potential startup crash.</li> <li>Fixed Kerberos authentication failure with alias.</li> <li>Fixed SVG / CSS animation regression causing rendering issues on websites like openstreetmap.org.</li> <li>Fixed a crash on Godaddy webmail.</li> <li>Fixed an update failure of document.baseURI to document.location after base tag was removed from DOM for site with a CSP.</li> <li>Fixed a text selection broken with a Right-to-left (RTL) version of Firefox.</li> <li>CSP had a change in behavior with regard to case sensitivity resources loading.</li> <li>Android</li> <li>Fixed crash with video playback on Asus MeMO Pad 10 and 8, Tesco Hudl, Lenovo Lifetab E models, and several other devices running the Rockchip SoC.</li> <li>End-of-life 35.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on February 24, 2015.</li> </ul>
36.0	February 24, 2015 (desktop) February 27, 2015 (Android)	Official Firefox 36.0 release.[171][172]  Pinned tiles on the new tab page can be synced.  Added full support for HTTP/2.  Locale added: Uzbek (UZ).  Remote option removed.  No longer accepting insecure RC4 ciphers whenever possible.  Phasing out Certificates with 1024-bit RSA Keys.  Shut down hangs will now show the crash reporter before exiting the program.  Add-on compatibility changed.  Support for the ECMAScript 6 Symbol data type added.  Unicode-range CSS descriptor implemented.  CSSOM-View scroll behavior implemented allowing smooth scrolling of content without custom libraries.  Object-fit and object-position implemented.  Isolation CSS property implemented.  CSS3 will-change property implemented.  Changed JavaScript 'const' semantics to conform better to the ES6 specification.  Improved ES6 generators for better performance.  Eval sources now appear in the Debugger.  DOM Promises inspection.

		<ul> <li>Inspector: More paste options in markup view.</li> <li>CSS gradients work on premultiplied colors.</li> <li>Fixed some unexpected logout from Facebook or Google after restart.</li> </ul>
36.0.1	March 5, 2015 (desktop) March 6, 2015 (Android)	Off-cycle stability update. [202]  Disabled the usage of the ANY DNS query type. Fixed a startup crash with EMET. Fixed the Hello contact that may become inactive until restart. Fixed print preferences that may not be preserved. Fixed Hello contact tabs that may not be visible. Accepted hostnames that include an underscore character Fixed the WebGL that may use significant memory with Canvas2d. Option -remote has been restored. Fixed a top crash.
		Android
36.0.2	March 16, 2015	Off-cycle stability mobile update. [203]  • Fixed a startup crash on HTC One M8 devices (Verizon) with Android 5.0.1.
		Fixed some potential crashes with Flash videos.
36.0.3	March 20, 2015	<ul> <li>Off-cycle security update. [204]</li> <li>Security fix for an issue disclosed at HP Zero Day Initiative's Pwn2Own contest.</li> </ul>
		Off-cycle security update.[205][206]
		Security fix for an issue disclosed at HP Zero Day Initiative's Pwn2Own contest.
36.0.4	March 21, 2015	End-of-life 36.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releas5Bjoduinn.2C5D) on March 31, 2015.
37.0	March 31, 2015	<ul> <li>Official Firefox 37.0 release. [173][174]</li> <li>Heartbeat user rating system – your feedback about Firefox.</li> <li>Yandex set as default search provider for the Turkish locale.</li> <li>Bing search now uses HTTPS for secure searching.</li> <li>Improved protection against site impersonation via OneCRL centralized certificate revocation.</li> <li>Opportunistically encrypts HTTP traffic where the server supports HTTP/2 AltSvc.</li> <li>Disabled insecure TLS version fallback for site security.</li> <li>Extended SSL error reporting for reporting non-certificate errors.</li> <li>TLS False Start optimization now requires a cipher suite using AEAD construction.</li> <li>Improved certificate and TLS communication security by removing support for DSA.</li> <li>Improved performance of WebGL rendering on Windows.</li> <li>Implemented a subset of the Media Source Extensions (MSE) API to allow native HTML5 playback on YouTube.</li> <li>Added support for CSS display:contents.</li> <li>IndexedDB now accessible from worker threads.</li> <li>New SDP/JSEP implementation in WebRTC.</li> <li>Debug tabs opened in Chrome Desktop, Chrome for Android, and Safari for iOS.</li> <li>New Inspector animations panel to control element animations.</li> <li>New Security Panel included in Network Panel.</li> <li>Debugger panel support for chrome:// and about:// URIs.</li> <li>Added logging of weak ciphers to the web console.</li> </ul>
37.0.1	April 3, 2015	<ul> <li>Off-cycle stability and security update. [207]</li> <li>Disabled HTTP/2 AltSvc introduced in 37.0 due to security issues.</li> <li>Desktop</li> <li>Fixed start-up crash due to graphics hardware and third-party software.</li> <li>Android</li> <li>Fixed crash due to WebRTC usage on certain web sites.</li> </ul>
37.0.2	April 14, 2015 (Android) April 20, 2015 (desktop)	Off-cycle stability and security update. [208][209]  Desktop  Fixed an issue with Google Maps rendering incorrectly in some cases.  Fixed stability issues for some graphics hardware and feature sets.

Security fixes.

#### Android

• Fixed an issue related to the "request desktop site" feature.

End-of-life 37.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x\_and\_Previous\_Releases \_.5Bjoduinn.2C\_.5D) on May 12, 2015.

#### Firefox 38 through 44

Both Firefox 38 and Firefox 38 ESR were released on May 12, 2015, with new tab-based preferences, Ruby annotation support and availability of WebSockets in web workers, along with the implementation of the BroadcastChannel API and other features and security fixes. [210]

Firefox 39 was released on July 2, 2015, for desktop and Android, disabling insecure  $\underline{SSLv3}$  and  $\underline{RC4}$ , improving performance for IPv6 fallback to IPv4 and including various security fixes. [211][212] Firefox 39.0.3 was released on August 6, 2015, to fix a zero-day exploit. [213]

Firefox 40 was released on August 11, 2015, for desktop and Android. On Windows 10, the Australis theme was updated to reflect the overall appearance of Windows 10, and the interface is adapted for usability on touchscreens when used in the operating system's "Tablet mode". Firefox 40 includes additional security features, including the filtering of pages that offer potentially unwanted programs, and warnings during the installation of unsigned extensions; in future versions, signing of extensions will become mandatory, and the browser will refuse to install extensions that have not been signed. Firefox 40 also includes performance improvements, such as off-main-thread compositing on Linux.  $\frac{[214][215][216]}{[216]}$ 

Firefox 41 was released on September 22, 2015, for desktop and Android. Among many additions are the ability to set a profile picture for a Firefox account, enhanced  $\underline{\text{IME}}$  support using  $\underline{\text{Text Services Framework}}$ , and instant messaging on Firefox Hello. [217][218]

Firefox 42 was released on November 3, 2015, for desktop and Android. Among many additions are private browsing with tracking protection, IPv6 support in WebRTC, and the ability to view HTML source in a tab. [219][220]

Firefox 43 was released on December 15, 2015, for desktop and Android. Among many additions are the availability of the 64-bit version for Windows 7 and above, a new strict blocklist, and audio indicators on Android. [221][222]

Firefox 44 was released on January 26, 2016, for desktop and Android. Among many additions are the improvement of warning pages for certificate errors and untrusted connections, enabling of H.264 and WebM/VP9 video support on systems that don't support MP4/H.264, support for the brotli compression format via HTTPS content-encoding, and the use of Android print service to enable cloud printing. [223][224] "Ask me every time" cookies option was removed without any notifications. [225]

	I	Release history of Firefox 38-44
Version	Release date <sup>[23]</sup>	Release type and highlights $^{[t1]}$
		Official Firefox 38.0 release.[210]
		<ul> <li>New tab-based preferences.</li> <li>Ruby annotation support.</li> <li>Base for the next ESR release.</li> </ul>
		<ul> <li>autocomplete=off is no longer supported for username/password fields.</li> <li>URL parser avoids doing percent encoding when setting the Fragment part of the URL, and percent decoding when getting the Fragment in line with the URL spec.</li> <li>RegExp.prototype.source now returns "(?:)" instead of the empty string for empty regular expressions.</li> <li>Improved page load times via speculative connection warmup.</li> </ul>
38.0	May 12, 2015	<ul> <li>WebSocket now available in web workers.</li> <li>BroadcastChannel API implemented.</li> <li>Implemented srcset attribute and <picture> element for responsive images.</picture></li> </ul>
56.0	May 12, 2015	<ul> <li>Implemented DOM3 Events KeyboardEvent.code.</li> <li>Mac OS X: Implemented a subset of the Media Source Extensions (MSE) API to allow native HTML5 playbac</li> </ul>
		on YouTube.  • Implemented Encrypted Media Extensions (EME) API to support encrypted HTML5 video/audio playback
		<ul> <li>(Windows Vista or later only).</li> <li>Automatically downloaded Adobe Primetime Content Decryption Module (CDM) for DRM playback through EME (Windows Vista or later only).</li> </ul>
		<ul> <li>Optimized-out variables are now visible in Debugger UI.</li> <li>XMLHttpRequest logs in the web console are now visually labelled and can be filtered separately from regular network requests.</li> <li>WebRTC now has multistream and renegotiation support.</li> </ul>
		• copy command added to console.
38.0esr	May 12, 2015	Official Firefox 38.0 Extended Support Release (ESR).[210]
		Off-cycle stability update.[226][227]
38.0.1	May 14, 2015 (desktop) May 15, 2015 (Android)	<ul> <li>Fixed a crash on start-up with first generation NVidia Optimus graphics cards.</li> <li>Fixed a problem in which users who import cookies from Google Chrome can end up with broken websites.</li> <li>Fixed a problem that large animated images may fail to play and may stop other images from loading.</li> <li>Fixed a problem that WebRTC H264 video streams from CiscoSpark native clients are not decoded correctly (Fixed in Firefox ESR 38.0.1; was already fixed in Firefox 38.0).</li> </ul>
		Android
		<ul> <li>Fixed a crash on start-up on devices for which Firefox does not support Android hardware acceleration.</li> <li>Fixed a problem that large animated images may fail to play and may stop other images from loading.</li> <li>Fixed a problem that Mozilla Location Service (MLS) stumbler may not submit all data.</li> </ul>
38.0.1esr	May 14, 2015	Off-cycle stability update.[226]
		Official Firefox 38.0.5 release.[228][229]
		Desktop
38.0.5	June 2, 2015	<ul> <li>Integration of Pocket.</li> <li>Implementation of Reader View.</li> <li>Share the active tab or window in a Hello conversation.</li> <li>Fixed a problem that would cause Firefox to stop painting when switching tabs.</li> <li>Fixed graphics performance when using the built-in VGA driver on Windows 7.</li> </ul>
		Android
		<ul><li>Integrated Adjust SDK to measure aggregate installs.</li><li>Fixed various stability fixes.</li></ul>
		End-of-life 38.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases_55Bjoduinn.2C5D) on July 2, 2015.
		Desktop
38.0.6	June 9, 2015	Desktop  Off-cycle update.

		Note: This release is only available from the Mozilla archives.
		End-of-life 38.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Release s5Bjoduinn.2C5D) on July 2, 2015.
38.1.0esr	July 2, 2015	Regular security update.[230]
20.1.1.55	A	Off-cycle security update.
38.1.1esr	August 6, 2015	■ Patches zero-day exploit. [231]
		Regular security and stability update.[232]
38.2.0esr	August 11, 2015	<ul> <li>Fixed: Firefox may become unresponsive after right-clicking Flash content on Windows 8.</li> <li>Fixed: Firefox may crash during mp4 video playback.</li> <li>Fixed branded Firefox application that does not open URLs in system default browser.</li> <li>Fixed significant memory leak with GreaseMonkey add-on.</li> <li>Fixed crash [@ RtlEnterCriticalSection   MessageLoop::PostTask_Helper] on browser shutdown.</li> <li>Fixed browser UI that becomes unresponsive state when using Unity Web Player Plugin.</li> <li>Fixed ESRs that would not build on hppa platform.</li> <li>Fixed crash in mozilla::layers::SyncObjectD3D11::FinalizeFrame().</li> </ul>
38.2.1esr	August 27, 2015	Off-cycle security update.[233]
38.3.0esr	September 22, 2015	Regular security update.[234]
38.4.0esr	November 3, 2015	Regular security update.[235]
38.5.0esr	December 15, 2015	Regular security update. [236]  • Improved stability with Java.
		Off-cycle stability update.[237]
38.5.1esr	December 21, 2015	■ Preparing to use SHA-256 signing certificate for Windows builds, to meet new signing requirement.
38.5.2esr	December 22, 2015	Off-cycle security and stability update. [238]  • Use of a SHA-256 signing certificate for Windows builds, to meet new signing requirements.
38.6.0esr	January 26, 2016	Regular security update.[239]
38.6.1esr	February 11, 2016	Off-cycle graphite2 library update. [240]  • Updated graphite2 library to latest release.
38.7.0esr	March 8, 2016	Regular security update.[241]
30.7.003	March 6, 2016	Off-cycle stability update.[242]
38.7.1esr	March 16, 2016	<ul> <li>Fixed an issue in which loading from history can show the wrong url in the location bar.</li> <li>Disabled Graphite font shaping library.</li> </ul>
38.8.0esr	April 26, 2016	Regular security update. [243] End-of-life 38.x.x ESR product line (https://wiki.mozilla.org/RapidRelease#4.0.x_a nd_Previous_Releases5Bjoduinn.2C5D) on June 7, 2016.
39.0	July 2, 2015	<ul> <li>Official Firefox 39.0 release. [212][211]</li> <li>Share Hello URLs with social networks.</li> <li>Project Silk for Mac OS X: Smoother animation and scrolling.</li> <li>Support for 'switch' role in ARIA 1.1 (web accessibility).</li> <li>SafeBrowsing malware detection lookups enabled for downloads on Mac OS X and Linux.</li> <li>Support for new Unicode 8.0 skin tone emoji.</li> <li>Removed support for insecure SSLv3 for network communications.</li> <li>Disable use of RC4 except for temporarily whitelisted hosts.</li> <li>The malware detection service for downloads now covers common Mac file types.</li> <li>Performance of displaying dashed lines is improved on Mac OS X.</li> <li>List-style-type now accepts a string value.</li> <li>Enable the Fetch API for network requests from dedicated, shared and service workers.</li> <li>Cascading of CSS transitions and animations now matches the current spec.</li> <li>Implement <li>Implement <li>Ink rel="preconnect"&gt;allowing anticipation of a future connection without revealing any information.</li> <li>Added support for CSS Scroll Snap Points.</li> <li>Drag and drop enabled for nodes in Inspector markup view.</li> <li>Webconsole input history persists even after closing the toolbox.</li> <li>Cubic bezier tooltip now shows a gallery of timing-function presets for use with CSS animations.</li> </li></li></ul>

		<ul> <li>Improve performance for IPv6 fallback to IPv4.</li> <li>Fixed incomplete downloads being marked as complete by detecting broken HTTP1.1 transfers.</li> <li>Fixed the security state indicator on a page now correctly ignores loads caused by previous pages.</li> <li>Fixed an issue where a Hello conversation window would sometimes fail to open.</li> <li>Fixed a regression that could lead to Flash not displaying has been fixed.</li> <li>Update to NSS 3.19.2.</li> </ul>
39.0.3	August 6, 2015	Off-cycle security update. <sup>[213]</sup> ■ Patches zero-day exploit. <sup>[231]</sup> End-of-life 39.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Release s5Bjoduinn.2C5D) on August 11, 2015.
40.0	August 11, 2015	Support for Windows 10. Added protection against unwanted software downloads. User can receive suggested tiles in the new tab page based on categories Firefox matches to browsing history (en-US only). Hello allows adding a link to conversations to provide context on what the conversation will be about. New style for add-on manager based on the in-content preferences style. Improved scrolling, graphics, and video playback performance with off-main-thread compositing (Linux only). Graphic blocklist mechanism improved: Firefox version ranges can be specified, limiting the number of devices blocked. Add-on extensions that are not signed by Mozilla will display a warning. NPAPI Plug-in performance improved via asynchronous initialization. Smoother animation and scrolling with hardware vsync (Windows only). JPEG images use less memory when scaled and can be painted faster. Sub-resources can no longer request HTTP authentication, thus protecting users from inadvertently disclosing login data. IndexedDB transactions are now non-durable by default. Implemented AudioBufferSourceNode.detune to modulate playback rate in cents, a logarithmic unit of measure used for musical intervals. Improved Performance tools in the developer tools: Waterfall view, Call Tree view and a Flame Chart view. New rules view tooltip in the Inspector to tweak CSS Filter values. Console API messages from SharedWorker and ServiceWorker are now displayed in web console. New page ruler highlighting tool that displays lightweight horizontal and vertical rules on a page. Inspector now searches across all content frames in a page.
40.0.2	August 13, 2015	<ul> <li>Desktop</li> <li>Off-cycle stability update. [244]</li> <li>Enabled API allowing Windows 10 users to open settings dialog.</li> <li>Fixed mozalloc.lib that was missing from the xulrunner package.</li> <li>Fixed a startup crash with some combination of hardware and drivers.</li> </ul>
40.0.3	August 27, 2015	Off-cycle stability and security update.[245][246]  Disabled the asynchronous plugin initialization.  Fixed a segmentation fault in the GStreamer support (Linux only).  Fixed a startup crash when using DisplayLink (Windows only).  Fixed a regression with some Japanese fonts used in the <input/> field.  Fixed an issue that the selection in a select combox box using the mouse could be broken on some sites.  Fixed an issue that some search partner codes were missing.  End-of-life 40.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases_5.5Bjoduinn.2C5D) on September 22, 2015.
41.0	September 22, 2015	Official Firefox 41.0 release. [219][220]  Enhanced IME support on Windows (Vista +) using TSF (Text Services Framework).  Ability to set a profile picture for your Firefox Account.  Firefox Hello now includes instant messaging.  SVG images can be used as favicons.  Improved box-shadow rendering performance.  WebRTC now requires perfect forward secrecy.  WARP is disabled on Windows 7.  Updates to image decoding process.

		<ul> <li>Support for running animations of 'transform' and 'opacity' on the compositor thread.</li> <li>MessageChannel and MessagePort API enabled by default.</li> <li>Added support for the transform-origin property on SVG elements.</li> <li>CSS Font Loading API enabled by default.</li> <li>Navigator.onLine now varies with actual internet connectivity (Windows and Mac OS X only).</li> <li>Copy/Cut Web content from JavaScript to the OS clipboard with document.execCommand("cut"/"copy").</li> <li>Implemented Cache API for querying named caches that are accessible Window, Worker, and ServiceWorker.</li> <li>Removed support for binary XPCOM components in extensions, use addon SDK "system/child_process" pipe mechanism for native binaries instead.</li> <li>Network requests can be exported in HAR format.</li> <li>Quickly adds new CSS rule with New Rule button in the Inspector.</li> <li>Screenshots a node or element from markup view with the Screenshot Node context menu item.</li> <li>Copies element CSS rule declarations with the Copy Rule Declaration context menu item in the Inspector.</li> <li>Pseudo-Class panel in the Inspector.</li> <li>Fixed an issue where picture element does not react to resize/viewport changes.</li> </ul>
41.0.1	September 30, 2015	<ul> <li>Off-cycle stability update. [247]</li> <li>Fixed a startup crash related to Yandex toolbar and Adblock Plus.</li> <li>Fixed potential hangs with Flash plugins.</li> <li>Fixed a regression in the bookmark creation.</li> <li>Fixed a startup crash with some Intel Media Accelerator 3150 graphic cards.</li> <li>Fixed a graphic crash, occurring occasionally on Facebook.</li> </ul>
41.0.2	October 15, 2015	Off-cycle security update. [248] End-of-life 41.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous Releases .5Bjoduinn.2C .5D) on November 3, 2015.
42.0	November 3, 2015	<ul> <li>Official Firefox 42.0 release. [219](220]</li> <li>Private Browsing with Tracking Protection that blocks certain Web elements that could be used to record your behavior across sites.</li> <li>Control Center that contains site security and privacy controls.</li> <li>Indicator added to tabs that play audio with one-click muting.</li> <li>WebRTC improvements: <ul> <li>IPV6 support.</li> <li>Preferences for controlling ICE candidate generation and IP exposure.</li> <li>Hooks for extensions to allow/deny createOffer/Answer.</li> <li>Improved ability for applications to monitor and control which devices are used in getUserMedia.</li> </ul> </li> <li>Login Manager improvements: <ul> <li>Improved heuristics to save usernames and passwords.</li> <li>Editing and showing all logins in line, Copy/Paste usernames/passwords from the Context menu.</li> <li>Migration imports your passwords to Firefox from Google Chrome for Windows and Internet Explorer; import anytime from the Login Manager.</li> </ul> </li> <li>Improved performance on interactive websites that trigger a lot of restyles.</li> <li>Implemented ES6 Reflect.</li> <li>Support for ImageBitmap and createImageBitmap().</li> <li>Media Source Extension for HTML5 video available for all sites.</li> <li>Viewing HTML source in a tab.</li> <li>Remote website debugging over WiFi (no USB cable or ADB needed).</li> <li>Asynchronous call stacks now allow web developers to follow the code flow through setTimeout, DOM event handlers, and Promise handlers.</li> <li>Configurable Firefox OS Simulator in WebIDE, to simulate reference devices like phones, tablets, even TVs.</li> <li>CSS filter presets in the Inspector.</li> <li>Ability to save filter presets inside CSS Filter Tooltip.</li> </ul> <li>End-of-life 42.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases_5.5Bjoduinn.2C5D) on December 15, 2015.</li>
43.0	December 15, 2015	<ul> <li>Official Firefox 43.0 release. [221][222]</li> <li>Private Browsing with Tracking Protection offers choice of blocking additional trackers.</li> <li>Improved API support for m4v video playback.</li> <li>Firefox 64-bit for Windows is now available via the Firefox download page.</li> <li>Users can choose search suggestions from the Awesome Bar.</li> <li>On-screen keyboard displayed on selecting input field on devices running Windows 8 or greater.</li> <li>Firefox Health Report has switched to use the same data collection mechanism as telemetry.</li> <li>Markup view shows indicators for pseudo-classes locked for elements.</li> <li>Binding F1 key to open the settings when the toolbox is focused.</li> </ul>

		<ul> <li>New 'Use in Console' context menu item in Inspector to store selected element in a temporary variable.</li> <li>Search button next to overridden CSS properties to find similar properties in the rules view.</li> <li>Ability to filter styles from their property names in the rules view.</li> <li>Stack traces are now shown for exceptions inside the console.</li> <li>Added ability to display server-side logs in the console.</li> <li>Ability to choose resolution for the Graphical Command Line Interpreter (GCLI) screenshot command.</li> <li>Subresource integrity allows developers to make their sites more secure.</li> <li>Network requests in Console now link to Network panel instead of opening in a popup.</li> <li>Unprefixed 'hyphens' property is now supported.</li> <li>WebIDE now has a sidebar-based UI.</li> <li>The 'transform-origin' property is now supported on SVG elements.</li> <li>Animation inspector now displays animations in a timeline.</li> <li>Single-process mode is no longer supported for NPAPI plugins.</li> <li>Fixed an issue in which the Eyedropper tool does not work as expected when page is zoomed.</li> <li>Various security fixes.</li> </ul>
43.0.1	December 18, 2015	Desktop  Off-cycle stability update. [249]  ■ Preparing to use SHA-256 signing certificate for Windows builds, to meet new signing requirement.
43.0.2	December 22, 2015	Desktop  Off-cycle security and stability update.[250]  Use of a SHA-256 signing certificate for Windows builds, to meet new signing requirements.
43.0.3	December 28, 2015	Desktop  Off-cycle stability update.[251]  Fixed network issue when using Nvidia's Network Access Manager.  Improved the decoding of some videos on YouTube on some Windows configurations.
43.0.4	January 6, 2016	Desktop  Off-cycle stability update.[252]  Fix for startup crash for users of a third party antivirus tool.  Multi-user Linux download folders can be created.  Re-enabled SHA-1 certificates.  The last version to support HTTP cookie prompts.  End-of-life 43.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on January 26, 2016.
44.0	January 26, 2016	<ul> <li>Official Firefox 44.0 release. [223][224]</li> <li>Improved warning pages for certificate errors and untrusted connections.</li> <li>Enabled H.264 if system decoder is available.</li> <li>Enabled WebM/VP9 video support on systems that don't support MP4/H.264.</li> <li>In the animation-inspector timeline, lightning bolt icon next to animations running on the compositor thread.</li> <li>Support for the brotli compression format via HTTPS content-encoding.</li> <li>Screenshot commands allow user choice of pixel ratio in Developer Tools.</li> <li>Fixed an issue where Windows XP and Vista screensaver doesn't disable when watching videos.</li> <li>Various security fixes.</li> <li>To support unicode-range descriptor for webfonts, font matching under Linux now uses the same font matching code as other platforms.</li> <li>Use of a SHA-256 signing certificate for Windows builds, to meet new signing requirements.</li> <li>Firefox has removed support for the RC4 decipher.</li> <li>Firefox will no longer trust the Equifax Secure Certificate Authority 1024-bit root certificate or the UTN - DATACorp SGC to validate secure website certificates.</li> <li>Stricter validation of web fonts.</li> <li>On-screen keyboard support temporarily turned off for Windows 8 and Windows 8.1.</li> <li>Right-clicking on a logged object in the console to store it as a global variable on the page.</li> <li>Visual tools for Animation: <ul> <li>View/Edit CSS animation keyframe rules directly in the inspector.</li> <li>Visually modify the cubic-bezier curve that drives the way animations progress through time.</li> <li>Discover and scrub through all CSS animations and transitions playing on the page.</li> <li>Learn more: http://devtoolschallenger.com/.</li> </ul> </li> </ul>

		Visual tools for Layout and Styles:
		<ul> <li>Display rulers along the viewport to verify size and position and use the measurement tool to easily detect spacing and alignment problems.</li> </ul>
		<ul> <li>Use CSS filters to preview and create real-time effects like drop-shadows, sepia, etc</li> </ul>
		Learn more: http://devtoolschallenger.com/.
		New memory tool for inspecting the memory heap.
		■ Service Workers API.
		<ul> <li>Built-in JSON reader to intuitively view, search, copy and save data without extensions.</li> </ul>
		<ul> <li>A jump to function definitions in the debugger with Cmd-Click.</li> </ul>
		<ul> <li>WebSocket Debugging API and add-on.</li> </ul>
		• The rule view now displays styles using their authored text, and edits in the rule view are now linked to the style editor.
		Changes during Nightly releases
		■ This and newer versions erase the cookie permissions database of any previous Firefox version.
		Desktop
		Off-cycle stability update.[253]
		• Fixed an issue which could lead to the removal of stored passwords under certain circumstances.
	February 8,	<ul> <li>Allows spaces in cookie names.</li> </ul>
44.0.1	2016	■ Requires NSS 3.21.
		• Fixed a crash in cache networking.
		• Fix for using WebSockets in service worker controlled pages.
		■ Disabled opus/vorbis audio with H.264.
		■ Shipment for the Gecko SDK.
		Fix for graphics startup crash on Linux.
		Off-cycle security and stability update.[254][255]
	February 11,	• Fixed an issue where Firefox hangs or crashes on startup.
44.0.2	2016	End-of-life 44.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releas s .5Bjoduinn.2C .5D) <i>on March 8, 2016</i> .

#### Firefox 45 through 51

Firefox 45 and Firefox 45 ESR were released on March 8, 2016, for desktop (both) and Android (no ESR). Among many additions were Instant Browser sharing through Hello, the addition of Guarani locale, the ability to filter snapshot output in memory tool, and the removal of the Tab Groups (panorama) feature. [256][257]

Firefox 46 was released on April 26, 2016, for both desktop and Android. Among the many additions were improved security of the JavaScript Just In Time (JIT) Compiler, the GTK3 integration (Linux only), HKDF support for Web Crypto API, and removal of support for Android 3.0 (Android only). [258][259]

Firefox 47 was released on June 7, 2016, for both desktop and Android. Among the many additions were support for Google's Widevine CDM on Windows and Mac OS X so streaming services like Amazon Video can switch from Silverlight to encrypted HTML5 video; enabling VP9 video codec for users with fast machines; the ability of embedded YouTube videos to play with HTML5 video if Flash is not installed; and the addition of the Latgalian language. It is also the last Firefox version to support Android  $2.3.x.^{[260][261]}$ 

Firefox 48 was released on August 2, 2016, for both desktop and Android. Among the many additions were enhanced download protection and the removal of the Windows Remote Access Service modem Autodial. It was also the first official release with "Electrolysis" (multi-process Firefox, meaning that the interface and web pages are running in separate processes in the computer) was enabled.

Firefox 48 is the last Firefox version to support Mac OS X Snow Leopard, Mac OS X Lion, and OS X Mountain Lion. Additionally, support for old processors without  $\overline{\text{SSE2}}$  extensions such as the AMD Athlon XP and Pentium III was dropped. [262]

Firefox 49 was released on September 20, 2016, for both desktop and Android. Among the many additions were an updated Firefox Login Manager, improved video performance for users on systems that support SSE3 without hardware acceleration, added context menu controls to HTML5 audio and video that let users loop files or play files at 1.25x speed, improvements in about:memory reports for tracking font memory usage, and the removal of Firefox Hello. [263][264] The macOS version now requires at least OS X Mavericks, and the Microsoft Windows version requires a CPU which supports SSE2.[262]

Firefox 50 was released on November 15, 2016, for both desktop and Android. Among the many additions were playback video on more sites without plugins with WebM EME Support for Widevine on Windows and Mac, improved performance for SDK extensions or extensions using the SDK module loader; download protection for a large number of executable file types

on Windows, Mac OS, and Linux, increased availability of WebGL to more than 98 percent of users on Windows 7 and newer (desktop), and support for HLS videos via player overlay (Android).  $\frac{[265][266]}{[265]}$ 

Firefox 51 was released on January 24, 2017, for both desktop and Android. Among the many additions were added support for FLAC (Free Lossless Audio Codec) playback, better Tab Switching, support for WebGL 2, and a warning that is displayed when a login page does not have a secure connection. [267][268]

Release history of Firefox 45-51				
Version	Release date <sup>[23]</sup>	Release type and highlights [t 1]		
		Official Firefox 45.0 release. [256][257]  Instant browser tab sharing through Hello.		
45.0	March 8, 2016	<ul> <li>Tabs synced via Firefox Accounts from other devices are now shown in dropdown area of Awesome Bar wher searching.</li> <li>Synced Tabs button in button bar.</li> <li>Introduces a new preference (network.dns.blockDotOnion) to allow blocking .onion at the DNS level.</li> <li>Guarani [gn] locale added.</li> <li>URLs containing a Unicode-format Internationalized Domain Name (IDN) are now properly redirected.</li> <li>Various security fixes.</li> <li>Tab Groups (Panorama) feature removed.</li> <li>Ability to filter snapshot output in memory tool.</li> <li>Fine-tuning animations by changing the playback rate of animations in the animation-inspector's timeline.</li> <li>DOMContentLoaded and load events shown in the network monitor timeline.</li> <li>Added Negative url filtering for the network monitor.</li> <li>Support for diffing heap snapshots added to the memory tool.</li> <li>Inspector search now matches results from all content in the page, including subframes.</li> <li>List of animated properties and keyframes is now displayed when clicking on an animation in the animation inspector's timeline.</li> <li>Push API support, part of Progressive Web Applications.</li> <li>Support for delivery of a Content Security Policy (CSP) via a meta tag.</li> <li>Web Speech synthesis API.</li> </ul>		
		■ ES6 Classes.  Off-cycle stability update. [269][270]		
45.0.1	March 16, 2016	<ul> <li>Fix for a potential performance regression (YouTube for example).</li> <li>Fix for a regression causing search engine settings to be lost in some context.</li> <li>Brings back non-standard jar: URIs to fix a regression in IBM iNotes.</li> <li>Fixed an issue in which XSLTProcessor.importStylesheet was failing when <import> was used.</import></li> <li>Fix for an issue which could cause the list of search provider to be empty.</li> <li>Fix for a regression when using the location bar.</li> <li>Fix for some loading issues when Accept third-party cookies: was set to Never.</li> <li>Disabled Graphite font shaping library.</li> </ul>		
	April 11, 2016	Off-cycle stability update.[271][272]		
		<ul> <li>Fix for an issue impacting the cookie header when third-party cookies are blocked.</li> <li>Fix for a web compatibility regression impacting the <i>srcset</i> attribute of the <i>image</i> tag.</li> <li>Fix for a crash impacting the video playback with Media Source Extension.</li> <li>Fix for a regression impacting some specific uploads.</li> </ul>		
		Desktop		
45.0.2		• Fix for a regression with the copy and paste with some old versions of some Gecko applications like Thunderbird.		
		Android		
		■ Last release for Android 3.x  End-of-life 45.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releas5Bjoduinn.2C5D) on April 26, 2016.		
15.0esr	March 8, 2016	Official Firefox 45.0 Extended Support Release (ESR).		
	March 16, 2016	Off-cycle stability update.[273]		
15.0.1esr		Same changelog of 45.0.1		
	April 11, 2016	Off-cycle stability update.[273]		
45.0.2esr		Same changelog of 45.0.2		
15.1.0esr	April 26, 2016	Regular security and stability update.[274]		
	May 3, 2016	Off-cycle stability update.[275]		
45.1.1esr		■ Fixed a build issue when jit is disabled.		

		<ul> <li>Fixed add-on signing certificate expiration.</li> <li>Fixed a graphics-related shutdown crash.</li> </ul>
		Regular security and stability update. <sup>[276]</sup> • Fixed graphics-related crashes.
45.2.0esr	June 7, 2016	<ul> <li>Fixed graphics-related crashes.</li> <li>Fixed unicode support for AutoConfig API.</li> <li>Web compatibility fix for addEventListener API.</li> </ul>
45.3.0esr	August 2, 2016	Regular security and stability update.[277]
45.4.0esr	September 20, 2016	Regular security update.[278]
45.5.0esr	November 15, 2016	Regular security update.[279]
45.5.1esr	November 30, 2016	Off-cycle security update.[280]
45.6.0esr	December 13, 2016	Regular security update.[281]
45.7.0esr	January 24, 2017	Regular security update.[282]
45.8.0esr	March 7, 2017	Regular security update.[283]
45.9.0esr	April 19, 2017	Regular security update. [284] End-of-life 45.x.x ESR product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on June 13, 2017.
		Official Firefox 46.0 release.[258][259]
		■ Improved security of the JavaScript Just In Time (JIT) Compiler
		<ul> <li>GTK3 integration (Linux only)</li> <li>Screen reader behavior with blank spaces in Google Docs corrected</li> </ul>
		Corrected rendering for scaled SVGs that use a clip and a mask
46.0	April 26, 2016	WebRTC fixes to improve performance and stability
		Display of dominator trees in Memory tool  Allocation and parkage adjustion pages profiling in the partagraphs and parkage adjustion pages.
		<ul> <li>Allocation and garbage collection pause profiling in the performance panel</li> <li>Launch of responsive mode from the Style Editor @media sidebar</li> </ul>
		■ Added support for document.elementsFromPoint
		■ Added HKDF support for Web Crypto API
		Off-cycle stability update.[285][286]
		Fixed add-on signing certificate expiration.
		Fixed service worker update issue.
		<ul> <li>Fixed a build issue when jit is disabled.</li> <li>Fixed a page loading issue related to antivirus software.</li> </ul>
46.0.1	May 3, 2016	<ul> <li>Searched a plugin issue for various locales.</li> </ul>
		■ Limited Sync registration updates.
		End-of-life 46.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on June 7, 2016.
		Official Firefox 47.0 release.[260][261]
		<ul> <li>Support for Google's Widevine CDM on Windows and Mac OS X so streaming services like Amazon Video can switch from Silverlight to encrypted HTML5 video.</li> </ul>
		Enabled VP9 video codec for users with fast machines
		■ Embedded YouTube videos now play with HTML5 video if Flash is not installed.
		<ul> <li>Ability to view and search open tabs from your smartphone or another computer in a sidebar</li> </ul>
		Allowed no-cache on back/forward navigations for https resources     Lateraly [ltm] locale added
		Latgalu [ltg] locale added.      Various security fixes
47.0	June 7, 2016	• FUEL (Firefox User Extension Library) has been removed. Add-ons relying on it will stop working.
		<ul> <li>The browser.sessionstore.restore_on_demand preference has been reset to its default value (true) to avoid e10s performance problems.</li> </ul>
		The Firefox click-to-activate plugin whitelist has been removed.
		Web platform changes
		Ability to view, start, and debug registered Service Workers in the Service Workers developer tool
		Ability to simulate Push messages in the Service Workers developer tool

47.0.1 47.0.2	June 28, 2016  November 1, 2016	<ul> <li>Smart multi-line input in the Web Console</li> <li>cuechange events are now available on TextTrack objects</li> <li>WebCrypto: PBKDF2 supports SHA-2 hash algorithms</li> <li>WebCrypto: RSA-PSS signature support</li> </ul> Android <ul> <li>Last release to support Android 2.3.x (Gingerbread)</li> </ul> Desktop Off-cycle stability update.[287] <ul> <li>Fixed an issue in which Selenium WebDriver may cause Firefox to crash at startup.</li> </ul> <li>Off-cycle stability update.[288]</li> <li>Detect SSE hardware version.</li> <li>Detect Websense to protect users from a startup crash.</li> End-of-life 47.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases
		5Bjoduinn.2C5D) on November 1, 2016.
48.0	August 2, 2016	Roar for moar protection against harmful downloads! We've got your back.  Process separation (e10s) is enabled for some of you. Like it? Let us know and we'll roll it out to more.  Add-ons that have not been verified and signed by Mozilla will not load.  Linux fans: Get better Canvas performance with speedy Skia support. Try saying that three times fast.  WebRTC embetterments:  Delay-agnostic AEC enabled. Full duplex for Linux enabled. Cloning of MediaStream and MediaStreamTrack is now supported. Cloning of MediaStream and MediaStreamTrack is now supported. Searching for something already in your bookmarks or open tabs? We added super smart icons to let you know.  Tab (move buttons) and Shift+F10 (pop-up menus) now behave as they should in Firefox customization mode (Windows only).  The media parser has been redeveloped using the Rust programming language. Heyo, Jabra & Logitech C920 webcam users. Fixed WebRTC bugs causing frequency distortions. Improved step debugging on last line of functions. After version 48, SSE2 CPU extensions are going to be required on Windows. Au revoir to Windows Remote Access Service modem Autodial. WebExtensions support is now considered as stable. Want to move absolute & fixed positioned elements? Now you can with our geometry editor. The memory tool now has a tree map view for your debugging pleasure. We're putting the spotlight on the background. Now you can debug WebExtensions background content scripts and background pages. Content Security Policy (CSP) is now enforced for WebExtensions. Old and busted: Error Console. New hotness: Browser Console for your debugging pleasure. Add-on development just got easier because you can reload them from about:debugging – because we're all about debugging. This theme is hot, hot, hot! Say hi to the Firebug theme for Developer Tools.
48.0.1	August 18, 2016	<ul> <li>Desktop</li> <li>Off-cycle stability update. [289]</li> <li>Fix for an audio regression impacting some major websites.</li> <li>Fix for a top crash in the JavaScript engine.</li> <li>Fix for a startup crash issue caused by Websense.</li> <li>Fix for a different behavior with e10s / non-e10s on <select> and mouse events.</select></li> <li>Fix for a top crash caused by plugin issues.</li> <li>Fix for an unsigned add-ons issue on Windows.</li> <li>Fix for a shutdown issue.</li> <li>Fix for a crash in WebRTC.</li> </ul>

		Desktop
		Off-cycle stability update.[290]
48.0.2	August 24, 2016	<ul> <li>Fix for a startup crash issue caused by Websense (Windows only).</li> <li>Last release for Mac OS X 10.6-10.8.</li> </ul>
		End-of-life 48.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases5Bjoduinn.2C5D) on September 20, 2016.
		Official Firefox 49.0 release.[263][264]
		<ul> <li>Updated Firefox Login Manager to allow HTTPS pages to use saved HTTP logins. It's one more way Firefox is supporting Let's Encrypt and helping users transition to a more secure web.</li> <li>Added features to Reader Mode that make it easier on the eyes and the ears.</li> </ul>
		<ul> <li>Controls that allow users to adjust the width and line spacing of text.</li> <li>Narrate, which reads the content of a page out loud.</li> </ul>
49.0	September 20, 2016	<ul> <li>Improved video performance for users on systems that support SSSE3 without hardware acceleration.</li> <li>Added context menu controls to HTML5 audio and video that let users loops files or play files at 1.25x speed.</li> <li>Improved performance on OS X systems without hardware acceleration.</li> <li>Improved appearance of anti-aliased OS X fonts.</li> <li>Improvements in about:memory reports for tracking font memory usage.</li> </ul>
		<ul> <li>Improved performance on Windows systems without hardware acceleration.</li> <li>Fixed an issue that prevented users from updating Firefox for Mac unless they originally installed Firefox. Now, those users as well as any user with administrative credentials can update Firefox.</li> <li>Ended Firefox for Mac support for OS X 10.6, 10.7, and 10.8.</li> </ul>
		<ul> <li>Ended Firefox for Windows support for SSE processors.</li> <li>Removed Firefox Hello.</li> </ul>
		<ul> <li>Re-enabled the default for Graphite2 font shaping.</li> <li>Added a Cause column to the Network Monitor to show what caused each network request.</li> <li>Introduced web speech synthesis API.</li> </ul>
		Desktop
49.0.1	September 23, 2016	Off-cycle stability update.[291]
		Mitigated a startup crash issue caused by Websense (Windows only).
49.0.2	October 20, 2016	<ul> <li>Off-cycle security and stability update. [292][293]</li> <li>Asynchronous rendering of the Flash plugins for desktop is now enabled by default. This should improve performance and reduce crashes for sites that use the Flash plugin.</li> <li>Changed D3D9 default fallback preference to prevent graphical artifacts.</li> <li>Fixed a network issue that prevents some users from seeing the Firefox UI on startup.</li> <li>Fixed a web compatibility issue with Array.prototype.values</li> <li>Fixed a web compatibility issue with file uploads on Android.</li> <li>Diagnostic information on timing for tab switching.</li> <li>Fix for a Canvas filters graphics issue affecting HTML5 apps.</li> <li>End-of-life 49.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Release.</li> </ul>
		5Bjoduinn.2C5D) on November 15, 2016.
50.0	November 15, 2016	Official Firefox 50.0 release. [265][266]  Playback video on more sites without plugins with WebM EME Support for Widevine on Windows and Mac. Improved performance for SDK extensions or extensions using the SDK module loader. Added download protection for a large number of executable file types on Windows, Mac and Linux. Increased availability of WebGL to more than 98 percent of users on Windows 7 and newer. Added Guarani (gn) locale. Added option to Find in page that allows users to limit search to whole words only.
		<ul> <li>Updates to keyboard shortcuts.</li> <li>Set for a preference to have Ctrl+Tab cycle through tabs in recently used order.</li> <li>View for a page in Reader Mode by using Ctrl+Alt+R (Command+Alt+R on Mac).</li> <li>Various security fixes.</li> <li>Blocked versions of libavcodec older than 54.35.1.</li> <li>Added a built-in Emoji set for operating systems without native Emoji fonts (Windows 8.0 and lower and Linux).</li> <li>Changes for web developers.</li> </ul>
		Android

		Simplified the user interface by combining the Recent Tabs and History panels.
		Desktop
50.0.1	November 28, 2016	Off-cycle security and stability update.[294]
		■ Fixed an issue where Firefox crashes with 3rd party Chinese IME when using IME text.
	November 30, 2016	Off-cycle security update.[295][296]
50.0.2		Fixed a zero-day exploit in the wild among other exploits.
	December 13, 2016	Regular security update.[297][298]
50.1.0		End-of-life 50.x.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Release5Bjoduinn.2C5D) on January 24, 2017.
		Official Firefox 51.0 release.[267][268]
		<ul> <li>Added support for FLAC (Free Lossless Audio Codec) playback.</li> </ul>
		<ul> <li>Improved reliability of browser data sync.</li> </ul>
		• An even faster E10s! Tab Switching is better!
		<ul> <li>Added Georgian (ka) and Kabyle (kab) locales.</li> </ul>
		A warning is displayed when a login page does not have a secure connection.
		<ul> <li>Added support for WebGL 2, with advanced graphics rendering features like transform feedback, improved texturing capabilities, and a new sophisticated shading language.</li> </ul>
		<ul><li>Firefox will save passwords even in forms that do not have "submit" events.</li></ul>
		<ul> <li>Improved video performance for users without GPU acceleration for less CPU usage and a better full screen experience.</li> </ul>
-1.0	January 24, 2017	Added a zoom button in the URL bar:
51.0		<ul> <li>Displays percent above or below 100 percent when a user has changed the page zoom setting from the default.</li> </ul>
		<ul> <li>Lets users return to the default setting by clicking on the button.</li> </ul>
		<ul> <li>Users can view passwords in the save password prompt before saving them.</li> </ul>
		Removed Belarusian (be) locale.
		<ul> <li>Various security fixes.</li> </ul>
		■ Updated to NSS 3.28.1.
		■ Re-enabled E10s support for Russian (ru) locale.
		<ul> <li>Use of 2D graphics library (Skia) for content rendering on Linux.</li> </ul>
		Android
		■ Added Nepali (ne-NP), Bulgarian (bg) and Kabyle (kab) locales.
	January 26, 2017	Desktop
51.0.1		Off-cycle security and stability update. [299]
		<ul> <li>Fixed an issue in which multiprocess incompatibility did not correctly register with some add-ons.</li> <li>Fixed an issue in which geolocation was not working on Windows.</li> </ul>
51.0.2	February 6, 2017	Android
		Off-cycle stability update.[300]
		■ Fix for a crash caused by an Android library (Palette) on some x86 devices.
51.0.3	February 9, 2017	Android
		Off-cycle stability update.[301]
		■ Fix for a build issue which was causing some crashes on some x86 architectures.
		End-of-life 51.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Release5Bjoduinn.2C5D) on March 7, 2017.

## Firefox 52 through 59

Firefox 52 and Firefox 52 ESR were released on March 7, 2017, for desktop (both) and Android (no ESR). An important aspect of Firefox ESR 52.0 is that it is the first ESR version based on Firefox Electrolysis (Firefox 48) code base. Firefox 52 added support for WebAssembly (while disabled in Firefox ESR  $\overline{52}$ ), an emerging standard that brings near-native performance to Web-based games, apps, and software libraries without the use of plugins; automatic captive portal detection,

for easier access to Wi-Fi hotspots; user warnings for insecure HTTP pages with logins (desktop); and display of media controls to pause or resume playback on the Android notification bar. [302][303] Firefox 52 dropped support for NPAPI plugins like Microsoft Silverlight and Java with the exception of Adobe Flash Player (except the ESR version which still supports NPAPI). [304]

Firefox 53 was released on April 19, 2017, for both desktop and Android. Starting with Firefox 53, Microsoft Windows support is exclusively for Windows 7 and above. Among the many additions are: improved graphics stability for Windows users with the addition of compositor process separation, light and dark "compact" themes available, based on the Firefox Developer Edition theme, removal of support for 32-bit macOS and Linux support for processors older than Pentium 4 and AMD Opteron; new visual design for audio and video controls, support for WebM video with alpha compositing, which allows playing videos with transparent backgrounds (desktop), Reader Mode displaying estimated reading time for the page (desktop and Android), and enabling two columns tabs setting in portrait mode (Android). [305][306]



Logo used from Firefox 57 to Firefox 69

Firefox 54 was released on June 13, 2017, for both desktop and Android. Among the many additions are: simplifying the download button and download status panel, added support for multiple content processes, the ability to create and save custom devices in responsive web design mode (desktop), improved audio and video playback in the browser, and improved bookmarks sync performance (Android). [307][308]

Firefox 55 was released on August 8, 2017, for both desktop and Android. Among the many additions are: the launch of Windows support for WebVR, bringing immersive experiences to the web, options that let users optimize recent performance improvements, simplification of the installation process with a streamlined Windows stub installer, improvements to address bar functionality, simplification of printing from Reader Mode (desktop), and the option for accessibility settings to respect the system's set font size when displaying web pages (Android). This is also the last version to support Android Ice Cream Sandwich. [309][310]

Firefox 56 was released on September 28, 2017, for both desktop and Android. Among the many additions are: a new layout for the "Preferences" page, the launch of Firefox Screenshots, support for address form autofill, hardware acceleration for AES-GCM, update of the Safe Browsing protocol to version 4, improved security or verifying update downloads (desktop), improvement of support for WebExtensions, and the end of support for Adobe Flash (Android). Starting with this version, Android support is exclusively for Android Jelly Bean and above. [311][312]

Another change was the introduction of the *mozlz4* format, a proprietary variant of the *lz4* compression format (.mozlz4 and .jsonlz4 file extensions instead of .json.lz4 as per unix/linux standard). Session data is stored in the *lz4* format instead of plain text. Firefox 56 cannot recognize the legacy plain text session files, only the *lz4*-encoded ones.

Firefox 57 was released on November 14, 2017, for desktop and Android with the name  $Firefox\ Quantum.^{[313]}\ ZDNet$  dubbed it a "comeback" following years of falling market share against Google Chrome. The release included a new interface design, codenamed "Photon", and a new rendering engine almost twice as fast as the previous one used.  $\frac{[313][314][316]}{[313][314][316]}$  One of the largest visual changes in Photon was the removal of the search box from the address bar. Firefox 57 no longer supports legacy add-ons using  $\frac{XUL}{US}$  technologies.  $\frac{[317][318][319]}{[318][319]}$  That same day, Mozilla announced that  $\frac{Google}{US}$  would be the default search engine in the  $\frac{US}{US}$  and Canada, a departure from  $\frac{Yahoo}{US}$ , which had been the default search engine in the US and Canada since  $\frac{2014.[320]}{US}$ 

Firefox 58 was released on January 23, 2018, for desktop and Android. Among the additions were: support for credit card autofill, the drop of support for user profiles in previous versions of Firefox, a warning to alert users and site owners of planned security changes to sites affected by the gradual distrust plan for the Symantec certificate authority (desktop), full screen bookmark management with folder support, support for FLAC (Free Lossless Audio Codec) playback, the ability to change the status bar color in themes, and removal of the Firefox Search widget from the home screen (Android). [321][322]

Firefox 59 was released on March 13, 2018, for desktop and Android. Among the additions were: faster load times and improved graphics, improved Real-Time Communications (RTC) capabilities, additional features for Firefox Screenshots, support for W3C specs for pointer events, Private Browsing Mode's removal of path information from referrers to prevent cross-site tracking (desktop), and the addition of Firefox as an Assist app, support for HLS (HTTP Live Streaming) playback for improved compatibility with video sites, and removal of the "about:" page. [323][324]

Release history of Firefox 52-59		
Version	Release date <sup>[23]</sup>	Release type and highlights [t 1]
52.0	March 7, 2017	Official Firefox 52.0 release. [302][303]  First release to implement WebAssembly.  Added support for WebAssembly, an emerging standard that brings near-native performance to Web-based games, apps, and software libraries without the use of plugins.  Added automatic captive portal detection, for easier access to Wi-Fi hotspots. When accessing the Internet via a captive portal, Firefox will alert users and open the portal login page in a new tab.  Enabled multi-process Firefox for Windows users with touch screens  Added user warnings for non-secure HTTP pages with logins. Firefox now displays a "This connection is not secure" message when users click into the username and password fields on pages that don't use HTTPs.  Implemented the Strict Secure Cookies specification which forbids insecure HTTP sites from setting cookies with the "secure" attribute. In some cases, this will prevent an insecure site from setting a cookie with the same name as an existing "secure" cookie from the same base domain.  Enhanced Sync to allow users to send and open tabs from one device to another.  Improved text input for third-party keyboard layouts on Windows. This will address some keyboard layouts that:  have chained dead keys.  input a character even when a dead key sequence failed to compose a character.  Removed support for Netscape Plugin API (NPAPI) plugins other than Flash. Silverlight, Java, Acrobat and the like are no longer supported.  Removed Battery Status API to reduce fingerprinting of users by trackers.  Improved experience for downloads:  Notification in the toolbar when a download fails.  Quick access to five most recent downloads rather than three.  Larger buttons for canceling and restarting downloads.  Displaying (but allowing users to override) an "Untrusted Connection" error when encountering SHA-1 certificates that chain up to a root certificate included in Mozilla's CA Certificate Program. (Note: Firefox continues to permit SHA-1 certificates that chain to manually imported root certificates.)  Migrated Fir
52.0.1	March 17, 2017	Off-cycle security update.[325][326]  • Various security fixes.
52.0.2	March 28, 2017	<ul> <li>Off-cycle stability update. [327][328]</li> <li>Fixed use of Nirmala UI as fallback font for additional Indic languages.</li> <li>Fix for loading tab icons on session restore.</li> <li>Fix for a crash on startup on Linux.</li> <li>Fix for new installs erroneously not prompting to change the default browser setting.</li> <li>Android</li> <li>Disabled presentation API to avoid page loading delays.</li> <li>Display of end-of-life message on non-NEON devices.</li> <li>End-of-life 52.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases_5Bjoduinn.2C5D) on April 19, 2017.</li> </ul>
52.0esr	March 7, 2017	Official Firefox 52.0 Extended Support Release (ESR).
52.0.1esr	March 17, 2017	Off-cycle security update.[329] Same changelog of 52.0.1

		Off-cycle stability update.[330]
52.0.2esr	March 28, 2017	Same changelog of 52.0.2
F2.1.000	April 19,	Regular security and stability update.[331]
52.1.0esr	2017	Various security, stability, and regression fixes.
F2.1.1	M 5 2017	Off-cycle security update.[332]
52.1.1esr	May 5, 2017	Various security fixes.
F2 1 2	M10 2017	Off-cycle stability update.[333]
52.1.2esr	May 19, 2017	■ Fixed hangs when using a proxy with NTLM authentication.
	. 12	Regular security and stability update.[334]
52.2.0esr	June 13, 2017	<ul><li>Various security fixes</li><li>Improved file type recognition on Windows</li></ul>
	June 29,	Off-cycle stability update.[335]
52.2.1esr	2017	■ Fixed an issue in which printing text does not work on Windows when Direct2D is disabled
		Regular security and stability update. [336]
52.3.0esr	August 8, 2017	<ul> <li>Various security fixes</li> <li>Various stability and regression fixes</li> </ul>
		Regular security and stability update. [337]
52.4.0esr	September 28, 2017	Various security fixes
	-, -	Various stability and regression fixes
	October 9,	Off-cycle stability update.[338]
52.4.1esr	2017	<ul> <li>Fixed a crash when using the color picker on macOS 10.13</li> <li>Fixed a crash when playing videos on macOS 10.13</li> </ul>
	November 14, 2017	Regular security and stability update.[339]
52.5.0esr		<ul><li>Various security fixes</li><li>Various stability and regression fixes</li></ul>
	December 7,	Off-cycle security update.[340]
52.5.2esr	2017	Various security fixes
	D	Off-cycle stability update.[341]
52.5.3esr	December 28, 2017	• Fix for a crash reporting issue that inadvertently sends background tab crash reports to Mozilla without user opt-in
	January 23, 2018	Regular security and stability update.[342]
52.6.0esr		<ul> <li>Various stability and regression fixes</li> <li>Various security fixes</li> </ul>
		Regular security and stability update.[343]
52.7.0esr	March 13, 2018	<ul> <li>Various stability and regression fixes</li> <li>Various security fixes</li> </ul>
	March 14,	Off-cycle stability update.[344]
52.7.1esr	March 14, 2018	■ Fixed an issue in which the search is broken for Italian "it" locale in Firefox ESR 52.7.0
F2 7 2	March 16,	Off-cycle security update.[345]
52.7.2esr	2018	Various security fixes
52.7.3esr	March 26,	Off-cycle security update.[346]
52.7.5esr	2018	Various security fixes
52.7.4esr	April 30,	Off-cycle stability update.[347]
J2.7.4ESI	2018	Fix for compatibility with Windows 10 April 2018 update.
		Regular security and stability update. [348]
52.8.0esr	May 9, 2018	<ul> <li>Various stability and regression fixes</li> <li>Performance improvements to the Safe Browsing service to avoid slowdowns while updating site classification data</li> </ul>

E2 0 1 :	luno 6, 2010	Off-cycle security update.[349]
52.8.1esr	June 6, 2018	Various security fixes
52.9.0esr	June 26, 2018	Regular security update.[350]  Various security fixes Last release for Windows XP and Windows Vista.  Last release for 32-bit Mac OS X.
		End-of-life 52.x.x ESR product line on September 5, 2018.
		Official Firefox 53.0 release.[305][303]  • Improved graphics stability for Windows users with the addition of compositor process separation (Quantum
		Compositor).  Two new 'compact' themes available in Firefox, dark and light, based on the Firefox Developer Edition theme.  Lightweight themes are now applied in private browsing windows.
		<ul> <li>Reader Mode now displays estimated reading time for the page.</li> <li>Windows 7+ users on 64-bit OS can select 32-bit or 64-bit versions in the stub installer.</li> <li>Various security fixes.</li> </ul>
		<ul> <li>Updated the design of site permission requests to make them harder to miss and easier to understand.</li> <li>Windows XP and Vista are no longer supported. XP and Vista users running Firefox 52 will continue to receive security updates on Firefox ESR 52.</li> </ul>
53.0	April 19, 2017	<ul> <li>32-bit Mac OS X is no longer supported. 32-bit Mac OS X users can switch to Firefox ESR 52 to continue receiving security updates</li> <li>Updates for Mac OS X are smaller in size compared to updates for Firefox 52.</li> <li>The last few characters of shortened tab titles fade out instead of being replaced by ellipses to keep more of</li> </ul>
		the title visible.  • Ended Firefox Linux support for processors older than Pentium 4 and AMD Opteron  • New visual design for audio and video controls.  • Support for WebM video with alpha, which allows playing videos with transparent backgrounds.
		Changes for web developers.  Changes for web developers.
		Android
		<ul> <li>Right to Left Language Support - Arabic (ar), Urdu (ur), Hebrew (he) and Persian (fa)</li> <li>Users can enable two columns tabs setting in portrait mode.</li> <li>Long press on a search suggestion removes it from browser history.</li> </ul>
		Android
F2 0 1	April 27,	Off-cycle stability update.[351]
53.0.1	2017	<ul> <li>Fixed a rare condition that could prevent opening restored tabs.</li> <li>Fix for accessibility issue with TalkBack.</li> <li>Fix for a crash with the Bluhell Firewall add-on.</li> </ul>
		Off-cycle security and stability update.[352]
	May 5, 2017	<ul> <li>Various security fixes.</li> <li>The non-standard showDialog argument to window.find is now ignored.</li> <li>Right-to-left locales will now display the search bar correctly.</li> <li>Prevented video corruption on affected devices.</li> </ul>
53.0.2		Desktop
		Made form validation errors and date picker panel visible to the user
		Android
		Fix for issues with Android integration.
53.0.3	May 19, 2017	Desktop
		Off-cycle stability update.[353]
		<ul> <li>Fixed hangs when using a proxy with NTLM authentication.</li> <li>Fixed excessive resource usage from the captive portal detection service.</li> <li>Bumped preloaded security information expiration times.</li> </ul>
		End-of-life 53.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on June 13, 2017.

		Official Firefox 54.0 release.[307][303]  • Simplified the download button and download status panel.
		<ul> <li>Simplified the download button and download status panel.</li> </ul>
		<ul> <li>Added support for multiple content processes (e10s-multi).</li> </ul>
		Added Burmese (my) locale.
		<ul> <li>Moved the mobile bookmarks folder to the main bookmarks menu for easier access.</li> </ul>
		<ul> <li>Added ability to create and save custom devices in Responsive Design Mode.</li> <li>Additional changes for web developers.</li> </ul>
54.0	June 13, 2017	Android
	2017	Added Bulgarian (bg) and Kabyle (kab) locales.
		• Fixed formatting for right-to-left languages, including formatting of preference names in about:config.
		<ul> <li>Improved audio and video playback in the browser.</li> <li>Improved bookmarks sync performance.</li> </ul>
		Changes during Developer Edition releases
		• Last Developer Edition build that is based on "Aurora" build. Firefox Developer Edition will be based on the
		"Beta" build afterwards.
		Off-cycle stability update. [354][355]
		<ul> <li>Fix for a display issue of tab title.</li> <li>Fix for a display issue of opening new tab.</li> </ul>
		• Fix for a display issue when opening multiple tabs.
		Fix for a tab display issue when downloading files.
		Desktop
54.0.1	June 29, 2017	<ul> <li>Fix for a PDF printing issue.</li> <li>Fix for a Netflix issue on Linux.</li> </ul>
		Android
		Fix for an inconsistent locale display issue
		Fix for a crash in tabs tray menu  Fix for legger with positions  Fix for legger with positi
		• Fix for issues with navigation
		End-of-life 54.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases_5Bjoduinn.2C5D) on August 8, 2017.
		Official Firefox 55.0 release.[309][310]
		<ul> <li>Launched Windows support for WebVR, bringing immersive experiences to the web.</li> <li>Added options that let users optimize recent performance improvements</li> </ul>
		<ul> <li>Setting to enable Hardware VP9 acceleration on Windows 10 Anniversary Update for better battery life and lower CPU usage while watching videos</li> </ul>
		<ul> <li>Setting to modify the number of concurrent content processes for faster page loading and more responsive</li> </ul>
		tab switching  • Simplified installation process with a streamlined Windows stub installer
	August 8, 2017	■ Firefox for Windows 64-bit is now installed by default on 64-bit systems with at least 2GB of RAM
		<ul> <li>Full installers with advanced installation options are still available</li> </ul>
		<ul> <li>Improved address bar functionality</li> </ul>
		<ul> <li>Search with any installed one-click search engine directly from the address bar</li> <li>Search suggestions appear by default</li> </ul>
55.0		<ul> <li>When entering a hostname (like pinterest.com) in the URL bar, Firefox resolves to the secure version of the</li> </ul>
		site (https://www.pinterest.com) instead of the insecure version (http://www.pinterest.com) when possible  • Updated Sidebar for bookmarks, history, and synced tabs so it can appear at the right edge of the window as
		well as the left
		Added support for stereo microphones with WebRTC  Singlified printing force Reader Mode.
		<ul> <li>Simplified printing from Reader Mode</li> <li>Updated Firefox for OS X and macOS to allow users to assign custom keyboard shortcuts to Firefox menu item.</li> </ul>
		via System Preferences
		<ul> <li>Browsing sessions with a high number of tabs are now restored in an instant</li> <li>Make screenshots of webpages, and save them locally or upload them to the cloud. This feature will undergo</li> </ul>
		A/B testing and will not be visible for some users.
		Added Belarusian (be) locale
		Various security fixes

		<ul> <li>Modernized application update UI to be less intrusive and more aligned with the rest of the browser. Only users who have not restarted their browser 8 days after downloading an update or users who opted out of automatic updates will see this change.</li> <li>Made the Adobe Flash plugin click-to-activate by default and allowed only on http:// and https:// URL schemes. (This change will not be visible to all users immediately.)</li> <li>Firefox does not support downgrades, even though this may have worked in past versions. Users who install Firefox 55+ and later downgrade to an earlier version may experience issues with Firefox.</li> <li>Sites that don't use SSL can no longer access Geolocation APIs to determine a user's physical location</li> <li>Headless mode supported on linux<sup>[356]</sup></li> <li>Android</li> <li>Added actions to manage tabs. You can now reorder tabs by tapping and holding a tab in the tabs tray (or in the tab strip on tablets).</li> <li>Added Greek (el) and Lao (lo) locales</li> </ul>
		<ul> <li>Various security fixes</li> <li>Added option to accessibility settings to respect the system's set font size when displaying web pages</li> <li>Video that is not visible will stop rendering to conserve power (audio will still continue)</li> <li>Note: Firefox 55 is the last version that supports devices running Android 4.0</li> </ul>
55.0.1	August 10, 2017	<ul> <li>Desktop</li> <li>Off-cycle stability update. [357]</li> <li>Fix for a rendering issue with some PKCS#11 libraries.</li> <li>Fix for a problem causing What's new pages not to be displayed.</li> <li>Fix for a regression in the tab restoration process.</li> <li>Disabled the predictor prefetch.</li> </ul>
55.0.2	August 16, 2017	Off-cycle stability update.[358][359]  Fix for a potential issue when the username had some specific characters in the path.  Fix for an issue with new installation notification for sideload add-ons.  Fix for performance regressions with WebExtension.  Fix for a regression with the popup menu.  Android  Fix for an issue with tab restoration
		<ul> <li>Fix for a crash with Tablemetry</li> <li>Fixed: Blacklisting of Galaxy S4 SPH-L720 model for the adaptive playback feature</li> <li>Disabled the predictor prefetch</li> <li>Last release to support Android 4.0.x (Ice Cream Sandwich)</li> </ul>
55.0.3	August 25, 2017	<ul> <li>Desktop</li> <li>Off-cycle stability update. [360]</li> <li>Fixed file uploads to some websites, including YouTube.</li> <li>Fix for an issue with addons when using a path containing non-ASCII characters.</li> <li>End-of-life 55.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on September 28, 2017.</li> </ul>
56.0	September 28, 2017	Official Firefox 56.0 release. [311][312]  Launched Firefox Screenshots, a feature that lets users take, save, and share screenshots without leaving the browser  Added support for address form autofill (en-US only)  Updated Preferences  Added search tool so users can find a specific setting quickly  Reorganized preferences so users can more easily scan settings  Rewrote descriptions so users can better understand choices and how they affect browsing  Revised data collection choices so they align with updated Privacy Notice and data collection strategy  Media opened in a background tab will not play until the tab is selected  Improved Send Tabs feature of Sync for iOS and Android, and Send Tabs can be discovered even by users without a Firefox Account  Replaced character encoding converters with a new Encoding Standard-compliant implementation written in Rust  Added hardware acceleration for AES-GCM  Updated the Safe Browsing protocol to version 4  Reduced update download file size by approximately 20 percent  Improved security for verifying update downloads

		■ Added Layout Panel to CSS Grid DevTools
		Android
		<ul> <li>Improved support for WebExtensions on Android</li> <li>Improved power consumption and performance for WebRTC with the use of hardware encoders</li> <li>Added Zapoteco (zam) and Belarusian (be) locales</li> <li>Ended support for Flash</li> <li>Ended support for devices running Android 4.0</li> </ul>
		Desktop
	October 9, 017	<ul> <li>Off-cycle stability update. [361]</li> <li>Blocked D3D11 when using Intel drivers on Windows 7 systems with partial AVX support.</li> <li>Users of 32-bit Firefox on 64-bit Windows are migrated to 64-bit Firefox for increased stability and security.</li> </ul>
		Desktop
	october 26, 017	Off-cycle stability update. [362]  Disabled Form Autofill completely on user request.  Fix for video-related crashes on Windows 7.  Corrected detection for 64-bit GSSAPI authentication.  Fix for shutdown crash.  End-of-life 56.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x and Previous Releases
		5Bjoduinn.2C5D) on November 14, 2017.
5/0	lovember 4, 2017	Firefox 57 ("Quantum")(363)  A completely new browsing engine, designed to take full advantage of the processing power in modern devices A redesigned interface with optimizations for touch screens A unified address and search bar. New installs will see this unified bar A revamped new tab page that includes top visited sites, recently visited pages, and recommendations from Pocket (in the US, Canada, and Germany) An updated product tour to orient new and returning Firefox users AMD VP9 hardware video decoder support for improved video playback with lower power consumption An expanded section in preferences to manage all website permissions Various security fixes Firefox now exclusively supports extensions built using the WebExtension API, and unsupported legacy extensions will no longer work The browser's autoscroll feature, as well as scrolling by keyboard input and touch-dragging of scrollbars, now use asynchronous scrolling. These scrolling methods are now similar to other input methods like mousewheel and provide a smoother scrolling experience The content process now has a stricter security sandbox that blocks filesystem reading and writing on Linux, similar to the protections for Windows and macOS that shipped in Firefox 56 Middle mouse paste in the content area no longer navigates to URLs by default on Unix systems Removed the toolbar Share button Some older versions of the ATOK IME, including ATOK 2006, 2008, 2009 and 2010, can cause crashes and are therefore disabled on the Windows 64-bit version of Firefox Quantum The default font for Japanese text is now Meiryo A complete visual refresh of both the Light and Dark DevTools themes, matching the new visual style of Firefo Quantum The laspector shows the values of CSS variables on hover Completely new and re-designed Console panel. Joining the Debugger and the Network Monitor, the Console has been rewritten using modern web technologies such as React and Redux. It now also allows to inspect objects in context.  Android Performance improvements for faster

	<ul> <li>Firefox for Android now exclusively supports extensions built using the WebExtension API, and unsupported legacy extensions will no longer work</li> <li>Android Apps can now launch Firefox Custom Tabs</li> </ul>
	Off-cycle security and stability update.[364][365]
November 29, 2017	<ul> <li>Fix for a video color distortion issue on YouTube and other video sites with some AMD devices.</li> <li>Fix for an issue with prefs.js when the profile path has non-ASCII characters.</li> <li>Various security fixes.</li> <li>Fixed an issue in which Google map crashes on macOS with Intel HD Graphics 3000.</li> <li>Blocked injection of a client library associated with the RealPlayer Free player which is known to cause performance problems in Firefox.</li> </ul>
	Android
	<ul> <li>Fixed an issue in which Stop button no longer appears immediately after starting a navigation.</li> <li>Various security fixes.</li> </ul>
	Desktop
December 7,	Off-cycle stability update.[366]
2017	<ul> <li>Blocked old versions of G Data Endpoint Security for crashing Firefox on start up - Windows only</li> <li>Fix for a regression with WebGL and D3D9 - Windows only</li> </ul>
	Desktop
December	Off-cycle stability update.[367]
28, 2017	• Fix for crash reporting issue that inadvertently sends background tab crash reports to Mozilla without a user opt-in.
	Off-cycle security update.[368][369]
January 4,	• Security fixes to address the Meltdown and Spectre timing attacks.
2018	End-of-life 57.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on January 23, 2018.
	Official Firefox 58.0 release.[321][322]
	<ul> <li>Performance improvements, including:</li> </ul>
	<ul> <li>Rendering graphics for Windows users by using Off-Main-Thread Painting (OMTP)</li> <li>Loading pages faster by changing how Firefox caches and retrieves JavaScript</li> </ul>
	Improvements to Firefox Screenshots:
	<ul> <li>Copy and paste screenshots directly to your clipboard</li> <li>Firefox Screenshots now works in Private Browsing mode</li> </ul>
	Added support for credit card autofill
	Added Nepali (ne-NP) locale
January 23, 2018	<ul> <li>Users can enable Tracking Protection at all times.</li> <li>Fonts installed in non-standard directories will no longer appear blank for Linux users</li> </ul>
	Various security fixes
	<ul> <li>User profiles created in Firefox 58 (and in future releases) are not supported in previous versions of Firefox.</li> <li>Users who downgrade to a previous version should create a new profile for that version.</li> </ul>
	<ul> <li>Added a warning to alert users and site owners of planned security changes to sites affected by the gradual distrust plan for the Symantec certificate authority</li> <li>Implemented the PerformanceNavigationTiming API</li> </ul>
	<ul> <li>Added PerformanceResourceTiming.workerStart so sites can measure service worker startup time</li> </ul> Android
	Performance improvements, including:  Curport for Progressive Web Appe
	<ul> <li>Support for Progressive Web Apps</li> <li>Loading pages faster by changing how Firefox caches and retrieves JavaScript</li> </ul>
	<ul> <li>Added ability to Sync only over non-metered connections (e.g., WiFi). Setting available via Sync Preferences.</li> </ul>
	<ul> <li>Added full screen bookmark management with folder support</li> </ul>
	<ul> <li>Added support for FLAC (Free Lossless Audio Codec) playback</li> <li>Added ability to change the status bar color in themes</li> <li>Added Bengali from Bangladesh (bn-BD) and Nepali (ne-NP) locales</li> </ul>
	December 7, 2017  December 28, 2017  January 4, 2018

58.0.1	January 29, 2018	Off-cycle security and stability update.[370][371]  Security fix.  Fixed an issue in which, when using certain non-default security policies on Windows (for example with Windows Defender Exploit Protection or Webroot security products), Firefox 58.0 would fail to load pages.  Android  Fixed performance issue whereby some installations were initially slow to load pages.
58.0.2	February 7, 2018	<ul> <li>Off-cycle stability update. [372][373]</li> <li>Avoided a signature validation issue during update on macOS</li> <li>Blocklisted graphics drivers related to off main thread painting crashes.</li> <li>Fixed tab crash during printing.</li> <li>Fix for clicking links and scrolling emails on Microsoft Hotmail and Outlook (OWA) webmail.</li> <li>Android</li> <li>Fixed an issue in which, if the user cancels a download by exiting our app chooser dialogue without choosing anything, the download continues invisibly in background.</li> <li>End-of-life 58.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on March 13, 2018.</li> </ul>
59.0	March 13, 2018	Performance enhancements:  Paster load times for content on the Firefox Home page Paster page load times by loading either from the networked cache or the cache on the user's hard drive (Race Cache With Network) Improved graphics rendering using Off-Main-Thread Painting (OMTP) for Mac users Drag-and-drop to rearrange Top Sites on the Firefox Home page, and customize new windows and tabs in other ways Added features for Firefox Screenshots: Basic annotation lets the user draw on and highlight saved screenshots Recropping to change the viewable area of saved screenshots Enhanced WebExtensions API including better support for decentralized protocols and the ability to dynamically register content scripts Improved Real-Time Communications (RTC) capabilities. Implemented RTP Transceiver to give pages more fine grained control over calls Implemented features to support large scale conferences Added support for W3C specs for pointer events and improved platform integration with added device support for mouse, pen, and touch screen pointer input Added the Ecosia search engine as an option for German Firefox Added the Qwant search engine as an option for French Firefox Added the Qwant search engine as an option for French Firefox Added the Gwant search engine as an option for French Firefox Added the Want search engine as an option for French Firefox Added settings in about:preferences to stop websites from asking to send notifications or access your device's camera, microphone, and location, while still allowing trusted websites to use these features Firefox Private Browsing Mode will remove path information from referrers to prevent cross-site tracking  Android  Added Firefox as an Assist App so users can start a search by long-pressing the home button Added support for HLS (HTTP Live Streaming) playback for improved compatibility with video sites Firefox Private Browsing Mode will remove path information from referrers sent to third parties to help prevent third-party data leakage The "about." page was removed
59.0.1	March 16, 2018	Off-cycle security update.[374][375] ■ Various security fixes.
59.0.2	March 26, 2018	<ul> <li>Off-cycle security and stability update. [376][377]</li> <li>Fixed invalid page rendering with hardware acceleration enabled</li> <li>Fixed an issue in which Windows 7 users with touch screens or certain 3rd party desktop applications which interact with Firefox through accessibility services may experience random browser crashes</li> <li>Fixed an issue in which browser keyboard shortcuts (e.g. copy Ctrl+C) don't work on sites that use those keys with resistFingerprinting enabled</li> <li>Fixed high CPU / memory churn caused by third-party software on some computers.</li> <li>Fixed an issue in which users who have configured an "automatic proxy configuration URL" and want to reload their proxy settings from the URL will find the Reload button disabled in the Connection Settings dialog when</li> </ul>

		they select Preferences/Options > Network Proxy > Settings  Fixed an issue in which URL fragment identifiers break Service Worker responses.  Fixed an issue in which users trying to cancel a print around the time it completed would continue to get intermittent crashes  Fixed broken getUserMedia (audio) on DragonFly, FreeBSD, NetBSD, OpenBSD. Video chat apps either wouldn't work or be always muted  Various security fixes  Android  Fixed top crasher on Firefox for Android  Fixed an issue in which URL fragment identifiers break Service Worker responses
59.0.3	April 30, 2018	Desktop  Off-cycle stability update. [378]  ■ Fix for compatibility with Windows 10 April 2018 update.  End-of-life 59.0.x product line (https://wiki.mozilla.org/RapidRelease#4.0.x_and_Previous_Releases 5Bjoduinn.2C5D) on May 9, 2018.

## Firefox 60 through 67

Firefox 60 and Firefox 60 ESR were released on May 9, 2018, for desktop (both) and Android (no ESR). It includes a policy engine that allows customized Firefox deployments in enterprise environments, using Windows Group Policy or a cross-platform JSON file, enhancements to New Tab / Firefox Home, a redesigned Cookies and Site Storage section in Preferences for greater clarity and control of first- and third-party cookies, the application of Quantum CSS to render browser UI, support for Web Authentication API, which allows USB tokens for website authentication, an option for Linux users to show or hide page titles in a bar at the top of the browser, improved WebRTC audio performance and playback for Linux users (desktop), exclusive support for extensions built using the WebExtension API (ESR), the implementation of Quantum CSS (also known as Stylo) in Android for faster page rendering; and the addition of the View Page Source option to the Page Action menu (Android). [379][380][381]

Firefox 61 was released on June 26, 2018, for both desktop and Android. Among the many additions were: Improvements for dark theme support across the entire Firefox user interface, added support to allow WebExtensions to hide tabs, improved bookmark syncing, convenient access to more search engines (desktop), improved security and enhanced performances (both), and the fix for a recurring crash on Samsung Galaxy S8 devices running Android Oreo (Android). [382][383]

Firefox 62 was released on September 5, 2018, for both desktop and Android. Among the many additions were: FreeBSD support for WebAuthn, a preference that allows users to distrust certificates issued by Symantec in advance of removing all trust for Symantec-issued certificates in Firefox 63, improved graphics rendering for Windows users without accelerated hardware using Parallel-Off-Main-Thread Painting, CSS Variable Fonts (OpenType Font Variations) support, support for CSS Shapes, allowing for richer web page layouts (desktop), improved scrolling performance, faster page load times over Wi-Fi connections by loading from the network cache if disk cache is slow, and "Product and feature tips" toggle in Notifications settings (Android). [384][385] The bookmarks' Description field was deprecated and will be removed completely in future releases.

Firefox 63 was released on October 23, 2018, for both desktop and Android. Among the many additions and changes were: Performance and visual improvements for Windows and macOS users, content blocking, WebExtensions running in their own process in Linux, recognition of the operating system accessibility setting for reducing animation, the addition of Amazon and Google as Top Sites tiles on the Firefox Home (New Tab) page, the removal of the "Never Check for Updates" option from "about:preferences" and "Open in Sidebars" feature from the Library (desktop), support for Picture-In-Picture video, and use of notification channels (Android). [386][387]

Firefox 64 version 64.0 was released on December 11, 2018, for desktop only. Firefox 64 for desktop provides better recommendations, enhanced tab management, easier performance management, improved performance for Mac and Linux users by enabling link time optimization (Clang LTO), more seamless sharing on Windows, the option to remove add-ons using the context menu on their toolbar buttons, TLS certificates issued by Symantec that are no longer trusted by Firefox, and the availability of WebVR on macOS. [388] Three days later, version 64.0.1 was released for Android only. Firefox 64 for Android provides faster and more responsive scrolling and fixes for performance lags for users with installed password manager apps and an issue that resulted in the loading indicator using too much of the CPU and power. [389]

Firefox 65 was released on January 29, 2019, for both desktop and Android. Among the many additions and changes were: improved performance and web compatibility, with support for the  $\underline{\text{WebP}}$  image format; enhanced security for macOS, Linux, and Android users via stronger stack smashing protection which is now enabled by default for all platforms (both desktop and Android); enhanced tracking protection; updated language settings in Preferences; support for Handoff on macOS; a better video streaming experience for Windows users; easier performance management; an improved pop-up blocker; the availability of Firefox for Windows with 32- and 64-bit MSI installers for easier enterprise deployments; additional support for Flexbox (desktop); and the restoration of Chromecast controls to the location bar (Android). [390][391]

Firefox 66 was released on March 19, 2019, for both desktop and Android. Among the many additions and changes were:

Prevention of websites from automatically playing sound, smoother scrolling (both), an improved search experience and performance and better user experience for extensions, the addition of basic support for macOS Touch Bar and of support for Windows Hello on Windows 10, the enabling of AV1 support on 32-bit Windows and MacOS (desktop), and the addition of support to open files from external storage, such as an SD card (Android). [392][393]

Firefox 67 was released on May 21, 2019, for both desktop and Android. Among the many additions and changes were: Lowering priority of setTimeout during page load; suspending (unloading) unused tabs to clear memory; the ability to block known cryptominers and fingerprinters in the Custom settings of the Content Blocking preferences; improvement of keyboard accessibility; usability and security improvements in Private Browsing; protection against running older versions of the browser which can lead to data corruption and stability issues (desktop); a new Firefox search widget with voice input; and removal of the Guest Session feature ostensibly to "streamline" user experience (Android). [394][395]

	I	Release history of Firefox 60-67
Version	Release date <sup>[23]</sup>	Release type and highlights <sup>[t 1]</sup>
60.0	May 9, 2018	Official Firefox 60.0 release. [379][381]  Added a policy engine that allows customized Firefox deployments in enterprise environments, using Windows Group Policy or a cross-platform JSON file.  DNS over HTTPS (DOH) functionality available.  Enhancements to New Tab / Firefox Home.
		<ul> <li>Responsive layout that shows more content for users with wide-screen displays.</li> <li>Highlights section includes web sites saved to Pocket.</li> <li>More options to reorder sections and content on the page.</li> <li>Pocket Sponsored Stories will appear for a percentage of users in the US.</li> <li>Redesigned Cookies and Site Storage section in Preferences for greater clarity and control of first- and third-party cookies.</li> <li>Applied Quantum CSS to render browser UI.</li> <li>Added support for Web Authentication API, which allows USB tokens for website authentication.</li> <li>Enhanced camera privacy indicators: Firefox now turns off your camera and the camera's light when you disable video recording, and turns the camera and light on when you resume recording.</li> <li>Added an option for Linux users to show or hide page titles in a bar at the top of the browser.</li> <li>Improved WebRTC audio performance and playback for Linux users.</li> <li>Locale added: Occitan (oc).</li> <li>Various security fixes.</li> <li>Changed the Windows shortcut for entering Reader View to F9, for better compatibility with keyboard layouts that use AltGr.</li> <li>Bookmarks no longer support multiple keywords for the same URL unless the request has different POST data.</li> <li>TLS certificates issued by Symantec before June 1, 2016, are no longer trusted by Firefox.</li> <li>Updated the Skia graphics library to milestone 66.</li> <li>Changes affecting developers.</li> </ul> Android <ul> <li>Implemented Quantum CSS (also known as Stylo) in Android for faster page rendering.</li> <li>Added View Page Source option to the Page Action menu.</li> <li>Various security fixes.</li> <li>Changes affecting developers.</li> </ul>
60.0.1	May 16, 2018	Off-cycle stability update. [396][397]  Avoided overly long cycle collector pauses with some add-ons installed.  Fixed an issue in which, after unchecking the "Sponsored Stories" option, the New Tab page now immediately stops displaying "Sponsored content" cards.  On touchscreen devices, fixed momentum scrolling on non-zoomable pages.  Fixed black map on Google Maps with updated Nvidia Web Drivers on macOS.  Corrected use of the right default background when opening tabs or windows in high contrast mode.  The Firefox uninstaller on Windows is now translated again.  Restored translations of the Preferences panels when using a language pack.  WebVR has been disabled by default on macOS.  Android
60.0.2	June 6, 2018	<ul> <li>On touchscreen devices, fixed momentum scrolling on non-zoomable pages.</li> <li>Off-cycle security and stability update. [398][399]</li> <li>Updated to NSS 3.36.4 from 3.36.1:         <ul> <li>Fixed an issue in which connecting to a server that was recently upgraded to TLS 1.3 would result in a SSL_RX_MALFORMED_SERVER_HELLO error.</li></ul></li></ul>

		Official Firefox 60.0 Extended Support Release (ESR).[380]
		Firefox Quantum arrives in the ESR channel. Key features include:
		<ul> <li>A completely new browser engine, designed to take full advantage of the processing power in modern devices</li> </ul>
		A redesigned interface with a clean, modern appearance, consistent visual elements, and optimizations for
		touch screens  A unified address and search bar. New installs will see this unified bar.
		• A revamped new tab page that includes top visited sites, recently visited pages, and recommendations
60.0esr	May 9, 2018	from Pocket (in the US, Canada, and Germany)  • An updated product tour to orient new and returning Firefox users
		<ul> <li>Support for enterprise environments, with a policy engine that allows customized Firefox deployments using</li> </ul>
		Windows Group Policy or a cross-platform JSON file  • Firefox now exclusively supports extensions built using the WebExtension API. Unsupported legacy extensions
		will no longer work in Firefox 60 ESR, but they will continue to work in Firefox 52 ESR, which will be supported
		until September 2018.  • DNS over HTTPS (DOH) functionality available.
		<ul> <li>TLS certificates issued by Symantec before June 1, 2016, are no longer trusted by Firefox. The "security.pki.distrust_ca_policy" preference can be set to 0 to reinstate trust in those certificates</li> </ul>
		Off-cycle stability update[400]
60.0.1esr	May 16, 2018	Same changelog of 60.0.1
		Off-cycle security and stability update.[401]
60.0.2esr	June 6, 2018	Same changelog of 60.0.2
		Regular security and stability update.[402]
60.1.0esr	June 26, 2018	Various security fixes
		Various stability and regression fixes
	September 5,	Regular security and stability update.[403]
60.2.0esr	2018	<ul><li>Various security fixes</li><li>Various stability and regression fixes</li></ul>
		Off-cycle security and stability update.[404]
	September	■ Disabled multiprocess support for users running old versions of the JAWS screen reader software
60.2.1esr	21, 2018	<ul> <li>Fixed a startup crash affecting users migrating from older ESR releases</li> <li>Cleaned up old NSS DB files after upgrading</li> </ul>
		Various security fixes  • Various security fixes
		Off-cycle security and stability update.[405]
60.2.2esr	October 2, 2018	<ul> <li>Fixed hangs on macOS Mojave (10.14) when various dialog windows (upload, download, print, etc.) are activated</li> </ul>
	2010	Various security fixes
		Regular security and stability update.[406]
60.3esr	October 23, 2018	Various stability and regression fixes
		Various security fixes
60.4esr	December	Regular security and stability update.[407]
	11, 2018	<ul> <li>Updated list of currency codes to include Unidad Previsional (UYW)</li> <li>Various security fixes</li> </ul>
60.5esr	January 28,	Regular security update.[408]
ou.sesi	2019	Various security fixes
60.5.1esr	February 12,	Off-cycle security update.[409]
55.5.1631	2019	Various security fixes
60.5.2esr	February 22,	Off-cycle stability update.[410]
30.3.2031	2019	Fixed a frequent crash when reading various Reuters news articles
		Regular security update.[411]
60.6esr	March 19, 2019	<ul> <li>Various security fixes</li> <li>In the network connections settings, sites added to the "No proxy for" list will now honor that setting</li> </ul>
		regardless of any other specified proxy settings

	M	Off-cycle security update.[412]
60.6.1esr	March 22, 2019	Various security fixes
		Off-cycle stability update.[413]
60.6.2esr	May 5, 2019	Repaired certificate chain to re-enable web extensions that had been disabled
		Off-cycle stability update.[414]
60.6.3esr	May 8, 2019	• Further improvements to re-enable web extensions which had been disabled for users with a master password set
		Regular security and stability update.[415]
60.7esr	May 21, 2019	<ul> <li>Various security fixes</li> <li>Font and date adjustments to accommodate the new Reiwa era in Japan</li> </ul>
60.7.1esr	luno 19, 2010	Off-cycle security update.[416]
60.7.1esi	June 18, 2019	Security fix
60.7.2esr	June 20, 2019	Off-cycle security update.[417]
00.7.2631	Julie 20, 2019	Security fix
60.8esr	July 9, 2019	Regular security update.[418]
	July 3, 2013	Various security fixes.
		Regular security update.[419]
60.0	September 3,	Various security fixes.
60.9esr	2019	End-of-life 60.x.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on October 22, 2019.
		Official Firefox 61.0 release.[382][383]
		■ Enhanced performance:
		■ Faster page rendering with Quantum CSS improvements and the new retained display list feature
		<ul> <li>Faster switching between tabs on Windows and Linux</li> <li>WebExtensions now run in their own process on MacOS</li> </ul>
		• Convenient access to more search engines: You can now add search engines to the address bar "Search with"
		tool from the page action menu when on a webpage that provides an OpenSearch plugin  Share links from Firefox for MacOS more easily: You can now share the URL of an active tab from the page
		actions menu in the address bar  Improved security:
		On-by-default support for the latest draft of the TLS 1.3 specification
61.0	June 26, 2018	<ul> <li>Access to FTP subresources inside http(s) pages has been blocked</li> <li>A more consistent user experience: Improvements for dark theme support across the entire Firefox user</li> </ul>
01.0		interface
		<ul> <li>More customization for tab management: added support to allow WebExtensions to hide tabs</li> <li>Improved bookmark syncing</li> </ul>
		The settings for customizing your homepage and new tab page in Firefox have been added to a new Preferences section that can be accessed from Firefox at about:preferences#home. The settings can also be accessed via the gear icon on the New Tab page.
		Android
		Performance enhancements:
		Quantum CSS improvements which improve page rendering times
		Faster scrolling due to treating touch event listeners as passive by default
		<ul> <li>Improved security: On-by-default support for the latest draft of the TLS 1.3 specification</li> <li>Fixed a recurring crash on Samsung Galaxy S8 devices running Android Oreo (8.0)</li> </ul>
		Desktop
61.0.1		Off-cycle stability update.[420]
		Fixed broken website loading for Chinese users with accessibility enabled.
	July 5, 2018	• Fixed missing content on the New Tab Page and the Home section of the Preferences page.
61.0.1		
61.0.1	, july 3, 2020	Fixed loss of bookmarks under rare circumstances when upgrading from Firefox 60.  Improved playback of Twitch 1080p video streams.
61.0.1	, a., s, 2020	<ul> <li>Fixed loss of bookmarks under rare circumstances when upgrading from Firefox 60.</li> <li>Improved playback of Twitch 1080p video streams.</li> <li>Web pages no longer lose focus when a browser popup window is opened.</li> </ul>

		Fixed extensions being unable to override the default homepage in certain situations.
		Off-cycle stability update.[421][422]
		<ul> <li>Adds support for automatically restoring your Firefox session after Windows restarts.</li> <li>Improved website rendering with the Retained Display List feature enabled.</li> <li>Fixed broken DevTools panels with certain extensions installed.</li> </ul>
		Desktop
61.0.2	August 8, 2018	■ Fixed a crash for users with some accessibility tools enabled.
		Android
		■ Fixed a crash on devices running Android KitKat 4.4 or earlier.
		End-of-life 61.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on September 5, 2018.
		Official Firefox 62.0 release.[384][385]
		• Firefox Home (the default New Tab) now allows users to display up to 4 rows of top sites, Pocket stories, and highlights
		"Reopen in Container" tab menu option appears for users with Containers that lets them choose to reopen a tab in a different container  In odverse of removing all trust for Companies is said and fine to the container.
		<ul> <li>In advance of removing all trust for Symantec-issued certificates in Firefox 63, a preference was added that allows users to distrust certificates issued by Symantec</li> <li>Added FreeBSD support for WebAuthn</li> </ul>
		<ul> <li>Improved graphics rendering for Windows users without accelerated hardware using Parallel-Off-Main-Thread Painting</li> </ul>
		• Support for CSS Shapes, allowing for richer web page layouts. This goes hand in hand with a brand new Shape Path Editor in the CSS inspector
		<ul> <li>CSS Variable Fonts (OpenType Font Variations) support, which makes it possible to create beautiful typography with a single font file</li> <li>Updates for enterprise environments:</li> </ul>
		AutoConfig is sandboxed to the documented API by default
62.0	September 5,	Added Canadian English (en-CA) locale
02.0	2018	<ul> <li>Removed the description field for bookmarks</li> <li>Dark theme is automatically enabled in macOS 10.14 dark mode</li> </ul>
		Changed the default setting to Enforce (3) for the security.pki.name_matching_mode preference
		<ul> <li>Adobe Flash applets now run in a more secure mode using process sandboxing on macOS</li> <li>Users disconnecting from Sync are now offered the option to wipe their Firefox profile data (including bookmarks, passwords, history, cookies, and site data) from their desktop computer</li> </ul>
		• Changed how WebRTC handles screen sharing: When screen-sharing a window, the window will be brought to front
		<ul> <li>Three-pane Inspector in Developer Tools separates the rules into its own panel</li> <li>Changes affecting developers</li> </ul>
		Android
		Improved scrolling performance
		<ul> <li>Faster page load times over WiFi connections by loading from the network cache if disk cache is slow</li> <li>"Product and feature tips" toggle in Notifications settings, allowing for more control over which notifications</li> </ul>
		are shown  • WebRTC video sessions between Firefox for Android and Safari browsers works again
		Android
62.0.1	September 7, 2018	Off-cycle stability update.[423]
		Fixed a crash when navigating sites with WebGL content.
		Off-cycle security and stability update. [424][425]
		<ul> <li>Unvisited bookmarks can once again be autofilled in the address bar.</li> <li>Fixed WebGL rendering issues.</li> </ul>
		<ul> <li>Updates from unpacked language packs no longer break the browser.</li> </ul>
62.0.2	September 21, 2018	<ul> <li>Fixed fallback on startup when a language pack is missing.</li> <li>Fixed an issue in which profile refresh from the Windows stub installer restarts the browser.</li> </ul>
02.0.2	21, 2010	Properly restored window size and position when restarting on Windows.
		<ul> <li>Avoided crash when sharing a profile with newer (as yet unreleased) versions of Firefox.</li> <li>Fixed an issue in which you do not undo removal of search engines when using a language pack.</li> </ul>
		Fixed rendering of some web sites.
		Restored compatibility with some sites using deprecated TLS settings.

		<ul><li>Fix for screen share on macOS when using multiple monitors.</li><li>Various security fixes.</li></ul>
		Android
		<ul> <li>Fixed rendering of some web sites.</li> <li>Restored compatibility with some sites using deprecated TLS settings.</li> <li>Oversized quick share icons on Android 6.0 and newer.</li> <li>Various security fixes.</li> </ul>
		Off-cycle security and stability update.[426][427]
		• Various security fixes.
		Desktop
62.0.3	October 2, 2018	<ul> <li>Fixed hangs on macOS Mojave (10.14) when various dialog windows (upload, download, print, etc.) are activated.</li> <li>Fixed playback of some encrypted video streams on macOS.</li> </ul>
		End-of-life 62.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on October 23, 2018.
		Official Firefox 63.0 release.[386][387]
		Performance and visual improvements for Windows users
		<ul> <li>Moved the build infrastructure of Firefox on Windows to the Clang toolchain, bringing important performance gains</li> </ul>
		• Firefox theme now matches the Windows 10 OS Dark and Light modes
		Performance improvements for macOS users  - Improved reactivity  - Improved reactivity
		<ul> <li>Improved reactivity</li> <li>Faster tab switching</li> </ul>
		<ul> <li>WebGL power preferences allow non-performance-critical applications and applets to request the low- power GPU instead of the high-power GPU in multi-GPU systems</li> </ul>
		<ul> <li>Added content blocking, a collection of Firefox settings that offer users greater control over technology that can track them around the web.</li> <li>WebExtensions now run in their own process on Linux</li> </ul>
		Firefox now warns about having multiple windows and tabs open when quitting from the main menu
63.0	October 23,	<ul> <li>Firefox now recognizes the operating system accessibility setting for reducing animation</li> <li>Added search shortcuts for Top Sites: Amazon and Google appear as Top Sites tiles on the Firefox Home (New</li> </ul>
03.0	2018	Tab) page (U.S. only)  • Resolved an issue that prevented the address bar from autofilling bookmarked URLs in certain cases
		<ul> <li>Resolved an issue that prevented the address bar from addoming bookmarked ords in certain cases</li> <li>In the Library, the Open in Sidebar feature for individual bookmarks was removed</li> </ul>
		<ul> <li>The option to Never check for updates was removed from about:preferences</li> <li>The Ctrl+Tab shortcut now displays thumbnail previews of your tabs and cycles through tabs in recently used</li> </ul>
		order
		<ul> <li>Refreshed visual style of Developer Tools menus to improve navigation and consistency</li> <li>The Dev Tools accessibility inspector is now enabled by default</li> </ul>
		<ul> <li>Added support for Web Components custom elements and shadow DOM</li> <li>The inspector now ships with a Font Editor that allows you to control non-variable as well as variable fonts</li> </ul>
		Android
		<ul> <li>Added support for Picture-In-Picture video</li> <li>Started using notification channels</li> </ul>
		Locales added: English from Canada (en-CA), and Ligurian (lij)  Ann pow targets Orea with security and performance improvements and support for new features.
		<ul> <li>App now targets Oreo with security and performance improvements and support for new features</li> <li>Desktop</li> </ul>
		Off-cycle stability update.[428]
63.0.1	October 31,	• Fixed an issue in which snippets are not loaded due to a missing element.
	2018	<ul> <li>Fixed an issue in which print preview always shows 30% scale when it is actually Shrink To Fit.</li> <li>Fixed an issue in which dialog displayed when closing multiple windows shows unreplaced %\$1S placeholder in Japanese and potentially other locales.</li> </ul>
		Android
63.0.2	November 7, 2018	Off-cycle stability update.[429]
		<ul> <li>Fixed an issue in which session history popup breaks after one usage.</li> <li>Fixed flickering of (some) sticky elements on Twitter and other websites.</li> </ul>

		<ul><li>Fixed a hang in Samsung Galaxy devices.</li><li>Crash fixes.</li></ul>
		Desktop
63.0.3	November 15, 2018	<ul> <li>Off-cycle stability update. [430]</li> <li>Fixed an issue in which games using WebGL (created in Unity) get stuck after very short time of gameplay.</li> <li>Fixed slow page loading for some users with specific proxy configurations.</li> <li>Disabled HTTP response throttling by default for causing bugs with videos in background tabs.</li> <li>Fixed an issue in which opening magnet links no longer works.</li> <li>Crash fixes.</li> <li>End-of-life 63.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on December 11, 2018.</li> </ul>
		Desktop
		Official Firefox 64.0 release for desktop.[388]
		<ul> <li>Better recommendations: You may see suggestions in regular browsing mode for new and relevant Firefox features, services, and extensions based on how you use the web (for US users only).</li> </ul>
		<ul> <li>Enhanced tab management: You can now select multiple tabs from the tab bar and close, move, bookmark, or pin them quickly and easily.</li> </ul>
		<ul> <li>Easier performance management: The new Task Manager page found at about:performance lets you see how much energy each open tab consumes and provides access to close tabs to conserve power.</li> </ul>
		<ul> <li>Improved performance for Mac and Linux users, by enabling link time optimization (Clang LTO).</li> <li>More seamless sharing on Windows: Windows users can now share web pages using the native sharing</li> </ul>
		experience.
64.0	December 11, 2018	<ul> <li>Added option to remove add-ons using the context menu on their toolbar buttons.</li> <li>Updated the policy engine on macOS to allow using configuration profiles to customize Firefox for enterprise deployments.</li> </ul>
		<ul> <li>Various security fixes.</li> </ul>
		RSS feed preview and live bookmarks are available only via add-ons.  TIS contificates issued by Symantos are no longer trusted by Firefey.
		<ul> <li>TLS certificates issued by Symantec are no longer trusted by Firefox.</li> <li>about:crashes has been redesigned to make it clear when a crash is being submitted to Mozilla, as well as being clear that removing crashes locally does not remove them from crash-stats.mozilla.com.</li> </ul>
		<ul> <li>The macOS keyboard shortcut to add "www" and ".com" to a URL is now ctrl-enter instead of [apple]-enter.</li> <li>You may now overlay multiple CSS grids at the same time (up to 3) in the CSS Grid Inspector.</li> </ul>
		<ul> <li>The Web Console's command line now highlights JavaScript syntax.</li> <li>When hovering over elements in the Accessibility panel, the contrast ratio of text against background is now indicated.</li> </ul>
		Added support for the new CSS scrollbar specification.
		WebVR is now available on macOS.
		Android
		Official Firefox 64.0 release for Android.[389]
	December	Scrolling is faster and more responsive.
64.0.1	14, 2018	• Files downloaded after this update are no longer deleted when uninstalling Firefox.
		• Fixed performance lags for users with installed password manager apps.
		<ul> <li>Fixed an issue that resulted in the loading indicator using too much CPU and power.</li> <li>Various security fixes.</li> </ul>
		■ TLS certificates issued by Symantec are no longer trusted by Firefox.

		Off-cycle stability update.[431][432]
		<ul> <li>Fixed video stuttering on YouTube.</li> <li>Properly restored column sizes in developer tools inspector.</li> <li>Fix for updates for some lightweight themes.</li> </ul>
		Desktop
64.0.2	January 9, 2019	<ul> <li>Fixed a browser crash on macOS.</li> <li>Updated the Japanese translation for missing strings.</li> </ul>
		Android
		<ul> <li>Fixed a crash when Firefox for Android is put in background.</li> <li>Fixed a crash when using Web Speech.</li> </ul>
		End-of-life 64.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on January 29, 2019.
		Official Firefox 65.0 release.[390][391]
		<ul> <li>Enhanced tracking protection: Simplified content blocking settings give users standard, strict, and custom options to control online trackers.</li> </ul>
		<ul> <li>Updated Language section in Preferences</li> <li>Support for Handoff on macOS</li> </ul>
		<ul> <li>A better video streaming experience for Windows users: Firefox now supports the next-generation, royalty-free video compression technology called AV1.</li> </ul>
		<ul> <li>Improved performance and web compatibility, with support for the WebP image format</li> <li>Various security fixes.</li> </ul>
		<ul> <li>Enhanced security for macOS, Linux, and Android users via stronger stack smashing protection which is now enabled by default for all platforms.</li> </ul>
	January 28,	Firefox will now warn you when closing a window (regardless of whether you have automatic session restore enabled for restart).
65.0	2019	Revamped Task Manager page found at about:performance
		<ul> <li>Improved the pop-up blocker to prevent multiple pop-up windows from being opened by websites at the same time.</li> </ul>
		<ul> <li>Firefox for Windows is now available with 32- and 64-bit MSI installers for easier enterprise deployments.</li> <li>Launched a new Flexbox inspector tool that details Flexbox containers and helps debug Flex item sizes</li> <li>All CSS changes made in the Rules panel are now tracked in the new Changes tab.</li> <li>Added support for the Storage Access API on desktop platforms.</li> </ul>
		Android
		Improved performance: Scrolling is faster and more responsive
		<ul> <li>Improved performance and web compatibility, with support for the WebP image format</li> <li>Restored Chromecast controls to the location bar.</li> </ul>
		Off-cycle security and stability update. [433][434]
		<ul> <li>Fixed accidental requests to addons.mozilla.org when an addon recommendation doorhanger is shown.</li> <li>Improved playback of interactive Netflix videos.</li> </ul>
		■ Fixed color management not working on macOS.
		<ul> <li>Fixed incorrect sizing of the "Clear Recent History" window in some situations.</li> <li>Fixed looping CONNECT requests when using WebSockets over HTTP/2 from behind a proxy server.</li> </ul>
		• Fixed the "Enter" key not working on password entry fields for certain Linux distributions.
	February 12,	<ul> <li>Various stability and security fixes.</li> <li>Made support for <meta/> viewport tags in Responsive Design Mode, initially enabled in Firefox 64, pref-</li> </ul>
65.0.1	2019	controlled and off by default.  • Fixed looping CONNECT requests when using WebSockets over HTTP/2 from behind a proxy server.
		Desktop
		<ul> <li>Fixed audio &amp; video delays while making WebRTC calls.</li> <li>Fixed video sizing problems during some WebRTC calls.</li> </ul>
		Android
		Various stability and security fixes.
		Desktop
65.0.2	February 28, 2019	Off-cycle stability update.[435]
	2013	■ Fixed an issue with geolocation services affecting Windows users

		End-of-life 65.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on March 19 2019.
		Official Firefox 66.0 release. [392][393]
		<ul> <li>Firefox now prevents websites from automatically playing sound</li> <li>Improved search experience:</li> </ul>
		<ul> <li>Find a specific webpage faster when you have a lot of tabs open</li> <li>Easier search via a redesigned new tab in Private Windows</li> </ul>
		<ul> <li>Smoother scrolling: Scroll anchoring keeps content from jumping as images and ads load at the top of a page</li> <li>Improved performance and better user experience for extensions:</li> </ul>
		<ul> <li>Extensions now store their settings in a Firefox database, rather than individual JSON files, making every site you visit faster</li> </ul>
		<ul> <li>A redesigned keyboard shortcuts section in about:addons makes it easier to view and adjust default shortcuts</li> <li>Redesigned certificate error pages help you better understand and resolve issues, including identification of</li> </ul>
66.0	March 19,	certificate issuers for anti-virus software  • Added basic support for macOS Touch Bar
	2019	<ul> <li>Experimenting with an improved Pocket experience in New Tab with different layouts and more topical conten</li> <li>Improved performance and reduced crash rates by doubling web content loading processes from 4 to 8</li> <li>Easier, passwordless security: Added support for Windows Hello on Windows 10</li> </ul>
		<ul> <li>Enabled AV1 support on 32-bit Windows and MacOS</li> <li>The Dark and Light Firefox themes now override the system setting for title bar accent color on Windows 10</li> <li>Linux users: Resolved an issue that caused Firefox to freeze when downloading files</li> </ul>
		<ul><li>Various security fixes</li><li>System title bar is hidden by default to match Gnome guideline for Linux users</li></ul>
		<ul> <li>DevTools Inspector is now fully usable when the Debugger is paused</li> <li>Lowered priority of setTimeout and setInterval during page load to improve overall page load performance</li> <li>Fixed: <button> element is no longer special cased in event dispatch, per latest specifications</button></li> </ul>
		Android
		<ul> <li>Added support to open files from external storage, such as an SD card</li> </ul>
66.0.1	March 22,	Off-cycle security update.[436][437]
00.0.1	2019	• Various security fixes.
		Off-cycle stability update.[438][439]
	March 27, 2019	Desktop
66.0.2		<ul> <li>Fixed Web compatibility issues with Office 365, iCloud and IBM WebMail caused by recent changes to the handling of keyboard events.</li> <li>Crash fixes.</li> </ul>
		Android
		<ul> <li>Fixed frequent crashes on sites using the OpenH264 video codec for WebRTC.</li> </ul>
		Desktop
		Off-cycle stability update.[440]
66.0.3	April 10, 2019	<ul> <li>Address bar on tablets running Windows 10 now behaves correctly.</li> <li>Fixed performance issues with some HTML5 games.</li> <li>Fixed a bug with keypress events in IBM cloud applications.</li> <li>Fix for keypress events in some Microsoft cloud applications.</li> </ul>
		<ul> <li>Updated Baidu search plugin.</li> </ul>
66.0.4	May F 2010	Off-cycle stability update.[441][442]
66.0.4	May 5, 2019	<ul> <li>Repaired certificate chain to re-enable web extensions that had been disabled</li> </ul>
	May 7, 2019	Off-cycle stability update.[443][444]
66.0.5		• Further improvements to re-enable web extensions which had been disabled for users with a master passwork set
		End-of-life 66.0.x product line on May 21, 2019.

#### Desktop

- Firefox 67 demonstrates improved performance thanks to a number of changes such as:
  - Lowering priority of setTimeout during page load
  - Delayed component initialization until after start up
  - Painting sooner during page load but less often
  - Suspending unused tabs
- Users can block known cryptominers and fingerprinters in the Custom settings of their Content Blocking preferences
- Keyboard accessibility has improved in the latest version of Firefox
- Private Browsing sees both usability and security improvements:
  - Save passwords in private browsing mode
  - Choose which extensions to exclude from private tabs
- A myriad of new features help make Firefox easier to use:
  - Added toolbar for Firefox Account to provide more transparency for when you are synced, sharing data across devices and with Firefox
  - Tabs can now be pinned from the Page Actions menu in the address bar
  - Firefox will highlight useful features (like Pin Tabs) when users are most likely to benefit from them
  - Easier access to your list of saved logins from the main menu and login autocomplete
  - The Import Data from Another Browser feature is now also available from the File menu
  - Users will be able to run different Firefox installs side by side by default so that you can run the beta and release versions simultaneously
- Protection against running older versions of the browser which can lead to data corruption and stability issues
- Firefox is upgrading to the newer, higher performance, AV1 decoder known as 'dav1d'
- WebRender is gradually enabled by default on Windows 10 desktops with NVIDIA graphics cards
- Mozilla's highest performing JavaScript compiler now supports ARM64 Windows devices
- Enabling FIDO U2F API and permitting registrations for Google Accounts
- Improved Pocket experience Firefox Home with different layouts and more topical content
- Various security fixes
- Firefox no longer supports handling webcal: links with 30boxes.com
- Changes to extensions in Private Windows
- Users will no longer be able to upload and share screenshots through the Firefox Screenshots server
- Included Twemoji Mozilla font updated to support Emoji 11.0
- Font and date adjustments to accommodate the new Reiwa era in Japan
- The DevTools Changes panel now supports copying modified CSS
- JavaScript module imports Firefox now supports dynamic module imports
- $\blacksquare \ \ \text{New streamlined worker debugging in the JavaScript Debugger with the new Threads panel}$
- New inline breakpoints provided by the JavaScript Debugger give a much higher fidelity and reliability for pausing in specific locations within a line of code

### Android

- A new Firefox Search widget with voice input can be added to the Android home screen from the Android Widget section
- Various security fixes
- The Guest Session feature has been removed to streamline user experience
- CSS Viewport-compat Firefox for Android's mobile viewport behavior is now aligned with other browsers, resolving known compatibility issues with websites

# Desktop

June 4, 2019

67.0.1

### Off-cycle stability update.[445]

- A new experience that includes a set of web pages and in-browser notifications
  - With the new experience, there will be an opportunity for users to opt in for test-driving upcoming products during registration
- Enhanced Tracking Protection (ETP), stronger privacy protections on by default as "Standard" in the Privacy & Security setting
  - Ability to turn ETP on
- A number of products and services
  - Facebook Container version 2.0
  - Firefox Lockwise (formerly Lockbox), with its new name, look and feel, is now fully cross-platform with the introduction of the Lockwise desktop extension in this release
  - Firefox Monitor 2.0 expands its capabilities to allow users with a Firefox account to monitor multiple email addresses and receive email alerts when any of them are involved in a known breach
  - Firefox Send allows you to send files up to 1GB with end-to-end encryption and a link that automatically expires

		Off-cycle stability update.[446][447]
		Fix for JavaScript error ("TypeError: data is null in PrivacyFilter.jsm") in console which may significantly degrade sessionstore reliability and performance
		<ul> <li>Fixed an issue in which proxy authentication dialog box repeatedly pops up asking to authenticate after upgrading to Firefox 67</li> </ul>
		■ Fixed an issue in which Pearson MyCloud breaks if FIDO U2F is not Chrome's implementation
		■ Fixed performance-regression for eclipse RAP based applications
		• Fixed an issue in which you can't start two downloads in parallel via a download anymore
67.0.2	June 11, 2019	Desktop
		• Fixed an issue in which starting in safe mode on Linux or macOS causes Firefox to think on the subsequent launch that the profile is too recent to be used with this version of Firefox
		<ul> <li>Fixed an issue in which Linux distribution users can't easily install/use additional/different languages using the built-in preferences UI</li> </ul>
		<ul> <li>Fixed an issue in which developer tools users can't copy the href/src content from various HTML tags via the context menu in the Inspector markup view</li> </ul>
		<ul> <li>Fixed an issue in which custom home page is broken with clearing data on shutdown settings applied</li> <li>Crash fix for macOS 10.15</li> </ul>
67.0.3	June 18, 2019	Off-cycle security update.[448][449]
67.0.3		■ Security fix
		Desktop
		Off-cycle security update.[450]
67.0.4	June 20, 2019	■ Security fix
		End-of-life 67.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on July 9, 2019.

### Firefox 68 through 77

Firefox 68 and Firefox 68 ESR were released on July 9, 2019, for desktop (both) and Android (no ESR). Among the many additions were: Expansion of Dark Mode in Reader view, a new reporting feature in about:addons, cryptomining and fingerprinting protections, WebRender for Windows 10, Windows Background Intelligent Transfer Service (BITS) update download support (desktop), user and enterprise added certificates read from the OS by default (68 ESR), improved web page painting performance by avoiding redundant calculations during paint, and introduction of WebAuthn (the Web Authentication API; Android). [451][452][453]



Firefox 68.1 was released on September 3, 2019, for Android only, with the addition of on-by-default Enhanced Tracking Protection, which enabled users to benefit from protections against ad, social, and analytics trackers. [454]

Logo used from Firefox 70

Firefox 69 was released on September 3, 2019, for desktop only. Among the additions were: Enhanced Tracking Protection; the Block Autoplay feature; support for the Web Authentication HmacSecret extension via Windows Hello for versions of Windows 10 May 2019 or newer; support for receiving multiple video codecs; JIT support for ARM64; and improvements for download UI, performance (Windows 10), and battery life (macOS). [455]

Firefox 68.2 was released on October 22, 2019, for Android only, gaining the ability to sign in to a Firefox account from the onboarding experience as well as from the new tab page, and resolving a crash in the "Welcome" screen. [456]

Firefox 70 was released on October 22, 2019, for desktop only. Among the additions were: more privacy protection from Enhanced Tracking Protection; more security protection from Firefox Lockwise; improvements to core engine components for better browsing on more sites; a stand-alone Firefox account menu for easy access to Firefox services like Monitor and Send; the dark mode preference for built-in Firefox pages; and inactive CSS. [457]

Firefox 68.3 was released on December 3, 2019, for Android only, gaining the updates to improve performance and stability. 458

Firefox 71 was released on December 3, 2019, for desktop only. Among the additions were: improvements to the integrated password manager Lockwise; more information about Enhanced Tracking Protection in action; picture-in-picture for Windows; and native MP3 decoding on Windows, Linux, and macOS. [459]

Firefox 68.4 was released on January 7, 2020, for Android only, gaining various security fixes. [460]

Firefox 72 was released on January 7, 2020, for desktop only. Among the additions were: the replacement of notification request pop-ups; the ETP blocking fingerprinting scripts by default; the availability of picture-in-picture video for macOS and Linux; and the removal of support for blocking images from individual domains because of low usage and poor user

Firefox version history - Wikipedia

experience.[461]

Firefox 68.5 was released on February 11, 2020, for Android only, updating messaging card on the homescreen to inform users about upcoming releases and gaining various security and stability fixes. [462]

Firefox 73 was released on February 11, 2020, for desktop only. Among the additions were: a new global default zoom level setting, a "readability backplate" solution which places a block of background color between the text and background image, improved audio quality when playing back audio at a faster or slower speed, a prompt to save logins if a field in a login form was modified, and rolling out WebRender to laptops with Nvidia graphics cards with drivers newer than 432.00, and screen sizes smaller than 1920x1200. [463]

Firefox 68.6 was released on March 10, 2020, for Android only, gaining various security and stability fixes. [464]

Firefox 74 was released on March 10, 2020, for desktop only. Additions included: improvement of login management with the ability to reverse alpha sort (Name Z-A) in Lockwise; simple importing of bookmarks and history from Microsoft Edge on Windows and Mac; use of Add-ons Manager to remove add-ons installed by external applications; Facebook Container, which prevents Facebook from tracking across the web; and support for mDNS ICE. [465] Initially, this release was also the first with TLS 1.0 and 1.1 disabled. However, out of concern for access to information during the concurrent pandemic, this change was rolled back. [466]

Firefox 68.7 was released on April 7, 2020, for Android only, gaining various security and stability fixes. [467]

Firefox 75 was released on April 7, 2020, for desktop only. Additions included: a number of improvements with Firefox's revamped address bar; the local cache of all trusted Web PKI Certificate Authority certificates known to Mozilla; the availability of Firefox in Flatpak on Linux; and the integration of Direct Composition on Windows. [468]

Firefox 68.8 was released on May 5, 2020, for Android only, gaining various security and stability fixes. [469]

Firefox 76 was released on May 5, 2020, for desktop only. Additions included: strengthened protections for online account logins and passwords, with innovative approaches to managing accounts during this critical time; allowing multitasking in Picture-in-Picture; support for Audio Worklets that will allow more complex audio processing like VR and gaming on the web; and two updates to the address bar improving its usability and visibility. [470]

Firefox 68.9 was released on June 2, 2020, for Android only, gaining various security and stability fixes. [471]

Firefox 77 was released on June 2, 2020, for desktop only. Additions included: pocket recommendations on Firefox' new tab for UK users; a new about:certificate page; and the removal of the browser.urlbar.oneOffSearches preference. [472]

Firefox 68.10 was released on June 30, 2020, for Android only, gaining various security and stability fixes. [473]

Firefox 68.11 was released on July 27, 2020, for Android only, gaining various security and stability fixes. With the first stable release of Firefox Daylight (Fenix), Firefox 68.11 is the last release for Firefox for Android codenamed Fennec. [474]

	Release history of Firefox 68-77		
Note: Date	ote: Dates in the future indicate a scheduled release date; they are subject to change in the event of unanticipated complications.		
Version	Release date <sup>[23]</sup>	Release type and highlights $^{[t\;1]}$	
68.0	July 9, 2019	Desktop  Des	
68.0.1	July 18, 2019	Desktop  macOS releases are now signed by the Apple notary service, allowing Firefox to properly run on macOS 10.15 Beta releases  Fixed missing Full Screen button when watching videos in full screen mode on HBO GO  Fixed a bug causing incorrect messages to appear for some locales when sites try to request the use of the Storage Access API  Fixed an issue in which users in Russian regions may have their default search engine changed  Fixed an issue in which built-in search engines in some locales do not function correctly	

		Off-cycle security and stability update.[476][477]
		Desktop
68.0.2	August 14, 2019	<ul> <li>Fixed a bug causing some special characters to be cut off from the end of the search terms when searching from the URL bar</li> <li>Allowed fonts to be loaded via file:// URLs when opening a page locally</li> <li>Printing emails from the Outlook web app no longer prints only the header and footer</li> <li>Fixed a bug causing some images not to be displayed on reload, including on Google Maps</li> <li>Fixed an error when starting external applications configured as URI handlers</li> <li>Security fixes</li> </ul>
		Android
		<ul> <li>Allowed fonts to be loaded via file:// URLs when opening a page locally</li> </ul>
		End-of-life 68.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on September 3, 2019.
		Regular security update.[454]
68.1	September 3,	Android
	2019	<ul> <li>Firefox for Android v68.1 introduces on-by-default Enhanced Tracking Protection</li> <li>Various security fixes</li> </ul>
		Off-cycle stability update.[478]
68.1.1	September 13, 2019	Android
	,	■ Turned on ability to deliver in-app messages via Leanplum for 64-bit builds
		Regular security and stability update.[456]
	October 22	Android
68.2.0	October 22, 2019	<ul> <li>Ability to sign in to a Firefox account from the onboarding experience as well as from the new tab page</li> <li>Resolved crash in "Welcome" screen</li> <li>Various security fixes</li> </ul>
	November 13, 2019	Off-cycle stability update.[479]
68.2.1		Android
00.2.2		<ul> <li>Updated to the latest Firefox branding</li> <li>Added new locales to the updated onboarding experience previously released in Firefox for Android 68.2.0</li> </ul>
		Regular security and stability update.[458]
68.3.0	December 3, 2019	Android
		<ul> <li>Updates to improve performance and stability</li> <li>Various security fixes</li> </ul>
		Regular security update.[460]
68.4.0	January 7, 2020	Android
		Various security fixes
		Off-cycle security update.[480]
68.4.1	January 8, 2020	Android
	2020	Security fix
68.4.2	January 20, 2020	Off-cycle stability update.[481]
		Android
		■ Minor fixes
		Regular security and stability update.[462]
68.5.0	F-1	and wild
68.5.0	February 11, 2020	Android

	Various stability and security fixes
	Regular security and stability update.[464]
March 10, 2020	Android
	Various stability and security fixes
	Regular security and stability update. [467]
April 7, 2020	Android
	Various stability and security fixes
	Regular security and stability update.[469]
May 5, 2020	Android
	Various stability and security fixes
	Off-cycle stability update.[482]
May 11, 2020	Android
	Minor bug fixes
	Regular security and stability update.[471]
June 2, 2020	Android
	Various stability and security fixes
	Regular security and stability update.[473]
June 30, 2020	Android
	Various stability and security fixes
	Off-cycle security update.[483]
July 7, 2020	Android
	Fixed a critical security bug
	Regular security and stability update.[474]
July 27, 2020	Android
	Various stability and security fixes
	Official Firefox 68.0 Extended Support Release (ESR).[452]
	A number of features improve the browser experience in enterprise settings
	<ul> <li>MSI installer file type is included in this release, helping make deployments in the Windows environment easier and more flexible</li> </ul>
	■ Configuration profiles in macOS
	<ul> <li>The ability to read added certificates roots from the macOS Keychain</li> <li>For all operating systems, we have a number of additional policies including:</li> </ul>
July 9, 2019	New tab page configuration and disabling
,, .,	■ Local file links
	<ul> <li>Download behavior</li> <li>Search suggestions</li> </ul>
	Managed storage for using policies in Webextensions
	Extension configuration (allow/deny) by ID and website  A subset of congressly used Firefox professions.
	<ul> <li>A subset of commonly used Firefox preferences</li> <li>Fixed: Local files can no longer access other files in the same directory</li> </ul>
	Added support for the event property on the Window object to improve web compatibility for enterprises.
	Off-cycle stability update. <sup>[484]</sup>
I	■ macOS releases are now signed by the Apple notary service, allowing Firefox to properly run on macOS 10.15
	Beta releases
July 18, 2019	■ Fixed missing Full Screen button when watching videos in full screen mode on HBO GO
July 18, 2019	
	2020 April 7, 2020 May 5, 2020 May 11, 2020 June 2, 2020 June 30, 2020

		Enterprise Policy improvements:
		<ul> <li>Fixed an issue in which SupportMenu policy doesn't always work</li> <li>Allowed the new ExtensionSettings policy to work with GPO on Windows</li> <li>Allowed the privacy.file_unique_origin pref to be controlled by policy</li> </ul>
68.0.2esr	August 14, 2019	<ul> <li>Off-cycle security and stability update. [485]</li> <li>Fixed a bug causing some special characters to be cut off from the end of the search terms when searching from the URL bar</li> <li>Allowed fonts to be loaded via file:// URLs when opening a page locally</li> <li>Printing emails from the Outlook web app no longer prints only the header and footer</li> <li>Fixed a bug causing some images not to be displayed on reload, including on Google Maps</li> <li>Fixed an error when starting external applications configured as URI handlers</li> <li>Security fixes</li> </ul>
68.1esr	September 3, 2019	Regular security and stability update. [486]  • Various security fixes  • Various stability and functionality fixes
68.2esr	October 22, 2019	Regular security and stability update.[487]  • Various security fixes  • New administrative policies were added
68.3esr	December 3, 2019	Regular security and stability update. [488]  • Updates to improve performance and stability  • Various security fixes
68.4esr	January 7, 2020	Regular security update. [489]  • Various security fixes
68.4.1esr	January 8, 2020	Off-cycle security update.[490] ■ Security fix
68.4.2esr	January 20, 2020	Off-cycle stability update.[491]  • Fixed various issues opening files with spaces in their path
68.5esr	February 11, 2020	Regular security and stability update. [492]  • Various security and stability fixes
68.6esr	March 10, 2020	Regular security and stability update. [493]  • Various security and stability fixes
68.6.1esr	April 3, 2020	Off-cycle security update. [494] ■ Security fixes
68.7esr	April 7, 2020	Regular security and stability update.[495]  • Various security and stability fixes
68.8esr	May 5, 2020	Regular security and stability update. [496]  • Various security and stability fixes
68.9esr	June 2, 2020	Regular security and stability update. [497]  • Various security and stability fixes
68.10esr	June 30, 2020	Regular security and stability update. [498]  • Various security and stability fixes
68.11esr	July 28, 2020	Regular security and stability update. [499]  • Various security and stability fixes
68.12esr	August 25, 2020	Regular security update. [500]  • Various security fixes  End-of-life 68.x.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on September 22, 2020.
69.0	September 3, 2019	Official Firefox 69.0 release.[455]  Desktop

		Enhanced Tracking Protection (ETP) rolls out stronger privacy protections:
		The default standard setting for this feature now blocks third-party tracking cookies and cryptominers  The default standard setting for this feature now blocks third-party tracking cookies and cryptominers
		The optional strict setting blocks fingerprinters as well as the items blocked in the standard setting
		• The Block Autoplay feature is enhanced to give users the option to block any video that automatically starts playing, not just those that automatically play with sound
		<ul> <li>A new "New Tab" page experience that connects US users or those using the en-US browser to the best of Pocket's content</li> </ul>
		<ul> <li>Support for the Web Authentication HmacSecret extension via Windows Hello for versions of Windows 10 May 2019 or newer</li> </ul>
		<ul> <li>Support for receiving multiple video codecs with this release makes it easier for WebRTC conferencing services to mix video from different clients</li> </ul>
		Users on Windows 10 will see performance and UI improvements:
		<ul> <li>Firefox will give Windows hints to appropriately set content process priority levels</li> <li>Existing Windows 10 users can easily find and launch Firefox from a shortcut on the Win10 taskbar</li> </ul>
		• For users on macOS, battery life and download UI are both improved:
		<ul> <li>macOS users on dual-graphics-card machines (like MacBook Pro) will switch back to the low-power GPU more aggressively, saving battery life</li> </ul>
		<ul> <li>Finder on macOS now displays download progress for files being downloaded</li> </ul>
		<ul> <li>JIT support comes to ARM64 for improved performance of our JavaScript Optimizing JIT compiler</li> <li>Various security fixes</li> </ul>
		■ The "Always Activate" option for Flash plugin content has been removed
		<ul> <li>No longer a need to identify users on 32-bit version of the Firefox browser on 64-bit version operating systems reducing user agent fingerprinting factors providing greater level of privacy to our users as well as improving the experience of downloading other apps</li> </ul>
		<ul> <li>Firefox no longer loads userChrome.css or userContent.css by default improving start-up performance</li> <li>For Enterprise system administrators that manage macOS computers, we begin shipping a Mozilla signed PKG installar to simplify your deployments.</li> </ul>
		installer to simplify your deployments  For our mobile web developers, we have migrated remote debugging from the old WebIDE into a re-designed
		about:debugging, making debugging GeckoView on remote devices via USB rock solid  The network panel will now show blocked resources to allow developers to best understand the impact of
		content blocking and ad blocking extensions
		<ul> <li>The new event listener breakpoint feature allows developers to pause on a host of different event types</li> <li>Firefox Developer Tools now offers an audit for the presence of text alternatives for non-text content, the ally panel checks toolbar has been augmented to better help developers adhere to WCAG Guideline 1.1</li> </ul>
		Off-cycle security and stability update. [501]
		Desktop
69.0.1	September 18, 2019	<ul> <li>Fixed external programs launching in the background when clicking a link from inside Firefox to launch them</li> <li>Usability improvements to the Add-ons Manager for users with screen readers</li> <li>Fixed the Captive Portal notification bar not being dismissable in some situations after login is complete</li> <li>Fixed the maximum size of fonts in Reader Mode when zoomed</li> <li>Fixed missing stacks in the Developer Tools Performance section</li> </ul>
		Security and stability fixes  Off and a stability was data [502]
	October 3, 2019	Off-cycle stability update. [502]
69.0.2		Desktop
		<ul> <li>Fixed a crash when editing files on Office 365 websites</li> <li>Fixed detection of the Windows 10 Parental Controls feature being enabled</li> <li>Fixed a Linux-only crash when changing the playback speed while watching YouTube videos</li> </ul>
		Off-cycle stability update.[503]
		Desktop
69.0.3	October 10, 2019	<ul> <li>Fixed download errors for Windows 10 users with Parental Controls enabled</li> <li>Fixed Yahoo mail users being prompted to download files when clicking on emails</li> </ul>
		End-of-life 69.0.x product line on October 22, 2019.
		Official Firefox 70.0 release. [457]
		Desktop
70.0	October 22, 2019	
70.0		<ul> <li>More privacy protections from Enhanced Tracking Protection:</li> <li>Social tracking protection, which blocks cross-site tracking cookies from sites like Facebook, Twitter, and</li> </ul>
		LinkedIn, is now a standard feature of Enhanced Tracking Protection  The Privacy Protections report shows an overview, with details, of the trackers Firefox has blocked

		More security protections from Firefox Lockwise, our digital identity and password management tool:
		<ul> <li>Lockwise for desktop lets you create, update, and delete your logins and passwords to sync across all your devices</li> <li>Integrated breach alerts from Firefox Monitor</li> <li>Complex password generation</li> <li>Improvements to core engine components, for better browsing on more sites</li> </ul>
		<ul> <li>A faster Javascript Baseline Interpreter to handle the modern web's large codebases and improve page load performance by as much as 8 percent</li> <li>WebRender rolled out to more Firefox for Windows users, now available by default on Windows desktops with integrated Intel graphics cards and resolution of 1920x1200 or less</li> <li>Compositor improvements in Firefox for macOS</li> </ul>
		<ul> <li>More browser features to help you get the most out of Firefox products and services</li> </ul>
		<ul> <li>A stand-alone Firefox account menu for easy access to Firefox services like Monitor and Send</li> <li>A message panel accessed from the gift icon in the toolbar that offers a quick overview of new releases and key features</li> <li>When a website uses your geolocation, an indicator is shown in the address bar</li> </ul>
		<ul> <li>Various security fixes</li> <li>Built-in Firefox pages now follow the system dark mode preference</li> </ul>
		<ul> <li>Aliased theme properties have been removed, which may affect some themes</li> <li>Passwords can now be imported from Chrome on macOS in addition to existing support for Windows</li> <li>Readability is now greatly improved on under- or overlined texts, including links</li> <li>The Developer Tools Accessibility panel now includes an audit for keyboard accessibility and a color deficiency simulator for systems with WebRender enabled</li> </ul>
		■ The Inspector now grays out CSS declarations that don't affect the selected element and shows a tooltip explaining why-and even how to fix it
		<ul> <li>The new DOM Mutation Breakpoints in Developer Tools allows developers to diagnose when scripts add, remove or update page content</li> <li>WebExtensions developers can now inspect browser.storage.local data using the "Addon Debugging" Firefox Developer Tools</li> </ul>
		New network resource search in Developer Tools
		Off-cycle stability update.[504]  Desktop
70.0.1	October 31, 2019	<ul> <li>Fix for an issue that caused some websites or page elements using dynamic JavaScript to fail to load</li> <li>Updated OpenH264 video plugin for macOS 10.15 users</li> <li>Fix for an issue in which title bar no longer shows in full screen view</li> <li>OpenH264 video codec version bump for macOS 10.15 users</li> </ul>
		End-of-life 70.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on December 3, 2019.
		Official Firefox 71.0 release.[459]
		Desktop
		■ Improvements to Lockwise, our integrated password manager
	December 3, 2019	<ul> <li>Firefox now recognizes subdomains and will autofill domain logins from Lockwise</li> <li>Integrated breach alerts from Firefox Monitor are now available to users with screen readers</li> </ul>
		More information about Enhanced Tracking Protection in action
		<ul> <li>Notifications when Firefox blocks cryptominers</li> <li>A running tally of blocked trackers in the protection panel accessed by clicking the address bar shield</li> <li>Picture-in-picture video comes to Firefox for Windows</li> </ul>
71.0		<ul> <li>Native MP3 decoding on Windows, Linux, and macOS</li> <li>Various security fixes</li> <li>Configuration page (about:config) reimplemented in HTML</li> </ul>
		<ul> <li>Firefox will now ship with Catalan (Valencian) (ca-valencia), Tagalog (tl), and Triqui (trs)</li> <li>New kiosk mode functionality, which allows maximum screen space for customer-facing displays</li> <li>Added support for developers, including:</li> </ul>
		<ul> <li>DevTools' Network panel can now inspect WebSocket messages and automatically formats a variety of framework formats</li> </ul>
		<ul> <li>Console's new multi-line editor mode provides an IDE-like experience that makes it convenient to iterate on longer code snippets</li> <li>The Network panel's new resource blocking can simulate the impact of tracking protection, security,</li> </ul>
		<ul> <li>The Network panel's new resource blocking can simulate the impact of tracking protection, security, service outages, and bad connectivity for more robust testing</li> <li>More features and improvements can be found every release in DevTools' "What's New" panel in en-US</li> </ul>
		■ New videos every week on the Mozilla Developer YouTube channel

		<ul> <li>Improvements to the website certificate viewer, with more features and more detailed information</li> <li>Improvements to the extensions downloads API for handling download failures</li> <li>Extension popup windows now include the extension name instead of its moz-extension:// url when using the windows.create API</li> <li>Extension-registered devtools panels now interact better with screen readers</li> <li>End-of-life 71.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on January 7, 2020.</li> </ul> Official Firefox 72.0 release. [461]
72.0	January 7, 2020	Desktop  Firefox's Enhanced Tracking Protection now blocks fingerprinting scripts by default for all users Firefox replaces annoying notification request pop-ups with a more delightful experience, by default for all users Picture-in-picture video is now also available in Firefox for Mac and Linux Various security fixes Support for blocking images from individual domains has been removed from Firefox, because of low usage and poor user experience Experimental support for using client certificates from the OS certificate store can be enabled by setting the preference security.osclientcerts.autoload to true (Windows only) Debugger Watchpoints let developers observe object property access and writes for easier to track data flow through an application Firefox now supports simulation of meta viewport in Responsive Design Mode
72.0.1	January 8, 2020	Off-cycle security update.[505]  Desktop  • Security fix
72.0.2	January 20, 2020	Off-cycle stability update. [506]  Desktop  Various stability fixes Fixed issues opening files with spaces in their path Fixed a hang opening about:logins when a master password is set Fixed a web compatibility issue with CSS Shadow Parts which shipped in Firefox 72 Fixed inconsistent playback performance for fullscreen 1080p videos on some systems  End-of-life 72.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on February 11, 2020.
73.0	February 11, 2020	Desktop  Today's Firefox release includes two features that help users view and read website content more easily, quickly  Page zoom feature for more than a decade that allows users to set the zoom level on a per-site basis; available in about:preferences under "Language and Appearance"  A "readability backplate" solution which places a block of background color between the text and background image for websites in High Contrast Mode  Various security fixes  Improved audio quality when playing back audio at a faster or slower speed  A prompt to save logins if a field in a login form was modified  WebRender will roll out to laptops with Nvidia graphics cards with drivers newer than 432.00, and screen sizes smaller than 1920x1200  WAMP-formatted WebSocket messages (JSON, MsgPack and CBOR) are now nicely decoded for inspection in the Network panel  Improved auto-detection of legacy text encodings on old web pages which don't explicitly declare the text encoding
73.0.1	February 18, 2020	Desktop  Fixed crashes on Windows systems running third-party security software such as 0patch or G DATA  Fixed loss of browser functionality in certain circumstances such as running in Windows compatibility mode or having custom anti-exploit settings  Resolved problems connecting to the RBC Royal Bank website

		<ul> <li>Fixed Firefox unexpectedly exiting when leaving Print Preview mode</li> <li>Fixed crashes when playing encrypted content on some Linux systems</li> </ul>
		End-of-life 73.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on March 10, 2020.
		Official Firefox 74.0 release.[465]
		<ul> <li>Desktop</li> <li>Login management has improved with the ability to reverse alpha sort (Name Z-A) in Lockwise, accessed under Logins and Passwords</li> <li>Simple importing of bookmarks and history from Microsoft Edge on Windows and Mac</li> </ul>
74.0	March 10, 2020	<ul> <li>Add-ons installed by external applications can now be removed using the Add-ons Manager (about:addons)</li> <li>Addition of Facebook Container</li> <li>Support for mDNS ICE</li> <li>Various security fixes</li> <li>Fixed issues involving pinned tabs such as being lost</li> <li>Picture-in-Picture toggle is now moved allowing you to flip through to the next image of the batch</li> <li>On Windows, Ctrl+I can now be used to open the Page Info window instead of opening the Bookmarks sidebar</li> </ul>
		<ul> <li>Disabling <u>TLS 1.0 and 1.1</u> for improvement of website connections (later re-enabled<sup>[466]</sup>)</li> <li>Firefox's Debugger added support for debugging Nested Web Workers, so their execution can be paused and stepped through with breakpoints</li> <li>Support for the new JavaScript optional chaining operator and CSS text-underline-position</li> </ul>
		Off-cycle security update.[508]
		Desktop
74.0.1	April 3, 2020	• Security fixes
		End-of-life 74.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on April 7, 2020.
75.0	April 7, 2020	<ul> <li>Official Firefox 75.0 release. [468]</li> <li>A number of improvements with Firefox's revamped address bar:</li> <li>Focused, clean search experience that's optimized for smaller laptop screens</li> <li>Top sites now appear when address is selected</li> <li>Improved readability of search suggestions with a focus on new search terms</li> <li>Suggestions include solutions to common Firefox issues</li> <li>On Linux, the behavior when clicking on the Address Bar and the Search Bar now matches other desktop platforms</li> <li>Firefox will locally cache all trusted Web PKI Certificate Authority certificates known to Mozilla</li> <li>Firefox is now available in Flatpak, an easier way to install and use Firefox on Linux</li> <li>Direct Composition is being integrated for users on Windows to help improve performance and enable the ongoing work to ship WebRender on Windows 10 laptops with Intel graphics cards</li> <li>Various security fixes</li> <li>Experimental support for using client certificates from the OS certificate store can be enabled on macOS by setting the preference security.osclientcerts.autoload to true</li> <li>Enterprise policies may be used to exclude domains from being resolved via TRR (Trusted Recursive Resolver) using DNS over HTTPS</li> <li>The ability to save bandwidth and reduce browser memory by using the loading attribute on the <img/>element</li> <li>Instant evaluation for Console expressions lets developers identify and fix errors more rapidly than before</li> <li>End-of-life 75.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on May 5, 2020.</li> </ul>
76.0	May 5, 2020	Strengthened protections for online account logins and passwords, with innovative approaches to managing accounts during this critical time:  Firefox displays critical alerts in the Lockwise password manager when a website is breached  Prompt to update passwords if one account is involved in a website breach and the same password is used on other websites; a key icon identifies which accounts use that vulnerable password  Automatic generation of secure, complex passwords for new accounts across more of the web that are easily saved right in the browser  Prevention of casual snooping is device happens to be shared among family or roommates  Allowing multitasking in Picture-in-Picture  Support for Audio Worklets that will allow more complex audio processing like VR and gaming on the web

		- Joining Zoom calls on Firefox without the pood for any additional downloads
		<ul> <li>Joining Zoom calls on Firefox without the need for any additional downloads</li> <li>WebRender continues its roll out to more Firefox for Windows users, now available by default on modern Intel laptops with a small screen (1920x1200) for improved graphics rendering</li> </ul>
		Various security fixes
		• Two updates to the address bar improving its usability and visibility:
		<ul> <li>The shadow around the address bar field is reduced in width when a new tab is opened</li> </ul>
		<ul> <li>The bookmarks toolbar has expanded slightly in size to improve its surface area for touchscreens</li> </ul>
		<ul> <li>Testing mobile interactions using DevTools' Responsive Design Mode now mimics the device behavior for handling double-tap to zoom</li> </ul>
		<ul> <li>Double-clicking table headers in DevTools' network request table now resizes the column width to fit the content, making it easier to expand the important data</li> </ul>
		<ul> <li>WebSocket inspection now supports ActionCable message preview, adding to the list of automatically formatted protocols like socket.io, SignalR, WAMP, etc.</li> </ul>
		Off-cycle stability update.[509]
		Desktop
76.0.1	May 8, 2020	<ul> <li>Fixed a bug causing some add-ons such as Amazon Assistant to see multiple onConnect events, impairing functionality</li> <li>Fixed a crash on 32-bit Windows systems with some nVidia drivers installed</li> </ul>
		• rixed a crash on 52-bit willdows systems with some rividia drivers installed
		End-of-life 76.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on June 2, 2020.
		Official Firefox 77.0 release.[472]
		Desktop
		<ul> <li>Pocket recommendations, featuring some of the best stories on the web, will appear on the Firefox new tab for users in the UK</li> </ul>
		users in the UK  • WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10
77.0	June 2, 2020	users in the UK  • WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  • Ability to view and manage web certificates more easily on the new about:certificate page
77.0	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes  A number of features have been fixed to improve Firefox accessibility
77.0	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes
77.0	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes  A number of features have been fixed to improve Firefox accessibility  The applications list in Firefox Options is now accessible to screen reader users
77.0	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes  A number of features have been fixed to improve Firefox accessibility  The applications list in Firefox Options is now accessible to screen reader users  Fixed an issue in which some live regions didn't report updated text with the JAWS screen reader  Date/time inputs are now no longer missing labels for users of accessibility tools  The browser.urlbar.oneOffSearches preference has been removed
77.0	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes  A number of features have been fixed to improve Firefox accessibility  The applications list in Firefox Options is now accessible to screen reader users  Fixed an issue in which some live regions didn't report updated text with the JAWS screen reader  Date/time inputs are now no longer missing labels for users of accessibility tools  The browser.urlbar.oneOffSearches preference has been removed  Significant improvements to JavaScript debugging make loading and stepping through sources faster and with
77.0	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes  A number of features have been fixed to improve Firefox accessibility  The applications list in Firefox Options is now accessible to screen reader users  Fixed an issue in which some live regions didn't report updated text with the JAWS screen reader  Date/time inputs are now no longer missing labels for users of accessibility tools
77.0	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes  A number of features have been fixed to improve Firefox accessibility  The applications list in Firefox Options is now accessible to screen reader users  Fixed an issue in which some live regions didn't report updated text with the JAWS screen reader  Date/time inputs are now no longer missing labels for users of accessibility tools  The browser.urlbar.oneOffSearches preference has been removed  Significant improvements to JavaScript debugging make loading and stepping through sources faster and with less memory being used over time  Added support for the JavaScript API String.prototype.replaceAll() which allows developers to return a new
77.0	June 2, 2020	<ul> <li>WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (&lt;= 3440x1440) and large screens (&gt; 3440x1440)</li> <li>Ability to view and manage web certificates more easily on the new about:certificate page</li> <li>Various security fixes</li> <li>A number of features have been fixed to improve Firefox accessibility</li> <li>The applications list in Firefox Options is now accessible to screen reader users</li> <li>Fixed an issue in which some live regions didn't report updated text with the JAWS screen reader</li> <li>Date/time inputs are now no longer missing labels for users of accessibility tools</li> <li>The browser.urlbar.oneOffSearches preference has been removed</li> <li>Significant improvements to JavaScript debugging make loading and stepping through sources faster and with less memory being used over time</li> <li>Added support for the JavaScript API String.prototype.replaceAll() which allows developers to return a new string with all matches to the provided pattern while preserving the original string</li> </ul>
77.0.1	June 2, 2020	users in the UK  WebRender continues its roll out to more Firefox for Windows users, now available by default on Windows 10 laptops running on Nvidia GPUs with medium (<= 3440x1440) and large screens (> 3440x1440)  Ability to view and manage web certificates more easily on the new about:certificate page  Various security fixes  A number of features have been fixed to improve Firefox accessibility  The applications list in Firefox Options is now accessible to screen reader users  Fixed an issue in which some live regions didn't report updated text with the JAWS screen reader  Date/time inputs are now no longer missing labels for users of accessibility tools  The browser.urlbar.oneOffSearches preference has been removed  Significant improvements to JavaScript debugging make loading and stepping through sources faster and with less memory being used over time  Added support for the JavaScript API String.prototype.replaceAll() which allows developers to return a new string with all matches to the provided pattern while preserving the original string

## Firefox 78 through 90

Firefox 78 and Firefox 78 ESR were released on June 30, 2020, for desktop. Among the many additions were: the Protections Dashboard, the addition of the Refresh button to the Uninstaller, a new WebRender rolled out to Windows users with Intel GPUs, the addition of Pocket Recommendations to users in the UK, the requirement of GNU libc 2.17, libstdc++ 4.8.1 and GTK+ 3.14 or newer versions on Linux, the disabling of TLS 1.0 and 1.1 and other improvements; and the addition of Kiosk Mode, client certificates, Service Worker and Push APIs, the Block Autoplay feature, picture-in-picture support, and the management of web certificates in about:certificate in 78 ESR. [511][512]

Firefox 79 was released on July 28, 2020, for desktop, and on August 27 for Android. Among the many additions were: a new WebRender rolled out to Windows users with Intel and AMD GPUs, the addition of Pocket Recommendations to users in Germany, the fixes for several crashes while using a screen reader, and updates to the password policy (desktop); the enabling of Enhanced Tracking Protection by default, the ability to switch to Dark Mode, and video multitasking with Picture-in-Picture mode (Android). [513][514]

Firefox 80 was released on August 25, 2020, for desktop, and on August 31 for Android. Among the many additions were: the

setting as the default system PDF viewer; the new add-ons blocklist enabled to improve performance and scalability; support for RTX and Transport-cc for improved call quality in poor network conditions and better bandwidth estimation and better compatibility with many websites using WebRTC (desktop); and the return of the Back button (Android). [515][516]

Firefox 81 was released on September 22, 2020, for desktop and Android. Among the many additions were: the ability to pause or play audio or video right from the keyboard or headset; the introduction of the Alpenglow theme; the ability to save, manage, and auto-fill credit card information for U.S. and Canada users; the support of Acroform, which allows users to fill in, print, and save supported PDF forms; the automatic revelation of the Bookmarks toolbar; the expansion of .xml, .svg, and .webp; and fixes for browser native HTML5 audio/video controls (desktop); and the introduction of Firefox Daylight (Android). [517][518]

Firefox 82 was released on October 20, 2020, for desktop and Android. Among the many additions were: a number of improvements that make watching videos more delightful; improved performance on both page loads and start up time; saving a webpage to Pocket from the Firefox toolbar (desktop); the ability to automatically purge cookies from sites not visited in 30 days; and better support for opening links in Firefox from third-party apps (Android). [519][520]

Firefox 83 was released on November 17, 2020, for desktop and Android. Among the many additions were: significant updates to SpiderMonkey and JavaScript engine and replacement of the part of the JavaScript engine that helps to compile and display websites for the user; the introduction of the HTTPS-Only Mode; the support of pinch zooming for users with Windows touchscreen devices and touchpads on Mac devices; support of keyboard shortcuts for fast forwarding and rewinding videos in Picture-in-Picture; improved user interface; improved functionality and design for a number of Firefox search features; support of Acroform (desktop); and newly supported add-ons: FoxyProxy, Bitwarden, AdGuard AdBlocker, Tomato Clock, LeechBlock NG, Web Archives, and Ghostery (Android). [521][522]

Firefox 84 was released on December 15, 2020, for desktop and Android. Among the many additions were: native support for macOS devices built with Apple silicon CPUs; the rollout of WebRender to MacOS Big Sur, Windows devices with Intel Gen 6 GPUs, and Intel laptops running Windows 7 and 8, and an accelerated rendering pipeline for Linux/GNOME/X11 users for the first time; the use of more modern techniques for allocating shared memory on Linux, improving performance and increasing compatibility with Docker (desktop); the option to view open tabs side by side in a grid view; the ability to delete downloaded files within the app; the rollout of WebRender to more users on the Mali-G GPU series; and improvement of scrolling accuracy and control and fix of cases of unexpected scroll acceleration (Android). [523][524]

Firefox 85 was released on January 26, 2021, for desktop and Android. Among the many additions were: protection from supercookies, a type of tracker that can stay hidden in the browser and track users online, even after they have cleared cookies; the ability to save and access bookmarks more easily; the ability of the password manager to have users remove all their saved logins with one click, as opposed to having to delete each login individually; the removal of Adobe Flash support; and added support for the :focus-visible pseudo class (desktop). [525][526]

Firefox 86 was released on February 23, 2021, for desktop and Android. Among the many additions were: added support for simultaneously watching multiple videos in Picture-in-Picture; improved Print functionality with a cleaner design and better integration with the computer's printer settings; credit card management and auto-fill for users in Canada; notable performance and stability improvements achieved by moving canvas drawing and WebGL drawing to the GPU process; the removal of DTLS 1.0 support or establishing WebRTC's PeerConnections (desktop), and the introduction of Total Cookie Protection to Strict Mode (both). [527][528]

Firefox 87 was released on March 23, 2021, for desktop and Android. Among the many additions and removals were: the addition of SmartBlock, which provides stand-in scripts so that websites load properly; the new default HTTP Referrer policy (both); the improved "Highlight All" feature on Find in Page; full support for macOS built-in screen reader, VoiceOver; the disabling of the Backspace key as a navigation shortcut for the back navigation button; and the removal of Synced tabs, Recent highlights, and Pocket list from the Library menu (desktop); and the rollout of WebRender to more devices, with the following mobile GPUs now supported: Adreno 505, Adreno 506, Mali-T (Android). [529][530]

Firefox 88 was released on April 19, 2021, for desktop and Android. Among the many additions and removals were: PDF forms supporting JavaScript embedded in PDF files; localized margin units; smooth pinch-zooming using a touchpad on Linux; isolation of window.name data to the website that created it; the removal of the "Take a Screenshot" feature from the Page Actions menu in the url bar; the disabling of FTP support; a new toggle button in the Network panel for switching between JSON formatted HTTP response and raw data (desktop); and a search engine suggestion feature (Android). [531][532]

Firefox 89 was released on June 1, 2021, for desktop and Android. Among the many additions and removals were: core experience redesigned and remodernized to be cleaner, more inviting, and easier to use; simplified browser chrome and toolbar; clear, streamlined menus; updated prompts; inspired tab design; reduced number of alerts and messages; lighter iconography, a refined color palette, and more consistent styling throughout; enhancement of privacy of Private Browsing Mode with Total Cookie Protection; the introduction of the elastic overscroll effect known from many other applications for macOS users; added support for smart zoom; native context menus on macOS (desktop); Synced Tabs in the Tabs tray; compact menu (Android); support of Event Timing API; and support of the CSS forced-colors media query (both). [533][534]

Firefox 90 was released on July 13, 2021, for desktop and Android. Among the many additions and removals were: the application of updates in the background when Firefox is not running on Windows; a new page called about:third-party to help identify compatibility issues caused by third-party applications in Windows; the management of exceptions to HTTPS-Only mode in about:preferences#privacy; working hyperlinks in "Print to PDF"; Version 2 of Firefox's SmartBlock feature; the addition of software WebRender for most users without its hardware accelerated version; improved software WebRender performance; removal of FTP support; support for Private Fields in DevTools; support for Fetch Metadata Request Headers; the ability to use client authentication certificates stored in hardware tokens or in Operating System storage (desktop); the

ability to save, manage, and auto-fill credit card information for users shopping on Firefox; and Back/Forward Cache (aka BFCache) for webpages that use unload event listeners (Android). [535][536]

Release historv of Firefox 78-90	Rel	ease	history	of Firef	ox 78-90
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Note: Dates in the future indicate a scheduled release date; they are subject to change in the event of unanticipated complications.

Version	Release date <sup>[23]</sup>	Release type and highlights $[t\ 1]$
		Official Firefox 78.0 release.[511]
		Desktop
78.0	June 30, 2020	<ul> <li>The Protections Dashboard includes consolidated reports about tracking protection, data breaches, and password management</li> <li>Refresh button added to the Uninstaller</li> <li>Screen saver will no longer interrupt WebRTC calls on Firefox, making conference and video calling in Firefox better</li> <li>WebRender rolled out to Windows users with Intel GPUs</li> <li>Pocket recommendations, featuring some of the best stories on the web, will now appear on the Firefox new tab for 100% of users in the UK</li> <li>Various security fixes</li> <li>Fixed bugs in the search results quality composition and improved search result texts based on recommendations by partners</li> <li>Firefox now requires GNU libc 2.17, libstdc++ 4.8.1 and GTK+ 3.14 or newer versions on Linux</li> <li>All remaining DHE-based TLS ciphersuites disabled by default</li> <li>Two more AES-GCM SHA2-based ciphersuites enabled</li> <li>TLS 1.0 and 1.1 disabled</li> <li>Context menu lets you undo multiple tab closings with a single click and places Close Tabs to the Right and Close Other Tabs in a submenu</li> <li>A number of accessibility improvements have been made with this release:</li> <li>When using the JAWS screen reader, pressing the down arrow in an HTML input control with a datalist no longer incorrectly moves the cursor to the next element after the input control</li> <li>Screen readers no longer severely lag or freeze when focusing the microphone/camera/screen sharing indicator</li> <li>Large tables with thousands of rows now load much faster for screen reader users</li> <li>Text input controls with custom styling now correctly show the focus outline when appropriate</li> <li>Screen readers no longer sometimes incorrectly switch to document browsing mode unexpectedly when the user enters the main Developer Tools window</li> <li>Number of animations such as tab hover, search bar expansion, and others reduced for users with migraines and epilepsy</li> <li>Enabled support for client certificates stored on macOS and Windows by setting</li></ul>
		properties, particularly improving JavaScript framework debugging  Debugger's automatic mapping for minified variable names now also works for Logpoints  Firefox DevTools' Network panel now highlights which extension or CORS restriction blocked a request  New RegExp engine in SpiderMonkey, adding support for the dotAll flag, Unicode escape sequences, lookbehind references, and named captures  Migrated Firefox users on OS X 10.9-10.11 operating systems to the extended support release (ESR) version of Firefox.
		Off-cycle stability update.[537]
78.0.1	July 1, 2020	<ul> <li>Desktop</li> <li>Fixed an issue which could cause installed search engines to not be visible when upgrading from a previous release</li> </ul>
		Off-cycle security and stability update.[538]
78.0.2	July 9, 2020	<ul> <li>Desktop</li> <li>Security fix</li> <li>Fixed an accessibility regression in reader mode</li> <li>Made the address bar more resilient to data corruption in the user profile</li> <li>Fixed a regression opening certain external applications</li> <li>End-of-life 78.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on July 28, 2020.</li> </ul>
78.0esr	June 30, 2020	Official Firefox 78.0 Extended Support Release (ESR).[512]
		Some of the highlights of the new Extended Support Release are:

		<ul> <li>Kiosk mode</li> <li>Client certificates</li> <li>Service Worker and Push APIs are now enabled</li> <li>The Block Autoplay feature is enabled</li> <li>Picture-in-picture support</li> <li>Viewing and managing web certificates in about:certificate</li> </ul>		
78.0.1esr	July 1, 2020	Off-cycle stability update.[539]  • Fixed an issue which could cause installed search engines to not be visible when upgrading from a		
	July 1, 2020	previous release		
78.0.2esr	July 9, 2020	Off-cycle security and stability update. [540]     Security fix     Fixed an accessibility regression in reader mode     Made the address bar more resilient to data corruption in the user profile     Fixed a regression opening certain external applications		
78.1esr	July 28, 2020	Regular security and stability update. [541]  • Various stability, functionality, and security fixes		
78.2esr	August 25, 2020	Regular security and stability update. [542]  Various stability, functionality, and security fixes		
78.3esr	September 22, 2020	Regular security and stability update.[543]  • Various stability, functionality, and security fixes		
78.3.1esr	October 1, 2020	Off-cycle stability update.[544]  • Fixed legacy preferences not being properly applied when set via GPO		
78.4esr	October 20, 2020	Regular security and stability update. [545]  • Various stability, functionality, and security fixes		
78.4.1esr	November 10, 2020	Off-cycle security update.[546]  • Security fix		
78.5esr	November 17, 2020	Regular security and stability update. [547]  • Various stability, functionality, and security fixes		
78.6esr	December 15, 2020	Regular security and stability update.[548]  • Various stability, functionality, and security fixes		
78.6.1esr	January 6, 2021	Off-cycle security and stability update.[549]  Security fix  Fixed a crash during video playback on Apple silicon devices		
78.7esr	January 26, 2021	Regular security and stability update.[550]  • Various stability, functionality, and security fixes		
		Off-cycle security and stability update.[551]		
78.7.1esr	February 5, 2021	<ul> <li>Security fix</li> <li>Prevention of access to NTFS special paths that could lead to filesystem corruption</li> </ul>		
78.8esr	February 23, 2021	Regular security and stability update.[552]  • Various stability, functionality, and security fixes		
78.9esr	March 23, 2021	Regular security and stability update.[553]  • Various stability, functionality, and security fixes		
78.10esr	April 19, 2021	Regular security and stability update. [554]  • Various stability, functionality, and security fixes		
78.10.1esr	May 4, 2021	Off-cycle security and stability update. [555]      Resolved an issue caused by a recent Widevine plugin update which prevented some purchased video content from playing correctly     Security fix		
78.11esr	June 1, 2021	Regular security and stability update. [556]  • Various stability, functionality, and security fixes		

		Regular security and stability update. [557]
78.12esr	July 13, 2021	Various stability, functionality, and security fixes
78.13esr	August 10, 2021	Regular security and stability update.[558]
76.1365	August 10, 2021	Various stability, functionality, and security fixes
78.14esr	September 7,	Regular security and stability update. [559]
70.14631	2021	Various stability, functionality, and security fixes
70 15 000		Regular security and stability update. [560]
		Various stability, functionality, and security fixes
78.15esr	October 5, 2021	End-of-life 78.x.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on November 2, 2021.
		Official Firefox 79.0 release.[513][514]
		Desktop
	July 28, 2020 (desktop); August 27, 2020 (Android)	<ul> <li>New WebRender rolled out to Windows users with Intel and AMD GPUs</li> <li>Firefox users in Germany will now see more Pocket recommendations in their new tab featuring some of the best stories on the web</li> <li>Various security fixes</li> <li>Several crashes while using a screen reader were fixed, including a frequently encountered crash when</li> </ul>
		<ul> <li>using the JAWS screen reader</li> <li>Firefox Developer Tools received significant fixes allowing screen reader users to benefit from some of the tools that were previously inaccessible</li> <li>SVG title and desc elements (labels and descriptions) are now correctly exposed to assistive technology</li> </ul>
		products such as screen readers  A number of bug fixes and new policies have been implemented in the latest version of Firefox  Updates to the password policy allow admins to require a primary password (formerly called master
		password)  • Newly added asynchronous call stacks let developers trace their async code through events, timeouts, and promises
79.0		<ul> <li>Erroneous network responses with 4xx/5xx status codes display as errors in the Console, making it easy to understand them in the context of related logs</li> <li>JavaScript errors are now visible not only in the Console, but also in the Debugger</li> </ul>
		<ul> <li>Opening SCSS and CSS-in-JS sources from the Inspector now works more reliably thanks to improved source map handling across all panels</li> <li>Inspecting accessibility properties from the browser context menu is now available to all users by default</li> </ul>
		OS X 10.9-10.11 are no longer supported. 10.9-10.11 users running Firefox 78 will continue to receive security updates on Firefox ESR 78.
		Android
		Enhanced Tracking Protection on by default  The ability to a green and approximate the province Callegations.
		<ul> <li>The ability to open as many tabs and organize them into Collections</li> <li>Getting into Private Browsing Mode with just one tap</li> </ul>
		Ergonomic browsing with the bottom nav bar
		<ul> <li>Users can switch to Dark Mode</li> <li>Video multitasking with Picture-in-Picture mode</li> </ul>
		Powered by the independent GeckoView engine
		End-of-life 79.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on August 25, 2020.
		Official Firefox 80.0 release.[515][516]
	August 25, 2020 (desktop); August 31, 2020 (Android)	Desktop
80.0		<ul> <li>Firefox can now be set as the default system PDF viewer</li> <li>The name reported by accessibility tools for items in multi-tiered tree controls no longer incorrectly includes information from items at deeper levels, providing users with the correct level of content when using a screen reader</li> <li>Various cocurity fixes</li> </ul>
		<ul> <li>Various security fixes</li> <li>Several crashes while using a screen reader were fixed including a frequently encountered crash when using the JAWS screen reader</li> <li>Firefox Developer Tools received significant fixes allowing screen reader users to benefit from some of the</li> </ul>
		<ul> <li>Tried &amp; Developer Tools received significant fixes allowing screen reader dsers to belief it from some of the tools that were previously inaccessible</li> <li>SVG title and desc elements (labels and descriptions) are now correctly exposed to assistive technology products such as screen readers</li> </ul>

		<ul> <li>A number of animations such as tab loading reduced for users with migraines and epilepsy and reduced motion settings</li> <li>The new add-ons blocklist has been enabled to improve performance and scalability</li> <li>A number of bug fixes and new policies have been implemented in the latest version of Firefox</li> <li>An experimental sidebar panel in the inspector to Firefox Developer Edition that helps developers more quickly identify potential browser compatibility problems based on MDN data</li> <li>In the Network Monitor request list, a turtle icon is shown for "slow" requests that exceed a threshold for the waiting time</li> <li>Firefox now supports RTX and Transport-cc for improved call quality in poor network conditions and better bandwidth estimation and for better compatibility with many websites using WebRTC</li> </ul> Android <ul> <li>The Back button is back</li> <li>Users can view tab history with a long-press of any back button</li> </ul>
		<ul> <li>Various security fixes</li> <li>Off-cycle stability update. [561]</li> </ul>
		Desktop
80.0.1	September 1, 2020	<ul> <li>Fixed a performance regression when encountering new intermediate CA certificates</li> <li>Fixed crashes possibly related to GPU resets</li> <li>Fixed rendering on some sites using WebGL</li> <li>Fixed the zoom-in keyboard shortcut on Japanese language builds</li> <li>Fixed download issues related to extensions and cookies</li> </ul> End-of-life 80.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on September 22, 2020.
		September 22, 2020.
81.0	September 22, 2020	Users can pause and play audio or video in Firefox right from their keyboard or headset, giving them easy access to control their media when in another Firefox tab, another program, or even when their computer is locked  In addition to the default, dark and light themes, with this release, Firefox introduces the Alpenglow theme: a colorful appearance for buttons, menus, and windows  The ability to save, manage, and auto-fill credit card information for U.S. and Canada users, making shopping on Firefox ever more convenient  Firefox supports AcroForm, which allows users to fill in, print, and save supported PDF forms, and the PDF viewer also has a new fresh look  Users in Austria, Belgium and Switzerland using the German version of Firefox will now see Pocket recommendations in their new tab featuring some of the best stories on the web  In addition to Firefox's new tab, Pocket is also available as an app on iOS and Android  Various security fixes  Fixed a bug for users of language packs where the default language was reset to English after Firefox updates  Browser native HTML5 audio/video controls received several important accessibility fixes:  Audio/video controls remain accessible to screen readers even when they are temporarily hidden visually  Audio/video elapsed and total time are now accessible to screen readers where they weren't previously  Various unlabelled controls are now labelled making them identifiable to screen readers  Screen readers no longer intrusively report progress information unless the user requests it  Users will soon find Picture-in-Picture more easily on all the videos they watch with new iconography  The bookmarks toolbar is now automatically revealed once bookmarks are imported into Firefox, making it easier to find most important websites  The expansion of .xml, .svg, and .webp file types  Various bug fixes and new policies have been implemented in the latest version of Firefox  TypeScript files are now properly identified in the Debugger panel and labeled with corresponding icon
		<ul> <li>HTTP JSON responses using XSSI prevention characters are properly parsed and JSON data presented in a form of an expandable tree</li> <li>It's possible to pause on script first statement, which is useful e.g. in cases where developers want to debug side effects caused by script execution or timers</li> <li>The color vision deficiency simulation in the accessibility panel of Developer Tools is now more accurate</li> </ul> Android
		■ Top requests in the Firefox Daylight release:

	I	
		<ul> <li>The ability to view downloads</li> <li>Enhanced search</li> </ul>
		Frequently visited top sites
		■ The ability to auto-close tabs
		<ul> <li>The ability to switch tabs by swiping horizontally on address bar</li> </ul>
		<ul> <li>Password migration support for master password users</li> </ul>
		Various security fixes
		Off-cycle stability update.[562]
		Desktop
81.0.1	October 1, 2020	<ul> <li>Fixed missing content on Blackboard course listings</li> <li>Resolved incorrect scaling of Flash content on HiDPI macOS systems</li> <li>Fixes for various printing issues</li> <li>Fixed legacy preferences not being properly applied when set via GPO</li> <li>Fixed Picture-in-Picture controls being visible on audio-only page elements</li> <li>Fixed high memory growth with addons such as Disconnect installed, causing browser responsiveness issues over time</li> <li>Various stability improvements</li> </ul>
		Off-cycle stability update.[563]
		Desktop
81.0.2	October 13, 2020	• Fixed an incompatibility with Twitter.com manifesting itself with the intermittent display of a network protocol violation error page
		End-of-life 81.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) of October 20, 2020.
		Official Firefox 82.0 release.[519][520]
		Desktop
		A number of improvements that make watching videos more delightful:
		,
		The Picture-In-Picture button has a new look and position  Picture in Picture pay has a keyboard shortsut for Mas users that works before they start playing the
		<ul> <li>Picture-In-Picture now has a keyboard shortcut for Mac users that works before they start playing the video</li> </ul>
		■ DirectComposition for hardware decoded video for Windows users, which will improve CPU and GPU
		usage during video playback, improving battery life
		• Improved performance on both page loads and start up time:
		<ul> <li>Websites that use flexbox-based layouts load 20% faster than before</li> </ul>
		Restoring a session is 17% quicker
		• For Windows users, opening new windows got quicker by 10%
		<ul> <li>Users can now explore new articles when they save a webpage to Pocket from the Firefox toolbar</li> <li>WebRender continues to roll out to more Firefox users on Windows</li> </ul>
	October 20.	• Screen reader features which report paragraphs now correctly report paragraphs in Firefox instead of
82.0	2020	lines
		<ul> <li>Various security fixes</li> <li>Credit card auto-fill is now more accessible with the card type, and the card number in the card editor</li> </ul>
		now available to screen readers
		<ul> <li>Printing dialog errors for invalid form entries are now reported to screen readers</li> </ul>
		<ul> <li>MediaSession API has been enabled by default which allows web authors to provide custom behaviors for</li> </ul>
		standard media playback interactions, giving them more options than ever  • DevTools now shows server side events in the Network panel
		- Devicors flow shows server side events in the Network panel
		Android
		New ways of making browsing experience better:
		<ul> <li>Users can now reopen their recently closed tabs in the tab tray menu or History panel</li> </ul>
		■ The ability to automatically purge cookies from sites not directly visited in 30 days
		<ul> <li>Newly supported add-ons: Video Background Play Fix and Google Search Fixer</li> </ul>
		■ Added a new locale: Tajik
		Better support for opening links in Firefox from third-party apps
		Various security fixes
	October 27,	Off-cycle stability update.[564]

82.0.2	October 28, 2020 November 10, 2020	<ul> <li>Avoided an unnecessary prompt to reboot when using the full installer on Windows</li> <li>Restored the ability to print on paper whose width or height is larger than 100 inches, e.g. for receipts</li> <li>Fixed printing of documents with margins of zero, e.g. some PDFs</li> <li>Fixed handling of the WebDriver:ClickElement command in the marionette testing framework</li> <li>Stability fix</li> <li>Off-cycle stability update. [565]</li> <li>Desktop</li> <li>Fixed duplication of WebSocket messages in certain cases</li> <li>Off-cycle security update. [566]</li> <li>Desktop</li> <li>Security fix</li> <li>End-of-life 82.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on November 17, 2020.</li> </ul>
83.0	November 17, 2020	Official Firefox 83.0 release. [521][522]  Desktop  Significant updates to SpiderMonkey and JavaScript engine and replacement of the part of the JavaScript engine that helps to compile and display websites for the user Introduction of the HTTPS-Only Mode Pinch zooming will now be supported for users with Windows touchscreen devices and touchpads on Mac devices Picture-in-Picture now supports keyboard shortcuts for fast forwarding and rewinding videos: use the arrow keys to move forward and back 15 seconds, along with volume controls Improved user interface that makes it clearer which devices or displays are being shared Improved functionality and design for a number of Firefox search features: Selecting a search engine at the bottom of the search panel now enters search mode for that engine, allowing users to see suggestions (if available) for their search terms When Firefox autocompletes the URL of one of your search engines, users can now search with that engine directly in the address bar by selecting the shortcut in the address bar results Added buttons at the bottom of the search panel to allow users to search bookmarks, open tabs, and history Firefox supports Acroform, which allows users to fill in, print, and save supported PDF forms and the PDF Viewer also has a new fresh look Users in India on the English build of Firefox will now see Pocket recommendations in their new tab featuring some of the best stories on the web Support of emulation under Apple's Rosetta 2 that ships with macOS Big Sur Major WebRender release for users on Windows 7 and 8 as well as on macOS 10.12 to 10.15 Screen reader features which report paragraphs now correctly report paragraphs instead of lines in Google Docs When reading by word using a screen reader, words are now correctly reported when there is punctuation nearby The arrow keys now work correctly after tabbing in the picture-in-picture window For users on macOS restoring a session with minimized windows, Firefox now uses much less power Various security fixes Developers
84.0	December 15, 2020	Desktop  Native support for macOS devices built with Apple silicon CPUs brings dramatic performance improvements over the non-native build that was shipped in Firefox 83  WebRender rolls out to MacOS Big Sur, Windows devices with Intel Gen 6 GPUs, and Intel laptops running Windows 7 and 8; an accelerated rendering pipeline for Linux/GNOME/X11 users for the first time

		<ul> <li>More modern techniques for allocating shared memory on Linux, improving performance and increasing compatibility with Docker</li> <li>Final release to support Adobe Flash Player</li> <li>Various security fixes</li> </ul>
		<ul> <li>Various bug fixes and new policies have been implemented</li> <li>The Network panel is now able to handle unexpected crashes and render useful debugging details such as a related stack-trace</li> </ul>
		<ul> <li>The Accessibility Panel now includes an option for displaying elements in their tabbing order in order to help developers see what elements are focusable when tabbing and in what sequence</li> </ul>
		Android
		<ul> <li>Option to view open tabs side by side in a grid view</li> <li>Ability to delete downloaded files within the app</li> <li>WebRender rolls out to more users on the Mali-G GPU series</li> <li>Improved scrolling accuracy and control and fixed cases of unexpected scroll acceleration.</li> <li>Various security fixes</li> </ul>
		Off-cycle stability update.[567]
		Desktop
84.0.1	December 22, 2020	<ul> <li>Fixed problems loading secure websites and crashes for users with certain third-party PKCS11 modules and smartcards installed</li> <li>Fixed slower than expected performance and flickering on Canvas elements for some Windows users</li> <li>Fixed a bug causing some Unity JS games to not load on Apple silicon devices due to improper detection of the OS version</li> <li>Fixed crashes caused by various third-party antivirus software</li> </ul>
		Off-cycle security update.[568]
		Desktop
84.0.2	January 6, 2021	■ Security fix
		End-of-life 84.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on January 26, 2021.
		Official Firefox 85.0 release.[525][526]
		Desktop
85.0	January 26, 2021	<ul> <li>Protection from supercookies, a type of tracker that can stay hidden in the browser and track users online, even after they have cleared cookies</li> <li>Remembering the preferred location for saved bookmarks, displaying the bookmarks toolbar by default on new tabs, and giving users easy access to all of their bookmarks via a toolbar folder</li> <li>Ability of the password manager to have users remove all their saved logins with one click, as opposed to having to delete each login individually</li> <li>Various security fixes</li> <li>Removal of Adobe Flash support</li> <li>Various bug fixes and new policies have been implemented</li> <li>Added support for the :focus-visible pseudo class</li> <li>It's possible to prettify JS expressions in Console source code Editor (available in multiline mode) using a new toolbar button</li> </ul>
		Android
		Various security fixes
		Off-cycle security and stability update.[569]
		Desktop
85.0.1	February 5, 2021	<ul> <li>Security fix</li> <li>Prevention of access to NTFS special paths that could lead to filesystem corruption</li> <li>Fixed a crash when authenticating to websites using SPNEGO on macOS devices with Apple silicon CPUs</li> <li>Avoided printing an extra blank page at the end of some documents</li> <li>Fixed a browser crash in case of unexpected Cache API state</li> <li>Fixed external URL scheme handlers when using the Firefox flatpak</li> </ul>
		Off-cycle stability update. <sup>[570]</sup>
85.0.2	February 9, 2021	Desktop
		Fixed a deadlock during startup

		End-of-life 85.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on February 23, 2021.
		Official Firefox 86.0 release.[527][528]
		Desktop
86.0	February 23, 2021	<ul> <li>Firefox now supports simultaneously watching multiple videos in Picture-in-Picture</li> <li>Introduction of Total Cookie Protection to Strict Mode</li> <li>Improved Print functionality with a cleaner design and better integration with the computer's printer settings</li> <li>For Firefox users in Canada, credit card management and auto-fill are now enabled</li> <li>Notable performance and stability improvements are achieved by moving canvas drawing and WebGL drawing to the GPU process</li> <li>Reader mode now works with local HTML pages</li> <li>Using screen reader quick navigation to move to editable text controls no longer incorrectly reaches non-editable cells in some grids such as on messenger.com</li> <li>The Orca screen reader's mouse review feature now works correctly after switching tabs in Firefox</li> <li>Screen readers no longer report column headers incorrectly in tables containing cells spanning multiple columns</li> <li>Links in Reader View now have more color contrast</li> <li>Various security fixes</li> <li>The protection to miltigate the stack clash attack has been activated (Linux)</li> <li>Removal of DTLS 1.0 support for establishing WebRTC's PeerConnections</li> <li>Consolidated all video decoding in the new RDD process</li> <li>Various bug fixes and new policies have been implemented in the latest version of Firefox</li> <li>CSS images-set() function in CSS is now enabled, allowing for responsive images in CSS</li> <li>Inactive CSS tool is now showing a warning when margin or padding is set on internal table elements</li> <li>Developer Tools Toolbox is now showing a number of errors on the current page</li> <li>Android</li> <li>Introduction of Total Cookie Protection to Strict Mode</li> <li>Various security fixes</li> </ul>
		The protection to mitigate the stack clash attack has been activated
86.0.1	March 11, 2021	Off-cycle stability update. [571]  Desktop  Fixed an issue on Apple silicon machines that caused Firefox to be unresponsive after system sleep Fixed an issue causing windows to gain or lose focus unexpectedly Fixed truncation of date and time widgets due to incorrect width calculation Fixed an issue causing unexpected behavior with extensions managing tab groups Fixed a frequent Linux crash on browser launch  End-of-life 86.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on March 23, 2021.
		Official Firefox 87.0 release.[529][530]
87.0	March 23, 2021	■ The addition of SmartBlock, which provides stand-in scripts so that websites load properly     ■ The new default HTTP Referrer policy will trim path and query string information from referrer headers to prevent sites from accidentally leaking sensitive user data     ■ The "Highlight All" feature on Find in Page now displays tick marks alongside the scrollbar that correspond to the location of matches found on that page     ■ Full support for macOS built-in screen reader, VoiceOver     ■ New locale: Silesian (szl)     ■ Fixed several significant accessibility issues     ■ Video controls now have visible focus styling and video and audio controls are now keyboard navigable     ■ HTML <meter> is now spoken by screen readers     ■ Firefox now sets a useful initial focus in Add-ons Manager     ■ Firefox will now fire a page/description change quest when a ris labelledby/describedby/contents.</meter>
		<ul> <li>Firefox will now fire a name/description change event when aria-labelledby/describedby content changes</li> <li>Various security fixes</li> <li>Disabled the Backspace key as a navigation shortcut for the back navigation button to prevent user data loss when filling out forms</li> <li>Removal of Synced tabs, Recent highlights, and Pocket list from the Library menu</li> </ul>

		<ul> <li>Simplified the Help menu by reducing redundant items, such as those that point to Firefox support pages that can also be accessed via the Get Help item</li> <li>Various bug fixes and new policies have been implemented</li> <li>Simplified the Web Developer menu</li> <li>Developers can now use the Page Inspector to toggle the :target pseudo-class for the currently selected element.</li> <li>There is a number of Page Inspector improvements and bug fixes related to inactive CSS rules</li> <li>The table-layout property is now marked as inactive for non-table elements</li> <li>The scroll-padding properties (shorthand and longhand) are now marked as inactive for non-scrollable elements</li> <li>The text-overflow property was previously incorrectly marked as inactive for some overflow values</li> </ul> Android <ul> <li>The new default HTTP Referrer policy will trim path and query string information from referrer headers to prevent sites from accidentally leaking sensitive user data</li> <li>Various security fixes</li> <li>Sharing an image now shares the image itself instead of its URL</li> <li>Sites that have only been visited once are no longer automatically added as Top Sites on the home screen</li> <li>WebRender is rolling out to more devices, with the following mobile GPUs now supported: Adreno 505, Adreno 506, Mali-T</li> <li>End-of-life 87.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on April 20, 2021.</li> </ul>
88.0	April 19, 2021	Desktop  PDF forms now support JavaScript embedded in PDF files Print updates: Margin units are now localized Smooth pinch-zooming using a touchpad is now supported on Linux Isolation of window.name data to the website that created it to protect against cross-site privacy leaks Creen readers no longer incorrectly read content that websites have visually hidden, as in the case of articles in the Google Help panel Various security fixes No prompt for access to microphone or camera if access is already granted to the same device on the same site in the same tab within the past 50 seconds The 'Take a Screenshot' feature was removed from the Page Actions menu in the url bar FTP support has been disabled, and its full removal is planned for an upcoming release Various bug fixes and new policies have been implemented in the latest version of Firefox Introduced a new toggle button in the Network panel for switching between JSON formatted HTTP response and raw data  Android Search engine suggestion feature makes it easier to search the web Fixed an issue where video playing in fullscreen or picture-in-picture mode would not display correctly on sites using a desktop viewport Various security fixes
88.0.1	May 5, 2021	Desktop  Resolved an issue caused by a recent Widevine plugin update which prevented some purchased video content from playing correctly Fixed corruption of videos playing on Twitter or WebRTC calls on some Gen6 Intel graphics chipsets Fixed menulists in Preferences being unreadable for users with High Contrast Mode enabled Various stability and security fixes  End-of-life 88.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on June 1, 2021.
89.0	June 1, 2021	Official Firefox 89.0 release. [533][534]  Desktop  Core experience redesigned and remodernized to be cleaner, more inviting, and easier to use Simplified browser chrome and toolbar Clear, streamlined menus Updated prompts

ı	I	I to a cloud to be designed.
		<ul> <li>Inspired tab design</li> <li>Reduced number of alerts and messages</li> </ul>
		Lighter iconography, a refined color palette, and more consistent styling throughout
		■ Enhancement of privacy of Private Browsing Mode with Total Cookie Protection
		■ The introduction of the elastic overscroll effect known from many other applications for macOS users
		■ Added support for smart zoom
		Native context menus on macOS
		<ul> <li>Colors in Firefox on macOS will no longer be saturated on wide gamut displays, untagged images are properly treated as sRGB, and colors in images tagged as sRGB will now match CSS colors</li> </ul>
		■ In full screen mode on macOS, moving the mouse to the top of the screen will no longer hide the tabs
		behind the system menu bar
		■ It is now possible to hide the browser toolbars for a fully immersive full screen experience
		<ul> <li>Various stability and security fixes</li> </ul>
		<ul> <li>Introduction of a non-native implementation of web form controls, which delivers a new modern design and some improvements to page load performance</li> </ul>
		The screenshots feature is available in the right-click context menu  The screenshots feature is available in the right-click context menu
		Various bug fixes and new policies have been implemented
		<ul> <li>Better keyboard navigation for editable BoxModel properties in the Inspector panel</li> </ul>
		Support of Event Timing API
		Support of the CSS forced-colors media query
		Android
		Synced Tabs are now shown in the tabs tray
		Compact menu to allow easy access to commonly used items
		■ Top site tiles are larger to improve touch accessibility
		<ul> <li>Various stability and security fixes</li> </ul>
		Using a touchpad to scroll now scrolls the page instead of selecting text
		"Find toolbar" no longer covers content with top toolbar setting     Large data LIPL images new display and unlead correctly.
		<ul> <li>Large data URI images now display and upload correctly</li> <li>Removal of Firefox from the Android recent apps list when the 'quit to clear browsing data' option is used</li> </ul>
		■ The "Quit" option is available in both menus: the Home screen menu, and the page menu
		■ Support of Event Timing API
		Support of the CSS forced-colors media query
		Off-cycle security and stability update.[573]
		Desktop
		<ul> <li>Windows: Resolved an issue causing some screen readers to not interact correctly with Firefox anymore</li> <li>Updated translations, including full Spanish (Mexico) localization and other improvements</li> </ul>
89.0.1	June 17, 2021	Fix for various font related regressions
		■ Linux: Fix for performance and stability regressions with WebRender
		macOS Fix for screen flickering when scrolling a page on an external monitor
		<ul> <li>Enterprise: Fix for the DisableDeveloperTools policy not having effect anymore</li> <li>Linux: Fix for broken scrollbars on some GTK themes</li> </ul>
		Various stability and security fixes
		Off-cycle stability update.[574]
		Desktop
89.0.2	June 23, 2021	Fix for occasional hangs with Software WebRender on Linux
		End-of-life 89.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on July 13, 2021.
		Official Firefox 90.0 release. [535][536]
		Desktop
		<ul> <li>On Windows, updates can now be applied in the background while Firefox is not running</li> <li>A new page called about:third-party to help identify compatibility issues caused by third-party</li> </ul>
90.0	July 13, 2021	applications in Windows  Exceptions to HTTPS-Only mode can be managed in about:preferences#privacy
		Print to PDF now produces working hyperlinks
		<ul> <li>Version 2 of Firefox's SmartBlock feature further improves private browsing</li> </ul>
		Various security fixes  The Money Image in New Table context recent items now approximately and reading in a healthy and table by
		The "Open Image in New Tab" context menu item now opens images and media in a background tab by default
		Most users without hardware accelerated WebRender will now be using software WebRender
	1	

		<ul> <li>Improved software WebRender performance</li> <li>FTP support has been removed</li> <li>Various bug fixes and new policies have been implemented</li> <li>Support for Private Fields (TC39 proposal, stage 3) is available in DevTools</li> <li>The Network panel shows a preview of HTTP requests for fonts in the Response tab</li> </ul>
		<ul> <li>Support for Fetch Metadata Request Headers, which allows web applications to better protect themselves and their users against various cross-origin threats</li> <li>Added the ability to use client authentication certificates stored in hardware tokens or in Operating</li> </ul>
		System storage
		Android
		<ul> <li>The ability to save, manage, and auto-fill credit card information for users shopping on Firefox</li> <li>Back/Forward Cache (aka BFCache) is now enabled for webpages that use unload event listeners, making the back and forward navigations faster on these pages</li> </ul>
		<ul> <li>Users that need to import user Android certificates can do so through the secret settings</li> <li>Various stability and security fixes</li> </ul>
		Off-cycle stability update.[575]
		Desktop
90.0.1	July 19, 2021	Fixed a crash when using some accessibility clients on Windows
		<ul> <li>Fixed busy looping processing some HTTP3 responses</li> <li>Fixed transient errors authenticating with some smart cards</li> </ul>
		Fixed a rare crash on shutdown
		Fixed a race on startup that caused about:support to end up empty after upgrade
		Off-cycle stability update.[576]
		Desktop
90.0.2	July 22, 2021	<ul> <li>Fixed truncated output when printing</li> <li>Fixed menu styling on some Gtk themes</li> <li>Updates to support DoH Canada rollout</li> </ul>
		End-of-life 90.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on August 10, 2021.

### Firefox 91 through 101

Firefox 91 and Firefox 91 ESR were released on August 10, 2021, for desktop and Android. Among the many additions and removals were: a build on Total Cookie Protection; support for logging into Microsoft, work, and school accounts using Windows single sign-on; the return of the Simplify page when printing feature; the addition of a new Scots locale; the address bar providing Switch to Tab results in Private Browsing windows; the automatic enable of High Contrast Mode when "Increase Contrast" is checked on MacOS; catch-up paints for almost all user interactions (desktop); the support of Javascript embedded in PDF files; the addition of SmartBlock; protection from supercookies; support of AcroForm; the removal of support for Adobe Flash (ESR); a "Set Firefox as your default browser" message on notification pane for new installs; the addition of eBay Search to help users with their shopping needs; and default autoplay setting updated to Blocking Audio Only (Android). [577][578][579]

Firefox 92 was released on September 7, 2021, for desktop and Android. Among the many additions and removals were: an automatic upgrade to HTTPS using HTTPS RR as Alt-Svc headers; support of full-range color levels for video playback on many systems; support for images containing ICC v4 profiles on macOS; access of macOS share options from the Firefox File menu; the redesign of certificate error pages for better user experience (desktop); and added support for Web Authentication API, which allows USB tokens (such as the use of USB or Bluetooth Security Key) for website authentication (Android). [580][581]

Firefox 93 was released on October 5, 2021, for desktop and Android. Among the many additions and removals were: support for the new AVIF image format, which is based on the modern and royalty free AV1 video codec; support for filling more forms for PDF viewer; automatic unload of tabs based on their last access time, memory usage, and other attributes for Windows when available system memory is critically low; blocking downloads that rely on insecure connections, protecting against potentially malicious or unsafe downloads; improved web compatibility for privacy protections with SmartBlock 3.0; a new referrer tracking protection in Strict Tracking Protection and Private Browsing; disabling of TLS ciphersuites that use 3DES (desktop); the addition of forward, back, and reload buttons in the toolbar on tablets; the auto-fill of logins and passwords by default; and the merging of site security and privacy info into one icon (Android). [582][583]

Firefox 94 was released on November 2, 2021, for desktop and Android. Among the many additions and removals were: a selection of six fun seasonal Colorways (available for a limited time only); the usage of Apple's low power mode for fullscreen video on sites such as YouTube and Twitch; the addition of about:unloads; fewer interruptions on Windows because of a background agent that will download and install updates even if Firefox is closed; improved WebGL performance and reduced power consumption for Linux users; the introduction of Site Isolation to better protect all users against side-channel attacks;

support for the new Snap Layouts menus when running on <u>Windows 11</u>; reduced CPU usage during socket polling for HTTPS connections; faster storage initialization; improved cold startup by reducing main thread I/O (desktop); and the new Inactive Tabs feature (Android).<sup>[584][585]</sup>

Firefox 95 was released on December 7, 2021, for desktop and Android. Among the many additions and removals were: RLBox, a new technology that hardens Firefox against potential security vulnerabilities in third-party libraries; the addition of Firefox download from the Microsoft Store on Windows 10 and 11; reduced CPU usage on macOS in Firefox and WindowServer during event processing; reduced power usage of software decoded video on macOS, especially in fullscreen; the ability to move the Picture-in-Picture toggle button to the opposite side of the video; the enabling of Site Isolation; a User Agent override for Slack.com, which allows Firefox users to use more Call features and have access to Huddles (desktop); the new "Homepage" section in the Settings Menu; Hero Images in the "Jump Back In" section; confirmation of snack bar "Autoclose enabled" when a user enables auto-close from the tab tray; and support of Pocket (Thought Provoking Stories section) in Canada. [586][587]

Firefox 96 was released on January 11, 2022, for desktop and Android. Among the many additions and removals were: significant improvements in noise-suppression and auto-gain-control as well as slight improvements in echo-cancellation; reduced main-thread load; the default of all cookies to having a SameSite=lax attribute which helps defend against Cross-Site Request Forgery (CSRF) attacks; the selection of printing odd/even pages (desktop); history highlights to recently visited sites; the display of better images for recent bookmarks on the home page; and improved "fill link from clipboard for Android 12 (Android).[588][589]

Firefox 97 was released on February 8, 2022, for desktop and Android. Among the many additions and removals were: support and display for the new style of scrollbars on Windows 11; improvements to system font loading which makes opening and switching to new tabs faster in certain situations for macOS; removal of the 18 colorway themes of Firefox 94; removal of support for directly generating PostScript for printing on Linux, with the exception of printing to PostScript printers (desktop); and the addition of a new prompt when users attempt to leave private browsing with active downloads (Android). [590][591]

Firefox 98 was released on March 8, 2022, for desktop and Android. Among the many additions were: a new optimized download flow, in which, instead of prompting every time, files will download automatically; allowing users to choose from a number of built-in search engines to set as their default (desktop); the ability to change Wallpapers on Homepage; and the ability to clear cookies and website data for a single domain (Android). [592][593]

Firefox 99 was released on April 5, 2022, for desktop and Android. Among the many additions were: the ability to toggle Narrate in ReaderMode with the keyboard shortcut "n"; added support for search—with or without diacritics—in the PDF viewer; support for credit card autofill and capture in Germany and France (desktop); the ability to clear cookies and data for a single domain; and improved performance of Pocket articles on the homescreen (Android). [594][595]

Firefox 100 was released on May 3, 2022, for desktop and Android. Among the many additions were: support for captions/subtitles display on YouTube, Amazon Prime Video, and Netflix videos watched in Picture-in-Picture, which now supports video captions on websites that use WebVTT (Web Video Text Track) format, like Coursera.org, Canadian Broadcasting Corporation, and many more; support for HDR video on macOS; hardware accelerated AV1 video decoding on Windows with supported GPUs; video overlay on Windows for Intel GPUs, reducing power usage during video playback; improved fairness between painting and handling other events, support for credit card autofill and capture in the UK; support for profiling multiple java threads (desktop); updated History; and bookmark search (Android). [596][597]

Firefox 101 was released on May 31, 2022, for desktop and Android. Among the many additions were: the prefers-contrast media query, which allows sites to detect if the user has requested that web content is presented with a higher (or lower) contrast; all non-configured MIME types that can now be assigned a custom action upon download completion; the use of as many microphones at the same time, during video conferencing; added support for large, small, dynamic viewport units and logical ones (\*vi and \*vb); added web conferencing support for enumerating and selecting multiple audio input devices through navigator.mediaDevices.enumerateDevices() (desktop); and added support for using the magnifier on Android 9+ for positioning the cursor in forms on web pages (Android).[598][599]

Legend:	Former release	Extended Support Release (ESR)	Current	Beta	Future official release	Future test release	Тор

Note: Date	s in the future	Release history of Firefox 91-101  indicate a scheduled release date; they are subject to change in the event of unanticipated complications.
Version	Release date <sup>[23]</sup>	Release type and highlights[t 1]
91.0	August 10, 2021	Desktop  A build on Total Cookie Protection Support for logging into Microsoft, work, and school accounts using Windows single sign-on The simplify page when printing feature is back HTTPS-First Policy: Firefox Private Browsing windows now attempt to make all connections to websites secure, and fall back to insecure connections only when websites do not support it Addition of Scots (sco) locale The address bar now provides Switch to Tab results also in Private Browsing windows Firefox now automatically enables High Contrast Mode when "Increase Contrast" is checked on MacOS Firefox now does catch-up paints for almost all user interactions, enabling a 10-20% improvement in response time to most user interactions Various security fixes Various bug fixes and new policies have been implemented The Visual Viewport API is now supported on desktop platforms  Android  New installs will see a "Set Firefox as your default browser" message on their notification pane Added eBay Search to help users with their shopping needs Password fields no longer automatically start with capital letter with the Samsung keyboard Various security fixes In order to improve tab navigation, the default layout of the tabs tray was changed from List View to Grid View The default autoplay setting has been updated to Blocking Audio Only
91.0.1	August 17, 2021	<ul> <li>Opting out of telemetry will now also erase all previously collected usage data</li> <li>Off-cycle security and stability update. [600]</li> <li>Desktop</li> <li>Fixed an issue causing buttons on the tab bar to be resized when loading certain websites</li> <li>Fixed an issue which caused tabs from private windows to be visible in non-private windows when viewing switch-to-tab results in the address bar panel</li> <li>Various stability fixes</li> <li>Security fix</li> </ul>
91.0.2	August 24, 2021	Off-cycle stability update.[601]  Desktop  High Contrast Mode is no longer enabled by default when "Increase Contrast" is checked in macOS settings Firefox no longer clears authentication data when purging trackers, to avoid repeatedly prompting for a password  End-of-life 91.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on September 7, 2021.
91.0esr	August 10, 2021	Official Firefox 91.0 Extended Support Release (ESR). [578]

		■ Some of the highlights of the new Extended Support Release are:
		<ul> <li>A number of user interface changes</li> <li>Support for logging into Microsoft, work, and school accounts using Windows single sign-on</li> <li>On Windows, updates can now be applied in the background while Firefox is not running</li> <li>Firefox for Windows now offers a new page about:third-party to help identify compatibility issues caused by third-party applications</li> <li>Version 2 of Firefox's SmartBlock feature further improves private browsing</li> <li>Enhanced the privacy of the Firefox Browser's Private Browsing mode with Total Cookie Protection</li> <li>PDF forms now support JavaScript embedded in PDF files</li> <li>Improved Print functionality with a cleaner design and better integration with the computer's printer settings</li> <li>Protection from supercookies</li> <li>Firefox now remembers preferred location for saved bookmarks, displays the bookmarks toolbar by default on new tabs, and gives users easy access to all of their bookmarks via a toolbar folder</li> <li>Native support for macOS devices built with Apple Silicon CPUs</li> <li>Pinch zooming will now be supported for users with Windows touchscreen devices and touchpads on Mac devices</li> <li>Improved functionality and design for a number of Firefox search features:</li> </ul>
		<ul> <li>Selecting a search engine at the bottom of the search panel now enters search mode for that engine</li> <li>When Firefox autocompletes the URL of one of the search engines, users can now search with that engine directly in the address bar by selecting the shortcut in the address bar results</li> <li>Added buttons at the bottom of the search panel to allow you to search your bookmarks, open tabs, and history</li> <li>Support for AcroForm</li> <li>Firefox can now save, manage, and auto-fill credit card information for users in the U.S. and Canada</li> <li>Introduction of the Alpenglow theme: a colorful appearance for buttons, menus, and windows</li> <li>Removal of support for Adobe Flash</li> <li>Various bug fixes and new policies have been implemented</li> </ul>
91.0.1esr	August 17, 2021	Off-cycle security and stability update. [602]  Fixed an issue causing buttons on the tab bar to be resized when loading certain websites  Fixed an issue which caused tabs from private windows to be visible in non-private windows when viewing switch-to-tab results in the address bar panel  Various stability fixes  Security fix
91.1esr	September 7, 2021	Regular security and stability update. [603]  • Various stability, functionality, and security fixes
91.2esr	October 5, 2021	Regular security and stability update. [604]  • Various stability, functionality, and security fixes
91.3esr	November 2, 2021	Regular security and stability update. [605]  • Various stability, functionality, and security fixes
91.4esr	December 7, 2021	Regular security update. [606]  • Various security fixes
91.4.1esr	December 16, 2021	Off-cycle stability update. [607]  Fixed frequent MOZILLA_PKIX_ERROR_OCSP_RESPONSE_FOR_CERT_MISSING error messages when trying to connect to various microsoft.com domains
91.5esr	January 11, 2022	Regular security and stability update. [608]  • Various stability, functionality, and security fixes
91.5.1esr	January 27, 2022	Off-cycle stability update. [609]  • Fixed an issue that allowed unexpected data to be submitted in some of our search telemetry
91.6esr	February 8, 2022	Regular security and stability update. [610]  • Various stability, functionality, and security fixes
91.6.1esr	March 5, 2022	Off-cycle security update.[611]  ■ Security fix

91.7.1esr	March 14,	Off-cycle stability update.[613]
	2022	Yandex and Mail.ru have been removed as optional search providers in the drop-down search menu
91.8esr	April 5, 2022	Regular security and stability update. [614]  ■ Various stability, functionality, and security fixes
91.9esr	May 3, 2022	Regular security and stability update. [615]  • Various stability, functionality, and security fixes
91.9.1esr	May 20, 2022	Off-cycle security update.[616]
91.10esr	May 31,	Security fix  Regular security and stability update.[617]
J1.10C3i	2022	Various stability, functionality, and security fixes
91.11esr	June 28, 2022	<ul> <li>Regular security and stability update. [618]</li> <li>Various stability, functionality, and security fixes</li> </ul>
91.12esr	July 26, 2022	Regular security and stability update. [619]  • Various stability, functionality, and security fixes
91.13esr	August 23, 2022	[620] End-of-life 91.x.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on September 20, 2022.
92.0	September 7, 2021	Desktop  An automatic upgrade to HTTPS using HTTPS RR as Alt-Svc headers Full-range color levels are now supported for video playback on many systems Mac users can now access the macOS share options from the Firefox File menu Support for images containing ICC v4 profiles is enabled on macOS Firefox performance with screen readers and other accessibility tools is no longer severely degraded if Mozilla Thunderbird is installed or updated after Firefox macOS VoiceOver now correctly reports buttons and links marked as "expanded" using the aria-expanded attribute An open alert in a tab no longer causes performance issues in other tabs using the same process Various security fixes The bookmark toolbar menus on macOS now follow Firefox visual styles Certificate error pages have been redesigned for a better user experience Continuing work to restructure Firefox's JavaScript memory management to be more performant and use less memory Various bug fixes and new policies have been implemented  Android Added support for Web Authentication API, which allows USB tokens (such as the use of USB or Bluetooth Security Key) for website authentication Fixed: Crash when attempting to disconnect from Mozilla account Fixed: Crash when navigating back to the settings menu after disabling studies
92.0.1	September 23, 2021	Off-cycle stability update. [621]  Desktop  Fixed an issue where audio playback was not working on some Linux systems Fixed issues with the findbar close button on different operating systems  End-of-life 92.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on October 5, 2021.
93.0	October 5, 2021	Official Firefox 93.0 release. [582][583]  Desktop  Support for the new AVIF image format, which is based on the modern and royalty free AV1 video codec Firefox PDF viewer now supports filling more forms (XFA-based forms, used by multiple governments and banks) Automatic unload of tabs based on their last access time, memory usage, and other attributes for Windows

when available system memory is critically low

- To prevent session loss for macOS users who are running Firefox from a mounted .dmg file, they'll now be prompted to finish installation
- Firefox now blocks downloads that rely on insecure connections, protecting against potentially malicious or unsafe downloads
- Improved web compatibility for privacy protections with SmartBlock 3.0
- Introducing a new referrer tracking protection in Strict Tracking Protection and Private Browsing
- The VoiceOver screen reader now correctly reports checkable items in accessible tree controls as checked or unchecked
- The Orca screen reader now works correctly, no longer requiring users to switch to another application after starting Firefox
- Various security fixes
- TLS ciphersuites that use 3DES have been disabled
- The download panel now follows the Firefox visual styles
- Various bug fixes and new policies have been implemented

#### **Android**

- Tablets now have forward, back, and reload buttons in the toolbar
- The auto-fill of logins and passwords by default
- Firefox can also auto-fill logins and passwords on other apps
- Users can now manually add logins and passwords
- Users can now opt out of experiments and studies
- Various security fixes
- Site security and privacy info have been merged to one icon, freeing up space in the address bar

End-of-life 93.0.x product line (https://wiki.mozilla.org/Release\_Management/Calendar) on November 2, 2021.

### Official Firefox 94.0 release.[584][585]

#### Desktop

- A selection of six fun seasonal Colorways (available for a limited time only)
- Firefox macOS now uses Apple's low power mode for fullscreen video on sites such as YouTube and Twitch
- Power users can use about:unloads to release system resources by manually unloading tabs without closing them
- Fewer interruptions on Windows because of a background agent that will download and install updates even if Firefox is closed
- Improved WebGL performance and reduced power consumption for Linux users
- The introduction of Site Isolation to better protect all users against side-channel attacks
- Rollout of Firefox Multi-Account Containers extension with Mozilla VPN integration
- Firefox no longer warns users by default when they exit the browser or close a window using a menu, button, or three-key command
- Support for the new Snap Layouts menus when running on Windows 11
- Reduced overhead of using performance.mark() and performance.measure() APIs with a large set of performance entries
- Modified paint suppression during load to greatly improve warmload performance in Site Isolation mode
- A small reduction in Javascript memory usage
- Faster Javascript property enumeration
- Implemented better scheduling of garbage collection which has improved some pageload benchmarks
- Reduced CPU usage during socket polling for HTTPS connections
- Faster storage initialization
- Improved cold startup by reducing main thread I/O
- Closing devtools now reclaims more memory than ever before
- Improved pageload (especially with Site Isolation mode) by setting a higher priority for loading and displaying images
- Various security fixes
- Enterprise users now have more control over Firefox deployments with the availability of MSIX package on Windows platforms
- Various bug fixes and new policies have been implemented

#### **Android**

- New, customizable Firefox for Android Homepage
- New Inactive Tabs feature moves tabs not viewed for two weeks to an Inactive section in the tabs tray
- Various security fixes
- Users can control which sections are visible on their homepage, turn on/off displays for top visited sites, recently visited tabs, recently saved bookmarks and searches, collections, and articles and topics recommended by Pocket
- Awesomebar History Highlights: Firefox suggests relevant search terms and even solutions related to the

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November 4, 2021	Off-cycle stability update.[622]
	Post to a
	Desktop
	■ Fixed browser hangs when viewing fullscreen videos on macOS 10.12
	Off-cycle stability update.[623]
	Desktop
	<ul> <li>Improved hangs experienced by users of assistive technology such as NVDA when installing Firefox through the Microsoft Store</li> </ul>
November 22, 2021	<ul> <li>Resolved general instability/crashes on Linux caused by a file descriptor leak when backgrounding tabs using WebGL</li> </ul>
	Updated preference design for Firefox Suggest for improved clarity
	End-of-life 94.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on December 7, 2021.
	Official Firefox 95.0 release.[586][587]
	Desktop
	<ul> <li>RLBox — a new technology that hardens Firefox against potential security vulnerabilities in third-party libraries</li> <li>is now enabled on all platforms</li> </ul>
	Users can now download Firefox from the Microsoft Store on Windows 10 and Windows 11 platforms
	<ul> <li>Reduced CPU usage on macOS in Firefox and WindowServer during event processing</li> <li>Reduced power usage of software decoded video on macOS, especially in fullscreen</li> </ul>
	<ul> <li>Users can now move the Picture-in-Picture toggle button to the opposite side of the video</li> </ul>
	■ Site Isolation is now enabled for all users to protect against side-channel attacks such as Spectre
	<ul> <li>After starting, users of the JAWS screen reader and ZoomText magnifier will no longer need to switch applications in order to access the browser</li> </ul>
	State of controls using the ARIA switch role is now correctly reported by Mac OS VoiceOver  State of controls using the ARIA switch role is now correctly reported by Mac OS VoiceOver
	■ Faster content process startup on macOS
December 7, 2021	Memory allocator improvements
	<ul> <li>Improved page load performance by speculatively compiling JavaScript ahead of time</li> <li>Various security fixes</li> </ul>
	<ul> <li>Added User Agent override for Slack.com, which allows users to use more Call features and have access to Huddles</li> </ul>
	Android
	New "Homepage" section in Settings menu
	■ The "Jump back in" section now shows Hero Images
	Confirmation of snack bar "Auto-close enabled" when a user enables auto-close from the tab tray
	<ul> <li>Pocket (Thought Provoking Stories section) now has support in Canada</li> <li>The "Jump back in" section will now always show titles or URLs</li> </ul>
	The Inactive Tabs prompt will no longer be redisplayed after dismissing the prompt  The Inactive Tabs prompt will no longer be redisplayed after dismissing the prompt
	■ The download list will now refresh properly after deleting a file
	• Fixed the following crashes: when opening a history group, and when a selected topic under "Stories by topic"
	does not exist anymore  • Various stability and security fixes
	Off-cycle stability update.[624]
	Desktop
December 16, 2021	• Fixed frequent MOZILLA_PKIX_ERROR_OCSP_RESPONSE_FOR_CERT_MISSING error messages when trying to connect to various microsoft.com domains
	■ Fix for a WebRender crash on some Linux/X11 systems
	<ul> <li>Fix for a frequent Windows shutdown crash</li> <li>Fix for websites' contrast issues for some Linux users with Dark mode set at OS level</li> </ul>
C 7	December 7, 2021

		Off-cycle stability update.[625]
		Desktop
95.0.2	December 19, 2021	<ul> <li>Addresses frequent crashes experienced by users with C/E/Z-Series "Bobcat" CPUs running on Windows 7, 8, and 8.1</li> </ul>
		End-of-life 95.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on January 11, 2022.
		Official Firefox 96.0 release.[588][589]
		Desktop
		<ul> <li>Significant improvements in noise-suppression and auto-gain-control as well as slight improvements in echo- cancellation</li> </ul>
		<ul> <li>Reduced main-thread load</li> <li>The default of all cookies to having a SameSite=lax attribute which helps defend against Cross-Site Request Forgery (CSRF) attacks</li> </ul>
		<ul> <li>When printing, users can now choose to print only the odd/even pages</li> </ul>
		<ul> <li>On macOS, command-clicking links in Gmail now opens them in a new tab as expected</li> <li>Fixed an issue where video intermittently drops SSRC</li> </ul>
		<ul> <li>Fixed an issue where WebRTC downgrades screen sharing resolution to provide you with a clearer browsing experience</li> </ul>
		• Fixed video quality degradation issues on certain sites
		<ul> <li>Detached video in fullscreen on macOS has been temporarily disabled to avoid some issues with corruption, brightness changes, missing subtitles and high CPU usage</li> <li>Various security fixes</li> </ul>
	January 11, 2022	■ Web Locks API landed
96.0		<ul> <li>WebRTC library updated, bringing improved audio and video features for web conferencing applications</li> <li>Added CSS color-scheme support to allow web pages to indicate which color schemes they can be rendered with (for example, operating system dark mode)</li> </ul>
		Android
		<ul> <li>Added history highlights to recently visited sites</li> </ul>
		Display of better images for recent bookmarks on the home page  (Either the control of the
		<ul> <li>"Fill link from clipboard" has been improved for Android 12</li> <li>Selecting 'search group' in 'Jump back in' switches to an active tab</li> </ul>
		■ Fixed an interface problem where private tabs were displayed as normal tabs
		■ The history delete button is now correctly labeled for screen readers
		<ul> <li>Duplicate history items are now merged</li> <li>A rare crash when browsing bookmarks is now fixed</li> </ul>
		<ul> <li>Deleted search groups are now repopulated after interacting with their tabs</li> </ul>
		Search Groups in Jump Back In will not also display in Recently Searched
		<ul> <li>Users can now dismiss the keyboard when scrolling Home behind search dialog for a clearer, smoother experience</li> <li>Various security fixes</li> </ul>
		Off-cycle stability update.[626]
96.0.1	January 14,	Desktop
	2022	<ul> <li>Addresses proxy rule exceptions not working on Windows systems when "Use system proxy settings" is set</li> <li>Improvements to make the parsing of content-length headers more robust</li> </ul>
		Off-cycle stability update.[627]
06.0.2	January 20,	Desktop
96.0.2	2022	<ul> <li>Fixed an issue that caused tab height to display inconsistently on Linux when audio was played</li> <li>Fixed an issue that caused Lastpass dropdowns to appear blank in Private Browsing mode</li> <li>Fixed a crash encountered when resizing a Facebook app</li> </ul>
		Off-cycle stability update.[628]
		Desktop
96.0.3	January 27, 2022	Fixed an issue that allowed unexpected data to be submitted in some of our search telemetry
		End-of-life 96.0.x product line on February 8, 2022.

	Official Firefox 97.0 release.[590][591]
	Desktop
February 8, 2022	<ul> <li>Support and display for the new style of scrollbars on Windows 11</li> <li>Improvements to system font loading which makes opening and switching to new tabs faster in certain situations for macOS</li> <li>Various security fixes</li> <li>Removal of the 18 colorway themes of Firefox 94</li> <li>Removal of support for directly generating PostScript for printing on Linux, with the exception of printing to Postscript printers</li> </ul> Android
	Addition of a new prompt when users attempt to leave private browsing with active downloads
	<ul> <li>Addition of a flew prompt when it does attempt to leave private browsing with active downloads</li> <li>Improved performance when it comes to a cold start</li> <li>Fixed the order of items in Firefox history</li> <li>Talkback now reads "Button" aloud just once for the "Show all" button on the home screen</li> <li>Tab group titles are no longer the wrong color when in private mode</li> <li>When dark theme/private mode is enabled, users can see the icons for bookmarks, folders and downloads</li> <li>App no longer crashes when returning to the add-on details menu after changing a device language</li> <li>Firefox is no longer slow to search stored passwords</li> <li>Various security fixes</li> </ul>
	Off-cycle stability update.[629]
	Desktop
February 17, 2022	<ul> <li>Fixed an issue where <u>TikTok</u> videos would fail to load when selected from a user's profile page</li> <li>Fixed an issue which led to Picture-in-Picture mode being unable to be toggled on Hulu</li> <li>Works around problems with WebRoot SecureAnywhere antivirus rendering Firefox unusable in some situations</li> <li>Fixed an issue causing users to see the Restore Session screen unexpectedly when starting Firefox</li> </ul>
	Off-cycle security update.[630]
	Desktop
March 5, 2022	<ul> <li>Security fix</li> <li>End-of-life 97.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on March 8, 2022.</li> </ul>
	Official Firefox 98.0 release.[592][593]
	Desktop
	<ul> <li>A new optimized download flow, in which, instead of prompting every time, files will download automatically</li> <li>Allows users to choose from a number of built-in search engines to set as their default</li> <li>Users can set a default app to open a file type</li> <li>"Always ask" download actions are now reset</li> <li>Various security fixes</li> </ul>
March 9	<ul> <li>The Compatibility sidebar panel in the DevTools Inspector</li> <li>Event listeners for a given node can now be disabled from the Inspector Event Tooltip, in the markup view</li> <li>New UI in the Browser Toolbox to toggle Fluent pseudolocalization bidi / accented</li> <li>"Ignore line" context menu entry added in the debugger editor gutter when devtools.debugger.features.blackbox-lines is true</li> <li>Auto-open devtools for tabs opened via window.open (behind devtools.popups.debug)</li> </ul>
2022	<ul> <li>Addition of the <dialog> HTML element</dialog></li> <li>Addition of form associated custom elements</li> <li>The hyphenate-character CSS property can be used to set a string that is used instead of a hyphen character (-) at the end of a hyphenation line break</li> </ul>
	Android
	<ul> <li>Ability to change Wallpapers on Homepage</li> <li>Ability to clear cookies and website data for a single domain</li> <li>Fix for Slow Search on Stored passwords</li> <li>Fixed: Dark theme for tabs on Tab Grid View</li> <li>Fixed: "Remove" menu overlapping the address bar when switching between Portrait and Landscape mode</li> <li>Fixed: Title is null when sharing content</li> </ul>
	February 17, 2022  March 5, 2022

		Off-cycle stability update.[631]
98.0.1	March 14, 2022	Desktop
	2022	Yandex and Mail.ru have been removed as optional search providers in the drop-down search menu
		Off-cycle stability update.[632]
		Desktop
98.0.2	March 23, 2022	<ul> <li>Fixed an issue preventing users from typing in Address Bar after opening new tab and pressing cmd + enter</li> <li>Fixed an issue causing some users to crash in out-of-memory conditions</li> <li>Fixed an issue in session history which caused some sites to fail to load</li> <li>Fixed an add-on specific compatibility issue</li> <li>End-of-life 98.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on April 5, 2022.</li> </ul>
		2022.
		Official Firefox 99.0 release.[594][595]
		Desktop
99.0	April 5, 2022	<ul> <li>Users can now toggle Narrate in ReaderMode with the keyboard shortcut "n"</li> <li>Added support for search—with or without diacritics—in the PDF viewer</li> <li>The Linux sandbox has been strengthened: processes exposed to web content no longer have access to the X Window system (X11)</li> <li>Added support for credit card autofill and capture in Germany and France</li> <li>Various security fixes</li> </ul>
		Android
		<ul> <li>Users can now clear cookies and data for a single domain</li> <li>Fixed a common crash that occurred when returning to Firefox after an update, switching apps, or when unlocking the device has been prevented</li> <li>Performance of Pocket articles on the homescreen has been improved</li> <li>Various security fixes</li> </ul>
		Off-cycle stability update.[633]
		Desktop
99.0.1	April 12, 2022	<ul> <li>Fixed an issue for Windows users that prevented hardware video decoding on newer Intel drivers</li> <li>Fixed an issue with text rendering in Bengali</li> <li>Fixed a selection issue in the Download panel with drag and drop</li> <li>Fixed an issue preventing Zoom gallery mode for users who go to zoom.us URLs instead of subdomain.zoom.us URLs</li> </ul>
		End-of-life 99.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on May 3, 2022.
		Official Firefox 100.0 release.[596][597]
		Desktop
100.0	May 3, 2022	<ul> <li>Support for captions/subtitles display on YouTube, Amazon Prime Video, and Netflix videos watched in Picture-in-Picture</li> <li>Picture-in-Picture now supports video captions on websites that use WebVTT (Web Video Text Track) format, like Coursera.org, Canadian Broadcasting Corporation, and many more</li> <li>Detection on the first install when the browser's language does not match the operating system language and offering the user a choice between the two languages</li> <li>Spell checking now checks spelling in multiple languages</li> <li>Support for HDR video on macOS</li> <li>Hardware accelerated AV1 video decoding is enabled on Windows with supported GPUs</li> <li>Video overlay is enabled on Windows for Intel GPUs, reducing power usage during video playback</li> <li>Improved fairness between painting and handling other events</li> <li>Scrollbars on Linux and Windows 11 won't take space by default</li> <li>Support for credit card autofill and capture in the UK</li> <li>Ignored less restricted referrer policies—including unsafe-url, no-referrer-when-downgrade, and origin-whencross-origin—for cross-site subresource/iframe requests to prevent privacy leaks from the referrer</li> <li>Users can now choose preferred color schemes for websites</li> </ul>
		<ul> <li>Beginning in this release, the Firefox installer for Windows is signed with a SHA-256 digest, rather than SHA-1</li> <li>Rasterization of the fonts once per window in macOS 11+</li> <li>The performance of deeply-nested display: grid elements is greatly improved</li> </ul>

		<ul> <li>Support for profiling multiple java threads has been added</li> <li>Soft-reloading a web page will no longer cause revalidation for all resources</li> <li>Non-vsync tasks are given more time to run, which improves behavior on Google docs and Twitch</li> <li>Geckoview APIs have been added to control the start/stop time of capturing a profile</li> <li>Various security fixes</li> <li>New focus indicator for links which replaces the old dotted outline with a solid blue outline</li> <li>New users can now set Firefox as the default PDF handler when setting Firefox as their default browser</li> </ul> Android
		<ul> <li>Two new wallpapers now available for homepage background</li> <li>History has been updated to reduce clutter and help find pages users previously looked at:         <ul> <li>History search is now available</li> <li>Similar searches are now grouped together in users' history for a more organized view</li> <li>New section on homepage that shows highlights from history</li> </ul> </li> <li>Bookmark search is now available</li> <li>Users can now turn on HTTPS-only mode, which will request a secure version of all websites they visit and warn them if one is unavailable</li> <li>The system clipboard is now a valid share target for text and URLs</li> <li>Code for migrating Firefox 68 or older profiles has been removed</li> <li>Various security fixes</li> </ul>
100.0.1	May 16, 2022	Off-cycle stability update. [634]  Desktop  Fixed an issue with subtitles in Picture-in-Picture mode while using Netflix Fixed an issue where some commands were unavailable in the Picture-in-Picture window Firefox's security sandbox now blocks access to the Win32k APIs for Content Processes on Windows
100.0.2	May 20, 2022	Off-cycle security update. [635]  Desktop  • Security fix  End-of-life 100.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on May 31 2022.
101.0	May 31, 2022	Desktop  Reading is now easier with the prefers-contrast media query, which allows sites to detect if the user has requested that web content is presented with a higher (or lower) contrast  All non-configured MIME types can now be assigned a custom action upon download completion.  Now allows users to use as many microphones as you want, at the same time, during video conferencing  Various security fixes  Inspector panel: When adding/removing a class name to/from an existing HTML element (using .cls button in Rules View), an autocomplete drop down automatically offers all existing class names on the page; the selected class name in the autocomplete drop-down list is auto-applied immediately as the user changes the selection of the autocomplete list (using up/down arrow keys)  Inspector panel: This new option can be used to disable "drag to update" features in the Rule View (values of some CSS properties e.g., sizes can be modified by dragging the mouse horizontally)  WebDriver BiDi: This protocol is enabled on the release channel to support external tools such as Selenium, which plan to start using WebDriver BiDi  Added support for large, small, dynamic viewport units and logical ones (*vi and *vb)  Added web conferencing support for enumerating and selecting multiple audio input devices through navigator.mediaDevices.enumerateDevices()  Android  Added support for using the magnifier on Android 9+ for positioning the cursor in forms on web pages  Fixed YouTube video sizing issues on some devices  Fixed YouTube video sizing issues on some devices  Fixed deyboard flicker in menu popups  Fixed QR code button disappearing from the address bar  Various security fixes
101.0.1	June 9, 2022	Off-cycle stability update.[636]  Desktop

- Fixed Firefox clearing the clipboard when closing on macOS
- Fixed a compatibility issue causing severely impaired functionality with win32k lockdown enabled on some Windows systems
- Fixed context menus not appearing when right-clicking Picture-in-Picture windows on some Linux systems
- Various stability fixes

End-of-life 101.0.x product line (https://wiki.mozilla.org/Release\_Management/Calendar) on June 28, 2022.

## Firefox 102 through 110

Firefox 102 and Firefox 102 ESR were released on June 28, 2022, for desktop and Android. Among the many additions and removals were: the ability to disable automatic opening of the download panel every time a new download starts; the mitigation of query parameter tracking when navigating sites in ETP strict mode; the availability of subtitles and captions for Picture-in-Picture (PiP) at HBO Max, Funimation, Dailymotion, Tubi, Disney+ Hotstar, and SonyLIV; improved security by moving audio decoding into a separate process with stricter sandboxing, thus improving process isolation; the ability to filter style sheets in the Style Editor tab of developer tools; TransformStream and ReadableStream.pipeThrough being transferable along with WritableStream; support for Content-Security-Policy (CSP) integration with WebAssembly (desktop); and credit card autofill request to save and update card information when filling out forms (Android). [637][638][638]

Firefox 103 was released on July 26, 2022, for desktop and Android. Among the many additions and removals were: improved responsiveness on macOS during periods of high CPU load by switching to a modern lock API; required fields highlighted in PDF forms; improved performance on high-refresh rate monitors (120Hz+); improved Picture-in-Picture subtitles, which are now available at Funimation, Dailymotion, Tubi, Hotstar, and SonyLIV; buttons in the Tabs toolbar reachable with Tab, Shift+Tab, and Arrow keys; Windows' "Make text bigger" accessibility setting now affecting all the UI and content pages, rather than only applying to system font sizes; the browser getting pinned to the Windows taskbar during installation on Windows 10 and 11; and the removal of a configuration option to allow SHA-1 signatures in certificates, which are not supported (desktop). [640][641]

Legend:	Former release	Extended Support Release (ESR)	Current	Beta	Future official release	Future test release	qoT

Note: D-1	Release history of Firefox 102-109					
Version	Release	dicate a scheduled release date; they are subject to change in the event of unanticipated complications.  Release type and highlights <sup>[t 1]</sup>				
	date <sup>[23]</sup>	Official Firefox 102.0 release.[637][639]				
102.0	June 28, 2022	Pesktop  The ability to disable automatic opening of the download panel every time a new download starts  The mitigation of query parameter tracking when navigating sites in ETP strict mode  The availability of subtitles and captions for Picture-in-Picture (PiP) at HBO Max, Funimation, Dailymotion, Tubi, Disney+ Hotstar, and SonyLIV  Fixed: When using a screen reader on Windows, pressing enter to activate an element no longer fails or clicks the wrong element and/or another application window  Various security fixes  Improved security by moving audio decoding into a separate process with stricter sandboxing, thus improving process isolation  Users can now filter style sheets in the Style Editor tab of developer tools  TransformStream and ReadableStream.pipeThrough have landed, allowing users to pipe from a ReadableStream to a WritableStream, executing a transformation on each chunk  ReadableStream, TransformStream, and WritableStream are all transferable now  Support for Content-Security-Policy (CSP) integration with WebAssembly  Android  Credit card autofill will now ask to save and update card information when filling out forms  Resolved a problem with large clipboard contents causing a crash when the keyboard was opened  Resolved a problem when tapping on the search widget with PiP enabled would crash  Password autofill with a locked and not running Bitwarden password now works  When switching between apps Firefox should remain running				
102.0.1	July 6, 2022	<ul> <li>Various security fixes</li> <li>Off-cycle stability update. [642]</li> <li>Desktop</li> <li>Fixed bookmark shortcut creation by dragging to Windows File Explorer and dropping partially broken</li> <li>Fixed bookmarks sidebar flashing white when opened in dark mode</li> <li>Fixed multilingual spell checking not working with content in both English and a non-Latin alphabet</li> <li>Developer tools: Fixed an issue where the console output keep getting scrolled to the bottom when the last visible message is an evaluation result</li> <li>Fixed Delete cookies and site data when Firefox is closed checkbox getting disabled on startup</li> <li>Various stability fixes</li> <li>End-of-life 102.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on July 26, 2022.</li> </ul>				
102.0esr	June 28, 2022	Official Firefox 102.0 Extended Support Release (ESR). [638]  Automatic upgrade to HTTPS using HTTPS RR as Alt-Svc headers  For added viewing pleasure, full-range color levels are now supported for video playback on many systems  Mac users can now access the macOS share options from the Firefox File menu  Support for images containing ICC v4 profiles is enabled on macOS  Support for new AVIF image format, which is based on the modern and royalty-free AV1 video codec  Firefox PDF viewer now supports filling more forms (e.g., XFA-based forms, used by multiple governments and banks)  When available system memory is critically low, Firefox for Windows will automatically unload tabs based on their last access time, memory usage, and other attributes  To prevent session loss for macOS users who are running Firefox from a mounted .dmg file, they'll now be prompted to finish installation  The ability to block downloads that rely on insecure connections, protecting against potentially malicious or unsafe downloads  Improved web compatibility for privacy protections with SmartBlock 3.0  Introducing a new referrer tracking protection in Strict Tracking Protection and Private Browsing  Introducing Firefox Suggest, a feature that provides website suggestions as users type into the address bar  Firefox for macOS now uses Apple's low-power mode for fullscreen video on sites such as YouTube and Twitch  Power users can use about:unloads to release system resources by manually unloading tabs without closing them  On Windows, there will now be fewer interruptions because Firefox won't prompt users for updates  Improved WebGL performance and reduced power consumption for many Linux users  No longer warns users by default when they exit the browser or close a window using a menu, button, or				

I	I	three key command
		three-key command  Support for new Snap Layouts menus when running on Windows 11
		■ RLBox—a new technology that hardens Firefox against potential security vulnerabilities in third-party
		libraries—is now enabled on all platforms  Reduced CPU usage on macOS in Firefox and WindowServer during event processing
		Reduced power usage of software decoded video on macOS, especially in fullscreen
		<ul> <li>Users can now move the Picture-in-Picture toggle button to the opposite side of the video</li> </ul>
		<ul> <li>Significant improvements in noise suppression and auto-gain-control, as well as slight improvements in echo- cancellation to provide users with a better overall experience</li> </ul>
		Reduced main-thread load
		<ul> <li>Users can now choose to print only the odd/even pages when printing</li> <li>Support and display for the new style of scrollbars on Windows 11</li> </ul>
		Optimized download flow     No language selfs what to do for each file by default.
		<ul> <li>No longer asks what to do for each file by default</li> <li>Any files users download will be immediately saved on their disk</li> </ul>
		Allowing users to choose from a number of built-in search engines to set as their default
		<ul> <li>Users can now toggle Narrate in ReaderMode with the keyboard shortcut "n"</li> <li>Users can find added support for search—with or without diacritics—in the PDF viewer</li> </ul>
		■ The Linux sandbox has been strengthened: processes exposed to web content no longer have access to the X Window system
		<ul> <li>Support for credit card autofill and capture in Germany, France, and the United Kingdom</li> <li>The availability of subtitles and captions for Picture-in-Picture (PiP) at HBO Max, Funimation, Dailymotion, Tubi, Disney+ Hotstar, and SonyLIV</li> </ul>
		<ul> <li>Picture-in-Picture now also supports video captions on websites that use Web Video Text Track (WebVTT) format</li> </ul>
		The ability to detect when its language does not match the operating system language on first run after install and offer the user a choice between the two languages  Single and the ability property of a single and the same area.
		<ul> <li>Firefox spell checking now checks spelling in multiple languages</li> <li>HDR video is now supported in Firefox on Mac—starting with YouTube; users on macOS 11+ (with HDR-compatible screens) can only higher fidelity video sectors.</li> </ul>
		compatible screens) can enjoy higher-fidelity video content  Hardware-accelerated AV1 video decoding is enabled on Windows with supported GPUs (Intel Gen 11+, AMD RDNA 2 Excluding Navi 24, GeForce 30)
		Video overlay is enabled on Windows for Intel GPUs, reducing power usage during video playback
		<ul> <li>Improved fairness between painting and handling other events</li> <li>Scrollbars on Linux and Windows 11 won't take space by default</li> </ul>
		<ul> <li>Ignoring less restricted referrer policies—including unsafe-url, no-referrer-when-downgrade, and origin-when-</li> </ul>
		cross-origin—for cross-site subresource/iframe requests to prevent privacy leaks from the referrer  Reading is now easier with the prefers-contrast media query, which allows sites to detect if the user has
		requested that web content is presented with a higher (or lower) contrast  • All non-configured MIME types can now be assigned a custom action upon download completion
		Now allows users to use as many microphones as they want, at the same time, during video conferencing
		Print preview has been updated
		Various security fixes
102.1esr	July 26, 2022	Regular security and stability update.[643]
		Various stability, functionality, and security fixes
102.2esr	August 23, 2022	[620]
102.3esr	September 20, 2022	[620]
102.4esr	October 18, 2022	[620]
102.5esr	November 15, 2022	[620]
102.6esr	December 13, 2022	[620]
		Official Firefox 103.0 release.[640][641]
		Desktop
		■ Improved responsiveness on macOS during periods of high CPU load by switching to a modern lock API
103.0	July 26, 2022	<ul> <li>Required fields are now highlighted in PDF forms</li> <li>Improved performance on high-refresh rate monitors (120Hz+)</li> </ul>
103.0	Jany 20, 2022	<ul> <li>Users can now change subtitles font size directly from the Picture-in-Picture window; PiP subtitles are now</li> </ul>
		available at Funimation, Dailymotion, Tubi, Hotstar, and SonyLIV
		<ul> <li>Buttons in the Tabs toolbar can now be reached with Tab, Shift+Tab, and Arrow keys.</li> <li>Windows' "Make text bigger" accessibility setting now affects all the UI and content pages, rather than only</li> </ul>
		applying to system font sizes
		■ Users can now conveniently access Firefox, which will now be pinned to the Windows taskbar during

installation on Windows 10 and 11

- Non-breaking spaces are now preserved—preventing automatic line breaks—when copying text from a form control
- Fixed WebGL performance issues on NVIDIA binary drivers via DMA-Buf on Linux
- Fixed an issue in which Firefox startup could be significantly slowed down by the processing of Web content local storage
- Various security fixes
- Removed a configuration option to allow SHA-1 signatures in certificates: SHA-1 signatures in certificates long since determined to no longer be secure enough—are now not supported
- Information now has increased protection from online tracking via Total Cookie Protection enabled by default; all third-party cookies are now isolated into partitioned storage

#### **Android**

• Resolved a crash involving split screen or resizing the Firefox window

		<ul> <li>Resolved a crash involving split screen or resizing the Friedox window</li> <li>Resolved a problem where video, for some devices, was playing upside down</li> <li>Resolved a rare crash to a black screen when opening the keyboard on Android 12</li> </ul>
		End-of-life 103.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on August 23, 2022.
104.0b1	July 25, 2022	First Firefox 104.0 Developer Edition build.[620]
104.0b1	July 25, 2022	First Firefox 104.0 Beta release.[620]
104.0	August 23, 2022	Official Firefox 104.0 release. [620]  End-of-life 104.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on September 20, 2022.
105.0a1	July 25, 2022	First Firefox 105.0 Nightly build. [620]
105.0b1	August 22, 2022	First Firefox 105.0 Developer Edition build.[620]
105.0b1	August 22, 2022	First Firefox 105.0 Beta release.[620]
105.0	September 20, 2022	Official Firefox 105.0 release. [620]  End-of-life 105.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on October 18, 2022.
106.0a1	August 22, 2022	First Firefox 106.0 Nightly build.[620]
106.0b1	September 19, 2022	First Firefox 106.0 Developer Edition build.[620]
106.0b1	September 19, 2022	First Firefox 106.0 Beta release. [620]
106.0	October 18, 2022	Official Firefox 106.0 release. [620]  End-of-life 106.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on November 15, 2022.
107.0a1	September 19, 2022	First Firefox 107.0 Nightly build.[620]
107.0b1	October 17, 2022	First Firefox 107.0 Developer Edition build.[620]
107.0b1	October 17, 2022	First Firefox 107.0 Beta release. [620]
107.0	November 15, 2022	Official Firefox 107.0 release. [620]  End-of-life 107.0.x product line (https://wiki.mozilla.org/Release_Management/Calendar) on December 13, 2022.
108.0a1	October 17, 2022	First Firefox 108.0 Nightly build. [620]
108.0b1	November 14, 2022	First Firefox 108.0 Developer Edition build.[620]

108.0b1	November 14, 2022	First Firefox 108.0 Beta release.[620]
108.0	December 13, 2022	Official Firefox 108.0 release.[620]
109.0a1	November 14, 2022	First Firefox 109.0 Nightly build.[620]
109.0b1	December 12, 2022	First Firefox 109.0 Developer Edition build.[620]
109.0b1	December 12, 2022	First Firefox 109.0 Beta release.[620]
110.0a1	December 12, 2022	First Firefox 110.0 Nightly build. [620]

## **CPU** architectures

## x86 family

Native 64-bit builds are officially supported on Linux, macOS, and Windows (since version 42). [644]

Mozilla made Firefox for 64-bit Linux a priority with the release of  $\underline{\text{Firefox 4}}$ , labeling it as tier 1 priority. [645] Since being labeled tier 1, Mozilla has been providing official 64-bit releases for its browser for Linux. [646][647] Vendor-backed 64-bit support has existed for Linux distributions such as Novell/SUSE Linux, Red Hat Enterprise Linux, and Ubuntu prior to Mozilla's 64-bit support, even though vendors were faced with the challenge of having to turn off the 64-bit  $\underline{\text{JIT compiler}}$  due to its instability prior to Firefox 4. [648][649]

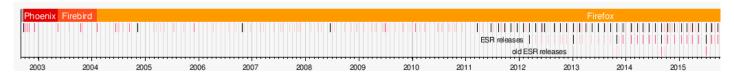
The official releases of Firefox for macOS are universal builds that include both 32-bit and 64-bit versions of the browser in one package, and have been this way since Firefox 4. A typical browsing session uses a combination of the 64-bit browser process and a 32-bit plugin process, because some popular plugins still are 32-bit. [650] As of April 19, 2017, Firefox 53 has dropped support for 32-bit macOS. [651]

The 32-bit and 64-bit versions of Windows can be used to run 32-bit Firefox. In late 2012, Mozilla announced 64-bit Windows builds would be stopped [652] but later reversed the decision. [653] As of April 2015, 64-bit Windows builds are available as 38.0 Beta [654] and newer. 64-bit builds for Windows are officially supported as of November 2015 with the release of Firefox 42.

#### Other CPU architectures

Besides x86, Firefox also supported other CPU architectures including ARMv7, SPARC, PowerPC, and 68k on different tiers. [655] Mozilla terminated support for PowerPC-based Macintosh computers with Firefox 3.6, but a third-party project known as TenFourFox ported several newer versions of Firefox, the latest being based on Firefox 45 ESR.

### Mozilla Firefox timeline



## Release compatibility

os	Latest release		Minimum <u>OS</u> version required	Support
family	Version	Date	required	date
	103.0 (https://archive.mozilla.org/pub/firefox/releases/1 03.0/win64-aarch64/) [656] (ARM64)	2022-07-26	10 v1700	2010
	102.1.0esr (https://archive.mozilla.org/pub/firefox/releases/102. 1.0esr/win64-aarch64/) [657] (ARM64)	2022-07-26	10 v1709	2019-
	103.0 (https://archive.mozilla.org/pub/firefox/releases/1 03.0/win64/) [656] (x64)	2022-07-26	7,	
	102.1.0esr (https://archive.mozilla.org/pub/firefox/releases/102. 1.0esr/win64/) [657] (x64)	2022-07-26		
	103.0 (https://archive.mozilla.org/pub/firefox/releases/1 03.0/win32/) [656] (IA-32)	2022-07-26	Server 2008 R2	2009-
	102.1.0esr (https://archive.mozilla.org/pub/firefox/releases/102. 1.0esr/win32/) [657] (IA-32)	2022-07-26		
Windows	52.9.0esr (IA-32) (https://archive.mozilla.org/pub/firefox/release s/52.9.0esr/win32/) <sup>[658]</sup>	2018-06-26	XP SP2, Server 2003	2004-2018
	52.0.2 (IA-32) (https://archive.mozilla.org/pub/firefox/releases/5 2.0.2/win32/) <sup>[659][660]</sup>	2017-03-28	SP1, Windows Vista	2004-2017
	$\frac{10.0.12 \text{esr (https://archive.mozilla.org/pub/firefox/releases/10.}}{0.12 \text{esr/win32/})^{[661]}}$	2013-01-08	2000	2004-2013
	$\frac{12.0 \text{ (https://archive.mozilla.org/pub/firefox/releases/12.0/win3}}{2/)^{[662][663][664]}}$	2012-04-24	2000	2004-2012
	2.0.0.20 (https://archive.mozilla.org/pub/firefox/releases/2.0.0.2 0/win32/) <sup>[665]</sup>	2008-12-18	NT 4.0 (IA-32),	2004-2008
	1.5.0.12 (https://archive.mozilla.org/pub/firefox/releases/1.5.0.1 2/win32/)	2007-05-30	95	2004-2007
	103.0 (https://archive.mozilla.org/pub/firefox/releases/1 03.0/mac/) [656]	2022-07-26	10.12 (x64)	2016- (x64)
	102.1.0esr (https://archive.mozilla.org/pub/firefox/releases/102. 1.0esr/mac/) [657]	2022-07-26	11 (ARM64)	2020- (ARM64)
	78.15.0esr (https://archive.mozilla.org/pub/firefox/releases/78.1 5.0esr/mac/)[666]	2021-10-05	10.0	2013-2021
	78.0.2 (https://archive.mozilla.org/pub/firefox/releases/78.0.2/m ac/) <sup>[667][668]</sup>	2020-07-09	10.9	2013-2020
	45.9.0esr (https://archive.mozilla.org/pub/firefox/releases/45.9. 0esr/mac/) <sup>[669]</sup>	2017-04-19	10.6	2009-2017
macOS	48.0.2 (https://archive.mozilla.org/pub/firefox/releases/48.0.2/m ac/) <sup>[670][671][672][673]</sup>	2016-08-24	10.6	2009-2016
	$ 10.0.12 esr \ (https://archive.mozilla.org/pub/firefox/releases/10. \\ 0.12 esr/mac/)^{[661]} $	2013-01-08		2007-2013
	16.0.2 (https://archive.mozilla.org/pub/firefox/releases/16.0.2/m ac/) <sup>[674]</sup>	2012-10-26	10.5	2007-2012
	3.6.28 (https://archive.mozilla.org/pub/firefox/releases/3.6.28/m ac/) <sup>[675]</sup>	2012-03-13	10.4	2005-2012
	2.0.0.20 (https://archive.mozilla.org/pub/firefox/releases/2.0.0.2 0/mac/) <sup>[665]</sup>	2008-12-18	10.2	2004-2008
	1.0.8 (https://archive.mozilla.org/pub/firefox/releases/1.0.8/mac/)	2006-04-13	10.0	2004-2006
Linux	103.0 (https://archive.mozilla.org/pub/firefox/releases/1 03.0/linux-x86_64/) [656] (x64)	2022-07-26	Linux distributions	2011-

CS family Version  102.1.0esr (https://archive.mozilla.org/pub/firefox/releases/102. 1.0esr/linux-x86_64/) [657] (x64)  103.0 (https://archive.mozilla.org/pub/firefox/releases/1	Latest release	Minimum OS	Support date	
	Date	version required		
		2022-07-26	set support 6 cycle	
	103.0 (https://archive.mozilla.org/pub/firefox/releases/1 03.0/linux-i686/) [656] (IA-32)	2022-07-26		2004
	102.1.0esr (https://archive.mozilla.org/pub/firefox/releases/102. 1.0esr/linux-i686/) [657] (IA-32)	2022-07-26		2004-

<b>Legend:</b> Old ve	ersion O	lder version, still maintained Latest version	
Operating sys	tem	Latest stable version	Support status
		103.1.0 (x64) (https://github.com/mozilla-mobile/fenix/releases/tag/v103.1.0)[676]	2018-
	5.0 and later	103.1.0 (ARM64) (https://github.com/mozilla-mobile/fenix/releases/tag/v103.1.0)	2017-
		103.1.0 (IA-32 and ARMv7) (https://github.com/mozilla-mobile/fenix/releases/tag/v103.1.0)[676]	2014-
		68.11.0 (x64) (https://archive.mozilla.org/pub/mobile/releases/68.11.0/android-x86_64/) <sup>[677]</sup>	2018-2020
	4.1-4.4	68.11.0 (IA-32) (https://archive.mozilla.org/pub/mobile/releases/68.11.0/android-x86/)	2013-2020
		68.11.0 (ARMv7) (https://archive.mozilla.org/pub/mobile/releases/68.11.0/android-api-16/)	2012-2020
Android	4.0	55.0.2 (IA-32) (https://archive.mozilla.org/pub/mobile/releases/55.0.2/android-x86/)[678][679]	2013-2017
(including <u>Android-</u> x86)	4.0	55.0.2 (ARMv7) (https://archive.mozilla.org/pub/mobile/releases/55.0.2/android-api-15/)	2011-2017
	3.0-3.2	45.0.2 (ARMv7) (https://archive.mozilla.org/pub/mobile/releases/45.0.2/android-api-11/)[678]	2011 2016
	2.3	47.0 (ARMv7) (https://archive.mozilla.org/pub/mobile/releases/47.0/android-api-9/)[678][680]	2011-2016
	2.2-4.3	31.3.0esr (ARMv6) (https://archive.mozilla.org/pub/mobile/releases/31.3.0esr/android-armv 6/)	2012-2015
	2.2	31.0 (ARMv7) (https://archive.mozilla.org/pub/mobile/releases/31.0/android/)[681]	2011-2014
	2.1	19.0.2 (ARMv6) (https://archive.mozilla.org/pub/mobile/releases/19.0.2/android-armv6/)	2012-2013
	2.1	19.0.2 (ARMv7) (https://archive.mozilla.org/pub/mobile/releases/19.0.2/android/)	2011-2013
	2.0	6.0.2 (ARMv7) (https://archive.mozilla.org/pub/mobile/releases/6.0.2/android/)	2011
	2.2	35/36/37 (https://developer.mozilla.org/en-US/docs/Archive/B2G_OS/Releases/2.2)	2015
Firefox OS	2.1	33/34 (https://developer.mozilla.org/en-US/docs/Archive/B2G_OS/Releases/2.1)	2014-2015
	2.0	31/32 (https://developer.mozilla.org/en-US/docs/Archive/B2G_OS/Releases/2.0)	2014-2015
Maemo		7.0.1 (https://archive.mozilla.org/pub/mobile/releases/7.0.1/maemo/)	2010-2011

**Legend:** Old version Older version, still maintained Latest version

### 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's rendering engine (WebKit), rather than Mozilla's (Gecko).

Operating system			Latest stable version	Support status
Solaris	11		91.11.0esr (x64,SPARC V9) (https://github.com/oracle/solaris-userland/tree/master/components/desktop/firefox)	2011-
	10 and OpenSolaris		52.9.0esr (IA-32,x64,SPARC V9) (https://github.com/oracle/solaris-userland/tree/master/compone nts/desktop/firefox)	2005-2018
	8-9		2.0.0.20 (IA-32 and SPARC V9) (https://archive.mozilla.org/pub/firefox/releases/2.0.0.20/contrib/)	2004-2008
HP-UX	11i v2-v3		3.5.9 (IA-64,PA-RISC) (https://myenterpriselicense.hpe.com/cwp-ui/free-software/HPUXFIREFOX)	N/A
OpenBSD	-current		102.0 (x64,ARM64) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/mozilla-fir efox/Makefile)	2019-
			91.11.0esr (x64,ARM64) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/firefox-esr/Make file)	
			88.0.1 (IA-32) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/mozilla-firefox/Makefile)	2019-2021
			78.14.0esr (IA-32) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/firefox-esr/Makefile)	
	-stable	7.1	91.11.0esr (x64,ARM64) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/firefox-esr/Make file)	2022-
			100.0.2 (x64,ARM64) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/mozilla-firefox/Make file)	2022
		6.9	88.0.1 (IA-32) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/mozilla-firefox/Makefile)	2021
			78.14.0esr (IA-32) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/firefox-esr/Makefile)	
		5.8	38.7.1esr (PPC) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/firefox-esr/Makefile)	2015-2016
		5.7	31.6.0esr (SPARC V9) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/firefox-esr/Makefile)	2015
	-release	5.8	39.0.3 (PPC) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/mozilla-firefox/Makefile)	
		5.4	3.6.28 (Alpha) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/firefox36/Makefile)	
		4.7	3.0.18 (ARMv7) (https://cvsweb.openbsd.org/cgi-bin/cvsweb/ports/www/mozilla-firefox/Makefile)	

**Legend:** Old version Older version, still maintained **Latest version** 

## See also

- Timeline of web browsers
- GNU IceCat
- History of free and open-source software
- History of Mozilla Application Suite
- Mozilla Corporation software rebranded by the Debian project

# Explanatory notes

1. Features highlighted may exist in beta stages prior to an official release build of the immediate version, or in an incremental minor version build prior to the last one.

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# Further reading

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## External links

Mozilla Firefox release notes (https://www.mozilla.org/en-US/firefox/releases/) for each version

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- Mozilla Firefox developer release notes (https://developer.mozilla.org/en-US/Firefox/Releases/) for each version
- Releases (https://wiki.mozilla.org/Releases) from MozillaWiki
- History of the Mozilla logo (https://www.jwz.org/blog/2016/10/they-live-and-the-secret-history-of-the-mozilla-logo/) by Jamie Zawinski
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