

# EAPI Cheat Sheet

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Version 8.0  
13th June 2021

## Abstract

An overview of the main EAPI changes in Gentoo, for ebuild authors. For full details, consult the Package Manager Specification found on the project page;<sup>1</sup> this is an incomplete summary only.

Official Gentoo EAPIs are consecutively numbered integers (0, 1, 2, ...). Except where otherwise noted, an EAPI is the same as the previous EAPI. All labels refer to the PMS document itself, built from the same checkout as this overview.

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## EAPIs 0, 1, 2, 3, 4, and 5

Omitted for lack of space. See version 5.0 of this document for differences between these previous EAPIs.

## EAPI 6 (2015-11-13)

### Additions/Changes

**Bash version** Ebuilds can use features of Bash version 4.2 (was 3.2 before). See BASH-VERSION on page 29.

**failglob** The `failglob` option of Bash is set in global scope, so that unintentional pattern expansion will be caught as an error. See FAILGLOB on page 29.

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<sup>1</sup>[https://wiki.gentoo.org/wiki/Project:Package\\_Manager\\_Specification](https://wiki.gentoo.org/wiki/Project:Package_Manager_Specification)

<sup>2</sup><https://creativecommons.org/licenses/by-sa/4.0/>

**Locale settings** It is ensured that the behaviour of case modification and collation order for ASCII characters (`LC_CTYPE` and `LC_COLLATE`) are the same as in the POSIX locale. See `LOCALE-SETTINGS` on page 56.

**src\_prepare** This phase function has a default now, which applies patches from the `PATCHES` variable with the new `eapply` command, and user-provided patches with `eapply_user`. See `SRC-PREPARE` on page 43.

**src\_install** The default implementation uses the new `einstalldocs` function for installing documentation. See `SRC-INSTALL` on page 45.

**nonfatal die** When `die` or `assert` are called under the `nonfatal` command and with the `-n` option, they will not abort the build process but return with an error. See `NONFATAL-DIE` on page 63.

**unpack changes** `unpack` has been extended:

**Pathnames** Both absolute paths and paths relative to the working directory are accepted as arguments. See `UNPACK-ABSOLUTE` on page 76.

**.txz files** Suffix `.txz` for xz compressed tarballs is recognised. See `UNPACK-EXTENSIONS` on page 76.

**Filename case** Character case of filename extensions is ignored. See `UNPACK-IGNORE-CASE` on page 76.

**econf changes** Options `--docdir` and `--htmldir` are passed to `configure`, in addition to the existing options. See `ECONF-OPTIONS` on page 65.

**eapply** The `eapply` command is a simplified substitute for `epatch`, implemented in the package manager. The patches from its file or directory arguments are applied using `patch -p1`. See `EAPPLY` on page 63.

**eapply\_user** The `eapply_user` command permits the package manager to apply user-provided patches. It must be called from every `src_prepare` function. See `EAPPLY-USER` on page 65.

**einstalldocs** The `einstalldocs` function will install the files specified by the `DOCS` variable (or a default set of files if `DOCS` is unset) and by the `HTML_DOCS` variable. See `EINSTALLDOCS` on page 77.

**in\_iuse** The `in_iuse` function returns true if the `USE` flag given as its argument is available in the ebuild for `USE` queries. See `IN-IUSE` on page 73.

**get\_libdir** The `get_libdir` command outputs the `lib*` directory basename suitable for the current ABI. See `GET-LIBDIR` on page 77.

## Removals/Bans

**einstall** No longer allowed. Use `emake install` as replacement. See `BANNED-COMMANDS` on page 61.

## EAPI 7 (2018-04-30)

### Additions/Changes

**package.\* and use.\*** These profile files can be directories instead of regular files. This is intended to be used in overlays only. See `PACKAGE-MASK-DIR` on page 19 and `PROFILE-FILE-DIRS` on page 24.

**|| and ^^ dependency groups** These groups now evaluate to false when they are empty (for example, if there are only unmatched use dependencies inside of them). See `EMPTY-DEP-GROUPS` on page 37.

**No trailing slash** The paths specified by `ROOT`, `EROOT`, `D`, and `ED` no longer end with a slash. Thus, default `ROOT` is empty now. See `TRAILING-SLASH` on page 58.

**Cross compilation support** Several variables have been added and some commands have been extended for better cross compilation support:

**BDEPEND** Build dependencies are divided into two classes: `BDEPEND` for native build tools (`CBUILD`); `DEPEND` for dependencies compatible with the system being built (`CHOST`). See `BDEPEND` on page 35.

**SYSROOT** The path to the root directory for `DEPEND` type dependencies. See `SYSROOT` on page 53.

**ESYSROOT** The concatenation of `SYSROOT` and the applicable offset-prefix. See `SYSROOT` on page 53.

**BROOT** The prefixed root directory path for `BDEPEND` type dependencies, typically executable build tools. See `BROOT` on page 53.

**econf** If supported, `configure` will be called with the `--with-sysroot=${ESYSROOT:-/}` option. See `ECONF-OPTIONS` on page 65.

**has\_version and best\_version** These helpers support `-b`, `-d` or `-r` options, causing the query to apply to `BDEPEND`, `DEPEND` or `RDEPEND` (the default). This replaces the `--host-root` option. See `PM-QUERY-OPTIONS` on page 62.

**Environment blacklist** Any environment variable listed in the profile-defined `ENV_UNSET` variable will be unset by the package manager. See `ENV_UNSET` on page 56.

**patch** All inputs valid for GNU patch version 2.7 are supported. Especially, this includes support for git-formatted patches. See `GNU-PATCH` on page 60.

**nonfatal** In addition to its definition as a shell function, the `nonfatal` wrapper has now a fallback implementation as an external command. Thus, it can be called from other commands. See `NONFATAL` on page 61.

**Output commands** `einfor` and friends no longer use `stdout`, so inside of command substitution their output won't be caught. See `OUTPUT-NO-STDOUT` on page 62.

**eqawarn** The `eqawarn` output command is supported in the package manager itself. See `EQAWARN` on page 63.

**die in subshell** The `die` command is guaranteed to work in a subshell context. See `SUBSHELL-DIE` on page 63.

**domo destination** `domo` installs the specified files under `/usr/share/locale` instead of `${DESTTREE}/share/locale`. See `DOMO-PATH` on page 69.

**Controllable stripping** The `dostrip -x` command can be used to add paths to an exclusion list for stripping of debug symbols, to allow more fine-grained control than with `RESTRICT="strip"`. See `DOSTRIP` on page 72.

## Version manipulation and comparison commands

**ver\_cut range [version]** Print the version substring specified by *range*. *version* defaults to `PV`.

**ver\_rs range repl ... [version]** Replace all version separators in *range* by string *repl*. Multiple *range repl* pairs are allowed. *version* defaults to `PV`.

**ver\_test [v1] op v2** Check if the relation *v1 op v2* is true. *v1* defaults to `PVR`; *op* can be `-eq`, `-ne`, `-gt`, `-ge`, `-lt` or `-le`.

See `VER-COMMANDS` on page 74.

## Removals/Bans

**package.provided** Deprecated since a long time and finally dropped. See `PACKAGE-PROVIDED` on page 25.

**PORTDIR and ECLASSDIR** No longer defined, because ebuilds should not directly access files in the repository. See `PORTDIR` on page 53 and `ECLASSDIR` on page 53.

**DESTTREE and INSDESTTREE** Not defined any more. Use the `into` and `insinto` commands instead. See `DESTTREE` on page 54 and `INSDESTTREE` on page 54.

**dohtml** No longer allowed. `doins -r` can be used as a replacement. See `BANNED-COMMANDS` on page 61.

**dolib and libopts** No longer allowed. The specific `dolib.a` or `dolib.so` commands should be used as replacement. See `BANNED-COMMANDS` on page 61.

## EAPI 8 (2021-06-13)

### Additions/Changes

**profiles/updates directory** Arbitrary filenames are now allowed, instead of strict naming by quarters (like `2Q-2021`). See `UPDATES-FILENAMES` on page 21.

**Bash version** Ebuilds can use features of Bash version 5.0 (was 4.2 before). See `BASH-VERSION` on page 29.

**Selective fetch/mirror restriction** In `SRC_URI`, adding a `fetch+` or `mirror+` prefix to an individual URI means that the file may be fetched or mirrored. This overrides the corresponding global settings in the `RESTRICT` variable. See `URI-RESTRICT` on page 32.

**IDEPEND** This variable specifies install-time dependencies on packages used in (e.g.) `pkg_postinst`. In a cross-compilation environment, these are dependencies for native tools (`CBUILD`). See `IDEPEND` on page 35.

**pkg\_\* phases** The initial working directory is guaranteed to be empty. See `PHASE-FUNCTION-DIR` on page 41.

**src\_prepare** Items in the `PATCHES` variable are interpreted as files, even if their name begins with a hyphen. See `SRC-PREPARE` on page 43.

**PROPERTIES and RESTRICT** These variables are accumulated across the ebuild and inherited eclasses, like

IUSE, REQUIRED\_USE, and \*DEPEND were before.  
See ACCUMULATE-VARS on page 49.

**econf** If supported, options `--disable-static` and `--datarootdir=${EPREFIX}/usr/share` are passed to configure, respectively. See ECONF-OPTIONS on page 65.

**dosym** With the new option `-r`, an absolute path specified for the link target will be converted to a path relative to the link location. See DOSYM-RELATIVE on page 69.

**insopts** Commands `doconfd`, `doenvd`, `doheader` install files with fixed mode 0644, i. e., they are no longer affected by `insopts`. See INSOPTS on page 71.

**exeopts** Command `doinitd` installs files with fixed mode 0755, i. e., it is no longer affected by `exeopts`. See EXEOPTS on page 71.

**usev** This helper has an optional second argument now: `usev <flag> [true]`. If the flag is set, outputs `[true]`, or the flag's name if called with only one argument. Otherwise outputs nothing. See USEV on page 73.

## Removals/Bans

**useq** No longer allowed. Use regular `use` as a drop-in replacement. See BANNED-COMMANDS on page 61.

**hasv and hasq** No longer allowed. Regular `has` should be used instead. See BANNED-COMMANDS on page 61.

**unpack** No longer supports unpacking of 7-Zip, RAR, and LHA archives. See UNPACK-EXTENSIONS on page 76.