LANTRONIX®

XPort® Pro™

XPort Pro™ Command Reference

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Contents

1: Introduction

Evolution OS™, the Lantronix cutting edge operating system, supports three convenient configuration methods (Web, command line, and XML). This Command Reference describes how to configure Lantronix device servers running on Evolution using Command-Line and XML interfaces.

Command Line Interface (CLI): Making the edge-to-enterprise vision a reality, Evolution OS™ uses industry-standard tools for configuration, communication, and control. For example, the Evolution OS™ uses a command line interface (CLI) whose syntax is very similar to that used by data center equipment such as routers and hubs.

This Command Reference provides information about navigating the CLI interface and lists the CLI commands for configuring, monitoring, and controlling the device server.

XML-based Architecture and Device Control: XML is a fundamental building block for the future growth of Machine-to-Machine (M2M) networks. Evolution supports XML-based configuration records that make configuring the device server easy for users and administrators. The XML is easily editable with a standard text editor or an XML editor.

Chapter 4 provides a brief overview of the XML interface, contains rules on basic XML syntax, provides a guide to the interface with specific tags, and provides a guide to using XML configuration records.

2: Configuration Using Telnet or a Serial Port

As an alternative to using the Web Manager, you can configure the Lantronix Evolution device server using a series of commands through the Command Line Interface (CLI). You can access the CLI through a Telnet session, an SSH session, or a direct connection to a serial port.

This command reference describes how to use the CLI and provides a detailed list of all the CLI commands supported.

Configuration Using Telnet

To configure the device server using a Telnet session over the network, you must first establish a Telnet connection.

Note: *As an alternative, you may establish a Telnet connection by clicking the Telnet Configuration tab in DeviceInstaller. See the product User Guide for more information.*

1. From the Windows **Start** menu, click **Run**. The Run dialog box appears.
2. In the Run dialog box, type the following command, where x.x.x.x is the IP address:

```
telnet x.x.x.x
```

A prompt appears.

Note: *Depending on the level of security you have configured, a password may be required.*

Configuration Using a Serial Port

Serial Command Mode

The serial port can be configured to operate in command mode permanently or to be triggered under specified conditions. See the line <line> Level command description for more information.

Serial Recovery

In this mode, the normal boot process is interrupted, allowing recovery from unknown or incorrect configuration settings.

While the backdoor is active, the CLI prompt is changed to “>>” (instead of “>”) and the Web Manager is inaccessible. These serve as an important indication that the device

boot processes has been temporarily halted. To complete the boot process, terminate the serial CLI session (with the exit command),

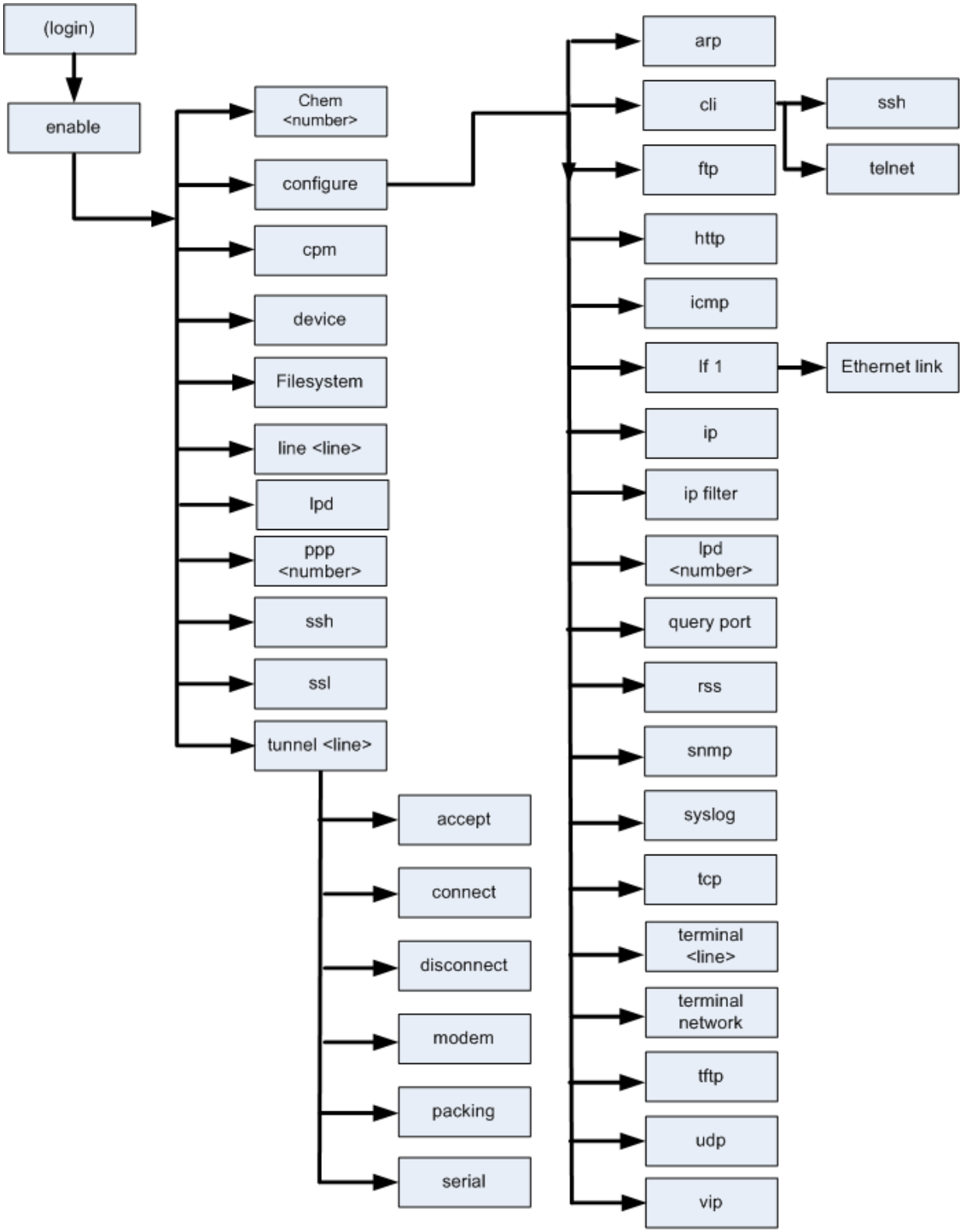
To configure the Lantronix device server locally using a serial port, connect a terminal or a PC running a terminal emulation program to one of the device server's serial ports. Configure the terminal for 9600 baud, 8-bit, no parity, 1 stop bit, and no flow control.

1. Power off the device.
2. Press and hold down the exclamation point (!) key.
3. Power on the device.
4. When an exclamation point appears on the terminal or PC screen, type **xyz** within 5 seconds to display the CLI prompt.

Navigating the Command Line Interface

The CLI is organized into a hierarchy of levels. When you start a command line session, you are in the login level. Commands at the login level of the CLI do not affect current configuration settings. These commands provide diagnostic and status information only. To configure the device server running on Evolution, you must be in the enable level or any of its sub-levels. The level structure is depicted in the following figure:

Figure 2-1. CLI Command Hierarchy



To move to a different level:

One Step Enter the name of that level from within its parent level.

For example:

```
>enable
(enable)#tunnel 2
```

Note: *Some levels require a number to indicate one of several level instances. In the example, the number 2 indicates configuring the settings for tunneling on serial port 2.*

To exit and return to one level higher:

One Step Type **exit** and press the **Enter** key.

Note: *Typing exit at the login level or the enable level will close the CLI session. If Command Mode is configured for always-on operation, a new session will immediately be restarted.*

To view the current configuration at any level:

One Step Type **show**

To view the list of commands available at the current level:

One Step At the command prompt, type the question mark "?". The list of current commands appears. (There is no need to press Enter.)

Note: *Items within < > (e.g. <string>) are required parameters.*

To view the available commands and their explanations:

One Step At the command prompt, type " * " and press **Enter**.

To view the list of commands available for a partial command:

One Step At the command prompt, type the partial command followed by the question mark "?". (There is no need to press Enter.)

For example: **<tunnel-1>#echo?** displays a list of all echo commands at the tunnel level.

To view available commands and their explanations for a partial command:

One Step At the prompt, type the partial command followed by " * " and press **Enter**.

For example: **`<tunnel-1>#echo*`** displays a list of all echo commands and descriptions at the tunnel level.

To view the last 20 commands entered at the CLI:

One Step Type **show history** and press the **Enter** key.

Keyboard Shortcut Commands

Typing enough characters to uniquely identify a command is a shortcut for that command.

Tab completion: Typing some characters then typing <tab> will display the first command that begins with those characters. Typing <tab> again will display the next command that begins with the original characters typed. While the command is displayed, you may press <enter> to execute the command or you may backspace to edit any parameters.

The following key combinations are allowed when configuring the device server from the command line interface (CLI):

- **Ctrl + a:** place cursor at the beginning of line
- **Ctrl + b:** backspace one character
- **Ctrl + d:** delete one character
- **Ctrl + e:** place cursor at the end of the line
- **Ctrl + f:** move cursor forward one character
- **Ctrl + k:** delete from the current position to the end of the line
- **Ctrl + l:** redraw the command line
- **Ctrl + n:** display the next line in the history
- **Ctrl + p:** display the previous line in the history
- **Ctrl + u:** delete entire line and place cursor at start of prompt
- **Ctrl + w:** delete one word back
- **Ctrl + z:** a shortcut for the exit command
- **Esc + b:** move cursor back one word
- **Esc + f:** move cursor forward one word

3: Summary of CLI Commands

Command Hierarchy

The hierarchy of commands is shown in Figure 2-1. CLI Command Hierarchy on page 9.

Command Index

The command levels are indexed in alphabetical order below.

Click on a page number to see the details of a command.

accept Level Commands

Command Path: enable>tunnel #>accept

Level Prompt: tunnel-accept:#

Where # is the line number.

The following commands are available in the accept level.

accept level commands	Description
accept mode always	Enables the tunneling server to always accept tunneling connections.
accept mode any character	Enables the tunneling server to accept tunneling connections only when a character is received through the corresponding line (serial port)
accept mode disable	Disables accept mode tunneling.
accept mode modem control asserted	Enables the tunneling server to accept tunneling connections when the modem control pin is asserted.
accept mode modem emulation	Enables modem emulation for accept mode tunneling.
accept mode start character	Enables accept mode tunneling when the configured start character is received on the line.
aes decrypt key *<hexadecimal>*	Sets the accept tunnel AES decrypt key with up to 16 bytes. Each byte is represented by two adjacent hex digits. Bytes may run together or be separated by optional punctuation: 123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc Note that quotes must enclose the value if it contains spaces.
aes decrypt key text *<text>*	Sets the accept tunnel AES decrypt key with up to 16 bytes. Each byte is represented by a single character. Note that quotes must enclose the value if it contains spaces.
aes encrypt key *<hexadecimal>*	Sets the accept tunnel AES encrypt key with up to 16 bytes. Each byte is represented by two adjacent hex digits. Bytes may run together or be separated by optional punctuation: 123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc Note that quotes must enclose the value if it contains spaces.
aes encrypt key text *<text>*	Sets the accept tunnel AES encrypt key with up to 16 bytes. Each byte is represented by a single character. Note that quotes must enclose the value if it contains spaces.
block network disable	Forwards (tunnels) network data in accept mode tunneling.
block network enable	Discards all data coming in from the accept mode tunnel before forwarding it to the serial interface (generally used for debugging).
block serial disable	Forwards (tunnels) serial data in accept mode tunneling.

accept level commands	Description
block serial enable	Discards all data coming in from the serial interface before forwarding it to the accept mode tunnel (generally used for debugging).
clrscrn	Clears the screen.
cp output	Enters the next lower level.
default accept mode	Restores the default accept mode as "always".
default protocol	Restores the default protocol as "TCP".
default start character	Defaults the accept mode start character.
default tcp keep alive	Restores the default 45 second accept mode TCP keep alive timeout.
email connect *<number>*	Sets an email profile to use to send an email alert upon establishing an accept mode tunnel. <number> = the number of the email profile to use.
email disconnect *<number>*	Sets an email profile to use to send an email alert upon closing an accept mode tunnel. <number> = the number of the email profile to use.
exit	Returns to the tunnel level.
flush serial disable	Characters already in the serial data buffer are retained upon establishing an accept mode tunneling connection.
flush serial enable	Flushes the serial data buffer upon establishing an accept mode tunneling connection.
flush start character disable	Enables forwarding of the accept start character into the network.
flush start character enable	Disables forwarding of the accept start character into the network.
kill connection	Disconnects the active accept mode tunneling connection.
local port <number>	Sets the port to use for accept mode tunneling. <number> = number of the port to use.
no aes decrypt key	Removes the accept tunnel AES decrypt key.
no aes encrypt key	Removes the accept tunnel AES encrypt key.
no email connect	Discontinues sending email alerts upon establishing an accept mode tunnel.
no email disconnect	Discontinues sending email alerts upon closing an accept mode tunnel.
no local port	Uses the default port number as the local port for accept mode tunneling. The default port is 10000 + #, where # is the line number for this tunnel.

accept level commands	Description
no tcp keep alive	Disables the accept mode TCP keep alive timeout.
password	Enters the next lower level.
protocol ssh	Uses SSH protocol for accept mode tunneling.
protocol ssl	Uses SSL protocol for accept mode tunneling.
protocol tcp	Uses TCP protocol for accept mode tunneling.
protocol tcp aes	Uses TCP protocol with AES encryption for accept mode tunneling.
protocol telnet	Uses Telnet protocol (with IAC) for accept mode tunneling.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show status	Displays tunnel accept status.
start character <*control*>	Sets the accept mode start character. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.
tcp keep alive <milliseconds>	Enables TCP keep alive for accept mode tunneling and sets the timer. <milliseconds> = timer value, in milliseconds.
write	Stores the current configuration in permanent memory.

arp Level Commands

Command Path: enable>config>arp

Level Prompt: config-arp

The following commands are available in the ARP level.

arp level commands	Description
add <ip address> <MAC address>	Adds an entry to the ARP table, mapping an IP address to a MAC address. <ip address> = IP address to be mapped. <mac address> = MAC address in colon-separated form.
clrscrn	Clears the screen.
default timeout	Restores the default ARP cache timeout.
exit	Exits to the configuration level.
remove <ip address>	Removes an entry from the ARP cache. <ip address> = address of the entry being removed.

show	Displays the current configuration.
show cache	Displays the ARP cache table.
show history	Displays the last 20 commands entered during the current CLI session.
timeout <seconds>	Sets the ARP cache timeout. <seconds> = ARP cache timeout in seconds.
write	Stores the current configuration in permanent memory.

chem Level Commands

This level allows you to change email configuration settings.

Command Path: enable>chem #

Level Prompt: chem:#

Where # is an email number, 1-4.

The following commands are available in the chem level for up to four configurable emails.

chem level commands	Description
auto show statistics	Continuously displays email statistics.
cc <*email addresses*>	Sets Cc addresses for email alerts. <email addresses> = a semicolon-separated list of email addresses within quotation marks (For example, “name1; name2”)
chem <*number*>	Enters the configure email level.
clear log	Clears all entries from the mail log.
clear mail counters	Sets the email counters to zero.
clrscrn	Clears the screen.
exit	Exits to the enable level.
file <*file*>	Specifies a text file, the contents of which will be the message body of an email alert. <file> = the name of a local file.
from <*email address*>	Sets the From address for email alerts. <email address> = email address to list in the From field of the email alert.
local port <*number*>	Sets local port used to send email alerts. <number> local port to use for email alerts.
no cc	Removes the Cc addresses for email alerts.
no clear mail counters	Restores the email counters to the aggregate values.

chem level commands	Description
no file	Removes the file name, so the message body will be empty.
no from	Removes From address for email alerts.
no overriding domain	Removes the overriding domain name option.
no replyto	Removes Reply-To address for email alerts.
no subject	Removes subject used for email alerts.
no to	Removes To address for email alerts.
no trigger	Disables the trigger to send an email.
overriding domain *<domain>*	Sets a domain name that will be used when connecting to an SMTP server to send an email alert instead of the device's domain name in EHLO. <domain> = domain name to override the current domain name in EHLO.
priority high	Sets X-Priority for email alerts to 2.
priority low	Sets X-Priority for email alerts to 4.
priority normal	Sets X-Priority for email alerts to 3.
priority urgent	Sets X-Priority for email alerts to 1.
priority very low	Sets X-Priority for email alerts to 5.
replyto *<email address>*	Sets Reply-To address for email alerts. <email address> = email address to list in the Reply-To field of the email alert.
send	Sends an email using the current settings.
server port *<number>*	Sets the port used by the SMTP server. <number> = port used for SMTP on the server side.
show	Displays email settings.
show history	Displays the last 20 commands entered during the current CLI session.
show log	Displays the email log.
show statistics	Displays email statistics.
subject *<string>*	Sets the subject for email alerts. <string> = text to placed as the subject.
to *<email addresses>*	Sets email address to which the email alerts will be sent. <email addresses> = a quoted, semi-colon separated list of email addresses.
trigger *<cp group>* *<value>*	Specify a CP group and its value that shall trigger an email. <cp group> = configurable pin group. <value> = numeric value to watch for from the CP group. Can be specified as hex if prepended with "0x".

chem level commands	Description
write	Stores the current configuration in permanent memory.

cli Level Commands

Command Path: enable>config>cli

Level Prompt: cli

The following commands are available in the cli level.

cli level commands	Description
clrscrn	Clears the screen.
default inactivity timeout	The default inactivity timeout will apply to CLI sessions.
default quit connect line	Restores the default string used to quit the "connect line <line>" command.
enable level password *<text>*	Sets the enable-level password.
exit	Exits to the configuration level.
inactivity timeout *<minutes>*	Sets the inactivity timeout for all CLI sessions.
login password *<text>*	Sets the CLI login password.
no enable level password	Removes the enable-level password.
no inactivity timeout	No inactivity timeout will apply to CLI sessions.
no login password	Removes the CLI login password.
quit connect line *<control>*	Sets the string used to quit the "connect line <line>" command. The characters may be input as text or control. A control character has the form <control>C.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
ssh	Change to menu level for SSH configuration and status.
telnet	Change to menu level for Telnet configuration and status.
write	Stores the current configuration in permanent memory.

configure Level Commands

Command Path: enable>config

Level Prompt: config

The following commands are available in the configure level.

configure level commands	Description
arp	Changes to the command level for ARP configuration and status.
clear host <*host*>	Removes an entry from the DNS Cache
cli	Change to menu level for CLI configuration and status
clrscrn	Clears the screen.
exit	Exits to the enable level.
ftp	Enters the ftp level.
host <*number*>	Change to config host level
http	Enters the http level.
icmp	Changes to the command level for ICMP configuration and status.
if <*instance*>	Changes to the interface configuration level.
ip	Changes to the command level for IP configuration and status.
ip filter	Enters the config-filter level.
kill ssh <*session*>	Kills SSH session with index from “show sessions”
kill telnet <*session*>	Kills Telnet session with index from “show sessions”
lpd <*line*>	Enters the configure lpd level. <line> = number of the line (lpd serial port) to be configured.
query port	Enters the query port level.
rss	Change to menu level for RSS configuration and status
show	Displays system information.
show history	Displays the last 20 commands entered during the current CLI session.
snmp	Enters the snmp level.
syslog	Enters the syslog level.
tcp	Changes to the command level for TCP configuration and status.
terminal <*line*>	Enters the configure-terminal level. <line> = number of the terminal line (serial port) to be configured.
terminal network	Enters the configure-terminal level for the network.
tftp	Enters the tftp level.
udp	Changes to the command level for UDP configuration and status.
vip	Change to menu level for VIP configuration and status.

configure level commands	Description
write	Stores the current configuration in permanent memory.

Connect Level Commands

Command Path: enable>tunnel #>connect

Level Prompt: connect

Where # is the line number.

The following commands are available in the connect level.

connect Level Commands	Description
block network disable	Forwards (tunnels) network data in connect mode tunneling.
block network enable	Discards all data coming in from the connect mode tunnel before forwarding it to the serial interface (generally used for debugging).
block serial disable	Forwards (tunnels) serial data in connect mode tunneling.
block serial enable	Discards all data coming in from the serial interface before forwarding it to the connect mode tunnel (generally used for debugging).
clrscrn	Clears the screen.
connect mode always	Enables the tunneling server to always establish tunneling connections.
connect mode any character	Enables the tunneling server to establish a tunneling connection when a character is received on the corresponding line (serial port).
connect mode disable	Disables connect mode tunneling.
connect mode modem control asserted	Enables the tunneling server to make tunneling connections when the modem control pin is asserted.
connect mode modem emulation	Enables modem emulation for connect mode tunneling.
connect mode start character	Enables connect mode tunneling when the configured start character is received on the line.
cp output	Enters the next lower level.
default connect mode	Restores the default connect mode as "disable".
default host mode	Connects to the first host in the list that accepts the connection.
default local port	Uses a random port number as the local port for establishing tunneling connections to other devices.

connect Level Commands	Description
default reconnect time	Restores the default reconnect time value for connect mode tunneling.
default start character	Defaults the connect mode start character.
email connect <*number*>	Sets an email profile to use to send an email alert upon establishing a connect mode tunnel. <number> = the number of the email profile to use.
email disconnect <*number*>	Sets an email profile to use to send an email alert upon closing a connect mode tunnel. <number> = the number of the email profile to use.
exit	Returns to the tunnel level.
flush serial disable	Characters already in the serial data buffer are retained upon establishing a connect mode tunneling connection.
flush serial enable	Flushes the serial data buffer upon establishing a connect mode tunneling connection.
flush start character disable	Enables forwarding of the connect start character into the network.
flush start character enable	Disables forwarding of the connect start character into the network.
host <*instance*>	Enters the next lower level. Specify the instance for the next lower level.
host mode sequential	Connects to the first host in the list that accepts the connection.
host mode simultaneous	Selects simultaneous connections to all hosts on the host list.
kill connection	Disconnects the active connect mode tunneling connection.
local port <*number*>	Sets a specific port for use as the local port. <number> = the number of the port to use.
no email connect	Discontinues sending email alerts upon establishing a connect mode tunnel.
no email disconnect	Discontinues sending email alerts upon closing a connect mode tunnel.
promote host <*number*>	Promotes the identified host, exchanging it place with the host above it, to adjust the order of the defined hosts.
reconnect time <*milliseconds*>	Sets the reconnect time value for tunneling connections established by the device in milliseconds. <milliseconds> = timeout in milliseconds.
show	Displays tunnel connect settings.

connect Level Commands	Description
show history	Displays the last 20 commands entered during the current CLI session.
show status	Displays tunnel connect status.
start character <*control*>	Sets the connect mode start character. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.
write	Stores the current configuration in permanent memory.

cp output Level Commands

Command Path:

enable>tunnel #>accept>cp output

–Or–

enable>tunnel #>connect>cp output

Level Prompt: cp_output

The following commands are available in the cp output level.

cp output level commands	Description
clrscrn	Clears the screen.
connection value <number>	Sets the value to output to the CP Group upon connect mode connection. <number> = binary to output (typically 1 or 0).
default connection value	Restores the default value for accept/connect mode connection.
default disconnection value	Restores the default value for accept/connect mode disconnection.
disconnection value <number>	Sets the value to output to the CP Group upon connect mode disconnection. <number> = binary to output (typically 1 or 0).
exit	Exits to the next higher level.
group <text>	Configures the CP Group to set upon making or breaking an accept mode connection. <text> = CP Group.
no group	Removes the CP Set Group for accept mode.

cp output level commands	Description
show	Shows the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
write	Stores the current configuration in permanent memory.

cpm Level Commands

Command Path: enable>cpm

Level Prompt: cpm

The following commands are available in the configurable pin level.

cpm level commands	Description
add <*cp*> to <*group*>	Adds the specified CP to the specified group. <cp> = configurable pin. <group> = the name of the group to which you want to add the CP.
add <*cp*> to <*group*> <*bit*>	Adds a specified CP to a specified group at a specified bit position. <cp> = configurable pin. <group> = the name of the group to which you want to add the CP. <bit> = bit position.
clrscrn	Clears the screen.
create <*group*>	Creates a configurable pin (CP) group. <group> = the name for the new group.
delete <*cp*> from <*group*>	Removes a CP from a specified group and sets the CP to its default configuration of input. <cp> = configurable pin. <group> = the name of the group.
delete <*group*>	Removes a group and resets all CPs in that group to the default configuration of input. <group> = the name of the group.
disable <*group*>	Disables the specified group. <group> = the name of the group.
enable <*group*>	Enables a disabled group. <group> = the name of the group.

cpm level commands	Description
exit	Exits to the enable level.
get <*group*>	Displays the value of the specified group. <group> = the name of the group.
set <*cp*> as input	Configures a CP as an asserted high input. <cp> = configurable pin.
set <*cp*> as input assert low	Configures a CP as an asserted low input. <cp> = configurable pin.
set <*cp*> as output	Configures a CP as an asserted high output. <cp> = configurable pin.
set <*cp*> as output assert low	Configures a CP as an asserted low output. <cp> = configurable pin.
set <*group*> <*value*>	Assigns a value to the specified group. <group> = the name of the group. <value> = numeric value to assign to the CP group. Can be specified as hex if prepended with “0x”.
show <*group*>	Displays group information for specified group. <group> = the name of the group.
show cp	Displays configuration and group information for all CPs.
show groups	Displays all groups defined and their state.
show history	Displays the last 20 commands entered during the current CLI session.
write	Stores the current configuration in permanent memory.

device Level Commands

Command Path: enable>device

Level Prompt: device

The following commands are available in the device level.

device level commands	Description
auto show tlog	Continuously displays the internal trouble log.
auto show upload	Continuously displays the status of firmware upload.
clrscrn	Clears the screen.
default long name	Restores the default product long name.
default short name	Restores the default product short name.
dhrystone	Runs the Dhrystone benchmark program.

device level commands	Description
exit	Exit to the enable level.
long name <*name*>	Sets the product long name, displayed in command mode and the Web interface.
short name <*name*>	Sets the product short name, displayed in command mode and the Web interface. <name> = maximum of eight characters.
show	Show system information
show buffer pool	Displays information about the various buffer pools.
show codefile memory	Displays memory utilization by code files.
show delta memory	Displays differences in memory utilization by code files or line reference.
show hardware information	Displays information about the hardware.
show history	Displays the last 20 commands entered during the current CLI session.
show linereference memory <*code filename*>	Displays memory utilization by line reference for one code file.
show memory	Displays current memory usage information.
show task memory	Displays task memory utilization.
show task state	Displays current task states.
show tlog	Displays the internal trouble log.
show upload	Displays the status of firmware upload.
show xport_pro	Show system information
write	Stores the current configuration in permanent memory.

disconnect Level Commands

Command Path: enable>tunnel #>disconnect

Level Prompt: disconnect

Where # is the line number.

The following commands are available in the disconnect level.

disconnect level commands	Description
clrscrn	Clears the screen.
exit	Returns to the tunnel level.
flush serial disable	Does not flush serial data upon closing a tunneling connection.
flush serial enable	Flushes serial data buffer when a tunneling connection is

	closed.
flush stop character disable	Forwards the stop character from the Line to the network.
flush stop character enable	Prevents the stop character from the Line from being forwarded to the network.
modem control disable	Does not watch the modem control pin to disconnect.
modem control enable	Watches the modem control pin and disconnects if it is not asserted.
no stop character	Removes the stop character.
no timeout	Disables disconnect after timeout feature for tunneling sessions.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
stop character *<control>*	Sets the stop character. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.
timeout *<milliseconds>*	Disconnects when no data has been received on the line (serial port) for the specified length of time. <milliseconds> = timeout in milliseconds.
write	Stores the current configuration in permanent memory.

enable Level Commands

Command Path: root>enable

Level Prompt: enable

The following commands are available in the enable level.

enable level commands	Description
auto show interfaces	Show interface statistics
auto show processes	Continuously show thread runtime information
auto show xsr	Show XML Status Record counters
chem *<number>*	Enters the configure email level.
clear interfaces counters	Zeros interface session counters
clear query port counters	Zeros Query Port counters
clear xsr counters	Zeros XML Status Record counters
clrscrn	Clears the screen.

enable level commands	Description
configure	Enters the configuration level.
connect	Show name and number for lines
connect line <*line*>	Begin session on serial port
cpm	Enters the CP Manager level.
device	Enters the device level.
disable	Exits the enable level.
exit	Exit from the system
filesystem	Enters the filesystem level.
kill line <*line*>	Kills command mode session on the Line
kill ssh <*session*>	Kills SSH session with index from “show sessions”
kill telnet <*session*>	Kills Telnet session with index from “show sessions”
line <*line*>	Enters the line level. <line> = number of the line (serial port) to be configured.
lpd	Enters the lpd level.
no clear interfaces counters	Unzeros interface session counters
no clear query port counters	Unzeros Query Port counters
no clear xsr counters	Unzeros XML Status Record counters
nslookup	Lookup host information for the given host name
nslookup <*host*>	Return host information for the given host name
ping <*host*>	Ping destination 5 times with 5 second timeout
ping <*host*> <*count*>	Ping destination n times with 5 second timeout
ping <*host*> <*count*> <*timeout*>	Ping destination n times with x timeout (in seconds)
ppp <*line*>	Enters the serial line PPP level.
reload	Reboot system
reload factory defaults	Reload factory defaults to permanent storage
secret xcr dump	Dump XML configuration containing secrets to the console
secret xcr dump <*group list*>	Dump specified XML configuration containing secrets to the console
secret xcr export <*file*>	Save XML configuration containing secrets to a file
secret xcr export <*file*> <*group list*>	Save specified XML configuration containing secrets to a local file
show	Show system information
show history	Displays the last 20 commands entered during the current CLI session.
show hosts	Show domain settings

enable level commands	Description
show interfaces	Show interface statistics
show ip sockets	Show UDP/TCP state information
show processes	Show thread runtime information
show sessions	Show active Telnet and SSH Sessions
show xport_pro	Show system information
show xsr	Show XML Status Record counters
ssh	Enters the SSH configuration level.
ssh <*optClientUsername*> <*host*>	Begin SSH session on network <host>. The optClientUserName must match an SSH Client: Users configuration entry. Use "" in optClientUserName to prompt for host username and password.
ssh <*optClientUsername*> <*host*> <*port*>	Begin SSH session on network <host>:<port>. The optClientUserName must match an SSH Client: Users configuration entry. Use "" in optClientUserName to prompt for host username and password.
ssl	Enters the SSL configuration level.
telnet <*host*>	Begin session on network <host>
telnet <*host*> <*port*>	Begin session on network <host>:<port>
trace route <*host*>	Trace route to destination
tunnel <*line*>	Enters the tunnel level. <line> = number of the tunnel line (serial port) to be configured.
write	Stores the current configuration in permanent memory.
xcr dump	Dump XML configuration to the console
xcr dump <*group list*>	Dump specified XML configuration to the console
xcr export <*file*>	Save XML configuration to a file
xcr export <*file*> <*group list*>	Save specified XML configuration to a local file
xcr import <*file*>	Load XML configuration from a local file
xcr import <*file*> <*group list*>	Load specified XML configuration from a local file
xcr list	List XML Configuration Record groups to the console
xsr dump	Dump XML Status Records to the console
xsr dump <*group list*>	Dump specified XML Status Records to the console
xsr export <*file*>	Save XML Status Record to a file
xsr export <*file*> <*group list*>	Save specified XML Status Record to a local file
xsr list	List XML Status Record groups to the console

filesystem Level Commands

Command Path: enable>filesystem

Level Prompt: filesystem

The following commands are available in the filesystem level. This level allows for the management of files in the XPort Pro.

filesystem level commands	Description
cat <*file*>	Show the contents of a file
cd <*directory*>	Change the current directory to the specified directory
clrscrn	Clears the screen.
compact	Compact the file system, freeing all dirty space
cp <*source file*> <*destination file*>	Copy an existing file
dump <*file*>	Show contents of a file as a hex dump
exit	Exits to the enable level.
format	Format the file system and lose all data
ls	Show all files and directories in the current directory
ls <*directory*>	Show all files and directories in the specified directory
mkdir <*directory*>	Create a directory
mv <*source file*> <*destination file*>	Move a file on the file system
pwd	Print working directory
rm <*file*>	Remove a file
rmdir <*directory*>	Remove a directory
show	Show file system statistics
show history	Displays the last 20 commands entered during the current CLI session.
show tree	Show all files and directories from current directory
tftp get ascii <*source file*> <*destination file*> <*host*>	Get an ASCII file using TFTP
tftp get ascii <*source file*> <*destination file*> <*host*> <*port*>	Get an ASCII file using TFTP
tftp get binary <*source file*> <*destination file*> <*host*>	Get a binary file using TFTP
tftp get binary <*source file*> <*destination file*> <*host*> <*port*>	Get a binary file using TFTP

filesystem level commands	Description
tftp put ascii <*source file*> <*destination file*> <*host*>	Put an ASCII file using TFTP
tftp put ascii <*source file*> <*destination file*> <*host*> <*port*>	Put an ASCII file using TFTP
tftp put binary <*source file*> <*destination file*> <*host*>	Put a binary file using TFTP
tftp put binary <*source file*> <*destination file*> <*host*> <*port*>	Put a binary file using TFTP
touch <*file*>	Create a file

ftp Level Commands

Command Path: enable>config>ftp

Level Prompt: config-ftp

The following commands are available in the ftp level.

ftp level commands	Description
admin password <*text*>	Sets the administrative password for the FTP server. <text> = administrative password.
admin username <*text*>	Sets the administrative username for the FTP server. <text> = administrative username. It also removes the administrative password.
clear counters	Zeros FTP counters.
clrscrn	Clears the screen.
default admin username	Resets the FTP username to the default (admin).
exit	Returns to the config level.
no admin password	Removes the FTP administrative password.
no clear counters	Unzeros FTP counters.
show	Displays the FTP settings and statistics.
show history	Displays the last 20 commands entered during the current CLI session.
show statistics	Displays the FTP statistics.
state disable	Disables the FTP server.
state enable	Enables the FTP server.
write	Stores the current configuration in permanent memory.

host <*number*> Level Commands

Command Path: enable>config>host

Level Prompt: config-host:#

Where # is the host number, 1 or 2.

The following commands are available in the host level.

host level commands	Description
clrscrn	Clears the screen.
default protocol	Restores the default value of the protocol (Telnet).
default remote port	Sets the remote port (used to connect to the host) to the default value, which depends on the selected protocol.
exit	Exits to the configuration level.
host <*number*>	Change to config host level
name <*text*>	Sets the name of the host. <text> = name of the host.
no name	Clears the name of the host.
no remote address	Clears the remote address of the host.
no ssh username	Clears the SSH username associated with the host.
protocol ssh	Sets the protocol to SSH.
protocol telnet	Sets the protocol to Telnet.
remote address <*text*>	Sets the IP address of the remote host to connect to when this host is selected on the login connect menu. <text> = IP address.
remote port <*number*>	Sets the remote port used to connect to the host. <number> = port to be used.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
ssh username <*text*>	Sets the username for logging into the host via SSH. <text> = username.
write	Stores the current configuration in permanent memory.

http Level Commands

Command Path: enable>config>http

Level Prompt: config-http

The following commands are available in the http level.

http level commands	Description
auth <*uri*> <*realm*>	Creates a new HTTP server authentication directive. <uri> = URI of the server. <realm> = domain of the server.
auth type <*uri*> basic	Sets an HTTP server authentication directive to the Basic Access Authentication scheme. <uri> = URI of the server.
auth type <*uri*> digest	Sets an HTTP server authentication directive to the Digest Access Authentication scheme. <uri> = URI of the server.
auth type <*uri*> none	Sets the authentication type for an HTTP server authentication directive to none. <uri> = URI of the server.
auth type <*uri*> ssl	Sets the authentication type for an HTTP server authentication directive to SSL. <uri> = URI of the server.
auth type <*uri*> ssl-basic	Sets the authentication type for an HTTP server authentication directive to SSL-Basic. <uri> = URI of the server.
auth type <*uri*> ssl-digest	Sets the authentication type for an HTTP server authentication directive to SSL-Digest. <uri> = URI of the server.
auth user <*uri*> <*user*> <*password*>	Creates or modifies a user for an HTTP server authentication directive. <uri> = URI of the server. <user> = username. <password> = password associated with the username.
clear counters	Sets the HTTP counters to zero.
clear log	Clears the HTTP server log.

http level commands	Description
clrscrn	Clears the screen.
default log format	Restores the HTTP Server log format string to its default value.
default log max entries	Restores the default maximum number of HTTP Server log entries.
default max bytes	Resets the default maximum bytes the HTTP Server will accept when receiving a request.
default max timeout	Resets the default maximum time the HTTP Server will wait when receiving a request.
default port	Resets the HTTP Server port to its default value.
default ssl port	Resets the HTTP Server SSL port to its default value.
delete auth <*uri*>	Deletes an existing HTTP Server authentication directive. <uri> = URI of the server.
delete auth user <*uri*> <*user*>	Deletes an existing user for an HTTP Server authentication directive. <uri> = URI of the server. <user> = username.
exit	Returns to the config level.
log disable	Disables HTTP server logging.
log enable	Enables HTTP server logging.
log format <*string*>	Sets the log format string for the HTTP server, using the following directives: %a remote ip address (could be a proxy) %b bytes sent excluding headers %B bytes sent excluding headers (0 = '-') %h remote host (same as %a) %{h}i header contents from request (h = header string) %m request method %p ephemeral local port value used for request %q query string (prepend with '?' or empty '-') %t timestamp HH:MM:SS (same as Apache '%(%H:%M:%S)t') %u remote user (could be bogus for 401 status) %U URL path info %r first line of request (same as '%m %U%q <version>') %s return status
max bytes <*bytes*>	Sets the maximum number of bytes the HTTP server accepts when receiving a request.
max timeout <*seconds*>	Sets the maximum timeout the HTTP server waits when receiving a request.

http level commands	Description
	<seconds> = maximum timeout value.
no clear counters	Restores the HTTP counters to the aggregate values.
port <*number*>	Sets the port number the HTTP server will use. <number> = port number.
server disable	Disables the HTTP server.
server enable	Enables the HTTP server.
show	Displays the HTTP server settings.
show auth	Displays the HTTP server authentication settings.
show history	Displays the last 20 commands entered during the current CLI session.
show log	Displays the HTTP server log.
show statistics	Displays the HTTP statistics.
ssl port <*number*>	Sets the port number the HTTP server will use over SSL. <number> = port number.
ssl3 disable	Disables SSLv3 handling.
ssl3 enable	Enables SSLv3 handling.
tls1.0 disable	Disables TLSv1.0 handling.
tls1.0 enable	Enables TLSv1.0 handling.
tls1.1 disable	Disables TLSv1.1 handling.
tls1.1 enable	Enables TLSv1.1 handling.
write	Stores the current configuration in permanent memory.

icmp Level Commands

Command Path: enable>config>icmp

Level Prompt: config-icmp

The following commands are available in the icmp level.

icmp level commands	Description
auto show stats	Continuously shows ICMP statistics
clear counters	Zeros counters
clrscrn	Clears the screen.
exit	Exits to the configuration level.
no clear counters	Unzeros IP counters

icmp level commands	Description
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show stats	Shows ICMP statistics
state disable	Prevents ICMP packets from being sent or received.
state enable	Allows ICMP packets to be sent and received.
write	Stores the current configuration in permanent memory.

if <*instance*> Interface Commands

Command Path:

enable>configure>if #

–Or–

enable>configure>if eth0

Level Prompt:

config-if:eth0

Where # is the interface number, 1 for eth0.

The following commands are available in the if level.

if level commands	Description
bootp disable	Disables BOOTP.
bootp enable	Enables BOOTP.
clear host <*string*>	Removes an entry from the DNS Cache
clrscrn	Clears the screen.
default gateway <*ip address*>	Sets the configurable gateway IP address to the default value.
dhcp client id binary <*binary*>	Sets the client id allowing binary characters. Within [] use binary decimal up to 255 or hex up to 0xFF.
dhcp client id set <*text*>	Sets the client id in text format.
dhcp disable	Disables DHCP.
dhcp enable	Enables DHCP.
dhcp renew	Force DHCP to renew
domain <*text*>	Sets the domain name.

if level commands	Description
	<text> = name of the domain.
exit	Exits to the config level.
hostname <*text*>	Sets the host name. <text> = name of the host.
ip address <*ip address/cidr*>	Sets the IP address and network mask. Formats accepted: 192.168.1.1 (default mask) 192.168.1.1/24 (CIDR) "192.168.1.1 255.255.255.0" (explicit mask)
link	Enter link configuration level
no default gateway	Clears the default gateway.
no dhcp client id	Clears the DHCP client ID.
no domain	Clears the domain name.
no hostname	Clears the host name.
no ip address	Clears the IP address.
no primary dns	Clears the name of the primary DNS server.
no secondary dns	Clears the name of the secondary DNS server.
primary dns <*ip address*>	Sets the IP address of the primary DNS server.
secondary dns <*ip address*>	Sets the IP address of the secondary DNS server.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show status	Show interface status
write	Stores the current configuration in permanent memory.

ip Level Commands

Command Path: enable>config>ip

Level Prompt: config-ip

The following commands are available at the ip level.

ip level commands	Description
auto show stats	Continuously shows IP statistics
clear counters	Zeros counters
clrscrn	Clears the screen.
default multicast time to live	Restores the default IP multicast time to live, which is one hop.
exit	Exits to the configuration level.
multicast time to live <*hops*>	Sets the IP multicast time to live. <hops> = number of hops that a multicast IP packet is allowed to live.
no clear counters	Unzeros IP counters
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show stats	Shows IP statistics
write	Stores the current configuration in permanent memory.

ip filter Level Commands

Command Path: enable>config>ip filter

Level Prompt: config-filter

The following commands are available at the ip filter level.

ip filter level commands	Description
add <ip address> <subnet mask>	Adds an entry to the IP filter table.
clrscrn	Clears the screen.
exit	Returns to the config level.
remove <ip address> <subnet mask>	Removes an entry from the IP filter table.
show	Displays the IP filter table.
show history	Displays the last 20 commands entered during the current

ip filter level commands	Description
	CLI session.
write	Stores the current configuration in permanent memory.

line <*line*> Level Commands

Command Path: enable>line

Level Prompt: line:#

For the XPort Pro, only line 1 is available.

The following commands are available in the line level. These commands configure the corresponding serial ports.

line level commands	Description
auto show statistics	Continuously displays line statistics.
baud rate <bits per second>	Sets the line speed. <bits per second> = any rate between 300 and 230400.
clear line counters	Sets the serial counters to zero.
clrscrn	Clears the screen.
command mode always	Sets the current line to always be in command mode.
command mode cp	Sets the current line to enter command mode under control of a CP.
command mode cp <*cp group*> <*value*>	Specifies the CP group and trigger value.
command mode echo serial string disable	Disables user-defined serial boot string to be echoed in the CLI.
command mode echo serial string enable	Enables user-defined serial boot string to be echoed in the CLI.
command mode serial string	Enables user to enter a custom string at boot time to enter command mode.
command mode serial string <*string*>	Sets a string that can be entered at boot time to enter command mode. <string> = text.
command mode serial string binary <*string*>	Sets a binary string that can be entered at boot time to enter command mode. <string> = string that may contain binary characters. Within [] use binary decimal up to 255 or hex up to 0xFF.
command mode signon message <*string*>	Sets an ASCII sign-on message that is sent from the serial port when the

line level commands	Description
	device boots and when the line is in command mode. <string> = text.
command mode signon message binary *<string>*	Sets a binary sign-on message that is sent from the serial port when the device boots and when the line is in command mode. <string> = string that may contain binary characters. Within [] use binary decimal up to 255 or hex up to 0xFF.
command mode wait time *<milliseconds>*	Sets boot-up wait time for command mode serial string. <milliseconds> = wait time.
data bits 7	Uses seven bits for data on the line.
data bits 8	Uses eight bits for data on the line.
default baud rate	Restores the default speed of 9600 bits per second.
default data bits	Restores the default of eight data bits.
default flow control	Restores the default of no flow control.
default interface	Restores the default interface type to this line.
default parity	Restores the default of no parity.
default protocol	Restores the default protocol on the line.
default stop bits	Restores the default of one stop bit.
default threshold	Restores the factory default threshold.
default xoff char	Restores the default xoff character on this line.
default xon char	Restores the default xon character on this line.
exit	Exits to the enable level
flow control hardware	Uses hardware (RTS/CTS) flow control on the line.
flow control none	Does not provide flow control on the line.
flow control software	Uses software (xon/xoff characters) flow control on the line.
gap timer *<milliseconds>*	Sets the gap timer in milliseconds. If some data has been received, it will be forwarded after this time since the last character.
interface rs232	Sets the line interface to RS232.
interface rs485 full-duplex	Sets the line interface to RS485 in full-duplex mode.
interface rs485 half-duplex	Sets the line interface to RS485 in half-duplex mode.
line *<line>*	Enters the line level.

line level commands	Description
	<line> = number of the line (serial port) to be configured.
lpd <*line*>	Enters the configure lpd level. <line> = number of the line (lpd serial port) to be configured.
name <*text*>	Sets the name for this line.
no clear line counters	Restores the serial counters to the aggregate values.
no command mode	Disables command mode for the current line.
no command mode cp	Disables control of a CP to enter command mode.
no command mode serial string	Prevents the user-defined serial boot string from being used to enter command mode in the CLI.
no command mode signon message	Clears the signon message displayed at boot time and when entering command mode.
no gap timer	Removes the gap timer, so forwarding depends on the line speed.
no name	Removes the name of this line.
parity even	Uses a parity bit on the line for even parity.
parity none	Does not use a parity bit on the line.
parity odd	Uses a parity bit on the line for odd parity.
ppp <*line*>	Enters the serial line PPP level.
protocol lpd	Applies Line Printer Daemon (LPD) protocol on the line.
protocol lpd or tunnel	Applies LPD or tunnel protocol on the line.
protocol none	Uses no protocol on the line.
protocol ppp	Applies point-to-point protocol (PPP) on the line.
protocol tunnel	Applies tunnel protocol on the line.
reassert	Asserts line status with current configured values.
show	Displays the current status.
show command mode	Shows the command mode settings for the current line.
show history	Displays the last 20 commands entered during the current CLI session.
show line	Displays the current configuration.
show statistics	Shows the line statistics.
state disable	Disables the line so data cannot be sent/received.
state enable	Enables the line so data can be sent/received.
stop bits 1	Uses one stop bit after data on the line.
stop bits 2	Uses two stop bits after data on the line.

line level commands	Description
terminal <*line*>	Enters the configure-terminal level. <line> = number of the terminal line (serial port) to be configured.
terminal network	Enters the configure-terminal level for the network.
threshold <*bytes*>	Sets the threshold in bytes. After this many bytes are received, they are forwarded without delay.
tunnel <*line*>	Enters the tunnel level. <line> = number of the tunnel line (serial port) to be configured.
write	Stores the current configuration in permanent memory.
xoff char <*control*>	Sets the xoff character for use with software flow control on this line. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.
xon char <*control*>	Sets the xon character for use with software flow control on this line. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.

ethernet link Level Commands

Command Path: enable>config>if 1>link

Level Prompt: config-ethernet:eth0

The following commands are available in the Ethernet link level.

Ethernet link level commands	Description
clrscrn	Clears the screen.
default duplex	Restores the default duplex setting, which is auto.
default speed	Restores the default speed setting, which is auto-negotiate.
duplex auto	Sets duplex mode to auto.
duplex full	Sets duplex mode to full.

duplex half	Sets duplex mode to half.
exit	Exit back to interface configuration level
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
speed 10	Sets the speed of the Ethernet link to 10 Mbps.
speed 100	Sets the speed of the Ethernet link to 100 Mbps.
speed auto	Sets the speed of the Ethernet link to auto-negotiate.
write	Stores the current configuration in permanent memory.

login (root) Level Commands

The following is a list of login (root) level commands.

These commands do not alter the configuration of the device server.

root level commands	Description
clrscrn	Clears the screen.
enable	Enters the enable level.
exit	Exit from the system
ping <*host*>	Ping destination 5 times with 5 second timeout
ping <*host*> <*count*>	Ping destination n times with 5 second timeout
ping <*host*> <*count*> <*timeout*>	Ping destination n times with x timeout (in seconds)
show	Show system information
show history	Displays the last 20 commands entered during the current CLI session.
show xport_pro	Show system information
trace route <*host*>	Trace route to destination

lpd Level Commands

There are two levels having to do with LPD.

- The LPD level
- The LPD <*line*> level

LPD Level commands do not allow the configuration of any LPD properties. You can only view status, view statistics, and kill print jobs.

LPD <line> commands allow you to

- Configure LPD properties for a given line.

- Enter the configure level and then the configure-LPD level with the lpd <line> command.

Command Path: enable>lpd

Level Prompt: lpd

The following is a list of commands available in the lpd level.

lpd Level Commands	Description
auto show <*line*>	Continuously displays lpd status for the specified line. <line> = LPD line to display.
clrscrn	Clears the screen.
exit	Exits to the enable level.
kill <*line*>	Kills the current print job on the specified line. <line> = LPD line with print job.
show <*line*>	Displays lpd status for the specified line. <line> = LPD line to display.
show history	Displays the last 20 commands entered during the current CLI session.
write	Stores the current configuration in permanent memory.

lpd <line> Level Commands

Command Path: enable>config>lpd

Level Prompt: config-lpd:#

Where # is the line number 1 or 2.

The following is a list of commands available in the lpd <*line*> level.

lpd <line> level commands	Description
banner disable	Disables printing banner for all print jobs. Only print the banner when a job requests it.
banner enable	Enables printing banner for all print jobs.
binary disable	Treats print job as ascii text. Filters out all non-ascii characters and
binary enable	Treats print job as binary. Sends data byte-for-byte to the printer.
capture disable	Redirects serial output back to the line.
capture enable	Redirects serial output from the line to this CLI session.
clrscrn	Clears the screen.

lpd <line> level commands	Description
convert newline disable	Disables converting single new line and carriage return characters to DOS-style line endings.
convert newline enable	Enables converting single new line and carriage return characters to DOS-style line endings. If characters are already in DOS line-ending order, they are not converted.
eoj disable	Disables sending the end-of-job string after each print job.
eoj enable	Enables sending the end-of-job string after each print job.
eoj text binary *<binary>*	Sets the end-of-job text allowing for binary characters. <binary> = string in binary format that will be sent to the printer at the end of each print job. Within [] use binary decimal up to 255 or hex up to 0xFF.
eoj text set *<text>*	Sets the end-of-job text. <text> = ascii string that will be sent to the printer at the end of each print job.
exit	Exits to the configuration level.
formfeed disable	Disables the printer from advancing to the next page at the end of each print job.
formfeed enable	Forces the printer to advance to the next page at the end of each print job.
kill	Ends the current print job on this lpd line.
line *<line>*	Enters the line level. <line> = number of the line (serial port) to be configured.
lpd *<line>*	Enters the configure lpd level. <line> = number of the line (lpd serial port) to be configured.
no eoj text	Removes the end-of-job string.
no queue name	Removes the queue name.
no soj text	Removes the start-of-job string.
ppp *<line>*	Enters the serial line PPP level.
queue name *<text>*	Sets the name of the queue that this lpd line belongs to. <text> = name for the queue.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.

lpd <line> level commands	Description
show statistics	Displays statistics and status information for this lpd line.
soj disable	Disables sending the start-of-job string after each print job.
soj enable	Enables sending the start-of-job string after each print job.
soj text binary <*binary*>	Sets the start-of-job text allowing for binary characters. <binary> = string in binary format that will be sent to the printer at the beginning of each print job. Within [] use binary decimal up to 255 or hex up to 0xFF.
soj text set <*text*>	Sets the start-of-job text allowing for binary characters. <binary> = string in binary format that will be sent to the printer at the beginning of each print job. Within [] use binary decimal up to 255 or hex up to 0xFF.
terminal <*line*>	Enters the configure-terminal level. <line> = number of the terminal line (serial port) to be configured.
terminal network	Enters the configure-terminal level for the network.
test print <*number of lines*>	Prints lines of text directly to the lpd line. <number of lines> = number of lines to print.
tunnel <*line*>	Enters the tunnel level. <line> = number of the tunnel line (serial port) to be configured.
write	Stores the current configuration in permanent memory.

modem Level Commands

Command Path: enable>tunnel #>modem

Level Prompt: tunnel-modem:#

Where # is the line number.

The following is a list of commands available in the modem level.

modem level commands	Description
clrscrn	Clears the screen.
connect string <*text*>	Sets the CONNECT string used in modem emulation. <string> = connect string.
default incoming connection	Default disables incoming network connections.
default response type	Default uses text type responses.

display remote ip disable	The incoming RING has nothing following it.
display remote ip enable	The incoming RING is followed by the IP address of the caller.
echo commands disable	Does not echo modem commands.
echo commands enable	Echoes modem commands.
echo pluses disable	Does not echo the +++ characters when entering modem command mode.
echo pluses enable	Echoes the +++ characters when entering modem command mode.
error unknown commands disable	Returns OK on unknown AT commands.
error unknown commands enable	Returns an error upon unknown AT commands.
exit	Returns to the tunnel level.
incoming connection automatic	Automatically answer incoming network connections.
incoming connection disabled	Disable incoming network connections.
incoming connection manual	Wait for an ATA command before answering an incoming network connection.
no connect string	Removes optional CONNECT string information for modem emulation.
reassert	Asserts tunnel modem status with current configured values.
response type numeric	Uses numeric type responses.
response type text	Uses text type responses.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show status	Displays tunnel modem status.
verbose response disable	Does not send Modem Response Codes.
verbose response enable	Sends Modem Response Codes out on the Serial Line.
write	Stores the current configuration in permanent memory.

packing Level Commands

Command Path: enable>tunnel #> packing

Level Prompt: tunnel-packing:#

Where # is the line number.

The following is a list of commands available in the packing level.

packing level commands	Description
clrscrn	Clears the screen.
default packing mode	Sets to default packing mode, which is “Disable”
default send character	Removes the send character for packing mode.
default threshold	Restores the default threshold.
default timeout	Restores the default packing mode timeout.
exit	Returns to the tunnel level.
no trailing character	Removes the trailing character for packing mode.
packing mode disable	Disables packing. Data is sent to the network when received.
packing mode send character	Sets packing mode to accumulate data and transmit it upon receiving the configured send character on the line (serial port).
packing mode timeout	Sets packing mode to accumulate data and transmit it after a specified amount of time (timeout).
send character <*control*>	Sets the send character for packing mode. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.

threshold <*bytes*>	Sets the threshold (byte count). If the queued data reaches this threshold then the data will be sent. <bytes> = number of bytes in the threshold.
timeout <*milliseconds*>	Sets the timeout value for packing mode in milliseconds. <milliseconds> = timeout value, in milliseconds.
trailing character <*control*>	Sets the trailing character for packing mode. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.
write	Stores the current configuration in permanent memory.

password Level Commands

Command Path: enable>tunnel #>accept>password

Level Prompt: tunnel-accept-password:#

Where # is the line number.

The following is a list of commands available in the password level.

password level commands	Description
clrscrn	Clears the screen.
exit	Exits to the tunnel accept level.
no password	Removes the password so connections will be accepted unchallenged.
password <*text*>	Sets the password required on the network side of the tunnel to begin a connection.
prompt disable	Inhibits any prompting for password on the network side of the tunnel.
prompt enable	Sets up so a user on the network side of the tunnel will be prompted for a password.
show	Displays the password configuration.

password level commands	Description
show history	Displays the last 20 commands entered during the current CLI session.
write	Stores the current configuration in permanent memory.

ppp Level Commands

Command Path: enable>ppp

Level Prompt: ppp:#

Where # is the line number, 1 or 2.

The following commands are available in the ppp level.

ppp level commands	Description
authentication mode chap	Sets authentication to Challenge-Handshake Authentication Protocol (CHAP).
authentication mode ms-chap	Sets authentication to MS-CHAP version 1.
authentication mode ms-chapv2	Sets authentication to MS-CHAP version 2.
authentication mode none	Removes PPP authentication.
authentication mode pap	Sets authentication to Password Authentication Protocol (PAP).
clrscrn	Clears the screen.
default authentication mode	Removes PPP authentication.
exit	Exits to the configuration level.
line <*line*>	Enters the line level. <line> = number of the line (serial port) to be configured.
local ip <*ip address/cidr*>	Sets the Local IP address and network mask. Formats accepted: 192.168.1.1 (default mask) 192.168.1.1/24 (CIDR) "192.168.1.1 255.255.255.0" (explicit mask)
lpd <*line*>	Enters the configure lpd level. <line> = number of the line (lpd serial port) to be configured.
no local ip	Removes the Local IP address.
no password	Removes the PPP authentication password.
no peer ip	Removes the peer IP address.
no username	Removes the PPP authentication username.
password <*text*>	Sets the password for PPP authentication.
peer ip <*ip address*>	Sets the IP Address assigned to the peer when requested during negotiation. <ip address> IP address of the peer device.

ppp level commands	Description
ppp <*line*>	Enters the serial line PPP level.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
terminal <*line*>	Enters the configure-terminal level. <line> = number of the terminal line (serial port) to be configured.
terminal network	Enters the configure-terminal level for the network.
tunnel <*line*>	Enters the tunnel level. <line> = number of the tunnel line (serial port) to be configured.
username <*text*>	Sets the user name for PPP authentication.
write	Stores the current configuration in permanent memory.

query port Level Commands

Command Path: enable>config>query port

Level Prompt: config-query port

The following commands are available at the query port level.

query port level commands	Description
clrscrn	Clears the screen.
exit	Returns to the config level.
show	Displays statistics and information about the query port.
show history	Displays the last 20 commands entered during the current CLI session.
state disable	Disables response to 77FE requests.
state enable	Permits response to 77FE requests.
write	Stores the current configuration in permanent memory.

rss Level Commands

Command Path: enable>config>rss

Level Prompt: config-rss

The following commands are available at the rss level.

rss level commands	Description
clear rss	Clear the RSS Feed data
clrscrn	Clears the screen.
default max entries	Restores the default number of RSS feed entries.
exit	Exits to the configuration level.
feed disable	Disables RSS feed.
feed enable	Enables RSS feed.
max entries <*number*>	Sets the maximum number of RSS feed entries.
persist disable	Disables RSS feed data persistence.
persist enable	Enables RSS feed data persistence.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show status	Display the RSS Feed status
write	Stores the current configuration in permanent memory.

serial Level Commands

Command Path: enable>tunnel #>serial

Level Prompt: tunnel-serial:#

Where # is the line number.

The following is a list of commands available in the serial level.

serial level commands	Description
buffer size <*bytes*>	Sets the size of the buffer for data read from the serial port. <bytes> = size of the buffer.
clrscrn	Clears the screen.
default buffer size	Restores the default buffer size.
default dtr	Restores default DTR control, asserted while connected.

dtr asserted while connected	Asserts DTR whenever a connect or accept mode tunnel connection is active.
dtr continuously asserted	Asserts DTR regardless of any connections.
dtr truport	Asserts DTR to match remote DSR when connected via Telnet.
dtr unasserted	Does not assert DTR.
exit	Returns to the tunnel level.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
write	Stores the current configuration in permanent memory.

snmp Level Commands

Command Path: enable>configure>snmp

Level Prompt: config-snmp

Following are the commands available in the snmp level.

snmp level commands	Description
clrscrn	Clears the screen.
community ro <*string*>	Sets the SNMP read-only community string. <string> = name of the read-only community string to be set.
community rw <*string*>	Sets the SNMP read-write community string. <string> = name of the read-write community string to be set.
contact <*string*>	Sets the SNMP system contact information. <string> = system contact information.
default description	Restores the SNMP system description to its default.
description <*string*>	Sets the SNMP system description. <string> = description of device.
exit	Returns to the config level.
host <*ip address*>	Sets the primary SNMP trap host. <ip address> = IP address of host running the SNMP trap.
host <*ip address*> <*ip address*>	Sets the primary and secondary SNMP trap hosts. <ip address> = IP address of primary host running the SNMP trap. <ip address> = IP address of secondary host running the SNMP trap.

snmp level commands	Description
location <*string*>	Sets the SNMP system location. <string> = location of device.
name <*string*>	Sets the SNMP system name. <string> = SNMP system name.
no community ro	Clears the SNMP read-only community.
no community rw	Clears the SNMP read/write community.
no contact	Clears the SNMP server contact.
no host <*ip address*>	Deletes the designated SNMP server trap host. <ip address> = IP address of an SNMP server.
no location	Clears the SNMP server location.
no name	Clears the SNMP server name.
server disable	Disables the SNMP server.
server enable	Enables the SNMP server.
show	Displays the SNMP server settings.
show history	Displays the last 20 commands entered during the current CLI session.
traps disable	Disables the sending of SNMP trap messages.
traps enable	Enables the sending of SNMP trap messages.
write	Stores the current configuration in permanent memory.

ssh Level Commands

Command Path: enable>ssh

Level Prompt: ssh

The following is a list of commands available in the ssh level.

ssh level commands	Description
client server <*server*>	Set Client Server RSA or DSA key
client server <*server*> <*key*>	Set Client Server RSA or DSA key
client user <*user*> <*command*>	Set Client User, command and RSA or DSA keys
client user <*user*> <*password*> <*command*>	Set Client User with password, command and optional RSA or DSA keys
client user <*user*> <*password*> <*command*> <*public*> <*private*>	Set Client User with password, command and RSA or DSA keys
client user <*user*> generate dsa 1024	Generate DSA public and private keys
client user <*user*> generate dsa 512	Generate DSA public and private keys
client user <*user*> generate dsa 768	Generate DSA public and private keys

ssh level commands	Description
client user <*user*> generate rsa 1024	Generate RSA public and private keys
client user <*user*> generate rsa 512	Generate RSA public and private keys
client user <*user*> generate rsa 768	Generate RSA public and private keys
clrscrn	Clears the screen.
exit	Exits to the enable level.
host	Sets RSA or DSA public and/or private keys
host <*key*>	Sets RSA or DSA public or private key
host <*public*> <*private*>	Sets RSA or DSA public and private keys
host generate dsa 1024	Generate DSA public and private keys
host generate dsa 512	Generate DSA public and private keys
host generate dsa 768	Generate DSA public and private keys
host generate rsa 1024	Generate RSA public and private keys
host generate rsa 512	Generate RSA public and private keys
host generate rsa 768	Generate RSA public and private keys
host user <*user*> <*password*>	Sets Host username and password
host user <*user*> <*password*> <*public*>	Sets Host username, password and either a RSA or DSA public key. Place the entire contents of the file generated by ssh-keygen within quotes.
host user <*user*> <*password*> <*public*> <*public*>	Sets Host username, password and both RSA and DSA public keys. For each key, place the entire contents of the file generated by ssh-keygen within quotes.
no client server <*server*>	Remove Client Server
no client server <*server*> dsa	Remove Client Server DSA key
no client server <*server*> rsa	Remove Client Server RSA key
no client user <*user*>	Remove Client User
no client user <*user*> command	Remove command from Client User
no client user <*user*> dsa	Remove Client User DSA key
no client user <*user*> rsa	Remove Client User RSA key
no host dsa	Removes DSA public and private keys
no host rsa	Removes RSA public and private keys
no host user <*user*>	Remove a host user
show	Show SSH settings
show client server <*server*>	Show Client Server RSA and DSA keys
show client user <*user*>	Show information for a client user
show history	Displays the last 20 commands entered

ssh level commands	Description
	during the current CLI session.
show host dsa	Show full DSA public key
show host rsa	Show full RSA public key
show host user <*user*>	Show information for a host user
write	Stores the current configuration in permanent memory.

ssl Level Commands

Command Path: enable>ssl

Level Prompt: ssl

The following is a list of commands available at the ssl level.

ssl level commands	Description
authority	Adds an Authority Certificate.
clrscrn	Clears the screen.
dsa	Adds DSA Certificate and Private Key.
exit	Exits to the enable level.
generate dsa	Generates a new Self-Signed DSA Certificate.
generate rsa	Generates a new Self-Signed RSA Certificate.
no dsa	Removes DSA Certificate and Private Key
no intermediate authority <*cert*>	Removes an Intermediate Authority Certificate. <cert> = index displayed by "show authority" command.
no rsa	Removes RSA Certificate and Private Key
no trusted authority <*cert*>	Removes a Trusted Authority Certificate. <cert> = index displayed by "show authority" command.
rsa	Adds RSA Certificate and Private Key.
show	Displays Certificate Information.
show authority	Displays Authority Certificate Information.
show history	Displays the last 20 commands entered during the current CLI session.
write	Stores the current configuration in permanent memory.

syslog Level Commands

Command Path: enable>configure>syslog

Level Prompt: config-syslog

Following are the commands available in the syslog level.

syslog level commands	Description
clrscrn	Clears the screen.
default local port	Restores the default syslog local port.
default remote port	Restores the default syslog remote port.
default severity log level	No logging.
exit	Returns to the config level.
host <*text*>	Sets the address of the syslog recipient. <text> = IP address or name of the host.
local port <number>	Sets the syslog local port. <number> = number of the local port used when making a syslog connection.
no host	Removes the address of the syslog recipient.
remote port <number>	Sets the syslog remote port. <number> = number of the remote port used when making a syslog connection.
severity log level alert	Log only Alert and more severe events.
severity log level critical	Log only Critical and more severe events.
severity log level debug	Log all events.
severity log level emergency	Log only Emergency events.
severity log level error	Log only Error and more severe events.
severity log level information	Log only Information and more severe events.
severity log level none	No logging.
severity log level notice	Log only Notice and more severe events.
severity log level warning	Log only Warning and more severe events.
show	Displays the syslog settings and statistics.
show history	Displays the last 20 commands entered during the current CLI session.
show statistics	Displays the syslog statistics.
state disable	Disables syslog logging.
state enable	Enables syslog logging.
write	Stores the current configuration in permanent memory.

tcp Level Commands

Command Path: enable>configure>tcp

Level Prompt: config-tcp

Following are the commands available in the tcp level.

tcp level commands	Description
ack limit <*packets*>	Sets the number of packets that must be received before an ACK is forced. If there is a large amount of data to acknowledge, an ACK will be forced before this.
auto show stats	Continuously shows TCP statistics
clear counters	Zeros TCP counters
clrscrn	Clears the screen.
default ack limit	Restores the default ack limit of 3 packets.
default send data	Sets TCP to send data in accordance with standards.
exit	Exits to the configuration level.
no clear counters	Unzeros TCP counters
resets disable	Does not send TCP RSTs upon connection to unused ports.
resets enable	Sends TCP RSTs upon connection to unused ports.
send data expedited	Sets TCP to send data whenever the window is sufficiently open, for improved real-time performance.
send data standard	Sets TCP to send data in accordance with standards.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show stats	Shows TCP statistics
write	Stores the current configuration in permanent memory.

terminal Level Commands

Command Path: enable>configure>terminal

Level Prompt: config-terminal:#

Where # is the line number or “network”.

Following are the commands available in the terminal network and terminal <line> levels.

terminal level commands	Description
break duration <*milliseconds*>	Sets how long a break should last when it is being sent to the line. <milliseconds> = number of milliseconds.
clrscrn	Clears the screen.
default break duration	Restores the break duration to the default value (500 ms).
default terminal type	Sets the default terminal type, “UNKNOWN”.
echo disable	Disables echoing of characters received on the line back to the line.
echo enable	Enables echoing of characters received on the line back to the line.
exit	Exits to the configuration level.
exit connect menu disable	On the login connect menu, removes the menu item allowing the user to exit to the CLI.
exit connect menu enable	On the login connect menu, inserts the menu item allowing the user to exit to the CLI.
line <*line*>	Enters the line level. <line> = number of the line (serial port) to be configured.
login connect menu disable	Disables the login connect menu, so a user will get the CLI immediately after logging in.
login connect menu enable	Enables the login connect menu, so a user will get the menu rather than the CLI immediately after logging in.
lpd <*line*>	Enters the configure lpd level. <line> = number of the line (lpd serial port) to be configured.
no send break	Removes the configured send break character.
ppp <*line*>	Enters the serial line PPP level.
preview connect menu	Shows the layout of the connect menu with current settings.
send break <*control*>	Sets the optional send break character. <text> = the character. The character may be input as text, control, decimal, or hex. A control character has the form <control>C. A decimal value character has the form \99. A hex value character has the form 0xFF.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.

terminal level commands	Description
terminal <*line*>	Enters the configure-terminal level. <line> = number of the terminal line (serial port) to be configured.
terminal network	Enters the configure-terminal level for the network.
terminal type <*text*>	Sets the terminal type.
tunnel <*line*>	Enters the tunnel level. <line> = number of the tunnel line (serial port) to be configured.
write	Stores the current configuration in permanent memory.

tftp Level Commands

Command Path: enable>config>tftp

Level Prompt: tftp

The following is a list of commands available in the tftp level.

tftp level commands	Description
allow file creation disable	Prohibits the TFTP server from creating files on the file system.
allow file creation enable	Enables the TFTP server to create files on the file system.
allow firmware update disable	The TFTP server rejects any attempt to update firmware.
allow firmware update enable	The TFTP server accepts a firmware image for update based on the file name.
clear counters	Sets the TFTP counters to zero.
clrscrn	Clears the screen.
exit	Returns to the config level.
no clear counters	Restores the TFTP counters to the aggregate values.
show	Displays the TFTP settings and statistics.
show history	Displays the last 20 commands entered during the current CLI session.
show statistics	Displays the TFTP statistics.
state disable	Disables the TFTP server.
state enable	Enables the TFTP server.
write	Stores the current configuration in permanent memory.

tunnel <*line*> Level Commands

Command Path: enable>tunnel

Level Prompt: tunnel:#

Where # is the line number**.**

The following is a list of commands available in the tunnel level.

tunnel level commands	Description
accept	Enters the accept level for this tunnel.
auto show statistics	show connection statistics
clear counters	Zeros all tunnel counters
clrscrn	Clears the screen.
connect	Enters the connect level for this tunnel.
disconnect	Enters the disconnect level for this tunnel.
exit	Exits to the enable level.
line <*line*>	Enters the line level. <line> = number of the line (serial port) to be configured.
lpd <*line*>	Enters the configure lpd level. <line> = number of the line (lpd serial port) to be configured.
modem	Enters the modem level for this tunnel.
no clear counters	Unzeros all tunnel counters
packing	Enters the packing level for this tunnel.
ppp <*line*>	Enters the serial line PPP level.
serial	Enters the serial level for this tunnel.
show	Displays tunneling configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show statistics	show connection statistics
terminal <*line*>	Enters the configure-terminal level. <line> = number of the terminal line (serial port) to be configured.
terminal network	Enters the configure-terminal level for the network.
tunnel <*line*>	Enters the tunnel level. <line> = number of the tunnel line (serial port) to be configured.
write	Stores the current configuration in permanent memory.

udp Level Commands

Command Path: enable>config>udp

Level Prompt: config-udp

The following is a list of commands available in the udp level.

udp level commands	Description
auto show stats	Continuously shows UDP statistics
clear counters	Zeros counters
clrscrn	Clears the screen.
exit	Exits to the configuration level.
no clear counters	Unzeros IP counters
show history	Displays the last 20 commands entered during the current CLI session.
show stats	Shows UDP statistics
write	Stores the current configuration in permanent memory.

vip Level Commands

Command Path: enable>config>vip

Level Prompt: config-vip

The following is a list of commands available in the vip level.

vip level commands	Description
auto show statistics	Displays VIP statistics continuously.
clear counters	Sets the VIP counters to zero.
clrscrn	Clears the screen.
exit	Exits to the configuration level.
no clear counters	Restores the VIP counters to the aggregate values.
show	Displays the current configuration.
show history	Displays the last 20 commands entered during the current CLI session.
show statistics	Displays the VIP statistics.
state disable	Disables use of Virtual IP (VIP) addresses.
state enable	Enables use of Virtual IP (VIP) addresses.
write	Stores the current configuration in permanent memory.

4: Configuration Using XML

The device server provides an Extensible Markup Language (XML) interface that you can use to configure device server devices. Every configuration setting that can be issued from the device server Web Manager and CLI can be specified using XML.

The device server can import and export configuration settings as an XML document known as an XML configuration record (XCR). An XCR can be imported or exported via the CLI, a Web browser, FTP, or the device server filesystem. An XCR can contain many configuration settings or just a few. For example, it might change all of the configurable parameters for a device server, or it may only change the baud rate for a single serial line. Using XCRs is a straightforward and flexible way to manage the configuration of multiple device server devices.

XML Configuration Record Document Type Definition (DTD)

An XML DTD is a description of the structure and content of an XML document. It can be used to verify that a received document is valid.

XML Configuration Records are exported using the following DTD:

```
<!DOCTYPE configrecord [
<!ELEMENT configrecord (configgroup+)>
<!ELEMENT configgroup (configitem+)>
<!ELEMENT configitem (value+)>
<!ELEMENT value (#PCDATA)>
<!ATTLIST configrecord version CDATA #IMPLIED>
<!ATTLIST configgroup name CDATA #IMPLIED>
<!ATTLIST configgroup instance CDATA #IMPLIED>
<!ATTLIST configitem name CDATA #IMPLIED>
<!ATTLIST value name CDATA #IMPLIED>
]>
```

The device server DTD states the following:

- The XML document element is a <configrecord> element. This is the root element.
- A <configrecord> must have one or more <configgroup> elements and can have a version attribute.
- A <configgroup> must have one or more <configitem> elements and can have name and instance attributes.

- A <configitem> element must have one or more <value> elements and can have a name attribute.
- A <value> element can have only data and can have a name attribute.

Notes: *The name for each <configgroup> (specified with the name attribute) is the group name listed in the Web Manager XCR groups. See the User Guide for more information.*

An empty or missing <value> element in each present <configgroup> clears the setting to its default.

Attributes

- Use the “name” attribute to identify a group, item, or value. It is always a quoted string.
- Use the “instance” attribute to identify the specific option, like the serial port number. the “instance” attribute is always a quoted string.

Quick Syntax Tour for XCRs

Figure 4-2 shows a simple XML example.

Figure 4-2. Simple XML Group Example

```
<?xml version=”1.0” standalone=”yes”?>
<configrecord>
       <configgroup name = “serial command mode” instance = “1”>
       <configitem name = “mode serial string”>
              <value>disable</value>
       </configitem>
       </configgroup>
</configrecord>
```

The first line:

```
<?xml version=”1.0” standalone=”yes”?>
```

is the “XML declaration.” It is required and indicates the XML version in use (normally version 1.0).

The remainder of the file consists of nested “elements,” some of which have “attributes” and “content.”

- An element typically consists of two tags, a “start tag” and an “end tag,” possibly surrounding text and other elements.

- The start tag consists of a name surrounded by angle brackets, like `<configrecord>`.
- The end tag consists of the same name surrounded by angle brackets, but with a forward slash preceding the name, like `</configrecord>`.

- The element content is everything that appears between the start tag and end tag, including text and other (child) elements.

In addition to content, an element can contain attributes—name-value pairs included in the start tag after the element name.

- Attribute values must always be quoted, using single or double quotes.
- Each attribute name should appear only once in an element.

The Evolution OS™ uses the following attributes to label the group configuration settings.

Record, Group, Item, and Value Tags

A <configgroup> is a logical grouping of configuration parameters and must contain one or more <configitem> elements. It must have a name attribute and may have an instance attribute.

A <configitem> is a specific grouping of configuration parameters relevant to its parent group. An item takes the name attribute and must contain one or more value elements. For example, the line group might have parameters such as baud rate, data bits, and parity.

A value may specify the value of a configuration parameter. It may take the name attribute. In our example, a value of 9600 might be specified for baud rate; 7 may be specified for data bits, and even may be specified for parity.

- A name attribute identifies the group, item, or value. It is always quoted (as are all XML attributes). For example, a group that contains serial port parameters has the name “line”.
- An instance attribute identifies which of several instances is being addressed. It is always quoted. For example, the serial port name has the instance “1” to indicate serial port 1 or “2” to specify serial port 2.

The following figures show examples of XML configuration records and the use of the <configrecord>, <configgroup>, <configitem>, and <value> XML elements.

Figure 4-3. XML Group Example

```
<?xml version=”1.0” standalone=”yes”?>
<configrecord>
       <configgroup name = “serial command mode” instance = “1”>
       <configitem name = “mode”>
              <value>disable</value>
       </configitem>
       </configgroup>
```

```
</configrecord>
```

Figure 4-4. XML Example with Multiple Named Values

```
<?xml version=”1.0” standalone=”yes”?>
<configgroup name = "ssh server">
       <configitem name = "host rsa keys">
           <value name = "public key"></value>
           <value name = "private key"></value>
       </configitem>
   </configgroup>
```

Figure 4-5. XML Example with Multiple Items

```
<?xml version=”1.0” standalone=”yes”?>
<configgroup name = "email" instance = "1">
       <configitem name = "to">
           <value>john.doe@somewhere.com</value>
       </configitem>
       <configitem name = "from">
           <value>evolution@xportar.com</value>
       </configitem>
   </configgroup>
```

Figure 4-6. XML Example with Multiple Groups

```
<?xml version=”1.0” standalone=”yes”?>
<configgroup name = "ftp server">
       <configitem name = "state">
           <value>enable</value>
       </configitem>
       <configitem name = "admin username">
           <value>admin</value>
       </configitem>
       <configitem name = "admin password">
           <value><!-- configured and ignored --></value>
       </configitem>
   </configgroup>
   <configgroup name = "tftp server">
       <configitem name = "state">
           <value>enable</value>
       </configitem>
```

```
        <configitem name = "allow file creation">
            <value>disable</value>
        </configitem>
    </configgroup>
```

Importing and Exporting an XML Configuration File

An XML configuration record can be imported or exported using the following methods:

- Filesystem — XCRs can be saved to the device server's file system and imported or accessed as needed. See the Best Practices section below or the *File System Browser Page* in the User Guide.
- CLI — an XML configuration record can be imported (captured) or exported (dumped) directly to a Telnet, SSH, or serial line CLI session. Capturing an XML configuration record can be started by pasting a valid XCR directly into the CLI prompt. Evolution OS will immediately process the configuration record, changing any settings specified in the XCR. This can be done on any level, including the root. Special tags in the XML allow for providing root and enable level passwords so that this can also be done at the password prompt.
- Web browser — the Web interface can be used to import and export an XCR to the device server's file system. It can also be used to import an XCR from an external source such as your local hard drive.
- FTP — The device server's FTP server will export and import XCRs when a get or a put on the file xport_pro.xcr is requested. On export (FTP get of xport_pro.xcr), the FTP server obtains the current XCR from Evolution OS™ and sends it as a file. On import (FTP put of xport_pro.xcr), the FTP server processes the file by sending it directly to the XML engine. In both cases the device server's filesystem is not accessed. The file xport_pro.xcr is not read from, or written to the file system. See the FTP Page in the User Guide.

Note: *The Trivial File Transfer Protocol (TFTP) is not supported for importing XML configuration files because it does not provide any security features.*

Best Practices

Importing and Exporting Partial Configurations

You can import or export an entire XCR, or just a portion of it, by specifying the group name and/or group instances. In the examples below, import and export operations are performed from the CLI on the local filesystem and require a XCR on the local filesystem. The Web Manager provides the same functionality.

> ***CAUTION:*** ***Do not edit an XCR with Microsoft Word—you will not be able to import the file, even if you save the document as Plain Text (.txt) or XML Document (.xml) file. Use Microsoft Notepad instead.***

The following syntax can be used to import configurations from a file on the device server's file system:

```
xcr import <file>
xcr import <file> <groups and/or group:instances>
```

The first line imports all groups specified in the XML config record named in <*file*>. Any filename is valid, and the file name and extension are not important.

> ***CAUTION:*** ***The file name xport_pro.xcr is not acceptable, since performing a FTP get on that name produces the current configuration and does not get anything from the filesystem. Also, the file name xport_pro.xsr is not acceptable, since performing a FTP get on that name produces the current status and does not get anything from the filesystem.***

In the second line:

- Instance follows group with a colon (see the third example on the next page).
- Multiple groups are separated with a comma.
- Any white space requires the list of groups to be quoted.
- Only the named groups will be imported, even if the XCR contains additional XCR groups.

The following syntax can be used to export configurations to a file on the device server's file system:

```
xcr export <file>
xcr export <file> <groups and/or group:instances>
```

The same guidelines above regarding importing configurations also apply to exporting configurations. If no groups are specified, then the export command will export all configuration settings to the file. If instances are specified after the groups, only those group instances are written. If no instance is specified, all instances of that group are written.

The following example exports only the accept mode tunneling settings for line 1 to the file "tunnel_1.xcr" on the device server filesystem:

```
xcr export tunnel_1.xcr "tunnel accept:1"
```

The following example exports only the connect mode tunneling settings for all ports to the file "tunnel_all.xcr" on the device server filesystem:

```
xcr export tunnel_all.xcr "tunnel connect"
```

The following example imports only the settings for line 4 from a XCR named "factory_config.xcr" on the device server filesystem. If "factory_config.xcr" has other configuration settings, they are ignored:

```
xcr import factory_config.xcr "line:4"
```

The following example imports only line settings for all ports from a configuration record on the device server filesystem named "foobar.xcr":

```
xcr import foobar.xcr "line"
```

To import only disconnect mode tunneling settings for port 1 and serial line settings for port 4 from an XML configuration record named "production.xcr" that contains these settings (and possibly more), issue the following command:

```
xcr import production.xcr "tunnel disconnect:1, line:4"
```

The following example imports all tunneling settings and line settings for all serial ports from a file named xcr_file:

```
xcr import xcr_file "tunnel accept, tunnel connect, tunnel
disconnect, tunnel modem, tunnel packing, tunnel serial,
tunnel start, tunnel stop, line"
```

The following example exports only accept mode tunneling settings on serial port 1, and line settings on serial port 4 to a file named tunnel_config_t1_l4.xcr on the device server filesystem.

```
xcr export tunnel_config_t1_l4.xcr "tunnel accept:1, line:4"
```

The following example exports connect mode tunneling and line settings for all ports to the file tunnel_config.xcr on the device server filesystem:

```
xcr export tunnel_config.xcr "tunnel, line"
```

CAUTION: ***Do not edit an XCR with Microsoft Word—you will not be able to import the file, even if you save the document as Plain Text (.txt) or XML Document (.xml) file. Use Microsoft Notepad instead.***

Including Passwords in the XML File

If you log in to a device server to which you will be pasting an XML configuration record, you do not need to include passwords in the file, since you are already logged in to the device. However, if you will be sending an XML configuration record to one or more device server devices that are password protected, you can include the appropriate passwords in the XML configuration record and forego the usual login steps.

The “xml paste passwords” <configgroup> name is used with the “passwords” <configitem> name and “cli login” and “cli enable level” values to specify the passwords to use when the device has been configured with password protection. The password value is clear text. To protect the password, establish an SSH connection to the device server.

```
<!—To supply passwords when importing via cli capture -->
 <configgroup name = "xml paste passwords">
     <configitem name = "passwords">
         <value name = "cli login"></value>
         <value name = "cli enable level"></value>
     </configitem>
 </configgroup>
```

Special XCR Items

The XML configuration record has several items that do not directly affect the device’s configuration. These items generally provide functionality to control the device behavior during XCR importing and are not exported (or are exported with blank values) when an XCR is generated. Entries that are not exported are marked as Import only in the “Import/Export column.”

XML Configuration Groups

Table 4-1 lists the XPort XML configuration record groups in alphabetical order. This table indicates whether each item can be imported, exported, or exported with the placeholder: `<!--configured and ignored-->.`

Table 4-1. XPort XCR Import and Export Groups

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
arp	timeout			import/export	In seconds.
	arp entry	ip address		Import	Add a dynamic entry to the ARP table.
		mac address		import	
	arp delete	ip address		import	Remove an entry from the ARP table. Specify the entry by its IP address.
cli	enable level password			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	login password			import/export Placeholder	Same as above.
	quit connect line			import/export	Normally this will be a control key. For example, <control>L
	inactivity timeout				
cp group (Attribute of "instance" is required for the group name)	state		enable	import/export	Changes state of the CP group.
			disable		
	cp (Attribute of "instance" is a number from 1 to 3.)	bit		import/export	Bit number from 0 to 3
		type	input	import/export	
			output		
		assert low	enable	import/export	
			disable		
device	long name			import/export	
	serial number			export	
	short name			import/export	
	firmware version			export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
email (Attribute of "instance" is a number from 1 to 4.)	to			import/export	Multiple to addresses may be separated with semicolons.
	from			import/export	
	reply to			import/export	
	cc			import/export	Multiple cc address may be separated with semicolons.
	subject			import/export	
	message file			import/export	
	local port			import/export	Either a specific number or "Random".
	server port			import/export	
	priority		Very Low	import/export	
			Low		
			Normal		
			High		
			Urgent		
	overriding domain			import/export	
	cp	group		import/export	
		trigger value		import/export	
ethernet (Attribute of "instance" is "eth0".)	duplex		auto	import/export	
			full		
			half		
	speed		auto	import/export	
			10		
			100		
			disable		
ftp server	state		enable	import/export	
			disable		
	admin username			import/export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
	admin password			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
host (Attribute of "instance" is the number 1.)	name			import/export	
	protocol		telnet	import/export	
			ssh		
	remote address			import/export	
	remote port			import/export	
	ssh username			import/export	Username must correspond to a configured ssh client user.
http authentication uri (Attribute of "instance" is the URI.)	realm			import/export	
	type			import/export	
	user (Attribute of "instance" is the user name.)	password		import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	user delete	name		import	Deletes an HTTP Authentication URI user. The value element is used to specify the user for deletion.
http server	state		enable	import/export	
			disable		
	port			import/export	
	secure port			import/export	
	secure protocols	ssl3	enable	import/export	
			disable		
		ttls1.0	enable	import/export	
			disable		
		ttls1.1	enable	import/export	
			disable		
	max timeout			import/export	
	max bytes			import/export	
	logging state		enable	import/export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
			disable		
	log format			import/export	
	max log entries			import/export	
icmp	state		enable	import/export	
			disable		
interface (Attribute of "instance" is eth0")	bootp		enable	import/export	
			disable		
	dhcp		enable	import/export	
			disable		
	dhcp client id			import/export	Set the identity of the client device.
	domain			import/export	
	hostname			import/export	
	ip address			import/export	Specifies both the address and mask. Use CIDR form (192.168.0.1/16) or explicit mask (192.168.0.1 255.255.0.0)
	default gateway			import/export	
	primary dns			import/export	
	secondary dns			import/export	
ip	multicast time to live		enable	import/export	Specifies number of hops.
ip filter	delete entries		enable	import	If enabled, deletes any existing entries before adding "filter entry".
			disable		
	filter entry	ip address		import/export	
		net mask			
	filter delete	ip address		import	Deletes a specific IP filter entry.
		net mask	enable		
line (Attribute of "instance" is the number 1.)	state		enable	import/export	
			disable		
	baud rate		7	import/export	Any value from 300 to 230400.

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
	data bits		8	import/export	
			none		
	parity		even	import/export	
			odd		
			1		
	stop bits		2	import/export	
			hardware		
	flow control		software	import/export	
			none		
	xon char			import/export	Set the x-on character. Prefix hex with 0x (0x11) or decimal with \(\17).
	xoff char		rs232	import/export	Set the x-off character. Prefix hex with 0x (0x11) or decimal with \(\17).
	interface		rs485 half-duplex	import/export	
			rs485 full-duplex		
	name		lpd	import/export	
	protocol		lpd or tunnel	import/export	
			none		
			ppp		
			tunnel		
	gap timer				
	threshold		enable		
lpd (Attribute of “instance” is the number 1.)	banner		disable	import/export	
			enable		
	binary		disable	import/export	
			enable		
	convert newline		disable	import/export	
			enable		
	eoj		disable	import/export	
	eoj text		enable	import/export	
	formfeed		disable	import/export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
	queue name		enable	import/export	
	soj		disable	import/export	
	soj text			import/export	
managelinx	plaintext dsm credentials	dna.xml.replication.protocol.version			
	encrypted dsm credentials	dna.dsc.auth.tunnel.username			
		dna.dsc.auth.ssh.pub			
		dna.dsc.auth.ssh.priv			
		device.dna.dsc.tunnel.portlist.list			
		device.dna.dsc.tunnel.ip.addr			
		device.dna.dsc.tunnel.ssh.public			
		device.dnaid			
	managelinx common	device.dna.system.change.number			
		device.config.name			
		device.dna.system.change.timestamp			
	managelinx network interface	device.dna.system.network.iface.name			
		device.dna.system.network.iface.ipaddress			
ppp (Attribute of "instance" is the number 1.)	local ip			import/export	Specifies both the address and mask. Use CIDR form (192.168.0.1/16) or explicit mask (192.168.0.1 255.255.0.0)
	peer ip		none	import/export	
	authentication mode		pap	import/export	
			ms-chap		
			ms-chapv2		

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
			chap		
	username			import/export	
	password		enable	import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
query port	state		disable	import/export	
			enable		
rss	feed		disable	import/export	
			enable		
	persist		disable	import/export	
	max entries			import/export	
serial command mode (Attribute of "instance" is the number 1.)	mode		cp	import/export	
			cp and serial string		
			disable		
			serial string		
			enable		
	echo serial string		disable	import/export	
	serial string			import/export	
	signon message			import/export	
	wait time			import/export	Milliseconds.
	cp	group		import/export	
		trigger value	enable	import/export	
snmp	state		disable	import/export	
	system name			import/export	
	system contact			import/export	
	system description			import/export	
	system location		enable	import/export	
	traps	state	disable	import/export	
		primary destination		import/export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
		secondary destination		import/export	
	read community			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	write community			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
ssh client	client user (Attribute of "instance" is required for the user name)	private dsa key		import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
		public dsa key		import/export	
		private rsa key		import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
		public rsa key		import/export	
		password		import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
		remote command		import/export	
	known host (Attribute of "instance" is required for the known host name)	public rsa key		import/export	
		public dsa key		import/export	
	known host delete	name		import	Specify the known host to delete.
	client user delete	name	enable	import	Specify the user to delete.
	delete known hosts		disable enable	import	If enabled, deletes any existing hosts before adding "known host".
	delete client		disable	import	If enabled,

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
	users				deletes any existing client users before adding “client user”.
ssh command mode	max sessions		enable	import/export	
	state		disable	import/export	
	port			import/export	
ssh server	host rsa keys	public key		import/export	
		private key		import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	host dsa keys	public key		import/export	
		private key		import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	authorized user (Attribute of “instance” is required for the authorized user name)	password		import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
		public rsa key		import/export	
		public dsa key		import/export	
	authorized user delete	name	enable	import	Delete an SSH authorized user.
	delete authorized users		disable	import	If enabled, deletes any authorized users before adding “authorized user”.
ssl	rsa certificate	certificate		import/export	Enter the text of the certificate.

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
		private key		import/export Placeholder	Enter the text of the private key. If configured and not exporting secrets, exports only a placeholder.
	dsa certificate	certificate		import/export	Enter the text of the certificate.
		private key	enable	import/export Placeholder	Enter the text of the private key. If configured and not exporting secrets, exports only a placeholder.
	delete all cas		disable	import	If enabled, deletes any existing trusted cas before adding “trusted ca”.
syslog	host			import/export	
	local port			import/export	
	remote port		emergency	import/export	
	severity log level		alert	import/export	
			critical		
			error		
			warning		
			notice		
			information		
			debug		
			enable		
	state		disable	import/export	
			enable		
tcp	resets		disable	import/export	
	ack limit		standard	import/export	Number of packets received before an ACK is forced.
	send data		expedited	import/export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
telnet command mode	max sessions		enable	import/export	
	state		disable	import/export	
	port			import/export	
terminal (Attribute of "instance" is either "network" or the number 1.)	break duration		enable	import/export	milliseconds
	echo		disable	import/export	
			enable		
	exit connect menu		disable	import/export	
			enable		
	login connect menu		disable	import/export	
	send break			import/export	control character
	terminal type		enable	import/export	
tftp server	state		disable	import/export	
			enable		
	allow file creation		disable	import/export	
			always		
	allow firmware update		disable		
tunnel accept (Attribute of "instance" is the number 1.)	accept mode		disable	import/export	
			any character		
			start character		
			modem control asserted		
			modem emulation		
	aes decrypt key			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	aes encrypt key			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	local port		tcp	import/export	
	protocol		tcp aes	import/export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
			ssh		
			ssl		
			telnet		
			enable		
	flush serial		disable	import/export	
			enable		
	block serial		disable	import/export	
			enable		
	block network		disable	import/export	
	start character				
	flush start character		enable		
	tcp keep alive			import/export	Milliseconds
	email connect			import/export	
	email disconnect			import/export	
	cp output	group		import/export	CP group name
		connection value		import/export	
		disconnection value	enable	import/export	
	password	prompt	disable	import/export	
		password	always	import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
tunnel connect (Attribute of “instance” is the number 1.)	connect mode		disable	import/export	
			any character		
			start character		
			modem control asserted		
			modem emulation		
	start character				
	flush start character		enable		

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
	aes decrypt key			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	aes encrypt key			import/export Placeholder	If configured and not exporting secrets, exports only a placeholder.
	local port			import/export	Either a specific number or “Random”.
	host	vip	disable		
		vip name			
		address			
		port			
		protocol	tcp		
		ssh username			
		tcp keep alive	45000 milliseconds		
		aes encrypt key			
		aes decrypt key			
	host mode		Sequential		
	protocol		udp	import/export	
			ssh		
			ssl		
			tcp aes		
			udp aes		
			telnet		
	reconnect time		enable	import/export	Milliseconds.
	flush serial		disable	import/export	
	ssh username		enable	import/export	Username must correspond to a configured ssh client user.
	block serial		disable	import/export	
			enable		
	block network		disable	import/export	

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
	tcp keep alive			import/export	Milliseconds.
	email connect			import/export	
	email disconnect			import/export	
	cp output	group		import/export	cp group name
		connection value		import/export	
		disconnection value	enable	import/export	
tunnel disconnect (Attribute of "instance" is the number 1.)	stop character		disable	import/export	
			enable		
	flush stop character		enable		
	flush serial		disable	import/export	
			enable		
	modem control		disable	import/export	
	timeout		enable	import/export	Milliseconds. A value of 0 disables the timeout.
tunnel modem (Attribute of "instance" is the number 1.)	echo pluses		disable	import/export	
			enable		
	echo commands		disable	import/export	
			enable		
	verbose response		disable	import/export	
			text		
	response type		numeric	import/export	
			enable		
	error unknown commands		disable	import/export	
			disabled		
	incoming connection		automatic	import/export	
			manual		
			enable		
	display remote ip		disable	import/export	
	connect string		disable	import/export	
tunnel packing (Attribute of "instance" is the number 1.)	packing mode		timeout	import/export	
			send character		
	timeout			import/export	Milliseconds
	threshold			import/export	Bytes

Group Name	Item Name	Value Name	Value	Import/ Export	Additional Information
	send character			import/export	
	trailing character			import/export	
tunnel serial (Attribute of "instance" is the number 1.)	buffer size		asserted while connected	import/export	Bytes
	dtr		continuously asserted	import/export	
			unasserted		
vip	state		enable	import/export	
			enable		
xml import control	restore factory configuration		disable	import/export	
			enable		
	delete cpm groups		disable	import/export	Deletes existing groups before importing new ones.
	cpm group delete	name	disable	import/export	Deletes the specified cpm group.
			enable		
	delete http authentication uris		disable	import/export	Deletes existing http authentication uris before importing new ones.
	http authentication uri delete	name	enable	import/export	Deletes the specified http authentication uri.
	reboot		disable	import/export	Reboots after importing.

XML Status Groups and Items

The table below lists the supported XML Status Record (XSR) groups and items. These groups and items show the status of the device in XML form and can only be exported.

The XSR schema differs slightly from the XCR groups and items however, in that the XSR allows groups within groups.

Current use of groups within groups.

The buffer pool group, which has the following groups as sub groups:

- Protocol stack
- Ethernet driver
- Line

The tunnel group, which has the following group as sub group:

- Tunnel Modem

The CLI command usage is identical to the XCR export, dump, and list.

Table 4-2. XPort Pro XSR Groups and Items

Group Name	Item Name	Value Name	Valid Values
arp (Attribute of "instance" is "eth0".)	arp entry	ip address	
		mac address	
		age	
		type	
buffer pool	This group contains other groups: ethernet driver, line #, protocol stack.		
cp group (Attribute of "instance" is required for the group name)	state		disabled
			disabled and locked
			enabled
			enabled and locked

Group Name	Item Name	Value Name	Valid Values
	value		
	cp (Attribute of "instance" is a number from 1 to 3.)	value	
		level	low
			high
		logic	inverted
			not inverted
		position	
cps	cp (Attribute of "instance" is a number from 1 to 3.)	pin	
		configured as	input
			output
		value	
		level	low
			high
		logic	inverted
			not inverted
		active group	
		group	
device	product info	product type	
		serial number	
		firmware version	
		uptime	
		permanent config	saved
			unsaved
email (Attribute of "instance" is a number from 1 to 4.)	success	sent	
		sent with retries	
	failed		
	queued		
email log (Attribute of "instance" is a number from 1 to 4.)	entry	time	
		log	
ethernet driver (within group "buffer pool")	buffer headers	total	
		free	
		used	
		max used	
	cluster pool	cluster size	

Group Name	Item Name	Value Name	Valid Values
		total	
		free	
		used	
		max used	
filesystem	filesystem	size	
		available clean	
		available dirty	
		used total	
		used data	
		busy	
	entries	file count	
		directory count	
		system count	
		open count	
		lock count	
		share count	
	banks	current	
		firmware begin	
		firmware end	
		firmware erase cycles	
		firmware 2 begin	
		firmware 2 end	
		firmware 2 erase cycles	
		bank a begin	
		bank a end	
		bank a erase cycles	
		bank b begin	
		bank b end	
		bank b erase	

Group Name	Item Name	Value Name	Valid Values
		cycles	
ftp	status	running	enabled
			disabled
	connections	rejected	
		accepted	
	last client	ip address	
		port	
hardware	cpu	type	
		speed	
	memory	flash size	
		ram size	
http	state		enabled
			disabled
	ports	http port	
		https port	
	max bytes		
	max timeout		
	logging	state	enabled
			disabled
		max entries	
		format	
		entries	
		bytes	
http log	entry (Attribute of "instance" is a number from 1 to N)		
	totals	entries	
		bytes	
icmp	in	messages	
		messages discarded	

Group Name	Item Name	Value Name	Valid Values
		errors	
		destination unreachables	
		time exceeded messages	
		parameter problems	
		source quench requests	
		redirects	
		ping requests	
		ping replies	
		timestamp requests	
		timestamp replies	
		address mask requests	
		address mask replies	
	out	messages	
		messages discarded	
		errors	
		destination unreachables	
		time exceeded messages	
		parameter problems	
		source quench requests	
		redirects	
		ping requests	
		ping replies	
		timestamp requests	

Group Name	Item Name	Value Name	Valid Values
		timestamp replies	
		address mask requests	
		address mask replies	
interface (Attribute of "instance" is either "eth0")	generic	status	no link
			link up
			disabled
			unknown
		errors	
	ethernet (Present only for eth0)	speed	
		duplex	
	arp	encapsulation	
		type	
		timeout	
	default gateway		
	network mask		
	domain		
	mac address		
	hostname		
	ip address		
	last change		
	mtu		
	primary dns		
	secondary dns		
	transmit	octets	
		unicast	

Group Name	Item Name	Value Name	Valid Values
		non unicast	
		discards	
		errors	
		broadcast packets	
		multicast packets	
		filtered packets	
		deferred	
		multiple retries	
		one retry	
		underflows	
		late collisions	
		retry errors	
		carrier lost errors	
	receive	octets	
		unicast	
		non unicast	
		discards	
		errors	
		broadcast packets	
		multicast packets	
		filtered packets	
		unknown protocol	
		framing errors	
		overflows	
		crc errors	
		missed frame errors	

Group Name	Item Name	Value Name	Valid Values
ip	state		enabled
			disabled
	default ttl		
	forwarded		
	route discards		
	in	receives	
		header errors	
		address errors	
		unknown protocols	
		discarded	
		delivered	
	out	requests	
		discards	
		discards no route	
	reassembly	timeout	
		needed	
		success	
		failures	
	fragments	needed	
		failures	
		success	
ip sockets	ip socket	protocol	
		rx queue	
		tx queue	
		local address	
		local port	

Group Name	Item Name	Value Name	Valid Values
		remote address	
		remote port	
		state	
line (Attribute of "instance" is the number 1.) .	receiver	bytes	
		breaks	
		parity errors	
		framing errors	
		overrun errors	
		no receive buffer errors	
		queued bytes	
		flow control	
	transmitter	bytes	
		breaks	
		queued bytes	
		flow control	
	line levels	cts	
		rts	
		dsr	
		dtr	
line (with no instance) (within group "line" with instance 1 or 2)	state		enabled
			disabled
	protocol		lpd
			none
			ppp
			tunnel
	baud rate		Any value from 300 to 230400.
	parity		even
			none
			odd
	data bits		7
			8
	stop bits		1
			2

Group Name	Item Name	Value Name	Valid Values
	flow control		hardware
			none
			software
	xon char		enabled
			disabled
	xoff char		enabled
			disabled
line <number> (within group “buffer pool”)	buffer headers	total	
		free	
		used	
		max used	
	cluster pool	cluster size	
		total	
		free	
		used	
		max used	
lpd (Attribute of “instance” is the number 1.)	jobs printed		
	bytes printed		
	current client ip address		
	current client port		
	last client ip address		
	last client port		
memory	main heap	condition	clean
		total memory	
		available memory	
		fragments	
		allocated blocks	
processes	process	pid	
		cpu %	
		stacks	
		thread name	
protocol stack (within group “buffer pool”)	buffer headers	total	
		free	
		used	
		max used	
	cluster pool	cluster size	

Group Name	Item Name	Value Name	Valid Values
		total	
		free	
		used	
		max used	
query port	status		enabled
			disabled
	last connection	ip address	
		port	
	in	discoveries	
		unknown queries	
		erroneous packets	
	out	discovery replies	
		errors	
rss	url		
	data	entries	
		bytes	
sessions	line (Attribute of "instance" is the number 1.)		
		baud	
		parity	
		data bits	
		stop bits	
		flow control	
	ssh Attribute of "instance" is the ssh session number.)	local port	
		remote ip address	
		remote port	
		duration	
	telnet (Attribute of "instance" is the telnet session number.)	local port	
		remote ip address	
		remote port	
		duration	
ssh	state		
	totals	uptime	
		bytes in	
		bytes out	
syslog	status		

Group Name	Item Name	Value Name	Valid Values
	messages failed		
	messages send		
tcp	retransmission	algorithm	
		timeout minimum	
		timeout maximum	
	connections	maximum	
		open active	
		open passive	
		failed	
		resets	
		established	
	errors in		
	resets	in	
		out	
	segments	in	
		out	
		retransmitted	
telnet	state		enabled
			disabled
	totals	uptime	
		bytes in	
		bytes out	
tftp	status		enabled
			disabled
			disabled
	downloaded		
	uploaded		
	not found		
	errors	read	
		write	
		unknown	
	last client	ip address	
		port	
tunnel (Attribute of “instance” is the number 1.)	aggregate	completed connects	
		completed accepts	
		disconnects	

Group Name	Item Name	Value Name	Valid Values
		dropped connects	
		dropped accepts	
		octets from serial	
		octets from network	
		connect connection time	
		accept connection time	
		connect dns address changes	
		connect dns address invalids	
tunnel modem (within group “tunnel”)	echo commands		enable
	verbose response		enable
	response type		text
	error unknown commands		disable
	incoming connection		disabled
udp	in unknown ports		
	in datagrams		
	in errors		
	out datagrams		
vip	conduit status		up
	conduit uptime		
	time of last replication		
	config name		
	network interface		
xsr	out	bytes	
		lines	
		elements	
	errors		

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