

## NAME

Devel::PPPort - Perl/Pollution/Portability

## SYNOPSIS

```
Devel::PPPort::WriteFile(); # defaults to ./ppport.h
Devel::PPPort::WriteFile('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 a single function, called `WriteFile`. Its 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 5.11.5 are supported.

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.

## COMPATIBILITY

*ppport.h* supports Perl versions from 5.003 to 5.11.5 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
call_argv
call_method
call_pv
call_sv
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\_cvn\_flags  
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\_fetchsv  
gv\_stashpvn  
gv\_stashpvs  
GvSVn  
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  
isGV\_with\_GP  
isPRINT  
isPSXSPC  
isPUNCT  
isXDIGIT  
IVdf  
IVSIZE  
IVTYPE  
load\_module  
memEQ  
memEQs  
memNE  
memNEs  
MoveD  
mPUSHi  
mPUSHn

mPUSHp  
mPUSHs  
mPUSHu  
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  
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\_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\_rsfp

PL\_rsfilters  
PL\_signals  
PL\_stack\_base  
PL\_stack\_sp  
PL\_statcache  
PL\_stdin  
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\_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  
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_REGEXP
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
XSprePUSH
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 5.19.3
```

```

BhkDISABLE
BhkENABLE
BhkENTRY_set
MULTICALL
PERL_SYS_TERM
POP_MULTICALL
PUSH_MULTICALL
PadARRAY
PadMAX
PadlistARRAY
PadlistMAX
PadlistNAMES
PadlistNAMESARRAY
PadlistNAMESMAX
PadnameLEN
PadnamePV
PadnameSV
PadnameUTF8
PadnamelistARRAY
PadnamelistMAX
XS_EXTERNAL
XS_INTERNAL
XopDISABLE
XopENABLE
XopENTRY
XopENTRY_set
cophh_new_empty
croak_memory_wrap
my_lstat
my_stat
reentrant_free
reentrant_init
reentrant_retry
reentrant_size
ref
sv_pos_b2u_flags
sv_setref_pvs
perl 5.19.2
  SVt_INVLIST
perl 5.19.1
  re_intuit_start
  toFOLD
  toFOLD_utf8
  toLOWER_L1
  toTITLE
perl 5.17.11
  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_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
  _to_utf8_fold_flags
  _to_utf8_lower_flags
  _to_utf8_title_flags
  _to_utf8_upper_flags
  newCONSTSUB_flags
```

## perl 5.15.4

- HvENAMELEN
- HvENAMEUTF8
- 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\_pvn
- 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
- 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 5.13.11

- \_to\_uni\_fold\_flags

## perl 5.13.10

- foldEQ\_utf8\_flags
- is\_utf8\_xidcont
- is\_utf8\_xidfirst

## perl 5.13.8

```
foldEQ_latin1
mg_findext
parse_arithexpr
parse_fullexpr
parse_listexpr
parse_termexpr
sv_unmagicext
```

## 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
    caller_cx
    isOCTAL
    lex_stuff_pvs
    parse_fullstmt
perl 5.13.4
    XS_APIVERSION_BOOTCHECK
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
  SvOOK_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
  HeUTF8
  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
```



- PERL\_SYS\_INIT
- PERL\_SYS\_INIT3
- hv\_common
- hv\_common\_key\_len
- sv\_destroyable
- sys\_init
- sys\_init3
- sys\_term

## perl 5.9.5

- PL\_parser
- Perl\_signbit
- SvRX
- SvRXOK
- 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
- newXS\_flags
- regclass\_swash
- sv\_does
- sv\_usepvn\_flags

## perl 5.9.3

- av\_arylen\_p
- ckwarn
- ckwarn\_d
- csighandler
- dMULTICALL
- doref
- gv\_const\_sv
- hv\_eiter\_p
- hv\_eiter\_set
- hv\_name\_set
- hv\_placeholders\_get
- hv\_placeholders\_set
- hv\_riter\_p
- hv\_riter\_set
- is\_utf8\_string\_loclen
- newGIVENOP
- newSVhek
- newWHENOP
- pad\_compname\_type
- savepvs
- sortsv\_flags
- vverify

perl 5.9.2

- SvPVbyte\_force
- find\_rundefsvoffset
- op\_refcnt\_lock
- op\_refcnt\_unlock
- savesvpv
- vnormal

perl 5.9.1

- hv\_clear\_placeholders
- hv\_scalar
- scan\_version
- sv\_2iv\_flags
- sv\_2uv\_flags

perl 5.9.0

- new\_version
- save\_set\_svflags
- vcmp
- vnumify
- vstringify

perl 5.8.3

- SvIsCOW
- SvIsCOW\_shared\_hash

perl 5.8.1

CvPADLIST  
PL\_comppad  
SvVOK  
doing\_taint  
find\_runcv  
is\_utf8\_string\_loc  
packlist  
pad\_add\_anon  
pad\_new  
pad\_tidy  
save\_bool  
savestack\_grow\_cnt  
seed  
sv\_cat\_decode  
sv\_setpviv  
sv\_setpviv\_mg  
unpackstring

## perl 5.8.0

hv\_iternext\_flags  
hv\_store\_flags  
is\_utf8\_idcont  
nothreadhook

## perl 5.7.3

OP\_DESC  
OP\_NAME  
PL\_peekp  
PerlIO\_clearerr  
PerlIO\_close  
PerlIO\_eof  
PerlIO\_error  
PerlIO\_fileno  
PerlIO\_fill  
PerlIO\_flush  
PerlIO\_get\_base  
PerlIO\_get\_bufsiz  
PerlIO\_get\_cnt  
PerlIO\_get\_ptr  
PerlIO\_read  
PerlIO\_seek  
PerlIO\_set\_cnt  
PerlIO\_set\_ptrcnt  
PerlIO\_setlinebuf  
PerlIO\_stderr  
PerlIO\_stdin  
PerlIO\_stdout  
PerlIO\_tell  
PerlIO\_unread  
PerlIO\_write  
SvLOCK  
SvSHARE  
SvUNLOCK  
atfork\_lock  
atfork\_unlock  
custom\_op\_desc

custom\_op\_name  
deb  
debstack  
debstackptrs  
gv\_fetchmeth\_autoload  
ibcmp\_utf8  
my\_fork  
my\_socketpair  
pack\_cat  
perl\_destruct  
pv\_uni\_display  
save\_shared\_pvref  
savesharedpv  
sortsv  
sv\_magicext  
sv\_nolocking  
sv\_nosharing  
sv\_recode\_to\_utf8  
sv\_uni\_display  
toFOLD\_uni  
toLOWER\_uni  
toTITLE\_uni  
toUPPER\_uni  
to\_uni\_fold  
to\_uni\_lower  
to\_uni\_title  
to\_uni\_upper  
to\_utf8\_case  
unpack\_str  
uvchr\_to\_utf8\_flags  
uvuni\_to\_utf8\_flags  
vdeb

## perl 5.7.2

calloc  
getcwd\_sv  
init\_tm  
malloc  
mfree  
mini\_mktime  
my\_atof2  
my\_strftime  
op\_null  
realloc  
sv\_catpvn\_flags  
sv\_catsv\_flags  
sv\_setsv\_flags  
sv\_utf8\_upgrade\_flags  
sv\_utf8\_upgrade\_nomg  
swash\_fetch

## perl 5.7.1

```

POPpbytex
XCPT_RETHROW
bytes_from_utf8
despatch_signals
do_openn
gv_handler
is_lvalue_sub
my_popen_list
save_mortalizesv
scan_num
sv_force_normal_flags
sv_setref_uv
sv_unref_flags
sv_utf8_upgrade
utf8_length
utf8_to_uvchr
utf8_to_uvuni
utf8n_to_uvuni
uvuni_to_utf8

```

## perl 5.6.1

```

SvGAMAGIC
apply_attrs_string
bytes_to_utf8
gv_efullname4
gv_fullname4
is_utf8_string
save_generic_pvref
utf16_to_utf8
utf16_to_utf8_reversed
utf8_to_bytes

```

## perl 5.6.0

```

PL_check
SvIOK_UV
SvIOK_notUV
SvIOK_only_UV
SvPOK_only_UTF8
SvPVbyte_nolen
SvPVbytex
SvPVbytex_force
SvPVutf8
SvPVutf8_force
SvPVutf8_nolen
SvPVutf8x
SvPVutf8x_force
SvUOK
SvUTF8
SvUTF8_off
SvUTF8_on
av_delete
av_exists
call_atexit
cast_i32
cast_iv
cast_ulong

```

```
cast_uv
do_gv_dump
do_gvgv_dump
do_hv_dump
do_magic_dump
do_op_dump
do_open9
do_pmop_dump
do_sv_dump
dump_all
dump_eval
dump_form
dump_indent
dump_packsubs
dump_sub
dump_vindent
get_context
get_ppaddr
gv_dump
init_i18nl10n
init_i18nl14n
isASCII
isCNTRL
is_uni_alnum
is_uni_alnum_lc
is_uni_alpha
is_uni_alpha_lc
is_uni_ascii
is_uni_ascii_lc
is_uni_cntrl
is_uni_cntrl_lc
is_uni_digit
is_uni_digit_lc
is_uni_graph
is_uni_graph_lc
is_uni_idfirst
is_uni_idfirst_lc
is_uni_lower
is_uni_lower_lc
is_uni_print
is_uni_print_lc
is_uni_punct
is_uni_punct_lc
is_uni_space
is_uni_space_lc
is_uni_upper
is_uni_upper_lc
is_uni_xdigit
is_uni_xdigit_lc
is_utf8_alnum
is_utf8_alpha
is_utf8_ascii
is_utf8_char
is_utf8_cntrl
```

is\_utf8\_digit  
is\_utf8\_graph  
is\_utf8\_idfirst  
is\_utf8\_lower  
is\_utf8\_mark  
is\_utf8\_print  
is\_utf8\_punct  
is\_utf8\_space  
is\_utf8\_upper  
is\_utf8\_xdigit  
magic\_dump  
mess  
my\_atof  
my\_fflush\_all  
newANONATTRSUB  
newATTRSUB  
newXS  
newXSproto  
new\_collate  
new\_ctype  
new\_numeric  
op\_dump  
perl\_parse  
pmop\_dump  
re\_intuit\_string  
reginitcolors  
require\_pv  
safesyscalloc  
safesysfree  
safesysmalloc  
safesysrealloc  
save\_I8  
save\_alloc  
save\_destructor  
save\_destructor\_x  
save\_re\_context  
save\_vptr  
scan\_bin  
set\_context  
set\_numeric\_local  
set\_numeric\_radix  
set\_numeric\_standard  
str\_to\_version  
sv\_2pvutf8  
sv\_2pvutf8\_nolen  
sv\_force\_normal  
sv\_len\_utf8  
sv\_pos\_b2u  
sv\_pos\_u2b  
sv\_pv  
sv\_pvbyte  
sv\_pvbyten  
sv\_pvbyten\_force  
sv\_pvutf8

- sv\_pvutf8n
- sv\_pvutf8n\_force
- sv\_rvweaken
- sv\_utf8\_decode
- sv\_utf8\_downgrade
- sv\_utf8\_encode
- swash\_init
- tmps\_grow
- to\_uni\_lower\_lc
- to\_uni\_title\_lc
- to\_uni\_upper\_lc
- utf8\_distance
- utf8\_hop
- vcroak
- vform
- vmess
- vwarn
- vwarner

perl 5.005\_03

- POPpx
- get\_vtbl
- save\_generic\_svref

perl 5.005

- PL\_curpad
- PL\_modglobal
- cx\_dump
- debop
- debprofdump
- fbm\_compile
- fbm\_instr
- get\_op\_descs
- get\_op\_names
- init\_stacks
- mg\_length
- mg\_size
- newHVhv
- new\_stackinfo
- regdump
- regexec\_flags
- regnext
- runops\_debug
- runops\_standard
- save\_iv
- save\_op
- screaminstr
- sv\_iv
- sv\_nv
- sv\_peek
- sv\_pvn
- sv\_pvn\_nomg
- sv\_true



```
perl 5.004_05
  Copy
  CopyD
  Move
  Moved
  do_binmode
  save_aelem
  save_helem

perl 5.004
  GIMME_V
  G_VOID
  HEf_SVKEY
  HeHASH
  HeKEY
  HeKLEN
  HePV
  HeSVKEY
  HeSVKEY_force
  HeSVKEY_set
  HeVAL
  SvSetMagicSV
  SvSetMagicSV_nosteal
  SvSetSV_nosteal
  SvTAINTED
  SvTAINTED_off
  SvTAINTED_on
  XCPT_TRY_END
  XCPT_TRY_START
  block_gimme
  call_list
  cv_const_sv
  delimcpy
  do_open
  form
  gv_autoload4
  gv_efullname3
  gv_fetchmethod_autoload
  gv_fullname3
  hv_delayfree_ent
  hv_delete_ent
  hv_exists_ent
  hv_fetch_ent
  hv_free_ent
  hv_iterkeysv
  hv_ksplit
  hv_store_ent
  ibcmp_locale
  my_failure_exit
  my_memset
  my_pclose
  my_popen
  newSVpvf
  rsignal
  rsignal_state
```

```
save_I16
save_gp
share_hek
start_subparse
sv_catpvf
sv_catpvf_mg
sv_cmp_locale
sv_derived_from
sv_gets
sv_magic_portable
sv_setpvf
sv_setpvf_mg
sv_taint
sv_tainted
sv_untaint
sv_vcatpvf
sv_vcatpvf_mg
sv_vcatpvfn
sv_vsetpvf
sv_vsetpvf_mg
sv_vsetpvfn
toLOWER_LC
toUPPER
unsharepvn
vnewSVpvf
warner
```

## BUGS

If you find any bugs, [Devel::PPPort](#) doesn't seem to build on your system or any of its tests fail, please use the CPAN Request Tracker at <http://rt.cpan.org/> to create a ticket for the module.

## 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.

## COPYRIGHT

Version 3.x, Copyright (C) 2004-2013, Marcus Holland-Moritz.

Version 2.x, Copyright (C) 2001, Paul Marquess.

Version 1.x, Copyright (C) 1999, Kenneth Albanowski.

This program is free software; you can redistribute it and/or modify it under the same terms as Perl itself.

## SEE ALSO

See `h2xs`, `ppport.h`.