NAME
perl5113delta - what is new for perl v5.11.3

DESCRIPTION
This document describes differences between the 5.11.2 release and the 5.11.3 release.

If you are upgrading from an earlier release such as 5.11.1, first read the perl5112delta, which describes differences between 5.11.1 and 5.11.2

Incompatible Changes
Filehandles are blessed directly into IO::Handle, as FileHandle is merely a wrapper around IO::Handle.

The previous behaviour was to bless Filehandles into FileHandle (an empty proxy class) if it was loaded into memory and otherwise to bless them into IO::Handle.

Core Enhancements
Unicode version
Perl is shipped with the latest Unicode version, 5.2, dated October 2009. See http://www.unicode.org/versions/Unicode5.2.0 for details about this release of Unicode. See perlunicode for instructions on installing and using older versions of Unicode.

Unicode properties
Perl can now handle every Unicode character property. A new pod, perluniprops, lists all available non-Unihan character properties. By default the Unihan properties and certain others (deprecated and Unicode internal-only ones) are not exposed. See below for more details on these; there is also a section in the pod listing them, and why they are not exposed.

Perl now fully supports the Unicode compound-style of using = and : in writing regular expressions: \p{property=value} and \p{property:value} (both of which mean the same thing).

Perl now fully supports the Unicode loose matching rules for text between the braces in \p{...} constructs. In addition, Perl also allows underscores between digits of numbers.

All the Unicode-defined synonyms for properties and property values are now accepted.

qr/\X/, which matches a Unicode logical character, has been expanded to work better with various Asian languages. It now is defined as an extended grapheme cluster.(See http://www.unicode.org/reports/tr29/). Anything matched previously that made sense will continue to be matched. But in addition:

- \X will now not break apart a CR LF sequence.
- \X will now match a sequence including the ZWJ and ZWNJ characters.
- \X will now always match at least one character, including an initial mark. Marks generally come after a base character, but it is possible in Unicode to have them in isolation, and \X will now handle that case, for example at the beginning of a line or after a ZWSP. And this is the part where \X doesn’t match the things that it used to that don’t make sense. Formerly, for example, you could have the nonsensical case of an accented LF.
- \X will now match a (Korean) Hangul syllable sequence, and the Thai and Lao exception cases.

Otherwise, this change should be transparent for the non-affected languages.

\p{...} matches using the Canonical_Combining_Class property were completely broken in previous Perls. This is now fixed.

In previous Perls, the Unicode Decomposition_Type=Compat property and a Perl extension had
the same name, which led to neither matching all the correct values (with more than 100 mistakes in one, and several thousand in the other). The Perl extension has now been renamed to be Decomposition_Type=Noncanonical (short: dt=noncanon). It has the same meaning as was previously intended, namely the union of all the non-canonical Decomposition types, with UnicodeCompat being just one of those.

\p{Uppercase} and \p{Lowercase} have been brought into line with the Unicode definitions. This means they each match a few more characters than previously.

\p{Ctrl} now matches the same characters as \p{Control}. This means it no longer will match Private Use (gc=co), Surrogates (gc=cs), nor Format (gc=cf) code points. The Format code points represent the biggest possible problem. All but 36 of them are either officially deprecated or strongly discouraged from being used. Of those 36, likely the most widely used are the soft hyphen (U+00AD), and BOM, ZWSP, ZWNJ, WJ, and similar, plus Bi-directional controls.

\p{Alpha} now matches the same characters as \p{Alphabetic}. The Perl definition included a number of things that aren't really alpha (all marks), while omitting many that were. As a direct consequence, the definitions of \p{Alnum} and \p{Word} which depend on Alpha also change.

\p{Print} no longer matches the line control characters: Tab, LF, CR, FF, VT, and NEL. This brings it in line with the documentation.

\p{Decomposition_Type=Canonical} now includes the Hangul syllables.

The Numeric type property has been extended to include the Unihan characters.

There is a new Perl extension, the 'Present_In', or simply 'In', property. This is an extension of the Unicode Age property, but \p{In=5.0} matches any code point whose usage has been determined as of Unicode version 5.0. The \p{Age=5.0} only matches code points added in precisely version 5.0.

A number of properties did not have the correct values for unassigned code points. This is now fixed. The affected properties are Bidi_Class, East_Asian_Width, Joining_Type, Decomposition_Type, Hangul_Syllable_Type, Numeric_Type, and Line_Break.

The Default_Ignorable_Code_Point, ID_Continue, and ID_Start properties have been updated to their current Unicode definitions.

Certain properties that are supposed to be Unicode internal-only were erroneously exposed by previous Perls. Use of these in regular expressions will now generate, if enabled, a deprecated warning message. The properties are: Other_Alphabetic, Other_Default_Ignorable_Code_Point, Other_Grapheme_Extend, Other_ID_Continue, Other_ID_Start, Other_Lowercase, Other_Math, and Other_Uppercase.

An installation can now fairly easily change which Unicode properties Perl understands. As mentioned above, certain properties are by default turned off. These include all the Unihan properties (which should be accessible via the CPAN module Unicode::Unihan) and any deprecated or Unicode internal-only property that Perl has never exposed.

The generated files in the lib/unicore/To directory are now more clearly marked as being stable, directly usable by applications. New hash entries in them give the format of the normal entries, which allows for easier machine parsing. Perl can generate files in this directory for any property, though most are suppressed. An installation can choose to change which get written. Instructions are in perluniprops.

Regular Expressions

U+0FFFF is now a legal character in regular expressions.
Modules and Pragmata

Pragmata Changes

constant
Upgraded from version 1.19 to 1.20.

diagnostics
This pragma no longer suppresses `Use of uninitialized value in range (or flip) warnings. [perl #71204]`

feature
Upgraded from 1.13 to 1.14. Added the `unicode_strings` feature:

```perl
use feature "unicode_strings";
```

This pragma turns on Unicode semantics for the case-changing operations (uc/lc/ucfirst/lcfirst) on strings that don't have the internal UTF-8 flag set, but that contain single-byte characters between 128 and 255.

legacy
The experimental `legacy` pragma, introduced in 5.11.2, has been removed, and its functionality replaced by the new feature pragma, `use feature "unicode_strings"`.

threads
Upgraded from version 1.74 to 1.75.

warnings
Upgraded from 1.07 to 1.08. Added new `warnings::fatal_enabled()` function.

Updated Modules

Archive::Extract
Upgraded from version 0.34 to 0.36.

CPAN
Upgraded from version 1.94_51 to 1.94_5301, which is 1.94_53 on CPAN plus some local fixes for bleedperl.
Includes better bzip2 support, improved FirstTime experience with auto-selection of CPAN mirrors, proper handling of modules removed from the Perl core, and an updated `cpan` utility script

CPANPLUS
Upgraded from version 0.89_09 to 0.90.

Encode
Upgraded from version 2.38 to 2.39.

ExtUtils::MakeMaker
Upgraded from version 6.55_02 to 6.56. Adds new BUILD_REQUIRES key to indicate build-only prerequisites. Also adds support for mingw64 and the new "package NAME VERSION" syntax.

File::Path
Upgraded from version 2.08 to 2.08_01.

Module::Build
Upgraded from version 0.35_09 to 0.36. Compared to 0.35, this version has a new
'installdeps' action, supports the PERL_MB_OPT environment variable, adds a 'share_dir' property for File::ShareDir support, support the "package NAME VERSION" syntax and has many other enhancements and bug fixes. The 'passthrough' style of Module::Build::Compat has been deprecated.

Module::CoreList
Upgraded from version 2.23 to 2.24.

POSIX
Upgraded from version 1.18 to 1.19. Error codes for getaddrinfo() and getnameinfo() are now available.

Pod::Simple
Upgraded from version 3.10 to 3.13.

Safe
Upgraded from version 2.19 to 2.20.

Utility Changes
perlbug
No longer reports "Message sent" when it hasn't actually sent the message

Changes to Existing Documentation
The Pod specification (perlpodspec) has been updated to bring the specification in line with modern usage already supported by most Pod systems. A parameter string may now follow the format name in a "begin/end" region. Links to URIs with a text description are now allowed. The usage of \< "section"> has been marked as deprecated.

if.pm has been documented in "use" in perlfunc as a means to get conditional loading of modules despite the implicit BEGIN block around use.

Installation and Configuration Improvements
Testing improvements
It's now possible to override PERL5OPT and friends in t/TEST

Platform Specific Changes
Win32
- Always add a manifest resource to perl.exe to specify the trustInfo settings for Windows Vista and later. Without this setting Windows will treat perl.exe as a legacy application and apply various heuristics like redirecting access to protected file system areas (like the "Program Files" folder) to the users "VirtualStore" instead of generating a proper "permission denied" error.

For VC8 and VC9 this manifest setting is automatically generated by the compiler/linker (together with the binding information for their respective runtime libraries); for all other compilers we need to embed the manifest resource explicitly in the external resource file.

This change also requests the Microsoft Common-Controls version 6.0 (themed controls introduced in Windows XP) via the dependency list in the assembly manifest. For VC8 and VC9 this is specified using the /manifestdependency linker commandline option instead.

cygwin
Enable IPv6 support on cygwin 1.7 and newer

OpenVMS
Make -UDEBUGGING the default on VMS for 5.12.0.
Like it has been everywhere else for ages and ages. Also make command-line
selection of -UDEBUGGING and -DDEBUGGING work in configure.com; before the
only way to turn it off was by saying no in answer to the interactive question.

Selected Bug Fixes

- Ensure that pp_qr returns a new regexp SV each time. Resolves RT #69852.
  Instead of returning a(nother) reference to the (pre-compiled) regexp in the optree, use
  reg_temp_copy() to create a copy of it, and return a reference to that. This resolves issues
  about Regexp::DESTROY not being called in a timely fashion (the original bug tracked by RT
  #69852), as well as bugs related to blessing regexps, and of assigning to regexps, as
  described in correspondence added to the ticket.

- It transpires that we also need to undo the SvPVX() sharing when it/threads cloning a Regexp
  SV, because mother_re is set to NULL, instead of a cloned copy of the mother_re. This
  change might fix bugs with regexps and threads in certain other situations, but as yet neither
tests nor bug reports have indicated any problems, so it might not actually be an edge case
that it's possible to reach.

- Several compilation errors and segfaults when perl was built with -Dmad were fixed.

- Fixes for lexer API changes in 5.11.2 which broke NYTProf's savesrc option.

- -t should only return TRUE for file handles connected to a TTY
  The Microsoft C version of isatty() returns TRUE for all character mode devices, including the
  /dev/null style "null" device and printers like "lpt1".

- Fixed a regression caused by commit fafafbaf which caused a panic during parameter passing
  [perl #70171]

- On systems which in-place edits without backup files, -i"" now works as the documentation
  says it does [perl #70802]

- Saving and restoring magic flags no longer loses readonly flag.

- The malformed syntax grep EXPR LIST (note the missing comma) no longer causes abrupt
  and total failure.

- Regular expressions compiled with qr() literals properly set $^r when matching again.

- Using named subroutines with sort should no longer lead to bus errors [perl #71076]

- Numerous bugfixes catch small issues caused by the recently-added Lexer API.

- Smart match against @_ sometimes gave false negatives. [perl #71078]

- $@ may now be assigned a read-only value (without error or busting the stack).

- sort called recursively from within an active comparison subroutine no longer causes a bus
  error if run multiple times. [perl #71076]

New or Changed Diagnostics

- split now warns when called in void context

- printf-style functions called with too few arguments will now issue the warning "Missing
  argument in $s" [perl #71000]

New Tests

Many modules updated from CPAN incorporate new tests.
t/comp/final_line_num.t
  See if line numbers are correct at EOF

t/comp/form_scope.t
  See if format scoping works

t/comp/line_debug.t
  See if @{$"<$file"} works

t/op/filetest_t.t
  See if -t file test works

t/op/qr.t
  See if qr works

t/op/utf8cache.t
  Tests malfunctions of utf8 cache

t/re/uniprops.t
  Test unicode \p{} regex constructs

Deprecations

The following items are now deprecated.

Use of "goto" to jump into a construct is deprecated
  Using goto to jump from an outer scope into an inner scope is now deprecated. This rare use case was causing problems in the implementation of scopes.

Acknowledgements

Perl 5.11.3 represents approximately one month of development since Perl 5.11.2 and contains 61407 lines of changes across 396 files from 40 authors and committers:

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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.

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 http://rt.perl.org/perlbug/ . 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 archived mailing list, which includes all the core committer, who 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.