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

$ man stty.1p

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

stty ? set the options for a terminal

SYNOPSIS

stty [-a|-g]

stty operand...

DESCRIPTION

The stty utility shall set or report on terminal I/O characteristics for the device that is its standard input. Without options or operands specified, it shall report the settings of certain characteristics, usually those that differ from implementation-defined defaults. Other? wise, it shall modify the terminal state according to the specified op? erands. Detailed information about the modes listed in the first five groups below are described in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface. Operands in the Combination Modes group (see Combination Modes) are implemented using operands in the previous groups. Some combinations of operands are mu? tually-exclusive on some terminal types; the results of using such com?

binations are unspecified.

Typical implementations of this utility require a communications line configured to use the termios interface defined in the System Inter? faces volume of POSIX.1?2017. On systems where none of these lines are available, and on lines not currently configured to support the termios interface, some of the operands need not affect terminal characteris? tics.

OPTIONS

The stty 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 Write to standard output all the current settings for the terminal.

-g Write to standard output all the current settings in an un? specified form that can be used as arguments to another invo? cation of the stty utility on the same system. The form used shall not contain any characters that would require quoting to avoid word expansion by the shell; see Section 2.6, Word Expansions.

OPERANDS

The following operands shall be supported to set the terminal charac? teristics.

Control Modes

parenb (-parenb)

Enable (disable) parity generation and detection. This shall have the effect of setting (not setting) PARENB in the termios c_cflag field, as defined in the Base Defini? tions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

parodd (-parodd)

Select odd (even) parity. This shall have the effect of setting (not setting) PARODD in the termios c_cflag field, as defined in the Base Definitions volume of POSIX.1?2017,

Chapter 11, General Terminal Interface.

cs5 cs6 cs7 cs8

Select character size, if possible. This shall have the ef? fect of setting CS5, CS6, CS7, and CS8, respectively, in the termios c_cflag field, as defined in the Base Defini? tions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

number Set terminal baud rate to the number given, if possible. If the baud rate is set to zero, the modem control lines shall no longer be asserted. This shall have the effect of set? ting the input and output termios baud rate values as de? fined in the Base Definitions volume of POSIX.1?2017, Chap? ter 11, General Terminal Interface.

ispeed number

Set terminal input baud rate to the number given, if possi? ble. If the input baud rate is set to zero, the input baud rate shall be specified by the value of the output baud rate. This shall have the effect of setting the input termios baud rate values as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter? face.

ospeed number

Set terminal output baud rate to the number given, if pos? sible. If the output baud rate is set to zero, the modem control lines shall no longer be asserted. This shall have the effect of setting the output termios baud rate values as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

hupcl (-hupcl)

Stop asserting modem control lines (do not stop asserting modem control lines) on last close. This shall have the ef? fect of setting (not setting) HUPCL in the termios c_cflag field, as defined in the Base Definitions volume of

POSIX.1?2017, Chapter 11, General Terminal Interface.

hup (-hup) Equivalent to hupcl(-hupcl).

cstopb (-cstopb)

Use two (one) stop bits per character. This shall have the effect of setting (not setting) CSTOPB in the termios c_cflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

cread (-cread)

Enable (disable) the receiver. This shall have the effect of setting (not setting) CREAD in the termios c_cflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

clocal (-clocal)

Assume a line without (with) modem control. This shall have the effect of setting (not setting) CLOCAL in the termios c_cflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

It is unspecified whether stty shall report an error if an attempt to set a Control Mode fails.

Input Modes

ignbrk (-ignbrk)

Ignore (do not ignore) break on input. This shall have the effect of setting (not setting) IGNBRK in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

brkint (-brkint)

Signal (do not signal) INTR on break. This shall have the effect of setting (not setting) BRKINT in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

ignpar (-ignpar)

Ignore (do not ignore) bytes with parity errors. This shall have the effect of setting (not setting) IGNPAR in the

termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter? face.

parmrk (-parmrk)

Mark (do not mark) parity errors. This shall have the ef? fect of setting (not setting) PARMRK in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

inpck (-inpck)

Enable (disable) input parity checking. This shall have the effect of setting (not setting) INPCK in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

istrip (-istrip)

Strip (do not strip) input characters to seven bits. This shall have the effect of setting (not setting) ISTRIP in the termios c_iflag field, as defined in the Base Defini? tions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

inlcr (-inlcr)

Map (do not map) NL to CR on input. This shall have the ef? fect of setting (not setting) INLCR in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

igncr (-igncr)

Ignore (do not ignore) CR on input. This shall have the ef? fect of setting (not setting) IGNCR in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

icrnl (-icrnl)

Map (do not map) CR to NL on input. This shall have the ef? fect of setting (not setting) ICRNL in the termios c_iflag field, as defined in the Base Definitions volume of

POSIX.1?2017, Chapter 11, General Terminal Interface.

ixon (-ixon)

Enable (disable) START/STOP output control. Output from the system is stopped when the system receives STOP and started when the system receives START. This shall have the effect of setting (not setting) IXON in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

ixany (-ixany)

Allow any character to restart output. This shall have the effect of setting (not setting) IXANY in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

ixoff (-ixoff)

Request that the system send (not send) STOP characters when the input queue is nearly full and START characters to resume data transmission. This shall have the effect of setting (not setting) IXOFF in the termios c_iflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

Output Modes

opost (-opost)

Post-process output (do not post-process output; ignore all other output modes). This shall have the effect of setting (not setting) OPOST in the termios c_oflag field, as de? fined in the Base Definitions volume of POSIX.1?2017, Chap? ter 11, General Terminal Interface.

onlcr (-onlcr)

Map (do not map) NL to CR-NL on output. This shall have the effect of setting (not setting) ONLCR in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

ocrnl (-ocrnl)

Map (do not map) CR to NL on output. This shall have the effect of setting (not setting) OCRNL in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

onocr (-onocr)

Do not (do) output CR at column zero. This shall have the effect of setting (not setting) ONOCR in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

onlret (-onlret)

The terminal newline key performs (does not perform) the CR function. This shall have the effect of setting (not set? ting) ONLRET in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

ofill (-ofill)

Use fill characters (use timing) for delays. This shall have the effect of setting (not setting) OFILL in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter? face.

ofdel (-ofdel)

Fill characters are DELs (NULs). This shall have the effect of setting (not setting) OFDEL in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

cr0 cr1 cr2 cr3

Select the style of delay for CRs. This shall have the ef? fect of setting CRDLY to CR0, CR1, CR2, or CR3, respec? tively, in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, Gen? eral Terminal Interface.

nl0 nl1 Select the style of delay for NL. This shall have the ef?

fect of setting NLDLY to NL0 or NL1, respectively, in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter?face.

tab0 tab1 tab2 tab3

Select the style of delay for horizontal tabs. This shall have the effect of setting TABDLY to TAB0, TAB1, TAB2, or TAB3, respectively, in the termios c_oflag field, as de?fined in the Base Definitions volume of POSIX.1?2017, Chap?ter 11, General Terminal Interface. Note that TAB3 has the effect of expanding <tab> characters to <space> characters.

tabs (-tabs)

Synonym for tab0 (tab3).

bs0 bs1 Select the style of delay for <backspace> characters. This shall have the effect of setting BSDLY to BS0 or BS1, re?spectively, in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, Gen?eral Terminal Interface.

ff0 ff1 Select the style of delay for <form-feed> characters. This shall have the effect of setting FFDLY to FF0 or FF1, re?spectively, in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, Gen?eral Terminal Interface.

vt0 vt1 Select the style of delay for <vertical-tab> characters. This shall have the effect of setting VTDLY to VT0 or VT1, respectively, in the termios c_oflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

Local Modes

isig (-isig)

Enable (disable) the checking of characters against the special control characters INTR, QUIT, and SUSP. This shall have the effect of setting (not setting) ISIG in the

termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter? face.

icanon (-icanon)

Enable (disable) canonical input (ERASE and KILL process? ing). This shall have the effect of setting (not setting) ICANON in the termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

iexten (-iexten)

Enable (disable) any implementation-defined special control characters not currently controlled by icanon, isig, ixon, or ixoff. This shall have the effect of setting (not set? ting) IEXTEN in the termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

echo (-echo)

Echo back (do not echo back) every character typed. This shall have the effect of setting (not setting) ECHO in the termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter? face.

echoe (-echoe)

The ERASE character visually erases (does not erase) the last character in the current line from the display, if possible. This shall have the effect of setting (not set? ting) ECHOE in the termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, Gen? eral Terminal Interface.

echok (-echok)

Echo (do not echo) NL after KILL character. This shall have the effect of setting (not setting) ECHOK in the termios c_lflag field, as defined in the Base Definitions volume of

POSIX.1?2017, Chapter 11, General Terminal Interface.

echonl (-echonl)

Echo (do not echo) NL, even if echo is disabled. This shall have the effect of setting (not setting) ECHONL in the termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter? face.

noflsh (-noflsh)

Disable (enable) flush after INTR, QUIT, SUSP. This shall have the effect of setting (not setting) NOFLSH in the termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Inter? face.

tostop (-tostop)

Send SIGTTOU for background output. This shall have the ef? fect of setting (not setting) TOSTOP in the termios c_lflag field, as defined in the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface.

Special Control Character Assignments

<control>?character string

Set <control>?character to string. If <control>?character is one of the character sequences in the first column of the following table, the corresponding the Base Definitions volume of POSIX.1?2017, Chapter 11, General Terminal Interface control character from the second column shall be recognized. This has the effect of setting the corresponding element of the termios c_cc array (see the Base Definitions volume of POSIX.1?2017, Chapter 13, Headers, <termios.h>).

Table: Control Character Names in stty

Control Character	c_cc Subscript	Description
?eof	VEOF	EOF character

?eol ? VEOL ? EOL character ?

?erase ? VERASE ? ERASE character ?

?intr ? VINTR ? INTR character ?

?kill ? VKILL ? KILL character ?

?quit ? VQUIT ? QUIT character ?

?susp ? VSUSP ? SUSP character ?

?start ? VSTART ? START character ?

?stop ? VSTOP ? STOP character ?

??

If string is a single character, the control character shall be set to that character. If string is the two-character sequence "^-" or the string undef, the control character shall be set to _POSIX_VDISABLE , if it is in effect for the device; if _POSIX_VDISABLE is not in effect for the device, it shall be treated as an error. In the POSIX locale, if string is a two-character sequence beginning with <circumflex> ('^'), and the second character is one of those listed in the "^c" column of the following table, the control character shall be set to the corre? sponding character value in the Value column of the table.

Table: Circumflex Control Characters in stty

??

? ^c Value ? ^c Value ? ^c Value ?

??

?a, A <SOH> ? l, L <FF> ? w, W <ETB> ?

?b, B <STX> ? m, M <CR> ? x, X <CAN> ?

?c, C <ETX> ? n, N <SO> ? y, Y <EM> ?

?d, D <EOT> ? o, O <SI> ? z, Z <SUB> ?

?e, E <ENQ> ? p, P <DLE> ? [<ESC> ?

?f, F <ACK> ? q, Q <DC1> ? \ <FS> ?

?g, G <BEL> ? r, R <DC2> ?] <GS> ?

?h, H <BS> ? s, S <DC3> ? ^ <RS> ?

?i, I <HT> ? t, T <DC4> ? _ <US> ?

?j, J <LF> ? u, U <NAK> ? ? <DEL> ?

?k, K <VT> ? v, V <SYN> ? ?

??

min number

Set the value of MIN to number. MIN is used in non-canonical mode input processing (icanon).

time number

Set the value of TIME to number. TIME is used in non-canonical mode input processing (icanon).

Combination Modes

saved settings

Set the current terminal characteristics to the saved settings produced by the -g option.

evenp or parity

Enable parenb and cs7; disable parodd.

oddp

Enable parenb, cs7, and parodd.

-parity, -evenp, or -oddp

Disable parenb, and set cs8.

raw (-raw or cooked)

Enable (disable) raw input and output. Raw mode shall be equiva? lent to setting:

```
stty cs8 erase ^- kill ^- intr ^- \
    quit ^- eof ^- eol ^- -post -inpck
```

nl (-nl)

Disable (enable) icrnl. In addition, -nl unsets inlcr and igncr.

ek Reset ERASE and KILL characters back to system defaults.

sane

Reset all modes to some reasonable, unspecified, values.

STDIN

Although no input is read from standard input, standard input shall be used to get the current terminal I/O characteristics and to set new terminal I/O characteristics.

INPUT FILES

None.

ENVIRONMENT VARIABLES

The following environment variables shall affect the execution of stty:

LANG Provide a default value for the internationalization vari? ables that are unset or null. (See the Base Definitions vol? ume of POSIX.1?2017, Section 8.2, Internationalization Vari? ables 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 This variable determines 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) and which characters are in the class print.

LC_MESSAGES

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

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

ASYNCHRONOUS EVENTS

Default.

STDOUT

If operands are specified, no output shall be produced.

If the -g option is specified, stty shall write to standard output the current settings in a form that can be used as arguments to another in? stance of stty on the same system.

If the -a option is specified, all of the information as described in the OPERANDS section shall be written to standard output. Unless other? wise specified, this information shall be written as <space>-separated tokens in an unspecified format, on one or more lines, with an unspeci? fied number of tokens per line. Additional information may be written.

If no options or operands are specified, an unspecified subset of the

information written for the -a option shall be written.

If speed information is written as part of the default output, or if the -a option is specified and if the terminal input speed and output speed are the same, the speed information shall be written as follows:

"speed %d baud;", <speed>

Otherwise, speeds shall be written as:

"ispeed %d baud; ospeed %d baud;", <ispeed>, <ospeed>

In locales other than the POSIX locale, the word baud may be changed to something more appropriate in those locales.

If control characters are written as part of the default output, or if the -a option is specified, control characters shall be written as:

"%s = %s;", <control-character name>, <value>

where <value> is either the character, or some visual representation of the character if it is non-printable, or the string undef if the char? acter is disabled.

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 terminal options were read or set successfully.

>0 An error occurred.

CONSEQUENCES OF ERRORS

Default.

The following sections are informative.

APPLICATION USAGE

The -g flag is designed to facilitate the saving and restoring of ter? minal state from the shell level. For example, a program may:

```
saveterm="$(stty -g)"       # save terminal state
stty (new settings)         # set new state
```

```
...                     # ...
stty $saveterm          # restore terminal state
```

Since the format is unspecified, the saved value is not portable across systems.

Since the -a format is so loosely specified, scripts that save and re? store terminal settings should use the -g option.

EXAMPLES

None.

RATIONALE

The original stty description was taken directly from System V and re? flected the System V terminal driver termio. It has been modified to correspond to the terminal driver termios.

Output modes are specified only for XSI-conformant systems. All imple? mentations are expected to provide stty operands corresponding to all of the output modes they support.

The stty utility is primarily used to tailor the user interface of the terminal, such as selecting the preferred ERASE and KILL characters. As an application programming utility, stty can be used within shell scripts to alter the terminal settings for the duration of the script.

The termios section states that individual disabling of control charac? ters is possible through the option _POSIX_VDISABLE. If enabled, two conventions currently exist for specifying this: System V uses "^-", and BSD uses undef. Both are accepted by stty in this volume of POSIX.1?2017. The other BSD convention of using the letter 'u' was re? jected because it conflicts with the actual letter 'u', which is an ac? ceptable value for a control character.

Early proposals did not specify the mapping of "^c" to control charac? ters because the control characters were not specified in the POSIX lo? cale character set description file requirements. The control character set is now specified in the Base Definitions volume of POSIX.1?2017, Chapter 3, Definitions, so the historical mapping is specified. Note that although the mapping corresponds to control-character key assign? ments on many terminals that use the ISO/IEC 646:1991 standard (or

ASCII) character encodings, the mapping specified here is to the con? trol characters, not their keyboard encodings.

Since termios supports separate speeds for input and output, two new options were added to specify each distinctly.

Some historical implementations use standard input to get and set ter? minal characteristics; others use standard output. Since input from a login TTY is usually restricted to the owner while output to a TTY is frequently open to anyone, using standard input provides fewer chances of accidentally (or maliciously) altering the terminal settings of other users. Using standard input also allows stty -a and stty -g out? put to be redirected for later use. Therefore, usage of standard input is required by this volume of POSIX.1?2017.

FUTURE DIRECTIONS

None.

SEE ALSO

Chapter 2, Shell Command Language

The Base Definitions volume of POSIX.1?2017, Chapter 8, Environment Variables, Chapter 11, General Terminal Interface, Section 12.2, Util? ity Syntax Guidelines, <termios.h>

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