



to leverage its dominance in the operating system market to take over the Web browser market; Internet Explorer usage share peaked at over 95% by 2002. Internet Explorer has 60% browser usage share as of September 2010 according to Net Applications, and it continues to show a negative trend.

Opera first appeared in 1996; although it has never achieved widespread use, with a browser usage share that is stable around 2.4% as of September 2010, it has a substantial share of the fast-growing mobile phone Web browser market, being preinstalled on over 40 million phones. It is also available on several other embedded systems, including Nintendo's Wii video game console.

In 1998, Netscape launched what was to become the Mozilla Foundation in an attempt to produce a competitive browser using the open source software model. That browser would eventually evolve into Firefox, which developed a respectable following while still in the beta stage of development; shortly after the release of Firefox 1.0 in late 2004, Firefox (all versions) accounted for 7.4% of browser use. As of September 2010, Firefox has a 23% usage share.

Apple's Safari had its first beta release in January 2003; it has a dominant share of Apple-based Web browsing, accounting for 5.3% of the entire browser market as of September 2010 and is slowly gaining. Its rendering engine, called WebKit, is also running in the standard browsers of several mobile phone platforms, including Apple iOS, Google Android, Nokia S60 and Palm webOS.

The most recent major entrant to the browser market is Google's WebKit-based Chrome, first released in September 2008. Its market share has quickly risen; as of September 2010, it has an 8% usage share and appears to be gaining further in the coming months.

## Function

The primary purpose of a web browser is to bring information resources to the user. This process begins when the user inputs a Uniform Resource Identifier (URI), for example *http://en.wikipedia.org/*, into the browser. The prefix of the URI determines how the URI will be interpreted. The most commonly used kind of URI starts with *http:* and identifies a resource to be retrieved over the Hypertext Transfer Protocol (HTTP). Many browsers also support a variety of other prefixes, such as *https:* for HTTPS, *ftp:* for the File Transfer Protocol, and *file:* for local files. Prefixes that the web browser cannot directly handle are often handed off to another application entirely. For example, *mailto:* URIs are usually passed to the user's default e-mail application and *news:* URIs are passed to the user's default newsgroup reader.

In the case of *http*, *https*, *file*, and others, once the resource has been retrieved the web browser will display it. HTML is passed to the browser's layout engine to be transformed from markup to an interactive document. Aside from HTML, web browsers can generally display any kind of content that can be part of a web page. Most browsers can display images, audio, video, and XML files, and often have plug-ins to support Flash applications and Java applets. Upon encountering a file of an unsupported type or a file that is set up to be downloaded rather than displayed, the browser prompts the user to save the file to disk.

Interactivity in a web page can also be supplied by JavaScript, which usually does not require a plugin. JavaScript can be used along with other technologies to allow "live" interaction with the web page's server via AJAX.

Information resources may contain hyperlinks to other information resources. Each link contains the URI of a resource to go to. When a link is clicked, the browser navigates to the resource indicated by the link's target URI, and the process of bringing content to the user begins again.

## Features

*For more details on this topic, see [Comparison of web browsers](#).*

Available web browsers range in features from minimal, text-based user interfaces with bare-bones support for HTML to rich user interfaces supporting a wide variety of file formats and protocols. Browsers which include additional components to support e-mail, Usenet news, and Internet Relay Chat (IRC), are sometimes referred to as "Internet suites" rather than merely "web browsers".

All major web browsers allow the user to open multiple information resources at the same time, either in different browser windows or in different tabs of the same window. Major browsers also include pop-up blockers to prevent unwanted windows from "popping up" without the user's consent.

Most web browsers can display a list of web pages that the user has *bookmarked* so that the user can quickly return to them. Bookmarks are also called "Favorites" in Internet Explorer. In addition, all major web browsers have some form of built-in web feed aggregator. In Mozilla Firefox, web feeds are formatted as "live bookmarks" and behave like a folder of bookmarks corresponding to recent entries in the feed. In Opera, a more traditional feed reader is included which stores and displays the contents of the feed.

Furthermore, most browsers can be extended via plug-ins, downloadable components that provide additional features.

## **User interface**

Most major web browsers have these user interface elements in common:

- *Back* and *forward* buttons to go back to the previous resource and forward again.
- A history list, showing resources previously visited in a list (typically, the list is not visible all the time and has to be summoned)
- A *refresh* or *reload* button to reload the current resource.
- A *stop* button to cancel loading the resource. In some browsers, the stop button is merged with the reload button.
- A *home* button to return to the user's home page
- An address bar to input the Uniform Resource Identifier (URI) of the desired resource and display it.
- A search bar to input terms into a search engine
- A status bar to display progress in loading the resource and also the URI of links when the cursor hovers over them, and page zooming capability.

Major browsers also possess incremental find features to search within a web page.

## **Privacy and security**

Most browsers support HTTP Secure and offer quick and easy ways to delete the web cache, cookies, and browsing history. For a comparison of the current security vulnerabilities of browsers, see [comparison of web browsers](#).

## **Standards support**

Early web browsers supported only a very simple version of HTML. The rapid development of web browsers led to the development of non-standard dialects of HTML, leading to problems with interoperability. Modern web browsers support a combination of standards-based and *de facto* HTML and XHTML, which should be rendered in the same way by all browsers.

## **See also**

- Browser wars
- Comparison of web browsers
- Geobrowsing
- Internet suite
- Layout engine
- List of web browsers
- Mobile browser
- Timeline of web browsers
- Usage share of web browsers

## External links

- Architecture of the World Wide Web, Volume One (<http://www.w3.org/TR/webarch/>)
- WorldWideWeb: Proposal for a HyperText Project (<http://www.w3.org/Proposal.html>)
- What is browser? Video by Google (<http://www.whatbrowser.org/>)
- How browsers work (<http://taligarsiel.com/Projects/howbrowserswork1.htm>)
- 50 different browsers in one place (<http://www.multibrowsers.com/>)

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