

## NAME

perl52110delta - what is new for perl v5.21.10

## DESCRIPTION

This document describes differences between the 5.21.9 release and the 5.21.10 release.

If you are upgrading from an earlier release such as 5.21.8, first read *perl5219delta*, which describes differences between 5.21.8 and 5.21.9.

## Incompatible Changes

### (?[...]) operators now follow standard Perl precedence

This experimental feature allows set operations in regular expression patterns. Prior to this, the intersection operator had the same precedence as the other binary operators. Now it has higher precedence. This could lead to different outcomes than existing code expects (though the documentation has always noted that this change might happen, recommending fully parenthesizing the expressions). See *"Extended Bracketed Character Classes"* in *perlrecharclass*.

## Performance Enhancements

- The functions `utf8::native_to_unicode()` and `utf8::unicode_to_native()` (see *utf8*) are now optimized out on ASCII platforms. There is now not even a minimal performance hit in writing code portable between ASCII and EBCDIC platforms.

## Modules and Pragmata

### Updated Modules and Pragmata

- *B* has been upgraded from version 1.56 to 1.57.
- *B::Deparse* has been upgraded from version 1.33 to 1.34.  
Deparse `$_` as that instead of as `#{_}`. [*perl #123947*]
- *Carp* has been upgraded from version 1.35 to 1.36.
- *CPAN* has been upgraded from version 2.05 to 2.10.
  - Add support for `Cwd::getdcwd()` and introduce workaround for a misbehaviour seen on Strawberry Perl 5.20.1.
  - Fix `chdir()` after building dependencies bug.
  - Introduce experimental support for plugins/hooks.
  - Integrate the `App::Cpan` sources.
  - Do not check recursion on optional dependencies.
  - Sanity check `META.yml` to contain a hash. [*cpan #95271*]
- *CPAN::Meta* has been upgraded from version 2.143240 to 2.150001.
- *Data::Dumper* has been upgraded from version 2.157 to 2.158.
- *DB* has been upgraded from version 1.07 to 1.08.
- *Devel::PPPort* has been upgraded from version 3.28 to 3.31.
- *DynaLoader* has been upgraded from version 1.31 to 1.32.
- *Encode* has been upgraded from version 2.70 to 2.72.
- *encoding* has been upgraded from version 2.13 to 2.14.
- *Getopt::Long* has been upgraded from version 2.43 to 2.45.

- *locale* has been upgraded from version 1.05 to 1.06.
- *Locale::Codes* has been upgraded from version 3.33 to 3.34.
- *Module::CoreList* has been upgraded from version 5.20150220 to 5.20150320.
- *parent* has been upgraded from version 0.228 to 0.232.  
No changes to installed files other than the version bump.
- The PathTools modules have been upgraded from version 3.54 to 3.55.
- *Pod::Functions* has been upgraded from version 1.08 to 1.09.
- *POSIX* has been upgraded from version 1.51 to 1.52.
- *re* has been upgraded from version 0.31 to 0.32.
- *sigtrap* has been upgraded from version 1.07 to 1.08.
- *Term::Complete* has been upgraded from version 1.402 to 1.403.
- *Test::Simple* has been reverted from version 1.301001\_098 to 1.001014.
- *Text::Balanced* has been upgraded from version 2.02 to 2.03.  
No changes to installed files other than the version bump.
- *Text::ParseWords* has been upgraded from version 3.29 to 3.30.
- *threads* has been upgraded from version 1.96\_001 to 2.01.
- *Unicode::Collate* has been upgraded from version 1.11 to 1.12.
- *utf8* has been upgraded from version 1.14 to 1.15.

## Documentation

### Changes to Existing Documentation

#### perldata

- Documentation has been added regarding the special floating point values `Inf` and `NaN`.

#### perlexperiment

- Removed note about `\s` matching `\VT` now that it is no longer experimental.
- Added note that `use re 'strict'` has been introduced experimentally.

#### perlpolicy

- The documentation of what to expect to see in future maintenance releases has been updated. Essentially the same types of changes will be included as before but with fewer changes that don't affect the installation or execution of perl.

## 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 Errors

- *Invalid quantifier in {,} in regex; marked by <-- HERE in m/%s/*  
(F) The pattern looks like a {min,max} quantifier, but the min or max could not be parsed as a valid number - either it has leading zeroes, or it represents too big a number to cope with. The <-- HERE shows where in the regular expression the problem was discovered. See *perlre*.

## Testing

- Tests for performance issues have been added in the file *t/perf/taint.t*.

## Platform Support

### New Platforms

z/OS running EBCDIC Code Page 1047

Core perl now works on this EBCDIC platform. Early perls also worked, but, even though support wasn't officially withdrawn, recent perls would not compile and run well. Perl 5.20 would work, but had many bugs which have now been fixed. Many CPAN modules that ship with Perl still fail tests, including Pod::Simple. However the version of Pod::Simple currently on CPAN should work; it was fixed too late to include in Perl 5.22. Work is under way to fix many of the still-broken CPAN modules, which likely will be installed on CPAN when completed, so that you may not have to wait until Perl 5.24 to get a working version.

### Platform-Specific Notes

HP-UX

The archname now distinguishes use64bitint from use64bitall.

## Internal Changes

- Macros have been created to allow XS code to better manipulate the POSIX locale category LC\_NUMERIC. See *"Locale-related functions and macros" in perlapi*.
- The previous `atoi` et al replacement function, `grok_atou`, has now been superseded by `grok_atoUV`. See *perlclib* for details.

## Selected Bug Fixes

- Repeated global pattern matches in scalar context on large tainted strings were exponentially slow depending on the current match position in the string. [*perl #123202*]
- Various crashes due to the parser getting confused by syntax errors have been fixed. [*perl #123801*] [*perl #123802*] [*perl #123955*] [*perl #123995*]
- `split` in the scope of lexical `$_` has been fixed not to fail assertions. [*perl #123763*]
- `my $x : attr` syntax inside various list operators no longer fails assertions. [*perl #123817*]
- An `@` sign in quotes followed by a non-ASCII digit (which is not a valid identifier) would cause the parser to crash, instead of simply trying the `@` as literal. This has been fixed. [*perl #123963*]
- `*bar::=*foo::=*glob_with_hash` has been crashing since Perl 5.14, but no longer does. [*perl #123847*]
- `foreach` in scalar context was not pushing an item on to the stack, resulting in bugs. (`print 4, scalar do { foreach(@x){} } + 1` would print 5.) It has been fixed to return `undef`. [*perl #124004*]
- A memory leak introduced in Perl 5.21.6 has been fixed. [*perl #123922*]
- A regression in the behaviour of the `readline` built-in function, caused by the introduction of the `<<>>` operator, has been fixed. [*perl #123990*]
- Several cases of data used to store environment variable contents in core C code being potentially overwritten before being used have been fixed. [*perl #123748*]

## Known Problems

- A goal is for Perl to be able to be recompiled to work reasonably well on any Unicode version. In Perl 5.22, though, the earliest such version is Unicode 5.1 (current is 7.0).

- EBCDIC platforms
  - Encode and encoding are mostly broken.
  - Many cpan modules that are shipped with core show failing tests.
  - `pack/unpack` with "U0" format may not work properly.

## Acknowledgements

Perl 5.21.10 represents approximately 4 weeks of development since Perl 5.21.9 and contains approximately 170,000 lines of changes across 860 files from 27 authors.

Excluding auto-generated files, documentation and release tools, there were approximately 170,000 lines of changes to 610 .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 5.21.10:

Chris 'BinGOs' Williams, David Golden, David Mitchell, David Wheeler, Father Chrysostomos, H.Merijn Brand, Hugo van der Sanden, James E Keenan, Jarkko Hietaniemi, Jasmine Ngan, Jerry D. Hedden, John Goodyear, Karen Etheridge, Karl Williamson, Lukas Mai, Matthew Horsfall, Nicholas Clark, Petr Páľák™, Rafael Garcia-Suarez, Reini Urban, Ricardo Signes, Sawyer X, Steffen Møller, Steve Hay, Sullivan Beck, Tony Cook, Vincent Pit.

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.