

SU(1)

User Commands

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NAME

su - run a command with substitute user and group ID

SYNOPSIS

su [options] [-] [user [argument...]]

DESCRIPTION

su allows commands to be run with a substitute user and group ID.

When called with no user specified, su defaults to running an interactive shell as root. When user is specified, additional arguments can be supplied, in which case they are passed to the shell.

For backward compatibility, su defaults to not change the current directory and to only set the environment variables HOME and SHELL (plus USER and LOGNAME if the target user is not root). It is recommended to always use the --login option (instead of its shortcut -) to avoid side effects caused by mixing environments.

This version of su uses PAM for authentication, account and session management. Some configuration options found in other su implementations, such as support for a wheel group, have to be

`su` is mostly designed for unprivileged users, the recommended solution for privileged users (e.g., scripts executed by `root`) is to use non-set-user-ID command `runuser(1)` that does not require authentication and provides separate PAM configuration. If the PAM session is not required at all then the recommended solution is to use command `setpriv(1)`.

Note that `su` in all cases uses PAM (`pam_getenvlist(3)`) to do the final environment modification. Command-line options such as `--login` and `--preserve-environment` affect the environment before it is modified by PAM.

Since version 2.38 `su` resets process resource limits `RLIMIT_NICE`, `RLIMIT_RTPRIO`, `RLIMIT_FSIZE`, `RLIMIT_AS` and `RLIMIT_NOFILE`.

OPTIONS

`-c, --command=command`

Pass `command` to the shell with the `-c` option.

`-f, --fast`

Pass `-f` to the shell, which may or may not be useful, depending on the shell.

Specify the primary group. This option is available to the root user only.

-G, --supp-group=group

Specify a supplementary group. This option is available to the root user only. The first specified supplementary group is also used as a primary group if the option `--group` is not specified.

-, -l, --login

Start the shell as a login shell with an environment similar to a real login:

? clears all the environment variables except TERM and variables specified by `--whitelist-environment`

? initializes the environment variables HOME, SHELL, USER, LOGNAME, and PATH

? changes to the target user's home directory

? sets argv[0] of the shell to '-' in order to make the shell a login shell

-m, -p, --preserve-environment

or LOGNAME. This option is ignored if the option `--login` is specified.

-P, --pty

Create a pseudo-terminal for the session. The independent terminal provides better security as the user does not share a terminal with the original session. This can be used to avoid TIOCSTI ioctl terminal injection and other security attacks against terminal file descriptors. The entire session can also be moved to the background (e.g., `su --pty - username -c application &`). If the pseudo-terminal is enabled, then su works as a proxy between the sessions (sync stdin and stdout).

This feature is mostly designed for interactive sessions. If the standard input is not a terminal, but for example a pipe (e.g., `echo "date" | su --pty`), then the ECHO flag for the pseudo-terminal is disabled to avoid messy output.

-s, --shell=shell

Run the specified shell instead of the default. The shell to run is selected according to the following rules, in order:

? the shell specified with `--shell`

--preserve-environment option is used

? the shell listed in the passwd entry of the target user

? /bin/sh

If the target user has a restricted shell (i.e., not listed in /etc/shells), the --shell option and the SHELL environment variables are ignored unless the calling user is root.

--session-command=command

Same as -c, but do not create a new session. (Discouraged.)

-w, --whitelist-environment=list

Don't reset the environment variables specified in the comma-separated list when clearing the environment for --login. The whitelist is ignored for the environment variables HOME, SHELL, USER, LOGNAME, and PATH.

-h, --help

Display help text and exit.

-V, --version

Print version and exit.

SIGNALS

Upon receiving either **SIGINT**, **SIGQUIT** or **SIGTERM**, **su** terminates its child and afterwards terminates itself with the received signal. The child is terminated by **SIGTERM**, after unsuccessful attempt and 2 seconds of delay the child is killed by **SIGKILL**.

CONFIG FILES

su reads the **/etc/default/su** and **/etc/login.defs** configuration files.

The following configuration items are relevant for **su**:

FAIL_DELAY (number)

Delay in seconds in case of an authentication failure. The number must be a non-negative integer.

ENV_PATH (string)

Defines the **PATH** environment variable for a regular user. The default value is **/usr/local/bin:/bin:/usr/bin**.

ENV_ROOTPATH (string), **ENV_SUPATH** (string)

Defines the **PATH** environment variable for root. **ENV_SUPATH** takes precedence. The default value is **/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:/usr/bin**.

ALWAYS_SET_PATH (boolean)

specified su initializes PATH.

The environment variable PATH may be different on systems where /bin and /sbin are merged into /usr; this variable is also affected by the --login command-line option and the PAM system setting (e.g., pam_env(8)).

EXIT STATUS

su normally returns the exit status of the command it executed. If the command was killed by a signal, su returns the number of the signal plus 128.

Exit status generated by su itself:

1

Generic error before executing the requested command

126

The requested command could not be executed

127

The requested command was not found

default PAM configuration file

`/etc/pam.d/su-l`

PAM configuration file if `--login` is specified

`/etc/default/su`

command specific logindef config file

`/etc/login.defs`

global logindef config file

NOTES

For security reasons, `su` always logs failed log-in attempts to the `btmptmp` file, but it does not write to the `lastlog` file at all. This solution can be used to control `su` behavior by PAM configuration. If you want to use the `pam_lastlog(8)` module to print warning message about failed log-in attempts then `pam_lastlog(8)` has to be configured to update the `lastlog` file as well. For example by:

```
session required pam_lastlog.so nowtmp
```

HISTORY

This `su` command was derived from `coreutils`' `su`, which was based on an implementation by David MacKenzie. The `util-linux` version has been

SEE ALSO

[setpriv\(1\)](#), [login.defs\(5\)](#), [shells\(5\)](#), [pam\(8\)](#), [runuser\(1\)](#)

REPORTING BUGS

For bug reports, use the issue tracker at
<https://github.com/util-linux/util-linux/issues>.

AVAILABILITY

The `su` command is part of the `util-linux` package which can be downloaded from Linux Kernel Archive
<<https://www.kernel.org/pub/linux/utils/util-linux/>>.

util-linux 2.39.3

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