

PERL(1)

Perl Programmers Reference Guide

PERL(1)

NAME

perl - The Perl 5 language interpreter

SYNOPSIS

```
perl [ -sTtuUWX ] [ -hv ] [ -V[:configvar] ]  
    [ -cw ] [ -d[t][:debugger] ] [ -D[number/list] ]  
    [ -pna ] [ -Fpattern ] [ -I[octal] ] [ -O[octal/hexadecimal] ]  
    [ -ldir ] [ -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/>>.

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

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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
perlrun	Perl execution and options
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
perloutut	Perl OO tutorial for beginners
perlperf	Perl Performance and Optimization Techniques
perlstyle	Perl style guide

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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

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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

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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
perltrace	Perl's support for DTrace

Internals and C Language Interface

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

perldebguts Perl debugging guts and tips

perlxstut Perl XS tutorial

perlxs Perl XS application programming interface

perlxstypemap 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

perlmroapi 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

perlapiio Perl internal IO abstraction interface

perlhack Perl hackers guide

perlsource 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

perlpolicy	Perl development policies
perlgov	Perl Rules of Governance
perlgit	Using git with the Perl repository

History

perlhyst	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

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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

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

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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
perlgpl	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

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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
perlhpux	Perl notes for HP-UX
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
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
perlriscos	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`

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()`.)

(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.