

NAME

perl - The Perl 5 language interpreter

SYNOPSIS

```
perl [ -sTtuUWX ] [ -hv ] [ -V[:configvar] ] [ -cw ] [ -d[t[:debugger]] ] [ -D[number/list] ] [ -pna ] [ -F
pattern ] [ -l[octal] ] [ -O[octal/hexadecimal] ] [ -ldir ] [ -m[-]module ] [ -M[-]'module...' ] [ -f ] [ -C [
number/list] ] [ -S ] [ -x[dir] ] [ -i[extension] ] [ [-e|-E] 'command' ] [ -- ] [ programfile ] [ argument ]...
```

GETTING HELP

The *perldoc* program gives you access to all the documentation that comes with Perl. You can get more documentation, tutorials and community support online at <http://www.perl.org/>.

If you're new to Perl, you should start by running `perldoc perlintro`, which is a general intro for beginners and provides some background to help you navigate the rest of Perl's extensive documentation. Run `perldoc perldoc` to learn more things you can do with *perldoc*.

For ease of access, the Perl manual has been split up into several sections.

Overview

```
perl Perl overview (this section)
perlintro Perl introduction for beginners
perltoc Perl documentation table of contents
```

Tutorials

```
perlreftut Perl references short introduction
perldsc Perl data structures intro
perllo1 Perl data structures: arrays of arrays

perlrequick Perl regular expressions quick start
perlretut Perl regular expressions tutorial

perlboot Perl OO tutorial for beginners
perltoot Perl OO tutorial, part 1
perltooc Perl OO tutorial, part 2
perlbot Perl OO tricks and examples

perlperf Perl Performance and Optimization Techniques

perlstyle Perl style guide

perlcheat Perl cheat sheet
perltrap Perl traps for the unwary
perldebtut Perl debugging tutorial

perlfaq Perl frequently asked questions
perlfaq1 General Questions About Perl
perlfaq2 Obtaining and Learning about Perl
perlfaq3 Programming Tools
perlfaq4 Data Manipulation
perlfaq5 Files and Formats
perlfaq6 Regexes
perlfaq7 Perl Language Issues
perlfaq8 System Interaction
perlfaq9 Networking
```

Reference Manual

perlsyn Perl syntax
perldata Perl data structures
perlop Perl operators and precedence
perlsub Perl subroutines
perlfunc Perl built-in functions
 perlopentut Perl open() tutorial
 perlpacktut Perl pack() and unpack() tutorial
perlpod Perl plain old documentation
perlpodspec Perl plain old documentation format specification
perlpodstyle Perl POD style guide
perlrun Perl execution and options
perldiag Perl diagnostic messages
perllexwarn Perl warnings and their control
perldebug Perl debugging
perlvar Perl predefined variables
perlre Perl regular expressions, the rest of the story
perlrebackslash Perl regular expression backslash sequences
perlrecharclass Perl regular expression character classes
perlref Perl regular expressions quick reference
perlref Perl references, the rest of the story
perlform Perl formats
perlobj Perl objects
perltie Perl objects hidden behind simple variables
 perlshmfilter Perl DBM filters

perlipc Perl interprocess communication
perlfork Perl fork() information
perlnumber Perl number semantics

perlthrtut Perl threads tutorial

perlport Perl portability guide
perllocale Perl locale support
perluniintro Perl Unicode introduction
perlunicode Perl Unicode support
perlunifaq Perl Unicode FAQ
perluniprops Index of Unicode Version 6.0.0 properties in Perl
perlunitut Perl Unicode tutorial
perlebcdic Considerations for running Perl on EBCDIC platforms

perlsec Perl security

perlmod Perl modules: how they work
perlmodlib Perl modules: how to write and use
perlmodstyle Perl modules: how to write modules with style
perlmodinstall Perl modules: how to install from CPAN
perlnewmod Perl modules: preparing a new module for distribution
perlpragma Perl modules: writing a user pragma

perlutil utilities packaged with the Perl distribution

perlcompile Perl compiler suite intro

`perlfiter` Perl source filters

`perlglossary` Perl Glossary

Internals and C Language Interface

`perlembed` Perl ways to embed perl in your C or C++ application

`perldebbugs` Perl debugging guts and tips

`perlxstut` Perl XS tutorial

`perlxs` Perl XS application programming interface

`perlclib` Internal replacements for standard C library functions

`perlguts` Perl internal functions for those doing extensions

`perlcall` Perl calling conventions from C

`perlmroapi` Perl method resolution plugin interface

`perlreapi` Perl regular expression plugin interface

`perlreguts` Perl regular expression engine internals

`perlapi` Perl API listing (autogenerated)

`perlintern` Perl internal functions (autogenerated)

`perliol` C API for Perl's implementation of IO in Layers

`perlpio` Perl internal IO abstraction interface

`perlhack` Perl hackers guide

`perlsources` Guide to the Perl source tree

`perlinterp` Overview of the Perl interpreter source and how it works

`perlhacktut` Walk through the creation of a simple C code patch

`perlhacktips` Tips for Perl core C code hacking

`perlpolicy` Perl development policies

`perlgit` Using git with the Perl repository

Miscellaneous

`perlbook` Perl book information

`perlcommunity` Perl community information

`perltodo` Perl things to do

`perldoc` Look up Perl documentation in Pod format

`perlhists` Perl history records

`perldelta` Perl changes since previous version

`perl5141delta` Perl changes in version 5.14.1

`perl5140delta` Perl changes in version 5.14.0

`perl51311delta` Perl changes in version 5.13.11

`perl51310delta` Perl changes in version 5.13.10

`perl5139delta` Perl changes in version 5.13.9

`perl5138delta` Perl changes in version 5.13.8

`perl5137delta` Perl changes in version 5.13.7

`perl5136delta` Perl changes in version 5.13.6

`perl5135delta` Perl changes in version 5.13.5

`perl5134delta` Perl changes in version 5.13.4

`perl5133delta` Perl changes in version 5.13.3

`perl5132delta` Perl changes in version 5.13.2

`perl5131delta` Perl changes in version 5.13.1

`perl5130delta` Perl changes in version 5.13.0

`perl5123delta` Perl changes in version 5.12.3

perl5122delta Perl changes in version 5.12.2
perl5121delta Perl changes in version 5.12.1
perl5120delta Perl changes in version 5.12.0
perl5115delta Perl changes in version 5.11.5
perl5114delta Perl changes in version 5.11.4
perl5113delta Perl changes in version 5.11.3
perl5112delta Perl changes in version 5.11.2
perl5111delta Perl changes in version 5.11.1
perl5110delta Perl changes in version 5.11.0
perl5101delta Perl changes in version 5.10.1
perl5100delta Perl changes in version 5.10.0
perl595delta Perl changes in version 5.9.5
perl594delta Perl changes in version 5.9.4
perl593delta Perl changes in version 5.9.3
perl592delta Perl changes in version 5.9.2
perl591delta Perl changes in version 5.9.1
perl590delta Perl changes in version 5.9.0
perl589delta Perl changes in version 5.8.9
perl588delta Perl changes in version 5.8.8
perl587delta Perl changes in version 5.8.7
perl586delta Perl changes in version 5.8.6
perl585delta Perl changes in version 5.8.5
perl584delta Perl changes in version 5.8.4
perl583delta Perl changes in version 5.8.3
perl582delta Perl changes in version 5.8.2
perl581delta Perl changes in version 5.8.1
perl58delta Perl changes in version 5.8.0
perl573delta Perl changes in version 5.7.3
perl572delta Perl changes in version 5.7.2
perl571delta Perl changes in version 5.7.1
perl570delta Perl changes in version 5.7.0
perl561delta Perl changes in version 5.6.1
perl56delta Perl changes in version 5.6
perl5005delta Perl changes in version 5.005
perl5004delta Perl changes in version 5.004

perlartistic Perl Artistic License
perlgpl GNU General Public License

Language-Specific

perlcn Perl for Simplified Chinese (in EUC-CN)
perljp Perl for Japanese (in EUC-JP)
perlko Perl for Korean (in EUC-KR)
perltw Perl for Traditional Chinese (in Big5)

Platform-Specific

perlaix Perl notes for AIX
perlamiga Perl notes for AmigaOS
perlbeos Perl notes for BeOS
perlbs2000 Perl notes for POSIX-BC BS2000
perlce Perl notes for WinCE
perlcygwin Perl notes for Cygwin
perldgux Perl notes for DG/UX
perldos Perl notes for DOS

```
perlepoc Perl notes for EPOC
perlfreebsd Perl notes for FreeBSD
perlhaiku Perl notes for Haiku
perlhpx Perl notes for HP-UX
perlhurd Perl notes for Hurd
perlirix Perl notes for Irix
perllinux Perl notes for Linux
perlmacos Perl notes for Mac OS (Classic)
perlmacosx Perl notes for Mac OS X
perlmpaix Perl notes for MPE/iX
perlnetware Perl notes for NetWare
perlopenbsd Perl notes for OpenBSD
perlos2 Perl notes for OS/2
perlos390 Perl notes for OS/390
perlos400 Perl notes for OS/400
perlplan9 Perl notes for Plan 9
perlqnx Perl notes for QNX
perlrisco Perl notes for RISC OS
perlsolaris Perl notes for Solaris
perlsymbian Perl notes for Symbian
perltru64 Perl notes for Tru64
perluts Perl notes for UTS
perlvms Perl notes for VM/ESA
perlvms Perl notes for VMS
perlvos Perl notes for Stratus VOS
perlwin32 Perl notes for Windows
```

On a Unix-like system, these documentation files will usually also be available as manpages for use with the *man* program.

In general, if something strange has gone wrong with your program and you're not sure where you should look for help, try the **-w** switch first. It will often point out exactly where the trouble is.

DESCRIPTION

Perl officially stands for Practical Extraction and Report Language, except when it doesn't.

Perl was originally a language optimized for scanning arbitrary text files, extracting information from those text files, and printing reports based on that information. It quickly became a good language for many system management tasks. Over the years, Perl has grown into a general-purpose programming language. It's widely used for everything from quick "one-liners" to full-scale application development.

The language is intended to be practical (easy to use, efficient, complete) rather than beautiful (tiny, elegant, minimal).

Perl combines (in the author's opinion, anyway) some of the best features of C, **sed**, **awk**, and **sh**, so people familiar with those languages should have little difficulty with it. (Language historians will also note some vestiges of **csh**, Pascal, and even BASIC-PLUS.) Expression syntax corresponds closely to C expression syntax. Unlike most Unix utilities, Perl does not arbitrarily limit the size of your data--if you've got the memory, Perl can slurp in your whole file as a single string. Recursion is of unlimited depth. And the tables used by hashes (sometimes called "associative arrays") grow as necessary to prevent degraded performance. Perl can use sophisticated pattern matching techniques to scan large amounts of data quickly. Although optimized for scanning text, Perl also has many excellent tools for slicing and dicing binary data.

But wait, there's more...

Begun in 1993 (see *perlhst*), Perl version 5 is nearly a complete rewrite that provides the following

additional benefits:

- modularity and reusability using innumerable modules
Described in *perlmod*, *perlmodlib*, and *perlmodinstall*.
- embeddable and extensible
Described in *perlembed*, *perlxtut*, *perlx*, *percall*, *perlguts*, and *xsubpp*.
- roll-your-own magic variables (including multiple simultaneous DBM implementations)
Described in *perltie* and *AnyDBM_File*.
- subroutines can now be overridden, autoloaded, and prototyped
Described in *perlsub*.
- arbitrarily nested data structures and anonymous functions
Described in *perlreftut*, *perlref*, *perldsc*, and *perllo*.
- object-oriented programming
Described in *perlobj*, *perlboot*, *perltot*, *perltoc*, and *perlbot*.
- support for light-weight processes (threads)
Described in *perlthrtut* and *threads*.
- support for Unicode, internationalization, and localization
Described in *perluniintro*, *perllocale* and *Locale::Maketext*.
- lexical scoping
Described in *perlsub*.
- regular expression enhancements
Described in *perlre*, with additional examples in *perlop*.
- enhanced debugger and interactive Perl environment, with integrated editor support
Described in *perldebtut*, *perldebug* and *perldebguts*.
- POSIX 1003.1 compliant library
Described in *POSIX*.

Okay, that's *definitely* enough hype.

AVAILABILITY

Perl is available for most operating systems, including virtually all Unix-like platforms. See "*Supported Platforms*" in *perlport* for a listing.

ENVIRONMENT

See *perlrun*.

AUTHOR

Larry Wall <larry@wall.org>, with the help of oodles of other folks.

If your Perl success stories and testimonials may be of help to others who wish to advocate the use of Perl in their applications, or if you wish to simply express your gratitude to Larry and the Perl developers, please write to perl-thanks@perl.org.

FILES

"@INC" locations of perl libraries

SEE ALSO

http://www.perl.org/	the Perl homepage
http://www.perl.com/	Perl articles (O'Reilly)
http://www.cpan.org/	the Comprehensive Perl Archive
http://www.pm.org/	the Perl Mongers

DIAGNOSTICS

The use `warnings` pragma (and the `-w` switch) produces some lovely diagnostics.

See *perldiag* for explanations of all Perl's diagnostics. The use `diagnostics` pragma automatically turns Perl's normally terse warnings and errors into these longer forms.

Compilation errors will tell you the line number of the error, with an indication of the next token or token type that was to be examined. (In a script passed to Perl via `-e` switches, each `-e` is counted as one line.)

Setuid scripts have additional constraints that can produce error messages such as "Insecure dependency". See *perlsec*.

Did we mention that you should definitely consider using the `-w` switch?

BUGS

The `-w` switch is not mandatory.

Perl is at the mercy of your machine's definitions of various operations such as type casting, `atof()`, and floating-point output with `sprintf()`.

If your `stdio` requires a seek or eof between reads and writes on a particular stream, so does Perl. (This doesn't apply to `sysread()` and `syswrite()`.)

While none of the built-in data types have any arbitrary size limits (apart from memory size), there are still a few arbitrary limits: a given variable name may not be longer than 251 characters. Line numbers displayed by diagnostics are internally stored as short integers, so they are limited to a maximum of 65535 (higher numbers usually being affected by wraparound).

You may mail your bug reports (be sure to include full configuration information as output by the `myconfig` program in the perl source tree, or by `perl -v`) to `perlbug@perl.org`. If you've succeeded in compiling perl, the *perlbug* script in the *utils/* subdirectory can be used to help mail in a bug report.

Perl actually stands for Pathologically Eclectic Rubbish Lister, but don't tell anyone I said that.

NOTES

The Perl motto is "There's more than one way to do it." Divining how many more is left as an exercise to the reader.

The three principal virtues of a programmer are Laziness, Impatience, and Hubris. See the Camel Book for why.