



EDS Device Servers Command Reference

- ◆ EDS4100
- ◆ EDS8PR
- ◆ EDS16PR
- ◆ EDS32PR

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Contacts

Lantronix Corporate Headquarters

15353 Barranca Parkway
Irvine, CA 92618, USA
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

Online: www.lantronix.com/support

Sales Offices

For a current list of our domestic and international sales offices, go to the Lantronix web site at www.lantronix.com/about/contact .

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1: Introduction

EDS device servers (EDS4100, EDS8PR, EDS16PR, and EDS32PR) contain all the components necessary to deliver full network connectivity to virtually any kind of serial device, a reliable TCP/IP protocol stack, and a variety of remote management capabilities. They boast an innovative design and run on Lantronix's leading-edge Evolution OS™, which supports three convenient configuration methods (Web, command line, and XML). The EDS User Guide describes how to configure the EDS using a web interface.

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

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

XML-based Architecture and Device Control: XML is a fundamental building block for the future growth of M2M network. The EDS supports XML-based configuration and setup records that makes device configuration transparent to users and administrators. The XML is easily editable with a standard text or XML editor.

This command reference provides a brief overview of the XML interface, shows typical XML commands, and provides best practices for using XML commands.

2: Configuration Using Telnet or Serial Port

As an alternative to using Web Manager, you can configure the EDS using a series of commands. You can access this command-line interface (CLI) with a Telnet session or through a serial port connection to the EDS.

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

Using Telnet

To configure the EDS using a Telnet session over the network, establish a Telnet connection.

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

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

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

A prompt displays.

Note: Depending on the level of security you have configured, the User Name and Password may be required. If you named the unit, the name displays as the prompt. If you assigned a host name to the unit, a host name prompt displays.

Using a Serial Port

To configure the EDS locally using a serial port, connect a terminal or a PC running a terminal-emulation program to an EDS serial port. Configure the terminal (or emulation) for 9600 baud, 8-bit, no parity, 1 stop bit, and no flow control.

1. Cycle the unit's power (power off and back on). After power-up, the self-test begins.

Note: The *EDS8/16/32PR* products have a dedicated console port that automatically provides a CLI. If you are using the the console port, skip step 2.

2. Press and hold down the exclamation point (!) key. (Some keyboard require you to press the **Shift** key when typing an exclamation point.) Then, when an exclamation point appears on the terminal or PC screen, immediately type **xyz** to display a CLI prompt.

Navigating the Command Line Interface

Guidelines

Commands at the root level (top level) of the CLI do not affect current configuration settings. Commands within the Enable menu (and its sub-menus) modify the EDS's configuration.

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

To view acceptable commands: Type enter "?".

To move to a sub-level and traverse the tree of commands: Enter each sub-command only in its parent command prompt. For example, to access the Tunnel1 level within the Enable level (which is below the root level), enter:

```
>enable
(enable)#tunnel 1
```

To exit and return to the menu one level higher: Type **exit**.

The following key combinations are allowed when configuring the EDS from the CLI:

- ◆ **Ctrl + a:** place cursor at the beginning of line
- ◆ **Ctrl + b:** backspace one character
- ◆ **Ctrl + d:** delete one character
- ◆ **Ctrl + e:** place cursor at the end of the line
- ◆ **Ctrl + f:** move cursor forward one character
- ◆ **Ctrl + k:** delete everything 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 in line
- ◆ **Esc + b:** move cursor back one word
- ◆ **Esc + f:** move cursor forward one word

Notes:

- ◆ *You need only type enough characters to uniquely identify each part of a command.*
- ◆ *The EDS CLI also supports tab completion.*

To view the current configuration at any level: Type `show`. The configuration for that menu level displays.

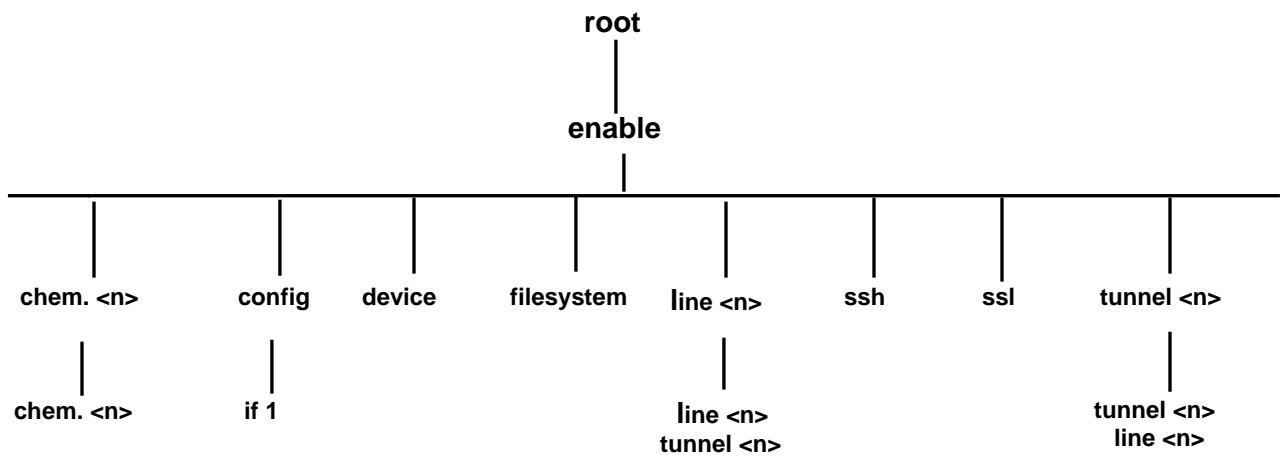
To view the list of commands available at the current menu level: At the command prompt, type `?`. The list of current commands displays.

To return to the next level up in the menu hierarchy: At the command prompt, type `exit`. The prompt for the parent menu displays.

To view the available commands and their explanation: At the command prompt, type `*`. The list of commands for that menu level and their description displays.

CLI Levels

The following diagram shows the CLI command levels.



3: Summary of CLI Commands

The following sections describe the CLI commands. The commands are organized as follows:

- ◆ Root menu: page [9](#)
- ◆ Enable menu: page [10](#)
- ◆ Chem menu: page [14](#)
- ◆ Configure menu: page [16](#)
- ◆ Interface 1 Level Menu: page [24](#)
- ◆ Device menu: page [26](#)
- ◆ Filesystem menu: page [28](#)
- ◆ Line menu: page [31](#)
- ◆ SSH menu: page [33](#)
- ◆ SSL menu: page [36](#)
- ◆ Tunnel menu: page [37](#)

Root Menu

The following parameters are top-level root commands. These commands do not alter the configuration of the EDS. You can issue these commands from any level.

Root Configuration Command	Description
<code>clrscrn</code>	Clears the screen.
<code>enable</code>	Displays the Enable level prompt.
<code>exit</code>	Exits from the system.
<code>ping <host></code>	Pings the host destination the specified number of times (count) with a 5-second timeout. <code><host></code> = host destination.
<code>ping <host> <count> <timeout></code>	Pings the string destination a specified number of times with a specified timeout. <code><host></code> = host destination. <code><count></code> = number of times the ping is to occur. <code><timeout></code> = number of seconds that must elapse without a response before the ping times out.
<code>show history</code>	Displays the set of commands inputted from the moment user was brought back up to this menu.
<code>show eds4100</code> <code>show eds8PR</code> <code>show eds16PR</code> <code>show eds32PR</code>	Displays the current EDS settings.
<code>trace route <host></code>	Determines the path taken from a computer to a specified destination. <code><host></code> = host destination.

Enable Menu

The following configurable parameters reside in the Enable configuration menu

Enable Menu Command	Description
<code>auto show interfaces</code>	Displays interface statistics.
<code>auto show processes</code>	Continuously displays thread runtime information.
<code>auto show xsr</code>	Displays XML Status Record counters.
<code>chem <number></code>	Changes to the Configure Email level.
<code>clear interface counters</code>	Sets the interface session counters to zero.
<code>clear line <number></code>	Closes a specific command mode session. <number> = number of the serial line to be cleared.
<code>clear query port counters</code>	Sets the Query Port counters to zero.
<code>clear ssh <session></code>	Closes an active SSH session on the EDS. <session> = session number displayed by the show sessions command.
<code>clear telnet <session></code>	Closes an active Telnet session on the EDS. <session> = session number displayed by the show session command.
<code>clear xsr counters</code>	Sets the XML Status Record counters to 0.
<code>configure</code>	Displays the Configuration-level menu.
<code>connect</code>	Displays names and numbers of all lines.
<code>connect line <line></code>	Starts a session on the serial line. <line> = line number.
<code>device</code>	Displays the device-level menu.
<code>disable</code>	Exits current menu level and returns to main root level menu.
<code>exit</code>	Exits the system.
<code>filesystem</code>	Displays the Filesystem-level menu.
<code>kill line <line></code>	Closes a command mode session on the line. <line> =line number

Enable Menu Command	Description
<code>kill ssh <session></code>	Closes an SSH session. <session> = session number in the index displayed by the <code>show sessions</code> command.
<code>kill telnet <session></code>	Closes a Telnet SSH session. <session> = session number in the index displayed by the <code>show sessions</code> command.
<code>line <line></code>	Displays the configuration menu for the specified serial port. <line> = number of the line (serial port)
<code>no clear interfaces counters</code>	Restores the interface counters to the last aggregate value.
<code>no clear query port counters</code>	Restores the query port counters to the last aggregate value.
<code>no clear xsr counters</code>	Restores the XML Status Record counters to the last aggregate value.
<code>nslookup</code>	Looks up host information for the given host name.
<code>nslookup <host></code>	Displays host information for a specified host name. <host> = IP address of the host whose information you want to view.
<code>ping <host></code>	Pings the host destination five times with a 5-second timeout <host> = IP address of the host you want to ping.
<code>ping <host> <count></code>	Pings the host destination a specified number of times with a 5-second timeout. <host> = IP address host you want to ping. <count> = number of times the specified host is to be pinged.
<code>ping <host> <count> <timeout></code>	Pings the host destination the specified number (count) of times with a specified timeout (in seconds).
<code>reload</code>	Reboots the EDS and reloads the configuration from Flash memory.
<code>reload factory defaults</code>	Resets the EDS configuration to the default settings.
<code>show eds4100</code> <code>show eds8pr</code> <code>show eds16pr</code> <code>show eds32pr</code>	Displays the EDS's configuration.

Enable Menu Command	Description
<code>show history</code>	Displays previously entered commands.
<code>show hosts</code>	Displays the domain settings.
<code>show interfaces</code>	Displays network-interface statistics.
<code>show ip sockets</code>	Displays TCP and UDP state information and their associated ports.
<code>show processes</code>	Displays thread runtime information.
<code>show query port</code>	Displays statistics and information on the query port.
<code>show sessions</code>	Displays active Telnet and SSH sessions on the EDS.
<code>show xsr</code>	Displays XML Status Record counters.
<code>ssh</code>	Displays the SSH configuration level.
<code>ssl</code>	Displays the SSL configuration level.
<code>trace route <host></code>	Determines the path taken from a computer to a specified destination. <host> = IP address of the host you want to trace route.
<code>tunnel <line></code>	Displays the Tunnel menu for configuring tunneling the line number entered. <line> = line number
<code>write</code>	Stores and applies current configuration into permanent memory.
<code>xcr dump</code>	Displays the XML configuration to the console.
<code>xcr dump <group list></code>	Displays a specified XML configuration to the console. <group list> = name of the group list whose XML configuration you want to view.
<code>xcr export <file></code>	Saves the EDS's current configuration to a file. <file> = name of the file in which the current EDS configuration will be saved.
<code>xcr export <file> <group list></code>	Saves a specified XML configuration to a file. <file> = name of the file in which the XML configuration will be saved. <group list> = name of the XML configuration to be imported.
<code>xcr import <file></code>	Imports a local XML configuration to the EDS. <file> = name of the file to be imported.

Enable Menu Command	Description
<code>xcr import <file> <group list></code>	Imports a specific XML configuration to the EDS. <i><file></i> = name of the file to be imported. <i><group list></i> = name of the XML configuration to be imported.
<code>xcr list</code>	Lists XML configuration record groups to the console.
<code>xsr dump</code>	Displays the XML Status Record to the console. (
<code>xsr dump <group list></code>	Displays a specified XML Status Record to the console. <i><group list></i> = name of the group list whose XML Status Record you want to view.
<code>xsr export <file></code>	Saves the current EDS's Status Record to a file. <i><file></i> = name of the file in which the current EDS Status Record will be saved.
<code>xsr export <file> <group list></code>	Saves a specified XML Status Record to a local file. <i><file></i> = name of the file in which the XML Status Record will be saved. <i><group list></i> = name of the group list whose XML Status Record will be saved.
<code>xsr list</code>	Lists XML Status Record groups to the console.

Chem Level Commands

The following is a list of commands available in the chem (configurable host email) level.

Chem Level Command	Description
<code>auto show statistics</code>	Continuously displays email statistics <email addresses> = a semi-colon separated list of email addresses.
<code>chem <number></code>	Enters the chem level. <number> = number of the chem level to enter.
<code>clear log</code>	Clears all entries from the mail log.
<code>clear mail counters</code>	Sets the email counters to zero.
<code>clrscrn</code>	Clears the screen.
<code>exit</code>	Returns to the <code>enable</code> level.
<code>file <file></code>	Specifies a text file, the contents of which will be the message body of an email alert. <file> = the name of a local file.
<code>from <email address></code>	Sets the From address for email alerts. <email address> = email address to list in the From field of the email alert.
<code>local port <number></code>	Sets local port used to send email alerts. <number> local port to use for email alerts.
<code>local port random</code>	Sets local port (used to send email alerts) to random.
<code>no cc</code>	Clears the Cc addresses for email alerts.
<code>no clear mail counters</code>	Restores the email counters to the aggregate values.
<code>no file</code>	Removes the file used for the body of the email.
<code>no from</code>	Removes From address for email alerts.
<code>no overriding domain</code>	Removes the overriding domain name option.
<code>no replyto</code>	Removes Reply-To address for email alerts.
<code>no subject</code>	Removes subject used for email alerts.
<code>no to</code>	Removes To address for email alerts.

Chem Level Command	Description
overriding domain <domain>	Sets a domain name that will be used when connecting to an SMTP server to send an email alert instead of the device's domain name in EHLO. <domain> = domain name to override the current domain name in EHLO.
priority high	Sets X-Priority for email alerts to 2.
priority low	Sets X-Priority for email alerts to 4.
priority normal	Sets X-Priority for email alerts to 3.
priority urgent	Sets X-Priority for email alerts to 1.
priority very low	Sets X-Priority for email alerts to 5.
replyto <email address>	Sets Reply-To address for email alerts. <email address> = email address to list in the Reply-To field of the email alert.
send	Sends an email using the current settings.
server port <number>	Sets the port used by the SMTP server. <number> = port used for SMTP on the server side.
show	Displays email settings.
show history	Displays the last 20 commands entered during the current CLI session.
show log	Displays the email log.
show statistics	Displays email statistics.
subject <string>	Sets the subject for email alerts. <string> = text to place as the subject.
to <email addresses>	Sets email address to which the email alerts will be sent. <email addresses> = a quoted, semi-colon separated list of email addresses
write	Writes runtime configuration to permanent storage.

Configure Menu

The following configurable parameters reside in the Configure menu.

Configure Menu Command	Description
<code>arp <ip address> <mac address></code>	Maps an IP address to a device's MAC address. <ip address> = IP address to be mapped. <MAC address> = device's MAC address.
<code>auto show icmp</code>	Continuously displays ICMP state and statistics.
<code>auto show ip</code>	Continuously displays IP statistics.
<code>auto show tcp</code>	Continuously displays TCP statistics.
<code>auto show udp</code>	Continuously displays UDP statistics.
<code>clear arp-cache</code>	Removes all entries from the ARP table.
<code>clear ftp counters</code>	Sets the FTP counters to zero.
<code>clear host <host></code>	Removes a specified entry from the DNS cache. <host> = IP address of the host with the DNS cache.
<code>clear http counters</code>	Sets the HTTP counters to zero.
<code>clear icmp counters</code>	Sets the Internet Control Message Protocol (ICMP) counters to zero.
<code>clear ip counters</code>	Sets the IP counters to zero.
<code>clear ip http log</code>	Clears the HTTP server log.
<code>clear ip ssh counters</code>	Sets the SSH counters to zero.
<code>clear ip telnet counters</code>	Sets the Telnet counters to zero.
<code>clear rss</code>	Clears the RSS feed data.
<code>clear ssh</code>	Closes an active SSH session on the EDS.
<code>clear telnet</code>	Closes an active Telenet session on the EDS.
<code>clear ssh counters</code>	Sets the SSH counters to zero.
<code>clear tcp counters</code>	Sets the TCP counters to zero.
<code>clear telnet</code>	Closes an active Telnet session on the EDS.
<code>clear tftp counters</code>	Sets the TFTP counters to zero.

Configure Menu Command	Description
<code>clear udp counters</code>	Sets the UDP counters to zero.
<code>clock set <time (HH:MM:SS)> <day (1-31)> <month text> <year></code>	Sets the system clock. <time (HH:MM:SS)> = time in hours, minutes, and seconds <day (1-31)> = day of the month <month text> = month of the year (in text) <year> = year (4 digits)
<code>clock timezone</code>	Shows possible time zone names.
<code>clock timezone <time zone> <hour offset></code>	Sets the displayed time zone. <time zone> = abbreviation of time zone where EDS is located <hour offset> = number of hours off the time is from that of the time zone. Prefix with minus sign if the time is earlier than the time zone's.
<code>clock timezone <time zone> <hour offset> <minute offset></code>	Sets the displayed time zone. <time zone> = abbreviation of time zone where EDS is located <hour offset> = number of hours off the time is from that of the time zone. Prefix with minus sign if the time is earlier than the time zone's. <minute offset> = number of minutes off the time is from that of the time zone. Prefix with minus sign if the time is earlier than the time zone's.
<code>clrscrn</code>	Clears the screen.
<code>enable password</code>	Sets the password for the Enable-level menu.
<code>exit</code>	Exits the Configure menu and returns to the Enable menu.
<code>hostname <string></code>	Sets the system hostname. <string> = hostname to be assigned to the system.
<code>if 1</code>	Displays the Interface 1 menu.
<code>ip domain name <string></code>	Sets the default domain name on the EDS. <string> = default domain name.
<code>ip ftp enable</code>	Enables the FTP server.
<code>ip ftp password <string></code>	Sets the administrative password for the FTP server. <string> = administrative password.

Configure Menu Command	Description
<code>ip ftp username <string></code>	Sets the administrative username for the FTP server. <string> = administrative username.
<code>ip http auth <uri> <realm></code>	Creates a new HTTP server authentication directive. <uri> = URI of the server. <realm> = domain of the server.
<code>ip http auth type <uri> basic</code>	Sets an HTTP server authentication directive to the Basic Access Authentication scheme. <uri> = URI of the server.
<code>ip http auth type <uri> digest</code>	Sets an HTTP server authentication directive to the Digest Access Authentication scheme. <uri> = URI of the server.
<code>ip http auth type <uri> none</code>	Sets the authentication type for an HTTP server authentication directive to none. <uri> = URI of the server.
<code>ip http auth type <uri> ssl</code>	Sets the authentication type for an HTTP server authentication directive to SSL. <uri> = URI of the server.
<code>ip http auth type <uri> ssl-basic</code>	Sets the authentication type for an HTTP server authentication directive to SSL-Basic. <uri> = URI of the server.
<code>ip http auth type <uri> ssl-digest</code>	Sets the authentication type for an HTTP server authentication directive to SSL-Digest. <uri> = URI of the server.
<code>ip http auth user <uri> <user> <password></code>	Creates or modifies a user for an HTTP server authentication directive. <uri> = URI of the server. <user> = username. <password> = password associated with the username.
<code>ip http log</code>	Enables HTTP server logging.
<code>ip http log entries <number></code>	Sets the maximum number of HTTP server log entries. <number> = maximum number of HTTP server log entries.
<code>ip http log format <string></code>	Sets the log format for the HTTP server. <string> = log format.

Configure Menu Command	Description
<code>ip http max bytes <bytes></code>	Sets the maximum number of bytes the HTTP server accepts when receiving a request. <bytes> = maximum number of bytes.
<code>ip http max timeout <seconds></code>	Sets the maximum timeout the HTTP server waits when receiving a request. <seconds> = maximum timeout value.
<code>ip http port <number></code>	Sets the port number. <number> = port number.
<code>ip http server</code>	Enables the HTTP server.
<code>ip http ssl port <number></code>	Sets the SSL port number for use with the HTTP server. <number> = SSL port number.
<code>ip icmp enable</code>	Allows the transmission and retrieval of Internet Control Message Protocol (ICMP) packets.
<code>ip name-server <ip address></code>	Sets the primary DNS server. <ip address> = IP address of the primary server.
<code>ip name-server <ip address1> <ip address2></code>	Sets the primary and secondary DNS servers. <ip address1> = IP address of the primary server. <ip address2> = IP address of the secondary server.
<code>ip ssh enable</code>	Enable the SSH server.
<code>ip ssh port <number></code>	Sets the local port for SSH that the server uses. <number> = local port number.
<code>ip tcp resets enable</code>	Sends TCP RSTs upon connection to unused ports.
<code>ip telnet enable</code>	Enables and starts the Telnet server.
<code>ip telnet port <number></code>	Sets the Telnet port that the server uses. <number> = Telnet port number.
<code>ip tftp allow file creation</code>	Enables the automatic creation of files by the TFTP server.
<code>ip tftp enable</code>	Enables the TFTP server.
<code>kill ssh <session></code>	Closes the SSH session using the index from the <code>show sessions</code> command.
<code>kill telnet <session></code>	Closes the Telnet session using the index from the <code>show sessions</code> command.

Configure Menu Command	Description
no arp	Clears the ARP table.
no clear ftp counters	Restores the FTP counters to the last aggregate value.
no clear http counters	Restores the HTTP counters to the last aggregate value.
no clear icmp counters	Restores the ICMP counters to the last aggregate value.
no clear ip counters	Restores the IP counters to the last aggregate value.
no clear ip ssh counters	Restores the IP SSH counters to the last aggregate value.
no clear ip telnet counters	Restores the IP Telnet counters to the last aggregate value.
no clear tcp counters	Restores the TCP counters to the last aggregate value.
no clear tftp counters	Restores the TFTP counters to the last aggregate value.
no clear udp counters	Restores the UDP counters to the last aggregate value.
no clock timezone	Disables the timezone.
no hostname	Clears the system host name.
no ip domain name	Removes the IP domain name entered.
no ip ftp enable	Disables the IP FTP.
no ip ftp password	Removes the FTP password.
no ip ftp username	Removes the FTP username.
no ip http auth <uri>	Deletes an existing HTTP server authentication directive. <uri> = URI of the HTTP server.
no ip http auth user <uri> <user>	Deletes an existing user for the specified HTTP server's authentication directive. <uri> = URI of the HTTP server. <user> = user name.
no ip http auth log	Disables HTTP server logging.
no ip http auth log format	Removes the log format string for the HTTP server.
no ip http server	Disables the HTTP server.
no ip icmp enable	Prevents the sending or retrieval of ICMP packets.

Configure Menu Command	Description
<code>no ip name-server</code>	Removes the name server.
<code>no ip ssh enable</code>	Disables and stops the SSH server.
<code>no ip tcp resets enable</code>	Prohibits TCP RSTs from sending on connect to unused ports.
<code>no ip telnet enable</code>	Disables the Telnet server.
<code>no ip tftp allow file creation</code>	Disables file creation via TFTP.
<code>no ip tftp enable</code>	Disables the TFTP server.
<code>no password</code>	Removes the root level password.
<code>no query-port enable</code>	Disables the query port.
<code>no quit connect line</code>	Clears the string used to exit the <code>connect line <line></code> command.
<code>no rss enable</code>	Disables the RSS feed.
<code>no rss persistent</code>	Disables RSS feed data persistence.
<code>no snmp-server community ro</code>	Removes the SNMP read-only server community string.
<code>no snmp-server community rw</code>	Removes the SNMP read/write server community string.
<code>no snmp-server contact</code>	Remove the SNMP server contact.
<code>no snmp-server description</code>	Clears the SNMP server description.
<code>no snmp-server enable</code>	Disables the SNMP server.
<code>no snmp-server enable traps</code>	Disables SNMP server traps.
<code>no snmp-server host <ip address></code>	Deletes the SNMP server host. <ip address> = IP address of the SNMP server.
<code>no snmp-server host <ip address1> <ip address2></code>	Deletes the primary and secondary SNMP server hosts. <ip address1> = IP address of the primary SNMP server. <ip address2> = IP address of the secondary SNMP server.
<code>no snmp-server location</code>	Clears the SNMP server location.

Configure Menu Command	Description
<code>no snmp-server name</code>	Clears the SNMP server name.
<code>no syslog enable</code>	Disables syslog logging.
<code>no syslog host</code>	Removes the address of the syslog recipient.
<code>no syslog level</code>	Disables logging of all events.
<code>password</code>	Sets the new password. Prompts for a password, and then requests password verification.
<code>password <string></code>	Enter the password on one line. <string> = password.
<code>query-port enable</code>	Enables the query port.
<code>quit connect line <string></code>	Sets the string used to exit the connect line <line> command.
<code>rss enable</code>	Enables RSS Feed
<code>rss entries <number></code>	Sets the maximum number of RSS Feed entries
<code>rss persistent</code>	Enables RSS Feed data persistence.
<code>show arp</code>	Shows the arp table.
<code>show clock</code>	Displays the system clock.
<code>show ftp</code>	Displays the FTP configuration and statistics.
<code>show history</code>	Displays previously entered commands.
<code>show http</code>	Displays the HTTP server settings.
<code>show http auth</code>	Displays the HTTP server authentication settings.
<code>show http log</code>	Displays the HTTP server log.
<code>show http statistics</code>	Displays the HTTP statistics.
<code>show icmp</code>	Displays ICMP state and statistics.
<code>show ip</code>	Displays the IP statistics.
<code>show query port</code>	Displays statistics and information about the Query Port.
<code>show rss</code>	Displays the RSS feed settings.
<code>show snmp-server</code>	Displays the SNMP server settings.

Configure Menu Command	Description
<code>show ssh</code>	Displays the IP SSH configuration.
<code>show syslog</code>	Displays syslog information.
<code>show tcp</code>	Displays TCP configuration information and statistics.
<code>show telnet</code>	Displays the Telnet configuration.
<code>show tftp</code>	Displays the TFTP settings and statistics.
<code>show udp</code>	Displays the UDP settings and statistics.
<code>snmp-server community <string> ro</code>	Sets the read-only community within the SNMP server. <string> = name of the read-only community that is to be set.
<code>snmp-server community <string> rw</code>	Sets the read-write community within the SNMP server. <string> = name of the read-write community that is to be set.
<code>snmp-server contact <string></code>	Sets the SNMP system contact information. <string> = system contact information.
<code>snmp-server description <string></code>	Enter a description for SNMP server. <string> = description of server.
<code>snmp-server enable</code>	Enables the SNMP server.
<code>snmp-server enable traps</code>	Enables traps on the SNMP server.
<code>snmp-server host <ip address></code>	Sets the primary SNMP trap host. <ip address> = IP address of host running the SNMP trap.
<code>snmp-server host <ip address1> <ip address2></code>	Sets the primary and secondary SNMP trap hosts. <ip address1> = IP address of primary host running the SNMP trap. <ip address2> = IP address of secondary host running the SNMP trap.
<code>snmp-server location <string></code>	Sets the SNMP system location. <string> = SNMP system location.
<code>snmp-server name <string></code>	Sets the SNMP system name. <string> = SNMP system name.
<code>syslog enable</code>	Enables syslog logging.

Configure Menu Command	Description
<code>syslog host <ip address></code>	Sets the address of the syslog recipient.
<code>syslog level <severity></code>	Sets the minimum severity of events that will be logged.
<code>write</code>	Stores and applies the current configuration into permanent memory.

Interface 1 Level Menu

The following configurable parameters reside in the Interface (IF 1) configuration menu

Interface 1 Level Command	Description
<code>arp timeout <seconds></code>	Sets the ARP cache timeout. <seconds> = ARP cache timeout value.
<code>bootp</code>	Enables BOOTP.
<code>clear host <string></code>	Removes an entry from DNS cache. <string> = entry to be removed.
<code>clrscrn</code>	Clears the screen.
<code>dhcp</code>	Enables DHCP.
<code>dhcp renew</code>	Forces DHCP to renew.
<code>duplex auto</code>	Sets Ethernet link duplex to auto-negotiate.
<code>duplex full</code>	Sets Ethernet link duplex to full-duplex.
<code>duplex half</code>	Sets Ethernet link duplex to half-duplex.
<code>exit</code>	Exits the Interface menu and returns to the Enable menu.
<code>ip address <ip address/bits></code>	Sets the IP address and netmask. <ip address/bits> = IP address / netmask in Classless Inter-Domain Routing (CIDR) notation.
<code>ip address <ip address></code>	Sets the IP address. <ip address> = IP address.
<code>ip address <ip address> <netmask></code>	Sets the IP address and netmask. <ip address> = IP address. <netmask> = netmask in dotted notation.

Interface 1 Level Command	Description
<code>ip address filter <ip address> <netmask></code>	Adds a filter to the IP filter table. <code><ip address></code> = IP address. <code><netmask></code> = netmask in dotted notation.
<code>ip default-gateway <ip address></code>	Sets the IP address for the default gateway.
<code>ip dhcp client client-id ascii <string></code>	Sets the DHCP client ID.
<code>mac-address <mac address></code>	Change the EDS MAC address. <code><mac address></code> = new MAC address to be assigned to the EDS.
<code>no bootp</code>	Disables BOOTP.
<code>no dhcp</code>	Disables DHCP.
<code>no ip address</code>	Removes the IP address.
<code>no ip address filter <ip address> <netmask></code>	Removes a specified filter from the IP filter table. <code><ip address></code> = IP address. <code><netmask></code> = netmask in dotted notation.
<code>show</code>	Displays the interface settings.
<code>no ip default-gateway</code>	Removes the default gateway.
<code>no ip dhcp client client-id</code>	Deletes the DHCP client ID.
<code>no speed</code>	Restores the default Ethernet link speed.
<code>show history</code>	Displays previously entered commands.
<code>show ip address filter</code>	Displays the IP filter table.
<code>speed 10</code>	Sets the Ethernet link speed to 10 Mbps, duplex is unchanged.
<code>speed 10 full</code>	Sets the Ethernet link speed to 10 Mbps, full-duplex.
<code>speed 10 half</code>	Sets the Ethernet link speed to 10 Mbps, half-duplex.
<code>speed 100</code>	Sets the Ethernet link speed to 100 Mbps, duplex is unchanged.
<code>speed 100 full</code>	Sets the Ethernet link speed to 100 Mbps, full-duplex.
<code>speed 100 half</code>	Sets the Ethernet link speed to 100 Mbps, half-duplex.

Interface 1 Level Command	Description
<code>speed auto</code>	Sets the Ethernet link speed to auto-negotiation.
<code>write</code>	Stores and applies the current configuration into permanent memory.

Device Menu

The following configurable parameters reside in the Device configuration menu.

Device Configuration Command	Description
<code>auto show tlog</code>	Show internal trouble log.
<code>auto show upload</code>	Show current upload status.
<code>clrscrn</code>	Clears the screen.
<code>cpu speed <mhZ></code>	Sets the CPU speed. <mhZ> = speed of the CPU.
<code>dvt</code>	Displays the DVT menu.
<code>exit</code>	Exits the Device menu and returns to the Enable menu.
<code>long name <name></code>	Renames the EDS's long name as displayed in Command mode and the Web Manager. <name> = new long name to be assigned to the EDS.
<code>no cpu speed</code>	Restores the query port counters to the last aggregate value.
<code>no long name</code>	Resets the EDS's long name to the default value.
<code>no short name</code>	Resets the EDS's short name to the default value.
<code>short name <name></code>	Sets the EDS's short name, displayed in Command mode and the Web Manager. <name> = maximum of eight characters.
<code>show buffer pool</code>	Displays information on buffer pool.
<code>show hardware information</code>	Displays the hardware information for the EDS. Shows the CPU type, CPU speed, Hardware ID, flash size, RAM size, and hard drive size.
<code>show history</code>	Displays previously entered commands.

Device Configuration Command	Description
show ixp	Shows various debug information about the IXP.
show ixp db <port>	Shows information about the IXP Ethernet DB layer
show ixp ethernet <port>	Shows information about the IXP Ethernet Access layer
show ixp mac <port>	Shows information about the IXP Ethernet MAC
show ixp mh <port>	Shows information about the IXP NPE Message Handler layer
show ixp mii	Shows information about the IXP MII layer
show ixp qmgr <port>	Shows information about the IXP QMgr layer
show tlog	Shows the internal trouble log
show upload	Shows the current upload state
show memory	<p>Prompt displays:</p> <p>This command will affect the performance of tunneling. Continue (yes/no)?</p> <p>Reply yes: The system displays the following information in both the main heap and internal buffer heap: Total memory, available memory, number of fragments, and allocated blocks.</p>
write	Stores and applies the current configuration into permanent memory.

Filesystem Menu

The following commands are configurable parameters within the Filesystem menu. This level allows for the management of files in the EDS.

Filesystem Menu Command	Description
<code>cat <file></code>	Displays the contents of a specified file. <file> = name of the file whose contents are to be displayed.
<code>cd <directory></code>	Displays all filesystem files in the current directory. <directory> = name of current directory .
<code>compact</code>	Compress the filesystem and frees all available space.
<code>cp <source file> <destination file></code>	Creates a copy of an existing file. <source file> = name of the original file. <destination file> = name for the copied file.
<code>dump <file></code>	Dumps the contents of the specified file. <file> = name of the file whose contents are to be dumped.
<code>exit</code>	Exits the Filesystem menu and returns to the Enable menu.
<code>format</code>	Displays all filesystem files and directories.
<code>ls</code>	Displays all filesystem files in the current directory.
<code>ls <directory></code>	Displays all filesystem files in the specified directory. <directory> = name of the directory whose filesystems are to be displayed.
<code>mkdir <directory></code>	Create a directory on the filesystem. <directory> = name of the new directory.
<code>mv <source file> <destination file></code>	Moves a file on the filesystem. <source file> = current file path. <destination file> = new file location.
<code>pwd</code>	Displays all the filesystem files in the current directory.
<code>rm <file></code>	Removes a specified file from the filesystem. <file> = name of the file to be removed from the filesystem.

Filesystem Menu Command	Description
<code>rmdir <directory></code>	Removes a specified directory from the filesystem. <file> = name of the directory to be removed from the filesystem.
<code>show</code>	Displays filesystem statistics.
<code>show history</code>	Displays previously entered commands.
<code>show tree</code>	Displays all filesystem files and directories.
<code>tftp get ascii <source file> <destination file> <host></code>	Obtains an ASCII file using TFTP. <source file> = name of the file to be stored locally. <destination file> = name of the file when it is moved. <host> = name of the host where the file will be moved.
<code>tftp get ascii <source file> <destination file> <host> <port></code>	Obtains an ASCII file using TFTP. <source file> = name of the file to be stored locally. <destination file> = name of the file when it is moved. <host> = name of the host where the file will be moved. <port> = port on which the TFTP server is listening (when not using the default).
<code>tftp get binary <source file> <destination file> <host></code>	Obtains a binary file using TFTP. <source file> = name of the file to be stored locally. <destination file> = name of the file when it is moved. <host> = name of the host where the file will be moved.
<code>tftp get binary <source file> <destination file> <host> <port></code>	Obtains a binary file using TFTP. <source file> = name of the file to be stored locally. <destination file> = name of the file when it is moved. <host> = name of the host where the file will be moved. <port> = port on which the TFTP server is listening (when not using the default).
<code>tftp put <string> <string> <string> <string></code>	Sends a file using TFTP. <source file> = name of the file to be to a remote location. <destination file> = name of the file when it is moved. <host> = name of the host where the file will be moved.
<code>tftp put ascii <source file> <destination file> <host></code>	Sends an ASCII file using TFTP. <source file> = name of the file to be to a remote location. <destination file> = name of the file when it is moved. <host> = name of the host where the file will be moved.

Filesystem Menu Command	Description
<pre>tftp put ascii <source file> <destination file> <host> <port></pre>	<p>Sends an ASCII file using TFTP.</p> <p><source file> = name of the file to be to a remote location.</p> <p><destination file> = name of the file when it is moved.</p> <p><host> = name of the host where the file will be moved.</p> <p><port> = port on which the TFTP server is listening (when not using the default).</p>
<pre>tftp put binary <source file> <destination file> <host></pre>	<p>Sends a binary file using TFTP.</p> <p><source file> = name of the file to be to a remote location.</p> <p><destination file> = name of the file when it is moved.</p> <p><host> = name of the host where the file will be moved.</p>
<pre>tftp put binary <source file> <destination file> <host> <port></pre>	<p>Sends a binary file using TFTP.</p> <p><source file> = name of the file to be sent to a remote location.</p> <p><destination file> = name of the file when it is moved.</p> <p><host> = name of the host where the file will be moved.</p> <p><port> = port on which the TFTP server is listening (when not using the default).</p>
<pre>touch <string></pre>	<p>Creates a file on the filesystem.</p> <p><string> name of the file to be created.</p>

Line Menu

The following configurable parameters reside in the Line 1, Line 2, Line 3, Line 4 (and so forth) configuration menus. These commands configure the corresponding serial ports.

Line Menu Command	Description
<code>auto show statistics</code>	Continuously displays line statistics.
<code>clear line counters</code>	Sets the serial counters to zero.
<code>clrscrn</code>	Clears the screen.
<code>command mode always</code>	Sets command mode to always enabled.
<code>command mode echo serial string</code>	Enables echoing of serial data at boot time.
<code>command mode serial string</code>	Sets Command mode to use serial settings.
<code>command mode serial string <string></code>	Sets the Command mode serial string using ASCII characters.
<code>command mode serial string binary <string></code>	Sets the Command mode serial string using binary values.
<code>command mode signon message <string></code>	Sets the boot-up sign-on message using ASCII characters.
<code>command mode signon message binary <string></code>	Sets the boot-up sign-on message using binary values.
<code>command mode wait time <milliseconds></code>	Sets boot-up wait time for serial settings. <milliseconds> = number of milliseconds for boot-up wait time and serial settings.
<code>databits 7</code>	Sets the number of EDS data bits to 7.
<code>databits 8</code>	Sets the number of EDS data bits to 8.
<code>enable rs485 full- duplex (EDS4100 only)</code>	Switches the serial port to RS485 interface in full duplex mode
<code>enable rs485 half- duplex (EDS4100 only)</code>	Switches the serial port to RS485 interface in half duplex mode
<code>exit</code>	Exits the Line menu and return to the Enable menu.
<code>flowcontrol hardware</code>	Sets flow control to hardware.

Line Menu Command	Description
<code>flowcontrol none</code>	Sets flow control to none.
<code>flowcontrol software</code>	Sets flow control to software.
<code>no clear line counters</code>	Restores the serial counters to the last aggregate value.
<code>line n</code>	Displays the Line <i>n</i> menu level, where <i>n</i> = 1, 2, 3, 4, and so forth (up to 32 for the EDS32PR).
<code>no command mode</code>	Disable Command mode.
<code>no command mode echo</code>	Disables the echoing of serial data at boot time.
<code>no command mode serial string</code>	Disables the Command Mode use of serial settings.
<code>no command mode signon message</code>	Removes the sign-on message displayed during Command mode.
<code>no enable rs485</code>	Uses the default RS-232 interface for the serial port.
<code>no flowcontrol</code>	Configures the EDS for no flow control.
<code>no name</code>	Removes the name of the EDS.
<code>no shutdown</code>	Enables the interface.
<code>parity even</code>	Sets the EDS's parity to even.
<code>parity none</code>	Sets the EDS's parity to none.
<code>parity odd</code>	Sets the EDS's parity to odd
<code>show</code>	Displays the EDS's settings.
<code>show command mode</code>	Shows the Command mode settings.
<code>show line</code>	Shows the line settings.
<code>show statistics</code>	Shows the line statistics.
<code>shutdown</code>	Disables the interface.
<code>speed <baud></code>	Sets the EDS network interface speed. <baud> = a value between 300 and 230400.
<code>speed custom <baud></code>	Sets the EDS 4100 speed to values between 300 and 230400.
<code>stopbits 1</code>	Sets the EDS's stop bit to 1.
<code>stopbits 2</code>	Sets the EDS's stop bit to 2.

Line Menu Command	Description
<code>tunnel n</code>	Displays the Tunnel <i>n</i> menu level, where <i>n</i> = 1, 2, 3, 4, and so forth (up to 32 for the EDS32PR).
<code>write</code>	Stores and applies the current configuration into permanent memory.
<code>xoff <character definition></code>	Sets the XOFF character. <character definition> = new XOFF character.
<code>xon <character definition></code>	Sets the XON character. <character definition> = new XON character.

SSH Menu

The following configurable parameters reside in the SSH configuration menus.

SSH Menu Command	Description
<code>client server <server></code>	Sets the client server RSA or DSA keys. <server> = name of the client server.
<code>client server <server> <key></code>	Sets Client Server RSA or DSA key.

SSH Menu Command	Description
<code>client user <user> <command></code>	Sets the client user, command, and RSA or DSA keys.
<code>client user <user> <password> <command></code>	Sets the client user, password, command, and RSA or DSA keys (optional). <user> = client username. <password> = password associated with the username. <command> = command to execute on the remote machine.
<code>client user <user> <password> <command> <public> <private></code>	Sets the client user, password, command, and RSA or DSA keys. <user> = username to be set. <password> = password associated with username. <command> = command to be set. <public> = RSA key. <private> = DSA key.
<code>client user <user> generate dsa 1024</code>	Generates DSA public and private keys. <user> = username.
<code>client user <user> generate dsa 512</code>	Generates DSA public and private keys. <user> = username.
<code>client user <user> generate dsa 768</code>	Generates DSA public and private keys. <user> = username.
<code>client user <user> generate rsa 1024</code>	Generates RSA public and private keys. <user> = username.
<code>client user <user> generate rsa 512</code>	Generates RSA public and private keys. <user> = username.
<code>client user <user> generate rsa 768</code>	Generates RSA public and private keys. <user> = username.
<code>clrscrn</code>	Clears the screen.
<code>exit</code>	Exits the SSH menu and return to the Enable menu.
<code>host</code>	Sets the RSA or DSA public (or private) keys.
<code>host <key></code>	Sets the RSA or DSA public (or private) key. <key> = RSA or DSA key to be set.

SSH Menu Command	Description
<code>host <public> <private></code>	Sets RSA or DSA public and private keys. <public> = public key to be set. <private> = private key to be set.
<code>host generate dsa 1024</code>	Generates DSA public and private keys.
<code>host generate dsa 512</code>	Generates DSA public and private keys.
<code>host generate dsa 768</code>	Generates DSA public and private keys.
<code>host generate rsa 1024</code>	Generates RSA public and private keys.
<code>host generate rsa 512</code>	Generates RSA public and private keys.
<code>host generate dsa 768</code>	Generates DSA public and private keys.
<code>host user <user> <password></code>	Sets the host username and password. <user> = username to be set. <password> = password associated with username.
<code>host user <user> <password><key></code>	Sets the host username, password, and key. <user> = username to be set. <password> = password associated with username. <key> = key to be set.
<code>host user <user> <password> <public> <private></code>	Sets the host username, password, public keys, and private keys. <user> = username to be set. <password> = password associated with username. <public> = public key to be set. <private> = private key to be set.
<code>no client server <server></code>	Removes the client server. <server> = name of client server to be removed.
<code>no client server <server> dsa</code>	Removes the client server DSA key. <server> = name of client server whose DSA key is to be removed.
<code>no client server <server> rsa</code>	Removes the client server RSA key. <server> = name of client server whose RSA key is to be removed.
<code>no client user <user></code>	Removes the client user. <user> = name of client user to be removed.

SSH Menu Command	Description
no client user <user> dsa	Removes the client user DSA key. <user> = name of client user whose DSA key is to be removed.
no client user <user> rsa	Removes the client user RSA key. <user> = name of client user whose RSA key is to be removed.
no host dsa	Removes DSA public and private keys.
no host rsa	Removes RSA public and private keys.
no host user <user>	Removes a host user. <user> name of host user to be removed.
show	Displays SSH settings.
show client server <server>	Displays client server RSA and DSA keys. <server> = IP address of server whose RSA and DSA keys are to be shown.
show client user <user>	Displays information about a client user. <user> = username.
show host dsa	Displays the full DSA public key.
show host rsa	Displays the full RSA public key.
show host user <user>	Displays information for a host user. <user> = username.
write	Stores and applies current configuration into permanent memory.

SSL Menu

The following configurable parameters reside in the SSL configuration menus.

SSL Menu Command	Description
clrscrn	Clears the screen.
exit	Exits the SSL menu and return to the Enable menu.

SSL Menu Command	Description
<code>no ssl</code>	Removes the SSL certificate.
<code>show history</code>	Displays previously-entered commands.
<code>show ssl</code>	Displays the SSL certificate information.
<code>ssl</code>	Adds a SSL certificate and private key.
<code>ssl <certificate> <private></code>	Adds a SSL certificate and private key. <certificate> = certificate to be added. <private> = private key associated with certificate.
<code>ssl generate</code>	Generates a new self-signed SSL certificate.
<code>write</code>	Stores and applies current configuration into permanent memory.

Tunnel Menu

The following configurable parameters reside in the Tunnel configuration menus.

Tunnel Menu Command	Description
<code>accept aes decryption key <string></code>	Sets the AES decryption key using ASCII format. <string> = AES decryption key to be set.
<code>accept aes decryption key binary <string></code>	Sets the AES decryption key using binary format. <string> = AES decryption key to be set.
<code>accept aes encryption key <string></code>	Sets the AES encryption key using ASCII format. <string> = AES encryption key to be set.
<code>accept aes encryption key binary <string></code>	Sets the AES encryption key using binary format. <string> = AES encryption key to be set.
<code>accept always</code>	Enables accept mode.
<code>accept any character</code>	Enables accept mode when a character is received.
<code>accept block network</code>	Blocks the tunneling of network data.
<code>accept block serial</code>	Blocks the tunneling of serial data.
<code>accept flush serial data</code>	Flushes the serial data buffer upon a connection.

Tunnel Menu Command	Description
<code>accept keep alive</code> <code><milliseconds></code>	Enables TCP keepalives and sets the timer in milliseconds. <code><milliseconds></code> = timer value, in milliseconds.
<code>accept port <number></code>	Sets a specific port to use as the local port. <code><port></code> = number of port to be used as the local port.
<code>accept protocol ssh</code>	Uses SSH for accept mode.
<code>accept protocol tcp</code>	Uses TCP for accept mode.
<code>accept protocol tcp aes</code>	Uses AES over TCP for accept mode.
<code>accept protocol telnet</code>	Use Telnet (IAC) for accept mode.
<code>accept start character</code>	Enables accept mode when the start character is received.
<code>clear accept counters</code>	Sets the accept counters to zero.
<code>clear aggregate counters</code>	Sets the aggregate counters to zero.
<code>clear all counters</code>	Sets the tunnel counters to zero.
<code>clear connect counters</code>	Sets the connect counters to zero.
<code>clrscrn</code>	Clears the screen.
<code>connect aes decryption</code> <code>key <string></code>	Sets the AES decryption key using ASCII format. <code><string></code> = AES decryption key to be set.
<code>connect aes decryption</code> <code>key binary <string></code>	Sets the AES decryption key using binary format. <code><string></code> = AES decryption key to be set.
<code>connect aes encryption</code> <code>key <string></code>	Sets the AES encryption key using ASCII format. <code><string></code> = AES encryption key to be set.
<code>connect aes encryption</code> <code>key binary <string></code>	Sets the AES encryption key using binary format. <code><string></code> = AES encryption key to be set.
<code>connect always</code>	Enables connect mode.
<code>connect any character</code>	Enable connect mode when a character is received.
<code>connect block network</code>	Blocks the tunneling of serial data.
<code>connect dsr active</code>	Enables connect mode if the Data Set Ready (DSR) signal is asserted.
<code>connect flush serial data</code>	Flushes the serial data buffer on a connection.

Tunnel Menu Command	Description
connect keep alive <number>	Enables TCP keepalives and the sets timer in milliseconds. <number> = number of milliseconds to which the timer is set.
connect modem control active	Enable Connect mode when the modem control pin is set to asserted.
connect modem emulation	Enables modem emulation.
connect port <number>	Sets the specific port to use as the local port. <number> = number of the port to be used as the local port.
connect protocol ssh	Uses SSH for connect mode.
connect protocol tcp	Uses TCP for connect mode.
connect protocol tcp aes	Uses AES over TCP for connect mode.
connect protocol udp	Uses UDP for connect mode.
connect protocol udp aes	Uses AES over UDP for connect mode.
connect reconnect timer <milliseconds>	Sets the reconnect time value in milliseconds. <milliseconds> = number of milliseconds.
connect remote <host>	Sets the remote address in which to connect. <host> = host IP address.
connect remote port <number>	Sets remote port <number> = port number of remote port.
connect ssh username <string>	Sets the SSH user information. <string> = SSH user information.
connect start character	Enables connect mode on reception of the start character.
disconnect dsr inactive	Enables disconnect mode to disconnect if DSR not asserted.
disconnect flush serial data	Flushes serial data buffer upon disconnection.

Tunnel Menu Command	Description
<code>disconnect stop character</code>	Enables disconnect mode to disconnect when a stop character is received.
<code>disconnect timeout</code>	Enables disconnect mode to disconnect on a timeout.
<code>disconnect timeout <number></code>	Sets disconnect mode timeout in milliseconds. <number> = disconnect mode timeout value, in milliseconds.
<code>echo start character</code>	Enables forwarding (tunneling) of the start character.
<code>echo stop character</code>	Enables forwarding (tunneling) of stop-character.
<code>exit</code>	Exits the Tunnel menu and returns to the Enable menu.
<code>kill accept connection</code>	Kills the active accept mode connection.
<code>kill connect connection</code>	Kills the active connect mode connection.
<code>line n</code>	Displays the Line <i>n</i> menu level, where <i>n</i> = 1, 2, 3, 4, and so forth (up to 32 for the EDS32PR).
<code>modem connect string <string></code>	Adds to the connect string in modem emulation. <string> = connect string.
<code>modem echo commands</code>	Echoes modem commands.
<code>modem echo pluses</code>	Echoes the +++ characters when entering modem Command mode.
<code>modem error unknown commands</code>	Returns an error upon unknown AT commands.
<code>modem numeric response codes</code>	Uses numeric response codes.
<code>modem text response codes</code>	Uses text response codes.
<code>modem verbose</code>	Uses verbose status codes.
<code>no accept</code>	Disables accept mode.
<code>no accept aes decryption key</code>	Removes the AES decryption key.
<code>no accept aes key encrypt</code>	Removes the AES encryption key.
<code>no accept block network</code>	Forwards (tunnel) network data.
<code>no accept block serial</code>	Forwards (tunnel) serial data.

Tunnel Menu Command	Description
<code>no accept flush serial data</code>	Do not flush serial data buffer on connection.
<code>no accept keep alive</code>	Disables TCP keepalives.
<code>no accept port</code>	Uses a random port number as the local port.
<code>no clear accept counters</code>	Unzeros the accept counters.
<code>no clear aggregate counters</code>	Unzeros the aggregate counters.
<code>no clear all counters</code>	Unzeros all tunnel counters.
<code>no clear connect counters</code>	Unzeros connect counters.
<code>no connect</code>	Disables connect mode.
<code>no connect aes decryption key</code>	Removes the AES decryption key.
<code>no connect aes encryption key</code>	Removes the AES encryption key.
<code>no connect block network</code>	Forwards (tunnel) network data.
<code>no connect block serial</code>	Forwards (tunnel) serial data.
<code>no connect flush serial data</code>	Do not flush serial data buffer on connection.
<code>no connect keep alive</code>	Disables TCP keepalives.
<code>no connect port</code>	Uses a random port number as the local port.
<code>no connect remote address</code>	Removes a remote address to connect to.
<code>no connect remote port</code>	Remove remote port to connect to.
<code>no connect ssh username</code>	No SSH user is specified.
<code>no disconnect</code>	Disables disconnect mode.
<code>no disconnect flush serial data</code>	Do not flush serial data buffer on disconnection.
<code>no echo start character</code>	Disables forwarding (tunneling) of start-character.
<code>no echo stop character</code>	Disables forwarding (tunneling) of stop-character.
<code>no modem connect string</code>	Removes optional CONNECT string information.
<code>no modem echo commands</code>	Does not echo modem commands.

Tunnel Menu Command	Description
no modem echo pluses	Do not echo the +++ characters when entering modem command mode.
no modem verbose	Uses decimal status codes.
no packing mode	Disables packing mode.
no packing send character	Removes the send character.
no packing trailing character	Removes the trailing character.
no serial buffer size	Sets buffers used in tunneling of data to the default.
no serial wait for read timeout	Disables waiting for read timeout before returning serial data.
no start character	Removes the start character.
no stop character	Removes the stop character.
packing mode send character	Enables packing mode to pack data and transmit upon the send character.
packing mode timeout	Enables packing mode to pack data and transmit using a timeout.
packing send character <i><string></i>	Sets the send character (string format: C, HEX: 0x##, Decimal: ###). <i><string></i> = send character.
packing threshold <i><bytes></i>	Sets the threshold (byte count).
packing timeout <i><milliseconds></i>	Sets the timeout value in milliseconds. <i><milliseconds></i> = timeout value, in milliseconds.
packing trailing character <i><string></i>	Sets the trailing character. <i><string></i> = trailing character.
serial buffer size <i><bytes></i>	Sets the size of the buffers to using in tunneling of data. <i><bytes></i> = size of buffers, in bytes.
serial read timeout <i><milliseconds></i>	Sets the time to wait for serial data. <i><milliseconds></i> = wait time for serial data, in milliseconds.
serial wait for read timeout <i><milliseconds></i>	Makes tunneling wait for read timeout before returning serial data. <i><milliseconds></i> = read timeout value, in milliseconds.

Tunnel Menu Command	Description
show	Displays tunneling configuration.
show history	Displays previously entered commands.
show statistics	Show connection statistics.
start character <string>	Sets the start character (string format: C, HEX: 0x##, Decimal: ###).
stop character <string>	Sets the stop- character (string format: C, HEX: 0x##, Decimal: ###).
tunnel <i>n</i>	Displays the Tunnel <i>n</i> menu option, where <i>n</i> = 1, 2, 3, 4, and so forth (up to 32 for the EDS32PR).
write	Stores and applies current configuration into permanent memory.

4: Configuration Using XML

The EDS provides an Extensible Markup Language (XML) interface that can be used to configure EDS devices. Every configuration setting that can be issued from the EDS Web Manager or Command mode can also be specified using XML.

Using the XML interface, you can import and export EDS configuration settings as XML configuration records (XCRs) using the CLI, filesystem, Web browser, or FTP. This simplifies the task of configuring multiple EDS devices. The XCR being imported or exported can contain many configuration settings or just a few. For example, it might change all of the configurable parameters for an EDS, or it may only change the baud rate for a single serial line. In this way, using the XML interface makes it straightforward to change the configuration for EDS devices.

XML Configuration Record Schema

An XML schema is a description of a type of XML document, expressed in terms of constraints on the structure and content of documents of that type, above and beyond the basic syntax constraints imposed by XML itself. An XML schema provides a view of the document type at a high level of abstraction.

XML Configuration Records (XCRs) are exported using the following DTD:

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

The EDS's schema is structured as follows.

The XML document element is known as a <configrecord>. This is the root element and can take a "version" attribute.

A <configrecord> must have one or more <configgroup> elements. The configuration group can take "name" and "instance" attributes.

Note: The items in the <config group> are the groups listed in the Web Manager groups. See the User Guide for more information.

Each configuration group must have one or more <configitem> element. The configuration item is a specific group of configurable parameters relevant to the parent group. It accepts the “name” attribute.

A <configitem> must have at least one <value>. This element specifies the actual value of the configuration parameter. It accepts the “name” attribute.

Note: In general, an empty <value> clears the value to its default setting. Exceptions are passwords and SSH/SSL certificates.

A <value> element contains the configuration value that gets parsed by the EDS and may take a “name” attribute.

Attributes

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

Quick Syntax Tour for XCRs

Figure 4-1 shows a simple XML example.

Figure 4-1. Simple XML Group Example

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

The first line:

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

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

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

- ◆ An element typically consists of two tags, a “start tag” and an “end tag,” possibly surrounding text and other elements.
 - The start tag consists of a name surrounded by angle brackets, like <configrecord>.
 - The end tag consists of the same name surrounded by angle brackets, but with a forward slash preceding the name, like </configrecord>.

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

In addition to content, an element can contain attributes — name-value pairs included in the start tag after the element name. Attribute values must always be quoted, using single or double quotes. Each attribute name should appear only once in an element.

The Evolution OS™ uses these attributes to differentiate and group configuration settings.

Records, Groups, Items, and Values

A group is a logical grouping of config parameters and must contain one or more item elements. It takes the name and may take an instance.

- ◆ A name 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 identifies which of several instances is being addressed. It is always quoted. For example, the serial port name might have the instance "1" to indicate serial port 1 or "2" to specify serial port 2.

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

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

The following figures show color-coded examples of XML pages that use records, groups, items, and values.

Figure 4-2. XML Group Example

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

Figure 4-3. XML Example with Multiple Named Values

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

Figure 4-4. XML Example with Multiple Items

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

Figure 4-5. XML Example with Multiple Groups

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

Importing and Exporting an XML Configuration File

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

- ◆ Filesystem — see *File System Browser Page* in the User Guide.
- ◆ CLI — an XML configuration file can be imported or exported during a Telnet, SSH, or serial line session. This can be done on any level, including the root, by pasting (or “capturing”) the XML file into a CLI session. Special tags allow for providing root and enable level passwords (see *Including Passwords in the XML File* on page 49).
- ◆ Web browser — using the Web Manager interface. See *XML Status Record: Export System Status Page* in the User Guide.
- ◆ FTP — to export a file, execute a get on the file eds4100.xml. To import a file, execute a put on the file eds4100.xml. When you execute a get or put with this XML file, the file is intercepted by the EDS and acted upon, without being placed on the filesystem. See *FTP Page* in the User Guide.

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

Best Practices

Testing the XML Configuration File

The group name `<processmethod>` and item name `<method>` allow the XML configuration file to be tested for accuracy before processing the file. During testing, the file is checked for configuration errors, such as an incorrect baud rate entry for a serial port. When you use `<processmethod>` and `<method>`, you can indicate how the EDS behaves if it finds configuration errors during testing:

- ◆ If you select the “pair” value, all valid commands are processed and any configuration errors in the XML file are ignored.
- ◆ If you select the “group” value, an error found during testing stops the processing and no commands are executed. This is the default.

Note: `<processmethod>` only deals with configuration errors. Any syntax errors in the XML configuration file that prevent the file from being parsed, such as a missing angle bracket or delimiter, cause the EDS to reject the entire configuration file. For security reasons, passwords, private keys, and certificates are not imported.

Importing and Exporting Partial Configurations

You can import or export an entire XCR, or just a portion of it, by specifying the group and/or group instances. Import and export operations are performed from the local filesystem and require a file on the local filesystem.

The following syntaxes can be used to import configurations:

```
xcr import <file>
```

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

These lines import all groups specified in the XML config record named in `<file>`. Any filename is valid, and the file name and extension are not important. However, the file name `eds4100.xcr` is not acceptable, since performing a get on that name produces the current configuration and does not get anything from the filesystem.

In the second example:

- ◆ 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.

The following syntaxes can be used to export configurations:

```
xcr export <file>
```

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

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

The following example exports only the tunnel 1 settings to the file "tunnel_1.xcr" on the EDS filesystem:

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

The following example exports only tunnel settings for all ports to the file "tunnel_all.xcr" on the EDS 4100 filesystem.:

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

The following example imports only the settings for line 4 from a complete XCR named "factory_config.xcr" on the EDS filesystem:

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

The following example imports only line settings for all ports from a configuration record on the EDS 4100 filesystem named "foobar.xcr":

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

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

```
xcr import blah.xcr "tunnel:1, line:4"
```

The following example imports settings for all tunnel ports and all serial line ports (tunnels 1 - 4 and lines 1 - 4 only) from a file named xcr_file:

```
xcr import xcr_file "tunnel, line"
```

The following example exports only tunnel port 1 settings, and serial line 4 settings to a file named tunnel_config_t1_l4.xcr on the EDS 4100 filesystem.

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

The following example exports settings for all tunnel ports and all serial line ports (tunnels 1 - 4 and lines 1 - 4 only) to the file tunnel_config.xcr on the EDS 4100 filesystem:

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

Note: If you edit an XCR with Microsoft Word, you will not be able to import the file, even if you save the document as Plain Text (.txt) or XML Document (.xml) file.

Including Passwords in the XML File

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

The <level passwords> group name is used with the <passwords> item name and "enable" value to specify the passwords to use if an enable function is password protected (see page 54). The password value is clear text; to protect the password and all other data on that channel, establish an SSH connection to the EDS.

Special XCR Groups

The following XCR groups are used to delete settings, control how the XML is processed, or control the device. They are not used for configuration purposes. For example, the Reboot group, which causes the EDS to reboot, is not a configurable setting that can be exported. However, it may be added to an XML configuration record manually to ensure the EDS reboots after applying new configuration settings.

For more information about these XCR groups, refer to the appropriate page.

- ◆ arp entry — see page 51.
- ◆ deleting http authentication for a user or uri — see user delete and uri delete on page 52.
- ◆ deleting ip filters — see filter delete on page 53.
- ◆ deleting ssh configurations — see ssh client on page 56.
- ◆ deleting ssl config — see ssl delete on page 57.
- ◆ exit cli — see page 52.
- ◆ level passwords — see page 54.
- ◆ process method — see page 55.
- ◆ reboot — see page 55.
- ◆ restore factory defaults — see page 55.

XML Groups

Table 4-1 lists the EDS XML import and export groups in alphabetical order. This table also indicates whether the group can be imported and/or exported.

Table 4-1. EDS Import and Export Groups

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
<i>arp</i>	<i>arp timeout</i>			<i>Import and Export</i>	
	<i>arp entry</i>	<i>ip address</i>		<i>Import</i>	<i>Add a dynamic entry to the ARP table.</i>
		<i>mac address</i>		<i>Import</i>	
	<i>arp delete</i>			<i>Import</i>	<i>Remove an entry from the ARP table. Specify the entry by its IP address.</i>
<i>command mode password</i>	<i>system</i>			<i>Import and Export</i>	<i>Set the password for the system (root) level of the CLI.</i>
	<i>enable</i>			<i>Import and Export</i>	<i>Sets the password for the enable level of the CLI.</i>
<i>device</i>	<i>cpu speed</i>			<i>Import and Export</i>	
	<i>short name</i>			<i>Import and Export</i>	
	<i>long name</i>			<i>Import and Export</i>	
<i>email</i>	<i>to</i>			<i>Import and Export</i>	<i>Multiple to addresses may be separated with semicolons or input as separate "to" items.</i>
	<i>from</i>			<i>Import and Export</i>	
	<i>reply to</i>			<i>Import and Export</i>	
	<i>cc</i>			<i>Import and Export</i>	<i>Multiple cc address may be separated with semicolons or input as separate "cc" items.</i>
	<i>subject</i>			<i>Import and Export</i>	
	<i>message file</i>			<i>Import and Export</i>	
	<i>local port</i>			<i>Import and Export</i>	
	<i>server port</i>			<i>Import and Export</i>	

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information	
	<i>priority</i>		<i>Very Low</i>	<i>Import and Export</i>		
			<i>Low</i>	<i>Import and Export</i>		
			<i>Normal</i>	<i>Import and Export</i>		
			<i>High</i>	<i>Import and Export</i>		
			<i>Urgent</i>	<i>Import and Export</i>		
	<i>overriding domain</i>			<i>Import and Export</i>		
<i>ethernet</i>	<i>auto negotiate</i>		<i>enable</i>	<i>Import and Export</i>	Enable = auto-negotiation determines the link speed and duplex. Not set to enable = speed and duplex items are exported.	
			<i>disable</i>	<i>Import and Export</i>		
<i>exit cli</i>	<i>state</i>		<i>enable</i>	<i>Import</i>		
			<i>disable</i>	<i>Import</i>		
<i>firmware</i>	<i>version</i>			<i>Export</i>		
<i>ftp server</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>		
			<i>disable</i>	<i>Import and Export</i>		
	<i>Admin username</i>			<i>Import and Export</i>		
	<i>Admin password</i>			<i>Import and Export</i>		
<i>http authentication uri</i>	<i>realm</i>			<i>Import and Export</i>	Attribute of "instance" specifies the uri.	
	<i>type</i>			<i>Import and Export</i>		
	<i>user</i>	<i>username</i>			<i>Import and Export</i>	
		<i>password</i>			<i>Import and Export</i>	
	<i>user delete</i>			<i>Import</i>	Delete the HTTP Authentication URI user. The value element is used to specify the user for deletion.	
	<i>uri delete</i>			<i>Import</i>	Delete the HTTP Authentication URI. The value of the element is used to specify the URI for deletion.	

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
<i>http server</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>port</i>			<i>Import and Export</i>	
	<i>secure port</i>			<i>Import and Export</i>	
	<i>max timeout</i>			<i>Import and Export</i>	
	<i>max bytes</i>			<i>Import and Export</i>	
	<i>logging state</i>			<i>Import and Export</i>	
<i>icmp</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
<i>interface</i>	<i>bootp state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>dhcp state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>dhcp client id</i>			<i>Import and Export</i>	<i>Set the identity of the client device.</i>
	<i>mac address</i>			<i>Import and Export</i>	<i>Specify the MAC address of the Ethernet card.</i>
	<i>domain</i>			<i>Import and Export</i>	
	<i>hostname</i>			<i>Import and Export</i>	
	<i>ip address</i>			<i>Import and Export</i>	
	<i>network mask</i>			<i>Import and Export</i>	
	<i>default gateway</i>			<i>Import and Export</i>	
	<i>primary dns</i>			<i>Import and Export</i>	
	<i>secondary dns</i>			<i>Import and Export</i>	
<i>ip filter</i>	<i>filter entry</i>	<i>ip address</i>		<i>Import and Export</i>	<i>Delete an IP filter entry.</i>
		<i>net mask</i>		<i>Import and Export</i>	
	<i>filter delete</i>	<i>ip address</i>		<i>Import</i>	
		<i>net mask</i>		<i>Import</i>	

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
<i>level passwords</i>	<i>passwords</i>	<i>system</i>		<i>Import</i>	<i>This group specifies the passwords to use when importing an XCR using the CLI capture feature. The system value specifies the root password used if the root level is password protected. Passwords are not required if the CLI is already logged in to the system level.</i>
		<i>enable</i>		<i>Import</i>	<i>The enable value specifies the enable level password to use if the enable level is password-protected. The password is not needed if the CLI is already logged in to the enable level.</i>
<i>line</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>baud rate</i>			<i>Import and Export</i>	<i>Any value from 300 to 230400.</i>
	<i>data bits</i>		<i>7</i>	<i>Import and Export</i>	
			<i>8</i>	<i>Import and Export</i>	
	<i>parity</i>		<i>none</i>	<i>Import and Export</i>	
			<i>even</i>	<i>Import and Export</i>	
			<i>odd</i>	<i>Import and Export</i>	
	<i>stop bits</i>		<i>1</i>	<i>Import and Export</i>	
			<i>2</i>	<i>Import and Export</i>	
	<i>flow control</i>		<i>hardware</i>	<i>Import and Export</i>	
			<i>software</i>	<i>Import and Export</i>	
		<i>none</i>	<i>Import and Export</i>		

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
	<i>xon char</i>			<i>Import and Export</i>	<i>Set the x-on character. Enter as a hexadecimal byte.</i>
	<i>xoff char</i>			<i>Import and Export</i>	<i>Set the x-off character. Enter as a hexadecimal byte.</i>
<i>process method</i>	<i>method</i>		<i>pair</i>	<i>Import</i>	<i>Process the test/set functions as pairs. For each XML item, process the test function then the set function (if the test passed). If a test fails, continue by processing the next item's test function.</i>
			<i>group</i>	<i>Import</i>	<i>Process the test/set functions as a group of tests, then as a group of sets. For each XML Item, process all test functions (before processing any set functions). Then process all the set functions. If a test functions fails, immediately abort.</i>
<i>query port</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
<i>reboot</i>	<i>state</i>		<i>enable</i>	<i>Import</i>	<i>Force the EDS to reboot after processing.</i>
			<i>disable</i>	<i>Import</i>	
<i>restore factory defaults</i>	<i>state</i>		<i>enable</i>	<i>Import</i>	<i>Before processing, reset the EDS to factory defaults.</i>
			<i>disable</i>	<i>Import</i>	
<i>rss</i>	<i>feed</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>persist</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
	<i>max entries</i>			<i>Import and Export</i>	
<i>serial command mode</i>	<i>mode</i>		<i>disable</i>	<i>Import and Export</i>	
			<i>always</i>	<i>Import and Export</i>	
			<i>serial string</i>	<i>Import and Export</i>	
	<i>echo serial string</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>serial string</i>			<i>Import and Export</i>	
	<i>signon message</i>			<i>Import and Export</i>	
	<i>wait time</i>			<i>Import and Export</i>	
<i>snmp</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>system name</i>			<i>Import and Export</i>	
	<i>system contact</i>			<i>Import and Export</i>	
	<i>system location</i>			<i>Import and Export</i>	
	<i>traps</i>	<i>state</i>	<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
		<i>primary destination</i>			<i>Import and Export</i>
	<i>secondary destination</i>			<i>Import and Export</i>	
<i>ssh client</i>	<i>known host</i>			<i>Import and Export</i>	
		<i>server</i>		<i>Import and Export</i>	
		<i>public rsa key</i>		<i>Import and Export</i>	
	<i>client users</i>	<i>username</i>		<i>Import and Export</i>	
		<i>password</i>		<i>Import and Export</i>	
		<i>remote command</i>		<i>Import and Export</i>	
		<i>public rsa key</i>		<i>Import and Export</i>	
		<i>private rsa key</i>		<i>Import and Export</i>	
		<i>public dsa key</i>		<i>Import and Export</i>	
<i>private dsa key</i>		<i>Import and Export</i>			

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
	<i>known host delete</i>			<i>Import and Export</i>	<i>Specify the server host for deletion.</i>
	<i>client users delete</i>			<i>Import and Export</i>	<i>Specify the username for deletion.</i>
	<i>client rsa key delete</i>			<i>Import and Export</i>	<i>Specify the username.</i>
	<i>client dsa key delete</i>			<i>Import and Export</i>	<i>Specify the username.</i>
<i>ssh command mode</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>port</i>			<i>Import and Export</i>	
<i>ssh server</i>	<i>host rsa keys</i>	<i>public key</i>		<i>Import and Export</i>	
		<i>private key</i>		<i>Import and Export</i>	
	<i>authorized users</i>	<i>username</i>		<i>Import and Export</i>	
		<i>password</i>		<i>Import and Export</i>	
		<i>public rsa key</i>		<i>Import and Export</i>	
		<i>public dsa key</i>		<i>Import and Export</i>	
	<i>authorized users delete</i>			<i>Import and Export</i>	<i>Delete an SSH authorized user.</i>
	<i>host keys delete</i>			<i>Import and Export</i>	<i>Delete an SSH host key.</i>
<i>ssl</i>	<i>certificate</i>	<i>certificate</i>		<i>Import and Export</i>	<i>Enter the text of the certificate.</i>
		<i>private key</i>		<i>Import and Export</i>	<i>Enter the text of the private key.</i>
	<i>delete</i>		<i>certificate</i>	<i>Import and Export</i>	<i>Deletes the current SSL certificate.</i>
<i>tcp</i>	<i>resets</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
<i>telnet command mode</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>port</i>			<i>Import and Export</i>	
<i>ftpt server</i>	<i>state</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>allow file creation</i>			<i>Import and Export</i>	
<i>tunnel accept</i>	<i>accept mode</i>		<i>enable</i>	<i>Import and Export</i>	

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
			<i>disable</i>	<i>Import and Export</i>	
			<i>any character</i>	<i>Import and Export</i>	
			<i>start character</i>	<i>Import and Export</i>	
			<i>modem control asserted</i>	<i>Import and Export</i>	
			<i>modem</i>	<i>Import and Export</i>	
	<i>local port</i>			<i>Import and Export</i>	
	<i>protocol</i>		<i>tcp</i>	<i>Import and Export</i>	
			<i>tcp aes</i>	<i>Import and Export</i>	
			<i>ssh</i>	<i>Import and Export</i>	
			<i>telnet</i>	<i>Import and Export</i>	
	<i>flush serial</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>block serial</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>block network</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>tcp keep alive</i>			<i>Import and Export</i>	
<i>tunnel aes accept</i>	<i>encrypt key</i>			<i>Import and Export</i>	
	<i>decrypt key</i>			<i>Import and Export</i>	
<i>tunnel aes connect</i>	<i>encrypt key</i>			<i>Import and Export</i>	
	<i>decrypt key</i>			<i>Import and Export</i>	
<i>tunnel connect</i>	<i>connect mode</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
			<i>any character</i>	<i>Import and Export</i>	
			<i>start character</i>	<i>Import and Export</i>	
			<i>modem control asserted</i>	<i>Import and Export</i>	
			<i>modem</i>	<i>Import and Export</i>	
	<i>local port</i>			<i>Import and Export</i>	

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information	
	<i>remote address</i>			<i>Import and Export</i>		
	<i>remote port</i>			<i>Import and Export</i>		
	<i>protocol</i>		<i>tcp</i>	<i>Import and Export</i>		
			<i>udp</i>	<i>Import and Export</i>		
			<i>ssh</i>	<i>Import and Export</i>		
			<i>tcp aes</i>	<i>Import and Export</i>		
			<i>udp aes</i>	<i>Import and Export</i>		
	<i>reconnect time</i>			<i>Import and Export</i>		
	<i>flush serial</i>		<i>enable</i>	<i>Import and Export</i>		
			<i>disable</i>	<i>Import and Export</i>		
	<i>ssh username</i>			<i>Import and Export</i>		
	<i>block serial</i>		<i>enable</i>	<i>Import and Export</i>		
			<i>disable</i>	<i>Import and Export</i>		
	<i>block network</i>		<i>enable</i>	<i>Import and Export</i>		
			<i>disable</i>	<i>Import and Export</i>		
	<i>tcp keep alive</i>			<i>Import and Export</i>		
<i>tunnel disconnect</i>	<i>disconnect mode</i>		<i>disable</i>	<i>Import and Export</i>		
			<i>timeout</i>	<i>Import and Export</i>		
			<i>stop character</i>	<i>Import and Export</i>		
			<i>modem control not asserted</i>	<i>Import and Export</i>		
	<i>timeout</i>				<i>Import and Export</i>	
		<i>flush serial</i>	<i>enable</i>	<i>Import and Export</i>		
			<i>disable</i>	<i>Import and Export</i>		
<i>tunnel modem</i>	<i>echo pluses</i>		<i>enable</i>	<i>Import and Export</i>		
			<i>disable</i>	<i>Import and Export</i>		
	<i>echo commands</i>		<i>enable</i>	<i>Import and Export</i>		
			<i>disable</i>	<i>Import and Export</i>		
	<i>verbose response</i>		<i>enable</i>	<i>Import and Export</i>		

Group Name	Item Name	Value Name	Value	Import/Export	Additional Information
			<i>disable</i>	<i>Import and Export</i>	
	<i>response type</i>		<i>text</i>	<i>Import and Export</i>	
			<i>numeric</i>	<i>Import and Export</i>	
	<i>error unknown commands</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
	<i>connect string</i>			<i>Import and Export</i>	
<i>tunnel packing</i>	<i>packing mode</i>		<i>disable</i>	<i>Import and Export</i>	
			<i>timeout</i>	<i>Import and Export</i>	
			<i>send character</i>	<i>Import and Export</i>	
		<i>timeout</i>		<i>Import and Export</i>	
		<i>threshold</i>		<i>Import and Export</i>	
		<i>send character</i>		<i>Import and Export</i>	
		<i>trailing character</i>		<i>Import and Export</i>	
<i>tunnel serial</i>	<i>buffer size</i>			<i>Import and Export</i>	
	<i>read timeout</i>			<i>Import and Export</i>	
	<i>wait read timeout</i>			<i>Import and Export</i>	
<i>tunnel start</i>	<i>start character</i>			<i>Import and Export</i>	
	<i>echo</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	
<i>tunnel stop</i>	<i>stop character</i>			<i>Import and Export</i>	
	<i>echo</i>		<i>enable</i>	<i>Import and Export</i>	
			<i>disable</i>	<i>Import and Export</i>	

XSR Groups and Items

Table 4-2 lists the supported XML Status Record (XSR) groups and items. These groups and items show the status of the device in XML form and can only be exported.

The XSR schema differs slightly from the XCR groups and items, however, in that the XSR allows groups within groups. The only current use of that is the buffer pool group, which has the following groups as sub groups:

- ◆ protocol stack
- ◆ ethernet drive
- ◆ line

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

Table 4-2. EDS XSR Groups and Items

Group Name	Item Name	Value Name	Valid Values
<i>arp</i>	<i>arp entry</i>	<i>ip address</i>	
		<i>mac address</i>	
		<i>age</i>	
		<i>type</i>	
<i>buffer pool</i>			
<i>clock</i>		<i>time</i>	
		<i>date</i>	
		<i>timezone</i>	<i>zone</i>
			<i>offset</i>
<i>device</i>	<i>product info</i>	<i>product type</i>	<i>lantronix eds4100</i>
			<i>lantronix eds8pr</i>
			<i>lantronix eds16pr</i>
			<i>lantronix eds32pr</i>
		<i>serial number</i>	
		<i>firmware version</i>	
		<i>uptime</i>	
		<i>permanent config</i>	<i>saved</i>
<i>ethernet driver</i>	<i>buffer headers</i>	<i>total</i>	
		<i>free</i>	
		<i>used</i>	
		<i>max used</i>	
	<i>cluster pool</i>	<i>cluster size</i>	
		<i>total</i>	
		<i>free</i>	
		<i>used</i>	
<i>filesystem</i>	<i>filesystem</i>	<i>size</i>	
		<i>available clean</i>	
		<i>available dirty</i>	
		<i>used total</i>	
		<i>used data</i>	
		<i>busy</i>	
	<i>entries</i>	<i>file count</i>	
		<i>directory count</i>	
		<i>system count</i>	
		<i>open count</i>	

Group Name	Item Name	Value Name	Valid Values
		<i>lock count</i>	
		<i>share count</i>	
	<i>banks</i>	<i>bank a begin</i>	
		<i>bank a end</i>	
		<i>bank a erase cycles</i>	
		<i>bank b begin</i>	
		<i>bank b end</i>	
		<i>bank b erase cycles</i>	
<i>ftp</i>	<i>status</i>		
	<i>admin username</i>		
	<i>connections</i>	<i>rejected</i>	
		<i>accepted</i>	
	<i>last client</i>	<i>ip address</i>	
<i>hardware</i>		<i>port</i>	
	<i>cpu</i>	<i>type</i>	
		<i>speed</i>	
	<i>memory</i>	<i>flash size</i>	
		<i>ram size</i>	
<i>http</i>	<i>state</i>		
	<i>ports</i>	<i>http port</i>	
		<i>https port</i>	
	<i>max timeout</i>		
	<i>logging</i>	<i>state</i>	
		<i>max entries</i>	
		<i>format</i>	
		<i>entries</i>	
		<i>bytes</i>	
<i>http log</i>	<i>totals</i>	<i>entries</i>	
		<i>bytes</i>	
<i>icmp</i>	<i>state</i>		
	<i>in</i>	<i>messages</i>	
		<i>messages detected</i>	
		<i>errors</i>	
		<i>destination unreachable</i>	
		<i>time exceeded messages</i>	
		<i>parameter problems</i>	
		<i>source quench requests</i>	
		<i>redirects</i>	
		<i>ping requests</i>	
		<i>ping replies</i>	
		<i>timestamp requests</i>	
		<i>timestamp replies</i>	
		<i>address mask requests</i>	
		<i>address mask replies</i>	
	<i>out</i>	<i>messages</i>	
		<i>messages detected</i>	
		<i>errors</i>	
		<i>destination unreachable</i>	
		<i>time exceeded messages</i>	
		<i>parameter problems</i>	
		<i>source quench requests</i>	
		<i>redirects</i>	
		<i>ping requests</i>	
		<i>ping replies</i>	
		<i>timestamp requests</i>	
		<i>timestamp replies</i>	
		<i>address mask requests</i>	

Group Name	Item Name	Value Name	Valid Values
			<i>address mask replies</i>
<i>interface</i>	<i>status</i>		
	<i>ethernet</i>	<i>ip address</i>	
		<i>mac address</i>	
	<i>phy</i>	<i>auto negotiate</i>	
		<i>speed</i>	
		<i>duplex</i>	
	<i>arp</i>	<i>encapsulation</i>	
		<i>type</i>	
		<i>timeout</i>	
	<i>mtu</i>		
	<i>transmits</i>	<i>octets</i>	
		<i>unicast</i>	
		<i>non unicast</i>	
		<i>discards</i>	
		<i>errors</i>	
		<i>broadcasts packets</i>	
		<i>multicasts packets</i>	
		<i>filtered packets</i>	
		<i>deferred</i>	
		<i>multiple retries</i>	
		<i>one retry</i>	
		<i>underflows</i>	
		<i>late collisions</i>	
		<i>retry errors</i>	
		<i>carrier lost errors</i>	
	<i>receives</i>	<i>octets</i>	
		<i>unicast</i>	
		<i>non unicast</i>	
		<i>discards</i>	
		<i>errors</i>	
		<i>broadcasts packets</i>	
		<i>multicasts packets</i>	
		<i>filtered packets</i>	
		<i>unknown protocol</i>	
		<i>framing errors</i>	
		<i>overflows</i>	
		<i>crc errors</i>	
		<i>missed frame errors</i>	
<i>ip</i>	<i>state</i>		
	<i>default ttl</i>		
	<i>forwarded</i>		
	<i>route discards</i>		
	<i>in</i>	<i>receives</i>	
		<i>header errors</i>	
		<i>address errors</i>	
		<i>unknown protocols</i>	
		<i>discarded</i>	
		<i>delivered</i>	
	<i>out</i>	<i>requests</i>	
		<i>discards</i>	
		<i>discards no routes</i>	
	<i>reassembly</i>	<i>timeout</i>	
		<i>needed</i>	
		<i>success</i>	
		<i>failures</i>	
	<i>fragments</i>	<i>needed</i>	

Group Name	Item Name	Value Name	Valid Values			
<i>ip sockets</i>	<i>ip socket</i>	<i>failure</i>				
		<i>success</i>				
		<i>protocol</i>				
		<i>rx queue</i>				
		<i>tx queue</i>				
		<i>local address</i>				
		<i>remote address</i>				
		<i>local port</i>				
		<i>remote port</i>				
		<i>state</i>				
		<i>protocol</i>				
		<i>rx queue</i>				
		<i>tx queue</i>				
		<i>local address</i>				
		<i>remote address</i>				
<i>line 1</i>	<i>buffer headers</i>	<i>total</i>				
		<i>free</i>				
		<i>used</i>				
		<i>max used</i>				
		<i>cluster pool</i>	<i>cluster size</i>			
			<i>total</i>			
			<i>free</i>			
			<i>used</i>			
			<i>max used</i>			
		<i>line 2</i>	<i>buffer headers</i>	<i>total</i>		
				<i>free</i>		
				<i>used</i>		
				<i>max used</i>		
				<i>cluster pool</i>	<i>cluster size</i>	
					<i>total</i>	
<i>free</i>						
<i>used</i>						
<i>max used</i>						
<i>line 3</i>	<i>buffer headers</i>			<i>total</i>		
				<i>free</i>		
				<i>used</i>		
				<i>max used</i>		
				<i>cluster pool</i>	<i>cluster size</i>	
					<i>total</i>	
		<i>free</i>				
		<i>used</i>				
		<i>max used</i>				
		<i>line 4</i>	<i>buffer headers</i>	<i>total</i>		
				<i>free</i>		
				<i>used</i>		
				<i>max used</i>		
				<i>max used</i>		

Group Name	Item Name	Value Name	Valid Values
	<i>cluster pool</i>	<i>cluster size</i>	
		<i>total</i>	
		<i>free</i>	
		<i>used</i>	
		<i>max used</i>	
<i>line statistics</i>	<i>receive</i>	<i>bytes</i>	
		<i>breaks</i>	
		<i>parity errors</i>	
		<i>framing errors</i>	
		<i>overrun errors</i>	
		<i>number buffers</i>	
		<i>allocated bytes</i>	
	<i>transmit</i>	<i>bytes</i>	
		<i>breaks</i>	
		<i>queued bytes</i>	
	<i>flow control</i>	<i>asserting</i>	
		<i>asserted</i>	
	<i>line levels</i>	<i>cts</i>	
		<i>rts</i>	
		<i>dsr</i>	
		<i>dtr</i>	
<i>memory</i>	<i>main heap</i>	<i>condition</i>	
		<i>total memory</i>	
		<i>available memory</i>	
		<i>fragments</i>	
		<i>allocated blocks</i>	
	<i>internal buffer</i>	<i>heap</i>	
		<i>condition</i>	
		<i>total memory</i>	
		<i>available memory</i>	
		<i>fragments</i>	
		<i>allocated blocks</i>	
<i>processes</i>	<i>process</i>	<i>pid</i>	
		<i>cpu %</i>	
		<i>stacks</i>	
		<i>thread name</i>	
<i>protocol stack</i>	<i>buffer headers</i>	<i>total</i>	
		<i>free</i>	
		<i>used</i>	
		<i>max used</i>	
	<i>cluster pool</i>	<i>cluster size</i>	
		<i>total</i>	
		<i>free</i>	
		<i>used</i>	
		<i>max used</i>	
<i>query port</i>	<i>status</i>		
	<i>last connection</i>	<i>ip address</i>	
		<i>port</i>	
	<i>in</i>	<i>discoveries</i>	
		<i>unknown queries</i>	
		<i>erroneous packets</i>	
	<i>out</i>	<i>discovery replies</i>	
		<i>errors</i>	
<i>rss</i>	<i>state</i>		
	<i>persist</i>		
	<i>max entries</i>		
	<i>url</i>		

Group Name	Item Name	Value Name	Valid Values
	<i>data</i>	<i>entries</i>	
		<i>bytes</i>	
<i>sessions</i>	<i>line</i>	<i>interface</i>	
		<i>baud</i>	
		<i>parity</i>	
		<i>data bits</i>	
		<i>stop bits</i>	
		<i>flow control</i>	
	<i>telnet</i>	<i>local port</i>	
		<i>remote ip address</i>	
		<i>remote port</i>	
		<i>duration</i>	
<i>ssh</i>	<i>state</i>		
	<i>local port</i>		
	<i>totals</i>	<i>uptime</i>	
		<i>bytes in</i>	
		<i>bytes out</i>	
<i>tcp</i>	<i>send reset</i>		
	<i>retransmission</i>	<i>algorithm</i>	
		<i>timeout minimum</i>	
		<i>timeout maximum</i>	
	<i>connections</i>	<i>maximum</i>	
		<i>open active</i>	
		<i>open passive</i>	
		<i>failed</i>	
		<i>resets</i>	
		<i>established</i>	
<i>telnet</i>	<i>state</i>		
	<i>local port</i>		
	<i>totals</i>	<i>uptime</i>	
		<i>bytes in</i>	
		<i>bytes out</i>	
	<i>last connection</i>	<i>local ip address</i>	
		<i>local port</i>	
		<i>remote ip address</i>	
		<i>remote port</i>	
<i>fttp</i>	<i>state</i>		
	<i>creation</i>		
	<i>downloaded</i>		
	<i>uploaded</i>		
	<i>not found</i>		
	<i>errors</i>	<i>read</i>	
		<i>write</i>	
		<i>unknown</i>	
	<i>last client</i>	<i>ip address</i>	
		<i>port</i>	
<i>tunnel</i>	<i>aggregate</i>	<i>completed connects</i>	
		<i>completed accepts</i>	
		<i>disconnects</i>	
		<i>dropped connects</i>	
		<i>dropped accepts</i>	
		<i>octets from serial</i>	
		<i>octets from network</i>	
		<i>connect connection time</i>	
		<i>accept connection time</i>	
		<i>connect dns address</i>	
		<i>changes</i>	

Group Name	Item Name	Value Name	Valid Values
		<i>accept dns address</i>	
		<i>invalids</i>	
	<i>current connect connections</i>	<i>local ip address</i>	
		<i>local port</i>	
		<i>remote ip address</i>	
		<i>remote port</i>	
		<i>uptime</i>	
		<i>octets from serial</i>	
		<i>octets from network</i>	
		<i>connect dns address</i>	
		<i>changes</i>	
		<i>accept dns address</i>	
		<i>invalids</i>	
	<i>current accept connections</i>	<i>local ip address</i>	
		<i>local port</i>	
		<i>remote ip address</i>	
		<i>remote port</i>	
		<i>uptime</i>	
		<i>octets from serial</i>	
		<i>octets from network</i>	
<i>udp</i>	<i>in unknown ports</i>		
	<i>in datagrams</i>		
	<i>in errors</i>		
	<i>out datagrams</i>		
<i>xsr</i>	<i>out</i>	<i>bytes</i>	
		<i>lines</i>	
		<i>elements</i>	
	<i>errors</i>		

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