## NAME

clisp – ANSI Common Lisp compiler, interpreter and debugger.

## SYNOPSIS

**clisp** [**–h** | **––help**] [**––version**] [**––license**] [**–B** *lisp–lib–dir*] [**–K** *linking–set*] [**–M** *mem–file*]
[**–m** *mem–size*] [**–L** *language*] [**–N** *locale–dir*] [**–E***domain encoding*]
[[**–q––quiet––silent–v––verbose**]] [**–interactive–debug**] [**–repl**] [**–w**] [**–I**] [**–ansi** | **–traditional**]
[**–p** *package*] [**–C**] [**–norc**] [**–i** *init–file*...] [**–c** [**–l**] *lisp–file* [**–o** *output–file*]...] [**–x** *expressions*]
[*lisp–file* [*argument*...]]

## DESCRIPTION

Invokes the Common Lisp interpreter and compiler. When called without arguments, executes the read–eval–print loop, in which expressions are in turn **READ** from the standard input, **EVAL**uated by the lisp interpreter, and their results are **PRINT**ed to the standard output. Invoked with **–c**, compiles the specified lisp files to a platform–independent bytecode that can be executed more efficiently.

## OPTIONS

**–h**, **––help**

Displays a help message on how to invoke **CLISP**.

**––version**

Displays the **CLISP** version number, as given by the function **LISP–IMPLEMENTATION–VERSION**, the value of the variable **FEATURES**, as well some other information.

**––license**

Displays a summary of the licensing information, the GNU GPL.

**–B** *lisp–lib–dir*

Specifies the installation directory. This is the directory containing the linking sets and other data files. This option is normally not necessary, because the installation directory is already built–in into the **clisp** executable. Directory *lisp–lib–dir* can be changed dynamically using the SYMBOL–MACRO **LIB–DIRECTORY**.

**–K** *linking–set*

Specifies the linking set to be run. This is a directory (relative to the *lisp–lib–dir*) containing at least a main executable (runtime) and an initial memory image. Possible values are **base**, **full**. The default is **base**.

**–M** *mem–file*

Specifies the initial memory image. This must be a memory dump produced by the **EXT:SAVEINITMEM** function by this **clisp** runtime. It may have been compressed using GNU **gzip**.

**–m** *mem–size*

Sets the amount of memory **CLISP** tries to grab on startup. The amount may be given as

*nnnnnnn*

measured in bytes

*nnnn***K**, *nnnn***KB**

measured in kilobytes

*n***M**, *n***MB**

measured in megabytes

The default is 2 megabytes. The argument is constrained above 100 KB. This version of **CLISP** allocates memory dynamically. *mem–size* is essentially ignored (except that it determines the Lisp STACK size).

**–L** *language*

Specifies the language **CLISP** uses to communicate with the user. This may be one of **english**, **german**, **french**, **spanish**, **dutch**, **russian**. Other languages may be specified through the environment variable **LANG**, provided the corresponding message catalog is installed. The language may

be changed dynamically using the symbol macro **current−language**.

**−N** *locale−dir*
Specifies the base directory of locale files. **CLISP** will search its message catalogs in *locale−dir/language*/LC_MESSAGES/clisp.mo. This directory may be changed dynamically using the symbol macro **current−language**.

**−E***domain encoding*
Specifies the encoding used for the given domain, overriding the default which depends on the environment variables **LC_ALL**, **LC_CTYPE**, **LANG**. *domain* can be

**file** affecting **default−file−encoding**

**pathname**
affecting **pathname−encoding**

**terminal**
affecting **terminal−encoding**

**foreign** affecting **foreign−encoding**

**misc** affecting **misc−encoding**

*blank* affecting all of the above.

**Warning**

Note that these values cannot be saved in a memory image. You have to use the init file or init−function to set them on startup.

**−q**, **−−quiet**, **−−silent**, **−v**, **−−verbose**
Change verbosity level: by default, **CLISP** displays a banner at startup and a good−bye message when quitting, and initializes **LOAD−VERBOSE** and **COMPILE−VERBOSE** to **T**, and **LOAD−PRINT** and **COMPILE−PRINT** to **NIL**, as per [ANSI CL standard]. The first **−q** removes the banner and the good−bye message, the second sets variables **LOAD−VERBOSE** and **COMPILE−VERBOSE** to **NIL**. **−v** sets variables **LOAD−PRINT** and **COMPILE−PRINT** to **T**. These settings affect the output produced by **−i** and **−c** options. Note that these settings persist into the read−eval−print loop. Repeated **−q** and **−v** cancel each other, e.g., **−q −q −v −v −v** is equivalent to **−v**.

**−interactive−debug**
Override the batch mode imposed by **−c**, **−x**, and *lisp−file* and allow interactive handling of **ASSERT** and friends.

**−repl** Start an interactive read−eval−print loop after processing the **−c**, **−x**, and *lisp−file* options.

**−w** Wait for a keypress after program termination.

**−I** Be ILISP−friendly. ILISP is an alternative Emacs interface to **Common Lisp** systems. With this option, **CLISP** interacts in a way that ILISP can deal with. Currently the only effect of this is that unnecessary prompts are not suppressed. Furthermore, the GNU readline library treats Tab as a normal self−inserting character, so you should always use this option when you invoke **CLISP** from Emacs.

**−ansi** Comply with the [ANSI CL standard] specification even where **CLISP** has been traditionally different. It sets the symbol macro **ansi** to **T**. See Section 29.9, “Extensions-1.9. Maximum ANSI CL compliance” for details.

**−traditional**
Traditional: reverses the residual effects of **−ansi** in the saved memory image.

**−p** *package*
At startup the value of the variable **PACKAGE** will be set to the package named *package*. The default is the package which was active when the image was saved, normally ‘‘COM-

MON–LISP–USER''.

**–C** Compile when loading: at startup the value of the variable **LOAD–COMPILING** will be set to **T**. Code being **LOAD**ed will then be **COMPILE**d on the fly. This results in slower loading, but faster execution.

**–norc** Normally **CLISP** loads the user ''run control'' (RC) file on startup (this happens after the **–C** option is processed). The file loaded is *${HOME}/.clisprc.lisp* or *${HOME}/.clisprc.fas*, whichever is newest. This option, **–norc**, prevents loading of the RC file.

**–i** *init–file*
Specifies initialization files to be **LOAD**ed at startup. These should be lisp files (source or compiled). Several **–i** options can be given; all the specified files will be loaded in order.

**–c** *lisp–file*
Compiles the specified *lisp–file*s to bytecode (**.fas*). The compiled files can then be **LOAD**ed instead of the sources to gain efficiency.

**–o** *outputfile*
Specifies the output file or directory for the compilation of the last specified *lisp–file*.

**–l** A bytecode **DISASSEMBLE** listing (**.lis*) of the files being compiled will be produced. Useful only for debugging purposes. See the documentation of **COMPILE–FILE** for details.

**–x** *expressions*
Executes a series of arbitrary expressions instead of a read–eval–print loop. The values of the expressions will be output to **STANDARD–OUTPUT**. Due to the argument processing done by the shell, the *expressions* must be enclosed in double quotes, and double quotes and backslashes must be escaped with backslashes.

*lisp–file* [ *argument* ... ]
Loads and executes a *lisp–file*, as described in Script execution. There will be no read–eval–print loop. Before *lisp–file* is loaded, the variable **ARGS** will be bound to a list of strings, representing the *argument*s. The first line of *lisp–file* may start with **#!**, thus permitting **CLISP** to be used as a script interpreter. If *lisp–file* is **–**, the **STANDARD–INPUT** is used instead of a file. If *lisp–file* is the empty string **""** or **"––"**, the normal read–eval–print loop is entered, and the rest of the arguments is still available in **ARGS**, for parsing by the init–function of the current image. This option must be the last one. No RC file will be executed.

## REFERENCE

The language implemented mostly conforms to the ANSI Common Lisp standard.

## USAGE

help get context–sensitive on–line help, see Chapter 25, Environment [CLHS-25].

(**APROPOS** *name*)
list the symbols related to *name*.

(exit), (quit), (bye)
quit **CLISP**.

EOF (Control-D on UNIX) leave the current level of the read–eval–print loop (see also Section 1.1, “Special Symbols [CLHS-1.4.1.3]”).

arrow keys
for editing and viewing the input history, using the GNU readline library.

Tab key
Context sensitive:

- If you are in the "function position" (in the first symbol after an opening paren or in the first symbol after a **#'**), the completion is limited to the symbols that name functions.
- If you are in the "filename position" (inside a string after **#P**), the completion is done across file names, bash–style.

- If you have not typed anything yet, you will get a help message, as if by the **Help** command.
- If you have not started typing the next symbol (i.e., you are at a whitespace), the current function or macro is **DESCRIBE**d.
- Otherwise, the symbol you are currently typing is completed.

## FILES

**clisp** on UNIX
: startup driver (a script or an executable)

*lisp.run*,
: main executable (runtime)

*lispinit.mem*
: initial memory image

*config.lisp*
: site−dependent configuration (should have been customized before **CLISP** was built); see Section 29.11, “Extensions-1.11. Customizing CLISP behavior.”

**.lisp* lisp source

**.fas* lisp code, compiled by **CLISP**

**.lib* lisp source library information, generated by **COMPILE−FILE**, see Section 24.1.3, “Function REQUIRE”.

**.c* C code, compiled from lisp source by **CLISP** (see Section 30.3, “Extensions-2.3. The Foreign Function Call Facility”)

## ENVIRONMENT

All environment variables that **CLISP** uses are read at most once.

**CLISP_LANGUAGE**
: specifies the language **CLISP** uses to communicate with the user. The legal values are identical to those of the **−L** option which can be used to override this environment variable.

**LC_CTYPE**
: specifies the locale which determines the character set in use. The value can be of the form *language* or *language_country* or *language_country.charset*, where *language* is a two−letter ISO 639 language code (lower case), *country* is a two−letter ISO 3166 country code (upper case). *charset* is an optional character set specification, and needs normally not be given because the character set can be inferred from the language and country. This environment variable can be overridden with the **−E** option.

**LANG** specifies the language **CLISP** uses to communicate with the user, unless it is already specified through the environment variable **CLISP_LANGUAGE** or the **−L** option. It also specifies the locale determining the character set in use, unless already specified through the environment variable **LC_CTYPE**. The value may begin with a two−letter ISO 639 language code, for example **en**, **de**, **fr**.

**HOME**, **USER**
: are used for determining the value of the function **USER−HOMEDIR−PATHNAME**.

**SHELL**,
: is used to find the interactive command interpreter called by **SHELL**.

**TERM** determines the screen size recognized by the pretty printer.

**ORGANIZATION**
: for **SHORT−SITE−NAME** and **LONG−SITE−NAME** in *config.lisp*.

**CLHSROOT**
for **clhs−root** in *config.lisp*.

**EDITOR**
for **editor−name** in *config.lisp*.

**LOGICAL_HOST_***host*_FROM, **LOGICAL_HOST_***host*_TO, **LOGICAL_HOST_***host*
for **LOAD−LOGICAL−PATHNAME−TRANSLATIONS**

## SEE ALSO

CLISP impnotes, **CMU CL − cmucl**(1), Emacs − **emacs**(1), XEmacs − **xemacs**(1).

## BUGS

When you encounter a bug in **CLISP**, please report it to the CLISP mailing list or the SourceForge bug tracker.

When submitting a bug report, please specify the following information:

1. What is your platform (**uname** −a on a UNIX system)? Compiler version? GNU libc version (on GNU/Linux)?
2. Where did you get the sources? When? (Absolute dates are preferred over the relative ones).
3. How did you build **CLISP**? (What command, options &c.) Please do a clean build (remove your build directory and build **CLISP** with **"./configure −−build build"** or at least do a **"make distclean"** before **"make"**). If you are reporting a crash (segmentation fault, bus error, core dump etc), please do **"./configure −−with−debug −−build build−g"** and report the backtrace.
4. If you are using pre−built binaries, the problem is likely to be in the incompatibilities between the platform on which the binary was built and yours; please try compiling the sources.
5. What is the output of **"clisp −−version"**?
6. Please supply the full output (copy and paste) of all the error messages, as well as detailed instructions on how to reproduce them.

Known bugs, some of which may be platform−dependent, include

- No on−line documentation beyond **APROPOS** and **DESCRIBE** is available.

### PROJECTS

- Write on−line documentation.
- Enhance the compiler so that it can inline local functions.
- Specify a portable set of window and graphics operations.
- Add Multi−Threading capabilities, via OS threads.

## CLISP AUTHORS

**CLISP** project was started in late 1980−ies by Bruno Haible and Michael Stoll, both in Germany.

See COPYRIGHT for the list of other contributors and the license.

## AUTHORS

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