FahMon Version 2.3.99.1
User Guide

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Contents

1 Introduction

This section gives an overview of FahMon, what it is and is not, and what it it might be used for.

1.1 What is FahMon?

FahMon is an open-source tool (GPL license) that allows you to quickly check the progress of your Folding@Home client (or clients if you have several), avoiding you having to open different files and/or to go to the Internet (for example to know how much your current work unit is worth). Other monitoring tools exist (such as Electron Microscope, FahSpy and InCrease), so if you don't like FahMon, have a look at them!

FahMon is entirely coded in C++ and uses the wxWidgets library, which allows FahMon to exist both for Linux, Windows and OS X. It is designed to be really easy to use, and you should thus not encounter any major problems.

1.2 What is FahMon not?

FahMon is not a Folding@Home client manager, it is designed solely to monitor clients.

1.3 What can FahMon be used for?

FahMon can be used to simply check how far along your clients are on their current WUs. It can also track the performance of clients on different WUs thanks to its benchmark database. You can use FahMon to publish client stats to the web for remote monitoring too.

1.4 Licenses

FahMon is licensed under the GNU General Public License; a copy of this license is included in the file `COPYING`. FahMon also includes wxCurl which is licensed under the wxWidgets license which can be found here `http://www.wxwidgets.org/about/newlicen.htm`

For more information on the licenses, please visit the `opensource.org` website.

2 Installing FahMon

This section describes how to install FahMon.

2.1 Windows

Windows users can either download a zipped version of FahMon, or as an installer. The two are identical except for the method of installation. The installer will create Start menu entries for you and install itself into `%PROGRAM FILES%`. The zipped version can simply be extracted wherever you want. You will need to create your own shortcuts etc. for the zipped version.

2.2 Linux

2.2.1 Packages

If a package exists for your Linux distribution on the download page, it is easiest to use that. Note that some distributions maintain FahMon as part of their standard software repositories (Arch Linux for example does this), so it is often worthwhile checking your package manager to see if someone has done the hard work for you already.

2.2.2 Compiling from source

Compiling from source is *harder* than installing from a pre-built package, however it is not *that* hard.

Prerequisites

- A C++ compiler. gcc-c++ (g++) is the usual compiler for most Linux distributions.
- The unicode wxGTK libraries and their development headers. Version 2.8.0 is the minimum required.
- libcurl. This is usually installed when you install curl itself. Some distributions also appear to require that you install the development headers too.

The simplest way to install the above software is to open your package manager and search for the software to install if you don't already know the package names.

The following table lists the package names of the required components form a number of common distributions.

Component	Ubuntu	Fedora	PCLinuxOS
gcc-g++	g++	gcc-c++	gcc-c++
wxGTK	libwxgtk2.8-dev	wxgtk-devel	wxgtk2.8-devel
libcurl	libcurl3, libcurl4-openssl-dev	libcurl, libcurl-devel	libcurl3, libcurl3-devel

Compiling You normally only need to issue 3 commands after navigating to the source folder in a terminal

```
./configure
```
Optionally you can include a prefix parameter, which affects the install location. If this doesn't complete successfully, check the errors, which will usually be about a missing package. If it worked, continue:

```
make
```
This will take a while as it compiles the source. No errors should occur. Ignore any warnings. You now need to log in as root to install. Different distributions have different ways of achieving this. So either:

```
sudo make install
```
This will work for ubuntu and other sudo-enabled distributions and will prompt you for you sudo password.

OR

```
su -c "make install"
```
This will work for non-sudo distributions and will prompt you for your root password.

Depending on your system configuration you may find that you also need to run ldconfig in order for FahMon to find the new libwxcurl library. To do this either run

```
sudo ldconfig
```

OR

```
su -c "ldconfig"
```

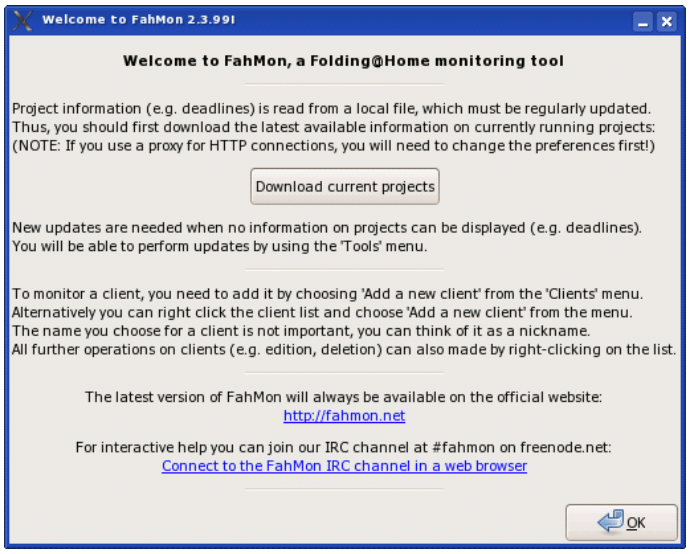
2.3 OS X

The package for OS X is in the form of a zipped universal binary. Installation is as simple as extracting the archive and copying FahMon into your applications folder.

3 Using FahMon

3.1 First launch

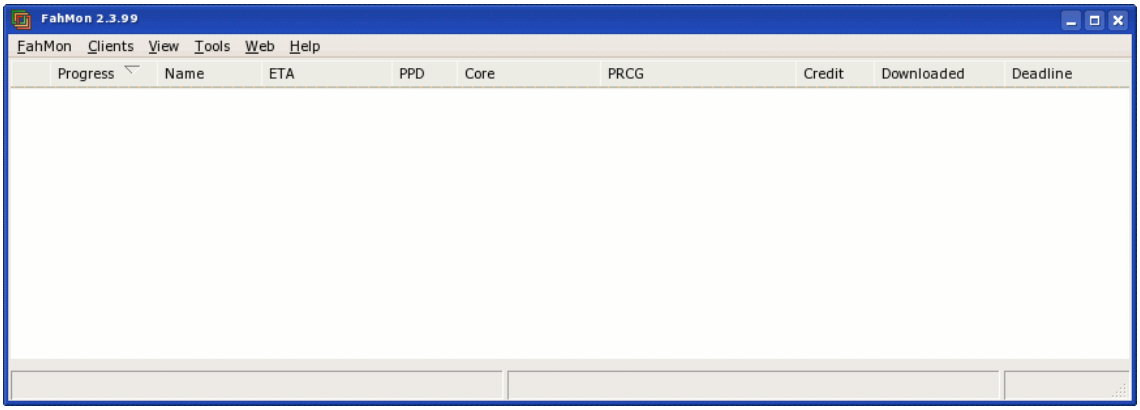
When you launch FahMon for the first time, you should get a dialog like this one:



It suggests that you should download the new projects definition from the Folding@home website. This definition contains information required by FahMon to display deadlines, calculate points-per-day etc. Beware that if you need to use a proxy for HTTP connections, you should not download the definition here as it will fail; you will have to first change the proxy settings in preferences, then update the project definition.

3.2 GUI overview

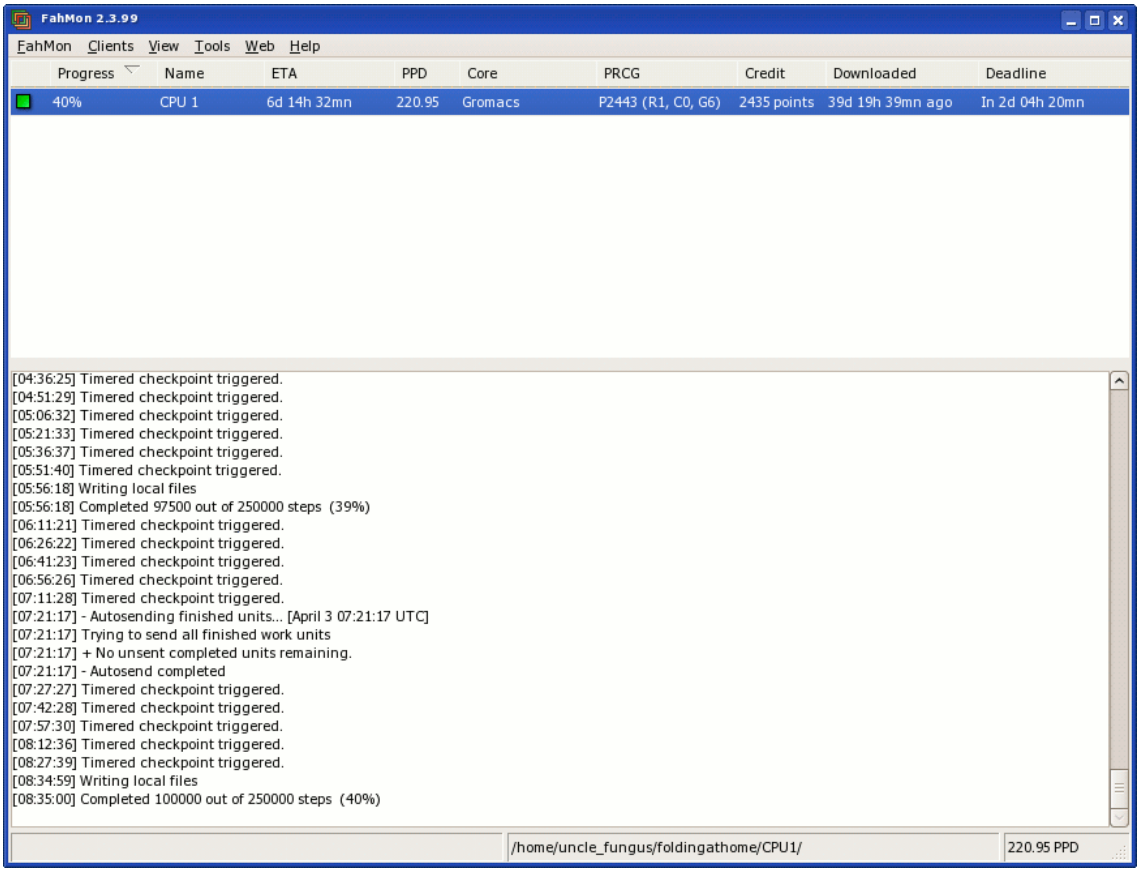
The default layout for FahMon is that of a simple list of clients. This is laid out in a tabular format with various pieces of information shown in columns.



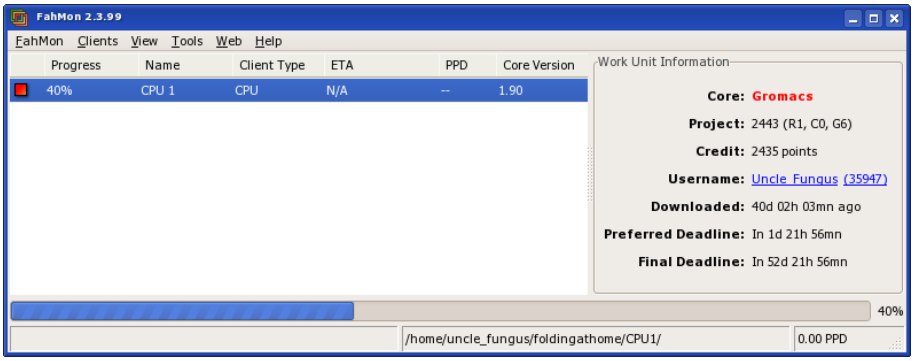
The columns that are displayed can be altered by right-clicking the column header and selecting the columns you wish to appear in the pop-up menu. Altering the order of columns is not supported. Various actions can be performed on the clients by right-clicking their entries in the client list. This includes editing details, and individually enabling/disabling monitoring of a particular client. Double-clicking on an entry will open up your file-manager at the location FahMon is monitoring for a given client.

The statusbar at the bottom of the FahMon window is split into three sections. The left-most will display hints for various menu items, as well as warning you about any potential problems that wouldn't normally be apparent. The middle section will display the monitored location of the currently selected client. If you are monitoring via ftp or HTTP, the username and password will be masked. The right-most section will display the total calculated PPD from all monitored clients.

By default FahMon does not display the contents of FAHlog.txt for any clients. You can enable this display from the view menu which will expand the layout and show the log for the current client below the client list.



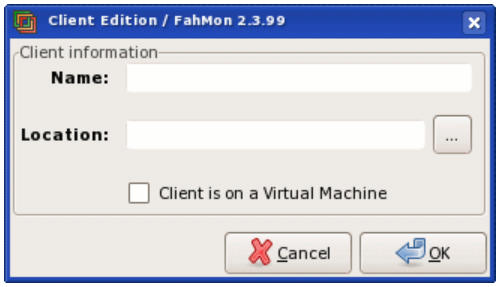
An alternative layout is available and will be familiar to users of previous versions of FahMon. To enable this select *Show/Hide WU Info Panel*. This will create a panel on the right-hand side of the client-list which shows various pieces of information based on the currently selected client. In this layout a progress bar for the current client is shown beneath the client list.



3.3 Adding clients

Adding clients for FahMon to monitor can be accomplished in two different ways. The first, which is simplest if you have machines on a local network is to drag the folder in which FahMon should monitor onto the client list. The second way is either right-click the client list and select *Add a new client*, or select the same from the *Clients* menu.

However you choose to add a client, the *Client edition* dialog will appear.



Here is where you tell FahMon where the new client is located. If you dragged-and-dropped your new client, this will be filled in for you. You also need to choose a name for each client you add. This name can be anything you want, it's just like a nickname for the client. Most people tend to use the computer name and client type or number e.g. *Machine1 - GPU1*.

Clients being monitored on remote machines may be accessed by a number of different methods. If the machines are accessible via Windows Network Shares (SMB/SAMBA) then you can use their UNC path as the monitoring location on Windows machines e.g. \\machine1\Folding1. If you are using Linux/OS X you will need to mount these into your filesystem as there is no facility to access SMB shares directly in FahMon.

Remote clients may also be accessed via FTP or HTTP if available. Monitoring these clients is as simple as entering the correct URI in the format *http://username:password@server/path/to/client/* or *ftp://username:password@server/path/to/client/*

If you are monitoring a client running as a guest inside a Virtual Machine such as VMWare, it is recommended that you check the box for this on the client edition dialog. This will enable some extra heuristics to account for the fact that VMWare guests often have trouble keeping their clock synchronised with the host machine. Leaving this box unchecked for a VM guest may result in erroneous *Hung* or *Inactive* states being triggered. This heuristic is a workaround and is not 100% reliable; to improve monitoring of VM guests it is recommended that they regularly synchronise with an NTP server to eliminate asynchrony with the host machine clock.

Note: On Windows systems running the v6 Systray clients, the location you need to enter is the folder inside "`Documents and Settings\UserName\Application Data\Folding@home\CLIENT`" (XP) or "`Users\UserName\AppData\Roaming\CLIENT`" (Vista).

Once a client has been added FahMon will start monitoring it and will populate the various fields in the client list with information as it becomes available.

3.4 The monitoring process

The default behaviour for FahMon is to automatically reload any *local clients* (local being defined as anything in the current filesystem, or accessible by UNC) every 5 minutes, and any *internet clients* (via ftp or HTTP) every 10 minutes. These intervals can be altered if required.

Clients can also be reloaded manually by either right-clicking a client and selecting *Reload client* or selecting the same from the *Clients* menu. The *Clients* menu also offers the option to reload all clients. Choosing either of these options forcibly reloads any clients regardless of any other monitoring options (except for a client being disabled).

The monitoring process relies on a number of files being available for FahMon to read:

- **FAHlog.txt**
  This most obvious source of data and is parsed for current progress, client status and is used to calculated the frame count.
- **unitinfo.txt**
  This is used to obtain current progress when unobtainable from FAHlog.txt.
- **queue.dat**
  This is parsed for information about the current WU including PRCG (Project, Run, Clone, Generation), and assignment specific data.
- **work/logfile_xx.txt**
  This file is parsed for current core version. On Linux this information might not be available due to the file-permissions set by the core.

3.5 Client status

The current status of a client is denoted by a small coloured square at the left of each client in the list.

There are 6 different colours:

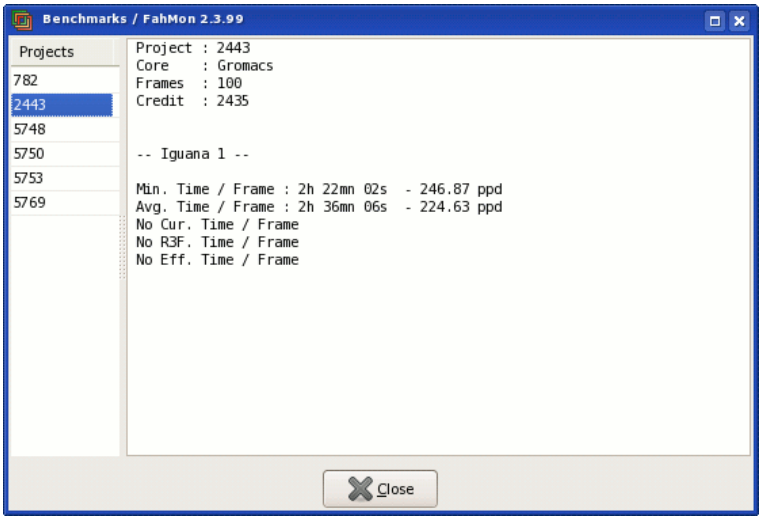
- **Black**
  FahMon is unable to access to the directory where this client is located.

- **Red**
  The client is currently stopped.
- **Orange**
  The client is currently paused.
- **Yellow**
  The client seems to be inactive or in an unknown state. The former happens most of the time when the elapsed time since the last completed frame is too high (this happens if another process is using the processor). An unknown state occurs when FahMon does not have sufficient information to decide whether the client is running or not. Check the Messages Window to find out what is happening.
- **Blue (optional)**
  The client has been flagged as having an asynchronous clock, this state is also triggered when the monitoring machine passes over 00:00 local time. The basic meaning of this state is that the client is still working, but you *may* need to check on it.
- **Green**
  Everything is OK, FahMon should display all information about this client, as long as the project database is up to date.

3.6 Additional features

3.6.1 Benchmarks database

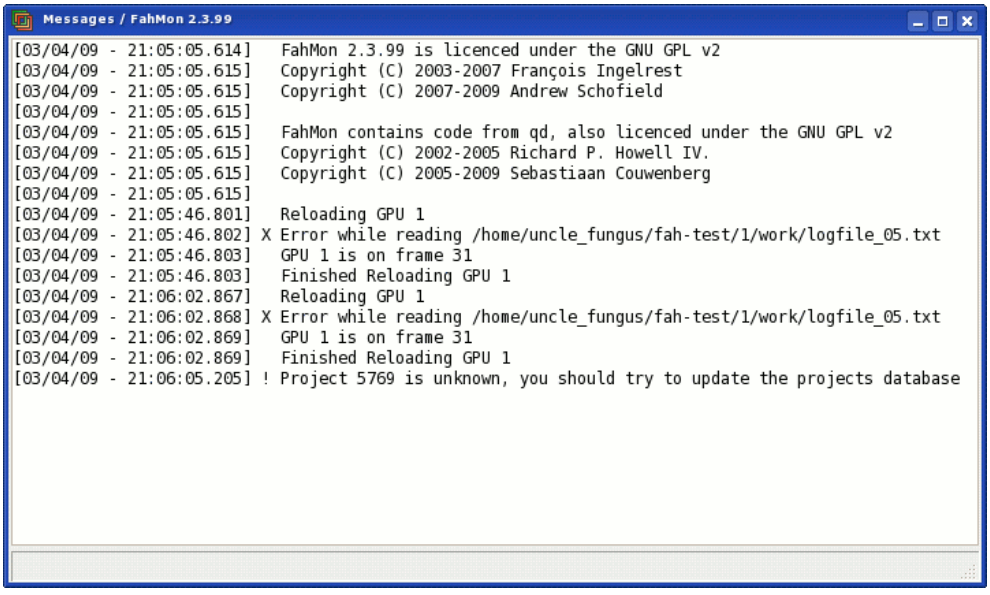
FahMon keeps a record of the performance of all your WUs on each machine that is monitored. These data are stored in the benchmarks database which shows you the PPDs for each machine that has completed a given project. For clients currently running, you can see the result from all 5 PPD calculation algorithms; for stopped clients you can only see the minimum and average frame times.



3.6.2 Message window

FahMon's message window is used to log various error messages and other important status messages. This window is useful if clients aren't reloading properly as this can usually tell you why. If logging of non-error messages is enabled the message window will also log FTP transactions, and provide info on reloading status etc.

The message windows also serves to provide a copy of the copyright and licence notice (this cannot be removed).



3.6.3 Web links

A number of useful web links are provided on the *Web* menu. These are as follows:

- **My Stats**
  This links directly to your Stanford stats page using the username and team number from the currently selected client.
- **Jmol**
  This links to `http://www.jmol.org/` to provide visualisation data for the project running on the currently selected client (relies on submissions)
- **fahinfo.org**
  This links to `http://fahinfo.org/`, and alternative project data site that automatically keeps up-to-date data on every project released.
- **F@H Website**
  This links to `http://folding.stanford.edu/`, the official Folding@home website.
- **Folding Forum**
  This links to `http://foldingforum.org/`, the official Folding@home support forum.
- **Projects Summary**
  This links to `http://fah-web.stanford.edu/psummary.html` which shows the current active project list
- **Servers status**
  This links to `http://fah-web.stanford.edu/serverstat.html` which shows the current Folding@home server statuses.

3.6.4 Web export

FahMon has the ability to automatically export up to 3 formatted web-pages based on the data obtained from the clients it is monitored. By default these are 3 specific types of output, but since the output is governed by a templating system, completely unique output is possible.

FahMon provides 3 templates; A fancy, Javascript powered page designed to mimic the FahMon interface from version 2.3.2; A simple, low-bandwidth formatted table; and a simple plain text template for easy access via ssh.

The web output feature of FahMon is activated from the preferences dialog and is able to automatically upload the pages to an ftp server if provided with a valid URI.

4 Configuring FahMon

This section describes how to configure FahMon from the preferences dialog, and also explains some of the more advanced features.

4.1 General

- **Enable system tray icon** *Default - disabled*
  Place an icon in the system tray to which FahMon will minimise. This also provides a right-click menu to access the preferences and benchmarks dialogs in addition to a tooltip showing pertinent information.
- **Collect .xyz files** *Default - disabled*
  These files are generated by the client and allow third-party tools to display proteins in 3D (see Jmol website for example). If you select this option, the .xyz files will automatically be collected in a directory named *xyz*.
- **Auto update projects database when needed** *Default - enabled*
  When a new unknown project is downloaded by a monitored client, you will have to update the projects database to obtain information about this project. If you select this, FahMon will try to automatically download the new definitions when needed.
- **Always list inaccessible clients last** *Default - enabled*
  Make sure that however the clients are sorted, inaccessible (black) clients always get listed last.
- **Start minimised** *Default - disabled*
  Start FahMon minimised - usually used in conjunction with the system tray icon.
- **Check for FahMon updates at startup** *Default - disabled*
  Automatically polls the FahMon website at every launch to see if a newer version is available.

4.2 Monitoring

- **Auto reload clients** *Default - enabled*
  If you select this option, FahMon will automatically reload the monitored clients at the desired frequency.
- **Use experimental reload system (local only)** *Default - disabled*
  Checks the file modification times every 10 seconds and only proceeds to reload the client if the log has changed. This reduces processing load, and allows more "real-time" updates of client states. It is current experimental as it can cause some clients to fail to update

at all if they are being accessed over a network. Windows (SAMBA) shares seem to be affected by this as the modification times sometimes don't seem to update as they should. NFS shares aren't affected.

- **Local client reload interval (mn)** *Default - 5*
  Reload all local (Current filesystem and UNC paths) clients with this time interval.

- **HTTP/FTP client reload interval (mn)** *Default - 10*
  Reload all HTTP/FTP clients with this time interval. This is also the interval at which web output is created.

- **Reload clients in series** *Default - disabled*
  This will perform reloads in the same thread instead of created a new thread for each client. This consumes slightly less memory at the expense of marginally slower reloads.

- **Display dates as** *Default - Time left*
  This allows you to change the format used to display the ETA and deadline information.

- **Calculate PPD based on** *Default - Last 3 frames*
  Allows you to choose which algorithm is used to display the PPD in the main window. The default behaviour is "Last 3 frames", which calculates an average PPD based on a rolling 3 frame average. "All frames" uses a stored database of 255 previous values. "Last frame only" gives the instantaneous PPD. "Effective rate" takes into account client downtime and projects this forward to predict the final ETA.

- **Ignore asynchronous clocks** *Default - disabled*
  Prevents clients whose local clocks are not perfectly synced with the monitoring machines clock from turning orange/yellow. When this option is enabled, the clients turn blue and a message is noted in the log.

4.3 Networking

- **Use a proxy for HTTP connections** *Default - disabled*
  Select this option if you need to use a proxy for HTTP connections.

- **Proxy requires authentication** *Default - disabled*
  Select this option if you need to use authentication with your proxy. Beware that once saved, the password will not be directly human readable from the disk, but an attacker will easily be able to retrieve it.

- **Use a proxy for FTP connections** *Default - disabled*
  Select this option if you need to use a proxy for HTTP connections.

- **Proxy requires authentication** *Default - disabled*
  Select this option if you need to use authentication with your proxy. Beware that once

saved, the password will not be directly human readable from the disk, but an attacker will easily be able to retrieve it.

4.4 Advanced

- **Use the following settings for new project downloads**
  Default - http://fah-web.stanford.edu/psummary.html
  This setting allows you to alter the online data source for project information. Unticking this box will result in default values being used.

- **Use a local file for project data** *Default - disabled*
  Uses a locally stored version of psummary.html (.html extension is important) to update the project database. This is useful for times when psummary isn't up-to-date with projects being assigned, like is the case with Win-SMP WUs.

- **Log error messages only** *Default - enabled*
  Ignore any non-error messages in the log. This will not prevent the Copyright and Licence notice from being displayed

4.5 System

- **Web Browser (Linux Only)** *Default -*
  You should specify the web-browser you wish to use for opening web-links here. This replaces the old method of exporting the browser as an environment variable used in previous versions of FahMon.

- **File Manager** *Default - Platform dependent*
  Select the file manager you wish to use to open client folder with. The default setting for Windows is "Windows Explorer", for Linux it is "Konqueror".

- **File Manager Command** *Default - Platform dependent*
  Alter the command used to execute your file manager.

- **Manually set timezone to UTC + ...** *Default - disabled*
  Allows you to override the timezone that is automatically detected. This provides a workaround for the bug in wxwidgets that causes DST timezones to be reported incorrectly, which in turn causes state detection, ETA calculation etc to be incorrect or fail. Only whole hours can be selected at present.

4.6 WebApp 1

The names of the components on this page reflect the default behaviour of FahMon, but does not mean that this behaviour needs to be adhered to if creating custom templates.

- **Export *** *Default - Disabled*
  These allow FahMon to create a formatted web page based upon a simple templating system. Each of these 3 boxes will allow a separate page to be generated. These pages can either be saved to a local file, or uploaded via FTP to a remote web server. For FTP upload, a correctly formatted URI needs to be entered in the form *ftp://username:password@server/path/to/upload/file.html*.

4.7 WebApp 2

The names of the components on this page reflect the default behaviour of FahMon, but does not mean that this behaviour needs to be adhered to if creating custom templates.

- **Custom * Template** *Default - Disabled*
  These configure the template files FahMon will use to generate any enabled web outputs from. For information on templating, see the `TEMPLATE_SYNTAX` file.

5 Contact and help

Reporting bugs in FahMon and its documents is appreciated. For bug reports, suggestions, or anything else about FahMon that you think is important, feel free to use our ticket tracking tool at:

FahMon support `http://trac.fahmon.net/`

Help may be available on irc, depending on the time of day at:

`irc.freenode.net #fahmon`

Support is also available through the Folding forum 3rd party contributions section:

`http://foldingforum.org/viewforum.php?f=14`

A FahMon Commands Overview

FahMon has a number of command-line options, however these are for advanced users only.

- `-v, --version`
  Displays the current version number.
- `-s, --stress`
  Run FahMon in stress-test mode. This is meant only for trying to replicate reloading bugs by forcibly reloading all clients every 0.5 seconds.
- `-l, --local` *Windows only*
  This option tells FahMon to store all settings in it's own folder, rather than using the standard %APPDATA% location.