NAME

clisp − ANSI Common Lisp compiler, interpreter and debugger.

SYNOPSIS

clisp [[\−**h**] | [\−\−**help**]] [\−\−**version**] [\−\−**license**] [\−**help**\−**image**]
[\−**B**âlisp\-lib\-dir] [\−**K**âlinking\-set] [\−**M**âmem\-file] [\−**m**âmemory\-size]
[\−**L**âlanguage] [\−**N**âlocale\-dir] [\−**E**domainâencoding] [[\−**q**] | [\−\−**quiet**] |
[\−\−**silent**] | [\−**v**] | [\−\−**verbose**]] [\−**on**\−**error**âaction] [\−**repl**] [\−**w**] [\−**I**]
[[\−**ansi**] | [\−**traditional**]] [\−**modern**] [\−**p**âpackage] [\−**C**] [\−**norc**] [\−**i**âinit\-file...]
[\−**c**â[\−**l**]âlisp\-fileâ[\−**o**âoutput\-file]...] [\−**x**âexpressions...] [lisp\-fileâ[argument...]]

DESCRIPTION

Invokes the **Common Lisp**[1] interpreter and compiler\. When called without arguments,
executes the read\-eval\-print loop[2], in which expressions are in turn **READ**[3] from the
standard input, **EVAL**[4]uated by the lisp interpreter, and their results are **PRINT**[5]ed to the
standard output\. Invoked with \−**c**, compiles the specified lisp files to a platform\−independent
bytecode which can be executed more efficiently\.

OPTIONS

\−**h**

\−\−**help**

> Displays a help message on how to invoke **CLISP**[6]\.

\−\−**version**

> Displays the **CLISP**[6] version number, as given by the function
> **LISP**\−**IMPLEMENTATION**\−**VERSION**[7], the value of the variable *FEATURES*,
> as well some other information\.

\−\−**license**

> Displays a summary of the licensing information, the GNU[8] GPL[9]\.

\−**help**\−**image**

> Displays information about the memory image being invoked: whether is it suitable for
> scripting as well as the **:DOCUMENTATION** supplied to **EXT:SAVEINITMEM**\.

\−**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[10] *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**
>> the core **CLISP**[6]

> **full**
>> core plus all the modules with which this installation was built, see Section 32.2,
>> "External Modules"\.

> 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[8] **gzip**[11]\.

\−**m** memory\-size

> Sets the amount of memory **CLISP**[6] 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 3 megabytes\. The argument is constrained above 100 KB\.

This version of **CLISP**[6] is not likely to actually use the entire *memory\-size* since garbage\−collection will periodically reduce the amount of used memory\. It is therefore common to specify 10 MB even if only 2 MB are going to be used\.

\−**L** *language*
> Specifies the language **CLISP**[6] uses to communicate with the user\. This may be one of **english**, **german**, **french**, **spanish**, **dutch**, **russian**, **danish**\. Other languages may be specified through the *environment variable*[12] **LANG**, provided the corresponding message catalog is installed\. The language may be changed dynamically using the *SYMBOL\-MACRO*[10] *CUSTOM:*CURRENT\-LANGUAGE**\.

\−**N** *locale\-dir*
> Specifies the base directory of locale files\. **CLISP**[6] will search its message catalogs in *locale\-dir/language/LC_MESSAGES/clisp\.mo*\. This directory may be changed dynamically using the *SYMBOL\-MACRO*[10] *CUSTOM:*CURRENT\-LANGUAGE**\.

\−**E***domain encoding*
> Specifies the encoding used for the given domain, overriding the default which depends on the *environment variable*[12]s **LC_ALL**, **LC_CTYPE**, **LANG**\. *domain* can be

file
> affecting *CUSTOM:*DEFAULT\-FILE\-ENCODING**

pathname
> affecting *CUSTOM:*PATHNAME\-ENCODING**

terminal
> affecting *CUSTOM:*TERMINAL\-ENCODING**

foreign
> affecting *CUSTOM:*FOREIGN\-ENCODING**

misc
> affecting *CUSTOM:*MISC\-ENCODING**

blank
> affecting all of the above\.

Warning
Note that the values of these *SYMBOL\-MACRO*[10]s that have been saved in a memory image are ignored: these *SYMBOL\-MACRO*[10]s are reset based on the OS environment **after** the memory image is loaded\. You have to use the RC file, *CUSTOM:*INIT\-HOOKS** or init function to set them on startup, but it is best to set the aforementioned *environment variable*[12]s appropriately for consistency with other programs\. See Section 31.1, "Customizing CLISP Process Initialization and Termination"\.

\−q
\−\−quiet
\−\−silent
\−v
\−\−verbose

> Change verbosity level: by default, **CLISP**[6] displays a banner at startup and a good\−bye message when quitting, and initializes **LOAD\-VERBOSE**[13] and **COMPILE\-VERBOSE**[14] to **T**[15], and **LOAD\-PRINT**[13] and **COMPILE\-PRINT**[14] to **NIL**[16], as per [ANSI CL standard]\. The first \−**q** removes the banner and the good\−bye message, the second sets variables **LOAD\-VERBOSE**[13] and **COMPILE\-VERBOSE**[14] to **NIL**[16]\. The first \−**v** sets variables *CUSTOM:*REPORT\-ERROR\-PRINT\-BACKTRACE**, **LOAD\-PRINT**[13] and **COMPILE\-PRINT**[14] to **T**[15], the second sets *CUSTOM:*LOAD\-ECHO** to **T**[15]\. These settings affect the output produced by \−**i** and \−**c** options\. Note that these settings persist into the *read\-eval\-print loop*[2]\. Repeated \−**q** and \−**v** cancel each other, e\.g\., \−**q** \−**q** \−**v** \−**v** \−**v** is equivalent to \−**v**\.

\−on\−error *action*

> Override (or force) the batch mode imposed by \−**c**, \−**x**, and *lisp\-file*, depending on *action*:.PP appease
>
> > *continuable*[17] *ERROR*[18]s are turned into *WARNING*[19]s (with **EXT:APPEASE\−CERRORS**) other *ERROR*[18]s are handled in the default way
>
> debug
>
> > *ERROR*[18]s **INVOKE\−DEBUGGER**[20] (the normal *read\-eval\-print loop*[2] behavior)
>
> abort
>
> > *continuable*[17] *ERROR*[18]s are appeased, other *ERROR*[18]s are **ABORT**[21]ed with **EXT:ABORT\−ON\−ERROR**
>
> exit
>
> > *continuable*[17] *ERROR*[18]s are appeased, other *ERROR*[18]s terminate **CLISP**[6] with **EXT:EXIT\−ON\−ERROR**
>
> See also **EXT:SET\−GLOBAL\−HANDLER**\.

\−repl

> Start an interactive *read\-eval\-print loop*[2] after processing the \−**c**, \−**x**, and *lisp\-file* options and on any *ERROR*[18] **SIGNAL**[22]ed during that processing\.

\−w

> Wait for a keypress after program termination\.

\−I

> Interact better with *Emacs*[23] (useful when running **CLISP**[6] under *Emacs*[23] using *SLIME*[24], *ILISP*[25] et al)\. With this option, **CLISP**[6] interacts in a way that *Emacs*[23] can deal with:
>
> > \h'−04'•\h'+03'unnecessary prompts are not suppressed\.
>
> > \h'−04'•\h'+03'The *GNU*[8] *readline*[26] library treats TAB (see TAB key) as a normal self\−inserting character (see Q: A.4.5)\.

\−ansi

> Comply with the [ANSI CL standard] specification even where **CLISP**[6] has been traditionally different\. It sets the *SYMBOL\-MACRO*[10] *CUSTOM:*ANSI** to **T**[15]\.

\−traditional

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

\−modern

Provides a modern view of symbols: at startup the **PACKAGE**[27] variable will be set to the "CS\−COMMON\−LISP\−USER" package, and the **PRINT\-CASE**[28] will be set to **:DOWNCASE**\. This has the effect that symbol lookup is case\−sensitive (except for keywords and old\−style packages) and that keywords and uninterned symbols are printed with lower\−case preferrence\. See Section 11.4, "Package Case−Sensitivity"\.

\−p *package*

At startup the value of the variable **PACKAGE**[27] will be set to the package named *package*\. The default is the value of **PACKAGE**[27] when the image was saved, normally "COMMON\-LISP\-USER"[29]\.

\−C

Compile when loading: at startup the value of the variable *CUSTOM:*LOAD\-COMPILING** will be set to **T**[15]\. Code being **LOAD**[30]ed will then be **COMPILE**[31]d on the fly\. This results in slower loading, but faster execution\.

\−norc

Normally **CLISP**[6] loads the user *"run control" (RC)*[32] file on startup (this happens **after** the \−**C** option is processed)\. The file loaded is *\.clisprc\.lisp* or *\.clisprc\.fas* in the home directory **USER\−HOMEDIR\−PATHNAME**[33], whichever is newer\. This option, \−**norc**, prevents loading of the RC file\.

\−i *init\-file*

Specifies initialization files to be **LOAD**[30]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**[30]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

Produce a bytecode **DISASSEMBLE**[34] listing (**\.lis*) of the files being compiled\. Useful only for debugging\. See Section 24.1.1, "Function COMPILE−FILE" for details\.

\−x *expressions*

Executes a series of arbitrary expressions instead of a *read\-eval\-print loop*[2]\. The values of the expressions will be output to **STANDARD\-OUTPUT**[35]\. 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*[2]\. Before *lisp\-file* is loaded, the variable *EXT:*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**[6] to be used as a script interpreter\. If *lisp\-file* is \−, the **STANDARD\-INPUT**[35] is used instead of a file\.

This option is *disabled* if the memory image was created by **EXT:SAVEINITMEM** with **NIL**[16] **:SCRIPT** argument\. In that case the *LIST*[36] *EXT:*ARGS** starts with *lisp\-file*\.

This option must be the last one\.

No RC file will be executed\.

As usual, \−\− stops option processing and places all remaining command line arguments into

EXT:*ARGS*\.

LANGUAGE REFERENCE

The language implemented is [ANSI CL standard]\. The implementation mostly conforms to the ANSI Common Lisp standard, see Section 31.10, "Maximum ANSI CL compliance"\. [ANSI CL] ANSI CL standard1994. ANSI Common Lisp standard X3.226−1994 −

> *Information*
> *Technology \− Programming Language \− Common Lisp*[37]. .SH "USAGE"

help

> get context\−sensitive on\−line help, see Chapter 25, Environment [CLHS−25]\.

(**APROPOS** *name*)

> list the *SYMBOL*[38]s matching *name*\.

(**DESCRIBE** *symbol*)

> describe the *symbol*\.

(exit)
(quit)
(bye)

> quit **CLISP**[6]\.

EOF (Control+D on **UNIX**[39])

> leave the current level of the *read\−eval\−print loop*[2] (see also Section 1.1, "Special Symbols [CLHS−1.4.1.3]")\.

arrow keys

> for editing and viewing the input history, using the *GNU*[8] *readline*[26] library\.

TAB key

> Context sensitive:
>
> > \h'−04'•\h'+03'If you are in the "function position" (in the first symbol after an opening paren or in the first symbol after a #\ [41]), the completion is limited to the symbols that name functions\.
> >
> > \h'−04'•\h'+03'If you are in the "filename position" (inside a string after #*P*[42]), the completion is done across file names, *bash*[43]\−style\.
> >
> > \h'−04'•\h'+03'If you have not typed anything yet, you will get a help message, as if by the **Help** command\.
> >
> > \h'−04'•\h'+03'If you have not started typing the next symbol (i\.e\., you are at a whitespace), the current function or macro is **DESCRIBE**d\.
> >
> > \h'−04'•\h'+03'Otherwise, the symbol you are currently typing is completed\.

FILES

clisp

> startup driver (a script or an executable)

lisp\.run
lisp\.exe

> main executable (runtime)

lispinit\.mem

> initial memory image

config\.lisp

site\−dependent configuration (should have been customized before **CLISP**[6] was built); see Section 31.12, "Customizing CLISP behavior"

*\.*lisp*
   lisp source

*\.*fas*
   lisp code, compiled by **CLISP**[6]

*\.*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**[6] (see Section 32.3, "The Foreign Function Call Facility")

For the **CLISP**[6] source files, see Chapter 34, The source files of CLISP\.

ENVIRONMENT

All *environment variable*[12]s that **CLISP**[6] uses are read at most once\.

CLISP_LANGUAGE
   specifies the language **CLISP**[6] 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*[12]\.

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*[12] can be overridden with the −**Edomain encoding** option\.

LANG
   specifies the language **CLISP**[6] uses to communicate with the user, unless it is already specified through the *environment variable*[12] **CLISP_LANGUAGE** or the \−**L** option\. It also specifies the locale determining the character set in use, unless already specified through the *environment variable*[12] **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**[33]\.

SHELL
COMSPEC
   is used to find the interactive command interpreter called by **EXT:SHELL**\.

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

ORGANIZATION
   for **SHORT\−SITE\−NAME**[44] and **LONG\−SITE\−NAME**[44] in *config*\.*lisp*\.

CLHSROOT
   for **CUSTOM:CLHS\−ROOT** in *config*\.*lisp*\.

IMPNOTES
   for **CUSTOM:IMPNOTES\−ROOT** in *config*\.*lisp*\.

EDITOR

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

LOGICAL_HOST__host_**_FROM**
LOGICAL_HOST__host_**_TO**
LOGICAL_HOST__host_
for *CUSTOM:*LOAD\\-LOGICAL\\-PATHNAME\\-TRANSLATIONS\\-DATABASE**

SEE ALSO

CLISP impnotes

CMU CL[45] \\− **cmucl**(1)

Emacs[23] \\− **emacs**(1)

XEmacs[46] \\− **xemacs**(1)

BUGS

When you encounter a bug in **CLISP**[6] or in its documentation (this manual page or CLISP impnotes), please report it to the **CLISP**[6] *SourceForge bug tracker*[47]\\.

Before submitting a bug report, please take the following basic steps to make the report more useful:

\\h'−04' 1.\\h'+02'Please do a clean build (remove your build directory and build **CLISP**[6] with \\.**/configure** \\−\\−**build build** or at least do a **make distclean** before **make**)\\.

\\h'−04' 2.\\h'+02'If you are reporting a "hard crash" (segmentation fault, bus error, core dump etc), please do \\.**/configure** \\−\\−**with**\\−**debug** \\−\\−**build build**\\−**g ; cd build**\\−**g; gdb lisp**\\.**run**, then load the appropriate linking set by either **base** or **full gdb**[48] command, and report the backtrace (see also Q: A.1.1.10)\\.

\\h'−04' 3.\\h'+02'If you are using pre\\−built binaries and experience a hard crash, 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 and report the problem if it persists\\.

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

\\h'−04' 1.\\h'+02'What is your platform (**uname** \\−**a** on a **UNIX**[39] system)? Compiler version? *GNU*[8] *libc*[49] version (on *GNU*[8]/*Linux*[50])?

\\h'−04' 2.\\h'+02'Where did you get the sources or binaries? When? (Absolute dates \\− like "2006\\−01\\−17" \\− are preferred over the relative ones \\− like "2 days ago")\\.

\\h'−04' 3.\\h'+02'How did you build **CLISP**[6]? (What command, options &c\\.)

\\h'−04' 4.\\h'+02'What is the output of **clisp** \\−\\−**version**?

\\h'−04' 5.\\h'+02'Please supply the full output (copy and paste) of all the error messages, as well as detailed instructions on how to reproduce them\\.

PROJECTS

\\h'−04'•\\h'+03'Enhance the compiler so that it can inline local functions\\.

\\h'−04'•\\h'+03'Add Multi\\−Threading capabilities, via OS threads\\.

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NOTES

1. **Common Lisp**
   http://www.lisp.org

2. read−eval−print loop
   http://www.lisp.org/HyperSpec/Body/sec_25−1−1.html

3. **READ**
   http://www.lisp.org/HyperSpec/Body/fun_readcm_re_g−whitespace.html

4. **EVAL**
   http://www.lisp.org/HyperSpec/Body/fun_eval.html

5. **PRINT**
   http://www.lisp.org/HyperSpec/Body/fun_writecm_p_rintcm_princ.html

6. **CLISP**
   http://clisp.cons.org

7. **LISP−IMPLEMENTATION−VERSION**
   http://www.lisp.org/HyperSpec/Body/fun_lisp−impl_tion−version.html

8. GNU
   http://www.gnu.org

9. GPL
   http://www.gnu.org/copyleft/gpl.html

10. SYMBOL−MACRO
    http://www.lisp.org/HyperSpec/Body/mac_define−symbol−macro.html

11. **gzip**
    http://www.gzip.org/

12. environment variable
    basedefs/xbd_chap08.html

13. *LOAD-VERBOSE*
    http://www.lisp.org/HyperSpec/Body/var_stload−pr_ad−verbosest.html

14. *COMPILE-VERBOSE*
    http://www.lisp.org/HyperSpec/Body/var_stcompile_le−verbosest.html

15. **T**
    http://www.lisp.org/HyperSpec/Body/convar_t.html

16. **NIL**
    http://www.lisp.org/HyperSpec/Body/convar_nil.html

17. continuable
    http://www.lisp.org/HyperSpec/Body/glo_c.html#continuable

18. ERROR
    http://www.lisp.org/HyperSpec/Body/contyp_error.html

19. WARNING
    http://www.lisp.org/HyperSpec/Body/contyp_warning.html

20. **INVOKE−DEBUGGER**
    http://www.lisp.org/HyperSpec/Body/fun_invoke−debugger.html

21. **ABORT**
    http://www.lisp.org/HyperSpec/Body/fun_abortcm_c_cm_use−value.html

22. **SIGNAL**
    http://www.lisp.org/HyperSpec/Body/fun_signal.html

23. Emacs
    http://www.gnu.org/software/emacs/

24. SLIME
    http://common−lisp.net/project/slime/

25. ILISP
    http://sourceforge.net/projects/ilisp/

26. readline
    http://cnswww.cns.cwru.edu/~chet/readline/rltop.html

27. *PACKAGE*
    http://www.lisp.org/HyperSpec/Body/var_stpackagest.html

28. *PRINT-CASE*
    http://www.lisp.org/HyperSpec/Body/var_stprint−casest.html

29. "COMMON−LISP−USER"
    http://www.lisp.org/HyperSpec/Body/sec_11−1−2−2.html

30. **LOAD**
    http://www.lisp.org/HyperSpec/Body/fun_load.html

31. **COMPILE**
    http://www.lisp.org/HyperSpec/Body/fun_compile.html

32. "run
    control" (RC)
    http://www.faqs.org/docs/artu/ch10s03.html

33. **USER−HOMEDIR−PATHNAME**
    http://www.lisp.org/HyperSpec/Body/fun_user−homedir−pathname.html

34. **DISASSEMBLE**
    http://www.lisp.org/HyperSpec/Body/fun_disassemble.html

35. *STANDARD-OUTPUT*
    http://www.lisp.org/HyperSpec/Body/var_stdebug−i_ace−outputst.html

36. LIST
    http://www.lisp.org/HyperSpec/Body/syscla_list.html

37. Information Technology − Programming Language − Common Lisp
    http://www.ncits.org/tc_home/j13sd4.htm

38. SYMBOL
    http://www.lisp.org/HyperSpec/Body/syscla_symbol.html

39. **UNIX**
    http://www.UNIX−systems.org/online.html

40. *Win32*
    http://winehq.com/

41. #'
    http://www.lisp.org/HyperSpec/Body/sec_2−4−8−2

42. #P
    http://www.lisp.org/HyperSpec/Body/sec_2−4−8−14

43. bash
    http://www.gnu.org/software/bash/

44. **SHORT−SITE−NAME**
    http://www.lisp.org/HyperSpec/Body/fun_short−sit_ng−site−name.html

45. **CMU CL**
    http://www.cons.org/cmucl/

46. XEmacs
    http://www.xemacs.org

47. SourceForge bug tracker
    http://sourceforge.net/tracker/?func=add&group_id=1355&atid=101355

48. **gdb**
    http://sources.redhat.com/gdb/

49. libc
    http://www.gnu.org/software/libc/

50. *Linux*
    http://www.linux.org/