

# Using Firefox

[Wikibooks.org](https://www.wikibooks.org/)

March 17, 2013

On the 28th of April 2012 the contents of the English as well as German Wikibooks and Wikipedia projects were licensed under Creative Commons Attribution-ShareAlike 3.0 Unported license. An URI to this license is given in the list of figures on page 63. If this document is a derived work from the contents of one of these projects and the content was still licensed by the project under this license at the time of derivation this document has to be licensed under the same, a similar or a compatible license, as stated in section 4b of the license. The list of contributors is included in chapter Contributors on page 59. The licenses GPL, LGPL and GFDL are included in chapter Licenses on page 67, since this book and/or parts of it may or may not be licensed under one or more of these licenses, and thus require inclusion of these licenses. The licenses of the figures are given in the list of figures on page 63. This PDF was generated by the L<sup>A</sup>T<sub>E</sub>X typesetting software. The L<sup>A</sup>T<sub>E</sub>X source code is included as an attachment (`source.7z.txt`) in this PDF file. To extract the source from the PDF file, we recommend the use of <http://www.pdflabs.com/tools/pdftk-the-pdf-toolkit/> utility or clicking the paper clip attachment symbol on the lower left of your PDF Viewer, selecting **Save Attachment**. After extracting it from the PDF file you have to rename it to `source.7z`. To uncompress the resulting archive we recommend the use of <http://www.7-zip.org/>. The L<sup>A</sup>T<sub>E</sub>X source itself was generated by a program written by Dirk Hünninger, which is freely available under an open source license from [http://de.wikibooks.org/wiki/Benutzer:Dirk\\_Huenniger/wb2pdf](http://de.wikibooks.org/wiki/Benutzer:Dirk_Huenniger/wb2pdf). This distribution also contains a configured version of the `pdflatex` compiler with all necessary packages and fonts needed to compile the L<sup>A</sup>T<sub>E</sub>X source included in this PDF file.

# Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
1.1	About Firefox . . . . .	3
1.2	History of Firefox . . . . .	3
<b>2</b>	<b>Installation</b>	<b>5</b>
2.1	Getting Firefox . . . . .	5
2.2	Installing . . . . .	5
<b>3</b>	<b>Browsing with Tabs</b>	<b>9</b>
3.1	What are tabs? . . . . .	9
3.2	Create, close, and select tabs . . . . .	9
3.3	Customization . . . . .	10
3.4	Multiple home pages . . . . .	10
3.5	Bookmark Groups . . . . .	10
3.6	Middle click to close tabs on Linux . . . . .	11
<b>4</b>	<b>Searching and finding within documents</b>	<b>13</b>
4.1	Quick searches and keywords . . . . .	13
4.2	Find Toolbar . . . . .	15
<b>5</b>	<b>User preferences</b>	<b>17</b>
5.1	Preferences . . . . .	17
<b>6</b>	<b>Extensions</b>	<b>33</b>
6.1	Blogging . . . . .	33
6.2	Bookmarks . . . . .	33
6.3	Developer Tools . . . . .	33
6.4	Download Tools . . . . .	34
6.5	Themes . . . . .	34
6.6	Miscellaneous . . . . .	34
6.7	Mouse gestures . . . . .	35
6.8	Navigation . . . . .	35
6.9	News . . . . .	35
6.10	Page Display . . . . .	36
6.11	Search tools . . . . .	36
6.12	Tabs and windows . . . . .	36
<b>7</b>	<b>Plug-ins</b>	<b>39</b>
7.1	What is a Plugin? . . . . .	39
7.2	Before You Install . . . . .	39
7.3	Available Plugins . . . . .	40

---

7.4	Uninstalling Plugins . . . . .	41
<b>8</b>	<b>Mouse shortcuts</b>	<b>43</b>
8.1	Standard Firefox Shortcuts . . . . .	43
<b>9</b>	<b>Keyboard shortcuts</b>	<b>45</b>
9.1	Standard Firefox Keyboard Shortcuts . . . . .	45
<b>10</b>	<b>Privacy</b>	<b>47</b>
10.1	Clearing Private Data . . . . .	47
<b>11</b>	<b>Advanced configuration</b>	<b>51</b>
11.1	about:config . . . . .	51
11.2	Editing the userChrome.css File . . . . .	52
11.3	Editing the userContent.css File . . . . .	52
11.4	Tips . . . . .	52
<b>12</b>	<b>Developers tools</b>	<b>53</b>
12.1	Extension Development . . . . .	53
12.2	Source viewing . . . . .	53
<b>13</b>	<b>Creating an extension</b>	<b>55</b>
13.1	Introduction . . . . .	55
13.2	Extensions for Firefox 3.0.* . . . . .	55
13.3	Start creating an extension. . . . .	56
<b>14</b>	<b>External Links</b>	<b>57</b>
14.1	Helpful Links . . . . .	57
14.2	Getting Started . . . . .	57
14.3	Plugins, Extensions, and Tweaks . . . . .	57
<b>15</b>	<b>Contributors</b>	<b>59</b>
	<b>List of Figures</b>	<b>63</b>
<b>16</b>	<b>Licenses</b>	<b>67</b>
16.1	GNU GENERAL PUBLIC LICENSE . . . . .	67
16.2	GNU Free Documentation License . . . . .	68
16.3	GNU Lesser General Public License . . . . .	69



# 1 Introduction

## 1.1 About Firefox

**Mozilla Firefox** (originally known as "Phoenix" and briefly as "Mozilla Firebird") is a free, cross-platform, graphical web browser developed by the Mozilla Foundation and hundreds of volunteers. Its current release is Firefox 15.0, released in August 28, 2012.

Firefox strives to be a lightweight, fast, intuitive, and highly extensible standalone browser. Firefox has now become the foundation's main development focus. Firefox includes an integrated pop-up blocker, tabbed browsing, live bookmarks, built in Phishing protection, support for open standards, an extension mechanism for adding functionality and localization for Firefox in different languages. Firefox also attempts to produce secure software and fix security holes promptly. Although other browsers have introduced these features, Firefox is the first such browser to achieve wide adoption.

Firefox has attracted attention as an alternative to other browsers such as Microsoft Internet Explorer. As of January 2011, estimates suggest that Firefox's usage share is around 30% of overall browser usage worldwide and is the dominant browser in Europe by some metrics. Since its release, Firefox has significantly reduced Internet Explorer's dominant usage share.

## 1.2 History of Firefox

Before its 1.0 release on November 9, 2004, Firefox had already gained acclaim from numerous media outlets, including Forbes and the Wall Street Journal. With over 25 million downloads in the 99 days after its release, Firefox became one of the most downloaded free and open source applications, especially among home users. On October 19, 2005, Firefox had its 100 millionth download, just 344 days after the release of version 1.0. By January 31, 2009 Firefox had been downloaded 1 billion times.

Firefox has become the foundation's main development focus (along with its Thunderbird email client), and has replaced the Mozilla Suite as their official main software release.

Blake Ross began working on the Firefox project as an experimental branch of the Mozilla project. They believed that the commercial requirements of Netscape's sponsorship and developer-driven feature creep compromised the utility of the Mozilla browser. To combat what they saw as the Mozilla Suite's software bloat, they created a pared-down browser (then known as Phoenix, today known as Firefox), with which they intended to replace the Mozilla Suite. Ben Goodger currently works as the lead developer of Firefox.

Mozilla Firefox retains the cross-platform nature of the original Mozilla browser by using the XUL user interface markup language. Through Firefox's support of XUL, users may extend

their browser's capabilities by applying themes and extensions. Initially, these add-ons raised security concerns, so with the release of Firefox 0.9, the Mozilla Foundation opened Mozilla Update, a website containing themes and extensions "approved" as not harmful.

### 1.2.1 Standards

Support for software standards

The Mozilla Foundation takes pride in Firefox's compliance with existing standards, especially W3C web standards. Firefox has extensive support for most basic standards including HTML, XML, XHTML, CSS, ECMAScript (JavaScript), DOM, MathML, SVG, DTD, XSL and XPath.

Firefox also supports PNG<sup>1</sup> images and variable transparency.

Mozilla contributors constantly improve Firefox's support for existing standards. Firefox has already implemented most of CSS Level 2 and some of the not-yet-completed CSS Level 3 standard. Also, work continues on implementing standards currently missing, including APNG and XForms. Some of the Mozilla standards like XBL is also making its way to open standards (via WHATWG).

<sup>2</sup> [it:Mozilla Firefox/Introduzione](http://it.wikibooks.org/wiki/Mozilla_Firefox/Introduzione)<sup>3</sup>

---

<sup>1</sup> <http://en.wikipedia.org/wiki/PNG>

<sup>2</sup> <http://en.wikibooks.org/wiki/Category%3A>

<sup>3</sup> <http://it.wikibooks.org/wiki/Mozilla%20Firefox%2FIntroduzione>

## 2 Installation

### 2.1 Getting Firefox

Firefox can be downloaded from [this page](#)<sup>1</sup>. Pressing the large green button will download Firefox. To get a version of Firefox in another language, see [this page](#)<sup>2</sup>.

### 2.2 Installing



**Figure 1** Firefox Windows Installer

#### 2.2.1 Microsoft Windows

Firefox supports various versions of Windows including 98, 98SE, Me, NT 4.0, 2000, XP, Server 2003, Vista and Windows 7 although it is possible to run Firefox in Windows 95 [http://johnhaller.com/jh/mozilla/windows\\_95/](http://johnhaller.com/jh/mozilla/windows_95/). Builds for Windows XP Professional x64 Edition also exist <http://www.mozilla-x86-64.com/>. The Microsoft Windows version of Firefox is distributed as an executable installer. However, starting in Firefox 3.0, there's only support for Windows 2000, Windows XP, Windows Vista and Windows 7.

To install, double click on Firefox Setup <version>.exe (where <version> is a number) and follow the installation instructions. Choosing the standard installation is recommended for most new users. This will install Firefox under Program Files.

---

1 <http://www.mozilla.com/firefox/>  
2 <http://www.mozilla.org/products/firefox/all>



You can run Firefox from the Program Files entry or by double-clicking the Firefox icon on your desktop. The first run of Firefox will give you the option of importing your settings from Internet Explorer (or any other browser installed on your computer). Choosing 'Yes' will import all your bookmarks (also known as favorites), saved passwords, history and browsing options. After it finishes importing all these settings, the Firefox browser will start up and a dialog box will pop-up alerting you that Firefox is not set as the default browser. Selecting 'Yes' will associate Firefox with web related files on your PC and Firefox will also open when links are selected from (most) external applications, such as from an instant messenger.

After setting Firefox as the default browser, it should automatically appear on the Windows XP new-style Start menu under the "Internet" option. However, if it doesn't, it can be manually set. Right click on the Start button and select "Properties". From there, select "Customize...", and select "Mozilla Firefox" next to the "Internet" checkbox.



**Figure 2** Firefox MacOSX Disc Image

### 2.2.2 Mac OS X

Double click on the compressed Disk Image to mount it. Drag the Firefox application icon to the "Applications" folder on your hard drive. Do not double-click the Firefox icon inside the Disk Image; doing so can cause a program hang. To make Firefox always appear in the dock, drag the icon from the "Applications" folder to the dock.

### 2.2.3 Linux

Many distributions now come with Firefox included. Check your distribution's documentation for details. There should be a Firefox icon in your desktop environment's program menu.

If your distribution does not come with Firefox pre-installed, you may download it from the official Firefox website. Once the download is complete, decompress the file, which can be done usually by opening the file in a file archiver (such as ark or file roller) and extract it to another folder. Alternatively, typing `tar -xvzf firefox-<version>.tar.gz` or `tar`

---

`-xvzf firefox*` at a command line will generate directory named "firefox." This directory can be moved anywhere. Typing `./firefox` in the shell from the install directory should run Firefox.

## 2.2.4 Other Operating Systems

Since the Mozilla Foundation makes the Firefox source code available, users can also compile and run Firefox on a variety of other architectures and operating systems. Operating systems not supported by Firefox, but known to run the browser include:

- Solaris (x86 and SPARC)
- OS/2
- AIX
- FreeBSD
- PC-BSD
- NetBSD
- BeOS
- SkyOS
- RISC OS (ARM)
- OpenBSD

<sup>3</sup> [it:Mozilla Firefox/Installazione](http://it:Mozilla Firefox/Installazione)<sup>4</sup>

---

<sup>3</sup> <http://en.wikibooks.org/wiki/Category%3A>

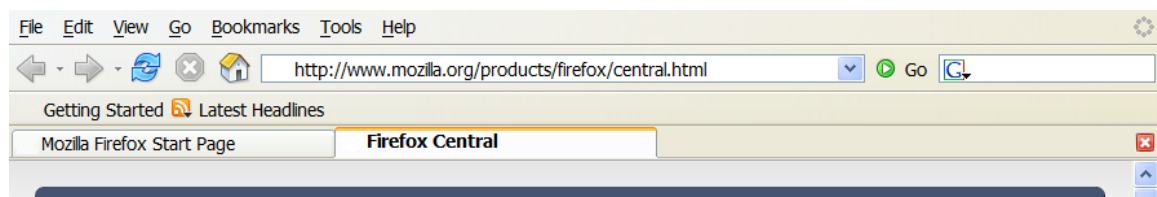
<sup>4</sup> <http://it.wikibooks.org/wiki/Mozilla%20Firefox%2FInstallazione>



## 3 Browsing with Tabs

### 3.1 What are tabs?

Firefox has been designed to be useable by any user immediately--with no learning curve. However, to truly "rediscover the web", you should become comfortable with Firefox's advanced features. One of these is the use of tabs. Firefox uses "tabs" to show multiple web pages in the same window. Several other web browsers, such as Internet Explorer 7 and Opera, also use tabs.



**Figure 3** The default look of Firefox, with tabs visible

Tabs are featured underneath the Location and Bookmarks Toolbars, in a file folder-like layout. Tabs allow users to have one Firefox window in the taskbar, with multiple web pages open within that window. In the image, the default Firefox homepage is shown in the first tab, and Firefox Central<sup>1</sup> (accessed from the "Getting Started" bookmark) is shown in the second. The number of tabs that can be opened at any one time is unlimited, though the tab bar can only hold around 20 tabs comfortably. Also, Firefox does not display the tab bar unless more than one tab is open (there is an option to change this).

### 3.2 Create, close, and select tabs

There are many different ways to both create, close, and access tabs. First, a new blank tab can be created by clicking on *File* → *New Tab*, or by using the keyboard shortcut [Ctrl]+[T]. If the tab bar is visible, an empty space (i.e., one not occupied by a tab) can be right clicked, and "New Tab" will create a new tab. Similarly, double clicking an empty space on the tab bar will create a new blank tab. Another way to create a tab, arguably the most common, is by clicking the middle mouse button (sometimes referred to as the third mouse button, or scroll wheel) on any link or bookmark (for instance, "Getting Started" in the above image). Finally, holding down the [Ctrl] key and left clicking a link will open that website in a new tab.

<sup>1</sup> <http://www.mozilla.org/products/firefox/central.html>

There are also a variety of different ways to close tabs. First, *File* → *Close* or [Ctrl]+[W] will close the currently selected tab. Also, the red "x" on the right edge of the tab bar will close the current tab. Finally, middle clicking on any tab (it doesn't have to be selected), or right clicking and selecting "Close Tab" will close whichever tab was selected.

Finally, there are a few different ways to select tabs. The most obvious is to simply left click on a tab. However, a keyboard shortcut also exists: [Ctrl]+[Number] where "Number" is any number 1-9. The corresponding tab will then be selected. Of course, this only works for the first 9 tabs opened. Another common keyboard shortcut is [Ctrl]+[Tab]. This will make the next tab active. Using [Ctrl][Shift]+[Tab] will select the previous tab. These shortcuts are an easy way to cycle through the currently open web pages.

A new feature in Firefox 1.5 is the ability to "Drag and Drop" tabs. By clicking and holding down the left mouse button on a tab, it is possible to change the order of tabs or put them on a different Firefox window. Once the desired location is found (as signaled by an arrow), the left button can be released, and the tab will be moved.

In addition to basic functionality, there are many other ways to use tabs.

### 3.3 Customization

For Tab preferences, see the chapter on Preferences<sup>2</sup>.

### 3.4 Multiple home pages

Tabbed browsing also enables another feature: multiple home pages. With multiple home pages, it is possible to have several pages open each time the browser is opened or the "Home" button is selected.

To set multiple home pages, go to the "Preferences" window, accessible from *Tools* → *Options* on Windows, *Edit* → *Preferences* on Linux, or *Firefox* → *Preferences* on OS X. Once in the Preferences window, select the *General* panel, and type each URL, separated by a pipe character (which is |), in the *Home Page* box. For example:

<http://addons.mozilla.org/>|<http://www.google.com/>|<http://wikibooks.org/wiki/Special:Randompage>

An easier way to set multiple homepages is to open all of the desired sites in tabs (making sure **only** the desired sites are opened) and then click the *Use Current Pages* button from the *General* tab of the *Preferences* window.

### 3.5 Bookmark Groups

Bookmarks Groups are very similar to Multiple Home pages. Bookmark Groups create a folder with multiple related (or unrelated, even) bookmarks. It is then possible to open all

---

<sup>2</sup> Chapter 5.1.4 on page 27

of them at once by clicking on the created folder and clicking *Open in Tabs*. Alternately, you can simply open just one of the bookmarked web sites. To create a Bookmark Group, simply open each desired site in its own tab (again, be sure to **only** open the sites you'd like in the group). From there, a few ways exist to create a group:

- Right click on a tab and select *Bookmark All Tabs...*
- Click on *Bookmarks* → *Bookmark All Tabs...*
- Hit [Ctrl]+[Shift]+[D]

No matter which way you create the group, the same window will appear, asking you for a name and where to create the group.

### 3.6 Middle click to close tabs on Linux

When using Firefox on Linux, the default behavior when middle clicking is to try to load whatever is currently in the clipboard as if it were a URL. If you prefer to use the middle click to close tabs, type *about:config* in the location bar and hit enter.

In the new window that appears, type *middlemouse.contentLoadURL* in the box labeled *Filter:*. Then, right click on the preference, and select *Toggle*, which should set the preference to **false**.

(*Another contributor writes:* Unfortunately, in some versions--- such as the one I'm using now---this simply causes Firefox to do *nothing* when you middle-click a tab. 'Twould be nice to figure out how to really fix this!)

3

it:Mozilla Firefox/Navigazione con schede<sup>4</sup>

---

3 <http://en.wikibooks.org/wiki/Category%3A>

4 <http://it.wikibooks.org/wiki/Mozilla%20Firefox%20Navigazione%20con%20schede>



# 4 Searching and finding within documents

## 4.1 Quick searches and keywords



Figure 4 Select "Add a Keyword for this Search".

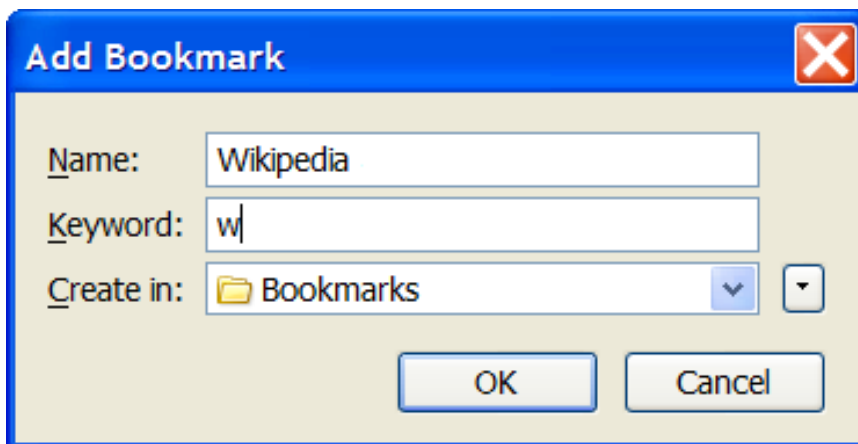


Figure 5 A Name and the Keyword *w* were just entered for this Quick Search.



Quick Searches allow you to define custom search keywords for entering in the Location Bar. After setup, just type your search keyword before your search terms. A wiki of popular quick searches is maintained [here](#)<sup>1</sup>. The steps needed to make a new Quick Search are outlined below:

1. Go to a web page that contains a search box.
2. Right click in the search entry box.
3. Select "Add a Keyword for this Search".
4. Give your quick search a keyword. For example, a Wikipedia search could be *w*. Obviously, shorter keywords are more efficient than longer ones, such as *wikipedia*.

An alternative method for older versions of Firefox or locations without search boxes is to:

1. Go to a webpage that contains a search box.
2. Search for something. In this case, *oddball* will be the search word.
3. Note the term in the URL, and replace it with *%s*. For example, searching on the Google search engine gives us the URL:

```
http://www.google.com/search?hl=en&q=oddball&btnG=Google+Search
```

Using our example, the new address would be:

```
http://www.google.com/search?hl=en&q=%s&btnG=Google+Search
```

1. Copy the modified URL from the location bar.
2. Go to *Bookmarks* → *Manage Bookmarks* → *New Bookmark*.
3. Paste your modified URL in the *Location* box.
4. Give your quick search a name, e.g. Google Quick Search.
5. Give your quick search a keyword. **Note:** This can be one character or more. For example, a Google search could be *g*.

To use your new quick search all you need to do is type *keyword your search term* in the address bar; for example, to search for the information regarding the history of Wikipedia in Google, you would type, *g history of wikipedia*. You can also bookmark advanced searches using the same technique. Just try a search and replace your search term with *%s*. Simple!

This functionality doesn't have to be limited to web searches; it can be used to quickly go to pages that have a certain structure. For example, one way to get more out of Wikipedia<sup>2</sup> would be to create a bookmark to `http://en.wikipedia.org/wiki/%s` with keyword *w*. Getting to Wikipedia articles now only requires typing in *w article title*.

Another example is currency conversions. To easily convert from US dollars to Euro, one could create a bookmark to `http://www.xe.com/ucc/convert.cgi?From=USD&To=EUR&Amount=%s` and give it the keyword *\$*. To convert a given amount (say \$50), all one has to do now is enter *\$ 50* into the address bar (note the space, it's very important).

Once you start thinking about them, keywords can become quite useful.

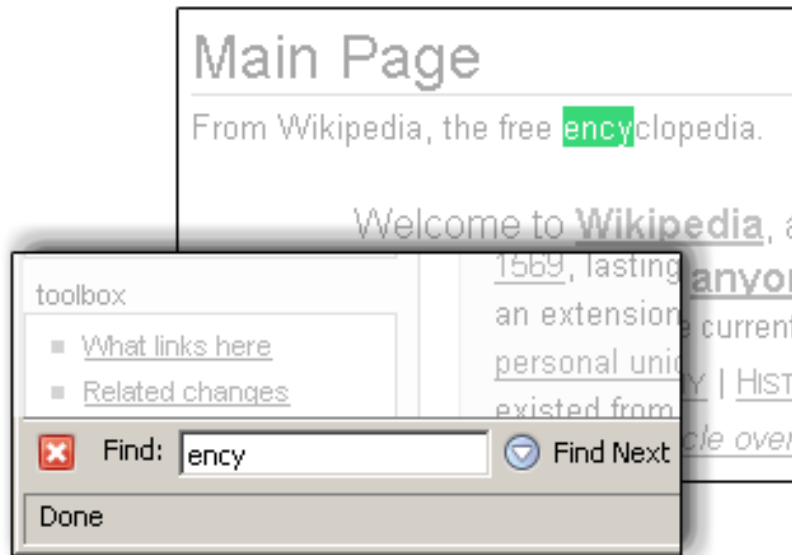
---

<sup>1</sup> <http://www.wormus.com/leakytap/Internet/CustomKeywords>

<sup>2</sup> [http://en.wikipedia.org/wiki/Main\\_Page](http://en.wikipedia.org/wiki/Main_Page)

You can also use the SmartSearch<sup>3</sup> extension to do all your quick searches from the context menu, by highlighting a word on a page, right-clicking it and search using any of your quick searches.

## 4.2 Find Toolbar



**Figure 6** Screenshot of performing "Find as you type". "ency" was being typed and the first matched text was highlighted in green.

A new and innovative feature is the Find Toolbar. The Find Toolbar is used for searching for text within a page without being too obtrusive. When activated by pressing Ctrl+F, the Find Toolbar appears on the bottom of the Firefox browser ready to search the current web page. The Find Toolbar using incremental searching which means that it will look up your search term simultaneously as you type it. This is more robust than traditional find as finding is done immediately when typing starts. The Find Toolbar has the ability to find the next or previous result and select it, highlight all the matched results and match case. Firefox will search down until reaching the end of the document and "wraparound" to the beginning of the page. If there are no results matching your terms, Firefox will 'beep' to inform you of this. (If you want to disable this 'beep' go to `about:config` and change the value `accessibility.typeaheadfind.enable` to `false`.) When you are done searching, simply press the Esc key and the Find Toolbar will hide.

### 4.2.1 Find As You Type

A very useful feature is Find As You Type, which lets you use the functionality of the Find Toolbar without having to open or close it with Ctrl+F or Cmd+F.

<sup>3</sup> <http://update.mozilla.org/extensions/moreinfo.php?id=188>

By default, Find As You Type will only begin after pressing the / key. Alternatively, to only search links, press the ' key (apostrophe). However, it is possible to have Find As You Type work without needing an additional key press. To do so, go to *Tools* → *Options* → *Advanced* → *General* and check "Begin finding when you begin typing".

From now on, when searching about some topic on a website, just start typing into the body of the page. You will instantly go to the first instance of the sequence of letters as you type. The Find Toolbar will temporarily appear at the bottom of the page, allowing you to highlight all the places the term occurs, or jump to the next one. More Find Toolbar shortcuts can be found in the *../Keyboard shortcuts*/<sup>4</sup> section, and a complete description here<sup>5</sup>.

A useful tip to navigate around a web page is to use find as you type. You simply push the ' key (apostrophe) and begin typing the text of the link you wish to follow. Once Firefox highlights that link (whether you've only typed a few letters or the entire word), you hit the Enter key and Firefox will begin loading that page. For example, if on this same page, you quickly want to go to the Table of Contents. Notice that the link for the table of contents is << *To Contents*. Press the apostrophe key to activate the Find Toolbar for searching for links and then type "to". Firefox will then highlight part of the link. Pressing enter will take you to the *Using Firefox* Table of Contents. One thing to note is that the apostrophe key does not necessarily have to be used for this tip to work; just using Find As You Type can accomplish the same thing, but since it searches all text, whether it's a link or not, it may not be as quick as beginning your search with the apostrophe key.

6

---

4 Chapter 9 on page 45

5 <http://www.mozilla.org/access/type-ahead/>

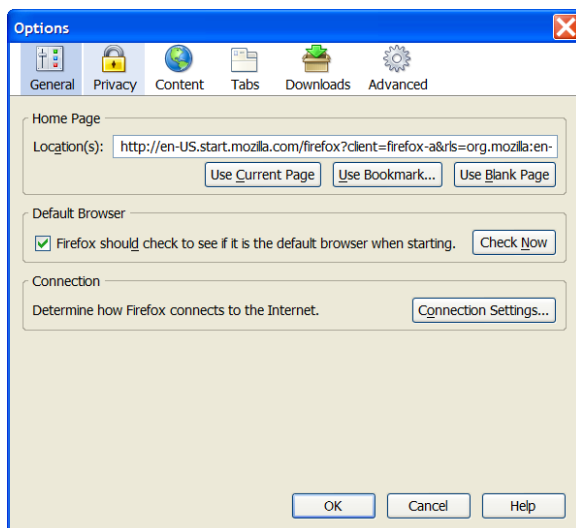
6 <http://en.wikibooks.org/wiki/Category%3A>

# 5 User preferences

## 5.1 Preferences

To access the Preferences window, navigate to *Tools* → *Options* on Windows, *Edit* → *Preferences* on Linux, or *Firefox* → *Preferences* on OS X.

### 5.1.1 General



**Figure 7** The General tab

The General Tab of the Preferences window allows you to change a few things:

- Home Page
- Default Browser
- How Firefox connects to the Internet

The Home Page setting will most likely be the most used from this window, as the other two only need to be set once (if at all). There are four ways to set a home page from this window:

- Type an address into the *Location(s):* box (e.g., <http://www.google.com>)
- Select the *Use Current Page(s)* button, which will set the current page as the home page if only one is showing, or set all tabs as multiple home pages<sup>1</sup>

---

<sup>1</sup> Chapter 3.4 on page 10

- Select the *Use Bookmark...* button to open a dialog that will allow you to select a site currently bookmarked as the home page
- Select *Use Blank Page* to have *about:blank* set as the home page.

The first time Firefox is launched, it will check if it is set as the default browser. The option *Firefox should check to see if it is the default browser when starting*, when checked, will make sure that Firefox remains the default browser (or, if Firefox is *not* the default browser, it will ask you each time if you'd like it to be). Also, pressing *Check now* will do the check after the browser has already been started.

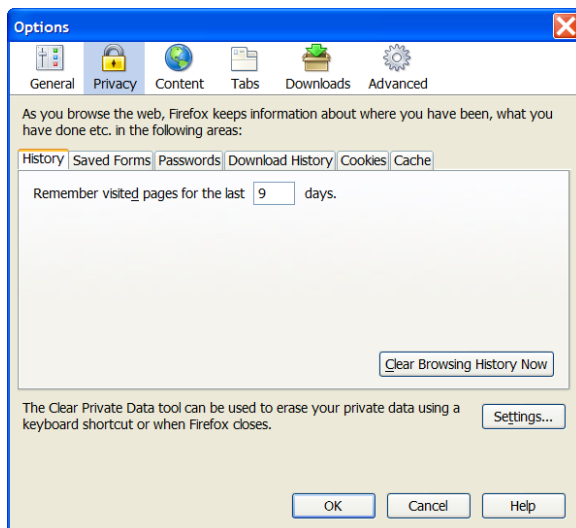
The Connection Settings button only needs to be used if you use a proxy to connect to the Internet. If so, you can have Firefox auto-detect the settings, manually enter them, or use an automatic proxy configuration URL.

### 5.1.2 Privacy

The Privacy tab is described as follows: *As you browse the web, Firefox keeps information about where you have been, what you have done etc. in the following areas:* Each area has its own settings. As you select tabs inside the Privacy Tab, the main content area will change. However, there is one setting at the bottom of the window that is accessible from each tab. It says *The Clear Private Data tool can be used to erase your private data using a keyboard shortcut or when Firefox closes.* along with a *Settings...* button. Selecting that button will bring up a list of information that Firefox stores. Each can be set or unset individually. In addition to selecting which data you'd like cleared, there is an option to *Clear private data when closing Firefox* and another to *Ask me before clearing private data*. All private data that you have selected can be cleared at any time during a browsing session by hitting [Ctrl]+[Shift]+[Del].

Clearing private data is a public act that may, if your purpose was to keep some activity secret, expose that very secret. For a significant historical example see [http://en.wikipedia.org/wiki/Soviet\\_atomic\\_bomb\\_project#Beginnings\\_of\\_the\\_program](http://en.wikipedia.org/wiki/Soviet_atomic_bomb_project#Beginnings_of_the_program). Further, if "Clear Private Data" does not overwrite that data (and the prior paragraph does not so state) then that data may remain on your computer for some time and can possibly be accessed.

## History



**Figure 8** The Privacy Tab with History selected

The History tab has only two items:

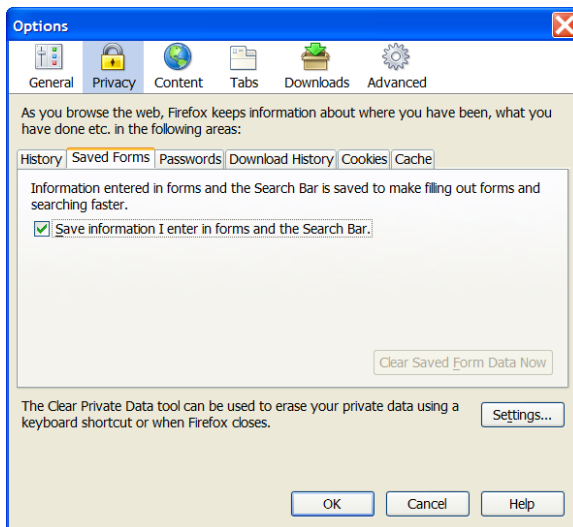
- Remember visited pages for the last \_\_\_ day(s).
- A button to *Clear Browsing History Now*

These options are pretty self explanatory. Set the number of days you'd like Firefox to remember pages you have visited. Setting the value to **0** will cause Firefox to not use History. Pressing the *Clear Browsing History Now* button will erase all of the History.

The History is available from the *Go* → *History* menu item, by pressing [Ctrl]+[H], or by going to *View* → *Sidebar* → *History*. The *Go* menu itself also shows History.

History is an option for "Clear Private Data", and is selected by default.

## Saved Forms



**Figure 9** The Privacy Tab with Saved Forms selected

This tab, like the History tab, has only two items of interest:

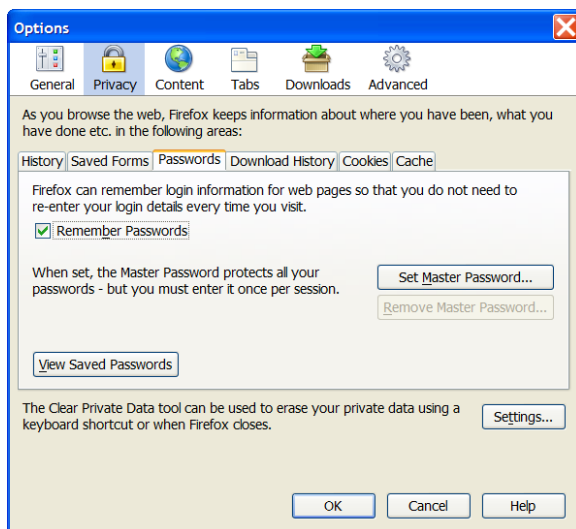
- Save information I enter in forms and the Search Bar.
- Clear Saved Form Data Now

Checking the box (which is the default setting) will have Firefox save any data that is entered in a form. This includes things like the Google search box, any contact information (Name, Address, Email, etc) and other search boxes. Also, the Search Box included on the default Firefox toolbar (accessible by pressing [Ctrl]+[K]) Unchecking this box will stop Firefox from saving this information. Pressing the *Clear Saved Form Data Now* button will remove all the data currently stored by Firefox.

Saved Form Data is an option for "Clear Private Data", and is selected by default.

Note that you can clear out individual items (*such as an erroneous or mis-typed entry*) without having to clear all saved data. When the list of saved items shows up, navigate to the item you want to remove (*don't click on it*), then use the Shift-Delete key combination.

## Passwords



**Figure 10** The Privacy Tab with Passwords selected

When *Remember Passwords* is checked (default), Firefox will present you with an option to save a password on any site where one is entered. After entering a password and hitting the submit button, Firefox will present a dialog with three options, *Remember*, *Never for This Site*, and *Not Now*. Selecting *Remember* will have Firefox store the password for that page, and will automatically enter it on each successive visit. Selecting *Never for This Site* will prevent Firefox from remembering the password for that page, **and** it will not ask to save a password on that page again. Selecting *Not Now* will prevent Firefox from saving the password on that visit, but the dialog will be presented again the next time you visit that site.

Firefox also has the option to set a Master Password. Without one, Firefox will automatically enter any password that is stored—regardless of who is using the browser at that time. A Master Password will cause Firefox to prompt the user for a password before it will enter any saved passwords. However, it will only prompt once *per session*, meaning as long as the browser remains open. To prevent unauthorized use of passwords, be sure to close the browser when you are finished using it (if you entered a Master Password). The Master Password can also be unset from this window.

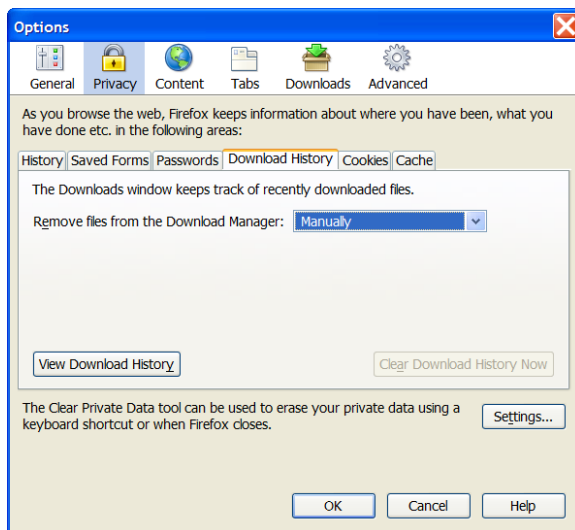
Pressing the *View Saved Passwords* button will open a new dialog. This window shows every site that Firefox has a username/password saved for. At first, the address of the site and the username are displayed. Press the *Show Passwords* button to display the saved passwords. Individual entries can be removed by selecting them, and pressing *Remove*. All entries can be removed with the *Remove All* button.

Also on the *View Saved Passwords* dialog is a tab that displays *Passwords Never Saved*. This window is very similar to the *Passwords Saved* window. Removing an entry from this list, however, will cause Firefox to ask to save a password the next time you visit that site.

Saved Passwords are an option for "Clear Private Data", but are not selected by default.



## Download History



**Figure 11** The Privacy Tab with Download History selected

Any time you download an item from the Internet, Firefox opens the Download Manager to track it. After the download is finished, Firefox will keep that item visible. Each item can be removed individually, or the entire history can be cleared at once. Also, Firefox can be set to never save a history (or clear the download history on its own, after each download). The Download Manager can be accessed by going to *Tools* → *Downloads*, or by pressing [Ctrl]+[J]. It can also be accessed by pressing the *View Download History* button on this pane of the Preferences window.

The only setting here affects how Firefox clears the Download Manager. *Remove files from the Download Manager:*

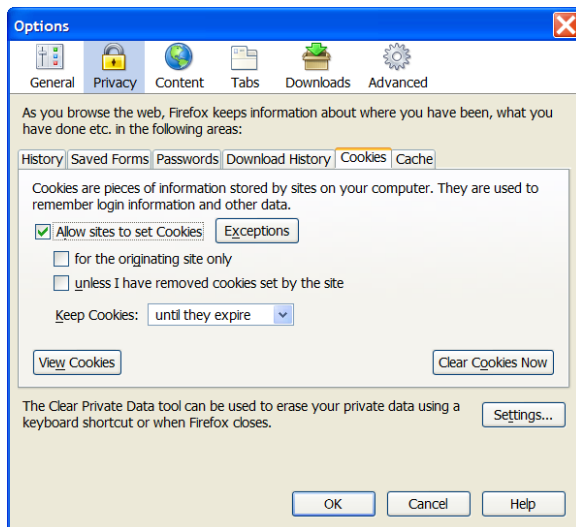
- Upon successful download
- When Firefox exits
- Manually (default)

*Upon successful download* will erase entries from the Download Manager as they finish downloading, *When Firefox exits* will clear the Download Manager history each time Firefox is closed, and *Manually* will leave all entries in the Download Manager until they are removed by the user.

**Note:** Removing files from the Download Manager **does not** delete the files from your computer. It only removes the history of you downloading it from Firefox.

Download History is an option for "Clear Private Data", and is selected by default.

## Cookies



**Figure 12** The Privacy Tab with Cookies selected

Cookies<sup>2</sup> are "*pieces of information stored by sites on your computer. They are used to remember login information and other data.*" This window can be a little more confusing than the others.

The first option, which is enabled by default, is *Allow sites to set Cookies*. Next to that option is a button named *Exceptions*. Setting exceptions will allow cookies from every site *except* for sites on the list.

Under that are two more options:

- *for the originating site only*
- *unless I have removed cookies set by the site*

Checking the first box will only allow cookies that are from the site you are currently on. For other sites to give you cookies, you will have to navigate to that site (with the option enabled; it is disabled by default). The second option will except all cookies, as long as you have not removed a cookie from that site. For instance, if you remove a cookie set by google.com, then google.com will no longer be able to send you cookies.

Beneath those options is a dropdown box. *Keep Cookies*:

- *until they expire* (default)
- *until I close Firefox*
- *ask me every time*

Each cookie has an expiration date. By selecting the first option, Firefox will keep each cookie until it expires, and then discard it. Selecting the second option will keep all cookies

<sup>2</sup> [http://en.wikipedia.org/wiki/HTTP\\_cookie%20](http://en.wikipedia.org/wiki/HTTP_cookie%20)

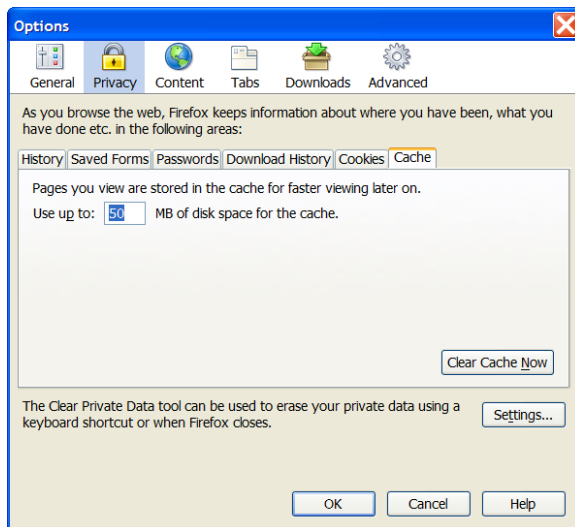
only until Firefox is closed. The third option will make Firefox ask you each time a site tries to set a cookie, or modify an existing one.

Pressing the *View Cookies* button will bring up a new window, listing all cookies by site. From this window, it is possible to remove one, a few, or all cookies. Also, it is possible to view the contents of each cookie (though they are usually nonsensical).

Finally, the *Clear Cookies Now* button will clear all cookies.

Cookies are an option for "Clear Private Data", but are not selected by default.

## Cache



**Figure 13** The Privacy Tab with Cache selected

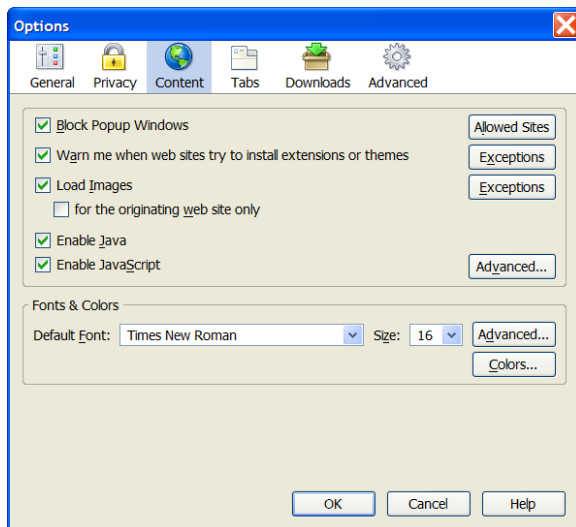
*Pages you view are stored in the cache for faster viewing later on.* As you visit pages, Firefox will automatically save copies of them. If you navigate to the same page later, Firefox will use the page saved rather than downloading it again. With this setting, you can set the size of the cache.

*Use up to \_\_\_MB of disk space for the cache.* The default value is 50.

Press the *Clear Cache Now* button to remove all pages from the cache.

Cache is an option for "Clear Private Data", and is selected by default.

### 5.1.3 Content



**Figure 14** The Content Tab

The first setting on this pane is for blocking popups. Firefox is set to automatically enable all unwanted popups. The setting is *Block Popup Windows*, and is enabled by default. To the right is an *Allowed Sites* button, that lets you set sites to accept popup windows from. When a popup is blocked, the yellow "information bar" appears at the top of the window. From there, you can allow the popup that was blocked, or allow access for the site to open popups. Sites can be removed from the *Allowed Sites* list, which will cause Firefox to block popups from that site again.

Next is the *Warn me when web sites try to install extensions or themes*. This is also enabled by default. To the right of that is an *Exceptions* button. Any site that is not on the Exceptions list (which contains only *addons.mozilla.org* and *update.mozilla.org* by default) will be blocked from installing extensions or themes. A yellow information bar will appear at the top of the window, very similar to the one that appears when a popup is blocked. If you want to install an extension or theme from the current site, you can add it to the exceptions list, and then retry the install. If the install was unwanted (e.g., a web site tried to install a malicious extension), you don't need to take any further action, as the install was already blocked. Do not add the site to your exceptions list unless you want to install an extension/theme.

*Load images* is the next preference. It is enabled by default. This preference also has an *Exceptions* list, though it works slightly different from the extensions/themes exceptions list. From this list, you can both allow **and** deny permission for sites to load images. For instance, if the *Load images* preference is enabled, you can use the Exceptions list to deny specific sites the ability to load images. If, for example, you did not want wikibooks.org to load images, you would type "wikibooks.org" in the *Address of the web site* box, and hit *Deny*. All other sites would be allowed to load images as normal.

If the *Load images* preference was disabled, then no images would be downloaded. However, if (again for example) you wanted wikibooks.org to be **allowed** to load images, then you

would type "wikibooks.org" in the *Address of the web site* box, this time hitting *Allow*. All images would be blocked **except** images from wikibooks.org. Both types (allowed sites and denied sites) can be set at the same time, but would depend on the state of the *Load images* preference.

Below *Load images* is a preference (disabled by default) *for the originating web site only*. When enabled, images will only load if they come from the same site as the current page. However, this will not display images for such large sites as Yahoo! and Wikipedia, as images on those sites are stored on separate servers.

The preference *Enable Java* (enabled by default), controls whether or not Java applets are loaded in Firefox.

*Enable JavaScript* (enabled by default) controls whether or not JavaScript<sup>3</sup> is executed by the browser. Pressing the *Advanced...* button will bring up a new window with the following options: *Allow scripts to*:

- Move or resize existing windows
- Raise or lower windows
- Disable or replace context menus
- Hide the status bar
- Change status bar text

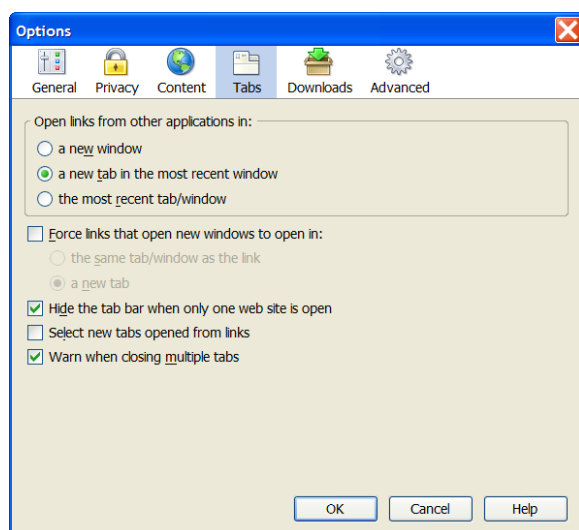
The first three are enabled (meaning JavaScripts on a page will be able to do those actions) while the last two are disabled by default.

Finally, the Content tab contains Fonts & Colors settings. From this dialog, you can set the default font, and the default font size. The *Advanced...* dialog will allow you to select which specific fonts display which font type, and their sizes. The *Colors...* button allows you to set Link, Background, and Text colors.

---

<sup>3</sup> <http://en.wikipedia.org/wiki/JavaScript%20>

## 5.1.4 Tabs



**Figure 15** The Tabs tab

The first Tab-related preference is "Open links from other applications in:"

- A new window
- A new tab in the most recent window
- The most recent tab/window

These options are mostly self explanatory. When another application (AOL Instant Messenger, for instance) tries to open a link, this preference will tell Firefox where to do it. The first two are easy enough to figure out, while the third will simply reuse the window that was most recently focused (replacing its contents).

The next preference is "Force links that open new windows to open in:"

- The same tab/window as the link
- A new tab

This preference is sometimes referred to as "Single Window Mode", as it prevents the "target:\_blank" and "target:\_new" attributes on links from opening new windows, always forcing Firefox to use one window. However, it has been disabled by default, as a few crashes have been reported with it enabled. There is little danger in enabling it, as it can be easily disabled again if a problem arises.

Three other preferences are on this window:

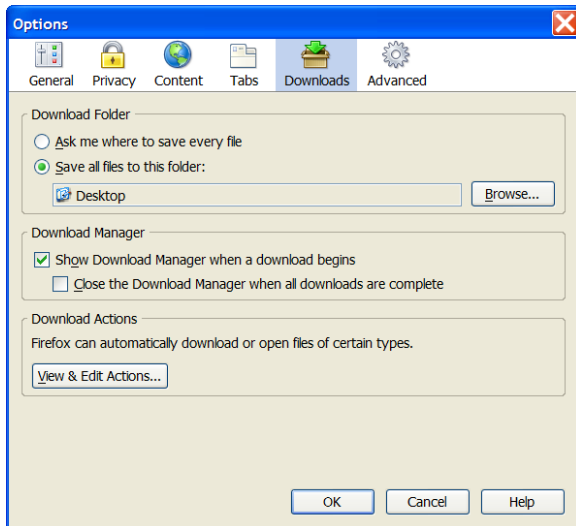
- Hide the tab bar when only one web site is open
- Select new tabs opened from links
- Warn when closing multiple tabs

The tab bar is hidden by default when only one website is opened. To have it always visible, uncheck the box next to the preference. "Select new tabs opened from links" can be described as "open a tab in the foreground". In other words, with this preference enabled (it's disabled by default), a new tab opened by middle clicking a link will automatically be selected and

visible. The default behavior is to have the new tab open in the background, where you have to manually select it to view it. The final preference is visible by opening more than one tab and trying to close the window. A warning will be displayed to make sure all of the tabs can be closed.

It is also possible to extend tabbed browsing functionality through Firefox's extension system. See Chapter 6<sup>4</sup> for more details on extensions.

### 5.1.5 Downloads



**Figure 16** The Downloads tab

The Downloads tab has several preferences. First, there is the option of setting a "Download Folder". If *Ask me where to save every file* is selected, then Firefox will prompt you for a location to save every file you download. Selecting *Save all files to this folder:* will make it so every download goes to the same location. The Desktop is the default location for downloads on Windows.

Next, *Show Download Manager when a download begins*, which is enabled by default. This brings up the download manager for each file that is downloaded. You will manually have to close the Download Manager unless the preference *Close the Download Manager when all downloads are complete* is selected.

The final preference states *Firefox can automatically download or open files of certain types*. Pressing the *View & Edit Actions...* button will bring up a new window. It contains a list of file extensions, and default actions for files of that type. Each file type can be set to automatically open with its default application, automatically open with a non-default application, saved to the computer, or opened with a plugin (assuming the correct plugin is installed). At this time, there appears to be no "Add" button, so you're out of luck if the type you want to handle is missing from the list. Additionally, some users may have a blank dialog box (as of 8-8-2006), in which case none

---

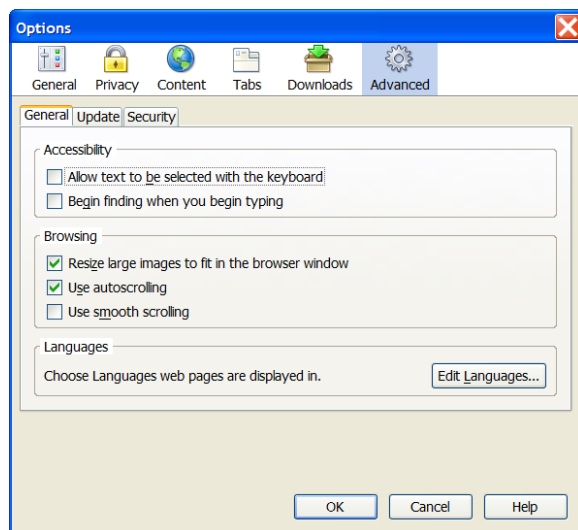
4 Chapter 6 on page 33

of the extensions are listed. The issue is mentioned at <http://forums.mozillazine.org/viewtopic.php?p=2400536&sid=d02c030728278592cbeb3aee9805b14b> but the fixes described may not work for all users. Those users should locate their profiles folder (%AppData%\Mozilla\Firefox\Profiles\xxxxxxx.default on WinXP where x is a random character), and delete the appropriate files there.

### 5.1.6 Advanced

This pane offers some advanced settings. There is a third tab offered under "Advanced", "Security". However, most users should not need to change any preferences on this tab.

#### General



**Figure 17** The Advanced Tab with General selected

The setting *Allow text to be selected with the keyboard* controls **caret browsing**. When using caret browsing, a cursor is placed in the browser, and it can be moved with the arrow keys and used to select text. Pressing [F7] will also enable and disable this feature.

*Begin finding when you begin typing* is a setting for Find As You Type (FAYT). Normally, FAYT is activated only after pressing the / or ' keys, or by pressing [F3]. With this setting enabled, FAYT will begin when any key is pressed (as long as the cursor is not in a form, or other text entry area).

*Resize large images to fit in the browser window* will automatically resize any image that is larger than the current browser window so that it fits in the window without causing scrollbars. Clicking on the image will display it at its full size, and clicking on it again will resize it to fit the window.

*Use autoscrolling* toggles the ability to autoscroll. With autoscroll enabled, click the middle mouse button to enter autoscroll mode. While in autoscroll mode, simply move the mouse

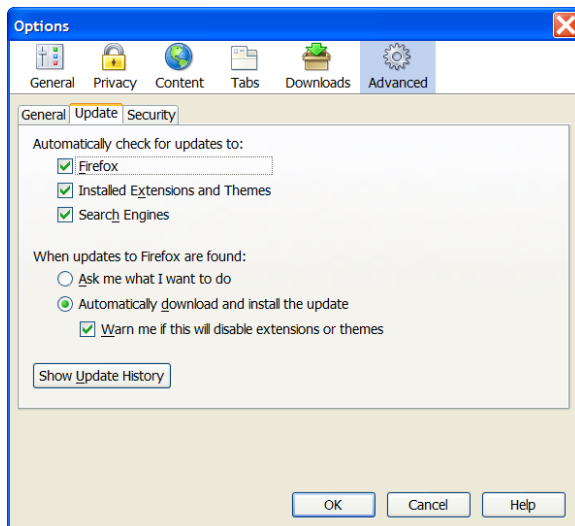


up to scroll up, and move the mouse down to scroll down. Clicking the middle mouse button again will exit autoscroll.

Use *smooth scrolling* toggles the ability to make scrolling with the mouse wheel "smoother" than normal.

Finally, click the *Edit Languages...* button to change the order of preference of languages for pages that offer more than one language.

## Update



**Figure 18** The Advanced Tab with Update selected

The Update tab changes the way Firefox checks for updates for itself, extensions and themes, and search engines. All three should remain checked, as critical security updates will use the Update system.

The final preference determines how to install updates. If *Ask me what I want to do* is selected, then Firefox will alert you when new updates are found and wait for instructions. If *Automatically download and install the update* is selected, Firefox will apply updates without asking. However, if *Warn me if this will disable extensions or themes* is checked, and a new update may break a currently installed extension or theme, Firefox will display a warning.

Finally, select the *Show Update History* button to see a list of previously installed updates, and what they contained.

### 5.1.7 Multiple Users

With Firefox, it is possible to create many different *profiles* each with its own settings. This has several advantages, because it allows you to install the extensions you need for web development, while not slowing down your browser for normal surfing. The disadvantage is that only one profile can be running at the same time. To switch profiles, or add new profiles,

you need to run `firefox -profilemanager`. On Windows, this can be achieved by typing the command into the "Run" dialog on the start menu, on most other systems this can be run wherever a command may be run, usually a Terminal or Command Line.

This command must be run when firefox is not running on your computer, if it is running, you will just get a new window with the preferences for the currently active profile. The dialog box that opens when the command is run successfully allows you to select from a list of profiles. With each profile you have the option to either "Rename" or "Delete" it, or just to "Start Firefox" by using it.

When you delete a profile from the profile manager, it asks you whether you want to delete or keep the files that contain the information associated with it. If you select the delete files option, then all private data associated with that profile, including history, saved passwords, and cookies, are deleted from the hard drive. There is no reason to keep these files as creating a new profile under the same name as the deleted one will not restore the profile.

5



# 6 Extensions

Extensions are small add-ons that add new functionality to Firefox. They can add anything from a toolbar button to a completely new feature. They allow the browser to be customized to fit the personal needs of each user if they need additional features, while keeping Firefox small to download.

There are over 1000 extensions available for Firefox. This may make it difficult for people to find what they want. The links on this page are intended to help while also remaining current. As such they will not generally point to specific extension but rather where to look for them. To look at links by category this page<sup>1</sup> is a good start. Additionally the headings below provide a link to mozilla.org pointing to the specific category - this means that the information will always be up to date.

A good place to start looking for extensions is here<sup>2</sup> for recommended extensions.

The most popular extensions are to be found here<sup>3</sup>.

There are many themes available at Mozilla Update which make Firefox more attractive. The most popular ones are here<sup>4</sup>.

In addition, Mozilla has recently launched Fashion Your Firefox<sup>5</sup>, a service for users who don't want to go through the entire library of addons to choose just a few good ones based on what they use Firefox for.

## 6.1 Blogging

## 6.2 Bookmarks

## 6.3 Developer Tools

- EditCSS<sup>6</sup>- Stylesheet modifier in the Sidebar. Allows you to edit any site's CSS file on the fly.

---

1 <https://addons.mozilla.org/firefox/extensions/>  
2 <https://addons.mozilla.org/firefox/recommended/>  
3 <https://addons.mozilla.org/search.php?app=firefox&appfilter=firefox&type=E&sort=downloads>  
4 <https://addons.mozilla.org/search.php?app=firefox&appfilter=firefox&type=T&sort=downloads>  
5 <https://addons.mozilla.org/en-US/firefox/fashionyourfirefox>  
6 <http://update.mozilla.org/extensions/moreinfo.php?id=179&page=releases>

- Web Developer Extension<sup>7</sup>- Must have extension for anyone dabbling in web design.

## 6.4 Download Tools

- Download Statusbar<sup>8</sup> — View downloads in an auto-hide statusbar.
- DownThemAll!<sup>9</sup> — Easily manage downloads while accelerating them as well.
- Video DownloadHelper<sup>10</sup> — Download videos(FLV files; Flash Video; extension:\*.flv) from sites like Youtube<sup>11</sup> and other types of media including MP3(Extension:\*.mp3) etc.

## 6.5 Themes

- Vista-aero<sup>12</sup> — A theme for Firefox meant to look like Internet Explorer 7; with Aero-like visual effects

## 6.6 Miscellaneous

- BBCode<sup>13</sup> — Enables you to quickly and easily insert various BBCode tags in editable textboxes from the context menu. Very handy for customizing posts on forums.
- Calculator<sup>14</sup> — A simple calculator extension.
- Calculator<sup>15</sup> — An advanced calculator extension.
- Calendar<sup>16</sup> — An iCal<sup>17</sup> compatible Calendar for Firefox. You can download calendars for your favourite sports teams, etc., from iCal Share<sup>18</sup>
- ChatZilla<sup>19</sup> — A simple, straightforward Internet Relay Chat (IRC) client.
- Cookiepie<sup>20</sup> — An extension to handle multiple web accounts simultaneously, opening many Gmail, Yahoo, Hotmail accounts in different tabs on the same browser.
- FoxyTunes<sup>21</sup> — Adds media player controls within Firefox. Currently supports many different music players across multiple platforms.

---

7 <http://update.mozilla.org/extensions/moreinfo.php?id=60&page=releases>

8 <http://update.mozilla.org/extensions/moreinfo.php?id=26&page=releases>

9 <https://addons.mozilla.org/en-US/firefox/addon/201>

10 <https://addons.mozilla.org/en-US/firefox/addon/3006>

11 <http://www.youtube.com>

12 <https://addons.mozilla.org/en-US/firefox/addon/4988>

13 <http://update.mozilla.org/extensions/moreinfo.php?id=128&page=releases>

14 <http://quicktools.mozdev.org/mozcalc/>

15 <https://addons.mozilla.org/firefox/1194/>

16 <http://www.mozilla.org/projects/calendar/>

17 <http://www.apple.com/ical/>

18 <http://icalshare.com/>

19 <http://update.mozilla.org/extensions/moreinfo.php?id=16&page=releases>

20 <http://www.nekra.com/oss/firefox/extensions/cookiepie/>

21 <http://update.mozilla.org/extensions/moreinfo.php?application=firefox&id=219>

- Gmail Notifier<sup>22</sup> — A Gmail notifier that integrates into the browser's user interface.
- FasterFox<sup>23</sup> — A simple-to-use performance and network tweaker. Fasterfox allows you to change certain setting to make Firefox load pages more quickly, depending on your computer speed and Internet connection.
- Quick Note<sup>24</sup> — A note taking extension with advanced features.
- StumbleUpon<sup>25</sup> — Lets you 'stumble upon' websites that have been recommended ("thumbed up") by friends and community members with interests similar to your own. See also StumbleUpon website<sup>26</sup>.
- WebmailCompose<sup>27</sup> — Makes mailto: (email) links load a webmail mail compose window and adds a WebMailCompose link to the context menu. Now supports selected addresses.
- **Wikipedia**<sup>28</sup> — Provides text formatting options in the context menu for use on wiki sites based on Mediawiki<sup>29</sup>, such as Wikipedia and Wikibooks.

## 6.7 Mouse gestures

- All-in-one mouse gestures<sup>30</sup> — Enables you to use the mouse for a wide variety of customizable shortcuts.

## 6.8 Navigation

- Linkification<sup>31</sup> — Injects CSS on the fly making text URLs clickable with the default option to suppress referrer information.
- Paste & Go<sup>32</sup> — Lets you paste a URL from the clipboard and directly load it.

## 6.9 News

- Sage<sup>33</sup> — A lightweight RSS<sup>34</sup> and Atom feed<sup>35</sup> aggregator. Very useful for viewing news from many sites.

---

22 <http://update.mozilla.org/extensions/moreinfo.php?id=173&page=releases>  
 23 <http://addons.mozilla.org/extensions/moreinfo.php?id=1269>  
 24 <http://update.mozilla.org/extensions/moreinfo.php?id=46&page=releases>  
 25 <http://update.mozilla.org/extensions/moreinfo.php?id=138&page=releases>  
 26 <http://www.stumbleupon.com/>  
 27 <http://update.mozilla.org/extensions/moreinfo.php?id=206&page=releases>  
 28 <http://wikipedia.mozdev.org/>  
 29 <http://wikipedia.sourceforge.net/>  
 30 <http://update.mozilla.org/extensions/moreinfo.php?id=12&page=releases>  
 31 <http://www.beggarchooser.com/firefox/>  
 32 <http://update.mozilla.org/extensions/moreinfo.php?id=65&page=releases>  
 33 <http://update.mozilla.org/extensions/moreinfo.php?id=77&page=releases>  
 34 <http://en.wikibooks.org/wiki/RSS>  
 35 <http://en.wikipedia.org/wiki/ATOM%20feed>

## 6.10 Page Display

- Adblock Plus<sup>36</sup> — Blocks or hides advertisements and other annoyances from web pages, while still retaining the correct page format. It is designed to allow you to block flash and image banners built into the web page, as well as scripts. You add your own filters using wildcards (\*) for simple filters, or RegEx<sup>37</sup> (regular expressions) for advanced ones. An excellent maintained set of filters is [here](#)<sup>38</sup>.
- Flashblock<sup>39</sup> — Allows you to easily block flash animations. Flash animations are replaced with an icon you click to play. May conflict with Adblock Plus and crash on some flash-intensive sites.
- Image Zoom<sup>40</sup> — Adds zoom functionality for images. Functionality is also included in the Mouse Gestures extension.

## 6.11 Search tools

- termBlaster<sup>41</sup> — Lets you search selected text using search engines selected by context menu. It comes with 110+ search engines from encyclopedias to translators to web-search engines organized in folders.
- Dictionary Search<sup>42</sup> — Looks up selected word in a (customizable) online dictionary. Functionality is also included in the SmartSearch extension, which lacks the 4 search limitation.
- Googlebar<sup>43</sup> — The Google Toolbar for Firefox. Additionally, Googlebar Lite provides a simpler interface (which is recommended for new users). <https://addons.mozilla.org/extensions/moreinfo.php?id=492>
- Groowe Search Toolbar<sup>44</sup> — Groowe Search Toolbar bundles Google toolbar, Yahoo, Ask Jeeves, Teoma, Amazon, Download.com and others. The application is available for Internet Explorer as well.

## 6.12 Tabs and windows

- Focus Last Selected Tab<sup>45</sup> — Brings focus to the last selected tab when closing the active tab. Functionality is also included in the TabMix extension.

---

36 <http://www.extensionsmirror.nl/index.php?showtopic=774>

37 <http://www.regular-expressions.info/>

38 <http://pierceive.com/>

39 <http://flashblock.mozdev.org/>

40 <http://update.mozilla.org/extensions/moreinfo.php?id=139&page=releases>

41 <http://addons.mozilla.org/extensions/moreinfo.php?id=1720>

42 <http://update.mozilla.org/extensions/moreinfo.php?id=68&page=releases>

43 <http://update.mozilla.org/extensions/moreinfo.php?application=firefox&id=33&page=releases>

44 <http://www.groowe.com/>

45 <http://update.mozilla.org/extensions/moreinfo.php?id=32&page=releases>

- Session Saver<sup>46</sup> — Saves the open tabs when closing the browser, and restores them upon restarting it. Functionality is also included in the TabMix extension.
- Single Window<sup>47</sup> — A simple extension that allows Mozilla to fully utilize the built-in tabbed browsing behavior. Traps links that would normally open in a new window. Functionality is also included in the TabMix extension.
- Tabbrowser Preferences<sup>48</sup> — Enables enhanced control for tabbed browsing. Most functionality is also included in the TabMix extension. Recommended for users who would like to change the way tabs behave in Firefox.
- TabMixPlus<sup>49</sup> An extension that allows considerable customisation in the use of tabs and windows as well as a "restore" function that is as useful (or better) then the built in FireFox one.
- Undoclosetab<sup>50</sup> — Reopen a closed tab. Functionality is also included in the TabMix, SessionSaver, and Mouse Gestures extensions.

51

---

46 <http://extensionroom.mozdev.org/more-info/sessionsaver>  
 47 <http://update.mozilla.org/extensions/moreinfo.php?id=50&page=releases>  
 48 <http://update.mozilla.org/extensions/moreinfo.php?id=158&page=releases>  
 49 <https://addons.mozilla.org/firefox/1122/>  
 50 <http://update.mozilla.org/extensions/moreinfo.php?id=58&page=releases>  
 51 <http://en.wikibooks.org/wiki/Category%3A>





# 7 Plug-ins

## 7.1 What is a Plugin?

Firefox requires *plugins* in order to read or display special content from the websites. Plugins are programs that are integrated into Firefox that allows websites to provide content to you. Such content includes flash videos, java games and streaming video from the Internet. Examples of plugins are Flash<sup>1</sup>, RealPlayer<sup>2</sup>, and Java<sup>3</sup>. Plugins are a necessary component to truly access the Internet's interactive stuff.

A much more comprehensive list of plugins, with detailed installation instructions, is available at Mozilla Update<sup>4</sup>. Another valuable resource is Mozdev Plugins<sup>5</sup>.

## 7.2 Before You Install

### 7.2.1 Close Firefox before installing plugins

Firefox should be closed before running any plugin installation programs, as existing files may be overwritten during the installation process.

### 7.2.2 Using XPInstall to install plugins

Some plugins are available as XPInstall packages (XPIs), the same format as that for extensions. Where XPIs are available, it is recommended you use them as they often install the plugin automatically without you having to restart Firefox. After the XPI has finished installing, you should restart your browser.

### 7.2.3 Checking which plugins you have installed

To check what plugins you have installed, simply type *about:plugins* in the Location bar. This page will show which plugins are installed, what file types they are associated with and if the plugin is enabled or disabled.

---

1 Chapter 7.3.3 on page 40  
2 Chapter 7.3.6 on page 41  
3 Chapter 7.3.2 on page 40  
4 <http://pfs.mozilla.org/plugins/>  
5 <http://plugindoc.mozdev.org>

## 7.3 Available Plugins

### 7.3.1 Adobe PDF Reader

In order to read .pdf files, you need to install a pdf reader. Adobe Reader, one of the more popular software, can do this. Simply go to Adobe's official site<sup>6</sup> and download Adobe Reader. With Firefox closed, install Adobe Reader and it will also install the plugin necessary for Firefox to view PDF files. No other steps are necessary. Firefox will now open all PDFs from within a Firefox tab.

If you install Adobe Reader after Firefox, Adobe Reader will automatically select the right plugin. If you already have the latest version of Adobe Reader installed then Firefox will automatically use the plugin. Some people have problems with the Adobe Reader plugin in Firefox. The explanation and solution is here<sup>7</sup>.

### 7.3.2 Java

The Java Plugin is part of the Java Runtime Environment (JRE, for short). The JRE installer will install the Java Plugin for Netscape 7.2 and Mozilla automatically.

To get the it simply go to java.com<sup>8</sup> and click the "Download Now!" button to download and install the latest JRE.

### 7.3.3 Macromedia Flash Player

When you encounter a site that makes use of Flash graphics, a yellow bar will appear at the top of the page telling you that there is a missing plugin preventing you from viewing all the content on the current page. Click on *Install Missing Plugins* button and the Mozilla Plugin Finder Service will appear automatically. After accepting the User Agreement from Macromedia, the necessary components to view Flash will be installed.

Alternately, you may install Macromedia Flash Player (without having to go to a site) by installing the plugin manually. Simply go here<sup>9</sup> and click on the Macromedia Flash Player 8.0 link.

### 7.3.4 Macromedia Shockwave Player

Simply go to the Macromedia Shockwave site<sup>10</sup> and download the plugin. When you are installing it, Firefox will appear in the list of browsers that you can install the plugin for. (Remember, Firefox should be closed when installing).

---

6 <http://www.adobe.com/products/acrobat/readstep2.html>  
7 [http://kb.mozillazine.org/index.phtml?title=Adobe\\_Reader](http://kb.mozillazine.org/index.phtml?title=Adobe_Reader)  
8 <http://java.com/>  
9 <http://plugindoc.mozdev.org/windows.html#Flash>  
10 <http://sdc.shockwave.com/shockwave/download/download.cgi?>

### 7.3.5 Quicktime Player (Windows & Mac)

Simply go to Apple's (the developer of Quicktime) website and download Quicktime<sup>11</sup>. Installing Quicktime will install the appropriate plugin in order for Firefox to view .mov files.

### 7.3.6 RealPlayer

Simply go to Real's (the developer of RealPlayer) website and download the program<sup>12</sup>. The RealPlayer installer will automatically detect your browser's plugins folder and install the plugin.

## 7.4 Uninstalling Plugins

A list of your installed plugins can be obtained from about:plugins. As a general rule, to remove a plugin, you remove the file listed in about:plugins for it. Typically a .dll file.

On a XP machine this can typically be found at c:\Program Files\Mozilla Firefox\plugins  
<sup>13</sup> it:Mozilla Firefox/Plug-ins<sup>14</sup>

---

11 <http://www.apple.com/quicktime/download/>

12 <http://www.real.com/freeplayer/?rppr=rnwk>

13 <http://en.wikibooks.org/wiki/Category%3A>

14 <http://it.wikibooks.org/wiki/Mozilla%20Firefox%2FPlug-ins>



# 8 Mouse shortcuts

*Note: for Mac OS X, use the Command key in place of Control for all shortcuts listed.*

## 8.1 Standard Firefox Shortcuts

<b>Back</b>	Shift+Scroll down
<b>Close Tab</b>	Middle-click on tab
<b>Decrease Text Size</b>	Ctrl+Scroll down
<b>Forward</b>	Shift+Scroll up
<b>Increase Text Size</b>	Ctrl+Scroll up
<b>New Tab</b>	Double-Click on Tab Bar or Middle-click on Tab Bar
<b>Open Link in Background Tab</b>	Ctrl+Left-click or Middle-click on a link
<b>Open Link in Foreground Tab</b>	Ctrl+Shift+Left-click or Shift+Middle-click on a link
<b>Open Link in New Window</b>	Shift+Left-click on a link
<b>Save Link As</b>	Alt+Left-click on a link
<b>Scroll line by line</b>	Alt+Scroll

<sup>1</sup> it:Mozilla Firefox/Scorciatoie Mouse<sup>2</sup>

---

<sup>1</sup> <http://en.wikibooks.org/wiki/Category%3A>

<sup>2</sup> <http://it.wikibooks.org/wiki/Mozilla%20Firefox%2FScorciatoie%20Mouse>



# 9 Keyboard shortcuts

## 9.1 Standard Firefox Keyboard Shortcuts

*Note: for Mac OS X, use the Command key in place of Control for all shortcuts listed.*

<b>Back</b>	Alt+Left Arrow (or Backspace on Windows)
<b>Bookmarks</b>	Ctrl+B or Ctrl+I
<b>Bookmark This Page</b>	Ctrl+D
<b>Bookmark All Tabs</b>	Ctrl+Shift+D
<b>Caret Browsing</b>	F7
<b>Clear Personal Data</b>	Ctrl+Shift+Del
<b>Close Tab</b>	Ctrl+W or Ctrl+F4
<b>Close Window</b>	Ctrl+Shift+W or Alt+F4
<b>Complete .com Address</b>	Ctrl+Enter
<b>Complete .net Address</b>	Shift+Enter
<b>Complete .org Address</b>	Ctrl+Shift+Enter
<b>Copy</b>	Ctrl+C or Ctrl+Insert
<b>Cut</b>	Ctrl+X or Shift+Del
<b>Delete</b>	Del
<b>Downloads</b>	Ctrl+J (Windows & Mac OS X only), Ctrl+Y (Linux only)
<b>Find Again</b>	F3 or Ctrl+G
<b>Find in This Page (Find As You Type)</b>	Ctrl+F or /
<b>Find in This Page (Find As You Type): links only</b>	' (apostrophe key)
<b>Find Previous</b>	Shift+F3 or Shift+Ctrl+G
<b>Force Reload (override cache)</b>	Ctrl+F5 or Ctrl+Shift+R
<b>Forward</b>	Alt+Right Arrow (or Shift+Backspace on Windows)
<b>Full Screen</b>	F11 (not implemented on Mac OS X)
<b>Group Your Tabs (Panorama)</b>	Ctrl+Shift+E
<b>History</b>	Ctrl+H
<b>Home</b>	Alt+Home
<b>Location Bar</b>	F6 or Ctrl+L or Alt+D
<b>New Tab</b>	Ctrl+T
<b>Next Frame</b>	F6
<b>Next Tab</b>	Ctrl+Tab or Ctrl+PageDown or Ctrl+Alt+Right Arrow
<b>New Window</b>	Ctrl+N



<b>Open File</b>	Ctrl+O
<b>Open Last Closed Tab</b>	Ctrl+Shift+T
<b>Open Location in New Tab</b>	Alt+Enter
<b>Page Source</b>	Ctrl+U
<b>Paste</b>	Ctrl+V or Shift+Insert
<b>Previous Frame</b>	Shift+F6
<b>Previous Tab</b>	Ctrl+Shift+Tab or Ctrl+PageUp or Ctrl+Alt+Left Arrow
<b>Print</b>	Ctrl+P
<b>Redo</b>	Ctrl+Y (NOT Linux) or Ctrl+Shift+Z
<b>Reload</b>	F5 or Ctrl+R
<b>Save Page As</b>	Ctrl+S
<b>Search</b>	<i>see <b>Find and Web Search</b></i>
<b>Select All</b>	Ctrl+A
<b>Select Next Search Engine in Search Bar</b>	Ctrl+Down
<b>Select Previous Search Engine in Search Bar</b>	Ctrl+Up
<b>Select Tab [1 to 8; last tab]</b>	Ctrl+[1 to 8; 9]
<b>Stop</b>	Esc
<b>Text Size: Decrease</b>	Ctrl+-
<b>Text Size: Increase</b>	Ctrl++
<b>Text Size: Normal</b>	Ctrl+0
<b>Web Search</b>	Ctrl+K (or Ctrl+E on Windows & Mac OS X, or Ctrl+J on Unix)
<b>Undo</b>	Ctrl+Z
<b>Start typing in address bar</b>	Ctrl+L (Cmd + L on OS X)

it:Mozilla Firefox/Scorciatoie da Tastiera<sup>1</sup> nl:Firefox/Sneltoetsen<sup>2</sup>

---

<sup>1</sup> <http://it.wikibooks.org/wiki/Mozilla%20Firefox%2FScorciatoie%20da%20Tastiera>

<sup>2</sup> <http://nl.wikibooks.org/wiki/Firefox%2FSneltoetsen>

# 10 Privacy

## 10.1 Clearing Private Data

### 10.1.1 History

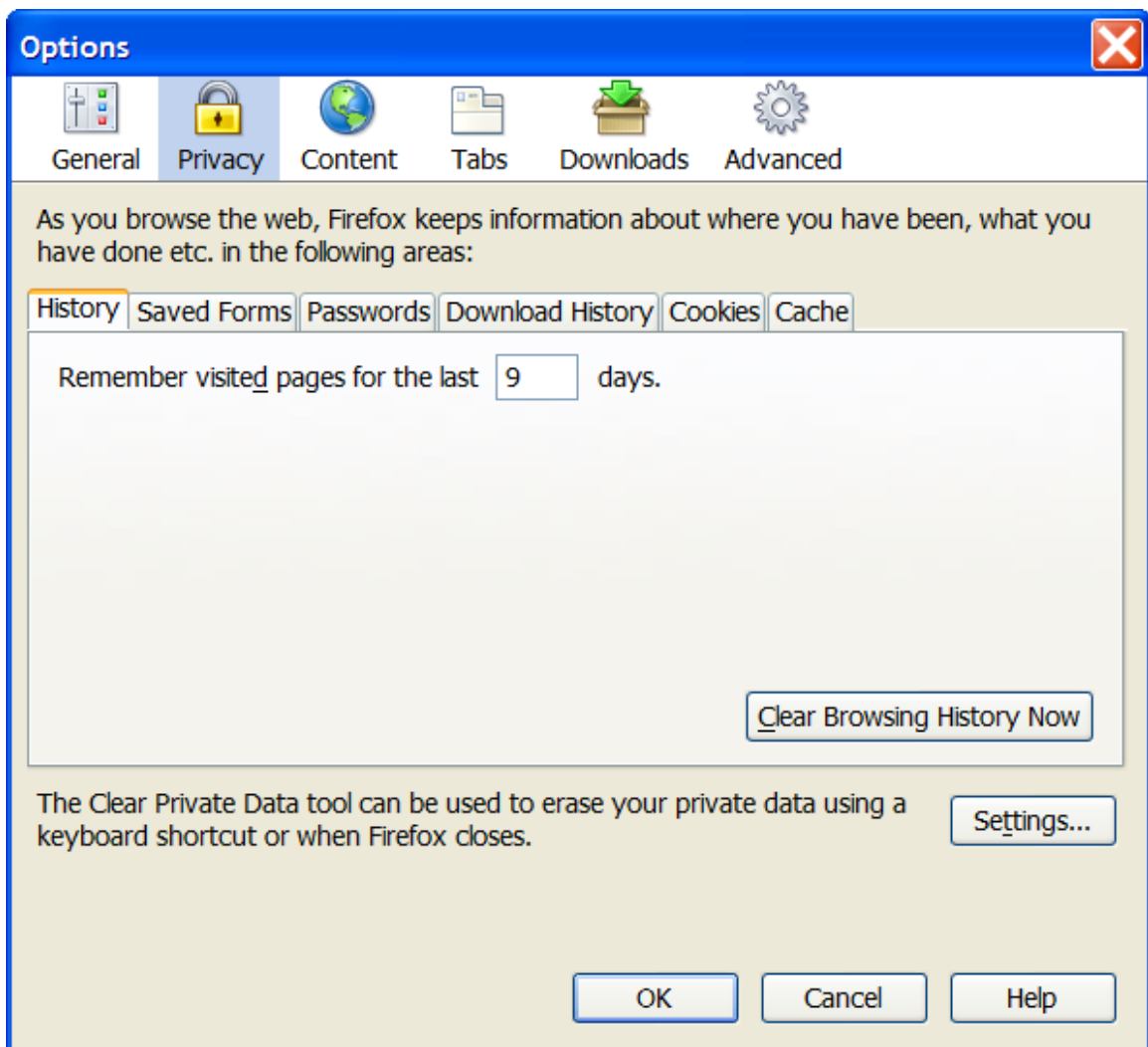


Figure 19

It is possible to select individual history items to delete, by using the history side bar. You can open the history side bar by selecting from the menu the *View -> Sidebar -> History* option. Deleting singular items can be achieved by finding the item, right-clicking on it to

get the context menu, and selecting *Delete*. Deleting multiple entries can be achieved by right-clicking the list to focus it (for left-clicking will open the web page under the mouse, and losing focus on the list) and using the up/down arrows, and shift+up/down to select blocks of entries. Pressing *Delete* on the keyboard will delete the selected history items.

It is possible to delete all history items by opening the preferences dialog on the menu at *Edit -> Preferences*, and clicking on the *Privacy* tab and then the *History* tab. A button will be there to *Clear Browsing History Now*. This will clear **all** history items.

Under this tab also, by changing the option *Remember my browsing history for X days*, to 0, history items will not be kept between sessions.

Auto-completed URLs will disappear as corresponding history items are deleted.

### 10.1.2 Cookies

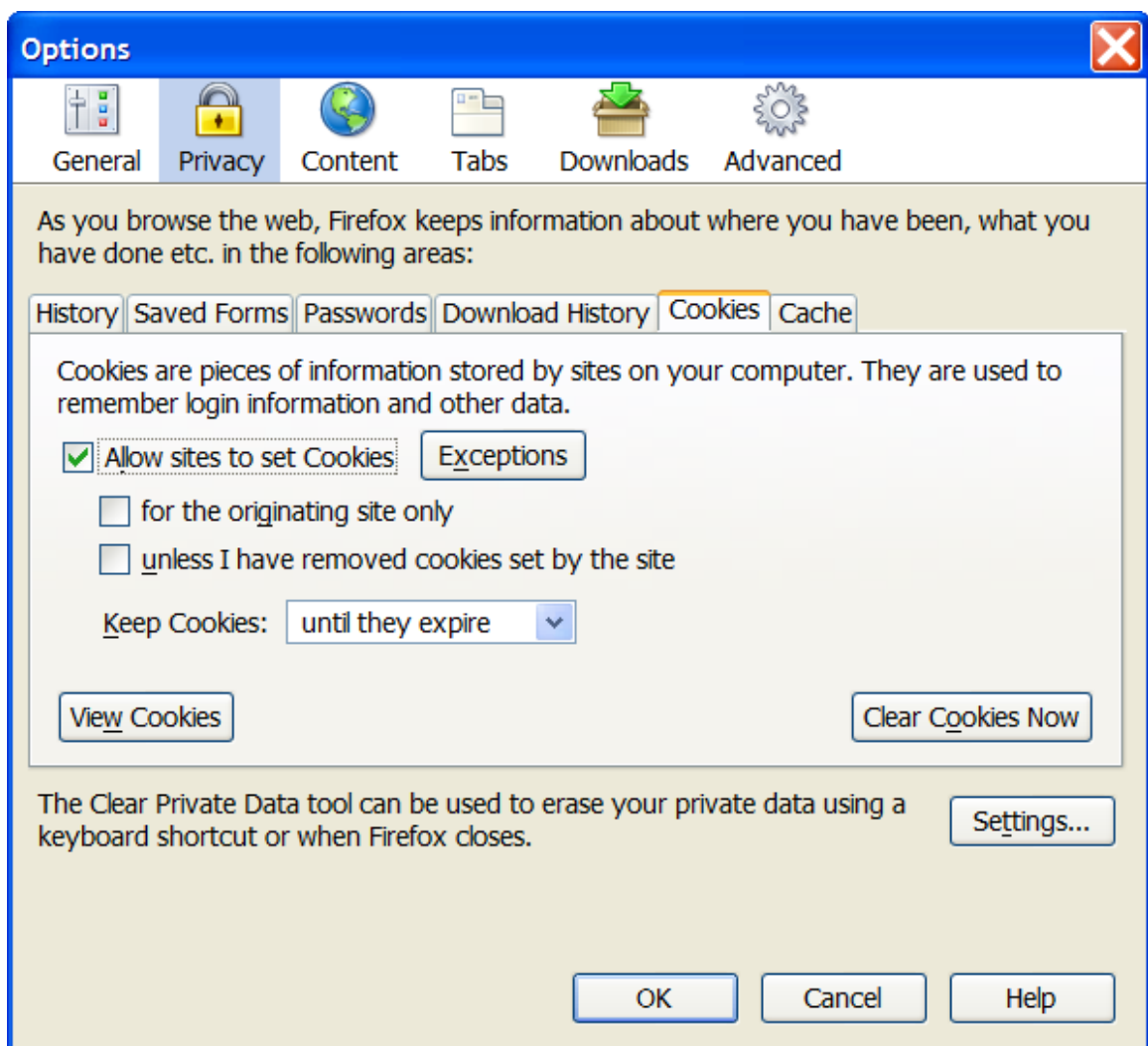


Figure 20

Cookies can be cleared by selecting the *Privacy* tab and then the *Cookies* tab under the user preferences from the menu at *Edit -> Preferences*. All cookies can be deleted by clicking the *Clear Cookies Now* button. Individual cookies can be cleared by clicking the *View Cookies* button to open the cookie viewing dialog. Selecting cookies and pressing *Delete* on the keyboard will delete those cookies.

By changing the option to *Keep Cookies* to *Until I close Firefox*, cookies will not be kept between sessions. Also it is possible to choose to block all websites from putting cookies on your computer unless you have explicitly allowed them to do so, by adding them to a list accessible from this tab.

### 10.1.3 Other Data

It is possible to delete other private data by using options under the *Privacy* tab of the user preferences. See Preferences<sup>1</sup> for more details.

If you just want to delete one or a few values from the saved (remembered) list of field (or form) values, navigate to the item you want to clear (*don't click on it, just "point" to it*), then use the Shift-Delete key combination to clear it.

### 10.1.4 Deleting All Private Data

You can delete all private data, including browsing history, cookies, cache, saved form data, passwords, and download history, by opening the *Clear Private Data* dialog under the menu in *Tools -> Clear Private Data* (or by pressing *Ctrl-Shift-Delete* on your keyboard). This will ask you to list your preferences as to what should be cleared from Firefox. If you want to do the same thing often in the future, you can deselect *Ask me before clearing private data*, and the dialog will not be cleared.

Your preferences for this option can be set in the user preferences dialog under the *Privacy* tab; there is a button down the bottom right that says *Settings*, which will effect this function.

### 10.1.5 Security Extensions

#### Stealthier

This Firefox extension allows you to surf the web without leaving a trace on your local machine. It temporarily disables the following while it is active:

- Browsing History (Websites you've visited, no auto-complete of URL's - Cookies (Doesn't allow websites to store cookies \*Warning\* this could cause difficulties when trying to access user account or E-Mail) - Downloaded Files History (All the files you've downloaded) - Disk Cache (Any files normally stored on your local machine "i.e images" will not be stored for fast viewing) - Saved Form Information (Information that would be used during the save

---

1 Chapter 5.1.2 on page 18

form feature in Firefox "i.e save user name and password on this computer?" will not work)  
- Sending of ReferrerHeader. (When you click on a link from one web page or website to another, the browser usually sends a Referer/header to the server to tell sites where you came from.)

### **NoScript**

"Winner of the "2006 PC World World Class Award", this tool provides extra protection to your Firefox. It allows JavaScript, Java and other executable content to run only from trusted domains of your choice, e.g. your home-banking web site, and guards the "trust boundaries" against cross-site scripting attacks (XSS). Such a preemptive approach prevents exploitation of security vulnerabilities (known and even unknown!) with no loss of functionality... Experts do agree: Firefox is really safer with NoScript ;-)" -Giorgio Maone

### **WOT**

"Can you recognize good and reliable Internet content? Did you have a bad experience that you would like to share with others? WOT can help you. Seeing website reputations on your browser allows you to learn from other people. This shared knowledge makes it easier to avoid online fraud, including phishing and spyware. WOT can add reputations also to web search results, Digg, Gmail, Wikipedia, and other selected sites." -Against Intuition, Inc.

"This of course preserves your privacy to great extent" - Anonymous

### **CookieSafe**

"This extension will allow you to easily control cookie permissions. It will appear on your statusbar. Just click on the icon to allow, block, or temporarily allow the site to set cookies. You can also view or clear the cookies and exceptions by right clicking on the statusbar icon. For safer browsing you may choose to deny cookies globally and then enable them on a per site basis." -Ron Beckman

2

# 11 Advanced configuration

## 11.1 about:config

Type `about:config` into your address bar and you will be brought to the `about:config` settings. This is a powerful way to tweak your settings in ways that are not normally accessible through the Options menu. By simply double clicking one of the available options (after copying and pasting them into the filter bar to find them easily), changes can be made, including the following:

- `browser.block.target_new_window` — if set to `true`, links that normally force a new window to open will open in the current window instead.
- `browser.xul.error_pages.enabled` — if set to `true`, Firefox displays an error page similar to IE instead of a message box if loading a page fails.
- `layout.frames.force_resizability` — if set to `true`, allows the user to resize frames on any web site that uses them.

The following changes can be made to speed up browsing. Normally the browser will make one request to a web page at a time. When you enable pipelining it will make several at once, which usually speeds up page loading. Make these changes to enable pipelining:

Set `"network.http.pipelining"` to `"true"`

Set `"network.http.proxy.pipelining"` to `"true"`

[Tip: If have your browser set to connect to an optional http proxy, you can leave `"network.http.pipelining"` setp to `"false"`, then add the domains of websites that don't work with pipelining (like `images.google.com`) to the proxy exclude list.]

Set `"network.http.pipelining.maxrequests"` to 8. This means it will make up to 8 requests at once rather than the default of 4. This is only an advantage if you have a reliable internet connection that isn't particularly slow.

Finally, right-click anywhere and select New-> Integer. Name it `"nglayout.initialpaint.delay"` and set its value to `"0"`. This value is the amount of time the browser waits before it acts on information it receives, but it will increase the total time taken to render the page. This option is more suitable for a faster computer (`"250"` is the default). Try a value of `"100"` if `"0"` causes problems.

For broadband users:

Set `"network.http.max-connections-per-server"` to 14. Many guides recommend setting this figure to 100, but this can have undesirable effects upon webservers.

Set `"network.http.max-connections"` to 48

A much more complete list can be found [here](#)<sup>1</sup>, with descriptions and which values the preference will take (where applicable)

## 11.2 Editing the userChrome.css File

userChrome.css is a file that allows you to change the appearance of Firefox with CSS rules. The actual browser window (i.e., not the webpage, but everything else) is called the "chrome". The file userChrome.css overrides default settings to allow for more customization.

userChrome.css is not created by default. It should be created in your profile folder, which can be found in the following places:

```
Windows:
  %appdata%\Roaming\Mozilla\Firefox\Profiles\<<Profile name>\
Linux:
  ~/.mozilla/firefox/<Profile name>/
Mac OS X:
  ~/Library/Mozilla/Firefox/Profiles/<Profile name>/
or
  ~/Library/Application Support/Firefox/Profiles/<Profile name>/
```

In all cases, the profile is randomly named, with 8 characters followed by *.default*. Inside that folder is another named "chrome". Inside the chrome folder is where userChrome.css needs to be created.

## 11.3 Editing the userContent.css File

### 11.4 Tips

- Allowing extension downloads from mozilla.org instead of www.mozilla.org will match all subdomains of mozilla.org, just as blocking cookies from doubleclick.net instead of www.doubleclick.net will allow blocking of all doubleclick.net subdomains. Allowing "www.mozilla.org" would not allow "addons.mozilla.org". However, as a security measure, when whitelisting sites for extensions, the most specific domain available should be used (i.e., addons.mozilla.org instead of mozilla.org) to prevent potentially malicious installs from other subdomains on a site.
- To get Firefox on a computer without an internet connection or where internet downloads are blocked you can download the file as normal form another computer (usually you can do this at a public library) then put the \*.exe file on some removable media and transfer it to the first computer.

2

---

1 <http://preferential.mozdev.org/preferences.html>

2 <http://en.wikibooks.org/wiki/Category%3A>

# 12 Developers tools

## 12.1 Extension Development

The most comprehensive site for Extension development is at the Mozillazine Knowledge Base found [here](#)<sup>1</sup>. Other helpful tools include the DOM Inspector<sup>2</sup> included in Firefox and the JavaScript console.

Firefox is especially developer-friendly. It allows even the most casual web developer to crib useful HTML techniques from most any website they visit, and offers a host of other features for more serious users.

## 12.2 Source viewing

Perhaps the most-used development feature is the ability to highlight images and text in any website, and choose to view source from a drop-down menu. When this feature is used, Firefox displays the HTML source that was used to generate the highlighted content.

For instance, highlighting the above paragraph and section heading, right clicking, and choosing "*View Selection Source*", will display the following in a new window:

```
<p><a name="Source_viewing" id="Source_viewing"></a></p>
<h2>Source viewing</h2>
<p>Perhaps the most-used development feature is the ability to highlight images and text in
any website, and choose "View selection source" from the drop-down menu. Doing this
will bring up a pop-up window, with the HTML source that was used to generate the highlighted
content.</p>
```

Combining this technique with a good markup language reference source, such as the Wikibook<sup>3</sup> HTML Programming<sup>4</sup>, will allow you to learn from every new website you visit.

<sup>5</sup> [it:Mozilla Firefox/Sviluppatori](#)<sup>6</sup>

---

1 [http://kb.mozillazine.org/Extension\\_development](http://kb.mozillazine.org/Extension_development)

2 <http://www.mozilla.org/projects/inspector/>

3 [http://en.wikibooks.org/wiki/Main\\_Page](http://en.wikibooks.org/wiki/Main_Page)

4 <http://en.wikibooks.org/wiki/HTML%20Programming>

5 <http://en.wikibooks.org/wiki/Category%3A>

6 <http://it.wikibooks.org/wiki/Mozilla%20Firefox%2FSviluppatori>





# 13 Creating an extension

## 13.1 Introduction

This tutorial will explain step by step how to deploy an extension for Firefox 3. In this way the reader could implement in a easy way extensions that let personalize their version of Firefox, taking care about the compatibilities with Firefox 3.0\*.

The first chapter gives a brief introduction to the extensions for Firefox. Then it will discuss some items that the developer must have considered about the compatibilities.

The second chapter starts to describe step by step how to deploy the extension and then, the last chapter will explain hoy to make the install file and how to install it.

## 13.2 Extensions for Firefox 3.0.\*

This chapter will introduce the topic of what are the extensions and what functionalities they give. And for last the topic of compatibility.

### 13.2.1 What are the extensions?

An extension is a new functionality that is integrated to Firefox. These one can be deployed independent from the browser and from the platform. So we can say that extensions let users to bring new features, functionalities and behaviors to the browser.

The extensions are not the same as plug-ins. A plug-in allows for the viewing of web content that the browser cannot show by itself, for example: pdf, flash, sounds and videos.

### 13.2.2 Compatibility with Firefox 3.0.\*

Some functions of JavaScript are not longer supported in the new releases of Firefox, especially over versions 3.p.\*. Also the structures of the manifest files and the reference to the browes.xul have been changed. It is important to know about that changes, if not the extension could be incompatible with the last versions of Firefox. Other items to consider are the Managers that Firefox implements (ex, loginManager). These have been suffered changes too. For more information: Updating...

## 13.3 Start creating an extension.

The next chapter describes step by step how to develop simple extensions. It'll specify the folders that must be created, the structure that must follow the type of files and the root folder.

### 13.3.1 Structure of folders

There is an obligatory structure that the folders must carry out. This structure defines the names of the folders, the hierarchical structure, the type of files of each folder and the place where these folders and files should be stored for bean recognized for Firefox.

### 13.3.2 Root folder

At the beginning we must create a folder with the name of the extension. This name must be unique and match the name defined in the installation file. There are two ways of naming the root folder of an extension.

As mentioned, this name must be unique, so the first alternative is to generate a GUID identifier for it. In windows you can use the guidgen command and in Linux the uuidgen command. For example, you can generate this {1ca6f699-f8f3-479b-983b-20775f09f755}. The second alternative is to create a name with e-mail format. Is not recommendable to use a personal e-mail, only should have the same format. For example, we can call our extension like myextension@somedomain.

Inside the root folder we'll create the structure corresponding to the extension.

### 13.3.3 Chrome Folder

1

---

1 <http://en.wikibooks.org/wiki/Category%3A>

# 14 External Links

## 14.1 Helpful Links

- Why switch to Firefox?<sup>1</sup> — Reasons to switch.
- Portable Firefox<sup>2</sup> — John Haller has repackaged firefox to be run from a removable storage device (such as a USB key or a zip disk).
- Spread Firefox<sup>3</sup> — Firefox marketing.

## 14.2 Getting Started

- Firefox Help<sup>4</sup> — Online Help for the Mozilla Firefox Web Browser
- Getting started with Mozilla Firefox<sup>5</sup>
- MozillaZine Knowledge Base wiki<sup>6</sup>
- Mozilla Community wiki<sup>7</sup>
- MozillaZine Forums<sup>8</sup>- If you have any problems with Firefox this should be your first port of call.
- Firefox Resources<sup>9</sup>
- Firefox Guide<sup>10</sup> Simplified guide for the Firefox browser and all its resources

## 14.3 Plugins, Extensions, and Tweaks

- PluginDoc<sup>11</sup> — Lists common plugins and how to install them in Firefox.
- Mozilla Addons<sup>12</sup> — Official Mozilla site for plugins, extensions and themes.
- Addonsmirror.net<sup>13</sup> — unofficial extension database (Formerly extensionsmirror.nl)

---

1 <http://www.switch2firefox.com/whyswitch/>  
2 [http://johnhaller.com/jh/mozilla/portable\\_firefox/](http://johnhaller.com/jh/mozilla/portable_firefox/)  
3 <http://www.spreadfirefox.com/>  
4 <http://www.mozilla.org/support/firefox/>  
5 <http://www.edafe.org/tag/firefox/>  
6 <http://kb.mozillazine.org/>  
7 <http://mozilla.wikicityies.com/>  
8 <http://forums.mozillazine.org/>  
9 <http://loadaveragezero.com/app/drx/Internet/WWW/Clients/Browsers/Firefox>  
10 <http://www.browserfirefox.com/>  
11 <http://plugindoc.mozdev.org/>  
12 <https://addons.mozilla.org/>  
13 <http://www.addonsmirror.net/>

- [Firefox Tweak Guide](#)<sup>14</sup> — Has some great tweaks for speed and various other customizations.
- [How to write Firefox extensions](#)<sup>15</sup> — Tutorial for creating Firefox extensions, which includes a "Hello, world!" extension to explain the basics.

<sup>16</sup> [it:Mozilla Firefox/Links](#)<sup>17</sup>

[es:Mozilla Firefox/Texto completo](#)<sup>18</sup>

---

<sup>14</sup> <http://www.tweakfactor.com/articles/tweaks/firefoxtweak/>

<sup>15</sup> <http://roachfiend.com/archives/2004/12/08/how-to-create-firefox-extensions>

<sup>16</sup> <http://en.wikibooks.org/wiki/Category%3A>

<sup>17</sup> <http://it.wikibooks.org/wiki/Mozilla%20Firefox%2FLinks>

<sup>18</sup> <http://es.wikibooks.org/wiki/Mozilla%20Firefox%2FTexto%20completo>

# 15 Contributors

Edits	User
13	*nix <sup>1</sup>
11	Adrignola <sup>2</sup>
12	Alerante <sup>3</sup>
1	Anyseo <sup>4</sup>
1	Brian Brondel <sup>5</sup>
2	Conrad.Irwin <sup>6</sup>
1	Coolgamer <sup>7</sup>
4	Dancornett <sup>8</sup>
13	Darklama <sup>9</sup>
1	DavidCary <sup>10</sup>
1	Derbeth <sup>11</sup>
2	Dirk Hünninger <sup>12</sup>
11	Dlrohrer2003 <sup>13</sup>
1	DropDeadGorgias <sup>14</sup>
1	Ekevu <sup>15</sup>
25	Everlong <sup>16</sup>
1	Fedora.Pirate <sup>17</sup>
1	FireBobGibons <sup>18</sup>
2	Geeke <sup>19</sup>
7	Herbythyme <sup>20</sup>
1	Jameshales <sup>21</sup>

- 
- 1 <http://en.wikibooks.org/w/index.php?title=User:%2Anix>
  - 2 <http://en.wikibooks.org/w/index.php?title=User:Adrignola>
  - 3 <http://en.wikibooks.org/w/index.php?title=User:Alerante>
  - 4 <http://en.wikibooks.org/w/index.php?title=User:Anyseo>
  - 5 [http://en.wikibooks.org/w/index.php?title=User:Brian\\_Brondel](http://en.wikibooks.org/w/index.php?title=User:Brian_Brondel)
  - 6 <http://en.wikibooks.org/w/index.php?title=User:Conrad.Irwin>
  - 7 <http://en.wikibooks.org/w/index.php?title=User:Coolgamer>
  - 8 <http://en.wikibooks.org/w/index.php?title=User:Dancornett>
  - 9 <http://en.wikibooks.org/w/index.php?title=User:Darklama>
  - 10 <http://en.wikibooks.org/w/index.php?title=User:DavidCary>
  - 11 <http://en.wikibooks.org/w/index.php?title=User:Derbeth>
  - 12 [http://en.wikibooks.org/w/index.php?title=User:Dirk\\_H%C3%BCnniger](http://en.wikibooks.org/w/index.php?title=User:Dirk_H%C3%BCnniger)
  - 13 <http://en.wikibooks.org/w/index.php?title=User:Dlrohrer2003>
  - 14 <http://en.wikibooks.org/w/index.php?title=User:DropDeadGorgias>
  - 15 <http://en.wikibooks.org/w/index.php?title=User:Ekevu>
  - 16 <http://en.wikibooks.org/w/index.php?title=User:Everlong>
  - 17 <http://en.wikibooks.org/w/index.php?title=User:Fedora.Pirate>
  - 18 <http://en.wikibooks.org/w/index.php?title=User:FireBobGibons>
  - 19 <http://en.wikibooks.org/w/index.php?title=User:Geeke>
  - 20 <http://en.wikibooks.org/w/index.php?title=User:Herbythyme>
  - 21 <http://en.wikibooks.org/w/index.php?title=User:Jameshales>

5	Jbond64 <sup>22</sup>
13	Jguk <sup>23</sup>
1	JoeAxon <sup>24</sup>
1	Joelf <sup>25</sup>
4	Kathleen.wright5 <sup>26</sup>
1	Kernigh <sup>27</sup>
1	LouCypher <sup>28</sup>
22	Mahanga <sup>29</sup>
1	Martinman11 <sup>30</sup>
3	Mattisse <sup>31</sup>
2	Midnightcomm <sup>32</sup>
1	Mjbmrbot <sup>33</sup>
18	Nathan8225 <sup>34</sup>
1	Norm <sup>35</sup>
1	Phoenix Hacker <sup>36</sup>
8	Pietrodn <sup>37</sup>
1	Polyparadigm <sup>38</sup>
1	Poop <sup>39</sup>
7	Pureblade <sup>40</sup>
2	QuiteUnusual <sup>41</sup>
2	Ramac <sup>42</sup>
2	Rwww <sup>43</sup>
25	Steeler fan <sup>44</sup>
2	Talkie Toaster <sup>45</sup>
4	Techman224 <sup>46</sup>

---

22	<a href="http://en.wikibooks.org/w/index.php?title=User:Jbond64">http://en.wikibooks.org/w/index.php?title=User:Jbond64</a>
23	<a href="http://en.wikibooks.org/w/index.php?title=User:Jguk">http://en.wikibooks.org/w/index.php?title=User:Jguk</a>
24	<a href="http://en.wikibooks.org/w/index.php?title=User:JoeAxon">http://en.wikibooks.org/w/index.php?title=User:JoeAxon</a>
25	<a href="http://en.wikibooks.org/w/index.php?title=User:Joelf">http://en.wikibooks.org/w/index.php?title=User:Joelf</a>
26	<a href="http://en.wikibooks.org/w/index.php?title=User:Kathleen.wright5">http://en.wikibooks.org/w/index.php?title=User:Kathleen.wright5</a>
27	<a href="http://en.wikibooks.org/w/index.php?title=User:Kernigh">http://en.wikibooks.org/w/index.php?title=User:Kernigh</a>
28	<a href="http://en.wikibooks.org/w/index.php?title=User:LouCypher">http://en.wikibooks.org/w/index.php?title=User:LouCypher</a>
29	<a href="http://en.wikibooks.org/w/index.php?title=User:Mahanga">http://en.wikibooks.org/w/index.php?title=User:Mahanga</a>
30	<a href="http://en.wikibooks.org/w/index.php?title=User:Martinman11">http://en.wikibooks.org/w/index.php?title=User:Martinman11</a>
31	<a href="http://en.wikibooks.org/w/index.php?title=User:Mattisse">http://en.wikibooks.org/w/index.php?title=User:Mattisse</a>
32	<a href="http://en.wikibooks.org/w/index.php?title=User:Midnightcomm">http://en.wikibooks.org/w/index.php?title=User:Midnightcomm</a>
33	<a href="http://en.wikibooks.org/w/index.php?title=User:Mjbmrbot">http://en.wikibooks.org/w/index.php?title=User:Mjbmrbot</a>
34	<a href="http://en.wikibooks.org/w/index.php?title=User:Nathan8225">http://en.wikibooks.org/w/index.php?title=User:Nathan8225</a>
35	<a href="http://en.wikibooks.org/w/index.php?title=User:Norm">http://en.wikibooks.org/w/index.php?title=User:Norm</a>
36	<a href="http://en.wikibooks.org/w/index.php?title=User:Phoenix_Hacker">http://en.wikibooks.org/w/index.php?title=User:Phoenix_Hacker</a>
37	<a href="http://en.wikibooks.org/w/index.php?title=User:Pietrodn">http://en.wikibooks.org/w/index.php?title=User:Pietrodn</a>
38	<a href="http://en.wikibooks.org/w/index.php?title=User:Polyparadigm">http://en.wikibooks.org/w/index.php?title=User:Polyparadigm</a>
39	<a href="http://en.wikibooks.org/w/index.php?title=User:Poop">http://en.wikibooks.org/w/index.php?title=User:Poop</a>
40	<a href="http://en.wikibooks.org/w/index.php?title=User:Pureblade">http://en.wikibooks.org/w/index.php?title=User:Pureblade</a>
41	<a href="http://en.wikibooks.org/w/index.php?title=User:QuiteUnusual">http://en.wikibooks.org/w/index.php?title=User:QuiteUnusual</a>
42	<a href="http://en.wikibooks.org/w/index.php?title=User:Ramac">http://en.wikibooks.org/w/index.php?title=User:Ramac</a>
43	<a href="http://en.wikibooks.org/w/index.php?title=User:Rwww">http://en.wikibooks.org/w/index.php?title=User:Rwww</a>
44	<a href="http://en.wikibooks.org/w/index.php?title=User:Steeler_fan">http://en.wikibooks.org/w/index.php?title=User:Steeler_fan</a>
45	<a href="http://en.wikibooks.org/w/index.php?title=User:Talkie_Toaster">http://en.wikibooks.org/w/index.php?title=User:Talkie_Toaster</a>
46	<a href="http://en.wikibooks.org/w/index.php?title=User:Techman224">http://en.wikibooks.org/w/index.php?title=User:Techman224</a>

- 1 Tinchomaru<sup>47</sup>
- 1 Whiteknight<sup>48</sup>
- 3 Xaque<sup>49</sup>
- 4 Xp54321<sup>50</sup>

---

47 <http://en.wikibooks.org/w/index.php?title=User:Tinchomaru>  
48 <http://en.wikibooks.org/w/index.php?title=User:Whiteknight>  
49 <http://en.wikibooks.org/w/index.php?title=User:Xaque>  
50 <http://en.wikibooks.org/w/index.php?title=User:Xp54321>





# List of Figures

- GFDL: Gnu Free Documentation License. <http://www.gnu.org/licenses/fdl.html>
- cc-by-sa-3.0: Creative Commons Attribution ShareAlike 3.0 License. <http://creativecommons.org/licenses/by-sa/3.0/>
- cc-by-sa-2.5: Creative Commons Attribution ShareAlike 2.5 License. <http://creativecommons.org/licenses/by-sa/2.5/>
- cc-by-sa-2.0: Creative Commons Attribution ShareAlike 2.0 License. <http://creativecommons.org/licenses/by-sa/2.0/>
- cc-by-sa-1.0: Creative Commons Attribution ShareAlike 1.0 License. <http://creativecommons.org/licenses/by-sa/1.0/>
- cc-by-2.0: Creative Commons Attribution 2.0 License. <http://creativecommons.org/licenses/by/2.0/>
- cc-by-2.0: Creative Commons Attribution 2.0 License. <http://creativecommons.org/licenses/by/2.0/deed.en>
- cc-by-2.5: Creative Commons Attribution 2.5 License. <http://creativecommons.org/licenses/by/2.5/deed.en>
- cc-by-3.0: Creative Commons Attribution 3.0 License. <http://creativecommons.org/licenses/by/3.0/deed.en>
- GPL: GNU General Public License. <http://www.gnu.org/licenses/gpl-2.0.txt>
- LGPL: GNU Lesser General Public License. <http://www.gnu.org/licenses/lgpl.html>
- PD: This image is in the public domain.
- ATTR: The copyright holder of this file allows anyone to use it for any purpose, provided that the copyright holder is properly attributed. Redistribution, derivative work, commercial use, and all other use is permitted.
- EURO: This is the common (reverse) face of a euro coin. The copyright on the design of the common face of the euro coins belongs to the European Commission. Authorised is reproduction in a format without relief (drawings, paintings, films) provided they are not detrimental to the image of the euro.
- LFK: Lizenz Freie Kunst. <http://artlibre.org/licence/lal/de>
- CFR: Copyright free use.

- EPL: Eclipse Public License. <http://www.eclipse.org/org/documents/epl-v10.php>

Copies of the GPL, the LGPL as well as a GFDL are included in chapter Licenses<sup>51</sup>. Please note that images in the public domain do not require attribution. You may click on the image numbers in the following table to open the webpage of the images in your webbrowser.

---

<sup>51</sup> Chapter 16 on page 67

1		
2		
3	Original uploader was Steeler fan <sup>52</sup> at en.wikibooks <sup>53</sup> . Later version(s) were uploaded by Adrignola <sup>54</sup> at en.wikibooks <sup>55</sup> .	
4		GFDL
5	Original uploader was Steeler fan <sup>56</sup> at en.wikibooks <sup>57</sup>	
6		
7	Original uploader was Steeler fan <sup>58</sup> at en.wikibooks <sup>59</sup>	
8	Original uploader was Steeler fan <sup>60</sup> at en.wikibooks <sup>61</sup>	
9	Original uploader was Steeler fan <sup>62</sup> at en.wikibooks <sup>63</sup>	
10	Original uploader was Steeler fan <sup>64</sup> at en.wikibooks <sup>65</sup>	
11	Original uploader was Steeler fan <sup>66</sup> at en.wikibooks <sup>67</sup>	
12	Original uploader was Steeler fan <sup>68</sup> at en.wikibooks <sup>69</sup>	
13	Original uploader was Steeler fan <sup>70</sup> at en.wikibooks <sup>71</sup>	
14	Original uploader was Steeler fan <sup>72</sup> at en.wikibooks <sup>73</sup>	
15	Original uploader was Steeler fan <sup>74</sup> at en.wikibooks <sup>75</sup>	
16	Original uploader was Steeler fan <sup>76</sup> at en.wikibooks <sup>77</sup>	
17	Original uploader was Steeler fan <sup>78</sup> at en.wikibooks <sup>79</sup>	
18	Original uploader was Steeler fan <sup>80</sup> at en.wikibooks <sup>81</sup>	
19	Original uploader was Steeler fan <sup>82</sup> at en.wikibooks <sup>83</sup>	

52 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

53 <http://en.wikibooks.org>

54 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3AAdrignola>

55 <http://en.wikibooks.org>

56 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

57 <http://en.wikibooks.org>

58 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

59 <http://en.wikibooks.org>

60 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

61 <http://en.wikibooks.org>

62 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

63 <http://en.wikibooks.org>

64 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

65 <http://en.wikibooks.org>

66 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

67 <http://en.wikibooks.org>

68 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

69 <http://en.wikibooks.org>

70 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

71 <http://en.wikibooks.org>

72 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

73 <http://en.wikibooks.org>

74 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

75 <http://en.wikibooks.org>

76 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

77 <http://en.wikibooks.org>

78 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

79 <http://en.wikibooks.org>

80 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

81 <http://en.wikibooks.org>

82 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>

83 <http://en.wikibooks.org>

20	Original uploader was Steeler fan <sup>84</sup> at en.wikibooks <sup>85</sup>	
----	---	--

---

84 <http://en.wikibooks.org/wiki/%3Awikibooks%3Aen%3AUser%3ASteeler%20fan>  
85 <http://en.wikibooks.org>

# 16 Licenses

## 16.1 GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc.  
<<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed. Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program—to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow. TERMS AND CONDITIONS 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer

network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion. 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work. 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary. 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures. 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee. 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

\* a) The work must carry prominent notices stating that you modified it, and giving a relevant date. \* b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices". \* c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it. \* d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate. 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

\* a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange. \* b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge. \* c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b. \* d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements. \* e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial, or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying. 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

\* a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or \* b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or \* c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or \* d) Limiting the use for publicity purposes of names of licensors or authors of the material; or \* e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or \* f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way. 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work)

from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10. 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so. 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it. 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

## 16.2 GNU Free Documentation License

Version 1.3, 3 November 2008

Copyright © 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed. 0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference. 1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on, the exercise of, one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law. 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program. 13. Use with the GNU Affero General Public License.

authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject (The Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardsly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such. 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version. 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION. 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal ef-

fect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.> Copyright (C) <year>
<name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.
```

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties; any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License. 2. VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies. 3. COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you

must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition of the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document. 4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

\* A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission. \* B. List on the Title

Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement. \* C. State on the Title page the name of the publisher of the Modified Version, as the publisher. \* D. Preserve all the copyright notices of the Document. \* E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices. \* F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below. \* G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice. \* H. Include an unaltered copy of this License. \* I. Preserve the section Entitled "History". Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence. \* J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission. \* K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein. \* L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles. \* M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version. \* N. Do not retitle any existing section to be Entitled "Endorsements" or to conflict in title with any Invariant Section. \* O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties—for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add an-

other; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version. 5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled "History" in the various original documents, forming one section Entitled "History"; likewise combine any sections Entitled "Acknowledgements", and any sections Entitled "Dedications". You must delete all sections Entitled "Endorsements". 6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document. 7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate. 8. TRANSLATION

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work. 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL. 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

\* a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or \* b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

\* a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License. \* b) Accompany the object code with a copy of the GNU GPL and this license document.

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title. 9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it. 10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

\* a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License. \* b) Accompany the Combined Work with a copy of the GNU GPL and this license document. \* c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document. \* d) Do one of the following: o 1) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source. o 2) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version. \* e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4e, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document. 11. RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing. ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

Copyright (C) YEAR YOUR NAME. Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with ... Texts." line with this:

with the Invariant Sections being LIST THEIR TITLES, with the Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

\* a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License. \* b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

## 16.3 GNU Lesser General Public License

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below. 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.