LX-Series Commands Reference Guide

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Preface

This guide describes the purpose, syntax, and options of each of the LX commands.

This guide is organized as follows:

- **Chapter 1** – Describes the User commands.
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- **Chapter 3** – Describes the Configuration commands.
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Conventions

The following conventions are used throughout this guide:

- **Command execution** – Unless otherwise specified, commands are executed when you press <RETURN>.
- **Command syntax** – Where command options or command syntax are shown, keywords and commands are shown in lowercase letters.
- **Keyboard characters (keys)** – Keyboard characters are represented using left and right angle brackets (< and >). For example, the notation <CTRL> refers to the CTRL key; <A> refers to the letter A; and <RETURN> refers to the RETURN key.
- **Typographical conventions** – The following typographical conventions are used:

  `Monospace Typeface` – indicates text that can be displayed or typed at a terminal (i.e., displays, user input, messages, prompts, etc.).

  italics – are used to indicate variables in command syntax descriptions.

Using the Function Keys

The LX Command Line Interface (CLI) supports the following function keys:

- **Tab key** – Completes a partially typed command. For example, if you type the tab key after you type **show ve** at the Superuser command prompt, the `show version` command will be executed.
- **Up arrow** – Recalls the last command.
- **Ctrl-F** – Moves forward to the next session.
- **Ctrl-B** – Moves back to the previous session.
- **Ctrl-L** – Returns you to the Local Command Mode.

  NOTE: You must press the Enter key after you type **Ctrl-F**, **Ctrl-B**, or **Ctrl-L**.

Navigating the LX Command Line Interface (CLI)

The LX CLI is structured as a set of nested command modes. Each command mode is used to implement a group of related features or functions. Figure 1 (below) lists the command modes in the LX CLI.

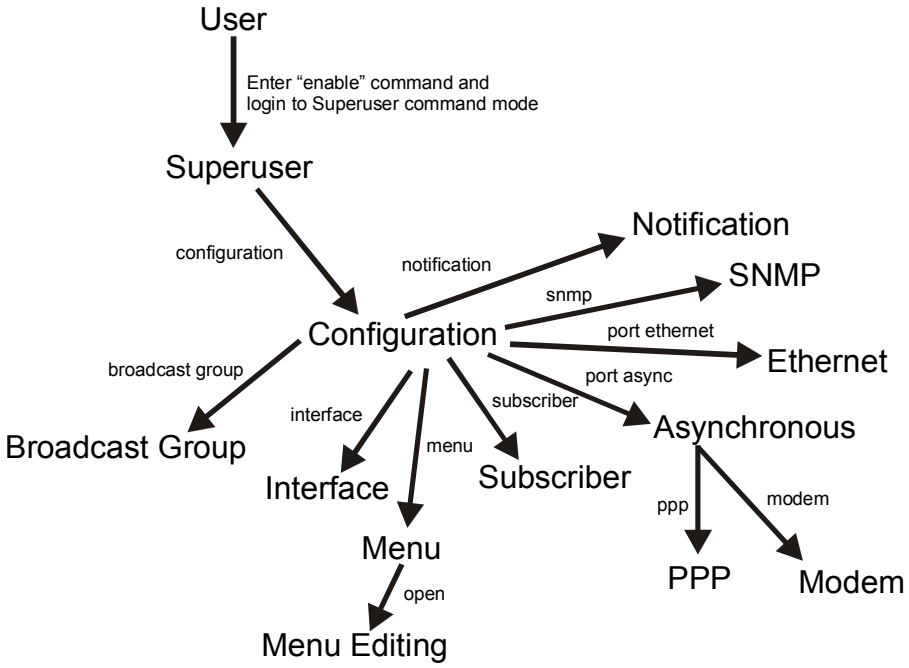

Figure 1 - LX Command Modes

Each command mode has its own command prompt (e.g., `Config:0 >>`) and its own set of commands.

Type a question mark (**?**) (or press the Tab key) at any of the LX CLI command prompts to display the commands that can be executed in the current command mode. For example, type a question mark at the `Menu :0 >>` prompt to display the commands that can be executed in the Menu command mode.

Except for the User command mode, each command mode is nested in a previous command mode. (The User command mode is the basic command mode of the LX CLI; you are in the User command mode when you log in to the LX unit.) For example, the Superuser command mode is nested in User command mode; the Configuration command mode is nested in the Superuser command mode, and so on.

To enter a nested command mode, you must enter the appropriate command from the previous command mode. For example, to enter the Configuration command mode you must enter the `configuration` command from the Superuser command mode.

You can use the `exit` command to return to the previous command mode. For example, you would enter the `exit` command in the Configuration command mode to return to the Superuser command mode.

The rest of this section describes the LX command modes and the commands that are used to access each of them.

User Command Mode

When you log on to the LX unit, you are in the User command mode. This is indicated by the User command prompt (e.g., `InReach:0 >`). The User command mode includes commands for doing the following:

- Managing your LX session and terminal.
- Pinging remote hosts.
- Connecting to remote hosts via SSH and Telnet.
- Displaying your subscriber-specific information.
- Accessing the Superuser command mode.

Refer to “User Commands” on page 33 for detailed information on the commands that you can execute in the User Command Mode.

Superuser Command Mode

The Superuser command prompt (e.g., `InReach:0 >>`) is displayed when you are in the Superuser command mode. You can access the Superuser command mode by executing the `enable` command in the User command mode (see "enable" on page 36).

In the Superuser command mode, you can perform all of the tasks that you can perform in User command mode, as well as the following:

- Manage the LX unit.
- Display global information for the LX unit.
- Access the Linux shell.
- Access the Configuration command mode.

Refer to "Superuser Commands" on page 65 for detailed information on the commands that you can execute in the Superuser Command Mode.

Configuration Command Mode

The Configuration command prompt (e.g., `Config:0 >>`) is displayed when you are in the Configuration command mode. You can access the Configuration command mode by executing the `configuration` command in the Superuser command mode (see "configuration" on page 67).

In the Configuration command mode, you can perform such tasks as the following:

- Specify the server-level configuration of the LX unit. The server-level configuration includes the Superuser password and settings for ppciboot, RADIUS, the Network Time Protocol (NTP), and all other server-level features.
- Access the Asynchronous command mode.
- Access the Ethernet command mode.
- Access the Interface command mode.

- Access the Menu command mode.
- Access the Notification command mode.
- Access the SNMP command mode.
- Access the Subscriber command mode.

Refer to "Configuration Commands" on page 159 for detailed information on the commands that you can execute in the Configuration Command Mode.

Asynchronous Command Mode

The Asynchronous command prompt (e.g., `Async 4-4:0 >>`) is displayed when you are in the Asynchronous command mode. You can access the Asynchronous command mode by executing the `port async` command in the Configuration command mode (see "port async" on page 194).

In the Asynchronous command mode, you can do the following:

- Configure asynchronous port settings such as access methods, APD settings, autobaud, autodial, flow control, and inbound and outbound authentication.
- Access the PPP command mode.
- Access the Modem command mode.

Refer to "Asynchronous Commands" on page 307 for detailed information on the commands that you can execute in the Asynchronous Command Mode.

Ethernet Command Mode

The Ethernet command prompt (e.g., `Ether 1-1:0 >>`) is displayed when you are in the Ethernet command mode. You can access the Ethernet command mode by executing the `port ethernet` command in the Configuration command mode (see "port ethernet" on page 195).

In the Ethernet command mode, you can configure Ethernet port descriptions and the duplex mode and speed of Ethernet ports.

Refer to "Ethernet Commands" on page 361 for detailed information on the commands that you can execute in the Ethernet Command Mode.

PPP Command Mode

The PPP command prompt (e.g., `PPP 4-4:0 >>`) is displayed when you are in the PPP command mode. You can access the PPP command mode by executing the `ppp` command in the Asynchronous command mode (see "ppp" on page 348).

In the PPP command mode, you can configure the Point-to-Point Protocol (PPP) for asynchronous ports. Some of the settings that you can configure include accounting, authentication, IPCP parameters, and LCP parameters.

Refer to "PPP Commands" on page 447 for detailed information on the commands that you can execute in the PPP Command Mode.

Modem Command Mode

The Modem command prompt (e.g., `Modem 4-4:0 >>`) is displayed when you are in the Modem command mode. You can access the Modem command mode by executing the `modem` command in the Asynchronous command mode (see "modem" on page 338).

In the Modem command mode, you can configure external modems for asynchronous ports. Some of the settings that you can configure include DTRWAIT, dialout, and the modem initialization string.

Refer to "Modem Commands" on page 437 for detailed information on the commands that you can execute in the Modem Command Mode.

Subscriber Command Mode

The Subscriber command prompt (e.g., `Subs_mark >>`) is displayed when you are in the Subscriber command mode. You can access the Subscriber command mode by executing the `subscriber` command in the Configuration command mode (see "subscriber" on page 247).

In the Subscriber command mode, you can provision subscribers of the LX unit. Some of the subscriber settings include function keys, Telnet settings, and security settings.

Refer to "Subscriber Commands" on page 367 for detailed information on the commands that you can execute in the Subscriber Command Mode.

SNMP Command Mode

The SNMP command prompt (e.g., `Snmp:0 >>`) is displayed when you are in the SNMP command mode. You can access the SNMP command mode by executing the `snmp` command in the Configuration command mode (see "snmp" on page 242).

In the SNMP command mode, you can configure the SNMP settings for an LX unit.

Refer to "SNMP Commands" on page 409 for detailed information on the commands that you can execute in the SNMP Command Mode.

Interface Command Mode

The Interface command prompt (e.g., `Intf 1-1:0 >>`) is displayed when you are in the Interface command mode. You can access the Interface command mode by executing the `interface` command in the Configuration command mode (see "interface" on page 180).

In the Interface command mode, you can configure interfaces for the LX unit. Some of the settings that you can configure include the IP settings, MTU, and IP Rotaries for the interface, as well as SSH and Telnet settings.

Refer to "Interface Commands" on page 275 for detailed information on the commands that you can execute in the Interface Command Mode.

Menu Command Mode

The Menu command prompt (e.g., `Menu :0 >>`) is displayed when you are in the Menu command mode. You can access the Menu command mode by executing the `menu` command in the Configuration command mode (see "menu" on page 184).

In the Menu command mode, you can delete, import, and display menus and access the Menu Editing command mode.

Refer to "Menu Commands" on page 479 for detailed information on the commands that you can execute in the Menu Command Mode.

Menu Editing Command Mode

The Menu Editing command prompt (e.g., `mark-1:0 >>`) is displayed when you are in the Menu Editing command mode. You can access the Menu Editing command mode by executing the `open` command in the Menu command mode (see "open" on page 486).

In the Menu Editing command mode, you can create and modify menus.

Refer to "Menu Editing Commands" on page 487 for detailed information on the commands that you can execute in the Menu Editing Command Mode.

Notification Command Mode

The Notification command prompt (e.g., `Notification:0 >>`) is displayed when you are in the Notification command mode. You can access the Notification command mode by executing the `notification` command in the Configuration command mode (see "notification" on page 186).

In the Notification command mode, you can configure the sending of accounting log messages to pagers, email addresses, SNMP trap clients, local files, remote hosts, syslogd, and asynchronous ports.

Refer to "Notification Commands" on page 509 for detailed information on the commands that you can execute in the Notification Command Mode.

Broadcast Group Command Mode

The Broadcast Group command prompt (e.g., `BrGroups 6:0 >>`) is displayed when you are in the Broadcast Group command mode. You can access the Broadcast Group command mode by executing the `broadcast group` command in the Configuration command mode (see "broadcast group" on page 163).

In the Broadcast Group command mode, you can configure a Broadcast Group. A Broadcast Group consists of Slave Ports and Master Ports. The Slave Ports receive data broadcasts from the Master Ports, or vice versa.

Refer to "Broadcast Group Commands" on page 535 for detailed information on the commands that you can execute in the Broadcast Group Command Mode.

Online Help

The question mark character (`?`), and the Tab key, are used to display online help in the LX Command Line Interface (CLI). The following guidelines will help you to navigate the online help system:

- Type the `?` character (or press the Tab key) at the command prompt in any command mode to display the first keyword of each command that can be executed in that command mode. For example, the following is displayed when you type the `?` character at the User mode command prompt:

```
User Commands:

   clear       Clear screen and reset terminal line
   disconnect  Disconnect session
   enable      Turn on privileged commands
   exit        Exits and disconnects user
   no          Negate
   pause       Pause enable
   ping        Send echo messages
   show        Show running system information
   ssh         Secured Shell (Triple-DES/Blowfish)
   telnet      Open a telnet connection
   terminal    Set the terminal type
```

- Type the `?` character (or press the Tab key) after the displayed keyword to list the options for that keyword. For example, type `show?` to list the options of the `show` keyword. You could then type `show port?` to list the next item in the syntax of the `show port` command.

Related Documents

For detailed information on the LX commands, refer to the *LX-Series Configuration Guide* (P/N 451-0311B).

For more information on the LX hardware, refer to *Getting Started with the LX Series* (P/N 451-0308E).

The *LX Quick Start Instructions* (P/N 451-0312F) describes how to get the LX unit up and running.

Chapter 1

User Commands

The User commands are executed in the User command mode. The User command mode is in effect immediately upon logging in to the LX unit.

The User Command prompt indicates that the LX unit is in the User command mode. The format of the User command prompt is as follows:

`<username>:<session_number> >`

where `<username>` is the username that was entered at the `Login:` prompt.

`<session_number>` is the session number of the current connection.

For example, in the `InReach:0 >` prompt, the username is `InReach` and the session number is 0.

The rest of this chapter describes the commands that you can enter in the User command mode.

clear

Clear the screen and removes any user input from the command buffer.

Syntax

```
clear
```

Example

```
      clear
```

disconnect

Disconnects a session to the LX unit.

NOTE: You can not use this command to disconnect the current session. For example, you can not use this command to disconnect session 0 when you are logged in to session 0.

Syntax

```
disconnect NUMBER|all
```

Where	Means
NUMBER	The session number of the session that is to be disconnected.
all	Disconnect all sessions other than the session from which this command is executed.

Examples

```
disconnect 3

disconnect all
```

enable

Displays a password prompt for logging into Superuser mode. When you are logged into Superuser mode, you can execute the Superuser commands. Refer to "Superuser Commands" on page 65 for more information on the Superuser commands.

Syntax

```
enable
```

Usage Guidelines

When you execute the `enable` command, the `Password:` prompt is displayed:

To enter Superuser mode, you must enter a Superuser password at the `Password:` prompt. The default Superuser password is `system`.

The Superuser prompt is displayed when you are in Superuser mode. The Superuser prompt is in the following format:

```
<username>:<session_number> >>
```

where `<username>` is the username that was entered at the `Login:` prompt.

`<session_number>` is the session number of the current connection.

For example, in the `InReach:0 >>` prompt, the username is `InReach` and the session number is 0.

Example

```
enable
```

exit

When the `exit` command is executed in User Mode, it exits the LX CLI and closes the connection to the LX unit.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX Command Modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in User Mode exits the LX CLI and closes the connection to the LX unit.

Issuing the `exit` command in any mode other than User returns the user to the previous command mode. For example, issuing the `exit` command in Superuser Mode returns the user to User Mode; issuing the `exit` command in Configuration Mode returns the user to Superuser Mode, and so on.

Example

```
exit
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the User mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the User command mode *and are currently enabled*. To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no pause
```

pause enable

Configures the screen to pause after displaying the number of lines specified in the "lines/screen" value for the terminal.

Syntax

```
pause enable
```

Example

```
      pause enable
```

ping

Sends a series of 4 echo messages to a destination host.

Syntax

```
ping [A.B.C.D|NAME]
```

Where	Means
A.B.C.D	The IP Address of the destination host. (See "Usage Guidelines" (below) for the default value of this field.)
NAME	The domain name of the destination host. (See "Usage Guidelines" (below) for the default value of this field.)

Usage Guidelines

If a destination host is not specified, the echo message is sent to the default destination host which is your Preferred Service. Refer to the `preferred service` command on page 399 for information on configuring a Preferred Service.

If the `ping command` is executed without a destination host, and you do not have a Preferred Service configured, the following error message is displayed:

```
No Preferred Service Configured
```

Examples

```
ping 119.20.112.3
```

```
ping
```

```
ping FinanceServer
```

show clock

Displays the day, date, time, and timezone for the LX unit.

Syntax

```
show clock
```

Example

```
show clock
```

Figure 2 shows an example of the clock display.

```
Mon, 24 Mar 2003 14:39:16 UTC
```

Figure 2 - Clock Display

show port

Displays the user-level port information for the LX port where you are connected.

NOTE: You cannot execute this command on a virtual port or on the DIAG port (port 0).

NOTE: You must be in Superuser Mode to display port information for ports other than the one where you are connected. Refer to Chapter 2 for more information on the Superuser `show port` commands.

Syntax

```
show port characteristics|apd|modem|ppp|status
```

Where	Means
characteristics	Displays general port characteristics. Refer to "Port Characteristics" on page 43 for descriptions of the general port characteristics.
apd	Displays the port APD settings. Refer to "Port APD Settings" on page 46 for descriptions of the port APD settings.
modem	Displays the port Modem settings. Refer to "Port Modem Settings" on page 47 for descriptions of the port Modem settings.
ppp	Displays the port PPP settings. Refer to "Port PPP Settings" on page 48 for descriptions of the port PPP settings.
status	Displays the port status information. Refer to "Port Status Display" on page 50 for descriptions of the port status information.

Examples

```
show port characteristics

show port apd

show port modem

show port ppp

show port status
```

Port Characteristics

Figure 3 shows an example of the Port Characteristics screen.

```
Time:                                          Mon 24 Mar 2003 19:10:43
Banner:          Welcome to MRV Communications, In-Reach Product Division.
Port Number:                    5  Transparent Mode:              Enabled
Access:                 Databuffer  Flow Control:                    Xon
Port Name:                     N/A  Stop Bits:                        1
Port Type:                Physical  Parity:                         None
Device Name:            /dev/pts/4  Bits per Character:              8
Port Prompt String:           login  Autobaud:                   Disabled
Break:                     Enabled  Auto Dial:                   Disabled
Special Break String:         1234  Autobaud Retry:                    5
Telnet Negotiations:       Disabled  Autohangup:                  Disabled
Telnet Cr filter:               N/A  Radius Accounting:           Disabled
Inbound Authentication:    Disabled  Tacacs+ Accounting:          Disabled
Outbound Authentication:   Disabled  Data Buffer Size:              1024
Authentication FallBack:   Disabled  Data Buffer Display:         Disabled
Data Buffer Time Stamp:     Enabled  Data Buffer Syslog:           Enabled
Connect Command:                              export MYPALMDIR=/root/palm
```

Figure 3 - Port Characteristics Screen

Field	Description
Time	The date and time that the show port characteristics command was executed.
Banner	The version of LX software that is running on the LX unit.
Port Number	The port at which you are logged in.
Access	The type of access the port can have to a service node, and/or the type of access other interactive users and service nodes can have to the port. The possible values are: Dynamic, Local, Remote, Databuffer, Power, or Sensor.
Port Name	An ASCII string that is typically used to identify the port that is displayed in this screen.
Port Type	The port Type. The possible values are Serial, Ethernet, and Virtual.
Device Name	The device name of the port.
Port Prompt String	The prompt that is displayed when a user logs in to this port. If this is a custom prompt, this field will contain the custom prompt. If this is the default login prompt, this field will contain “login”.
Break	The action the port will take when the user presses the BREAK key. The possible values are Enabled or Disabled.
Special Break String	The unique break string for the port.

Telnet Negotiations	Indicates whether Telnet Negotiations are Enabled or Disabled.
Telnet CR Filter	Indicates the filtering for carriage returns in Telnet sessions.
Inbound Authentication	Indicates whether inbound authentication is Enabled or Disabled on the port.
Outbound Authentication	Indicates whether outbound authentication is Enabled or Disabled on the port.
Authentication Fallback	Indicates whether users can log in by Fallback if the authentication server (RADIUS or TACACS+) is unreachable. The possible settings of this field are Enabled and Disabled.
Data Buffer Time Stamp	Indicates whether the Data Buffer Timestamp feature is Enabled or Disabled.
Connect Command	The command, or commands, that are executed when a connection to the port is made.
Transparent Mode	Indicates whether Transparent Mode is Enabled or Disabled on the port.
Flow Control	The flow control ("handshaking") method used by the serial interface to control data transfer between the LX port and the device connected to the port. The possible values are XON, CTS, and NONE (disabled). The default value is XON.
Stop Bits	The number of stop bits used to maintain synchronization of data. The possible values are 1 or 2.
Parity	The method by which the LX unit and the device connected to the port check for single-bit errors in characters transmitted or received by the port. (This is called a parity check because the device provides an extra bit, called a parity bit, for error checking.) The possible values are EVEN, NONE, and ODD, and the default value is NONE.
Bits per Character	The number of bits per character for data characters that are transmitted or received over the serial connection between the LX port and the device connected to the port. The possible values are 7 or 8 bits. The default value is 8.
Autobaud	Indicates whether Autobaud is enabled or disabled on the port. If Autobaud is enabled, the port will attempt to determine the speed of incoming connections.
Auto Dial	Indicates whether Auto Dial is Enabled or Disabled for the port. Auto Dial consists of the Dialback and Dialout features.
Autobaud Retry	The number of times that the LX port will attempt to determine the speed of an incoming connection.

Autohangup	Indicates whether the port will log out when the last session is terminated. The allowable values are Enabled and Disabled.
RADIUS Accounting	Shows the current status of RADIUS accounting. The valid values are Enabled or Disabled.
TACACS+ Accounting	Shows the current status of TACACS+ accounting. The valid values are Enabled or Disabled.
Data Buffer Size	The size, in bytes, of the port data buffer.
Data Buffer Display	Indicates whether the contents of the databuffer will be displayed when the user logs into the port. The allowable values are Enabled and Disabled.
Data Buffer Syslog	Indicates whether the Data Buffer syslog feature is Enabled or Disabled.

Port APD Settings

Figure 4 shows an example of the Port APD Settings screen.

```
Time:    Mon 24 Mar 2003 12:50:42 UTC
Banner: MRV Communication Linux 2.4.9.8 Rel 0.0.34
Device Name:    /dev/pts/0        Port Number:       5
Apd Feature:       Enabled        Apd Timeout:       0
Apd Signature:      414141        Port Name:    Port_1
Apd Retry:               0
Port Type:        Physical
```

Figure 4 - Port APD Settings Screen

Field	Description
Time	The date and time that the show port characteristics command was executed.
Banner	The field identifies the release of Linux and the version of the LX software that is running on the LX unit.
Device Name	The port name.
Apd Feature	Shows whether Automatic Protocol Detection (APD) is Enabled or Disabled on this port.
Apd Signature	The signature of the expected protocol.
Apd Retry	The number of retries that remote hosts can have after they fail to make an APD connection on the first try.
Apd Timeout	The length of time, in seconds, that the port can spend in an attempt to determine which protocol is being used to make a connection.
Port Type	The port Type. The possible values are Serial, Ethernet, and Virtual.
Port Number	The port at which you are logged in.
Port Name	The name of the LX port.

Port Modem Settings

Figure 5 shows an example of the Port Modem Settings screen.

```
Time:   Mon 24 Mar 2003 12:50:42 UTC
Banner: MRV Communication Linux 2.4.9.8 Rel 0.0.34
Device Name:              /dev/pts/0   Port Number:            7
Port Type:                   Virtual   Port Name:           N/A
Modem Control:              Disabled   Modem Timeout:        40
Modem Retry:                       6   Modem Dial Type:     N/A
Modem Dialout Num.:     19785558371
Modem Init String:  AT S7=45 S0=1 L1 V1 X4 &C1 &1 Q0 &S1
```

Figure 5 - Port Modem Settings

Field	Description
Time	The date and time that the show port characteristics command was executed.
Banner	The field identifies the release of Linux and the version of the LX software that is running on the LX unit.
Device Name	The port name.
Port Type	The port Type. The possible values are Serial, Ethernet, and Virtual.
Modem Control	Shows whether the PPP modem feature is Enabled or Disabled on this port.
Modem Retry	The number of times the LX unit attempts to connect to the remote modem.
Modem Dialout Num.	The telephone number that the modem will dial for a dialout connection.
Modem Init String	A configuration string that is sent to the remote modem.
Port Number	The Port Number.
Port Name	A text string that typically identifies the modem port.
Modem Timeout	The length of time that the remote modem has to respond to the LX unit.
Modem Dial Type	Indicates whether the Modem Type for the port is Dial In or Dial Out.

Port PPP Settings

Figure 6 shows an example of the PPP Settings screen.

```
Time:                                          Mon 24 Mar 2003 19:08:19 UTC
Port Device:               /dev/pts/2    Port Number:                    N/A
PPP Feature:                 Disabled    PPP Debug:                  Disabled
PPP Mode:              Server Passive    PPP MTU:                        1400
PPP Authent:                    None    PPP Authent. Retry:                3
PPP Port Type:              Physical    PPP Authent. Timeout:             60
PPP Local IP Address:        0.0.0.0
PPP Remote IP Address:       0.0.0.0
PPP LCP Compress.:           Enabled    PPP IPCP Compress.(VJ):       Enabled
PPP LCP Failure Limit:            10    PPP IPCP Failure Limit:            10
PPP LCP Echo Failure Limit:        0    PPP IPCP Timeout:                   4
PPP LCP Echo Interval:             0    PPP IPCP Accept Remote:     Disabled
PPP LCP Timeout:                   4    PPP IPCP Accept Local:      Disabled
PPP CCP:                     Enabled    PPP Accounting:             Disabled
Port Name:                       N/A
Client Mode Username:                                                    N/A
Client Mode PAP Secret:                                                  N/A
Client Mode CHAP Secret:                                                 N/A
```

Figure 6 - Port PPP Settings Screen

Field	Description
Port Device	The port name.
PPP Feature	Indicates whether the Point-to-Point Protocol (PPP) is Enabled or Disabled on the port.
PPP Mode	Indicates the PPP Mode for the port. The possible values are Client, Server Active, or Server Passive.
PPP Authent	The PPP Authentication method for the port. The allowable values are PAP, CHAP, and None.
PPP Port Type	The PPP port type.
PPP Local IP Address	The IP Address assigned to the port.
PPP Remote IP Address	The IP address of the remote device that the port will attempt to negotiate when the remote device does not specify an Internet address on its own.
PPP LCP Compress	Indicates whether the use of LCP compression is Enabled or Disabled over the PPP link.
PPP LCP Failure Limit	The number of attempts at LCP option negotiation that can be made by the port.

PPP LCP Echo Failure Limit	The interval between the sending of LCP echo requests.
PPP LCP Timeout	The length of time that the port has for LCP option negotiation.
PPP CCP	Indicates whether the PPP Compression Control Protocol (CCP) is Enabled or Disabled for the port.
Port Name	The name of the PPP port.
Client Mode Username	The username for the PAP client.
Client Mode PAP Secret	The PAP authentication secret for the PPP client.
Client Mode CHAP Secret	The CHAP authentication secret for the PPP client.
Port Number	The port at which you are currently logged in.
PPP Debug	Indicates whether PPP debugging is Enabled or Disabled on the port.
PPP MTU	The Maximum Transmission Unit (MTU) for PPP links on the port.
PPP Authent. Retry	The number of times that the port can attempt to authenticate a PPP link.
PPP Authent. Timeout	The length of time that the port has to authenticate a PPP link.
PPP IPCP Compress.	Indicates whether the use of Van Jacobson (VJ) compression is Enabled or Disabled over the PPP link.
PPP IPCP Failure Limit	The number of attempts at IPCP option negotiation that can be made by the port.
PPP IPCP Timeout	The length of time that the port has for IPCP option negotiation.
PPP IPCP Accept Remote	Indicates whether the port is configured to accept or reject the negotiation of remote addresses. If the value is Enabled, the port is configured to *accept* the negotiation of remote addresses. If the value is Disabled, the port is configured to *reject* the negotiation of remote addresses.
PPP IPCP Accept Local	Indicates whether the port is configured to accept or reject the negotiation of local addresses. If the value is Enabled, the port is configured to *accept* the negotiation of local addresses. If the value is Disabled, the port is configured to *reject* the negotiation of local addresses.
PPP Accounting	Indicates whether PPP accounting is Enabled or Disabled on the port.

Port Status Display

Figure 7 shows an example of the port status screen for non-outlet ports.

```
Time:   Mon 24 Mar 2003 13:19:01 UTC
Port Device:              /dev/ttyGN8     Port Number:           8
Remote Partner Host IP Address:                              0.0.0.0
Locally Connected by IP Address:                             0.0.0.0
Autobaud:                     Enabled     Speed:              9600
Port Lock Status:              In Use     Port Name:         Port_8
Transmit Bytes:                137260     Receive Bytes:      8728
Frame Errors:                       0     Overrun Errors:        0
Parity Errors:                      0     Break Signals:         2
Buffer Overruns:                    0     IRQ Number:            4
Last Transmit Char:               0x0     Last Receive Char:   0x0

Input Signals:                      Output Signals:
 CTS=                   Up           RTS=                     Up
 DSR=                   Up           DTR=                     Up
```

Figure 7 - Port Status Screen (non-outlet)

Field	Description
Port Device	The name of the port.
Remote Partner Host IP Address	If the port is connected to a remote host, the IP Address of the remote host appears in this field.
Locally Connected by IP Address	If the port is locally connected to a host, the IP Address of the LX unit, or the rotary address for the port, appears in this field.
Autobaud	Indicates whether Autobaud is enabled or disabled on the port. If Autobaud is enabled, the port will attempt to determine the speed of incoming connections.
Port Lock Status	Indicates whether or not the port is locked.
Transmit Bytes	The number of bytes transmitted on the port since the counters were last reset to zero.
Frame Errors	The number of bytes received at the port with illegally formatted frames, since the counter was reset to zero. Frequent framing errors (more than 20 per day for a terminal; 200 per day for a modem) may indicate a problem with the port or the device attached to the port, or mismatched settings between the port and the data received from the attached serial device.

Parity Errors	The number of bytes received at the port with parity errors, since the counters were reset to zero. Frequent parity errors (more than 20 per day for a terminal; 200 per day for a modem, due to line noise) may indicate a problem with the port or the device attached to the port, or mismatched settings between the port and the device connected to the port.
Buffer Overruns	The number of times characters were lost because the LX unit input buffers were full, since the counters were reset to zero. Buffer overruns indicate that there may be a flow control problem, such as mismatched flow control methods, between the port and the device connected to the port.
Last Transmit Char	The last character transmitted on the port.
Input Signals	The status of the port CTS and DSR signals.
Port Number	The port number of the asynchronous port.
Time	The day, date, and time of the LX system clock.
Speed	The port speed.
Port Name	The name of the asynchronous port.
Receive Bytes	The number of bytes received on the port since the counters were last reset to zero.
Overrun Errors	The number of port overrun errors since the counters were last reset to zero.
Break Signals	The number of break signals since the counters were last reset to zero.
IRQ Number	The IRQ Number for the port.
Last Receive Char	The last character received on the port.
Output Signals	The status of the port RTS and DTR signals.

Figure 8 shows an example of the port status screen for outlet ports.

```
Time:     Mon 24 Mar 2003 20:05:47      Device Number:                    4
Device Type:                                                          IR5150
Model Name:                                                              N/A
Total Outlet Strip Load:                                                0.25
Outlet Minimum Off Time:                                                  15
Outlet          Name       State            Load        Assigned Groups
   1            plug1        On              N/A                   1 4 13
   2            plug2        On              N/A                   1 6 10
   3            plug3        On              N/A                      1 7
   4            plug4        On              N/A                        1
   5            plug5        On              N/A                      2 4
   6            plug6        On              N/A                        2
   7            plug7        On              N/A                        2
   8            plug8        On              N/A                        2
   9            plug9        On              N/A                      3 4
  10           plug10        On              N/A                        3
  11           plug11        On              N/A                        3
  12           plug12        On              N/A                        3
  13           plug13        On              N/A                      4 5
  14           plug14        On              N/A                      4 5
  15           plug15        On              N/A                      4 5
  16           plug16        On              N/A                        5
```

Figure 8 - Port Status Screen (Outlet)

Field	Description
Device	Identifies the type of Power Control unit.
Model Name	The Model Name of the Power Control unit.
Total Outlet Strip Load	The total load for the Power Control unit.
Outlet Minimum Off Time	The minimum time that outlets in this Power Control unit must remain off after they are turned off with the `outlet` or `outlet group` command.
Outlet	The Outlet Number of an outlet.
Name	The descriptive name of an outlet.
State	The ON or OFF state of the outlet.
Load	The load on the outlet.
Assigned Groups	The outlet groups to which the outlet is assigned.

show service

Displays the names and addresses of the available services.

Syntax

```
show service
```

Example

```
show service
```

Figure 9 shows an example of the Service screen.

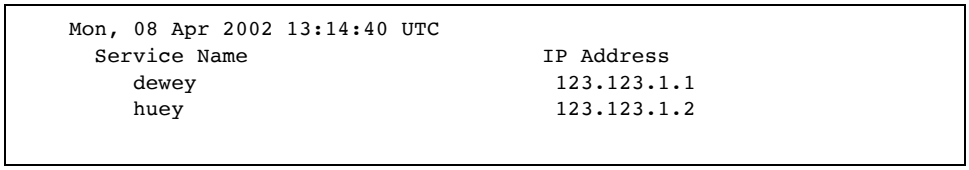

Figure 9 - Service Screen

Field	Description
Service	The name of an available service or server/host.
IP Address	The IP Address of the available service

show session

Displays information about your opened connections, including opened sessions to services or hosts on the network, as well as CLI sessions opened on the port.

Syntax

```
show session <session_number>
```

Where	Means
session_number	The session number of an opened connection.

Example

```
show session 3
```

Figure 10 shows an example of the Session screen.

```
Number    Device          Program        Pid       Time      Status
3          /dev/pts/1       cli           8384       2589          *
```

Figure 10 - Session Screen

Field	Description
Number	The Session Number. The possible values are 1, 2, 3, or 4.
Device	The Linux port name.
Program	The program running on the LX unit.
Pid	The Process ID for the session.
Time	The time elapsed since the start of the session.
Status	Indicates whether the displayed session is the active session. An asterisk (*) means that the displayed session is the active session. An hyphen (–) means that the displayed session is *not* the active session.

show subscriber

Displays your subscriber information.

Syntax

```
show subscriber characteristics|status|tcp
```

Where	Means
characteristics	Displays your subscriber characteristics. Refer to "Subscriber Characteristics" on page 56 for descriptions of the subscriber characteristics.
status	Displays your subscriber status information. Refer to "Subscriber Status" on page 59 for descriptions of the status information for subscribers.
tcp	Displays your subscriber TCP settings. Refer to "Subscriber TCP Settings" on page 60 for descriptions of your subscriber TCP settings.

Examples

```
show subscriber characteristics

show subscriber status

show subscriber tcp
```

Subscriber Characteristics

Figure 11 shows an example of the Subscriber Characteristics screen.

```
Subscriber Name:             demo
Security:               Superuser  User Prompt:                       Demo
Preferred Service:                 Dedicated Service:
Command Logging:         Disabled  User Password:                 Disabled
Maximum Connections:           50  Maximum Sessions:                    4
Shell       :            Disabled  Screen Pause:                  Enabled
Debug Feature:           Disabled  Debug File:                /tmp/D_demo
Idle Timeout:                 0  Session Timeout:                     0
Menu Feature:            Disabled  Menu Name:              /config/M_demo
Forward Switch:               ^F  Local Switch:                       ^L
Backward Switch:              ^B  Dialback Feature:              Disabled
Dialback Retry:                4  Dialback Number:
Dialback Timeout:             45  Audit Feature:                 Disabled
Port Access list:                                                    1-8
Remote Access list:                                 Telnet Ssh Web_Server
```

Figure 11 - Subscriber Characteristics Screen

Field	Description
Subscriber Name	The name under which the subscriber is logged in.
Security	The level of security that the subscriber has. The possible values are None and Superuser.
Preferred Service	The service to which the subscriber will be connected when the subscriber makes a connect request without specifying a service.
Command Logging	Indicates whether the Command Logging Feature is Enabled or Disabled for the subscriber.
Maximum Connections	The maximum number of concurrent connections that the subscriber can have to the LX unit.
Shell	Indicates whether the Shell mode is Enabled or Disabled for this subscriber.
Debug Feature	Shows whether the Debug feature is enabled for this user. The allowable values are Enabled and Disabled.
Idle Timeout	The length of time that the subscriber can go without entering keyboard data before she is logged out.
Menu Feature	Indicates whether a menu will be displayed when the subscriber successfully logs in to the LX unit. The allowable values are Enabled and Disabled. **Note:** If this feature is Enabled, a Menu Name must be specified for the user. For more information, refer to the Menu Name field (below).

Forward Switch	The keyboard character that the subscriber types to switch to the next session.
Backward Switch	The keyboard character that the subscriber types to switch to the previous session.
Dialback Retry	The number of times that the modem on the LX unit can attempt to answer a dialback call.
Dialback Timeout	The length of time that the modem can spend attempting to make a modem connection.
Port Access List	The LX ports that the user can access.
Remote Access List	The methods that the user can use to make remote connections.
User Prompt	The subscriber-specific field of the subscriber User prompt. For example, for a subscriber prompt of `InReach:0 >`, the subscriber-specific field is `InReach`.
Dedicated Service	The service to which the subscriber is permanently assigned.
User Password	Indicates whether or not the subscriber must enter a password when he logs in to the account. If the value of this field is Enabled, the subscriber must enter a password when logging in to this account. If the value of this field is Disabled, the subscriber does not enter a password when logging in to this account.
Maximum Sessions	The maximum number of concurrent sessions allowed for the subscriber.
Screen Pause	Indicates whether or not the screen is enabled to pause after 26 lines of output are displayed.
Debug File	Shows the location and filename of the Debug file for this subscriber on the LX unit.
Session Timeout	Indicates the maximum length of time for a subscriber session. The allowable values are 0 through 65535. A value of 0 means that there is no limit to the length of a subscriber session.
Menu Name	Shows the location and filename of the subscriber menu on the LX unit.
Local Switch	The keyboard character that the subscriber types to return to the local command mode.
Audit Feature	Indicates whether the Audit feature is Enabled or Disabled.

Dialback Feature	Indicates whether or not the subscriber requires a dialback script in order to be logged in. (The dialback script contains commands that cause a modem to dial a designated telephone number.) The allowable values are Enabled and Disabled.
Dialback Number	The telephone number that the LX modem will dial when the subscriber makes a Dialback call to the LX unit.

Subscriber Status

Figure 12 shows an example of the Subscriber Status screen.

```
Time:                                  Mon, 08 Apr 2002 14:39:16 UTC
Subs. Name:           InReach         Number of Connections:       1
Configured TermType:      ANSI          Session Mode:         Normal
```

Figure 12 - Subscriber Status Screen

Field	Description
Subs. Name	The name under which the subscriber is logged in.
Configured TermType	The terminal type that is configured for the subscriber.
Session Mode	The Telnet binary option for the subscriber session.
Number of Connections	The number of connections that the subscriber currently has to the LX unit.

Subscriber TCP Settings

Figure 13 shows an example of the TCP Settings screen.

```
Time:                                        Mon, 08 Apr 2002 14:39:16 UTC
Subscriber Name:                InReach      Telnet Line Mode:   Character Mode
SSH Name:                       InReach      SSH Encryption:         Triple-DES
SSH Port:                            22      SSH Log Level:                  23
```

Figure 13 - TCP Settings Screen

Field	Description
Subscriber Name	The name under which the subscriber is logged in.
Telnet Line Mode	Indicates the Telnet Line Mode. The possible values are Character and Block.
SSH Name	The SSH Name for the subscriber.
SSH Port	The ports that are enabled as SSH ports for this subscriber.
SSH Encryption	The form of SSH encryption used by the subscriber.
SSH Log Level	The Revision Level of the SSH Log for this subscriber.

show version

Displays the Linux OS version, Linux In-Reach version, LX software version, and ppciboot version for the LX unit.

Syntax

```
show version
```

Example

```
show version
```

Figure 14 shows an example of the Version screen.

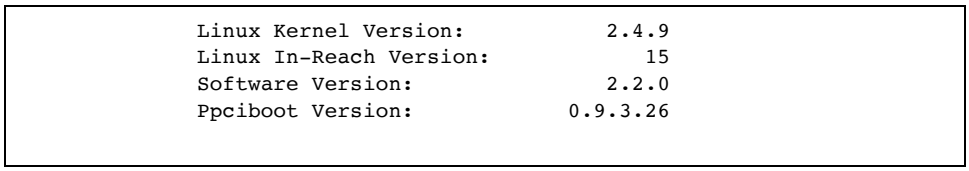

Figure 14 - Version Screen

Field	Description
Linux Kernel Version	The version of the Linux Operating System that is running on the LX unit.
Linux In-Reach Version	The version of the In-Reach implementation of Linux.
Software Version	The version of the LX software that is running on the LX unit.
Ppciboot Version	The version of ppciboot that the LX unit is using.

ssh

Opens a Secure Shell (Triple-DES/BLOWFISH) connection.

Syntax

```
ssh [A.B.C.D [NUMBER]]|[NAME [NUMBER]] [LOGIN NAME]
```

Where	Means
A.B.C.D	The IP Address of the SSH server to which the connection is being made. (See "Usage Guidelines" (below) for the default value of this field.)
NAME	The Domain Name of the SSH server to which the connection is being made. (See "Usage Guidelines" (below) for the default value of this field.)
NUMBER	The socket number to which the connection is being made.
LOGIN NAME	The name that you are using to log in to the SSH server.

Usage Guidelines

The default SSH server is your Preferred Service. Refer to the `preferred service` command on page 399 for information on configuring a Preferred Service.

If the `ssh command` is executed without an SSH server, and you do not have a Preferred Service configured, the following error message is displayed:

```
No Preferred Service Configured
```

Examples

```
ssh 102.19.240.14

ssh 102.19.240.14 2322

ssh

ssh 102.19.240.14 2322 henryh
```

telnet

Opens a Telnet connection to a host.

Syntax

```
telnet [A.B.C.D [NUMBER]]|[NAME [NUMBER]]
```

Where	Means
A.B.C.D	The IP Address of the Telnet host. (See "Usage Guidelines" (below) for the default value of this field.)
NAME	The Domain Name of the Telnet host. (See "Usage Guidelines" (below) for the default value of this field.)
NUMBER	The socket number to which the connection is being made.

Usage Guidelines

The default Telnet host is your Preferred Service. Refer to the `preferred service` command on page 399 for information on configuring a Preferred Service.

If the `telnet command` is executed without a Telnet host, and you do not have a Preferred Service configured, the following error message is displayed:

```
No Preferred Service Configured
```

Examples

```
telnet 102.19.240.14

telnet 102.19.240.14 2500

telnet
```

terminal

Sets the terminal type for the LX user.

Syntax

`terminal <terminal_type>`

Where	Means
terminal_type	The terminal type for the LX user. The allowable terminal types are VT100 and ANSI.

Example

```
terminal vt100

terminal ansi
```

Chapter 2

Superuser Commands

The Superuser commands are executed in the Superuser command mode. When the LX unit is in the Superuser command mode, the Superuser command prompt (e.g., `InReach:0 >>`) is displayed on the terminal screen.

The format of the Superuser command prompt is as follows:

`<username>:<session_number> >>`

where `<username>` is the username that was entered at the `Login:` prompt.

`<session_number>` is the session number of the current connection.

For example, in the `InReach:0 >>` prompt, the username is `InReach` and the session number is 0.

To enter the Superuser command mode, do one of the following:

- If you are in the User command mode, execute the `enable` command. This displays the `Password:` prompt. Enter a Superuser password at the `Password:` prompt.

  Refer to page 36 for more information on the `enable` command.

- If you are in a command mode other than User, execute the `end` command or the `exit` command until the Superuser command prompt is displayed.

clear

Clear the screen and removes any user input from the command buffer.

Syntax

```
clear
```

Example

```
      clear
```

configuration

Enters the Configuration command mode. When this command is executed, the configuration prompt (e.g., `Config >>`) is displayed. Only the Configuration commands can be executed from the configuration prompt. For more information on the Configuration commands, refer to "Configuration Commands" on page 159.

Syntax

```
configuration
```

Example

```
configuration
```

debug port async ppp

Generates debug information for PPP sessions on an asynchronous port. The debug information can be displayed by executing the `show debug port async ppp` command (see page 90).

Syntax

```
debug port async NUMBER ppp
```

Where	Means
NUMBER	An asynchronous port number.

Example

```
debug port async 5 ppp
```

debug snmp

Generates debug information for SNMP.

Syntax

```
debug snmp
```

Example

```
debug snmp
```

debug subscriber

Generates debug information for a subscriber. The debug information can be displayed by executing the `show debug subscriber` command (see page 91).

Syntax

`debug subscriber <subscriber_name>`

Where	Means
subscriber_name	The subscriber for which debug information is to be generated.

Example

```
debug subscriber bill
```

disconnect

Disconnects a session to the LX unit.

NOTE: You can not use this command to disconnect the current session. For example, you can not use this command to disconnect session 0 when you are logged in to session 0.

Syntax

```
disconnect NUMBER|all
```

Where	Means
NUMBER	The session number of the session that is to be disconnected.
all	Disconnect all sessions other than the session from which this command is executed.

Examples

```
disconnect 3

disconnect all
```

exit

Returns you to the previous command mode. For example, if the current command mode is Superuser, issuing this command will return you to the User command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX Command Modes. However, the effect of the `exit` command varies, depending on the command mode from which it is issued.

As noted above, issuing the `exit` command in the Superuser command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any command mode other than the User command mode. For example, issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode; issuing the `exit` command in the Subscriber command mode returns the user to the Configuration command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

logout

Logs out a device, an LX port, or an LX subscriber.

Syntax

`logout <device_name>|port <port_number>|<subscriber_name>`

Where	Means
device_name	The name of the device that is to be logged out. For example, the command `logout /dev/ttyGN3` logs out the Linux device /dev/ttyGN3 (port 4).
port_number	The LX port that is to be logged out. For example, the command `logout port 3` logs out port 3.
subscriber_name	The name of the subscriber to be logged out. For example, the command `logout mark` logs out the subscriber `mark`.

Syntax

```
logout /dev/ttyGN3

logout port 3

logout mark
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the Superuser command mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the Superuser command mode *and are currently enabled.* To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no pause
```

outlet

Reboots a Power Control Relay or turns a Power Control Relay on or off.

Syntax

`outlet <power_master>:<control_relay> on|off|reboot`

Where	Means
power_master	Specifies the Power Master from which the Power Control Relay is managed. **Note:** Refer to "access power model" on page 309 for information on configuring a port as a Power Master.
control_relay	Specifies a Power Control Relay on the IR-5100 or IR-5150 that is managed from the Power Master. The Power Master number, combined with the Power Control Relay number, uniquely identifies each Power Control Relay. For example, 2:5 identifies Power Control Relay 5 on the device that is managed from port 2.
on	Turn the Power Control Relay on.
off	Turn the Power Control Relay off.
reboot	Reboot the Power Control Relay.

Examples

```
outlet 3:5 on

outlet 5:2 off

outlet 6:1 reboot
```

outlet group

Reboots, or turns on or off, all of the outlets in an outlet group.

Syntax

`outlet group <group_number>|<group_name> on|off|reboot`

Where	Means
group_number	An integer number that specifies an existing outlet group.
group_name	The descriptive name of an existing outlet group.
on	Turn the outlets in the group on.
off	Turn the outlets in the group off.
reboot	Reboot the outlets in the group.

Examples

```
outlet group 5 reboot

outlet group Laboutlets off

outlet group 6 on
```

pause enable

Configures the screen to pause after displaying the number of lines specified in the "lines/screen" value for the terminal.

Syntax

```
pause enable
```

Example

```
      pause enable
```

ping

Sends a series of 4 echo messages to a destination host.

Syntax

```
ping [A.B.C.D|NAME]
```

Where	Means
A.B.C.D	The IP Address of the destination host. (See "Usage Guidelines" (below) for the default value of this field.)
NAME	The domain name of the destination host. (See "Usage Guidelines" (below) for the default value of this field.)

Usage Guidelines

If a destination host is not specified, the echo message is sent to the default destination host which is your Preferred Service. Refer to the `preferred service` command on page 399 for information on configuring a Preferred Service.

If the `ping command` is executed without a destination host, and you do not have a Preferred Service configured, the following error message is displayed:

```
No Preferred Service Configured
```

Examples

```
ping 119.20.112.3
```

```
ping
```

```
ping FinanceServer
```

reload

Re-starts the LX unit.

Syntax

```
reload
```

Usage Guidelines

If the LX parameter set has been saved since the last time the LX unit was re-started, or since the last configuration change was made, the LX unit will be re-started immediately. If the LX parameters have *not* been saved, you will be prompted to save them before the LX is re-started.

```
Configuration is not saved!!! Proceed anyway? (y/n) :
```

Enter `y` to re-start the LX unit without saving the changes.

Enter `n` to abort the command.

Refer to "save configuration" on page 80 for more information on saving the LX parameters.

Example

```
reload
```

save configuration

Saves the configuration of the LX unit to the local flash or to a network parameter server.

Syntax

`save configuration flash|[network <filename> <domain_name>|<ip_address>]`

Where	Means
flash	Save the LX-unit configuration to the local flash.
network	Save the LX-unit configuration to a network parameter server.
filename	Identifies the network file to which the LX-unit configuration is to be saved. The filename must *not* include a `.zip` suffix. For example, `unit1` is a valid filename, but `unit1.zip` is not a valid filename.
domain_name	Specifies the domain name of the TFTP server to which the LX-unit configuration is to be saved.
ip_address	Specifies the IP Address of the TFTP server to which the LX-unit configuration is to be saved.

Examples

```
save configuration flash

save config network unit1 119.25.42.37
```

setup

Runs the setup utility (Quick Start Configurator). For more information on the Quick Start Configurator, refer to the *LX Quick Start Instructions*.

Syntax

```
setup
```

Example

```
setup
```

shell

Enters the Built-in Linux shell on the LX unit.

Syntax

```
shell
```

Usage Guidelines

When this command is executed, the following is displayed on the Linux monitor:

```
BusyBox v0.60.1 (2002.04.16-12:27+0000) Built-in shell (ash)
Enter 'help' for a list of built-in commands

InReach:/#
```

You can enter any command in the Built-in Linux shell from the command prompt (`InReach:/#` in the above example). Enter `help` at the command prompt for a list of the built-in commands.

The format of the command prompt is `<username>:/#`, where `<username>` is the username of the subscriber.

Enter `exit` at the command prompt to return to Superuser Mode.

Example

```
shell
```

show audit log

Displays the audit log for a port or a subscriber.

Syntax

`show audit log [<port_number>]|[<subscriber_name>]`

Where	Means
port_number	Specifies an asynchronous port number on the LX unit.
subscriber_name	Specifies an LX subscriber name.

Usage Guidelines

If you execute `show audit log` for a subscriber, the display will only contain audit log data for the subscriber in question.

If you execute `show audit log` for a port, the display will contain audit log data for all of the subscribers that are logged in at the port.

Example

```
show audit

show audit log 5

show audit log mark
```

Figure 15 shows an example of the audit log display.

```
Nov 18 16:08:32 yves ttyGN0 0 Subs_yves >>end
Nov 18 16:08:50 yves ttyGN0 1 Yves:0 >>
Nov 18 16:08:50 yves ttyGN0 2 Yves:1 >
Nov 18 16:08:50 yves ttyGN0 3 Yves:2 >
Nov 18 16:08:55 yves ttyGN0 3 Yves:3 >sho session
Nov 18 16:08:55 yves ttyGN0 3 Number    Device       Program       Pid       Time      Status
Nov 18 16:08:55 yves ttyGN0 3   0     /dev/pts/0    Superuser      477       98          -
Nov 18 16:08:55 yves ttyGN0 3   1     /dev/pts/3    User           481        5          -
Nov 18 16:08:55 yves ttyGN0 3   2     /dev/pts/4    User           482        5          -
Nov 18 16:08:55 yves ttyGN0 3   3     /dev/pts/5    User           483        5          *
```

Figure 15 - Audit Log Display

show broadcast group characteristics

Displays the characteristics of Broadcast Groups.

Syntax

`show broadcast group all|<group_number> characteristics`

Where	Means
all	Display information for all Broadcast Groups.
group_number	The group number of a Broadcast Group.

Example

```
show broadcast group 1 characteristics

show broadcast group all characteristics
```

Figure 16 shows an example of the Broadcast Group Characteristics Display.

```
Time: 08 Nov 2002 16:29:26 US/EASTERN
Broadcast Group Number:            1  Mode:              Line Mode
State:                        Disabled
Async Master port(s) with Timestamp:

Async Master port(s) without Timestamp:
 1,4
TCP Master port(s) with Timestamp:

TCP Master port(s) without Timestamp:

Async Slave port(s) with Discard:

Async Slave port(s) without Discard:
 2-3,5-7
Async Slave port(s) with Local Echo:

Async Slave port(s) without Local Echo:
 2-3,5-7
TCP Slave port(s) with Discard:

TCP Slave port(s) without Discard:

TCP Slave port(s) with Local Echo:

TCP Slave port(s) without Local Echo:
```

Figure 16 - Broadcast Group Characteristics Display

show broadcast group summary

Displays summary information on all of the Broadcast Groups that are configured on the LX unit.

Syntax

```
show broadcast group summary
```

Example

```
show broadcast group summary
```

Figure 17 shows an example of the Broadcast Group summary display.

```
Broadcast group number:                    State:

                        1                  Enabled
                        2                  Disabled
                        3                  Disabled
                        4                  Disabled
                        5                  Disabled
```

Figure 17 - Broadcast Group Summary Display

show clock

Displays the day, date, time, and timezone for the LX unit.

Syntax

```
show clock
```

Example

```
show clock
```

Figure 18 shows an example of the clock display.

```
   Mon, 08 Apr 2002 14:39:16 UTC
```

Figure 18 - Clock Display

show command log

Displays the command log for a port or for a subscriber.

Syntax

`show command log [<port_number>]|[<subscriber_name>]`

Examples

```
show command log

show command log 4

show command log mark
```

Figure 19 shows an example of the command log display.

```
Nov 11 12:47:30 demo 0 end
Nov 11 12:47:33 demo 0 sho command log
Nov 11 12:49:21 demo 23 modem
Nov 11 12:49:29 demo 23 end
Nov 11 12:49:39 demo 23 show command log demo
```

Figure 19 - Command Log Display

show configuration

Displays the contents of the LX System configuration table or the configuration data from the Non-Volatile memory of the LX unit.

Syntax

```
show configuration
```

Example

```
show configuration
```

Figure 20 shows an example of the Configuration Data display.

```
Signature  is :a1326c7cf50dd779086e0a90843fdke94398kj9
In-Reach Configuration version 0.0.34, Linux kernel version 2.4.10

System.SystemName.0         TYPE STRING        VALUE "InReach LX-1"
System.SystemLocation.0     TYPE STRING        VALUE "Middle of NoWhere"
System.TimeZone.0           TYPE STRING        VALUE "UTC"
System.UseNtp.0             TYPE BOOL          VALUE "Disabled"
System.UseLpd.0             TYPE BOOL          VALUE "Disabled"
System.SnmpLocation.0       TYPE STRING        VALUE ""
System.SnmpPort.0           TYPE SHORT         VALUE "161"
System.SnmpLog.0            TYPE BOOL          VALUE "Disabled"
System.SnmpTransport.0      TYPE OCTET         VALUE "0"
System.SysLogAddr.0         TYPE IPADDR        VALUE "0.0.0.0"
System.UseSsh.0             TYPE BOOL          VALUE "Disabled"
System.UseRad.0             TYPE BOOL          VALUE "Disabled"
System.UseRadAcct.0         TYPE BOOL          VALUE "Disabled"
System.RadPort.0            TYPE SHORT         VALUE "1812"
System.RadAcctPort.0        TYPE SHORT         VALUE "1813"
System.RadPrimAuth.0        TYPE IPADDR        VALUE "1.1.1.1"
System.RadPrimSecret.0      TYPE STRING        VALUE ""
System.RadSecAuth.0         TYPE IPADDR        VALUE "1.1.1.2"
System.RadSecSecret.0       TYPE STRING        VALUE ""
System.RadPrimAcct.0        TYPE IPADDR        VALUE "1.1.1.1"
Type a key to continue, q to quit
```

Figure 20 - Configuration Data Display

show configuration log

Displays the commands that have been executed in the Configuration Command Mode and in any of the Command Modes nested in the Configuration Command Mode. (The Command Modes nested in the Configuration Command Mode include Broadcast Group, Interface, Menu, Menu Editing, Subscriber, Asynchronous, PPP, Modem, Ethernet, SNMP, and Notification.)

Syntax

```
show configuration log
```

Example

```
show configuration log
```

Figure 21 shows an example of the configuration log display.

```
Nov 20 20:59:03 InReach /ttyGN0 0 save config to flash
Nov 20 20:59:12 InReach /ttyGN0 0 boot config file from flash
Nov 20 20:59:46 InReach /ttyGN0 0 subscriber 4 no password
Nov 20 21:00:17 InReach /ttyGN0 0 subscriber 4 access telnet enable
Nov 20 21:00:24 InReach /ttyGN0 0 subscriber 4 access ssh enable
Nov 20 21:00:29 InReach /ttyGN0 0 subscriber 4 access guiserver enable
Nov 20 21:00:34 InReach /ttyGN0 0 subscriber 4 access console enable
Nov 20 21:00:47 InReach /ttyGN0 0 subscriber 4 security level super
Nov 20 21:01:01 InReach /ttyGN0 0 save config to flash
```

Figure 21 - Configuration Log Display

show debug port async ppp

Displays the debug data for PPP sessions on an asynchronous port of the LX unit.

Syntax

```
show debug port async NUMBER ppp
```

Where	Means
NUMBER	The number of the port for which debug data is to be displayed.

Example

```
show debug port async 5 ppp
```

show debug subscriber

Displays the subscriber debug data for the LX unit.

Syntax

```
show debug subscriber NAME
```

Where	Means
NAME	The name of the subscriber for which debug data is to be displayed.

Example

```
show debug subscribers bill
```

Figure 22 shows an example of the Subscriber Debug data display.

```
Bill_M:0 >>show debug subscriber billStamp : 1020858407 To Line
 1b 5b 3f 32 35 6c                                  .[?25l
Stamp : 1020858407 To Line
 1b 5b 39 30 30 3b 39 30 30 48                      .[900;900H
Stamp : 1020858407 To Line
 1b 5b 36 6e                                        .[6n
Stamp : 1020858407 From Line
 1b 5b 32 34 3b 38 30 52 6e e6                      .[24;80Rn.
Stamp : 1020858407 From Line
 75 81 1b 5b 32 34 3b 38 30 52                      u..[24;80R
Stamp : 1020858407 To Line
 1b 5b 3f 32 35 68                                  .[?25h
Stamp : 1020858407 To Line
 1b 5b 48 1b 5b 4a                                  .[H.[J
Stamp : 1020858407 To Line
 1b 5b 30 3b 30 48                                  .[0;0H
Stamp : 1020858407 To Line
 42 69 6c 6c 5f 4d 3a 30 20 3e                      Bill_M:0.>
Stamp : 1020858407 To Line
 1b 5b 36 6e                                        .[6n
```

Figure 22 - Subscriber Debug Data

show device status

Displays information on devices connected to asynchronous ports configured as OUTLET or SENSOR on the LX unit.

Syntax

```
show device all|<port_number> status
```

Where	Means
all	Display information for all asynchronous ports configured as OUTLET or SENSOR.
port_number	The port number of an asynchronous port that is configured as OUTLET or SENSOR.

Example

```
show device 5 status
```

Figure 23 shows an example of the Device Display for an OUTLET port.

```
Time:      Tue, 17 Sep 2002 20:05:47   Device Number:                      4
Device Type:                                                          IR5100
Model Name:                                                       IR-5100-126
Total Outlet Strip Load:                                                 0.0
Outlet Minimum Off Time:                                                  15
Outlet          Name       State            Load        Assigned Groups
   1            plug1        Off             0.0                    1 4 13
   2            plug2        Off             0.0                    1 6 10
   3            plug3        Off             0.0                       1 7
   4            plug4        Off             0.0                         1
   5            plug5        Off             0.0                       2 4
   6            plug6        Off             0.0                         2
   7            plug7        Off             0.0                         2
   8            plug8        Off             0.0                         2
   9            plug9        Off             0.0                       3 4
  10           plug10        Off             0.0                         3
  11           plug11        Off             0.0                         3
  12           plug12        Off             0.0                         3
  13           plug13        Off             0.0                       4 5
  14           plug14        Off             0.0                       4 5
  15           plug15        Off             0.0                       4 5
  16           plug16        Off             0.0                         5
```

Figure 23 - Device Display for An OUTLET Port

Figure 24 shows an example of the Device Display for a SENSOR port.

```
Time: 29 Aug 2002 17:35:17 US/EASTERN  Device Number:                  4
Device Type:                                                      Sensor
Humidity Level(%):                                                39.00
Temperature (Celsius):                                            26.00
Temperature (Fahrenheit):                                         78.80
```

Figure 24 - Device Display for A SENSOR Port

show device summary

Displays summary information on the sensors, and power management devices, that are attached to asynchronous ports of the LX unit.

Syntax

```
show device summary
```

Example

```
show device summary
```

Figure 25 shows an example of the Device summary display.

```
Device Number   Device Type       Model Name

        4         IR5100         IR-5100-126
        5         IR5100         IR-5100-255
```

Figure 25 - Device Summary Display

show interface characteristics

Displays the characteristics of an IP interface.

Syntax

```
show interface NUMBER|all characteristics
```

Where	Means
NUMBER	Specifies the IP interface for which information is to be displayed.
all	Display information for all the IP interfaces on the LX unit.

Examples

```
show interface 1 characteristics

show interface all characteristics
```

Figure 26 shows an example of the Interface Characteristics display.

```
Time:                                          Mon, 24 Feb 2003 16:14:27
Interface Name:          Interface_1  Bound to :                    eth0
IP MTU Size:                    1500
IP Address   :             0.0.0.0  Learned IP Address  :  102.19.169.191
IP Mask      :             0.0.0.0  Learned IP Mask     :   255.255.255.0
IP Broadcast :             0.0.0.0  Learned IP Broadcast:  102.19.169.255
Interface Status:           In Use  Learned IP Gateway  :    102.19.169.1
Rotary Feature:            Disabled  Learned IP DNS      :         0.0.0.0
Authentication:               Local  Radius Accounting:           Disabled
Authentication FallBack:     Disabled  Tacacs+ Accounting:           Disabled
SSH    port:                     22  Telnet port:                      23
SSH Keepalive Interval:           0  SSH Keepalive Count:               3
```

Figure 26 - Interface Characteristics Display

Field	Description
Time	The date and time that the `show interface characteristics` command was executed.
Interface Name	The name of the IP interface for which data is being displayed.
IP MTU Size	The Maximum Transmission Unit (MTU) size for an IP interface. The MTU size is the largest-size frame that can be transmitted on the IP interface.
IP Address	The IP Address of the IP interface.
IP Mask	The subnet mask of the IP interface.
IP Broadcast	The IP Broadcast Address of the IP interface.

Interface Status	The status of the IP interface. The possible values are In Use and N/A.
Rotary Feature	Indicates whether IP Rotary is Enabled or Disabled on this IP interface. If it is Enabled, you will be able to configure the rotary settings on this IP interface. If it is Disabled, you will *not* be able to configure the rotary settings on this IP interface.
Authentication	Indicates the type of authentication that is in effect for the IP interface.
Authentication Fallback	Indicates whether the Fallback Login Feature is Enabled or Disabled for the IP interface.
SSH port	The SSH port for the IP interface.
SSH Keepalive Interval	The length of time, in seconds, between attempts at making an SSH connection to the IP interface.
Bound to	The Ethernet port to which the interface is bound.
Learned IP Address	The IP Address learned from ppciboot.
Learned IP Mask	The subnet mask learned from ppciboot.
Learned IP Broadcast	The IP Broadcast Address learned from ppciboot.
Learned IP Gateway	The IP Gateway learned from ppciboot.
Learned IP DNS	The Domain Name Server (DNS) learned from ppciboot.
RADIUS Accounting	Indicates whether RADIUS Accounting is enabled or disabled for the IP interface.
Tacacs+ Accounting	Indicates whether Tacacs+ Accounting is enabled or disabled for the IP interface.
Telnet port	The Telnet port for the IP interface.
SSH Keepalive Count	The number of times that an SSH client will attempt to make an SSH connection to the IP interface.

show interface port mapping

Displays the Telnet port number, and the SSH port number, associated with each serial port on an IP interface.

Syntax

```
show interface NUMBER|all port mapping
```

Where	Means
NUMBER	Specifies the IP interface for which information is to be displayed.
all	Display information for all the IP interfaces on the LX unit.

Example

```
show interface all port mapping
```

Figure 27 on page 98 shows an example of the port mapping display.

Serial Port	Telnet Port	SSH Port
0	0	0
1	2100	2122
2	2200	2222
3	2300	2322
4	2400	2422
5	2500	2522
6	2600	2622
7	2700	2722
8	2800	2822
9	2900	2922
10	3000	3022
11	3100	3122
12	3200	3222
13	3300	3322
14	3400	3422
15	3500	3522
16	3600	3622
17	3700	3722
18	3800	3822
19	3900	3922
20	4000	4022
21	4100	4122
22	4200	4222
23	4300	4322
24	4400	4422
25	4500	4522
26	4600	4622
27	4700	4722
28	4800	4822
29	4900	4922
30	5000	5022
31	5100	5122
32	5200	5222
33	5300	5322

Figure 27 - Port Mapping Display

show interface rotary

Displays the characteristics of a rotary.

Syntax

```
show interface NUMBER|all rotary
```

Where	Means
NUMBER	Specifies the rotary for which information is to be displayed. The allowable rotary numbers are 1 through 5.
all	Display information for all the rotaries on the LX unit.

Examples

```
show interface 3 rotary

show interface all rotary
```

Figure 28 shows an example of the Rotary Characteristics display.

```
Rotary IP Address    TCP    SSH       Rotary Type   Rotary State  Serial Ports
  147.132.145.16    1500   1522     First Available     Disabled
```

Figure 28 - Rotary Characteristics Display

Field	Description
Rotary IP Address	The IP Address of the rotary. (This is also the IP Address of the interface.)
TCP	The TCP socket number assigned to the rotary.
SSH	The SSH socket number assigned to the rotary.
Rotary Type	The rotary type (First Available or Round Robin).
Rotary State	Indicates whether the rotary is Enabled or Disabled.
Serial Ports	The serial ports included in the rotary.

show interface status

Displays status information for an IP interface.

Syntax

```
show interface NUMBER|all status
```

Where	Means
NUMBER	Specifies the IP interface for which information is to be displayed. The allowable IP interface numbers are 1 through 5.
all	Display information for all the IP interfaces on the LX unit.

Examples

```
show interface 1 status

show interface all status
```

Figure 29 shows an example of the Interface status display.

```
Time:                                        Mon 24 Apr 2003 16:19:34
Interface Name:          Interface_1     Bound to :                eth0
IP Address:           102.19.169.191     IP Mask:          255.255.255.0
IP Broadcast Addr:     102.19.169.255
```

Figure 29 - Interface Status Display

Field	Description
Time	The date and time that the `show interface status` command was executed.
Interface Name	The name of the IP interface.
IP Address	The IP Address of the IP interface.
IP Broadcast Addr	The IP Broadcast Address of the IP interface.
Bound to	The Ethernet port to which the IP interface is bound.
IP Mask	The Subnet Mask of the IP interface.

show interface summary

Displays summary information on all of the IP interfaces that are configured on the LX unit.

Syntax

```
show interface summary
```

Example

```
show interface summary
```

Figure 30 shows an example of the Interfaces summary display.

NOTE: Interface addresses that are *learned* are not displayed on the following screen.

```
        Name          Address        Broadcast       Addr. Mask    Bound to
  Interface_1         0.0.0.0          0.0.0.0          0.0.0.0        eth0
  Interface_2         0.0.0.0          0.0.0.0          0.0.0.0      eth0:1
  Interface_3         0.0.0.0          0.0.0.0          0.0.0.0      eth0:2
  Interface_4         0.0.0.0          0.0.0.0          0.0.0.0      eth0:3
  Interface_5         0.0.0.0          0.0.0.0          0.0.0.0      eth0:4
```

Figure 30 - Interfaces Summary Display

Field	Description
Name	The name of the IP interface.
Address	The IP Address configured for the IP interface.
Broadcast	The Broadcast Address configured for the IP interface.
Addr. Mask	The subnet mask configured for the IP interface.
Bound to	The Ethernet port to which the IP interface is bound.

show kernel log

Displays a log of Linux kernel activity for the LX unit.

Syntax

```
show kernel log
```

Example

```
show kernel log
```

Figure 31 shows an example of the Kernel Log display.

```
Jan  3 15:42:50 In-Reach kernel: klogd 1.4.1, log source = /proc/kmsg started.
Jan  3 15:42:50 In-Reach kernel: Cannot find map file.
Jan  3 15:42:50 In-Reach kernel: No module symbols loaded - kernel modules not
   enabled.
Jan  3 15:42:50 In-Reach kernel: Linux version 2.4.19 (build@GenBuild) (gcc version
   2.95.3 20010315 (release)) #1 Wed Feb 26 08:16:45 EST 2003
Jan  3 15:42:50 In-Reach kernel: On node 0 totalpages: 16384
Jan  3 15:42:50 In-Reach kernel: zone(0): 16384 pages.
Jan  3 15:42:50 In-Reach kernel: zone(1): 0 pages.
Jan  3 15:42:50 In-Reach kernel: zone(2): 0 pages.
Jan  3 15:42:50 In-Reach kernel: Kernel command line: root=/dev/ram CONSOLE=/dev
    /console
Jan  3 15:42:50 In-Reach kernel: Decrementer Frequency = 247500000/60
Jan  3 15:42:50 In-Reach kernel: Calibrating delay loop... 65.53 BogoMIPS
Jan  3 15:42:50 In-Reach kernel: Memory: 57500k available (1440k kernel code, 49
   2k data, 56k init, 0k highmem)
Jan  3 15:42:50 In-Reach kernel: Dentry cache hash table entries: 8192 (order: 4
   , 65536 bytes)
Jan  3 15:42:50 In-Reach kernel: Inode cache hash table entries: 4096 (order: 3,
   32768 bytes)
Jan  3 15:42:50 In-Reach kernel: Mount-cache hash table entries: 1024 (order: 1,
   8192 bytes)
Jan  3 15:42:50 In-Reach kernel: Buffer-cache hash table entries: 4096 (order: 2
   , 16384 bytes)
Jan  3 15:42:50 In-Reach kernel: Page-cache hash table entries: 16384 (order: 4,
   65536 bytes)
Jan  3 15:42:50 In-Reach kernel: POSIX conformance testing by UNIFIX
Jan  3 15:42:50 In-Reach kernel: Linux NET4.0 for Linux 2.4
Jan  3 15:42:50 In-Reach kernel: Based upon Swansea University Computer Society
   NET3.039
Jan  3 15:42:50 In-Reach kernel: Initializing RT netlink socket
Jan  3 15:42:50 In-Reach kernel: Starting kswapd
Jan  3 15:42:50 In-Reach kernel: i2c-core.o: i2c core module version 2.6.1 (2001
   0830)

Type a key to continue, q to quit
```

Figure 31 - Kernel Log Display

show log

Displays the contents of syslogd for the LX unit.

Syntax

```
show log
```

Example

```
show log
```

Figure 32 shows an example of the Log display.

```
Dec 31 21:10:20 In-Reach syslogd 1.4.1: restart.
Dec 31 21:10:20 In-Reach kernel: klogd 1.4.1, log source = /proc/kmsg started.
Dec 31 21:10:21 In-Reach kernel: Cannot find map file.
Dec 31 21:10:21 In-Reach kernel: No module symbols loaded - kernel modules not
enabled.
Dec 31 21:10:21 In-Reach kernel: Linux version 2.4.19 (build@GenBuild) (gcc vers
ion 2.95.3 20010315 (release)) #1 Mon Feb 3 07:52:36 EST 2003
Dec 31 21:10:21 In-Reach kernel: On node 0 totalpages: 16384
Dec 31 21:10:21 In-Reach kernel: zone(0): 16384 pages.
Dec 31 21:10:21 In-Reach kernel: zone(1): 0 pages.
Dec 31 21:10:21 In-Reach kernel: zone(2): 0 pages.
Dec 31 21:10:21 In-Reach kernel: Kernel command line: root=/dev/ram CONSOLE=/dev
/console
Dec 31 21:10:21 In-Reach kernel: Decrementer Frequency = 247500000/60
Dec 31 21:10:21 In-Reach kernel: Calibrating delay loop... 65.53 BogoMIPS
Dec 31 21:10:21 In-Reach kernel: Memory: 58432k available (1292k kernel code, 43
2k data, 52k init, 0k highmem)
Dec 31 21:10:21 In-Reach kernel: Dentry cache hash table entries: 8192 (order: 4
, 65536 bytes)
Dec 31 21:10:21 In-Reach kernel: Inode cache hash table entries: 4096 (order: 3,
 32768 bytes)
Dec 31 21:10:21 In-Reach kernel: Mount-cache hash table entries: 1024 (order: 1,
 8192 bytes)
Dec 31 21:10:21 In-Reach kernel: Buffer-cache hash table entries: 4096 (order: 2
, 16384 bytes)
Dec 31 21:10:21 In-Reach kernel: Page-cache hash table entries: 16384 (order: 4,
 65536 bytes)
Dec 31 21:10:21 In-Reach kernel: POSIX conformance testing by UNIFIX
Dec 31 21:10:21 In-Reach kernel: Linux NET4.0 for Linux 2.4
Dec 31 21:10:21 In-Reach kernel: Based upon Swansea University Computer Society
NET3.039
Dec 31 21:10:21 In-Reach kernel: Initializing RT netlink socket
Dec 31 21:10:21 In-Reach kernel: Starting kswapd

Type a key to continue, q to quit
```

Figure 32 - Log Display

show notification message

Displays the ID number, string portion (message), facility, and priority of configurable syslogd messages.

Syntax

```
show notification message NUMBER|all
```

Where	Means
NUMBER	The ID number of a configurable syslogd message.
all	Display all of the configurable syslogd messages on the LX unit.

Example

```
show notification message 4
```

Figure 33 shows an example of the Message display.

```
Message record 4:
Message: The Shell has been exited by
Facility: user  Priority: notice
```

Figure 33 - Message Display

show notification serviceprofile

Displays information on Service Profiles configured for the Notification Feature.

Syntax

`show notification serviceprofile <name>|all`

Where	Means
name	The Service Profile for which data is to be displayed.
all	Display the specified data for all Service Profiles on the LX unit.

Example

```
show notification serviceprofile all
```

Figure 34 shows an example of the Service Profile display.

```
ServiceProfile: syslog Protocol: localsyslog
File: syslog

ServiceProfile: messages Protocol: localsyslog
File: messages

ServiceProfile: debug Protocol: localsyslog
File: debug

ServiceProfile: mark1 Protocol: localsyslog
File:

ServiceProfile: jacklocal Protocol: localsyslog
File: jacksyslog

ServiceProfile: jackremote Protocol: remotesyslog
Remote Host:

ServiceProfile: jackasync Protocol: async
Async Port: 5

ServiceProfile: jack Protocol: tap
SMSC: 18668230501 Bits/Parity/StopBits:8N1
Modem Port(s): 33

ServiceProfile: webjack Protocol: web
Driver: verizon_web
```

Figure 34 - Service Profile Display

show notification userprofile

Displays information on User Profiles of the Notification Feature.

Syntax

```
show notification userprofile <name>|all
```

Where	Means
name	The User Profile for which data is to be displayed.
all	Display the specified data for all User Profiles on the LX unit.

Example

```
show notification userprofile all
```

Figure 35 shows an example of the User Profile display.

```
UserProfile: syslog ServiceProfile: syslog
Contact:
Facility: all Priority: err

UserProfile: messages ServiceProfile: messages
Contact:
Facility: all Priority: notice

UserProfile: debug ServiceProfile: debug
Contact:
Facility: all Priority: debug

UserProfile: grogers@mrv ServiceProfile: N/A
Contact:
Facility: kern Priority: emerg

UserProfile: mark ServiceProfile: N/A
Contact:
Facility: kern Priority: emerg

UserProfile: jacklocal ServiceProfile: jacklocal
Contact:
Facility: user Priority: warning
```

Figure 35 - User Profile Display

show outlet group status

Displays status information for outlet groups.

Syntax

`show outlet group <group_number>|<group_name>|all status`

Where	Means
group_number	An integer number that specifies an existing outlet group.
group_name	The descriptive name of an existing outlet group.
all	Display the specified data for all outlet groups on the LX unit.

Example

```
show outlet group all status
```

Figure 36 shows an example of the Outlet Group Status display.

```
Time:      Mon, 16 Sep 2002 17:55:19   Group Number:                    2
Group Name:                    mypc  Group Off Time:                    4
Port  Outlet    State
  2      1       Not configured
  2      2       Not configured
```

Figure 36 - Outlet Group Status Display

Field	Description
Time	The date and time that the `show outlet group status` command was executed.
Group Name	The descriptive name of the outlet group.
Port	The LX Port from which the outlet is managed.
Outlet	The outlet number.
State	The state of the individual outlet.
Group Number	The group number of the outlet group.
Group Off Time	The length of time that outlets in the group must remain off after they have been turned off.

show port async apd

Displays the APD settings of an asynchronous port.

Syntax

`show port async all|<port_number> apd`

Where	Means
all	Display information for all asynchronous ports.
port_number	The port number of an asynchronous port.

Example

```
show port async 5 apd

show port async all apd
```

The port APD Settings screen contains the same fields as the port APD Settings screen that can be displayed in the User command mode. For more information refer to Figure 4 on page 46.

show port async characteristics

Displays the characteristics of an asynchronous port.

Syntax

`show port async all|<port_number> characteristics`

Where	Means
all	Display information for all asynchronous ports.
port_number	The port number of an asynchronous port.

Example

```
show port async 5 characteristics

show port async all characteristics
```

The display contains the same fields as the port characteristics screen that can be displayed in the User command mode. For more information refer to Figure 3 on page 43.

show port async modem

Displays the modem settings for an asynchronous port.

Syntax

`show port async all|<port_number> modem`

Where	Means
all	Display information for all asynchronous ports.
port_number	The port number of an asynchronous port.

Example

```
show port async 5 modem

show port async all modem
```

The display contains the same fields as the port modem screen that can be displayed in the User command mode. For more information refer to Figure 5 on page 47.

show port async pattern match characteristics

Displays the match patterns and pattern-matching characteristics for an asynchronous port.

Syntax

`show port async <port_number>|all pattern match characteristics`

Where	Means
port_number	The port number of an asynchronous port. **Note:** The port must be configured for databuffer access.
all	Display the pattern-matching characteristics for all asynchronous ports on the LX unit.

Example

```
show port async 5 pattern match characteristics
```

Figure 37 shows an example of the Pattern Match Characteristics display.

```
Time:                                          Wed, 05 Feb 2003 07:05:52
Banner:          Welcome to MRV Communications, In-Reach Product Division.
Port Number:                      5
Pattern Match:              Enabled

Pattern 1: SuperUser
Pattern 2: tes.t
Pattern 3: Unix Reboot
Pattern 8: abc*
```

Figure 37 - Pattern Match Characteristics Display

show port async ppp

Displays the Point-to-Point Protocol (PPP) settings of an asynchronous port.

Syntax

`show port async all|<port_number> ppp`

Where	Means
all	Display information for all asynchronous ports.
port_number	The port number of an asynchronous port.

Example

```
show port async 5 ppp

show port async all ppp
```

The display contains the same fields as the port PPP screen that can be displayed in the User command mode. For more information refer to Figure 6 on page 48.

show port async ppp status

Displays the Point-to-Point Protocol (PPP) status of an asynchronous port.

Syntax

`show port async all|<port_number> ppp status`

Where	Means
all	Display information for all asynchronous ports.
port_number	The port number of an asynchronous port.

Example

```
show port async 4 ppp status
```

Figure 38 shows an example of the PPP status display.

```
Time:                                        Tue, 18 Mar 2003 20:21:58 UTC
Port Device:              /dev/ttyGN4  Port Number:                      4
Learned Remote Addr.:         0.0.0.0
Lcp Link Status:              Closed  Ipcp Link Status:             Closed
PPP Transmit Bytes:              N/A  PPP Recieve Bytes:              N/A
PPP Transmit Frames:             N/A  PPP Recieve Frames:             N/A
PPP Transmit Errors:             N/A  PPP Recieve Errors:             N/A
```

Figure 38 - PPP Status Display

show port async status

Displays status information for asynchronous ports.

Syntax

`show port async all|<port_number> status`

Where	Means
all	Display information for all asynchronous ports.
port_number	The port number of an asynchronous port.

Example

```
show port async 5 status

show port async all status
```

This display contains the same fields as the port Status screen that can be displayed in the User command mode. For more information refer to Figure 7 on page 50.

show port async summary

Displays summary information for all of the asynchronous ports on the LX unit.

Syntax

```
show port async summary
```

Example

```
show port async summary
```

Figure 39 shows an example of the summary information for LX asynchronous ports.

Port	Port Name	Access	Speed	TCP Port	SSH port	Device
0	Port_0	Local	9600	0	0	/dev/ttyGN0
1	Port_1	Remote	9600	2100	2122	/dev/ttyGN1
2	Port_2	Remote	9600	2200	2222	/dev/ttyGN2
3	Port_3	Local	9600	2300	2322	/dev/ttyGN3
4	Port_4	Dynamic	9600	2400	2422	/dev/ttyGN4
5	Port_5	Sensor	9600	2500	2522	/dev/ttyGN5
6	Port_6	Databuffer	9600	2600	2622	/dev/ttyGN6
7	Port_7	IR5100	9600	2700	2722	/dev/ttyGN7
8	Port_8	IR5150	9600	2800	2822	/dev/ttyGN8

Figure 39 - Asynchronous Port Summary Data

Field	Description
Port	The Port Number
Port Name	The Port Name
Access	The access method for the port
Speed	The port speed
TCP Port	The Telnet port number for the port
SSH Port	The SSH port number for the port
Device	The Linux Device Name for the port

show port ethernet characteristics

Displays the characteristics of an Ethernet port.

Syntax

`show port ethernet all|<port_number> characteristics`

Where	Means
all	Display information for all Ethernet ports.
port_number	The port number of an Ethernet port.

Example

```
show port ethernet 1 characteristics
```

Figure 40 shows an example of Ethernet Port Characteristics.

```
Time:                                       Mon, 24 Mar 2003 22:30:19
Name:                  eth0    MAC Address:     00:a0:87:9c:00:50:e3
Link Speed:             Auto    Duplex Mode:                    Auto
Description:
```

Figure 40 - Ethernet Port Characteristics

Field	Description
Name	The name of the port.
Description	The description of the Ethernet port.
MAC Address	The Ethernet MAC Address for the port.
Link Speed	The Ethernet port speed. The possible values are auto, 10mb and 100mb.
Duplex Mode	The duplex mode of the Ethernet port. The possible values are auto, full, and half.

show port ethernet status

Displays the statistical information for an ethernet port.

Syntax

```
show port ethernet all|<port_number> status
```

Where	Means
all	Display information for all ethernet ports.
port_number	The port number of an ethernet port.

Example

```
show port ethernet 1 status
```

Figure 41 shows an example of the statistical information for an Ethernet port.

```
Name:                        eth0     MAC Address:  00:a0:87:9c:00:50:e3
Link State:                    Up     Duplex Mode:                  Half
Link Speed:                   100     Auto Negotiation:             Auto
Receive Bytes:             240061     Transmit Bytes:              40115
Receive Packets:             2890     Transmit Packets:              659
Receive Errors:                 0     Transmit Errors:                 0
Receive Drop Packet:            0     Transmit Drop Packet:            0
Receive Overruns:               0     Transmit Overruns:               0
Receive Compressed:             0     Transmit Compressed:             0
Receive Frame Error:            0     Transmit Collisions:             0
Receive Multicast:              0     Transmit Carrier:                0
```

Figure 41 - Ethernet Port Statistical Information

Field	Description
Name	The Ethernet port name.
Link State	The state (Up or Down) of the Ethernet link.
Link Speed	The speed of the Ethernet link (in Megabytes per second).
Receive Bytes	The number of Bytes Received on the Ethernet port since the counters were last reset to zero.
Receive Packets	The number of Packets Received on the Ethernet port since the counters were last reset to zero.
Receive Errors	The number of Receive Errors on the Ethernet port since the counters were last reset to zero.
Receive Drop Packet	The number of Receive Packets that have been dropped by the Ethernet port since the counters were last reset to zero.

Receive Overruns	The number of Receive Overruns on the Ethernet port since the counters were last reset to zero.
Receive Compressed	The number of compressed packets received since the counters were last reset to zero.
Receive Frame Error	The number of Receive Frame Errors on the Ethernet port since the counters were last reset to zero.
Receive Multicast	The number of Multicasts received on the Ethernet port since the counters were last reset to zero.
MAC Address	The MAC Address of the LX unit.
Duplex Mode	The duplex mode (half or full) of the Ethernet link.
Auto Negotiation	Indicates whether or not auto negotiation is in effect on the Ethernet link.
Transmit Bytes	The number of bytes transmitted on the Ethernet port since the counters were last reset to zero.
Transmit Packets	The number of packets transmitted on the Ethernet port since the counters were last reset to zero.
Transmit Errors	The number of Transmit Errors on the Ethernet port since the counters were last reset to zero.
Transmit Drop Packet	The number of Transmit Packets dropped on the Ethernet port since the counters were last reset to zero.
Transmit Overruns	The number of Transmit Overruns on the Ethernet port since the counters were last reset to zero.
Transmit Compressed	The number of compressed packets transmitted since the counters were last reset to zero.
Transmit Collisions	The number of Transmit Collisions on the Ethernet port since the counters were last reset to zero.
Transmit Carrier	

show port ethernet summary

Displays summary information for the Ethernet ports on the LX unit.

Syntax

```
show port ethernet summary
```

Example

```
show port ethernet summary
```

Figure 42 shows an example of the summary information for the LX Ethernet port.

```
Name                    MAC-Address
eth0            00:a0:87:9c:00:50:e3
```

Figure 42 - Ethernet Summary Information

Field	Description
Name	The name of the Ethernet port.
MAC Address	The MAC (physical) Address of the Ethernet port.

show radius characteristics

Displays information about the RADIUS authentication and accounting servers for the LX unit.

Syntax

```
show radius characteristics
```

Example

```
show radius characteristics
```

Figure 43 shows an example of the RADIUS Display.

```
Time:                                   Wed, 10 Apr 2002 00:44:48 UTC
Primary RADIUS Authentication Server:
IP Address: 0.0.0.0                     RADIUS Auth. UDP Port: 1812
Secret:     Not Configured              Timeout:                  4
Retry:      4

Secondary RADIUS Authentication Server:
IP Address: 0.0.0.0                     RADIUS Auth. UDP Port: 1812
Secret:     Not Configured              Timeout:                  4
Retry:      4

Primary RADIUS Accounting Server:
IP Address: 0.0.0.0                     RADIUS Acct. UDP Port: 1813
Secret:     Not Configured              Timeout:                  4
Retry:      4

Secondary RADIUS Accounting Server:
IP Address: 0.0.0.0                     RADIUS Acct. UDP Port: 1813
Secret:     Not Configured              Timeout:                  4
Retry:      4

RADIUS Accounting Server Period: 5
Inbound RADIUS Enabled Serial Ports:
Outbound RADIUS Enabled Serial Ports:
RADIUS Enabled Interfaces:
```

Figure 43 - RADIUS Display

Field	Description
IP Address	The IP Address for the applicable Authentication or Accounting Server.
Secret	The Radius secret shared between the LX unit and the Radius server used for encrypting communications between them.
Retry	The number of times the LX unit will attempt to connect to the Radius server.

RADIUS Auth. UDP Port	The UDP port that the LX unit and the applicable RADIUS authentication server will use for communication.
RADIUS Acct. UDP Port	The UDP port that the LX unit and the applicable RADIUS accounting server will use for communication.
Timeout	The time to wait for a RADIUS server to respond before retransmitting packets to the server.
RADIUS Accounting Server Period	The length of time, in seconds, that the RADIUS server waits for a reply from the RADIUS Accounting server.
Inbound RADIUS Enabled Serial Ports	The Inbound serial ports that are enabled for RADIUS.
Outbound RADIUS Enabled Serial Ports	The Outbound serial ports that are enabled for RADIUS.
RADIUS Enabled Interfaces	The LX interfaces that are enabled for RADIUS.

show radius status

Displays statistical information on RADIUS authentication attempts.

Syntax

```
show radius status
```

Example

```
show radius status
```

Figure 44 shows an example of the RADIUS Status Display.

```
Time:                                    Wed, 08 May 2002 13:32:34 UTC
Total RADIUS Authentication Message Exchange:       Primary     Secondary
   Successful attempts:                                2            0
   Failed attempts:                                    0            0

Total RADIUS Accounting Message Exchange:           Primary     Secondary
   Successful attempts:                                0            0
   Failed attempts:                                    6            6

RADIUS Authentication Counter Summary:              Primary     Secondary
   Successful Logins:                                  2            0
   Authentication Failures:                            0            0
   Configuration Failures:                             0            0
   Policy Failures:                                    0            0

RADIUS Accounting Counter Summary:                  Primary     Secondary
   Successful Acct Entries:                            0            0
   Failed Acct Entries:                                0            0
   Requests Waiting:                                   0            0

RADIUS Fallback Counter Summary:
   Total Fallback Logins:                      0
```

Figure 44 - RADIUS Status Display

Field	Description	
Total RADIUS Authentication Message Exchange	Successful Attempts	The number of times the primary and secondary RADIUS authentication servers successfully exchanged messages with the LX unit.
	Failed attempts	The number of times the primary and secondary RADIUS authentication servers failed to exchange messages with the LX unit.

Total RADIUS Accounting Message Exchange	Successful Attempts	The number of times the primary and secondary RADIUS accounting servers successfully exchanged messages with the LX unit.
	Failed attempts	The number of times the primary and secondary RADIUS accounting servers failed to exchange messages with the LX unit.
RADIUS Authentication Counter Summary	Successful Logins	The number of successful logins using RADIUS.
	Authentication Failures	The number of unsuccessful logins using RADIUS.
	Configuration Failures	The number of login failures that occurred due to configuration failures.
	Policy Failures	The number of login failures that occurred due to policy failures.
RADIUS Accounting Counter Summary	Successful Acct Entries	The number of successful RADIUS accounting entries.
	Failed Acct Entries	The number of failed RADIUS accounting entries.
	Requests Waiting	The number of RADIUS Accounting requests that have not been processed yet.
RADIUS Fallback Counter Summary	Total Fallback Logins	The number of logins that have been done through the RADIUS Fallback Login feature.

show radius summary

Displays summary data for the RADIUS authentication and accounting servers.

Syntax

```
show radius summary
```

Example

```
show radius summary
```

Figure 45 shows an example of the RADIUS Summary Display.

```
Radius Server Summary                                Thu, 12 Sep 2002 20:47:18
 Primary Auth. Server:          0.0.0.0  Primary Auth. UDP Port:          1812
 Secondary Auth. Server:        0.0.0.0  Secondary Auth. UDP Port:        1812
 Primary Acct. Server:          0.0.0.0  Primary Acct. UDP Port:          1813
 Secondary Acct. Server:        0.0.0.0  Secondary Acct. UDP Port:        1813
```

Figure 45 - RADIUS Summary Display

Field	Description
Primary Auth. Server	The IP Address of the Primary RADIUS Authentication server.
Secondary Auth. Server	The IP Address of the Secondary RADIUS Authentication server.
Primary Acct. Server	The IP Address of the Primary RADIUS Accounting server.
Secondary Acct. Server	The IP Address of the Secondary RADIUS Accounting server.
Primary Auth. UDP Port	The UDP port for the Primary RADIUS Authentication server.
Secondary Auth. UDP Port	The UDP port for the Secondary RADIUS Authentication server.
Primary Acct. UDP Port	The UDP port for the Primary RADIUS Accounting server.
Secondary Acct. UDP Port	The UDP port for the Secondary RADIUS Accounting server.

show route

Displays the IP addresses of the default route, subnet mask, and gateway of the LX unit.

Syntax

```
show route
```

Example

```
show route
```

Figure 46 shows an example of the Route Display.

```
          Route            Mask          Gateway
    192.168.10.0   255.255.255.0     10.50.100.1
    192.168.11.0   255.255.255.0     10.50.100.10
    192.168.12.0   255.255.255.0     10.50.100.20
    192.168.13.0   255.255.255.0     10.50.100.30
    192.168.14.0   255.255.255.0     10.50.100.40
    192.168.15.0   255.255.255.0     10.50.100.50
    192.168.16.0   255.255.255.0     10.50.100.60
```

Figure 46 - Route Display

show securid characteristics

Displays information about the SecurID authentication server for the LX unit.

Syntax

```
show securid characteristics
```

Example

```
show securid characteristics
```

Figure 43 shows an example of the SecurID Characteristics Display.

```
Time:                                          Mon, 17 Mar 2003 18:09:34 UTC
SecurID Configuration Settings
 Authentication Version:     Version_5  Authentication Encryption:        DES
 Authentication Timeout:             5  Authentication Retransmit:          3
 Authentication Port:             5500
 V5 Primary Server:            0.0.0.0  Primary Name:
 Legacy Master Server:         0.0.0.0  Master Name:
 Legacy Slave Server:          0.0.0.0  Slave Name:
 Inbound SecurID Enabled Serial Ports:
 Outbound SecurID Enabled Serial Ports:
 SecurID Enabled Interfaces:
```

Figure 47 - SecurID Characteristics Display

Field	Description
Time	The date and time that the `show securid characteristics` command was executed.
Authentication Version	The version of SecurID that is running on the SecurID authentication server. The possible values are Legacy and Version_5.
Authentication Timeout	The time to wait for the SecurID authentication server to respond before retransmitting packets to the server.
Authentication Port	The UDP port that the LX unit and the SecurID authentication server will use for communication.
V5 Primary Server	The IP Address of the authentication server used for Version 5 of SecurID.
Legacy Master Server	The IP address of the Master server for the Legacy version of SecurID.
Legacy Slave Server	The IP address of the Slave server for the Legacy version of SecurID.
Inbound SecurID Enabled Serial Ports	The Inbound serial ports that use SecurID authentication.

Outbound SecurID Enabled Serial Ports	The Outbound serial ports that use SecurID authentication.
SecurID Enabled Interfaces	The IP interfaces that use SecurID authentication.
Authentication Encryption	The encryption method used by SecurID. The possible values are DES and SDI.
Authentication Retransmit	The maximum number of times the LX unit will retransmit packets to the SecurID authentication server after the expiration of an Authentication Timeout.
Primary Name	The name of the Version 5 authentication server.
Master Name	The name of the Master server for the Legacy version of SecurID.
Slave Name	The name of the Slave server for the Legacy version of SecurID.

show securid status

Displays statistical information on SecurID authentication attempts.

Syntax

```
show securid status
```

Example

```
show securid status
```

Figure 44 shows an example of the SecurID Status Display.

```
Time:                                          Mon, 24 Feb 2003 16:55:59
SecurID Status & Counters:
Successful Logins:                 0
Failed Logins:                     0
Fallback Logins:                   0
Learned SecurID Node Secret:    False
Learned SecurID Servers:
```

Figure 48 - SecurID Status Display

Field	Description
Time	The date and time that the `show securid status` command was executed.
Successful Logins	The number of successful logins using SecurID.
Failed Logins	The number of unsuccessful logins using SecurID.
Fallback Logins	The number of logins that have been accomplished using SecurID Fallback.
Learned SecurID Node Secret	Indicates whether or not the LX unit has received the SecurID Secret from the SecurID Server. The possible values are True and False. A value of True means that the LX unit has received the SecurID Secret from the SecurID Server. A value of True means that the LX unit has *not* received the SecurID Secret from the SecurID Server.
Learned SecurID Servers	The IP addresses, or host names, of the Primary and Replica SecurID servers that the LX unit can use for authentication.

show securid summary

Displays summary data for the SecurID authentication and accounting servers.

Syntax

```
show securid summary
```

Example

```
show securid summary
```

Figure 45 shows an example of the SecurID Summary Display.

```
Time:                                          Mon, 17 Mar 2003 18:17:27 UTC
 V5 Primary Server:            0.0.0.0  Primary Name:
 Legacy Master Server:         0.0.0.0  Master Name:
 Authentication Version:     Version_5  Authentication Port:             5500
```

Figure 49 - SecurID Summary Display

Field	Description
Time	The date and time that the `show securid summary` command was executed.
V5 Primary Server	The IP Address of the authentication server used for Version 5 of SecurID.
Legacy Master Server	The IP address of the Master server for the Legacy version of SecurID.
Authentication Version	The version of SecurID that is running on the SecurID authentication server. The possible values are Legacy and Version_5.
Primary Name	The name of the Version 5 Primary authentication server.
Master Name	The name of the Master server for the Legacy version of SecurID.
Authentication Port	The UDP port that the LX unit and the SecurID authentication server will use for communication.

show service

Displays the name and IP Address of every service that is configured for the LX unit.

Syntax

```
show service
```

Example

```
show service
```

Figure 50 shows an example of the Service screen.

```
Wed, 10 Apr 2002 10:45:08 UTC
  Service Name                IP Address
  dewey                       123.123.1.1
  huey                        123.123.1.2
```

Figure 50 - Service Screen

show session

Displays information about opened sessions on the LX unit.

Syntax

```
show session [<session_number>]
```

Where	Means
session_number	The session number of an opened connection.

Usage Guidelines

If this command is executed without the <*session_number*> argument (i.e., `show session`), it displays information for all opened sessions on the LX unit.

Example

```
show session 3
```

This display contains the same fields as the Session screen that can be displayed in the User command mode. For more information refer to Figure 10 on page 54.

show snmp characteristics

Displays the system-level SNMP characteristics for the LX unit.

Syntax

```
show snmp characteristics
```

Example

```
show snmp characteristics
```

Figure 52 shows an example of SNMP characteristics Display.

```
Time:   Wed, 10 Apr 2002 10:45:08 UTC     Name:          InReach
Logging:      Disabled                   Port:              161
Contact:   Henry Smith                   Location:  Upstairs Lab
V3 Engine Boots:    14
V3 Engine ID:           6537303330336565616365323932336100000000
```

Figure 51 - SNMP Characteristics Display

Field	Description
Time	The date and time that the `show snmp characteristics` command was executed.
Logging	Indicates whether the SNMP Logging feature is Enabled or Disabled on the LX unit.
Contact	The contact for the LX unit.
V3 Engine Boots	The number of times the V3 engine has been rebooted.
V3 Engine ID	The V3 Engine ID for the LX unit.
Name	The system name for the LX unit.
Port	The SNMP UDP port for the LX unit.
Location	The location of the LX unit.

show snmp client

Displays information on SNMP clients.

Syntax

`show snmp client all|<client_number>`

Where	Means
all	Display information for all SNMP clients on this LX unit.
client_number	The client number for an SNMP client

Example

```
show snmp client 1
```

Figure 52 shows an example of SNMP Client Display.

```
Get Client:                  1  Address:              145.134.118.12
Community:              public  Version:                         1

Set Client:                  1  Address:              145.134.118.16
Community:              public  Version:                         1

Trap Client:                 1  Address:              145.134.118.18
Community:             private  Version:                         1
```

Figure 52 - SNMP Client Display

Field	Description
Get Client	The SNMP client (e.g., a Network Operations Center, or NOC) which is permitted to perform an SNMP get on the LX unit.
Set Client	The SNMP client (e.g., a Network Operations Center, or NOC) which is permitted to perform an SNMP set on the LX unit.
Trap Client	The SNMP client (e.g., a Network Operations Center, or NOC) which is permitted to trap SNMP characteristics from the LX unit.
Community	The name of the applicable SNMP Community to which the LX unit belongs. When an SNMP Community Name has been specified for the unit, only SNMP clients which belong to the same community are permitted to perform the applicable SNMP operation (Get, Set, or Trap) on the unit.
Address	The IP Address of the SNMP Get, Set, or Trap client.
Version	The SNMP Get, Set, or Trap Version for the client. The possible values are 1, 2, or 3.

show snmp v3

Displays V3 information for SNMP clients.

Syntax

`show snmp v3 all|<client_number>`

Where	Means
all	Display information for all SNMP clients on this LX unit.
client_number	The client number for an SNMP client

Example

```
show snmp v3 3
```

Figure 53 shows an example of the V3 display for an SNMP client.

```
Client:                          4
Engine Boots:                    8
Engine ID:                        e70303eeace2923a000000000000000000000000
V3 View OID Subtree:                                                      0
V3 View OID Subtree Mask:         80000000000000000000000000000000000000000
V3 View Name:
V3 View Type:                Allow
V3 Access Group Name:                V3 Access Context Prefix:
V3 Access Security Model:          3  V3 Access Security Level:           1
V3 Access Read View:          view  V3 Access Write View:           view
V3 Access Notify View:        view
V3 Access Cont. Match:        none
V3 Security Name:                    V3 Source IP:                0.0.0.0
V3 Secur. Community:         public  V3 Source Mask:               0.0.0.0
V3 Group Secur. Model:               V3 Group Secur. Name:
V3 Group Name:
```

Figure 53 - V3 Display

Field	Description
Client	The SNMP client number.
Engine Boots	The number of times the SNMP v3 daemon has booted (i.e., used its shared secret).
Engine ID	The ID of the SNMP v3 daemon.
V3 View OID Subtree	The OID range that is accessible by this view.
V3 View OID Subtree Mask	The valid numbers in the subtree, specified as the individual bits of the digits.

V3 View Name	The name of the view entry.
V3 View Type	Indicates whether the v3 view type is allowed or denied. If the value of this field is Enabled, the view type is allowed. If the value of this field is Disabled, the view type is denied.
V3 Access Group Name	The name of a group to map to a view.
V3 Access Security Model	The version number of the group entry.
V3 Access Read View	The view to use for read requests.
V3 Access Notify View	The view to use for Notify requests.
V3 Access Cont. Match	Indicates whether the context prefix is a prefix of an exact value.
V3 Security Name	The user name to be used for the IP Address specified by the Source IP, Source Mask, and Community.
V3 Secur. Community	The Community Name used in a request to map to a Security Name.
V3 Group Secur. Model	The Version Number of a request to map to a Group Name.
V3 Group Name	The Name of the v3 Group.
V3 Access Context Prefix	The Access Context Prefix.
V3 Access Security Level	Indicates the v3 Access Security Level for the LX unit. The possible values are as follows: **1** - No authorization **2** - Authorization with no privileges **3** - Authorization with privileges **4** - The LX unit is non-v3
V3 Access Write View	The view to use with write requests.
V3 Source IP	The IP range that is mapped to the Security Name for non-v3 requests.
V3 Source Mask	The incoming IP Address is ANDed with this mask before it is compared with the Source IP Address.

V3 Group Secur. Name	The name of the user to map to a group.

show subscriber

Displays the status or characteristics for selected subscribers.

Syntax

```
show subscriber <subscriber_name>|all characteristics|status|tcp
```

Where	Means
subscriber_name	The subscriber for which data is to be displayed.
all	Display the specified data for all subscribers on the LX unit.
characteristics	Displays the characteristics for the specified subscribers. This option displays a screen that contains the same fields as the subscriber characteristics that are displayed in User Mode. For more information, refer to Figure 11 on page 56.
status	Displays the status information for the specified subscribers. This option displays a screen that contains the same fields as the subscriber status screen that is displayed in User Mode. For more information, refer to Figure 12 on page 59.
tcp	Displays the TCP information for the selected subscribers. This option displays a screen that contains the same fields as the subscriber TCP screen that is displayed in User Mode. For more information, refer to Figure 13 on page 60.

Examples

```
show subscriber tim characteristics

show subscriber tim status

show subscriber all tcp
```

show subscriber summary

Displays summary information for all of the subscribers configured on the LX unit.

Syntax

```
show subscriber summary
```

Examples

```
show subscriber summary
```

Figure 54 shows an example of the Subscriber Summary Display.

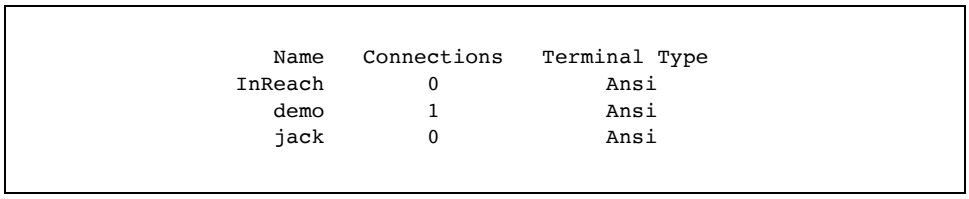

Figure 54 - Subscriber Summary Display

show system characteristics

Displays the global system configuration for the LX unit.

Syntax

```
show system characteristics
```

Example

```
show system characteristics
```

Figure 55 shows an example of the system display for an LX unit.

```
Name:                          InReach    Time:   Wed, 10 Apr 2002 02:13:18 UTC
Serial Number:      00:a0:9c:00:01:43
Location:                                                        UpstairsLab
Domain Name suffix:                                          yourcompany.com
Maximum Number of Async Ports:      8    Internal Modem on Port:             0
Maximum Number of Subscribers:     16    Maximum Number of Virtual Ports:   32
Maximum Number of Interfaces:       4    Maximum Number of Ethernet Ports:   1
Primary Domain :       102.19.176.254    Secondary Domain :      102.19.128.17
Gateway :                102.19.169.1    Default TFTP Server :  102.19.169.182
Timed Daemon:                Disabled    TFTP Retries:                       3
NTP   Daemon:                Disabled    TFTP Timeout:                       3
NTP   Server:                 0.0.0.0    SNMP Feature:                Disabled
Finger Daemon:               Disabled    Logging Size :                  64000
Telnet Daemon:                Enabled    SSH Daemon:                   Enabled
Web Server:                   Enabled
```

Figure 55 - System Display

Field	Description
Name	The host name of the LX unit.
Location	A text string that specifies the physical location of the LX unit.
Serial Number	The Serial Number of the LX unit.
Domain Name Suffix	The suffix for the LX-unit Domain Name.
Maximum Number of Async Ports	The maximum allowable number of asynchronous ports on the LX unit.
Maximum Number of Subscribers	The maximum number of subscribers on the LX unit.
Maximum Number of Interfaces	The maximum allowable number of IP interfaces on the LX unit.
Primary Domain	The IP Address of the Primary Domain Name Server (DNS) for the LX unit.

Gateway	The IP Address for the gateway (default route) of the LX unit.
Timed Daemon	Indicates whether the Timed Daemon is Enabled or Disabled.
NTP Daemon	Indicates whether the Network Time Protocol (NTP) Daemon is Enabled or Disabled on the LX unit.
NTP Server	The IP Address of the NTP server for the LX unit.
Finger Daemon	Indicates whether the Finger Daemon (fingerd) is Enabled or Disabled on the LX unit.
Telnet Daemon	Indicates whether the Telnet Daemon is Enabled or Disabled on the LX unit.
Web Server	Indicates whether the WebServer feature (Browser Management) is Enabled or Disabled on the LX unit.
Time	The date and time that the `show system characteristics` command was executed.
Internal Modem on Port	Indicates whether or not the LX port has an internal modem.
Maximum Number of Virtual Ports	The maximum allowable number of virtual ports on the LX unit.
Maximum Number of Ethernet Ports	The maximum allowable number of Ethernet ports on the LX unit.
Secondary Domain	The IP Address of the Secondary Domain Name Server (DNS) for the LX unit.
Default TFTP server	The default network server for updating the software image, the iBoot file, and parameter files.
TFTP Retries	The number of times the TFTP server will attempt to communicate with the LX unit.
TFTP Timeout	If the LX unit can not load from the TFTP Server before the expiration of this timeout, the TFTP Server is considered dead.
SNMP Feature	Indicates whether SNMP is Enabled or Disabled for the LX unit.
Logging Size	Indicates the size of logging files on the unit.
SSH Daemon	Indicates whether the SSH Daemon is Enabled or Disabled on the LX unit.

show system ppciboot

Displays the ppciboot configured load settings for the LX unit.

Syntax

```
show system ppciboot
```

Example

```
show system ppciboot
```

Figure 56 shows an example of the ppciboot Configured Load Settings Display for an LX unit.

```
            Ppciboot Configured Load Settings

  Ppciboot Software Version      :                  0.9.3.26
  Ppciboot Ethernet Network Link :                      auto
  Software Load From Flash       :                        no
  Software Load From Network     :                       yes
  Software Filename              :              linuxito.img
  Configured IP Address          :           145.189.121.19
  Configured Network Mask        :             255.255.255.0
  Configured Gateway Address     :             145.177.123.1
  Configured TFTP Server Address :            145.177.169.208
  IP Assignment Method #1        :              User Defined
  IP Assignment Method #2        :                     BOOTP
  IP Assignment Method #3        :                      RARP
  IP Assignment Method #4        :                      DHCP
```

Figure 56 - ppciboot Configured Load Settings Display

show system status

Displays system status information for the LX unit.

Syntax

```
show system status
```

Example

```
show system status
```

Figure 57 shows an example of the System Status Display for an LX unit.

```
Time:   Mon, 24 Feb 2003 20:17:20 UTC  System Uptime:                0 8:7:50

Software Load From                  :                       Local Flash Memory
Active System Gateway               :                             102.19.169.1
Configuration Load From             :                       Local Flash Memory
Network file Name                   :
Configuration File to Boot From     :                       /config/Config.prm
Configuration Settings to Boot From :                                    Flash
Configuration Status                :                     Configuration Saved
Configuration Version               :                                        4

CPU usage (0.10 = 10%):                 Memory usage (in KB):
1 min. Avg usage      :          0.00   Total Memory        :           62760
5 min. Avg usage      :          0.00   Cached Memory       :            6320
15 min. Avg usage     :          0.00   Free Memory         :           28488

Temperature Status (degrees Celsius):
Critical Temp.      :            60.0   Hysteresis Temp.    :             5.0
Low Temperature     :             0.0   Threshold Temp.     :            55.0
Current Temp.       :           38.5

PowerFail Log:  Feb 24 21:54:33 2003
```

Figure 57 - System Status Display

Field	Description
Software Load From	The IP Address of the Load Server for the LX software image.
Active System Gateway	The IP Address of the gateway that is currently being used by the LX unit.
Configuration Load From	The parameter server for the LX unit.
Network File Name	The filename of the network file from which the LX configuration is loaded.
Configuration File to Boot From	The filename of the file from which the LX unit is booted.

Configuration Settings to Boot From	Indicates whether the configuration of the LX unit is booted from the local flash or from the network.
Configuration Status	Indicates whether the current configuration of the LX unit has been saved with the `save configuration` command.
Configuration Version	The version number of the LX configuration. This number is incremented by 1 each time a modified version of the LX configuration is saved.
CPU usage (0.10 = 10%)	
1 min. Avg usage	Average CPU usage over the last minute.
5 min. Avg usage	Average CPU usage over the last 5 minutes.
15 min. Avg usage	Average CPU usage over the last 15 minutes.
Memory usage (in KB)	
Total Memory	The total memory on the LX unit (in KB).
Cached Memory	The total cached memory in use (in KB).
Free Memory	The total free memory (in KB).
Temperature Status (degrees Celsius)	
Critical Temp.	The temperature level (in Celsius degrees) that is considered critical for the LX unit.
Low Temperature	The lowest supported operating temperature for the LX unit.
Current Temp.	The current temperature of the LX unit.
Hysteresis Temp.	The Hysteresis for temperature measurements on the LX unit.
Threshold Temp.	The highest supported operating temperature for the LX unit.
PowerFail Log	The dates and times when power failures have occurred on the LX unit. **Note:** This field also displays the date and time when the LX unit is unplugged.

show tacacs+ characteristics

Displays information about the TACACS+ authentication and accounting servers for the LX unit.

Syntax

```
show tacacs+ characteristics
```

Example

```
show tacacs+ characteristics
```

Figure 58 shows an example of the TACACS+ Display.

```
Time:                                    Wed, 10 Apr 2002 00:44:48 UTC
Primary TACACS+ Authentication Server:
IP Address: 0.0.0.0                     TACACS+ Auth. TCP Port:  49
Secret:     Not Configured              Timeout:                  4
Retry:      4

Secondary TACACS+ Authentication Server:
IP Address: 0.0.0.0                     TACACS+ Auth. TCP Port:  49
Secret:     Not Configured              Timeout:                  4
Retry:      4

Primary TACACS+ Accounting Server:
IP Address: 0.0.0.0                     TACACS+ Acct. TCP Port:  49
Secret:     Not Configured              Timeout:                  4
Retry:      4

Secondary TACACS+ Accounting Server:
IP Address: 0.0.0.0                     TACACS+ Acct. TCP Port:  49
Secret:     Not Configured              Timeout:                  4
Retry:      4

TACACS+ Superuser Request:  Disabled   TACACS+ Accounting Server Period: 5
Inbound TACACS+ Enabled Serial Ports:
Outbound TACACS+ Enabled Serial Ports:
TACACS+ Enabled Interfaces:
```

Figure 58 - TACACS+ Display

Field	Description
IP Address	The IP Address for the applicable Authentication or Accounting Server.
Secret	The TACACS+ secret shared between the LX unit and the TACACS+ server used for encrypting communications between them.
Retry	The number of times the LX unit will attempt to connect to the TACACS+ server.

TACACS+ Auth. TCP Port	The TCP port that the LX unit and the applicable TACACS+ authentication server will use for communication.
TACACS+ Acct. TCP Port	The TCP port that the LX unit and the applicable TACACS+ accounting server will use for communication.
Timeout	The time to wait for a TACACS+ server to respond before retransmitting packets to the server.
TACACS+ Superuser Request	Indicates whether or not the TACACS+ Superuser password is used to enter the Superuser Command Mode. The possible values of this field are Enabled and Disabled. If this field is Enabled, the TACACS+ Superuser password will be used to enter the Superuser Command Mode. If this field is Disabled, the Local Password will be used to enter the Superuser Command Mode. **Note:** Even if this field is Disabled, the logon authentication to the LX unit will be through TACACS+.
Inbound TACACS+ Enabled Serial Ports	The Inbound serial ports that are enabled for TACACS+.
Outbound TACACS+ Enabled Serial Ports	The Outbound serial ports that are enabled for TACACS+.
TACACS+ Enabled Interfaces	The LX IP interfaces that are enabled for TACACS+.
TACACS+ Accounting Server Period	The length of time, in seconds, that the TACACS+ server waits for a reply from the TACACS+ Accounting server.

show tacacs+ status

Displays statistical information on TACACS+ authentication attempts.

Syntax

```
show tacacs+ status
```

Example

```
show tacacs+ status
```

Figure 59 shows an example of the TACACS+ Status Display.

```
Time:                                    Wed, 08 May 2002 13:32:34 UTC
Total TACACS+ Authentication Message Exchange:       Primary     Secondary
   Successful attempts:                                 2             0
   Failed attempts:                                     0             0

Total TACACS+ Accounting Message Exchange:           Primary     Secondary
   Successful attempts:                                 0             0
   Failed attempts:                                     6             6

TACACS+ Authentication Counter Summary:              Primary     Secondary
   Successful Logins:                                   2             0
   Authentication Failures:                             0             0

TACACS+ Accounting Counter Summary:                  Primary     Secondary
   Successful Acct Entries:                             0             0
   Failed Acct Entries:                                 0             0

TACACS+ Superuser Enable Summary:                    Primary     Secondary
   Successful Enable Requests:                          0             0
   Failed Enable Requests:                              0             0

TACACS+ Fallback Counter Summary:
   Total Fallback Logins:                       0
```

Figure 59 - TACACS+ Status Display

Field	Description	
Total TACACS+ Authentication Message Exchange	Successful Attempts	The number of times the primary and secondary TACACS+ authentication servers successfully exchanged messages with the LX unit.
	Failed attempts	The number of times the primary and secondary TACACS+ authentication servers failed to exchange messages with the LX unit.

Total TACACS+ Accounting Message Exchange	Successful Attempts	The number of times the primary and secondary TACACS+ accounting servers successfully exchanged messages with the LX unit.
	Failed attempts	The number of times the primary and secondary TACACS+ accounting servers failed to exchange messages with the LX unit.
TACACS+ Authentication Counter Summary	Successful Logins	The number of successful logins using TACACS+.
	Authentication Failures	The number of unsuccessful logins using TACACS+.
TACACS+ Accounting Counter Summary	Successful Acct Entries	The number of successful TACACS+ accounting entries.
	Failed Acct Entries	The number of failed TACACS+ accounting entries.
TACACS+ Superuser Enable Summary	Successful Enable Requests	This field only contains a value if TACACS+ Superuser Request is enabled. If TACACS+ Superuser Request is enabled, this field indicates the number of successful logins to Superuser Mode.
	Failed Enable Requests	This field only contains a value if TACACS+ Superuser Request is enabled. If TACACS+ Superuser Request is enabled, this field indicates the number of *unsuccessful* attempts at logging in to Superuser Mode.
TACACS+ Fallback Counter Summary	Total Fallback Logins	The number of logins that have been done through the TACACS+ Fallback Login feature.

show tacacs+ summary

Displays summary data for the TACACS+ authentication and accounting servers.

Syntax

```
show tacacs+ summary
```

Example

```
show tacacs+ summary
```

Figure 60 shows an example of the TACACS+ Summary Display.

```
TACACS+ Server Summary                                  Thu, 12 Sep 2002 20:47:18
 Primary Auth. Server:          0.0.0.0  Primary Auth. TCP Port:            49
 Secondary Auth. Server:        0.0.0.0  Secondary Auth. TCP Port:          49
 Primary Acct. Server:          0.0.0.0  Primary Acct. TCP Port:            49
 Secondary Acct. Server:        0.0.0.0  Secondary Acct. TCP Port:          49
```

Figure 60 - TACACS+ Summary Display

Field	Description
Primary Auth. Server	The IP Address of the Primary TACACS+ Authentication server.
Secondary Auth. Server	The IP Address of the Secondary TACACS+ Authentication server.
Primary Acct. Server	The IP Address of the Primary TACACS+ Accounting server.
Secondary Acct. Server	The IP Address of the Secondary TACACS+ Accounting server.
Primary Auth. TCP Port	The TCP port for the Primary TACACS+ Authentication server.
Secondary Auth. TCP Port	The TCP port for the Secondary TACACS+ Authentication server.
Primary Acct. TCP Port	The TCP port for the Primary TACACS+ Accounting server.
Secondary Acct. TCP Port	The TCP port for the Secondary TACACS+ Accounting server.

show users

Displays information about each user that is currently logged in to the LX unit.

Syntax

```
show users
```

Example

```
show users
```

Figure 61 shows an example of the Users screen.

```
      Name     Remote IP Address      Local Port      Protocol     Device
 InReach       0.0.0.0                     0              0        /dev/pts/3
    demo       0.0.0.0                     0              0        /dev/ttyGN1
    demo       0.0.0.0                     0              0        /dev/pts/1
```

Figure 61 - Users Screen

Field	Description
Name	The user name
Remote IP Address	If the user is logged in from a remote IP Address, the address is displayed in this field.
Local Port	If the user is logged on to a local port of the LX unit, the port number is displayed in this field.
Protocol	The protocol under which the user is connected to the LX unit.
Device	The Linux Device Number under which the user is logged in.

show version

Displays the Linux OS version, Linux In-Reach version, LX software version, and ppciboot version for the LX unit.

Syntax

```
show version
```

Example

```
show version
```

Figure 62 shows an example of the Version screen.

```
Linux Kernel Version:           2.4.9
Linux In-Reach Version:           15
Software Version:              2.2.0
Ppciboot Version:           0.9.3.26
```

Figure 62 - Version Screen

Field	Description
Linux Kernel Version	The version of the Linux Operating System that is running on the LX unit.
Linux In-Reach Version	The version of the In-Reach implementation of Linux.
Software Version	The version of the LX software that is running on the LX unit.
Ppciboot Version	The version of ppciboot that the LX unit is using.

ssh

Opens a Secure Shell (Triple-DES/BLOWFISH) connection.

Syntax

```
ssh [A.B.C.D [NUMBER]]|[NAME [NUMBER]] [LOGIN NAME]
```

Where	Means
A.B.C.D	The IP Address of the SSH server to which the connection is being made. (See "Usage Guidelines" (below) for the default value of this field.)
NAME	The Domain Name of the SSH server to which the connection is being made. (See "Usage Guidelines" (below) for the default value of this field.)
NUMBER	The socket number to which the connection is being made.
LOGIN NAME	The name that you are using to log in to the SSH server.

Usage Guidelines

The default SSH server is your Preferred Service. Refer to the `preferred service` command on page 399 for information on configuring a Preferred Service.

If the `ssh command` is executed without an SSH server, and you do not have a Preferred Service configured, the following error message is displayed:

```
No Preferred Service Configured
```

Examples

```
ssh 102.19.240.14

ssh 102.19.240.14 2322

ssh

ssh 102.19.240.14 2322 henryh
```

telnet

Opens a Telnet connection to a host.

Syntax

```
telnet [A.B.C.D [NUMBER]]|[NAME [NUMBER]]
```

Where	Means
A.B.C.D	The IP Address of the Telnet host. (See "Usage Guidelines" (below) for the default value of this field.)
NAME	The Domain Name of the Telnet host. (See "Usage Guidelines" (below) for the default value of this field.)
NUMBER	The socket number to which the connection is being made.

Usage Guidelines

The default Telnet host is your Preferred Service. Refer to the `preferred service` command on page 399 for information on configuring a Preferred Service.

If the `telnet` command is executed without a Telnet host, and you do not have a Preferred Service configured, the following error message is displayed:

```
No Preferred Service Configured
```

Examples

```
telnet 102.19.240.14

telnet 102.19.240.14 2500

telnet
```

terminal

Sets the terminal type for the LX user.

Syntax

`terminal <terminal_type>`

Where	Means
terminal_type	The terminal type for the LX unit. The allowable terminal types are VT100 and ANSI.

Example

```
terminal vt100

terminal ansi
```

update

Updates the LX software or ppciboot file from a TFTP server on the network.

Syntax

`update software|ppciboot [<tftp_server>]`

Where	Means
software	Update the LX software from the specified TFTP server.
ppciboot	Update the LX ppciboot file from the specified TFTP server.
tftp_server	The IP Address or the Domain Name of the TFTP server from which the LX software or ppciboot file is to be copied. If this field is not specified, the default TFTP server is used. To display the default TFTP server, refer to "show system characteristics" on page 139.

Usage Guidelines

In order for this command to take effect, you must restart the LX unit by executing the `reload` command. The `reload` command is described on page 79.

If this command is executed without a TFTP server specified, and there is no default TFTP server configured, the following error message is displayed:

```
No TFTP Host
Download Failed
```

Examples

```
update ppciboot 102.19.169.141

update software 102.19.169.141

update ppciboot

update software
```

zero all

Erases the statistics data for the LX unit.

Syntax

```
zero all
```

Example

```
      zero all
```

zero log

Resets the log files for the LX unit.

Syntax

```
zero log
```

Example

```
      zero log
```

zero securid secret

Deletes from the LX unit the SecurID Secret that was sent from the SecurID server.

Syntax

```
zero securid secret
```

Example

```
      zero securid secret
```

Chapter 3

Configuration Commands

The Configuration commands are executed in the Configuration command mode. When the LX unit is in the Configuration command mode, the Configuration command prompt (i.e., `Config:0 >>`) is displayed on the terminal screen.

The format of the Configuration command prompt is as follows:

`Config:<session_number> >>`

where `<session_number>` is the session number of the current connection.

To enter the Configuration command mode, do one of the following:

- If you are in the Superuser command mode, execute the `configuration` command. This displays the configuration prompt.

  Refer to page 67 for more information on the `configuration` command.

- If you are in the Interface, Ethernet, Subscriber, Asynchronous, Menu, Menu Editing, Notification, or Broadcast Groups command mode, execute the `exit` command until the Configuration command prompt is displayed.

boot configuration from flash

Configures the LX unit to boot the configuration from the local flash.

Syntax

```
boot configuration from flash
```

Example

```
      boot configuration from flash
```

boot configuration from name

Configures the LX unit to boot from a local file on the LX unit.

Syntax

```
boot configuration from name <filename>
```

Where	Means
filename	The name of the local (LX-based) from which the LX unit will be booted. The filename may include a suffix. For example, the default filename is `config.prm`.

NOTE: You can use the `show system status` command to display the name of the boot file. The `show system status` command is described on page 142.

Example

```
boot configuration from name local.prm
```

boot configuration from network

Configures the LX unit to boot from a TFTP server.

Syntax

`boot configuration from network <ip_address> <filename>`

Where	Means
ip_address	Specifies the IP Address of the TFTP server from which the LX unit is to be booted.
filename	The file on the LX unit, or on the TFTP server, from which the LX unit will be booted. The filename must *not* include a suffix. For example, `local` is a valid filename, but `local.img` is not a valid filename.

Example

```
boot configuration from network 119.25.42.37 new_image
```

broadcast group

Creates a Broadcast Group or accesses a Broadcast Group that already exists.

Syntax

```
broadcast group <group_number>
```

Where	Means
group_number	The group number of the Broadcast Group. This can be any integer number between 1 and 5.

Usage Guidelines

A Broadcast Group consists of Slave Ports and Master Ports. The Slave Ports receive data broadcasts from the Master Ports. The Slave Ports can be asynchronous ports or a TCP port. Users can receive data broadcasts by Telneting to a port that is configured as a Slave Port.

A Master Port and its Slave Ports constitute a Broadcast Group, and a Slave Port can only receive data from its Master Port. Any console port or virtual port can be configured as a Master Port.

Example

```
broadcast group 4
```

broadcast group enable

Enables a Broadcast Group.

NOTE: In order to enable a Broadcast Group, the Broadcast Group must contain at least one Master Port and one Slave Port.

Syntax

`broadcast group <group_number> enable`

Where	Means
group_number	The group number of the Broadcast Group.

Example

```
broadcast group 4 enable
```

clock

Sets the time for the LX system clock.

NOTE: Use the `date` command to set the date for the system calendar. For more information, refer to “date” on page 168.

Syntax

```
clock HH:MM[:SS]
```

Where	Means
HH	The hour in 24-hour format; for example, `23`.
MM	The minute; for example, `09`.
SS	The second; for example, `02`.

Examples

```
clock 14:47

clock 04:29:11
```

copy port

Copies the configuration of one LX port to another LX port, or to a range of LX ports.

Syntax

`copy port <origin_port> to <destination_port1> [<destination_portn>]`

Where	Means
origin_port	The LX port *from* which the configuration is to be copied.
destination_port1	The first port in a range of LX ports *to* which the configuration is to be copied. (**Note:** If *destination_portn* is not specified, the configuration is copied only to *destination_port1*.)
destination_portn	The last port in a range of LX ports *to* which the configuration is to be copied.

Examples

```
copy port 3 to 6

copy port 2 to 5 7
```

copy subscriber

Copies the configuration of one LX subscriber to one, or several, LX subscribers. If the destination subscriber is not in the database, a new subscriber is created.

Syntax

`copy subscriber <origin_subscriber> to <destination_subscriber>*`

Where	Means
origin_subscriber	The LX subscriber from which the configuration is to be copied.
destination_subscriber	The subscribers to which the configuration of *origin_subscriber* is to be copied. **Note:** If you specify an existing subscriber in this field, the *origin_subscriber* configuration overwrites the *destination_subscriber*.

Usage Guidelines

The maximum number of subscribers on an LX unit is equal to double the number of ports on the unit. For example, the maximum number of subscribers is 16 on an 8-port unit, 32 on a 16-port unit, 64 on a 32-port unit, and 96 on a 48-port unit.

Examples

```
copy subscriber benw to jimk billj edw susano emilyc

copy subscriber mark to bill
```

date

Sets the date for the LX system calendar.

NOTE: Use the `clock` command to set the system clock for the LX unit. For more information, refer to "clock" on page 165.

Syntax

```
date MM/DD[/YYYY]
```

Where	Means	
MM/DD[/YYYY]	The date for the LX system calendar, where	
	`MM` =	The month; for example, `03` for March.
	`DD` =	The date; for example, `17` for the 17th.
	`YYYY` =	The 4-digit year; for example, `2002`.

Example

```
date 03/17/2002
```

NOTE: In the above example, the date is set to March 17, 2002.

default boot

Resets the boot file for the LX unit to the default boot file.

When this command is entered the following message is displayed:

```
File Saved
```

Syntax

```
default boot
```

Example

```
default boot
```

default configuration

Resets the configuration of the LX unit to default values and then shuts down and re-starts the LX unit.

Syntax

```
default configuration
```

Usage Guidelines

When this command is entered, the following confirmation prompt is displayed:

```
Do You Really want to default the unit? [y|n]  :
```

Entering "y" will reset the configuration. Entering "n" will abort the command.

If you enter “y” to default the configuration, you must re-start the LX unit with the `reload` command to make the default configuration take effect. The `reload` command is described on page 79.

Example

```
default configuration
```

default log size

Resets the sizes of log files on the LX unit to the default value.

Syntax

```
default log size
```

Example

```
      default log size
```

default outlet group off time

Resets the off time for an outlet group to the default value of 10 seconds.

Syntax

```
default outlet group <group_number>|<group_name> off time
```

Where	Means
group_number	An integer number that identifies the group whose off time is being reset to the default value.
group_name	The name assigned to the outlet group.

Examples

```
default outlet group 2 off time

default outlet group rmlights off time
```

default tftp

Resets the timeout or retry value for the TFTP server to its default value.

Syntax

```
default tftp timeout|retry
```

Where	Means
timeout	Reset the TFTP server timeout to its default value.
retry	Reset the TFTP server retries to its default value.

Examples

```
default tftp timeout
```

```
default tftp retry
```

domain name

Specifies the domain name of the LX unit.

Syntax

```
domain name NAME
```

Where	Means
NAME	The domain name for the LX unit. The domain name should include a period (.) and a suffix.

Usage Guidelines

The portion of the domain name that follows the period is the domain name suffix. For example, `com` is the suffix in the domain name `boston_office.com`.

Example

```
domain name boston_office.com
```

end

When the end command is issued in the Configuration Command Mode, it returns the user to the Superuser command mode.

Syntax

end

Usage Guidelines

The end command can be issued in all of the LX command modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is Configuration, issuing this command will return the user to the Superuser command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX command modes. However, the effect of the `exit` command varies, depending on the command mode from which it is issued.

As noted above, issuing the `exit` command in the Configuration command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any command mode other than User. For example, issuing the `exit` command in the Interface command mode returns the user to the Configuration command mode; issuing the `exit` command in the Menu Editing command mode returns the user to the Menu command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

fingerd enable

Enables the finger daemon (fingerd) for exchanging information between hosts about users who are logged on to the LX unit.

Syntax

```
fingerd enable
```

Example

```
      fingerd enable
```

gateway

Configures the network gateway IP address for the LX unit.

Syntax

```
gateway A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the router/gateway that is to be used as the default route for the LX unit.

Example

```
gateway 119.20.112.47
```

hostname

Configures a network name for the LX unit.

Syntax

```
hostname NAME
```

Where	Means
NAME	A text string of up to 15 alphanumeric characters that specifies the network name for the LX unit.

Examples

```
hostname boston_office

hostname a123456
```

interface

Enters the Interface command mode. In the Interface command mode, the user can create or change an interface record. For more information on the Interface command mode, refer to "Interface Commands" on page 275.

Syntax

```
interface NUMBER
```

Where	Means
NUMBER	Specifies an interface number. In the Interface command mode, you can configure the characteristics of the IP interface that is associated with this interface number. The maximum number of IP interfaces is 4. If the IP interface does not exist, it is created when this command is executed.

Example

```
interface 1
```

iptables

Displays information that describes how to set up IP filtering with the `iptables` command.

Syntax

```
iptables
```

Usage Guidelines

When you execute this command, the following text is displayed:

```
You must navigate to the Linux shell and use the iptables
commands that are available in the kernel. You can run a shell
from the Superuser Command Mode by launching the command
"shell". For further details, please refer to the LX-Series
Commands Reference Guide.

Iptables are used to set up, maintain, and inspect the tables
of IP packet filter rules in the Linux kernel. Iptables help
manage IP traffic by creating filters known as chains. Each
chain is a list of rules which can match a set of packets. Each
rule specifies what to do with a packet that matches. The
options are ACCEPT, DENY, or DROP. The INPUT chain filters
packets coming from the LAN to the LX-Series and the OUTPUT
chain filters packets leaving the LX-Series destined for the
LAN.

After making any changes, you should always run the command
"/sbin/iptables-save -f /config/iptables.conf" to save the
changes. To make the change permanent through reboots you must
save the configuration change by running the command "save
configuration" from the superuser command mode.
```

Example

```
iptables
```

location

Specifies the physical location of the LX unit.

NOTE: To display this information, execute the `show system characteristics` command in the Superuser Command Mode. For more information, refer to "show system characteristics" on page 139.

Syntax

```
location STRING
```

Where	Means
STRING	A text string that describes the physical location of the LX unit.

Example

```
location UpstairsLab
```

log size

Specifies the size of log files on the LX unit.

Syntax

```
log size NUMBER
```

Where	Means
NUMBER	A whole number that specifies the size, in bytes, for the LX-unit log files. The number must be greater than 1023 and less than 128001.

Example

```
log size 100000
```

menu

Enters the Menu command mode. In the Menu command mode, you can create, delete, or merge menus and enter the Menu Editing command mode. For more information on the Menu command mode, refer to “Menu Commands” on page 479.

Syntax

```
menu
```

Example

```
menu
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the Configuration command mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the Configuration command mode *and are currently enabled.* To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no location
```

notification

Enters the Notification command mode. In the Notification command mode, you can configure the sending of log messages to email addresses, pagers, remote syslogd, asynchronous ports, or local files.

For more information on the Notification command mode, refer to “Notification Commands” on page 509.

Syntax

```
notification
```

Example

```
notification
```

ntp enable

Enables the Network Time Protocol (NTP).

Syntax

```
ntp enable
```

Usage Guidelines

Before you can enable NTP, you must specify the IP Address of the NTP server. Refer to “ntp server address” on page 188 for more information on specifying the IP Address of the NTP server.

Example

```
ntp enable
```

ntp server address

Specifies the IP address of the Network Time Protocol (NTP) server for the LX unit.

Syntax

```
ntp server address <ip_address>
```

Where	Means
ip_address	Specifies the IP Address of the NTP server on the network.

Usage Guidelines

After you have specified the NTP server, you can enable NTP. Refer to “ntp enable” on page 187 for more information on enabling NTP.

Example

```
ntp server address 119.20.110.87
```

outlet group

Assigns outlets to an outlet group.

Syntax

`outlet group <group_number>|<group_name> <outlet_list>`

Where	Means
group_number	An integer number that identifies the group to which outlets are being assigned. The allowable values are 1 - 16.
group_name	The descriptive name of the group to which outlets are being assigned. (Refer to "outlet group name" on page 190 for information on assigning a descriptive name to an outlet group.)
outlet_list	Specifies the outlets that are being added to the outlet group. The Power Master number, combined with the outlet number, identifies each outlet. For example, 2:5 identifies outlet 5 on the device that is managed from port 2. If you specify more than one outlet in the *outlet_list*, the outlets must be separated by blank spaces; for example, `2:5 3:7 4:2 4:3 4:5`. Up to 16 outlets can be included in an outlet group.

Usage Guidelines

When outlets are assigned to an outlet group, they can be configured and managed as a group. This can be more efficient than configuring and managing outlet individually. Refer to the following commands for more information about configuring and managing outlet groups:

- "outlet group name" on page 190
- "outlet group off time" on page 191
- "show outlet group status" on page 107

Examples

```
outlet group 2 2:5 3:7 4:2 4:3 4:5

outlet group Testoutlets 3:4 5:1 5:2 5:3 5:4 5:5 5:6 6:2 6:3
```

outlet group name

Specifies a descriptive name for an outlet group.

NOTE: Before you can specify a descriptive name for an outlet group, you must create the outlet group with the `outlet group` command (see page 189).

Syntax

`outlet group <group_number> name <group_name>`

Where	Means
group_number	An integer number that specifies an existing outlet group.
group_name	Specifies a descriptive name for the outlet group. This can be a text string of up to 15 characters.

Example

```
outlet group 5 name Testoutlets
```

outlet group off time

Specifies the length of time, in seconds, that outlets must remain off before they can be turned back on.

Syntax

`outlet group <group_number>|<group_name> off time NUMBER`

Where	Means
group_number	An integer number that specifies an existing outlet group.
group_name	The descriptive name of an existing outlet group.
NUMBER	An integer number that specifies the off time, in seconds, for the outlet group. After the outlets in the group have been turned off with the `outlet` command (see page 75), they must remain off for at least this length of time. The allowable values are 0 - 255. The default value is 10.

Example

```
outlet group Testoutlets off time 10

outlet group 14 off time 20
```

password

Allows you to set, or change, the Superuser password for the LX unit. (The default Superuser password for the LX unit is **system**.)

Syntax

```
password
```

Usage Guidelines

When you execute the `password` command, the following prompt is displayed:

```
Enter your NEW password   :
```

Type the new Superuser password at the above prompt and press the Enter key. After you press the Enter key, the following prompt is displayed:

```
Re-Enter your NEW password:
```

Re-type the new Superuser password at the above prompt and press the Enter key. The Superuser password for the LX unit is now changed.

Example

```
password
```

password enable

Sets the Superuser password for the LX unit to the default value. (The default Superuser password for the LX unit is **system**.)

Syntax

```
password enable
```

Usage Guidelines

When you execute the `password enable` command, the following informational message is displayed:

```
Password was set to its default value
```

Example

```
password enable
```

port async

Configures an LX asynchronous port, or a range of LX asynchronous ports. When this command is executed in the Configuration Command Mode, the LX CLI goes into the Asynchronous command mode for the port number, or range of ports. The Asynchronous command mode includes commands for configuring asynchronous ports. Refer to "Asynchronous Commands" on page 307 for more information on the Asynchronous command mode.

Syntax

`port async <first_port> [<last_port>]`

Where	Means
first_port	The first port in a range of ports that are to be configured as asynchronous.
last_port	The last port in a range of ports that are to be configured as asynchronous. **Note:** If this argument is left out of the command, only the port specified in *<first_port>* is configured as asynchronous.

Example

```
port async 2

port async 3 7
```

port ethernet

Enters the Ethernet Command Mode for an Ethernet port. Refer to “Ethernet Commands” on page 361 for more information on the Ethernet Command Mode.

Syntax

```
port ethernet NUMBER
```

Where	Means
NUMBER	Specifies the Ethernet port to be configured. The only port that can be configured as an Ethernet port is port 1.

Example

```
port ethernet 1
```

ppciboot address

Specifies the ppciboot address for the LX unit. The ppciboot address is used as the IP Address of the LX unit when any of the ppciboot assignment options is selected as "User Defined". Refer to "ppciboot address assignment option" on page 197 for more information on the ppciboot assignment options.

Syntax

```
ppciboot address <ip_address>
```

Where	Means
ip_address	The ppciboot address

Example

```
ppciboot address 117.23.79.81
```

ppciboot address assignment option

Specifies the ppciboot assignment option for the LX unit. The ppciboot assignment option defines how the LX unit will obtain its IP information.

Syntax

```
ppciboot address assignment NUMBER option user|dhcp|rarp|bootp|none
```

Where	Means
NUMBER	The priority for the ppciboot assignment options. The allowable values are 1, 2, 3, and 4. For more information, refer to "Usage Guidelines" (below).
user	Specifies that the ppciboot assignment option is user-defined. This means that the user must manually assign all of the IP information.
dhcp	The IP information will be assigned via a DHCP server.
rarp	The IP information will be assigned via a RARP server.
bootp	The IP information will be assigned via a BOOTP server.
none	Disables the ppciboot assignment option associated with the specified priority. For example, the command `ppciboot ip assignment 2 option none` disables the ppciboot assignment option associated with priority 2.

Usage Guidelines

You can use this command to specify up to 4 ppciboot assignment options for the LX unit.

You must specify a priority for each ppciboot assignment option that you specify with this command. The allowable values are `1`, `2`, `3`, and `4`. For example, if `1` is specified as the priority for DHCP, it means that the *first* attempt at loading an IP Address will be via DHCP; if `2` is specified as the priority for RARP, it means that the *second* attempt at loading an IP Address will be via RARP, and so on.

Examples

```
ppciboot address assignment 1 option dhcp

ppciboot address assignment 2 option rarp

ppciboot address assignment 3 option bootp

ppciboot address assignment 4 option user

ppciboot address assignment 3 option none
```

ppciboot ethernet network link

Specifies the speed and duplex mode of the ppciboot Ethernet network link.

Syntax

```
ppciboot ethernet network link auto|10half|100half|10full|100full
```

Where	Means
auto	The ppciboot Ethernet network link will auto-negotiate its port speed and duplex mode. This is the default setting.
10half	Sets a speed of 10 Megabytes per second, and a duplex mode of half duplex, for the Ethernet network link.
100half	Sets a speed of 100 Megabytes per second, and a duplex mode of half duplex, for the Ethernet network link.
10full	Sets a speed of 10 Megabytes per second, and a duplex mode of full duplex, for the Ethernet network link.
100full	Sets a speed of 100 Megabytes per second, and a duplex mode of full duplex, for the Ethernet network link.

Examples

```
ppciboot ethernet network link auto

ppciboot ethernet network link 10half

ppciboot ethernet network link 100half

ppciboot ethernet network link 10full

ppciboot ethernet network link 100full
```

ppciboot gateway

Specifies the ppciboot gateway. This gateway is used when any of the ppciboot assignment options is selected as "User Defined". Refer to "ppciboot address assignment option" on page 197 for more information on ppciboot assignment options.

Syntax

```
ppciboot gateway <ip_address>
```

Where	Means
ip_address	The IP address of the ppciboot gateway.

Example

```
ppciboot gateway 119.20.110.7
```

ppciboot image filename

Specifies the filename of the LX software image.

Syntax

```
ppciboot image filename <filename>
```

Where	Means
filename	The filename of the LX software image.

Example

```
ppciboot image filename new_linuxito.img
```

ppciboot image load from

Specifies the source from which the LX software image will be loaded.

NOTE: The ppciboot image file is specified using the `ppciboot image filename` command (see page 200).

Syntax

```
ppciboot image load from flash|network
```

Where	Means
flash	Load the LX software image from the local flash.
network	Load the LX software image from the network TFTP server. (The TFTP server for loading the LX software image is defined using the `ppciboot tftp` command (see page 203).)

Examples

```
ppciboot image load from flash

ppciboot image load from network
```

ppciboot mask

Specifies the ppciboot subnet mask for the LX unit. This is used as the subnet mask for the LX unit when any of the ppciboot assignment options is selected as "User Defined". Refer to "ppciboot address assignment option" on page 197 for more information on ppciboot assignment options.

Syntax

`ppciboot mask <subnet_mask>`

Where	Means
subnet_mask	The IP address that will be used as the ppciboot subnet mask.

Example

```
ppciboot mask 255.255.255.0
```

ppciboot tftp server

Specifies the TFTP server for the LX unit. This TFTP server is used when any of the ppciboot assignment options is selected as "User Defined". Refer to "ppciboot address assignment option" on page 197 for more information on ppciboot assignment options.

Syntax

`ppciboot tftp server <ip_address>`

Where	Means
ip_address	The IP address of the TFTP server from which the LX software image will be loaded.

Example

```
ppciboot tftp server 118.23.109.18
```

primary dns

Specifies the Primary Domain Name Server (DNS) for the LX unit.

Syntax

```
primary dns A.B.C.D
```

Where	Means
A.B.C.D	The Primary DNS for the LX unit.

Example

```
primary dns 119.20.112.3
```

radius period

Specifies the interval at which the LX unit will update the RADIUS accounting server with the status of each RADIUS user.

Syntax

```
radius period NUMBER
```

Where	Means
NUMBER	The interval, in minutes, at which the LX unit will update the RADIUS accounting server with the status of each RADIUS user. The default value is 5. The allowable values are 0 - 255.

Example

```
radius period 10
```

radius primary accounting server address

Specifies the IP Address of the RADIUS primary accounting server for the LX unit.

Syntax

```
radius primary accounting server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the RADIUS primary accounting server for the LX unit.

Example

```
radius primary accounting server address 152.34.65.33
```

radius primary accounting server port

Specifies the RADIUS primary accounting server UDP port for the LX unit. (This is the UDP port to which the LX unit performs RADIUS accounting.)

Syntax

```
radius primary accounting server port NUMBER
```

Where	Means
NUMBER	The UDP port, on the RADIUS primary accounting server, to which the LX unit performs RADIUS accounting. The allowable values are 0 - 65535. **Note:** If you do not specify a RADIUS primary accounting port with this command, the LX unit will use the default RADIUS primary accounting port of 1813.

Example

```
radius primary accounting server port 1646
```

radius primary accounting server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Accounting Request to the RADIUS primary accounting server when the LX unit receives no Accounting Response from the RADIUS primary accounting server.

Syntax

```
radius primary accounting server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the RADIUS primary accounting server. The allowable values are 0 - 255. The default value is 3.

Example

```
radius primary accounting server retransmit 3
```

radius primary accounting server secret

Specifies the RADIUS secret shared between the LX unit and the RADIUS primary accounting server used for encrypting communications between them.

Syntax

```
radius primary accounting server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
radius primary accounting server secret AaBbCc
```

radius primary accounting server timeout

Specifies the length of time that the LX unit will wait for the RADIUS primary accounting server to respond before retransmitting packets to the RADIUS primary accounting server.

Syntax

```
radius primary accounting server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a RADIUS primary accounting server to respond before retransmitting Accounting Requests to the RADIUS primary accounting server. The default value is 5. The allowable values are 1 - 255.

Example

```
radius primary accounting server timeout 3
```

radius primary authentication server address

Specifies the RADIUS primary authentication server address for the LX unit.

Syntax

```
radius primary authentication server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the RADIUS primary authentication server for the LX unit.

Example

```
radius primary authentication server address 152.34.65.37
```

radius primary authentication server port

Specifies UDP port for the RADIUS primary authentication server.

Syntax

```
radius primary authentication server port NUMBER
```

Where	Means
NUMBER	The RADIUS primary authentication server UDP port for the LX unit. This value must match the primary accounting UDP port that is being used on the RADIUS primary authentication server. The allowable values are 0 - 65535. **Note:** If you do not specify a RADIUS primary authentication port with this command, the LX unit will use the default RADIUS primary authentication port of 1812.

Example

```
radius primary authentication server port 1645
```

radius primary authentication server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Access Request to the RADIUS primary authentication server when the LX unit receives no Access Accept or Reject messages from the RADIUS primary authentication server.

Syntax

```
radius primary authentication server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the RADIUS primary authentication server. The allowable values are 0 - 255. The default value is 3.

Example

```
radius primary authentication server retransmit 3
```

radius primary authentication server secret

Specifies the RADIUS secret shared between the LX unit and the RADIUS primary authentication server used for encrypting communications between them.

Syntax

```
radius primary authentication server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
radius primary authentication server secret AaBbCc
```

radius primary authentication server timeout

Specifies the length of time that the LX unit will wait for the RADIUS primary authentication server to respond before retransmitting packets to the RADIUS primary authentication server.

Syntax

```
radius primary authentication server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a RADIUS primary authentication server to respond before retransmitting Access-Request messages to the RADIUS primary authentication server. The default value is 5. The allowable values are 1 - 255.

Example

```
radius primary authentication server timeout 3
```

radius secondary accounting server address

Specifies the IP Address of the RADIUS secondary accounting server for the LX unit.

Syntax

```
radius secondary accounting server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the RADIUS secondary accounting server for the LX unit.

Example

```
radius secondary accounting server address 152.34.65.33
```

radius secondary accounting server port

Specifies the RADIUS secondary accounting server UDP port for the LX unit. (This is the UDP port to which the LX unit performs RADIUS accounting.)

Syntax

```
radius secondary accounting server port NUMBER
```

Where	Means
NUMBER	The UDP port, on the RADIUS secondary accounting server, to which the LX unit performs RADIUS accounting. The allowable values are 0 - 65535. **Note:** If you do not specify a RADIUS secondary accounting port with this command, the LX unit will use the default RADIUS secondary accounting port of 1813.

Example

```
radius secondary accounting server port 1813
```

radius secondary accounting server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Accounting Request to the RADIUS secondary accounting server when the LX unit receives no Accounting Response from the RADIUS secondary accounting server.

Syntax

```
radius secondary accounting server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the RADIUS secondary accounting server. The allowable values are 0 - 255. The default value is 3.

Example

```
radius secondary accounting server retransmit 3
```

radius secondary accounting server secret

Specifies the RADIUS secret shared between the LX unit and the RADIUS secondary accounting server used for encrypting communications between them.

Syntax

```
radius secondary accounting server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
radius secondary accounting server secret AaBbCc
```

radius secondary accounting server timeout

Specifies the length of time that the LX unit will wait for the RADIUS secondary accounting server to respond before retransmitting packets to the RADIUS secondary accounting server.

Syntax

```
radius secondary accounting server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a RADIUS secondary accounting server to respond before retransmitting Accounting Requests to the RADIUS secondary accounting server. The default value is 5. The allowable values are 1 - 255.

Example

```
radius secondary accounting server timeout 3
```

radius secondary authentication server address

Specifies the RADIUS secondary authentication server address for the LX unit.

Syntax

```
radius secondary authentication server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the RADIUS secondary authentication server for the LX unit.

Example

```
radius secondary authentication server address 152.34.65.37
```

radius secondary authentication server port

Specifies the UDP port for the RADIUS secondary authentication server.

Syntax

```
radius secondary authentication server port NUMBER
```

Where	Means
NUMBER	The RADIUS secondary authentication server UDP port for the LX unit. This value must match the secondary accounting UDP port that is being used on the RADIUS secondary authentication server. The allowable values are 0 - 65535. **Note:** If you do not specify a RADIUS secondary authentication port with this command, the LX unit will use the default RADIUS secondary authentication port of 1812.

Example

```
radius secondary authentication server port 1812
```

radius secondary authentication server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Access Request to the RADIUS secondary authentication server when the LX unit does not receive Access Accept or Reject messages from the RADIUS secondary authentication server.

Syntax

```
radius secondary authentication server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the RADIUS secondary authentication server. The allowable values are 0 - 255. The default value is 3.

Example

```
radius secondary authentication server retransmit 3
```

radius secondary authentication server secret

Specifies the RADIUS secret shared between the LX unit and the RADIUS secondary authentication server used for encrypting communications between them.

Syntax

```
radius secondary authentication server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
radius secondary authentication server secret AaBbCc
```

radius secondary authentication server timeout

Specifies the length of time that the LX unit will wait for the RADIUS secondary authentication server to respond before retransmitting packets to the RADIUS secondary authentication server.

Syntax

```
radius secondary authentication server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a RADIUS secondary authentication server to respond before retransmitting Access-Request messages to the RADIUS secondary authentication server. The default value is 5. The allowable values are 1 - 255.

Example

```
radius secondary authentication server timeout 3
```

route address

Creates a static route for the LX unit.

Syntax

`route <route_number> address <destination_ip>`

Where	Means
route_number	Specifies a route number for the static route.
destination_ip	Specifies the destination IP Address of the route.

Usage Guidelines

To delete a route, use the `no route` command. For example, the command `no route 3` deletes Route 3.

Example

```
route 3 address 119.20.112.39
```

route gateway

Creates a gateway that a static route will use to reach its destination.

Syntax

`route <route_number> gateway <gateway_ip>`

Where	Means
route_number	Specifies the route number of a static route.
gateway_ip	Specifies the IP Address of the gateway by which the destination will be reached.

Example

```
route 3 gateway 119.20.112.47
```

route mask

Creates a subnet mask for a static route.

Syntax

`route <route_number> mask <subnet_mask>`

Where	Means
route_number	Specifies the route number of a static route.
subnet_mask	Specifies the subnet mask that will be used by the static route.

Example

```
route 3 mask 255.255.255.0
```

secondary dns

Specifies the Secondary Domain Name Server (DNS) for the LX unit.

Syntax

```
secondary dns A.B.C.D
```

Where	Means
A.B.C.D	The Secondary DNS for the LX unit.

Example

```
secondary dns 119.20.112.3
```

securid authentication encryption

Specifies the encryption method for SecurID authentication on the LX unit.

Syntax

```
securid authentication encryption des|sdi
```

Where	Means
des	Specifies DES as the SecurID encryption method.
sdi	Specifies SDI as the SecurID encryption method.

Example

```
securid authentication encryption des

securid authentication encryption sdi
```

securid authentication port

Specifies the LX UDP port that the that the LX unit and the SecurID authentication server will use for communication.

Syntax

```
securid authentication port <port_number>
```

Where	Means
port_number	The port number of a UDP port on the LX unit. This can be any UDP port number that is not currently in use. The allowable values are 0 - 65535.

Example

```
securid authentication port 5500
```

securid authentication retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Access Request to the SecurID authentication server when the LX unit receives no Access Accept or Reject messages from the SecurID primary authentication server.

Syntax

```
securid authentication retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the SecurID authentication server. This can be any integer number from 0 through 255. The default value is 3.

Example

```
securid authentication retransmit 7
```

securid authentication timeout

Specifies the length of time that the LX unit will wait for the SecurID authentication server to respond before retransmitting packets to the SecurID authentication server.

Syntax

```
securid authentication timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for the SecurID authentication server to respond before retransmitting Access-Request messages to the SecurID authentication server. This can be any integer number from 0 through 255. The default value is 3.

Example

```
securid authentication timeout 3
```

securid authentication version

Specifies the SecurID authentication version that will be used on the LX unit.

Syntax

```
securid authentication version legacy|version_5
```

Where	Means
legacy	The version of SecurID that will be used is older than Version 5.
version_5	Version 5 SecurID authentication will be used.

Example

```
securid authentication version legacy

securid authentication version version_5
```

securid master authentication server address

Specifies the SecurID master authentication server address for the LX unit.

NOTE: You can not specify a SecurID master authentication server for Version 5, or higher, or SecurID.

Syntax

```
securid master authentication server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the SecurID master authentication server for the LX unit.

Example

```
securid master authentication server address 192.16.65.38
```

securid master authentication server name

Specifies the host name of the SecurID master authentication server for the LX unit.

Syntax

```
securid master authentication server name HOSTNAME
```

Where	Means
HOSTNAME	The host name of the SecurID master authentication server for the LX unit.

Example

```
securid master authentication server name bigsky22
```

securid primary authentication server address

Specifies the SecurID primary authentication server address for the LX unit.

Syntax

```
securid primary authentication server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the SecurID primary authentication server for the LX unit.

Example

```
securid primary authentication server address 138.30.65.34
```

securid primary authentication server name

Specifies the host name of the SecurID primary authentication server for the LX unit.

Syntax

```
securid primary authentication server name HOSTNAME
```

Where	Means
HOSTNAME	The host name of the SecurID primary authentication server for the LX unit.

Example

```
securid primary authentication server name bigsky1
```

securid slave authentication server address

Specifies the SecurID slave authentication server address for the LX unit.

NOTE: You can not specify a SecurID slave authentication server for Version 5, or higher, or SecurID.

Syntax

```
securid slave authentication server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the SecurID slave authentication server for the LX unit.

Example

```
securid slave authentication server address 192.16.23.115
```

securid slave authentication server name

Specifies the host name of the SecurID slave authentication server for the LX unit.

Syntax

```
securid slave authentication server name HOSTNAME
```

Where	Means
HOSTNAME	The host name of the SecurID slave authentication server for the LX unit.

Example

```
securid slave authentication server name bigsky37
```

service

Adds a host name and its address to a Service Table to provide the CLI user with a means for address resolution.

Syntax

```
service NAME A.B.C.D
```

Where	Means
NAME	A text string that specifies the name of the IP device.
A.B.C.D	The address of the IP device.

Example

```
service Finance_Server 119.20.112.3
```

snmp

Enters the SNMP command mode. The SNMP command prompt (e.g., `Snmp:0 >>`) is displayed while you are in the SNMP command mode. For more information, refer to "SNMP Commands" on page 409.

Syntax

```
snmp
```

Example

```
snmp
```

snmp enable

Enables the Simple Network Management Protocol (SNMP) for use in managing the LX unit.

Syntax

```
snmp enable
```

Example

```
      snmp enable
```

ssh enable

Enables the LX unit to function as an SSH server. This makes it possible for SSH clients to make connections to the LX unit.

Syntax

```
ssh enable
```

Example

```
ssh enable
```

ssh v1

Specifies that the LX unit will use Version 1 (V1) of SSH.

Syntax

```
ssh v1
```

Example

```
ssh v1
```

ssh v2

Specifies that the LX unit will use Version 2 (V2) of SSH.

Syntax

```
ssh v2
```

Example

```
ssh v2
```

subscriber

Enters the Subscriber Command Mode. For more information on the Subscriber Command Mode, refer to “Subscriber Commands” on page 367.

Syntax

```
subscriber NAME
```

Where	Means
NAME	The name of the subscriber that is to be configured. If the subscriber does not exist, a new subscriber record is created.

Usage Guidelines

The maximum number of subscribers on an LX unit is equal to double the number of ports on the unit. For example, the maximum number of subscribers is 16 on an 8-port unit, 32 on a 16-port unit, 64 on a 32-port unit, and 96 on a 48-port unit.

Example

```
subscriber mark
```

tacacs+ period

Specifies the interval at which the LX unit will update the TACACS+ accounting server with the status of each TACACS+ user.

Syntax

```
tacacs+ period NUMBER
```

Where	Means
NUMBER	The interval, in minutes, at which the LX unit will update the TACACS+ accounting server with the status of each TACACS+ user. The default value is 5. The allowable values are 0 - 255.

Example

```
tacacs+ period 10
```

tacacs+ primary accounting server address

Specifies the IP Address of the TACACS+ primary accounting server for the LX unit.

Syntax

```
tacacs+ primary accounting server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the TACACS+ primary accounting server for the LX unit.

Example

```
tacacs+ primary accounting server address 152.34.65.33
```

tacacs+ primary accounting server port

Specifies the TACACS+ primary accounting server UDP port for the LX unit. (This is the UDP port to which the LX unit performs TACACS+ accounting.)

Syntax

```
tacacs+ primary accounting server port NUMBER
```

Where	Means
NUMBER	The UDP port, on the TACACS+ primary accounting server, to which the LX unit performs TACACS+ accounting. The allowable values are 0 - 65535. **Note:** If you do not specify a TACACS+ primary accounting port with this command, the LX unit will use the default TACACS+ primary accounting port of 1813.

Example

```
tacacs+ primary accounting server port 1646
```

tacacs+ primary accounting server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Accounting Request to the TACACS+ primary accounting server when the LX unit does not receive an Accounting Response from the TACACS+ primary accounting server.

Syntax

```
tacacs+ primary accounting server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the TACACS+ primary accounting server. The allowable values are 0 - 255. The default value is 3.

Example

```
tacacs+ primary accounting server retransmit 3
```

tacacs+ primary accounting server secret

Specifies the TACACS+ secret shared between the LX unit and the TACACS+ primary accounting server used for encrypting communications between them.

Syntax

```
tacacs+ primary accounting server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
tacacs+ primary accounting server secret AaBbCc
```

tacacs+ primary accounting server timeout

Specifies the length of time that the LX unit will wait for the TACACS+ primary accounting server to respond before retransmitting packets to the TACACS+ primary accounting server.

Syntax

```
tacacs+ primary accounting server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a TACACS+ primary accounting server to respond before retransmitting Accounting Requests to the TACACS+ primary accounting server. The default value is 5. The allowable values are 1 - 255.

Example

```
tacacs+ primary accounting server timeout 3
```

tacacs+ primary authentication server address

Specifies the TACACS+ primary authentication server address for the LX unit.

Syntax

```
tacacs+ primary authentication server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the TACACS+ primary authentication server for the LX unit.

Example

```
tacacs+ primary authentication server address 152.34.65.37
```

tacacs+ primary authentication server port

Specifies UDP port for the TACACS+ primary authentication server.

Syntax

```
tacacs+ primary authentication server port NUMBER
```

Where	Means
NUMBER	The TACACS+ primary authentication server UDP port for the LX unit. This value must match the primary accounting UDP port that is being used on the TACACS+ primary authentication server. The allowable values are 0 - 65535. **Note:** If you do not specify a TACACS+ primary authentication port with this command, the LX unit will use the default TACACS+ primary authentication port of 1812.

Example

```
tacacs+ primary authentication server port 1645
```

tacacs+ primary authentication server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Access Request to the TACACS+ primary authentication server when the LX unit does not receive an Access Accept or Reject messages from the TACACS+ primary authentication server.

Syntax

```
tacacs+ primary authentication server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the TACACS+ primary authentication server. The allowable values are 0 - 255. The default value is 3.

Example

```
tacacs+ primary authentication server retransmit 3
```

tacacs+ primary authentication server secret

Specifies the TACACS+ secret shared between the LX unit and the TACACS+ primary authentication server used for encrypting communications between them.

Syntax

```
tacacs+ primary authentication server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
tacacs+ primary authentication server secret AaBbCc
```

tacacs+ primary authentication server timeout

Specifies the length of time that the LX unit will wait for the TACACS+ primary authentication server to respond before retransmitting packets to the TACACS+ primary authentication server.

Syntax

```
tacacs+ primary authentication server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a TACACS+ primary authentication server to respond before retransmitting Access-Request messages to the TACACS+ primary authentication server. The allowable values are 0 - 255. The default value is 5.

Example

```
tacacs+ primary authentication server timeout 3
```

tacacs+ secondary accounting server address

Specifies the IP Address of the TACACS+ secondary accounting server for the LX unit.

Syntax

```
tacacs+ secondary accounting server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the TACACS+ secondary accounting server for the LX unit.

Example

```
tacacs+ secondary accounting server address 152.34.65.33
```

tacacs+ secondary accounting server port

Specifies the TACACS+ secondary accounting server UDP port for the LX unit. (This is the UDP port to which the LX unit performs TACACS+ accounting.)

Syntax

```
tacacs+ secondary accounting server port NUMBER
```

Where	Means
NUMBER	The UDP port, on the TACACS+ secondary accounting server, to which the LX unit performs TACACS+ accounting. The allowable values are 0 - 65535. **Note:** If you do not specify a TACACS+ secondary accounting port with this command, the LX unit will use the default TACACS+ secondary accounting port of 1813.

Example

```
tacacs+ secondary accounting server port 1646
```

tacacs+ secondary accounting server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Accounting Request to the TACACS+ secondary accounting server when the LX unit does not receive an Accounting Response from the TACACS+ secondary accounting server.

Syntax

```
tacacs+ secondary accounting server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the TACACS+ secondary accounting server. The allowable values are 0 - 255. The default value is 3.

Example

```
tacacs+ secondary accounting server retransmit 3
```

tacacs+ secondary accounting server secret

Specifies the TACACS+ secret shared between the LX unit and the TACACS+ secondary accounting server used for encrypting communications between them.

Syntax

```
tacacs+ secondary accounting server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
tacacs+ secondary accounting server secret AaBbCc
```

tacacs+ secondary accounting server timeout

Specifies the length of time that the LX unit will wait for the TACACS+ secondary accounting server to respond before retransmitting packets to the TACACS+ secondary accounting server.

Syntax

```
tacacs+ secondary accounting server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a TACACS+ secondary accounting server to respond before retransmitting Accounting Requests to the TACACS+ secondary accounting server. The allowable values are 0 - 255. The default value is 5.

Example

```
tacacs+ secondary accounting server timeout 3
```

tacacs+ secondary authentication server address

Specifies the TACACS+ secondary authentication server address for the LX unit.

Syntax

```
tacacs+ secondary authentication server address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the TACACS+ secondary authentication server for the LX unit.

Example

```
tacacs+ secondary authentication server address 152.34.65.37
```

tacacs+ secondary authentication server port

Specifies the UDP port for the TACACS+ secondary authentication server.

Syntax

```
tacacs+ secondary authentication server port NUMBER
```

Where	Means
NUMBER	The TACACS+ secondary authentication server UDP port for the LX unit. This value must match the secondary accounting UDP port that is being used on the TACACS+ secondary authentication server. The allowable values are 0 - 65535. **Note:** If you do not specify a TACACS+ secondary authentication port with this command, the LX unit will use the default TACACS+ secondary authentication port of 1812.

Example

```
tacacs+ secondary authentication server port 1645
```

tacacs+ secondary authentication server retransmit

Specifies the maximum number of retries that the LX unit will have for transmitting an Access Request to the TACACS+ secondary authentication server when the LX unit does not receive an Access Accept or Reject message from the TACACS+ secondary authentication server.

Syntax

```
tacacs+ secondary authentication server retransmit NUMBER
```

Where	Means
NUMBER	The maximum number of times that the LX unit will attempt to contact the TACACS+ secondary authentication server. The allowable values are 0 - 255. The default value is 3.

Example

```
tacacs+ secondary authentication server retransmit 3
```

tacacs+ secondary authentication server secret

Specifies the TACACS+ secret shared between the LX unit and the TACACS+ secondary authentication server used for encrypting communications between them.

Syntax

```
tacacs+ secondary authentication server secret WORD
```

Where	Means
WORD	A text string of up to 16 characters. The string is case sensitive.

Example

```
tacacs+ secondary authentication server secret AaBbCc
```

tacacs+ secondary authentication server timeout

Specifies the length of time that the LX unit will wait for the TACACS+ secondary authentication server to respond before retransmitting packets to the TACACS+ secondary authentication server.

Syntax

```
tacacs+ secondary authentication server timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the LX unit will wait for a TACACS+ secondary authentication server to respond before retransmitting Access-Request messages to the TACACS+ secondary authentication server. The allowable values are 0 - 255. The default value is 5.

Example

```
tacacs+ secondary authentication server timeout 3
```

tacacs+ superuser password request enable

Specifies that a Superuser password request will be sent to TACACS+.

Syntax

```
tacacs+ superuser password request enable
```

Usage Guidelines

When this setting is disabled, the local Superuser password (**system**) will be used to enter the Superuser Command Mode. Use the `no tacacs+ superuser password request` command to disable this setting.

When this setting is enabled, the superuser password that resides on the TACACS+ authentication server will be used to enter the Superuser Command Mode.

Example

```
tacacs+ superuser password request enable
```

telnet enable

Configures the LX unit to support inbound Telnet connections from remote clients.

Syntax

```
telnet enable
```

Example

```
      telnet enable
```

tftp

Specifies the timeout and retries for the TFTP server.

Syntax

`tftp timeout <timeout_num>|retry <retries_num>`

Where	Means
timeout	Set the TFTP server timeout value.
retry	Set the TFTP server retries value.
timeout_num	The TFTP server timeout value.
retries_num	The TFTP server retries value.

Examples

```
tftp timeout 60

tftp retry 6
```

timed enable

Configures the LX unit to use the Time Daemon (timed).

Syntax

```
timed enable
```

Example

```
      timed enable
```

timezone

Sets the timezone for the LX system clock.

Syntax

```
timezone GMT + <n>|GMT – <n>|UTC|US <us_timezone>
```

Where	Means
GMT + <*n*>	Greenwich Mean Time, plus *n* hours. The value of *n* can be any integer from 1 to 12, inclusive. For example, the timezone for Paris is Greenwich Mean time, plus 1 hour (GMT+1). The default value of *n* is 0. GMT+0 is Greenwich Mean Time itself.
GMT - <*n*>	Greenwich Mean Time, minus *n* hours. The value of *n* can be any integer from 1 to 12, inclusive. For example, the timezone for New York is Greenwich Mean time, minus 6 hours (GMT-6). The default value of *n* is 0. GMT-0 is Greenwich Mean Time itself.
UTC	Specifies that the LX unit will use Coordinated Universal Time.
US	Specifies that the LX unit will use the United States (US) timezone that is specified in the *us_timezone* field.
us_timezone	A US timezone. The allowable values are Alaska, Aleutian, Arizona, Central, Eastern, East-Indiana, Hawaii, Indiana-Starke, Michigan, Mountain, Pacific, and Samoa

Example

```
timezone GMT + 3

timezone GMT – 7

timezone UTC

timezone US Alaska

timezone US East–Indiana

timezone US Samoa

timezone US Mountain
```

web_server enable

Configures the LX unit to support Web Browser connections from remote clients.

Syntax

```
web_server enable
```

Example

```
      web_server enable
```

Chapter 4

Interface Commands

The Interface commands are executed in the Interface command mode. When the LX unit is in the Interface command mode, the Interface command prompt (e.g., `Intf 1-1:0 >>`) is displayed on the terminal screen.

The format of the Interface command prompt is as follows:

`Intf <1st_interface_num>-<`*n*`th_interface_num>:<session_number> >>`

where `<1st_interface_num>` identifies the first IP interface in the range of interfaces under configuration.

`<`*n*`th_interface_num>` identifies the last IP interface in the range of interfaces under configuration.

`<session_number>` identifies the current session number.

For example, in the Interface command prompt `Intf 1-1:0 >>` the first IP interface is the IP interface under configuration, and the session number is 0.

To enter the Interface command mode, execute the `interface` command in the Configuration command mode. The `interface` command is described on page 180.

address

Specifies the IP Address and subnet mask for the IP interface.

Syntax

`address <ip_address> [mask <subnet_mask>]`

Where	Means
ip_address	The IP Address for the IP interface.
subnet_mask	The subnet mask for the IP interface.

Examples

```
address 119.20.112.3

address 119.20.112.3 mask 255.0.0.0
```

authentication fallback enable

Enables the Local Authentication feature on the IP interface under configuration.

Syntax

```
authentication fallback enable
```

Usage Guidelines

Fallback Login is a mechanism for logging in users when RADIUS authentication, or TACACS+ authentication, fails because the authentication server is unreachable. When you log in via Fallback, you are logged in to the IP interface as a nonprivileged user. The authentication challenge will be against the local subscriber database.

When both RADIUS and TACACS+ are disabled on the IP interface, Fallback is also disabled.

Example

```
authentication fallback enable
```

authentication local enable

Enables the Local Authentication feature on the IP interface under configuration.

Syntax

```
authentication local enable
```

Example

```
      authentication local enable
```

authentication none

Disables the Authentication feature on the IP interface under configuration.

Syntax

```
authentication none
```

Example

```
      authentication none
```

authentication radius enable

Enables the RADIUS authentication feature on the IP interface under configuration.

Syntax

```
authentication radius enable
```

Example

```
      authentication radius enable
```

authentication securid enable

Enables the SecurID authentication feature on the IP interface under configuration.

Syntax

```
authentication securid enable
```

Example

```
      authentication securid enable
```

authentication tacacs+ enable

Enables the TACACS+ authentication feature on the IP interface under configuration.

Syntax

```
authentication tacacs+ enable
```

Example

```
      authentication tacacs+ enable
```

broadcast

Sets the Broadcast Address for the IP interface.

Syntax

```
broadcast A.B.C.D
```

Where	Means
A.B.C.D	The Broadcast Address for the IP interface.

Example

```
broadcast 119.255.255.255
```

default mtu

Resets the Maximum Transmission Unit (MTU) size for the IP interface to the factory default (1500). Frames that are larger than the designated MTU size are fragmented before transmission. (Note that the software fragments frames on the transmit side only.)

Syntax

```
default mtu
```

Example

```
      default mtu
```

default rotary

Resets any of three rotary parameters to their default values.

Syntax

```
default rotary [ssh port|tcp port|type]
```

Where	Means
ssh port	Resets the SSH UDP port for the rotary to its default value. The default SSH UDP port for a rotary is 1522.
tcp port	Resets the TCP UDP port for the rotary to its default value. The default SSH TCP port for a rotary is 1500.
type	Resets the rotary type to the default value of First Available.

Usage Guidelines

The modifiers (i.e., `ssh port`, `tcp port`, and `type`) are optional in this command. If this command is executed without a modifier (i.e., `default rotary`), it will reset the three rotary parameters (SSH port, TCP port, and type) to their default values.

Example

```
default rotary ssh port

default rotary tcp port

default rotary type

default rotary
```

default ssh keepalive

Resets the SSH Keepalive Count, or the SSH Keepalive Interval, to its default value.

Syntax

```
default ssh keepalive count|interval
```

Where	Means
count	Reset the SSH Keepalive Count to its default value.
interval	Reset the SSH Keepalive Interval to its default value.

Example

```
default ssh keepalive count

default ssh keepalive interval
```

default ssh port

Resets the SSH UDP port for the IP interface to its default value of 22.

Syntax

```
default ssh port
```

Example

```
      default ssh port
```

default telnet port

Resets the Telnet UDP port for the IP interface to its default value of 23.

Syntax

```
default telnet port
```

Example

```
      default telnet port
```

end

When the end command is issued in Interface command mode, it returns the user to the Superuser command mode.

Syntax

```
end
```

Usage Guidelines

The end command can be issued in all of the LX command codes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is Interface, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX Command Modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in the Interface command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any command mode other than the User command mode. For example, issuing the `exit` command in the Menu command mode returns the user to the Configuration command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

mask

Sets the subnet mask for the IP interface.

Syntax

`mask <subnet_mask>`

Where	Means
subnet_mask	The subnet mask for the IP interface.

Example

```
mask 255.0.0.0
```

mtu

Sets the Maximum Transmission Unit (MTU) size for an interface. Frames that are larger than the designated MTU size are fragmented before transmission. (Note that the software fragments frames on the transmit side only.)

Syntax

```
mtu NUMBER
```

Where	Means
NUMBER	The MTU size for the interface. This can be any numerical value between 1000 and 1500. (It is recommended that you use a value of 1500 for Ethernet connections.) The default MTU size is 1500.

Examples

```
mtu 1000

mtu 1200

mtu 1500
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the Interface command mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the Interface command mode *and are currently enabled.*
To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no ssh keepalive interval
```

radius accounting enable

Enables the RADIUS accounting feature on the IP interface under configuration.

Syntax

```
radius accounting enable
```

Example

```
      radius accounting enable
```

rotary enable

Enables you to create rotaries on the IP interface. The term "rotary" refers to the ability to assign the same Internet address or domain name to multiple ports that offer the same type of service.

Syntax

```
rotary enable
```

Usage Guidelines

In order for this command to take effect, the Telnet protocol must be enabled.

Example

```
rotary enable
```

rotary port

Assigns ports on the LX unit to a rotary. The term "rotary" refers to the ability to assign the same Internet address or domain name to multiple ports that offer the same type of service.

Syntax

```
rotary port NUMBER|PORT LIST|all
```

Where	Means
NUMBER	The port number of an LX port that is to be assigned to the rotary.
PORT LIST	A list of ports on the LX unit that are to be assigned to the rotary. The port numbers must be separated by blank spaces (e.g., `2 3 5 8`).
all	Assigns all ports on the LX unit to the rotary.

Usage Guidelines

When this command is used to assign ports to a rotary, the IP Address of the IP interface serves as the IP Address of the rotary.

To create a rotary, do the following:

1. Create an IP interface (see the “interface” command on page 180).
2. Assign ports to the rotary using the “rotary port” command.
3. Configure the IP Address for the IP interface (see the “address” command on page 276).
4. Configure the Rotary SSH port for the IP interface (see the “rotary ssh port” command on page 297).
5. Configure the Rotary TCP port for the IP interface (see the “rotary tcp port” command on page 298).

For example, you could create a rotary on interface 1 with a TCP port of 3500 and an SSH port of 3522. Then you could assign ports 2, 3, and 4 to it. You could connect (assuming all ports have dynamic or remote access) to ports 2, 3, or 4 via TCP port 3500 for telnet, and 3522 for SSH. You could connect to port 2 via TCP port 2200 for telnet or 2222 for SSH, or port 5 via TCP port 2500 for telnet or 2522 for SSH. A telnet connection to the IP address of the LX on TCP port 23 would get you to a virtual port, and an SSH connection to port 22 would also get you to a virtual port via SSH.

NOTE: You cannot add the DIAG port (port 0) to a rotary.

Examples

```
rotary port 4

rotary port 2 3 5 8

rotary port all
```

rotary ssh port

Assigns an SSH socket number to the rotary that was created with the `rotary port` command. (The `rotary port` command is described on page 296.)

Syntax

```
rotary ssh port NUMBER
```

Where	Means
NUMBER	The SSH socket number that will be used to make SSH connections to the rotary that was created with the `rotary port` command. SSH will attempt to connect to the ports in the rotary on a First Available basis. The default SSH socket number is 1522.

Examples

```
rotary ssh port 988
```

rotary tcp port

Assigns a TCP socket number to the rotary that was created with the `rotary port` command. (The `rotary port` command is described on page 296.)

Syntax

```
rotary tcp port NUMBER
```

Where	Means
NUMBER	The TCP socket number that will be used to make TCP connections to the rotary that was created with the `rotary port` command. The default TCP socket number is 1500.

Examples

```
rotary tcp port 1497
```

rotary type

Specifies the rotary type according to the port search method (Round Robin or First Available).

Syntax

```
rotary type round robin|first available
```

Where	Means
round robin	The LX unit will search the rotary for an available port, starting with the lowest-numbered port in the rotary. Unlike “First Available”, Round Robin will always go the next available port. For example, if all ports on the rotary are available and a connection to port 3 goes away, the next connection is to port 4.
first available	An incoming call is connected to the First Available (non-busy) port in the rotary. For example, if ports 1 - 5 are connected in a rotary of ports 1 - 7, and the connection to port 3 went away (so that port 3 was now available), the next connection would be to port 3.

Examples

```
rotary type round robin

rotary type first available
```

serial

Assigns user-defined Telnet, or SSH, socket numbers to an LX serial port. This is typically done to prevent hackers from accessing LX serial ports via default SSH socket numbers, or default Telnet socket numbers.

Syntax

`serial <serial_port> ssh|telnet <ssh/telnet_port>`

Where	Means
serial_port	The port number of an LX serial port. The valid values are 1 through 8.
ssh	Set the SSH socket number for the LX serial port specified in *serial_por*t.
telnet	Set the Telnet socket number for the LX serial port specified in *serial_port.*
ssh/telnet_port	Specifies the Telnet socket number, or the SSH socket number, for the LX port specified in *serial_por*t.

Note: The default SSH and Telnet port numbers are as follows:

LX Serial Port	Default Telnet Port	Default SSH Port
0	0	0
1	2100	2122
2	2200	2222
3	2300	2322
4	2400	2422
5	2500	2522
6	2600	2622
7	2700	2722
8	2800	2822

Example

```
serial 4 ssh 983

serial 6 telnet 1297
```

ssh keepalive count

Specifies the SSH Keepalive Count for the IP interface. The SSH Keepalive Count is the number of times that an SSH client will attempt to make an SSH connection to the IP interface.

Syntax

```
ssh keepalive count NUMBER
```

Where	Means
NUMBER	The SSH Keepalive Count for the IP interface. This can be any integer value.

Example

```
ssh keepalive count 8
```

ssh keepalive interval

Specifies the SSH Keepalive Interval for the IP interface. The SSH Keepalive Interval is the length of time, in seconds, between attempts at making an SSH connection to the IP interface.

Syntax

```
ssh keepalive interval NUMBER
```

Where	Means
NUMBER	The SSH Keepalive Interval for the IP interface. This can be any integer value.

Example

```
ssh keepalive interval 30
```

ssh port

Specifies the Virtual Port socket number for making an SSH connection to the IP interface.

Syntax

```
ssh port NUMBER
```

Where	Means
NUMBER	The SSH Virtual Port socket number for the IP interface. The default value is 22.

Example

```
ssh port 988
```

tacacs+ accounting enable

Enables the TACACS+ accounting feature on the IP interface under configuration.

Syntax

```
tacacs+ accounting enable
```

Example

```
      tacacs+ accounting enable
```

telnet port

Specifies the Virtual Port socket number for making a Telnet connection to the IP interface.

Syntax

```
telnet port NUMBER
```

Where	Means
NUMBER	The Telnet Virtual Port socket number for the IP interface. The default value is 23.

Example

```
telnet port 1743
```

Chapter 5

Asynchronous Commands

The Asynchronous port commands are executed in the Asynchronous command mode. When the LX unit is in the Asynchronous command mode, the Asynchronous command prompt (e.g., `Async 4-4:0 >>`) is displayed on the terminal screen.

The format of the Asynchronous command prompt is as follows:

`Async <1st_port_number>-<nth_port_number>:<session_number> >>`

where `<1st_port_number>` identifies the first port in the range of ports under configuration.

`<nth_port_number>` identifies the last port in the range of ports under configuration.

`<session_number>` identifies the current session number.

To enter the Asynchronous command mode, execute the `port async` command in the Configuration command mode. The `port async` command is described on page 194.

access

Specifies any access method, other than power management, for the asynchronous port(s) under configuration. (Refer to "access power model" on page 309 for information on specifying port(s) for power management.)

The default access method is LOCAL on modem ports and on port 0. On all other non-modem ports, the default access method is REMOTE.

Syntax

```
access local|dynamic|remote|sensor|databuffer
```

Where	Means
local	Specifies that the port(s) under configuration will use the LOCAL access method. The LOCAL access method is used to support inbound connections (i.e., when the user logs in to the port via a terminal or via a dialin connection).
dynamic	Specifies that the port(s) under configuration will use the DYNAMIC access method. **Note:** You cannot specify DYNAMIC as the access method for port 0.
remote	Specifies that the port(s) under configuration will use the REMOTE access method. The REMOTE access method is used to support outbound connections (i.e., connections from the LAN). **Note:** You cannot specify REMOTE as the access method for port 0.
sensor	Specifies that the port(s) under configuration will be used as a Temperature/Humidity Sensor port(s). Refer to *Getting Started with the LX Series* for information on connecting a Temperature/Humidity Sensor to an LX port. Refer to "show device status" on page 92 to display the temperature and humidity recorded on a Temperature/Humidity Sensor attached to a SENSOR port. **Note:** You cannot configure port 0 as a SENSOR port.
databuffer	Specifies that the port(s) under configuration will be used for data buffering. **Note:** You cannot configure port 0 as a DATABUFFER port.

Usage Guidelines

PPP can not be enabled on a port that has autobaud enabled.

Examples

```
access local

access dynamic

access remote
```

access power model

Specifies that the asynchronous port(s) under configuration will be used as Power Master(s) for an IR-5100 or IR-5150.

Syntax

```
access power model ir5100|ir5150
```

Where	Means
ir5100	Specifies that the asynchronous port(s) under configuration will be Power Master(s) for an IR-5100.
ir5150	Specifies that the asynchronous port(s) under configuration will be Power Master(s) for an IR-5150.

Usage Guidelines

Refer to the applicable *Getting Started* Guide for information on connecting an IR-5100 or an IR-5150 unit to an LX asynchronous port.

NOTE: You cannot configure port 0 as a Power Master port.

Examples

```
access power model ir5100

access power model ir5150
```

apd enable

Enables Automatic Protocol Detection (APD) on the port(s) under configuration. When APD is enabled, the port will automatically determine the protocol being used to make a connection and adjust port settings appropriately.

On all ports except modem ports, APD is disabled by default.

Syntax

```
apd enable
```

Usage Guidelines

To use APD, the LX port must be configured with PORT ACCESS set to LOCAL or DYNAMIC. Refer to “access” on page 308 for information on setting PORT ACCESS to LOCAL or DYNAMIC.

If you do not enable APD, ports can be dedicated for use by a single access serving protocol. An individual port can be configured to accept any connections made via PPP, SLIP (which includes CSLIP), and interactive protocols, as well as both, or neither of these.

You cannot enable APD on port 0. If you execute the `apd enable` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
apd enable
```

apd retry

Specifies the number of times an APD-enabled port will attempt to determine the protocol of an incoming connection.

NOTE: You cannot execute this command on port 0.

Syntax

```
apd retry NUMBER
```

Where	Means
NUMBER	The number of times that the port will attempt to determine the protocol of an incoming connection. The allowable values are 0 - 255.

Example

```
apd retry 6
```

apd signature

Specifies the APD signature for the port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

```
apd signature WORD
```

Where	Means
WORD	A text string.

Example

```
apd signature FinancePort
```

apd timeout

Specifies the APD timeout for the port(s) under configuration. The APD timeout is the length of time an APD port can spend attempting to determine which protocol is being used to make a connection.

NOTE: You cannot execute this command on port 0.

Syntax

```
apd timeout NUMBER
```

Where	Means
NUMBER	Specifies how much time the port can spend in an attempt to determine which protocol is being used to make a connection. Valid timeout values are from 1 to 255 seconds.

Example

```
apd timeout 30
```

authentication enable

Enables an authentication method (Local, RADIUS, SecurID, or TACACS+) as the inbound, or outbound, authentication method for the asynchronous port(s) under configuration.

Syntax

```
authentication inbound|outbound local|radius|securid|tacacs+ enable
```

Where	Means
inbound	The specified authentication method (Local, RADIUS, SecurID, or TACACS+) will be enabled as the method of inbound authentication for the asynchronous port(s) under configuration. (Inbound authentication is used on ports that have an access method of LOCAL. For more information on LOCAL access, refer to "access" on page 308.)
outbound	The specified authentication method (Local, RADIUS, SecurID, or TACACS+) will be enabled as the method of outbound authentication for the asynchronous port(s) under configuration. (Outbound authentication is used on ports that have an access method of REMOTE. For more information on REMOTE access, refer to "access" on page 308.) **Note:** You cannot configure outbound authentication for the DIAG port (port 0).
local	Enables Local authentication for inbound (or outbound) connections on the asynchronous port(s) under configuration. Under local authentication, the subscriber's username and password are checked against the subscriber database that resides on the LX.
radius	Enables RADIUS authentication for inbound (or outbound) connections on the asynchronous port(s) under configuration. Under RADIUS authentication, the authentication is validated by a network-based RADIUS server.
securid	Enables SecurID authentication for inbound (or outbound) connections on the asynchronous port(s) under configuration. Under SecurID authentication, the authentication is validated by a network-based SecurID server.
tacacs+	Enables TACACS+ authentication for inbound (or outbound) connections on the asynchronous port(s) under configuration. Under TACACS+ authentication, the authentication is validated by a network-based TACACS+ server.

Examples

```
authentication inbound radius enable

authentication outbound radius enable

authentication inbound local enable

authentication outbound local enable

authentication inbound securid enable
```

```
authentication outbound securid enable

authentication inbound tacacs+ enable

authentication outbound tacacs+ enable
```

authentication fallback enable

Enables the Fallback Login feature on the asynchronous port(s) under configuration.

Syntax

```
authentication fallback enable
```

Usage Guidelines

Fallback Login is a mechanism for logging in users when RADIUS, SecurID, or TACACS+, fails because the authentication server is unreachable. When you log in via Fallback, you are logged in to the asynchronous port as a nonprivileged user. The authentication challenge will be against the local subscriber database.

When RADIUS, SecurID, and TACACS+ are disabled on the asynchronous port, Fallback is effectively disabled on the port.

Example

```
authentication fallback enable
```

autobaud enable

Specifies that the port(s) under configuration will determine the input port speed, parity, and character size for the device connected to the port, and automatically set the matching LX port settings.

Autobaud is disabled by default, except on the last physical port.

Syntax

```
autobaud enable
```

Usage Guidelines

The LX unit uses the ASCII RETURN character to determine the port speed, parity, and character size. Normally, the user must press the RETURN key a few times until the LX unit determines the port speed, parity, and character size, and begins a logon sequence. When APD is enabled, the port will automatically determine the protocol being used to make a connection and adjust port settings appropriately.

You can only enable AUTOBAUD where the attached device is configured with the following settings at a port set to LOCAL ACCESS and:

- CHARACTER SIZE 8, (7 if EVEN parity)
- PARITY NONE (EVEN if character size is set to 7)
- SPEED is set to 1200, 2400, 4800, 9600, 19200, or 38400.

PPP can not be enabled on a port that uses Remote for an access method.

Example

```
autobaud enable
```

autobaud retry

Specifies the number of times an autobaud-enabled port will attempt to determine the input port speed, parity, and character size for the device connected to the port.

Syntax

```
autobaud retry NUMBER
```

Where	Means
NUMBER	The number of times that the port will attempt to determine the input port speed, parity, and character size for the device connected to the port.

Usage Guidelines

You cannot enable the Autobaud feature on port 0. If you execute the `autobaud enable` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
autobaud retry 6
```

autodial enable

Specifies that the port(s) under configuration will be automatically dialed.

Syntax

```
autodial enable
```

Usage Guidelines

You cannot enable the Autodial feature on port 0. If you execute the `autodial enable` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
autodial enable
```

autohangup enable

Specifies that the port(s) under configuration will automatically log out when the last connection closes.

NOTE: The port will also be logged out when the attached equipment drops its signaling.

NOTE: Autohangup cannot be enabled on port 0.

Syntax

```
autohangup enable
```

Example

```
autohangup enable
```

banner

Specifies the banner that is displayed when the user logs in to the port.

Syntax

```
banner STRING
```

Where	Means
STRING	A text string.

Example

```
banner Welcome to Finance
```

bits

Specifies the number of data bits per character for the port(s) under configuration.

Syntax

```
bits NUMBER
```

Where	Means
NUMBER	The number of data bits per character for the port(s) under configuration. The allowable values are 5, 6, 7, or 8.

Example

```
bits 6
```

break enable

Specifies that the port(s) under configuration will send a break signal to the serial line when a break or a Telnet break signal is received, via Telnet or SSH, from a remote host.

Syntax

```
break enable
```

Example

```
      break enable
```

break special

Defines a unique break sequence for the port(s) under configuration. When a unique break sequence is defined, it is sent in an out-of-band mode in place of the standard break sequence when the user presses the Break key.

Syntax

`break special <break_sequence>`

Where	Means
break_sequence	Specifies the break sequence. This can be any combination of up to six characters.

Example

```
break special 1234
```

connect command

Specifies the connect command(s) for the asynchronous port(s) under configuration. The connect command(s) are executed when a connection to the port is made, or when the port detects assertion of DSR. This feature is also known as the "Dedicated Async Port Service".

Syntax

```
connect command <command_sequence>
```

Where	Means
command_sequence	Specifies the connect command(s) for the port. The connect command(s) can be any of the Built-in Linux shell commands. If you specify more than one command, you must separate the commands with semi-colons (;). You can also specify an executable file or a batch file in this field.

Examples

```
connect command telnet 10.1.2.3

connect command mew_startup.exe

connect command ssh 10.1.2.3 -p 2022
```

databuffer display

Specifies the display option for a databuffer port.

Syntax

```
databuffer display enable|prompt
```

Where	Means
enable	The contents of the data buffer will be displayed for the user as soon as the user logs in to the port; the user will *not* be prompted for whether or not he wants to display the contents of the data buffer.
prompt	When the user logs in to the port, he will be prompted for whether or not he wants to display the contents of the data buffer. If the user enters a `y` response, the contents of the data buffer will be displayed at the user's terminal. If the user enters an `n` response, the contents of the data buffer will *not* be displayed at the user's terminal.

Usage Guidelines

You can disable the databuffer display by executing the following command in the Asynchronous command mode:

```
no databuffer display
```

When you execute the `no databuffer display` command, the contents of the databuffer will not be displayed when you log in to the port.

Example

```
databuffer display enable

databuffer display prompt
```

databuffer size

Specifies the size, in bytes, of the data buffer on the port(s) under configuration.

Syntax

```
databuffer size NUMBER
```

Where	Means
NUMBER	A whole number that specifies the size, in bytes, for the data buffer on the port(s) under configuration. This can be any number from 28 to 65535. The default databuffer size is 1024 bytes.

Example

```
databuffer size 62000
```

databuffer syslog enable

Specifies that the data received on the port(s) under configuration will be logged to the local syslogd.

NOTE: This feature can only be enabled on asynchronous ports that are configured for data buffering. Refer to the `access` command on page 308 for information on configuring ports for data buffering.

Syntax

```
databuffer syslog enable
```

Example

```
databuffer syslog enable
```

databuffer timestamp enable

Specifies that there will be a timestamp added to every entry of the data buffer for the port(s) under configuration.

Syntax

```
databuffer timestamp enable
```

Example

```
      databuffer timestamp enable
```

default apd

Resets the APD retries, APD signature, or APD timeout to the default value.

Syntax

```
default apd retry|signature|timeout
```

Where	Means
retry	Resets the apd retry value of the port(s) under configuration to the factory default.
signature	Resets the apd signature of the port(s) under configuration to the factory default.
timeout	Resets the apd timeout value of the port(s) under configuration to the factory default.

Example

```
default apd retry

default apd signature

default apd timeout
```

default databuffer size

Resets the data buffer size on the port(s) under configuration to the factory-default value of 1024 bytes.

Syntax

```
default databuffer size
```

Example

```
      default databuffer size
```

default port

Resets all of the parameters of the port(s) under configuration to their factory-default values.

Syntax

```
default port
```

Example

```
      default port
```

default power off time

Resets the off time for the power outlets on the asynchronous port(s) to the default value of 10 seconds.

Syntax

```
default power off time
```

Example

```
      default power off time
```

default speed

Resets the speed of the port(s) under configuration to their factory-default values. The default port speed is 9600.

Syntax

```
default speed
```

Example

```
      default speed
```

end

When the end command is issued in the Asynchronous command mode, it returns the user to the Superuser command mode.

Syntax

```
end
```

Usage Guidelines

The end command can be issued in all of the LX command modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is the Asynchronous command mode, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX Command Modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in the Asynchronous command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any mode other than the User command mode. For example, issuing the `exit` command in the Menu Editing command mode returns the user to the Menu command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

flowcontrol

Specifies the type of flow control ("handshaking") that is used by the serial interface(s) of the port(s) under configuration.

On all ports except modem ports, the default flow control is XON/XOFF; on modem ports, the default flow control is CTS.

Syntax

```
flowcontrol cts|xon
```

Where	Means
cts	The LX unit will use CTS flow control for the specified port(s).
xon	The LX unit will use XON/XOFF flow control for the specified port(s).

Example

```
flowcontrol cts

flowcontrol xon
```

modem

Enters the Modem command mode. For more information on the Modem command mode, refer to “Modem Commands” on page 437.

Syntax

```
modem
```

Example

```
modem
```

modem enable

Specifies that the port(s) under configuration will have Modem Control enabled.

Syntax

```
modem enable
```

Usage Guidelines

You cannot enable Modem Control on port 0. If you execute the `modem enable` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
modem enable
```

name

Specifies a description of the port(s) under configuration.

Syntax

```
name STRING
```

Where	Means
STRING	A text string that describes the port(s) under configuration. The text string can contain up to 60 characters.

Example

```
name FieldOffice3
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the Asynchronous command mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the Asynchronous command mode *and are currently enabled.* To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no modem
```

outlet name

Specifies a descriptive name for a Power Outlet that is connected to a Power Master port on the LX unit. Refer to “access power model” on page 309 for information on configuring an LX port as a Power Master.

Syntax

`outlet <outlet_number> name <outlet_name>`

Where	Means
outlet_number	An integer number that specifies an outlet on the Power Control unit that is being managed via the asynchronous port under configuration. **Note:** This number consists of the Power Control Relay Number without the Power Master port number.
outlet_name	Specifies a descriptive name for the Power Control Relay. This can be a text string of up to 15 characters.

Example

```
outlet 2 name Build5NTserver
```

parity

Specifies whether or not the port(s) under configuration will provide a bit (parity bit) with each character for error checking. The value you set for this characteristic must match the value set at the device attached to the port.

Syntax

```
parity even|odd|none
```

Where	Means
even	The port will ensure that each byte (character) that is transmitted or received contains an even number of 1's, including the parity bit. If the port receives a byte that contains an odd number of 1 bits, it indicates to the LX unit that an error occurred.
odd	The port will ensure that each byte (character) that is transmitted or received contains an odd number of 1's, including the parity bit. If the port receives a byte that contains an even number of 1 bits, it indicates to the LX unit that an error occurred.
none	A parity bit will not be provided. This is the default setting.

Examples

```
parity even

parity odd

parity none
```

pattern match enable

Specifies that the ports under configuration will use the Pattern Matching feature.

Syntax

```
pattern match enable
```

Usage Guidelines

The Pattern Matching feature can only be used on ports that are configured for databuffer access. Refer to the "access" command on page 308 to configure a port for databuffer access.

You must create a match pattern before you can execute this command. To create a match pattern, refer to "pattern string" on page 345.

Example

```
pattern match enable
```

pattern string

Specifies a match pattern for the databuffer port(s) under configuration. When data matching this pattern is received at the port, the data is put into a syslogd message. The syslogd message that contains the matching data can be forwarded to users of the Notification feature. Refer to "Usage Guidelines" (below) for more information.

NOTE: Pattern matching must be disabled on the port(s) where this command is executed. To disable pattern matching, execute the `no pattern match` command in the Asynchronous command mode:

Syntax

`pattern string <pattern_number> <match_pattern>`

Where	Means
pattern_number	A number that identifies the match pattern. This can be any integer number from 1 through 8.
match_pattern	A case-sensitive text string that is used as a match pattern for incoming data. This string can contain up to 15 characters, including wildcards. The allowable wildcards are the period (".") and the asterisk ("*"). The period represents a single character. For example, the pattern `a.c.ef` matches the strings `abc3ef`, `azcxef`, and `a2cgef`. The asterisk represents up to 16 iterations of the last character before the asterisk. For example, the pattern `abc*` matches the strings `abccccccc` and `abccc`. **Note:** The asterisk cannot be specified as the first character in a match pattern. **Note:** The string `help` is reserved and can not be specified in a match pattern.

Usage Guidelines

When incoming data matching a specified pattern is received at the port, a syslogd message is generated at the facility LOG_USER, with the priority LOG_NOTICE:

`Pattern match found:<data>:Msg39`

where `<data>` is the incoming data that matches the specified pattern.

For example, the following syslogd messages could be generated for incoming data that matched the pattern `no *`:

`Pattern match found:no broadcast group 4:Msg39`

NOTE: The text `Pattern match found` is the default content of Message 39. This text can be changed. If it is changed, the text that precedes the colon (:) will be different from `Pattern match found`. Refer to "message string" on page 514 to change the text content of a configurable message.

The messages will be forwarded to Notification clients that have a facility of `user` and a priority of `notice` configured in their User Profiles. Refer to the *LX-Series Configuration Guide* for information on configuring User Profiles for the Notification feature.

Examples

```
pattern string 1 no *

pattern string 2 number .

pattern string 3 OK>

pattern string 4 stuck*

pattern string 5 1234B
```

power off time

Specifies the length of time, in seconds, that outlets must remain off before they can be turned back on.

Syntax

```
power off time NUMBER
```

Where	Means
NUMBER	An integer number that specifies the length of time, in seconds, that the outlets must remain off before they can be turned back on. After the outlets in the group have been turned off with the `outlet` command (see page 75), they must remain off for at least this length of time. The allowable values are 0 - 255. The default value is 10.

Example

```
power off time 15
```

ppp

Enters the PPP command mode. For more information on the PPP command mode, refer to “PPP Commands” on page 447.

Syntax

ppp

Example

```
ppp
```

ppp enable

Specifies that the ports under configuration can be used for PPP links.

Syntax

```
ppp enable
```

Usage Guidelines

You cannot use port 0 for PPP links. If you execute the `ppp enable` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
ppp enable
```

prompt

Specifies the port prompt for remote connections.

Syntax

`prompt <prompt_string>`

Where	Means
prompt_string	The text string that will be used as the port prompt. The text string can contain up to 60 characters.

Example

```
prompt Finance-Group
```

radius accounting enable

Enables the RADIUS accounting feature on the port(s) under configuration.

Syntax

```
radius accounting enable
```

Example

```
      radius accounting enable
```

signals syslog enable

Specifies that a syslogd message will be sent when there is a state transition of the serial input signals CTS and DCD/DSR.

Syntax

```
signals syslog enable
```

Example

```
      signals syslog enable
```

special break enable

Specifies that the port(s) under configuration will send the special break string out the serial line of the port(s) when a break (or Telnet break string) is received, via Telnet or SSH, from a remote host. Refer to “special break string” on page 354 to specify the special break string.

Syntax

```
special break enable
```

Example

```
      special break enable
```

special break string

Specifies a unique break sequence that is sent out the serial line of the ports under configuration when a break is received, via Telnet or SSH, from a remote host.

Syntax

```
special break string <break_sequence>
```

Where	Means
break_sequence	Specifies the unique break sequence. This can be any string of up to six characters.

Example

```
special break string gfeij
```

speed

Specifies the speed of the port(s) under configuration.

Syntax

```
speed NUMBER
```

Where	Means
NUMBER	The port speed, in bits per second, to which the port(s) under configuration will be set. The valid speeds are 134, 200, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 or 230400. The default port speed is 9600.

Example

```
speed 57600
```

stopbits

Specifies the number of stop bits to be used to maintain synchronization of data on the port(s) under configuration.

Syntax

```
stopbits NUMBER
```

Where	Means
NUMBER	A whole number that maps to the number of stop bits to be used to maintain synchronization of data. The allowable values are 1 or 2.

Example

```
stopbits 1

stopbits 2
```

tacacs+ accounting enable

Enables the TACACS+ accounting feature on the port(s) under configuration.

Syntax

```
tacacs+ accounting enable
```

Example

```
      tacacs+ accounting enable
```

telnet break string

Specifies the Telnet break string for the ports under configuration. When it is received from a remote host in a Telnet or SSH session, the LX unit will send the enabled break feature (break signal or special break string) out the serial line. Refer to "break enable" on page 323 to enable the break signal. Refer to "special break enable" on page 353 to enable the special break string.

Syntax

`telnet break string <break_sequence>`

Where	Means
break_sequence	Specifies the Telnet break sequence. This can be any string of up to four characters.

Example

```
telnet break string sfg
```

telnet negotiation enable

Enables Telnet negotiation on the port(s) under configuration. When Telnet negotiation is enabled, the LX unit will begin negotiating Telnet parameters as soon as the session is started.

NOTE: Telnet negotiation is enabled by default. This command is typically used to re-enable Telnet negotiation after it has been disabled. (To disable Telnet negotiation, execute the `no telnet negotiation` command in the Asynchronous Command Mode.)

Syntax

```
telnet negotiation enable
```

Usage Guidelines

Telnet Negotiation is used with transparency enabled when full transparency is needed within the telnet connection. Refer to the `transparency enable` command on page 360 to enable transparency.

You can disable Telnet Negotiation on the LX to ensure operation with NT servers.

Disabling Telnet negotiation on the LX effectively disables the negotiation of all telnet options in the TCP three-way handshaking process.

Example

```
telnet negotiation enable
```

transparency enable

Sets the port(s) under configuration to transparent mode.

Syntax

```
transparency enable
```

Usage Guidelines

The use of transparent mode ensures that the LX can support applications that were designed for a point-to-point serial connection over an IP network. Examples of such applications include (but are not limited to) legacy serial applications and the downloading of an operating system to a switch or router via the serial port.

Transparent mode is applicable to the serial-port side only. When transparent mode is enabled, common control characters are not interpreted. For example, some characters that would not be interpreted (and their Hex equivalents) are ^Q (11), ^S (13), and NULL (00).

To disable transparent mode, execute the following command in the Asynchronous Command Mode:

```
no transparency
```

Example

```
transparency enable
```

Chapter 6

Ethernet Commands

The Ethernet commands are executed in the Ethernet command mode. When the LX unit is in the Ethernet command mode, the Ethernet command prompt (e.g., `Ether 1-1:0 >>`) is displayed on the terminal screen.

The format of the Ethernet command prompt is as follows:

`Ether <1st_port_number>-<`*n*`th_port_number>:<session_number> >>`

where `<1st_port_number>` identifies the first port in the range of ports under configuration.

`<`*n*`th_port_number>` identifies the last port in the range of ports under configuration.

`<session_number>` identifies the current session number.

To enter the Ethernet command mode, execute the `port ethernet` command in the Configuration command mode. The `port ethernet` command is described on page 195.

description

Specifies the description for the Ethernet port.

Syntax

```
description STRING
```

Where	Means
STRING	A text string that describes the Ethernet port. The text string can contain up to 60 characters.

Example

```
description Port 0 on the Lab Unit
```

end

When the end command is issued in Ethernet Command Mode, it returns the user to the Superuser command mode.

Syntax

```
end
```

Usage Guidelines

The end command can be issued in all of the LX Command Modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is the Ethernet command mode, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX command modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in the Ethernet command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any mode other than the User command mode. For example, issuing the `exit` command in the Menu Editing command mode returns the user to the Menu command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

no description

Removes (deletes) the description field for the Ethernet port(s) under configuration. Refer to “description” on page 362 for more information on the description field.

Syntax

```
no description
```

Example

```
      no description
```

speed

Specifies the speed and duplex mode of the Ethernet port under configuration.

Syntax

```
speed auto|10mb|100mb duplex full|half
```

Where	Means
auto	The Ethernet port under configuration will auto-negotiate its port speed and duplex mode. This is the default setting. **Note:** If the `auto` option is specified, you will not be able to specify `full` or `half` as the duplex mode for the port; the duplex mode will be auto-negotiated.
10mb	Sets a speed of 10 Megabytes per second for the Ethernet port under configuration.
100mb	Sets a speed of 100 Megabytes per second for the Ethernet port under configuration.
full	The Ethernet port under configuration will use full duplex.
half	The Ethernet port under configuration will use half duplex.

Examples

```
speed auto

speed 10mb duplex full

speed 100mb duplex full

speed 10mb duplex half

speed 100mb duplex half
```

Chapter 7

Subscriber Commands

The Subscriber commands are executed in the Subscriber command mode. When the LX unit is in the Subscriber command mode, the Subscriber command prompt (e.g., `Subs_mark >>`) is displayed on the terminal screen.

The format of the Subscriber command prompt is as follows:

`Subs_<subscriber_name> >>`

where `<subscriber_name>` is the name of the subscriber under configuration.

To enter the Subscriber command mode, execute the `subscriber` command in the Configuration command mode. The `subscriber` command is described on page 247.

access console enable

Enables the subscriber to access the LX unit via a direct connection to the LX console port.

Syntax

```
access console enable
```

Example

```
      access console enable
```

access port

Specifies the LX asynchronous ports that the subscriber can access.

Syntax

`access port <port_list>`

Where	Means
port_list	Specifies the asynchronous port(s) that the user can access on the LX unit. If more than one asynchronous port is specified, they should be separated by blank spaces; for example, `2 3 5 6`. In order to specify a range of ports, put a hyphen between the first port and the last port; for example: `3-7`.

Example

```
access port 2

access port 0 2 3 5 6

access port 3-7
```

access ssh enable

Enables the subscriber to access the LX unit by an SSH connection.

Syntax

```
access ssh enable
```

Example

```
      access ssh enable
```

access telnet enable

Enables the subscriber to access the LX unit by a Telnet connection.

Syntax

```
access telnet enable
```

Example

```
      access telnet enable
```

access web enable

Enables the subscriber to access the LX unit from a web browser via an Internet connection.

Syntax

```
access web enable
```

Example

```
      access web enable
```

audit log enable

Enables the auditing of port activity for the subscriber. The auditing begins as soon as this command is executed.

Syntax

```
audit log enable
```

Example

```
      audit log enable
```

backward_switch

Specifies the Backward Switch character for the subscriber; when the subscriber enters the Backward Switch character, he is returned to the previous (lower-numbered) session without returning to the local command mode.

Syntax

```
backward_switch CHARACTER
```

Where	Means
CHARACTER	A capital letter (A - Z) that the user will type to return to the previous session. It is recommended that you specify an unused CTRL character.

Usage Guidelines

To specify that the Backward Switch character is a CTRL character, the character must be preceded by the caret symbol (^) in the `backward_switch` command. For example, the following command specifies that the Backward Switch character is CTRL/I:

```
backward_switch ^I
```

Be sure that there are no conflicting uses for the character you select (particularly with control characters that are used by applications programs, or with the character you set for the FORWARD SWITCH, the LOCAL SWITCH, or any Telnet command characters). If you specify a CTRL character, when the user types the character, it will be displayed as ^<Key> (i.e., if the user types CTRL/I, the terminal will echo the characters: ^I).

Example

```
backward_switch ^I
```

command log enable

Enables command logging for the subscriber.

Syntax

```
command log enable
```

Usage Guidelines

Command logging creates an audit trail of subscriber input in a subscriber session. The audit trail is sent to the accounting log and to syslogd. Use the `show command log` command to display the command log. The `show command log` command is described on page 87.

Example

```
command log enable
```

dedicated service

Permanently assigns the subscriber to a dedicated service; whenever the subscriber logs into the LX unit, he will begin running the service that is specified in this command.

Syntax

```
dedicated service NAME
```

Where	Means
NAME	The name of the service to which the subscriber is permanently assigned.

Usage Guidelines

In order to use this command, the Telnet protocol must be enabled.

Example

```
dedicated service finance_server
```

default access port

Resets the access ports for the subscriber to the factory default of all physical ports on the LX unit, including port 0.

Syntax

```
default access port
```

Example

```
      default access port
```

default access remote

Resets the subscriber's remote access to the default value, which is no remote access.

Syntax

```
default access remote
```

Example

```
      default access remote
```

default backward_switch

Resets the Backward Switch character for the subscriber back to the factory default.

NOTE: The factory-default Backward Switch character is Control-B (`^B`).

Syntax

```
default backward_switch
```

Example

```
default backward_switch
```

default dialback retry

Resets the Dialback retries for the subscriber back to the factory default of 4.

Syntax

```
default dialback retry
```

Example

```
      default dialback retry
```

default forward_switch

Resets the Forward Switch character for the subscriber back to the factory default.

NOTE: The factory-default Forward Switch character is Control-F (`^F`).

Syntax

```
default forward_switch
```

Example

```
default forward_switch
```

default idletime

Resets the Inactivity timeout for the subscriber to the factory default of 0. A value of 0 means that the Inactivity Timer is effectively disabled.

Syntax

```
default idletime
```

Example

```
      default idletime
```

default local_switch

Resets the Local Switch character for the subscriber back to the factory default.

NOTE: The factory-default Forward Switch character is Control-L (`^L`).

Syntax

```
default local_switch
```

Example

```
default local_switch
```

default ssh log level

Resets the SSH log level to the factory-default level, which is INFO.

Syntax

```
default ssh log level
```

Example

```
      default ssh log level
```

dialback enable

Enables the Dialback feature for the subscriber.

Syntax

```
dialback enable
```

Example

```
      dialback enable
```

dialback number

Specifies the telephone number that the LX modem will dial when the subscriber makes a Dialback call to the LX unit.

Syntax

`dialback number <telephone_number>`

Where	Means
telephone_number	The telephone number that the LX modem will dial when the subscriber makes a Dialback call to the LX unit.

Example

```
dialback number 19785551978
```

dialback retry

Specifies the number of times that the modem on the LX unit can attempt to answer a dialback call.

Syntax

```
dialback retry NUMBER
```

Where	Means
NUMBER	The number of times that the modem on the LX unit can attempt to answer a dialback call. The default value is 3. The allowable values are 1 through 255.

Example

```
dialback retry 7
```

end

When the end command is issued in the Subscriber command mode, it returns the user to the Superuser command mode.

Syntax

end

Usage Guidelines

The end command can be issued in all of the LX Command Modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is the Subscriber command mode, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX command modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in the Subscriber command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any mode other than the User command mode. For example, issuing the `exit` command in the Menu command mode returns the user to the Configuration command mode; issuing the `exit` command in the Configuration command mode returns the user to Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

forward_switch

Specifies the Forward Switch character for the subscriber; when the subscriber enters the Forward Switch character, he is switched to the next (higher-numbered) session without returning to the local command mode.

Syntax

```
forward_switch CHARACTER
```

Where	Means
CHARACTER	A capital letter (A - Z) that the user will type to switch to the next session. It is recommended that you specify an unused CTRL character.

Usage Guidelines

To specify that the Forward Switch character is a CTRL character, the character must be preceded by the caret symbol (^) in the `forward_switch` command. For example, the following command specifies that the Forward Switch character is CTRL/M:

```
forward_switch ^M
```

Be sure that there are no conflicting uses for the character you select (particularly with control characters that are used by applications programs, or with the character you set for the BACKWARD SWITCH, the LOCAL SWITCH, or any Telnet command characters). If you do specify a CTRL character, when the user types the character, it will be displayed as ^<Key> (i.e., if the user types CTRL/M, the terminal will echo the characters: ^M).

Example

```
forward_switch ^M
```

idletime

Sets the Inactivity Timeout for the subscriber. The subscriber is logged out if he does not enter keyboard data before the expiration of the Inactivity Timeout.

Syntax

`idletime <timeout_value>`

Where	Means
timeout_value	The length of the Inactivity Timeout, in seconds. The allowable values are 0 through 65535. The default value is 0. A value of 0 means that the Inactivity Timer is effectively disabled.

Syntax

```
idletime 1200
```

local_switch

Specifies the Local Switch character for the subscriber; when the subscriber enters the Local Switch character, he is returned to the local command mode.

Syntax

```
local_switch CHARACTER
```

Where	Means
CHARACTER	A capital letter (A - Z) that the user will type to return to the local command mode. It is recommended that you specify an unused CTRL character.

Usage Guidelines

To specify that the Local Switch character is a CTRL character, the character must be preceded by the caret symbol (^) in the `local_switch` command. For example, the following command specifies that the Local Switch character is CTRL/K:

```
local_switch ^K
```

Be sure that there are no conflicting uses for the character you select (particularly with control characters that are used by applications programs, or with the character you set for the BACKWARD SWITCH, the FORWARD SWITCH, or any Telnet command characters). If you do specify a CTRL character, when the user types the character, it will be displayed as ^<Key> (i.e., if the user types CTRL/K, the terminal will echo the characters: ^K).

Example

```
local_switch ^K
```

maxsubscriber

Sets the maximum simultaneous connections for the subscriber.

Syntax

```
maxsubscriber NUMBER
```

Where	Means
NUMBER	The maximum simultaneous connections for the subscriber. The allowable values are 1 through 255. The default value is 5.

Syntax

```
maxsubscriber 10
```

menu enable

Assigns a log-in menu to the subscriber and enables the Menu feature for the subscriber. If the Menu feature is enabled, and a menu exists for the subscriber, a menu is displayed when the subscriber logs in to the LX unit. Refer to "Menu Commands" on page 479 for more information on creating menus.

Syntax

```
menu NAME enable
```

Where	Means
NAME	The name of the menu that is to be displayed when the subscriber logs in to the LX unit. Refer to "Menu Commands" on page 479 for more information on creating menus.

Example

```
menu tom enable
```

no

Disables (negates) specific features and boolean parameters for the subscriber under configuration. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the Subscriber mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the Subscriber command mode *and are currently enabled for this subscriber*. To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no pause
```

password

Assigns a new login password to the subscriber's account.

Syntax

```
password
```

Usage Guidelines

When this command is executed, the following prompts are displayed:

```
Enter your NEW password   :
Re-enter your NEW password:
```

Enter the new password at the `Enter` prompt, and re-enter it at the `Re-enter` prompt. The password string can be up to 16 characters in length, and it will be masked when you enter it at the above prompts.

Example

```
password
```

password enable

Enables password login protection on the subscriber account and enables the subscriber to reset his password the next time he logs in. (The subscriber will be prompted to enter, and confirm, his new password the next time he logs in.)

Syntax

```
password enable
```

Example

```
      password enable
```

pause enable

Configures the screen pause feature for this subscriber. When this feature is enabled, the screen will pause after displaying the number of lines specified in the "lines/screen" value for the terminal.

Syntax

```
pause enable
```

Example

```
      pause enable
```

preferred service

Assigns a service to which the port will connect whenever a user makes a connect request without specifying a service.

Syntax

```
preferred service NAME
```

Where	Means
NAME	The name of the preferred service.

Usage Guidelines

After assigning a Preferred Service to a subscriber, you must log out the subscriber in order for the Preferred Service to take effect.

Example

```
preferred service finance_server
```

prompt

Sets the *<username>* portion of the subscriber's user prompt. Refer to page 33 for more information on the format of the user prompt.

Syntax

```
prompt STRING
```

Where	Means
STRING	A text string of up to 8 ASCII characters.

Example

```
prompt BILL
```

security level superuser

Allows the subscriber to log into the Superuser command mode with the Superuser password. The subscriber logs in to the Superuser command mode by executing the `enable` command (see page page 36).

Syntax

```
security level superuser
```

Example

```
      security level superuser
```

session

Sets the maximum number of sessions for a subscriber.

Syntax

```
session NUMBER
```

Where	Means
NUMBER	The maximum number of sessions for the subscriber. The allowable values are 0 through 4, where a value of 0 disables the subscriber's access to the LX unit.

Examples

```
session 3
```

shell enable

Configures the Subscriber Session Mode as `Shell`. When the Subscriber Session Mode is `Shell`, the subscriber is logged into the Linux shell when he accesses the LX unit.

Syntax

```
shell enable
```

Usage Guidelines

You can reset the Subscriber Session Mode to `CLI` by executing the `no shell` command in the Subscriber Command Mode. When the Subscriber Session Mode is `CLI`, the subscriber will be logged into the LX CLI (or his specified Login Menu) when he accesses the LX unit.

Example

```
shell enable
```

ssh cipher

Specifies the SSH encryption type(s) that are supported for this subscriber.

Syntax

```
ssh cipher triple-des|any|blowfish
```

Where	Means
`triple-des`	Specifies that the Triple Data Encryption Standard (Triple-DES) is the only SSH encryption type supported for this subscriber.
any	Specifies that any SSH encryption type is supported for this subscriber.
blowfish	Specifies that BLOWFISH is the only SSH encryption type supported for this subscriber. See "Usage Guidelines" (below) for more information on the BLOWFISH encryption type.

Usage Guidelines

Blowfish is a variable-length key block cipher. It is only suitable for applications where the key does not change often, like a communications link or an automatic file encryptor. It is significantly faster than DES when implemented on 32-bit microprocessors with large data caches, such as the Pentium and the PowerPC. It takes a variable-length key, from 32 bits to 448 bits, making it ideal for both domestic and exportable use. Blowfish is unpatented and license-free, and is available free for all uses at the following website:

http://www.counterpane.com/blowfish-download.html

Examples

```
ssh cipher triple-des

ssh cipher any

ssh cipher blowfish
```

ssh key

Specifies a unique SSH key for this subscriber. When a subscriber has a unique SSH key, he can log on to the LX unit via SSH without entering a password. (The only requirement is that the user must log on from the host on which his SSH key was generated.)

Syntax

```
ssh key
```

Usage Guidelines

When this command is executed, the following prompt is displayed:

```
Please enter your key:
```

Type an SSH key at the above prompt. The SSH key can be any random string of characters.

As an alternative to typing the SSH key, you can paste a generated SSH key at the above prompt. (The SSH key must be generated on the host from which the subscriber will make SSH connections to the LX unit. Refer to your Linux documentation for more information on generating an SSH key.)

Example

```
ssh key
```

ssh log level

Specifies the class of SSH messages that will be logged to syslogd.

Syntax

```
ssh log level debug|error|fatal|info|quiet|verbose
```

Where	Means
debug	Only debug messages will be sent to the SSH log.
error	Only error messages will be sent to the SSH log.
fatal	Only fatal error messages will be sent to the SSH log.
info	Only informational messages will be sent to the SSH log. This is the default.
quiet	Default account log information will be logged for SSH.
verbose	Verbose account log information will be logged for SSH.

Examples

```
ssh log level debug

ssh log level error

ssh log level fatal

ssh log level info

ssh log level quiet

ssh log level verbose
```

telnet mode

Specifies the Telnet mode for the subscriber.

Syntax

```
telnet mode line|character
```

Where	Means
line	The subscriber will use Telnet line mode.
character	The subscriber will use Telnet character mode.

Examples

```
telnet mode line

telnet mode character
```

terminal

Sets the terminal type for the subscriber.

Syntax

```
terminal <terminal_type>
```

Where	Means
terminal_type	The terminal type for the subscriber. The allowable terminal types are VT100 and ANSI.

Example

```
terminal vt100

terminal ansi
```

Chapter 8

SNMP Commands

The SNMP commands are executed in the SNMP command mode. When the LX unit is in the SNMP command mode, the SNMP command prompt (e.g., `Snmp:0 >>`) is displayed on the terminal screen.

The format of the SNMP command prompt is as follows:

`Snmp:<session_number> >>`

where `<session_number>` is the session number of the current connection.

To enter the SNMP command mode, execute the `snmp` command in the Configuration command mode. The `snmp` command is described on page 242.

contact

Specifies the name of a system contact for the LX unit.

Syntax

```
contact STRING
```

Where	Means
STRING	The name of a system contact for the LX unit. This information is available via an SNMP query (get) but is provided for administrative or informational purposes only. The MIB object is sysContact. The text string can contain up to 60 characters.

Example

```
contact Henry Smith
```

default v3 client

Specify the default SNMP V3 client for the LX unit

Syntax

```
default v3 client NUMBER
```

Where	Means
NUMBER	The number of the default SNMP V3 client. Valid values are 3 - 7.

Example

```
default v3 client 5
```

end

When the end command is issued in SNMP Mode, it returns the user to the Superuser command mode.

Syntax

```
end
```

Usage Guidelines

The end command can be issued in all of the LX Command Modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is the SNMP command mode, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX Command Modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in the SNMP command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any mode other than the User command mode. For example, issuing the `exit` command in the Menu Editing command mode returns the user to the Menu command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

get client

Add, or change, an SNMP client (e.g., a Network Operations Center, or NOC) that has permission to view information about the LX unit (i.e., perform an SNMP get).

Syntax

```
get client NUMBER A.B.C.D
```

Where	Means
NUMBER	The number of the SNMP client that has permission to perform an SNMP get on the LX unit. Valid values are 0 - 16.
A.B.C.D	The Internet address of an SNMP client that has permission to perform an SNMP get on the LX unit. The default value is 0.0.0.0. Specify the default value (0.0.0.0) to remove a client.

Example

```
get client 4 119.20.112.3
```

get client community

Specifies an SNMP Get client community for an SNMP get client of the LX unit. When an SNMP Get community has been specified with this command, any SNMP get clients must belong to the same SNMP Get community in order to perform an SNMP get on the unit.

Syntax

`get client NUMBER community <community_name>`

Where	Means
NUMBER	The number of the SNMP client that has permission to perform an SNMP get on the LX unit.
community_name	The name of the SNMP Get community. The name can be up to 32 characters long.

Example

```
get client 3 community labunits
```

get client version

Specifies the SNMP get client version for an SNMP get client of the LX unit.

Syntax

`get client NUMBER version <version_number>`

Where	Means
NUMBER	The number of the SNMP get client for which the SNMP get client version is to be set.
version_number	An SNMP get client version number. The allowable values are 1, 2, or 3. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.

Example

```
get client 3 version 2
```

location

Specifies the physical location of the LX unit.

Syntax

```
location STRING
```

Where	Means
STRING	The physical location of the LX unit. This information is available via an SNMP query (get) but is provided for administrative or informational purposes only. The MIB object is sysLocation. The text string can contain up to 60 characters.

Example

```
location Engineering Lab
```

log enable

Enables the logging of all incoming SNMP packets to syslogd.

Syntax

```
log enable
```

Example

```
      log enable
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the SNMP mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the SNMP command mode *and are currently enabled*. To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no pause
```

set client

Add, or change, an SNMP client (e.g., a Network Operations Center, or NOC) that has permission to set characteristics (i.e., perform an SNMP set) on the LX unit.

Syntax

```
set client NUMBER A.B.C.D
```

Where	Means
NUMBER	The number of the SNMP client that has permission to perform an SNMP set on the LX unit. Valid values are 0 - 16.
A.B.C.D	The Internet address of an SNMP client that has permission to perform an SNMP set on the LX unit. The default value is 0.0.0.0. Specify the default (0.0.0.0) value to remove a client.

Example

```
set client 4 119.20.112.3
```

set client community

Specifies an SNMP Set client community for an SNMP set client of the LX unit. When an SNMP Set community has been specified with this command, any SNMP set clients must belong to the same SNMP Set community in order to perform an SNMP set on the unit.

Syntax

`set client NUMBER community <community_name>`

Where	Means
NUMBER	The number of the SNMP client that has permission to perform an SNMP set on the LX unit.
community_name	The name of the SNMP Set community. The name can be up to 32 characters long.

Example

```
set client 3 community labunits
```

set client version

Specifies the SNMP set client version for an SNMP set client of the LX unit.

Syntax

`set client NUMBER version <version_number>`

Where	Means
NUMBER	The number of the SNMP set client for which the SNMP set client version is to be set.
version_number	An SNMP set client version number. The allowable values are 1, 2, or 3. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.

Example

```
set client 3 version 2
```

trap client

Add, or change, an SNMP client (e.g., a Network Operations Center, or NOC) that will receive SNMP traps generated by the LX unit.

The LX unit sends an Enterprise-specific SNMP trap before a reboot and a Cold Start SNMP trap when the LX unit has rebooted. During normal operation of the LX unit, SNMP traps can be sent to trap clients via the Notification feature.

Syntax

```
trap client NUMBER A.B.C.D
```

Where	Means
NUMBER	The number of the SNMP client that has permission to receive SNMP traps generated by the LX unit. Valid values are 0 - 16.
A.B.C.D	The Internet address of an SNMP client that has permission to receive SNMP traps from the LX unit. The default value is 0.0.0.0. Specify the default value (0.0.0.0) to remove a client.

Example

```
trap client 4 119.20.112.3
```

trap client community

Specifies an SNMP Trap community for an SNMP trap client of the LX unit. When an SNMP Trap community has been specified with this command, any SNMP trap clients must belong to the same SNMP Trap community in order to receive SNMP traps that are generated by the unit.

The LX unit sends an Enterprise-specific SNMP trap before a reboot and a Cold Start SNMP trap when the LX unit has rebooted. During normal operation of the LX unit, SNMP traps can be sent to trap clients via the Notification feature.

Syntax

`trap client NUMBER community <community_name>`

Where	Means
NUMBER	The number of the SNMP client that has permission to receive SNMP traps that are generated by the LX unit.
community_name	The name of the SNMP Trap community. The name can be up to 32 characters long.

Example

```
trap client 3 community labunits
```

trap client version

Specifies the SNMP trap client version for an SNMP set client of the LX unit.

The LX unit sends an Enterprise-specific SNMP trap before a reboot and a Cold Start SNMP trap when the LX unit has rebooted. During normal operation of the LX unit, SNMP traps can be sent to trap clients via the Notification feature.

Syntax

`trap client NUMBER version <version_number>`

Where	Means
NUMBER	The number of the SNMP trap client for which the SNMP trap client version is to be set.
version_number	An SNMP trap client version number. The allowable values are 1, 2 or 3. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.

Example

```
trap client 5 version 2
```

v3 client access context match

Specifies the access context match criteria for an SNMP V3 client.

Syntax

```
v3 client <client_number> access context match exact|prefix
```

Where	Means
client_number	The number of the SNMP V3 client for which the access context match criteria are being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
exact	The access context field of an incoming SNMP packet must be an exact match for the access context field that is specified for the group on the LX unit.
prefix	The prefix of an access context field of an incoming SNMP packet must match the prefix of the access context field that is specified for the group on the LX unit.

Examples

```
v3 client 3 access context match exact

v3 client 3 access context match prefix
```

v3 client access context prefix

Specifies the access context prefix for an SNMP V3 client.

Syntax

`v3 client <client_number> access context prefix <string>`

Where	Means
client_number	The number of the SNMP V3 client for which the access context prefix is being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
string	The access context prefix for the SNMP V3 client.

Examples

```
v3 client 3 access context prefix lab
```

v3 client access read view

Specifies the access read view for an SNMP V3 client.

Syntax

`v3 client <client_number> access read view <word>`

Where	Means
client_number	The number of the SNMP V3 client for which the access read view is being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
word	The view that will be used as the read view for the SNMP V3 client. The read view is used for incoming SNMP Get Requests.

Example

```
v3 client 3 access read view second_view
```

v3 client access security

Specifies the access security settings for an SNMP V3 client.

Syntax

```
v3 client <client_number> access security level <security_level>
                                               model <model_number>
```

Where	Means
client_number	The number of the SNMP V3 client for which the access context settings are being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
level	Specify the access security level.
security_level	The access security level in an incoming SNMP packet must match this value in order for the packet to be allowed. The allowable values are 1, 2, or 3.
model	Specify the access security model.
model_number	The access security model in an incoming SNMP packet must match this value in order for the packet to be allowed. The allowable values are 1, 2, or 3.

Examples

```
v3 client 3 access security level 1

v3 client 3 access security level 2

v3 client 3 access security level 3

v3 client 3 access security model 1

v3 client 3 access security model 2
```

v3 client access write view

Specifies the access write view for an SNMP V3 client.

Syntax

`v3 client <client_number> access write view <word>`

Where	Means
client_number	The number of the SNMP V3 client for which the access write view is being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
word	The view that will be used as the write view for the SNMP V3 client. The write view is used for incoming SNMP Set Requests.

Example

```
v3 client 3 access write view third_view
```

v3 client group security model

Specifies the group security model for an SNMP V3 client.

Syntax

`v3 client <client_number> group security model <model_number>`

Where	Means
client_number	The number of the SNMP V3 client for which the security community setting is being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
model_number	The group security model in an incoming SNMP packet must match this value in order for the packet to be allowed. The allowable values are 1 or 2.

Examples

```
v3 client 3 group security model 1

v3 client 3 group security model 2
```

v3 client name

Specifies the name for an SNMP V3 client.

Syntax

`v3 client <client_number> name <string>`

Where	Means
client_number	The number of the SNMP V3 client for which the client engine settings are being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
string	The name of the SNMP V3 client. This can be any text string.

Examples

```
v3 client 3 name lab_unit
```

v3 client security community

Specifies the security community for an SNMP V3 client.

Syntax

`v3 client <client_number> security community <word>`

Where	Means
client_number	The number of the SNMP V3 client for which the security community setting is being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
word	The security community name for the SNMP V3 client. The LX unit will only accept SNMP Requests from this SNMP V3 client if the Request packet includes this community name. This is a text string of up to 60 characters.

Example

```
v3 client 3 security community lab_group
```

v3 client security source

Specifies the security source settings for an SNMP V3 client.

Syntax

```
v3 client <client_number> security source <ip_address>
                                          mask <subnet_mask>
```

Where	Means
client_number	The number of the SNMP V3 client for which the security source settings are being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
ip_address	The IP Address that will be used as the security source for the SNMP V3 client. The LX unit will only accept SNMP Requests from this SNMP V3 client if they have this IP Address specified as the security source.
mask	Requires both the IP Address, and subnet mask, of the security source to match.
subnet_mask	The subnet mask that will be used as the security source mask for the SNMP V3 client. If this mask is specified, both IP address and the subnet mask for the security source must match for the LX unit to accept SNMP Requests from the V3 client.

Examples

```
v3 client 4 security source 143.32.87.23

v3 client 4 security source mask 255.255.255.0
```

v3 client view

Specifies the view settings for an SNMP V3 client.

Syntax

```
v3 client <client_number> view subtree <object_id>
                               mask <octet_string>
                               type <word>
```

Where	Means
client_number	The number of the SNMP V3 client for which the view settings are being configured. **Note:** Clients 0-2 are reserved for SNMP V1 clients and SNMP V2 clients. You cannot specify clients 0-2 as SNMP V3 clients.
subtree	Specify the subtree for the V3 client.
object_id	An Object ID that will be used as a filter for incoming SNMP packets, as specified by the mask for the V3 client.
mask	Specify the view mask for the V3 client.
octet_string	A hexadecimal number that specifies the octets that must match those in the subtree. For example, hexadecimal F (which has a binary value of 1111) indicates that the first four octets in an incoming Object ID must match the first four octets in the subtree. If the subtree is 1.3.6.1.2.1.1.2, the Object IDs of incoming SNMP packets must have 1.3.6.1 as their first four octets.
type	Specify the type for the V3 view.
word	The type of the V3 view. The allowable values are: **allow** – Packets that match the mask and subtree in this view will be allowed to make requests on the LX unit. **deny** – Packets that match the mask and subtree in this view will *not* be allowed to make requests on the LX unit.

Examples

```
v3 client 4 view subtree 1.3.6.1.2.1.1.2

v3 client 4 view mask F

v3 client 4 view type allow

v3 client 4 view type deny
```

v3 engine

Specifies the engine settings for an SNMP V3 client.

Syntax

```
v3 engine id <octet_string>
          boots NUMBER
```

Where	Means
id	Specify the Engine ID for the LX unit.
octet_string	An hexadecimal value that uniquely identifies the LX unit.
boots	Specify the Engine boots for the LX unit.
NUMBER	An integer number that represents the number of times that the SNMP daemon running on the LX unit has rebooted. You can set this to any integer value. This is a counter that will be incremented each time the SNMP daemon is rebooted. This value is also a shared secret between the LX unit and the SNMP V3 client.

Examples

```
v3 engine id 346248687

v3 engine boots 11
```

Chapter 9

Modem Commands

The Modem commands, which are used to configure modems for asynchronous ports, are executed in the Modem command mode. When the LX unit is in the Modem command mode, the Modem command prompt (e.g., `Modem 4-4:0 >>`) is displayed on the terminal screen.

The format of the Modem command prompt is as follows:

`Modem <1st_port_number>-<nth_port_number>:<session_number> >>`

where `<1st_port_number>` identifies the first port in the range of ports under configuration. (This value is inherited from the Asynchronous command mode.)

`<nth_port_number>` identifies the last port in the range of ports under configuration. (This value is inherited from the Asynchronous command mode.)

`<session_number>` identifies the current session number.

To enter the Modem command mode, execute the `modem` command in the Asynchronous command mode. The `modem` command is described on page 338.

default initstring

Resets the modem initialization string to its default value.

Syntax

```
default initstring
```

Example

```
      default initstring
```

dialout number

Specifies the telephone number that the LX modem will dial for a dialout connection.

Syntax

`dialout number <telephone_number>`

Where	Means
telephone_number	The telephone number that the LX modem will dial for a dialout connection.

Usage Guidelines

You cannot specify a dialout number for port 0. If you execute the `dialout number` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
dialout number 19785558371
```

end

When the end command is issued in the Modem command mode, it returns the user to the Superuser command mode.

Syntax

end

Usage Guidelines

The end command can be issued in all of the LX Command Modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is the Modem command mode, issuing this command will return the user to the Asynchronous command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX command modes. However, the effect of the `exit` command varies, depending on the command mode from which it is issued.

As noted above, issuing the `exit` command in the Modem command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any command mode other than the User command mode. For example, issuing the `exit` command in the Menu Editing command mode returns the user to the Menu command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

initstring

Specifies the Modem Initialization string that the port(s) under configuration will pass to the modem.

Syntax

```
initstring STRING
```

Where	Means
STRING	The Modem Initialization string

Usage Guidelines

You cannot specify a Modem Initialization string for port 0. If you execute the `initstring` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
initstring AT S7=45 S0=1 L1 V1 X4 &C1 &1 Q0 &S1
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the Modem command mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the Modem command mode *and are currently enabled.* To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no dialout number
```

retry

Specifies the number of times that the port(s) under configuration will attempt to make a dialout connection via a modem, after the initial attempt.

Syntax

```
retry NUMBER
```

Where	Means
NUMBER	The number of times that the port(s) under configuration will attempt to make a dialout connection via a modem. The valid values are 0 - 255.

Usage Guidelines

You cannot specify a retry value for port 0. If you execute the `retry` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
retry 6
```

timeout

Specifies the length of time that the port(s) under configuration can spend attempting to make a modem connection.

Syntax

```
timeout NUMBER
```

Where	Means
NUMBER	Specifies how much time the port(s) under configuration can spend attempting to make a modem connection. Valid timeout values are from 1 to 255 seconds.

Usage Guidelines

You cannot specify a modem timeout for port 0. If you execute the `timeout` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Example

```
timeout 30
```

type

Specifies the Modem type.

Syntax

```
type dialin|dialout
```

Where	Means
dialin	The modem on the asynchronous port(s) under configuration can only be used for dialin connections.
dialout	The modem on the asynchronous port(s) under configuration can only be used for dialout connections.

Usage Guidelines

You cannot specify a modem type for port 0. If you execute the `type` command on port 0, the following message will be displayed:

```
Operation not permitted on diagnostic/management port
```

Examples

```
type dialin

type dialout
```

Chapter 10

PPP Commands

The PPP commands, which are used to configure the Point-to-Point Protocol (PPP) for asynchronous ports, are executed in the PPP command mode. When the LX unit is in the PPP command mode, the PPP command prompt (e.g., `PPP 4-4:0 >>`) is displayed on the terminal screen.

The format of the PPP command prompt is as follows:

`PPP <1st_port_number>-<`*n*`th_port_number>:<session_number> >>`

where `<1st_port_number>` identifies the first port in the range of ports under configuration. (This value is inherited from the Asynchronous command mode.)

`<`*n*`th_port_number>` identifies the last port in the range of ports under configuration. (This value is inherited from the Asynchronous command mode.)

`<session_number>` identifies the current session number.

To enter the PPP command mode, execute the `PPP` command in the Asynchronous command mode. The `PPP` command is described on page 348.

accounting enable

Enables the logging of PPP data for the asynchronous port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

```
accounting enable
```

Example

```
accounting enable
```

authentication

Sets the PPP link authentication parameters for the port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

`authentication chap|pap|retry <retry_limit>|timeout <timeout_limit>`

Where	Means
chap	Enables CHAP authentication on the PPP link.
pap	Enables PAP authentication on the PPP link.
retry	Set the retry value for CHAP or PAP authentication.
retry_limit	The number of times that the LX unit will attempt to authenticate a PPP link.
timeout	Set the timeout value for CHAP or PAP authentication.
timeout_limit	The length of time that the LX unit has to perform CHAP or PAP authentication for a PPP link. If the link can not be authenticated within this time, the link is refused.

Examples

```
authentication chap

authentication pap

authentication retry 5

authentication timeout 30
```

ccp enable

Enables PPP Compression Control Protocol (CCP) negotiation on the asynchronous port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

```
ccp enable
```

Example

```
ccp enable
```

default authentication

Resets the retry and timeout values for PPP authentication to the factory-default settings.

NOTE: You cannot execute this command on port 0.

Syntax

```
default authentication retry|timeout
```

Where	Means
retry	Resets the retry value for PPP authentication to the factory-default setting. Refer to “authentication” on page 449 for more information on the retry value for PPP authentication.
timeout	Resets the timeout value for PPP authentication to the factory-default setting. Refer to “authentication” on page 449 for more information on the timeout value for PPP authentication.

Example

```
default authentication retry

default authentication timeout
```

default ipcp

Resets the negotiation options for the Internet Protocol Control Protocol (IPCP) to their factory-default values.

NOTE: You cannot execute this command on port 0.

Syntax

```
default ipcp compression|failure|timeout
```

Where	Means
compression	Resets the compression option for IPCP to the factory-default value. Refer to "ipcp accept address enable" on page 462 for more information on the compression option for IPCP.
failure	Resets the failure option for IPCP to the factory-default value. Refer to "ipcp accept address enable" on page 462 for more information on the failure option for IPCP.
timeout	Resets the timeout option for IPCP to the factory-default value. Refer to "ipcp accept address enable" on page 462 for more information on the timeout option for IPCP.

Example

```
default ipcp compression

default ipcp failure

default ipcp timeout
```

default lcp compression

Resets the compression option for the Link Control Protocol (LCP) to the factory-default value.

NOTE: You cannot execute this command on port 0.

Refer to “lcp compression enable” on page 466 for more information on the compression option for LCP.

Syntax

```
default lcp compression
```

Example

```
default lcp compression
```

default lcp echo failure

Resets the echo failure parameter for the Link Control Protocol (LCP) to the factory-default value.

NOTE: You cannot execute this command on port 0.

Refer to “lcp echo failure” on page 467 for more information on the echo failure parameter for LCP.

Syntax

```
default lcp echo failure
```

Example

```
default lcp echo failure
```

default lcp failure limit

Resets the failure limit parameter for the Link Control Protocol (LCP) to the factory-default value.

NOTE: You cannot execute this command on port 0.

Refer to “lcp failure limit” on page 469 for more information on the failure limit parameter for LCP.

Syntax

```
default lcp failure limit
```

Example

```
default lcp failure limit
```

default lcp timeout

Resets the Link Control Protocol (LCP) timeout for the port(s) under configuration to the factory-default value.

NOTE: You cannot execute this command on port 0.

Refer to “lcp timeout” on page 470 for more information on the LCP timeout.

Syntax

```
default lcp timeout
```

Example

```
default lcp timeout
```

default mode client username

Resets the client-mode username to the factory-default value, which is **InReach**.

NOTE: You cannot execute this command on port 0.

Syntax

```
default mode client username
```

Example

```
default mode client username
```

default mtu

Resets the Maximum Transmission Unit (MTU) for the PPP link to the factory-default setting. The MTU is the maximum-sized packet that can be transmitted on the PPP link.

NOTE: You cannot execute this command on port 0.

Syntax

```
default mtu
```

Example

```
default mtu
```

default remote address

Resets the IP address of the remote system in the PPP link to the default value.

NOTE: You cannot execute this command on port 0.

Syntax

```
default remote address
```

Example

```
default remote address
```

end

When the end command is issued in the PPP command mode, it returns the user to the Superuser command mode.

Syntax

end

Usage Guidelines

The end command can be issued in all of the LX command modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is the PPP command mode, issuing this command will return the user to the Asynchronous command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX command modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in the PPP command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any command mode other than User. For example, issuing the `exit` command in the Menu Editing command mode command mode returns the user to the Menu command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

ipcp accept address enable

Configures the PPP link to accept negotiation of local addresses or remote addresses.

NOTE: You cannot execute this command on port 0.

Syntax

```
ipcp accept local|remote address enable
```

Where	Means
local	Specifies that the PPP link will only accept negotiation of local addresses.
remote	Specifies that the PPP link will only accept negotiation of remote addresses.

Examples

```
ipcp accept local address enable

ipcp accept remote address enable
```

ipcp compression enable

Specifies that the port(s) under configuration will try to negotiate the use of Van Jacobson (VJ) compression over a PPP link.

NOTE: You cannot execute this command on port 0.

Syntax

```
ipcp compression enable
```

Usage Guidelines

Data compression allows more data to be transferred over the link. The use of the VJ compression method can result in significant bandwidth savings, which can be important when PPP connections are made over telephone lines or when a PPP link is very heavily used. VJ compression is very memory intensive, however. The use of VJ compression is negotiated during PPP options negotiation. Compression can be used in one direction only.

Example

```
ipcp compression enable
```

ipcp failure limit

Specifies the number of attempts at IPCP option negotiation that can be made by the port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

```
ipcp failure limit NUMBER
```

Where	Means
NUMBER	A whole number that specifies the number of attempts at IPCP option negotiation that can be made by the port(s) under configuration. The attempt at making a PPP link will be aborted if the options are not successfully negotiated within this number of tries.

Example

```
ipcp failure limit 6
```

ipcp timeout

Specifies the length of time that the port(s) under configuration have for ipcp option negotiation.

NOTE: You cannot execute this command on port 0.

Syntax

```
ipcp timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the port(s) under configuration have for IPCP option negotiation. The attempt at making a PPP link will be aborted if the options are not successfully negotiated within this time limit.

Example

```
ipcp timeout 30
```

lcp compression enable

Specifies that the port(s) under configuration will try to negotiate the use of LCP compression over a PPP link.

NOTE: You cannot execute this command on port 0.

Syntax

```
lcp compression enable
```

Example

```
lcp compression enable
```

lcp echo failure

Specifies the number of times that the port(s) under configuration can send an LCP echo request.

NOTE: You cannot execute this command on port 0.

Syntax

```
lcp echo failure NUMBER
```

Where	Means
NUMBER	A whole number that specifies the number of times that the port(s) under configuration can send an LCP echo request. The attempt at making a PPP link will be aborted if the port does not receive an LCP echo after the last echo request is sent.

Example

```
lcp echo failure 6
```

lcp echo interval

Specifies the interval between the sending of LCP echo requests.

NOTE: You cannot execute this command on port 0.

Syntax

```
lcp echo interval NUMBER
```

Where	Means
NUMBER	A whole number that specifies the interval, in seconds, between the sending of LCP echo requests.

Example

```
lcp echo interval 10
```

lcp failure limit

Specifies the number of attempts at LCP option negotiation that can be made by the port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

```
lcp failure limit NUMBER
```

Where	Means
NUMBER	A whole number that specifies the number of attempts at LCP option negotiation that can be made by the port(s) under configuration. The attempt at making a PPP link will be aborted if the options are not successfully negotiated within this number of tries.

Example

```
lcp failure limit 6
```

lcp timeout

Specifies the length of time that the port(s) under configuration have for LCP option negotiation.

NOTE: You cannot execute this command on port 0.

Syntax

```
lcp timeout NUMBER
```

Where	Means
NUMBER	The length of time, in seconds, that the port(s) under configuration have for LCP option negotiation. The attempt at making a PPP link will be aborted if the options are not successfully negotiated within this time limit.

Example

```
lcp timeout 30
```

local address

Specifies the PPP IP Local Address for the port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

```
local address A.B.C.D
```

Where	Means
A.B.C.D	The PPP IP Local Address for the port(s) under configuration.

Example

```
local address 119.20.112.3
```

mode client

Specifies “client” as the PPP mode, and optionally specifies the CHAP or PAP secret, for the port(s) under configuration.

NOTE: You cannot execute this command on port 0.

Syntax

```
mode client [chap|pap <secret>]
```

Where	Means
chap	Specify the CHAP secret for the port(s) under configuration.
pap	Specify the PAP secret for the port(s) under configuration.
secret	The CHAP or PAP secret for the port(s) under configuration.

Examples

```
mode client

mode client pap wtrrrgbbba

mode client pap irtntobaalmwmtg
```

mode client username

Specifies the username for the PPP client.

NOTE: You cannot execute this command on port 0.

Syntax

```
mode client username <name>
```

Where	Means
name	The username for the PPP client. This can be any text string.

Examples

```
mode client username jackc
```

mode server

Specifies the PPP mode for the port(s) under configuration as Server Active or Server Passive.

NOTE: You cannot execute this command on port 0.

Syntax

```
mode server active|passive
```

Where	Means
active	Specifies that the port(s) under configuration will use PPP server active mode.
passive	Specifies that the port(s) under configuration will use PPP server passive mode.

Examples

```
mode server active

mode server passive
```

mtu

Sets the Maximum Transmission Unit (MTU) size for the PPP link. Frames that are larger than the designated MTU size are fragmented before transmission. (Note that the software fragments frames on the transmit side only.)

NOTE: You cannot execute this command on port 0.

Syntax

```
mtu NUMBER
```

Where	Means
NUMBER	The MTU size for the PPP link. The allowable values are 1000 - 1500. The default value is 1400.

Example

```
mtu 1300
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the PPP command mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the PPP command mode *and are currently enabled*. To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no authentication
```

remote address

Identifies the remote system in the PPP link.

NOTE: You cannot execute this command on port 0.

Syntax

```
remote address A.B.C.D
```

Where	Means
A.B.C.D	The IP Address of the remote unit in the PPP link.

Example

```
remote address 129.27.172.19
```

Chapter 11

Menu Commands

The Menu commands are executed in the Menu command mode. When the LX unit is in the Menu command mode, the Menu command prompt (e.g., `Menu :0 >>`) is displayed on the terminal screen.

The format of the Menu command prompt is as follows:

```
Menu :<session_number> >>
```

where `<session_number>` identifies the current session number.

To enter the Menu command mode, execute the `menu` command in the Configuration command mode, or execute the `exit` command in the Menu Editing command mode. The `menu` command is described on page 184.

delete

Deletes a menu from the LX unit.

Syntax

```
delete NAME
```

Where	Means
NAME	The name of the menu that is to be deleted from the database of menus on the LX unit.

Example

```
delete finance_menu
```

end

When the end command is issued in the Menu command mode, it returns the user to the Superuser command mode.

Syntax

```
end
```

Usage Guidelines

The end command can be issued in all of the LX command modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is Menu, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX Command Modes. However, the effect of the `exit` command varies, depending on the command mode from which it is issued. For example, issuing the `exit` command in the Menu command mode returns the user to the Configuration command mode; issuing the `exit` command in Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

import

Merges existing menus into one menu.

Syntax

`import <menu_list> to <destination_menu>`

Where	Means
menu_list	Specifies the menu files that are to be merged into the destination menu. Each menu filename must be separated by a blank space. The menu files in the *menu_list* are appended to the destination menu. **Note:** A maximum of 16 menu pages can be merged into a destination menu. Each menu or submenu counts as a separate menu page.
destination_menu	Specifies the filename of the menu to which the files in *menu_list* are to be merged.

Usage Guidelines

If the destination menu already exists, the following prompt will be displayed when you execute the `import` command:

```
The destination file already exists.  Do you want to overwrite it?  (yes/no)
```

Answering "yes" will overwrite the destination file.

Answering "no" will abort the command.

Examples

```
import menu_1 menu_2 menu_3 menu_4 menu_5 to finance_menu

import susans_menu jacks_menu henrys_menu_3 to group_menu
```

list

Displays a list of the menus on the LX unit.

NOTE: If this command is executed while a menu file is open, a list of the submenus in the menu will be displayed.

Syntax

```
list
```

Example

```
list
```

no

Disables (negates) specific features and boolean parameters on the LX unit. Refer to "Usage Guidelines" (below) for more information about using the `no` command in the Menu command mode.

Syntax

`no <feature_name>`

Where	Means
feature_name	The name of the feature or boolean parameter that is to be disabled.

Usage Guidelines

The allowable arguments for this command consist of only those features and boolean parameters that can be set in the Menu Editing command mode *and are currently enabled.* To view the features and boolean parameters that are currently enabled, type the `no` command followed by a question mark (`?`).

Example

```
no entry 2
```

open

Opens a new or existing menu in the Menu Editing command mode. For more information on the Menu Editing command mode, refer to “Menu Editing Commands” on page 487.

Syntax

```
open NAME
```

Where	Means
NAME	The name of the menu that is to be opened for editing.

Example

```
open finance_menu
```

Chapter 12

Menu Editing Commands

The Menu Editing commands are executed in the Menu Editing command mode. When the LX unit is in the Menu Editing command mode, the Menu Editing command prompt (e.g., `mark-1:0 >>`) is displayed on the terminal screen.

The format of the Menu Editing command prompt is as follows:

`<menu_name>-<menu_number>:<session_number> >>`

where `<menu_name>` identifies the Menu name.

`<menu_number>` identifies the submenu number of the menu. The top-level menu always has a submenu number of 1.

`<session_number>` identifies the current session number.

To enter the Menu Editing command mode, execute the `open` command in the Menu command mode. The `open` command is described on page 486.

control key

Assigns control keys for the menu.

Syntax

```
control key logout|repaint|top|up <character> <text>
```

Where	Means
logout	Assigns a function key that will log out the subscriber account.
repaint	Assigns a function key that will redisplay the menu.
top	Assigns a function key that will move to the top-level menu for the subscriber.
up	Assigns a function key that will move up to the next-higher menu level.
character	The keyboard character that performs the assigned function.
text	Message text that is displayed at the bottom of the menu. This text typically describes what happens when the specified control key is pressed. This message has a limit of 18 characters.

Examples

```
control key logout W Log out of LX

control key repaint Z Refresh screen

control key top H Go to top level

control key up G Go back menu level
```

display

Displays the current menu, or a submenu associated with the current menu. The menu is displayed in the same form as it would be seen by an end user.

Syntax

```
display [menu <menu_number>]
```

Where	Means
menu_number	An integer number, from 1 through 16, that identifies an existing menu. Menu 1 is the top-level menu. The default value is the current menu.

Usage Guidelines

When this command is executed without a submenu number, the current menu or submenu is displayed.

Example

```
display

display menu 11
```

end

When the end command is issued in the Menu Editing command mode, it returns the user to the Superuser command mode.

Syntax

end

Usage Guidelines

The end command can be issued in all of the LX Command Modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

entry

Display a menu entry as it appears in the menu file.

NOTE: This command displays an entry as it appears in the menu file rather than as the end user will see it. The label and the associated command are listed.

Syntax

`entry <entry_number>`

Where	Means
entry_number	An integer number, from 1 through 40, that identifies the menu entry that is to be displayed.

Example

```
entry 12
```

entry command

Creates or modifies a command entry. A Command entry executes a Linux command when the user selects it from the menu.

Syntax

`entry <entry_number> command <command_text>`

Where	Means
entry_number	An integer number, from 1 through 40, that identifies the menu entry that is to be created or modified.
command_text	The shell-level command that is to be executed when this menu entry is selected by the user. This field can contain any syntactically correct Linux command.

Example

```
entry 3 command telnet 1.2.3.5.1
```

entry label

Creates or modifies a label for a command entry or a menu entry. The label is displayed to the user in the menu.

Syntax

`entry <entry_number> label <label_text>`

Where	Means
entry_number	An integer number, from 1 through 40, that identifies the menu entry for which the label is to be created or modified.
label_text	A text string that describes the entry. The text string can contain any text characters, including spaces. If the menu or submenu has less than 21 entries, the text string can contain up to 52 characters. If the menu or submenu has 21 or more entries, the text string is limited to 36 characters.

Example

```
entry 3 label List the log entries
```

entry menu

Creates or modifies a menu entry. When a menu entry is selected from a menu, it switches to a submenu.

NOTE: This command will create an entry with a label. The default label is the same as the command string itself. You can change the label with the `entry label` command. The `entry label` command is described on page 493.

Syntax

`entry <entry_number> menu <menu_number>`

Where	Means
entry_number	An integer number, from 1 through 40, that identifies the menu entry that is to be created or modified.
menu_number	An integer number, from 1 through 16, that identifies the submenu that is to be displayed when the user selects this menu entry.

Example

```
entry 11 menu 6
```

exit

Returns the user to the previous command mode. For example, if the current command mode is Menu Editing, issuing this command will return the user to the Menu command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX command modes. However, the effect of the `exit` command varies, depending on the command mode from which it is issued. For example, issuing the `exit` command in the Menu Editing command mode returns the user to the Menu command mode; issuing the `exit` command in the Menu command mode returns the user to the Configuration command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

header

Creates a header for the current submenu.

NOTE: The `list` command is used to display the headers for all submenus. The `list` command is described on page 497.

Syntax

`header [<header_text>]`

Where	Means
header_text	The text string that will be used as the Menu header. The text string can contain up to 60 characters, including spaces.

Examples

```
header

header Finance Department
```

list

Displays all of the configured submenus for the current menu, and their configured headers. An asterisk (*) indicates the menu that is currently under configuration.

Syntax

```
list
```

Example

```
      list
```

menu

Opens a new or existing submenu for editing.

Syntax

`menu <submenu_number>`

Where	Means
submenu_number	The menu number of the submenu that is to be opened for editing. This can be any integer number from 1 through 16.

Usage Guidelines

After this command is executed, the `<submenu_#>` field of the Menu Editing prompt changes to the Submenu number that is being edited. For example, the prompt `mark-12:0 >>` indicates that Submenu 12 is currently being edited.

Example

```
menu 12
```

menu continue string

Specifies the continue string for the current menu. If a continue string is specified, the screen will pause after a command entry is executed; the user must press the ENTER key to re-display the menu from which the command entry was selected. If a continue string is *not* specified, the screen will pause after a command entry is executed, but no prompt string will be displayed.

The continue string typically describes how to re-display the menu (e.g., `Press ENTER to return`).

The continue string appears at the bottom of the screen when you display the menu using the `display` command. The `display` command is described on page 489.

Syntax

`menu continue string <continue_string>`

Where	Means
continue_string	The continue string for the current menu or submenu. This is a text string of up to 60 characters.

Examples

```
menu continue string Press ENTER to return
```

menu prompt

Specifies the prompt string for the current menu. The prompt string is displayed at the bottom of the menu, and it typically describes how to select a menu option.

The prompt string appears at the bottom of the screen when you display the menu using the `display` command. The `display` command is described on page 489.

Syntax

`menu prompt <prompt_string>`

Where	Means
prompt_string	The prompt string for the current menu or submenu. This is limited to 53 characters.

Examples

```
menu prompt Highlight options with Arrow Keys and press RETURN
```

no control key

Removes control keys from the current menu.

Syntax

```
no control key logout|repaint|top|up
```

Where	Means
logout	Removes the logout control key from the current menu.
repaint	Removes the repaint control key from the current menu.
top	Removes the top control key from the current menu.
up	Removes the up control key from the current menu.

Examples

```
no control key logout

no control key repaint

no control key top

no control key up
```

no entry

Resets (negates) an entry in the current menu. When this command is executed, the menu entry no longer has a command, or a menu entry, associated with it.

Syntax

`no entry <entry_number>`

Where	Means
entry_number	An integer number, from 1 through 40, that identifies the menu entry that is to reset.

Example

```
no entry 11
```

no header

Removes the configured header from the current menu or submenu. (The configured header is specified with the `header` command, which is described on page 496.)

Syntax

```
no header
```

Usage Guidelines

After the `no header` command is executed, the default menu header will be used in the menu. The format of the default menu header is as follows:

```
Menu <menu_number> LX Menu
```

where `<menu_number>` identifies the submenu number of the menu. The top-level menu always has a submenu number of 1.

For example, the default menu header for the top-level menu is `Menu 1 LX Menu`.

Example

```
no header
```

no menu continue string

Removes (deletes) the continue string from the current menu or submenu.

Syntax

```
no menu continue string
```

Example

```
      no menu continue string
```

no menu prompt

Removes (deletes) the prompt from the current menu or submenu.

Syntax

```
no menu prompt
```

Example

```
no menu prompt
```

open

Opens a new or existing menu file, and closes the current menu file.

Syntax

```
open NAME
```

Where	Means
NAME	The name of the menu that is to be opened for editing.

Usage Guidelines

If you have made any changes to the current menu, the following prompt will be displayed when you execute the `open` command:

```
The Menu has been modified.

Do you want to save your changes? (y/n) :
```

Enter `y` to save your changes to the current menu.

Enter `n` to abandon your changes to the current menu.

Example

```
open finance_menu
```

save

Saves the current menu file.

Syntax

```
save [<filename>]
```

Where	Means
filename	The filename under which the current menu file is to be saved. If no filename is specified, it will be saved to the filename of the current menu file.

Example

```
save

save finance_menu
```

Chapter 13

Notification Commands

The Notification commands are executed in the Notification command mode. When the LX unit is in the Notification command mode, the Notification command prompt (e.g., `Notification:0 >>`) is displayed on the terminal screen.

The format of the Notification command prompt is as follows:

`Notification:<session_number> >>`

where `<session_number>` identifies the current session number.

To enter the Notification command mode, execute the `notification` command in the Configuration command mode. The `notification` command is described on page 186.

end

When the end command is issued in the Notification command mode, it returns the user to the Superuser command mode.

Syntax

end

Usage Guidelines

The end command can be issued in all of the LX command modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is Notification, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX command modes. However, the effect of the `exit` command varies, depending on the command mode from which it is issued. For example, issuing the `exit` command in the Notification command mode returns the user to the Configuration command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

message facility

Specifies the facility of a configurable syslogd messages. To display the configurable messages, refer to “show notification message” on page 104.

Syntax

```
message NUMBER facility user|syslog|kern|daemon|authpriv
```

Where	Means
NUMBER	The ID number of a configurable syslogd message. This can be any integer number from 1 through 40.
user	The message applies to the User processes.
syslog	The message applies to the syslog daemon (`syslogd`).
kern	The message applies to the Linux kernel.
daemon	The message applies to a system daemon, such as `in.ftpd`.
authpriv	The message applies to the Superuser authentication process.

Examples

```
message 1 facility user

message 2 facility syslog

message 3 facility kern

message 4 facility daemon

message 5 facility authpriv
```

message priority

Specifies the priority of a configurable syslogd messages. To display the configurable messages, refer to “show notification message” on page 104.

Syntax

```
message NUMBER priority emerg|alert|critical|error|notice|sigsnotice|info
```

Where	Means
NUMBER	The ID number of a configurable syslogd message. This can be any integer number from 1 through 40.
emerg	The message indicates a severe condition. This is the kind of condition that can immediately affect the users’ ability to work on the LX.
alert	The message indicates a condition that the system administrator needs to correct immediately, such as a corrupted system database.
critical	The message indicates a critical condition, such as a hard device error.
error	The message indicates a software error condition.
notice	The message indicates a condition which is not an error, but which might require specific procedures to adjust it.
warning	This message indicates a warning condition.
info	The message is a normal, informational message.

Examples

```
message 1 priority emerg

message 2 priority alert

message 3 priority critical

message 4 priority error

message 5 priority notice

message 6 priority info
```

message string

Specifies the string portion of a configurable syslogd messages. To display the configurable messages, refer to “show notification message” on page 104.

Syntax

```
message NUMBER string <text>
```

Where	Means
NUMBER	The ID number of a configurable syslogd message. This can be any integer number from 1 through 40.
text	The string portion of the configurable syslogd message. This string can contain up to 48 characters.

Example

```
message 1 string New CLI mode entered by
```

no

Deletes Service Profiles and User Profiles. (Service Profiles and User Profiles are used in the Notification Feature.)

Syntax

```
no serviceprofile|userprofile <name>|all
```

Where	Means
serviceprofile	Delete the Service Profile specified in this command.
userprofile	Delete the User Profile specified in this command.
name	The name of the Service Profile, or User Profile, that is to be deleted.
all	Delete all Service Profiles, or all User Profiles.

Examples

```
no serviceprofile FinanceServerprof2

no serviceprofile all

no userprofile Philpager

no userprofile all
```

serviceprofile async port

Specifies the asynchronous port(s) for a Service Profile of the ASYNC type.

Syntax

`serviceprofile <name> async port <async_list>|all|none`

Where	Means
name	The name of a Service Profile of the ASYNC type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as ASYNC.
async_list	Specifies the LX asynchronous port(s) to which syslogd will send the log messages. In order to specify asynchronous port(s) in this field, the Service Profile in the *name* field must be configured as ASYNC. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as ASYNC. If more than one asynchronous port is specified, they should be separated by blank spaces; for example, `2 3 5 6`. **Note:** You cannot specify port 0 in this command.
all	Log messages will be sent to all asynchronous ports on the LX unit.
none	Log messages will not be sent to any asynchronous ports on the LX unit.

Examples

```
serviceprofile Lab3port2 async port 2

serviceprofile Lab3port2-5 async port 2 3 4 5

serviceprofile Lab3port2 async port all

serviceprofile Lab3port2 async port none
```

serviceprofile bits

Specifies the bits-per-byte setting for a Service Profile of the TAP type.

Syntax

`serviceprofile <name> bits NUMBER`

Where	Means
name	A Service Profile of the TAP type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as TAP.
NUMBER	Specifies the number of bits per byte that must be supported on any modem port that is included in this Service Profile. The allowable values are 5 - 8. The default value is 8.

Example

```
serviceprofile Center10 bits 6
```

serviceprofile driver

Specifies the web driver for a Service Profile of the WEB type.

Syntax

`serviceprofile <name> driver <drivername>`

Where	Means
name	A Service Profile of the WEB type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile of the WEB type.
drivername	Specifies the web driver that will be used to send a log message through a web interface. The allowable values are ATT_WEB, CELLNET_WEB, CINGULAR_WEB, ORANGE_WEB, PAGENET_WEB, PROXIMUS_WEB, and VERIZON_WEB.

Usage Guidelines

The date and time should be set for the LX unit. (If the date and the time are not set, some wireless providers will reject the message.) The date and time are set with the `date` and `clock` commands in the Configuration Command Mode. For more information, see the `date` command on page 168 and the `clock` command on page 165.

Examples

```
serviceprofile InternetATT driver ATT_WEB

serviceprofile InternetORANGE driver ORANGE_WEB
```

serviceprofile file

Specifies the file to which log messages are to be sent for a Service Profile of the Localsyslog type.

Syntax

```
serviceprofile <name> file <filename>
```

Where	Means
name	A Service Profile of the Localsyslog type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as Localsyslog.
filename	Specifies the name of the file to which the log messages are to be sent. This file resides in the `/var/log` directory of the LX unit.

Example

```
serviceprofile LabUnit3 file ricklog.txt
```

serviceprofile host

Specifies the destination host for a Service Protocol of the Remotesyslog type.

Syntax

`serviceprofile <name> host <hostname>`

Where	Means
name	A Service Profile of the Remotesyslog type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as Remotesyslog.
hostname	Specifies the host to which the log messages are to be forwarded. The host can be specified as an IP Address or as any symbolic name that can be resolved by DNS.

Usage Guidelines

After you have specified the remote host with the `serviceprofile host` command, you must configure the remote host to serve as a destination host for log messages. Do the following:

1. Add the following entry to the `/etc/syslog.conf` file on the remote host:

```
user.warning      /tftpboot/test/user.warning.log
```

2. Create an empty log file on the remote host:

```
#touch /tftpboot/test/user.warning.log
#chmod 777 /tftpboot/test/user.warning.log
```

3. Restart the syslog daemon on the remote host:

```
# ps –ef|grep syslog
# kill –HUP pid#
```

Example

```
serviceprofile Mapleprof host 140.76.45.123
```

serviceprofile modem port

Specifies the modem ports for a Service Profile of the TAP type.

Syntax

`serviceprofile <name> modem port <port_list>|all|none`

Where	Means
name	A Service Profile of the TAP type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as TAP.
port_list	Specifies the modem port(s) that syslogd can dial out to send a log message via TAP. If more than one asynchronous port is specified, they should be separated by blank spaces; for example, `2 3 5 6`. The modem ports that are specified in this field must support the bits-per-byte setting of the Service Profile. Refer to `serviceprofile bits` on page 517 for information on specifying the bits-per-byte setting for a Service Profile. Refer to the `serviceprofile bits` command on page 517 for information on setting the bits-per-byte setting for a modem port.
all	All modem ports on the LX unit can be dialed to send a message via TAP.
none	None of the modem ports on the LX unit can be dialed to send a message via TAP.

Examples

```
serviceprofile Center10 modem port 4

serviceprofile Centers11and12 modem port 2 3 5 6
```

serviceprofile parity

Specifies the bit parity characteristic for a Service Profile of the TAP type.

Syntax

`serviceprofile <name> parity <parity_setting>`

Where	Means
name	A Service Profile of the TAP type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as TAP.
priority_setting	Specifies the bit parity that must be used by a modem port in order to send log messages with the TAP protocol. The allowable values are odd, even, and none. The default value is none. Refer to the `parity` command on page 343 for information on specifying the bit parity of a port.

Examples

```
serviceprofile Center10 parity odd

serviceprofile Center11 parity even

serviceprofile Center12 parity none
```

serviceprofile port

Specifies an optional TCP port for a Service Profile of the SNPP type.

Syntax

`serviceprofile <name> port <tcp_port>`

Where	Means
name	A Service Profile of the SNPP type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as SNPP.
tcp_port	Specifies a TCP port on the provider's SNPP server. The LX syslogd will send log messages to this TCP port. The Service Profile in the *name* field must be configured as SNPP. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as SNPP.

Examples

```
serviceprofile FinanceServerprof2 port 7777
```

serviceprofile protocol

Creates a new Service Profile. A Service Profile specifies the method and means for sending log messages to a destination.

Syntax

`serviceprofile <name> protocol snpp|web|tap|snmp|localsyslog|remotesyslog|async|smtp`

Where	Means
name	Specifies the name of the Service Profile. The name can be any text string of up to 20 characters.
snpp	Specifies that the Service Profile will use the Simple Network Pager Protocol (SNPP) as the method for sending log messages.
web	Specifies that the Service Profile will use the Web protocol as the method for sending log messages.
tap	Specifies that the Service Profile will use the Telocator Alphanumeric Protocol (TAP) as the method for sending log messages.
snmp	Specifies that the Service Profile will use the Simple Network Management Protocol (SNMP) as the method for sending log messages.
localsyslog	Specifies that the Service Profile will send log messages to a local file on the LX unit.
remotesyslog	Specifies that the Service Profile will send log messages to syslogd on a remote host.
async	Specifies that the Service Profile will send log messages to an outbound asynchronous ports on the LX unit.
smtp	Specifies that the Service Profile will use the Simple Mail Transfer Protocol (SMTP) to send log messages to an email address.

Usage Guidelines

This command defines a method (i.e., SNPP, Web protocol, TAP etc.) that will be used to send messages. However, a Service Profile is not fully defined until its *means* for sending messages have been specified. After you have created a Service Profile with the `serviceprofile protocol` command, do the following to specify the means that it will use to send the messages:

- For Service Profiles of the SNPP type:
  1. Execute the `serviceprofile server` command (see page 527) to specify the SNPP server that will be used to send messages to the destination.
  2. Execute the `serviceprofile port` command (see page 523) to specify the LX TCP port that will be used to send messages to the SNPP server.

- For Service Profiles of the Web type, execute the `serviceprofile driver` command (see page 518) to specify the web driver that is used to send the message through a web interface.
- For Service Profiles of the TAP type:
  1. Execute the `serviceprofile smsc` command (see page 528) to specify the Short Message Service Center (SMSC) that will be used to send the log messages to the user.
  2. Execute the `serviceprofile bits` command (see page 517) to specify the bits per byte that must be supported by the provider's application that is specified in a User Profile based on this Service Profile.
  3. Execute the `serviceprofile stopbits` command (see page 530) to specify the stopbits that must be supported by the provider's application that is specified in a User Profile based on this Service Profile.
  4. Execute the `serviceprofile parity` command (see page 522) to specify the bit parity that must be used by the provider's application that is specified in a User Profile based on this Service Profile.
- For Service Profiles of the SMTP type, execute the `serviceprofile server` command (see page 527) to specify the SMTP server that will be used to send messages to the destination.
- For Service Profiles of the SNMP type, create an SNMP trap client for the LX unit. The log messages will be sent to all of the SNMP trap clients of the LX unit. To create an SNMP trap client, execute the following commands in the SNMP Command Mode:
  - `trap client` (see page 423)
  - `trap client community` (see page 424)
  - `trap client version` (see page 425)
- For Service Profiles of the Localsyslog type, execute the `serviceprofile file` command (see page 519) to specify the local file to which messages will be sent.
- For Service Profiles of the Async type, execute the `serviceprofile async port` command (see page 516) to specify the outbound asynchronous port to which messages will be sent.
- For Service Profiles of the Remotesyslog type, execute the `serviceprofile host` command (see page 520) to specify the remote host to which the log messages are sent.

Examples

```
serviceprofile skytel protocol snpp

serviceprofile labunit protocol local

serviceprofile port4 protocol async

serviceprofile internetATT protocol web

serviceprofile Center10 protocol tap

serviceprofile Lab3snmp protocol snmp

serviceprofile Lab3billtxt protocol localsyslog

serviceprofile Mapleprof protocol remotesyslog

serviceprofile emailprof protocol smtp
```

serviceprofile server

Specifies the server for a Service Profile of the SMTP or SNPP type.

NOTE: In order to execute this command, you must have already configured the Domain Name suffix, Local DNS Address, and IP parameters for the LX unit.

Syntax

`serviceprofile <name> server <server_name>`

Where	Means
name	A Service Profile of the SMTP or SNPP type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as SMTP or SNPP.
server_name	Specifies the server to which syslogd will send the log messages. The messages will be forwarded from the server to the user. The server can be specified as an IP Address or as any symbolic name that can be resolved by DNS.

Examples

```
serviceprofile emailprof server 118.28.118.34

serviceprofile newsnpp1 server snpp.skytel.com
```

serviceprofile smsc

Specifies the Short Message Service Center (SMSC) for a Service Profile of the TAP type.

Syntax

`serviceprofile <name> smsc <tel_num>`

Where	Means
name	A Service Profile of the TAP type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as TAP.
tel_num	Specifies the telephone number of the SMSC to which the notification is to be sent. The telephone number must contain at least 10 digits. The maximum length of the telephone number is 20 digits. **Note:** Your modem settings for bits-per-second, stopbits, and parity are not required to match those of your SMSC provider.

Usage Guidelines

Now configure the LX modem port that will be used for sending messages. In the following example, the required settings are specified on port 17:

```
Config>>port async 17
Async 17>>no apd
Async 17>>access remote
Async 17>>modem
Modem>>modem enable
Modem>>type dialout
```

A list of wireless SMSC phone numbers is provided here for your convenience:

Carrier	SMSC Number	Email Address SMSC Phone#@
AT&T 7, 1, e	800-841-8837	@mobile.att.net
Cingular 7, 1, e	800-909-4602	@Cingular.com
Nextel 7, 1, e	801-301-6683	@messaging.nextel.com
Sprint 7, 1, e	888-656-1727	@sprintpcs.com
Verizon 7, 1, e, 8, 1, n	866-823-0501	@vtext.com
Skytel 8, 1, n	800-679-2778	pin@skytel.com

NOTE: MRV Communications is not responsible for these SMSC phone numbers and cannot guarantee their service. Please contact your provider for a number near you.

Example

```
userprofile servicecenter3 smsc 3776809977
```

serviceprofile stopbits

Specifies the stop bits characteristic for a Service Profile of the TAP type.

Syntax

`serviceprofile <name> stopbits NUMBER`

Where	Means
name	A Service Profile of the TAP type. Refer to the `serviceprofile protocol` command on page 524 for more information on configuring a Service Profile as TAP.
NUMBER	Specifies the number of stop bits for the Service Profile. The allowable values are 1 or 2. The default value is 1. Refer to the `stopbits` on page 356 for information on setting the stop bits for a port.

Example

```
serviceprofile Center10 stopbits 2
```

userprofile contact

Specifies the contact information for a User Profile. Contact information must be specified for any User Profile that is associated with a Service Profile of the Web, SNPP, SMTP, or TAP type.

Syntax

```
userprofile <name> contact <contact_name>
```

Where	Means
name	Specifies the name of a User Profile. (The User Profile must be one that is associated with a Service Profile of the Web, SNPP, or TAP type.)
contact_name	Specifies the contact information for the User Profile. (The contact information is the telephone number, pager ID, or email address to which the log messages will be sent.) The content of this field depends on the type of the Service Profile that is associated with the User Profile. If the associated Service Profile is of the SMTP type, this field must contain an email address. If the associated Service Profile is of the Web, SNPP, or TAP type, this field can contain a pager ID or a telephone number. The pager ID must consist of between 1 and 35 digits.

Examples

```
userprofile PhilWilliams contact 167451

userprofile JohnSmith contact 3995987642

userprofile JaneWalton contact 3996541276

userprofile NormanWillis contact nwillis@yourcompany.com
```

userprofile facility

Specifies the facility characteristic for a User Profile. Only those log messages that originate from a Linux facility that matches this characteristic will be sent to the user.

Syntax

```
userprofile <name> facility <facility_char>
```

Where	Means
name	Specifies the name of a User Profile.
facility_char	Specifies the facility characteristic for the User Profile. The allowable values are authpriv, daemon, kern, syslog, user, and all.

Examples

```
userprofile PhilWilliams facility all

userprofile JohnSmith facility authpriv

userprofile JaneWalton facility daemon

userprofile NormanWillis facility kern
```

userprofile priority

Specifies the priority characteristic for a User Profile. Only those log messages that match this priority level will be sent to the user.

Syntax

`userprofile <name> priority emerg|alert|critical|error|notice|info |warning|sigsnotice`

Where	Means
name	Specifies the name of a User Profile.
emerg	Only messages with a priority of `emerg` will be sent to the user. Messages with this priority indicate a condition that can immediately affect the users' ability to work on the LX.
alert	Only messages with a priority of `alert` will be sent to the user. Messages with this priority indicate a condition that the system administrator needs to correct immediately, such as a corrupted system database.
critical	Only messages with a priority of `critical` will be sent to the user. Messages with this priority indicate a critical condition, such as a hard device error.
error	Only messages with a priority of `error` will be sent to the user. Messages with this priority indicate a software error condition.
notice	Only messages with a priority of `notice` will be sent to the user. Messages with this priority indicate a condition which is not an error, but which might require specific procedures to adjust it.
info	Only messages with a priority of `info` will be sent to the user. These are normal, informational messages.
warning	Only messages with a priority of `warning` will be sent to the user.
sigsnotice	Only messages with a priority of `sigsnotice` will be sent to the user. Messages with this priority indicate a state transition of the serial input signals CTS or DCD/DSR. **Note:** When this priority is specified, the facility for the User Profile must be set to `kern`. Refer to "userprofile facility" on page 532 to set the facility for a User Profile to `kern`.

Examples

```
userprofile JohnSmith priority info

userprofile JaneWalton priority notice

userprofile NormanWillis priority warning
```

userprofile serviceprofile

Creates a new User Profile or changes the Service Profile associated with an existing User Profile.

Syntax

`userprofile <name> serviceprofile <service_profile_name>`

Where	Means
name	Specifies the name of a new or existing User Profile. The name can be any text string of up to 20 characters. **Note:** The LX unit supports a maximum of 20 User Profiles.
service_profile_name	Specifies the name of a fully defined Service Profile. For information on creating a fully defined Service Profile, refer to the "Usage Guidelines" for the `userprofile contact` command (see page 531).

Usage Guidelines

After a User Profile has been created, a facility characteristic and a priority characteristic can be specified for it. For more information, refer to `userprofile facility` on page 532 and `userprofile priority` on page 533.

You must define a contact field for a User Profile that is based on a Service Profile of the SNPP, SMTP, TAP, or WEB type. For more information, refer to the `userprofile contact` command on page 531.

Examples

```
userprofile PhilWilliams serviceprofile internetATT

userprofile JohnSmith serviceprofile Center10

userprofile JaneWalton serviceprofile emailprof
```

Chapter 14

Broadcast Group Commands

The Broadcast Group commands are executed in the Broadcast Group command mode. When the LX unit is in the Broadcast Group command mode, the Broadcast Group command prompt (e.g., `BrGroups 6:0 >>`) is displayed on the terminal screen.

The format of the Broadcast Group command prompt is as follows:

```
BrGroups <broadcast_group_number>:<session_number> >>
```

where `<broadcast_group_number>` identifies the Broadcast Group under configuration.

`<session_number>` identifies the current session number.

To enter the Broadcast Group command mode, execute the `broadcast group` command in the Configuration command mode. The `broadcast group` command is described on page 163.

end

When the end command is issued in Broadcast Group Mode, it returns the user to the Superuser command mode.

Syntax

end

Usage Guidelines

The end command can be issued in all of the LX Command Modes except for User and Superuser. Executing the end command always returns the user to the Superuser command mode.

Example

```
end
```

exit

Returns the user to the previous command mode. For example, if the current command mode is the Broadcast Group Command Mode, issuing this command will return the user to the Configuration command mode.

Syntax

```
exit
```

Usage Guidelines

The `exit` command can be issued in all of the LX Command Modes. However, the effect of the `exit` command varies, depending on the mode from which it is issued.

As noted above, issuing the `exit` command in the Broadcast Group command mode returns the user to the previous command mode. The same goes for issuing the `exit` command in any command mode other than User. For example, issuing the `exit` command in the Menu Editing command mode returns the user to the Menu command mode; issuing the `exit` command in the Configuration command mode returns the user to the Superuser command mode, and so on.

Issuing the `exit` command in the User command mode exits the LX CLI and closes the connection to the LX unit.

Example

```
exit
```

master port

Specifies the asynchronous port(s), or TCP port(s), that are to be used as Master Port(s) for the Broadcast Group under configuration. The Master Port is the port from which all input for a Broadcast Group is sent to the Slave Ports.

NOTE: To prevent data overruns, it is recommended that the Master Port(s) and Slave Port(s) in a Broadcast Group be set to the same port speed.

Syntax

```
master port async|tcp <port_list> [timestamp]
```

Where	Means
async	An asynchronous port, or asynchronous ports, will be specified as the Master Port(s) for the Broadcast Group under configuration.
tcp	A TCP port, or TCP port(s), will be specified as the Master Port(s) of the Broadcast Group under configuration. The allowable values are 1024 - 65535.
port_list	Specifies the asynchronous port(s), or TCP port(s), that will be used as the Master Port(s) for the Broadcast Group under configuration. If more than one port is specified, they should be separated by blank spaces; for example, `2 3 5 6`. **Note:** You cannot specify the DIAG port (port 0) as a Master Port. A maximum of 20 ports, including Masters and Slaves, can be configured for a Broadcast Group. A maximum of two TCP ports can be configured for a Broadcast Group.
timestamp	Specifies that a timestamp will be appended at the beginning of each new line of data. This option can only be applied after the Master Port has been created.

Usage Guidelines

The following *cannot* be specified as Master Ports:

- Any port that belongs to another Broadcast Group
- A TCP port that is already in use
- A port that is configured as a Slave Port in any Broadcast Group

At most, one TCP socket may be open on a single TCP port.

Examples

```
master port async 5 6 8

master port tcp 1500
```

mode

Specifies the Telnet mode for the Broadcast Group under configuration.

Syntax

```
mode line|character
```

Where	Means
line	The Broadcast Group will use Telnet line mode.
character	The Broadcast Group will use Telnet character mode.

Examples

```
mode line

mode character
```

no master port

Removes a Master Port, or Master Ports, from the Broadcast Group under configuration.

Syntax

```
no master port async|tcp <port_list>
```

Where	Means
async	Remove asynchronous Master Port(s) from the Broadcast Group under configuration.
tcp	Remove TCP Master Port(s) from the Broadcast Group under configuration. The allowable values are 1024 - 65535.
port_list	Specifies the asynchronous port(s), or TCP port(s), that are being removed from the Broadcast Group under configuration. If more than one port is specified, they should be separated by blank spaces; for example, `2 3 5 6`.

Examples

```
no master port async 5

no master port async 5 6 8

no master port tcp 1500 2500

no master port tcp 1500 2500
```

no slave port

Removes a Slave Port, or Slave Ports, from the Broadcast Group under configuration.

Syntax

`no slave port async|tcp <port_list>`

Where	Means
async	Remove asynchronous Slave Port(s) from the Broadcast Group under configuration.
tcp	Remove TCP Slave Port(s) from the Broadcast Group under configuration.
port_list	Specifies the asynchronous port(s), or TCP port(s), that are being removed from the Broadcast Group under configuration. If more than one port is specified, they should be separated by blank spaces; for example, `2 3 5 6`.

Examples

```
no slave port async 5

no slave port async 2 5 6 7

no slave port tcp 1500

no slave port tcp 1500 2500
```

no slave port discard

Removes the discard setting from a Slave Port, or Slave Ports, in the Broadcast Group under configuration.

Syntax

`no slave port async|tcp <port_list> discard`

Where	Means
async	Remove the discard setting from asynchronous Slave Ports.
tcp	Remove the discard setting from TCP Slave Ports.
port_list	Specifies the asynchronous port(s), or TCP port(s), for which the discard setting is being removed. If more than one port is specified, they should be separated by blank spaces; for example, `2 3 5 6`.

Examples

```
no slave port async 5 discard

no slave port async 2 5 6 7 discard

no slave port tcp 1500 discard

no slave port tcp 1500 2500 discard
```

no slave port localecho

Removes the localecho setting from a Slave Port, or Slave Ports, in the Broadcast Group under configuration.

Syntax

`no slave port async|tcp <port_list> localecho`

Where	Means
async	Remove the localecho setting from asynchronous Slave Ports.
tcp	Remove the localecho setting from TCP Slave Ports.
port_list	Specifies the asynchronous port(s), or TCP port(s), for which the localecho setting is being removed. If more than one port is specified, they should be separated by blank spaces; for example, `2 3 5 6`.

Examples

```
no slave port async 5 localecho

no slave port async 2 5 6 7 localecho

no slave port tcp 1500 localecho

no slave port tcp 1500 2500 localecho
```

slave port

Specifies the asynchronous port(s), or TCP port(s), that are to be used as Slave Port(s) for the Broadcast Group under configuration. The Slave Ports receive data from the Master Port and send all of their data to the Master Port.

NOTE: To prevent data overruns, it is recommended that the Slave Port(s) and Master Port(s) in a Broadcast Group be set to the same port speed.

Syntax

`slave port async|tcp <port_list> discard|localecho`

Where	Means
async	An asynchronous port, or asynchronous ports, will be specified as the Slave Port(s) for the Broadcast Group under configuration.
tcp	A TCP port, or TCP port(s), will be specified as the Slave Port(s) of the Broadcast Group under configuration. The allowable values are 1024 - 65535.
port_list	Specifies the asynchronous port(s), or TCP port(s), that will be used as the Slave Port(s) for the Broadcast Group under configuration. If more than one port is specified, they should be separated by blank spaces; for example, `2 3 5 6`. **Note:** You cannot specify the DIAG port (port 0) as a Slave Port. A maximum of 20 ports, including Masters and Slaves, can be configured for a Broadcast Group. A maximum of two TCP ports can be configured for a Broadcast Group.
discard	The port(s) specified in this command will discard any data that comes into them.
localecho	The port(s) specified in this command will echo any data that comes into them.

Usage Guidelines

The following *cannot* be specified as Slave Ports:

- Any port that belongs to another Broadcast Group
- A TCP port that is already in use
- A port that is configured as a Master Port in any Broadcast Group

At most, one TCP socket may be open on a single TCP port.

Examples

```
slave port async 5 discard
```

```
slave port async 2 5 6 7 discard

slave port async 5 localecho

slave port async 2 5 6 7 localecho

slave port tcp 1500 discard

slave port tcp 1500 2500 discard

slave port tcp 1500 localecho

slave port tcp 1500 2500 localecho
```

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