

NAME

`get` — get a version of an SCCS file

SYNOPSIS

`get` [`-rSID`] [`-ccutoff`] [`-e`] [`-b`] [`-ilist`] [`-xlist`] [`-k`] [`-l[p]`] [`-p`] [`-s`] [`-m`] [`-n`]
 [`-g`] [`-t`] [`-aseq-no.`] [`-RSID`] [`-Mfilename`] [`-T`] [`-D`] [`-G`] files

DESCRIPTION

`Get` generates an ASCII text file from each named SCCS file according to the specifications given by its keyletter arguments, which begin with `-`. The arguments may be specified in any order, but all keyletter arguments apply to all named SCCS files. If a directory is named, `get` behaves as though each file in the directory were specified as a named file, except that non-SCCS files (last component of the path name does not begin with `s.`) and unreadable files are silently ignored. If a name of `-` is given, the standard input is read; each line of the standard input is taken to be the name of an SCCS file to be processed. Again, non-SCCS files and unreadable files are silently ignored.

The generated text is normally written into a file called the *g-file* whose name is derived from the SCCS file name by simply removing the leading `s.`; (see also *FILES*, below).

Each of the keyletter arguments is explained below as though only one SCCS file is to be processed, but the effects of any keyletter argument applies independently to each named file.

`-rSID` The SCCS *ID*entification string (SID) of the version (delta) of an SCCS file to be retrieved. Table 1 below shows, for the most useful cases, what version of an SCCS file is retrieved (as well as the SID of the version to be eventually created by `delta(1)` if the `-e` keyletter is also used), as a function of the SID specified.

`-ccutoff` *Cutoff* date-time, in the form:

YY[MM[DD[HH[MM[SS]]]]]

No changes (deltas) to the SCCS file which were created after the specified *cutoff* date-time are included in the generated ASCII text file. Units omitted from the date-time default to their maximum possible values; that is, `-c7502` is equivalent to `-c750228235959`. Any number of non-numeric characters may separate the various 2 digit pieces of the *cutoff* date-time. This feature allows one to specify a *cutoff* date in the form: `"-c77/2/2 9:22:25"`. Note that this implies that one may use the `%E%` and `%U%` identification keywords (see below) for nested *gets* within, say the input to a `send(1C)` command:

```
^!get "-c%E% %U%" s.file
```

`-e` Indicates that the `get` is for the purpose of editing or making a change (delta) to the SCCS file via a subsequent use of `delta(1)`. The `-e` keyletter used in a `get` for a particular version (SID) of the SCCS file prevents further *gets* for editing on the same SID until `delta` is executed or the `j` (joint edit) flag is set in the SCCS file (see `admin(1)`). Concurrent use of `get -e` for different SIDs is always allowed.

If the *g-file* generated by `get` with an `-e` keyletter is accidentally ruined in the process of editing it, it may be regenerated by re-executing the `get` command with the `-k` keyletter in place of the `-e` keyletter.

SCCS file protection specified via the ceiling, floor, and authorized user list stored in the SCCS file (see `admin(1)`) are enforced when the `-e` keyletter is used.

`-b` Used with the `-e` keyletter to indicate that the new delta should have an SID in a new branch as shown in Table 1. This keyletter is ignored if the `b` flag is not present in the file (see `admin(1)`) or if the retrieved *delta* is not a leaf *delta*. (A leaf *delta* is one that has no successors on the SCCS file tree.)

Note: A branch *delta* may always be created from a non-leaf *delta*.

- i***list* A *list* of deltas to be included (forced to be applied) in the creation of the generated file. The *list* has the following syntax:
- ```
<list> ::= <range> | <list> , <range>
<range> ::= SID | SID - SID
```
- SID, the SCCS Identification of a delta, may be in any form shown in the "SID Specified" column of Table 1. Partial SIDs are interpreted as shown in the "SID Retrieved" column of Table 1.
- x***list* A *list* of deltas to be excluded (forced not to be applied) in the creation of the generated file. See the **-i** keyletter for the *list* format.
- k** Suppresses replacement of identification keywords (see below) in the retrieved text by their value. The **-k** keyletter is implied by the **-e** keyletter.
- l**[**p**] Causes a delta summary to be written into an *l-file*. If **-lp** is used then an *l-file* is not created; the delta summary is written on the standard output instead. See *FILES* for the format of the *l-file*.
- p** Causes the text retrieved from the SCCS file to be written on the standard output. No *g-file* is created. All output which normally goes to the standard output goes to file descriptor 2 instead, unless the **-s** keyletter is used, in which case it disappears.
- s** Suppresses all output normally written on the standard output. However, fatal error messages (which always go to file descriptor 2) remain unaffected.
- m** Causes each text line retrieved from the SCCS file to be preceded by the SID of the delta that inserted the text line in the SCCS file. The format is: SID, followed by a horizontal tab, followed by the text line.
- n** Causes each generated text line to be preceded with the %M% identification keyword value (see below). The format is: %M% value, followed by a horizontal tab, followed by the text line. When both the **-m** and **-n** keyletters are used, the format is: %M% value, followed by a horizontal tab, followed by the **-m** keyletter generated format.
- g** Suppresses the actual retrieval of text from the SCCS file. It is primarily used to generate an *l-file*, or to verify the existence of a particular SID.
- t** Used to access the most recently created ("top") delta in a given release (e.g., **-r1**), or release and level (e.g., **-r1.2**).
- aseq-no.** The delta sequence number of the SCCS file delta (version) to be retrieved (see *sccsfile(5)*). This keyletter is used by the *comb(1)* command; it is not a generally useful keyletter, and users should not use it. If both the **-r** and **-a** keyletters are specified, the **-a** keyletter is used. Care should be taken when using the **-a** keyletter in conjunction with the **-e** keyletter, as the SID of the delta to be created may not be what one expects. The **-r** keyletter can be used with the **-a** and **-e** keyletters to control the naming of the SID of the delta to be created.
- RSID** The SID-filename pairs in a file called *markfile* are retrieved. The *markfile* has the format of
- ```
<white_space>filename<white_space>SID
```
- The effect of using the **-R** is
- ```
get -rSID s.markfile | get -
```
- If no SID is specified, the highest level of the highest release of the *markfile* is used.
- M***filename*

Use *filename* instead of *markfile* when processing arguments to the `-R` option. If the `-R` flag is not specified, this option has no effect.

- `-T` Causes the most recently created "top" delta of the *markfile* to be used when processing under the `-R` mode. The option has the same effect on the argument of `-R` as the `-t` has on the `-r` option. If the `-R` flag is not specified, this option has no effect.
- `-D` Causes any directory structure under *file* (the filename arguments to *get*) to be recursively descended; the corresponding directories to be made, starting at the "." directory; and the files under each of the subdirectories under *file* to be retrieved. Thus, if
 

```
get -D /usr/src/lib
```

 is typed and the user is in `/usr/tmp`, the entire directory structure and all clear text source files under `/usr/src/lib` would be reproduced under the `/usr/tmp` directory.
- `-G` Causes each *markfile* to be read and printed. If the `-D` option is specified, a configuration listing will be produced. (I'm not sure about how well this works, I have not tested it fully {egb}.) If the `-R` flag is not specified, this option has no effect.

For each file processed, *get* responds (on the standard output) with the SID being accessed and with the number of lines retrieved from the SCCS file.

If the `-e` keyletter is used, the SID of the delta to be made appears after the SID accessed and before the number of lines generated. If there is more than one named file or if a directory or standard input is named, each file name is printed (preceded by a new-line) before it is processed. If the `-i` keyletter is used included deltas are listed following the notation "Included"; if the `-x` keyletter is used, excluded deltas are listed following the notation "Excluded".

TABLE 1. Determination of SCCS Identification String

| SID*<br>Specified | -b Keyletter<br>Used† | Other<br>Conditions                            | SID<br>Retrieved | SID of Delta<br>to be Created |
|-------------------|-----------------------|------------------------------------------------|------------------|-------------------------------|
| none‡             | no                    | R defaults to mR                               | mR.mL            | mR.(mL+1)                     |
| none‡             | yes                   | R defaults to mR                               | mR.mL            | mR.mL.(mB+1).1                |
| R                 | no                    | R > mR                                         | mR.mL            | R.1***                        |
| R                 | no                    | R = mR                                         | mR.mL            | mR.(mL+1)                     |
| R                 | yes                   | R > mR                                         | mR.mL            | mR.mL.(mB+1).1                |
| R                 | yes                   | R = mR                                         | mR.mL            | mR.mL.(mB+1).1                |
| R                 | -                     | R < mR and<br>R does <i>not</i> exist          | hR.mL**          | hR.mL.(mB+1).1                |
| R                 | -                     | Trunk succ.#<br>in release > R<br>and R exists | R.mL             | R.mL.(mB+1).1                 |
| R.L               | no                    | No trunk succ.                                 | R.L              | R.(L+1)                       |
| R.L               | yes                   | No trunk succ.                                 | R.L              | R.L.(mB+1).1                  |
| R.L               | -                     | Trunk succ.<br>in release ≥ R                  | R.L              | R.L.(mB+1).1                  |
| R.L.B             | no                    | No branch succ.                                | R.L.B.mS         | R.L.B.(mS+1)                  |
| R.L.B             | yes                   | No branch succ.                                | R.L.B.mS         | R.L.(mB+1).1                  |
| R.L.B.S           | no                    | No branch succ.                                | R.L.B.S          | R.L.B.(S+1)                   |
| R.L.B.S           | yes                   | No branch succ.                                | R.L.B.S          | R.L.(mB+1).1                  |

| R.L.B.S | — | Branch succ. | R.L.B.S | R.L.(mB+1).1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|---|--------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *       |   |              |         | "R", "L", "B", and "S" are the "release", "level", "branch", and "sequence" components of the SID, respectively; "m" means "maximum". Thus, for example, "R.mL" means "the maximum level number within release R"; "R.L.(mB+1).1" means "the first sequence number on the <i>new</i> branch (i.e., maximum branch number plus one) of level L within release R". Note that if the SID specified is of the form "R.L", "R.L.B", or "R.L.B.S", each of the specified components <i>must</i> exist. |
| **      |   |              |         | "hR" is the highest <i>existing</i> release that is lower than the specified, <i>nonexistent</i> , release R.                                                                                                                                                                                                                                                                                                                                                                                    |
| ***     |   |              |         | This is used to force creation of the <i>first</i> delta in a <i>new</i> release.                                                                                                                                                                                                                                                                                                                                                                                                                |
| #       |   |              |         | Successor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| †       |   |              |         | The <i>-b</i> keyletter is effective only if the <i>b</i> flag (see <i>admin(1)</i> ) is present in the file. An entry of <i>-</i> means "irrelevant".                                                                                                                                                                                                                                                                                                                                           |
| ‡       |   |              |         | This case applies if the <i>d</i> (default SID) flag is <i>not</i> present in the file. If the <i>d</i> flag is present in the file, then the SID obtained from the <i>d</i> flag is interpreted as if it had been specified on the command line. Thus, one of the other cases in this table applies.                                                                                                                                                                                            |

### IDENTIFICATION KEYWORDS

Identifying information is inserted into the text retrieved from the SCCS file by replacing *identification keywords* with their value wherever they occur. The following keywords may be used in the text stored in an SCCS file:

| Keyword | Value                                                                                                                                                                                                                            |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| %M%     | Module name: either the value of the <i>m</i> flag in the file (see <i>admin(1)</i> ), or if absent, the name of the SCCS file with the leading <i>s.</i> removed.                                                               |
| %I%     | SCCS identification (SID) (%R%.%L%.%B%.%S%) of the retrieved text.                                                                                                                                                               |
| %R%     | Release.                                                                                                                                                                                                                         |
| %L%     | Level.                                                                                                                                                                                                                           |
| %B%     | Branch.                                                                                                                                                                                                                          |
| %S%     | Sequence.                                                                                                                                                                                                                        |
| %D%     | Current date (YY/MM/DD).                                                                                                                                                                                                         |
| %H%     | Current date (MM/DD/YY).                                                                                                                                                                                                         |
| %T%     | Current time (HH:MM:SS).                                                                                                                                                                                                         |
| %E%     | Date newest applied delta was created (YY/MM/DD).                                                                                                                                                                                |
| %G%     | Date newest applied delta was created (MM/DD/YY).                                                                                                                                                                                |
| %U%     | Time newest applied delta was created (HH:MM:SS).                                                                                                                                                                                |
| %Y%     | Module type: value of the <i>t</i> flag in the SCCS file (see <i>admin(1)</i> ).                                                                                                                                                 |
| %F%     | SCCS file name.                                                                                                                                                                                                                  |
| %P%     | Fully qualified SCCS file name.                                                                                                                                                                                                  |
| %Q%     | The value of the <i>q</i> flag in the file (see <i>admin(1)</i> ).                                                                                                                                                               |
| %C%     | Current line number. This keyword is intended for identifying messages output by the program such as "this shouldn't have happened" type errors. It is <i>not</i> intended to be used on every line to provide sequence numbers. |
| %Z%     | The 4-character string @(# ) recognizable by <i>what(1)</i> .                                                                                                                                                                    |
| %W%     | A shorthand notation for constructing <i>what(1)</i> strings for UNIX program files.<br>%W% = %Z%%M%<horizontal-tab>%I%                                                                                                          |
| %A%     | Another shorthand notation for constructing <i>what(1)</i> strings for non-UNIX program files. %A% = %Z%%Y% %M% %I%%Z%                                                                                                           |

### FILES

Several auxiliary files may be created by *get*. These files are known generically as the *g-file*, *l-file*, *p-file*, and *z-file*. The letter before the hyphen is called the tag. An auxiliary file name is formed from the SCCS file name: the last component of all SCCS file names must be of the form *s.module-name*, the auxiliary files are named by replacing the leading *s.* with the tag. The *g-file* is an exception to this scheme: the *g-file* is named by removing the *s.* prefix. For

example, *s.xyz.c*, the auxiliary file names would be *xyz.c*, *l.xyz.c*, *p.xyz.c*, and *z.xyz.c*, respectively.

The *g-file*, which contains the generated text, is created in the current directory (unless the *-p* keyletter is used). A *g-file* is created in all cases, whether or not any lines of text were generated by the *get*. It is owned by the real user. If the *-k* keyletter is used or implied its mode is 644; otherwise its mode is 444. Only the real user need have write permission in the current directory.

The *l-file* contains a table showing which deltas were applied in generating the retrieved text. The *l-file* is created in the current directory if the *-l* keyletter is used; its mode is 444 and it is owned by the real user. Only the real user need have write permission in the current directory.

Lines in the *l-file* have the following format:

- a. A blank character if the delta was applied;  
\* otherwise.
- b. A blank character if the delta was applied or wasn't applied and ignored;  
\* if the delta wasn't applied and wasn't ignored.
- c. A code indicating a "special" reason why the delta was or was not applied:  
"I": Included.  
"X": Excluded.  
"C": Cut off (by a *-c* keyletter).
- d. Blank.
- e. SCCS identification (SID).
- f. Tab character.
- g. Date and time (in the form YY/MM/DD HH:MM:SS) of creation.
- h. Blank.
- i. Login name of person who created *delta*.

The comments and MR data follow on subsequent lines, indented one horizontal tab character. A blank line terminates each entry.

The *p-file* is used to pass information resulting from a *get* with an *-e* keyletter along to *delta*. Its contents are also used to prevent a subsequent execution of *get* with an *-e* keyletter for the same SID until *delta* is executed or the joint edit flag, *j*, (see *admin(1)*) is set in the SCCS file. The *p-file* is created in the directory containing the SCCS file and the effective user must have write permission in that directory. Its mode is 644 and it is owned by the effective user. The format of the *p-file* is: the gotten SID, followed by a blank, followed by the SID that the new delta will have when it is made, followed by a blank, followed by the login name of the real user, followed by a blank, followed by the date-time the *get* was executed, followed by a blank and the *-i* keyletter argument if it was present, followed by a blank and the *-x* keyletter argument if it was present, followed by a new-line. There can be an arbitrary number of lines in the *p-file* at any time; no two lines can have the same new delta SID.

The *z-file* serves as a *lock-out* mechanism against simultaneous updates. Its contents are the binary (2 bytes) process ID of the command (i.e., *get*) that created it. The *z-file* is created in the directory containing the SCCS file for the duration of *get*. The same protection restrictions as those for the *p-file* apply for the *z-file*. The *z-file* is created mode 444.

#### SEE ALSO

*admin(1)*, *delta(1)*, *help(1)*, *prs(1)*, *what(1)*, *scsfile(5)*.  
*Source Code Control System User's Guide* by L. E. Bonanni and C. A. Salemi.

#### DIAGNOSTICS

Use *help(1)* for explanations.

#### BUGS

If the effective user has write permission (either explicitly or implicitly) in the directory

containing the SCCS files, but the real user doesn't, then only one file may be named when the -e keyletter is used.