NAME

mergemaster - merge configuration files, et al during an upgrade

SYNOPSIS

mergemaster [**-scrvhpCP**] [**-a|iFU**] [**--run-updates=[always|never]**] [**-m** */path/to/sources*]
　　　　[**-t** */path/to/temp/root*] [**-d**] [**-u** *N*] [**-w** *N*] [**-A** *Target architecture*] [**-D** */destdir/path*]

DESCRIPTION

The mergemaster utility is deprecated and may not be available in FreeBSD 15.0 or later. Users are advised to use etcupdate(8) instead.

The **mergemaster** utility is a Bourne shell script which is designed to aid you in updating the various configuration and other files associated with FreeBSD. It is **HIGHLY** recommended that you back up your */etc* directory before beginning this process.

The script uses */usr/src/Makefile* to build a temporary root environment from */* down, populating that environment with the various files. You can specify a different source directory with the **-m** command line option, or specify the destination directory with the **-D** option. It then compares each file in that environment to its installed counterpart. When the script finds a change in the new file, or there is no installed version of the new file it gives you four options to deal with it. You can install the new file as is, delete the new file, merge the old and new files (as appropriate) using sdiff(1) or leave the file in the temporary root environment to merge by hand later.

By default it creates the temporary root in */var/tmp/temproot* and compares the Version Control System (VCS) Id strings ($FreeBSD) for files that have them, deleting the temporary file if the strings match. If there is no Id string, or if the strings are different it compares the files themselves. You can also specify that the script ignore the Id strings and compare every file with the **-s** option. Using the **-F** option **mergemaster** will install the new file for you if they differ only by VCS strings.

The merge menu option is designed to let you easily combine your customizations from the old version of a file into the new one. While you can use the merge function to incorporate changes from files that you have not customized, it is not recommended.

The **mergemaster** utility checks your umask and issues a warning for anything other than 022. While it is not mandatory to grant world read permissions for most configuration files, you may run into problems without them. If you choose a umask other than 022 and experience trouble later this could be the cause. */etc/master.passwd* is treated as a special case. If you choose to install this file or a merged version of it the file permissions are always 600 (rw-------) for security reasons. After installing an updated version of this file you should probably run pwd_mkdb(8) with the **-p** option to rebuild your password databases and recreate */etc/passwd*.

The script uses the owner and group ids that the files are created with by */usr/src/etc/Makefile*, and file permissions as specified by the umask. Unified diffs are used by default to display any differences unless you choose context diffs.

The **mergemaster** utility will source scripts that you specify right before it starts the comparison, and after it is done running. The easiest way to handle this is to place the path to the script(s) in the appropriate variables in your *.mergemasterrc* file. The script sourced before comparison is named in MM_PRE_COMPARE_SCRIPT, and the one sourced after the script is done is MM_EXIT_SCRIPT. This is the recommended way to specify local modifications, or files that you want to give special handling to. This includes files that you want to be deleted without being compared. Because the named scripts are sourced from within **mergemaster**, all of the script's variables are available for use in your custom script. You can also use */etc/mergemaster.rc* which will be read before *.mergemasterrc*. Options specified on the command line are updated last, and therefore can override both files.

When the comparison is done if there are any files remaining in the temproot directory they will be listed, and if the **-a** option is not in use the user will be given the option of deleting the temproot directory. If there are no files remaining in the temproot directory it will be deleted.

The options are as follows:

-s   Perform a strict comparison, diffing every pair of files. This comparison is performed line by line, without regard to VCS Ids.

-c   Use context diffs instead of unified diffs.

-r   Re-run **mergemaster** on a previously cleaned directory, skipping the creation of the temporary root environment. This option is compatible with all other options.

-v   Be more verbose about the process. You should probably use this option the first time you run **mergemaster**. This option also gives you a list of files that exist only in the installed version of */etc*.

-a   Run automatically. This option will leave all the files that differ from the installed versions in the temporary directory to be dealt with by hand. If the *temproot* directory exists, it creates a new one in a previously non-existent directory. This option unsets the verbose flag, and is not compatible with **-i**, **-F**, or **-U**. Setting **-a** makes **-w** superfluous.

-h   Display usage and help information.

-i   Automatically install any files that do not exist in the destination directory.

-p   Pre-buildworld mode. Compares only files known to be essential to the success of {build|install}world, i.e., */etc/group* and */etc/master.passwd*.

-F   If the files differ only by VCS Id ($FreeBSD) install the new file.

-C   After a standard **mergemaster** run, compares your rc.conf[.local] options to the defaults.

-P   Preserve files that you replace in */var/tmp/mergemaster/preserved-files-<date>*, or another directory you specify in your **mergemaster** rc file.

-U   Attempt to auto upgrade files that have not been user modified. This option can be dangerous when there are critical changes in the new versions that affect your running system.

--run-updates=[always|never]
               Specify always or never to run newaliases, pwd_mkdb, etc. at the end of the comparison run. If this option is omitted the default is to prompt the user for each update as necessary.

-m */path/to/sources*
               Specify the path to the directory where you want to do the make(1). (In other words, where your sources are, but -s was already taken.) In older versions of **mergemaster** the path to *src/etc* was required. **mergemaster** will convert the path if this older method is used.

-t */path/to/temp/root*
               Create the temporary root environment in */path/to/temp/root* instead of the default */var/tmp/temproot*.

-d   Add the date and time to the name of the temporary root directory. If **-t** is specified, this option must follow it if you want the date added too.

-u *N*   Specify a numeric umask. The default is 022.

-w *N*   Supply an alternate screen width to the sdiff(1) command in numbers of columns. The default is 80.

-A *Target architecture*
               Specify an alternative TARGET_ARCH architecture name.

-D */path* Specify the destination directory for the installed files.

ENVIRONMENT

The **mergemaster** utility uses the PAGER environment variable if set. Otherwise it uses less(1). If PAGER specifies a program outside its limited PATH without specifying the full path, **mergemaster** prompts you with options on how to proceed. The MM_PRE_COMPARE_SCRIPT and MM_EXIT_SCRIPT variables are used as described above. Other variables that are used by the script internally can be specified in *.mergemasterrc* as described in more detail below.

FILES

/etc/mergemaster.rc
$HOME/.mergemasterrc

The **mergemaster** utility will **.** (source) these files if they exist. Command line options will override rc file options. *$HOME/.mergemasterrc* overrides */etc/mergemaster.rc*. Here is an example with all values commented out:

```
# These are options for mergemaster, with their default values listed
# The following options have command line overrides
#
# The target architecture (-A, unset by default)
#ARCHSTRING='TARGET_ARCH=<foo>'
#
# Sourcedir is the directory to do the 'make' in (-m)
#SOURCEDIR='/usr/src'
#
# Directory to install the temporary root environment into (-t)
#TEMPROOT='/var/tmp/temproot'
#
# Specify the destination directory for the installed files (-D)
#DESTDIR=
#
# Strict comparison skips the VCS Id test and compares every file (-s)
#STRICT=no
#
# Type of diff, such as unified, context, etc. (-c)
#DIFF_FLAG='-u'
#
# Install the new file if it differs only by VCS Id ($FreeBSD, -F)
#FREEBSD_ID=
#
# Verbose mode includes more details and additional checks (-v)
```

```
#VERBOSE=
#
# Automatically install files that do not exist on the system already (-i)
#AUTO_INSTALL=
#
# Automatically upgrade files that have not been user modified (-U)
# ***DANGEROUS***
#AUTO_UPGRADE=
#
# Either always or never run newaliases, pwd_mkdb at the end (--run-updates)
#RUN_UPDATES=
#
# Compare /etc/rc.conf[.local] to /etc/defaults/rc.conf (-C)
#COMP_CONFS=
#
# Preserve files that you replace (-P)
#PRESERVE_FILES=
#PRESERVE_FILES_DIR=/var/tmp/mergemaster/preserved-files-'date +%y%m%d-%H%M%S'
#
# The umask for mergemaster to compare the default file's modes to (-u)
#NEW_UMASK=022
#
# The following options have no command line overrides
#
# Files to always avoid comparing
#IGNORE_FILES='/etc/motd /etc/printcap foo bar'
#
# Additional options for diff.  This will get unset when using -s.
#DIFF_OPTIONS='-Bb'       # Ignore changes in whitespace
#
# Location to store the list of mtree values for AUTO_UPGRADE purposes
#MTREEDB='/var/db'
#
# For those who just cannot stand including the full path to PAGER
#DONT_CHECK_PAGER=
#
# If you set 'yes' above, make sure to include the PATH to your pager
#PATH=/bin:/usr/bin:/usr/sbin
#
# Delete stale files in /etc/rc.d without prompting
```

#DELETE_STALE_RC_FILES=
#
Specify the path to scripts to run before the comparison starts,
and/or after the script has finished its work
#MM_PRE_COMPARE_SCRIPT=
#MM_EXIT_SCRIPT=

EXIT STATUS

Exit status is 0 on successful completion, or if the user bails out manually at some point during execution.

Exit status is 1 if it fails for one of the following reasons:

Invalid command line option

Failure to create the temporary root environment

Failure to populate the temporary root

Presence of the 'nodev' option in *<DESTDIR>/etc/fstab*

Failure to install a file

EXAMPLES

Typically all you will need to do is type **mergemaster** at the prompt and the script will do all the work for you.

To use context diffs and have **mergemaster** explain more things as it goes along, use:

    # mergemaster -cv

To specify that **mergemaster** put the temporary root environment in */usr/tmp/root*, use:

    # mergemaster -t /usr/tmp/root

To specify a 110 column screen with a strict comparison, use:

    # mergemaster -sw 110

SEE ALSO

diff(1), make(1), less(1), sdiff(1), etcupdate(8), pwd_mkdb(8)

/usr/src/etc/Makefile

The FreeBSD Handbook, https://docs.freebsd.org/en/books/handbook/cutting-edge/#makeworld.

HISTORY

The **mergemaster** utility was first publicly available on one of my web pages in a much simpler form under the name *comproot* on 13 March 1998. The idea for creating the temporary root environment comes from Nik Clayton's make world tutorial which is referenced above.

AUTHORS

This manual page and the script itself were written by Douglas Barton *<dougb@FreeBSD.org>*.