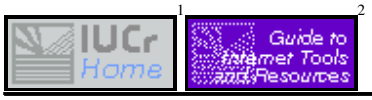

WWW Browsers

WWW browsers undertake the tasks of performing the networking required to access remote information from around the world and the graphics required to display this information to the user.

How WWW Browsers Work

The WWW information system is based on a **client–server** model, similar to the ftp[3] system, with the exception that no user authentication is required for normal information access. A server program, like *ncsa httpd*, *cern httpd*, *Apache* or *netscape server* runs on the server side of the connection making the information available to the WWW, while a client program, or WWW browser runs at the other side asking for information.

Addressing from the client to the server is undertaken using the URL[4]. The URL is entered directly in a dialogue box of the browser or much more commonly is the `HREF` attribute of an anchor tag in the source document making it a hypertext link to another document. In either case, the browser will then connect to the server, through the internet, and ask the server for the particular document. The server will reply by providing the browser with a stream of HTML text information. It is left entirely up to the browser as to how this text should be displayed, and whether or not to load any further information described in the HTML, like images, for example.

Information Visualization

Clearly the browser needs to be able to interpret HTML. It is important to note that the server does not need to understand HTML, but merely return the requested document to the browser. The browser reads the file as it receives it from the server and performs two types of actions:

1. The text is displayed in the browser's window using its own fonts and formatting. For example, netscape and mosaic usually will display text based hyperlinks in an alternate colour, as well as underline them, while the text–only browser, lynx, will normally display hyperlinks in reverse field. If images are going to be displayed, space may be provided in the document for these images.
2. Links to information to be embedded in the document are interpreted in the form of URLs, and connections are made to download the extra data. For example, the <IMG> tag in HTML will contain the URL of a graphics file, normally in GIF or JPEG format, which is to be included in the document. The browser will make another connection to the relevant machine and download the image from the server. The image is then displayed in the appropriate position in the displayed document.

Browsers like netscape and microsoft internet explorer are sufficiently intelligent to be able to format text around the images and display the images incrementally as they download. Multiple connections are often made to download a number of images simultaneously to minimize the time spent waiting by the user.

[1] http://www.iucr.ac.uk/iucr–top/welcome.html
[2] int.index.html
[3] int.ftp.gen.html
[4] int.url.html

Comparison of Browsers

It has been a number of years since NCSA Mosaic originally *took the WWW by storm* with its ease of use and graphical interface, which dramatically improved on text–only browsers like lynx. It was not long, however, before people began to realize the potential worth of the internet and the WWW, and commercial browsers began to be developed. The first, and still the most successful of these, is the popular Netscape Navigator, developed by one of the original Mosaic developers. Soon, however, every commercial organization with any stake in the internet had produced its own browser, but after netscape knocked mosaic of its pedestal, nothing has threatened its dominance. The next most popular browser is the new microsoft internet explorer, doing much to try and gain some market share from netscape.

While the browser developers keep enhancing their products in the fight for market share, we users can sit back and pick the browser we like based on the usual criteria: ease of use and speed. However, the only way to do that is to actually try the browsers out. Most often we will let someone else do that and then either use the browser our friends told us about, or have a look at some of the excellent reviews that are being written on both the browsers features and their presence and movements in the marketplace.

Web Compare[5] have an independent comparison of WWW servers

BrowserWatch[6] maintains up to date information on browsers and their enhancement plug–ins.

GVU's WWW Survey[7] provides more on the Users of WWW technology (*i.e.* you and me).

One interesting result of the 5th GVU[8] survey was the result of their question on the *browser expected to use in the next 12 months*. The following quote is from their results[9]:

Despite the fact that the actual percentage for Netscape might be inflated (89.4%), it is clear that it is the dominant Web browser. The only other specific browser with a notable percentage was Microsoft's Internet Explorer with 3.8%. 5.2% report using some "other" browser not listed in the question.

As is often the case, the popularity of different browsers is dependent on a number of factors, of which quality is (hopefully) the major one. However, the reason for the large number of available browsers (BrowserWatch lists 62)[10] is due to a mixture of of factors, primarily the wide range of computers and operating systems still in use, and the fact that people still do (despite rumours to the contrary) have an occasional independent sense of taste.

So ... have a look and decide for yourself.

[Index][11] [BrowserWatch][12] [GVU][13] – 19th July 1996 – © B. Craig Taverner[14] – **Not to be copied or reproduced without permission**

[5] http://www.webcompare.com
[6] http://browserwatch.iworld.com
[7] http://www.cc.gatech.edu/gvu/user_surveys/User_Survey_Home.html
[8] http://www.cc.gatech.edu/gvu/user_surveys/survey–04–1996
[9] http://www.cc.gatech.edu/gvu/user_surveys/survey–04–1996/graphs/use/intend_browser.html
[10] http://browserwatch.iworld.com/browsers.shtml
[11] int.index.html
[12] http://browserwatch.iworld.com
[13] http://www.cc.gatech.edu/gvu/user_surveys/User_Survey_Home.html
[14] http://www.gh.wits.ac.za/craig/