

EAPI Cheat Sheet

Christian Faulhammer
fauli@gentoo.org

Ulrich Müller
ulm@gentoo.org

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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;¹ 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 Package Manager Specification itself, built from the same checkout as this document.

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EAPIs 0 to 6

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

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.

¹https://wiki.gentoo.org/wiki/Project:Package_Manager_Specification

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

|| 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 38.

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 59.

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 36.

SYSROOT The path to the root directory for `DEPEND` type dependencies. See `SYSROOT` on page 54.

ESYSROOT The concatenation of `SYSROOT` and the applicable offset-prefix. See `SYSROOT` on page 54.

BROOT The prefixed root directory path for `BDEPEND` type dependencies, typically executable build tools. See `BROOT` on page 54.

econf If supported, `configure` will be called with the `--with-sysroot=${ESYSROOT:-/}` option. See `ECONF-OPTIONS` on page 66.

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 63.

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 57.

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 61.

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 62.

Output commands `echo` and friends no longer use `std-out`, so inside of command substitution their output won't be caught. See `OUTPUT-NO-STDOUT` on page 63.

eqawarn The `eqawarn` output command is supported in the package manager itself. See `EQAWARN` on page 64.

die in subshell The `die` command is guaranteed to work in a subshell context. See `SUBSHELL-DIE` on page 64.

domo destination `domo` installs the specified files under `/usr/share/locale` instead of `${DESTTREE}/share/locale`. See `DOMO-PATH` on page 70.

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 73.

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 75.

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 54 and `ECLASSDIR` on page 54.

DESTTREE and INSDESTTREE Not defined any more. Use the `into` and `insinto` commands instead. See `DESTTREE` on page 55 and `INSDESTTREE` on page 55.

dohtml No longer allowed. `doins -r` can be used as a replacement. See `BANNED-COMMANDS` on page 62.

dolib and libopts No longer allowed. The specific `dolib.a` or `dolib.so` commands should be used as replacement. See `BANNED-COMMANDS` on page 62.

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 30.

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 33.

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 36.

pkg_* phases The initial working directory is guaranteed to be empty. See PHASE-FUNCTION-DIR on page 42.

src_prepare Items in the PATCHES variable are interpreted as files, even if their name begins with a hyphen. See SRC-PREPARE on page 44.

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 50.

econf If supported, options `--disable-static` and `--datarootdir=${EPREFIX}/usr/share` are passed to configure, respectively. See ECONF-OPTIONS on page 66.

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 70.

insopts Commands `doconfd`, `doenvd`, `doheader` install files with fixed mode 0644, i.e. they are no longer affected by `insopts`. See INSOPTS on page 72.

exeopts Command `doinitd` installs files with fixed mode 0755, i.e. it is no longer affected by `exeopts`. See EXEOPTS on page 72.

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 74.

Removals/bans

useq No longer allowed. Use regular `use` as a drop-in replacement. See `BANNED-COMMANDS` on page 62.

hasv and hasq No longer allowed. Regular `has` should be used instead. See `BANNED-COMMANDS` on page 62.

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

EAPI 9 (2025-12-14)

Additions/changes

Default EAPI for profiles Profile directories without their own `eapi` file no longer default to EAPI 0, but to the EAPI specified in the top-level `profiles` directory. See `PROFILE-EAPI-DEFAULT` on page 23.

use.stable and package.use.stable Profile dirs may contain two new files. They can be used to override the USE flags specified by `make.defaults`, but act only on packages that would be merged due to a stable keyword. See `USE-STABLE` on page 25.

Bash version Ebuilds can use features of Bash version 5.3 (was 5.0 before). See `BASH-VERSION` on page 30.

Variables are no longer exported The package manager no longer exports its defined shell variables (exceptions are `TMPDIR` and `HOME`) to the environment. The same applies to variables defined in `make.defaults` that have specific meanings. See `EXPORT-VARS` on page 52.

pipestatus Checks if all commands in the last executed pipeline have returned an exit status of zero. When the `-v` option is specified, also prints the shell's pipe status array. See `PIPESTATUS` on page 64.

ver_replacing op v2 Checks if the relation `v1 op v2` is true for any element `v1` of `REPLACING_VERSIONS`. `op` can be any operator that is accepted by `ver_test`. See `VER-REPLACING` on page 76.

edo Outputs its entire argument list as an informational message, then executes it as a simple shell command, with standard failure behaviour. See EDO on page 78.

Merging of symlinks When merging `D` to `ROOT`, absolute symlinks are now merged as-is. The package manager will no longer strip a leading `D` from their link targets. See SYMLINK-REWRITE on page 82.

Removals/bans

assert No longer allowed. Use `pipestatus` instead. See BANNED-COMMANDS on page 62.

domo No longer allowed. Use `insinto` and `newins` as replacement. See BANNED-COMMANDS on page 62.