

NAME

perl5219delta - what is new for perl v5.21.9

DESCRIPTION

This document describes differences between the 5.21.8 release and the 5.21.9 release.

If you are upgrading from an earlier release such as 5.21.7, first read *perl5218delta*, which describes differences between 5.21.7 and 5.21.8.

Notice

With this release we are now in the user-visible changes portion of the code freeze as we prepare for the next stable release of Perl 5.

Core Enhancements

qr/\b{gcb}/ is now handled in regular expressions

`gcb` stands for Grapheme Cluster Boundary. It is a Unicode property that finds the boundary between sequences of characters that look like a single character to a native speaker of a language. Perl has long had the ability to deal with these through the `\x` regular escape sequence. Now, there is an alternative way of handling these. See "`\b{}`", "`\b`", "`\B{}`", "`\B`" in *perlrebackslash* for details.

qr/\b{wb}/ is now handled in regular expressions

`wb` stands for Word Boundary. It is a Unicode property that finds the boundary between words. This is similar to the plain `\b` (without braces) but is more suitable for natural language processing. It knows, for example that apostrophes can occur in the middle of words. See "`\b{}`", "`\b`", "`\B{}`", "`\B`" in *perlrebackslash* for details.

qr/\b{sb}/ is now handled in regular expressions

`sb` stands for Sentence Boundary. It is a Unicode property to aid in parsing natural language sentences. See "`\b{}`", "`\b`", "`\B{}`", "`\B`" in *perlrebackslash* for details.

New bitwise operators

A new experimental facility has been added that makes the four standard bitwise operators (`&`, `|`, `^`, `~`) treat their operands consistently as numbers, and introduces four new dotted operators (`&.`, `|.`, `^.`, `~.`) that treat their operands consistently as strings. The same applies to the assignment variants (`&=`, `|=`, `^=`, `&.=`, `|.=`, `^.=`).

To use this, enable the "bitwise" feature and disable the "experimental::bitwise" warnings category. See "*Bitwise String Operators*" in *perlop* for details. [rt.perl.org #123466]

no re covers more and is lexical

Previously running `no re` would only turn off a few things. Now it turns off all the enabled things. For example, previously, you couldn't turn off debugging, once enabled, inside the same block.

Incompatible Changes

There are no changes intentionally incompatible with 5.21.8. If any exist, they are bugs, and we request that you submit a report. See *Reporting Bugs* below.

Modules and Pragmata

Updated Modules and Pragmata

- *attributes* has been upgraded from version 0.25 to 0.26.
- *B* has been upgraded from version 1.55 to 1.56.
- *B::Debug* has been upgraded from version 1.22 to 1.23.
- *B::Deparse* has been upgraded from version 1.32 to 1.33.

- Deparse now provides a defined state sub in inner subs.
- Since version Perl 5.21.6, Deparse would croak on special constants, but this has now been fixed.
- *Benchmark* has been upgraded from version 1.19 to 1.20.
- *bigint*, *bignum*, *bigrat* have been upgraded to version 0.39.
Document in CAVEATS that using strings as numbers won't always invoke the big number overloading, and how to invoke it. [rt.perl.org #123064]
- *bignum* has been upgraded from version 0.38 to 0.39.
- *Carp* has been upgraded from version 1.34 to 1.35.
 - Carp now handles non-ASCII platforms better.
 - Off-by-one error fix for Perl < 5.14.
- *Config::Perl::V* has been upgraded from version 0.22 to 0.23.
- *constant* has been upgraded from version 1.32 to 1.33.
- *CPAN::Meta::Requirements* has been upgraded from version 2.131 to 2.132
- *Data::Dumper* has been upgraded from version 2.156 to 2.157.
- *Devel::Peek* has been upgraded from version 1.21 to 1.22.
- *DynaLoader* has been upgraded from version 1.30 to 1.31.
- *Encode* has been upgraded from version 2.67 to 2.70.
Building in C++ mode on Windows now works.
- *encoding* has been upgraded from version 2.12 to 2.13.
- *Errno* has been upgraded from version 1.22 to 1.23.
Add `-P` to the preprocessor command-line on GCC 5. GCC added extra line directives, breaking parsing of error code definitions. [rt.perl.org #123784]
- *ExtUtils::Miniperl* has been upgraded from version 1.03 to 1.04.
- *feature* has been upgraded from version 1.39 to 1.40.
- *HTTP::Tiny* has been upgraded from version 0.053 to 0.054.
- *Opcodes* has been upgraded from version 1.31 to 1.32.
- *overload* has been upgraded from version 1.24 to 1.25.
- *Perl::OSType* has been upgraded from version 1.007 to 1.008.
- *perlfaq* has been upgraded from version 5.0150046 to 5.021009.
- *PerlIO::scalar* has been upgraded from version 0.21 to 0.22.
Attempting to write at file positions impossible for the platform now fail early rather than wrapping at 4GB.
- *Pod::Parser* has been upgraded from version 1.62 to 1.63.
- *Pod::Perldoc* has been upgraded from version 3.24 to 3.25.
- *POSIX* has been upgraded from version 1.49 to 1.51.

- *re* has been upgraded from version 0.30 to 0.31.
- *Socket* has been upgraded from version 2.016 to 2.018.
- *Storable* has been upgraded from version 2.52 to 2.53.
- *Test::Simple* has been upgraded from version 1.301001_097 to 1.301001_098.
- *threads::shared* has been upgraded from version 1.47 to 1.48.
- *Unicode::Collate* has been upgraded from version 1.10 to 1.11.
- *Unicode::UCD* has been upgraded from version 0.59 to 0.61.
 - A new function *property_values()* has been added to return a given property's possible values.
 - A new function *charprop()* has been added to return the value of a given property for a given code point.
 - A new function *charprops_all()* has been added to return the values of all Unicode properties for a given code point.
 - A bug has been fixed so that *propaliases()* returns the correct short and long names for the Perl extensions where it was incorrect.
 - A bug has been fixed so that *prop_value_aliases()* returns `undef` instead of a wrong result for properties that are Perl extensions.
 - This module now works on EBCDIC platforms.
- *VMS::Stdio* has been upgraded from version 2.4 to 2.41.
- *warnings* has been upgraded from version 1.30 to 1.31.
- *Win32* has been upgraded from version 0.49 to 0.51.
GetOSName() now supports Windows 8.1, and building in C++ mode now works.
- *Win32API::File* has been upgraded from version 0.1201 to 0.1202
Building in C++ mode now works.

Documentation

New Documentation

perlrebackslash

- Added documentation of `\b{sb}`, `\b{wb}`, `\b{gcb}`, and `\b{g}`.

perlrequick

- Added example for `\b{wb}`.

perlretut

- Added example for `\b{wb}`.

Changes to Existing Documentation

perlunicode

- Update **Default Word Boundaries** under "*Unicode Regular Expression Support Level*" in *perlunicode*'s **Extended Unicode Support**.

perlunicook

- Clarify that `autodie >= 2.26` works with `use open`.

- Correct warning message for `use autodie` and `use open`.

perlfaq

- *perlfaq* has been synchronized with version 5.021009 from CPAN.

perlop

- Correct the version number which removes `m?PATTERN?`. It was Perl 5.22.0.

perlvar

- Further clarify version number representations and usage.

perlmodstyle

- Instead of pointing to the module list, we are now pointing to *PrePAN*.

Diagnostics

The following additions or changes have been made to diagnostic output, including warnings and fatal error messages. For the complete list of diagnostic messages, see *perldiag*.

New Diagnostics

New Warnings

- *'%s' is an unknown bound type in regex*
You used `\b{...}` or `\B{...}` and the `...` is not known to Perl. The current valid ones are given in `"\b{}", \b, \B{}, \B"` in *perlrebackslash*.
- *Use of `\b{} for non-UTF-8 locale is wrong. Assuming a UTF-8 locale`*
You are matching a regular expression using locale rules, and a Unicode boundary is being matched, but the locale is not a Unicode one. This doesn't make sense. Perl will continue, assuming a Unicode (UTF-8) locale, but the results could well be wrong except if the locale happens to be ISO-8859-1 (Latin1) where this message is spurious and can be ignored.
- *Using `/u` for '%s' instead of `/%s` in regex; marked by <-- HERE in `m/%s/`*
You used a Unicode boundary (`\b{...}` or `\B{...}`) in a portion of a regular expression where the character set modifiers `/a` or `/aa` are in effect. These two modifiers indicate an ASCII interpretation, and this doesn't make sense for a Unicode definition. The generated regular expression will compile so that the boundary uses all of Unicode. No other portion of the regular expression is affected.
- *The bitwise feature is experimental*
This warning is emitted if you use bitwise operators (`& | ^ ~ &. |. ^. ~.`) with the "bitwise" feature enabled. Simply suppress the warning if you want to use the feature, but know that in doing so you are taking the risk of using an experimental feature which may change or be removed in a future Perl version:

```
no warnings "experimental::bitwise";
use feature "bitwise";
$x |.= $y;
```

Changes to Existing Diagnostics

- **Unusual use of %s in void context** has been removed. It might come back in a future release.
- *Argument "%s" isn't numeric* now adds the following note:
Note that for the `C<Inf>` and `C<NaN>` (infinity and not-a-number) the definition of "numeric" is somewhat unusual: the strings

themselves (like "Inf") are considered numeric, and anything following them is considered non-numeric.

- **Possible precedence problem on bitwise %c operator** reworded as *Possible precedence problem on bitwise %s operator*.

Utility Changes

h2ph

- *h2ph* now handles hexadecimal constants in the compiler's predefined macro definitions, as visible in `$Config{cppsymbols}`. [rt.perl.org #123784]

encguess

- No longer depends on non-core module anymore.

Configuration and Compilation

- *Configure* now checks for *lrintl*, *lroundl*, *llrintl*, and *llroundl*.

Testing

- Added *t/op/dump.t* for testing *dump*.

Deprecations

Support for new warnings categories outside of "all"

The new option for warnings outside the **all** category in the *warnings* pragma has been removed for now.

For more context, you can refer to the following *discussion thread*.

Platform Support

Platform-Specific Notes

Win32

- Perl can now be built in C++ mode on Windows by setting the makefile macro `USE_CPLUSPLUS` to the value "define".
- List form pipe open no longer falls back to the shell.
- In release 5.21.8 compiling on VC with *dmake* was broken. Fixed.
- New `DebugSymbols` and `DebugFull` configuration options added to Windows makefiles.
- *B* now compiles again on Windows.

Solaris

Look for the Sun Studio compiler in both */opt/solstudio** and */opt/solarisstudio**.

VMS

- When spawning a subprocess without waiting, the return value is now the correct PID.
- Fix a prototype so linking doesn't fail under the VMS C++ compiler.

Selected Bug Fixes

- Patterns starting with `/ . * /` are now fast again. [rt.perl.org #123743]
- The original visible value of `$/` is now preserved when it is set to an invalid value. Previously if you set `$/` to a reference to an array, for example, perl would produce a runtime error and not set `PL_rs`, but perl code that checked `$/` would see the array reference. [rt.perl.org #123218]

- In a regular expression pattern, a POSIX class, like `[:ascii:]`, must be inside a bracketed character class, like `/qr[[:ascii:]]`. A warning is issued when something looking like a POSIX class is not inside a bracketed class. That warning wasn't getting generated when the POSIX class was negated: `[:^ascii:]`. This is now fixed.
- Fix a couple of other size calculation overflows. [rt.perl.org #123554]
- A bug introduced in 5.21.6, `dump LABEL` acted the same as `goto LABEL`. This has been fixed. [rt.perl.org #123836]
- Perl 5.14.0 introduced a bug whereby `eval { LABEL: }` would crash. This has been fixed. [rt.perl.org #123652]
- Various crashes due to the parser getting confused by syntax errors have been fixed. [rt.perl.org #123617] [rt.perl.org #123737] [rt.perl.org #123753] [rt.perl.org #123677]
- Code like `/ $a[/` used to read the next line of input and treat it as though it came immediately after the opening bracket. Some invalid code consequently would parse and run, but some code caused crashes, so this is now disallowed. [rt.perl.org #123712]
- Fix argument underflow for `pack`. [rt.perl.org #123874]
- Fix handling of non-strict `\x{ }`. Now `\x{ }` is equivalent to `\x{0}` instead of faulting.
- `stat -t` is now no longer treated as stackable, just like `-t stat`. [rt.perl.org #123816]
- The following no longer causes a SEGV: `qr{x+(y(?0))*}`.
- Fixed infinite loop in parsing backrefs in regexp patterns.
- Several minor bug fixes in behavior of Inf and NaN, including warnings when stringifying Inf-like or NaN-like strings. For example, "NaNcy" doesn't numify to NaN anymore.
- Only stringy classnames are now shared. This fixes some failures in *autobox*. [rt.cpan.org #100819]

Acknowledgements

Perl 5.21.9 represents approximately 4 weeks of development since Perl 5.21.8 and contains approximately 170,000 lines of changes across 520 files from 32 authors.

Excluding auto-generated files, documentation and release tools, there were approximately 160,000 lines of changes to 270 .pm, .t, .c and .h files.

Perl continues to flourish into its third decade thanks to a vibrant community of users and developers. The following people are known to have contributed the improvements that became Perl 5.21.9:

Chad Granum, Chris 'BinGOs' Williams, Craig A. Berry, Dagfinn Ilmari MannsÅker, Daniel Dragan, David Golden, David Mitchell, Father Chrysostomos, H. Merijn Brand, Hugo van der Sanden, James E Keenan, James Raspass, Jarkko Hietaniemi, Karen Etheridge, Karl Williamson, Kent Fredric, Lajos Veres, Leon Timmermans, Lukas Mai, Mathieu Arnold, Matthew Horsfall, Peter Martini, Petr PÅ-saÅ™, Randy Stauner, Ricardo Signes, Sawyer X, Shlomi Fish, Sisyphus, Steve Hay, Tony Cook, Yves Orton, Å†var ArnfjÅrÅ° Bjarmason.

The list above is almost certainly incomplete as it is automatically generated from version control history. In particular, it does not include the names of the (very much appreciated) contributors who reported issues to the Perl bug tracker.

Many of the changes included in this version originated in the CPAN modules included in Perl's core. We're grateful to the entire CPAN community for helping Perl to flourish.

For a more complete list of all of Perl's historical contributors, please see the *AUTHORS* file in the Perl source distribution.

Reporting Bugs

If you find what you think is a bug, you might check the articles recently posted to the comp.lang.perl.misc newsgroup and the perl bug database at <https://rt.perl.org/> . There may also be information at <http://www.perl.org/> , the Perl Home Page.

If you believe you have an unreported bug, please run the *perlbug* program included with your release. Be sure to trim your bug down to a tiny but sufficient test case. Your bug report, along with the output of `perl -V`, will be sent off to perlbug@perl.org to be analysed by the Perl porting team.

If the bug you are reporting has security implications, which make it inappropriate to send to a publicly archived mailing list, then please send it to perl5-security-report@perl.org. This points to a closed subscription unarchived mailing list, which includes all the core committers, who will be able to help assess the impact of issues, figure out a resolution, and help co-ordinate the release of patches to mitigate or fix the problem across all platforms on which Perl is supported. Please only use this address for security issues in the Perl core, not for modules independently distributed on CPAN.

SEE ALSO

The *Changes* file for an explanation of how to view exhaustive details on what changed.

The *INSTALL* file for how to build Perl.

The *README* file for general stuff.

The *Artistic* and *Copying* files for copyright information.