

NAME

perl – The Perl 5 language interpreter

SYNOPSIS

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

For more information on these options, you can run `perldoc perlrun`.

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 [<https://www.perl.org/>](https://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

<code>perl</code>	Perl overview (this section)
<code>perlintro</code>	Perl introduction for beginners
<code>perlrun</code>	Perl execution and options
<code>perltoc</code>	Perl documentation table of contents

Tutorials

<code>perlreftut</code>	Perl references short introduction
<code>perldsc</code>	Perl data structures intro
<code>perl101</code>	Perl data structures: arrays of arrays
<code>perlrequick</code>	Perl regular expressions quick start
<code>perlretut</code>	Perl regular expressions tutorial
<code>perlootut</code>	Perl OO tutorial for beginners
<code>perlperf</code>	Perl Performance and Optimization Techniques
<code>perlstyle</code>	Perl style guide
<code>perlcheat</code>	Perl cheat sheet
<code>perltrap</code>	Perl traps for the unwary
<code>perldebtut</code>	Perl debugging tutorial
<code>perlfaq</code>	Perl frequently asked questions
<code>perlfaq1</code>	General Questions About Perl
<code>perlfaq2</code>	Obtaining and Learning about Perl
<code>perlfaq3</code>	Programming Tools
<code>perlfaq4</code>	Data Manipulation
<code>perlfaq5</code>	Files and Formats
<code>perlfaq6</code>	Regexes
<code>perlfaq7</code>	Perl Language Issues
<code>perlfaq8</code>	System Interaction
<code>perlfaq9</code>	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
perldocstyle	Perl style guide for core docs
perlpodstyle	Perl POD style guide
perldiag	Perl diagnostic messages
perldeprecation	Perl deprecations
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
perlclass	Perl class syntax
perldbfilter	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
perlunicook	Perl Unicode cookbook
perlunifaq	Perl Unicode FAQ
perluniprops	Index of Unicode properties in Perl
perlunitut	Perl Unicode tutorial
perlebcdic	Considerations for running Perl on EBCDIC platforms
perlsec	Perl security
perlsecpolicy	Perl security report handling policy
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
perlfiler	Perl source filters
perldtrace	Perl's support for DTrace
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
perlxsstut	Perl XS tutorial
perlxs	Perl XS application programming interface
perlxsstypemap	Perl XS C/Perl type conversion tools
perlclib	Internal replacements for standard C library functions
perlguts	Perl internal functions for those doing extensions
perlcall	Perl calling conventions from C
perlmoapi	Perl method resolution plugin interface
perlreapi	Perl regular expression plugin interface
perlreguts	Perl regular expression engine internals
perlclassguts	Internals of class syntax
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
perlgov	Perl Rules of Governance
perlgit	Using git with the Perl repository

History

perlhists	Perl history records
perldelta	Perl changes since previous version
perl5381delta	Perl changes in version 5.38.1
perl5380delta	Perl changes in version 5.38.0
perl5363delta	Perl changes in version 5.36.3
perl5362delta	Perl changes in version 5.36.2
perl5361delta	Perl changes in version 5.36.1
perl5360delta	Perl changes in version 5.36.0
perl5343delta	Perl changes in version 5.34.3
perl5342delta	Perl changes in version 5.34.2
perl5341delta	Perl changes in version 5.34.1
perl5340delta	Perl changes in version 5.34.0
perl5321delta	Perl changes in version 5.32.1
perl5320delta	Perl changes in version 5.32.0
perl5303delta	Perl changes in version 5.30.3
perl5302delta	Perl changes in version 5.30.2
perl5301delta	Perl changes in version 5.30.1
perl5300delta	Perl changes in version 5.30.0
perl5283delta	Perl changes in version 5.28.3

perl5282delta	Perl changes in version 5.28.2
perl5281delta	Perl changes in version 5.28.1
perl5280delta	Perl changes in version 5.28.0
perl5263delta	Perl changes in version 5.26.3
perl5262delta	Perl changes in version 5.26.2
perl5261delta	Perl changes in version 5.26.1
perl5260delta	Perl changes in version 5.26.0
perl5244delta	Perl changes in version 5.24.4
perl5243delta	Perl changes in version 5.24.3
perl5242delta	Perl changes in version 5.24.2
perl5241delta	Perl changes in version 5.24.1
perl5240delta	Perl changes in version 5.24.0
perl5224delta	Perl changes in version 5.22.4
perl5223delta	Perl changes in version 5.22.3
perl5222delta	Perl changes in version 5.22.2
perl5221delta	Perl changes in version 5.22.1
perl5220delta	Perl changes in version 5.22.0
perl5203delta	Perl changes in version 5.20.3
perl5202delta	Perl changes in version 5.20.2
perl5201delta	Perl changes in version 5.20.1
perl5200delta	Perl changes in version 5.20.0
perl5184delta	Perl changes in version 5.18.4
perl5182delta	Perl changes in version 5.18.2
perl5181delta	Perl changes in version 5.18.1
perl5180delta	Perl changes in version 5.18.0
perl5163delta	Perl changes in version 5.16.3
perl5162delta	Perl changes in version 5.16.2
perl5161delta	Perl changes in version 5.16.1
perl5160delta	Perl changes in version 5.16.0
perl5144delta	Perl changes in version 5.14.4
perl5143delta	Perl changes in version 5.14.3
perl5142delta	Perl changes in version 5.14.2
perl5141delta	Perl changes in version 5.14.1
perl5140delta	Perl changes in version 5.14.0
perl5125delta	Perl changes in version 5.12.5
perl5124delta	Perl changes in version 5.12.4
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
perl5101delta	Perl changes in version 5.10.1
perl5100delta	Perl changes in version 5.10.0
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
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

Miscellaneous

perlbook Perl book information
 perlcommunity Perl community information

perldoc Look up Perl documentation in Pod format

perlexperiment A listing of experimental features in Perl

perlartistic Perl Artistic License
 perlgnu GNU General Public License

Language-Specific

perlcn Perl for Simplified Chinese (in UTF-8)
 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
 perlandroid Perl notes for Android
 perlbs2000 Perl notes for POSIX-BC BS2000
 perlcygwin Perl notes for Cygwin
 perlfreebsd Perl notes for FreeBSD
 perlhaiku Perl notes for Haiku
 perlhurd Perl notes for Hurd
 perlirix Perl notes for Irix
 perllinux Perl notes for Linux
 perlmacosx Perl notes for Mac OS X
 perlopenbsd Perl notes for OpenBSD
 perlос2 Perl notes for OS/2
 perlос390 Perl notes for OS/390
 perlос400 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
 perlsynology Perl notes for Synology
 perltru64 Perl notes for Tru64
 perlvms Perl notes for VMS
 perlvos Perl notes for Stratus VOS
 perlwin32 Perl notes for Windows

Stubs for Deleted Documents

perlboot
 perlbot
 perlrepository
 perltodo
 perltooc
 perltoot

On Debian systems, you need to install the **perl-doc** package which contains the majority of the standard Perl documentation and the *perldoc* program.

Extensive additional documentation for Perl modules is available, both those distributed with Perl and third-party modules which are packaged or locally installed.

You should be able to view Perl's documentation with your **man** (1) program or **perldoc** (1).

Some documentation is not available as man pages, so if a cross-reference is not found by man, try it with perldoc. Perldoc can also take you directly to documentation for functions (with the **-f** switch). See `perldoc --help` (or `perldoc perldoc` or `man perldoc`) for other helpful options perldoc has to offer.

In general, if something strange has gone wrong with your program and you're not sure where you should look for help, try making your code comply with **use strict** and **use warnings**. These 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). It combines (in the author's opinion, anyway) some of the best features of **sed**, **awk**, and **sh**, making it familiar and easy to use for Unix users to whip up quick solutions to annoying problems. Its general-purpose programming facilities support procedural, functional, and object-oriented programming paradigms, making Perl a comfortable language for the long haul on major projects, whatever your bent.

Perl's roots in text processing haven't been forgotten over the years. It still boasts some of the most powerful regular expressions to be found anywhere, and its support for Unicode text is world-class. It handles all kinds of structured text, too, through an extensive collection of extensions. Those libraries, collected in the CPAN, provide ready-made solutions to an astounding array of problems. When they haven't set the standard themselves, they steal from the best — just like Perl itself.

AVAILABILITY

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

ENVIRONMENT

See "ENVIRONMENT" in 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

"@INC" above is a reference to the built-in variable of the same name; see perlvar for more information.

SEE ALSO

https://www.perl.org/	the Perl homepage
https://www.perl.com/	Perl articles
https://www.cpan.org/	the Comprehensive Perl Archive
https://www.pm.org/	the Perl Mongers

DIAGNOSTICS

Using the `use strict` pragma ensures that all variables are properly declared and prevents other misuses of legacy Perl features. These are enabled by default within the scope of `use v5.12` (or higher).

The `use warnings` pragma produces some lovely diagnostics. It is enabled by default when you say

`use v5.35` (or higher). One can also use the `-w` flag, but its use is normally discouraged, because it gets applied to all executed Perl code, including that not under your control.

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 **use warnings** pragma?

BUGS

The behavior implied by the **use warnings** pragma 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 submit 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 <https://github.com/Perl/perl5/issues>.

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.