

IFI Fossil Interface (IFI) for Emacs

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This manual (last modified Wed 8 Sep 2021 11:13:30 BST, base 21c953800f9) documents IFI Fossil Interface (IFI) version 0.1; part of its *pre-alpha* development phase.

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1 Introduction

Fossil (<https://fossil-scm.org>) is a distributed software configuration management (SCM) system with built-in HTTP server and web interface (<https://fossil-scm.org/home/doc/trunk/www/webui.wiki>).

IFI provides two facilities for working with Fossil in Emacs; an enhanced shell buffer (see Section 3.1 [**Fossil shell** buffers], page 5) employing Fossil’s built-in shell (<https://fossil-scm.org/home/help?cmd=shell>), and a checkouts buffer (see Section 3.2 [The **Fossil checkouts** buffer], page 6) providing an overview of the current state of all Fossil checkout directories.

The enhanced shell facility may be loaded and used independently of the checkouts buffer facility, but the reverse is not possible. The checkouts buffer is dependent on one or more enhanced shells for carrying out Fossil commands. This is by design (see Chapter 5 [Design features], page 8).

IFI does not interfere with, and does not replace, Emacs’ generic version control interface VC (see Section “Version Control” in `emacs`), when Venkat Iyer’s Fossil backend is installed:

<http://chiselapp.com/user/venks/repository/emacs-fossil>

2 Getting started

2.1 Obtaining IFI

Not surprisingly, IFI's development home is a Fossil repository known as 'HEmP':

```
https://software.sebyte.me/hemp
```

The copy of HEmP hosted at the above URL is known as 'canonical HEmP'. There you will find instructions on how to clone the repository as a whole, as well as a link to the latest IFI release tarball.

N.B. HEmP includes *multiple* Emacs projects. If you decide to clone the repository, pay attention to the 'Anonymous quick start' instructions found in file `home.md` at the top level of branch `trunk`, or at the above URL.

2.2 Installation

Installation is the same whether you clone HEmP or download and extract a release tarball (see Section 2.1 [Obtaining IFI], page 2). In either case, the directory containing IFI's source files:

```
ifi-ckout.el
ifi-custom.el
ifi-lib.el
ifi-loaddefs.el
ifi-shell.el
ifi-x.el
```

must be added to Emacs' `load-path` before you issue the command:

```
M-x load-library RET ifi-loaddefs RET
```

At this point, the two IFI entry point commands:

```
M-x fossil-shell
M-x fossil-checkouts
```

are available but the set of source files that define each command have not been loaded (see Section "Autoload" in `elisp`). To load the source files and begin using IFI, simply issue one of the above two commands. (See Section 3.1 [`*Fossil shell*` buffers], page 5, or see Section 3.2 [The `*Fossil checkouts*` buffer], page 6).

To make the two IFI entry point commands available at start-up, add the following line to your `.emacs` init file:

```
(require 'ifi-loaddefs)
```

If you prefer to load all IFI source files at start-up (rather than on first use), add this line to your `.emacs` init file instead:

```
(require 'ifi-ckout)
```

This is sufficient because, as described in the introduction (see Chapter 1 [Introduction], page 1), the checkouts buffer facility depends on the enhanced shell facility and will ensure the shell facility is loaded.

Finally, you may load only the source files required by the enhanced shell facility, and ensure the checkouts buffer facility is available when it is needed, by adding these two lines to your `.emacs` init file:

```
(require 'ifi-shell)
(require 'ifi-loaddefs) ; make 'M-x fossil-checkouts' available
```

As always, the time it takes to load Emacs Lisp source files can be reduced by byte compiling them beforehand (see Section "Byte Compilation" in `elisp`). Visit the directory containing the

IFI source files in Dired and issue command `C-u 0 M-x byte-recompile-directory RET`. The position of point is unimportant. IFI should compile cleanly in GNU Emacs version ≥ 26.3 and all later versions (see Section 2.4 [Compatibility], page 3).

2.3 Documentation

This manual is included in release tarballs and is available online in the following formats:

HTML (Fossilized)

`https://software.sebyte.me/hemp/doc/ifi/doc/`

HTML (Standalone)

`https://software.sebyte.me/hemp/doc/ifi/doc/ifi.html`

PDF

`https://software.sebyte.me/hemp/doc/ifi/doc/ifi.pdf`

Plain text

`https://software.sebyte.me/hemp/doc/ifi/doc/ifi.text`

Info

`https://software.sebyte.me/hemp/doc/ifi/doc/ifi.info`

N.B. The online editions of the manual document IFI's *development* version and may differ substantially from the editions included in a release tarball, especially during its early development phases. (Current phase: pre-alpha).

The easiest way to browse the Info manual in Emacs (in the absence of an installation script) is to load Emacs library `Dired Extra`. (See `dired-x`). With `Dired Extra` loaded, simply visit the `doc/` directory in Dired, position point on file `ifi.info` and type `Shift-I`.

2.4 Compatibility

IFI development began in GNU Emacs 26.3 and is being continued in version 27.2. It should byte-compile cleanly, i.e. without warnings, in Emacs 26.3 and all later versions.

IFI has not been tested in earlier versions of GNU Emacs, nor on platforms other than GNU/Linux. Compilation bug reports are welcome. See Section 2.6 [Contributing], page 3.

2.5 Staying informed

Stay informed about IFI development by signing up for email alerts at canonical HEmP:

`https://software.sebyte.me/hemp/subscribe`

You may choose between announcements, checkin (commit) alerts, forum posts, forum edits, ticket and wiki page alerts.

N.B. HEmP includes *multiple* Emacs projects. *It is not possible to subscribe to IFI alerts only.* If desired, you may sign up anonymously, i.e. without a named user account.

2.6 Contributing

Contributions to IFI development should be made at canonical HEmP. There you can post to the forum and open new tickets, anonymously if you prefer, i.e. without a named user account.

2.6.1 Canonical HEmP forum

The canonical HEmP forum is for general queries, feedback, policy deliberation, simple patches e.t.c.

`https://software.sebyte.me/hemp/forum`

N.B. HEmP includes *multiple* Emacs projects. The title of new forum posts discussing IFI development should therefore begin with IFI: . For example:

IFI: Issue with multiple `*Fossil shell*` buffers

2.6.2 Patches

Creating an ordinary patch file with Fossil is simple:

```
$ fossil diff > file.patch
```

When posting a patch to the forum, include in the title of your post the 10-digit artifact hash of the checkin/commit against which the patch was made. For example:

```
IFI: Bugfix patch against 632729f34f
```

If you have cloned HEmP, the 10-digit artifact hash may be found either by examining the timeline (look for the `*CURRENT*` entry) or by issuing Fossil's `info` command like so:

```
$ fossil info current | grep ^hash: | cut -b 15-24
```

If you downloaded and extracted an IFI release tarball, the 10-digit artifact hash may be found in the `VERSION` file.

Note that it is generally best to upload a patch to a pastebin and include a link to the paste in the forum post, rather than including the patch in the forum post itself.

2.6.3 Fossil bundles

For more substantial contributions, the `diff` command may be inadequate since it cannot record file renamings, file deletions, tag operations, checkin/commit messages e.t.c. In this case, it is better to clone HEmP, create and work on a development branch, e.g. `ifi-fixes`, and then send a Fossil bundle (<https://fossil-scm.org/home/help?cmd=bundle>), which you would generate like so:

```
$ fossil bundle export --branch ifi-fixes ifi-fixes.bundle
```

Internally, Fossil stores state information in SQLite database files, and a Fossil bundle is no different; it's an SQLite database file. When attaching a Fossil bundle to an email, mime-type `application/vnd.sqlite3` should therefore be used.

Enquire in the forum for an email address or use the Fossil administrator address `fossil` at domain `sebyte.me`).

N.B. For developers used to making pull or merge requests, no such facility exists in the Fossil ecosystem. Bundles are a powerful alternative.

2.6.4 Canonical HEmP checkin/commit access

The first step towards gaining checkin/commit access to canonical HEmP is to create a named user account and participate in IFI development using the forum.

To create a named user account, visit the canonical HEmP login page (<https://software.sebyte.me/hemp/login>) and click the button labelled 'Create A New Account'.

2.6.5 HEmP tickets

The canonical HEmP ticket facility is for *formal* bug reports and feature requests and should generally follow discussion in the forum.

```
https://software.sebyte.me/hemp/ticket
```

N.B. HEmP includes *multiple* Emacs projects. The one line ticket summary should therefore begin with IFI: . For example:

```
IFI: Compilation error under Emacs 24.2
```

3 IFI buffers

3.1 *Fossil shell* buffers

Once IFI has been installed (see Section 2.2 [Installation], page 2), you may start a Fossil shell (and enter a `*Fossil shell*` buffer) by issuing command `M-x fossil-shell RET`. (In fact, `M-x fos-sh RET` is usually sufficient). This will start a `fossil shell` process in whichever directory is current when you issue the command. (See Section “File Names” in `emacs` for a brief explanation of `default-directory`).

Let’s suppose that you are visiting your home directory in `Dired` when you issue the command `M-x fossil-shell RET`. Let’s suppose also that your home directory is *not* a Fossil checkout. The `*Fossil shell*` buffer will, not surprisingly, look like this:

```
fossil (no repo)>
```

The shell is waiting for you to start issuing Fossil commands. For example:

```
fossil (no repo)> info
config-db:    /home/sebyte/.fossil
fossil:      /home/sebyte/fossil/bin/fossil
version:     2.17 [de417fb73c] 2021-08-06 07:58:18 UTC
fossil (no repo)>
```

However, note the buffer’s header line in which a large red dot is followed by the abbreviated form of the current directory. Note also what happens when you type a comma immediately after the Fossil prompt; the minibuffer prompt reads `Shortcut`. (See Section 4.2 [IFI shortcuts], page 7). Let’s suppose a checkout of a newly initialised Fossil repository is found at `~/fossil/sandpit/foo` and that you type `cd RET` and enter this checkout directory. The `*Fossil shell*` buffer would now look something like this:

```
fossil (no repo)> info
config-db:    /home/sebyte/.fossil
fossil:      /home/sebyte/fossil/bin/fossil
version:     2.17 [de417fb73c] 2021-08-06 07:58:18 UTC
fossil (no repo)> [ cd ~/fossil/sandpit/foo/ ]
fossil (unnamed)>
```

Behind the scenes, the previous `fossil shell` process has been killed, the current directory has changed and a new `fossil shell` process has been started. The (fake) shell command `cd ~/fossil/sandpit/foo/` (delimited by brackets) records where in the sequence of commands the change of directory occurred.

Note also the changes to the buffer’s header line. Because the new `fossil shell` process is running within a Fossil checkout, the large red dot is now followed by the abbreviated form of the current directory, the name of the project, the name of the current branch, a count (in brackets) of how many checkins/commits the checkout is behind the branch head and, finally, the default remote sync URL of the Fossil repository to which the checkout belongs. (See Section 4.1 [IFI headlines], page 7).

Now let’s return to your home directory in `Dired` and issue the command `M-x fossil-shell RET` again. We find ourselves in the same `*Fossil shell*` buffer we were in before, but a second change of directory has taken place, returning us to where we were:

```
fossil (no repo)> info
config-db:    /home/sebyte/.fossil
fossil:      /home/sebyte/fossil/bin/fossil
version:     2.17 [de417fb73c] 2021-08-06 07:58:18 UTC
fossil (no repo)> [ cd ~/fossil/sandpit/foo/ ]
```



```
fossil (unnamed)> [ cd ~/ ]  
fossil (no repo)>
```

The `*Fossil shell*` buffer has been reused because user-customisable variable `ifi-shell-use-multiple-buffers-p` is bound to `nil` by default. Had you enabled use of multiple shell buffers before issuing the `M-x fossil-shell RET` command the second time, you would have found yourself in a new shell buffer, named `*Fossil shell*<2>`.

There's no limit on how many shell buffers/processes may be alive at once but a directory may only have a single `*Fossil shell*` buffer associated with it at any one time.

3.2 The `*Fossil checkouts*` buffer

Content goes here.

3.3 The `*Fossil timeline*` buffer

Content goes here.

3.4 The `*Fossil help*` buffer

Content goes here.

4 Primary features

Content goes here.

4.1 IFI headlines

Content goes here.

4.2 IFI shortcuts

Content goes here.

5 Design features

Content goes here.

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