

**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 62.

**new\* standard input** The `newins` etc. commands read from standard input if the first argument is `-` (a hyphen). See `NEWFOO-STDIN` on page 64.

**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 52.

**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 24.

## 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 28.

**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 56.

**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 53.

**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 41.

**src\_install** The default implementation uses the new `einstalldocs` function for installing documentation. See `SRC-INSTALL-6` on page 43.

**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 58.

**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 68.

**.txz files** Suffix `.txz` for xz compressed tarballs is recognised. See `UNPACK-EXTENSIONS` on page 68.

**Filename case** Character case of filename extensions is ignored. See `UNPACK-IGNORE-CASE` on page 68.

**econf changes** Options `--docdir` and `--htmldir` are passed to `configure`, in addition to the existing options. See `ECONF-OPTIONS` on page 60.

**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 59.

**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 59.

**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 69.

**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 67.

**get\_libdir** The `get_libdir` command outputs the `lib*` directory basename suitable for the current ABI. See `GET-LIBDIR` on page 69.

### Removals/Bans

**install** No longer allowed. Use `emake install` as replacement. See `BANNED-COMMANDS` on page 57.

# 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 68.

**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\_pretend** 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_PRETEND` on page 39.

**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 43.

**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 44.

**ecount changes** The helper function now always activates `--disable-dependency-tracking`. See `CONF-OPTIONS` on page 60.

**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 USE should be treated as enabled; the latter, disabled. Cannot be used with `USE_EXPAND` flags. This mimics parts of the behaviour of `--missing` in `build_with_use`. See `USE-DEP-DEFAULTS` on page 37.

**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/{FF}/html`, `doccompress`, `path` ... adds paths to the inclusion list for `compression.doccompress -x path` ... adds paths to the exclusion list. See `DOCMCOMPRESS` on page 65.

**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 57.

**docdoc recursion** If the `-r` switch is given as first argument and followed by directories, files from there are installed recursively. See `DODOC` on page 62.

**doins symlink support** Symbolic links are now properly installed when using recursion (`-r` switch). See `DOINS` on page 63.

**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 `flag1` if `flag2` is enabled use `"flag2? ( !flag1 )"`.  
**OR** If at least one USE flag out of many must be activated on `flag1` use `"flag1? ( || ( flag2 flag3 ... ) )"`.

**XOR** To allow exactly one USE flag out of many use `"^^ ( flag1 flag2 ... )"`.  
 See `REQUIRED_USE` on page 30.

**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 52.

**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 54.

## Removals/Bans

**dohard, dosed** Both functions are not allowed any more. See `BANNED-COMMANDS` on page 57.

**No RDEPEND fail-back** The package manager will not fall back to `RDEPEND=DEPEND` if `RDEPEND` is undefined. See `RDEPEND-DEPEND` on page 31.

**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 39.

**AA, KV** These variables are not defined any more. See `AA` on page 50 and `KV` on page 52.

**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 37.

**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 37.

**Profile USE injection** Apart from the USE flags explicitly listed in `USE`, additional flags can be implicitly provided by profiles. See `PROFILE-USE-INJECT` on page 54.

**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 34.

**Parallel tests** The default for `src_test` runs `emake` without `-j1` now. See `PARALLEL-TESTS` on page 42.

**ecount changes** The `ecount` function now always passes `--disable-silent-rules` to `configure`. See `CONF-OPTIONS` on page 60.

**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 58.

**usex** Usage for this helper function is `usex <USE flag> [true] [false] [true] [true] [false]`. If the USE flag is set, outputs `[true] [true] [true] [true]` (defaults to `yes`), otherwise outputs `[false] [false] [false] [false]` (defaults to `no`). See `USEX` on page 67.