



## XPort AR Command Reference

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## Revision History

| Date           | Rev. | Comments                                 |
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| December 2006  | A    | Initial Document.                        |
| September 2009 | B    | Updated to firmware version 4000R16.     |
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# 1: About This Guide

This guide describes how to configure the XPort AR using the Command Line Interface (CLI) and/or Extensible Markup Language (XML). It is written for software developers and system integrators.

## Chapter Summaries

This table lists and summarizes each chapter and appendix.

| Chapter  | Summary  |
|--|--|
| <a href="#">Chapter 2: Overview</a>                | Gives an overview of CLI and XML.  |
| <a href="#">Chapter 3: Command Line Interface</a>  | Lists commands and describes how to use CLI to configure the XPort AR.                               |
| <a href="#">Chapter 4: Configuration Using XML</a> | Lists XCR groups and items and describes how to use XCRs to configure the XPort AR.                  |
| <a href="#">Chapter 5: Commands and Levels</a>     | Provides an index of the CLI Command Hierarchy with hyperlinks to the corresponding command details. |

## Conventions

The table below lists and describes the conventions used in this book.

| Convention                       | Description  |
|----------------------------------|--|
| <b>Bold text</b>                 | Default parameters.  |
| <i>Italic text</i>               | Required values for parameters   |
| <b>Brackets [ ]</b>              | Optional parameters.   |
| <b>Angle Brackets &lt; &gt;</b>  | Possible values for parameters.  |
| <b>Pipe  </b>                    | Choice of parameters.  |
| <b>Warning</b>                   | <b>Warning:</b> Means that you are in a situation that could cause equipment damage or bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents. |
| <b>Note</b>                      | <b>Note:</b> Means take notice. Notes contain helpful suggestions, information, or references to material not covered in the publication.  |
| <b>Caution</b>                   | <b>Caution:</b> Means you might do something that could result in faulty equipment operation, or loss of data.   |
| <b>Screen Font (Courier New)</b> | CLI terminal sessions and examples of CLI input.   |

## Additional Documentation

Visit the Lantronix web site at [www.lantronix.com/support/documentation](http://www.lantronix.com/support/documentation) for the latest documentation and the following additional documentation.

| Document                              | Description   |
|---------------------------------------|---|
| <i>XPort AR User Guide</i>            | Describes how to configure and use the XPort AR.  |
| <i>XPort AR Integration Guide</i>     | Contains information about the XPort AR hardware, the XPort AR demonstration board, and integrating the XPort AR into your product. |
| <i>XPort AR Getting Started Guide</i> | Describes how to get the XPort AR demonstration board up and running.   |

## 2: Overview

Evolution OS™ is the Lantronix cutting-edge operating system that supports three convenient configuration methods: Web Manager, Command Line Interface (CLI), and Extensible Markup Language (XML). For more information about the Web Manager, see the *XPort AR User Guide* at the Lantronix website.

### Command Line Interface

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.

For details of the CLI, see [Chapter 5: Commands and Levels](#). It provides an index of the CLI Command Hierarchy with links to the corresponding command details. The CLI provides commands for configuring, monitoring, and controlling the device server.

### XML Architecture and Device Control

XML is a fundamental building block for the future growth of Machine-to-Machine (M2M) networks. Evolution supports XML configuration records that make configuring the device server easy for users and administrators. XML configuration records are easy to edit with a standard text editor or an XML editor.

For a brief overview of XML, see [Chapter 4: Configuration Using XML](#). It provides rules on basic XML syntax, a guide to the specific XML tags used, and a guide to using XML configuration records.



## 3: Command Line Interface

This chapter describes accessing the XPort AR by using Telnet, SSH, or serial ports to configure the XPort AR, navigating the Command Line Interface (CLI), typing keyboard shortcuts, and moving between the levels.

It contains the following sections:

- ◆ [Configuration Using Telnet](#)
- ◆ [Configuration Using Serial Ports](#)
- ◆ [Navigating the CLI Hierarchy](#)
- ◆ [Using Keyboard Shortcuts and CLI](#)
- ◆ [Understanding the CLI Level Hierarchy](#)

Refer to [Chapter 5: Commands and Levels](#) for a complete list of levels, commands, and descriptions.

### Configuration Using Telnet

To access and configure the device server by using a Telnet session over the network, you must first establish a Telnet connection. You can also establish a Telnet connection by clicking the Telnet Configuration tab in DeviceInstaller. See the DeviceInstaller Online Help for more information, available on our website [www.lantronix.com/support/downloads](http://www.lantronix.com/support/downloads).

To access the XPort AR by using Telnet, perform the following steps.

1. Click **Start > Run**. The **Run** dialog box displays.
2. Type telnet x.x.x.x (x.x.x.x is the IP address). The XPort AR is online when the command prompt (>) displays. You are at the root level of the CLI.

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

### Configuration Using Serial Ports

#### 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 back door 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. The exclamation point displays on the terminal or PC screen.
4. Type **xyz** within 5 seconds to display the CLI prompt.

## Navigating the CLI Hierarchy

The CLI is organized into a hierarchy of levels. Each level has a group of commands for a specific purpose. For example, to configure a setting for the FTP server, one would navigate to the FTP level, which is under the configuration level.

- ◆ To move to a different level—Enter the name of the level from within its parent level. For example, to enter the tunnel level, type `tunnel <number>` at the enable prompt. This displays: `<enable> tunnel <number>#`.
- ◆ To exit and return to one level higher—Type `exit` and press the Enter key. Typing `exit` at the login level or the enable level will close the CLI session. If Line — Command Mode is specified as Always, a new session starts immediately.
- ◆ To view the current configuration at any level—Type `show`.
- ◆ To view the list of commands available at the current level—Type the question mark "?". Items within `< >` (e.g. `<string>`) are required parameters.
- ◆ To view the available commands and explanations—Type the asterisk (\*).
- ◆ To view the list of commands available for a partial command—Type the partial command followed by the question mark "?". 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—Type the partial command followed by the asterisk (\*). 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—Type `show history`.

## Using Keyboard Shortcuts and CLI

One useful shortcut built into Evolution OS™ is that the complete text of a command does not have to be entered to issue a command. Typing just enough characters to uniquely identify a command, then hitting enter, can be used as a short cut for a command. For example, at the enable level, "sh" can be used for the "show" command.

Tab Completion is also available. Typing the first few characters of a command, then hitting the <tab> key displays the first command that begins with those characters. Hitting the <tab> key again displays the next command that begins with the original characters typed. You can press <Enter> to execute the command or you can backspace to edit any parameters.

The following key combinations are allowed when configuring the device server using the CLI:

- ◆ **Ctrl + a**: place cursor at the beginning of a 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

## Understanding the CLI Level Hierarchy

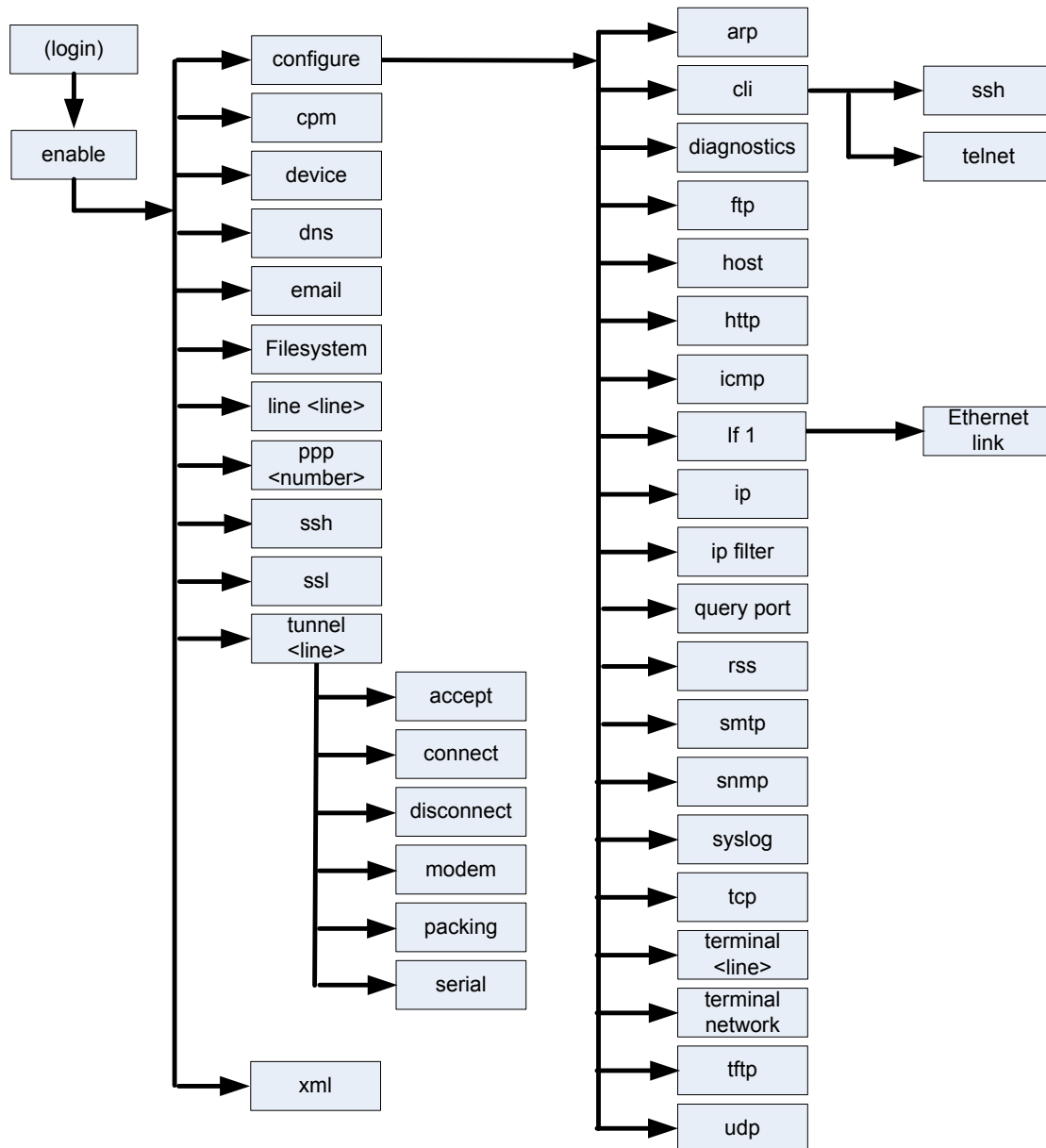
The CLI hierarchy is a series of levels. Arranging commands in a hierarchy of levels provides a way to organize and group similar commands, provide different levels of security, and reduce the complexity and number commands and options presented to a user at one time.

When you start a command line session, you begin at the login level. This level can be password protected and provides access to high level status, a few diagnostic commands, and the enable level. Further device information and configuration are accessed via the enable level.

The enable level can also be password protected and is the gateway to full configuration and management of the device server. There are commands for gathering and effecting all elements of device status and configuration, as well as commands that take you to additional levels. For instance, tunnel specific status and configuration is found under the "tunnel" level, and network specific status and configuration commands are found under the "configuration" level.

An overview of the levels in the XPort AR is presented in [Figure 3-1](#).

Figure 3-1 CLI Level Hierarchy



Commands at the login level, shown in [Figure 3-2](#), do not affect current configuration settings and are not displayed initially. If you type **<?>**, you will see the login sub-commands. These commands provide diagnostic and status information only.

**Figure 3-2 Login Level Commands**

```
>?
clrscrn
exit
ping <host> <count>
show
show history
>
enable
ping <host>
ping <host> <count> <timeout>
show xport_ar
trace route <host>
```

To configure the XPort AR, you must be in the enable level and any of its sub-levels. [Figure 3-3](#) shows the enable level commands.

**Figure 3-3 Enable Level Commands**

```
>enable
(enable)#?
auto show interfaces
clear interfaces counters
configure
connect line <line>
device
dens
exit
kill ssh <session>
line <line>
ping <host>
ping <host> <count> <timeout>
reload
show
show interfaces
show processes
show xport_ar
ssh <optClientUsername> <host>
ssl
telnet <host> <port>
tunnel <line>
xml
auto show processes
clrscrn
connect
cpm
disable
email <number>
filesystem
kill telnet <session>
no clear interfaces counters
ping <host> <count>
ppp <line>
reload factory defaults
show history
show ip sockets
show sessions
ssh
ssh <optClientUsername> <host> <port>
telnet <host>
trace route <host>
write
```

See the [Chapter 5: Commands and Levels](#) at the end of this document for a complete list of levels, commands, and descriptions.

## 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

An XML document type definition (DTD) is a description of the structure and content of an XML document. It verifies that a document is valid. XCRs are exported using the DTD shown in [Figure 4-1](#).

**Figure 4-1 DTD for XCRs**

```
<!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 rules state 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.
- ◆ The name attribute identifies a group, item, or value. It is always a quoted string.
- ◆ The instance attribute identifies the specific option, like the serial port number. The “instance” attribute is always a quoted string.

**Notes:**

- ◆ The name for each `<configgroup>` (specified with the `name` attribute) is the group name listed in the Web Manager XCR groups or with the “`xcr list`” CLI command. See the XPort AR User Guide for more information about the Web Manager XCR groups.
- ◆ An empty or missing `<value>` element in each present `<configgroup>` clears the setting to its default.

## Quick Tour of XML Syntax

### Declaration

The first line, `<?xml version="1.0" standalone="yes"?>`, is called 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 XML elements, some of which have attributes and content.

### Element Start and End Tags

An element typically consists of two tags: start tag and an end tag that surrounds text and other elements (element content). The start tag consists of a name surrounded by angle brackets, for example `<configrecord>`. The end tag consists of the same name surrounded by angle brackets, but with a forward slash preceding the name, for example `</configrecord>`.

The element content can also contain other “child” elements.

### Element Attributes

The XML element attributes that are name-value pairs included in the start tag after the element name. The values must always be quoted, using single or double quotes. Each attribute name should appear only once in an element.

[Figure 4-2](#) shows an XML example which consists of a declaration (first line), nested elements with attributes and content.

**Figure 4-2 XML 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 Evolution OS™ uses the attributes in the following subsections 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 contain the name attribute. In this 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 (in the line configgroup) 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 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 of 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 of 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 XCR can be imported or exported using the following methods:

- ◆ Filesystem—XCRs can be saved to the device server file system and imported or accessed as needed. See [Best Practices](#) or the Filesystem Browser section in the *XPort AR User Guide*.
- ◆ CLI—XCRs can be imported (captured) or exported (dumped) directly to a Telnet, SSH, or serial line CLI session. Capturing an XCR can be started by pasting a valid XCR directly into the CLI prompt. Evolution OS immediately processes the configuration record, changing any settings specified. 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—Web Manager can be used to import and export an XCR to the device server 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 FTP server can export and import XCRs when an FTP get or put command on the filename `xport_ar.xcr` is requested. On export (FTP get of `xport_ar.xcr`), the FTP server obtains the current XCR from Evolution OS™ and sends it as a file. On import (FTP put of `xport_ar.xcr`), the FTP server processes the file by sending it directly to the XML engine. In both cases the device server filesystem is not accessed. The file `xport_ar.xcr` is not read from or written to the file system. See FTP in the *XPort AR User Guide*.
- ◆ TFTP—TFTP supports XCR importing. Due to limited security capabilities of TFTP, the option is disabled by default.

## Best Practices

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:** *Using Microsoft Word to edit and save an XCR will change the format of the file and make it incompatible with Evolution OS. This is true even if the file is saved as Plain Text (.txt) or an XML Document (.xml). Notepad, a third party text editor, or a specialized XML editor should be used instead.*

## Importing

The following syntax can be used to import configurations from a file:

```
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 filename `xport_ar.xcr` is not acceptable, because performing a FTP get on that name produces the current configuration and does not perform an FTP from the filesystem. Also, the filename `xport_ar.xsr` is not acceptable, because performing an 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 get 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.

## Exporting

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 2 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:2"
```

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 2 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:2"
```

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 2 to a file named tunnel\_config\_t1\_l2.xcr on the device server filesystem.

```
xcr export tunnel_config_t1_l2.xcr "tunnel accept:1, line:2"
```

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"
```

## Passwords in the XML File

If you log in to a device server to which you will be pasting an XCR, you do not need to include passwords in the file, because you are already logged into the device. However, if you send an XCR to one or more devices that are password protected, you can include the appropriate passwords in the XCR and skip the 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. [Figure 4-7](#) shows an example.

**Figure 4-7 XML Example of Supplying Passwords**

```
<!--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>
```

## XML Configuration Groups

[Table 4-8](#) lists the XPort AR XCR groups in alphabetical order. This table indicates the various group items, as well as some possible value names and options.

**Note:** Any instance of **&#60** in the table may be read as “less than” and any instance of **&#62** may be read as “greater than”.

**Table 4-8 XCR Groups**

| Group Name | Group Item | Value Name  | Value Options | Additional Information   |
|------------|------------|-------------|---------------|--|
| arp        | arp delete | ip address  |               | Remove an entry from the ARP table. Specify the entry by its IP address. |
|            | arp entry  | ip address  |               |  |
|            |            | mac address |               |  |
|            | timeout    |             |               | Default: 60 seconds  |

| Group Name  | Group Item                                  | Value Name     | Value Options                              | Additional Information  |
|---|---|----------------|--|---|
| cli   | login password                              |                |  | Value is SECRET, hidden from user view.   |
|   | enable level password                       |                |  | Value is SECRET, hidden from user view.   |
|   | quit connect line                           |                |  | Accepts text containing control characters, for example, <code>&amp;#60;control&amp;#62;</code> . A represents control-A Default: <code>&lt;control&gt;L</code> |
|   | inactivity timeout                          |                | <code>&amp;#60;None&amp;#62;</code> , ...  | Default: 15 minutes   |
| cp group<br>(Attribute of "instance" is required for the group name.) | state                                       |                | enable                                     | Changes state of the CP group.  |
|   |   |                | disable                                    |   |
|   | cp<br>(Attribute of "instance is a number.) | bit            |  | Bit number  |
|   |   | type           | input                                      |   |
|   |   |                | output                                     |   |
|   |   | assert low     | enable                                     |   |
|   |   |                | disable                                    |   |
| device  | short name                                  |                |  |   |
|   | long name                                   |                |  |   |
|   | serial number                               |                |  | Read only.  |
|   | firmware version                            |                |  | Read only.  |
| diagnostics   | log   | output         | disable, filesystem, line <number>         | Default: disable  |
|   |   | max length     |  | Default: 50 Kbytes  |
|   |   | severity level | debug, information, notice, warning, error | Default: debug  |

| Group Name   | Group Item  | Value Name | Value Options                       | Additional Information   |
|--|---|------------|-------------------------------------|--|
| email<br>(Attribute of "instance" is a number.)                  | to  |            |                                     | Multiple addresses may be separated with semicolons.   |
|  | cc  |            |                                     | Multiple addresses may be separated with semicolons.   |
|  | from  |            |                                     |  |
|  | reply to  |            |                                     |  |
|  | subject   |            |                                     |  |
|  | message file  |            |                                     |  |
|  | overriding domain                                   |            |                                     |  |
|  | server port   |            |                                     | Default: 25  |
|  | local port  |            | &#60;Random&#62;, ...               | Default: <Random>  |
|  | priority  |            | urgent, high, normal, low, very low | Default: normal  |
| ethernet<br>(Attribute of "instance" is "eth0".)                 | speed   |            | auto, 10, 100                       | Default: auto  |
|  | duplex  |            | auto, half, full                    | Default: auto  |
| ftp server   | state   |            | enable, disable                     | Default: enable  |
|  | admin username                                      |            |                                     | Default: admin   |
|  | admin password                                      |            |                                     | Value is SECRET, hidden from user view.  |
| host<br>(Attribute of "instance" is either a number.)            | name  |            |                                     |  |
|  | protocol  |            | telnet, ssh                         | Default: telnet  |
|  | ssh username  |            |                                     |  |
|  | remote address                                      |            |                                     |  |
|  | remote port   |            |                                     | Default: 0   |
| http authentication uri<br>(Attribute of "instance" is the URI.) | user delete   | name       |                                     | Deletes an HTTP Authentication URI user. The value element is used to specify the user for deletion. |
|  | realm   |            |                                     |  |
|  | type  |            |                                     |  |
|  | user<br>(Attribute of "instance" is the user name.) | password   |                                     |  |

| Group Name  | Group Item             | Value Name | Value Options        | Additional Information  |
|-------------|------------------------|------------|----------------------|---|
| http server | state                  |            | enable, disable      | Default: enable   |
|             | port                   |            | &#60;None&#62;;, ... | Default: 80   |
|             | secure port            |            | &#60;None&#62;;, ... | Default: 443  |
|             | secure protocols       |            | ssl3, tls1.0, tls1.1 | May contain zero, one, or more of the values, separated by commas.<br>Default: ssl3, tls1.0, tls1.1 |
|             | max timeout            |            |                      | Default: 10 seconds   |
|             | max bytes              |            |                      | Default: 40960  |
|             | logging state          |            | enable, disable      | Default: enable   |
|             | max log entries        |            |                      | Default: 50   |
|             | log format             |            |                      | Default: %h %t<br>"%r" %s %B<br>"%{Referer}i"<br>"%{User-Agent}i"                                   |
|             | authentication timeout |            |                      | Default: 30 minutes   |
| icmp        | state                  |            | enable, disable      | Default: enable   |

| Group Name                                      | Group Item             | Value Name | Value Options        | Additional Information  |
|---|------------------------|------------|----------------------|---|
| interface<br>(Attribute of "instance" is eth0") | bootp                  |            | enable, disable      | Default: disable  |
|   | dhcp                   |            | enable, disable      | Default: enable   |
|   | ip address             |            | &#60;None&#62;), ... | Accepts an IP address and mask as either: (1) IP address only (192.168.1.1) gets a default mask, (2) CIDR (192.168.1.1/24), or (3) Explicit mask (192.168.1.1 255.255.255.0). |
|   | default gateway        |            | &#60;None&#62;), ... | Accepts in IP address in dotted notation, like 192.168.1.1.   |
|   | hostname               |            |                      |   |
|   | domain                 |            |                      |   |
|   | dhcp client id         |            |                      | Set the identity of the client device.  |
|   | primary dns            |            | &#60;None&#62;), ... | Accepts in IP address in dotted notation, like 192.168.1.1.   |
|   | secondary dns          |            | &#60;None&#62;), ... | Accepts in IP address in dotted notation, like 192.168.1.1.   |
|   | mtu                    |            |                      | Default: 1500 bytes   |
| ip  | ip time to live        |            |                      | Default: 64 hops  |
|   | multicast time to live |            |                      | Default: 1 hops   |
| ip filter                                       | delete entries         |            | enable, disable      | If enabled, deletes any existing entries before adding "filter entry".  |
|   | filter delete          | ip address |                      | Deletes a specific IP filter entry.   |
|   |                        | net mask   |                      | Deletes a specific IP filter entry.   |
|   | filter entry           | ip address |                      | If configured, is a specific IP address.  |
|   |                        | net mask   |                      | If configured, is a specific net mask.  |



| Group Name                                     | Group Item       | Value Name  | Value Options                               | Additional Information   |
|--|------------------|-------------|---|--|
| line<br>(Attribute of "instance" is a number.) | name             |             |   |  |
|  | interface        |             | rs232, rs485 half-duplex, rs485 full-duplex | Default:   |
|  | termination      |             | enable, disable                             | Default: disable   |
|  | state            |             | enable, disable                             | Default: depends on instance   |
|  | protocol         |             | none, tunnel, ppp, lpd                      | Default:   |
|  | baud rate        |             |   | Default: 9600 bits per second  |
|  | parity           |             | even, none, odd                             | Default: none  |
|  | data bits        |             | 7, 8  | Default: 8   |
|  | stop bits        |             | 1, 2  | Default: 1   |
|  | flow control     |             | none, hardware, software                    | Default: none  |
|  | xon char         |             |   | Accepts a control character, for example, <code>&amp;#60;control&amp;#62;</code> ; A represents control-A Default: <code>&lt;control&gt;Q</code> |
|  | xoff char        |             |   | Accepts a control character, for example, <code>&amp;#60;control&amp;#62;</code> ; A represents control-A Default: <code>&lt;control&gt;S</code> |
|  | gap timer        |             | <code>&amp;#60;None&amp;#62;</code> , ...   | Default: <code>&lt;None&gt;</code>   |
|  | threshold        |             |   | Default: 56 bytes  |
| modbus   | tcp server state |             | enable, disable                             | Default: disable   |
|  | additional port  |             | <code>&amp;#60;None&amp;#62;</code> , ...   | Default: <code>&lt;None&gt;</code>   |
|  | response timeout |             |   | Default: 3000 milliseconds   |
|  | rss              | trace input | enable, disable                             | Default: disable   |

| Group Name  | Group Item          | Value Name | Value Options                       | Additional Information  |
|---|---------------------|------------|-------------------------------------|---|
| ppp<br>(Attribute of "instance" is a number.)                 | local ip            |            | &#60;None&#62;), ...                | Accepts an IP address and mask as either: (1) IP address only (192.168.1.1) gets a default mask, (2) CIDR (192.168.1.1/24), or (3) Explicit mask (192.168.1.1 255.255.255.0). |
|   | peer ip             |            | &#60;None&#62;), ...                | Accepts in IP address in dotted notation, like 192.168.1.1.   |
|   | authentication mode |            | none, pap, chap, ms-chap, ms-chapv2 | Default: none   |
|   | username            |            |                                     |   |
|   | password            |            |                                     | Value is SECRET, hidden from user view.   |
| query port  | state               |            |                                     |   |
| rss   | feed                |            | enable, disable                     | Default: disable  |
|   | persist             |            | enable, disable                     | Default: disable  |
|   | max entries         |            |                                     | Default: 100  |
| serial command mode<br>(Attribute of "instance" is a number.) | mode                |            |                                     |   |
|   | echo serial string  |            |                                     |   |
|   | serial string       |            |                                     |   |
|   | signon message      |            |                                     |   |
|   | wait time           |            |                                     |   |
| smtp  | relay address       |            |                                     |   |
|   | relay port          |            |                                     | Default: 25   |

| Group Name | Group Item   | Value Name            | Value Options   | Additional Information   |
|------------|--|-----------------------|-----------------|--|
| snmp       | state  |                       | enable, disable | Default: enable  |
|            | read community   |                       |                 | Value is SECRET, hidden from user view. Default: public                    |
|            | write community  |                       |                 | Value is SECRET, hidden from user view. Default: private                   |
|            | system contact   |                       |                 |  |
|            | system name  |                       |                 | Default: <Default>   |
|            | system description   |                       |                 | Default: <Default>   |
|            | system location  |                       |                 |  |
|            | traps  | state                 | enable, disable | Default: enable  |
|            |  | primary destination   |                 |  |
|            |  | secondary destination |                 |  |
| ssh        | state  |                       | enable, disable | Default: enable  |
|            | port   |                       |                 | Default: 22  |
|            | max sessions   |                       |                 | Default: 3   |
| ssh client | delete known hosts   |                       | enable, disable | If enabled, deletes any existing hosts before adding "known host".         |
|            | known host delete  | name                  |                 | Specify the known host to delete.  |
|            | known host (Attribute of "instance" is required for the known host name) | public rsa key        |                 |  |
|            |  | public dsa key        |                 |  |
|            | delete client users  |                       | enable, disable | If enabled, deletes any existing client users before adding "client user". |
|            | client user delete   | name                  |                 | Specify the user to delete.  |
|            | client user (Attribute of "instance" is required for the user name)      | password              |                 |  |
|            |  | remote command        |                 |  |
|            |  | public rsa key        |                 |  |
|            |  | private rsa key       |                 |  |
|            |  | public dsa key        |                 |  |
|            |  | private dsa key       |                 |  |

| Group Name | Group Item   | Value Name     | Value Options  | Additional Information   |
|------------|--|----------------|--|--|
| ssh server | host rsa keys  | public key     |  |  |
|            |  | private key    |  |  |
|            | host dsa keys  | public key     |  |  |
|            |  | private key    |  |  |
|            | delete authorized users  |                |  |  |
|            | authorized user delete   | name           |  |  |
|            | authorized user (Attribute of "instance" is required for the authorized user name) | password       |  |  |
|            |  | public rsa key |  |  |
|            |  | public dsa key |  |  |
| ssl        | RSA certificate  | certificate    |  | Enter the text of the certificate.   |
|            |  | private key    |  | Enter the text of the private key.<br>If configured and not exporting secrets, exports only a placeholder. |
|            | DSA certificate  | certificate    |  | Enter the text of the certificate.   |
|            |  | private key    |  | Enter the text of the private key.<br>If configured and not exporting secrets, exports only a placeholder. |
|            | delete all cas   |                | enable, disable  | If enabled, deletes any existing trusted cas before adding "trusted ca".                                   |
|            |  |                |  |  |
| syslog     | state  |                | enable, disable  | Default: disable   |
|            | host   |                |  |  |
|            | local port   |                |  | Default: 514   |
|            | remote port  |                |  | Default: 514   |
|            | severity log level   |                | none, emergency, alert, critical, error, warning, notice, information, debug | Default: none  |

| Group Name   | Group Item            | Value Name | Value Options       | Additional Information  |
|--|-----------------------|------------|---------------------|---|
| tcp  | resets                |            | enable, disable     | Default: enable   |
|  | ack limit             |            |                     | Number of packets received before an ACK is forced.<br>Default: 3 packets                                 |
|  | send data             |            | standard, expedited | Default: standard   |
| telnet   | state                 |            | enable, disable     | Default: enable   |
|  | port                  |            |                     | Default: 23   |
|  | max sessions          |            |                     | Default: 3  |
| terminal<br>(Attribute of "instance" is either "network" or a number.) | terminal type         |            |                     | Default: UNKNOWN  |
|  | login connect menu    |            | enable, disable     | Default: disable  |
|  | exit connect menu     |            | enable, disable     | Default: disable  |
|  | send break            |            |                     | Accepts a control character, for example, <code>&amp;#60;control&amp;#62;</code> . A represents control-A |
|  | break duration        |            |                     | Default: 500 milliseconds   |
|  | echo                  |            | enable, disable     | Default: enable   |
| tftp server  | state                 |            | enable, disable     | Default: enable   |
|  | allow file creation   |            | enable, disable     | Default: disable  |
|  | allow firmware update |            | enable, disable     | Default: disable  |
|  | allow xcr import      |            | enable, disable     | Default: disable  |

| Group Name   | Group Item            | Value Name | Value Options  | Additional Information   |
|--|-----------------------|------------|--|--|
| tunnel accept<br>(Attribute of "instance" is a number.)  | accept mode           |            | disable, always, any character, start character, modem control asserted, modem emulation | Default: always  |
|  | start character       |            |  | Accepts a control character, for example, <code>&amp;#60;control&amp;#62;</code> ; A represents control-A Default: <code>&lt;control&gt;B</code> |
|  | flush start character |            | enable, disable  | Default: enable  |
|  | local port            |            | <code>&amp;#60;None&amp;#62;</code> , ...  | Default: <code>&lt;None&gt;</code>   |
|  | protocol              |            | tcp, ssh, telnet, tcp aes, ssl   | Default: tcp   |
|  | tcp keep alive        |            | <code>&amp;#60;None&amp;#62;</code> , ...  | Default: 45000 milliseconds  |
|  | aes encrypt key       |            |  | Value is SECRET, hidden from user view.  |
|  | aes decrypt key       |            |  | Value is SECRET, hidden from user view.  |
|  | flush serial          |            | enable, disable  | Default: disable   |
|  | block serial          |            | enable, disable  | Default: disable   |
|  | block network         |            | enable, disable  | Default: disable   |
|  | password              | password   |  | Value is SECRET, hidden from user view.  |
|  |                       | prompt     | enable, disable  | Default: disable   |
|  | email connect         |            | <code>&amp;#60;None&amp;#62;</code> , ...  | Default: <code>&lt;None&gt;</code>   |
|  | email disconnect      |            | <code>&amp;#60;None&amp;#62;</code> , ...  | Default: <code>&lt;None&gt;</code>   |
| tunnel connect<br>(Attribute of "instance" is a number.) | connect mode          |            | disable, always, any character, start character, modem control asserted, modem emulation | Default: disable   |
|  | start character       |            |  | Accepts a control character, for example, <code>&amp;#60;control&amp;#62;</code> ; A represents control-A Default: <code>&lt;control&gt;B</code> |
|  | flush start character |            | enable, disable  | Default: enable  |

| Group Name  | Group Item           | Value Name           | Value Options                                | Additional Information  |
|---|----------------------|----------------------|--|---|
|   | local port           |                      | &#60;Random&#62;; ...                        | Default: <Random>   |
|   | host                 | address              |  |   |
|   |                      | port                 | &#60;None&#62;; ...                          | Default: <None>   |
|   |                      | protocol             | tcp, udp, ssh, telnet, tcp aes, udp aes, ssl | Default: tcp  |
|   |                      | ssh username         |  | Username must correspond to a configured ssh client user.                           |
|   |                      | validate certificate | enable, disable                              | Default: enable   |
|   |                      | tcp keep alive       | &#60;None&#62;; ...                          | Default: 45000 milliseconds   |
|   |                      | aes encrypt key      |  | Value is SECRET, hidden from user view.   |
|   |                      | aes decrypt key      |  | Value is SECRET, hidden from user view.   |
|   | host mode            |                      | sequential, simultaneous                     | Default: sequential   |
|   | reconnect time       |                      |  | Default: 15000 milliseconds   |
|   | flush serial         |                      | enable, disable                              | Default: disable  |
|   | block serial         |                      | enable, disable                              | Default: disable  |
|   | block network        |                      | enable, disable                              | Default: disable  |
|   | email connect        |                      | &#60;None&#62;; ...                          | Default: <None>   |
|   | email disconnect     |                      | &#60;None&#62;; ...                          | Default: <None>   |
| tunnel disconnect<br>(Attribute of "instance" is a number.) | stop character       |                      |  | Accepts a control character, for example, &#60;control&#62;; A represents control-A |
|   | flush stop character |                      | enable, disable                              | Default: enable   |
|   | modem control        |                      | enable, disable                              | Default: disable  |
|   | timeout              |                      |  | Default: 0 milliseconds   |
|   | flush serial         |                      | enable, disable                              | Default: disable  |

| Group Name   | Group Item             | Value Name | Value Options  | Additional Information   |
|--|------------------------|------------|--|--|
| tunnel modem<br>(Attribute of "instance" is a number.)   | echo pluses            |            | enable, disable  | Default: disable   |
|  | echo commands          |            | enable, disable  | Default: enable  |
|  | verbose response       |            | enable, disable  | Default: enable  |
|  | response type          |            | text, numeric  | Default: text  |
|  | error unknown commands |            | enable, disable  | Default: disable   |
|  | incoming connection    |            | disabled, automatic, manual  | Default: disabled  |
|  | connect string         |            |  |  |
|  | display remote ip      |            | enable, disable  | Default: disable   |
| tunnel packing<br>(Attribute of "instance" is a number.) | packing mode           |            | disable, timeout, send character                                     | Default: disable   |
|  | timeout                |            |  | Default: 1000 milliseconds   |
|  | threshold              |            |  | Default: 512 bytes   |
|  | send character         |            |  | Accepts a control character, for example, <code>&amp;#60;control&amp;#62;</code> ; A represents control-A Default: <code>&lt;control&gt;M</code> |
|  | trailing character     |            |  | Accepts a control character, for example, <code>&amp;#60;control&amp;#62;</code> ; A represents control-A  |
| tunnel serial<br>(Attribute of "instance" is a number.)  | dtr                    |            | asserted while connected, continuously asserted, unasserted, truport | Default: asserted while connected  |
| tunnel start<br>(Attribute of "instance is a number.")   | start character        |            |  | import/export  |
|  | echo                   |            | enable<br>disable  | import/export  |
| tunnel stop<br>(Attribute of "instance is a number.")    | start character        |            |  | import/export  |
|  | echo                   |            | enable<br>disable  | import/export  |



| Group Name         | Group Item                      | Value Name | Value Options   | Additional Information   |
|--------------------|---------------------------------|------------|-----------------|--|
| xml import control | restore factory configuration   |            |                 |  |
|                    | delete http authentication uris |            | enable, disable | Deletes existing http authentication uris before importing new ones. |
|                    | http authentication uri delete  | name       |                 | Deletes the specified http authentication uri.                       |
|                    | reboot                          |            | enable, disable | Reboots after importing.   |

## XML Status Record Groups and Items

Table 4-9 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 in that the XSR allows groups within groups.

Currently, the only XSR groups that contain any sub groups are buffer pools and tunnel. The buffer pools group has the following sub groups:

- ◆ Protocol stack
- ◆ Ethernet driver
- ◆ Line

The tunnel group has the following sub groups:

- ◆ Tunnel Modem

**Table 4-9 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             | dynamic      |
|  |  |                  | static       |
| buffer/protocol stack                    | buffer headers   | total            |              |
|  |  | free             |              |
|  |  | used             |              |
|  |  | max used         |              |
|  | cluster pool   | cluster size     |              |
|  |  | total            |              |
|  |  | free             |              |
|  |  | used             |              |
|  |  | max used         |              |
| buffer pool                              | this group contains other groups: ethernet driver, line #, protocol stack. |                  |              |
| device                                   | product info   | product type     |              |
|  |  | serial number    |              |
|  |  | firmware version |              |
|  |  | uptime           |              |
|  |  | permanent config | saved        |
|  |  |                  | unsaved      |

| Group Name   | Item Name      | Value Name        | Valid Values |
|--|----------------|-------------------|--------------|
| 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<br>(Within group "buffer pool".)             | buffer headers | total             |              |
|  |                | free              |              |
|  |                | used              |              |
|  |                | max used          |              |
|  | cluster pool   | cluster size      |              |
|  |                | total             |              |
|  |                | free              |              |
|  |                | used              |              |
|  |                | max used          |              |

| Group Name | Item Name               | Value Name            | Valid Values |
|------------|-------------------------|-----------------------|--------------|
| filesystem | filesystem size         |                       |              |
|            | banks                   | current               | A            |
|            |                         |                       | B            |
|            |                         | firmware begin        |              |
|            |                         | firmware end          |              |
|            |                         | firmware erase cycles |              |
|            |                         | bank a begin          |              |
|            |                         | bank a end            |              |
|            |                         | bank a erase cycles   |              |
|            |                         | bank b begin          |              |
|            |                         | bank b end            |              |
|            |                         | bank b erase cycles   |              |
|            | available space         |                       |              |
|            | clean space             |                       |              |
|            | dirty space             |                       |              |
|            | file and dir space used |                       |              |
|            | data space used         |                       |              |
|            | number of files         |                       |              |
|            | number of directories   |                       |              |
|            | number of system files  |                       |              |
|            | opened files            |                       |              |
|            | locked files            |                       |              |
|            | opened for sharing      |                       |              |
|            | busy                    |                       | no           |
|            |                         |                       | yes          |
| ftp        | status                  |                       | running      |
|            |                         |                       | inactive     |
|            |                         |                       |              |
|            | connections             | rejected              |              |
|            |                         | accepted              |              |
| hardware   | last client             | ip address            |              |
|            |                         | port                  |              |
|            | cpu                     | type                  |              |
|            |                         | speed                 |              |
| http       | memory                  | flash size            |              |
|            |                         | ram size              |              |
|            | state                   |                       | enabled      |
|            |                         |                       | disabled     |
|            |                         |                       |              |
| logging    |                         | entries               |              |
|            |                         | bytes                 |              |

| Group Name                                     | Item Name                                    | Value Name               | Valid Values |
|--|--|--------------------------|--------------|
| http log                                       | entry (Attribute of "instance" is a number.) |                          |              |
|  | totals                                       | entries                  |              |
|  |  | bytes                    |              |
| icmp   | in   | messages                 |              |
|  |  | messages discarded       |              |
|  |  | errors                   |              |
|  |  | destination unreachable  |              |
|  |  | 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       |              |
|  |  | timestamp replies        |              |
|  |  | address mask requests    |              |
|  |  | address mask replies     |              |
| interface (Attribute of "instance" is "eth0".) | generic                                      | status                   | no link      |
|  |  |                          | link up      |
|  |  |                          | disabled     |
|  |  |                          | unknown      |
|  |  | errors                   | (error text) |
|  |  |                          | none         |

| Group Name   | Item Name                         | Value Name          | Valid Values |
|--|-----------------------------------|---------------------|--------------|
| interface (Attribute of "instance" is "eth0".)<br>(Continued.) | ethernet (Present only for eth0.) | speed               | 10           |
|  |                                   |                     | 100          |
|  |                                   | duplex              | full         |
|  |                                   |                     | half         |
|  | arp                               | encapsulation       | ARPA         |
|  |                                   | type                | ARPA         |
|  |                                   | timeout             |              |
|  | default gateway                   |                     |              |
|  | network mask                      |                     |              |
|  | domain                            |                     |              |
|  | mac address                       |                     |              |
|  | hostname                          |                     |              |
|  | ip address                        |                     |              |
|  | last change                       |                     |              |
|  | mtu                               |                     |              |
|  | primary dns                       |                     |              |
|  | secondary dns                     |                     |              |
|  | transmit                          | octets              |              |
|  |                                   | unicast             |              |
|  |                                   | non unicast         |              |
|  |                                   | discards            |              |
|  |                                   | errors              |              |
|  |                                   | broadcast packets   |              |
|  |                                   | multicast packets   |              |
|  |                                   | filtered packets    |              |
|  |                                   | deferred            |              |
|  |                                   | multiple retries    |              |
|  |                                   | one retry           |              |
|  |                                   | underflows          |              |
|  |                                   | late collisions     |              |
|  |                                   | retry errors        |              |
|  |                                   | carrier lost errors |              |

| Group Name   | Item Name      | Value Name          | Valid Values |
|--|----------------|---------------------|--------------|
| interface (Attribute of "instance" is "eth0".)<br>(Continued.) | receive        | octets              |              |
|  |                | unicast             |              |
|  |                | non unicast         |              |
|  |                | discards            |              |
|  |                | errors              |              |
|  |                | broadcast packets   |              |
|  |                | multicast packets   |              |
|  |                | filtered packets    |              |
|  |                | unknown protocol    |              |
|  |                | framing errors      |              |
|  |                | overflows           |              |
|  |                | crc errors          |              |
|  |                | missed frame errors |              |
| 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             |              |

| Group Name                                  | Item Name   | Value Name               | Valid Values |
|---|-------------|--------------------------|--------------|
| ip sockets                                  | ip socket   | protocol                 | UDP          |
|   |             |                          | TCP          |
|   |             | rx queue                 |              |
|   |             | tx queue                 |              |
|   |             | local address            |              |
|   |             | local port               |              |
|   |             | remote address           |              |
|   |             | remote port              |              |
|   |             | state                    |              |
| line (Attribute of "instance" is a number.) | receiver    | bytes                    |              |
|   |             | breaks                   |              |
|   |             | parity errors            |              |
|   |             | framing errors           |              |
|   |             | overrun errors           |              |
|   |             | no receive buffer errors |              |
|   |             | queued bytes             |              |
|   |             | flow control             | n/a          |
|   |             |                          | stop         |
|   |             |                          | go           |
|   | transmitter | bytes                    |              |
|   |             | breaks                   |              |
|   |             | queued bytes             |              |
|   |             | flow control             | n/a          |
|   |             |                          | stop         |
|   |             |                          | go           |
|   | line levels | cts                      | asserted     |
|   |             |                          | not asserted |
|   |             | rts                      | asserted     |
|   |             |                          | not asserted |
|   |             | dsr                      | asserted     |
|   |             |                          | not asserted |
|   |             | dtr                      | asserted     |
|   |             |                          | not asserted |



| Group Name   | Item Name                                      | Value Name       | Valid Values                  |
|--|--|------------------|-------------------------------|
| line <number> (within group "buffer pool".)                      | buffer headers                                 | total            |                               |
|  |  | free             |                               |
|  |  | used             |                               |
|  |  | max used         |                               |
|  | cluster pool                                   | cluster size     |                               |
|  |  | total            |                               |
|  |  | free             |                               |
|  |  | used             |                               |
|  |  | max used         |                               |
| line (With no instance.)<br>(Within group "line" with instance.) | state  |                  | enable                        |
|  |  |                  | disable                       |
|  | protocol                                       |                  | none                          |
|  |  |                  | ppp                           |
|  |  |                  | tunnel                        |
|  | baud rate                                      |                  | Any value from 300 to 230400. |
|  | parity   |                  | even                          |
|  |  |                  | none                          |
|  |  |                  | odd                           |
|  | data bits                                      |                  | 7                             |
|  |  |                  | 8                             |
|  | stop bits                                      |                  | 1                             |
|  |  |                  | 2                             |
|  | flow control                                   |                  | hardware                      |
|  |  |                  | none                          |
|  |  |                  | software                      |
|  | xon char                                       |                  |                               |
|  | xoff char                                      |                  |                               |
| memory   | main heap                                      | condition        | clean                         |
|  |  |                  | corrupt                       |
|  |  | total memory     |                               |
|  |  | available memory |                               |
|  |  | fragments        |                               |
|  |  | allocated blocks |                               |
| processes  | process (Attribute of "instance" is a number.) | cpu %            |                               |
|  |  | stack used       |                               |
|  |  | stack size       |                               |
|  |  | thread name      |                               |

| Group Name                                  | Item Name       | Value Name        | Valid Values |
|---|-----------------|-------------------|--------------|
| protocol stack (within group "buffer pool") | buffer headers  | total             |              |
|   |                 | free              |              |
|   |                 | used              |              |
|   |                 | max used          |              |
|   | cluster pool    | cluster size      |              |
|   |                 | 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             |              |

| Group Name | Item Name  | Value Name        | Valid Values |
|------------|--|-------------------|--------------|
| sessions   | line (Attribute of "instance" is a number.)                    | baud              |              |
|            |  | parity            | none         |
|            |  |                   | even         |
|            |  |                   | odd          |
|            |  | data bits         | 7            |
|            |  |                   | 8            |
|            |  | stop bits         | 1            |
|            |  |                   | 2            |
|            |  | flow control      | none         |
|            |  |                   | hardware     |
|            |  |                   | software     |
|            | 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  |                   | active       |
|            |  |                   | waiting      |
|            |  |                   | disabled     |
|            | totals   | uptime            |              |
|            |  | bytes in          |              |
|            |  | bytes out         |              |
| syslog     | status   |                   | running      |
|            |  |                   | inactive     |
|            | messages failed  |                   |              |
|            | messages send  |                   |              |

| Group Name | Item Name      | Value Name      | Valid Values |
|------------|----------------|-----------------|--------------|
| tcp        | retransmission | algorithm       | vanj         |
|            |                | timeout minimum |              |
|            |                | timeout maximum |              |
|            | connections    | maximum         |              |
|            |                | open active     |              |
|            |                | open passive    |              |
|            |                | failed          |              |
|            |                | resets          |              |
|            |                | established     |              |
|            | errors in      |                 |              |
|            | resets         | in              |              |
|            |                | out             |              |
|            | segments       | in              |              |
|            |                | out             |              |
|            |                | retransmitted   |              |
| telnet     | state          |                 | active       |
|            |                |                 | waiting      |
|            |                |                 | disabled     |
|            | totals         | uptime          |              |
|            |                | bytes in        |              |
|            |                | bytes out       |              |
| tftp       | status         |                 | running      |
|            |                |                 | inactive     |
|            | downloaded     |                 |              |
|            | uploaded       |                 |              |
|            | not found      |                 |              |
|            | errors         | read            |              |
|            |                | write           |              |
|            |                | unknown         |              |
|            | last client    | ip address      |              |
|            |                | port            |              |

| Group Name                                    | Item Name                                | Value Name                   | Valid Values |
|---|--|------------------------------|--------------|
| tunnel (Attribute of "instance" is a number.) | aggregate                                | completed connects           |              |
|   |  | completed accepts            |              |
|   |  | disconnects                  |              |
|   |  | dropped connects             |              |
|   |  | dropped accepts              |              |
|   |  | octets from serial           |              |
|   |  | octets from network          |              |
|   |  | connect 0–15 connection time |              |
|   |  | accept connection time       |              |
|   |  | connect dns address changes  |              |
|   |  | connect dns address invalids |              |
|   | current connection (As many as present.) | local ip address             |              |
|   |  | local port                   |              |
|   |  | remote ip address            |              |
|   |  | remote port                  |              |
|   |  | uptime                       |              |
|   |  | octets from serial           |              |
|   |  | octets from network          |              |
|   |  | connect dns address changes  |              |
|   |  | connect dns address invalids |              |
| tunnel modem (within group "tunnel")          | echo commands                            |                              | enable       |
|   |  |                              | disable      |
|   | verbose response                         |                              | enable       |
|   |  |                              | disable      |
|   | response type                            |                              | text         |
|   |  |                              | numeric      |
|   | error unknown commands                   |                              | disable      |
|   |  |                              | enable       |
|   | incoming connection                      |                              | disabled     |
|   |  |                              | automatic    |
|   |  |                              | manual       |
| udp   | in unknown ports                         |                              |              |
|   | in datagrams                             |                              |              |
|   | in errors                                |                              |              |
|   | out datagrams                            |                              |              |

| Group Name | Item Name | Value Name | Valid Values |
|------------|-----------|------------|--------------|
| xsr        | out       | bytes      |              |
|            |           | lines      |              |
|            |           | elements   |              |
|            | errors    |            |              |

## 5: Commands and Levels

Click the level in the tree structure and it will take you to the command list for that level.

- [root](#)
  - [enable \(enable\)](#)
    - [configure \(config\)](#)
      - [arp \(config-arp\)](#)
      - [cli \(config-cli\)](#)
        - [ssh \(config-cli-ssh\)](#)
        - [telnet \(config-cli-telnet\)](#)
      - [diagnostics \(config-diagnostics\)](#)
        - [log \(config-diagnostics-log\)](#)
      - [ftp \(config-ftp\)](#)
      - [host 1 \(config-host:1\)](#)
      - [host 2 \(config-host:2\)](#)
      - [host 3 \(config-host:3\)](#)
      - [host 4 \(config-host:4\)](#)
      - [http \(config-http\)](#)
      - [icmp \(config-icmp\)](#)
      - [if 1 \(config-if:eth0\)](#)
        - [link \(config-ethernet:eth0\)](#)
      - [ip \(config-ip\)](#)
      - [ip filter \(config-filter\)](#)
      - [query port \(config-query\\_port\)](#)
      - [rss \(config-rss\)](#)
      - [smtp \(config-smtp\)](#)
      - [snmp \(config-snmp\)](#)
        - [traps \(config-snmp-traps\)](#)
      - [syslog \(config-syslog\)](#)
      - [tcp \(config-tcp\)](#)
      - [terminal 1 \(config-terminal:1\)](#)
      - [terminal 2 \(config-terminal:2\)](#)
      - [terminal 3 \(config-terminal:3\)](#)
      - [terminal network \(config-terminal:network\)](#)
      - [tftp \(config-tftp\)](#)
      - [udp \(config-udp\)](#)
    - [cpm \(cpm\)](#)
    - [device \(device\)](#)
    - [dns \(dns\)](#)
    - [email 1 \(email:1\)](#)
      - [cp \(email-cp:1\)](#)
    - [email 2 \(email:2\)](#)
      - [cp \(email-cp:2\)](#)
    - [email 3 \(email:3\)](#)
      - [cp \(email-cp:3\)](#)
    - [email 4 \(email:4\)](#)
      - [cp \(email-cp:4\)](#)
    - [filesystem \(filesystem\)](#)
    - [line 1 \(line:1\)](#)
    - [line 2 \(line:2\)](#)
    - [line 3 \(line:3\)](#)
    - [ppp 1 \(ppp:1\)](#)
    - [ppp 2 \(ppp:2\)](#)

- [ssh \(ssh\)](#)
  - [client \(ssh-client\)](#)
  - [server \(ssh-server\)](#)
- [ssl \(ssl\)](#)
- [tunnel 1 \(tunnel:1\)](#)
  - [accept \(tunnel-accept:1\)](#)
    - [cp output \(tunnel-accept-cp\\_output:1\)](#)
    - [password \(tunnel-accept-password:1\)](#)
  - [connect \(tunnel-connect:1\)](#)
    - [cp output \(tunnel-connect-cp\\_output:1\)](#)
    - [host \(tunnel-connect-host:1\)](#)
  - [disconnect \(tunnel-disconnect:1\)](#)
  - [modem \(tunnel-modem:1\)](#)
  - [packing \(tunnel-packing:1\)](#)
  - [serial \(tunnel-serial:1\)](#)
- [tunnel 2 \(tunnel:2\)](#)
  - [accept \(tunnel-accept:2\)](#)
    - [cp output \(tunnel-accept-cp\\_output:2\)](#)
    - [password \(tunnel-accept-password:2\)](#)
  - [connect \(tunnel-connect:2\)](#)
    - [cp output \(tunnel-connect-cp\\_output:2\)](#)
    - [host \(tunnel-connect-host:2\)](#)
  - [disconnect \(tunnel-disconnect:2\)](#)
  - [modem \(tunnel-modem:2\)](#)
  - [packing \(tunnel-packing:2\)](#)
  - [serial \(tunnel-serial:2\)](#)
- [xml \(xml\)](#)



Table 5-1 Commands and Levels

| accept (tunnel-accept:2) level commands |   |
|---|---|
| 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.<br>Each byte is represented by two adjacent hex digits. Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>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.<br>Each byte is represented by a single character.<br>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.<br>Each byte is represented by two adjacent hex digits. Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>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.<br>Each byte is represented by a single character.<br>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.  |
| 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.<br><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.<br><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.<br><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.<br>The default port is 10000 + #, where # is the line number for this tunnel. |
| 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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.  |

|  |   |
|--|---|
|  | A decimal value character has the form \99.<br>A hex value character has the form 0xFF.   |
| tcp keep alive <milliseconds>                  | Enables TCP keep alive for accept mode tunneling and sets the timer.<br><milliseconds> = timer value, in milliseconds.  |
| write  | Stores the current configuration in permanent memory.   |
| <b>accept (tunnel-accept:1) level commands</b> |   |
| 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.<br>Each byte is represented by two adjacent hex digits. Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>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.<br>Each byte is represented by a single character.<br>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.<br>Each byte is represented by two adjacent hex digits. Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>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.<br>Each byte is represented by a single character.<br>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.  |
| 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.<br><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.<br><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.<br><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.<br>The default port is 10000 + #, where # is the line number for this tunnel. |
| 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.   |

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|--|---|
| show status                            | Displays tunnel accept status.  |
| start character <control>              | Sets the accept mode start character.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| tcp keep alive <milliseconds>          | Enables TCP keep alive for accept mode tunneling and sets the timer.<br><milliseconds> = timer value, in milliseconds.  |
| write                                  | Stores the current configuration in permanent memory.   |
| <b>arp (config-arp) level commands</b> |   |
| add <ip address> <MAC address>         | Adds an entry to the ARP table, mapping an IP address to a MAC address.<br><ip address> = IP address to be mapped.<br><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 all                             | Removes all entries from the ARP cache.   |
| remove ip <ip address>                 | Removes an entry from the ARP cache.<br><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.<br><seconds> = ARP cache timeout in seconds.  |
| write                                  | Stores the current configuration in permanent memory.   |
| <b>cli (config-cli) level commands</b> |   |
| 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.<br>The characters may be input as text or control.<br>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.   |

| <b>client (ssh-client) level commands</b> |   |
|---|---|
| clrscrn                                   | Clears the screen.  |
| default user <username> command           | Restore the user command to the default login shell                   |
| delete all known hosts                    | Remove all known hosts  |
| delete all users                          | Remove all users  |
| delete known host <server>                | Remove known host   |
| delete user <username>                    | Delete the named user   |
| exit                                      | Exits to the ssh level.   |
| known host <server>                       | Set known host RSA or DSA key   |
| no known host <server> dsa                | Remove known host DSA key   |
| no known host <server> rsa                | Remove known host RSA key   |
| no user <username> dsa                    | Remove user DSA key   |
| no user <username> rsa                    | Remove user RSA key   |
| show                                      | Show SSH Client settings  |
| show history                              | Displays the last 20 commands entered during the current CLI session. |
| show known host <server>                  | Show known host RSA and DSA keys                                      |
| show user <username>                      | Show information for a user   |
| user <username>                           | Set username and RSA or DSA keys                                      |
| user <username> command <command>         | Customizes the user command   |
| user <username> generate dsa 1024         | Generate DSA public and private keys                                  |
| user <username> generate dsa 512          | Generate DSA public and private keys                                  |
| user <username> generate dsa 768          | Generate DSA public and private keys                                  |
| user <username> generate rsa 1024         | Generate RSA public and private keys                                  |
| user <username> generate rsa 512          | Generate RSA public and private keys                                  |
| user <username> generate rsa 768          | Generate RSA public and private keys                                  |
| user <username> password <password>       | Set username with password and optional RSA or DSA keys               |
| write                                     | Stores the current configuration in permanent memory.                 |
| <b>configure (config) level commands</b>  |   |
| arp                                       | Changes to the command level for ARP configuration and status.        |
| cli                                       | Change to menu level for CLI configuration and status                 |
| clrscrn                                   | Clears the screen.  |
| diagnostics                               | Enters the diagnostics level.   |
| 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"                  |
| query port                                | Enters the query port level.  |

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| 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.  |
| smtp   | Changes to the command level for SMTP configuration and status.  |
| 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.<br><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.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>connect (tunnel-connect:2) level commands</b> |  |
| 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 local port                               | Uses a random port number as the local port for establishing tunneling connections to other devices.                                   |
| default reconnect time                           | Restores the default reconnect time value for connect mode tunneling.  |
| default start character                          | Defaults the connect mode start character.   |

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| email connect <number>                           | Sets an email profile to use to send an email alert upon establishing a connect mode tunnel.<br><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.<br><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   | Enters the next lower level.   |
| kill connection                                  | Disconnects the active connect mode tunneling connection.  |
| local port <number>                              | Sets a specific port for use as the local port.<br><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.  |
| reconnect time <milliseconds>                    | Sets the reconnect time value for tunneling connections established by the device in milliseconds.<br><milliseconds> = timeout in milliseconds.  |
| show   | Displays the current configuration.  |
| 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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| write  | Stores the current configuration in permanent memory.  |
| <b>connect (tunnel-connect:1) level commands</b> |  |
| 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).  |



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| 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 local port                  | Uses a random port number as the local port for establishing tunneling connections to other devices.   |
| 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.<br><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.<br><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                                | Enters the next lower level.   |
| kill connection                     | Disconnects the active connect mode tunneling connection.  |
| local port <number>                 | Sets a specific port for use as the local port.<br><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.  |
| reconnect time <milliseconds>       | Sets the reconnect time value for tunneling connections established by the device in milliseconds.   |

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|                                       | <milliseconds> = timeout in milliseconds.  |
| show                                  | Displays the current configuration.  |
| 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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| write                                 | Stores the current configuration in permanent memory.  |
| <b>cp (email-cp:4) level commands</b> |  |
| clrscrn                               | Clears the screen.   |
| exit                                  | Exits to the next higher level.  |
| group <text>                          | Specify a CP group that shall trigger an email.<br><text> = configurable pin group.  |
| no group                              | Disables the trigger to send an email.   |
| no trigger value                      | Clears the value that shall trigger an email.  |
| show                                  | Shows the current configuration.   |
| show history                          | Displays the last 20 commands entered during the current CLI session.  |
| trigger value <number>                | Specify a value of the CP group that shall trigger an email.<br><number> = numeric value to watch for from the CP group. Can be specified as hex if prepended with "0x".   |
| write                                 | Stores the current configuration in permanent memory.  |
| <b>cp (email-cp:3) level commands</b> |  |
| clrscrn                               | Clears the screen.   |
| exit                                  | Exits to the next higher level.  |
| group <text>                          | Specify a CP group that shall trigger an email.<br><text> = configurable pin group.  |
| no group                              | Disables the trigger to send an email.   |
| no trigger value                      | Clears the value that shall trigger an email.  |
| show                                  | Shows the current configuration.   |
| show history                          | Displays the last 20 commands entered during the current CLI session.  |
| trigger value <number>                | Specify a value of the CP group that shall trigger an email.<br><number> = numeric value to watch for from the CP group. Can be specified as hex if prepended with "0x".   |
| write                                 | Stores the current configuration in permanent memory.  |
| <b>cp (email-cp:2) level commands</b> |  |
| clrscrn                               | Clears the screen.   |
| exit                                  | Exits to the next higher level.  |
| group <text>                          | Specify a CP group that shall trigger an email.<br><text> = configurable pin group.  |
| no group                              | Disables the trigger to send an email.   |
| no trigger value                      | Clears the value that shall trigger an email.  |
| show                                  | Shows the current configuration.   |
| show history                          | Displays the last 20 commands entered during the current   |

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|  | CLI session.  |
| trigger value <number>                                       | Specify a value of the CP group that shall trigger an email. <number> = numeric value to watch for from the CP group. Can be specified as hex if prepended with "0x". |
| write  | Stores the current configuration in permanent memory.   |
| <b>cp (email-cp:1) level commands</b>                        |   |
| clrscrn  | Clears the screen.  |
| exit   | Exits to the next higher level.   |
| group <text>   | Specify a CP group that shall trigger an email. <text> = configurable pin group.  |
| no group   | Disables the trigger to send an email.  |
| no trigger value   | Clears the value that shall trigger an email.   |
| show   | Shows the current configuration.  |
| show history   | Displays the last 20 commands entered during the current CLI session.   |
| trigger value <number>                                       | Specify a value of the CP group that shall trigger an email. <number> = numeric value to watch for from the CP group. Can be specified as hex if prepended with "0x". |
| write  | Stores the current configuration in permanent memory.   |
| <b>cp output (tunnel-connect-cp_output:2) level commands</b> |   |
| 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 connect mode connection.   |
| default disconnection value                                  | Restores the default value for 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 a connect mode connection. <text> = CP Group.  |
| no group   | Removes the CP Set Group for connect mode.  |
| 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.   |
| <b>cp output (tunnel-accept-cp_output:2) level commands</b>  |   |
| clrscrn  | Clears the screen.  |
| connection value <number>                                    | Sets the value to output to the CP Group upon accept mode connection. <number> = binary to output (typically 1 or 0).   |
| default connection value                                     | Restores the default value for accept mode connection.  |
| default disconnection value                                  | Restores the default value for accept mode disconnection.   |
| disconnection value <number>                                 | Sets the value to output to the CP Group upon accept mode disconnection. <number> = binary to output (typically 1 or 0).  |

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

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| add <cp> to <group>                   | Adds the specified CP to the specified group.<br><cp> = configurable pin.<br><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.<br><cp> = configurable pin.<br><group> = the name of the group to which you want to add the CP.<br><bit> = bit position. |
| clrscrn                               | Clears the screen.   |
| create <group>                        | Creates a configurable pin (CP) group.<br><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.<br><cp> = configurable pin.<br><group> = the name of the group.                                     |
| delete <group>                        | Removes a group and resets all CPs in that group to the default configuration of input.<br><group> = the name of the group.  |
| disable <group>                       | Disables the specified group.<br><group> = the name of the group.  |
| enable <group>                        | Enables a disabled group.<br><group> = the name of the group.  |
| exit                                  | Exits to the enable level.   |
| get <group>                           | Displays the value of the specified group.<br><group> = the name of the group.   |
| set <cp> as input                     | Configures a CP as an asserted high input.<br><cp> = configurable pin.   |
| set <cp> as input assert low          | Configures a CP as an asserted low input.<br><cp> = configurable pin.  |
| set <cp> as output                    | Configures a CP as an asserted high output.<br><cp> = configurable pin.  |
| set <cp> as output assert low         | Configures a CP as an asserted low output.<br><cp> = configurable pin.   |
| set <group> <value>                   | Assigns a value to the specified group.<br><group> = the name of the group.<br><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.<br><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.  |
| <b>device (device) level commands</b> |  |
| auto show tlog                        | Continuously displays the internal trouble log.  |
| auto show upload                      | Continuously displays the status of firmware upload.   |
| clrscrn                               | Clears the screen.   |
| cpu speed <mhz>                       | Sets the CPU speed.  |

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|  | <mh> = speed of the CPU.   |
| default cpu speed                                      | Restores the default CPU clock rate.   |
| default long name                                      | Restores the default product long name.  |
| default short name                                     | Restores the default product short name.   |
| dvt  | Enters the DVT level.  |
| 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.<br><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_ar  | Show system information  |
| write  | Stores the current configuration in permanent memory.  |
| <b>diagnostics (config-diagnostics) level commands</b> |  |
| clrscrn  | Clears the screen.   |
| exit   | Returns to the config level.   |
| log  | Enters the next lower 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.  |
| <b>disconnect (tunnel-disconnect:2) level commands</b> |  |
| 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.   |

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| 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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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.<br><milliseconds> = timeout in milliseconds.  |
| write  | Stores the current configuration in permanent memory.  |
| <b>disconnect (tunnel-disconnect:1) level commands</b> |  |
| 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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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.<br><milliseconds> = timeout in milliseconds.  |
| write  | Stores the current configuration in permanent memory.  |
| <b>dns (dns) level commands</b>                        |  |
| clrscrn  | Clears the screen.   |
| exit   | Exits to the enable level.   |
| lookup <host_or_ip>                                    | Return a lookup on the DNS name or IP address.   |
| remove all   | Removes all entries from the DNS Cache.  |

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| remove host <host>                      | Removes an entry from the DNS Cache.  |
| show                                    | Show DNS status and cache entries.  |
| show history                            | Displays the last 20 commands entered during the current CLI session.   |
| write                                   | Stores the current configuration in permanent memory.   |
| <b>email 1 (email:1) level commands</b> |   |
| auto show statistics                    | Continuously displays email statistics.   |
| cc <text>                               | Sets Cc addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.  |
| clear log                               | Clears all entries from the mail log.   |
| clear mail counters                     | Sets the email counters to zero.  |
| clrscrn                                 | Clears the screen.  |
| cp                                      | Enters the next lower level.  |
| default local port                      | Sets the local port (used to send email alerts) to random.  |
| default priority                        | Sets X-Priority for email alerts to 3 (normal).   |
| default server port                     | Restores the factory default port for SMTP on the server side.  |
| email <number>                          | Enters the configure email level.   |
| exit                                    | Exits to the enable level.  |
| from <text>                             | Sets the From address for email alerts.<br><text> = email address to place in the From field of the email alert.  |
| local port <number>                     | Sets the local port used to send email alerts.<br><number> local port to use for email alerts.  |
| message file <text>                     | Specifies a text file, the contents of which will be the message body of an email alert.<br><text> = the name of a local file.  |
| no cc                                   | Removes the Cc addresses for email alerts.  |
| no clear mail counters                  | Restores the email counters to the aggregate values.  |
| no from                                 | Removes the From address for email alerts.  |
| no message file                         | Removes the file name, so the message body will be empty.   |
| no overriding domain                    | Removes the overriding domain name option.  |
| no reply to                             | Removes the Reply To address for email alerts.  |
| no subject                              | Removes subject used for email alerts.  |
| no to                                   | Removes the To addresses for email alerts.  |
| overriding domain <text>                | 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.<br><text> = domain name to override the current domain name in EHLO. |
| priority high                           | Sets X-Priority for email alerts to 2 (high).   |
| priority low                            | Sets X-Priority for email alerts to 4 (low).  |
| priority normal                         | Sets X-Priority for email alerts to 3 (normal).   |
| priority urgent                         | Sets X-Priority for email alerts to 1 (urgent).   |
| priority very low                       | Sets X-Priority for email alerts to 5 (very low).   |
| reply to <text>                         | Sets the Reply To address for email alerts.<br><text> = email address to place in the Reply To field of the   |



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|   | email alert.  |
| send                                    | Sends an email using the current settings.  |
| server port <number>                    | Sets the port used by the SMTP server.<br><number> = port used for SMTP on the server side.                                       |
| show                                    | Displays the current configuration.   |
| 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 <text>                          | Sets the Subject for email alerts.<br><text> = text to placed as the subject.   |
| to <text>                               | Sets To addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.                            |
| write                                   | Stores the current configuration in permanent memory.   |
| <b>email 2 (email:2) level commands</b> |   |
| auto show statistics                    | Continuously displays email statistics.   |
| cc <text>                               | Sets Cc addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.                            |
| clear log                               | Clears all entries from the mail log.   |
| clear mail counters                     | Sets the email counters to zero.  |
| clrscrn                                 | Clears the screen.  |
| cp                                      | Enters the next lower level.  |
| default local port                      | Sets the local port (used to send email alerts) to random.  |
| default priority                        | Sets X-Priority for email alerts to 3 (normal).   |
| default server port                     | Restores the factory default port for SMTP on the server side.  |
| email <number>                          | Enters the configure email level.   |
| exit                                    | Exits to the enable level.  |
| from <text>                             | Sets the From address for email alerts.<br><text> = email address to place in the From field of the email alert.                  |
| local port <number>                     | Sets the local port used to send email alerts.<br><number> local port to use for email alerts.                                    |
| message file <text>                     | Specifies a text file, the contents of which will be the message body of an email alert.<br><text> = the name of a local file.    |
| no cc                                   | Removes the Cc addresses for email alerts.  |
| no clear mail counters                  | Restores the email counters to the aggregate values.  |
| no from                                 | Removes the From address for email alerts.  |
| no message file                         | Removes the file name, so the message body will be empty.   |
| no overriding domain                    | Removes the overriding domain name option.  |
| no reply to                             | Removes the Reply To address for email alerts.  |
| no subject                              | Removes subject used for email alerts.  |
| no to                                   | Removes the To addresses for email alerts.  |
| overriding domain <text>                | 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 |

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|   | in EHLO.<br><text> = domain name to override the current domain name in EHLO.  |
| priority high                           | Sets X-Priority for email alerts to 2 (high).  |
| priority low                            | Sets X-Priority for email alerts to 4 (low).   |
| priority normal                         | Sets X-Priority for email alerts to 3 (normal).  |
| priority urgent                         | Sets X-Priority for email alerts to 1 (urgent).  |
| priority very low                       | Sets X-Priority for email alerts to 5 (very low).  |
| reply to <text>                         | Sets the Reply To address for email alerts.<br><text> = email address to place 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.<br><number> = port used for SMTP on the server side.                                    |
| show                                    | Displays the current configuration.  |
| 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 <text>                          | Sets the Subject for email alerts.<br><text> = text to placed as the subject.  |
| to <text>                               | Sets To addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.                         |
| write                                   | Stores the current configuration in permanent memory.  |
| <b>email 3 (email:3) level commands</b> |  |
| auto show statistics                    | Continuously displays email statistics.  |
| cc <text>                               | Sets Cc addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.                         |
| clear log                               | Clears all entries from the mail log.  |
| clear mail counters                     | Sets the email counters to zero.   |
| clrscrm                                 | Clears the screen.   |
| cp                                      | Enters the next lower level.   |
| default local port                      | Sets the local port (used to send email alerts) to random.   |
| default priority                        | Sets X-Priority for email alerts to 3 (normal).  |
| default server port                     | Restores the factory default port for SMTP on the server side.   |
| email <number>                          | Enters the configure email level.  |
| exit                                    | Exits to the enable level.   |
| from <text>                             | Sets the From address for email alerts.<br><text> = email address to place in the From field of the email alert.               |
| local port <number>                     | Sets the local port used to send email alerts.<br><number> local port to use for email alerts.                                 |
| message file <text>                     | Specifies a text file, the contents of which will be the message body of an email alert.<br><text> = the name of a local file. |
| no cc                                   | Removes the Cc addresses for email alerts.   |
| no clear mail counters                  | Restores the email counters to the aggregate values.   |

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| no from                                 | Removes the From address for email alerts.  |
| no message file                         | Removes the file name, so the message body will be empty.   |
| no overriding domain                    | Removes the overriding domain name option.  |
| no reply to                             | Removes the Reply To address for email alerts.  |
| no subject                              | Removes subject used for email alerts.  |
| no to                                   | Removes the To addresses for email alerts.  |
| overriding domain <text>                | 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.<br><text> = domain name to override the current domain name in EHLO. |
| priority high                           | Sets X-Priority for email alerts to 2 (high).   |
| priority low                            | Sets X-Priority for email alerts to 4 (low).  |
| priority normal                         | Sets X-Priority for email alerts to 3 (normal).   |
| priority urgent                         | Sets X-Priority for email alerts to 1 (urgent).   |
| priority very low                       | Sets X-Priority for email alerts to 5 (very low).   |
| reply to <text>                         | Sets the Reply To address for email alerts.<br><text> = email address to place 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.<br><number> = port used for SMTP on the server side.   |
| show                                    | Displays the current configuration.   |
| 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 <text>                          | Sets the Subject for email alerts.<br><text> = text to placed as the subject.   |
| to <text>                               | Sets To addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.  |
| write                                   | Stores the current configuration in permanent memory.   |
| <b>email 4 (email:4) level commands</b> |   |
| auto show statistics                    | Continuously displays email statistics.   |
| cc <text>                               | Sets Cc addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.  |
| clear log                               | Clears all entries from the mail log.   |
| clear mail counters                     | Sets the email counters to zero.  |
| clrscrn                                 | Clears the screen.  |
| cp                                      | Enters the next lower level.  |
| default local port                      | Sets the local port (used to send email alerts) to random.  |
| default priority                        | Sets X-Priority for email alerts to 3 (normal).   |
| default server port                     | Restores the factory default port for SMTP on the server side.  |
| email <number>                          | Enters the configure email level.   |
| exit                                    | Exits to the enable level.  |
| from <text>                             | Sets the From address for email alerts.   |

|                                       |   |
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|                                       | <text> = email address to place in the From field of the email alert.   |
| local port <number>                   | Sets the local port used to send email alerts.<br><number> local port to use for email alerts.  |
| message file <text>                   | Specifies a text file, the contents of which will be the message body of an email alert.<br><text> = the name of a local file.  |
| no cc                                 | Removes the Cc addresses for email alerts.  |
| no clear mail counters                | Restores the email counters to the aggregate values.  |
| no from                               | Removes the From address for email alerts.  |
| no message file                       | Removes the file name, so the message body will be empty.   |
| no overriding domain                  | Removes the overriding domain name option.  |
| no reply to                           | Removes the Reply To address for email alerts.  |
| no subject                            | Removes subject used for email alerts.  |
| no to                                 | Removes the To addresses for email alerts.  |
| overriding domain <text>              | 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.<br><text> = domain name to override the current domain name in EHLO. |
| priority high                         | Sets X-Priority for email alerts to 2 (high).   |
| priority low                          | Sets X-Priority for email alerts to 4 (low).  |
| priority normal                       | Sets X-Priority for email alerts to 3 (normal).   |
| priority urgent                       | Sets X-Priority for email alerts to 1 (urgent).   |
| priority very low                     | Sets X-Priority for email alerts to 5 (very low).   |
| reply to <text>                       | Sets the Reply To address for email alerts.<br><text> = email address to place 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.<br><number> = port used for SMTP on the server side.   |
| show                                  | Displays the current configuration.   |
| 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 <text>                        | Sets the Subject for email alerts.<br><text> = text to placed as the subject.   |
| to <text>                             | Sets To addresses for email alerts.<br><text> = a quoted, semicolon separated list of email addresses.  |
| write                                 | Stores the current configuration in permanent memory.   |
| <b>enable (enable) level commands</b> |   |
| auto show interfaces                  | Show interface statistics   |
| auto show processes                   | Continuously show thread runtime information  |
| clear interfaces counters             | Zeros interface session counters  |
| clrscrn                               | Clears the screen.  |
| configure                             | Enters the configuration level.   |

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| 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.  |
| dns   | Enters the DNS level.  |
| email <number>                                | Enters the configure email level.  |
| exit  | Exit from the system   |
| filesystem                                    | Enters the filesystem level.   |
| 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.<br><line> = number of the line (serial port) to be configured.  |
| no clear interfaces counters                  | Unzeros interface session counters   |
| ping <host>                                   | Ping destination continuously 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   |
| show  | Show system information  |
| show history                                  | Displays the last 20 commands entered during the current CLI session.  |
| 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_ar                                 | Show system information  |
| ssh   | Enters the SSH configuration level.  |
| ssh <optClientUsername> <host>                | Begin SSH session on network <host>.<br>The optClientUserName must match an SSH Client:<br>Users configuration entry.<br>Use "" in optClientUserName to prompt for host username<br>and password.        |
| ssh <optClientUsername> <host> <port>         | Begin SSH session on network <host>:<port>.<br>The optClientUserName must match an SSH Client:<br>Users configuration entry.<br>Use "" in optClientUserName to prompt for host username<br>and password. |
| ssl   | Enters the SSL configuration level.  |
| telnet <host>                                 | Begin telnet session on network <host>.  |
| telnet <host> <port>                          | Begin telnet session on network <host>:<port>.   |
| trace route <host>                            | Trace route to destination   |
| tunnel <line>                                 | Enters the tunnel level.<br><line> = number of the tunnel line (serial port) to be<br>configured.  |
| write   | Stores the current configuration in permanent memory.  |
| xml   | Enters the XML level.  |
| <b>filesystem (filesystem) level commands</b> |  |
| cat <file>                                    | Show the contents of a file  |

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| 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  |
| 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   |
| <b>ftp (config-ftp) level commands</b>                         |   |
| admin password <text>  | Sets the administrative password for the FTP server.<br><text> = administrative password.   |
| admin username <text>  | Sets the administrative username for the FTP server.<br><text> = administrative username.<br>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 current configuration.   |
| 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 (tunnel-connect-host:2) level commands |   |
|---|---|
| address <text>                              | Sets the remote host to establish tunneling connections with.<br><text> = IP address or host name of the remote host.   |
| aes decrypt key <hexadecimal>               | Sets the connect tunnel AES decrypt key with up to 16 bytes.<br>Each byte is represented by two adjacent hex digits.<br>Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>Note that quotes must enclose the value if it contains spaces. |
| aes decrypt key text <text>                 | Sets the connect tunnel AES decrypt key with up to 16 bytes.<br>Each byte is represented by a single character.<br>Note that quotes must enclose the value if it contains spaces.   |
| aes encrypt key <hexadecimal>               | Sets the connect tunnel AES encrypt key with up to 16 bytes.<br>Each byte is represented by two adjacent hex digits.<br>Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>Note that quotes must enclose the value if it contains spaces. |
| aes encrypt key text <text>                 | Sets the connect tunnel AES encrypt key with up to 16 bytes.<br>Each byte is represented by a single character.<br>Note that quotes must enclose the value if it contains spaces.   |
| auto show statistics                        | show connection statistics  |
| clrscrn                                     | Clears the screen.  |
| default protocol                            | Restores the default protocol as "TCP".   |
| default tcp keep alive                      | Restores the default 45 second connect mode TCP keep alive timeout.   |
| exit  | Exits to the next higher level.   |
| no address                                  | Removes the remote host address used to establish tunneling connections.  |
| no aes decrypt key                          | Removes the connect tunnel AES decrypt key.   |
| no aes encrypt key                          | Removes the connect tunnel AES encrypt key.   |
| no port                                     | Removes the remote port used to establish tunnel connections.   |
| no ssh username                             | Removes the SSH user name.  |
| no tcp keep alive                           | Disables the connect mode TCP keep alive timeout.   |
| port <number>                               | Sets the remote port to use for connect mode tunneling.<br><number> = number of the port to use.  |
| protocol ssh                                | Uses SSH protocol for connect mode tunneling.   |
| protocol ssl                                | Uses SSL protocol for connect mode tunneling.   |
| protocol tcp                                | Uses TCP protocol for connect mode tunneling.   |
| protocol tcp aes                            | Uses TCP protocol with AES encryption for connect mode tunneling.   |
| protocol telnet                             | Uses Telnet protocol (with IAC) for connect mode tunneling.   |
| protocol udp                                | Uses UDP protocol for connect mode tunneling.   |

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| protocol udp aes                                   | Uses UDP protocol with AES encryption for connect mode tunneling.   |
| show   | Shows the current configuration.  |
| show history                                       | Displays the last 20 commands entered during the current CLI session.   |
| show statistics                                    | show connection statistics  |
| ssh username <text>                                | Sets the SSH user name for use when establishing tunneling connections with other devices.<br><text> = SSH user name.   |
| tcp keep alive <milliseconds>                      | Enables TCP keep alive for connect mode tunneling and sets the timer.<br><milliseconds> = timer value, in milliseconds.   |
| validate certificate disable                       | Skips verification of the server certificate when connecting.   |
| validate certificate enable                        | Requires verification of the server certificate when connecting.  |
| write  | Stores the current configuration in permanent memory.   |
| <b>host (tunnel-connect-host:1) level commands</b> |   |
| address <text>                                     | Sets the remote host to establish tunneling connections with.<br><text> = IP address or host name of the remote host.   |
| aes decrypt key <hexadecimal>                      | Sets the connect tunnel AES decrypt key with up to 16 bytes.<br>Each byte is represented by two adjacent hex digits.<br>Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>Note that quotes must enclose the value if it contains spaces. |
| aes decrypt key text <text>                        | Sets the connect tunnel AES decrypt key with up to 16 bytes.<br>Each byte is represented by a single character.<br>Note that quotes must enclose the value if it contains spaces.   |
| aes encrypt key <hexadecimal>                      | Sets the connect tunnel AES encrypt key with up to 16 bytes.<br>Each byte is represented by two adjacent hex digits.<br>Bytes may run together or be separated by optional punctuation:<br>123ABC "12 3A BC" 12,3A,BC 12.3a.bc 12:3a:bc<br>Note that quotes must enclose the value if it contains spaces. |
| aes encrypt key text <text>                        | Sets the connect tunnel AES encrypt key with up to 16 bytes.<br>Each byte is represented by a single character.<br>Note that quotes must enclose the value if it contains spaces.   |
| auto show statistics                               | show connection statistics  |
| clrscrn  | Clears the screen.  |
| default protocol                                   | Restores the default protocol as "TCP".   |
| default tcp keep alive                             | Restores the default 45 second connect mode TCP keep alive timeout.   |
| exit   | Exits to the next higher level.   |
| no address   | Removes the remote host address used to establish   |



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|  | tunneling connections.  |
| no aes decrypt key                           | Removes the connect tunnel AES decrypt key.   |
| no aes encrypt key                           | Removes the connect tunnel AES encrypt key.   |
| no port                                      | Removes the remote port used to establish tunnel connections.   |
| no ssh username                              | Removes the SSH user name.  |
| no tcp keep alive                            | Disables the connect mode TCP keep alive timeout.   |
| port <number>                                | Sets the remote port to use for connect mode tunneling.<br><number> = number of the port to use.                        |
| protocol ssh                                 | Uses SSH protocol for connect mode tunneling.   |
| protocol ssl                                 | Uses SSL protocol for connect mode tunneling.   |
| protocol tcp                                 | Uses TCP protocol for connect mode tunneling.   |
| protocol tcp aes                             | Uses TCP protocol with AES encryption for connect mode tunneling.   |
| protocol telnet                              | Uses Telnet protocol (with IAC) for connect mode tunneling.   |
| protocol udp                                 | Uses UDP protocol for connect mode tunneling.   |
| protocol udp aes                             | Uses UDP protocol with AES encryption for connect mode tunneling.   |
| show   | Shows the current configuration.  |
| show history                                 | Displays the last 20 commands entered during the current CLI session.   |
| show statistics                              | show connection statistics  |
| ssh username <text>                          | Sets the SSH user name for use when establishing tunneling connections with other devices.<br><text> = SSH user name.   |
| tcp keep alive <milliseconds>                | Enables TCP keep alive for connect mode tunneling and sets the timer.<br><milliseconds> = timer value, in milliseconds. |
| validate certificate disable                 | Skips verification of the server certificate when connecting.   |
| validate certificate enable                  | Requires verification of the server certificate when connecting.  |
| write  | Stores the current configuration in permanent memory.   |
| <b>host 1 (config-host:1) level commands</b> |   |
| 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.<br><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   |

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|  | this host is selected on the login connect menu.<br><text> = IP address.   |
| remote port <number>                         | Sets the remote port used to connect to the host.<br><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.<br><text> = username.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>host 2 (config-host:2) level commands</b> |  |
| 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.<br><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.<br><text> = IP address. |
| remote port <number>                         | Sets the remote port used to connect to the host.<br><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.<br><text> = username.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>host 3 (config-host:3) level commands</b> |  |
| 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.<br><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.  |

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| 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.<br><text> = IP address. |
| remote port <number>                         | Sets the remote port used to connect to the host.<br><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.<br><text> = username.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>host 4 (config-host:4) level commands</b> |  |
| 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.<br><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.<br><text> = IP address. |
| remote port <number>                         | Sets the remote port used to connect to the host.<br><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.<br><text> = username.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>http (config-http) level commands</b>     |  |
| auth <uri> <realm>                           | Creates a new HTTP server authentication directive.<br><uri> = URI of the server.<br><realm> = domain of the server.               |
| auth type <uri> basic                        | Sets an HTTP server authentication directive to the Basic Access Authentication scheme.<br><uri> = URI of the server.              |
| auth type <uri> digest                       | Sets an HTTP server authentication directive to the Digest Access Authentication scheme.   |

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|                                   | <uri> = URI of the server.  |
| auth type <uri> none              | Sets the authentication type for an HTTP server authentication directive to none.<br><uri> = URI of the server.   |
| auth type <uri> ssl               | Sets the authentication type for an HTTP server authentication directive to SSL.<br><uri> = URI of the server.  |
| auth type <uri> ssl-basic         | Sets the authentication type for an HTTP server authentication directive to SSL-Basic.<br><uri> = URI of the server.  |
| auth type <uri> ssl-digest        | Sets the authentication type for an HTTP server authentication directive to SSL-Digest.<br><uri> = URI of the server.   |
| auth user <uri> <user> <password> | Creates or modifies a user for an HTTP server authentication directive.<br><uri> = URI of the server.<br><user> = username.<br><password> = password associated with the username.  |
| authentication timeout <minutes>  | For any Digest AuthType, sets the timeout for authentication.<br><minutes> = authentication timeout value.  |
| clear counters                    | Sets the HTTP counters to zero.   |
| clear log                         | Clears the HTTP server log.   |
| clrscrn                           | Clears the screen.  |
| default authentication timeout    | Resets the authentication timeout to its default value.   |
| default log format                | Restores the HTTP Server log format string to its default value.  |
| default max bytes                 | Resets the maximum bytes to its default value.  |
| default max log entries           | Restores the default maximum number of HTTP Server log entries.   |
| default max timeout               | Resets the timeout to its default value.  |
| default port                      | Resets the HTTP Server port to its default value.   |
| default secure port               | Resets the HTTP Server SSL port to its default value.   |
| default secure protocols          | Restores the default secure protocol selections.  |
| delete auth <uri>                 | Deletes an existing HTTP Server authentication directive.<br><uri> = URI of the server.   |
| delete auth user <uri> <user>     | Deletes an existing user for an HTTP Server authentication directive.<br><uri> = URI of the server.<br><user> = username.   |
| exit                              | Returns to the config level.  |
| log format <text>                 | Sets the log format string for the HTTP server, using the following directives:<br>%a remote ip address (could be a proxy)<br>%b bytes sent excluding headers<br>%B bytes sent excluding headers (0 = '-')<br>%h remote host (same as %a)<br>%{h}i header contents from request (h = header string)<br>%m request method<br>%p ephemeral local port value used for request<br>%q query string (prepend with '?' or empty '-') |

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|  | %t timestamp HH:MM:SS (same as Apache '%(%H:%M:%S)t')<br>%u remote user (could be bogus for 401 status)<br>%U URL path info<br>%r first line of request (same as '%m %U%q <version>')<br>%s return status |
| logging state disable                    | Disables HTTP server logging.   |
| logging state enable                     | Enables HTTP server logging.  |
| max bytes <number>                       | Sets the maximum number of bytes the HTTP server accepts when receiving a request.  |
| max log entries <number>                 | Sets the maximum number of HTTP server log entries.<br><number> = maximum number of HTTP server log entries.  |
| max timeout <seconds>                    | Sets the maximum time the HTTP server waits when receiving a request.<br><seconds> = maximum timeout value.   |
| no clear counters                        | Restores the HTTP counters to the aggregate values.   |
| no port                                  | Disables the HTTP Server port.  |
| no secure port                           | Disables the HTTP Server SSL port.  |
| port <number>                            | Sets the port number the HTTP server will use.<br><number> = port number.   |
| secure port <number>                     | Sets the port number the HTTP server will use over SSL.<br><number> = port number.  |
| secure protocols ssl3 disable            | Disables the protocol.  |
| secure protocols ssl3 enable             | Enables the protocol.   |
| secure protocols tls1.0 disable          | Disables the protocol.  |
| secure protocols tls1.0 enable           | Enables the protocol.   |
| secure protocols tls1.1 disable          | Disables the protocol.  |
| secure protocols tls1.1 enable           | Enables the protocol.   |
| show                                     | Displays the current configuration.   |
| 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.   |
| state disable                            | Disables the HTTP server.   |
| state enable                             | Enables the HTTP server.  |
| write                                    | Stores the current configuration in permanent memory.   |
| <b>icmp (config-icmp) level commands</b> |   |
| auto show statistics                     | Continuously shows ICMP statistics  |
| clear counters                           | Zeros counters  |
| clrscrn                                  | Clears the screen.  |
| exit                                     | Exits to the configuration level.   |
| 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 statistics                          | Shows ICMP statistics   |
| state disable                            | Prevents ICMP packets from being sent or received.  |

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| state enable                                | Allows ICMP packets to be sent and received.   |
| write                                       | Stores the current configuration in permanent memory.  |
| <b>if 1 (config-if:eth0) level commands</b> |  |
| bootp disable                               | Disables BOOTP.  |
| bootp enable                                | Enables BOOTP.   |
| 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.<br><text> = name of the domain.  |
| exit  | Exits to the config level.   |
| hostname <text>                             | Sets the host name.<br><text> = name of the host.  |
| ip address <ip address/cidr>                | Sets the IP address and network mask.<br>Formats accepted:<br>192.168.1.1 (default mask)<br>192.168.1.1/24 (CIDR)<br>"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.  |
| <b>ip (config-ip) level commands</b>        |  |
| auto show statistics                        | Continuously shows IP statistics   |
| clear counters                              | Zeros counters   |
| clrscrn                                     | Clears the screen.   |
| default ip time to live                     | Restores the default IP time to live.  |
| default multicast time to live              | Restores the default IP multicast time to live, which is one hop.  |
| exit  | Exits to the configuration level.  |
| ip time to live <hops>                      | Sets the IP time to live, known by SNMP as "ipDefaultTTL".<br><hops> = number of hops that a typical IP packet is  |

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|   | allowed to live.  |
| multicast time to live <hops>                   | Sets the IP multicast time to live.<br><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 statistics                                 | Shows IP statistics   |
| write   | Stores the current configuration in permanent memory.   |
| <b>ip filter (config-filter) level commands</b> |   |
| add <ip address> <subnet mask>                  | Adds an entry to the IP filter table.   |
| clrscrn   | Clears the screen.  |
| exit  | Returns to the config level.  |
| no filtering                                    | Removes filtering so ALL addresses are allowed.   |
| 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 CLI session.   |
| write   | Stores the current configuration in permanent memory.   |
| <b>line 1 (line:1) level commands</b>           |   |
| auto show statistics                            | Continuously displays line statistics.  |
| baud rate <bits per second>                     | Sets the line speed.<br><bits per second> = the speed.<br>Standard speeds include 1200, 2400, 4800, 9600, 19200, and so on.   |
| 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.<br><string> = text.   |
| command mode serial string binary <string>      | Sets a binary string that can be entered at boot time to enter command mode.<br><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 device boots and when the line is in command mode.<br><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.   |

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|                                       | <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.   |
| configure current settings            | Configures line with the current value of settings.  |
| 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 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. |
| kill session                          | Kills command mode session on the Line   |
| line <line>                           | Enters the line level.<br><line> = number of the line (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 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.   |



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| 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.   |
| terminal <line>                         | Enters the configure-terminal level.<br><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.<br><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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| xon char <control>                      | Sets the xon character for use with software flow control on this line.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF.  |
| <b>line 2 (line:2) level commands</b>   |  |
| auto show statistics                    | Continuously displays line statistics.   |
| baud rate <bits per second>             | Sets the line speed.<br><bits per second> = the speed.<br>Standard speeds include 1200, 2400, 4800, 9600, 19200, and so on.  |
| 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  |

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|   | command mode.<br><string> = text.   |
| command mode serial string binary <string>  | Sets a binary string that can be entered at boot time to enter command mode.<br><string> = string that may contain binary characters.<br>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 device boots and when the line is in command mode.<br><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.<br><string> = string that may contain binary characters.<br>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.<br><milliseconds> = wait time.   |
| configure current settings                  | Configures line with the current value of settings.   |
| 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 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.  |
| kill session                                | Kills command mode session on the Line  |
| line <line>                                 | Enters the line level.<br><line> = number of the line (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.   |

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| 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 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.   |
| terminal <line>                       | Enters the configure-terminal level.<br><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.<br><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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| xon char <control>                    | Sets the xon character for use with software flow control on this line.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF.  |
| <b>line 3 (line:3) level commands</b> |  |
| auto show statistics                  | Continuously displays line statistics.   |
| baud rate <bits per second>           | Sets the line speed.<br><bits per second> = the speed.<br>Standard speeds include 1200, 2400, 4800, 9600, 19200, and so on.  |
| clear line counters                   | Sets the serial counters to zero.  |
| clrscrn                               | Clears the screen.   |

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| 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.<br><string> = text.  |
| command mode serial string binary <string>  | Sets a binary string that can be entered at boot time to enter command mode.<br><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 device boots and when the line is in command mode.<br><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.<br><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.<br><milliseconds> = wait time.  |
| configure current settings                  | Configures line with the current value of settings.  |
| 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 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.   |
| kill session                                | Kills command mode session on the Line   |
| line <line>                                 | Enters the line level.<br><line> = number of the line (serial port) to be configured.  |
| name <text>                                 | Sets the name for this line.   |

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| 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 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.   |
| terminal <line>                | Enters the configure-terminal level.<br><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.<br><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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| xon char <control>             | Sets the xon character for use with software flow control on this line.<br>The character may be input as text, control, decimal, or hex.   |

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|  | <p>A control character has the form &lt;control&gt;C.</p> <p>A decimal value character has the form \99.</p> <p>A hex value character has the form 0xFF.</p> |
| <b>link (config-ethernet:eth0) level commands</b>  |  |
| 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.  |
| <b>log (config-diagnostics-log) level commands</b> |  |
| clrscrn  | Clears the screen.   |
| default max length                                 | Restores the factory default maximum Log file size.  |
| default output                                     | Disables log output.   |
| default severity level                             | Log all events.  |
| exit   | Exits to the next higher level.  |
| max length <Kbytes>                                | Sets the maximum size in Kbytes for the Log file.  |
| output disable                                     | Enables log to filesystem.   |
| output filesystem                                  | Enables log to serial line.  |
| output line <number>                               | Could not find VarID 438 entry 3 in file<br>http/config/varid_help.mtxt  |
| severity level debug                               | Log all events.  |
| severity level error                               | Log only Error and more severe events.   |
| severity level information                         | Log only Information and more severe events.   |
| severity level notice                              | Log only Notice and more severe events.  |
| severity level warning                             | Log only Warning and more severe events.   |
| 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.  |
| <b>modem (tunnel-modem:2) level commands</b>       |  |
| clrscrn  | Clears the screen.   |
| connect string <text>                              | Sets the CONNECT string used in modem emulation.<br><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.  |

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| 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.                          |
| <b>modem (tunnel-modem:1) level commands</b> |  |
| clrscrn                                      | Clears the screen.   |
| connect string <text>                        | Sets the CONNECT string used in modem emulation.<br><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                            |

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|  | 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.   |
| <b>packing (tunnel-packing:2) level commands</b> |   |
| 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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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.<br><bytes> = number of bytes in the threshold.   |
| timeout <milliseconds>                           | Sets the timeout value for packing mode in milliseconds.<br><milliseconds> = timeout value, in milliseconds.  |
| trailing character <control>                     | Sets the trailing character for packing mode.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| write  | Stores the current configuration in permanent memory.   |
| <b>packing (tunnel-packing:1) level commands</b> |   |
| 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.  |



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| 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.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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.<br><bytes> = number of bytes in the threshold.   |
| timeout <milliseconds>                                    | Sets the timeout value for packing mode in milliseconds.<br><milliseconds> = timeout value, in milliseconds.  |
| trailing character <control>                              | Sets the trailing character for packing mode.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>A hex value character has the form 0xFF. |
| write   | Stores the current configuration in permanent memory.   |
| <b>password (tunnel-accept-password:2) level commands</b> |   |
| clrscrn   | Clears the screen.  |
| exit  | Exits to the next higher 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  | 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.   |
| <b>password (tunnel-accept-password:1) level commands</b> |   |
| clrscrn   | Clears the screen.  |

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| exit                                | Exits to the next higher 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                                | 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.  |
| <b>ppp 1 (ppp:1) level commands</b> |  |
| 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.<br><line> = number of the line (serial port) to be configured.  |
| local ip <ip address/cidr>          | Sets the Local IP address and network mask.<br>Formats accepted:<br>192.168.1.1 (default mask)<br>192.168.1.1/24 (CIDR)<br>"192.168.1.1 255.255.255.0" (explicit mask) |
| 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.<br><ip address> IP address of the peer device.   |
| 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.<br><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.<br><line> = number of the tunnel line (serial port) to be configured.   |

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| username <text>                                      | Sets the user name for PPP authentication.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>ppp 2 (ppp:2) level commands</b>                  |  |
| 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.<br><line> = number of the line (serial port) to be configured.  |
| local ip <ip address/cidr>                           | Sets the Local IP address and network mask.<br>Formats accepted:<br>192.168.1.1 (default mask)<br>192.168.1.1/24 (CIDR)<br>"192.168.1.1 255.255.255.0" (explicit mask) |
| 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.<br><ip address> IP address of the peer device.   |
| 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.<br><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.<br><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.  |
| <b>query port (config-query_port) level commands</b> |  |
| clear counters                                       | Zeros Query Port counters  |
| clrscrn  | Clears the screen.   |
| exit   | Returns to the config level.   |
| no clear counters                                    | Unzeros Query Port counters  |
| 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.  |

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| state enable                                   | Permits response to 77FE requests.   |
| write  | Stores the current configuration in permanent memory.                      |
| <b>root level commands</b>                     |  |
| clrscrn  | Clears the screen.   |
| enable   | Enters the enable level.   |
| exit   | Exit from the system   |
| ping <host>                                    | Ping destination continuously 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_ar                                  | Show system information  |
| trace route <host>                             | Trace route to destination   |
| <b>rss (config-rss) level commands</b>         |  |
| 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.                      |
| <b>serial (tunnel-serial:2) level commands</b> |  |
| clrscrn  | Clears the screen.   |
| 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 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.                      |
| <b>serial (tunnel-serial:1) level commands</b> |  |
| clrscrn  | Clears the screen.   |
| 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 unasserted                                 | Does not assert DTR.   |

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| 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.                                   |
| <b>server (ssh-server) level commands</b> |   |
| authorized user <username> <password>     | Sets authorized username, password, and optionally RSA and/or DSA public keys           |
| clrscrn                                   | Clears the screen.  |
| delete all authorized users               | Removes all authorized users  |
| delete authorized user <username>         | Remove an authorized user   |
| exit                                      | Exits to the ssh level.   |
| 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 keys                                 | Sets RSA or DSA public and/or private keys  |
| no host dsa                               | Removes DSA public and private keys   |
| no host rsa                               | Removes RSA public and private keys   |
| show                                      | Show SSH Server settings  |
| show authorized user <username>           | Show information for an authorized user   |
| show history                              | Displays the last 20 commands entered during the current CLI session.                   |
| show host dsa                             | Show full DSA public key  |
| show host rsa                             | Show full RSA public key  |
| write                                     | Stores the current configuration in permanent memory.                                   |
| <b>smtp (config-smtp) level commands</b>  |   |
| clrscrn                                   | Clears the screen.  |
| default relay port                        | Restores the SMTP relay port to its default.  |
| exit                                      | Exits to the configuration level.   |
| no relay address                          | Removes the SMTP relay address.   |
| relay address <text>                      | Sets an SMTP relay address to direct all outbound email messages through a mail server. |
| relay port <number>                       | Sets the SMTP relay port.   |
| 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.                                   |
| <b>snmp (config-snmp) level commands</b>  |   |
| clrscrn                                   | Clears the screen.  |
| default read community                    | Clears the SNMP read-only community.  |
| default system description                | Restores the SNMP system description to its default.                                    |
| default system name                       | Restores the SNMP system name to default: the product name.                             |
| default write community                   | Clears the SNMP read/write community.   |

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| exit                                       | Returns to the config level.  |
| no system contact                          | Clears the SNMP system contact.   |
| no system location                         | Clears the SNMP system location.  |
| read community <text>                      | Sets the SNMP read-only community string.<br><text> = name of the read-only community string to be set.   |
| show                                       | Displays the current configuration.   |
| show history                               | Displays the last 20 commands entered during the current CLI session.                                     |
| show status                                | Displays the SNMP agent status.   |
| state disable                              | Disables the SNMP server.   |
| state enable                               | Enables the SNMP server.  |
| system contact <text>                      | Sets the SNMP system contact information.<br><text> = system contact information.                         |
| system description <text>                  | Sets the SNMP system description.<br><text> = description of device.                                      |
| system location <text>                     | Sets the SNMP system location.<br><text> = location of device.  |
| system name <text>                         | Sets the SNMP system name.<br><text> = SNMP system name.  |
| traps                                      | Enters the next lower level.  |
| write                                      | Stores the current configuration in permanent memory.   |
| write community <text>                     | Sets the SNMP read-write community string.<br><text> = name of the read-write community string to be set. |
| <b>ssh (ssh) level commands</b>            |   |
| client                                     | Enters the SSH Client configuration level.  |
| clrscrn                                    | Clears the screen.  |
| exit                                       | Exits to the enable level.  |
| server                                     | Enters the SSH Server configuration level.  |
| show history                               | Displays the last 20 commands entered during the current CLI session.                                     |
| write                                      | Stores the current configuration in permanent memory.   |
| <b>ssh (config-cli-ssh) level commands</b> |   |
| clear counters                             | Sets the SSH counters to zero.  |
| clrscrn                                    | Clears the screen.  |
| default max sessions                       | Could not find VarID 316 in file http/config/varid_help.mtxt  |
| default port                               | Restores the default local port to the SSH server.  |
| exit                                       | Exits to the CLI level.   |
| max sessions <number>                      | Could not find VarID 316 in file http/config/varid_help.mtxt  |
| no clear counters                          | Restores the SSH counters to the aggregate values.  |
| port <number>                              | Sets the local port that the SSH server uses.<br><number> = local port number.                            |
| show                                       | Displays the current configuration.   |
| show history                               | Displays the last 20 commands entered during the current CLI session.                                     |
| show statistics                            | Displays the SSH server statistics.   |
| state disable                              | Disables the SSH Server.  |
| state enable                               | Enables the SSH Server.   |
| write                                      | Stores the current configuration in permanent memory.   |

| <b>ssl (ssl) level commands</b>              |  |
|--|--|
| 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.<br><cert> = index displayed by "show authority" command.    |
| no rsa                                       | Removes RSA Certificate and Private Key  |
| no trusted authority <cert>                  | Removes a Trusted Authority Certificate.<br><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.  |
| <b>syslog (config-syslog) level commands</b> |  |
| 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.<br><text> = IP address or name of the host.                      |
| local port <number>                          | Sets the syslog local port.<br><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.<br><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 current configuration.  |
| 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.  |

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| write  | Stores the current configuration in permanent memory.  |
| <b>tcp (config-tcp) level commands</b>           |  |
| ack limit <packets>                              | Sets the number of packets that must be received before an ACK is forced.<br>If there is a large amount of data to acknowledge, an ACK will be forced before this. |
| auto show statistics                             | 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 max retrans                              | Restores the default Maximum Retransmissions.  |
| default max retrans syn ack                      | Restores the default Maximum Retransmissions for SYN/ACK.  |
| default max timeout                              | Restores the default Maximum Timeout between retransmissions.  |
| default send data                                | Sets TCP to send data in accordance with standards.  |
| exit   | Exits to the configuration level.  |
| max retrans <number>                             | Sets the Maximum Retransmissions.  |
| max retrans syn ack <number>                     | Sets the Maximum Retransmissions for SYN/ACK.<br>It is lower than "Max Retrans" to thwart denial-of-service attacks.   |
| max timeout <seconds>                            | Sets the Maximum Timeout between retransmissions in seconds.   |
| 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 statistics                                  | Shows TCP statistics   |
| write  | Stores the current configuration in permanent memory.  |
| <b>telnet (config-cli-telnet) level commands</b> |  |
| clear counters                                   | Sets the Telnet counters to zero.  |
| clrscrn  | Clears the screen.   |
| default max sessions                             | Could not find VarID 315 in file http/config/varid_help.mtxt   |
| default port                                     | Restores the default local port to the Telnet server.  |
| exit   | Exits to the CLI level.  |
| max sessions <number>                            | Could not find VarID 315 in file http/config/varid_help.mtxt   |
| no clear counters                                | Restores the Telnet counters to the aggregate values.  |
| port <number>                                    | Sets the local port that the Telnet server uses.<br><number> = local port number.  |
| show   | Displays the current configuration.  |
| show history                                     | Displays the last 20 commands entered during the current CLI session.  |



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| show statistics                                      | Displays the Telnet statistics.  |
| state disable  | Disables the Telnet Server.  |
| state enable   | Enables the Telnet Server.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>terminal 1 (config-terminal:1) level commands</b> |  |
| break duration <milliseconds>                        | Sets how long a break should last when it is being sent to the line.<br><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.<br><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.  |
| 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.<br><text> = the character.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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 <line>                                      | Enters the configure-terminal level.<br><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.<br><line> = number of the tunnel line (serial port) to be configured.   |
| write  | Stores the current configuration in permanent memory.  |

| <b>terminal 2 (config-terminal:2) level commands</b> |  |
|--|--|
| break duration <milliseconds>                        | Sets how long a break should last when it is being sent to the line.<br><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.<br><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.  |
| 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.<br><text> = the character.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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 <line>                                      | Enters the configure-terminal level.<br><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.<br><line> = number of the tunnel line (serial port) to be configured.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>terminal 3 (config-terminal:3) level commands</b> |  |
| break duration <milliseconds>                        | Sets how long a break should last when it is being sent to the line.<br><milliseconds> = number of milliseconds.   |

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| 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.<br><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.  |
| 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.<br><text> = the character.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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 <line>  | Enters the configure-terminal level.<br><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.<br><line> = number of the tunnel line (serial port) to be configured.   |
| write  | Stores the current configuration in permanent memory.  |
| <b>terminal network (config-terminal:network) level commands</b> |  |
| break duration <milliseconds>                                    | Sets how long a break should last when it is being sent to the line.<br><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   |

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|  | 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.<br><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.  |
| 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.<br><text> = the character.<br>The character may be input as text, control, decimal, or hex.<br>A control character has the form <control>C.<br>A decimal value character has the form \99.<br>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 <line>                          | Enters the configure-terminal level.<br><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.<br><line> = number of the tunnel line (serial port) to be configured.   |
| write                                    | Stores the current configuration in permanent memory.  |
| <b>tftp (config-tftp) level commands</b> |  |
| 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.  |
| allow xcr import disable                 | The TFTP server rejects any attempt to import XML configuration.   |
| allow xcr import enable                  | The TFTP server accepts an XCR file for configuration update based on the file name.   |
| clear counters                           | Sets the TFTP counters to zero.  |

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| clrscrn   | Clears the screen.   |
| exit  | Returns to the config level.   |
| no clear counters                               | Restores the TFTP 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 TFTP statistics.  |
| state disable                                   | Disables the TFTP server.  |
| state enable                                    | Enables the TFTP server.   |
| write   | Stores the current configuration in permanent memory.  |
| <b>traps (config-snmp-traps) level commands</b> |  |
| clrscrn   | Clears the screen.   |
| exit  | Exits to the next higher level.  |
| no primary destination                          | Deletes the primary SNMP trap host.  |
| no secondary destination                        | Deletes the secondary SNMP trap host.  |
| primary destination <text>                      | Sets the primary SNMP trap host.<br><text> = IP address of host running the SNMP trap.                       |
| secondary destination <text>                    | Sets the secondary SNMP trap host.<br><text> = IP address of host running the SNMP trap.                     |
| show  | Shows the current configuration.   |
| show history                                    | Displays the last 20 commands entered during the current CLI session.  |
| state disable                                   | Disables the sending of SNMP trap messages.  |
| state enable                                    | Enables the sending of SNMP trap messages.   |
| write   | Stores the current configuration in permanent memory.  |
| <b>tunnel 1 (tunnel:1) level commands</b>       |  |
| 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.<br><line> = number of the line (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 history                                    | Displays the last 20 commands entered during the current CLI session.  |
| show statistics                                 | show connection statistics   |
| terminal <line>                                 | Enters the configure-terminal level.<br><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.<br><line> = number of the tunnel line (serial port) to be                           |

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|   | configured.  |
| write                                     | Stores the current configuration in permanent memory.  |
| <b>tunnel 2 (tunnel:2) level commands</b> |  |
| 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.<br><line> = number of the line (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 history                              | Displays the last 20 commands entered during the current CLI session.  |
| show statistics                           | show connection statistics   |
| terminal <line>                           | Enters the configure-terminal level.<br><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.<br><line> = number of the tunnel line (serial port) to be configured.               |
| write                                     | Stores the current configuration in permanent memory.  |
| <b>udp (config-udp) level commands</b>    |  |
| auto show statistics                      | 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 statistics                           | Shows UDP statistics   |
| write                                     | Stores the current configuration in permanent memory.  |
| <b>xml (xml) level commands</b>           |  |
| auto show statistics                      | Show XML statistics  |
| clear counters                            | Zeros XML statistics   |
| clrscrn                                   | Clears the screen.   |
| exit                                      | Exits to the enable level.   |
| no clear counters                         | Unzeros XML statistics   |
| 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 history                   | Displays the last 20 commands entered during the current CLI session. |
| show statistics                | Show XML statistics   |
| 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                          |