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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'touch.1p' command

\$ man touch.1p

TOUCH(1P) POSIX Programmer's Manual TOUCH(1P)

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

touch ? change file access and modification times

SYNOPSIS

touch [-acm] [-r ref_file|-t time|-d date_time] file...

DESCRIPTION

The touch utility shall change the last data modification timestamps, the last data access timestamps, or both.

The time used can be specified by the -t time option-argument, the corresponding time fields of the file referenced by the -r ref_file option-argument, or the -d date_time option-argument, as specified in the following sections. If none of these are specified, touch shall use the current time.

For each file operand, touch shall perform actions equivalent to the following functions defined in the System Interfaces volume of POSIX.1?2017:

1. If file does not exist:
 - a. The creat() function is called with the following arguments:

- The file operand is used as the path argument.
- The value of the bitwise-inclusive OR of S_IRUSR, S_IWUSR, S_IRGRP, S_IWGRP, S_IROTH, and S_IWOTH is used as the mode argument.

b. The futimens() function is called with the following arguments:

- The file descriptor opened in step 1a.
- The access time and the modification time, set as described in the OPTIONS section, are used as the first and second elements of the times array argument, respectively.

2. If file exists, the utimensat() function is called with the following arguments:

- a. The AT_FDCWD special value is used as the fd argument.
- b. The file operand is used as the path argument.
- c. The access time and the modification time, set as described in the OPTIONS section, are used as the first and second elements of the times array argument, respectively.
- d. The flag argument is set to zero.

OPTIONS

The touch utility shall conform to the Base Definitions volume of POSIX.1?2017, Section 12.2, Utility Syntax Guidelines.

The following options shall be supported:

- a Change the access time of file. Do not change the modification time unless -m is also specified.
- c Do not create a specified file if it does not exist. Do not write any diagnostic messages concerning this condition.
- d date_time

Use the specified date_time instead of the current time. The option-argument shall be a string of the form:

YYYY-MM-DDThh:mm:SS[.frac][tz]

or:

YYYY-MM-DDThh:mm:SS[,frac][tz]

where:

- * YYYY are at least four decimal digits giving the year.

- * MM, DD, hh, mm, and SS are as with -t time.
- * T is the time designator, and can be replaced by a single <space>.
- * [.frac] and [,frac] are either empty, or a <period> ('.') or a <comma> (',') respectively, followed by one or more decimal digits, specifying a fractional second.
- * [tz] is either empty, signifying local time, or the letter 'Z', signifying UTC. If [tz] is empty, the resulting time shall be affected by the value of the TZ environment variable.

If the resulting time precedes the Epoch, the behavior is implementation-defined. If the time cannot be represented as the file's timestamp, touch shall exit immediately with an error status.

-m Change the modification time of file. Do not change the access time unless -a is also specified.

-r ref_file

Use the corresponding time of the file named by the pathname ref_file instead of the current time.

-t time Use the specified time instead of the current time. The operation-argument shall be a decimal number of the form:

[[CC]YY]MMDDhhmm[.SS]

where each two digits represents the following:

MM The month of the year [01,12].

DD The day of the month [01,31].

hh The hour of the day [00,23].

mm The minute of the hour [00,59].

CC The first two digits of the year (the century).

YY The second two digits of the year.

SS The second of the minute [00,60].

Both CC and YY shall be optional. If neither is given, the current year shall be assumed. If YY is specified, but CC is not, CC shall be derived as follows:

????????????????????????????????

?If YY is: ? CC becomes: ?

????????????????????????????????

? [69,99] ? 19 ?

? [00,68] ? 20 ?

????????????????????????????????

Note: It is expected that in a future version of this standard the default century inferred from a 2-digit year will change. (This would apply to all commands accepting a 2-digit year as input.)

The resulting time shall be affected by the value of the TZ environment variable. If the resulting time value precedes the Epoch, the behavior is implementation-defined. If the time is out of range for the file's timestamp, touch shall exit immediately with an error status. The range of valid times past the Epoch is implementation-defined, but it shall extend to at least the time 0 hours, 0 minutes, 0 seconds, January 1, 2038, Coordinated Universal Time. Some implementations may not be able to represent dates beyond January 18, 2038, because they use signed int as a time holder.

The range for SS is [00,60] rather than [00,59] because of leap seconds. If SS is 60, and the resulting time, as affected by the TZ environment variable, does not refer to a leap second, the resulting time shall be one second after a time where SS is 59. If SS is not given a value, it is assumed to be zero.

If neither the -a nor -m options were specified, touch shall behave as if both the -a and -m options were specified.

OPERANDS

The following operands shall be supported:

file A pathname of a file whose times shall be modified.

STDIN

Not used.

INPUT FILES

None.

ENVIRONMENT VARIABLES

The following environment variables shall affect the execution of touch:

LANG Provide a default value for the internationalization variables that are unset or null. (See the Base Definitions volume of POSIX.1?2017, Section 8.2, Internationalization Variables for the precedence of internationalization variables used to determine the values of locale categories.)

LC_ALL If set to a non-empty string value, override the values of all the other internationalization variables.

LC_CTYPE Determine the locale for the interpretation of sequences of bytes of text data as characters (for example, single-byte as opposed to multi-byte characters in arguments).

LC_MESSAGES

Determine the locale that should be used to affect the format and contents of diagnostic messages written to standard error.

NLSPATH Determine the location of message catalogs for the processing of LC_MESSAGES.

TZ Determine the timezone to be used for interpreting the time option-argument. If TZ is unset or null, an unspecified default timezone shall be used.

ASYNCHRONOUS EVENTS

Default.

STDOUT

Not used.

STDERR

The standard error shall be used only for diagnostic messages.

OUTPUT FILES

None.

EXTENDED DESCRIPTION

None.

EXIT STATUS

The following exit values shall be returned:

0 The utility executed successfully and all requested changes were made.

>0 An error occurred.

CONSEQUENCES OF ERRORS

Default.

The following sections are informative.

APPLICATION USAGE

The interpretation of time is taken to be seconds since the Epoch (see the Base Definitions volume of POSIX.1?2017, Section 4.16, Seconds Since the Epoch). It should be noted that implementations conforming to the System Interfaces volume of POSIX.1?2017 do not take leap seconds into account when computing seconds since the Epoch. When SS=60 is used, the resulting time always refers to 1 plus seconds since the Epoch for a time when SS=59.

Although the -t time option-argument specifies values in 1969, the access time and modification time fields are defined in terms of seconds since the Epoch (00:00:00 on 1 January 1970 UTC). Therefore, depending on the value of TZ when touch is run, there is never more than a few valid hours in 1969 and there need not be any valid times in 1969.

If the T time designator is replaced by a <space> for the -d date_time option-argument, the <space> must be quoted to prevent the shell from splitting the argument.

EXAMPLES

Create or update a file called dwc; the resulting file has both the last data modification and last data access timestamps set to November 12, 2007 at 10:15:30 local time:

```
touch -d 2007-11-12T10:15:30 dwc
```

Create or update a file called nick; the resulting file has both the last data modification and last data access timestamps set to November 12, 2007 at 10:15:30 UTC:

```
touch -d 2007-11-12T10:15:30Z nick
```

Create or update a file called gwc; the resulting file has both the last data modification and last data access timestamps set to November 12, 2007 at 10:15:30 local time with a fractional second timestamp of .002 seconds:

```
touch -d 2007-11-12T10:15:30.002Z gwc
```

Create or update a file called ajosey; the resulting file has both the last data modification and last data access timestamps set to November 12, 2007 at 10:15:30 UTC with a fractional second timestamp of .002 seconds:

```
touch -d "2007-11-12 10:15:30.002Z" ajosey
```

Create or update a file called cathy; the resulting file has both the last data modification and last data access timestamps set to November 12, 2007 at 10:15:00 local time:

```
touch -t 200711121015 cathy
```

Create or update a file called drepper; the resulting file has both the last data modification and last data access timestamps set to November 12, 2007 at 10:15:30 local time:

```
touch -t 200711121015.30 drepper
```

Create or update a file called ebb9; the resulting file has both the last data modification and last data access timestamps set to November 12, 2007 at 10:15:30 local time:

```
touch -t 0711121015.30 ebb9
```

Create or update a file called eggert; the resulting file has the last data access timestamp set to the corresponding time of the file named mark instead of the current time. If the file exists, the last data modification time is not changed:

```
touch -a -r mark eggert
```

RATIONALE

The functionality of touch is described almost entirely through references to functions in the System Interfaces volume of POSIX.1?2017. In this way, there is no duplication of effort required for describing such side-effects as the relationship of user IDs to the user database,

permissions, and so on.

There are some significant differences between the touch utility in this volume of POSIX.1?2017 and those in System V and BSD systems. They are upwards-compatible for historical applications from both implemen-
tations:

1. In System V, an ambiguity exists when a pathname that is a decimal number leads the operands; it is treated as a time value. In BSD, no time value is allowed; files may only be touched to the current time. The -t time construct solves these problems for future con-
forming applications (note that the -t option is not historical practice).
2. The inclusion of the century digits, CC, is also new. Note that a ten-digit time value is treated as if YY, and not CC, were speci-
fied. The caveat about the range of dates following the Epoch was included as recognition that some implementations are not able to represent dates beyond 18 January 2038 because they use signed int as a time holder.

The -r option was added because several comments requested this capa-
bility. This option was named -f in an early proposal, but was changed because the -f option is used in the BSD version of touch with a dif-
ferent meaning.

At least one historical implementation of touch incremented the exit code if -c was specified and the file did not exist. This volume of POSIX.1?2017 requires exit status zero if no errors occur.

In previous version of the standard, if at least two operands are spec-
ified, and the first operand is an eight or ten-digit decimal integer, the first operand was assumed to be a date_time operand. This usage was removed in this version of the standard since it had been marked obso-
lescent previously.

The -d date_time format is an ISO 8601:2004 standard complete represen-
tation of date and time extended format with an optional decimal point or <comma> followed by a string of digits following the seconds portion to specify fractions of a second. It is not necessary to recognize

"[+/-]hh:mm" and "[+/-]hh" to specify timezones other than local time and UTC. The T time designator in the ISO 8601:2004 standard extended format may be replaced by <space>.

FUTURE DIRECTIONS

None.

SEE ALSO

date

The Base Definitions volume of POSIX.1?2017, Section 4.16, Seconds Since the Epoch, Chapter 8, Environment Variables, Section 12.2, Utility Syntax Guidelines, <sys_stat.h>

The System Interfaces volume of POSIX.1?2017, creat(), futimens(), time(), utime()

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