Command Reference

Connectware™

Digi Connect Family

Digi Connect SP, Digi Connect ME, Digi Connect Wi-ME, Digi Connect EM, Digi Connect Wi-EM

www.digi.com

Making **DEVICE NETWORKING** *easy*

90000566_A

Chapter 1   Introduction

Chapter 2   Command Descriptions

This chapter provides the following:

- A quick reference showing the commands used to configure features or perform configuration tasks from the command line.
- Basic information that applies to all commands, including navigation and editing keys, displaying online help, abbreviating commands, syntax conventions, and entering special characters in string values.
- How to access the command line.
- How to configure an IP address for a Digi device from the command line, if an address has not already been assigned.

Throughout this manual, the "Digi Connect Family" includes the following devices:

- Digi Connect SP
- Digi Connect ME
- Digi Connect Wi-ME
- Digi Connect EM
- Digi Connect Wi-EM

Quick Reference for Configuring Features

The following table shows common features that can be configured from the command line, and the commands used to configure each feature.

Feature/Task	Commands
Configure Alarms	"set alarm" on page 34
Administration/Configuration management:	
Backup/restore a configuration from a TFTP server on the network	"backup" on page 12
Update firmware	"boot" on page 13
Reset configuration to factory defaults	"revert" on page 31 boot action=factory (see "boot" on page 13)
Reboot the device	"boot" on page 13
Display current configuration settings in a device	"show" on page 65
Display device statistics	"info" on page 20
Display device status	"display" on page 16 "status" on page 67 "who" on page 69
General Purpose Input/Output (GPIO) pins	"set gpio" on page 44 "set alarm" on page 34
Help on device commands	"help" on page 19
Manage connections	"connect" on page 15 "reconnect" on page 30 "rlogin" on page 33 "telnet" on page 68 "who" on page 69 "close" on page 14 "kill" on page 27
Modem emulation	"set pmodem" on page 47 "set serial" on page 50 Chapter 3, "Modem Emulation Commands"
Network configuration	"set network" on page 46
Network services, enabling and disabling	"set service" on page 52
Port buffering	"display buffers" on page 17 "set buffer" on page 42
RealPort (COM port redirection)	See the *RealPort Installation Guide* for details on configuring this feature.

Feature/Task	Commands
Remote login (rlogin)	"rlogin" on page 33
Security/access control features:	
Control access to inbound ports	"set service" on page 52
Change device/user password	• To change user name for a user: "set user" on page 61 • To issue new password to user: "newpass" on page 28
Serial port configuration:	
General serial port communication options	"set serial" on page 50
RCI serial mode	"set rciserial" on page 48
RTS Toggle	"set rtstoggle" on page 49
TCP serial connections	"set tcpserial" on page 56
UDP serial characteristics	"set udpserial" on page 58
Automatically connect to a server or network device (autoconnection)	"set autoconnect" on page 39 "set serial" on page 50 "set tcpserial" on page 56
Simple Network Management Protocol (SNMP)	• To configure SNMP: "set snmp" on page 53 • To enable/disable SNMP service: "set service" on page 52 • To enable/disable SNMP alarm traps: "set alarm" on page 34
Set system information: assign system-identifying information to a device	"set system" on page 55
Telnet to network devices	"telnet" on page 68
Wired devices	"set ethernet" on page 43
Wireless devices	"set wlan" on page 62

Basic Command Information

Navigation and Editing Keys

Use the keys listed in the table to navigate the command line and edit commands:

Action	Keys
Move the cursor back one space.	Ctrl+b
Move the cursor forward one space.	Ctrl+f
Delete the character to the left of the cursor.	Back space or Ctrl+h
Delete the character under the cursor.	Delete
Scroll back through commands.	Ctrl+p
Scroll forward through commands.	Ctrl+n
Execute the command.	Enter

Displaying Online Help

Help is available for all commands. The table describes how to access it.

For information on...	Type
All commands	? (with no additional parameters)
A specific command	help [*command*] OR [*command*] ? **Example:** help info **Example:** info ? **Example:** set alarm ?

Abbreviating Commands

All commands can be abbreviated. Simply supply enough letters to uniquely identify the command.

Syntax Conventions

Presentation of command syntax in this manual follows these conventions:

- Brackets [ ] surround optional material.
- Braces { } surround entries that require you to chose one of several options, which are separated by the vertical bar, |.
- Non-italicized text indicates literal values, that is, fields or values that must be typed exactly as they appear. Yes and no options are examples of literals.
- Italicized text indicates that a type of information is required in that field. For example, *filename* means that the name of a file is required in the field.

Entering Special Characters in String Parameter Values

Several commands have parameters that are string values, for example the set alarm command's match parameter and the set autoconnect command's connect_on_string parameter.

Escape Sequences for Special Characters

Special characters can be entered in strings using the following escape sequences:

Escape Sequence	Processed as:
*	Match any character. This escape sequence is only available on the set alarm match=string parameter.
\a	Alert character.
\b	Backspace character.
\f	Form-feed character.
\n	New-line character.
\r	Carriage-return character.
\s	Acts as a separator between characters. This sequence allows you to enter a string such as "\xB8\s4" where you want the B8 translated as a hexadecimal character separate from the numeric character 4.
\t	Horizontal tab character.
\v	Vertical tab character.
\\	Backslash character (\ ).
\x$N$	A hexadecimal number, where N is a series of 1 through 20 hexadecimal digits. For example: \x10\x2
\N	An octal byte, where N is from 1 through 3 valid octal digits. For example: \20\2

Length Limitations on String Parameters

String-value parameters have specific limitations on the maximum total string value including special characters, and the maximum parsed value, or the character-string length when any escape sequences in the string are processed. The parameter descriptions note these maximum lengths.

Access the Command Line

To configure devices using commands, you must first access the command line from a Telnet session, and then log on as needed.

This procedure assumes that you have configured the Digi device with an IP address already.

1. To Telnet to the device server, enter the following command from a command prompt on another networked device, such as a server:

   ```
   telnet ip-address
   ```

   where *ip-address* is the device server's IP address. For example:

   ```
   telnet 192.3.23.5
   ```

2. If security is enabled for the device, (that is, a username and password have been set up for the device), a login prompt is displayed. If you do not know the user name and password for the device, contact the system administrator who configured the device.

Configure an IP Address

If the device to which you will be issuing commands has not already been assigned an IP address, or if the IP address needs to be modified from its initial configuration, see the *Digi Connect User's Guide* for details on configuring an IP address.

Command Descriptions

This chapter provides a description of each command in the Digi Connect Command-Line Interface.

backup

Purpose   Use the backup command to save or restore the device configuration from a TFTP server located on the network.

Syntax
```
backup [to=serveripaddress[:filename]|
    from=serveripaddress[:filename]|print]
```

Fields   **to=*serveripaddress*[*:filename*]**
The IP address of the TFTP server to which the configuration will be saved, and the filename that the configuration will be saved as. If a filename is not specified, the **default filename of config.rci** is used.

from=*serveripaddress*[*:filename*]
The IP address of the TFTP server and the filename from which the configuration will be restored. If a filename is not specified, the **default filename of config.rci** is assumed.

print
Prints out the current device configuration.

Example
```
backup from=10.0.0.1:config.rci
```

See also   "set rciserial" on page 48. The "set rciserial" command allows a configuration file to be loaded over a serial port when the DSR input signal is high.

boot

Purpose   The boot command is used to reboot the device server, restore the device configuration to factory default settings, and load new firmware (both EOS and POST images) from a TFTP server.

Syntax   **Reboot the device server**
```
boot action=reset
```

Restore configuration defaults
```
boot action=factory
```

Load new firmware into flash ROM from a TFTP host
```
boot load=host-ip-address:load-file
```

Fields   **action**
The action to be performed.

factory
Resets the entire configuration to factory defaults, then reboots the device.

reset
Reboots the device.

load
The firmware to be loaded.

host-ip-address
The IP address of a host with new firmware, which is then burned into flash ROM. The host must be running a TFTP server.

load-file
The name of the firmware file.

Examples   **Restore configuration defaults**
This example reloads the firmware stored in flash ROM and resets the configuration to factory defaults then reboots the device.
```
boot action=factory
```

Reboot using the current firmware and configuration
This example reboots the device and uses the current firmware and configuration stored in flash ROM.
```
boot action=reset
```

Reboot using firmware from a boot host
This example loads the firmware stored on the TFTP host into flash ROM. A reboot is required to use the new firmware.
```
boot load=10.0.0.1:firmware.bin
```

See also   "revert" on page 31

---

close

Purpose

Closes active connect, Rlogin, and Telnet sessions; that is, sessions opened by connect, rlogin, or telnet commands.

The close command is associated with the sessions displayed by the status command.

A close command issued without options closes the current connection.

To issue the close command, you must escape the active session. Do this by pressing the escape key defined for your session type. The following table lists default escape keys.

Session Type	Default Escape Keys
Connect	Ctrl+[+Enter
Rlogin	~+Enter
Telnet	Ctrl+]+Enter

Syntax

`close [{*|connection-number}]`

Fields

*
  Closes all active sessions.

connection-number
  Identifies the session to close by its session number.

Examples

Close a session identified by number
`close 1`

Close the current session
`close`

Close all active sessions
`close *`

See also

- "kill" on page 27. The kill command has a broader effect than close, and lets you kill connections from the global list. That is, it is not limited to sessions associated with the current connection.

- "status" on page 67 for information on displaying status information on active sessions.

- "connect" on page 15

- "rlogin" on page 33

- "telnet" on page 68

connect

Purpose   Used to make a connection, or establish a session, with a serial port.

There are several ways of using the connect command:

- To make multiple connections, issue multiple connect commands.
- To temporarily suspend a connection, escape the active session by pressing Ctrl [.
- To temporarily suspend a connection and return to the command line, press the escape character and then the Enter key.
- To switch between active sessions (without first escaping to the command line), press the escape character and then the number of the session you wish to enter. Pressing the connect escape character twice causes the next session to appear, enabling you to easily page through sessions.

Syntax   `connect serial_port`

Fields   ***serial_port***
    The number of the port on which to establish a connection.

Example   The following command creates a connection to port 1:

`connect 1`

See also
- "close" on page 14 for information on ending a session.
- "reconnect" on page 30 for information on reestablishing a port connection.

display

Purpose   Use the display command to display the following status information:

- General product information, including the product name, MAC address, boot, post, and firmware versions, memory usage, utilization, and uptime, or the amount of time since the device was last booted.
- GPIO signals.
- Memory usage information only.
- Serial modem signals (DTR, RTS, CTS, DSR, DCD).
- Uptime information only.

Syntax   `display {device | gpio | memory | serial | uptime | wlan}`

Fields   **device**
Displays general product information including product name, MAC address, boot, post, and firmware versions, memory usage, utilization, and uptime.

gpio
Displays GPIO signals.

memory
Displays general memory, network memory, and streams memory usage.

serial
Displays serial modem signals (DTR, RTS, CTS, DSR, DCD).

uptime
Displays amount of time since the device was booted.

wlan
Displays typical wireless LAN (WLAN) parameters for wireless devices.

Example   `display device`

See also   The display command's focus is on real-time information. In contrast, the info command displays statistical information about a device over time, while the status command displays the status of outgoing connections (connections made by connect, rlogin, or telnet commands). For more information, see these commands:

- "info" on page 20.
- "status" on page 67

display buffers

Purpose   The display buffers command is used to display the contents of a port buffer, or Transfer the contents of a port buffer to a server running Trivial File Transfer Protocol (TFTP). Port buffering is enabled by the "set buffer" command (see page 42). Contents are displayed in log form.

Device support This command is supported in all Digi Connect devices.

Syntax
```
display buffers [port=range] {[screen] [lines=number]
  [tail=number] | tftp=server:filename}
```

Fields   **port=*range***
                 The port or ports to which the command applies. This field is optional on a single-port device.

                 screen
                 Displays the port buffer contents on the screen when screen is specified.

                 lines=*number*
                 The number of lines of data to display at a time when the screen option is specified. Use 0 to indicate continuous flow.

                 tail=*number*
                 The total number of lines in the buffer to be displayed. The number is calculated from the end of the buffer counting back.

                 tftp=*server:filename*

                 server
                     The IP address or DNS name of a server running TFTP to which buffer information should be transferred.

                 filename
                     The name to use for the file that will be transferred to the TFTP server. If the port field specifies more than one port, one file will be transferred for each port. The filename for each port will be *filename_n*, where n is the port number.

Examples   **Display port buffering information on the screen**
```
display buffers port=2 screen lines=32 tail=30
```

                 Output buffering information to a TFTP server
```
display buffers port=2 tftp=192.168.1.1:port_ouput
```

                 Output multi-port buffering information to a TFTP server
```
display buffers port=2-3 tftp=192.168.1.1:port_ouput
```
                 Note that port 2 buffering information goes to file port_output_2 and port 3 buffering information goes to file port_output_3.

See also   •   "set buffer" on page 42

---

exit

Purpose   Use the exit command to terminate your current session.

Syntax   `exit`

Example   `exit`

See also   "quit" on page 29. The quit and exit commands perform the same operation.

help

Purpose   Displays help about a specific command.

Syntax   `help [command]`
OR
`[command]?`

Examples   `help boot`
`boot?`
`help set serial`
`set serial?`

See also   "Displaying Online Help" on page 8.

---

info

Purpose   This command prints out statistical information about a device. Command options allow display of the following categories of statistics:

- Device statistics.
- Ethernet statistics.
- ICMP statistics.
- Serial statistics.
- TCP statistics.
- UDP statistics.
- For wireless devices, wireless (WLAN) statistics.

The statistics in these tables are those gathered since the tables were last cleared.

Syntax   `info {device | ethernet | icmp | serial | tcp | udp | wlan}`

Fields   For a description of the statistics displayed by all these fields, see "Results" on the following page.

device
  Displays statistics from the device table. This information includes device-model information, MAC address, current Boot and POST code, firmware, memory usage, utilization, and uptime.

ethernet
  Displays statistics from the Ethernet table. This field applies to Digi Connect SP, Digi Connect ME, and Digi Connect EM devices only.

icmp
  Displays statistics from the ICMP table.

serial
  Displays statistics from the serial table. For descriptions of these statistics, see "Results" on page 21.

tcp
  Displays statistics from the TCP table.

udp
  Displays statistics from the UDP table.

wlan
  Displays statistics from the wireless Ethernet (wlan) table. This field applies to Digi Connect Wi-ME and Digi Connect Wi-EM devices only.

Results   Following are descriptions of the statistics displayed for each info command option.

Note that these statistics are the *number* of changes for each statistic. They are not a *value* of the statistics since the device was booted. The numbers on these statistics will only increase from their previous counts, unless you reboot the device.

The statistics displayed include data counters and error tracking that will help determine the quality of data that is being sent or received. If any error counter is accumulating at an unexpected rate for that type of counter, you may have a problem with your Digi Connect device. Refer to the Digi Connect Family User Guide's Troubleshooting section for help.

Device statistics

Device Information	Description
Model	The model of the Digi Connect device.
MAC Address	A unique network identifier. All network devices are required to have their own unique MAC address. The MAC address is on a sticker on your Digi Connect device. The number is displayed as 12 hexadecimal digits, usually starting with 00:40:9D.
Firmware Version	The current firmware version. This information may be used to help locate and download new firmware. Firmware updates may be downloaded from the Digi Support website.
Boot Version	The current boot version.
Post Version	The current POST version.
CPU Utilization	The amount of CPU resources being used by the Digi Connect device.
Uptime	The amount of time the Digi Connect device has been running since it was last powered on or rebooted.
Total Memory	The total amount of memory (RAM) available.
Free Memory	The amount of memory (RAM) currently not being used.
Used Memory	The amount of memory (RAM) currently in use.

info

Ethernet statistics

Statistic	Description
InBytes	Number of bytes received.
OutBytes	Number of bytes sent.
InUcastPkts	Number of Unicast packets received.
OutUcastPkts	Number of Unicast packets sent.
InNonUcastPkts	Number of non-Unicast packets received.
OutNonUcastPkts	Number of non-Unicast packets sent.
InDiscards	Number of incoming packets that were discarded.
OutDiscards	Number of outgoing packets that were discarded.
InErrors	Number of incoming packets that contained errors.
OutErrors	Number of outgoing packets that contained errors.
RxOveruns	Number of Rx overruns. Rx overruns are generally caused by the inability of the device to get sufficient bus bandwidth to offload the data.
TxResets	Number of times the transmitter has been reset.
InUnknownProtos	Number of incoming packets where the protocol was unknown.

ICMP statistics

Statistic	Description
InMessages	Number of incoming messages.
OutMessages	Number of outgoing messages.
InDestUnreachables	Number of incoming destination-unreachable messages received. A destination-unreachable message is sent to the originator when a datagram fails to reach its intended destination.
OutDestUnreachables	Number of destination-unreachable messages sent. A destination-unreachable message is sent to the originator when a datagram fails to reach its intended destination.
InErrors	Number of incoming received messages with errors.

Serial statistics

Statistic	Description
rbytes	Total data in: the number of bytes received.
tbytes	Total data out: the number of bytes transmitted.
overrun errors	The number of times FIFO has overrun. The next data character arrived before the hardware could move the previous character.
overflow errors	The number of times the Received buffer has overrun. The receive buffer was full when additional data was received.
frame errors	The number of framing errors detected. The received data did not have a valid stop bit.
parity errors	The number of parity errors detected. The received data did not have the correct parity setting
breaks	The number of break signals detected.
signal change	For each signal (CTS, DSR, RI, DCD, RTS, DTR), the number of times the signal has changed states.

info

TCP statistics

Statistic	Description
InSegments	Number of segments received.
OutSegments	Number of segments sent.
InErrors	Number of segments received with errors.
RetransmitSegments	Number of segments retransmitted. Segments are retransmitted when the server doesn't respond to a packet sent by the client. This is to handle packets that might get lost or discarded somewhere in the network.
EstabResets	Number of established connections that have been reset.
OutResets	Number of outgoing connections that have been reset.
PassiveOpens	Number of passive opens. In a passive open, the Digi device server is listening for a connection request from a client.
ActiveOpens	Number of active opens. In an active open, the Digi device server is initiating a connection request with a server.
Established	Number of established connections.
Attempt Fails	Number of failed connection attempts.

UDP statistics

Statistic	Description
InDatagrams	Number of datagrams received.
OutDatagrams	Number of datagrams sent.
InErrors	Number of bad datagrams that were received. This number does not include the value contained by "No Ports"
NoPorts	Number of received datagrams that were discarded because the specified port was invalid.

Wireless (WLAN) statistics

The WLAN statistics may aid in troubleshooting network communication problems with your wireless network.

Statistic	Description
TxFrames	Number of frames transmitted.
TxBroadcastFrames	Number of broadcast frames transmitted.
TxRtsFrames	Number of Request-to-Send (RTS) frames transmitted.
TxRetries	Number of times an outgoing frame is retransmitted because the acknowledgement for the frame was not received.
TxDroppedRetries	Number of outgoing frames that were dropped because the maximum number of retries were exceeded for the frame.
TxDroppedBroadcasts	Number of broadcast frames dropped because the acknowledgement for the frame was not received.
TxDroppedAssoc	Number of outgoing packets dropped because the device had not yet associated with a wireless network
RxFrames	Number of received frames.
RxBroadcastFrames	Number of received broadcast frames.
RxRtsFrames	Number of RTS frames received.
RxRetries	Number of incoming frames that have the retry bit set in their frame header. The retry bit indicates that the other side has attempted to transmit a given frame more than once.
RxDroppedNoBuffers	Number of received frames dropped due to no buffer.
RxDropInvalid	Number of incoming frames dropped because the frame appeared incorrect.
RxDropDuplicate	Number of incoming frames dropped because a given frame had already been received.
RxDropAge	Number of fragmented frames dropped because the fragment timed out before the rest of the frame sequence was received.
RxDropDecrypt	Number of frames dropped because they were not properly encrypted.
RxDropSize	Number of frames dropped because their frame size was too big

Examples   **Display ICMP statistics**

```
#> info icmp


ICMP statistics:


InMessages          : 14            OutMessages           : 0

InDestUnreachables  : 5             OutDestUnreachables   : 0

InErrors            : 0
```

See also   The info command displays statistical information about a device over time. In contrast, the display command's focus is on real-time information, while the status command displays the status of outgoing connections (connections made by connect, rlogin, or telnet commands). For more information, see these commands:

- "display" on page 16.
- "status" on page 67

kill

Purpose   Use the kill command to kill connections. The kill command is associated with the connections displayed by the who command.

Syntax   `kill [range] [connection_id]`

Fields   *range*
A range of connection IDs.

connection_id
An ID for the connection.

Examples   **Killing a Session on a Specific Port**
`kill 1`

Killing a Session on a Range of Ports
`kill 1-3`

See also
- "close" on page 14, to close sessions created from the current connection.
- "status" on page 67, to display the list of current sessions.
- "who" on page 69, for information on determining active connections.

newpass

Purpose   Changes the password of the currently logged-in user.

Syntax   `newpass`

Example   The command initiates a dialog that changes the user's password.

`newpass`

See also   See "set user" on page 61 for information on configuring users.

quit

Purpose Use the quit command to log out of the device.

Syntax quit

Example quit

See also "exit" on page 18. The "quit" and "exit" commands perform the same operation.

reconnect

Purpose   Reestablishes a previously established connection; that is, a connection opened by a connect, rlogin, or telnet command. The default operation of this command is to reconnect to the last active session.

Syntax   `reconnect [{serial-port|p=serial-port|s=session}]`

Fields   *serial-port*
The serial port to which this command applies. Use this option to reconnect to a session opened by a connect command.

p=*serial-port* | s=*session*
The serial port number or session number (displayed by the status command) to reconnect to.

Example   **Reconnect to the last port used**
`reconnect`

Reconnect to port 1
`reconnect p=1`

Reconnect to session 1
`reconnect s=1`

See also   • "connect" on page 15 for information on establishing a connection on a selected port.

• "close" on page 14 for information on ending a connection.

• "status" on page 67 for information on gathering status on current connections.

• "rlogin" on page 33

• "telnet" on page 68

revert

Purpose   Sets a particular group of a devices' settings to its default values.

Syntax   revert [all|alarm|autoconnect [port=*range*]|buffer|
                gpio|network|pmodem [port=*range*]|serial [port=*range*]
                service|snmp|system|tcpserial [port=*range*]|
                udpserial [port=*range*]|user]

Fields   **all**
                Reverts everything except network settings.

                alarm
                Reverts the alarm configuration, configured by set alarm.

                autoconnect [port=*range*]
                Reverts the Autoconnect configuration configured by set autoconnect.

                buffer
                Reverts the port-buffering configuration configured by set buffer.

                gpio
                Reverts the GPIO configuration configured by set gpio.

                network
                Reverts the network configuration, configured by set network, and the
                wireless configuration parameters, configured by set wlan.

                pmodem [port=*range*]
                Reverts the modem emulation configuration, configured by set pmodem.

                serial [port=*range*]
                Reverts the serial configuration, configured by set serial.

                service
                Service configuration, configured by set service.

                snmp
                SNMP configuration, configured by set snmp.

                system
                System configuration, configured by set system.

                tcpserial [port=*range*]
                TCP serial configuration, configured by set tcpserial.

                udpserial [port=*range*]
                UDP serial configuration, configured by set udpserial.

                user
                User configuration, configured by set user.

---

revert

Example **Reset a device's serial setting**
The device serial setting is reset to the default serial configuration.
```
revert serial
```

Reset a serial port to default settings
```
revert serial port=2
```

See also "boot" on page 13

Chapter 2   Command Descriptions

rlogin

Purpose   Performs a login to a remote system, also referred to as an rlogin.

Syntax   `rlogin [esc=(char)] [{user=user-name|-l user-name}]`
                  `   [ip_address]`

Fields   **esc**
                  A different escape character than the ~ (tilde) character, which will be
                  used for the current Rlogin session. This character is used for
                  suspending a session from the remote host to return to the device server
                  command line.

                  user=*user-name* | -l *user-name*
                  The user name to use on the remote system. If you do not specify a
                  name, your device server user name will be used. The -l user-name
                  option is for compatibility with the UNIX rlogin command.

                  ip_address
                  The IP address of the system to which you are performing the remote
                  login.

Examples   `rlogin 10.0.0.1`

See also   • "telnet" on page 68
                  • "connect" on page 15
                  • "status" on page 67
                  • "close" on page 14

set alarm

Purpose Use this command to configure device alarms or display current alarm settings. Device alarms are used to send emails or SNMP traps when certain device events occur. These events include changes in GPIO signals and data patterns in the serial stream. Up to 32 alarms can be configured in Digi Connect devices.

Device support Setting alarms in GPIO mode is not supported in the Digi Connect SP device.

Syntax **Set alarms with general options (applies to all alarms)**
```
set alarm [state={on|off} | mailserverip=ipaddress | from=string]
```

Set alarms with a range (set multiple alarms)
```
set alarm range={1-n}
  [active={on|off}|to=string|cc=string|subject=string|
  priority={normal|high}|mode={match|gpio}|
  type={email|snmptrap|all}]
```

Set alarms in GPIO mode
```
set alarm range={1-n} mode=gpio
  [pins=list_of_pins/highpins=list_of highpins|
  lowpins=list of lowpins|pin{n}={high|low|ignore}|
  trigger_interval=seconds|reminder={on|off}|
  reminder_interval=seconds]
```
  Note: *n* is the pin number.

Set alarms in match mode
```
set mode=match match=string
```

Display current alarm settings
```
set alarm [range={1-n}]
```

Fields   **Fields for setting alarms with general options**

from=*string*
  The text to be included in the 'from' field of an alarm-triggered email.

mailserverip=ipaddress
  Used to configure IP address of the mail server to which alarm-triggered emails are sent.

state= {on|off}
  Enables or disables all alarms.

  on
    Enables all alarms.

  off
    Disables all alarms.

  The default is off.

Fields for setting alarms with a range (set multiple alarms)
The following fields apply to setting multiple alarms using a range parameter.

range= {1-*n*}
  All alarm fields require a range parameter that is used to select the alarm or range of alarms to set the options on. This range parameter is used to specify the indices of the alarms to which the other fields will be applied.

active={on|off}
  Enables or disables an alarm.

  on
    Enables an alarm.

  off
    Enables an alarm.

  The default is off.

cc=*string*
  The text to be included in the 'cc' field of an alarm triggered email.

mode={match|gpio}
  The alarm mode, which determines what type of event will trigger an alarm.

  match
    Specifies that an alarm will be triggered when a pattern is found in the stream of serial data.

  gpio
    Specifies that the transitions for GPIO pins will trigger alarms. See "Fields for setting alarms in GPIO mode" on page 37 for more information about GPIO.

  The default is gpio for all Digi Connect devices except Digi Connect SP. For Digi Connect SP, the only option available is match.

---

priority={normal|high}
The priority of the triggered email.

normal
The email is sent with normal priority.

high
The email is sent with high priority.

The default is normal.

The default is off.

subject=*string*
If type=email, this field specifies the text to be included in the 'subject' field of an alarm-triggered email. If type=snmptrap, this field specifies the text to be included in the "Serial Alarm Subject" field of an alarm-triggered SNMP trap.

to=*string*
The text to be included in the 'to' field of an alarm-triggered email.

type={email|snmptrap|all}
Used to determine what kind of an alarm is sent: an e-mail alarm, an SNMP trap or both.

In order for SNMP traps to be sent, the IP address of the system to which traps are sent must be configured, by issuing a set snmp command with the trapdestip parameter. See "set snmp" on page 53.

email
An email alarm is sent.

snmptrap
An SNMP trap is sent. If snmptrap is specified, the 'subject' text is sent with the alarm. The MIB for this trap is named DIGI-SERIAL-ALARM-TRAPS.mib.

all
Both an email alarm and SNMP trap are sent.

The default is email.

Fields for setting alarms in GPIO mode

In GPIO mode, alarms are triggered when there are transitions between states for GPIO pins. The following fields allow you set which GPIO pins' transitions will trigger alarms.

pins=*list_of_pins*
A list of GPIO pins that trigger alarms.

highpins=*list_of_highpins*
A list of GPIO pins that trigger alarms when a pin's signal is high.

lowpins=*list_of_lowpins*
A list of GPIO pins that trigger alarms when a pin's signal is low.

pin{*n*}={high|low|ignore}
This field is an alternative way to specify the action of a given GPIO pin, where *n* is the pin number.

high
The pin will trigger an alarm when the pin's signal is high.

low
The pin will trigger an alarm when the pin's signal is low.

ignore
The pin will not trigger an alarm.

The default is ignore.

reminder={on|off}
Specifies the type of reminder sent.

on
An email or SNMP trap is sent periodically while the alarm-triggering event is active. The interval is based on the value of the reminder_interval field.

off
An email or SNMP trap is sent only when an alarm is triggered.

reminder_interval=*seconds*
The minimum reminder interval in seconds. Indicates how often an email or SNMP trap is sent when 'reminder' is 'on' and an alarm-triggering event is active.

trigger_interval=*seconds*
The minimum trigger interval in seconds. If the reminder field is set to off, this field indicates the minimum amount of time that is allowed between alarm-triggered emails or SNMP traps.

Fields for setting alarms in match mode

In match mode, an alarm will be triggered when a pattern is found in the stream of serial data. The following fields are used for setting alarms in match mode:

mode=match
Sets the alarm to match mode.

match=*string*
A string that triggers an alarm if the data pattern is found in the incoming serial stream. The maximum length of this string is 40 characters, including escape sequences for special characters. For more details on the escape sequences, see "Entering Special Characters in String Parameter Values" on page 9. The maximum parsed length of this string is 10 characters. That is, this string must reduce down to a 10-character string when the escape sequences are processed.

Examples   **Set an alarm to "on" state**

```
set alarm state=on mailservip=10.0.0.1
```

Set alarm mode to GPIO mode

```
set alarm range=1 mode=gpio
```

Set alarm to designate which pins trigger alarm

```
set alarm range=1 pin2=high pin3=high
set alarm range=1 highpins=2,3
```

Set alarm to GPIO mode for specific pins and send SNMP traps

```
set alarm range=1 highpins=2,3 type=snmptrap
```

See also   • "set gpio" on page 44. The set gpio command determines whether pins act as GPIO input, GPIO output, or standard serial.

• "set snmp" on page 53.

set autoconnect

Purpose Used to establish an automatic connection (autoconnection) between the serial port and a remote network destination, and to display current autoconnect settings.

Syntax **Configure autoconnect**

```
set autoconnect [port=range] [state={on|off}]
  [trigger={always|data|dcd|dsr}]
  [service={raw|rlogin|ssl|telnet}]
  [description={string}] [ipaddress=ipaddress]
  [ipport=ipport] [connect_on_string=string]
  [flush_string={on|off}]
```

Display autoconnect settings

```
set autoconnect [port=range]
```

Fields **port=*range***
Used to specify the serial port. This field is optional on a single-port device.

state={on|off}
Enables or disables the autoconnect feature.

on
Enables the autoconnect feature.

off
Disables the autoconnect feature.

The default is off.

If you are using the serial port for another purpose, it is recommended this value be set to 'off'.

trigger={always|data|dcd|dsr|string}
Indicates which events from the serial port will trigger a network connection to occur.

always
The serial port will continually attempt to keep a connection to a remote network destination active.

data
The serial port will attempt a network connection whenever data arrives on the serial port.

dcd
The serial port will attempt a network connection whenever the serial port's DCD signal goes high.

dsr
The serial port will attempt a network connection whenever the serial port's DSR signal goes high.

string
A connection will be made upon detecting a particular sting, specified by the connect_on_string field, in the data from the serial port.

The default is always.

service={raw|rlogin|ssl|telnet}
The type of network connection that will be established.

raw
A connection without any special processing will occur.

rlogin
A remote login (rlogin) connection will occur.

ssl
A secure connection conforming to SSL (Secure Sockets Layer) Version 3 and Transport Layer Security (TLS) Version 1 will occur.

telnet
A connection with Telnet processing will occur.

The default is raw.

description=*string*
A name for descriptive purposes only.

ipaddress=*ipaddress*
The IP address of the network destination to which a connection will be made.

ipport=*ipport*
The TCP port of the network destination to which a connection will be made.

connect_on_string=*string*

When the value of the trigger field is string, this option specifies the string that must be found in the serial data in order for a connection to occur. The maximum length of this string is 32 characters, including escape sequences for special characters. For more details on the escape sequences, see "Entering Special Characters in String Parameter Values" on page 9. The maximum parsed length of this string is 32 characters. That is, this string must reduce down to a 32-character string when the escape sequences are processed.

flush_string={on|off}

Indicates whether the connect string, specified by the connect_on_string field, is flushed or sent over the newly established connection.

on

The connect string is flushed.

off

The connect string is sent over the newly established connection.

The default is on.

Examples

Set autoconnect on with trigger

This example shows setting autoconnect to connect to the TCP port (2101) of the network IP destination when data arrives on the serial port.

```
set autoconnect state=on trigger=data ipaddress=10.0.0.1
  ipport=2101
```

See also

- "set serial" on page 50.
- "set tcpserial" on page 56.

set buffer

Purpose
Configures buffering parameters on a port, or displays the port buffer configuration on all ports. The port buffering feature allows you to monitor incoming ASCII serial data in log form.

Device support
This command is supported in all Digi Connect devices.

Syntax
Configure port buffering
```
set buffer [clear] [port=number] [size=number]
  [state={on|off|pause}]
```

Display the port buffering configuration
```
set buffer [port=port]
```

Fields
clear
Clears the contents of the specified buffer.

port
The port or ports to which the command applies.

size
The size in kilobytes to configure the buffer. Settings are configurable in 2-kilobyte increments. The maximum size is 64 kilobytes. The default is 32 kilobytes.

state
The buffering state, which can be any of the following:

on
The data will be buffered.

off
The data will not be buffered and all data will be cleared from the buffer.

pause
The data will not be buffered, but data in the buffer will not be cleared.

Examples
Display port buffer configuration for all ports
```
set buffer
```

Configure buffers
In this example, the set buffer command sets the buffer state for port 1 to on mode and the buffer size to 64 kilobytes.
```
set buffer port=1 state=on size=64
```

See also
- "display buffers" on page 17.
- "exit" on page 18.

set ethernet

set ethernet

Purpose   Configures, adjusts, and displays Ethernet communications parameters.

Device support   This command is supported in wired Digi Connect devices only.

Syntax   **Configure Ethernet communications parameters**
```
set ethernet [duplex={half|full|auto}] [speed={10|100|auto}]
```

Display Ethernet communications parameters
```
set ethernet
```

Fields   **duplex**
Determines the mode the Digi device uses to communicate on the Ethernet network. Specify one of the following:

half
The device communicates in half-duplex mode.

full
The device communicates in full-duplex mode.

auto
The device senses the mode used on the network and adjusts automatically.

The default is half. If one side of the Ethernet connection is using auto, the other side can set the duplex value to whatever is desired. If one side uses a fixed value (for example, half-duplex), the other side has to use the same.

speed
Configures the Ethernet speed the Digi device will use on the Ethernet network. Specify an appropriate setting for your Ethernet network, which can be one of the following:

10
The device operates at 10 megabits per second (Mbps) only.

100
The device operates at 100 Mbps only.

auto
The device senses the Ethernet speed of the network and adjusts automatically.

The default is auto. If one side of the Ethernet connection is using auto (negotiating), the other side can set the Ethernet speed to whatever value is desired. Or, if the other side is set for 100 Mbps, this side must use 100 Mbps.

Examples   **Configure 100 Mbps Ethernet speed**
```
set ethernet speed=100
```

See also   "set network" on page 46 to configure network communications parameters.

---

set gpio

Purpose   Used to:
- Configure General Purpose I/O (GPIO) pins. In normal operation, the GPIO pins are used for the serial CTS, DCD, DSR, DTR, and RTS pins. The set gpio command allows these GPIO pins to be used for different purposes.
- Display current GPIO pin settings.

Device support   This command is supported in all Digi Connect Family devices except Digi Connect SP.

Syntax   **Configure GPIO pins**
`set gpio range={1-n} mode={serial|input|output}`

Display current GPIO pin settings
`set gpio [range={1-n}]`

Fields   **range={1-n}**
Used to specify the index of the GPIO pin to manipulate, where *n* is the maximum number of GPIO pins on the device.

mode={serial|input|output}
The mode of operation of the GPIO serial pin.

serial
Indicates normal serial operation.

input
Allows input of GPIO signals. This is used in conjunction with alarms to trigger emails or SNMP traps indicating a particular signal change.

output
Allows output of GPIO signals. Currently, output of GPIO signals is not supported in the command-line interface. The web user interface can be used to toggle the output of GPIO signals between high and low.

The default is serial for all pins.

Default serial signal settings for GPIO pins

The default serial signal settings for the GPIO pins on a Digi Connect device are as follows. Depending on the device, there are five or nine GPIO pins.

Pin Number	Default Serial Signal	Signal Direction
GPIO 1	DCD	Input
GPIO 2	CTS	Input
GPIO 3	DSR	Input
GPIO 4	RTS	Output
GPIO 5	DTR	Output
GPIO 6	TXD	Output
GPIO 7	RXD	Input
GPIO 8	TXD for port 2	Output
GPIO 9	RXD for port 2	Input

Examples

Changing the operation of the GPIO signal pins

The following command changes GPIO pins 1-5 to allow input of GPIO signals.

```
set gpio range=1-5 mode=input
```

See also

"set alarm" on page 34, for details on setting up alarms that issue email messages or SNMP traps when GPIO pins change.

set network

Purpose   Used to set general network configuration options and display current
                  network configuration options.

Syntax   **Set general network configuration options**
```
set network [gateway=gateway ip] [ip=device ip]
  [submask=device submask] [static={on|off}]
  [dhcp={on|off}][autoip={on|off}]
```

                  Display current network configuration options
```
set network
```

Fields   **gateway=*gateway ip***
                      Sets the network gateway IP address.

                  ip=*device ip*
                      Sets the device IP address when DHCP is off. This field is only applicable
                      if the static field is set to on.

                  submask=*device submask*
                      Sets the device submask address when DHCP is off. This field is only
                      applicable if the static field is set to on.

                  The following three IP address options have a precedence. That is, if all
                  three options are turned on, the order of precedence is: static, dhcp, autoip.

                  static={on|off}
                      When enabled, the device uses the specified IP address, gateway
                      address, and submask. The default is off.

                  dhcp={on|off}
                      When enabled, the device attempts to use the DHCP protocol to find an
                      IP address, gateway address, and submask. The default is on.

                  autoip={on|off}
                      When enabled, the device attempts to use the Auto IP protocol to find an
                      IP address, gateway address, and submask. The default is on.

Examples   **Manually set the device IP address**
```
set network ip=10.0.0.1 gateway=255.255.255.0
  submask=255.255.255.0 dhcp=off static=on autoip=off
```

                  Use DHCP to find an IP address, gateway address, and submask
```
set network static=off dhcp=on
```

                  **Use DHCP or the Auto IP protocol to automatically configure network
                  settings**
```
set network static=off dhcp=on autoip=on
```

See also   "set ethernet" on page 43.
                  "set wlan" on page 62.

set pmodem

Purpose	Used to:

- Configure various options for modem emulation over TCP/IP.
- Display current modem-emulation settings.

Syntax   **Configure modem emulation**

```
set pmodem port=range [state={on|off}] [telnet={on|off}]
```

Display current modem-emulation settings

```
set pmodem [port=range]
```

Fields   **port=*range***

Used to specify the serial port. This field is optional on a single-port device.

state

Used to enable or disable modem emulation on a given serial port.

on

Enables modem emulation.

off

Disables modem emulation.

The default is off.

telnet

Used to enable or disable Telnet processing on the incoming and outgoing modem-emulation connections.

on

Enables Telnet processing.

off

Disables Telnet processing.

The default is off.

Example   `set pmodem port=1 state=on`

See also   Chapter 3, "Modem Emulation Commands" for descriptions of Digi-specific commands for modem-emulation configurations.

set rciserial

Purpose   Used to:

- Turn on/off RCI serial mode on the first serial port. The RCI serial mode is a mode that allows a configuration file to be loaded over a serial port when the DSR input signal is high.

- Display current RCI serial-mode settings.

Syntax   **Turn on off RCI serial mode**

```
set rciserial [state={on|off}]
```

Display current RCI serial-mode settings

```
set rciserial
```

Fields   **state**
Enables (on) or disables (off) RCI serial mode on the port. The default is off.

Example   `set rciserial state=on`

See also   "backup" on page 12.

set rtstoggle

Purpose   Used to:
- Enable or disable RTS toggle on a given serial port. RTS toggle is used to raise RTS when sending data.
- Display current RTS toggle settings.

Syntax   **Enable or disable RTS toggle**
```
set rtstoggle port=range [state={on|off}]
  [predelay=delay] [postdelay=delay]
```

Display current RTS toggle settings
```
set rtstoggle [port=range]
```

Fields   **port=*range***
Used to specify the serial port. This field is optional on a single-port device.

state={on|off}
Used to enable or disable the RTS toggle feature.

on
Enables the RTS toggle feature.

off
Disables the RTS toggle feature.

The default is off.

predelay=*delay*
Specifies the time in milliseconds to wait after the RTS signal is turned on before sending data. The range is 0 to 5000 milliseconds. The default is 0.

postdelay=*delay*
Specifies the time in milliseconds to wait after sending data before turning off the RTS signal. The range is 0 to 5000 milliseconds. The default is 0.

Examples   ```set rtstoggle state=on predelay=10```

set serial

Purpose   Used to:

- Set general serial configuration options, such as baud rate, character size, parity, stop bits, and flow control.
- Display current serial configuration options.

Syntax   **Set general serial configuration options**

```
set serial port=range [altpin={on|off}] [baudrate=bps]
  [csize={5|6|7|8}] [parity={none|even|odd|mark|space}]
  [stopb={1|2}] [flowcontrol={hardware|software|none}]
```

Display current serial configuration options

```
set serial [port=range]
```

Fields   **port=*range***

Used to specify the serial port. This field is optional on a single-port device.

altpin={on|off}

Determines whether the altpin option, which swaps DCD with DSR so that eight-wire RJ-45 cables can be used with modems, is used:

on

The altpin option is used.

off

The altpin option is **not** used.

The default is off.

baudrate=*bps*

The baud rate in bits per second. The default is 9600.

csize={5|6|7|8}

The character size, which can be 5, 6, 7, or 8 bits. The default is 8.

flowcontrol={hardware|software|none}

Specifies which kind of flow control is used on the line.

hardware

Hardware flow control (RTS/CTS).

software

Software flow control (Xon/Xoff).

none

No flow control.

The default is software.

Chapter 2 Command Descriptions

parity={none|even|odd|mark|space}
The parity used for the line.

none
No parity.

even
Even parity.

odd
Odd parity.

mark
Mark parity.

space
Space parity.

The default is none.

stopb={1|2}
The number of stop bits per character to use on this line. The value used here must match the setting on the device connected to this port. Use 1 or 2 stop bits.

The default is 1 stop bit.

Example   `set serial baudrate=9600 flowcontrol=hardware`

---

set service

Purpose   Used to:
- Enable and disable network services.
- Change the network port on which a given service listens.
- Display the entire service table, or an entry in the service table.

Syntax   **Enable/disable network services or change network port for service**
```
set service [range=range] [state={on|off}]
  [ipport=network_port]
```

Display service table or entries in the table
```
set service [range=range]
```

Fields   **range=range**
Used to specify the index of the network service to which the rest of the command's options apply.

active={on|off}
Used to enable or disable a given network service.

ipport=network port
Used to change the network port on which a given network service listens.

Examples   **Disable service**
```
set service range=1 state=off
```

Change the network port (ipport) of a service
```
set service range=1 ipport=500
```

Displaying the service table
In this example, the set service command displays the entire service table.
```
set service
```

Displaying an entry in the service table
In this example, the set service command displays a range of entries in the service table.
```
set service range=2-4
```

set snmp

Purpose   Configures the Simple Network Management Protocol (SNMP) agent, or displays current SNMP settings.

Syntax   **Set SNMP settings**

```
set snmp [trapdestip=ipaddress|publiccommunity=string|
  privatecommunity=string|setsenabled={on|off}|
  authfailtrap={on|off}|coldstarttrap={on|off}|
  linkuptrap={on|off}|logintrap={on|off}]
```

Display current SNMP settings

```
set snmp
```

Fields   **trapdestip=*ipaddress***

Used to configure the IP address of the system to which the agent should send traps. In order to enable any of the traps, a non-zero value for trapdestip must be specified.

This parameter is required in order for alarms to be sent in the form of SNMP traps. See "set alarm" on page 34.

publiccommunity=*string*

The password required to "get" SNMP-managed objects. The default is "public".

privatecommunity=*string*

The password required to "set" SNMP-managed objects. The default is "private".

setsenabled={on|off}

Enables or disables "sets" of SNMP-managed objects.

on

Enables "sets" if the provided private community matches the current private community.

off

Disables "sets" even if the provided private community matches the current private community.

The default is off.

authfailtrap={on|off}

Enables or disables the sending of authentication failure traps.

on

Enables the sending of authentication failure traps.

off

Disables the sending of authentication failure traps.

The default is off.

coldstarttrap={on|off}

Enables or disables the sending of cold start traps.

set snmp

> **on**
> Enables the sending of cold start traps.
>
> **off**
> Disables the sending of cold start traps.
>
> The default is off.

linkuptrap={on|off}
Enables or disables the sending of link up traps.

> **on**
> Enables the sending of link up traps.
>
> **off**
> Disables the sending of link up traps.
>
> The default is off.

logintrap={on|off}
Enables or disables the sending of login traps.

> **on**
> Enables the sending of login traps.
>
> **off**
> Disables the sending of login traps.
>
> The default is off.

Examples   **Enable authentication failure traps**

```
set snmp trapdestip=10.0.0.1 authfailtrap=on
```

Specify a new private community string

```
set snmp privatecommunity="StLucia72!"
```

See also
- To disable and enable SNMP, use the set service command. See "set service" on page 52.
- To disable and enable SNMP alarm traps, see "set alarm" on page 34.

set system

Purpose   Configures and displays system-identifying information, such as a description of the device, its location, and a contact person.

Syntax   **Change system-identifying information**

```
set system [description=string|location=string|contact=string]
```

Display system identifying information

```
set system
```

Fields   **description=*string***
     A description of this device. The maximum length is 64 characters. The default is "".

location=*string*
     The location of this device. The maximum length is 64 characters. The default is "".

contact=*string*
     The contact for this device. The maximum length is 64 characters. The default is "".

Examples   **Set description, contact, and location**

```
set system description="Engineering printer" location="Room 1347"
  contact="John Doe at x-3749"
```

set tcpserial

Purpose   Used to set behaviors of TCP serial connections, or display current TCP serial settings.

This command affects the following TCP serial connections:

- Connections made using the autoconnect feature.
- Incoming network connections made to the following:
    - The TCP server (raw socket, IP port 2101)
    - The Telnet server (telnet socket, IP port 2001)
    - Secure Sockets Layer (ssl socket, IP port 2601)

Syntax   **Set behaviors of TCP serial connections**

```
set tcpserial port=range [hangupdcd={on|off}]
  [hangupdsr={on|off}] [idletime={0|n}] [sid={on|off}]
  [sidstring=socketID_string] [buffered={on|off}]
  [sendcount=1-65535 bytes [sendtime={0|1-65535ms}]
  [endpattern=string] [strippattern={on|off}
```

Display current TCP serial settings

```
set tcpserial [port=range]
```

Fields   **port=*range***

Used to specify the serial port. This field is optional on a single-port device.

hangupdcd={on|off}

Indicates whether an established network connection should be terminated when the serial port's DCD signal drops. The default is off.

hangupdsr={on|off|}

Indicates whether an established network connection should be terminated when the serial port's DSR signal drops. The default is off.

idletime=idletime={0|*n*}

Indicates that established network connection should be terminated if the serial port is idle for the specified amount of time in seconds. A value of 0 (zero) disables this parameter. The default is 0.

sid={on|off}

Determines how the socket ID (SID) string in the sidstring field is handled.

on

The value for the sidstring field is sent to the network destination right before the first data bytes are sent to the network.

off

The value for the sidstring field is not sent to the network destination.

The default is off.

sidstring=*socketID_string*

When the sid field is set to on, this string is sent to the network destination right before the first data bytes are sent to the network. The maximum length of this string is 256 characters, including escape sequences for special characters. For more details on the escape sequences, see "Entering Special Characters in String Parameter Values" on page 9. The maximum parsed length of this string is 256 characters. That is, this string must reduce down to a 256-character string when the escape sequences are processed.

buffered={on|off}

Turning on this feature on allows controlling how serial data is sent out to the network. The sendcount, sendtime, endpattern, and strippattern parameters are used to control how data is sent out once the buffered parameter is set to on. The default is off.

sendcount=1 - 65535 bytes

Indicates that data from the serial port should be sent out to the network after buffering the given number of bytes. This parameter only is valid when the buffered parameter is on. The default is 1024 bytes.

sendtime={0|1-65535ms}

Indicates that data from the serial port should be sent out to the network after the given amount of time has past where no new data has arrived from the serial port. This parameter only is valid when the buffered parameter is on. A value of 0 (zero) disables this parameter. The default is 0.

endpattern=*string*

Indicates that data from the serial port should be sent out to the network after the given endpattern string has been found in the data from the serial port. This parameter only is valid when the buffered parameter is on. An empty string disables this parameter.

The maximum length of this string is 16 characters, including escape sequences for special characters. For more details on the escape sequences, see "Entering Special Characters in String Parameter Values" on page 9. The maximum parsed length of this string is 4 characters. That is, this string must reduce down to a 4-character string when the escape sequences are processed.

strippattern={on|off}

This parameter corresponds with the endpattern parameter. When a valid endpattern string is found this parameter indicates whether the matching string is stripped or kept in the data stream. The default is off.

Examples

```
set tcpserial hangupdcd=off idletime=20

set tcpserial port=1 sid=on sidstring="abc"

set tcpserial port=1 buffered=on sendtime=50 sendcount=512

set tcpserial
```

set udpserial

Purpose   Use this command to set up the UDP serial feature, or display current UDP serial settings.

The UDP serial feature allows data to be sent between the serial port and one or more remote network destinations using the UDP protocol. When this feature is enabled for a given serial port, data sent to the serial port will be sent out to the configured destinations. Also anytime data is sent to the UDP serial service (IP port 2101) and the serial port is not being used by another service, the data will be sent to the serial port.

Syntax   **Set up general UDP serial forwarding characteristics for a serial port**

```
set udpserial port=range [state={on|off}]
  [sendcount=bytes] [sendtime={0|time}]
  [endpattern=string] [strippattern={on|off}]
  [sid={on|off}] [sidstring=string}
  [closetime=time]
```

Set up UDP destinations for a given serial port

```
set udpserial port=range range=1-64 [description=string]
  [active={on|off} [ipaddress=ip_address}
  [ipport=ip_port]
```

Display current UDP serial settings

```
set udpserial [port=range [range=range]]
```

Fields   **Fields for setting up general UDP serial forwarding characteristics**

port=*range*
Used to specify the serial port. This field is optional on a single-port device.

state={on|off}
Used to enable or disable sending data from the serial port to remote network destinations. The default is off.

sendcount=*bytes*
The number of bytes received from the serial port that will cause the data to be sent on to the network destinations. This trigger cannot be disabled. The default is 1024 bytes.

sendtime={0|*time*}
The amount of idle time, in milliseconds, allowed before sending data to the network. If no data is received on the serial port for the time specified by this option, any buffered data will be sent on to the network destinations. A value of 0 (zero) disables this trigger.

endpattern=*string*

If this string is set, any pattern match of data received from the serial port will cause the data to be sent on to the network destinations. The maximum length of this string is 16 characters, including escape sequences for special characters. For more details on the escape sequences, see "Entering Special Characters in String Parameter Values" on page 9. The maximum parsed length of this string is 4 characters. That is, this string must reduce down to a 4-character string when the escape sequences are processed.

strippattern={on|off}

Determines how the data specified by the endpattern field is handled.

on

The endpattern that is found is stripped from the stream before any data is to be sent on to the network destinations.

off

The endpattern is not stripped from the stream before data is sent on to network destinations.

The default is off.

sid={on|off}

Determines how the socket ID (SID) string in the sidstring field is handled; that is, whether the string specified by the sidstring parameter is sent at the beginning of each UDP packet.

on

The value of sidstring is sent at the beginning of each UDP packet.

off

The value of sidstring is not sent at the beginning of each UDP packet.

The default is off.

sidstring=*string*

The string sent at the beginning of each UDP packet if the sid field is set to on. The maximum length of this string is 256 characters, including escape sequences for special characters. For more details on the escape sequences, see "Entering Special Characters in String Parameter Values" on page 9. The maximum parsed length of this string is 256 characters. That is, this string must reduce down to a 256-character string when the escape sequences are processed.

clostime=*time*

The amount of idle time before closing the serial port. If no data is sent or received on the serial port for the specified amount of time, the serial port is closed. This allows the serial port to be used by other things such as TCP socket or RealPort. If a value of 0 is set, the closetime parameter will internally be recalculated to be 1 second or twice the send time, whichever is greater. The default is 0.

Fields for setting up UDP destinations for a given serial port

The following options require a specific range to be specified by the range field.

port=*range*

Specifies the serial port. This field is optional on a single-port device.

range={1-64}

Specifies the UDP destination to be configured.

description=*string*

A string for descriptive purposes only.

active={on|off}

Specifies whether data from the serial port is sent to this destination.

on

Data from the serial port is sent to this destination.

off

This destination is not sent any data.

The default is off.

ipaddress=*ipaddress*

The IP address of the network destination to which data is sent.

ipport=*ipport*

The UDP port of the destination to which data is sent.

Fields for displaying current UDP serial settings

port=*range*

Used to specify the serial port. This field is optional on a single-port device.

range=range

Identifies the range of UDP destinations to be displayed.

Examples

Set up general UDP serial forwarding based on bytes received

In this example, the amount of bytes received from the serial port will cause the data to be sent on to the network destination.

```
set udpserial port=1 state=on sendcount=2
```

Set up UDP destinations for a given serial port

In this example, data will be sent to the destination identified.

```
set udpserial port=1 range=1 ipaddress=10.0.0.1 ipport=2101
  active=on
```

Display current UDP serial settings

The following are all valid ways of using set udpserial to display current UDP serial settings:

```
set udpserial
set udpserial port=1
set udpserial port=1 range=1-12
```

Chapter 2 Command Descriptions

set user

Purpose   Used to change the user name, or display current user-name settings.

Syntax   **Change the user name**
                     `set user range=range [name=user_name]`

                     Display current user-name settings
                     `set user [range=range]`

Fields   **range**
                       Identifies a range of users in the user table to configure or display.

                     name=*user_name*
                       The new user name.

Examples   **Set the user name to be entered at login**
                     `set user range=1 name=root`

See also   "newpass" on page 28.

set wlan

Purpose   Configures wireless devices, or displays the status of wireless devices.

Device support   This command is supported in Digi Connect Wi-ME and Digi Connect Wi-EM devices only.

Syntax
```
set wlan
    [protmode=(bss_join|ibss_create|ibss_join)]
    [channel={0|1-14}]
    [ssid=string]
    [security={open|wep|wpa_psk|wpa_auth}]
    [username=string]
    [password=string]
    [psk=string]
    [wepmode={64bit|128bit}]
    [wepindex=1-4]
    [wepkeyN=hex_string]]
    [country=string]
    [maxtxrate=(1mb|2mb|5.5mb|11mb)]
```

Fields   **protmode={bss_join|ibss_create|ibss_join}**
Used to change the operation mode in which the device will work.

bss_join
Indicates that the device should join an access point.

ibss_create
Indicates the device will attempt to first join an Independent Basic Service Set (IBSS), and create one if it is unable to find one.

ibss_join
Indicates the device should attempt to join an IBSS or self-contained wireless network.

Typically, the operation mode is bss_join. The default is bss_join.

channel={0|1-14}
Sets the frequency channel that the wireless Ethernet radio will use. A value of 0 indicates that the device will scan all frequencies until it finds one with an available access point or wireless network it can join. The default value is 10.

ssid=*string*
Used to specify the identifier of the wireless network that the device should be joined to. The default is an empty string, which indicates that the first wireless network that the device finds will be joined to.

security={open|wep|wpa_psk|wpa_auth}
The type of security that is allowed for a given access point.

open
No authentication and no encryption is used over the wireless link.

wep
The Wired Equivalent Privacy (WEP) protocol and WEP keys are used to establish and encrypt the wireless link.

wpa_psk
The Wi-Fi Protected Access (WPA) protocol is used with a pre-shared key (PSK) that you specify to establish the wireless link. Depending on what the access point supports, either the TKIP or WEP protocol is used to encrypt the wireless link.

wpa_auth

The WPA protocol and 802.1x authentication are used, together with a specified username and password, to authenticate with the access point and establish the wireless link. Depending on what the access point supports, either the TKIP or WEP encryption protocol is used to encrypt the wireless link. If you use this option, you must also specify the username and password parameters.

The default is open.

username=*string*
Used when the security parameter is set to wpa_auth. This parameter specifies the user name to be used during authentication.

password=*string*
Used when the security parameter is set to wpa_auth. This parameter specifies the password to be used during authentication.

psk=*string*
Used when the security parameter is set to wpa_psk. This parameter specifies a string that is converted into a pre-shared key (PSK) that is used for encryption.

wepmode={64bit|128bit}
Specifies the key size used when WEP encryption is enabled. The default is 64bit.

wepindex=1-4
Specifies which of the 4 possible keys will be used. The default is 1.

wepkeyN=*hex_string*
A hexadecimal that serves as the key if WEP encryption is enabled. The key consists of up to 26 hexadecimal digit characters, except when wepmode=64 bit, in which case only the first 13 hex digit characters are used.

country=*string*
The country in which the device will be used. By selecting a country, the channel settings will be restricted to the legal set for that country.

maxtxrate={1mb|2mb|5.5mb|11mb}
The maximum transmission rate that the device will use.

---

set wlan

Example   #> set wlan wepkey1=ab12cd34ef567ab12cd34ef567 wepindex=1

                 #> set wlan wepmode=128bit

                 #> set wlan ssid="access point 1"

#> set wlan wepmode=128bit   *Chapter 2* Command Descriptions

                 #> set wlan ssid="access point 1"

show

Purpose   Displays the current settings in a device, including current configuration settings, boot code loaded in the device, and the effects of commands issued to the device.

Syntax   show *option* [port=*range*] [range=*range*]

Fields   *option*
                 Specifies which settings in the device to show. The following options can be specified. The use of the port and range fields on the show command depends on whether the command that was used to configure the settings uses the port and range fields as well..

Option	Displays settings configured by	Works w/ port field	Works w/ range field
alarm	set alarm	N	Y
autoconnect	set autoconnect	Y	N
buffer	set buffer	Y	N
ethernet	set ethernet	N	N
gpio	set gpio	N	Y
network	set network	N	N
pmodem	set pmodem	Y	N
rciserial	set rciserial	N	N
rtstoggle	set rtstoggle	Y	N
serial	set serial	Y	N
service	set service	N	Y
snmp	set snmp	N	N
system	set system	N	N
tcpserial	set tcpserial	Y	N
udpserial	set udpserial	Y	Y (when specifying UDP serial destinations)
user	set user	N	Y
wlan	set wlan	N	N

port=*range*
                 Identifies a particular serial port. The port=*range* field is optional on a single-port device.

show

range=*range*
A configuration table entry or range of entries.

Examples   **Display network configuration settings**
`show network`

Display current alarm settings
`show alarm`

Display settings for a particular user
`show user range=3`

See also   The "set" commands (set user, set network, set serial, etc.). Entering a set command without any options displays the same information as that displayed by the show command.

status

Purpose   Displays the current list of sessions. This includes any session that was created by a connect, rlogin, or telnet command. Typically, the status command is used to determine which sessions to close.

Syntax   status [*range*] [*session_number*]

Fields   *range*
                  The range of sessions to view.

                  session_number
                  An index number identifying the session number to view.

Examples   status

See also   • "connect" on page 15
                  • "close" on page 14, for information on ending a connection.
                  • "rlogin" on page 33
                  • "telnet" on page 68

                  The "status" command displays the status of outgoing connections (connections made by connect, rlogin, or telnet commands). In contrast, the "display" command displays real-time information about a device, while the "info" command displays statistical information about a device over time. For more information, see these commands:

                  • "display" on page 16
                  • "info" on page 20.
                  • "who" on page 69

telnet

Purpose   Used to make an outgoing Telnet connection, also known as a session

Syntax   `telnet ip-addr [tcp-port]`

Field Descriptions

ip-addr
   The IP address of the host to which you want make a Telnet connection.

tcp-port
   The TCP port assigned the Telnet application on the remote system. The default is 23, the port typically used for Telnet.

Examples   **Establish a Telnet session using an IP Address**

In this example, the telnet command establishes a Telnet session using an IP address. The default TCP port (23) is used.

`telnet 192.192.150.28`

Establish a Telnet session to a device server port from the LAN

In this example, a user on the LAN initiates a Telnet connection to port 4 on a device server.

`telnet 192.192.150.28 2004`

See also
- "rlogin" on page 33
- "connect" on page 15
- "close" on page 14
- "status" on page 67

who

Purpose   Displays active connections to and from the device.

Syntax   `who`

Fields   None at this time.

Examples   **Display a list of all current connections**
                   `who`

See also   "kill" on page 27. The "kill" command is used to kill a connection.

who

Chapter 3	**M o d e m E m u l a t i o n C o m m a n d s**

This chapter describes the commands that can be issued when Digi devices are configured in modem emulation mode.

What Is Modem Emulation?

Modem emulation enables a system administrator to configure a networked Digi device to act as a modem. The Digi device emulates modem responses to a serial device and seamlessly sends and receives data over an Ethernet network instead of a PSTN (Public Switched Telephone Network). The advantage for a user is the ability to retain legacy software applications without modification and use a less expensive Ethernet network in place of public telephone lines.

As an aid in configuring modem emulation, the Digi Device Setup Wizard and the default web interface have a serial port profile for modem emulation.

Scenarios for Modem Emulation

Modem emulation can involve the following types of connection scenarios:

Outgoing Modem Emulation Connection

In an outgoing modem emulation connection, a serial device sends an ATD*x.x.x.x:y* command, which triggers the Digi device to establish a telnet connection to destination IP=*x.x.x.x*, port=*y*.

Incoming Modem Emulation Connection

In an incoming modem emulation connection, a device on the network telnets to port 50001 (50000+1 = 1st serial port). This incoming connection triggers the Digi device to generate a RING on the serial port. The device attached to the serial port will answer the RING and the connection is established.

Modem Emulation Pooling

Modem emulation pooling is a combination of Incoming Modem Emulation Connection and a hunt group. A device on the network telnets to port 50000. The Digi device checks if a serial port configured for modem emulation is available. If so, it connects to the port, otherwise returns an error.

Modem Emulation Bridge

A modem emulation bridge is combination of Outgoing and Incoming Modem Emulation Connections, in which both serial devices require to talk to a modem. The first serial device telnets to the second device using ATDx.x.x.x:y, the second device gets a RING and accepts the incoming telnet connection.

About the Commands in this Chapter

This chapter describes the Digi-specific modem emulation commands that have been implemented for Digi Connect devices. It is divided into several sections:

- The AT command set. These are commands to perform actions in a modem-emulation connection.

- Modem S-Register definitions.

- A description of the result codes for the commands.

Accepted But Ignored AT Commands

Any other commands not described in this chapter but in the standard AT command set are accepted but ignored and therefore have no effect. Such commands are pertinent to actual modems, but not to modem emulation.

Modem Emulation AT Command Set

The following commands can be issued to perform actions in a modem-emulation configuration scenario.

AT Command	Function	Result Code
ATA	Answer command: The Digi device will go off-hook and answer a TCP connection request.	
ATC	Custom commands: Change IP Address Change Gateway Change Subnet Mask Change Speed Reboot	
ATD<IP> : <TCP PORT>	This command directs the Digi device to go on-line, dial according to the IP address entered as follow 191.1.2.3:12 and attempt to establish a TCP connection. If no dial string is supplied, the Digi device will respond no dial tone. **Note:** If the ATD command is issued before the S1 register has cleared, the modem will respond with the NO CARRIER result code. Dial Modifiers. The valid dial string parameters are described below. Punctuation characters may be used for clarity with parentheses, hyphen, and spaces being ignored. | 0-9	DTMF digits 0 to 9.
.	Dot notation used for IP addresses. IP addresses are written as four numbers separated by periods, where the first number is between 1 and 255 and the other three numbers are between 0 and 255. Retype the IP address in the format *xxx.xxx.xxx.xxx* .
:	Colon notation used for the TCP port
L	Re-dial last number: the modem will re-dial the last valid telephone number. The L must be immediately after the D with all the following characters ignored.
P	This command is accepted, but not acted on.
T	This command is accepted, but not acted on.
R	This command is accepted, but not acted on.
S=n	Dial the number stored in the directory (n=0 to 3). (See &Z.)
,	Dial pause: the modem will pause for a time specified by S8 before dialing the digits following ",".
-	Ignored: may be used to format the dial string.
<space>	Ignored: may be used to format the dial string.
<I>	Invalid character: will be ignored.		
ATE*n*	Command echo. The Digi device enables or disables the echo of characters to the DTE according to the parameter supplied. The parameter value, if valid, is written to S14 bit 1. E0: Disables command echo. E1: Enables command echo.	OK n=0 or 1 ERROR Otherwise
ATH	Disconnect (Hang up) command. This command initiates a hang-up sequence. H0: Disconnect the TCP session if the modem is currently on line. H1: If on-hook, the Digi device will go off-hook and enter command mode.	OK n=0 or 1 ERROR Otherwise

Modem Emulation AT Command Set

AT Command	Function	Result Code
ATI*n*	Identification command I0: Reports the maximum speed for the modem. I1: Reports the ROM checksum. I4: Reports the OEM Identifier String (DIGI_TS).	OK n=0 or 9 ERROR Otherwise
ATO*n*	Return to On-Line Data Mode. This command determines how the modem will enter the on-line data mode. If the modem is in the on-line command mode, the modem enters the on-line data mode. If the modem is in the off-line command mode (no connection), ERROR is reported. O0: Enters on-line data mode. Handling is determined by the Call Establishment task. Generally, if a connection exists, this command connects the DTE back to the remote modem after an escape (+++). O1: Same as above.	OKn = 0 or 1 and a connection exists. ERROR Otherwise or if not connected.
ATQ*n*	Quiet Results Codes Control command. The command enables or disables the sending of the result codes to the DTE according to the parameter supplied. The parameter value, if valid, is written to S14 bit 2. Q0: Enables result code to the DTE (Default). Q1: Disables result code to the DTE. Q2: Result codes are returned when calls are originated, but not answered. Q3: Custom behavior to emulate a gateway.	OK n=0 or 1 ERROR Otherwise
ATS*n*	Read/Write to the S- Register. *n* Establishes S-register *n* as the last register accessed. *n=v* Sets S-Register *n* to the value *v*. *n*? Reports the value of S-Register *n*. See "S-Register Definitions" on page 76 for definitions of S registers.	OK n=0 or 1 ERROR Otherwise
ATV*n*	The Verbose setting for result codes. This command selects the sending of short-form or long-form codes to the DTE. The parameter, if valid, is written to S14 bit 3. V0: Result codes are issued in numeric or short form. Line feeds are not issued before a short-form result. V1: Result codes are issued in text or long form. This is the default.	OK n=0 or 1 ERROR Otherwise
ATY*n*	Accepted but ignored.	OK n=0 or 1 ERROR Otherwise
ATZ*n*	Reloads the specified S-register from flash memory. See "S-Register Definitions" on page 76 for definitions of S registers.	OK n=0 or 1 ERROR Otherwise
AT&C*n*	DCD Option. The Digi device controls the DCD output in accordance with the parameter supplied. The parameter value, if valid is written to S21 bit 5. &C0: DCD remains ON at all times. &C1: DCD follows the state of the connection.	OK n=0 or 1 ERROR Otherwise

AT Command	Function	Result Code
AT&D*n*	DTR Option. This command interprets the ON to OFF transition of the DTR signal from the DTE in accordance with the parameter supplied. The parameter value, if valid, is written to S21 bits 3 and 4. Also see S25. &D0: DTR is ignored (assumed ON). Allows operation with DTEs which do not provide DSR. &D1: DTR drop is interpreted by the modem as if the asynchronous escape sequence had been entered. The modem returns to asynchronous command state without disconnecting. &D2: DTR drop causes the modem to hang up. Auto-answer is inhibited. (Default.)	OK n=0 to 3 ERROR Otherwise
AT&F*n*	Restore Factory Configuration (Profile). The device loads the factory default configuration (profile). The factory defaults are identified for each command and in the S-Register descriptions. A configuration (profile) consists of a subset of S-Registers. &F0: Restore factory configuration 0. &F1: Restore factory configuration 1.	OK n=0 or 1 ERROR Otherwise
AT&K*n*	Flow control. This command defines the DTE/DCE flow control mechanism. The parameter value, if valid, is written to S39 bits 0, 1, and 2. &K0: Disables flow control. &K3: Enables RTS/CTS flow control (Default). &K4: Enables XON/XOFF flow control. &K5: Enables transparent XON/XOFF flow control. &K6: Enables both RTS/CTS and XON/XOFF flow control.	OK n=0,3,4,5,or 6 ERROR Otherwise
AT&R*n*	RTS/CTS Option This selects how the Digi device controls CTS. CTS is modified if hardware flow control is selected (see &K command). The parameter value, if valid, is written to S21 bit2. &R0: CTS reflects the ability of the modem to transmit data. For example, CTS will drop during retrains. In sync mode, CTS tracks the state of RTS; the RTS-to-CTS delay is defined by S26. In async mode, CTS is normally ON and will turn OFF only if required by flow control. &R1: CTS forced on (default). In sync mode, CTS is always ON (RTS transitions are ignored). tracks the state of RTS. In async mode, CTS is normally ON and will turn OFF only if required by flow control. &R2: CTS follows RTS.	OK n=0 or 1 ERROR Otherwise
AT&V*n*	Displays current values and settings. AT&V0: Displays s-register/command values for the current or stored profile. AT&V6: Displays current network settings.	OK n=0 to 5 ERROR Otherwise
AT&W*n*	Store the specified S-register settings in NVRAM.	OK n=0 or 1 ERROR Otherwise

S-Register Definitions

Following is a description of the S-registers that can be set.

Register	Function	Range	Units	Saved	Default
S0	Rings to Auto-Answer. Sets the number of rings required before the Digi device automatically answers a call. Setting this register to Zero disables auto-answer mode.	0-255	Rings	*	0
S1	Ring Counter. Specifies the current number of rings. S1 is incremented each time the modem detects a ring signal on the telephone line. S1 is cleared when the existing connection is established or dropped.	0-255	Rings		0
S2	Escape Character. S2 holds the decimal value of the ASCII character used as the escape character. The default value corresponds to an ASCII '+'. A value over 127 disables the escape process. That is, no escape character will be recognized.	0-255	ASCII	*	43
S3	Carriage Return Character. Sets the value of the carriage return character used when displaying commands or results. Pertains to asynchronous operation only.	0-127	ASCII		13
S4	Line Feed Character. Sets the character recognized as a line feed when displaying commands or results. Pertains to asynchronous operation only. If verbose result codes are used, the Line Feed control character is output after the Carriage Return control character.	0-127	ASCII		10
S5	Backspace Character. Sets the character recognized as a backspace, used to erase the last character typed on the command line. Pertains to asynchronous operation only. The modem will not recognize the Backspace character if it is set to a value that is greater than 32 ASCII. This character can be used to edit a command line. When the echo command is enabled, the modem echoes back to the local DTE the Backspace character, an ASCII space character and a second Backspace character; this means a total of three characters are transmitted each time the modem processes the Backspace character.	0-32	ASCII		8
S12	Escape Prompt Delay. Defines the maximum period, in fiftieths of a second, allowed between receipt of the last character of the three escape character sequence (+++) from the DTE and sending of the OK result code to the DTE. If any characters are detected during this time, the OK will not be sent. Note that sending of the OK result code does not affect entry into command mode.	0-255	0.02 s	*	50

Register	Function	Range	Units	Saved	Default

S14	General Bit Mapped Options Status. Indicates the status of command options.
	
	Default: 138 (8Ah) (10001010b)
	
	Bit 0: Ignored.
	
	Bit 1: Command echo (&E*n*):
	
	  0 = Disabled (&E0).
	
	  1 = Enabled (&E1). (Default.)
	
	Bits 2 and 4: Quiet mode (&Q*n*):
	
	  0 = Display result codes (&Q0). (Default.)
	
	  1 = Do not display result codes (&Q1).
	
	  2 = Disables "CONNECT" result codes (&Q2).
	
	  3 = Disables "CONNECT" result codes on incoming connections (&Q3).
	
	Bit 3: Result codes (V*n*):
	
	  0 = Display numeric result codes (V0).
	
	  1 = Display verbose result codes (V1). (Default.)
	
	Bits 5-7: Ignored.
				*	138 (8Ah)

S21	General Bit-Mapped Options Status. Indicates the status of command options.
	
	Default: 52 (34h) (00110100b)
	
	Bits 0 - 2: Ignored.
	
	Bits 3-4: DTE's DTR behavior (&D*n*):
	
	  0 = DTR drop is ignored (&D0).
	
	  1 = DTR drop causes a transition from data to command mode without hanging up an existing connection (&D1).
	
	  2 = DTR drop hangs up the existing connection (&D2) (Default.)
	
	  3 = DTR drop causes the modem to do a soft reset if the ATZ command was executed (&D3).
	
	Bit 5: Modem's DTR behavior:
	
	  0 = The modem's DTR remains on at all times (&C0).
	
	  1 = The modem's DTR follows the state of the TCP connection (&C1). (Default.)
	
	Bits 6-7: Ignored.
		-	-	*	52 (34h)

S25	Delay to DTR Off. Sets the length of time that the modem will ignore DTR for taking the action specified by &D*n*. Its units are seconds for synchronous modes and one hundredths of a second for other modes	0-255	s or 0.01 s		5
* Register value may be stored in one of two user profiles with the &W command.					

Result Codes

Following is a description of the return codes returned by modem emulation commands.

Short	Long Form		Short	Long Form		Short	Long Form
0	OK		13	CONNECT 7200		84	CONNECT 33600
1	CONNECT		14	CONNECT 12000		91	CONNECT 31200
2	RING		15	CONNECT 14400		165	CONNECT 32000
3	NO CARRIER		16	CONNECT 19200		166	CONNECT 34000
4	ERROR		17	CONNECT 38400		167	CONNECT 36000
5	CONNECT 1200		18	CONNECT 57600		168	CONNECT 38000
6	NO DIALTONE		19	CONNECT 115200		169	CONNECT 40000
7	BUSY		20	CONNECT 230400		170	CONNECT 42000
8	NO ANSWER		59	CONNECT 16800		171	CONNECT 44000
9	CONNECT 0600		61	CONNECT 21600		172	CONNECT 46000
10	CONNECT 2400		62	CONNECT 24000		173	CONNECT 48000
11	CONNECT 4800		63	CONNECT 26400		174	CONNECT 50000
12	CONNECT 9600		64	CONNECT 28800			

total memory 21
traps
    authentication failure 53
    cold start 53
    destination IP address 53
    link up 54
    login 54

U
UDP
    statistics 20
    table 20
UDP serial feature
    configuring 58
    port number for service 58
    reverting to defaults 31
uptime 16, 21
used memory 21
user configuration
    reverting to defaults 31
    set user command 61
user name 61
users
    configuring 61
    passwords for 28
utilization 16

V
vertical tab character 9

W
WEP
    See Wired Equivalent Privacy (WEP)
who command
    description 69
    relationship to kill command 27
Wi-Fi Protected Access (WPA) 63
wired devices, configuring 43
Wired Equivalent Privacy (WEP) 63
wireless devices
    configuring 62
    set wlan command 62
    statistics for 25
wireless Ethernet (wlan) table 20
WPA
    See Wi-Fi Protected Access (WPA)

X
Xon/Xoff 50