Connectware™

Digi One RealPort/PortServer TS

Command Reference

92000304_B1p

Table of Contents

Introduction to Digi One RealPort/PortServer TS Commands

About the Command Line Interface - - - - - - - - - - - - - 1-2
Manual Organization and Conventions - - - - - - - - - - - 1-3

Commands

admin - 2-2
boot - 2-3
close - 2-5
connect - 2-6
cpconf - 2-7
display - 2-8
display buffers - 2-10
exit - 2-11
help - 2-12
info - 2-13
kill - 2-18
mode - 2-19
newpass - 2-20
ping - 2-21
quit - 2-23
reconnect - 2-24
remove - 2-25
revert - 2-26
rlogin - 2-28
send - 2-29
set altip - 2-30
set arp - 2-31
set auth - 2-32
set buffers - 2-35
set chat - 2-36
set config - 2-38
set device - 2-40
set dhcp - 2-42
set filter - 2-43
set flow - 2-46
set forwarding - 2-49
set host - 2-52
set ippool - 2-54
set keys - 2-55
set line - 2-57
set logins - 2-59
set menu - 2-61
set modbus - 2-63
set modem - 2-67

set ports - 2-69
set radius - 2-73
set route - 2-75
set script - 2-77
set service - 2-82
set snmp - 2-84
set socket-id - 2-86
set tcpip - 2-88
set telnetip - 2-90
set terms - 2-92
set time - 2-94
set trace - 2-95
set user - 2-98
show - 2-105
status -2-107
telnet -2-108
traceroute -2-109
uptime - 2-110
wan -2-111
who -2-113

Index

About This Manual

Purpose

The purpose of this reference manual is to provide descriptions of all Digi One RealPort/PortServer TS commands and command fields, which—along with the rest of the library—should enable those responsible for setting up, maintaining, and using Digi One RealPort/PortServer TS to complete these tasks.

Audience

This manual is intended primarily for those who configure and administrator Digi One RealPort/PortServer TS, though some parts of the manual describe commands that users may execute as well.

Scope

This manual provides reference information on commands and command fields. It does not provide task-oriented information, which can be found in the other manuals in the library.

Products Addressed in This Manual

This manual provides information on the following products:

- Digi One RealPort
- Digi One IA RealPort
- PortServer TS 2
- PortServer TS 4
- PortServer TS 8
- PortServer TS 16

Chapter 1

Introduction to Digi One RealPort/PortServer TS Commands

Introduction

This chapter provides information on using commands. It discusses the following topics:

- About the Command Line Interface 1-2
- Manual Organization and Conventions 1-3

About the Command Line Interface

This section discusses the Digi One RealPort/PortServer TS command line interface. It provides information on the following topics:

- The keys you use to navigate along the command line and edit commands
- Digi One RealPort/PortServer TS on-line help
- Tips on abbreviating Digi One RealPort/PortServer TS commands

Navigation and Editing Keys

Use the following keys to navigate along the command line and edit Digi One RealPort/PortServer TS 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
Scrolls back through commands	Ctrl p
Scrolls forward through commands	Ctrl n
Executes the command typed on the command line	Enter

Online Help

On-line help is available for Digi One RealPort/PortServer TS commands. The following describes how to access help:

For information on...	Type
All Digi One RealPort/PortServer TS commands	? (with no additional parameters)
A specific command	The command and then ? **Example:** info ? **Example:** set user ?

Abbreviating Commands

All Digi One RealPort/PortServer TS commands can be abbreviated. You need only supply a sufficient number of command letters to uniquely identify the command.

Manual Organization and Conventions

Organization of Command Information

Commands are listed in alphabetical order. Each command description contains the following topics:

- Introduction, which describes the
  - — Purpose of the command
  - — Privileges required to execute the command
  - — Related information
- Syntax, which describes how you issue the command. Often Command Syntax is divided into separate discussions on how you use the command to accomplish a specific purpose. For example, the syntax discussion on the set logins command is divided into separate discussion on the following:
  - — Using the command to display the logins table
  - — Using the command to configure login parameters
- Fields, which provides a description of each command field.
- Examples, which are examples of how the command is used.

In addition, when necessary, some command descriptions provide the following:

- Additional information on the purpose of the command or some aspect of the command that cannot adequately be discussed elsewhere. The heading that identifies these discussions starts with the word "About." For example, the discussion on the set route command includes a topic called "About the Route Table."
- A description of the output that results from issuing the command. These descriptions are provided when the description of output fields is not the same as the description of command (input) fields. The info command is a good example.

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 UNIX pipe (|).
- 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.

Chapter 2 Commands

Introduction

This chapter provides a description of each Digi device command.

admin

Use the admin command to temporarily access commands reserved for administrators (root) when logged in as a normal (non-root) user.

About the admin Command

After issuing the admin command, Digi device prompts for the root password.

Here is the sequence of events produced by the admin command:

1. Digi device displays a prompt requesting the root password.
2. The user types in the root password.
3. If the password is
   - Accepted, the Digi device displays the root prompt and the user can issue commands reserved for administrators
   - Not accepted, the Digi device displays the following message: “Incorrect password”

Required Privileges

Only normal users can issue the admin command. Administrators cannot.

Related Information

For information on ending temporary root sessions, see the following commands:

- exit on page 2-11
- quit on page 2-23

Syntax

```
admin
```

Example

```
admin
```

boot

Use the boot command to do the following:

- Reboot Digi device
- Restores the configuration to defaults
- Load a new operating system (firmware) into flash ROM from a TFTP host

Note: This note applies to Digi One RealPort and PortServer TS 2/4 devices: Be very careful with the boot load command and option. If this operation fails and then you reboot the Digi device, the unit may not work. To ensure success, do the following: (1) Attempt to boot from a remote firmware image before issuing the boot load command. See the set config command for more information. (2) After issuing the boot load command, ensure that you receive the message "The image in flash now appears valid." If you do **not** receive this message, do **not** reboot. Call technical support for instructions on what to do next.

Required Privileges

Administrator (root) privileges are required to use the boot command.

Related Information

See the following:

- cpconf on page 2-7 for information on saving the current configuration to a host prior to restoring the configuration to defaults
- revert on page 2-26 for information on restoring configuration defaults to the latest configuration stored in NVRAM.

Syntax

Reboot

Here is the syntax to reboot Digi device:

```
boot action=reset
```

Restore Configuration Defaults

Here is the syntax to restore the configuration to defaults:

```
boot action={reset | factory | eewrite} switch={factory | user}
```

Load New OS (Firmware)

Here is the syntax to load a new operating system (firmware) into flash ROM from a TFTP host:

```
boot load={ip-address | host-name}:[load-file]
```

Fields

`action=eewrite`
resets all but the network-related parts of the configuration to defaults. If you use this option, ports, users, passwords, and most other configurable features are reset. This option does not apply to PortServer TS 8/16 devices.

`action=factory`
resets the entire configuration to factory defaults

`action=reset`
reboots Digi device

`load={`*`host-ip-address | host-name`*`}:[`*`file`*`]`
is an IP address or host name and file name that identifies a source host and file for the new operating system, which is then burned into flash ROM. To use this option, the host specified must be running TFTP.

If no file is specified, the default file name (let.bin) is used.

`switch={factory | user}`
determines which firmware to use on reboot, the firmware that shipped with the Digi device or the most recent upgrade. This option applies to PortServer TS 8/16 devices only.

Examples

Restoring Configuration Defaults

In this example, the boot command reloads the operating system stored in flash ROM and resets the configuration to factory defaults.

```
boot action=factory
```

Resetting All-But the Network-Related Parts of the Configuration

In this example, the boot command resets all but the network-related parts of the configuration to factory defaults. This example does not apply to PortServer TS 8/16 devices.

```
boot action=eewrite
```

Using the Current OS and Configuration

In this example, the boot command reboots the Digi device and uses the current operating system and configuration stored in flash ROM.

```
boot action=reset
```

Using a Boot Host

In this example, the boot command loads the operating system stored on the host into flash ROM. If you want to use this new operating system, you must reboot Digi device.

```
boot load=198.150.150.10:os-1
```

close

Use the close command to close active Telnet, Rlogin, and connect sessions.

About the close Command

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 are the default escape keys:

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

Required Privileges

Normal users and administrators (root) can issue the close command.

Related Information

See the following commands:

- set user on page 2-98 for information on defining escape keys for telnet, rlogin, and connect sessions
- status on page 2-107 for information on displaying status information on active sessions

Syntax

Here is how you issue the close command:

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

Fields

`*`
specifies that all active sessions be closed

`connection-number`
identifies the session to close

Note: When you issue the close command without options, the current connection is closed.

Examples

Closing a Session Identified by Number

In this example, session 1 is closed.

```
close 1
```

Closing the Current Session

In this example, the current session is closed.

```
close
```

connect

Use the connect command to initiate a local connection on a port.

About the connect Command

Here is some information on the connect command:

- Multiple connections can be made by issuing multiple connect commands.
- To temporarily suspend a connection, escape the active session by pressing the escape character defined on the set user command. The default escape character is Ctrl [(Control key and left bracket).
- 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.

Note: Pressing the connect escape character twice causes the next session to appear, enabling you to easily page through sessions.

Required Privileges

Anyone can issue the connect command.

Related Information

See the following related commands:

- close on page 2-5 for information on ending a session
- reconnect on page 2-24 for information on reestablishing a port connection
- set user on page 2-98 for information on defining an escape character

Syntax

Here is how you enter the connect command:

```
connect {serial_port | hunt_group | id-name}
```

Fields

serial_port
specifies the number of the port on which to establish a connection

id-name
specifies the name (defined on the set ports command) of the port on which to establish a connection

hunt_group
specifies a hunt group, defined with the set ports group command

Example

In this example, the connect command opens a local connection on port 1.

```
connect 1
```

cpconf

Use the cpconf command to do the following:

- Restore the configuration from a remote host
- Copy the configuration to a remote host
- Display the configuration on the terminal that issues the command

Required Privileges

The cpconf command requires root privileges.

Related Information

None

Syntax

Here is how you issue the cpconf command:

```
cpconf {fromhost=host[:file]| tohost=host[:file] |term}
```

Fields

`fromhost=`*`host`*`[:`*`file`*`]`
copies the configuration to Digi device from the host and file specified. When you use this field, remember to do the following:

- Identify the host by either its IP address or DNS name.
- Separate host and file fields by colons.
- If you do not specify a file, the default, config.ps3, is used.

`tohost=`*`host`*`[:`*`file`*`]`
copies the configuration to the host and file specified. When you use this field, remember to do the following:

- Identify the host by either its IP address or DNS name.
- Separate the host and file information by a colon.
- If the filename is not specified, config.ps3 is used.

Note: TFTP must be running on the host specified on the fromhost and tohost fields. For TFTP transfers to the Digi device, the file must be in the TFTP directory and assigned read-write permissions for all users.

`term`
displays the configuration file on the terminal that issued the command

Examples

Copying the Configuration From a Host

In this example, the cpconf command copies the configuration from the host and file specified.

```
cpconf fromhost=190.150.150.10:ps-cnfg1
```

Copying the Configuration To a Host

In this example, the cpconf command copies the configuration to the host and file specified.

```
cpconf tohost=190.150.150.10:ps-cnfg1
```

Copying To the Administrative Terminal

In this example, the cpconf command, displays the configuration on the terminal that issued the command.

```
cpconf term
```

display

Use the display command to:

- Determine the status of the EIA-232 signals on serial ports
- Display a list of Digi device errors
- Clear the errors list
- Display information on Digi One IA RealPort and PortServer TS 2/4 dip switch settings
- Display power information for Digi One IA RealPort and PortServer TS 2/4 devices

Required Privileges

Anyone can display information. Root privileges are required to clear the errors list.

Related Information

None

Syntax

Display

Here is the syntax to display configuration settings, error, dip switch or power information.

```
display {port range=port-port | error | power | switches}
```

Clear

Here is how to issue the display command to clear errors from the errors list:

```
display error clear
```

Fields

`clear`
clears the errors list

`error`
does one of the following:

- clears all errors from the errors list when the clear option is specified
- displays a list of Digi device errors when the clear option is not specified

`port`
displays configuration information for the ports specified on the range option

`power`
displays status of power sources for Digi One IA RealPort and PortServer TS 2/4 devices. This option does not apply to PortServer TS 8/16 devices.

`range`
is a range of ports

`switches`
displays Digi One IA RealPort and PortServer TS 2/4 dip switch settings

Examples

Displaying Configuration Information on a Port

```
display port range=2
```

Displaying Configuration Information on a Range of Ports

```
display port range=1-2
```

Displaying a List of Errors

```
display error
```

Displaying Information on Digi One IA RealPort and PortServer TS 2/4 Dip Switch Settings

```
display switches
```

Displaying Digi One IA RealPort and PortServer TS 2/4 Power Information

```
display power
```

Clear Errors

```
display error clear
```

display buffers

Use the display buffers command to

- Display the contents of a port buffer on screen or outputted to a tftp file
- Configure the screen parameters

This command does not apply to PortServer TS 8/16 devices.

Required Parameters

Normal users can use this command.

Related Information

See the following commands:

- set buffers on page 2-35
- show on page 2-105

Syntax

Configuration of Display Buffers Parameters

Here is the form of the display buffers command for configuring the parameters:

```
display buffers [range=number] [screen] [lines=number] [tail=number]
[tftp=server:filename]
```

Fields

`lines=`*`number`*
if the screen option is specified, *number* will define the number of lines of data to display at a time. number=0 is the parameter for continuous flow.

`range=`*`number`*
is the port or ports to which the command is applied

`screen`
parameter to display the port buffer contents on the screen. The screen option is the default if the tftp option is not specified.

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

`tftp=`*`server:filename`*
when this option is specified, the port buffer information is transferred to the specified server and file using the TFTP file transfer.

Examples

Displaying Buffers Screen

In this example, the port buffering information is displayed on screen:

```
display buffers range=2 screen lines=32 tail=30
```

Outputting Buffering Information to TFTP Server

In this example, the port buffering information is transferred to a TFTP server:

```
display buffers range=2 tftp=stambrose:port_ouput
```

exit

Use the exit command to terminate the following:

- Your current session
- A temporary root session. If you are in a root session, the exit command returns you to a regular session.

Required Privileges

Anyone can execute the exit command.

Related Information

See the following commands:

- admin on page 2-2 for information on starting a temporary root session
- quit on page 2-23 for an alternate method of ending a root session

Syntax

Here is how you issue the exit command:

```
exit
```

Example

In this example, the exit command ends the current session.

```
exit
```

help

Use this command for information on Digi device commands.

Required Privileges

Anyone can execute the help command.

Related Information

None

Syntax

Here is how you issue the help command:

```
help
```

Example

In this example, the help command displays command information.

```
help
```

info

Use the info command to

- Display Digi device network statistics tables
- Clear network statistics tables

About Network Statistics Tables

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

Required Privileges

Normal users can view statistics tables. Administrator (root) privileges are required to clear them.

Related Information

None

Syntax

Clear the Network Statistics Table

Here is how you use the info command to clear network statistics tables:

```
info clear [table_name]
```

Display Network Statistics

Here is how you use the info command to display statistics for IP, ICMP, Ethernet, TCP, and UDP.

```
info table_name
```

Fields

`clear | clear table_name`
clears either (1) all network statistics tables (when no particular table is specified) (2) the specified table, which can be the IP, ICMP, Ethernet, TCP, or UDP

`table_name`
is one of the following tables:

table_name	Contents
ip	IP statistics
icmp	ICMP statistics
network	Statistics collected on the Ethernet interface
modbus	Modbus statistics. This option does not apply to PortServer TS 8/16 devices.
serial	Statistics on serial port activity
tcp	TCP statistics
udp	UDP statistics

Examples

Displaying the IP Table

In this example, the info command displays the IP table.

```
info ip
```

Clear All Network Statistics Tables

In this example, the info command clears all network statistics tables.

```
info clear
```

Command Output: ICMP Fields

This section describes the fields displayed when you issue the info icmp command.

`icmpInMsgs`
ICMP messages received, including those counted by icmpInErrors

`icmpInEchos`
ICMP Echo Request messages received

`icmpInEchoRp`
ICMP Echo Reply messages received

`icmpInDstUnrec`
ICMP Destination Unreachable messages received

`icmpInRedirect`
ICMP Redirect messages received

`icmpInParmProb`
ICMP Parameter Problem messages received

`icmpInTimeExcd`
ICMP Time Exceeded messages received

`icmpInSrcQuenc`
ICMP Source Quench messages received

`icmpInTimest`
ICMP Timestamp Request messages received

`icmpInTimestRp`
ICMP Timestamp Reply messages received

`icmpInAdrMsk`
ICMP Address Mask Request messages received

`icmpInAdrMskRp`
ICMP Address Mask Reply messages received

`icmpInErrors`
ICMP messages received with ICMP-specific errors (for example, bad ICMP checksums or length)

`icmpOutMsgs`
ICMP messages that Digi device attempted to send, including those counted by icmpOutErrors

`icmpOutEchoRp`
ICMP Echo Reply messages sent

`icmpOutEchos`
ICMP Echo Request messages sent

`icmpOutDstUnre`
ICMP Destination Unreachable messages sent

`icmpOutRedirec`
ICMP Redirect messages sent

`icmpOutParmPro`
ICMP Parameter Problem messages sent

`icmpOutTimeExc`
ICMP Time Exceeded messages sent

`icmpOutSrcQuen`
ICMP Source Quench messages sent

`icmpOutTimestR`
ICMP Timestamp Reply messages sent

`icmpOutTimest`
ICMP Timestamp (request) messages sent

`icmpOutAdrMskR`
TICMP Address Mask Reply messages sent

`icmpOutAdrMsk`
ICMP Address Mask Request messages sent

Command Output: IP Statistics

This section describes the fields displayed when you issue the info ip command.

`ipInReceives`
incoming datagrams, including any received in error

`ipInHdrErrors`
incoming datagrams discarded due to IP header errors. Causes include bad checksums, version number mismatches, other format errors, time-to-live values exceeded, and errors discovered in processing IP options. Correctly configured networks produce few such errors.

`ipInAddrErrors`
incoming datagrams discarded because the address in the IP header destination field was not valid for Digi device's network. This includes addresses of unsupported classes (Class E, for example). Correctly configured networks produce few such errors.

`ipInUnknownProtos`
datagrams received successfully but discarded because of an unknown or unsupported protocol

`ipInDiscards`
good incoming datagrams discarded for lack of resources, such as buffer space, including those discarded while awaiting re-assembly

`ipReasmOKs`
IP datagrams successfully re-assembled

`ipReasmFails`
failures detected by the IP re-assembly algorithm. This is may not be a count of all discarded IP fragments because some algorithms (notably the algorithm in RFC 815) lose count by combining fragments as they are received.

`ipForwDatagram`
incoming datagrams destined for another subnetwork to which Digi device's could not find a route

`ipOutNoRoutes`
outgoing datagrams discarded because no route could be found to their destination. This includes datagrams:

- Counted in ipForwDatagrams
- That a host could not route because default gateways are down

Correctly configured networks produce few such errors.

`ipOutRequests`
datagrams that local IP user protocols (including ICMP) supplied to IP for transmission, not including those counted in ipForwDatagrams

`ipOutDiscards`
good outgoing datagrams discarded for lack of resources, including those counted in ipForwDatagrams

`ipFragCreates`
datagram fragments Digi device generated

`ipFragOKs`
datagrams successfully fragmented

Command Output: Network Statistics

This section describes the fields displayed when you issue the info network command. This command reports activity on the Ethernet interface.

`ifInOctets`
octets received, including framing characters

`ifInUcastPkts`
subnetwork unicast packets delivered to higher-layer protocols

`ifInNUcastPkts`
non-unicast (for example, subnetwork-broadcast or subnetwork multicast) packets delivered to a higher-layer

`ifInDiscards`
inbound packets discarded, even though no error was detected that would prevent delivery to a higher-layer

`ifInErrors`
inbound packets with errors that prevent delivery to a higher-layer

`ifUnknownProtos`
inbound packets discarded because of unknown or unsupported protocols

`ifOutOctets`
Octets transmitted, including framing characters

`ifOutUcastPkts`
outbound packets using the subnetwork unicast address, including discards

`ifOutNUcastPkts`
outbound packets using a non-unicast (that is, a subnetwork broadcast or subnetwork multicast) address, including discards

`ifOutDiscards`
error-free outbound packets discarded, possibly to free buffer space

`ifOutErrors`
outbound packets not transmitted because of errors

`In Total`
frames received

`In IP`
IP protocol frames received

`In ARP`
ARP frames received

`Out Total`
frames sent by Digi device

`Out IP`
IP frames sent

`Out ARP`
ARP frames sent

`In Overruns`
times the Ethernet controller was unable to place a received frame in memory

`In Unaligned`
misaligned frames received

`In No Resource`
incoming frames not processed due to lack of available buffers

`In Collision`
Ethernet collisions detected after a destination address was received

`In Short Frame`
short frames received

`In Bad CRC`
frames received with bad CRC

`Out No Carrier`
frames lost when lack of carrier was detected

`Out Lost CTS`
frames lost when ClearToSend was reset

`Out DMA Underrun`
frames lost because transmit buffers were not available

`Out Deferred`
transmissions deferred

`Out Collisions`
Ethernet collisions detected after starting a transmission

Command Output: Serial Statistics

`rbytes`
number of bytes received on a serial port

`tbytes`
number of bytes transmitted on a serial port

Command Output: TCP Statistics

This section describes the fields displayed when you issue the info TCP command.

`tcpInSegs`
segments received, including those received in error. This includes only segments received on currently established connections.

`tcpInErrs`
segments received in error (for example, bad TCP checksums)

`tcpEstabResets`
times that TCP connections made a direct transition to the CLOSED state from either the ESTABLISHED or CLOSE-WAIT states

`tcpPassiveOpen`
times that TCP connections made a direct transition to the SYN-RCVD state from the LISTEN state

`tcpAttemptFail`
times that TCP connections made a direct transition to the CLOSED state from either the SYN-SENT state or the SYN-RCVD state, plus the times TCP connections made a direct transition to the LISTEN state from the SYN-RCVD state

`tcpOutSegs`
segments sent, including those on current connections. This excludes those containing only retransmitted octets.

`tcpRetransSegs`
segments retransmitted, that is, the number of TCP segments transmitted containing one or more previously transmitted octets

`tcpOutRsts`
TCP segments sent containing the RST flag

`tcpActiveOpens`
times TCP connections made a direct transition to the SYN-SENT state from the CLOSED state

Command Output: UDP Statistics

This section describes the fields displayed when you issue the info UDP command.

`udpInDatagrams`
datagrams delivered to UDP users

`udpInErrors`
received UDP datagrams that could not be delivered for any reason other than the lack of an application at the destination port

`udpNoPorts`
received UDP datagrams for which there was no application at the destination port

`udpOutDatagrams`
UDP datagrams sent

kill

Use the kill command to clear or reset sessions on ports.

Required Privileges

The kill command requires root privileges.

Related Information

See who on page 2-113 for information on determining current users.

Syntax

Here is how you issue the kill command:

```
kill {tty=tty-number | tty=tty-range} | tty-number | tty-range}
```

Fields

`tty=`*`tty-number`*
specifies a port on which to clear a session

`tty=`*`tty-range`*
specifies a range of ports on which to clear sessions

`tty-number`
is an alternate method of specifying the number of the port on which to clear a session

`tty-range`
is an alternate method of specifying a range of ports on which to clear sessions

Examples

Killing a Session on a Particular Port

In this example, the kill command clears TTY session 1:

```
kill tty=1
```

Killing a Session on a Range of Ports

In this example, the kill command clears sessions on a range of ports:

```
kill tty=1-2
```

mode

Use the mode command to change or display the operating options for a current Telnet session.

Required Privileges

Anyone can issue the mode command.

Related Information

None

Syntax

Change

Here is the syntax used for changing Telnet operating options:

```
mode [bin={on|off}][crmod={on|off}][crlf={on|off}]
```

Display

Here is the syntax used for displaying the operating options of the current Telnet session.

```
mode
```

Fields

`bin`
- `on`
  means that binary mode is on, that is, all transmitted and received characters are converted to binary during this Telnet session
- `off`
  means that binary mode is off for this Telnet session

The default is off.

`crmod`
- `on`
  means that line feed characters are added to received carriage return characters
- `off`
  means that line feed characters are **not** added to received carriage return characters

The default is off.

`crlf`
- `on`
  means that line feed characters are added to transmitted carriage return characters
- `off`
  means that line feed characters are **not** added to transmitted carriage return characters

The default is off.

Examples

Turning Binary Mode On

```
mode binary=on
```

Adding Line Feed Characters

```
mode crmod=on crlf=on
```

Displaying Operating Options

In this example, information on each Telnet session is displayed. This information includes

- The identity of the originating terminal
- The identity of the host on which the Telnet session is running
- The state (on or off) of mode command options for the Telnet session

```
mode
```

newpass

Use the newpass command to create or change:

- Your own password (if you are logged in under your own name)
- The root password or another user's password (if you are logged in as root)

Required Privileges

Anyone can change his or her own password. Root privileges are required to change someone else's password or the root password.

About the newpass Command

When you enter the newpass command, Digi device provides a series of prompts to guide you through the process of changing a password.

Related Information

See set user on page 2-98 for information on configuring users.

Syntax

Here is the syntax for the newpass command:

```
newpass [name=username]
```

Field

`name=`*`username`*
: is the name of the user (configured with the set user command) whose password will be created or changed. This option is available only if you have root privileges.

Example

In this example, the newpass command initiates a dialog that will enable the user to change his/her password.

```
newpass
```

ping

Use the ping command—which requests ICMP echo replies from a specified host or network device—to test if a host or other device is active and reachable.

Required Privileges

Anyone can issue the ping command.

Related Information

None

Syntax

```
ping [continuous][fill=char] {hostname | ip-addr} [intv=msec]
[loose_sroute=ip-addr,ip-addr...] [npkts=num] [pksiz=bytes] [record_route]
[strict_sroute=ip-addr,ip-addr...] [verbose]
```

Fields

`continuous`
specifies that pings be sent continuously until stopped. (Press the interrupt keys to stop continuous pings. The default interrupt keys are <Ctrl-C>.)

`fill`
specifies characters to include in the data portion of the echo reply

`intv`
is the interval in milliseconds between pings

The range is -1 to 60,000, and the default is 1000 milliseconds (one second). -1 means that echoes will be continuously sent until the value in the npkts field is reached.

`ip-addr | hostname`
identifies the target of the ping, which is identified by either an IP address or domain name

`loose_sroute`
specifies that the ping must pass through the routers indicated on its way to the target host. These routers are identified by their IP addresses.

`npkts`
is the number of packets to include with each ping

The range is 1 to 30,000, and the default is 1.

`pksiz`
specifies the size of the ping packet in bytes. The range is 0 to 20000, and the default is 56.

`record_route`
specifies that each router handling the ping record its IP addresses for inclusion in the echo reply

`strict_sroute`
specifies that the ping must pass through the routers indicated—and only those indicated—on its way to the target host. These routers are identified by their IP addresses.

`verbose`
specifies that returned echo replies include statistics associated with the ping, such as the roundtrip time and the number of packets transmitted and received

Examples

Ping with No fields

In this example, the ping command simply determines whether the specified host can be reached.

```
ping 199.150.150.10
```

Loose Source Routing

In this example, the ping command specifies loose source routing, which means that the ping must

pass through the routers identified on the loose_sroute option. The ping may, however, pass through additional routers as well.

```
ping 199.150.150.10 loose_sroute=199.150.160.10,190.150.161.10
```

Strict Source Routing

In this example, the ping command specifies strict source routing, which means that the ping must pass through the routers identified on the strict_sroute field, and only those routers. If it cannot reach the destination along this path, the destination is regarded as unreachable.

```
ping 199.150.150.10 strict_sroute=199.150.160.10,190.150.161.10
```

quit

Use the quit command to end

- Your current Digi device session. If you are in a regular or root session, quit closes the session.
- A temporary root session. If you are in a root session started with the admin command, quit returns you to a regular session.

Required Privileges

Anyone can issue the quit command.

Related Information

See admin on page 2-2 for information on temporarily accessing commands reserved for the administrator.

Syntax

Here is the syntax for the quit command:

```
quit
```

Example

In this example, the quit command ends either a regular session or a temporary root session.

```
quit
```

reconnect

Use the reconnect command to reestablish a connection previously established.

Required Privileges

Anyone can issue the reconnect command.

Related Information

See the following related commands:

- connect on page 2-6 for information on establishing a connection on a selected port
- close on page 2-5 for information on ending a connection
- status on page 2-107 for information on gathering status on current connections

Syntax

Enter the reconnect command as shown below:

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

Fields

serial-port
specifies a serial port to reconnect to

p=*serial-port* | s=*session*
specifies a serial port or session to reconnect to

Example

Reconnecting to the Last Port Used

In this example, the reconnect command reopens a local connection on the last port to which a connection has been established.

```
reconnect
```

remove

Use this command to remove entries from Digi device configuration tables.

Required Privileges

Root privileges are required to issue this command.

Related Information

None

Syntax

Enter the remove command as shown below:

```
remove table-name {range=range | name=name | ip=ip-address}
```

Fields

`ip=ip-address`
removes an entry from one of the Digi device configuration tables based on the IP address specified. This form of the command works only on table entries that can be identified by an IP address, such as entries in the auth or altip tables.

`name=name`
removes an entry from one of the Digi device configuration tables based on the name specified. This form of the command works only on table entries that can be identified by name, such as entries in the user table.

`range=range`
removes entries from one of the Digi device configuration tables based on the range of table index entries.

`table-name`
is one of the following Digi device configuration tables:

- altip
- arp
- auth
- filters
- host
- menu
- modbus
- route
- script
- service
- telnetip
- term
- user

Examples

Removing an Entry By Name

In this example, a user, identified by name, is removed from the user table.

```
remove user name=martymertz
```

Removing an Entry By IP Address

In this example, an altip entry, identified by IP address, is removed from the altip table.

```
remove altip ip=143.191.2.120
```

Removing an Entry By Index Number

In this example, an altip entry, identified by index number, is removed from the altip table.

```
remove altip range=3
```

revert

Use this command to restore the configuration to defaults or to the latest configuration stored in NVRAM.

Required Privileges

Root privileges are required to issue this command.

Related Information

None

Syntax

Enter the revert command as shown below:

```
revert option={factory | nvram} [range]
```

Fields

option={factory | nvram}

sets one of the following configuration options to either the factory defaults or to the latest version of the configuration stored in NVRAM. Here are the options you can specify:

If you specify ...	Then this part of the configuration reverts ...
all	Entire configuration
altip	altip configuration
arp	arp configuration
auth	auth configuration
config	set config configuration
filters	set filter configuration
flow	set flow configuration
host	set host configuration
keys	set keys configuration
line	set line configuration
login	set logins configuration
menu	menu configuration
modbus	Modbus configuration. This option does not apply to PortServer TS 8/16 devices.
network	altip, arp, host, route, snmp, tcpip, and telnetip configuration
port	set ports configuration
radius	RADIUS configuration. This option applies to PortServer TS8/16 devices only.
routed	Routing configuration
script	set script configuration
security	set auth, set logins, and set radius configuration
serial	set flow, set line, set ports configuration
service	set service configuration
snmp	SNMP configuration
system	set config, set keys, set menu, set service, set terms, set trace, and set user configuration
tcpip	set tcpip configuration
telnetip	set telnetip configuration
terms	set terms configuration
trace	Trace settings
users	set user configuration

`range`
defines a range of ports to which the command will apply. This option is valid when used with serial, port, line, flow, keys and login.

Examples

Resetting the Port Configuration

In this example, the configuration for port 2 is reset to factory defaults.

```
revert port=factory range=2
```

Resetting Network-Related Settings

In this example, the configuration is reset to the latest user configuration saved in NVRAM.

```
revert config=nvram
```

rlogin

Use the rlogin command to log into a remote system from the Digi device command line.

Required Privileges

Anyone can issue the rlogin command.

Related Information

None

Syntax

Here is the form of the rlogin command used to log into a remote host:

```
rlogin [esc=(char)] {hostname|host-ip-addr}
[user=user-name | -1 user-name}]
```

Fields

`esc`
is a different escape character than the ~ (tilde) character. This character is used for suspending a session from the remote host to return to the Digi device command line.

`hostname`
is the name of the host on which you want to log in

`host-ip-addr`
is the IP address of the host on which you want to log in

`user=user-name | -1 user-name`
is the user name to use on the remote system. If you do not specify a name, your Digi device user name will be used. The -1 user-name option is for compatibility with the UNIX rlogin command.

Examples

Using a Host Name

In this example, the rlogin command establishes an Rlogin session using a host name.

```
rlogin host1
```

Using an IP Address

In this example, the rlogin command establishes an Rlogin session using an IP address.

```
rlogin 192.192.150.28
```

Using a Host Name and User Name

In this example, the rlogin command establishes an Rlogin session using a host name. The name that identifies the user on the host system is also supplied in the command.

```
rlogin host1 user=fred
```

send

Use the send command to send a control command to a Telnet peer.

Required Privileges

Anyone can issue the send command.

Related Information

See telnet on page 2-108 for information on establishing Telnet sessions.

Syntax

Here is the syntax of the send command:

```
send {ao|ayt|brk|ec|el|escape|ga|ip|nop|synch}
```

Fields

`ao`
sends the “abort output” signal, which discards output buffered on the peer

`ayt`
sends the “are you there” signal to test whether a host is still active

`brk`
sends the break signal to interrupt the executing application

`ec`
sends the “erase character” to delete the previous character

`el`
sends the “erase line” signal to delete the entire current line

`escape`
sends the “escape character”

`ga`
sends the “go ahead” signal

`ip`
sends the “interrupt process” signal to terminate the program running on the peer

`nop`
sends the “no option” signal to the peer

`synch`
sends the “synchronize process” signal to the peer

Examples

Send IP

In this example, the send command transmits an interrupt process signal.

```
send ip
```

Send AYT

In this example, the send command transmits an “are you there” signal.

```
send ayt
```

set altip

Use the set altip command to

- Configure a serial port or group of serial ports with an IP address
- Display current entries in the altip table

About the set altip Command

Digi device uses alternate IP addresses to route outbound calls to the correct serial port or group of ports. By associating ports with IP addresses, Telnet users on the LAN can use IP addresses, rather than port numbers, to specify a port or range of ports in their Telnet calls.

Up to 64 alternate IP address entries are permitted.

Required Privileges

Normal users can display altip information. Root privileges are required to change altip settings.

Related Information

See the sockets option on set tcpip on page 2-88 for information on configuring the base option.

Syntax

Configuration

Here is the syntax used to configure altip entries:

```
set altip group={port# | group#} ip=ip-addr mode={raw | telnet}
```

Display

Here is the syntax used to display entries in the altip table:

```
set altip [range=range]
```

Fields

`group`
is a port or group of ports

`ip`
assigns an IP address to the ports or group of ports (hunt group) specified on the group field or identifies an entry in the altip table for removal (when the rm option is specified)

`range`
specifies a range of index entries in the altip table

`mode`
is either raw or Telnet, which is used to determine a connection type for reverse Telnet connections, that is, direct connections to Digi device ports

Examples

Displaying the Entire Altip Table.

```
set altip
```

Displaying Several Entries

```
set altip range=1-4
```

Configuring an Entry

```
set altip ip=198.150.150.10 group=65
```

set arp

Use the set arp command to

- Manually configure an entry in the Address Resolution Protocol (ARP) Table
- Display the contents of the ARP table

About the ARP Table

The ARP table contains the Ethernet-to-IP address mappings of other devices on the local subnetwork. Digi device requires these mappings to communicate with these devices. The ARP protocol updates this table automatically, so manual modification is usually not required.

Required Privileges

Normal users can display information. Root privileges are required to change ARP table entries.

Related Information

None

Syntax

Configuration

Here is the form of the set arp command used to configure entries in the arp table.

`set arp ether=`*`etaddr`* `ip=`*`ipaddr`* `[tim2liv=`*`time`*`]`

Display

Here is the form of the set arp command used to display the contents of the arp table.

`set arp [range=`*`range`*`]`

Fields

`ether`
specifies the Ethernet address of a device

`ip`
specifies the IP address of a host or device

`range`
specifies a range of table entries, which are identified by the index field in the ARP table

`tim2liv`
specifies the time, in seconds, to keep an entry in the ARP table

The range is 0 to 1200 seconds. The default is 0, which means the entry will never time out.

Examples

Displaying a Range of Entries

In this example, the set arp command displays a range of ARP table entries.

```
set arp range=1-4
```

Displaying All Entries

In this example, the set arp command displays the entire ARP table.

```
set arp
```

Configuring an Entry

In this example, the set arp command configures an ARP entry.

```
set arp ip=198.150.150.10 ether=08:00:20:05:0b:da tim2liv=900
```

set auth

Use the set auth command to

- Configure access permissions to Digi device serial ports for users making outbound calls
- Display outbound call permission levels to Digi device serial ports

About set auth

The set auth command is a very powerful tool for limiting outbound call access to Digi device ports. There are, however, a few principles to understand in order to use this command to produce the configuration results you intend. Here are the principles:

- The default for a port is unrestricted access. This means that all IP addresses have unrestricted access to a port to make outbound calls unless you use the set auth command to place restrictions on port use.
- You can configure a new default by removing the default entry in the auth table (the entry that specifies an IP address of 0.0.0.0 and mask of 0.0.0.0). Then, the default becomes no access for any IP address. You can then use the command to permit access for particular IP addresses.
- In addition to unrestricted access, there are three types of restricted access:
  - — Login access. The user of an IP address must use his/her Digi device login name and password before access to the port is granted.
  - — RealPort access. Only the RealPort application can use the port.
  - — No access. The user of the IP address cannot access the port.
- The most reliable way to use the command for configuration is to explicitly specify the type of access for each port on each command.

  In the examples that follow, the “right” command accounts for all ports, and the “wrong” one does not.:

Right	set auth ip=192.10.10.10 realport=1-3 login=4-5 unrestricted=6-8
Wrong	set auth ip=192.10.10.10 realport=1-3 login=4-5

- When the only option specified on the set auth command is an IP address, that IP address loses all access rights to all outbound ports.
- When you use the set auth command to change access permissions for a particular IP address (or range of addresses), all other IP addresses are unaffected by the command.
- The mask field extends the scope of the set auth command to a range of IP addresses. In each mask position that a binary 1 appears, the incoming address must match perfectly with the address specified on the ip field.

The auth table is limited to 20 entries.

Required Privileges

Normal users can display information. Root privileges are required to change auth table entries.

Related Information

See the following commands:

- set ports on page 2-69 for information on defining outbound port device types
- set user on page 2-98 for information on configuring a user for outbound port access

Syntax

Configuration

Here is the syntax of the set auth command used to configure auth table entries:

```
set auth ip=ipaddress [login={range | none}] [mask=mask]
[realport={range | none}] [unrestricted={ range | none]
```

Display

Here is the syntax of the set auth command used to display auth table entries.

```
set auth [range=range]
```

Fields

`ip`
is the IP address of the device to which this set auth command applies

`login={range | none}`
requires that users of the IP address specified log in using their Digi device names. None indicates that users of the IP address specified have login access to none of the ports.

`mask`
specifies an IP mask used to extend the scope of this set auth command to a range of IP addresses. Here are some examples of how the mask field works:

IP Address	Subnet Mask	set auth mask	Result
143.191.0.0	255.255.0.0	255.255.0.0.	All users on this class B network are included in the restrictions applied to the outbound ports.
192.10.10.0	255.255.255.0	255.255.255.0	All users on this class C network are included in the restrictions applied to the outbound ports.
192.10.10.0	255.255.255.240	255.255.255.240	All users on this subnetted class C network are included in the restrictions applied to the outbound ports.

`range`
specifies a range of auth table entries (identified by an index number) to which this set auth command applies

`realport={range | none}`
configures port access for the RealPort application running on the devices identified by the ip and mask fields. Use this option when you want to grant access to the RealPort application but restrict access to other users of the IP address.

`unrestricted={range | none}`
configures unrestricted access for the IP address specified to the range of ports specified

Examples

Display the Entire Auth Table

In this example, the set auth command displays the entire auth table.

```
set auth
```

Display Setting for a Range of Entries

In this example, the set auth command displays a range of auth table entries.

```
set auth range=1-2
```

Configuring No Access for an IP Address

In this example, users of the IP address specified will not be able to use outbound ports.

```
set auth ip=199.150.10.12 mask=255.255.255.25
```

Configuring Mixed Access

In this example, an 8-port Digi device is configured for mixed access.

```
set auth ip=199.150.10.12 mask=255.255.255.255 realport=1-4 login=5-6
unrestricted=7-8
```

Configuring Access for Two IP Addresses

This example requires three set auth commands.

- The first removes the default entry from the auth table, which changes the default setting from unrestricted access to all 8 ports for all IP addresses to no access to any ports for any IP addresses.
- The second and third commands restore unrestricted access to all ports for the IP addresses specified.

```
set auth ip=0.0.0.0 rmauth=on

set auth ip=199.22.33.4 realport=none login=none unrestricted=1-8

set auth ip=199.22.33.8 realport=none login=none unrestricted=1-8
```

Using the Mask to Extend the Command

In this example of a TCP/IP Class C network, the set auth commands configure RealPort running on any host on network 199.150.150.0 with access to ports 1 and 2. The other ports are not available to users of the IP address specified.

```
set auth ip=199.150.150.10 mask=255.255.255.0  realport=1-2 logon=none

set auth ip=199.150.150.10 unrestricted=none
```

set buffers

Use the set buffers command on PortServer 8/16 devices to:

- Configure buffering parameters on a port
- Display the port buffer configuration on all ports

Required Privileges

Root privileges required.

Related Information

See the following commands:

- "display buffers" on page 2-10.
- "show" on page 2-105

Syntax

Configuration

Here is the form of the set buffers command to configure the parameters of the port buffers:

```
set buffer [range={number}] [state={on | off | pause}] [size={number}]
[clear]
```

Display

Here is the form of the set buffers command to display the parameters of the port buffers:

```
set buffer [range=range]
```

Fields

`clear`
means the contents of a specified buffer (specified by the range parameter) will have its contents cleared.

`range=`*`number`*
is the port or ports to which the command is applied.

`size=`*`number`*
number is the size in kilobytes in the circular port buffer. 32k is the default setting with 64k being the maximum number of kilobytes. Settings are configurable in 2k increments.

`state`
`on`
means that the data will be buffered.
`off`
means the data will not be buffered and all data will be cleared from the buffer.
`pause`
means the data will not be buffered, but data in the buffer will not be cleared.

Examples

Displaying Buffer Attributes

In this example, the set buffer command displays the port buffer configuration for all ports including a percentage of the buffer currently being used.

```
set buffer
```

Configuring Buffers

In this example, the set buffer command sets the buffer state for port 2 in the on mode and the buffer size to 64 kilobytes.

```
set buffer range=2 state=on size=64
```

set chat

Use the set chat command to

- Configure entries in the chat table
- Display chat table entries
- Remove entries
- Rename entries

About the Set Chat Command

Chat table entries provide telephone number string translation and can be accessed by any configured script. The chat table holds a maximum of 12 entries.

Required Privileges

Root privileges are required to use this command.

Related Information

See set script on page 2-77 for information on creating scripts that use telephone string translation.

Syntax

Configuration

Here is the form of the set chat command used to configure chat table entries:

```
set chat [delay=string][name=chat-name] [pound=string] [range=range]
[retry=number] [star=string] [wait=string]
```

Display

Here is the form of the set chat command used to display chat table entries:

```
set chat [range=range]
```

Remove

Here is the form of the set chat command used to remove a chat table entry:

```
set chat {rmchat=on range=range | rmchat=chatname}
```

Rename

Here is the form of the set chat command used to rename a chat table entry:

```
set chat name=name newname=new-name
```

Fields

`delay`
is a string of up to 24 characters to substitute into telephone numbers in place of the delay character

`name`
configures a name for the chat table entry

`pound`
is a string of up to 24 characters to substitute into telephone numbers in place of the # character

`range`
is one of the following:

- A range of ports to which the chat table entry will apply
- A range of chat table index numbers, which identify chat table entries

`retry`
is the number of times to retry a call. The range is 0 to 99 times.

`rmchat`
removes the chat table entry specified on the range or name field

`star`
is a string of up to 24 characters to substitute into telephone numbers in place of the * character

`wait`
is a string of up to 24 characters to substitute into telephone numbers in place of the wait character

Examples

Displaying the Entire Chat Table

In this example, the set chat command displays the entire chat table.

```
set chat
```

Configuring a Table Entry

In this example, the set chat command configures a new entry.

```
set chat name=chat1 star=4452624
```

Removing An Entry

In this example, the set chat command removes a chat table entry from the chat table.

```
set chat rmchat=chat1
```

Renaming a Chat Table Entry

In this example, the set chat command renames the chat table entry.

```
set chat name=chat1 newname=chat2
```

set config

Use the set config command to configure or display entries in the network parameters configuration table, which holds

- Digi device's network-related parameters, such as an IP address, mask, and default gateway
- Information on how Digi device should handle ICMP redirect messages

Required Privileges

Root privileges are required to use this command.

Related Information

None

Syntax

Configuration

Here is the syntax used to add and change entries in the network parameter configuration table.

```
set config [bootfile=file] [boothost=host-ipaddr] [dhcp={on | off}]
[dns=ip-addr]  [domain=domain] [gateway=ip-addr] [ip=ip-addr]
[myname=name] [ramsize=show]
[realport=tcp-port]  [redirect={listen|ignore}]
[save={on |off}  [sockets=socket-num] [submask=mask]
[tbreak={std|any|none}] [tftpboot={yes|no|smart}]
```

Display

Here is the syntax used to display entries in the network parameter configuration table.

```
set config
```

Fields

`bootfile`
is the name of a boot file on a TFTP host. Specify the full path to the file if this is required to satisfy the host's TFTP implementation. This option does not apply to PortServer TS 8/16.

`boothost`
is the IP address of a host from which Digi device can boot using TFTP. This option does not apply to PortServer TS 8/16 devices.

`dhcp`
enables or disables DHCP (Dynamic Host Configuration Protocol). Turning DHCP on causes Digi device to obtain an IP address from a host server.

The default is on.

`dns`
specifies the IP address of a domain name server. This parameter cannot be changed if dhcp=on.

`domain`
is the name of Digi device's domain

`gateway`
is the IP address of the default gateway

`ip`
is Digi device's IP address

`myname`
is Digi device's DNS name

`nameserv`
is the IP address of a name server in the Digi device's domain. This option does not apply to PortServer TS 8/16 devices.

`redirect`
`listen`

means Digi device accepts ICMP routing redirect messages. Use this option, only if you have not configured Digi device to forward RIP packets.

`ignore`
means Digi device discards ICMP routing redirect messages

The default is ignore.

`realport`
specifies the TCP port number used for RealPort connections. The default is 771.

`save`
on saves configuration changes to flash memory. Off means that changes will be discarded when the Digi device is reset.

The default is on.

`sockets`
sets the base TCP socket service, which is used in reverse Telnet connections to identify the connection type (Telnet or raw) and a particular port. You can specify a base socket service as a multiple of 100 between 2000 - 9000. The examples that follow illustrate how this works.

If sockets= ...	And the user specifies ...	Then, the user establishes ...
3000	telnet *ip-address* 3002	A Telnet connection to port 2
3000	telnet *ip-address* 3102	A raw connection to port 2
8100	telnet *ip-address* 8102	A Telnet connection to port 2
8100	telnet ip-*address* 8204	A raw connection to port 4

The default is 2000 and the range is 2000 to 9000.

`submask`
is the subnet mask for Digi device's subnetwork

`tbreak`
sets the Telnet break keystroke

Once a Telnet connection is initiated but before the connection is established, the connection can be broken by entering a designated keystroke. This keystroke is determined by these settings.

`std`

configures tbreak so only ^C will break a Telnet connection

Example: `set config tbreak=std`

`any`

configures tbreak so any keystroke will break a Telnet connection

Example: `set config tbreak=any`

`none`

configures tbreak so no keystoke will break a Telnet connection

Example: `set config tbreak=none`

`tftpboot (This option does not apply to PortServer TS 8/16)`
`yes`
means always boot from the TFTP host identified on the boothost field
`smart`
means that if Digi device cannot boot from the TFTP host identified on the boothost field, boot from the Digi device's internal flash ROM instead
`no`
means boot Digi device from internal flash ROM

The default is no.

Example

Displaying the Complete Table

In this example, the set config command displays the network parameter configuration table.

```
set config
```

set device

Use the set device command to

- Configure modems and other devices used for outgoing connections to use dialer scripts and chat table entries
- Configure a different baud rate (line speed) for modems and other devices used for outgoing connections than the rate defined on the set line command
- Remove an entry from the device table
- Display the contents of the device table

Required Privileges

Root privileges are required to use this command.

Related Information

See the following related commands:

- set chat on page 2-36
- set line on page 2-57
- set script on page 2-77

Syntax

Configuration

Here is the form of the set device command used to configure entries in the device table:

```
set device [baud={no|rate}] [chat={no|index-num|chat-name}]
[dialer={no|index-num|script-name}] name=name ports=range
[newname=newname] [p{1-9}] [save={on | off}] [show=on]
```

Remove

Here is the form of the set device command used to remove an entry from the device table:

```
set device rmdevice={on range=index-range|device=name}
```

Display

Here is the form of the set device command used to display entries from the device table:

```
set device [{range=range|name=name]
```

Fields

`baud`

`no`
means the baud rate specified on the set line command will be used

`rate`
is the baud rate (line speed) when this device is used. This field overrides the baud rate (for this device) defined on the set line command.

The range is 300 to 115,200 bps, and the default is no.

`chat`

`no`
means that a chat table entry is **not** associated with this device

index-num
is a chat table entry (index number) associated with this device

`chat-name`
is the name of a chat table entry

The default is no.

`dialer`

`no`
means that a dialer script is not associated with this device

index-num
is a script table entry (index number) associated with this device

script-name
is the name of a script

The default is no.

`name`
is a user-defined name for the device

`newname`
is a new name for a previously defined device

`p{1-9}`
are integers (1-9) that can be used in the variable fields of login or dialer scripts

`ports`
is the port or range of ports available to this device

`range`
is a device table entry or range of entries (identified by their index numbers)

`rmdevice=on`
removes the device specifies on this field and on the range field

Examples

Displaying the Device Table

In this example, the set device command displays the entire device table.

```
set device
```

Displaying an Entry in the Device Table

In this example, the set device command displays a range of entries in the device table.

```
set device range=4-7
```

Removing an Entry from the Device Table

In this example, the set device command removes an entry from the device table.

```
set device rmdevice=on range=2
```

Configuring a Device

In this example, the set device command configures a device to use a dialer script and to override the baud rate specified on the set line command.

```
set device name=OutDev ports=3-5 dialer=modemscp baud=19200
```

set dhcp

Use the set dhcp command to:

- Enable/disable DHCP (Dynamic Host Configuration Protocol). Enabling DHCP causes the Digi device to obtain an IP address from the host server. If DHCP is disabled, a static IP address must be defined for the Digi device, using the set config command.
- Renew the IP address of the Digi device. This causes the Digi device to discard its current IP address and obtain a new one from the host server.
- Display the lease information for the current IP address.

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Syntax

Configuration

Enter the set dhcp command as shown below to configure DHCP settings.

```
set dhcp [run={on|off}]|[renew]
```

Syntax

Enter the set dhcp command with no parameters to display the lease information for the current IP address.

```
set dhcp
```

Fields

`run={on | off}`
turns DHCP on or off. The default is on.

Note: You must reboot the Digi device before this change will takes affect.

`renew`
renews the IP address of the Digi device

Examples

Enabling DHCP

```
set dhcp run=on
```

Renewing the IP address

```
set dhcp renew
```

set filter

Use the set filter command to manage filters that control and record traffic over PPP connections. With the set filter command, you can

- Create filters
- Remove filters from the filters table
- Display entries in the filter table
- Display the contents of a filter

About Filters: An Overview

Use filters to trigger the following actions on PPP connections:

- Block or pass packets
- Bring up or reject connections
- Reset the idle timeout timer
- Send information to the log file

Rules for Creating Filters

Here are some rules for creating filters:

- The action a filter takes depends on the contents of the filter and on the type of filter it is defined as on the set user command. If the filter is referenced on the
  - — passpacket field, it will allow packets that meet filter criteria to pass through a serial port and block all others
  - — bringup field, it will bring up a connection when the port handles a packet that meets filter criteria
  - — keepup field, it will reset the timer defined on the set user idletimeout field when the port handles a packet that meets filter criteria
  - — logpacket field, it will send a message to the log file when the port handles a packet that meets filter criteria
- Filters are made up of 1 to 32 stanzas, each of which expresses filtering criteria.
- Filter criteria are called tokens. Examples of tokens include IP addresses, TCP or UDP port numbers, whether a packet is incoming or outgoing, and several others.
- Tokens must be separated by slashes (/).
- Stanzas are processed in order. That is, first S1 (stanza 1) is processed and then S2, and so on.
- As soon as a stanza's criteria is completely satisfied, filtering action occurs and subsequent stanzas are ignored. For example, if S1 specifies an IP address of 190.159.146.10 and an ICMP message type 7, a packet from that IP address carrying that ICMP message type will trigger filtering action. Subsequent stanzas will not be processed. Consequently, you must specify and relationships (all criteria must be satisfied) in the same stanza and or relationships (any of the criterion must be satisfied) in different stanzas.
- The exclamation mark (!) at the beginning of a stanza changes how the filter acts. When a packet is encountered that meets stanza criteria, the filter does **not** execute the filter function (for example, bringing up a connection) and it does **not** process any more stanzas.

About the Filter Table

The filter table holds a maximum of 64 entries.

Required Privileges

Root privileges are required to use the set filter command.

Related Information

See set user on page 2-98 for information on associating a filter with a particular user.

Syntax

Creation

Use this form of the set filter command to create filters and add stanzas to them or to rename filters.

`set filter name=`*`name`* `[newname=`*`name`*`] [s#=`*`token`*`\`*`token`*`\`*`token...`*`]`

Removal

Use this form of the set filter command to remove a filter from the filters table.

`set filter {rmfilter=on range=`*`range`*`|rmfilter=`*`name`*`}`

Display Filter Table Entries

Use this form of the set filter command to display entries in the filter table.

`set filter [range=`*`range`*`]`

Display Filter Stanzas

Use this form of the set filter command to display all the stanzas of a filter.

`set filter name=`*`name`* `show=on`

Fields

`name`
is a name for the filter

`newname`
is a new name for a previously defined filter

`range`
is an entry or range of entries in the filters table

`rmfilter`
on
means that identified filters will be removed from the filter table

name
means that the filter identified by this name will be removed from the filter table

`show`
on
means that stanzas from the filter identified on the name field will be displayed

off
means that stanzas from the filter identified on the name field will **not** be displayed

The default is off.

`s#=`*`token/token/token...`*
#
is the number of a stanza, which can be from 1 to 32
token/token/token...
are 1-32 tokens, which are the criteria by which filtering is accomplished. Separate tokens by a forward slash (/). Tokens can consist of any of the following:

- *servicename*, which means filter criterion is a name in the service table that identifies a particular process, such as Telnet (see set service on page 2-82)
- *hostname*, which means filter criterion is the name of a host defined in the host table (see set host on page 2-52)
- *protocol-number*, which means filter criterion is the number in an IP packet that identifies the protocol to which IP should pass the packet. Use one of the following: 1 for ICMP, 2 for IGMP, 6 for TCP, and 17 for UDP.
- *ip-addr*, which means filter criterion is an IP address
- *ip-mask*, which is an IP mask that modifies the meaning of the ip-addr field
- *port-num*, which means filter criterion is a TCP or UDP port number
- *port-num-port-num*, which means filter criterion is a range of TCP or UDP port numbers

- rcv, which means filter criterion is incoming packets
- send, which means filter criterion is outgoing packets
- dst, which means filter criteria will be found in destination IP packet fields within the IP packet, such as destination IP addresses, ports, and host names
- src, which means filter criteria will be found in source IP packet fields, such as IP addresses, ports, or host names
- syn, which means start filtering when the start of a TCP data stream is encountered. This option is always used with the fin option and is used to trigger logging (logpacket field on the set user command).
- fin, which means stop filtering when the end of a TCP data stream is encountered. This value is always used with the syn option and ends logging (logpacket field on the set user command.).
- tcp, which means filter criterion is TCP packets
- udp, which means filter criterion is UDP packets
- icmp, which means filter criterion is ICMP packets. Note: You can also specify a type of ICMP packet. Here is how: s1=*type*/icmp. *type* is the type of ICMP packet, which can be any of the following:

Message Type	Type Identifier
Echo reply	0
Destination unreachable	3
Source quench	4
Redirect	5
Echo request	8
Time exceeded for a datagram	11
Parameter problem on a datagram	12
Timestamp request	13
Timestamp reply	14
Address mask request	17
Address mask reply	18

- ! (exclamation), which means that when a packet is encountered that meets stanza criteria, the filter does **not** execute the filter function (for example, bringing up a connection) and it does **not** process any more stanzas

Examples

Displaying the Filter Table

```
set filter
```

Displaying Filter Stanzas

```
set filter name=filter1 show=on
```

Removing a Filter from the Filter Table

```
set filter rmfilter=filter1
```

Filtering on a Source IP Address

```
set filter name=filter1 s1=src/199.86.8.3
```

Filtering on an ICMP Packet Type

In this example the set filter command creates a filter that uses an ICMP type 13 packet (destination unreachable) as filter criterion.

```
set filter name=filter1 s1=13/icmp
```

set flow

Use the set flow command to configure or display flow control options for Digi device's EIA-232 serial ports.

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

See the following for additional information on configuring serial ports:

- set line on page 2-57
- set ports on page 2-69

Syntax

Configuration

Use this form of the set flow command to configure flow control attributes for ports.

```
set flow [aixon={on|off}][altpin={on|off}] [cts={on|off}] [dcd={on|off}]
[dsr={on|off}] [dtr={on|off}] [itoss={on|off}] [ixany={on|off}]
[ixoff={on|off}] [ixon={on|off}] [range=range] [ri={on|off}]
[rts={on|off}]
```

Display

Use this form of the set flow command to display flow control attributes for ports.

```
set flow [range=range]
```

Fields

`aixon`

`on`
means that the auxiliary flow control characters defined on the set keys command are used for output flow control

`off`
means that the auxiliary flow control characters defined on the set keys command are **not** used for output flow control

The default is off.

`altpin`

`on`
means that the altpin option is used. This option swaps DCD with DSR so eight-pin RJ-45 connectors can be used with modems. Ports using this option must be equipped with altpin cables.

`off`
means that the altpin option is **not** used

The default is off.

`cts`

`on`
means CTS (clear to send) is used for output flow control

`off`
means CTS is **not** used for output flow control

The default is off.

`dcd`

`on`
means that DCD (data carrier detect) is used for output flow control

`off`
means that DCD is **not** used for output flow control

The default is off.

`dsr`
`on`
means that DSR (data set ready) is used for output flow control

`off`
means that DSR is **not** used for output flow control

The default is off.

`dtr`
`on`
means that DTR (data terminal ready) is used for input flow control

`off`
means that DTR is **not** used for input flow control

The default is off.

`itoss`
is used only with software flow control (XON\XOFF) and only if ixany=on

`on`
means that the character that resumes output is discarded

`off`
means that the character that resumes output is **not** discarded

The default is off.

`ixany`
is used only with software flow control

`on`
means any received character can restart Digi device output when output has been stopped because of software flow control. Specify "on" only when Digi device communicates with a device, such as printers and terminals that use software flow control (XON\XOFF).

`off`
means output will resume only when the XON character is received

The default is off.

`ixoff`
`on`
means that Digi device will use input software flow control

`off`
means that Digi device will **not** use input software flow control

The default is on.

`ixon`
`on`
means that Digi device will use output software flow control

`off`
means that Digi device will **not** use output software flow control

The default is on.

`range`
is a port or range of ports to which this set flow command applies.

`ri`
`on`
means that RI (ring indicator) is used for output flow control

`off`
means that RI is **not** used for output flow control

The default is off.

`rts`
`on`
means that RTS (request to send) is used for output flow control

`off`
means that RTS is **not** used for output flow control

The default is off.

Examples

Displaying Flow Control Settings

In this example the set flow command displays the flow control options for a port.

```
set flow range=3
```

Configuring Flow Control Settings

In this example, the set flow command configures hardware flow control.

```
set flow range=3 cts=on rts=on ixoff=off ixon=off
```

set forwarding

Use the set forwarding command to

- Configure Digi device to
  - — Function as an IP router using Routing Information Protocol (RIP) to dynamically maintain routes
  - — Perform Proxy ARP services
  - — Handle various ICMP-related functions
- Display IP routing options

Required Privileges

Root privileges are required to use this command.

Related Information

See set route on page 2-75 for information on creating static routes.

Syntax

Configuration

Here is the form of the set forwarding command used to configure Digi device for IP routing, proxy ARP, and various ICMP-related functions:

```
set forwarding [advertise=time]
[breakoutsubnets={on | off}]
[icmpdiscovery={on | off}]
[icmpsendredirects={on | off}]
[icmpmaskserver={on | off}] [igmp={on | off}]
[poisonreverse={on | off}] [proxyarp={on | off}]
[save={on|off}][state={off | passive | active}]
[splithorizon={on | off}] [timeout=time]
```

Display

Here is the form of the set forwarding command used to display IP routing options:

```
set forwarding
```

Fields

`advertise`
is the interval at which Digi device advertises its routes. This field is used only if state=active.

The range is 10 to 180 seconds, and the default is 30 seconds.

`icmpdiscovery`
`on`
means Digi device sends and answers ICMP Router Discovery packets

`off`
means Digi device does **not** send and answer ICMP Router Discovery packets

The default is off.

`icmpmaskserver`
`on`
means Digi device acts as an ICMP mask server

`off`
means Digi device does not act as an ICMP Mask Server

The default is off.

`icmpsendredirects`
`on`
means Digi device sends ICMP redirect messages when it detects a host is using a nonoptimal route, such as when the host uses the Digi device to route to a destination that can be reached more efficiently using another router or when the destination host can be reached directly (that is, with-

out the services of any router)

`off`
means Digi device does not send ICMP redirect messages

The default is off.

`igmp`
`on`
means that Digi device announces itself as a router when it initializes. This means that Digi device will be included in the IGMP router's group broadcasts.

`off`
means that Digi device does not announce itself as a router when it initializes and will not be included in IGMP router's group broadcasts

The default is off.

`poisonreverse`
`on`
means that poisonreverse is on. When this option is on, learned routes **are** propagated over the same interface on which they are learned, but the destination specified in those routes are advertised as unreachable. The splithorizon option must be on if poisonreverse is on.

`off`
means that the poisonreverse option is off

The default is off.

`proxyarp`
`on`
means Digi device provides proxy ARP services. Proxy ARP is a technique in which a router answers ARP requests intended for another system. By pretending to be the other system, the router accepts responsibility for forwarding packets to that system. Use proxy ARP to route packets to and from serial routes on the same IP subnetwork as Digi device's Ethernet interface.

`off`
means Digi device does not support proxy ARP

The default is off.

`splithorizon`
`on`
means the splithorizon option is on. When this option is on, learned routes are **not** propagated from the interface on which they are learned. Use this option, only if state=active.

`off`
means the splithorizon option is off.

The default is on.

`save`
on means the configuration will be saved, and off means that the configuration will not be saved, which means that configuration changes will be lost the next time the Digi device reinitializes

The default is on.

`state`
`off`
limits Digi device routing to static routes defined in the route table. See set route on page 2-75.

`passive`
configures Digi device to use the routing information protocol (RIP) to learn routes but not to propagate them

`active`
configures Digi device to use RIP to both learn and propagate routing information

The default is off.

`timeout`
is the time in which an entry in the routing table must be updated. If an entry exceeds the value specified here, it will be discarded. This value must be at least six times the advertise value.

The range is 60 to 1080, and the default is 180 seconds.

Examples

Displaying the IP Routing Table

In this example, the set forwarding command displays the IP routing table.

```
set forwarding
```

Configuring Proxy ARP

In this example, the set forwarding command configures Proxy ARP.

```
set forwarding proxyarp=on
```

Configuring RIP

In this example, the set forwarding command configures Digi device to

- Listen for and advertise RIP routing information every 45 seconds
- Discard this route from the routing table if a routing update is not received within 270 seconds. This value is derived from the value on the advertise field. The timeout value must be **at least** 6 times the advertise value. Since no timeout is specified, the default (6 times the advertise value) is used.
- Implement split horizon

```
set forwarding state=active advertise=45 splithorizon=on
```

set host

Use the set host command to

- Configure the host table, which contains host name-to-IP address mappings
- Display entries in the host table

About the Host Table and DNS

Digi device's IP component can use the host table and a DNS server to map host names to IP addresses. These mappings allow users to identify hosts by user-friendly names, instead of IP addresses.

This is a convenience only. If you do not configure the host table or configure DNS, users identify hosts by IP addresses.

If the Digi device can access a DNS server, there is no reason to configure the host table. The PortServer TS 8/16 host table can hold up to 64 entries. The host table for other devices can hold up to 20 entries.

You can configure

- A host table and DNS
- Either the host table or DNS
- Neither the host table nor DNS

Required Privileges

Normal users can display information. Root privileges are required to change settings.

DNS Search Order

If you configure a host table and a DNS server, Digi device will attempt to satisfy a request by first searching the host table and then the DNS server.

Related Information

See set config on page 2-38 for information on configuring Digi device to use a DNS server.

Syntax

Configuration

Here is the form of the set host command used to add (configure) entries in the host table:

`set host name=`*`host-name`* `ip=`*`ip-addr`*

Display

Here is the form of the set host command used to display host table entries:

Fields

`ip`
is the IP address that is to be mapped to the name specified on the name field

`name`
is the name that is to be mapped to the IP address specified on the ip field

`range`
is one or a range of index numbers that identify entries in the host table

Examples

Displaying the Host Table

In this example, the set host command displays the entire host table.

```
set host
```

Displaying an Entry in the Host Table

In this example, the set host command displays an entry in the host table.

```
set host range=4
```

Configuring a Name-to-IP Address Mapping

In this example, the set host command configures a mapping between a host name and an IP address.

```
set host ip=190.150.150.10 name=server1
```

set ippool

Use the set ippool command to

- Create a pool of IP addresses for serial ports
- Remove a pool of IP addresses

Required Privileges

Root privileges are required for this command.

Related Information

For information on linking a user to the IP address pool, see set user on page 2-98.

Syntax

Configuration

Here is the form of the set ippool command used to configure an IP address pool:

```
set ippool count=num-ip-addr ip=1st-ip-addr
```

Remove

Here is the form of the set ippool command used to remove the IP address pool:

```
set ippool rmippool
```

Fields

`count`
is the number of IP addresses in the pool. The count can be from 1 to 64.

`ip`
is the first IP address in the pool

`rmippool`
removes the IP address pool from the configuration

Examples

Configuring a Pool

In this example, the set ippool command configures a pool of four IP addresses. These are 190.175.175.20, 190.175.175.21, 190.175.175.22, and 190.175.175.23.

```
set ippool ip=190.175.175.20 count=4
```

Removing a Pool

In this example, the set ippool command removes an IP pool.

```
set ippool rmippool
```

set keys

Use the set keys command to

- Change the key or key sequences used to generate certain characters and command functions
- Display current key mappings for these characters and functions

About the set keys Command

Use the carat character (^) to indicate that the Ctrl key should be held while pressing another key.

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

None

Syntax

Configuration

Here is the form of the set keys command used to change the key sequences you use to generate certain characters and command functions.

`set keys` *`function=keys`* `[range=`*`range`*`]`

Display

Here is the form of the set keys command used to display current key mappings.

`set keys [range=`*`range`*`]`

Fields

`function`
is one of the following characters or control functions:

Note: ^ means press and hold the Ctrl key.

backchar
is the back character. The default is ^b.

`eof`
is the end of file character. The default is ^d.

`erase`
is the erase command. The default is ^h.

`forwchar`
is the forward key (move cursor forward). The default is ^f.

`intr`
is the interrupt command. The default is ^c.

`kill`
is the kill character. The default is ^u.

`lnext`
is the literal next character (interpret the next character literally). The default is ^v.

`nextcmd`
scroll forward through command history. The default is ^n.

`prevcmd`
scroll backward through command history. The default is ^p.

`xon`
is the XON character. The default is ^q.

`xoff`
is the XOFF character. The default is ^s.

`xona`
is the auxiliary XON character. The default is ^q.

`xoffa`
is the auxiliary XOFF character. The default is ^s.

`range`
is a range of ports. If you issue the command from a Telnet session, you must specify the range field. If you issue the command from an attached terminal, the command will work for the port to which the terminal is attached unless you use the range field to specify a different port.

Examples

Displaying the Key Table

In this example, the set keys command, issued from an attached terminal, displays key mapping information for the port on which the terminal is attached.

```
set keys
```

Changing a Key

In this example, the set keys command changes the key that generates an end of file character (eof) fro port 1.

```
set keys eof=^h range=1
```

set line

Use the set line command to configure and display options associated with a serial line.

Required Privileges

Normal users can display port information. Root privileges are required to change settings.

Related Information

See the following related commands for information on configuring serial ports:

- set ports on page 2-69
- set flow on page 2-46

Syntax

Configuration

Here is the form of the set line command used to configure serial line options.

```
set line [baud=bps] [break={ignore|send|escape}] [csize={5|6|7|8}]
[error={ignore|null|parmrk|dos}] [inpck={on|off}] [istrip={on|off}]
[onlcr={on|off}] [otab={on|off}] [parity={o|e|n}] [range=range]
[stopb={1|2}]
```

Display

Here is the form of the set line command used to display serial line options:

```
set line [range=range]
```

Fields

`baud`
is the line speed (bps) for this line. Use one of the following values: 50, 75, 110, 134, 150, 200, 300, 600, 1200, 1800, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 76800, 115200, 230400. In addition, PortServer TS 8/16 devices support 100, 3600, and 460800 bps.

The default is 9600.

`break`
`ignore`
means that the Telnet break signal is ignored

`send`
means that Digi device sends the Telnet break signal on the serial line when the Digi device receives a break signal

`escape`
means that Digi device sends the escape sequence on the serial line when the Digi device receives a break signal

The default is ignore.

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

`error`
determines how Digi device handles parity errors on the line

`ignore`
means Digi device ignores errors

`null`
means Digi device changes the error character to a null character

`parmrk`
means Digi device “marks” the error with FF (16450 error byte)

`dos`
means that Digi device marks the error with an error character

The default is ignore.

`inpck`
`on`
means input parity checking is turned on

`off`
means input error checking is turned off

The default is off.

`istrip`
`on`
means the high-order bit is stripped from each byte

`off`
means the high order bit is **not** stripped from each byte

The default is off.

`onlcr`
`on`
means that new line characters are mapped to carriage return/line feed characters

`off`
means that no mapping of new line characters occurs

The default is off.

`otab`
`on`
means that output tabs are converted to eight spaces

`off`
means that output tabs are **not** converted

The default is off.

`parity`
`o`
means odd parity is selected

`e`
means even parity is selected

`n`
means no parity is selected

The default is “n” (no parity).

`range`
is the port or range of ports to which this command applies

`stopb`
is the number of stop bits per character to use on this line. The value you use here must match the setting on the device connected to this port. Use 1 or 2 stop bits.

The default is 1 stop bit.

Examples

Displaying Serial Line Options

In this example, the set line command is used to display serial line options.

```
set line
```

Configuring Baud, Parity and Stop Bits

In this example, the set line command is used to configure the line’s baud rate (line speed), parity, and the number of stop bits.

```
set line range=3-4 baud=150 parity=e stopb=2 csize=6
```

set logins

Use the set logins command to

- Configure the sequence of events that occurs when a user logs into a Digi device port. This includes information the user supplies and Digi device prompts and responses.
- Display current login settings

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

None

Syntax

Configuration

Here is the form of the set logins command used to configure login sequences:

```
set logins [cmdprompt=string] [logprompt=string] [login={on|off}]
[passwd={on|off}] [passprompt=string] [range=range] [verbose={on|off}]
[write={on|off}]
```

Display

Here is the form of the set logins command used to display login sequences:

```
set logins [range=range]
```

Fields

`cmdprompt`
is the Digi device prompt displayed to a regular user who has logged in. The maximum length is 31 characters. Enclose this string in quotation marks if it includes spaces.

The default is `digi>` for normal users and `#>` for root users.

`login`
`on`
means that a user must log into the port.

`off`
means that a user is not required to log into the port

The default is "on" for inbound dev types. This field is disabled when the port is configured as an auto port . See set ports on page 2-69 for more information.

`logprompt`
is the login prompt Digi device displays. The maximum length is 10 characters. Enclose this string in quotation marks if it includes spaces.

The default is login:.

`passprompt`
is the password prompt Digi device displays. The maximum length is 10 characters. Enclose this string in quotation marks if it includes spaces.

The default is password:.

`passwd`
`on`
means that users are required to supply a password to access Digi device on the ports specified by the range field.

`off`
means that users do not supply a password to access Digi device

The default is on. This field is disabled when the port is configured as an auto port (see set ports on page 2-69).

`range`
is the range of ports addressed by this set logins command. When this command is issued from a Telnet session, this command is required in order to identify the port to which it applies. When it is issued from an attached terminal, the command will apply to the port which the terminal is attached unless the range field is used to specify another port.

`verbose`
`on`
means that Digi device displays connection status messages to users before the login prompt

`off`
means that Digi device does **not** display connection status messages to users before the login prompt

The default is off.

`write`
`on`
means that configuration changes made by regular users can be saved and used for subsequent sessions by that user

`off`
means that configuration changes made by regular users are **not** saved

Examples

Displaying Login Information on a Port

In this example, the set logins command displays login-related information on the port the user is using:

```
set logins
```

Displaying Login Information on a Range of Ports

In this example, the set logins command displays login-related information on a range of ports:

```
set logins range=1-2
```

Configuring a Port for User Configuration

In this example, the set logins command configures a port so that users can save their login-related configuration changes and use them in future sessions:

```
set logins write=on range=1
```

Configuring the Command Prompt

In this example, the set logins command configures the command prompt. Since there are spaces in the new command prompt, the entry is enclosed in quotation marks.

```
set logins cmdprompt="Ent Cmd:" range=1
```

set menu

Use the set menu command to

- Create menus for Digi device users
- Display menu table entries
- Display lines of a menu
- Remove a line from a menu

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

See set user on page 2-98 (the menu and defaultaccess fields) for information on setting up a user to use a menu.

Syntax

Creation

Use this form of the set menu command to create a menu:

`set menu [c#=`*`command`*`] [m#=`*`string`*`] [range=`*`range`*`] [t#=`*`string`*`] [name=string]`

Display Menu Table Entries

Use this form of the set menu command to display the contents of the menu table:

`set menu [range=`*`range`*`]`

Display Lines of Menus

Use this form of the set menu command to display the contents of a menu:

`set menu range=`*`range`*` [show={on|off}]`

Remove Line Syntax

Use this form of the set menu command to remove a line from a menu:

`set menu range=`*`range`*` rmentry=`*`line-num`*

Fields

`c#=`*`command`*

`c`
means that this is a command that is executed when a user selects this menu line. Enclose commands containing spaces in quotation marks.

`#`
is a line number. Lines appear in numeric order on the menu.

`command`
is any Digi device command

`name`
specifies a name for the menu. If this parameter is not used, menus are named menu*X*, where *X* is the index number of the menu specified on the range field.

Names may be up to 16 characters long. Enclose names containing spaces in quotation marks.

`range`
is a port or range of ports

`rmentry`
removes the specified line from the menu

`m#=`*`string`*

`m`
means that this is a text or informational line

#
is a line number for the menu. Lines appear in numeric order on the menu

string
is a text string. Enclose strings with spaces in quotation marks.

`show=on`
displays menu entries identified on the range field

`t#=`*`string`*
`t`
means that this is a title line

#
is a line number for the menu. Each menu can have two title lines (t1 and t2).

string
is a text string. Enclose strings with spaces in quotation marks.

Examples

Creating a Menu

In this example, set menu commands create a menu with active fields that enable users to start connections to hosts named server1 and server2.

```
set menu range=4 t1="Welcome to the Communications Server" t2="Make a
Selection"

set menu range=4 m1="Connect to Server1" c1="connect 1"

set menu range=4 m2="Connect to Server2" c2="connect 2"
```

Displaying the Menu Table

In this example, the set menu command displays the contents of the menu table.

```
set menu
```

Displaying the Contents of a Menu

In this example, the contents of Menu 1 are displayed.

```
set menu ra=1 show=on
```

set modbus

Use this command to configure the Digi One IA RealPort and PortServer TS 2/4 for Modbus use. PortServer TS 8/16 does not support this command.

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

None

About the set modbus Command

There are two modes for the set modbus command, set modbus master, which configures communication attributes between Digi One IA RealPort and PortServer TS 2/4 and a Modbus master, and set modbus slave, which does the same for communication between Digi One IA RealPort and PortServer TS 2/4 and a Modbus slave. A key point is that masters control slaves and initiate all communication with them, although this control can be shared among several masters. Control is defined in the following way:

- The set modbus slave command has a range field that requires you to assign an index number to identify the slave.
- The set modbus master command has a slave field that requires you to list the index numbers of slaves controlled by this master.

See Examples on page 2-66 to see how this relationship is expressed on set modbus commands.

Syntax: Modbus Master

```
set modbus master range=range [char_timeout=milleseconds]
[coe={on | off}] [connection_timeout=seconds]
[format={rtu | ascii}]
[ip={ip-addr-range | all | none}]
[port={port | port-port | all | none}]
slaves={index | index-index | index1, index2...}
[transaction_timeout=milliseconds]
```

Fields: Modbus Master

`master`
specifies that this set modbus command defines attributes for communication with a Modbus master

`range`
is an integer from 1 to 16, which provides an index number to identify this master in the set modbus master table

`char_timeout=`*`milliseconds`*
specifies the time in milliseconds to wait for additional characters from the master before determining that the message is complete

The range is 0 - 65535, and the default is 20. If you specify 0, this timer is disabled.

`coe={on | off}`

`on`
turns on the close-on-error function, which means that connection with the master will be automatically closed if communication errors are encountered

`off`
means that the connection with the master will not be automatically closed if communication errors are encountered

The default is off.

`connection_timeout`
defines the time in seconds to wait before closing an idle Modbus connection to a master

The range is 0 - 65535. The default is 0, which means this timer is disabled.

`format={rtu | ascii}`
defines the communication mode between Digi One IA RealPort and PortServer TS 2/4 and a master connected over a serial port. The default is rtu. Choose the mode required by the master device.

`ip={`*`ip-addr-range`* `| all | none}`
ip-addr-range
specifies an IP address or range of IP address that identify network-connected masters. The example that follows shows how to specify a range of addresses, which in this case, includes every address on a class C subnetwork.

Example

```
ip=192.100.50.0 - 192.100.50.255
```

`all`
specifies that all network-connected masters may communicate with Digi One IA RealPort and PortServer TS 2/4

`none`
specifies that no network-connected masters may communicate with Digi One IA RealPort and PortServer TS 2/4.

`port={`*`port-range`* `| all |none}`
`port-range`
specifies a port or range of ports that identify serial port-connected masters

`all`
specifies that masters using any port may communicate with Digi One IA RealPort and PortServer TS 2/4

`none`
specifies that serial port-connected masters cannot communicate with Digi One IA RealPort and PortServer TS 2/4

`slaves={`*`index | index-index | index1, index2 ...`*`}`
is the set modbus slave descriptor that identifies slaves managed by this master. Use integers between 1 and 32. This must match the range option specified on a set modbus slave command.

`transaction_timeout=`*`milliseconds`*
specifies the time in milliseconds to wait on an idle connection with the slave before voiding the transaction

The range is 0 - 65535. The default is 1000. If you choose 0, this timer is disabled.

Syntax: Modbus Slave

```
set modbus slave range=range char_timeout=milliseconds fixed={unit | none}
format={rtu | ascii}
ip={ip-address | none} port={port | none} transaction_timeout=milliseconds
unit={ unit | unit-unit | all | none}
```

Fields: Modbus Slave

`slave`
specifies that this set modbus command defines attributes for communication with a Modbus slave device

`range`
is an integer from 1 to 32 to identify the slave device in the set modbus slave table. This integer must be within the range specified on the slaves option of a set modbus master command.

`char_timeout`
specifies the time in milliseconds to wait for additional characters from the slave device before determining that the message is complete.

The range is 0 - 65535, and the default is 20. If you specify 0, this timer is disabled.

`fixed={`*`unit`* `| none}`
`unit`
determines the device to which to forward all messages. This option, which overrides the Modbus unit address, accommodates older Modbus master implementations that assume a single connect-

ed device and always use unit address 0. Valid unit numbers are from 0 - 255.

`none`
specifies that the Digi device use the unit address specified in the Modbus message to determine which device is to receive the message

The default is none.

`format={rtu | ascii}`
defines the communication mode used with a serial port-connected slave. Choose the mode required by the slave device. The default is rtu.

`ip={`*`ip-address`*` | none}`
ip-address
specifies an IP address that identifies a network-connected slave

`none`
specifies that set modbus command does not define a network-connected slave. In other words, the slave is connected to a serial port.

The default is none.

`port={`*`port`*` | none}`
`port`
specifies the port to which the slave is attached. Specify a port number only when the slave is connected over a serial port.

`none`
specifies that this set modbus command does not define a port-connected slave. In other words, the slave is connected through the network.

`transaction_timeout`
specifies the time in milliseconds to wait on an idle connection with the slave before voiding the transaction

The range is 0 - 65535. The default is 0, which disables this option. The value you specify here overrides the transaction_timeout value on the associated set modbus master command.

`unit={`*`unit`*` | `*`unit-unit`*` | all | none}`

`{`*`unit`*` | `*`unit - unit`*`}`
is a Modbus protocol unit number or a range of unit numbers for slave devices, which must match hardware addresses for slaves. Messages will be forwarded to this slave only if they carry a Modbus protocol unit number that falls within this range.

`all`
means accept all unit addresses (0 - 255)

`none`
is used to remove this slave as a candidate to which incoming Modbus messages might be forwarded. Typically, you will use this value as a way to exclude a slave included in the range of slaves specified on the slaves option of the set modbus master command form.

Examples

Configuring Network-Connected Masters

In this example, set modbus commands configure the following:

- Modbus masters that reside at the range of IP addresses specified
- Two slave devices that reside on port 1

Take special note of the following attributes of this configuration:

- All timers for both masters and slaves are using defaults.
- The range field on the set modbus master command is an index number that Digi One IA RealPort and PortServer TS 2/4 identifies these masters. The range fields on each of the set modbus slave commands identify the individual slaves.
- The slaves field on the set modbus master command then identifies the slaves that belong to this master.
- The value on the unit fields of the set modbus slave commands are hardware addresses for the slaves.
- The format=rtu option on the set modbus slave command is optional, since rtu is the default for Modbus communication over the serial port.

```
set modbus master range=1 ip=143.191.2.100-143.191.2.102 slaves=2-3

set modbus slave range=2 port=1 format=rtu unit=100

set modbus slave range=3 port=1 format=rtu unit=101
```

Configuring a Port-Connected Master

In this example, set modbus commands configure the following:

- A single master connected to port 1
- Two slaves that reside on the network

Take special note of the following attributes of this configuration:

- All timers for both masters and slaves are using defaults.
- The range field on the set modbus master command is an index number that Digi One IA RealPort and PortServer TS 2/4 uses to identify this master. The range fields on each of the set modbus slave commands identify the individual slaves.
- The slaves field on the set modbus master command then identifies the slaves that belong to this master.
- The value on the unit fields of the set modbus slave commands are hardware addresses for the slaves.
- The format=rtu option on the set modbus master command is optional, since rtu is the default for Modbus communication over the serial port.

```
set modbus master port=1 slaves=2,5 ra=4 format=rtu

set modbus slave ip=143.191.2.100 range=2 unit=200

set modbus slave ip=143.191.2.155 range=5 unit=100
```

set modem

Use the set modem command to

- Assign modem test and initialization scripts to ports
- Display the modem table
- Clear the association between ports and modem test and initialization scripts

Required Privileges

Administrator (root) privileges are required to use this command.

Related Information

See set script on page 2-77 for more information on creating modem scripts.

Syntax

Configuration

Use this form of the set modem command to configure an association between a port and modem test and initialization scripts:

`set modem [init={no | script | index-num}][range=range] [test={no | script | index-num}]`

Display

Use this form of the set modem command to display modem table entries:

`set modem [range=range]`

Clear Syntax

Use this form of the set modem command to clear an association between a port and modem test and initialization scripts:

`set modem [init=no] [test=no]`

Fields

`init`
is one of the following:

- The name of an initialization script (created with the set scripts command)
- The index number of an initialization script in the scripts table
- no, which clears an association between a port and an initialization script

`range`
is the range of ports to which this command applies

`test`
is one of the following:

- The name of a test script (created with the `set` scripts command)
- The index number of a test script in the scripts table
- no, which clears an association between a port and a test script

Examples

Displaying the Current Port's Scripts

In this example, the set modem command displays the script table.

```
set modem
```

Displaying a Range of Ports' Scripts

In this example, the set modem command displays the names of scripts associated with a range of ports.

```
set modem range=1-16
```

Configuring a Port for Scripts

In this example, the set modem command configures an association between a port and test and initialization scripts.

```
set modem test=test1 range=2 init=init1
```

Clearing a Port of Scripts

In this example, the set modem command clears an association between a port and test and initialization scripts.

```
set modem range=2 test=no init=no
```

set ports

Use the set ports command to

- Configure the operating parameters of a port
- Display the port's operating parameters

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

See the following commands for more information on configuring serial ports:

- set line on page 2-57
- set flow on page 2-46
- set keys on page 2-55
- set logins on page 2-59

Syntax

Configuration

Here is the form of the set ports command to configure the operating parameters of a port:

```
set ports [auto={on|off}] [bin={on|off}][dest={ip-adr | none] [dev=device]
[dport=tcp-port | none] [edelay=milliseconds] [group=group]
[id={show | id-name | none}] [range=range] [sess=sessions] [termtype=type]
[uid={id | none}]
```

Display

Here is the form of the set ports command to display operating parameters for a port:

```
set ports [range=range]
```

Fields

`auto`
`on`
means that all users of the port will bypass Digi device's login and password sequence and be automatically connected to the destination defined on the dest field

`off`
means that port users will **not** be automatically connected to a destination

The default is off.

`bin`
`on`
means that Telnet users are provided with Telnet binary connections

`off`
means that Telnet users are provided with normal (ASCII) connections

The default is off.

`dest`
is the IP address of the destination system to which port users will be routed if auto=on. Specify none to disable the field.

`dev`
is the device type, which defines the device connected to the port. Typically, you can use the following to define the devices listed:

- Most printers can use dev=prn.
- Most dumb terminals can use dev=term.
- Most incoming modem connections can use dev=min.
- Most outgoing modem connections can use dev=mout.

- Most bidirectional modem connections can use dev=mio.
- Most Realport connections can use dev=rp.
- Most reverse Telnet connections can use dev=prn.
- Most Modbus connections can use dev=modbus

If the device you are configuring is not one of these listed or requires unusual flow control attributes, use the information in the following table to define a device type:

Device Type	Attributes
term	• Digi device generates a login when it receives data. • Digi device ignores loss of carrier (DCD low). • DTR and RTS are high when the connection is idle. • This type usually requires cable support for transmit, receive, and ground only, which means a 3-wire crossover cable will work. Six, eight, and ten wire crossover cables work as well. • Do **not** use dev=term for RealPort and reverse Telnet connections.
prn	• Digi device never generates a login. • Digi device ignores carrier. • DTR and RTS are low when the connection is idle. • This type usually requires cable support for transmit, receive, and ground only, which means a 3-wire crossover cable will work. Six, eight, and ten wire crossover cables work as well. • Use dev=prn for reverse Telnet connections.
min	• Digi device generates a login when carrier is detected (DCD high). • Digi device closes the port at carrier loss (DCD low). • DTR and RTS are high when the connection is idle. • This type requires a 10-pin straight-through cable or an altpin cable. • Do not use dev=min for RealPort and reverse Telnet connections.
modbus	• Digi device never generates a login. • DTR and RTS are low when the connection is idle. IS THS TRUE, REVIWERS???? • This type usually requires cable support for transmit, receive, and ground only, which means a 3-wire crossover cable will work. Six, eight, and ten wire crossover cables work as well. IS THIS TRUE REVIEWERS????? • Use dev=modbus for most Modbus connections and all connections to Modbus serial port masters.
mout	• Digi device never generates a login. • Digi device closes the port at carrier loss (DCD low). • DTR and RTS are low when the connection is idle. • This type requires a 10-pin straight-through cable or an altpin cable. • dev=mout supports RealPort and reverse Telnet.

mio	• Digi device generates a login when carrier is detected (DCD high). • Digi device closes the port at carrier loss (DCD low). • DTR and RTS are high when the connection is idle. • This type requires a 10-pin straight-through cable or an altpin cable. • dev=mio supports reverse Telnet but does **not** support RealPort.
host	• Digi device does not generate a login. • Digi device opens the port at DCD high and closes the port at carrier loss (DCD low). • DTR and RTS are low when the connection is idle. • This type supports reverse Telnet and RealPort. • This type requires a cable that supports carrier detect (DCD).
hdial	• Digi device generates a login when carrier is detected (DCD high) and data is received. • Digi device closes the port at carrier loss (DCD low). • DTR and RTS are low when the connection is idle. • This type does **not** support reverse Telnet or RealPort. • This type requires 10-pin cables with DCD and DTR cross-connected or an altpin cable.
hio	• Digi device generates a login when carrier is detected (DCD high) and data is received. • Digi device closes the port at carrier loss (DCD low). • DTR and RTS are low when the connection is idle. • This type requires 10-pin cables with DCD and DTR cross-connected or an altpin cable.
rp	• Digi device never generates a login. • Digi device ignores carrier. • DTR and RTS are low when the connection is idle. • This type usually requires cable support for transmit, receive, and ground only, which means a 3-wire crossover cable will work. Six, eight, and ten wire crossover cables work as well. • Use dev=rp for RealPort connections.

The default is term.

Note: With mio, mout, min, host, and hdial device types, Digi device lowers DTR at disconnect and holds it low for two seconds to ensure a clean disconnection.

`dport`
is the TCP port for users of autoconnect ports, which is one of the following:

- 23 for Telnet
- 513 for Rlogin
- Any other TCP port or a physical port on the Digi device, identified by specifying the base TCP socket number and then the port number. For example (if you use the default base TCP socket number), to indicate an autoconnect Telnet connection to port 12, specify dport=2012. Similarly, to indicate an autoconnect raw connection to port 12, specify dport=2112
- 0, which means one of two things, depending on whether a specific user is assigned to this port on the uid field: (1) That Rlogin is used as the default if a specific user is assigned to this

port (2) That Telnet is used as the default if a specific user is **not** assigned to this port

- None, which disables the field

The default is 0.

`group`
assigns a group number to this port, which means that this port is part of a hunt group. Outgoing calls specifying this hunt group can then use any available port in the group. Use numbers 65 to 100 to avoid conflicts with regular port numbers.

`id`
specifies a character string for the port, which can be used in console management applications to identify the device connected to the port. Enclose this string in quotation marks if there are spaces in the string.

`range`
is the port or range of ports to which this command applies

`sess`
is the maximum number of sessions any user can run through this port

The range is 1-9, and the default is 4.

`termtype`
is the type of terminal assigned to the port. This information is used during multiscreen and multisession operations and is passed to the host during Telnet negotiations. Use a terminal type that is valid with the host operating system.

`uid`
is an index number in the user table that identifies a particular user for this port. If you use this field, calls from others attempting to use this port will be rejected. Specify none to disable the field.

Examples

Displaying Attributes of the Current Port

In this example, the set ports command displays attributes for the port to which the user is connected.

```
set ports
```

Displaying Attributes for a Range of Ports

In this example, the set ports command displays attributes for a range of ports.

```
set ports range=1-2
```

Configuring an Autoconnect Port

In this example, the set ports command configures the port so that all incoming users are automatically connected via Telnet to the host specified on the dest field. The port is also available for outgoing connections.

```
set ports range=1 auto=on dest=199.125.123.10 dev=mio dport=23
```

set radius

Use the set radius command to

- Configure PortServer TS 8/16 to use one or more RADIUS (Remote Authentication Dial-In User Service) servers to authenticate and maintain user profiles on dial-in users
- Display current RADIUS configuration options

About RADIUS

When Digi device uses a RADIUS server, it authenticates users by first searching its own user table and then, if the user is not found, searching the RADIUS server.

Required Privileges

Administrator (root) privileges are required to use this command.

Related Information

None

Syntax

Configuration

Here is the form of the set radius command used to configure Digi device to use RADIUS servers to authenticate dial-in users.

`set radius [primary=`*`ip-adr`*`] [run={on|off}] [secondary=` *`ip-adr`*`] [secret=`*`password`*`] [tolerant={on|off}]`

Display

Here is the form of the set radius command used to display RADIUS configuration status.

`set radius`

Fields

`primary`
is the IP address of the primary RADIUS server. This is the server that Digi device queries first. If this server is down or busy, Digi device queries the secondary server (if there is one).

`run`
`on`
enables RADIUS authentication

`off`
disables RADIUS authentication

The default is off.

`secondary`
is the IP address of a secondary RADIUS server

`secret`
is a password used for encryption of messages between the RADIUS server and Digi device. The server and Digi device must use the same password. The primary and the secondary servers are not required to use the same password. If they are different, however, you must issue two set radius commands, one to configure the primary RADIUS server and one to configure the secondary server. See the command examples for more information.

`tolerant`
on means ignore unrecognized RADIUS attributes. Off means that the connection is denied if unrecognized RADIUS attributes are present.

Examples

Displaying RADIUS Configuration Status

In this example, the set radius command displays the status of the current RADIUS configuration.

```
set radius
```

Configuring a Primary RADIUS Server

In this example the set radius command configures Digi device to use a primary RADIUS server.

```
set radius run=on primary=199.150.150.10 secret=xyyzzz
```

Configuring Two RADIUS Servers

In this example, the first set radius command configures the primary RADIUS server. The second set radius command configures the secondary server. Two commands are required because the two servers use different passwords (secret field).

```
set radius run=on primary=199.150.150.10 secret=xyyzzz

set radius run=on secondary=199.150.150.22 secret=abbccc
```

set route

Use the set route command to

- Manually configure IP routes
- Remove routes from the routing table
- Display the contents of the route table

About the Route Table

The route table holds up to 50 entries.

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

See set forwarding on page 2-49 for information on configuring Digi device to use dynamic IP routes maintained by RIP.

Syntax

Configuration and Removal

Here is the form of the set route command used to manually configure and remove IP routes:

```
set route {gateway=ip-adr | wanname=name} mask=mask metric=hops net=net-
adr range=range [rmroute={on|off}]
```

Display

Here is the form of the set route command used to display the route table:

```
set route
```

Fields

`gateway`
is the IP address of the router that is the next hop to the destination network defined on the net field. Use this field if this router is on the LAN.

`mask`
is the subnet mask used by the destination network

`metric`
is the number of routers through which a datagram must pass before reaching the destination network defined on the net field

`net`
is the IP network address of the destination network

`range`
is the entry or range of entries in the route table that will be removed when the rmroute field is executed

`rmroute=on`
means that the route table entry or entries defined on the range field will be removed

The default is off.

`wanname`
is the name, defined on a set user command, of a WAN connection that Digi device can use to reach the next hop to the destination defined on the net field.

Examples

Displaying the Route Table

In this example, the set route command displays the entire route table.

```
set route
```

Displaying a Range of Route Table Entries

In this example, the set route command displays a range of entries in the route table.

```
set route range=3-5
```

Removing an Entry in the RouteTable

In this example, the set route command removes an entry from the route table.

```
set route rmroute=on range=2
```

Configuring a Route over a WAN Connection

In this example, the set route command configures a route that uses a WAN connection through a serial port.

```
set route net=199.150.144.8 mask=255.255.255.0 metric=3 wanname=user999
```

set script

Use the set script command to

- Define a modem or login script
- Display entries in the script table
- Display all stanzas of a script
- Delete a script from the script table

Required Privileges

Root privileges are required for this command.

Related Information

See the following commands:

- set user on page 2-98 for information on assigning a login script to a user
- set chat on page 2-36 for information on telephone number string translation

Syntax

Configuration

Here is the form of the set script command used to configure or edit a modem or login script:

```
set script [name=name] [newname=new-name]
s{1-24}="stanza-content"
```

Note that the *stanza_content* value is enclosed in quotation marks.

Display Entries

Here is the form of the set script command used to display entries in the script table:

```
set script range=range
```

Display Stanzas

Here is the form of the set script command used to display all the stanzas of a script:

```
set script name=name show=on
```

Delete a Script

Here is the form of the set script command used to delete a script from a script table:

```
set script {rmscript=on name=name | rmscript=name}
```

Fields

`name`
is the name of the script

`newname`
is a new name for the script identified either by its old name (on the name option) or by an index number in the script table (on the range option)

`range`
an index number in the script table (for display)

`rmscript`
removes the script specified

`s {1-24}=stanza-content`
is the number of a script stanza (1 through 24) and the contents of the stanza.
Note: The content of a stanza-content field must be enclosed in quotation marks.
The contents can include any of the following commands:

Command	Description
A*np*	Sets • Character size to *n*, which can be either 7 or 8 bits. • Parity to *p*, which can be one of the following values: 0=no parity, 1=odd 2=even 3=mark **Example:** s1="A70"
B*n*	Transmits a break signal *n* milliseconds long. If *n* is not specified, the length is 250 milliseconds. **Example:** s7="B100"
C*n*	Sets carrier loss detection. If *n*= • 0, carrier loss is not detected • 1, the modem hangs up if the port loses DCD **Example:** S2="C1"
D+*m*	Raises a modem signal. If *m* is • 1, DTR is raised • 2, RTS is raised
D-*m*	Lowers a modem signal. If *m* is • 1, DTR is dropped • 2, RTS is dropped
E{*string*}	Writes the string either to • A user terminal (if running interactively) • To a trace buffer (if running in the background) This string can include any of the escape commands listed in "Script Escape Commands", which follows this discussion. **Example:** S10="E{Please Log In}"
F*n*	Pauses for *n* seconds and flushes input data. The default is 0. **Example:** s1="F10"
G*s*	Immediately does one of the following, depending on the value of *s.* If *s* is • The number of a stanza, control is passed to that stanza • + (plus), the script is exited with a success message from E string • - (minus) the script is exited with a failure message from E string **Example:** s2="G7"

H*s*

Sets the carrier lost (hang-up) recovery to stanza *s,* which is the number identifying another stanza or one of the following:

- + (plus), which means Exit, indicating success
- - (minus), which means Exit, indicating a general failure
- * (star), which means indicate that the remote system is busy
- = (equal), which means indicate that the remote system is down

Example: s2="H+"

M{*string*}

Writes *string* to a modem

Example: s2="M{at&f\c}"

This string can include any of the escape commands listed in "Script Escape Commands", which follows this discussion.

N*b*

Changes the baud rate. The range is 50 to 115,200. Rates under 110 bps should be used only on expansion ports.

Example: s4="N19200"

P*n*

Pauses for *n* seconds. If you do not specify a value for *n*, the default is 1 second.

Example: s5="P2"

Q*n*

Sets software flow control. If *n* is

- 0, flow control is disabled
- 1, flow control is enabled

Example: s5="Q0"

S*n*

Defines the time to wait (timeout), in seconds, for a modem signal or input data

Example: s2="S5"

T*s*

Defines the timeout recovery state. If the timeout is exceeded, control is passed to this stanza.

Example: s2="T8"

U*n*

Immediately executes the text of stanza *n*, as if it were inserted to replace this command. You can nest this command, up to a maximum of 10.

Example: s2="U4"

W+*m*

Waits for a modem signal to go high. If *m* is

- 1, wait for DCD to go high
- 2, wait for CTS to go high

Example: s6="W+1"

W-*m*

Waits for a modem signal to go low. If *m* is

- 1, wait for DCD to go low
- 2, wait for CTS to go low

Example: s6="W-1"

[*string*]*s*	Defines the *string* and the stanza to jump to when the *string* is received on a communications line. This string can include any of the escape commands listed in “Script Escape Commands”, which follows this discussion. **Example:** s7=”[abort]s22”

Script Escape Commands

This section describes the escape commands you can use in E, M, and [] command strings.

Escape Command	Description
^c	This is the character transmitted by an ASCII keyboard when the CTRL key is held down and the c key is pressed.
\b	Backspace
\f	Form feed
\t	Tab
\n	New line
\r	Return
\\	Backslash
nnn	Octal byte value *nnn*
\x*hh*	Hexadecimal byte value *hh*
%n	Is a variable, where n is • A telephone number whose value comes from the n*n* field on the set user command • one of the following special characters: * (star), which generates a tone equivalent to dialing * on a touch-tone phone # (pound), which generates a tone equivalent to dialing # on a touch-tone phone =, which causes a pause of 2 seconds w, which causes a wait for a secondary dial tone - (minus), which is completely ignored and not passed to the modem.
%p	Is a variable, where *p* is an integer from 1 to 9. For login scripts, the value of *p* comes from the p*n* field on the set user command. For dialer scripts, options come from the p*n* field of the set device command.

Examples

Displaying the Script Table

In this example, the set script command displays the entire script table.

```
set script
```

Displaying Entries in the Script Table

In this example, the set script command displays an entry in the scrip table.

```
set script range=4
```

Displaying all Stanzas in a Script

In this example, the set script command displays all stanzas of the specified script:

```
set script name=testmodem show=on
```

Displaying all Stanzas in a Script

In this example, the set script command creates a script called newname and assigns a character size of 8 and no parity.

```
set script name=newscript ra=4 s1="A80"
```

Configuring a Login Script

In this example, the set script command defines a login script.

```
set script name=loginscript
s1=”P2[Login:]2 S10 T4”
s2=”P1 M{%1\r} S1 [sword:]3 T4”
s3=”M{%2\r} G5”
s4=”E{login failed} G-”
s5=”E{login complete} G+”
```

set service

Use the set service command to

- Configure (associate) names with TCP and UDP service ports for use in filters
- Display entries in the service table

About Service Numbers

The following are the service numbers (TCP and UDP ports) to which you can assign names:

Service	Port Number
FTP	21
NNTP	119
RIP	520
Login	513
Shell	514
SMTP	25
Telnet	23
TFTP	69

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

See set filter on page 2-43 for information on configuring filters.

Syntax

Configuration

Use this form of the set service command to associate names with TCP service ports:

`set service name=`*`name`* `port={udp:`*`port`*`|tcp:`*`port`*`}`

Display

Use this form of the set service command to display entries in the service table:

`set service [range=`*`range`*`]`

Fields

`name`
is the name to assign the service

`port`
is the TCP or UDP port number for the service

`range`
is a range of entries in the service table, which is used to identify entries to display or delete

`{rmservice=`*`name`*`| rmservice=on}`
name
is the name of a service to be removed from the service table

`on`
means remove the service (or services) from the service table identified on the range field

Examples

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
```

Configuring an Entry in the Service Table

In this example, the set service command configures a name for Telnet.

```
set service name=http port=tcp:80
```

set snmp

Use the snmp command to configure, enable, and disable Digi device's SNMP (Simple Network Management Protocol) agent.

Required Privileges

Normal user may display information. Root privileges are required to change settings.

Related Information

None

Syntax

```
set snmp [auth_trap={off|on}] [contact=administrator]
[get_request=community] [location=location-string]
[name=name-string] [run={off|on}] [set_request] [trap_dest= ipaddress]
```

Fields

`auth_trap`
`on`
means the agent sends an authentication trap to the SNMP manager when an authentication error occurs

`off`
means the agent silently ignores SNMP requests that fail authentication

The default is off.

`contact`
is a text string that identifies a contact person (usually an administrator). The entry must be surrounded by quotation marks if there are spaces in the text.

`get_request=`*`community`*
is the password required to read Digi device SNMP managed objects. The default is "public".

`location`
is a text string that describes Digi device's location. The entry must be surrounded by quotation marks if there are spaces in the text.

`name`
is a text string that identifies Digi device. The entry must be surrounded by quotation marks if there are spaces in the text.

`run`
`on`
starts the SNMP daemon

`off`
means the SNMP daemon will not start

The default is off.

`set_request`
displays a prompt of a password required to write to Digi device SNMP managed objects. The default is "private".

`trap_dest`
is the IP address of the system to which the agent should send traps

Examples

Displaying SNMP Configuration

In this example, the snmp command displays the SNMP configuration.

```
set snmp
```

Configuring All Options

In this example, the snmp command configures SNMP.

```
set snmp run=on auth_trap=on trap_dest=190.175.178.73
location=Manufacturing-1 name=PServer1
contact="Joe Friday"
```

set socket-id

Use this command to configure the serial port socket-ID feature. PortServer 8/16 devices do not support this command.

About Serial Port Socket IDs

The Digi device supports reverse Telnet and raw reverse Telnet connections to serial ports, which enables remote users and applications to manage the serial devices connected to Digi device ports. This feature enables easier identification of the managed device.

Required Privileges

Root privileges are required to use this command.

Related Information

None.

Syntax

Configuration

Here is how you use the set socket-id command to configure the serial port socket-ID feature:

`set socket-id range=range [state={on | off}[string="character-string"]`

Display

Here is how you use the set socket-id command to display serial port socket-ID configuration settings:

`set socket-id [range=range] [verbose]`

Fields

`range=range`
is the port or ports configured with this command

`state={on | off}`
turns the feature on or off for the port specified. The default is off.

`string="character-string"`
is an identification string made up of ASCII characters, surrounded by quotation marks. This string can be 1 to 256 bytes long. It cannot contain the start or stop characters.

To embed ASCII characters in the string, follow the rules listed below:

To embed this character ...	Use this escape sequence ...
Backspace	\b
Form feed	\f
Tab	\t
New line	\n
Return	\r
Backslash	\\
Hexadecimal byte value *hh*	\x*hh*

`verbose`
is used to displays the entire identification string when the string exceeds twenty characters. The verbose option is not necessary for strings under twenty characters.

Example

Displaying the Configuration for All Ports

In this example, the set socket-id configuration settings for all ports are displayed:

```
set socket-id
```

Displaying the Configuration for a Specific Port

In this example, the set socket-id configuration for port 2 is displayed:

```
set socket-id range=2
```

Configuring a Socket-ID Identification String

```
set socket-id range=2 state=on string="\fDevice 54"
```

set tcpip

Use the set tcpip command to set operating characteristics of the Digi device TCP component. Configurable options include:

- The TCP port used by RealPort
- The interval TCP waits before retransmitting an unacknowledged segment
- How TCP handles idle connections
- Socket service values for reverse Telnet connections

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

None.

Syntax

Configuration

Here is the form of the set tcpip command to change TCP options:

```
set tcpip [keepalive_active={on|off}] [keepalive_byte={on|off}]
[ip_ttl=hops] [keepalive_idle=hours:minutes:seconds] [probe_count=probe-
count#] [probe_interval=probe-interval#] [rto_max=timeout#] [tcp_ttl=hops]
```

Display

Here is the form of the set tcpip command to display TCP settings:

```
set tcpip
```

Fields

`keepalive_active`
on enables the keep-alive function, and off disables it. The default is off, but can be turned on by an application regardless of this setting. When you change this setting, you must reboot the Digi device.

`keepalive_byte`
on means that the Digi device sends a “garbage” byte of data to force the device at the other end of the connection to respond to the keep-alive packet. The default is off. When you change this setting, you must reboot the Digi device.

`ip_ttl`
sets the intial value of the IP time-to-live variable, which defines the maximum number of hops that a packet can survive before being discarded. The default is 64.

`keepalive_idle=hours:minutes:seconds`
determines the period a TCP connection has to be idle before the keep-alive option is activated.

The range is 10 seconds to 24 hours. The default is 2 hours.

`probe_count`
is the number of times TCP probes the other connection to determine if it is alive after the keep-alive option has been activated

The valid range for probe_count is 5-30. The default is 10.

Digi recommends that the probe_count default not be changed unless there is a good reason to change it. Changing the value can adversely affect Telnet connections.

`probe_interval`
is the time in seconds between each keep-alive probe

The range is 10-75 seconds. The default is 75 seconds.

Digi recommends that the probe_interval default value not be changed unless there is a good reason. Changing the value can adversely affect Telnet connections.

`tcp_ttl`
sets the intial value of the TCP time-to-live variable, which defines the maximum number of hops that a packet can survive before being discarded. The default is 64.

`rto_max`
is the TCP maximum retransmission time out in seconds

When one side of a TCP connection sends a packet and does not receive an acknowledgment from the other side within the timeout period, the sending station retransmits the packet and sets an exponential backoff timeout. This is done for each successive retransmit until the maximum retransmission timeout is reached; then the TCP connection resets

Examples

Configuring Keepalive Options

In this example, the Digi device TCP component is configured to do the following:

- Begin sending keepalive probes after a TCP connection has been idle for 10 minutes
- Send up to 15 probes
- Send a probe every 50 seconds

```
set tcpip keepalive_active=on keepalive_idle=0:10:0 probe_count=15
```

Configuring TCP Maximum Retransmission Timeout Value

In this example, the Digi device TCP component is configured to attempt to reconnect a dormant connection for up to 100 seconds.

```
set tcpip rto_max=10 0
```

set telnetip

Use the set telnetip command to

- Add Telnet IP address table entries
- Display Telnet IP address table entries

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

None.

Syntax

Display

Use this form of the set telnetip command to display the current Telnet values for the Digi device:

```
set telnetip
```

Add

Use this form of the set telnetip command to add an entry to the Telnet table, which can hold up to 30 entries:

```
set telnetip ip=ip-addr [mask=mask] [mode={none|crbin|telprnt}]
```

Fields

`ip`
is the IP address to add to the Telnet table

`mask`
is value of the mask to use for the IP address entered
The default is 255.255.255.255

`mode`
is the Telnet mode

`none`
means that no special Telnet mode is set

`crbin`
sets a Telnet binary connection where carriage returns are added with line feeds

`telprnt`
is used for a Telnet print connection

The default is none.

`range`
is the range of index entries to remove

Note: Before removing Telnet table entries it may be helpful to use set telnet without any options to display the existing Telnet table entries and their corresponding index numbers.

Examples

Displaying Telnet Table Entries

In this example, the set telnet command displays current Telnet table entries.

```
set telnet
```

Adding a Telnet Table Entry

In this example, the set telnet command adds a Telnet table entry.

```
set telnet ip=199.86.5.56 mask=255.255.255.0 mode=none
```

set terms

Use the set terms command to

- Define terminal types and the escape sequence a terminal uses when initiating and maintaining multiple sessions
- Display entries in the term table

About the set terms Command

Here is some information on the set terms command:

- The set terms command configures Digi device to handle terminals that are **not** connected over a network.
- If users are to use the Ctrl key in a key sequence, use a carat character (^) in place of the Ctrl key when you configure the sequence.

Required Privileges

Normal users can display information. Root privileges are required to change settings.

Related Information

None

Syntax

Configuration

Here is the form of the set terms command used to configure terminals:

`set terms [clrseq=`*`escape-seq`*`] [npages=`*`pages`*`] [swtseq=`*`SessNumSequence`*`] termtype=`*`type`*

Display

Here is the form of the set terms command used to display entries in the term table:

`set terms [range=`*`range`*`]`

Fields

`clrseq`
is the escape sequence that clears the terminal's current screen. This should be the sequence specified by your terminal's manufacturer.

`npages`
is the number of sessions available to this terminal type. This should be the same as the number of pages of screen memory available on the terminal.

The range is 1-9.

`swtseq=`*`SessNumSequence`*
is a number that identifies the session and the escape sequence used to access that session. This should be the sequence specified by your terminal's manufacturer.

Note: There are no spaces between the number identifying the session and the key sequence used to access that session.

`range`
is the range of term table entries to display or remove

`termtype`
is a name for the terminal type. This name must match the name

- Specified on the termtype field of the set ports command
- Used by hosts on your network for this type of terminal

Digi device provides two default terminal types, wy60 and wy60-e. Use the set terms command to display options associated with these types of terminals.

Examples

Displaying the Entire Term Table

In this example, the set terms command displays the entire term table.

```
set terms
```

Displaying a Range of Entries in the Term Table

In this example, the set terms command displays a range of entries in the term table:

```
set terms range=4-6
```

Configuring a Terminal Type

In this example, the set terms command configures a terminal type.

```
set terms termtype=Jet npages=4 clrseq=^! swtseq=1^] swtseq=2^[ swtseq=3^}
swtseq=4^{
```

set time

Use the set time command to set and display the time and date PortServer TS 8/16 devices keep.

Required Privileges

Root privileges are required to use this command.

Related Information

None

Syntax

Here is how to use the set time command to set or display the time and date.

```
set time [{AM|PM}] [date=mn.day.yr] [dayofweek=day] [hrmode={12|24}]
[time=hr.mn.sec]
```

Fields

`{AM|PM}`
specifies the period of the day when hrmode=12.

`date`
is the month (expressed numerically), day, and year (use only two digits for the year), separated by periods

`dayofweek`
values are sun, mom, tue, wed, thu, fri, sat.

`hrmode`
is either 12 or 24.

`time`
is the hour (24-hour clock), minute, and second, separated by periods

Examples

Displaying the Time

In this example, the set time command displays the current time and date:

```
set time
```

Setting the Time

In this example, the set time command sets the time and date.

```
set time time=17.05 date=12.25.97
```

set trace

Use the set trace command to

- Configure Digi device for tracing
- Display tracing information

Required Privileges

Root privileges are required to use this command.

Related Information

None

Syntax

Configuration

Use this form of the set trace command to configure tracing:

```
set trace [loghost=ip-addr][mask=type:severity] [mode={historical |
concurrent]} [state={on|off|dump}] [syslog={on|off}]
```

Display

Use this form of the set trace command to display the status of tracing information:

```
set trace
```

Fields

`loghost`
is the IP address of a host to which trace messages should be sent. This host must be running the syslog daemon.

`mask=`*`type`*`:`*`severity`*
is the type and nature of event that should be traced

type
is one of the following:

Type	Traces events associated with...
addp	ADDP
arp	Address Resolution Protocol
cache	Routing cache
connect	connect functionality
dhcp	DHCP
dialer	Dial-out ports
dns	Domain Name System
esc	Escape sequence
ether	Ethernet
fwdr	Routing (forwarded IP packets)
icmp	Internet Control Message Protocol
inetd	Internet daemon (based on received packets)
ip	Internet Protocol
lpd	Line Printer Daemon
lpd_a	Line Printer Daemon (ASCII)
lpd_h	Line Printer Daemon (hex)
modbus	Modbus. PortServer TS 8/16 devices to not support this command.
netd	Net Daemon
portsw	Portswitcher software

ppp	Point-to-Point Protocol
radius	RADIUS. Digi One and PortServer TS 2/4 devices do not support this feature.
realp	RealPort
rlogin	Rlogin
routed	Route Daemon
serial	Serial ports
snmp	Simple Network Management Protocol
stream	STREAMS internal data processing methodology
tcp	Transmission Control Protocol
telnet	Telnet
udp	User Datagram Protocol
user	Users
vj	Van Jacobsen header compression
wan	Wide-area network connections
*	All entities listed in this table

severity
is one of the following severity levels:

Severity	Meaning
+ (plus sign)	+ is used to add other severity levels to the trace. This can be used to specify multiple severity trace levels on a single command or to specify multiple trace commands that add levels of severity. See the examples that follow for clarification.
- (minus sign)	- is used to subtract severity levels from the trace. See the examples that follow.
critical (the default)	This means that tracing is done on only the most severe events. This level produces the least amount of trace data. Critical can be abbreviated with a “c”.
warning	This means tracing is done on critical events and on less severe events as well. This level produces more trace data than critical, but less than info. Warning can be abbreviated with a “w”.
info	This means tracing is done on many events. It produces more trace data than previous levels. Info can be abbreviated with an “i”.
debug	Is the level to use for debugging. Do not use this level for anything but debugging. Debug can be abbreviated with a “d”.

`mode`

`historical`
means that all trace messages stored in the buffer may be displayed by issuing the following command: `set trace state=dump`

`concurrent`
means that all trace messages are printed to the administrative terminal when state=on

`state`

`on`
means that all messages in the trace buffer are displayed. Once they are displayed, the state remains on.

`off`

means that tracing is off

`dump`
means that all messages in the trace buffer are displayed. Once they are displayed, the state returns to off.

The default is off.

`syslog`
`on`
means that trace messages are sent to the host identified on the loghost field

`off`
means that trace messages are not sent to a host

The default is off.

Examples

Displaying Trace Settings

In this example, the set trace command displays current trace settings.

```
set trace
```

Dumping a Trace

In this example, the set trace command dumps a previously recorded trace of ARP events.

```
set trace mask=arp:warning mode=historical state=dump
```

Configuring Trace Levels

In this example, the set trace command configures tracing for future critical events.

```
set trace mask=arp:critical mode=concurrent state=on
```

Using the + Sign to Extend the Trace

In this example, the set trace command configures tracing for info, warning, and debug trace levels.

```
set trace mask=arp:i+w+d
```

Using the - Sign to Subtract a Severity Level

In this example, the warning severity level is subtracted from the trace settings specified in the previous example.

```
set trace mask=arp:-w
```

set user

Use the set user command to

- Display configuration attributes stored in the user table, such as whether a user must supply a password
- Configure a range of options associated with users, such as whether the user automatically connects to a host or is required to supply a password

About the User Table

- The PortServer TS 8/16 user table holds up to 64 entries. To accommodate additional users, PortServer 8/16 can use a RADIUS server. See set radius on page 2-73.
- The Digi One and PortServer TS 2/4 user table holds up to 9 users.

Required Privileges

All set user command functions require root privileges.

Related Information

Syntax

Configuration

Here is the form of the set user command used to configure user attributes:

```
set user [accesstime=time][addrcompress={on|off}][asyncmap=map]
[autoconnect={on|off}] [autohost=ip-addr] [autoport=tcp-port]
[autoservice={default|telnet|rlogin|raw}] [bringup=filter]
[chapid=id][chapkey=key][commandline={on|off}] [compression={vj|none}]
[connectesc={off | esc-char} [defaultaccess= service] [device=device-name]
[dialout={on|off}] [downdly=seconds] [idletimeout=time][ipaddr=ip-addr]
[ipmask=mask] [keepup=filter][killescchar=character] [loadkey=host:key]
[localbusydly=seconds][localipaddr=ip-addr] [loginscript=script]
[logpacket=filter] [maxsessions=number]
[menu={off|index-num}] [mtu=bytes]
[n1, n2=phone-number] [name=name]
[netrouting={off|send|rec|both}][netservice={on|off}]
[network][newname=string] [outgoing={on|off}] [p1,p2...=script-parm]
[papid=id] [pappasswd=password] [passive={on|off}] [passpacket= filter]
[password={on|off}] [ports=ports]
[pppauth={none|pap|chap|both}][protocol=ppp] [protocompress={on|off}]
[range=range] [rloginesc=char] [rmkey={on | off}] [rmtbusydly=seconds]
[sessiontimeout=seconds] [telnetesc=character] [vjslots=number]
```

Display

Here is the form of the set user command used to display entries from the user table:

```
{set user {[name=name]|[range=range]} | set user name=name network}
```

Remove Entry

Here is the form of the set user command used to remove an entry from the user table.

```
set user [range=range] [rmuser={on|name}]
```

Fields

`accesstime (Digi One and PortServer TS 2/4 devices do not support this option.)`

is the period in which the user can access Digi device. Use the accesstime field to restrict the user's access to the time specified.

Use the following keywords to specify day (or days) and hours:

Period	Keyword

Working week (Monday-Friday)	wk
Sunday	su
Monday	mo
Tuesday	tu
Wednesday	we
Thursday	th
Friday	fr
Saturday	sa

Specify hour ranges in the form: hr:min-hr:min or hr-hr. Use spaces to separate keywords and then enclose the entire string in quotation marks. Here are some examples:

Examples	Provides access...
accesstime=wk9:00-17:00	Monday through Friday from 9:00 a.m. until 5:00 p.m.
accesstime="wk9:00-17:00 su0-23"	Monday through Friday from 9:00 a.m. until 5:00 p.m. and all day Sunday
accesstime="su mo fr"	All day Sunday, Monday, and Friday

`addrcompress`

`on`
means Digi device attempts to negotiate address compression on PPP connections

`off`
means Digi device will **not** attempt to negotiate address compression

The default is on.

`asyncmap`
is a mask for PPP connections that defines which of the 32 asynchronous control characters to transpose. These characters, in the range 0x00 to 0x1f are used by some devices to implement software flow control. These devices may misinterpret PPP transmission of control characters and close the link. This mask tells PPP which characters to transpose.

The default is FFFF, which means transpose all 32 control characters. Any combination is valid. The following are the most likely masks that you will want to use:

- FFFFFFFF, which means transpose all control characters
- 00000000, which means transpose none
- 000A0000, which means transpose Ctrl-Q and Ctrl-S

`autoconnect`

`on`
means that a Telnet or Rlogin user will be automatically connected to another system without accessing the Digi device command line once the user has satisfied login and password requirements. If you specify yes, specify the autohost and autoport or autoservice fields.

`off`
means the user will **not** be automatically connected to another system

The default is off.

`autohost`
is the IP address of a host to which this Telnet or Rlogin user should be automatically connected. Use this field only if you specify autoconnect=yes.

`autoport`
is the TCP port to use for the automatic connection. Use this field only if you specify autoconnect=yes.

If you specify autoconnect and do not specify a TCP port, the port will be determined by the autoservice field, or—if there is no autoservice field specified—the default, port 513, which is Rlogin.

`autoservice`
is an alternate way to specify a TCP port for an autoconnect user (see the autoport field). Use this field only if you specify autoconnect=yes. Specify one of the following services: Telnet, Rlogin, or raw (which means that data will be passed between the serial port and the TCP stream without modification).

The default is the value of the autoport field.

`bringup`
is the name of a filter (defined on the set filter command) that Digi device uses to initiate a remote connection to a PPP user. This filter must be created before you use this field.

`chapid`
is a character string that identifies the PPP user using CHAP authentication. This is equivalent to a user (or login) name. The string must be 16 or fewer characters and must be recognized by the peer.

`chapkey`
is a character string that authenticates the PPP user using CHAP authentication. This is equivalent to a password. The string must be 16 or fewer characters and must be recognized by the peer.

`commandline`
`on`
means that a Telnet, Rlogin, PPP user can access the Digi device command line to issue commands

`off`
means that the user can **not** access the command line and can **not** issue commands

The default is on.

`compression`
`vj`
means that Van Jacobsen Header compression is used on PPP connections

`none`
means that header compression is not used on PPP connections

The default is none.

`connectesc`
is the escape character for users using the connect command. The default escape character is Ctrl [(Control key and left bracket).

`defaultaccess`
restricts the service accessible to the user

`commandline`
means that the Digi device command line is displayed to the user

`menu`
means that a menu is displayed to the user. If you specify this option, you must also specify a menu number on the menu field

`autoconnect`
means that Digi device automatically connects the user to the destination specified on the autohost field

`netservice`
starts outgoing PPP services, depending on which protocol is specified on the protocol field
`outgoing`
means that this user is limited to outgoing connections only

The default is commandline.

`device`
is the name of a device or a device pool (defined with the set device command) used for outgoing PPP connections

`dialout`
`on`
means that outgoing PPPconnections are enabled. A dialer script requires this field to be on to initiate outbound connections.

`off`

means that outgoing connections are **not** enabled

The default is off.

`downdly`
is the number of seconds the dialer script should delay before attempting to establish a PPP connection with a previously inaccessible host

The default is 0, which means do not delay in making the attempt to reconnect. The range is unlimited.

`idletimeout`
is the maximum time in seconds that a PPP user's connection can be idle before the user is disconnected

The range is 0 to unlimited. The default is 0, which means that the user will never be disconnected for lack of connection activity.

`ipaddr`
is the remote PPP user's IP address. Possible values are

- An IP address in dotted decimal format.
- negotiated or 0.0.0.0., which means that the peer provides an address
- ippool or 255.255.255.254, which means that Digi device provides an address for the peer from its IP address pool

`ipmask`
is the IP mask to apply to the address specified on the ipaddr field

`keepup`
is the name of a keepup filter, defined with the set filter command, that Digi device uses to maintain PPP connections. A keepup filter is one in which the reception of certain types of packets are indications to Digi device that the connection should be maintained.

`killescchar`
is the kill character, which is used to close sessions. The default is ^u.

`loadkey=`*`host`*`:`*`key`* `(only the PortServer TS 8/16 support this feature)`

- *host* is the IP address or DNS name of a host from which the SSH2 public key will be downloaded to the PortServer TS 8/16.
- *key* is the name of a file on the host in SECSH format, which contains the SSH2 public key. If your host's implementation requires a complete path to this file, specify the path here as well.

`localbusydly`
is the number of seconds that Digi device delays before retrying to establish a PPP connection that could not be made because local ports were unavailable.

The range is 0 to an unlimited number of seconds. The default is 0, which means there will be no delay.

`localipaddr`
is the IP address of the local end of a PPP link

`loginscript`
is the name of a script, defined with the set script command, to use to log in to a remote system. This field is required for outbound PPP connections unless the remote system does not require a login and password.

`logpacket`
is the name of a filter designed to write to the log file whenever Digi device handles a particular type of packet on PPP connections

`maxsessions`
is the maximum number of ports that a Telnet or Rlogin user can be logged into at the same time

0 means that the user can be simultaneously logged into all ports specified on the ports field

`menu`
`index-num`
is the menu, identified by an index number in the menu table, that will be presented to this user

`off` and `0` (zero)
means that no menu is presented to the user

The default is off.

`mtu`
is the maximum transmission unit (frame size in bytes) to use for this PPPconnection. For PPP connections, the MTU is negotiated, so enter 1500, the largest size Digi device will permit the remote host to send.

For PPP users, the range is 128 to 1500 bytes, and the default is 1500 bytes.

`n1,n2...`
are phone numbers (up to 10) to dial to request a PPP outgoing connection, which dialer scripts reference. If you enter more than one number, when Digi device encounters a busy signal, it tries these numbers in the order specified here.

You can enter this number as digits only, with dashes (-) separating digits, or with commas.

`name`
is the name that identifies this user

`netrouting`
specifies how RIP routing updates are handled on connections to this PPP user. Use this field only if the user is an IP router.

`off`
means that this user is not included in RIP updates

`send`
means propagate RIP updates to this user, but do not accept RIP updates from this user

`receive`
means accept RIP updates from this user, but do not send RIP updates to this user

`both`
means RIP updates will be sent to and received from this user

The default is off.

`netservice`
`on`
allows PPP connections for the user

`off`
allows no PPP connections for the user

`network`
displays network-related options associated with the user specified on the name field

`newname`
is a new name for a previously defined user

`outgoing`
`on`
means that the user can initiate outgoing connections

`off`
means that the user can **not** initiate outgoing connections

`p1, p2 ...`
are integers (1-9) that can be used in the variable fields of login or dialer scripts

`papid`
is a character string that identifies the PPP user using PAP authentication. This is equivalent to a user (or login) name. The string must be 16 or fewer characters and must be recognized by the peer.

`pappasswrd`
is a character string that authenticates the PPP user using PAP authentication. This is equivalent to a password. The string must be 16 or fewer characters and must be recognized by the peer.

`passive`
`on`
means that Digi device waits for the remote system to begin PPP negotiations

`off`
means that Digi device may initiate PPP negotiations

The default is off.

Note: Do not set both sides of a PPP connection to passive=on.

`passpacket`
is the name of a filter designed to allow packets meeting filter criteria to pass through Digi device serial ports on PPP connections

`password`
`on`
means a Digi device password is required of this user

`off`
means a password is not required of this user

The default is on.

`ports`
is a port or range of ports that this user can access

`pppauth`
determines whether PPP authentication is required and, if so, what kind

`none`
means the remote user does not require PPP authentication

`chap`
means CHAP authentication is required

`pap`
means PAP authentication is required

`both`
means both CHAP and PAP authentication is required

The default is both.

`protocompress`
`on`
means Digi device attempts to negotiate protocol compression on PPP connections

`off`
means Digi device will **not** negotiate protocol compression

The default is on.

`protocol=ppp`
specifies that this is a PPP user

`range`
identifies an entry or range of entries in the user table to display or remove

`rloginesc`
is a different escape character than the ~ (tilde) character. This character is used for disconnecting from the remote host.

`rmkey={on | off}`
on enables the SSH2 public key defined on the loadkey field, and off disables this feature. The default is on.

`rmtbusydly`
is the number of seconds that Digi device delays before reattempting a connection to a remote system that was previously inaccessible

The range is 0 to an unlimited number of seconds. The default is 0, which means no delay.

`sessiontimeout`
is the maximum time in seconds that a user may be connected

The range is 0 to an unlimited number of seconds. The default is 0, which means that there is no limit.

`telnetesc`
is the Telnet escape character for this user. The default is ^] (Ctrl and right bracket)

`vjslots`
is the number of slots used for Van Jacobson header compression. The number of slots you configure should correspond to the expected maximum number of simultaneous connections using Van Jacobson header compression on this WAN interface. To avoid excessive processor usage, configure only the number you think you will need.

The default is 16 and the range is 0 to 256.

Examples

Displaying the Entire User Table

In this example, the set user command displays a list of users.

```
set user
```

Displaying a Range of Entries in the User Table

In this example, the set user command displays a range of entries in the user table.

```
set user range=2-7
```

Displaying a Single User

In this example, the set user command displays information on a single entry in the user table.

```
set user ra=1
```

Configuring an Autoconnect User

In this example, the set user command configures an autoconnect user.

```
set user name=user4 autoconnect=on autohost=199.193.150.10 autoport=23
defaultaccess=autoconnect
```

Configuring a PPP User

In this example the set user command configures a remote PPP user.

```
set user name=user4 protocol=ppp addrcompress=on pppauth=pap papid=user4-
id pappasswrd=howdy compression=vj defaultaccess=netservice
ippaddr=ip-pool localipaddr=143.191.3.4 netservice=on range= 2-4
```

show

Use the show command to display the following:

- Configuration settings
- Current versions of the Boot, POST, OS components

Required Privileges

Anyone can issue the show command.

Related Information

None

Syntax

`show` *`option`* `[range=`*`range`*`]`

Fields

`option`
is one of the following options:

Option	Displays events associated with...	Works with Range Field?
altip	set altip setting	yes
arp	set arp settings	yes
auth	set auth settings	yes
boot	boot version	no
buffers	set buffers	yes
chat	set chat settings	yes
config	set config settings	no
device	set device settings	yes
dhcp	set dhcp setting	no
flow	set flow settings	no
forwarding	set forwarding settings	no
host	set host settings	yes
ippool	set ippool settings	no
keys	set keys settings	no
lines	set line settings	yes
logins	set logins settings	no
menu	set menu settings	yes
modbus	set modbus settings. This option does not apply to PortServer TS 8/16 devices.	yes
modem	set modem settings	yes
ports	set ports settings	no
radius	set radius settings	no
route	set route settings	yes
script	set script settings	no
service	set service settings	yes
snmp	snmp settings	no
socket-id	socket-id settings. This option does not apply to PortServer 8/16 devices.	yes
tcpip	set tcpip settings	no
telnetip	set telnetip settings	yes
terms	set terms settings	yes

time	set time settings. This option applies to PortServer 8/16 devices only.	no
trace	set trace settings	no
user	set user settings	yes
version	Version of POST, Boot, and EOS running on the Digi device.	no

`range`
is a configuration table entry or range of entries

Examples

Displaying Current Versions of POST, Boot and EOS

In this example, the current versions of the POST, Boot and EOS are displayed.

```
show version
```

Displaying User Setting

In this example, the settings for a user, identified by an index number in the user table, are displayed.

```
show user range=3
```

status

Use the status command to display information about your current Telnet or connect session.

Required Privileges

Anyone can execute the status command.

Related Information

See close on page 2-5. Typically you use the status command to determine which Telnet sessions to close.

Syntax

Here is how you issue the status command.

```
status
```

Example

In this example, the status command provides information on the user's current Telnet session.

```
status
```

telnet

Use the telnet command to establish a Telnet session with a remote system.

Required Privileges

Anyone can execute the telnet command.

Related Information

None

Syntax

Here is how you issue the telnet command.

```
telnet {hostname | host-ip-addr} [tcp-port]
```

Fields

Field Descriptions

`hostname`
is the name of the host to which you want a Telnet session. DNS must be configured on the Digi device to use this option.

`host-ip-addr`
is the IP address of the host to which you want a Telnet session

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

Examples

Telnetting Using a Host Name

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

```
telnet host1
```

Telnetting 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
```

Telnetting to a Digi device Port from the LAN

In this example, a user on the LAN initiates a Telnet connection to port 4 on a Digi device named host-1.

```
telnet host-1 2004
```

traceroute

Use the traceroute command to display a list of routers through which an IP packet passes on its way to a particular destination.

Required Privileges

Anyone can issue the traceroute command.

Related Information

None

Syntax

Here is the syntax for issuing the traceroute command.

```
traceroute ip-addr|name
```

Field

ip-addr | name
is either the IP address or the DNS name of the host to which you want a route traced

Examples

Tracing a Route Using an IP Address

In this example, the traceroute command traces a route to a host using the specified IP address.

```
traceroute 199.150.150.74
```

Tracing a Route Using a Name

In this example, the traceroute command traces a route to a host using a host name.

```
traceroute poe
```

uptime

Use the uptime command to display the amount of elapsed time since the last reboot.

Required Privileges

Anyone can issue the uptime command.

Syntax

Here is how to issue the uptime command:

```
uptime
```

Example

```
uptime
```

wan

Use the wan command to

- Initiate and control PPPconnections
- Display the status of current connections

Required Privileges

Anybody can issue the wan command to display the status of WAN connections. Root privileges are required to initiate or control WAN connections.

Related Information

See the following commands:

- set modem on page 2-67
- set filter on page 2-43

Syntax

Initiate and Control

Use this form of the wan command to initiate and controlWAN connections:

`wan [close=`*`user-name`*`] [initmodem=`*`range`*`] [start=`*`user-name`*`] [testmodem=`*`range`*`] [verify={all|`*`user-name`*`}]`

Display

Use this form of the wan command to display the status of current WAN connections:

`wan [range=`*`range`*`]`

Fields

`close`
closes an outbound connection. The connection is identified by a user name

`initmodem`
executes the modem initialization script associated with the port or ports specified

`range`
is a port or range of ports

`start`
places the connection in the start-up condition. The connection is identified by a user

`testmodem`
executes the modem test script associated with the port or ports specified. See set modem on page 2-67 for information on test scripts.

`verify`
`all`
verifies that all connections are associated with real users, that is, users that are defined in the configuration

`wanname`
verifies that the user has been defined in the configuration

Note: Only incorrectly configured WAN interfaces produce a message in response to this command. If WAN interfaces are configured correctly, no message is returned.

Examples

Closing a WAN Interface

In this example, a WAN connection is closed.

```
wan close=user-ppp01
```

Starting a WAN Interface

In this example, the wan command initiates a WAN connection.

```
wan start=user-ppp01
```

Displaying WAN Status Information

In this example, the wan command displays the status of the connection on port 2.

```
wan range=2
```

who

Use the who command to display a list of current Digi device users.

Required Privileges

Anyone can issue the who command.

Related Information

None

Syntax

Here is how you issue the who command.

```
who [range=tty-tty]
```

Field

`range`
is either a tty connection or a range of connections identified by tty connection number

Examples

Display List of all Users

In this example, a list of all current users is displayed.

```
who
```

Display a Range of Users

In this example, a range of user connections is displayed.

```
who range=5-10
```

Index

A
address compression 2-99
ARP table
  adding ethernet address 2-31
  displaying 2-31
async map 2-99
autoconnect
  configuring ports 2-69
  configuring users 2-99

B
baud rate, configuring 2-57
bringup filter 2-100

C
character size, configuring 2-57
chat scripts, configuring 2-36
chat table
  configuring entries 2-36
  displaying entries 2-36
  how to configure 2-37
  removing entries 2-36
  renaming entries 2-36
closing a connection 2-5
compression on PPP and SLIP connections 2-98
configuration
  coping to a remote host or terminal 2-7
  displaying 2-7
  restoring defaults 2-3
  restoring from a remote host or terminal 2-7
copying the configuration to a host or terminal 2-7
CSLIP
  closing connections 2-111
  initiating connections 2-111

D
date and time, setting 2-94
default gateway, configuring 2-38
dialout connections, enabling 2-98

E
echo replies 2-21
ethernet connection
  configuring 2-38

F
filte
  displaying the filter table 2-43
filter
  bringup 2-100
  configuring 2-43
  keepup 2-101
  passpacket 2-103
  removing 2-43
  using with TCP service ports 2-82
flow control
  configuring 2-46
  displaying current parameters 2-46
frame relay
  closing connections 2-111
  initiating connections 2-111

H
host connection, testing 2-21
host table
  configuring entries 2-52

I
ICMP
  configuring ICMP router discovery 2-49
  mask server 2-49
  routing redirect messages 2-38
IGMP 2-50
IP address
  configuring a serial port 2-30
  for a remote user 2-101
IP routing
  configuring 2-49
  displaying the routing table 2-49
  static routes 2-75

K
keeput filter 2-101

L
line, configuring 2-57
logging on to a remote system 2-28
login script 2-101
logins
  configuring 2-59
  displaying current settings 2-59

M
menus
  configuring 2-61
  displaying 2-61
  removing 2-61

N
name-to-address mappings, configuring 2-52

network configuration parameters
displaying 2-38
network parameters
displaying 2-102
network statistic tables
displaying 2-13
network statistics
clearing and displaying 2-13
newpass command 2-20

O
OS, updating 2-4
outbound ports
restricting access to 2-32
output devices
configuring 2-40

P
PAP 2-102
passpacket filter 2-103
password
creating 2-20
requiring of a user 2-103
ping Command 2-21
poison reverse
configuring 2-50
ports
configuring 2-69
configuring device types 2-69
PPP
address compression 2-99
authentication 2-103
closing connections 2-111
compression 2-98
protocol compression 2-103
PPP initiating connections 2-111
protocol compression 2-103
proxy ARP
configuring 2-50

Q
quit Command 2-23

R
RADIUS, configuring a server 2-73
RealPort
access to output ports 2-34
restoring the configuration from a host or terminal 2-7
restricting access to PortServer II 2-98
RIP
configuring 2-49
updates 2-102
rlogin command 2-28
root session
terminating 2-23
root sessions
temporary 2-2
routing
configuring dynamic routes 2-49
configuring static routes 2-75
routing information protocol
configuring 2-49
updates 2-102

S
script
assigning to ports 2-67
clearing association with ports 2-67
creating 2-77
displaying 2-77
login 2-101
removing from the scripts table 2-77
send command 2-29
serial line
configuring 2-57
serial port
local IP address 2-101
session
terminating 2-23
set 2-31, 2-38
set arp Command 2-31
set config command 2-39
set flow command 2-46
set route command 2-75
SLIP
closing connections 2-111
compression 2-98
SLIP initiating connections 2-111
SNMP, configuring 2-84
split horizon
configuring 2-50
start bits
configuring 2-57
statistics
ethernet 2-15
ICMP 2-13
interface 2-15
IP 2-15
network 2-13
TCP 2-17
UDP 2-17
stop bits, configuring 2-57

T
TCP service ports 2-82
telnet
connection status 2-108
establishing a connection 2-108
teminal types 2-90, 2-92
temporary root session 2-2
initiating 2-2
term table
displaying 2-92
removing entries 2-92
terminals
configuring screen memory 2-92
escape sequences 2-92

TFTP host
configuring 2-38
time and date
setting 2-94
tracing
configuring 2-95
tracing a route 2-109

U
users
configuring 2-98

W
wan command 2-111
WAN connections
closing 2-111
initiating and controlling 2-111
who command 2-113