NAME

emerge − Command−line interface to the Portage system

SYNOPSIS

emerge [*options*] [*action*] [*ebuild* | *tbz2 file* | *gpkg file* | *file* | *@set* | *atom*] ...

emerge −−**sync** [*repo* | *alias*] ...

emerge −−**info** [*atom*]

emerge −−**search** *somestring*

emerge −−**help** | −−**version**

DESCRIPTION

emerge is the definitive command−line interface to the Portage system. It is primarily used for installing packages, and **emerge** can automatically handle any dependencies that the desired package has. **emer ge** can also update the **ebuild repository**, making new and updated packages available. **emerge** gracefully handles updating installed packages to newer releases as well. It handles both source and binary packages, and it can be used to create binary packages for distribution.

EBUILDS, TBZ2S, SETS AND ATOMS

emerge primarily installs packages. You can specify packages to install in five possible ways: an *atom*, a *set*, an installed *file*, an *ebuild*, a *tbz2* file, or a *gpkg* file.

ebuild An *ebuild* must be, at a minimum, a valid Portage package directory name without a version or category, such as **portage** or **python**. Both categories and version numbers may be used in addition, such as **sys−apps/portage** or **=python−2.2.1−r2**. **emerge** ignores a trailing slash so that filename completion can be used. The *ebuild* may also be an actual filename, such as **/var/db/repos/gentoo/app−admin/python/python−2.2.1−r2.ebuild**. **WARNING:** The implementation of **emerge /path/to/ebuild** is broken and so this syntax shouldn't be used.

tbz2 file

A *tbz2* file must be a valid .tbz2 created with **ebuild <package>−<version>.ebuild package** or **emerge −−buildpkg [category/]<package>** or **quickpkg [category/]<package>**.

gpkg file

A *gpkg* file must be a valid .gpkg created with **ebuild <package>−<version>.ebuild package** or **emerge −−buildpkg [category/]<package>**or **quickpkg [category/]<package>** with **BINPKG_FORMAT="gpkg"**.

file A *file* must be a file or directory that has been installed by one or more packages. If an absolute path is not used, then it must begin with either "./" or "../". For directories that are owned by multiple packages, all owning packages will be selected. See the **portageq**(1) owners command if you would like to query the owners of one or more files or directories.

set A *set* is a convenient shorthand for a large group of packages. Six sets are currently always available: **selected-packages**, **selected-sets**, **selected**, **system**, **profile**, and **world**. **selected-packages** contains the user-selected "world" packages that are listed in **/var/lib/portage/world**, while **selected-sets** contains the nested sets that may be listed in **/var/lib/portage/world_sets**. **system** and **profile** both refer to sets of packages deemed necessary for your system to run properly (the differences between these two sets are documented in **portage**(5)). **selected** encompasses both the **selected-packages** and **selected-sets** sets, while **world** encompasses the **selected**, **system** and **profile** sets. (See **FILES** below for more information.) Other sets can exist depending on the current configuration. The default set configuration is located in the **/usr/share/portage/config/sets** directory. User sets may be created by placing files in the**/etc/portage/sets/** directory (see **portage**(5)). Note that a *set* is generally used in conjunction with −−**update**. When used as arguments to **emerge** sets have to be prefixed with **@** to be recognized. Use the −−**list−sets** action to display a list of available package sets.

atom An *atom* describes bounds on a package that you wish to install. *See ebuild(5) for the details on atom syntax.* F or example, **>=dev−lang/python−2.2.1−r2** matches the latest available version of Python greater than or equal to 2.2.1−r2. Similarly, **<dev−lang/python−2.0** matches the latest available version of Python before 2.0. Note that in many shells you will need to escape characters such as '<' and '='; use single− or double−quotes around the *atom* to get around escaping problems. You may also constrain an atom to match a specific **SLOT** by appending a colon and a **SLOT**. Example: **x11−libs/qt:3**.

ACTIONS

No action

If no action is specified, the action is to merge in the specified packages, satisfying any dependencies that they may have. The arguments can be *atoms*, *sets*, installed *files*, *ebuilds*, *tbz2s*, or *gpkgs*. **Note that you need to use the −−usepkg option if you want to install a tbz2 or a gpkg.** The packages are added to the **world** file at the end, so that they are considered for later updating.

−−check−news

Scan all repositories for relevant unread GLEP 42 news items, and display how many are found. See *https://www.gentoo.org/glep/glep-0042.html*.

−−clean

Cleans up the system by examining the installed packages and removing older packages. This is accomplished by looking at each installed package and separating the installed versions by **slot**. Clean will **remove all but the most recently installed version in each slot**. Clean should not remove unslotted packages. Note: Most recently installed means most **recent**, not highest version.

−−config

Run package specific actions needed to be executed after the emerge process has completed. This usually entails configuration file setup or other similar setups that the user may wish to run.

−−depclean, **−c**

Cleans the system by removing packages that are not associated with explicitly merged packages. Depclean works by creating the full dependency tree from the @world set, then comparing it to installed packages. Packages installed, but not part of the dependency tree, will be uninstalled by depclean. See**−−with−bdeps** for beha vior with respect to build time dependencies that are not strictly required. Packages that are part of the world set will always be kept. They can be manually added to this set with *emerge −−noreplace <atom>*. As a safety measure, depclean will not remove any packages unless *all* required dependencies have been resolved. As a consequence, it is often necessary to run *emerge −−update −−newuse −−deep @world* prior to depclean. Also note that depclean may break link level dependencies, especially when the **−−depclean−lib−check** option is disabled. Thus, it is recommended to use a tool such as **revdep-rebuild**(1) in order to detect such breakage.

WARNING: Inexperienced users are advised to use **−−pretend** or **−−ask** with this option in order to see a preview of which packages will be uninstalled. Always study the list of packages to be cleaned for any obvious mistakes. Note that packages listed in package.provided (see **portage**(5)) may be removed by depclean, even if they are part of the world set.

Depclean serves as a dependency aware version of **−−unmerge**. When given one or more atoms, it will unmerge matched packages that have no reverse dependencies. Use **−−depclean** together with **−−verbose** to show reverse dependencies.

−−deselect [y | n], **−W**

Remove atoms and/or sets from the world file. This action is implied by uninstall actions, including **-−depclean**, **-−prune** and **-−unmerge**. Use **-−deselect=n** in order to prevent uninstall actions from removing atoms from the world file.

−−help, **−h**

Displays help information for emerge. Adding one of the additional arguments listed above will give you more specific help information on that subject. The internal **emerge** help documentation

is updated more frequently than this man page; check it out if you are having problems that this man page does not help resolve.

−−info Produces a list of information to include in bug reports which aids the developers when fixing the reported problem. **Please include this inf ormation when submitting a bug report.** Expanded output can be obtained with the −−*verbose* option.

−−list−sets
Displays a list of available package sets.

−−metadata
Transfers pregenerated metadata cache from ${repository_location}/metadata/md5−cache/ to /var/cache/edb/dep/ as is normally done on the tail end of an rsync update using **emerge −−sync**. This process populates the cache database that Portage uses for pre-parsed lookups of package data. It does not populate cache for repositories not distributing pregenerated metadata cache. In order to generate cache for these repositories, use **−−regen**. In versions of portage >=2.1.5 the −−metadata action is totally unnecessary unless the user has enabled FEATURES="metadata-transfer" in **make.conf**(5).

−−prune, **−P**
Removes all but the highest installed version of a package from your system. Use **−−prune** together with **−−verbose** to show reverse dependencies or with **−−nodeps** to ignore all dependencies. **WARNING: This action can remove packages from your world file! Check the emerge output of the next −−depclean run carefully! Use −−depclean to avoid this issue.**

−−regen
Causes portage to check and update the dependency cache of all ebuilds in the repository. The cache is used to speed up searches and the building of dependency trees. This command is not recommended for rsync users as rsync updates the cache using server−side caches. If you do not know the differences between a 'rsync user' and some other user, then you are a 'rsync user' :). Rsync users should simply run **emerge −−sync** to regenerate the cache. After a portage update, rsync users may find it convenient to run **emerge −−metadata** to rebuild the cache as portage does at the end of a sync operation. In order to specify parallel **−−regen** behavior, use the **−−jobs** and **−−load−average** options. If you would like to generate and distribute cache for use by others, use **egencache**(1).

−−resume, **−r**
Resumes the most recent merge list that has been aborted due to an error. This re−uses the arguments and options that were given with the original command that's being resumed, and the user may also provide additional options when calling **−−resume**. It is an error to provide atoms or sets as arguments to **−−resume**, since the arguments from the resumed command are used instead. Please note that this operation will only return an error on failure. If there is nothing for portage to do, then portage will exit with a message and a success condition. A resume list will persist until it has been completed in entirety or until another aborted merge list replaces it. The resume history is capable of storing two merge lists. After one resume list completes, it is possible to invoke −−resume once again in order to resume an older list. The resume lists are stored in */var/cache/edb/mtimedb*, and may be explicitly discarded by running 'emaint −−fix cleanresume' (see **emaint**(1)).

−−search, **−s**
Searches for matches of the supplied string in the ebuild repository. By default emerge uses a case-insensitive simple search, but you can enable a regular expression search by prefixing the search string with % (the % prefix can often be omitted if the **−−regex−search−auto** option is enabled). For example, **emerge −−search "%^kde"** searches for any package whose name starts with "kde"; **emerge −−search "%gcc$"** searches for any package that ends with "gcc"; **emerge −−search "office"** searches for any package that contains the word "office". If you want to include the category into the search string, prepend an @: **emerge −−search "%@^dev-java.*jdk"**. If you want to search the package descriptions as well, use the **−−searchdesc** action.

−−searchdesc, **−S**
Matches the search string against the description field as well as the package name. **T ake caution** as the descriptions are also matched as regular expressions.

−−sync Updates repositories, for which auto−sync, sync−type and sync−uri attributes are set in repos.conf. A list of repos or aliases can be specified, in which case they will be updated regardless of their auto−sync attribute. See**portage**(5) for more information. The **POR TAGE_SYNC_STALE** variable configures warnings that are shown when emerge −−sync has not been executed recently.

WARNING: The emerge −−sync action will revert local changes (e.g. modifications or additions of files) inside repositories synchronized using rsync.

NOTE: The emerge −−sync command is a compatibility command. Sync operations are now performed using the new emaint sync module. This new emaint sync module has greater functionality and flexibility. Please refer to**emaint**(1) for more information about sync operations.

NOTE: The **emerge−webrsync** program will download the entire ebuild repository as a tarball, which is much faster than emerge −−sync for first time syncs.

−−unmerge, **−C**
WARNING: This action can remove important packages! Removes all matching packages following a counter governed by **CLEAN_DELAY**. This does no checking of dependencies, so it may remove packages necessary for the proper operation of your system. Its arguments can be *atoms* or *ebuilds*. For a dependency aware version of **−−unmerge**, use **−−depclean** or **−−prune**. For a version with **CLEAN_DELAY=0**, use **−−rage−clean**.

−−version, **−V**
Displays the version number of **emerge**.

OPTIONS

−−accept−properties=ACCEPT_PROPERTIES
This option temporarily overrides the **ACCEPT_PROPERTIES** variable. The **ACCEPT_PROPERTIES** variable is incremental, which means that the specified setting is appended to the existing value from your configuration. The special **-*** token can be used to discard the existing configuration value and start fresh. See the **MASKED PACKAGES** section and **make.conf**(5) for more information about ACCEPT_PROPERTIES. A typical usage example for this option would be to use *−−accept−properties=−interactive* to temporarily mask interactive packages. With default configuration, this would result in an effective **ACCEPT_PROPERTIES** value of "* -interactive".

−−accept−restrict=ACCEPT_RESTRICT
This option temporarily overrides the **ACCEPT_RESTRICT** variable. The **ACCEPT_RESTRICT** variable is incremental, which means that the specified setting is appended to the existing value from your configuration. The special **-*** token can be used to discard the existing configuration value and start fresh. See the **MASKED PACKAGES** section and **make.conf**(5) for more information about ACCEPT_RESTRICT. A typical usage example for this option would be to use *−−accept−restrict=−bindist* to temporarily mask packages that are not binary re−distributable. With default configuration, this would result in an effective **ACCEPT_RESTRICT** value of "* -bindist".

−−alert [y | n], **−A**
Add a terminal bell character (’\a’) to all interactive prompts. This is especially useful if dependency resolution is taking a long time, and you want emerge to alert you when it is finished. If you use **emerge -auAD world**, emerge will courteously point out when it has finished calculating the graph.

--alert may be ’y’ or ’n’. Using **--alert** without an option is the same as using it with ’y’. Try it with ’emerge -aA sys-apps/portage’.

If your terminal emulator is set up to make '\a' into a window manager urgency hint, move your cursor to a different window to get the effect.

−−alphabetical
When displaying USE and other flag output, combines the enabled and disabled lists into one list and sorts the whole list alphabetically.

−−ask [y | n], **−a**
Before performing the action, display what will take place (server info for **−−sync**, **−−pretend** output for merge, and so forth), then ask whether to proceed with the action or abort. Using **−−ask** is more efficient than using **−−pretend** and then executing the same command without **−−pretend**, as dependencies will only need to be calculated once. **WARNING: If the "Enter" key is pressed at the prompt (with no other input), it is interpreted as acceptance of the first choice. Note that the input buffer is not cleared prior to the prompt, so an accidental press of the "Enter" key at any time prior to the prompt will be interpreted as a choice! Use the −−ask−enter−invalid option if you want a single "Enter" key press to be interpreted as invalid input.**

−−ask−enter−invalid
When used together with the **−−ask** option, interpret a single "Enter" key press as invalid input. This helps prevent accidental acceptance of the first choice. This option is intended to be set in the **make.conf**(5) **EMERGE_DEFAULT_OPTS** variable.

−−autounmask [y | n]
Automatically unmask packages and generate package.use settings as necessary to satisfy dependencies. This option is disabled by default, except for portions of behavior which are controlled by the **−−autounmask−use** (**−−autounmask=n** disables autounmask behavior entirely). If any configuration changes are required, then they will be displayed after the merge list and emerge will immediately abort. If the displayed configuration changes are satisfactory, you should copy and paste them into the specified configuration file(s), or enable the **−−autounmask−write** option. The **EMERGE_DEFAULT_OPTS** variable may be used to entirely enable or disable this option by default in **make.conf**(5).

−−autounmask−backtrack < y | n >
Allow backtracking after autounmask has detected that configuration changes are necessary. This option is not recommended, since it can cause a large amount of time to be wasted by backtracking calculations, even though there is no guarantee that it will produce a solution. This option is disabled by default.

−−autounmask−continue [y | n]
Automatically apply autounmask changes to configuration files, and continue to execute the specified command. If the dependency calculation is not entirely successful, then emerge will simply abort without modifying any configuration files. This option implies **−−autounmask−backtrack=y**. **WARNING:** This option is intended to be used only with great caution, since it is possible for it to make nonsensical configuration changes which may lead to system breakage. Therefore, it is advisable to use **−−ask** together with this option.

−−autounmask−only [y | n]
Instead of doing any package building, just unmask packages and generate package.use settings as necessary to satisfy dependencies. This option is disabled by default.

−−autounmask−unrestricted−atoms [y | n]
If −−autounmask is enabled, keyword and mask changes using the ´=´ operator will be written. With this option, ´>=´ operators will be used whenever possible. USE and license changes always use the latter behavior.

−−autounmask−keep−keywords [y | n]
If −−autounmask is enabled, no package.accept_keywords changes will be created. This leads to unsatisfied dependencies if any keyword changes are required. This option does not imply −−autounmask−keep−masks, so −−autounmask is still allowed to create package.unmask changes unless the −−autounmask−keep−masks is also specified.

−−autounmask−keep−masks [y | n]
If −−autounmask is enabled, no package.unmask or ** keyword changes will be created. This leads to unsatisfied dependencies if no other solution exists.

−−autounmask−license < y | n >
Allow autounmask package.license changes.

−−autounmask−use < y | n >
Allow autounmask package.use changes. This option is enabled by default (any of **−−autounmask=n**, **−−autounmask−use=n**, or **−−binpkg−respect−use=y** disables it). The **EMERGE_DEFAULT_OPTS** variable may be used to disable this option by default in **make.conf**(5).

−−autounmask−write [y | n]
If −−autounmask is enabled, changes are written to config files, respecting **CONFIG_PROTECT** and **−−ask**. If the corresponding package.* is a file, the changes are appended to it, if it is a directory, changes are written to the lexicographically last file. This way it is always ensured that the new changes take precedence over existing changes. This option is automatically enabled with −−ask.

−−backtrack=COUNT
Specifies an integer number of times to backtrack if dependency calculation fails due to a conflict or an unsatisfied dependency (default: ´20´).

−−binpkg−changed−deps [y | n]
Tells emerge to ignore binary packages for which the corresponding ebuild dependencies have changed since the packages were built. In order to help avoid issues with resolving inconsistent dependencies, this option is automatically enabled unless the **−−usepkgonly** (or **−−getbinpkgonly**) option is enabled. Behavior with respect to changed build−time dependencies is controlled by the **−−with−bdeps** option.

−−binpkg−respect−use [y | n]
Tells emerge to ignore binary packages if their USE flags don’t match the current configuration. In order to help avoid issues with resolving inconsistent USE flag settings, this option is automatically enabled unless the **−−usepkgonly** (or **−−getbinpkgonly**) option is enabled. If **−−binpkg−respect−use** is given explicitly, then it implies **−−autounmask−use=n**, because these options naturally oppose each other.

−−buildpkg [y | n], **−b**
Tells emerge to build binary packages for all ebuilds processed in addition to actually merging the packages. Useful for maintainers or if you administrate multiple Gentoo Linux systems (build once, emerge tbz2s or gpkgs everywhere) as well as disaster recovery. The package will be created in the **PKGDIR** directory (see **make.conf**(5)). An alternative for already−merged packages is to use **quickpkg**(1) which creates a tbz2 or gpkg from the live filesystem.

−−buildpkg−exclude ATOMS
A space separated list of package atoms for which no binary packages should be built. This option overrides all possible ways to enable building of binary packages except for the downgrade−backup and unmerge−backup **FEATURES** settings (see **make.conf**(5) for more information about **FEATURES** settings).

−−buildpkgonly, **−B**
Creates binary packages for all ebuilds processed without actually merging the packages. This comes with the caveat that all build-time dependencies must already be emerged on the system.

−−changed−deps [y | n]
Tells emerge to replace installed packages for which the corresponding ebuild dependencies have changed since the packages were built. This option also implies the **−−selective** option. Behavior with respect to changed build−time dependencies is controlled by the **−−with−bdeps** option.

−−changed−deps−report [y | n]
Tells emerge to report ebuilds for which the ebuild dependencies have changed since the installed instance was built. Behavior with respect to changed build−time dependencies is controlled by the **−−with−bdeps** option.

−−changed−slot [y | n]
Tells emerge to replace installed packages for which the corresponding ebuild SLOT metadata has changed since the packages were built. This option also implies the **−−selective** option. This may also result in rebuilds for any installed packages that have slot/sub−slot := operator dependencies that are sensitive to the relevant SLOT metadata.

−−changed−use, **−U**
Tells emerge to include installed packages where USE flags have changed since installation. This option also implies the **−−selective** option. Unlike **−−newuse**, the **−−changed−use** option does not trigger reinstallation when flags that the user has not enabled are added or removed.

−−color < y | n >
Enable or disable color output. This option will override *NO_COLOR* and *NOCOLOR* (see **make.conf**(5)) and may also be used to force color output when stdout is not a tty (by default, color is disabled unless stdout is a tty).

−−columns
Used alongside **−−pretend** to cause the package name, new version, and old version to be displayed in an aligned format for easy cut−n−paste.

−−complete−graph [y | n]
This causes **emerge** to consider the deep dependencies of all packages from the world set. With this option enabled, **emerge** will bail out if it determines that the given operation will break any dependencies of the packages that have been added to the graph. Like the **−−deep** option, the **−−complete−graph** option will significantly increase the time taken for dependency calculations. Note that, unlike the **−−deep** option, the **−−complete−graph** option does not cause any more packages to be updated than would have otherwise been updated with the option disabled. Using **−−with−bdeps=y** together with **−−complete−graph** makes the graph as complete as possible.

−−complete−graph−if−new−use < y | n >
Trigger the **−−complete−graph** behavior if USE or IUSE will change for an installed package. This option is enabled by default.

−−complete−graph−if−new−ver < y | n >
Trigger the **−−complete−graph** behavior if an installed package version will change (upgrade or downgrade). This option is enabled by default.

−−config−root=DIR
Set the **PORTAGE_CONFIGROOT** environment variable.

−−debug, **−d**
Tells emerge to run the emerge command in **−−debug** mode. In this mode the bash build environment will run with the −x option, causing it to output verbose debugging information to stdout. This also enables a plethora of other output (mostly dependency resolution messages).

−−deep [DEPTH], **−D**
This flag forces **emerge** to consider the entire dependency tree of packages, instead of checking only the immediate dependencies of the packages. As an example, this catches updates in libraries that are not directly listed in the dependencies of a package. Also see **−−with−bdeps** for behavior with respect to build time dependencies that are not strictly required.

−−depclean−lib−check [y | n]
Account for library link-level dependencies during **−−depclean** and **−−prune** actions. This option is enabled by default. If FEATURES="preserve−libs" is enabled in **make.conf**(5), and preserve−libs is not restricted for any of the packages selected for removal, then this option is ignored because any libraries that have consumers will simply be preserved.

−−digest
Prevent corruption from being noticed. The ‘repoman manifest‘ command is the preferred way to generate manifests and it is capable of doing an entire repository or category at once (see **repoman**(1)).

−−dynamic−deps < y | n >
In dependency calculations, substitute the dependencies of installed packages with the dependencies of corresponding unbuilt ebuilds from source repositories. This causes the effective dependencies of installed packages to vary dynamically when source ebuild dependencies are modified. This option is enabled by default.

WARNING: If you want to disable −−dynamic−deps, then it may be necessary to first run **fixpackages**(1) in order to get the best results. The **fixpackages**(1) command performs two different operations that can also be performed separately by the ‘emaint −−fix moveinst‘ and ‘emaint −−fix movebin‘ commands (see **emaint**(1)).

−−emptytree, **−e**
Reinstalls target atoms and their entire deep dependency tree, as though no packages are currently installed. You should run this with **−−pretend** first to make sure the result is what you expect.

−−exclude, −X ATOMS
A space separated list of package names or slot atoms. Emerge won’t install any ebuild or binary package that matches any of the given package atoms.

−−fail−clean [y | n]
Clean up temporary files after a build failure. This is particularly useful if you have **PORTAGE_TMPDIR** on tmpfs. If this option is enabled, you probably also want to enable **PORTAGE_LOGDIR** (see **make.conf**(5)) in order to save the build log.

−−fetchonly, **−f**
Instead of doing any package building, just perform fetches for all packages (fetch things from SRC_URI based upon USE setting).

−−fetch−all−uri, **−F**
Instead of doing any package building, just perform fetches for all packages (fetch everything in SRC_URI regardless of USE setting).

−−fuzzy−search [y | n]
Enable or disable fuzzy search for search actions. When fuzzy search is enabled, a result is returned if it is sufficiently similar to the search string, without requiring an exact match. This option is enabled by default. Fuzzy search does not support regular expressions, therefore it is automatically disabled for regular expression searches. Fuzzy search is slightly slower than non−fuzzy search.

−−getbinpkg [y | n], **−g**
Using the server and location defined in *PORTAGE_BINHOST* (see **make.conf**(5)), portage will download the information from each binary package found and it will use that information to help build the dependency list. This option implies **−k**. (Use**−gK** for binary−only mer ging.)

−−getbinpkgonly [y | n], **−G**
This option is identical to **−g**, as above, except binaries from the remote server are preferred over local packages if they are not identical.

−−getbinpkg−exclude ATOMS
A space separated list of package names or slot atoms. Emerge will not fetch matching remote binary packages. This option only influences fetching of remote binary packages, local binary packages are still considered even if listed here. To define an explicit binary package blacklist use **−−usepkg−exclude** instead, which also affects remote binaries when **-g** is used.

−−getbinpkg−include ATOMS
A space separated list of package names or slot atoms. Emerge will not fetch non-matching remote binary packages. This option only influences fetching of remote binary packages, local binary packages are still considered even if not listed here. To define an explicit binary package whitelist use **−−usepkg−include** instead, which also affects remote binaries when **-g** is used.

−−ignore-default-opts
Causes *EMERGE_DEFAULT_OPTS* (see **make.conf**(5)) to be ignored.

−−ignore−built−slot−operator−deps < y | n >
Ignore the slot/sub−slot := operator parts of dependencies that have been recorded when packages where built. This option is intended only for debugging purposes, and it only affects built packages that specify slot/sub−slot := operator dependencies which are supported beginning with **EAPI 5**.

−−ignore−soname−deps < y | n >
Ignore the soname dependencies of binary and installed packages. This option is enabled by default, since soname dependencies are relatively new, and the required metadata is not guaranteed to exist for binary and installed packages built with older versions of portage. Also, soname dependencies will be automatically ignored for dependency calculations that can pull unbuilt ebuilds into the dependency graph, since unbuilt ebuilds do not have any soname dependency metadata, making it impossible to determine whether an unresolved soname dependency can be satisfied. Therefore, **−−usepkgonly** (or **−−getbinpkgonly**) must be used in order to enable soname dependency resolution when installing packages.

−−ignore−world [y | n]
Ignore the @world package set and its dependencies. This may be useful if there is a desire to perform an action even though it might break the dependencies of some installed packages (it might also remove installed packages in order to solve blockers). This also alters the behavior of **−−complete−graph** options so that only deep dependencies of packages given as arguments are included in the dependency graph. This option may be useful as an alternative to **−−nodeps** in cases where it is desirable to account for dependencies of packages given as arguments.

WARNING: This option is intended to be used only with great caution, since it is possible for it to make nonsensical changes which may lead to system breakage. Therefore, it is advisable to use **−−ask** together with this option.

−−implicit−system−deps < y | n >
Assume that packages may have implicit dependencies on packages which belong to the @system set. This option is enabled by default. One of the effects of disabling this option is to allow the −−jobs option to spawn jobs without accounting for the possibility of implicit dependencies on packages that belong to the @system set. This option interacts with the *merge−wait* and *parallel−install* features as discussed in the **make.conf**(5) man page.

−j [JOBS], **−−jobs[=JOBS]**
Specifies the number of packages to build simultaneously. If this option is given without an argument, emerge will not limit the number of jobs that can run simultaneously. If 0 is given as argument, emerge will limit the jobs to the number of processors. Using 'n' as argument can be used to disable this setting. Also see the related **−−load−average** option. Similarly to the −−quiet−build option, the −−jobs option causes all build output to be redirected to logs. Note that interactive packages currently force a setting of *−−jobs=1*. This issue can be temporarily avoided by specifying *−−accept−properties=−interactive*.

−−jobs−tmpdir−require−free−gb[=GB]
Specifies the required remaining capacity (in GiB) of **PORTAGE_TMPDIR** before additional emerge jobs are started. A decaying function is used to reduce the limit for every additional emerge job after the second. Specifiy *0* to disable this check. Defaults to *18* GiB.

−−keep−going [y | n]
Continue as much as possible after an error. When an error occurs, dependencies are recalculated for remaining packages and any with unsatisfied dependencies are automatically dropped. Also see the related **−−skipfirst** option.

−l [LOAD], **−−load−average[=LOAD]**
Specifies that no new builds should be started if there are other builds running and the load average is at least LOAD (a floating-point number). With no argument, removes a previous load limit. This option is recommended for use in combination with **−−jobs** in order to avoid excess load. See **make**(1) for information about analogous options that should be configured via **MAKEOPTS** in **make.conf**(5).

−−misspell−suggestions < y | n >
Enable or disable misspell suggestions. By default, emerge will show a list of packages with similar names when a package doesn't exist. The*EMERGE_DEF AULT_OPTS* variable may be used to disable this option by default.

−−newrepo
Tells emerge to recompile a package if it is now being pulled from a different repository. This option also implies the **−−selective** option.

−−newuse, **−N**
Tells emerge to include installed packages where USE flags have changed since compilation. This option also implies the **−−selective** option. USE flag changes include:

A USE flag was added to a package. A USE flag was removed from a package. A USE flag was turned on for a package. A USE flag was turned off for a package.

USE flags may be toggled by your profile as well as your USE and package.use settings. If you would like to skip rebuilds for which disabled flags have been added to or removed from IUSE, see the related **−−changed−use** option. If you would like to skip rebuilds for specific packages, see the **−−exclude** option.

−−nobindeps
Prefer ebuilds for any dependencies and select binary packages only for the atoms or sets requested for install, i.e. those named on the command line. Has no effect unless **-k** is also used or implied. Both **--usepkg-exclude** and **--usepkg-include** are ignored when this option is used, as are the usepkg-exclude and usepkg-include attributes in **repos.conf**.

−−noconfmem
Causes portage to disregard merge records indicating that a config file inside of a **CONFIG_PROTECT** directory has been merged already. Portage will normally merge those files only once to prevent the user from dealing with the same config multiple times. This flag will cause the file to always be merged.

−−nodeps, **−O**
Merges specified packages without merging any dependencies. Note that the build may fail if the dependencies aren't satisfied. This option implies **--backtrack=0**.

−−noreplace, **−n**
Skips the packages specified on the command−line that have already been installed. Without this option, any package atoms or package sets you specify on the command−line **will** cause Portage to remerge the package, even if it is already installed. Note that Portage will not remerge dependencies by default. This option can be used to update the world file without rebuilding the packages.

−−nospinner
Disables the spinner for the session. The spinner is active when the terminal device is determined to be a TTY. This flag disables it regardless.

−−usepkg−exclude ATOMS
A space separated list of package names or slot atoms. Emerge will ignore matching binary packages.

−−usepkg−include ATOMS
A space separated list of package names or slot names. Emerge will ignore non−matching binary packages.

−−rebuild−exclude ATOMS
A space separated list of package names or slot atoms. Emerge will not rebuild matching packages due to **−−rebuild**.

−−rebuild−ignore ATOMS
A space separated list of package names or slot atoms. Emerge will not rebuild packages that depend on matching packages due to **−−rebuild**.

−−regex−search−auto < y | n >
Enable or disable automatic regular expression detection for search actions. If this option is enabled (the default), then regular expression search is automatically enabled when the search string is a valid regular expression which contains any of these commonly used regular expression characters or character sequences: ^ $ * [ ] { } | ? .+

−−oneshot, **−1**
Emerge as normal, but do not add the packages to the world file for later updating.

WARNING: This option should only be used for packages that are reachable from the @world package set (those that would not be removed by **−−depclean**), since dependencies of unreachable packages are allowed to be broken when satisfying dependencies of other packages. Broken dependencies of this sort will invalidate assumptions that make it possible for **−−deep** to be disabled by default.

−−onlydeps, **−o**
Only merge (or pretend to merge) the dependencies of the packages specified, not the packages themselves.

−−onlydeps−with−rdeps < y | n >
Include run time dependencies when **−−onlydeps** is specified. When this is disabled only build time dependencies are included. This option is enabled by default.

−−onlydeps−with−ideps < y | n >
Include install time dependencies when **−−onlydeps** and **−−onlydeps−with−rdeps=n** are both specified. This option is disabled by default.

−−package−moves [y | n]
Perform package moves when necessary. This option is enabled by default. Package moves are typically applied immediately after a **−−sync** action. They are applied in an incremental fashion, using only the subset of the history of package moves which have been added or modified since the previous application of package moves.

WARNING: This option should remain enabled under normal circumstances. Do not disable it unless you know what you are doing.

NOTE: The **fixpackages**(1) command can be used to exhaustively apply the entire history of package moves, regardless of whether or not any of the package moves have been previously applied.

−−pkg−format
Specify which binary package format will be created as target. Possible choices now are tar and rpm or their combinations.

−−prefix=DIR
Set the **EPREFIX** environment variable.

−−pretend, **−p**
Instead of actually performing the merge, simply display what *would* have been installed if **−−pretend** weren't used. Using **−−pretend** is strongly recommended before installing an unfamiliar package. In the printout:

N new (not yet installed)
S new SLOT installation (side-by-side versions)
U updating (to another version)
D downgrading (best version seems lower)
r reinstall (forced for some reason, possibly due to slot or sub−slot)
R replacing (remerging same version)
F fetch restricted (must be manually downloaded)
f fetch restricted (already downloaded)
g remote binary (automatically download from binhost)
I interactive (requires user input)
B blocked by another package (unresolved conflict)
b blocked by another package (automatically resolved conflict)

−−quickpkg−direct < y | n >
Enable use of installed packages directly as binary packages. This is similar to using binary packages produced by **quickpkg**(1), but installed packages are used directly as though they are binary packages. If**−−quickpkg−dir ect−root=DIR** is not also set to something other than "/", then **−−root=DIR** must be used, and it comes with the caveat that packages are only allowed to be installed into the root that is specified by the **−−root=DIR** option (the other root which serves as a source of packages is assumed to be immutable during the entire operation).

Default behavior for handling of protected configuration files is controlled by the **QUICKPKG_DEFAULT_OPTS** variable. The relevant quickpkg options are *−−include−config* and *−−include−unmodified−config* (refer to the **quickpkg**(1) man page). When a configuration file is not included because it is protected, an ewarn message is logged.

−−quickpkg−direct−root=DIR
Specify the root to use as the **−−quickpkg−direct** package source. This root is assumed to be immutable during the entire emerge operation. The default is set to "/".

−−quiet [y | n], **−q**
Results may vary, but the general outcome is a reduced or condensed output from portage's displays.

−−quiet−build [y | n]
Redirect all build output to logs alone, and do not display it on stdout. If a build failure occurs for a single package, the build log will be automatically displayed on stdout (unless the *−−quiet−fail* option is enabled). If there are multiple build failures (due to options like −−keep−going or −−jobs), then the content of the log files will not be displayed, and instead the paths of the log files will be displayed together with the corresponding die messages. Note that interactive packages currently force all build output to be displayed on stdout. This issue can be temporarily avoided by specifying *−−accept−properties=−interactive*. Further, note that disabling *−−quiet−build* has no effect if *−−jobs* is set to anything higher than 1.

−−quiet−fail [y | n]
Suppresses display of the build log on stdout when build output is hidden due to options such as *−−jobs*, *−−quiet*, or *−−quiet−build*. Only the die message and the path of the build log will be displayed on stdout.

−−quiet−repo−display
In the package merge list display, suppress ::repository output, and instead use numbers to indicate which repositories package come from.

−−quiet−unmerge−warn
Disable the warning message that's shown prior to **−−unmerge** actions. This option is intended to be set in the **make.conf**(5) **EMERGE_DEFAULT_OPTS** variable.

−−rage−clean
WARNING: This action can remove important packages! **−−rage−clean** does **−−unmerge** with **CLEAN_DELAY=0**.

−−read−news [y | n]
Offer to read news via eselect if there are unread news. This option has no effect unless **−−ask** is enabled.

−−rebuild−if−new−slot [y | n]
Automatically rebuild or reinstall packages when slot/sub−slot := operator dependencies can be satisfied by a newer slot, so that older packages slots will become eligible for removal by the −−depclean action as soon as possible. This option only affects packages that specify slot/sub−slot := dependencies which are supported beginning with **EAPI 5**. Since this option requires checking of reverse dependencies, it enables −−complete−graph mode whenever a new slot is installed. This option is enabled by default.

NOTE: If you want to skip all rebuilds involving slot−operator dependencies (including those that involve sub−slot changes alone), then *−−ignore−built−slot−operator−deps=y* is the option that you are looking for, since *−−rebuild−if−new−slot* does not affect rebuilds triggered by sub−slot changes alone.

−−rebuild−if−new−rev [y | n]
Rebuild packages when build−time dependencies are built from source, if the dependency is not already installed with the same version and revision.

−−rebuild−if−new−ver [y | n]
Rebuild packages when build−time dependencies are built from source, if the dependency is not already installed with the same version. Revision numbers are ignored.

−−rebuild−if−unbuilt [y | n]
Rebuild packages when build−time dependencies are built from source.

−−rebuilt−binaries [y | n]
Replace installed packages with binary packages that have been rebuilt. Rebuilds are detected by comparison of BUILD_TIME package metadata. This option is enabled automatically when using binary packages (**−−usepkgonly** or **−−getbinpkgonly**) together with **−−update** and **−−deep**.

−−rebuilt−binaries−timestamp=TIMESTAMP
This option modifies emerge's behaviour only if **−−rebuilt−binaries** is given. Only binaries that have a BUILD_TIME that is larger than the given TIMESTAMP and that is larger than that of the installed package will be considered by the rebuilt−binaries logic.

−−reinstall changed−use
This is an alias for **−−changed−use**.

−−reinstall−atoms ATOMS
A space separated list of package names or slot atoms. Emerge will treat matching packages as if they are not installed, and reinstall them if necessary.

−−root=DIR
Set the **ROOT** environment variable.

−−sysroot=DIR
Set the **SYSROOT** environment variable.

−−root−deps[=rdeps]
This option is only meaningful when used together with **ROOT**.

If no argument is given, then build−time dependencies of packages for **ROOT** are installed to **ROOT** as well as /.

If the **rdeps** argument is given, then all build−time dependencies of packages for **ROOT** are ignored entirely. This option should not be enabled under normal circumstances! It is not applied to ebuilds at **EAPI 7** or later.

−−search−index < y | n >
Enable or disable indexed search for search actions. This option is enabled by default. The search index needs to be regenerated by **egencache**(1) after changes are made to a repository (see the **−−update−pkg−desc−index** action). This setting can be added to **EMERGE_DEFAULT_OPTS** (see **make.conf**(5)) and later overridden via the command line.

−−search−similarity PERCENTAGE
Set the minimum similarity percentage (a floating-point number between 0 and 100). Search results with similarity percentages lower than this are discarded (default: ´80´). This option has no effect unless the **−−fuzzy−search** option is enabled.

−−select [y | n], **−w**
Add specified packages to the world set (inverse of **−−oneshot**). This is useful if you want to use **EMERGE_DEFAULT_OPTS** to make **−−oneshot** behavior default.

−−selective [y | n]
This is identical to the **−−noreplace** option. Some options, such as **−−update**, imply **−−selective**. Use **−−selective=n** if you want to forcefully disable **−−selective**, regardless of options like **−−changed−use**, **−−newuse**, **−−noreplace**, or **−−update**.

−−skipfirst
This option is only valid when used with **−−resume**. It removes the first package in the resume list. Dependencies are recalculated for remaining packages and any that have unsatisfied dependencies or are masked will be automatically dropped. Also see the related **−−keep−going** option.

−−sync−submodule <glsa|news|profiles>
Restrict sync to the specified submodule(s). This option may be specified multiple times, in order to sync multiple submodules. Currently, this option has no effect for sync protocols other than rsync. (--sync action only)

−−tree, **−t**
Shows the dependency tree for the given target by indenting dependencies. This is only really useful in combination with **−−emptytree** or **−−update** and **−−deep**.

−−unordered−display
By default the displayed merge list is sorted using the order in which the packages will be merged. When **−−tree** is used together with this option, this constraint is removed, hopefully leading to a more readable dependency tree.

−−update, **−u**
Updates packages to the best version available, which may not always be the highest version number due to masking for testing and development. Package atoms specified on the command line are greedy, meaning that unspecific atoms may match multiple versions of slotted packages. This option also implies the **−−selective** option.

−−update−if−installed
Acts similar to **−−update** except it updates packages passed as arguments to the best version available only if they are already installed. This is useful for oneshot commands across a series of

systems to upgrade away from a buggy version.

−−use−ebuild−visibility [y | n]
Use unbuilt ebuild metadata for visibility checks on built packages.

−−useoldpkg−atoms ATOMS
A space separated list of package names or slot atoms. Emerge will prefer matching binary packages over newer unbuilt packages.

−−usepkg [y | n], **−k**
Tells emerge to use binary packages (from $PKGDIR) if they are available, thus possibly avoiding some time−consuming compiles. This option is useful for CD installs; you can export PKGDIR=/mnt/cdrom/packages and then use this option to have emerge "pull" binary packages from the CD in order to satisfy dependencies. Note this option implies **−−with−bdeps=n**. To include build time dependencies, **−−with−bdeps=y** must be specified explicitly.

−−usepkgonly [y | n], **−K**
Tells emerge to only use binary packages (from $PKGDIR). All the binary packages must be available at the time of dependency calculation or emerge will simply abort. Portage does not use ebuild repositories when calculating dependency information so all masking information is ignored. Like **−k** above, this option implies **−−with−bdeps=n**. To include build time dependencies, **−−with−bdeps=y** must be specified explicitly.

−−usepkg−exclude−live [y | n]
Tells emerge to not install from binary packages for live ebuilds.

−−verbose [y | n], **−v**
Tell emerge to run in verbose mode. Currently this flag causes emerge to print out GNU info errors, if any, and to show the USE flags that will be used for each package when pretending. The following symbols are affixed to USE flags in order to indicate their status:

Symbol	Location	Meaning
-	prefix	not enabled (either disabled or removed)
*	suffix	transition to or from the enabled state
%	suffix	newly added or removed
()	circumfix	forced, masked, or removed

−−verbose−conflicts
Make slot conflicts more verbose. Note that this may in some cases output hundreds of packages for slot conflicts.

−−verbose−missing−ebuilds [y | n]
Warn on packages in the world file with no ebuild available, which can prevent subslot rebuilds. The default is set to "y" (on).

−−verbose−slot−rebuilds [y | n]
Turns on/off the extra emerge output to list which packages are causing rebuilds. The default is set to "y" (on).

−−with−bdeps < y | n >
In dependency calculations, pull in build time dependencies that are not strictly required. This option is automatically enabled for installation actions, meaning they will be installed, and defaults to "y" for the **−−depclean** action, meaning they will not be removed. In order to prevent the **−−with−bdeps** option from being automatically enabled for installation actions, specify **−−with−bdeps−auto=n** in either the command line or **EMERGE_DEFAULT_OPTS**.

Since many users of binary packages do not want unnecessary build time dependencies installed, this option is not automatically enabled for installation actions when the **−−usepkg** option is enabled. In order to pull in build time dependencies for binary packages with **−−usepkg**,

−−with−bdeps=y must be specified explicitly. This also applies to options that enable the **−−usepkg** option implicitly, such as **−−getbinpkg**.

This setting can be added to **EMERGE_DEFAULT_OPTS** (see **make.conf**(5)) and later overridden via the command line.

−−with−bdeps−auto < y | n >
This option is used to enable or disable the program logic that causes **−−with−bdeps** is to be automatically enabled for installation actions. This option is enabled by default. Use **−−with−bdeps−auto=n** to prevent **−−with−bdeps** from being automatically enabled for installation actions. This setting can be added to **EMERGE_DEFAULT_OPTS** (see **make.conf**(5)) and later overridden via the command line.

NOTE: The program logic that causes **−−with−bdeps** to be automatically enabled for installation actions does not affect removal actions such as the **−−depclean** action. Therefore, when **−−with−bdeps−auto=n** is specified in **EMERGE_DEFAULT_OPTS**, it does not affect the default **−−with−bdeps=y** setting that applies to the **−−depclean** action. The default **−−with−bdeps=y** setting that applies to the **−−depclean** action can be overridden only by specifying **−−with−bdeps=n**.

−−with−test−deps [y | n]
For packages matched by arguments, this option will pull in dependencies that are conditional on the "test" USE flag, even if "test" is not enabled in **FEATURES** for the matched packages. (see **make.conf**(5) for more information about **FEATURES** settings).

ENVIRONMENT OPTIONS

EPREFIX = *[path]*
Use **EPREFIX** to specify the target prefix to be used for merging packages or ebuilds. This variable can be set via the **−−prefix** option or in **make.conf**(5) (the command line overrides other settings).
Defaults to the prefix where portage is currently installed.

ROOT = *[path]*
Use **ROOT** to specify the target root filesystem to be used for merging the requested packages or ebuilds and their runtime dependencies. This variable can be set via the **−−root** option or in **make.conf**(5) (the command line overrides other settings).
Defaults to /.

SYSROOT = *[path]*
Use **SYSROOT** to specify the target root filesystem to be used for merging the build dependencies satisfied by **DEPEND**. This variable can be set via the **−−sysroot** option or in **make.conf**(5) (the command line overrides other settings). The value must be / (or empty) when **ROOT** is / (or empty), although it should only be set to something other than / or **ROOT** when cross-bootstrapping a new system from scratch.
Defaults to /.

PORTAGE_CONFIGROOT = *[path]*
Use **PORTAGE_CONFIGROOT** to specify the location for various portage configuration files (see **FILES** for a detailed list of configuration files). This variable can be set via the **−−config−root** option. However, it is now superseded by the **SYSROOT** variable and can only be given if its value matches **SYSROOT** or if **ROOT=/**.
Defaults to /.

OUTPUT

When utilizing **emerge** with the **−−pretend** and **−−verbose** flags, the output may be a little hard to understand at first. This section explains the abbreviations.

[blocks B] app−text/dos2unix ("app−text/dos2unix" is blocking app−text/hd2u−0.8.0)
Dos2unix is Blocking hd2u from being emerged. Blockers are defined when two packages will clobber each others files, or otherwise cause some form of breakage in your system. However, blockers usually do not need to be simultaneously emerged because they usually provide the same functionality.

[ebuild N] app−games/qstat−25c
Qstat is New to your system, and will be emerged for the first time.

[ebuild NS] dev-libs/glib-2.4.7
You already have a version of glib installed, but a 'new' version in a different SLOT is available.

[ebuild R] sys−apps/sed−4.0.5
Sed 4.0.5 has already been emerged, but if you run the command, then portage will Re−emerge the specified package (sed in this case).

[ebuild F] media−video/realplayer−8−r6
The realplayer package requires that you Fetch the sources manually. When you attempt to emerge the package, if the sources are not found, then portage will halt and you will be provided with instructions on how to download the required files.

[ebuild f] media−video/realplayer−8−r6
The realplayer package's files are already downloaded.

[ebuild U] net−fs/samba−2.2.8_pre1 [2.2.7a]
Samba 2.2.7a has already been emerged and can be Updated to version 2.2.8_pre1.

[ebuild UD] media−libs/libgd−1.8.4 [2.0.11]
Libgd 2.0.11 is already emerged, but if you run the command, then portage will Downgrade to version 1.8.4 for you.
This may occur if a newer version of a package has been masked because it is broken or it creates a security risk on your system and a fix has not been released yet.
Another reason this may occur is if a package you are trying to emerge requires an older version of a package in order to emerge successfully. In this case, libgd 2.x is incompatible with libgd 1.x. This means that packages that were created with libgd 1.x will not compile with 2.x and must downgrade libgd first before they can emerge.

[ebuild U] sys−devel/distcc−2.16 [2.13−r1] USE="ipv6* −gtk −qt%"
Here we see that the make.conf variable **USE** affects how this package is built. In this example, ipv6 optional support is enabled and both gtk and qt support are disabled. The asterisk following ipv6 indicates that ipv6 support was disabled the last time this package was installed. The percent sign following qt indicates that the qt option has been added to the package since it was last installed. For information about all **USE** symbols, see the **−−verbose** option documentation above.
***Note:** Flags that haven't changed since the last install are only displayed when you use the **−−pretend** and **−−verbose** options. Using the **−−quiet** option will prevent all information from being displayed.

[ebuild r U] dev−libs/icu−50.1.1:0/50.1.1 [50.1−r2:0/50.1]
Icu 50.1−r2 has already been emerged and can be Updated to version 50.1.1. The **r** symbol indicates that a sub−slot change (from 50.1 to 50.1.1 in this case) will force packages having slot−operator dependencies on it to be rebuilt (as libxml2 will be rebuilt in the next example).

[ebuild rR] dev−libs/libxml2−2.9.0−r1:2 USE="icu"
Libxml2 2.9.0−r1 has already been emerged, but if you run the command, then portage will Re−emerge it in order to satisfy a slot−operator dependency which forces it to be rebuilt when the icu sub−slot changes (as it changed in the previous example).

[ebuild U *] sys−apps/portage−2.2.0_alpha6 [2.1.9.25]
Portage 2.1.9.25 is installed, but if you run the command, then portage will upgrade to version 2.2.0_alpha6. In this case, the ***** symbol is displayed, in order to indicate that version 2.2.0_alpha6 is masked by missing keyword. This type of masking display is disabled by the **−−quiet** option if

the **−−verbose** option is not enabled simultaneously. The following symbols are used to indicate various types of masking:

Symbol	Mask Type
#	package.mask
*	missing keyword
~	unstable keyword

NOTE: The unstable keyword symbol (~) will not be shown in cases in which the corresponding unstable keywords have been accepted globally via **ACCEPT_KEYWORDS**.

NOTES

You should almost always precede any package install or update attempt with a **−−pretend** install or update. This lets you see how much will be done, and shows you any blocking packages that you will have to rectify. This goes doubly so for the**system** and **w orld** sets, which can update a large number of packages if the ebuild repository has been particularly active.

You also want to typically use **−−update**, which ignores packages that are already fully updated but updates those that are not.

When you install a package with uninstalled dependencies and do not explicitly state those dependencies in the list of parameters, they will not be added to the world file. If you want them to be detected for world updates, make sure to explicitly list them as parameters to **emerge**.

USE variables may be specified on the command line to override those specified in the default locations, letting you avoid using some dependencies you may not want to have. **USE flags specified on the command line are NOT remembered**. For example, **env USE="−X −gnome" emerge mc** will emerge mc with those USE settings (on Bourne-compatible shells you may omit the **env** part). If you want those USE settings to be more permanent, you can put them in /etc/portage/package.use instead.

If **emerge −−update @system** or **emerge −−update @world** fails with an error message, it may be that an ebuild uses some newer feature not present in this version of **emerge**. You can use **emerge −−update sys-apps/portage** to upgrade to the latest version, which should support any necessary new features.

MASKED PACKAGES

NOTE: Please use caution when using development packages. Problems and bugs resulting from misusing masked packages drains Gentoo developer time. Please be sure you are capable of handling any problems that may ensue.

Masks in **portage** have many uses: they allow a testing period where the packages can be used in live machines; they prevent the use of a package when it will fail; and they mask existing packages that are broken or could pose a security risk. Read below to find out how to unmask in various cases. Also note that if you give **emerge** an ebuild, then all forms of masking will be ignored and **emerge** will attempt to emerge the package.

backtracking

When packages are masked for **backtracking**, it means that the dependency resolver has temporarily masked them in order to avoid dependency conflicts and/or unsatisfied dependencies. This type of mask is typically accompanied by a message about a missed package update which has been skipped in order to avoid dependency conflicts and/or unsatisfied dependencies.

package.mask

The **package.mask** file primarily blocks the use of packages that cause problems or are known to have issues on different systems. It resides in */var/db/repos/gentoo/profiles*.

CHOST

Use the **ACCEPT_CHOSTS** variable in **make.conf**(5) to control **CHOST** acceptance.

EAPI The **EAPI** variable in an **ebuild**(5) file is used to mask packages that are not supported by the current version of portage. Packages masked by **EAPI** can only be installed after portage has been upgraded.

KEYWORDS

The **KEYWORDS** variable in an **ebuild** file is also used for masking a package still in testing. There are architecture−specific keywords for each package that let **portage** know which systems are compatible with the package. Packages which compile on an architecture, but have not been proven to be "stable", are masked with a tilde (**~**) in front of the architecture name. **emer ge** examines the **ACCEPT_KEYWORDS** environment variable to allow or disallow the emerging of a package masked by **KEYWORDS**. To inform **emerge** that it should build these 'testing' versions of packages, you should update your */etc/portage/package.accept_keywords* file to list the packages you want the ´testing´ version. See**portage**(5) for more information.

LICENSE

The **LICENSE** variable in an **ebuild** file can be used to mask packages based on licensing restrictions. **emerge** examines the **ACCEPT_LICENSE** environment variable to allow or disallow the emerging of a package masked by **LICENSE**. See **make.conf**(5) for information about **ACCEPT_LICENSE**, and see **portage**(5) for information about */etc/portage/package.license*.

PROPERTIES

The **PROPERTIES** variable in an **ebuild** file can be used to mask packages based on properties restrictions. **emerge** examines the **ACCEPT_PROPERTIES** environment variable to allow or disallow the emerging of a package masked by **PROPERTIES**. See **make.conf**(5) for information about **ACCEPT_PROPERTIES**, and see **portage**(5) for information about */etc/portage/package.properties*. Use the **−−accept−properties** option to temporarily override **ACCEPT_PROPERTIES**.

RESTRICT

The **RESTRICT** variable in an **ebuild** file can be used to mask packages based on RESTRICT tokens. **emerge** examines the **ACCEPT_RESTRICT** environment variable to allow or disallow the emerging of a package masked by **RESTRICT**. See **make.conf**(5) for information about **ACCEPT_RESTRICT**, and see **portage**(5) for information about */etc/portage/package.accept_restrict*. Use the **−−accept−restrict** option to temporarily override **ACCEPT_RESTRICT**.

CONFIGURATION FILES

Portage has a special feature called "config file protection". The purpose of this feature is to prevent new package installs from clobbering existing configuration files. By default, config file protection is turned on for /etc and the KDE configuration dirs; more may be added in the future.

When Portage installs a file into a protected directory tree like /etc, any existing files will not be overwritten. If a file of the same name already exists, Portage will change the name of the to−be−installed file from 'foo' to ´._cfg0000_foo´. If ´._cfg0000_foo´ already exists, this name becomes ´._cfg0001_foo´, etc. In this way, existing files are not overwritten, allowing the administrator to manually merge the new config files and avoid any unexpected changes.

In addition to protecting overwritten files, Portage will not delete any files from a protected directory when a package is unmerged. While this may be a little bit untidy, it does prevent potentially valuable config files from being deleted, which is of paramount importance.

Protected directories are set using the *CONFIG_PROTECT* variable, normally defined in make.globals. Directory exceptions to the CONFIG_PROTECTed directories can be specified using the *CONFIG_PROTECT_MASK* variable. To find files that need to be updated in /etc, type **find /etc −name '._cfg????_*'**.

You can disable this feature by setting *CONFIG_PROTECT="−*"* in **make.conf**(5). Then, Portage will mercilessly auto−update your config files. Alternatively, you can leave Config File Protection on but tell Portage that it can overwrite files in certain specific /etc subdirectories. For example, if you wanted Portage to automatically update your rc scripts and your wget configuration, but didn't want any other changes made without your explicit approval, you'd add this to **make.conf**(5):

CONFIG_PROTECT_MASK="/etc/wget /etc/rc.d"

CONFIGURATION FILES UPDATE TOOLS

Tools such as dispatch−conf, cfg−update, and etc−update are also available to aid in the merging of these files. They provide interactive merging and can auto−merge trivial changes.

PORTAGE DEVELOPMENT FEATURES

This section describes features that are of interest when developing Portage. They allow for introspection, debugging, and performance analysis. Portage provides no stability guarantee; any feature may disappear in the future, and the output format may change without prior notice.

PORTAGE_MULTIPROCESSING_START_METHOD
: If this environment variable is set, then Portage will override the default Python multiprocessing start method with its value.

PORTAGE_SHOW_LRU_CACHE_INFO
: If this environment variable is set, then Portage will display statistics about its internal LRU caches.

PORTAGE_SHOW_HTTP_TRACE
: If this environment variable is set, then Portage will show a trace of all HTTP request.

PORTAGE_DO_NOT_EXPORT_PMS_VARS
: If this environment variable is set, then Portage will not export PMS variables regardless of the EAPI. The variables are still available to ebuilds; however, they are not exported and therefore not available to child processes of the ebuild. Since EAPI 9, Portage will never export PMS variables. This setting allows testing EAPI < 9 ebuilds with the new behavior.

REPORTING BUGS

Please report any bugs you encounter through our website:

https://bugs.gentoo.org/

Please include the output of **emerge −−info** when you submit your bug report.

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FILES

Here is a common list of files you will probably be interested in. For a complete listing, please refer to the **portage**(5) man page.

/usr/share/portage/config/sets/
: Contains the default set configuration.

/var/lib/portage/world
: Contains a list of all user−specified packages. You can safely edit this file, adding packages that you want to be considered in **world** set updates and removing those that you do not want to be considered.

/var/lib/portage/world_sets
: This is like the world file but instead of package atoms it contains packages sets which always begin with the **@** character. Use **/etc/portage/sets/** to define user package sets.

/etc/portage/make.conf
Contains variables for the build process, overriding those in **make.globals**.

/etc/portage/color.map
Contains variables customizing colors.

/etc/portage/sets/
Contains user package set definitions (see **portage**(5)).

/etc/dispatch−conf.conf
Contains settings to handle automatic updates/backups of configuration files.

/etc/portage/make.profile/make.defaults
Contains profile−specific variables for the build process. **Do not edit this file**.

/var/db/repos/gentoo/profiles/use.desc
Contains the master list of USE flags with descriptions of their functions. **Do not edit this file**.

/etc/portage/make.profile/virtuals
Contains a list of default packages used to resolve virtual dependencies. **Do not edit this file**.

/etc/portage/make.profile/packages
Contains a list of packages used for the base system. The **system** and **world** sets consult this file. **Do not edit this file**.

/usr/share/portage/config/make.globals
Contains the default variables for the build process. **Do not edit this file**.

/var/log/emerge.log
Contains a log of merged packages and invocations of **emerge**. This file is always appended to, so if you want to clean it, you need to do so manually.

/var/log/emerge-fetch.log
Contains a log of all the fetches in the previous emerge invocation.

/var/log/portage/elog/summary.log
Contains the emerge summaries. Installs */etc/logrotate.d/elog-save-summary*.

SEE ALSO

emerge −−help, **quickpkg**(1), **ebuild**(1), **ebuild**(5), **make.conf**(5), **color.map**(5), **portage**(5)

A number of helper applications reside in */usr/lib/portage/bin*.

The **app−portage/gentoolkit** package contains useful scripts such as **equery** (a package query tool).