Terminal Lines and Modem Commands

This chapter describes the function and displays the syntax of each terminal line and modem support command. For more information about defaults and usage guidelines, see the corresponding chapter of the *Router Products Command Reference* publication.

absolute-timeout *minutes*

To set the interval for closing the connection, use the **absolute-timeout** line configuration command. Use the **no** form of this command to restore the default.

> *minutes*   Number of minutes after which the user's session is terminated.

activation-character *ascii-number*
no activation-character

To set the activation character, use the **activation-character** line configuration command. This command defines the character you type at a vacant terminal to begin a terminal session. Use the **no** form of this command to make any character activate a terminal.

> *ascii-number*   ASCII decimal representation of the activation character. Default is Return (decimal 13).

[**no**] **autobaud**

To set the line for automatic baud detection, use the **autobaud** line configuration command. Use the **no** form of this command to restore the default.

autocommand *command*

To configure the router to automatically execute a command or list of commands automatically when a user connects to a particular line, use the **autocommand** line configuration command.

command	Any appropriate EXEC command, including the host name and any switches associated with the EXEC command.

autohangup

To configure automatic line disconnect, use the **autohangup** line configuration command. The command causes the EXEC to issue the **exit** command when the last connection closes.

autoselect {**arap** | **ppp** | **slip**} | **during-login**
no autoselect

To configure a line to start an ARA, Point-to-Point (PPP), or SLIP session, use the **autoselect** line configuration command. Use the **no** form of this command to disable this function on a line.

arap	Configures the router to allow an ARA session to start up automatically.
ppp	Configures the router to allow a PPP session to start up automatically.
slip	Configures the router to allow a SLIP session to start up automatically.
during-login	(Optional) The user receives a username and/or password prompt without pressing the Return key. After the user logs in, the autoselect function begins.

banner exec *d message d*

To display a message on terminals with an interactive EXEC, use the **banner exec** global configuration command. This command specifies a message to be displayed when an EXEC process is created (line activated, or incoming connection to VTY).

d	Delimiting character of your choice—a pound sign (#), for example. You cannot use the delimiting character in the banner message.
message	Message text.

banner incoming *d message d*

To specify a message used when you have an incoming connection to a line from a host on the network, use the **banner incoming** global configuration command. An incoming connection is one initiated from the network side of the router. To suppress the EXEC banner on certain lines, use the **no exec-banner** line configuration command. This line should *not* display the EXEC or MOTD banners when an EXEC is created.

d	Delimiting character of your choice—a pound sign (#), for example. You cannot use the delimiting character in the banner message.
message	0000000000

banner motd *d message d*

To specify a message-of-the-day (MOTD) banner, use the **banner motd** global configuration command.

d	Delimiting character of your choice—a pound sign (#), for example. You cannot use the delimiting character in the banner message.
message	Message text.

busy-message *hostname d message d*
no busy-message *hostname*

To create a "host failed" message that displays when a connection fails, use the **busy-message** global configuration command. Use the **no** form of this command to disable the "host failed" message from displaying on the specified host.

hostname	Name of the host that cannot be reached.
d	Delimiting character of your choice—a pound sign (#), for example. You cannot use the delimiting character in the message.
message	Message text.

databits {**5** | **6** | **7** | **8**}

To set the number of data bits per character that are interpreted and generated by hardware, use the **databits** line configuration command.

5	Five data bits per character.
6	Six data bits per character.
7	Seven data bits per character.
8	Eight data bits per character.

data-character-bits {**7** | **8**}

To set the number of data bits per character that are interpreted and generated by software, use the **data-character-bits** line configuration command.

7	Seven data bits per character.
8	Eight data bits per character.

default-value exec-character-bits {7 | 8}

To define the EXEC character width for either 7 bits or 8 bits, use the **default-value exec-character-bits** global configuration command.

7	Selects the 7-bit ASCII character set.
8	Selects the full 8-bit ASCII character set.

default-value special-character-bits {7 | 8}

To configure the flow control default value from a 7-bit width to an 8-bit width, use the **default-value special-character-bits** global configuration command.

7	Selects the 7-bit character set.
8	Selects the full 8-bit character set.

disconnect-character *ascii-number*
no disconnect-character

To define a character to disconnect a session, use the **disconnect-character** line configuration command. This command defines the character you enter to end a terminal session. Use the **no** form of this command to remove the disconnect character.

ascii-number	ASCII decimal representation of the session disconnect character.

[**no**] **dispatch-character** *ascii-number1* [*ascii-number2 . . . ascii-number*]

To define a character that causes a packet to be sent, use the **dispatch-character** line configuration command. Use the **no** form of this command to remove the definition of the specified dispatch character.

ascii-number	ASCII decimal representation of the character, such as Return (ASCII decimal 13) for line-at-a-time transmissions.

dispatch-timeout *milliseconds*
no dispatch-timeout

To set the character dispatch timer, use the **dispatch-timeout** line configuration command. Use the **no** form of this command to remove the timeout definition.

milliseconds	Integer that specifies the number of milliseconds the router waits after putting the first character into a packet buffer before sending the packet. During this interval, more characters may be added to the packet, which increases the processing efficiency of the remote host.

escape-character *ascii-number*
no escape-character

To define a system escape character, use the **escape-character** line configuration command. The **no** form of this command sets the escape character to Break.

ascii-number	Either the ASCII decimal representation of the character or a control sequence (Ctrl-E, for example).

[**no**] **exec**

To allow an EXEC process on a line, use the **exec** line configuration command. The **no** form of this command turns off the EXEC process for the line specified.

[**no**] **exec-banner**

To control whether banners are displayed or suppressed, use the **exec-banner** line configuration command. This command determines whether the router will display the EXEC banner or the message-of-the-day (MOTD) banner when an EXEC is created. The **no** form of this command suppresses the banner messages.

exec-character-bits {**7** | **8**}

To configure the character widths of EXEC and configuration command characters, use the **exec-character-bits** line configuration command.

7	Selects the 7-bit character set.
8	Selects the full 8-bit character set for use of international and graphical characters in banner messages, prompts, and so forth.

exec-timeout *minutes* [*seconds*]
no exec-timeout

To set the interval that the EXEC command interpreter waits until user input is detected, use the **exec-timeout** line configuration command. The **no** form of this command removes the timeout definition. It has the same effect as **exec-timeout 0**.

minutes	Integer that specifies the number of minutes.
seconds	(Optional) Additional time intervals in seconds. An interval of zero specifies no time-outs.

[**no**] **flowcontrol** {**none** | **software** [**in** | **out**] | **hardware** [**in** | **out**]}

To set the method of data flow control between the terminal or other serial device and the router, use the **flowcontrol** line configuration command. To disable flow control, use the **no** form of this command.

none	Turns off flow control.
software	Sets software flow control. An optional keyword specifies the direction: in causes the router to listen to flow control from the attached device, and out causes the router to send flow control information to the attached device. If you do not specify a direction, both are assumed.

| **hardware** | Sets hardware flow control. An optional keyword specifies the direction: in causes the router to listen to flow control from the attached device, and out causes the router to send flow control information to the attached device. If you do not specify a direction, both are assumed. For more information about hardware flow control, see the hardware installation and maintenance manual for your router. |

hold-character *ascii-number*
no hold-character

To define the local hold character used to pause output to the terminal screen, use the **hold-character** line configuration command. The **no** form of this command restores the default.

| *ascii-number* | Either the ASCII decimal representation of the hold character or a control sequence (for example, Ctrl-P). |

length *screen-length*

To set the terminal screen length, use the **length** line configuration command.

| *screen-length* | Number of lines on the screen. A value of zero disables pausing between screens of output. |

line [**aux** | **console** | **vty**] *line-number* [*ending-line-number*]

To configure a console port line, auxiliary port line, or virtual terminal lines, use the **line** global configuration command.

| **aux** | (Optional) Enables the auxiliary RS-232 DTE port. Must be addressed as relative line 0. The auxiliary port can be used for modem support and asynchronous connections. |

console	(Optional) Specifies the console terminal line. The console port is DCE.
vty	(Optional) Specifies a virtual terminal for remote console access.
line-number	Specifies the relative number of the terminal line (or the first line in a contiguous group) you want to configure when the line type is specified. Numbering begins with zero.
ending-line-number	(Optional) Specifies the relative number of the last line in a contiguous group you want to configure. If you omit the keyword, then *line-number* and *ending-line-number* are absolute rather than relative line numbers.

location *text*
no location

To record the location of a serial device, use the **location** line configuration command. The **no** form of this command removes the description.

text	Location description.

[**no**] **lockable**

To enable the EXEC command **lock**, use the **lockable** global configuration command. The **no** form of this command reinstates the default, which does not allow the terminal to be locked.

login [**local** | **tacacs**]
no login

To enable password checking at login, use the **login** line configuration command. Use the **no** form of this command to disable password checking and allow connections without a password.

local	(Optional) Selects local password checking. Authentication is based on the username specified with the **username** global configuration command.
tacacs	(Optional) Selects the TACACS-style user ID and password-checking mechanism.

[**no**] **login authentication** {**default** | *list-name*}

To enable AAA/TACACS+ authentication for logins, use the **login authentication** line configuration command. Use the **no** form of the command to return to the default.

default	Uses the default list created with the **aaa authentication login** command.
list-name	Uses the indicated list created with the **aaa authentication login** command.

login-string *hostname d message* [**%***sec***p**] [**%***sec***w**] [**%b**] *d*
no login-string *hostname*

To define a string of characters that the router sends to a host after a successful Telnet connection, use the **login-string** global configuration command. This command applies only to rlogin and Telnet sessions. The **no** form of this command removes the login string.

hostname	Specifies the name of the host.
d	Sets a delimiting character of your choice—a pound sign (#) for example. You cannot use the delimiting character in the busy message.
message	Specifies the login string.

%*sec*p	(Optional) Sets a pause in seconds. To insert pauses into the login string, embed a percent sign (%) followed by the number of seconds to pause and the letter "p."
%*sec*w	(Optional) Prevents users from issuing commands or keystrokes during a pause.
%b	(Optional) Sends a Break character.

logout-warning [*number*]

To warn users of an impending forced timeout, use the **logout-warning** line configuration command. Use the **no** form of this command to restore the default.

number	(Optional) The number of seconds that are counted down before session termination. If no number is specified, the default of 20 seconds is used.

modem answer-timeout *seconds*
no modem answer-timeout

To set the amount of time that the router waits for CTS after raising DTR in response to RING, use the **modem answer-timeout** line configuration command. The **no** form of this command reverts the router to the default value.

seconds	Specifies the timeout interval in seconds.

[**no**] **modem callin**

To support dial-in modems that use DTR to control the off-hook status of the modem, use the **modem callin** line configuration command. In response to RING, the modem raises the DTR signal, which answers the modem. At the end of the session, the router lowers DTR, which disconnects the modem. The **no** form of this command disables this feature.

[**no**] **modem callout**

To configure a line for reverse connections, use the **modem callout** line configuration command. The **no** form of this command disables this feature.

[**no**] **modem cts-required**

To configure a line to require a Clear To Send (CTS) signal, use the **modem cts-required** line configuration command. Use the **no** form of this command to disable this feature.

[**no**] **modem dtr-active**

To configure a line to leave DTR low unless the line has an active incoming connection or an EXEC process, use the **modem dtr-active** line configuration command. The **no** form of this command disables this feature.

[**no**] **modem in-out**

To configure a line for both incoming and outgoing calls, use the **modem in-out** line configuration command. The **no** form of this command disables this feature.

[**no**] **modem ri-is-cd**

To configure a line for a high-speed modem, use the **modem ri-is-cd** line configuration command. The **no** form of this command disables this feature.

[**no**] **notify**

To enable terminal notification about pending output from other connections, use the **notify** line configuration command. The **no** form of this command ends notification.

padding *ascii-number count*
no padding *ascii-number*

To set the padding on a specific output character, use the **padding** line configuration command. To remove padding for the specified output character, use the **no padding** line configuration command.

ascii-number	ASCII decimal representation of the character.
count	Number of NULL bytes sent after that character; the maximum is 255.

parity {**none** | **even** | **odd** | **space** | **mark**}

To define generation of a parity bit, use the **parity** line configuration command.

none	No parity.
even	Even parity.
odd	Odd parity.
space	Space parity.
mark	Mark parity.

password *password*
no password

To specify a password on a line, use the **password** line configuration command. Use the **no** form of this command to remove the password.

password	Case-sensitive character string that specifies the line password. The string can contain any alphanumeric characters, including spaces, up to 80 characters, except that the first character cannot be a number. You cannot specify the password in the format *number-space-anything* because the space after the number causes problems. For example, "hello 21" is a legal password, but "21 hello" is not.

printer *printername* {**line** *number* | **rotary** *number*} [**newline-convert**]
no printer

To configure a printer and assign a server tty line (or lines) to it, use the
printer global configuration command. Use the **no** form of the command
to disable printing on a tty line.

printername	Printer name.
line *number*	Assigns a tty line to the printer.
rotary *number*	Assigns a rotary group of tty lines to the printer.
newline-convert	(Optional) Converts newline (linefeed) characters to a two-character sequence "carriage-return, linefeed."

[**no**] **private**

To save user EXEC command changes between terminal sessions, use
the **private** line configuration command. Use the **no** form of this
command to restore the default condition.

refuse-message *d message d*
no refuse-message

To define a line-in-use message, use the **refuse-message** line
configuration command. Use the **no** form of the command to disable the
message.

d	Delimiting character of your choice—a pound sign (#), for example. You cannot use the delimiting character in the message.
message	Message text.

rotary *group*
no rotary

To define a group of lines consisting of one or more virtual terminal lines or one auxiliary port line, use the rota**ry** line configuration command. Use the **no** form of this command to remove a line or group of lines from a rotary group.

group   Integer between 1 and 100 that you choose to identify the rotary group.

rxspeed *bps*

To set the terminal baud rate receive (from terminal) speed, use the **rxspeed** line configuration command.

bps   Baud rate in bits per second (bps); see this command in the *Router Products Command Reference* publication for a table of supported values.

script activation *regexp*
no script activation

To specify that a chat script start on a line any time the line is activated, use the **script activation** line configuration command. The **no** form of this command disables this feature.

regexp   Regular expression that specifies the set of modem scripts that might be executed. The first script name that matches the argument *regexp* will be used.

script connection *regexp*
no script connection

To specify that a chat script start on a line any time a remote network connection is made to a line, use the **script connection** line configuration command. The **no** form of this command disables this feature.

    regexp   Specifies the set of modem scripts that might be executed. The first script name that matches the argument regexp will be used.

script reset *regexp*
no script reset

To specify that a chat script start on a line any time the specified line is reset, use the **script reset** line configuration command. The **no** form of this command disables this feature.

    regexp   Specifies the set of modem scripts that might be executed. The first script name that matches the argument regexp will be used.

script startup *regexp*
no script startup

To specify that a chat script start on a line any time the router is powered up, use the **script startup** line configuration command. The **no** form of this command disables this feature.

    regexp   Specifies the set of modem scripts that might be executed. The first script name that matches the argument *regexp* will be used.

[**no**] **service linenumber**

To configure the router to display line number information after the EXEC or incoming banner, use the **service linenumber** global configuration command. To disable this function, use the **no** form of this command.

session-limit *session-number*
no session-limit

To set the maximum number of terminal sessions per line, use the **session-limit** line configuration command. The **no** form of this command removes any specified session limit.

> *session-number*   Specifies the maximum number of sessions.

session-timeout *minutes* [**output**]
no session-timeout

To set the interval for closing the connection when there is no input or output traffic, use the **session-timeout** line configuration command. The **no** form of this command removes the timeout definition.

> *minutes*   Specifies the time interval in minutes.
>
> **output**   (Optional) Specifies that when traffic is sent to an asynchronous line from the router (within the specified interval), the connection is retained.

show line [*line-number*]

To display a terminal line's parameters, use the **show line** EXEC command.

> *line-number*   (Optional) Absolute line number of the line for which you want to list parameters.

special-character-bits {**7** | **8**}

To configure the number of data bits per character for special characters such as software flow control characters and escape characters, use the **special-character-bits** line configuration command.

> **7**   Selects the 7-bit ASCII character set.
>
> **8**   Selects the full 8-bit character set for special characters.

speed *bps*

To set the terminal baud rate, use the **speed** line configuration command. The command sets both the transmit (to terminal) and receive (from terminal) speeds.

> *bps* Baud rate in bits per second (bps); see the lines speeds table in the terminal lines chapter of the *Router Products Command Reference* publication for settings.

start-character *ascii-number*
no start-character

To define the character that signals the start of data transmission when software flow control is in effect, use the **start-character** line configuration command. The **no** form of this command removes the character.

> *ascii-number* ASCII decimal representation of the start character.

start-chat *regexp* [**aux 0** [*dialer-string*]]
no start-chat

To manually start a chat script, use the **start-chat** privileged EXEC command. The **no** form of the command stops the chat script.

> *regexp* Specifies the name of a regular expression or modem script to be executed. If there is more than one script with a name that matches the argument *regexp*, the first script found will be used.

aux 0	(Optional) Indicates the line number on which to execute the chat script. If you do not specify a line number, the current line number is chosen. If the specified line is busy, the script is not executed and an error message appears. If the *dialer-string* argument is specified, the line number (aux 0) must be entered; it is not optional if you specify a dialer string. This command functions only on physical terminal (tty) lines. It does not function on virtual terminal (vty) lines.
dialer-string	String of characters (often a telephone number) to be sent to a DCE. If you enter a dialer string, you must also specify the line number (aux 0), or the chat script *regexp* will not start.

stopbits {**1** | **1.5** | **2**}

To set the number of the stop bits transmitted per byte, use the **stopbits** line configuration command.

1	One stop bit.
1.5	One and one-half stop bits.
2	Two stop bits.

stop-character *ascii-number*
no stop-character

To set the flow control stop character, use the **stop-character** line configuration command. The **no** form of this command removes the character.

ascii-number	ASCII decimal representation of the stop character.

telnet break-on-ip

To configure the router to generate a hardware Break signal upon receiving an Interrupt Process (IP) command, use the **telnet break-on-ip** line configuration command.

telnet refuse-negotiations

To configure a line using Telnet to refuse to negotiate full-duplex, remote echo options on incoming connections, use the **telnet refuse-negotiations** line configuration command.

telnet speed *default-speed maximum-speed*

To allow the router to negotiate transmission speed of the line to a connected device, use the **telnet speed** line configuration command.

default-speed	Line speed (in bps) that the router will use if the device on the other end of the connection has not specified a speed.
maximum-speed	Maximum speed (in bps) that the device on the port will use.

telnet sync-on-break

To configure the router to cause an incoming connection to send a Telnet synchronize signal when it receives a Telnet Break signal, use the **telnet sync-on-break** line configuration command.

telnet transparent

To configure the router to send a carriage return (CR) as a CR followed by a NULL instead of a CR followed by a line feed (LF), use the **telnet transparent** line configuration command.

terminal-type *terminal-name*
no terminal-type

Use the **terminal-type** line configuration command to specify the type of terminal connected to a line. Use the **no** form of this command to remove any information about the type of terminal and reset the line to the default terminal emulation.

>*terminal-name*   Terminal name and type.

transport input {**mop** | **telnet** | **none**}

To allow the system administrator to define which protocols to use to connect to a specific line of the router, use the **transport input** line configuration command.

>**mop**   Selects the MOP protocol.
>
>**telnet**   Specifies all types of incoming TCP/IP connections.
>
>**none**   Prevents any protocol selection on the line. This makes the port unusable by incoming connections.

transport output {**telnet** | **none**}

To determine the protocols that can be used for outgoing connections from a line, use the **transport output** line configuration command.

>**telnet**   Selects the TCP/IP Telnet protocol. It allows a user at one site to establish a TCP connection to a login server at another site.
>
>**none**   Prevents any protocol selection on the line. The system normally assumes that any unrecognized command is a host name. If the protocol is set to **none**, the system no longer makes that assumption. No connection will be attempted if the command is not recognized.

transport preferred {**telnet** | **none**}

To specify the transport protocol the router uses if the user does not specify one when initiating a connection, use the **transport preferred** line configuration command.

telnet	Selects the TCP/IP Telnet protocol. It allows a user at one site to establish a TCP connection to a login server at another site.
none	Prevents any protocol selection on the line. The system normally assumes that any unrecognized command is a host name. If the protocol is set to **none**, the system no longer makes that assumption. No connection will be attempted if the command is not recognized.

txspeed *bps*

To set the terminal transmit baud rate (to terminal), use the **txspeed** line configuration command.

bps	Baud rate in bits per second (bps); see this command in the *Router Products Command Reference* publication for a table of supported values.

vacant-message [*d message d*]
no vacant-message

To display an idle terminal message, use the **vacant-message** line configuration command. The command enables the banner to be displayed on the screen of an idle terminal. The **vacant-message** command without any arguments restores the default message. The **no** form of this command removes the default vacant message or any other vacant message that might have been set.

d	(Optional) A delimiting character of your choice—a pound sign (#), for example. You cannot use the delimiting character in the banner message.
message	(Optional) Vacant terminal message.

width *characters*

To set the terminal screen width, use the **width** line configuration command. This command sets the number of character columns displayed on the attached terminal.

characters   Integer that specifies the number of character columns displayed on the terminal.