

## NAME

ExtUtils::MM\_Unix - methods used by ExtUtils::MakeMaker

## SYNOPSIS

```
require ExtUtils::MM_Unix;
```

## DESCRIPTION

The methods provided by this package are designed to be used in conjunction with ExtUtils::MakeMaker. When MakeMaker writes a Makefile, it creates one or more objects that inherit their methods from a package MM. MM itself doesn't provide any methods, but it ISA ExtUtils::MM\_Unix class. The inheritance tree of MM lets operating specific packages take the responsibility for all the methods provided by MM\_Unix. We are trying to reduce the number of the necessary overrides by defining rather primitive operations within ExtUtils::MM\_Unix.

If you are going to write a platform specific MM package, please try to limit the necessary overrides to primitive methods, and if it is not possible to do so, let's work out how to achieve that gain.

If you are overriding any of these methods in your Makefile.PL (in the MY class), please report that to the makemaker mailing list. We are trying to minimize the necessary method overrides and switch to data driven Makefile.PLs wherever possible. In the long run less methods will be overridable via the MY class.

## METHODS

The following description of methods is still under development. Please refer to the code for not suitably documented sections and complain loudly to the makemaker@perl.org mailing list. Better yet, provide a patch.

Not all of the methods below are overridable in a Makefile.PL. Overridable methods are marked as (o). All methods are overridable by a platform specific MM\_\*.pm file.

Cross-platform methods are being moved into MM\_Any. If you can't find something that used to be in here, look in MM\_Any.

### Methods

os\_flavor

Simply says that we're Unix.

c\_o (o)

Defines the suffix rules to compile different flavors of C files to object files.

cflags (o)

Does very much the same as the cflags script in the perl distribution. It doesn't return the whole compiler command line, but initializes all of its parts. The const\_cccmd method then actually returns the definition of the CCCMD macro which uses these parts.

const\_cccmd (o)

Returns the full compiler call for C programs and stores the definition in CONST\_CCCMD.

const\_config (o)

Defines a couple of constants in the Makefile that are imported from %Config.

const\_loadlibs (o)

Defines EXTRALIBS, LDLOADLIBS, BSLOADLIBS, LD\_RUN\_PATH. See *ExtUtils::Liblist* for details.

constants (o)

```
my $make_frag = $mm->constants;
```

Prints out macros for lots of constants.

depend (o)

Same as macro for the depend attribute.

init\_DEST

```
$mm->init_DEST
```

Defines the DESTDIR and DEST\* variables paralleling the INSTALL\*.

init\_dist

```
$mm->init_dist;
```

Defines a lot of macros for distribution support.

macro	description	default
TAR	tar command to use	tar
TARFLAGS	flags to pass to TAR	cvf
ZIP	zip command to use	zip
ZIPFLAGS	flags to pass to ZIP	-r
COMPRESS	compression command to use for tarfiles	gzip --best
SUFFIX	suffix to put on compressed files	.gz
SHAR	shar command to use	shar
PREOP	extra commands to run before making the archive	
POSTOP	extra commands to run after making the archive	
TO_UNIX	a command to convert linefeeds to Unix style in your archive	
CI	command to checkin your sources to version control	ci -u
RCS_LABEL	command to label your sources	rsc
-Nv\$(VERSION_SYM): -q	just after CI is run	
DIST_CP	\$show argument to manicompy() when the distdir is created	best
DIST_DEFAULT	default target to use to create a distribution	tardist
DISTVNAME	name of the resulting archive	
\$(DISTNAME)-\$(VERSION)	(minus suffixes)	

dist (o)

```
my $dist_macros = $mm->dist(%overrides);
```

Generates a make fragment defining all the macros initialized in `init_dist`.

%overrides can be used to override any of the above.

`dist_basics` (o)

Defines the targets `distclean`, `distcheck`, `skipcheck`, `manifest`, `veryclean`.

`dist_ci` (o)

Defines a check in target for RCS.

`dist_core` (o)

```
my $dist_make_fragment = $MM->dist_core;
```

Puts the targets necessary for 'make dist' together into one make fragment.

**dist\_target**

```
my $make_frag = $MM->dist_target;
```

Returns the 'dist' target to make an archive for distribution. This target simply checks to make sure the Makefile is up-to-date and depends on `$(DIST_DEFAULT)`.

**tardist\_target**

```
my $make_frag = $MM->tardist_target;
```

Returns the 'tardist' target which is simply so 'make tardist' works. The real work is done by the dynamically named `tardistfile_target()` method, `tardist` should have that as a dependency.

**zipdist\_target**

```
my $make_frag = $MM->zipdist_target;
```

Returns the 'zipdist' target which is simply so 'make zipdist' works. The real work is done by the dynamically named `zipdistfile_target()` method, `zipdist` should have that as a dependency.

**tarfile\_target**

```
my $make_frag = $MM->tarfile_target;
```

The name of this target is the name of the tarball generated by `tardist`. This target does the actual work of turning the `distdir` into a tarball.

**zipfile\_target**

```
my $make_frag = $MM->zipfile_target;
```

The name of this target is the name of the zip file generated by `zipdist`. This target does the actual work of turning the `distdir` into a zip file.

**uutardist\_target**

```
my $make_frag = $MM->uutardist_target;
```

Converts the tarfile into a uuencoded file

**shdist\_target**

```
my $make_frag = $MM->shdist_target;
```

Converts the `distdir` into a shell archive.

**dlsyms** (o)

Used by some OS' to define `DL_FUNCS` and `DL_VARS` and write the \*.exp files.

Normally just returns an empty string.

`dynamic_bs (o)`

Defines targets for bootstrap files.

`dynamic_lib (o)`

Defines how to produce the \*.so (or equivalent) files.

`exescan`

Deprecated method. Use libscan instead.

`extliblist`

Called by `init_others`, and calls `ext ExtUtils::Liblist`. See *ExtUtils::Liblist* for details.

`find_perl`

Finds the executables PERL and FULLPERL

`fixin`

```
$mm->fixin(@files);
```

Inserts the sharpbang or equivalent magic number to a set of @files.

`force (o)`

Writes an empty FORCE: target.

`guess_name`

Guess the name of this package by examining the working directory's name. MakeMaker calls this only if the developer has not supplied a NAME attribute.

`has_link_code`

Returns true if C, XS, MYEXTLIB or similar objects exist within this object that need a compiler. Does not descend into subdirectories as `needs_linking()` does.

`init_dirscan`

Scans the directory structure and initializes DIR, XS, XS\_FILES, C, C\_FILES, O\_FILES, H, H\_FILES, PL\_FILES, EXE\_FILES.

Called by `init_main`.

`init_MANPODS`

Determines if man pages should be generated and initializes MAN1PODS and MAN3PODS as appropriate.

`init_MAN1PODS`

Initializes MAN1PODS from the list of EXE\_FILES.

`init_MAN3PODS`

Initializes MAN3PODS from the list of PM files.

`init_PM`

Initializes PMLIBDIRS and PM from PMLIBDIRS.

`init_DIRFILESEP`

Using / for Unix. Called by `init_main`.

`init_main`

Initializes AR, AR\_STATIC\_ARGS, BASEEXT, CONFIG, DISTNAME, DLBASE, EXE\_EXT,

FULLEXT, FULLPERL, FULLPERLRUN, FULLPERLRUNINST, INST\_\*, INSTALL\*,  
INSTALLDIRS, LIB\_EXT, LIBPERL\_A, MAP\_TARGET, NAME, OBJ\_EXT, PARENT\_NAME,  
PERL, PERL\_ARCHLIB, PERL\_INC, PERL\_LIB, PERL\_SRC, PERLRUN, PERLRUNINST,  
PREFIX, VERSION, VERSION\_SYM, XS\_VERSION.

#### init\_others

Initializes EXTRALIBS, BSLOADLIBS, LDLOADLIBS, LIBS, LD\_RUN\_PATH, LD, OBJECT,  
BOOTDEP, PERLMAINCC, LDFROM, LINKTYPE, SHELL, NOOP, FIRST\_MAKEFILE,  
MAKEFILE\_OLD, NOECHO, RM\_F, RM\_RF, TEST\_F, TOUCH, CP, MV, CHMOD,  
UMASK\_NULL, ECHO, ECHO\_N

#### init\_linker

Unix has no need of special linker flags.

#### init\_lib2arch

```
$mm->init_lib2arch
```

#### init\_PERL

```
$mm->init_PERL;
```

Called by init\_main. Sets up ABSPERL, PERL, FULLPERL and all the \*PERLRUN\*  
permutations.

PERL is allowed to be miniperl  
FULLPERL must be a complete perl

ABSPERL is PERL converted to an absolute path

\*PERLRUN contains everything necessary to run perl, find it's  
libraries, etc...

\*PERLRUNINST is \*PERLRUN + everything necessary to find the  
modules being built.

#### init\_platform

##### platform\_constants

Add MM\_Unix\_VERSION.

#### init\_PERM

```
$mm->init_PERM
```

Called by init\_main. Initializes PERL\_\*

#### init\_xs

```
$mm->init_xs
```

Sets up macros having to do with XS code. Currently just INST\_STATIC, INST\_DYNAMIC  
and INST\_BOOT.

#### install (o)

Defines the install target.

#### installbin (o)

Defines targets to make and to install EXE\_FILES.

**linkext (o)**

Defines the linkext target which in turn defines the LINKTYPE.

**lsdir**

Takes as arguments a directory name and a regular expression. Returns all entries in the directory that match the regular expression.

**macro (o)**

Simple subroutine to insert the macros defined by the macro attribute into the Makefile.

**makeaperl (o)**

Called by staticmake. Defines how to write the Makefile to produce a static new perl.

By default the Makefile produced includes all the static extensions in the perl library. (Purified versions of library files, e.g., DynaLoader\_pure\_p1\_c0\_032.a are automatically ignored to avoid link errors.)

**makefile (o)**

Defines how to rewrite the Makefile.

**maybe\_command**

Returns true, if the argument is likely to be a command.

**needs\_linking (o)**

Does this module need linking? Looks into subdirectory objects (see also has\_link\_code())

**parse\_abstract**

parse a file and return what you think is the ABSTRACT

**parse\_version**

```
my $version = MM->parse_version($file);
```

Parse a \$file and return what \$VERSION is set to by the first assignment. It will return the string "undef" if it can't figure out what \$VERSION is. \$VERSION should be for all to see, so our \$VERSION or plain \$VERSION are okay, but my \$VERSION is not.

parse\_version() will try to use version before checking for \$VERSION so the following will work.

```
$VERSION = qv(1.2.3);
```

**pasthru (o)**

Defines the string that is passed to recursive make calls in subdirectories.

**perl\_script**

Takes one argument, a file name, and returns the file name, if the argument is likely to be a perl script. On MM\_Unix this is true for any ordinary, readable file.

**perldepend (o)**

Defines the dependency from all \*.h files that come with the perl distribution.

**perm\_rw (o)**

Returns the attribute PERM\_RW or the string 644. Used as the string that is passed to the chmod command to set the permissions for read/writeable files. MakeMaker chooses 644 because it has turned out in the past that relying on the umask provokes hard-to-track bug reports. When the return value is used by the perl function chmod, it is interpreted as an octal value.

**perm\_rwx (o)**

Returns the attribute `PERM_RWX` or the string `755`, i.e. the string that is passed to the `chmod` command to set the permissions for executable files. See also `perl_rw`.

**pm\_to\_blib**

Defines target that copies all files in the hash `PM` to their destination and autosplits them. See *"DESCRIPTION" in ExtUtils::Install*

**post\_constants (o)**

Returns an empty string per default. Dedicated to overrides from within `Makefile.PL` after all constants have been defined.

**post\_initialize (o)**

Returns an empty string per default. Used in `Makefile.PL`s to add some chunk of text to the `Makefile` after the object is initialized.

**postamble (o)**

Returns an empty string. Can be used in `Makefile.PL`s to write some text to the `Makefile` at the end.

**ppd**

Defines target that creates a PPD (Perl Package Description) file for a binary distribution.

**prefixify**

```
$MM->prefixify($var, $prefix, $new_prefix, $default);
```

Using either `$MM->{uc $var} || $Config{lc $var}`, it will attempt to replace it's `$prefix` with a `$new_prefix`.

Should the `$prefix` fail to match *AND* a `PREFIX` was given as an argument to `WriteMakefile()` it will set it to the `$new_prefix + $default`. This is for systems whose file layouts don't neatly fit into our ideas of prefixes.

This is for heuristics which attempt to create directory structures that mirror those of the installed perl.

For example:

```
$MM->prefixify('installman1dir', '/usr', '/home/foo',  
'man/man1');
```

this will attempt to remove `'usr'` from the front of the `$MM->{INSTALLMAN1DIR}` path (initializing it to `$Config{installman1dir}` if necessary) and replace it with `'/home/foo'`. If this fails it will simply use `'/home/foo/man/man1'`.

**processPL (o)**

Defines targets to run `*.PL` files.

**quote\_paren**

Backslashes parentheses ( ) in command line arguments. Doesn't handle recursive `Makefile $(...)` constructs, but handles simple ones.

**replace\_manpage\_separator**

```
my $man_name = $MM->replace_manpage_separator($file_path);
```

Takes the name of a package, which may be a nested package, in the form `'Foo/Bar.pm'` and replaces the slash with `::` or something else safe for a man page file name. Returns the replacement.

cd

oneliner

quote\_literal

escape\_newlines

max\_exec\_len

Using POSIX::ARG\_MAX. Otherwise falling back to 4096.

static (o)

Defines the static target.

static\_lib (o)

Defines how to produce the \*.a (or equivalent) files.

staticmake (o)

Calls makeaperl.

subdir\_x (o)

Helper subroutine for subdirs

subdirs (o)

Defines targets to process subdirectories.

test (o)

Defines the test targets.

test\_via\_harness (override)

For some reason which I forget, Unix machines like to have PERL\_DL\_NONLAZY set for tests.

test\_via\_script (override)

Again, the PERL\_DL\_NONLAZY thing.

tools\_other (o)

```
my $make_frag = $MM->tools_other;
```

Returns a make fragment containing definitions for the macros init\_others() initializes.

tool\_xsubpp (o)

Determines typemaps, xsubpp version, prototype behaviour.

all\_target

Build man pages, too

top\_targets (o)

Defines the targets all, subdirs, config, and O\_FILES

writedoc

Obsolete, deprecated method. Not used since Version 5.21.

xs\_c (o)

Defines the suffix rules to compile XS files to C.

xs\_cpp (o)

Defines the suffix rules to compile XS files to C++.



xs\_o (o)

Defines suffix rules to go from XS to object files directly. This is only intended for broken make implementations.

## SEE ALSO

*ExtUtils::MakeMaker*