

NAME

Devel::PPPort - Perl/Pollution/Portability

SYNOPSIS

```
Devel::PPPort::WriteFile();    # defaults to ./ppport.h
Devel::PPPort::WriteFile('someheader.h');

# Same as above but retrieve contents rather than write file
my $contents = Devel::PPPort::GetFileContents();
my $contents = Devel::PPPort::GetFileContents('someheader.h');
```

DESCRIPTION

Perl's API has changed over time, gaining new features, new functions, increasing its flexibility, and reducing the impact on the C namespace environment (reduced pollution). The header file written by this module, typically *ppport.h*, attempts to bring some of the newer Perl API features to older versions of Perl, so that you can worry less about keeping track of old releases, but users can still reap the benefit.

Devel::PPPort contains two functions, *WriteFile* and *GetFileContents*. *WriteFile*'s only purpose is to write the *ppport.h* C header file. This file contains a series of macros and, if explicitly requested, functions that allow XS modules to be built using older versions of Perl. Currently, Perl versions from 5.003 to 5.20 are supported.

GetFileContents can be used to retrieve the file contents rather than writing it out.

This module is used by *h2xs* to write the file *ppport.h*.

Why use ppport.h?

You should use *ppport.h* in modern code so that your code will work with the widest range of Perl interpreters possible, without significant additional work.

You should attempt older code to fully use *ppport.h*, because the reduced pollution of newer Perl versions is an important thing. It's so important that the old polluting ways of original Perl modules will not be supported very far into the future, and your module will almost certainly break! By adapting to it now, you'll gain compatibility and a sense of having done the electronic ecology some good.

How to use ppport.h

Don't direct the users of your module to download *Devel::PPPort*. They are most probably no XS writers. Also, don't make *ppport.h* optional. Rather, just take the most recent copy of *ppport.h* that you can find (e.g. by generating it with the latest *Devel::PPPort* release from CPAN), copy it into your project, adjust your project to use it, and distribute the header along with your module.

Running ppport.h

But *ppport.h* is more than just a C header. It's also a Perl script that can check your source code. It will suggest hints and portability notes, and can even make suggestions on how to change your code. You can run it like any other Perl program:

```
perl ppport.h [options] [files]
```

It also has embedded documentation, so you can use

```
perldoc ppport.h
```

to find out more about how to use it.

FUNCTIONS

WriteFile

`WriteFile` takes one optional argument. When called with one argument, it expects to be passed a filename. When called with no arguments, it defaults to the filename *ppport.h*.

The function returns a true value if the file was written successfully. Otherwise it returns a false value.

GetFileContents

`GetFileContents` behaves like `WriteFile` above, but returns the contents of the would-be file rather than writing it out.

COMPATIBILITY

ppport.h supports Perl versions from 5.003 to 5.20 in threaded and non-threaded configurations.

Provided Perl compatibility API

The header file written by this module, typically *ppport.h*, provides access to the following elements of the Perl API that is not available in older Perl releases:

- `_aMY_CXT`
- `_pMY_CXT`
- `aMY_CXT`
- `aMY_CXT_`
- `aTHX`
- `aTHX_`
- `aTHXR`
- `aTHXR_`
- `AvFILLp`
- `boolSV`
- `C_ARRAY_END`
- `C_ARRAY_LENGTH`
- `call_argv`
- `call_method`
- `call_pv`
- `call_sv`
- `caller_cx`
- `cBOOL`
- `ckWARN`
- `CopFILE`
- `CopFILE_set`
- `CopFILEAV`
- `CopFILEGV`
- `CopFILEGV_set`
- `CopFILESV`
- `CopSTASH`
- `CopSTASH_eq`
- `CopSTASH_set`
- `CopSTASHPV`
- `CopSTASHPV_set`
- `CopyD`
- `CPERLscope`
- `dAX`
- `dAXMARK`
- `DEFSV`
- `DEFSV_set`
- `dITEMS`
- `dMY_CXT`

dMY_CXT_SV
dNOOP
dTHR
dTHX
dTHXa
dTHXoa
dTHXR
dUNDERBAR
dVAR
dXCPT
dXSTARG
END_EXTERN_C
ERRSV
eval_pv
eval_sv
EXTERN_C
G_METHOD
get_av
get_cv
get_cvs
get_hv
get_sv
grok_bin
grok_hex
grok_number
GROK_NUMERIC_RADIX
grok_numeric_radix
grok_oct
gv_fetchpvn_flags
gv_fetchpvs
gv_stashpvn
gv_stashpvs
HEf_SVKEY
HeUTF8
hv_fetchs
hv_stores
HvNAME_get
HvNAMELEN_get
IN_LOCALE
IN_LOCALE_COMPILETIME
IN_LOCALE_RUNTIME
IN_PERL_COMPILETIME
INT2PTR
IS_NUMBER_GREATER_THAN_UV_MAX
IS_NUMBER_IN_UV
IS_NUMBER_INFINITY
IS_NUMBER_NAN
IS_NUMBER_NEG
IS_NUMBER_NOT_INT
isALNUMC
isASCII
isBLANK
isCNTRL
isGRAPH
isPRINT
isPSXSPC

isPUNCT
isXDIGIT
IVdf
IVSIZE
IVTYPE
load_module
memEQ
memEQs
memNE
memNEs
mg_findext
Moved
mPUSHi
mPUSHn
mPUSHp
mPUSHs
mPUSHu
MUTABLE_PTR
MUTABLE_SV
mXPUSHi
mXPUSHn
mXPUSHp
mXPUSHs
mXPUSHu
MY_CXT
MY_CXT_CLONE
MY_CXT_INIT
my_snprintf
my_sprintf
my_strlcat
my_strlcpy
newCONSTSUB
newRV_inc
newRV_noinc
newSV_type
newSVpvn
newSVpvn_flags
newSVpvn_share
newSVpvn_utf8
newSVpvs
newSVpvs_flags
newSVpvs_share
newSVuv
Newx
Newxc
Newxz
NOOP
NUM2PTR
NVef
NVff
NVgf
NVTYPE
OpHAS_SIBLING
OpLASTSIB_set
OpMAYBESIB_set
OpMORESIB_set

OpSIBLING
packWARN
PERL_ABS
PERL_BCDVERSION
PERL_GCC_BRACE_GROUPS_FORBIDDEN
PERL_HASH
PERL_INT_MAX
PERL_INT_MIN
PERL_LONG_MAX
PERL_LONG_MIN
PERL_MAGIC_arylen
PERL_MAGIC_backref
PERL_MAGIC_bm
PERL_MAGIC_collxfrm
PERL_MAGIC_dbfile
PERL_MAGIC_dbline
PERL_MAGIC_defelem
PERL_MAGIC_env
PERL_MAGIC_envelem
PERL_MAGIC_ext
PERL_MAGIC_fm
PERL_MAGIC_glob
PERL_MAGIC_isa
PERL_MAGIC_isaelem
PERL_MAGIC_mutex
PERL_MAGIC_nkeys
PERL_MAGIC_overload
PERL_MAGIC_overload_elem
PERL_MAGIC_overload_table
PERL_MAGIC_pos
PERL_MAGIC_qr
PERL_MAGIC_regdata
PERL_MAGIC_regdatum
PERL_MAGIC_regex_global
PERL_MAGIC_shared
PERL_MAGIC_shared_scalar
PERL_MAGIC_sig
PERL_MAGIC_sigelem
PERL_MAGIC_substr
PERL_MAGIC_sv
PERL_MAGIC_taint
PERL_MAGIC_tied
PERL_MAGIC_tiedelem
PERL_MAGIC_tiedscalar
PERL_MAGIC_utf8
PERL_MAGIC_uvar
PERL_MAGIC_uvar_elem
PERL_MAGIC_vec
PERL_MAGIC_vstring
PERL_PV_ESCAPE_ALL
PERL_PV_ESCAPE_FIRSTCHAR
PERL_PV_ESCAPE_NOBACKSLASH
PERL_PV_ESCAPE_NOCLEAR
PERL_PV_ESCAPE_QUOTE
PERL_PV_ESCAPE_RE
PERL_PV_ESCAPE_UNI

PERL_PV_ESCAPE_UNI_DETECT
PERL_PV_PRETTY_DUMP
PERL_PV_PRETTY_ELLIPSES
PERL_PV_PRETTY_LTGT
PERL_PV_PRETTY_NOCLEAR
PERL_PV_PRETTY_QUOTE
PERL_PV_PRETTY_REGPROP
PERL_QUAD_MAX
PERL_QUAD_MIN
PERL_REVISION
PERL_SCAN_ALLOW_UNDERSCORES
PERL_SCAN_DISALLOW_PREFIX
PERL_SCAN_GREATER_THAN_UV_MAX
PERL_SCAN_SILENT_ILLDIGIT
PERL_SHORT_MAX
PERL_SHORT_MIN
PERL_SIGNALS_UNSAFE_FLAG
PERL_SUBVERSION
PERL_UCHAR_MAX
PERL_UCHAR_MIN
PERL_UINT_MAX
PERL_UINT_MIN
PERL_ULONG_MAX
PERL_ULONG_MIN
PERL_UNUSED_ARG
PERL_UNUSED_CONTEXT
PERL_UNUSED_DECL
PERL_UNUSED_RESULT
PERL_UNUSED_VAR
PERL_UQUAD_MAX
PERL_UQUAD_MIN
PERL_USE_GCC_BRACE_GROUPS
PERL_USHORT_MAX
PERL_USHORT_MIN
PERL_VERSION
Perl_warner
Perl_warner_nocontext
PERLIO_FUNCS_CAST
PERLIO_FUNCS_DECL
PL_bufend
PL_bufptr
PL_compiling
PL_copline
PL_curcop
PL_curstash
PL_DBsignal
PL_DBsingle
PL_DBsub
PL_DBtrace
PL_debstash
PL_defgv
PL_diehook
PL_dirty
PL_dowarn
PL_errgv
PL_error_count

PL_expect
PL_hexdigit
PL_hints
PL_in_my
PL_in_my_stash
PL_laststatval
PL_lex_state
PL_lex_stuff
PL_linestr
PL_na
PL_no_modify
PL_parser
PL_perl_destruct_level
PL_perldb
PL_ppaddr
PL_rsf
PL_rsf_filters
PL_signals
PL_stack_base
PL_stack_sp
PL_statcache
PL_stdingv
PL_Sv
PL_sv_arenaroot
PL_sv_no
PL_sv_undef
PL_sv_yes
PL_tainted
PL_tainting
PL_tokenbuf
pMY_CXT
pMY_CXT_
Poison
PoisonFree
PoisonNew
PoisonWith
pTHX
pTHX_
PTR2IV
PTR2nat
PTR2NV
PTR2ul
PTR2UV
PTRV
PUSHmortal
PUSHu
pv_display
pv_escape
pv_pretty
SAVE_DEFSV
START_EXTERN_C
START_MY_CXT
STMT_END
STMT_START
STR_WITH_LEN
sv_2pv_flags

sv_2pv_nolen
sv_2pvbyte
sv_2pvbyte_nolen
sv_2uv
sv_catpv_mg
sv_catpvf_mg
sv_catpvf_mg_nocontext
sv_catpvn_mg
sv_catpvn_nomg
sv_catpvs
sv_catsv_mg
sv_catsv_nomg
SV_CONST_RETURN
SV_COW_DROP_PV
SV_COW_SHARED_HASH_KEYS
SV_GMAGIC
SV_HAS_TRAILING_NUL
SV_IMMEDIATE_UNREF
sv_magic_portable
SV_MUTABLE_RETURN
SV_NOSTEAL
sv_pvn_force_flags
sv_pvn_nomg
sv_setiv_mg
sv_setnv_mg
sv_setpv_mg
sv_setpvf_mg
sv_setpvf_mg_nocontext
sv_setpvn_mg
sv_setpvs
sv_setsv_mg
sv_setsv_nomg
sv_setuv
sv_setuv_mg
SV_SMAGIC
sv_unmagicext
sv_usepvn_mg
SV_UTF8_NO_ENCODING
sv_uv
sv_vcatpvf
sv_vcatpvf_mg
sv_vsetpvf
sv_vsetpvf_mg
SVf
SVf_UTF8
SVfARG
SvGETMAGIC
SvIV_nomg
SvMAGIC_set
SvPV_const
SvPV_flags
SvPV_flags_const
SvPV_flags_const_nolen
SvPV_flags_mutable
SvPV_force
SvPV_force_flags

SvPV_force_flags_mutable
SvPV_force_flags_nolen
SvPV_force_mutable
SvPV_force_nolen
SvPV_force_nomg
SvPV_force_nomg_nolen
SvPV_mutable
SvPV_nolen
SvPV_nolen_const
SvPV_nomg
SvPV_nomg_const
SvPV_nomg_const_nolen
SvPV_nomg_nolen
SvPV_renew
SvPVbyte
SvPVX_const
SvPVX_mutable
SvREFCNT_inc
SvREFCNT_inc_NN
SvREFCNT_inc_simple
SvREFCNT_inc_simple_NN
SvREFCNT_inc_simple_void
SvREFCNT_inc_simple_void_NN
SvREFCNT_inc_void
SvREFCNT_inc_void_NN
SvRV_set
SvRX
SvRXOK
SvSHARED_HASH
SvSTASH_set
SvUOK
SvUV
SvUV_nomg
SvUV_set
SvUVX
SvUVx
SvUVXx
SvVSTRING_mg
UNDERBAR
UTF8_MAXBYTES
UVof
UVSIZE
UVTYPE
UVuf
UVXf
UVxf
vload_module
vnewSVpvf
WARN_ALL
WARN_AMBIGUOUS
WARN_ASSERTIONS
WARN_BAREWORD
WARN_CLOSED
WARN_CLOSURE
WARN_DEBUGGING
WARN_DEPRECATED

WARN_DIGIT
WARN_EXEC
WARN_EXITING
WARN_GLOB
WARN_INPLACE
WARN_INTERNAL
WARN_IO
WARN_LAYER
WARN_MALLOC
WARN_MISC
WARN_NEWLINE
WARN_NUMERIC
WARN_ONCE
WARN_OVERFLOW
WARN_PACK
WARN_PARENTHESES
WARN_PIPE
WARN_PORTABLE
WARN_PRECEDENCE
WARN_PRINTF
WARN_PROTOTYPE
WARN_QW
WARN_RECURSION
WARN_REDEFINE
WARN_REGEX
WARN_RESERVED
WARN_SEMICOLON
WARN_SEVERE
WARN_SIGNAL
WARN_SUBSTR
WARN_SYNTAX
WARN_TAINT
WARN_THREADS
WARN_UNINITIALIZED
WARN_UNOPENED
WARN_UNPACK
WARN_UNTIE
WARN_UTF8
WARN_VOID
warner
WIDEST_UTYPE
XCPT_CATCH
XCPT_RETHROW
XCPT_TRY_END
XCPT_TRY_START
XPUSHmortal
XPUSHu
XSpresPUSH
XSPROTO
XSRETURN
XSRETURN_UV
XST_mUV
ZeroD

Perl API not supported by ppport.h

There is still a big part of the API not supported by *ppport.h*. Either because it doesn't make sense to back-port that part of the API, or simply because it hasn't been implemented yet. Patches welcome!

Here's a list of the currently unsupported API, and also the version of Perl below which it is unsupported:

perl 5.24.0

- BhkDISABLE
- BhkENABLE
- BhkENTRY_set
- MULTICALL
- PERL_SYS_TERM
- POP_MULTICALL
- PUSH_MULTICALL
- PadARRAY
- PadMAX
- PadlistARRAY
- PadlistMAX
- PadlistNAMES
- PadlistNAMESARRAY
- PadlistNAMESMAX
- PadnameLEN
- PadnamePV
- PadnameREFCNT
- PadnameREFCNT_dec
- PadnameSV
- PadnamelistARRAY
- PadnamelistMAX
- PadnamelistREFCNT
- PadnamelistREFCNT_dec
- RESTORE_LC_NUMERIC
- STORE_LC_NUMERIC_FORCE_TO_UNDERLYING
- STORE_LC_NUMERIC_SET_TO_NEEDED
- XS_APIVERSION_BOOTCHECK
- XS_EXTERNAL
- XS_INTERNAL
- XS_VERSION_BOOTCHECK
- XopDISABLE
- XopENABLE
- XopENTRY
- XopENTRYCUSTOM
- XopENTRY_set
- cophh_new_empty
- my_lstat
- my_stat
- reentrant_free
- reentrant_init
- reentrant_retry
- reentrant_size
- ref
- sv_setref_pvs

perl 5.23.9

- toFOLD_uvchr

toLOWER_uvchr
toTITLE_uvchr
toUPPER_uvchr

perl 5.23.8

clear_defarray
cx_popblock
cx_popeval
cx_popformat
cx_popgiven
cx_poploop
cx_popsub
cx_popsub_args
cx_popsub_common
cx_popwhen
cx_pushblock
cx_pusheval
cx_pushformat
cx_pushgiven
cx_pushloop_for
cx_pushloop_plain
cx_pushsub
cx_pushwhen
cx_topblock
leave_adjust_stacks
savetmps

perl 5.22.0

UVCHR_SKIP

perl 5.21.10

DECLARATION_FOR_LC_NUMERIC_MANIPULATION

perl 5.21.8

sv_get_backrefs

perl 5.21.7

PadnameUTF8
is_invariant_string
newPADNAMELIST
newPADNAMEouter
newPADNAMEpv
newUNOP_AUX
padnamelist_fetch
padnamelist_store

perl 5.21.6

newDEFSVOP
op_convert_list

perl 5.21.5

cv_name
newMETHOP
newMETHOP_named

perl 5.21.4

cv_set_call_checker_flags
grok_infnan
isinfnan
sync_locale

perl 5.21.2

grok_number_flags
op_sibling_splice

perl 5.21.1

_is_in_locale_category
_is_utf8_char_slow
_is_utf8_idcont
_is_utf8_idstart
_is_utf8_xidcont
_is_utf8_xidstart
isALNUM_lazy
isIDFIRST_lazy
isUTF8_CHAR
markstack_grow
my_strerror

perl 5.19.10

OP_TYPE_IS_OR_WAS

perl 5.19.9

_to_utf8_fold_flags
_to_utf8_lower_flags
_to_utf8_title_flags
_to_utf8_upper_flags

perl 5.19.7

OP_TYPE_IS

perl 5.19.4

append_utf8_from_native_byte
is_safe_syscall
uvoffuni_to_utf8_flags

perl 5.19.3

croak_memory_wrap
sv_pos_b2u_flags

perl 5.19.2

SVt_INVLIST

perl 5.19.1

re_intuit_start
toFOLD
toFOLD_utf8
toLOWER_L1
toTITLE

perl 5.18.0

hv_rand_set

perl 5.17.9

av_tindex
av_top_index

perl 5.17.8

_is_uni_F00
_is_uni_perl_idcont
_is_utf8_F00
_is_utf8_mark
_is_utf8_perl_idcont
isALPHANUMERIC
isIDCONT

perl 5.17.7

SvREFCNT_dec_NN
_is_uni_perl_idstart
_is_utf8_perl_idstart
is_uni_alnumc
is_uni_alnumc_lc
is_utf8_alnumc

perl 5.17.6

READ_XDIGIT

perl 5.17.4

PL_comppad_name
PadlistREFCNT
newMYSUB
newSVpadname

perl 5.17.2

is_uni_blank
is_uni_blank_lc
is_utf8_blank
sv_copypv_flags
sv_copypv_nomg
sv_vcatpvfn_flags

perl 5.15.9

utf8_to_uvchr_buf

utf8_to_uvuni_buf
valid_utf8_to_uvchr
valid_utf8_to_uvuni

perl 5.15.8

is_utf8_char_buf
wrap_op_checker

perl 5.15.7

toLOWER_utf8
toTITLE_utf8
toUPPER_utf8
to_utf8_fold
to_utf8_lower
to_utf8_title
to_utf8_upper

perl 5.15.6

newCONSTSUB_flags

perl 5.15.4

HVNAMELEN
HVNAMEUTF8
HvNAMELEN
HvNAMEUTF8
gv_autoload_pv
gv_autoload_pvn
gv_autoload_sv
gv_fetchmeth_pv
gv_fetchmeth_pv_autoload
gv_fetchmeth_pvn
gv_fetchmeth_pvn_autoload
gv_fetchmeth_sv
gv_fetchmeth_sv_autoload
gv_fetchmethod_pv_flags
gv_fetchmethod_pvn_flags
gv_fetchmethod_sv_flags
gv_init_pv
gv_init_sv
newGVgen_flags
sv_derived_from_pv
sv_derived_from_pvn
sv_derived_from_sv
sv_does_pv
sv_does_pvn
sv_does_sv
sv_ref
whichsig_pv
whichsig_pvn
whichsig_sv

perl 5.15.1

cop_fetch_label

cop_store_label
pad_add_name_pv
pad_add_name_pvn
pad_add_name_pvs
pad_add_name_sv
pad_findmy_pv
pad_findmy_pvn
pad_findmy_pvs
pad_findmy_sv

perl 5.14.0

_to_uni_fold_flags

perl 5.13.10

foldEQ_utf8_flags
is_utf8_xidcont
is_utf8_xidfirst

perl 5.13.8

foldEQ_latin1
parse_arithexpr
parse_fullexpr
parse_listexpr
parse_termexpr

perl 5.13.7

HVENAME
OP_CLASS
XopFLAGS
amagic_deref_call
bytes_cmp_utf8
cop_hints_2hv
cop_hints_fetch_pv
cop_hints_fetch_pvn
cop_hints_fetch_pvs
cop_hints_fetch_sv
cophh_2hv
cophh_copy
cophh_delete_pv
cophh_delete_pvn
cophh_delete_pvs
cophh_delete_sv
cophh_fetch_pv
cophh_fetch_pvn
cophh_fetch_pvs
cophh_fetch_sv
cophh_free
cophh_store_pv
cophh_store_pvn
cophh_store_pvs
cophh_store_sv
custom_op_register
custom_op_xop

newFOROP
newWHILEOP
op_lvalue
op_scope
parse_barestmt
parse_block
parse_label

perl 5.13.6

LINKLIST
SvTRUE_nomg
ck_entersub_args_list
ck_entersub_args_proto
ck_entersub_args_proto_or_list
cv_get_call_checker
cv_set_call_checker
isWORDCHAR
lex_stuff_pv
mg_free_type
newSVpv_share
op_append_elem
op_append_list
op_contextualize
op_linklist
op_prepend_elem
parse_stmtseq
rv2cv_op_cv
savesharedpvs
savesharedsvpv
sv_2bool_flags
sv_catpv_flags
sv_catpv_nomg
sv_catpvs_flags
sv_catpvs_mg
sv_catpvs_nomg
sv_cmp_flags
sv_cmp_locale_flags
sv_collxfrm_flags
sv_eq_flags
sv_setpvs_mg

perl 5.13.5

PL_rpeepp
isOCTAL
lex_stuff_pvs
parse_fullstmt

perl 5.13.3

blockhook_register
croak_no_modify

perl 5.13.2

SvNV_nomg

find_rundefsv
foldEQ
foldEQ_locale
foldEQ_utf8
hv_fill
sv_dec_nomg
sv_inc_nomg

perl 5.13.1

croak_sv
die_sv
mess_sv
sv_2nv_flags
warn_sv

perl 5.11.5

sv_pos_u2b_flags

perl 5.11.4

prescan_version

perl 5.11.2

PL_keyword_plugin
lex_bufutf8
lex_discard_to
lex_grow_linestr
lex_next_chunk
lex_peek_unichar
lex_read_space
lex_read_to
lex_read_unichar
lex_stuff_pvn
lex_stuff_sv
lex_unstuff

perl 5.11.1

ck_warner
ck_warner_d
is_utf8_perl_space
is_utf8_perl_word
is_utf8_posix_digit

perl 5.11.0

Gv_AMupdate
PL_opfreehook
SVt_REGEXP
Sv00K_offset
av_iter_p
gv_add_by_type
is_ascii_string
pregfree2
save_aDELETE

save_aelem_flags
save_hdelete
save_helem_flags
sv_utf8_upgrade_flags_grow

perl 5.10.1

croak_xs_usage
mro_get_from_name
mro_get_private_data
mro_register
mro_set_mro
mro_set_private_data
save_hints
save_padsv_and_mortalize
save_pushi32ptr
save_pushptr
save_pushptrptr
sv_insert_flags

perl 5.10.0

hv_common
hv_common_key_len
sv_destroyable
sys_init
sys_init3
sys_term

perl 5.9.5

Perl_signbit
av_create_and_push
av_create_and_unshift_one
gv_fetchfile_flags
lex_start
mro_get_linear_isa
mro_method_changed_in
my_dirfd
pregcomp
ptr_table_clear
ptr_table_fetch
ptr_table_free
ptr_table_new
ptr_table_split
ptr_table_store
re_compile
reg_named_buff_all
reg_named_buff_exists
reg_named_buff_fetch
reg_named_buff_firstkey
reg_named_buff_nextkey
reg_named_buff_scalar
regfree_internal
savesharedpvn
scan_vstring
upg_version

perl 5.9.4

- PerlIO_context_layers
- gv_name_set
- hv_copy_hints_hv
- my_vsnprintf
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is_uni_lower_lc
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BUGS

If you find any bugs, Devel::PPPort doesn't seem to build on your system, or any of its tests fail, please file an issue here: <https://github.com/mhx/Devel-PPPort/issues/>

AUTHORS

- Version 1.x of Devel::PPPort was written by Kenneth Albanowski.
- Version 2.x was ported to the Perl core by Paul Marquess.
- Version 3.x was ported back to CPAN by Marcus Holland-Moritz.
- Versions >= 3.22 are maintained with support from Matthew Horsfall (alh).

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SEE ALSO

See *h2xs*, *ppport.h*.