

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 5.10.0 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 <code>Devel::PPPort</code>. They are most probably no XS writers. Also, don't make <code>ppport.h</code> optional. Rather, just take the most recent copy of <code>ppport.h</code> that you can find (e.g. by generating it with the latest <code>Devel::PPPort</code> 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 5.10.0 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_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
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
TVdf
IVSIZE
IVTYPE
load_module
memEQ
memNE
MoveD
mPUSHi
mPUSHn
mPUSHp
mPUSHs
mPUSHu
mXPUSHi
```



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

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 defqv

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_rsfp_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
XHTq
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_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_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_PARENTHESIS

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
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 5.11.0
```

```
HeUTF8
MULTICALL
PERL_SYS_TERM
POP MULTICALL
PUSH_MULTICALL
Sv00K_offset
av_iter_p
croak_xs_usage
fetch_cop_label
gv_fetchmethod_flags
hv assert
mro_get_from_name
mro_get_private_data
mro_register
mro_set_mro
mro_set_private_data
pad_sv
pregfree2
ref
save_adelete
save_helem_flags
save_padsv_and_mortalize
save_pushptr
stashpv_hvname_match
sv_insert_flags
sv_utf8_upgrade_flags_grow
```



```
perl 5.10.0
       hv_common
       hv_common_key_len
       sv_destroyable
       sys_init
       sys_init3
       sys term
perl 5.9.5
       Perl_signbit
       SvRX
       SVRXOK
       av_create_and_push
        av_create_and_unshift_one
       get_cvn_flags
       gv_fetchfile_flags
       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
       re_intuit_start
       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
       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_p
        hv_placeholders_set
        hv_riter_p
        hv_riter_set
        is_utf8_string_loclen
        newGIVENOP
        newSVhek
        newSVpvs_share
        newWHENOP
        newWHILEOP
        savepvs
        sortsv_flags
        vverify
perl 5.9.2
        SvPVbyte_force
        find_rundefsvoffset
        gv_fetchsv
        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
        SvVOK
        doing_taint
        find_runcv
        is_utf8_string_loc
        packlist
```



```
save_bool
       savestack_grow_cnt
       seed
       sv_cat_decode
       sv_compile_2op
       sv_setpviv
       sv_setpviv_mg
        unpackstring
perl 5.8.0
       hv_iternext_flags
       hv_store_flags
        is_utf8_idcont
       nothreadhook
perl 5.7.3
        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
```



```
savesharedpv
       sortsv
       sv_copypv
       sv_magicext
       sv_nolocking
       sv_nosharing
        sv_recode_to_utf8
        sv_uni_display
        to_uni_fold
        to_uni_lower
        to uni title
        to_uni_upper
        to_utf8_case
        to_utf8_fold
        to_utf8_lower
        to_utf8_title
        to_utf8_upper
       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
       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
```

save_shared_pvref



```
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

PERL_SYS_INIT3 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 is_uni_alnum is_uni_alnum_lc is_uni_alnumc is uni alnumc 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_alnumc 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_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
        screaminstr
        sv_iv
        sv_nv
        sv_peek
        sv_pvn
        sv_pvn_nomg
        sv_true
perl 5.004_05
        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
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_memcmp
my_pclose
my_popen
newSVpvf
rsignal
rsignal_state
save_I16
save qp
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
unsharepvn
vnewSVpvf
```

warner



RUGS

If you find any bugs, <code>Devel::PPPort</code> 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.

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SEE ALSO

See h2xs, ppport.h.