

# Web Browsers

## by Andy Pepperdine

This month we look at web browsers.

Your browser is probably your most used application. It is your interface to all the Internet and every function on it, from searching for items and information, to buying, banking, and entertainment.

But it is also the largest and most vulnerable surface that can be attacked by malware, and is the door through which advertising arrives. These days scammers and other nefarious actors may have your e-mail address and send you mail, but the way they will actually get in is to fool you into going to a website that has been doctored to fool your browser.

Your browser is your most valuable asset, and it is also the most vulnerable to infiltration.

So let's see what there is available on most Linux systems, and why you might want to use one or another. The ones listed below are not in any particular order.

### ***Firefox***

*Firefox* is the most well-known, and could be used as the standard against which to measure the others. But I will not say much as we have covered it well in the past, except to mention a new version of the add-on Privacy Badger from EFF (Electronic Frontier Foundation) which adapts itself as time goes on to find and block those sites that are trying to track you. This will eventually stop annoying adverts, because those sites want to track you. It is a possible substitute to both NoScript and Adblock, and requires no white or black lists to be built-in, although you can establish them yourself if need be.

The site to get it from is given in the references below.

*Firefox* can create a new window for private browsing, either from a right click context menu on a link in a page, or from the main menu. A private window is one which will clear out all history on exit. It will not save any more passwords or any other text that you add while in that mode. However, it will keep your bookmarks, and your existing passwords. It seems it is designed to provide a temporary halt to saving history, and to delete everything you do in that window. The suggested use is for when you are using someone else's machine and do not wish to leave any traces behind.

### ***Chromium***

*Chromium* is the Open Source version of this browser from Google, who also produce their own expanded proprietary version under the name of *Chrome*.

There is a version of the Adblock Plus extension for it, but Google have recently announced that they will be supplying an ad blocker as part of the browser some time in the future. Considering that Google depends on advertising for its revenue, this might sound odd, but if their promises hold up, they will be judging each ad on its merits to see whether it is sufficiently annoying to be worth blocking – so not all of them then.

Otherwise, it can be a good substitute to Firefox, and may manage some sites that Firefox cannot. So when in difficulties, always worth a try.

It also can start a private window, which they call Incognito window, either from a right click menu on a link, or from the main menu. It appears largely the same characteristics as the Firefox private window.

But also, Chromium has a Guest feature, that allows you to control what your guest can see. It requires some additional work to set it up, and then to sign them in. See the references.

## **Opera**

*Opera* is available for Linux as a free application, but is in fact the product of a commercial company. However, it is available in Linux repositories, and on first use asks you to accept the terms of its license. As soon as it is started, it will tell you there is a later version available and to download and install it. This process was painless, although to accept automatic updates with the rest of the system took some time to process.

It has a full set of functions, can save passwords and other private data to be placed automatically into forms and login dialogs. Generally it is faster than Firefox, but lacks some of the extensions you may have used before.

It can be set to block ads from the Menu → Settings dialog, It also has a private browsing mode in the Menu → New private window when no history will be kept at the end of the session.

It will offer to save passwords for sites, but I do not see any way of setting a master password to protect the password list, although it does scramble them so they are not saved in plain text.

Although they say there is a private browsing mode, I could see no way of ensuring that all history data was cleared at the end. In particular the documentation states explicitly that saved passwords are not deleted.

## **Midori**

*Midori* is a less fully functioned browser that is still good enough for most purposes, and has the advantage that it loads and starts quickly.

When it is installed from the repository, two menu items will appear. One is a browser as expected, that will retain history like many other browsers. But there is also another which will start it in a private mode, and then it will have no access to anything previously you did, and will delete on exit everything about what you have done. The private mode has no menus for bookmarks or other tools.

There is an extension to save and auto-fill forms, but does not appear to save login details and passwords. The recommended method is to use an external password manager, like KeePass.

### ***Epiphany, aka Web***

This is available in the repositories under the name *epiphany-browser*, and gives itself the name *Web* in your desktop menus and icons. Features are available from a cogwheel at top right. It can save your passwords for you, and you can control cookies from the Personal data dialog.

The other features are more limited, but adequate for almost all purposes, and most can be customised via the Preferences dialog.

I did not find a private browsing mode.

### ***Konqueror***

This is the default browser for desktops based on KDE, and integrates well with those systems. It is well developed and supports about the same as Firefox, but has fewer extensions available to it.

When installing from the repositories, you can also, if you wish, take the *konqueror-nsplugins* package, which will enable Mozilla-style plugins and give you access to Adobe flash among other things. However, instead, you could try using the free version of a flash player and install the package *konqueror-plugin-gnash* instead.

Saving passwords looks like a pain, as it relies on external programs to keep them for it – all part of the integrated KDE setup. Scanning various questions on the net indicates that it is easy to set it up wrong.

The appearance is traditional with a simple menu bar and obvious names for the menus. It appears to have a very full feature set, rivalling Firefox. It has a built-in adblocker, with a selection of lists you can choose from to reduce the number of ads you see. But also you can set your own blocking filters for those sites that the standard lists miss.

It can split a window into two parts so you see more than one page at a time, via Window → Split view, either side by side, or one over the other.

It has no private browsing mode.

### ***Qupzilla***

*Qupzilla* is an odd little browser, but appears to have many useful features. It can save your passwords, either in plain text (bad) or in an encrypted form (good), but the default is plain text surprisingly.

It can be started with a command line option to start private browsing, but not from within a session.

It has a built-in adblocker.

Some sites do not display properly, but occasionally that can be an advantage. If you are having trouble with Firefox, then it might be worth trying this one instead.

## ***Dillo***

This browser cannot really be recommended for serious work, but could be used on smaller old machines for quick connections, and rapid searches, etc.

Its features are severely limited by modern standards. It will not save passwords, and every session is a private session. Although it can save benchmarks for later use.

The help is fairly clear, and shows that cookies are rejected by default, and you have to edit a text file to get it to accept any for a site. In a similar manner another text file can be edited to control how to handle scripts pulled in from other sites than the one you are looking at. This is extraordinarily restrictive but also the safest way of doing it.

## ***Lynx***

*Lynx* is a text-based browser, and it may surprise you that several people still use it as a regular part of their operations. It is not totally immune to attack, since it can execute some javascript that is included in a page, but generally not any from a third party site. You have to visit each site separately. This means that only if you deliberately go to some bad site might you be affected.

It is certainly not recommended for regular use by casual users, but as a last resort it is worth bearing in mind.

## ***Curl and Wget***

I have included these two command line programs as they can be used to download the contents of a specific page without any risk of infection. They could be used to obtain all manner of files from sites you are interested in, but just to extract the pages or images you want.

By default, most Linux distributions contain *wget*, but *curl* you will have to obtain from the repositories. They perform very similar functions, and can be used from script, although *curl* can be used in pipelines more easily.

One of the best uses of these, for normal users, is to see exactly what is being sent to your browser for interpretation. There is no attempt to show any pages, just get the content. Consequently, if your browser is not showing what you expect, or fails for some reason, then these can be used to find out where the problem may lie.

Another use might be to download and save a single page, or several pages, or even a complete copy of a website. There are options available to follow links within the same site and fetch those, too.

## ***Tor Browser***

Finally, a mention of the *Tor Browser* is useful. This is available for use by any usual Linux system, and can be obtained from the Tor website. It is based on Firefox, but has been modified to always connect through the Tor secure network. It is being recommended for journalists, security researchers and other dealers in sensitive material. Some websites will not deliver their pages if they detect that you are going through Tor.

The *Tor Browser* will not be found in any repositories, and when it has been first downloaded, must be installed according to the instructions given on the download page. However, it always checks for any updates when it is started, and if there is one will prompt you to update, which it will do for itself. The very first time it is started, it could take a considerable number of minutes before it has found and initialised itself – be patient.

The downloaded file contains an icon for the desktop, which should be placed there, and then it will automatically update the icon to find the true location of Tor.

To be safer still, the Tails operating system contains it as its only browser. But that is really only for those for whom security is a very serious matter.

## **References**

Privacy Badger: Download available here: <https://www EFF.org/privacybadger> is available for Firefox, Chrome and Opera.

Firefox information and download: <https://www.mozilla.org/en-US/> There is an android app also available now.

More information on private browsing in Firefox is here: [https://support.mozilla.org/en-US/kb/private-browsing-use-firefox-without-history#w\\_can-i-set-firefox-to-always-use-private-browsing](https://support.mozilla.org/en-US/kb/private-browsing-use-firefox-without-history#w_can-i-set-firefox-to-always-use-private-browsing)

Chromium information: <https://www.chromium.org/>. The business analysis of their adblocking plans can be found here: <http://uk.businessinsider.com/report-google-developing-ad-blocker-for-google-chrome-browser-2017-4>

Chromium guest mode is described here: <https://support.google.com/chrome/answer/6130773>

Opera home page: <http://www.opera.com/>

Midori home page: <http://midori-browser.org/>

Epiphany information: <https://wiki.gnome.org/Apps/Web/>

Konqueror information: <https://konqueror.org/features/browser.php>

Qupzilla information: <https://qupzilla.com/>

Dillo lightweight browser information: <https://www.dillo.org/>

Lynx text-based browser home page: <http://lynx.browser.org/>

The command *man curl* can give information on the curl command, or go here: <https://curl.haxx.se/docs/manpage.html>. Note that the Linux man page as a pdf file here: <http://www.linuxusersguide.com/man-pages/centos-5-2/curl/pdf> seems to be very badly formatted.

Information on the command *wget* can be found here: <http://www.computerhope.com/unix/wget.htm> or use the *man* command. A comparison of *curl* and *wget* can be found at: <https://daniel.haxx.se/docs/curl-vs-wget.html>

Tor browser: Download available here: <https://www.torproject.org/projects/torbrowser.html>

The TAILS operating system is available from here: <https://tails.boum.org/>