

**doheader and newheader** These new helper functions install the given header file(s) into `/usr/include`. The `-r` option enables recursion for `doheader`, similar to `doins`. See `DOHEADER` on page 61.

**new\* standard input** The `newins` etc. commands read from standard input if the first argument is `-` (a hyphen). See `NEWFOO-STDIN` on page 63.

**EBUILD\_PHASE\_FUNC** This variable is very similar to `EBUILD_PHASE`, but contains the name of the current `ebuild` function. See `EBUILD-PHASE-FUNC` on page 51.

**Stable use masking/forcing** New files `use.stable`, `{mask,force}` and `package.use.stable`, `{mask,force}` are supported in profile directories. They are similar to their non-`stable` counterparts, but act only on packages that would be merged due to a `stable` keyword. See `STABLEMASK` on page 23.

## 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 27.

**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 55.

**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 52.

**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-6` on page 40.

**src\_install** The default implementation uses the new `einstalldocs` function for installing documentation. See `SRC-INSTALL-6` on page 42.

**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 57.

**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 67.

**.txz files** Suffix `.txz` for xz compressed tarballs is recognised. See `UNPACK-EXTENSIONS` on page 67.

**Filename case** Character case of filename extensions is ignored. See `UNPACK-IGNORE-CASE` on page 67.

**econf changes** Options `--docdir` and `--htmldir` are passed to `configure`, in addition to the existing options. See `ECONF-OPTIONS` on page 59.

**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 58.

**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 58.

**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 `EINSTALDOCS` on page 68.

**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 66.

**get\_libdir** The `get_libdir` command outputs the `lib*` directory basename suitable for the current ABI. See `GET-LIBDIR` on page 68.

### Removals/Bans

**install** No longer allowed. Use `emake install` as replacement. See `BANNED-COMMANDS` on page 56.

# EAPI Cheat Sheet

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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;<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, and 2

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

## EAPI 3 (2010-01-18)

### Additions/Changes

**Support for .xz** Unpack of `.xz` and `.tar.xz` files is possible without any custom `src_unpack` functions. See `UNPACK-EXTENSIONS` on page 67.

**Offset prefix** Supporting installation on Prefix-enabled systems will be easier with this EAPI.

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

<sup>2</sup><http://creativecommons.org/licenses/by-sa/3.0/>

**pkg\_prepend** Some useful checks (kernel options for example) can be placed in this new phase to inform the user early (when just pretending to emerge the package). Most checks should usually be repeated in pkg\_setup. See PKG\_PREPEND on page 38.

**src\_install** The src\_install phase is no longer empty but has a default now. This comes along with an accompanying default function. See SRC\_INSTALL-4 on page 42.

**pkg\_info on non-installed packages** The pkg\_info phase can be called even for non-installed packages. Be warned that dependencies might not have been installed at execution time. See PKG\_INFO on page 43.

**econft changes** The helper function now always activates --disable-dependency-tracking. See ECONFT-OPTIONS on page 59.

**USE dependency defaults** In addition to the features offered in EAPI 2 for USE dependencies, a (+) or (-) can be added after a USE flag (mind the parentheses). The former specifies that flags not in IUSE should be treated as enabled; the latter, disabled. Cannot be used with USE\_EXPAND flags. This mimics parts of the behaviour of --missing in built\_with\_use. See USE-DEP-DEFAULTS on page 36.

**Controllable compression** All items in the doc, info, man subdirectories of /usr/share/ may be compressed on-disk after src\_install, except for /usr/share/doc/{PDF}/html, doccompress path ... adds paths to the inclusion list for compression, doccompress -x path ... adds paths to the exclusion list. See DOCOMPRESS on page 64.

**nonfatal for commands** If you call nonfatal the command given as argument will not abort the build process in case of a failure (as is the default) but will return non-zero on failure. See NONFATAL on page 56.

**dodoc recursion** If the -r switch is given as first argument and followed by directories, files from there are installed recursively. See DODOC on page 61.

**dots symlink support** Symbolic links are now properly installed when using recursion (-r switch). See DOINS on page 62.

**PROPERTIES** Is mandatory for all package managers now to support interactive installs.

**REQUIRED\_USE** This variable can be used similar to the (R|P) DEPEND variables and define sets of USE flag combinations that are not allowed. All elements can be further nested to achieve more functionality.

**Illegal combination** To prevent activation of flag if flag2 is enabled use "flag2? ( !flag1 ) : flag2 is enabled use "flag1 use "flag1? ( !flag2 ) : flag3 ... ) )"

**OR** If at least one USE flag out of many must be activated on flag1 use "flag1? ( !flag2 ) : flag2"

**XOR** To allow exactly one USE flag out of many use "^( flag1 flag2 ... )"

See REQUIRED-USE on page 29.

**MERGE\_TYPE** This variable contains one of three possible values to allow checks if it is normal merge with compilation and installation (source), installation of a binary package (binary), or a compilation without installation (buildonly). See MERGE-TYPE on page 51.

**REPLACING\_VERSIONS, REPLACED\_BY\_VERSION** These variables, valid in pkg\_\*, contain a list of all versions (PVR) of this package that we are replacing, and the version that is replacing the current one, respectively. See REPLACE-VERSION-VARS on page 53.

**Removals/Bans** Both functions are not allowed any more. See BANNED-COMMANDS on page 56.

**No RDEPEND fail-back** The package manager will not fall back to RDEPEND=DEPEND if RDEPEND is undefined. See RDEPEND-DEPEND on page 30.

**S fallback changes** The value of the variable S will not automatically be changed to WORKDIR, if S is not a directory, but abort. Virtual packages are the only exception. See S-WORKDIR-FALLBACK on page 38.

**AA, KV** These variables are not defined any more. See AA on page 49 and KV on page 51.

**Sub-slots** The SLOT variable and slot dependencies may contain an optional sub-slot part that follows the regular slot, delimited by a / character; for example 2/2.30. The sub-slot is used to represent cases in which an upgrade to a new version of a package with a different sub-slot may require dependent packages to be rebuilt. If the sub-slot is not specified in SLOT, it defaults to the regular slot. See SUB-SLOT on page 36.

**Slot operator dependencies** Package dependencies can specify one of the following operators as a suffix, which will affect updates of runtime dependencies:

**\*** Any slot value is acceptable. The package will not break when its dependency is updated.

**=** Any slot value is acceptable, but the package can break when its dependency is updated to a different slot (or sub-slot).

See SLOT-OPERATOR-DEPS on page 36.

**Profile IUSE injection** Apart from the USE flags explicitly listed in IUSE, additional flags can be implicitly provided by profiles. See PROFILE-IUSE-INJECT on page 53.

**At-most-one-of groups** In REQUIRED-USE you can use "?? ( flag1 flag2 ... )" to allow zero or one USE flag out of many. See AT-MOST-ONE-OF on page 33.

**Parallel tests** The default for src\_test runs emake without -j1 now. See PARALLEL-TESTS on page 41.

**econft changes** The econft function now always passes --disable-silent-rules to configure. See ECONFT-OPTIONS on page 59.

**has\_version and best\_version changes** The two helpers support a --host-root option that causes the query to apply to the host root instead of ROOT. See HOST-ROOT-OPTION on page 57.

**usex** Usage for this helper function is usex <USE flag> [true1] [false1] [true2] [false2]. If the USE flag is set, outputs [true1] [false1] [true2] (defaults to yes), otherwise outputs [false1] [false2] (defaults to no). See USEX on page 66.