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# PTools

## Perl Tools and Applications

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### 1 PTools

PTools is a collection of related library modules and applications written in Perl. It includes:

- A framework for writing (mostly) command-line applications, with support for command-line arguments, logging, configuration files, and testing.
- The PFC parser tools: a library of functional combinators, a parser generator and a graphical grammar “explorer”.
- The CF2 configuration language and compiler.
- A collection of miscellaneous library modules.

PFC and CF2 are documented separately. This document is a work-in-progress which is intended to cover the remaining elements.

#### 1.1 Installation

Unpacking the distributed tar file creates a directory `ptools-version`. This documentation uses the name *topdir* to refer to the full pathname of this directory.

All of the tools are accessed via the single `ptools` command. This can be executed by using the full pathname:

```
→ topdir/Perl/ptools
```

or by including `topdir/Perl` in the path:

```
→ PATH=$PATH:topdir/Perl  
→ ptools
```

or by symlinking the `ptools` command to a directory in the path:

```
→ ln -s topdir/Perl/ptools ~/bin  
→ ptools (assuming ~/bin is in your $PATH)
```

Do not copy the `ptools` file itself - it uses its own location to locate the rest of the package.

The installation can be checked by running the basic unit tests:

```
→ ptools test
```

This should report “all tests OK”.

For a full list of commands:

```
→ ptools help
```

For a full list of options to a command:

```
→ ptools cf2 help -v  
→ ptools test help -v  
...
```



The following sections are still to be done:

### 2 The PTools Framework

#### 2.1 Creating a New Project

#### 2.2 Command-Line Options

#### 2.3 Logging

#### 2.4 Configuration

#### 2.5 Testing

#### 2.6 Documentation

#### 2.7 Publishing

### 3 Other Modules

#### 3.1 Reading & Writing Files

#### 3.2 Shell Command Execution

#### 3.3 Transforming File Hierarchies

#### 3.4 ANSI Control Sequences

#### 3.5 Converting Mac documents to PDF

#### 3.6 Remote File Sync

#### 3.7 Time/Date Formatting & Parsing

#### 3.8 Mac Keychain Utilities

#### 3.9 HTML Element Creation

#### 3.10 PGP Wrappers

## Appendix A Change Log

### current 18/10/23:

- ptools: `publish` tool for public release
- ptools: fix unicode bug when writing to stdout
- cf2: major documentation update
- cf2: support duplicate assignments with the same value
- cf2: remove list merge to support commutative block merge
- cf2: support for conditionals
- cf2: support for external functions: `defined`, `downcase`, `fail`, `join`, `max`, `topdir`, `typeof`, `upcase`, `warn`
- cf2: support for macros
- cf2: syntax change: `+>` to `~>`
- cf2: change `include` to `import`
- cf2: support for external mutations: `~(f)>`
- cf2: various bug fixes
- cf2: evaluation debugger (`-Deval`)

### v2.4 13/9/23:

- cf2: added support for `private` resources
- cf2: added expressions
- cf2: always display `=>` instead of `+>` in compiled output
- cf2: distinct `number/string/bool` types
- cf2: `-o` options supports multiple output files & resource paths
- cf2: reads pgp-signed sources
- cf2: fixed various taint issues

### v2.3 7/9/23:

- cf2: replaced parse-time `import` with eval-time `include`
- cf2: added support for pgp-signed include files
- cf2: small bug/warning fixes

### v2.2 28/8/23:

- cf2: added keepass support
- ptools: added pgp module
- ptools: added keepass module
- ptools: rewritten keychain module