LANTRONIX®

SecureLinx™ SLP Remote Power Manager User Guide

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Contacts

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

Technical Support
Phone: 800-422-7044 or 949-453-7198
Fax: 949-450-7226
Online: www.lantronix.com/support

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

Disclaimer & Revisions

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment is a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own e

Instructions

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Dangerous Voltage

This symbol is intended to alert the user to the presence of un-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Protective Grounding Terminal

This symbol indicates a terminal that must be connected to earth ground prior to making any other connections to the equipment.

Life-Support Policy

As a general policy, Lantronix does not recommend the use of any of its products in the following situations:

- Life-support applications where failure or malfunction of the Lantronix product can be reasonably expected to cause failure of the life-support device or to significantly affect its safety or effectiveness.
- Direct patient care.

Lantronix will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to Lantronix that:

- The risks of injury or damage have been minimized,
- The customer assumes all such risks, and
- The liability of Lantronix is adequately protected under the circumstances.

The term life-support device includes but is not limited to neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief or other purposes), auto-transfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators (for adults or infants), anesthesia ventilators, infusion pumps, and any other devices designated as “critical” by the U.S. FDA.

The information in this guide may change without notice. The manufacturer assumes no responsibility for any errors that may appear in this guide.

Date	Rev.	Comments
12/2004	A	Initial Document

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1: Introduction

The Lantronix SLP Remote Power Manager family of products provides easy, practical, and secure solutions for power distribution, power management and load-measurement for remote equipment and branch AC circuits.

The SLP Remote Power Manager supports the elimination of unnecessary trips to remote locations by allowing remote control of the power on/off status for distant critical equipment, minimizing the impact of locked-up devices on mission-critical systems.

Features and Benefits

SLP models are available in 8-outlet and 16-outlet configurations for 100-120VAC and 208-240VAC up to 16A. See *Models* on page 59.

Communication Access Modes

All models are equipped standard with a RS-232 (serial) port and a 10/100 Base-T Ethernet port for Telnet, Secure Shell (SSH), and web browser access.

Power Distribution

Up to 16A of AC power (dependant on model) can be distributed across up to sixteen attached devices. See *Models* on page 59 for available models.

Remote Power Management

Remote control of power outlets allows individual on/off and reboot control of up to 16 devices.

Load and Environment Measurement

Load measurement eliminates guesswork by supplying the cumulative operating load in amperes. This allows on-site technicians to maximize the equipment installed and operated on a circuit without concern. Use of the circuit is maximized, while effectively allowing a 10% to 20% safety margin. Remote users also may access this information at any time from the command line or web browser interface.

Optionally, temperature and humidity sensors allow monitoring of key environmental conditions at remote facilities.

Power-up Sequencing

When powered on, each of the power outlets power sequentially with a two-second delay between each outlet. Power sequencing staggers the individual loads,

eliminating the potential of a blown fuse or circuit breaker due to excessive in-rush current and allows circuit support for operating load capacities of 80% to 90%.

Outlet Grouping

For operations across multiple attached devices or devices with multiple or redundant power supplies, include outlets in one or more named groups of outlets. This allows changes to all outlets in the named group with a single command sequence.

Security

Units ship with one predefined administrative user account. The administrator can create up to 128 user accounts, with individualized access to outlets and commands. All accounts support username and password protection. For configurations requiring multiple fully-privileged users, the administrator can grant administrative privileges to other user accounts in the system.

User Interfaces and LEDs

Two types of user interfaces are available: the web browser and the command line interface. For easy outlet recognition, assign descriptive names to both individual outlets and outlet groups for use in control commands. For the on-site technician, LEDs indicate individual outlet power status and cumulative power load.

Automatic Timeout

For added security, a user session automatically terminates after five minutes of inactivity; if a user is called away unexpectedly, an unprotected channel does not remain open indefinitely.

2: Installation

Prior to installation, refer to the following lists to ensure that you have all the items shipped with the unit as well as all other items required for proper installation.

Standard Accessories

- Mounting bracket hardware:

  Vertical (SLP-V models) – two removable flanges with four M4 screws and two mounting L-brackets with two nut plates and four sets of screws and washers

  Horizontal/Rack (SLP-H models) – two mounting brackets and four screws
- RJ45 to RJ45 serial rollover cable
- RJ45 to DB9F serial port adapter (for connection to standard DB9M DTE serial port)
- Outlet retention clips, one per outlet (208-240V units only)
- Power input retention bracket hardware

  Two removable T-brackets with two 40mm screws
- Additional required Items:

  Phillip screwdriver

  Screws, washers and nuts to attach the SLP to your rack

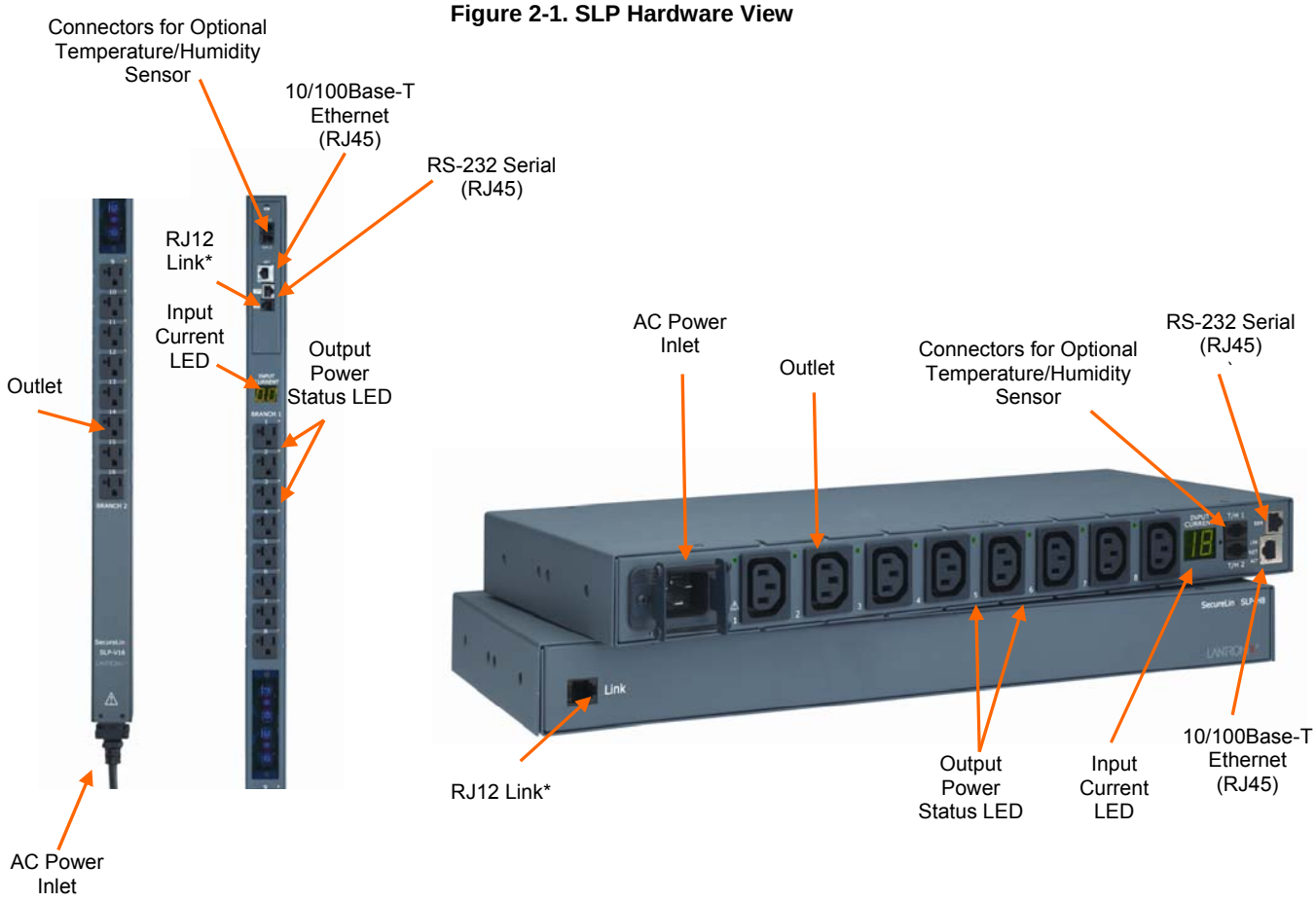
  Power input cord (purchased separately)

Equipment Overview

The outlets are labeled 1 through 16. These numbers may be used in commands that require an outlet name. See *Outlet Naming and Grouping* for more information. The power inlet connects to the electrical power source. Figure 2-1 shows the hardware features of the SLP.

Note: *Models SLP-H8 and SLP-V16 are displayed in the following illustration. Other models may have variations.*

Figure 2-1. SLP Hardware View



*Reserved for future use.

Safety Precautions

This section contains important safety and regulatory information that should be reviewed before installation. For input and output current ratings, see Power Ratings in *Technical Specifications*.

Only for installation and use in a Service Access Location in accordance with the following installation and use instructions.

This equipment is designed to be installed on a dedicated circuit.

Dedicated circuit must have circuit breaker or fuse protection.
This product has been designed without a master circuit breaker or fuse to avoid becoming a single point of failure. It is the customer's responsibility to provide adequate protection for the dedicated power circuit. Protection of capacity equal to the current rating of the product must be provided and must meet all applicable codes and regulations. In North America, protection must have a 10,000A interrupt capacity.

The plug on the power supply cord shall be installed near the equipment and shall be easily accessible.

Installation Orientation: SLPVxxxx-01 units are design to be installed in vertical orientation.

Always disconnect the power supply cord before opening to avoid electrical shock.

Warning! High leakage current! Earth connection is essential before connecting supply!

Warning: 208-240/230V models only: Outlets are not fused. Outlet circuit protection is provided by the building installation, which shall not exceed 30A branch circuit protection

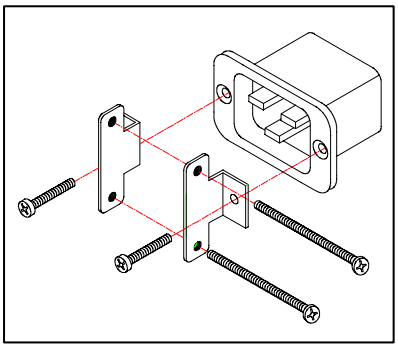
Installing the Power Input Retention Bracket

For models with a total maximum output < 30A, it may be necessary to install the power input retention bracket prior to mounting the unit within a rack.

To install the power input retention bracket:

1. Remove the two screws attaching the IEC 60320 C19 inlet to the enclosure.
2. Assemble and attach the retention bracket to the enclosure as shown:

Figure 2-2. Retention Bracket Assembly



Mounting

Horizontal/Rack

1. Select the appropriate bracket mounting points for proper mounting depth within the rack.
2. Attach the brackets to these mounting points with two screws for each bracket.
3. Install the enclosure into your rack, using the slots in each bracket. The slots allow about ¼ inch of horizontal adaptability to align with the mounting holes of your rack.

Vertical

1. Attach the removable flanges to the mount points on the rear of the enclosure using M4 screws.
2. Attach the mounting L-brackets to the flanges with the supplied screws, washers and nut plates. The slots allow about 1½ inches of vertical adaptability.
3. Attach the top and bottom brackets to your rack.

Connecting to the Power Source

Attach the power cord to the unit before connecting the unit to the power source. Each outlet powers up sequentially, with a two-second delay between each outlet, eliminating a potential blown primary fuse or circuit breaker from excessive in-rush current.

To attach a power cord to the unit:

1. Plug the female end of the power cord firmly into its connector at the base.
2. Use a screwdriver to tighten the two screws on the retention bracket.

To connect to the power source:

1. Plug the male end of the power cord into the AC power source.

Connecting Devices

To avoid the possibility of noise due to arcing:

1. Keep the device's on/off switch in the off position until after it is plugged into the outlet, or log in to the unit and turn the outlets off before connecting the devices
2. Connect devices to the outlets.

   On 230V units, install a retention clip for each outlet; Pull the prongs out slightly and insert them into holes on the sides of the unit, then insert the device's power cord and snap the clip over the cord.

Note: *Even distribution of attached devices is recommended across the available outlets to avoid exceeding the outlet, quad or octet ratings limitations. See Technical Specifications on page 59 more information.*

Note: *The outlet retention clips on the 230V models are designed for use with Lantronix provided cables. The retention clip may not properly fit 3rd party cables.*

Always disconnect the power supply cord before opening to avoid electrical shock.

Connecting to a local Personal Computer (PC)

Serial (RS-232) port

All models are equipped with an RS-232 port (RJ45) for attachment to a PC using the supplied RJ45 to RJ45 serial rollover cable and an RJ45 to DB9F adapter. See *Technical Specifications* on page 60 for more information on the RS-232 serial port. The default values are 9600 baud, 8 data bits, 1 stop bit, no parity (9600 8N1).

Ethernet port

All models are equipped with a 10/100Base-T Ethernet port for attachment to an existing network. This connection allows access via Telnet, Secure Shell (SSH), or web browser.

The following network defaults allow unit configuration out-of-the-box through either Telnet/SSH or via a web browser:

- IP address: 192.168.1.254
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.1.1

The local PC network connection must be configured as noted below:

Note: *Contact your system administrator for instructions in reconfiguring the network connection. Reconfiguration of your network connection may require a restart to take effect.*

- IP address: 192.168.1.x (where x is 2-253)
- Subnet Mask: 255.255.255.0

3: Operations

User Interfaces

Two user interfaces are available: the web browser interface accessed via the HTTP/SSL enabled Ethernet connections and the command line for serial and Telnet/SSH connections.

Outlet Naming and Grouping

For commands requiring an outlet name, you may specify it in one of two ways: a predefined absolute name or a descriptive name assigned by an administrator.

Models with a Single Power Infeed

Absolute names are specified by a period (.) followed by a unit letter and outlet number.

Usernames and Passwords

The factory default has one predefined administrative user account (username/password: sysadmin/PASS) and supports a maximum of 128 defined user accounts

Note: *For security purposes, it is recommended that the predefined administrative user account be removed after a new account with administrative rights has been created.*

Only an administrative-level user may perform operations such as creating/removing user accounts and command privileges, changing passwords and displaying outlet and user information. An administrator may also view the status of and control power to all outlets.

The administrator may create additional user accounts and then grant these users the right to view the status of and control power to specific outlets, groups and ports.

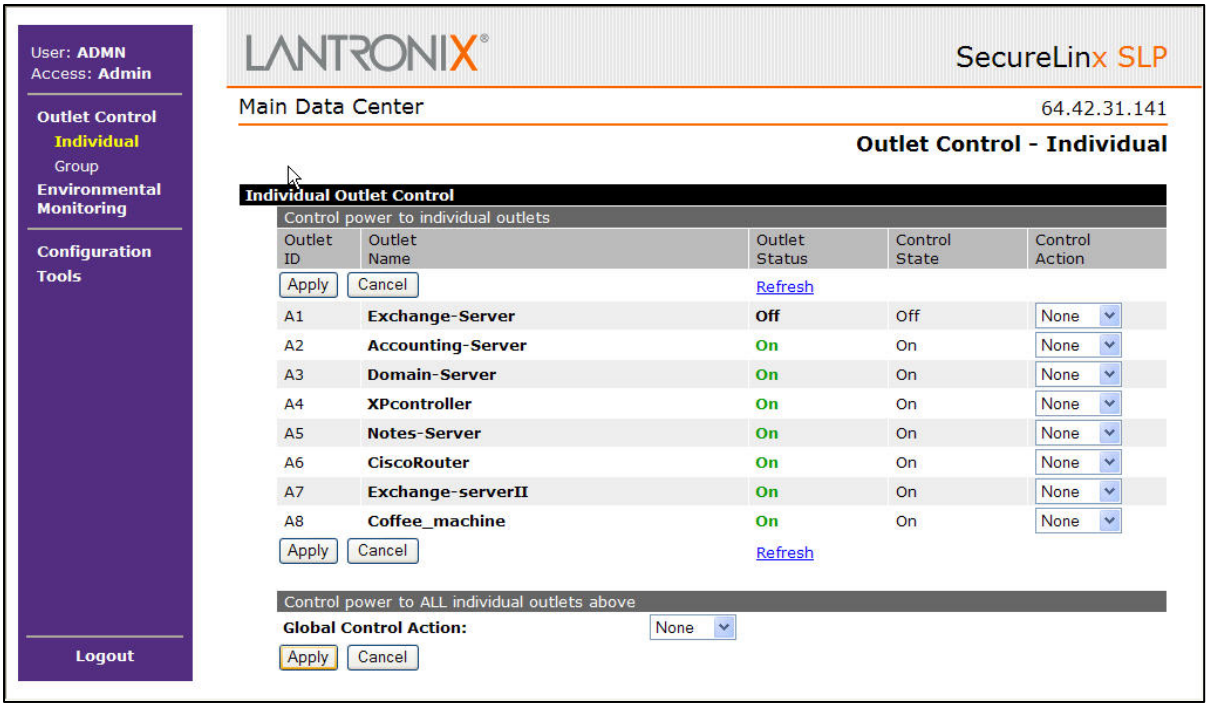
Usernames may contain from 1-16 characters and are not case sensitive; spaces are not allowed. Passwords may contain up to 16 characters, and are case sensitive.

Web Browser Interface

The web browser interface is constructed of three major components: the **System Location** bar, the **User/Navigation** bar and the **Control Screen**. The **System Location** bar displays the location and IP address as well as the current **Control Screen** title. The **User/Navigation** bar displays the current user and privilege level and provides access to all monitoring and control pages. The **Control Screen** is

used to display current data and allow changes to outlet states or system configuration.

Figure 3-1. Web Browser Interface



The following sections describe each interface section/page and their use.

Logging In

Logging in via a web browser requires directing the web client to the configured IP address of the unit.

To log in by web browser:

1. In the login window, enter a valid username and password and press **OK**.

   If you enter an invalid username or password, the prompt will repeat again.

   You are given three attempts to enter a valid username and password combination. If all three fail, the session ends and a protected page will be displayed.

Outlet Control

The **Outlet Control** section offers access to the **Individual** and **Group** outlet control pages. From the **Individual** and **Group** pages, the user can review and manipulate power control functions for all outlets and groups assigned to the current user. Both pages include the outlets absolute and descriptive names, the Outlet Status reported to the unit by the outlet, the current Control State being applied by the unit and the outlet load in amperes.

Available outlet and group power states may be set to on, off or reboot; the reboot operation turns the outlet(s) off, delays for a period of 15 seconds and then turns the outlet(s) on.

Individual

The **Individual** outlet control page displays all outlets assigned to the current user. The user may apply on, off or reboot actions to individual, multiple or all accessible outlets.

To apply actions to individual or multiple outlets:

1. In the Individual Outlet Control section, select the desired action from the Control Action drop-down menu for each individual outlet to be changed and press **Apply**.

To apply an action to all outlets:

1. In the Global Control section, select the desired action from the Control Action drop-down menu and press **Apply**.

Group

The **Group** outlet control page displays all groups assigned to the current user as well as the outlets for each group.

To select a group:

1. Select the group name from the drop-down menu and press **Select**. The page will refresh to display all outlets associated to the selected group name.

To apply an action to a group:

Select the desired action from the drop-down menu and press **Apply**.

Table 3-1. Outlet State/Control State Field Values

Outlet State	Control State	Description
On	On	Outlet is on
Off	Off	Outlet is off
Off	Pend On	Outlet is off and about to turn on in response to a sequence timer
Off	Reboot	Outlet is off and a Reboot action has been initiated
On	Idle On	A restart has occurred – Last Control State has been maintained
Off	Idle Off	A restart has occurred – Last Control State has been maintained
On	Wake On	A power-loss has occurred – Wakeup State has been applied
Off	Wake Off	A power-loss has occurred – Wakeup State has been applied
On/Wait	Off	Outlet state in transition – Re-query of outlet status required
Off/Wait	On	Outlet state in transition – Re-query of outlet status required

Outlet State	Control State	Description
On/Error	varies	Error State – Outlet should be off but current is sensed at the outlet
Off/Error	varies	Error State – Outlet should be on but no current is sensed at the outlet
No Comm	varies	Communication to the outlet has been lost*

*** Control State will be applied when communication is re-established**

Environmental Monitoring

The **Environmental Monitoring** section offers access to the Input Load page. This section is available to administrative level users and users with Environmental Monitoring view rights.

Input Load

The Input Load page displays the absolute and descriptive name and the cumulative input load in amperes of all devices attached to the unit at the time the page was loaded. This page will refresh automatically every 10 seconds.

Configuration

The Configuration section offers access to all unit configuration options including Network, Telnet/SSH, HTTP/SSL, Serial Port, Outlets, Groups, Users, FTP, SNTP and SNMP. This section is available to administrative level users only.

System

The System configuration page is used for reference of system information such as Ethernet NIC Serial Number, Ethernet MAC address and system firmware and hardware revisions as well as assignment and maintenance of the system location and unit descriptive names.

For description names, up to 24 alphanumeric and other characters (ASCII 33 to 126 decimal – spaces and colon characters are not allowed) are allowed.

Note: *Spaces may be used for the location description only.*

Creating a descriptive system location name:

1. Enter a descriptive name and press **Apply**.

Creating a descriptive unit name:

1. Click on the **Tower Names** link.
2. On the subsequent page, enter a descriptive name and press **Apply**.

Creating a descriptive input feed name:

1. Click on the **Input Feed Names** link.
2. On the subsequent **Input Feed Names** page, enter a descriptive name and press **Apply**.

Creating a descriptive outlet name:

1. Click on the **Outlet Names** link which will open the **Outlets** configuration page. See *Outlets* on page 20 for additional information on creating descriptive outlet names.

Creating a descriptive serial port name:

1. Click on the **Serial Port Names** link which will open the **Serial Port** configuration page. See *Serial Port* on page 19 for additional information on creating descriptive serial port names.

Network

The **Network configuration** page is used for maintenance of the network interface. From this page an administrator may configure the IP address, subnet mask and gateway address as well as view the link status, speed and duplex value.

The following network defaults allow unit configuration out-of-the-box through either Telnet/SSH or web browser:

- IP address: 192.168.1.254
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.1.1

The initial local PC network connection must be configured as Noted below:

Note: *Contact your system administrator for instructions in reconfiguring the network connection. Reconfiguration of your network connection may require a restart to take effect.*

- IP address: 192.168.1.x (where x is 2-253)
- Subnet Mask: 255.255.255.0

Note: *The unit must be restarted after network configuration changes. See Performing a warm boot on page 40.*

Setting the IP address, subnet mask or gateway:

1. In the appropriate field, enter the IP address, subnet mask or gateway address and press **Apply**.

Telnet/SSH

The Telnet/SSH configuration page is used to enable or disable Telnet and SSH support and configure the port number that the Telnet or SSH server watches. For more information on SSH see *Advanced Operations* on page 47.

Enabling or disabling Telnet or SSH support:

1. Select **Enabled** or **Disabled** from the appropriate Server drop-down menu and press **Apply**.

Changing the Telnet or SSH server port number:

1. In the appropriate Port field, enter the port number and press **Apply**.

Note: *The default ports numbers are: port 23 for Telnet, and port 22 for SSH*.

HTTP/SSL

The HTTP/SSL configuration page is used to enable or disable HTTP and SSL support, configure the port number that the HTTP server watches and responds to, selection of the method of authentication used and SSL access level. For more information on SSL see *Advanced Operations* on page 46.

Enabling or disabling HTTP or SSL support:

1. Select Enabled or Disabled from the appropriate Server drop-down menu and press **Apply**.

Changing the HTTP server port number:

1. In the HTTP Port field, enter the port number and press **Apply**.

Note: *The default port number for HTTP is 80.*

Setting the HTTP authentication method:

The HTTP server supports two authentication methods for security and validation of the username-password – Basic and MD5 digest.

The Basic method utilizes Base64 encoding to encode and deliver the username-password over the network to the HTTP server for decoding and authentication. This basic method is supported by all web browsers and offers a minimum level of security.

Note: *The Base64 algorithm is widely-known and susceptible to packet-sniffer attack for acquisition of the encoded username-password string.*

The MD5 digest method provides stronger protection utilizing one-way encoded hash numbers, never placing the username-password on the network. Instead, the sending browser creates a challenge code based on the hash algorithm, provided username-password and unique items such as the device IP address and timestamp, which is compared against the HTTP server internal user database of valid challenge codes. The MD5 digest method offers a higher level of security than the Basic method but at present is not supported by all browsers.

Note: *MD5 is known to be fully supported by Internet Explorer 5.0+*

Select Basic or MD5 from the Authentication drop-down menu and press **Apply**.

Setting SSL access level

SSL access may be configured as optional or required. The default access level is set to optional.

- Optional –Both non-secure (HTTP) and SSL encrypted connections (HTTPS) are allowed access.
- Required – ONLY SSL encrypted connections (HTTPS) are allowed access.

Select **Optional** or **Required** from the Secure Access drop-down menu and press Apply.

Serial Port

The Serial Port configuration page is used for maintenance of the serial port.

Setting the data rate for all serial/ ports:

1. Select the serial port data rate from the drop-down menu and press **Apply**.

Note: *The default values are 9600 baud, 8 data bits, 1 stop bit, and no parity (9600 N 8 1).*

Creating a descriptive serial name:

1. Click on the **Edit** link in the Action column next to the port to be configured.
2. On the subsequent **Serial Port Edit** page, enter the descriptive name. Up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal, spaces and colon characters are not allowed) are allowed. Press **Apply**.

Note: *Port names '1' thru '64' and 'CONSOLE' are reserved system names and may not be used.*

Enabling or disabling serial port active signal checking:

1. Click on the **Edit** link in the Action column next to the port to be configured.
2. On the subsequent **Serial Port Edit** page, select On or Off from the DSR Check drop-down menu and press **Apply**.

Outlets

The **Outlets configuration** page is used for assignment and/or editing of outlet descriptive names and wakeup states.

Editing the outlet descriptive name:

1. Click on the **Edit** link in the Action column next to the outlet to be configured.
2. On the subsequent **Outlet Edit** page, enter the descriptive name. Up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal, spaces and colon characters are not allowed) are allowed. Press **Apply**.

Changing the outlet wakeup state:

1. Click on the **Edit** link in the Action column next to the outlet to be configured.
2. On the subsequent **Outlet Edit** page, select On, Off, or Last from the Wakeup State drop-down menu and press **Apply**.

Groups

The Groups configuration page is used for creation and deletion of group and assignment of outlets to groups.

Creating a group:

1. Enter a descriptive group name in the Group Name field. Up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal, spaces and colon characters are not allowed) are allowed. Press **Apply**.

Removing a group:

1. Click on the **Remove** link in the Action column for the group to be removed and press **Yes** on the subsequent confirmation window.

Adding and Deleting outlets from a group:

1. Press the **Edit** link in the Action column for the associated group.
2. On the subsequent **Group Edit** page, select or deselect outlets to be included in that group. Press **Apply**.

Users

The **Users configuration** page is used for creation and removal of usernames, assignment of accessible outlets and group, assignment of privilege levels and the changing of user passwords.

Creating a new user:

1. Enter a user name in the Username field. Up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal, spaces and colon characters are not allowed) are allowed.
2. Enter a password for the new user in the Password and Verify Password fields. For security, password characters are not displayed. Press **Apply**.

Removing a user:

1. Click on the **Remove** link in the Action column for the user to be removed and press **Yes** on the subsequent confirmation window.

Changing a user password:

1. Click on the **Edit** link in the Action column for the associated user.
2. On the subsequent **User Edit** page, enter the new password in the Password and Verify Password fields. For security, password characters are not displayed. Press **Apply**.

Changing a user's access privilege level:

There are four defined access privilege levels; Admin, User, On-Only and View-Only:

- Admin: Full-access for all configuration, control (On, Off, Reboot) and status.
- User: Partial-access for control (On, Off, Reboot) status of assigned outlets, groups and serial port.
- On-Only: Partial-access for control (On) status of assigned outlets, groups and serial port.
- View-Only: Partial-access for status of assigned outlets, groups and serial port.

The administrator may also grant administrative privileges to other user accounts allowing more than one administrative-level user.

Note: *You cannot remove administrative privileges from the Admin user unless another user has already been given administrative access level privileges created.*

1. Click on the **Edit** link in the Action column for the associated user.
2. On the subsequent **User Edit** page, select Admin, User, On-only or View-only from the Access Level drop-down menu and press **Apply**.

Granting or removing Environmental Monitoring viewing privileges:

1. Click on the **Edit** link in the Action column for the associated user.
2. On the subsequent **User Edit** page, select Yes or No from the Environmental Monitoring drop-down menu and press **Apply**.

Adding and Deleting outlet access:

1. Click on the **Outlets** link in the Access column for the associated user.
2. On the subsequent **User Outlets** page, select or deselect outlets to be accessed by the user and press **Apply**.

Adding and Deleting group access:

1. Click on the **Groups** link in the Access column for the associated user.
2. On the subsequent **User Groups** page, select or deselect group to be accessed by the user and press **Apply**.

Adding and deleting serial port access:

1. Click on the **Ports** link in the Access column for the associated user.
2. On the subsequent **User Ports** page, select or deselect ports to be accessed by the user and press **Apply**.

FTP

The FTP configuration page is used for setup and maintenance of all settings required to perform an FTP firmware upload. See *Uploading Firmware* for more information on uploading firmware.

Setting the FTP Host IP Address:

1. Enter the IP address in the Host IP Address field and press **Apply**.

Setting the FTP username:

1. Enter the FTP server username in the Username field, and press **Apply**.

Setting the FTP password:

1. Enter the FTP server password in the Password field, and press **Apply**.

Setting the file path:

1. Enter the path of the file to be uploaded in the Directory field, and press **Apply**.

Setting the filename for upload:

1. Enter the filename of the file to be uploaded in the Filename field, and press **Apply**.

Testing the FTP upload configuration:

This test validates that the unit is able to contact and log onto the specified FTP server, download the firmware file and verify that the firmware file is valid for this unit.

1. Press **Test**.

SNTP

The **SNTP configuration** page is used for setup and maintenance of SNTP support.

Setting the SNTP Server Address:

1. Enter the IP address in the primary and/or secondary address field and press **Apply**.

SNMP

The **SNMP configuration** page is used for setup and maintenance of all settings required to enable SNMP support as well as access to the trap configuration pages. For additional information on SNMP support and detailed descriptions of available traps, see *SNMP* on page 49.

Note: *Traps are generated according to a hierarchical architecture; i.e. if a Tower (Unit) Status enters a trap condition, only the Tower Status trap is generated. Infeed and Outlet Status traps are suppressed until the Tower Status returns to Normal.*

Enabling or disabling SNMP support:

1. Select Enabled or Disabled from the drop-down menu and press **Apply**.

Setting the community strings:

1. Enter the community string in the appropriate field and press **Apply**.

   Community strings may be 1 to 24 characters

Setting the trap timer:

1. Enter a trap timer value in the Error Trap Repeat Time field and press **Apply**.

   The Error Trap Repeat Time value may be 1 to 65535 (in seconds).

Setting trap destinations:

1. Enter an IP address in the appropriate Trap Destination field and press **Apply**.

Enabling or disabling tower (unit) traps:

1. Click on the **Tower Traps** link.
2. On the subsequent page, select or deselect the desired traps and press **Apply**.

Configuring input feed traps:

1. Click on the **Input Feed Traps** link.
2. On the subsequent **Input Feed Traps** page, select or deselect the desired traps and press **Apply**.
3. For Load traps, enter a maximum load value for the infeed in the High Load Threshold field and press **Apply**.

   The High Load Threshold value may be 0 to 255 (in amperes).

Configuring outlet traps:

1. Click on the **Outlet Traps** link.

2. On the subsequent **Outlet Traps** page, select or deselect the desired traps and press **Apply**.

Tools

The Tools section contains access to rebooting the unit, uploading new firmware as well as resetting the unit to factory defaults. This section is available to administrative level users only.

Restart

Performing a warm boot:

1. Select the Restart from the Action drop-down menu and press **Apply**.

Note: *System user/outlet/group configuration or outlet states are NOT changed or reset with this command.*

Resetting to factory defaults:

See *Resetting to Factory Defaults* for more information on resetting a unit to factory defaults from the web browser interface.

Uploading new firmware:

See *Uploading Firmware* for more information on uploading new firmware from the web browser interface.

Command Line Interface

Logging In

Logging in through Telnet/SSH requires directing the Telnet/SSH client to the configured IP address of the unit.

Logging in through the Console (RS-232) port requires the use of a terminal or terminal emulation software configured to support ANSI or VT100 and a supported data rate (300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200 BPS) - 8 data bits-no parity-one stop bit and Device Ready output signal (DTR or DSR).

To log in by RS-232 or Telnet/SSH:

1. **Press Enter**. The following appears, where x.xx is the firmware version:

```
SecureLinx Power Manager Version x.xx
Username:
```

Note: *Logging in by Telnet will automatically open a session. It is not necessary to press* ***Enter****.*

2. At the `Username` and `Password` prompts, enter a valid username and password. And press **Enter**.

   You are given three attempts to enter a valid username and password combination. If all three fail, the session ends.

When you enter a valid username and password, the command prompt SLP: appears. If a location identifier was defined, it will be displayed before the prompt. See *Creating a location description* on page 38 for more information.

You may enter commands in any combination of uppercase and lowercase. You must enter all command characters correctly; there are no command abbreviations. There are two types of commands: operations and administration. A user must have administrative privileges to use the administration commands. The following tables list and briefly describe each command.

Table 3-2. Operations Command Summary

Command	Description
On	Turns one or more outlets on
Off	Turns one or more outlets off
Reboot	Reboots one or more outlets
Status	Displays the on/off status of one or more outlets
ILoad	Displays the total cumulative input load
Istat	Displays the status of the infeed
Connect	Connect to the serial port
Login	Ends the current session and brings up the Username prompt
Logout	Ends a session
Quit	Ends a session
List Outlets	Lists all accessible outlets for the current user
List Group	Lists all assigned outlets for a group name
List Groups	Lists all accessible groups for the current user

Table 3-3. Administrative Command Summary

Command	Description
Add Grouptouser	Grants a user access to one or more groups
Add Outlettogroup	Adds an outlet to a group name
Add Outlettouser	Grants a user access to one or all outlets
Create Group	Adds a group name
Create User	Adds a user account
Delete Groupfromuser	Removes access to one or more groups for a user
Delete Outletfromgroup	Deletes an outlet from a group name
Delete Outletfromuser	Removes access to one or all outlets for a user
List User	Displays all accessible outlets/groups for a user
List Users	Displays privilege levels for all users
Remove Group	Deletes a group name
Remove User	Deletes a user account
Restart	Performs a warm boot
Set FTP Filename	Specifies the file to be uploaded via FTP
Set FTP Filepath	Specifies the file path for the file to be uploaded
Set FTP Host	Sets the FTP Host IP address
Set FTP Password	Sets the password for the FTP Host
Set FTP Username	Sets the username for the FTP Host
Set Gateway	Sets the Gateway
Set Infeed Name	Specifies a descriptive field for the infeed

Command	Description
Set Ipaddress	Sets the IP address
Set Location	Specifies a descriptive field for the web browser control screen and login banner
Set Outlet Name	Specifies a descriptive field for a device attached to an outlet
Set Outlet Wakeup	Sets the wakeup state for an outlet
Set Subnet	Sets the Subnet Mask
Set Telnet Port	Sets the Telnet server port number
Set Telnet	Enables or disables Telnet access
Set Tower Name	Specifies a descriptive field for the Unit
Set User Access	Sets the access level for a user
Set User Envmon	Grants or removes privileges to view input and environmental monitoring status
Set User Password	Changes the password for a user
Set Port Name	Specifies a descriptive field for the serial port
Set Port Speed	Set the connection speed for the serial port
Show FTP	Displays FTP configuration information
Show Infeeds	Displays infeed configuration information
Show Network	Display network configuration information
Show Outlets	Displays configuration information for all outlets
Show Ports	Displays the serial port configuration information
Show System	Displays system configuration information
Show Towers	Displays unit configuration information
Version	Displays the firmware version

To display the names of commands that you may execute:

1. At the command prompt, press **Enter**. A list of valid commands for the current user appears.

Operations Commands

Operations commands manage outlet states, provide information about the unit's environment and control session operations.

Note: *Users must be granted access to affect any change in outlet state.*

Turning outlets on

The On command turns on one or more outlets. When the command completes, a display indicating all outlets affected and their current states will be displayed.

To turn outlets on:

1. At the command prompt, type `on`, followed by one or more outlet names separated by spaces or commas, and press **Enter**, or
2. Type `on`, followed by a group name, and press **Enter**, or
3. Type `on all` and press **Enter**.

Examples

The following command turns the second outlet on, using the outlet's absolute name:

```
SLP: on .a2<Enter>
```

The following command turns on all the outlets in the group named ServerGroup_1:

```
SLP: on ServerGroup_1<Enter>
```

Turning outlets off

The Off command turns off one or more outlets. When the command completes, a display indicating all outlets affected and their current states will be displayed.

To turn outlets off:

1. At the command prompt, type `off`, followed by one or more outlet names separated by spaces or commas, and press **Enter**, or
2. Type `off`, followed by a group name, and press **Enter**, or
3. Type `off all` and press **Enter**.

Examples

The following command turns off the outlet named FileServer_1:

```
SLP: off FileServer_1<Enter>
```

The following command turns off all outlets:

```
SLP: off all<Enter>
```

Rebooting outlets

The Reboot command reboots one or more outlets. This operation turns the outlet(s) off, delays for a period of 15 seconds and then turns the outlet(s) on. When the command completes, a display indicating all outlets affected and their current states will be displayed.

Note: *It is necessary to reissue the Status command to verify that the outlets have rebooted after 15 seconds.* *See Displaying outlet information on page 36 for more information.*

To reboot one or more outlets:

1. At the command prompt, type `reboot`, followed by one or more outlet names separated by spaces or commas, and press **Enter**, or
2. Type `reboot`, followed by a group name, and press **Enter**, or
3. Type `reboot all` and press **Enter**.

Example

The following command reboots all the outlets in the group named ServerGroup_1:

```
SLP: reboot ServerGroup_1<Enter>
```

Displaying outlet status

The Status command displays the on/off status of one or more outlets. The command displays the status of only those outlets for which the current username has power control access.

This display includes the outlet absolute and descriptive names, the Outlet State reported to the unit by the outlet and the current Control State being applied by the unit. If you do not specify any parameter with this command, the status of all accessible outlets is displayed.

Note: *If the user has access to more than 16 total outlets, the Status command will display the first 16 outlets with a prompt to view the remaining outlets.*

For more information on outlet and control state values, see *Outlet Control* on page 15.

To display on/off status of one or more outlets:

1. At the command prompt, type `status`, followed by an outlet name, and press **Enter**, or
2. Type `status`, followed by a group name, and press **Enter**, or
3. Type `status` and press **Enter**.

Examples

The following command displays the on/off status of the outlet named FileServer_1:

```
SLP: status FileServer_1<Enter>
   Outlet   Outlet                    Outlet   Control
   ID       Name                      State    State
   .A3      FileServer_1              On       On
```

The following command displays the on/off status of all accessible outlets:

```
SLP: status<Enter>
   Outlet   Outlet                    Outlet
Control
   ID       Name                      State    State
   .A1      DataServer_1              On       On
   .A2      WebServer_1               On       On
   .A3      FileServer_1              On       On
   .A4                                On       On
   .A5                                On       On
   .A6                                On       On
   .A7                                On       On
   .A8                                On       On
   .A9                                On       On
   .A10                               On       On
   .A11                               On       On
   .A12                               On       On
   .A13                               On       On
   .A14                               On       On
   .A15                               On       On
   .A16                               On       On
   More (Y/es N/o):
```

The following command displays the on/off status for outlets in the group ServerGroup_1:

```
SLP: status ServerGroup_1<Enter>
   Group: ServerGroup_1
      Outlet   Outlet                    Outlet   Control
      ID       Name                      State    State
      .A1      DataServer_1              On       On
      .A2      WebServer_1               On       On
      .A3      FileServer_1              On       On
```

Displaying accessible outlets

The List Outlets command displays accessible outlets for the current user. The display includes the absolute and descriptive name of all outlets assigned to the current user.

To display accessible outlets:

1. At the command prompt, type `list outlets` and press **Enter**.

Example

The following command displays all accessible outlets for the current user:

```
SLP:list outlets<Enter>
   Outlet   Outlet
   ID       Name
   .A1      DataServer_1
   .A2      WebServer_1
```

Displaying accessible groups

The List Groups command displays accessible groups for the current user.

To display accessible groups:

1. At the command prompt, type `list groups` and press **Enter**.

Example

The following command displays all accessible groups for the current user:

```
SLP: list groups<Enter>
   Groups:
      ServerGroup_1
      RouterGroup_1
```

Displaying outlets assigned to a group

The List Group command displays outlets assigned to the specified group name.

To display outlets assigned to a group:

1. At the command prompt, type `list group`, followed by the group name and press **Enter**.

Example

The following command displays the outlets assigned to the group ServerGroup_1:

```
SLP: list group ServerGroup_1<Enter>
   Group: ServerGroup_1
      Outlet   Outlet
```

```
ID        Name
.A1       DataServer_1
.A2       WebServer_1
.A3       FileServer_1
```

Displaying infeed status

The Istat or Iload command displays the status of one or more infeed.

This display includes the infeed absolute and descriptive names and the Input Status and current Load reported to the unit by the infeed.

To display status of one or more infeeds:

1. Type `istat` and press **Enter**, or
2. Type `iload` and press **Enter**.

Examples

The following command displays the infeed status:

```
SLP: istat
   Input    Input                    Input      Input
   Feed ID  Feed Name                Status     Load
   .AA      HQ_1_Infeed_A            On         10.5 Amps
```

Starting a new session

The Login command activates the `Username` prompt. The current session ends, allowing a user to log in and start a new session under a different username.

To start a new session:

1. At the command prompt, type `login` and press **Enter**. The `Username` prompt appears.

Ending a session

The Quit or Logout commands end a session. A session ends automatically when no activity is detected for five minutes, or upon loss of connection.

To end a session:

1. At the command prompt, type `quit` and press **Enter**, or
2. Type `logout` and press **Enter**.

Administration Commands

Administration commands may only be issued by a user with administrative privileges, such as the predefined administrative account or another user who has been granted administrative privileges with the Set User Admnpriv command.

User Administration

Creating a user account

The Create User command creates a user account with the specified username and password.

To create a user account:

1. At the command prompt, type `create user`, optionally followed by a 1-16 character username (Spaces are not allowed, and usernames are not case sensitive). Press **Enter**.
2. At the `Password` prompt, type a password of up to 16 alphanumeric and other typeable characters (ASCII 32 to 126 decimal). Passwords are case sensitive. Press **Enter**.
3. At the `Verify Password` prompt, retype the password. Press **Enter**.

Example

The following command creates the user account JaneDoe:

```
SLP: create user JaneDoe<Enter>
Password: <Enter>
Verify New Password: <Enter>
```

For security, password characters are not displayed.

Removing a user account

The Remove User command removes a user account.

Note: *You may remove the predefined user account Admn only if another user account has been granted administrative privileges using the Set User Access command.*

To remove a user account:

1. At the command prompt, type `remove user`, optionally followed by a username. Press **Enter**.

Changing a password

The Set User Password command changes a user's password. For security, when you type a password, the characters are not displayed on the screen.

To change a password:

1. At the command prompt, type `set user password`, followed by a username and press **Enter**.
2. At the `Password` prompt, type the new password and press **Enter**. Passwords may contain up to 16 characters, and spaces are not allowed.
3. At the `Verify Password` prompt, retype the new password and press **Enter**.

Examples

The following command changes the password for the user JohnDoe:

```
SLP: set user password johndoe<Enter>
   Password: <Enter>
   Verify Password: <Enter>
```

Setting user access level privileges

The Set User Access command sets the access level privileges for a user. There are four defined access privilege levels; Admin, User, On-Only and View-Only.

The administrator may also grant administrative privileges to other user accounts allowing the unit to have more than one administrative-level user.

Note: *You cannot remove administrative privileges from the Admin user unless another user has already been given administrative access privileges.*

To set the access level privilege for a user:

1. At the command prompt, type `set user access`, followed by `admn`, `user`, `ononly` or `viewonly`, optionally followed by a username and press **Enter**.

Examples

The following command sets the user access level for JohnDoe to Admin:

```
SLP: set user access admin johndoe<Enter>
```

The following command sets the user access level for JaneDoe to User:

```
SLP: set user access user janedoe<Enter>
```

Granting and removing input load viewing privileges

The Set User Envmon command grants or removes input load viewing privileges to/from a general or view-only user.

To grant or remove input load viewing privileges for a user:

1. At the command prompt, type `set user envmon` followed by on or off, optionally followed by a username and press **Enter**.

Example

The following command grants input load privileges to the user JohnDoe:

```
SLP: set user envmon on johndoe<Enter>
```

Displaying the access privilege levels

The List Users command displays all defined users with their access privilege level.

To display user access privilege levels:

1. At the command prompt, type `list users` and press **Enter**.

Example

The following command displays all users with their access privilege level:

```
SLP: list users<Enter>
   User              Privilege     Environmental
   Name              Level         Monitoring
```

```
JOHNDOE          Admin        Allowed
JANEDOE          User         Allowed
JOSEYDOE         On-Only      Not Allowed
JOEDOE           View-Only    Not Allowed
```

Adding outlet access to a user

The Add OutletToUser command grants a user access to one or all outlets. To grant access for more than one outlet, but not all outlets, you must use multiple Add OutletToUser commands.

To grant outlet access to a user:

1. At the command prompt, type `add outlettouser`, optionally followed by an outlet name and a username. Press **Enter**, or
2. Type `add outlettouser all`, followed by a username and press **Enter**.

Examples

The following commands grant the user JaneDoe access to outlets A1 and Webserver_1:

```
SLP: add outlettouser .a1 janedoe<Enter>
SLP:  add outlettouser WebServer_1 janedoe<Enter>
```

Deleting outlet access for a user

The Delete OutletFromUser command removes a user's access to one or all outlets. You cannot remove access to any outlet for an administrative level user.

To delete outlet access for a user:

1. At the command prompt, type `delete outletfromuser`, optionally followed by an outlet name and a username. Press **Enter**, or
2. Type `delete outletfromuser all`, followed by a username and press **Enter**.

Adding group access to a user

The Add GroupToUser command grants a user access to a group. To grant access for more than one group, you must use multiple Add GroupToUser commands.

To grant group access to a user:

1. At the command prompt, type `add grouptouser`, optionally followed by a group name and a username. Press **Enter**.

Examples

The following commands grant access to the Groups ServerGroup_1 and ServerGroup_2 for user JaneDoe:

```
SLP:  add GroupToUser ServerGroup_1 janedoe<Enter>
SLP:  add GroupToUser ServerGroup_2 janedoe<Enter>
```

Deleting group access for a user

The Delete GroupFromUser command removes a user's access to a group. You cannot remove access to any group for an administrative level user.

To delete group access for a user:

1. At the command prompt, type `delete GroupFromUser`, optionally followed by a group name and a username. Press **Enter**.

Displaying user outlet and group access

The List User command displays all accessible outlets and groups for a user.

To display user outlet and group access:

1. At the command prompt, type `list user`, optionally followed by a username. Press **Enter**.

Example

The following command displays information about the user JaneDoe:

```
SLP:  list user janedoe<Enter>
   Username: JANEDOE
      Outlet   Outlet
      ID       Name
      .A1      DataServer_1
      .A2      WebServer_1
      Groups:
         ServerGroup_1
         ServerGroup_2
```

JaneDoe may access the following outlets and groups: outlet A1 which has a descriptive name of DataServer_1, outlet A2 which has a descriptive name of WebServer_1, group ServerGroup_1 and group ServerGroup_2.

Group Administration

Creating a group name

The Create Group command creates a new group name.

To create a group name:

1. At the command prompt, type `create group`, optionally followed by a descriptive name of up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal - spaces are not allowed. Group names are not case sensitive). Press **Enter**.

Example

The following command creates a group named ServerGroup_1:

```
SLP: create group ServerGroup_1<Enter>
```

Removing a group name

The Remove Group command removes a group name.

To remove a group name:

1. At the command prompt, type `remove group`, optionally followed by a username. Press **Enter**.

Example

The following command removes group name ServerGroup_1:

```
SLP: remove group ServerGroup_1<Enter>
```

Adding an outlet to a group

The Add OutletToGroup command adds an outlet to a group. To add more than one outlet, but not all outlets, you must use multiple Add OutletToGroup commands.

To add an outlet to a group:

1. At the command prompt, type `add outlettogroup`, optionally followed by an outlet name and group name. Press **Enter**, or
2. Type `add OutletToGroup`, followed by all and the group name. Press **Enter**.

Examples

The following commands uses absolute outlet names to add outlets A1 and A2 to group name ServerGroup_1:

```
SLP: add OutletToGroup .a1 ServerGroup_1<Enter>
SLP: add OutletToGroup .a2 ServerGroup_1<Enter>
```

The following commands use the outlets' descriptive names to add outlets DataServer_1 and WebServer_1 to group name ServerGroup_1:

```
SLP: add OutletToGroup DataServer_1 ServerGroup_1<Enter>
SLP: add OutletToGroup WebServer_1 ServerGroup_1<Enter>
```

The following command adds all outlets to group name ServerGroup_1:

```
SLP: add OutletToGroup<Enter>
Outletname: all<Enter>
Groupname: ServerGroup_1<Enter>
```

Deleting an outlet from a group

The Delete OutletFromGroup command deletes an outlet from a group. To delete more than one outlet, but not all outlets, you must use multiple Delete OutletToGroup commands.

To delete an outlet from a group:

1. At the command prompt, type `delete outletfromgroup`, optionally followed by an outlet name and a group name. Press **Enter**, or
2. Type `delete outletfromgroup`, followed by all then the group name. Press **Enter**.

Outlet Administration

Creating a descriptive outlet name

The Set Outlet Name command assigns a descriptive name to an outlet. You may use this name in commands that require an outlet name as an alternative to using the outlet's absolute name.

To create an outlet name:

1. At the command prompt, type `set outlet name`, followed by the absolute outlet name and a descriptive name of up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal - spaces are not allowed). Outlet names are not case sensitive. Press **Enter**.

Example

The following command adds the descriptive name DataServer_1 to outlet .a1:

```
SLP: set outlet name .a1 DataServer_1<Enter>
```

Setting the outlet wakeup state

The Set Outlet Wakeup command set the default wakeup state for that outlet. In the event of a system-wide power loss, this state will be applied to the outlet when power is restored.

The wakeup state may be set to On, Off, or Last. Upon restoration of system power; If set to On, the unit will apply power to that outlet. If set to Off, the unit will not apply power to that outlet.

To set the wakeup state:

1. At the command prompt, type `set outlet wakeup`, followed by `on` or `off` and the outlet name. Press **Enter**.

Example

The following command sets the wakeup state for outlet .a1 to off:

```
SLP: set outlet wakeup off .a1<Enter>
```

Displaying outlet information

The Show Outlets command displays information about all outlets. This information includes:

- Descriptive outlet name, if applicable
- Outlet wakeup state setting

To display outlet information:

1. At the command prompt, type `show outlets` and press **Enter**.

Example

The following command displays all outlet information:

```
SLP: show outlets<Enter>
              Outlet   Outlet              Wakeup
              ID       Name                State
              .A1      DataServer_1        off
              .A2      WebServer_1         on
              .A3      FileServer_1        on
              .A4                          on
              .A5                          on
              .A6                          on
              .A7                          on
              .A8                          on
              .A9                          on
              .A10                         on
              .A11                         on
              .A12                         on
              .A13                         on
              .A14                         on
              .A15                         on
              .A16                         on
              More (Y/es N/o):
```

Serial Port Administration

Creating a descriptive serial port name

The Set Port Name command assigns a descriptive name to a serial port. You may use this name in commands that require a port name as an alternative to using the port's absolute name.

To create a port name:

1. At the command prompt, type `set port name`, followed by the absolute outlet name and a descriptive name of up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal - spaces are not allowed). Port names are not case sensitive.

2. Press **Enter**.

Note: *Port names '1' thru '64' and 'CONSOLE' are reserved system names and may not be used.*

Example

The following command adds the descriptive name Rack1 to Modem port:

```
SLP: set port name modem Rack1<Enter>
```

Setting the serial ports data rate

The Set Port Speed command sets the default data rate for the serial port.

Valid data rates are 1200, 2400, 4800, 9600, 19200, 38400, and 57600.

To set the serial port data rate:

1. At the command prompt, type `set port speed all`, followed by the data rate and press **Enter**.

Example

The following command sets the serial port data rate to 38400 BPS:

```
SLP: set port speed all 38400<Enter>
```

System Administration

Creating a location description

The Set Location command specifies text that appears in the web browser control screen's Location field. The text is also appended to a "Welcome to" banner that appears when a user successfully logs in serially or through a Telnet session.

If you do not issue this command, or if you issue this command without specifying any text, the control screen's Location field will be blank and no Welcome to banner will be displayed.

To create a location description:

1. At the command prompt, type `set location`, followed by a descriptive name of up to 24 alphanumeric and other typeable characters (ASCII 32 to 126 decimal - spaces are allowed). Press **Enter**.

   Omitting any characters after typing `set location` deletes any previously specified text.

Examples

The following command specifies Florida HQ as the descriptive location for the control screen and the login banner:

```
SLP: set location Florida HQ<Enter>
```

The following command deletes any previously specified location description:

```
SLP: set location<Enter>
```

In this case, the control screen's Location field will be blank, and no Welcome banner will be displayed after a successful login.

Displaying system configuration information

The Show System command displays all system configuration information.

- Firmware version
- NIC module serial number and MAC address
- Hardware revision code and Flash size
- Uptime since last system restart
- System location description

See *4:Advanced Operations* for more information on SNMP.

To display system configuration information:

1. At the command prompt, type `show system` and press **Enter**.

Example

```
System Information
F/W Version:   SecureLinx Power Manager Version x.xx
NIC S/N:       1600001
MAC Address:   00-80-a3-8b-00-0e
H/W Rev Code:  0
Flash Size:    1 MB
Uptime:        0 days 6 hours 14 minutes 1 second
Location:      Florida HQ
```

Creating a descriptive unit name

The Set Unit Name command assigns a descriptive name to a unit. This descriptive name is displayed when the Show Traps command is issued. See *Displaying trap configuration information* on page 55 for more information on the Show Traps command.

To create a unit name:

1. At the command prompt, type `set unit name`, followed by the absolute unit name, then the descriptive name of up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal - spaces are not allowed).
2. Press **Enter**.

Examples

The following command adds the descriptive name Florida_HQ_1 to unit.a:

```
SLP: set unit name .a Florida_HQ_1<Enter>
```

Displaying unit information

The Show Units command displays information about the unit. This information includes the absolute and descriptive unit names.

To display unit information:

1. At the command prompt, type `show units` and press **Enter**.

Example

```
SLP: show units<Enter>
Unit   Unit
ID      Name
.A      Florida_HQ_1
```

Creating a descriptive infeed name

The Set Infeed Name command assigns a descriptive name to an infeed. This descriptive name is displayed when the Show Traps command is issued. See *Displaying trap configuration information* on page 55 for more information on the Show Traps command.

To create an infeed name:

1. At the command prompt, type `set infeed name`, followed by the absolute infeed name, then the descriptive name of up to 24 alphanumeric and other typeable characters (ASCII 33 to 126 decimal - spaces are not allowed).
2. Press **Enter**.

Example

The following command adds the descriptive name HQ_1_Infeed_A to the infeed on the unit:

```
SLP: set infeed name .aa HQ_1_Infeed_A<Enter>
```

Displaying Infeed information

The Show Infeeds command displays information about all infeeds. This information includes the absolute and descriptive infeed names.

To display unit information:

1. At the command prompt, type `show infeeds` and press **Enter**.

Example

```
SLP: show infeeds<Enter>
Input    Input
Feed ID  Feed Name
.AA      HQ_1_Infeed_A
```

Displaying the firmware version

The Version command displays the firmware version.

To display the firmware version:

1. At the command prompt, type `version` and press **Enter**.

Performing a warm boot

The Restart command performs a warm boot of the unit.

Note: *System user/outlet/group/port configuration or outlet states are NOT changed or reset with this command.*

To perform a warm boot:

1. At the command prompt, type `restart` and press **Enter**.

TCP/IP Administration

Note: *A restart of the unit is required after setting or changing any TCP/IP configurations*.

Setting the IP address

The Set Ipaddress command sets the TCP/IP address of the network interface controller.

To set the IP address:

1. At the command prompt, type `set ipaddress`, followed by the IP address and press **Enter**.

Example

The following command sets the IP address to 12.34.56.78:

```
SLP: set ipaddress 12.34.56.78<Enter>
```

Setting the subnet mask

The Set Subnet command sets the subnet mask for the network in which the unit will be attached.

To set the subnet mask:

1. At the command prompt, type `set subnet`, followed by the subnet mask and press **Enter**.

Example

The following command sets the subnet mask to 255.0.0.0

```
SLP: set subnet 255.0.0.0<Enter>
```

Setting the gateway

The Set Gateway command sets the IP address of the default gateway the unit uses to access external networks.

To set the gateway IP address:

1. At the command prompt, type `set gateway`, followed by the gateway IP address and press **Enter**.

Example

The following command sets the gateway IP address to 12.34.56.1:

```
SLP: set gateway 12.34.56.1<Enter>
```

Displaying network configuration information

The Show Network command displays TCP/IP, Telnet, SSH, Web, SSL and SNMP configuration information.

- IP address, subnet mask and gateway
- Enabled-disabled status of Telnet, SSH, HTTP,SSL and SNMP support
- Telnet, SSH, and HTTP port numbers
- HTTP authentication method and SSL access setting
- Network status

See *4:Advanced Operations* for more information on SNMP

To display network configuration information:

1. At the command prompt, type `show network` and press **Enter**.

Example

The following command displays the network configuration information:

```
SLP: show network<Enter>
Network Configuration
       IP Address:   12.34.56.78
       Subnet Mask:  255.0.0.0
       Gateway:      12.34.56.1
       Telnet:       Enabled   Port: 23
       SSH:          Enabled   Port: 65535
       HTTP:         Enabled   Port: 80  Security: BASIC
       SSL:          Enabled             Access:  Required
       SNMP:         Enabled
Network Status
      Link:           Up
      Speed:          100 Mbps
      Duplex:         Full
      Negotiation:    Auto
```

HTTP Administration

Note: *A restart is required after setting or changing ANY Telnet/Web configurations. At the command prompt, type* `restart` *and press* ***Enter****.*

Enabling and disabling HTTP support

The Set HTTP command is used to enable or disable HTTP support.

To enable or disable HTTP support:

1. At the command prompt, type `set http`, followed by `enabled` or `disabled` and press **Enter**.

Changing the HTTP server port

With HTTP support enabled, the HTTP server watches and responds to requests on the default HTTP port number 80. This port number may be changed using the Set HTTP Port command.

To change the HTTP port:

1. At the command prompt, type `set http port`, followed by the port number and press **Enter**.

Example

The following changes the HTTP port number to 2048:

```
SLP: set HTTP port 2048<Enter>
```

Setting the HTTP authentication method

The Set HTTP Security command is used to set the method of authentication. The HTTP server supports two authentication methods for security and validation of the username-password – Basic and MD5 digest.

To set the HTTP authentication method:

1. At the command prompt, type `set http security`, followed by `basic` or `md5` and press **Enter**.

Telnet Administration

Note: *A restart of the unit is required after setting or changing ANY Telnet/Web configurations. See Performing a warm boot on page 40 for more information.*

Enabling and disabling Telnet support

The Set Telnet command is used to enable or disable Telnet support.

To enable or disable Telnet support:

1. At the command prompt, type `set Telnet`, followed by `enabled` or `disabled` and press **Enter**.

Changing the Telnet port

With Telnet support enabled, the Telnet server watches and responds to requests on the default Telnet port number 23. This port number may be changed using the Set Telnet Port command.

To change the Telnet socket:

1. At the command prompt, type `set Telnet port`, followed by the port number and press **Enter**.

Example

The following changes the Telnet port number to 7001:

```
SLP: set Telnet port 7001<Enter>
```

FTP Administration

You may install new versions of firmware using File Transfer Protocol (FTP). This allows access to new firmware releases for firmware improvements and new feature additions. The following commands are used to configure the unit for an FTP firmware upload. See *Uploading Firmware* for more information on initiating a FTP firmware upload.

Setting the FTP Host IP address

The Set FTP Host command sets the FTP host IP address allowing for firmware file uploads.

To set the FTP Host IP address:

1. At the command prompt, type `set ftp host`, followed by the Host IP address and press **Enter**.

Example

The following command sets the FTP Host IP address to 12.34.56.99:

```
SLP: set ftp host 12.34.56.99<Enter>
```

Setting the FTP username

The FTP Username command sets the username as required by the FTP Host.

To set the FTP username:

1. At the command prompt, type `set ftp username`, followed by the FTP username and press **Enter**.

Example

The following command sets the FTP username to Guest:

```
SLP: set ftp username guest<Enter>
```

Setting the FTP Password

The FTP Password command sets the password as required by the FTP Host.

To set the FTP password:

1. At the command prompt, type `set ftp password`, followed by the FTP password and press **Enter**.

Example

The following command sets the FTP password to OpenSesame:

```
SLP: set ftp password OpenSesame<Enter>
```

Setting the filename to be uploaded

The FTP Filename command sets the filename of the firmware file to be uploaded.

To set the FTP filename:

1. At the command prompt, type `set ftp filename`, followed by the firmware filename and press **Enter**.

Example

The following command sets the FTP filename to snb_s50a.bin:

```
SLP: set ftp filename snb_s50a.bin<Enter>
```

Setting the file path for the file to be uploaded

The FTP Filepath command sets the file path for the firmware file to be uploaded.

To set the FTP file path:

1. At the command prompt, type `set ftp filepath`, followed by the filepath and press **Enter**.

Example

The following command sets the FTP file path to ftp:// slp:

```
SLP: set ftp filepath ftp://slp<Enter>
```

Displaying FTP configuration information

The Show FTP command displays all FTP configuration information.

- FTP Host IP address
- FTP Host username and password
- Firmware file path and filename

To display FTP configuration information:

1. At the command prompt, type `show ftp` and press **Enter**.

Example

The following command displays the FTP configuration information:

```
SLP: show ftp<Enter>
       FTP Configuration
              Host IP Address: 12.34.56.99
              Username:        guest
              Password:        OpenSesame
              Directory:       ftp://slp
              Filename:        SLP_xxxx.bin
```

4: Advanced Operations

SSL

Secure Socket Layers (SSL) version 3 enables secure web browser sessions between a Remote Power Manager and a remote user. SSL provides two chief features designed to make TCP/IP (Internet) transmitted data more secure:

- Authentication – The connecting client is assured of the identity of the server.
- Encryption – All data transmitted between the client and the server is encrypted rendering any intercepted data unintelligible to any third party.

SSL uses the public-and-private key encryption system by RSA, which also requires the use of digital certificates. An SSL Certificate is an electronic file uniquely identifying individuals or websites and enables encrypted communication; SSL Certificates serve as a kind of digital passport or credential. The product's SSL Certificate enables the client to verify the unit's authenticity and to communicate with the unit securely via an encrypted session, protecting confidential information from interception and hacking.

Table 4-1. SSL Command Summary

Command	Description
Set SSL	Enables/disables SSL support
Set SSL access	Sets SSL access as optional or required

Enabling and Setting up SSL Support

Note: *A restart of the unit is required after setting or changing ANY SSL configurations. See Performing a warm boot on page 40 for more information.*

Enabling or disabling SSL support

The Set SSL command is used to enable or disable SSL support.

To enable or disable SSL support:

1. At the command prompt, type `set ssl`, followed by `enabled` or `disabled` and press **Enter**.

Setting SSL access level

The Set SSL Access command is used to assign use of SSL as optional or required. The default access level is set to optional.

To change the access level:

1. At the command prompt, type `set ssl access`, followed by `optional` or `required`, and press **Enter**.

Example

The following changes the access level to required:

```
SLP: set ssl access required<Enter>
```

SSL Technical Specifications

- Secure Socket Layer (SSL) version 3
- Transport Layer Security (TLS) version 1 (RFC 2246)
- SSL/TLS-enabled HTTPS server (RFC 2818)
- Self-Signed X.509 Certificate version 3 (RFC 2459)
- Asymmetric Cryptography:

  1024-bit RSA Key Exchange
- Symmetric Cryptography Ciphers:

  TLS_RSA_WITH_AES_256_CBC_SHA

  TLS_RSA_WITH_3DES_EDE_CBC_SHA

  TLS_RSA_WITH_AES_128_CBC_SHA

  TLS_RSA_WITH_DES_CBC_SHA

SSH

Secure Shell (SSH) version 2 enables secure network terminal sessions between a Remote Power Manager and a remote user over insecure network. SSH provides an encrypted terminal session with strong authentication of both the server and client, using public-key cryptography and is typically used as a replacement for unencrypted Telnet. In addition to enabling secure network terminal sessions to the unit for configuration and power management, the SSH session may be used for secure Pass-Thru connections to attached devices.

SSH requires the configuration and use of a client agent on the client PC. There are many freeware, shareware or for-purchase SSH clients available. Two examples are the freeware client PuTTY and the for-purchase client SecureCRT by VanDyke Software. For configuration and use of these clients, please refer to the applicable software documentation.

Table 4-2. SSH Command Summary

Command	Description
Set SSH	Enables/disables SSH support
Set SSH port	Sets the SSH server port number

Enabling and Setting up SSH Support

Note: *A restart of the unit is required after setting or changing ANY SSH configurations. See Performing a warm boot on page 40 for more information.*

Enabling or disabling SSH support

The Set SSH command is used to enable or disable SSH support.

To enable or disable SSH support:

1. At the command prompt, type `set ssh`, followed by `enabled` or `disabled` and press **Enter**.

Changing the SSH server port

With SSH support enabled, the SSH server watches and responds to requests on the default SSH port number 22. This port number may be changed using the Set SSH Port command.

To change the SSH port:

1. At the command prompt, type `set ssh port`, followed by the port number and press **Enter**.

Example

The following changes the SSH port number to 65535:

```
SLP: set ssh port 65535<Enter>
```

SSH Technical Specifications

- Secure Shell (SSH) version 2
- Asymmetric Cryptography:

  Diffie-Hellman DSA/DSS 512-1024 (random) bits per NIST specification
- Symmetric Cryptography:

  AES256-CBC RIJNDAEL256-CBC 3DES-192-CBC

  AES192-CBC RIJNDAEL192-CBC BLOWFISH-128-CBC

  AES128-CBC RIJNDAEL128-CBC ARCFOUR-128
- Message Integrity:

  HMAC-SHA1-160 HMAC-SHA1-96

  HMAC-MD5-128 HMAC-MD5-96
- Authentication:

  Username/Password

  Session Channel Break Extension (for RS-232 Break)

SNMP

The SLP family of products supports the Simple Network Management Protocol (SNMP). This allows network management systems to use SNMP requests to retrieve information and control power for the individual outlets.

The SNMP implementation includes an SNMP v1 agent supporting standard MIB I and MIB II objects. A private enterprise MIB extension is also supported to provide remote power control.

Note: *For security, SNMP support is disabled by default*.

Table 4-3. SNMP Command Summary

Command	Description
Set snmp	Enables or disables SNMP support
Set snmp getcomm	Sets the 'get' community string
Set snmp setcomm	Sets the 'set' community string
Set snmp trapdest1	Sets a destination IP addresses for traps
Set snmp trapdest2	Sets a destination IP addresses for traps
Set snmp traptime	Sets the delay for steady state condition traps
Show snmp	Displays all SNMP configuration information

Enabling and Setting up SNMP Support

SNMP support must be enabled and configured for access to private enterprise MIB extensions for remote power control, and for generation of all SNMP traps.

Enabling/disabling SNMP support

The SNMP command is used to enable or disable SNMP support.

To enable SNMP support:

1. At the command prompt, type `set snmp`, followed by `enabled` or `disabled` and press **Enter**.

Note: *A restart is required after enabling or disabling SNMP support. See* *Performing a warm boot on page 40* *for more information*.

Setting trap destinations

The Set SNMP Trapdest1 and Trapdest2 commands are used to set the IP addresses of SNMP management stations receiving all traps. A maximum of two trap destinations are supported; one must be defined to enable trap generation.

To set the trap destination:

1. At the command prompt, type `set snmp`, `trapdest1` or `trapdest2`, the Ipaddress and press **Enter**.

Example

The following sets the trap destination 1 to 64.42.31.208:

```
SLP: set snmp trapdest1 64.42.31.208<Enter>
```

To reset the trap destination:

1. At the command prompt, type `set snmp`, `trapdest1` or `trapdest2`, `0.0.0.0` and press **Enter**.

Setting the trap timer

The Set Traptime command sets the timer period between repeated error-condition traps. The valid range for the timer period is 1 to 65535 (in seconds).

The default value for the timer period is 60 seconds.

To set the trap timer:

1. At the command prompt, type set `traptime`, followed by the timer period and press **Enter**.

Example

The following sets the timer period to 180 seconds:

```
SLP: set traptime 180<Enter>
```

Setting the Get/Set community strings

Two SNMP community strings provide varying levels of access to objects defined in the private enterprise MIB extensions.

Community strings may be 1 to 24 characters.

Setcomm

The Setcomm string provides read-write access to private enterprise MIB objects.

The default Setcomm string is “private”

To set the Setcomm community string:

1. At the command prompt, type set `snmp setcomm`, followed by the string and press **Enter**.

Getcomm

The Getcomm string provides read-only access to private enterprise MIB objects. The default Getcomm string is “public”.

To set the Getcomm community string:

1. At the command prompt, type `set snmp getcomm`, followed by the string and press **Enter**.

Setting the Trap community string

The Set SNMP Trapcomm command is used to set the community string that is included with all generated traps. This string must be defined to enable trap generation.

The trap community string may be 1 to 24 characters. The default Trapcomm string is “trap”.

To set the Trapcomm community string:

1. At the command prompt, type set `snmp trapcomm`, followed by the string and press **Enter**.

Displaying SNMP configuration information

The Show SNMP command displays all SNMP configuration information.

- SNMP support status
- SNMP community strings
- Trap timer value
- Trap destinations

To display SNMP configuration information:

1. At the command prompt, type show snmp and press **Enter**.

Example

The following command displays the SNMP configuration information:

```
SLP: show snmp<Enter>
   SNMP Configuration
      SNMP:                                Enabled
      SET Community String:                private
      GET Community String:                public
      TRAP Community String:               trap
      Error Trap Repeat Time (seconds):    180
      Trap Destination 1:                  64.42.31.208
      Trap Destination 2:                  (undefined)
```

SNMP Traps

Three types of SNMP traps are supported. Traps are enabled at the unit (T), infeed (I) or outlet (O) level.

Table 4-4. Trap Summary

Name	Level(s)	Description
Status	T, I, O	Operational status change
Change	O	Control status change
Load	I	Input load out of limit

All traps include the Location of the unit as defined with the Set Location command. See *Creating a location description* on page 38 for more information.

Status trap

A Status trap is generated when an error condition occurs on a unit, infeed or outlet. Status traps include the reported Status, the Location of the unit, and identifier and name of the affected unit, infeed or outlet.

Any Trap Status generates a Status trap and triggers the trap timer. A new trap is generated at the end of every timer period until the Status returns to a non-error status.

Table 4-5. Unit Status Traps

Status	Error	Description
Normal		Unit is working correctly
NoComm	x	Communication to the unit has been lost
Status	Error	Description

Table 4-6. Infeed Status Traps

Status	Error	Description
On		Infeed is on
OffError	x	Infeed should be on but no current is sensed at the infeed
NoComm	x	Communication to the infeed has been lost

Table 4-7. Outlet Status Traps

Status	Error	Description
On		Outlet is on
Off		Outlet is off
OnWait		Outlet Status in transition
OffWait		Outlet Status in transition
OnError	x	Outlet should be off but current is sensed at the outlet
OffError	x	Outlet should be on but no current is sensed at the outlet
NoComm	x	Communication to the outlet has been lost

Note: *Traps are generated according to a hierarchical architecture; i.e. if a Unit Status enters a trap condition, only the Unit Status trap is generated. Infeed and Outlet Status traps are suppressed until the Unit Status returns to Normal*.

Change trap

The Change trap is generated for all outlet status changes between any on/off conditions. Change traps include the outlet status, Location of the unit, and identifier and name of the affected outlet. For descriptions of the outlet status types, please refer to the prior table.

Load Trap

The Load trap is generated whenever the total input load on an infeed exceeds a preset threshold. Load traps include the reported input load, load status, Location of the unit, and identifier and name of the affected infeed.

Any error state generates a Load trap and triggers the trap timer. A new trap is generated at the end of every timer period until the Load returns to a non-error status.

Table 4-8. Load Traps

Status	Error	Description
Normal		Infeed is on and within preset thresholds
NotOn		Infeed is off
Reading		Non-error state – Load status currently being read
LoadHigh	x	Infeed current load exceeds preset threshold
OverLoad	x	Infeed current load exceeds the measurable range for the infeed
ReadError	x	Unable to read Load status
NoComm	x	Communication to the infeed

Configuring Traps

Table 4-9. SNMP Trap Command Summary

Command	Description
Set Trap Unit Status	Enables or disables the Unit Status trap
Set Trap Infeed Status	Enables or disables the Infeed Status trap off
Set Trap Infeed Load	Enables or disables the Infeed Load trap
Set Trap Infeed HighThresh	Sets the Infeed Load trap high limit
Set Trap Outlet Change	Enables or disables the Outlet Change trap
Set Trap Outlet Status	Enables or disables the Outlet Status trap
Show Traps	Displays trap configurations

Enabling or Disabling a Status trap

The Set Trap <infeed|outfeed|outlet> Status command is used to enable or disable Status traps for a Unit, Infeed or Outlet.

To Enable or Disable a Status trap:

1. At the command prompt, type `set trap` (`unit`, `infeed` or `outlet`) `status`, followed by the tower, infeed or outlet name, and on or `off`. Press **Enter**, or

2. Type `set trap` (`unit`, `infeed` or `outlet`) `Status all`, followed by on or `off` and press **Enter**.

Examples

The following command enables the Status trap using the unit's absolute name:

```
SLP: set trap unit status .a on<Enter>
```

The following command enables the Status trap for the unit named Florida_HQ_1:

```
SLP: set trap unit status Florida_HQ_1 on<Enter>
```

Note: *Enabling lower hierarchical traps automatically enables traps of higher hierarchical value: i.e. enabling an Outlet Status trap automatically enables the Infeed and Unit Status traps for that outlet. Conversely, if a Unit Status*

trap is disabled, all associated Infeed Status & Load and Outlet Status traps will be disabled.

Enabling or Disabling a Load trap

The Set Trap Infeed Load command is used to enable or disable an Infeed Load trap.

To Enable or Disable a Load trap:

1. At the command prompt, type `set trap infeed load`, followed by the infeed name, and `on` or `off`. Press **Enter**, or
2. Type `set trap infeed load all`, followed by `on` or `off` and press **Enter**.

Examples

The following command enables the Load trap using the unit's absolute name:

```
SLP:  set trap infeed load.aa on<Enter>
```

The following command disables the Load trap:

```
SLP:  set trap infeed load all off<Enter>
```

Note: *Enabling lower hierarchical traps automatically enables traps of higher hierarchical value: i.e. enabling an Infeed Load trap automatically enables the Infeed and Unit Status traps for that infeed*.

Setting the Infeed Load limit

The Set Trap Infeed Loadhigh command is used to set the upper load limits for an input feed.

To set the infeed load limit:

1. At the command prompt, type `set trap infeed loadhigh`, followed by the infeed name, and a value from 0 to 255 in amperes. Press **Enter**.

Example

The following command sets the infeed load limit for the infeed to 25 amperes, using the infeed's absolute name:

```
SLP:  set trap infeed loadhigh.aa 25<Enter>
```

Enabling or Disabling a Change trap

The Set Trap Outlet Change command is used to enable or disable an Outlet Change trap.

To Enable or Disable a Change trap:

1. At the command prompt, type `set trap outlet change`, followed by the outlet name and `on` or `off`. Press **Enter**, or
2. Type `set trap outlet change all`, followed by `on` or `off` and press **Enter**.

Example

The following command enables the Change trap for the third outlet using the outlet's absolute name:

```
SLP:  set trap outlet change .a3 on<Enter>
```

Displaying trap configuration information

The Show Traps command displays information about all traps.

To display trap information:

1. At the command prompt, type `show traps` and press **Enter**.

Example

The following command requests trap configuration information:

```
SLP:  show traps <Enter>
Unit trap configuration:
   Unit    Unit                 Status
   ID       Name                  Trap
   .A       Florida_HQ_1          ON
   More (Y/es N/o): y
Input feed trap configuration:
   Input    Input                 Status   Load     High
   Feed ID  Feed Name             Trap     Trap   Thresh
   .AA      HQ_1_Infeed_A         ON       ON      255 A
   More (Y/es N/o): y
Outlet trap configuration:
   Outlet   Outlet                Change   Status
   ID       Name                  Trap     Trap
   .AA1     DataServer_1          OFF      ON
   .AA2     WebServer_1           OFF      ON
   .AA3     FileServer_1          OFF      ON
   .AA4                           OFF      ON
   .AA5                           OFF      ON
   .AA6                           OFF      ON
   .AA7                           OFF      ON
   .AA8                           OFF      ON
   More (Y/es N/o): y.
```

5: Troubleshooting and Technical Support

Technical Support

If you are experiencing an error that is not described in this user guide, or if you are unable to fix the error, you may:

- Check our online knowledge base at www.lantronix.com/support.
- Contact Technical Support in the US:

  Phone: 800-422-7044 (US only) or 949-453-7198

  Fax: 949-450-7226

  Our phone lines are open from 6:00AM - 5:30 PM Pacific Time Monday through Friday, excluding holidays.

- Contact Technical Support in Europe, Middle East, and Africa:

  Phone: +49 (0) 89 31787 817

  E-mail: eu_techsupp@lantronix.com

Firmware downloads, FAQs, and the most up-to-date documentation are available at: www.lantronix.com/support .

When you report a problem, please provide the following information:

- Your name, and your company name, address, and phone number
- Lantronix model number
- Lantronix serial number
- Software version
- Description of the problem
- Debug report (stack dump), if applicable
- Status of the unit when the problem occurred (please try to include information on user and network activity at the time of the problem)

A: Resetting to Factory Defaults

You may reset the non-volatile RAM that stores all configurable options. This clears all administrator-editable fields and resets all command line configurable options to their default values, including all user accounts.

You may reset the unit to factory defaults from the command line or the web browser interface, or by pressing the reset button. You must have administrator-level privileges to issue the command. Using the reset button may be necessary when a forgotten password prevents administrator login. Each of the methods updates the current working configuration to the factory defaults.

Note: *Resetting the unit resets all TCP/IP and Telnet/Web configurations. Reconfiguring the TCP/IP and Telnet/web settings will be required*.

To reset to factory defaults from the web browser interface

1. On the **Restart** page in the Tools section of the web browser interface, select Restart and reset to factory defaults from the drop-down menu and press **Apply**.

To reset to factory defaults from the command line

1. At the command prompt, type `restart factory` and press **Enter**.

To reset to factory defaults using the reset button

1. Locate the recessed reset button directly beside the Serial & Ethernet ports. You will need a non-conductive, non-metallic tool that fits inside the recess.
2. Insert the tool in the recess, then depress and hold the reset button for at least ten seconds.

Note: *If the reset button is depressed and held for more than 15 seconds, the reset will abort*.

B: Uploading Firmware

You may upload new versions of firmware using File Transfer Protocol (FTP). This allows access to new firmware releases for firmware improvements and new features additions.

Note: *To begin an FTP upload session, you must first configure the FTP Host address, username/password, filename and file path. For information on configuring the FTP settings required for firmware upload see* 3:*Operations*.

You may initiate an FTP upload session by issuing a command or from the web browser interface. You must have administrator-level privileges to initiate an upload.

To initiate an FTP upload session from the web browser interface

1. On the **Restart** page in the Tools section of the web browser interface, select Restart and upload firmware via FTP from the drop-down menu and press **Apply**.
2. Upon issuing this command the unit will restart and upload the firmware file specified with the FTP Filename command from the previously configured FTP Host. See *FTP Administration* on page 43 for more information.

To initiate an FTP upload session from the command line

The Restart FTPLoad command initiates an upload of firmware. Upon issuing this command the unit will restart and upload the firmware file specified with the FTP Filename command from the previously configured FTP Host. See *FTP Administration* on page 43 for more information.

To initiate an FTP firmware upload session:

1. At the command prompt, type `restart ftpload` and press **Enter**.

C: Technical Specifications

Models

Table C-1. Vertical Installation

Model	Voltage	Inlet	Outlets
SLPV1611E-01	100-120V, 50/60Hz	IEC 60320/C20	16 - NEMA 5-20R
SLPV1612E-01	208-230V, 50/60Hz	IEC 60320/C20	16 - IEC 60320/C13

Table C-2. Horizontal/Rack Installation

Model	Voltage	Inlet	Outlets
SLPH0811E-01	100-120V, 50/60Hz	IEC 60320/C20	8 - NEMA 5-20R
SLPH0812E-01	208-230V, 50/60Hz	IEC 60320/C20	8 - IEC 60320/C13

Table C-3. Power Ratings

Model	Input Current Ratings[1]		Output Current Ratings			
	Voltage	Current	Outlet	Quad[2]	Octet[3]	Total
SLPH08x1E-01	100-120V 50/60 Hz	16	10	16	16	16
SLPV16x1E-01						
SLPH08x2E-01	208-230V 50/60 Hz	16	6	10	16	16
SLPV16x2E-01						

[1] **Current ratings are in amperes.**

[2] **1-4, 5-8, 9-12, 13-16**

[3] **1-8, 9-16**

Table C-4. Physical Specifications

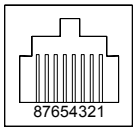
		SLP-V16xxx-01	SLP-H08xxx-01
Physical	Size	65.0 x 1.75 x 2.25 in.	1.75 x 17.0 x 7.0 in.
	Weight	13.2 lbs	8.2 lbs
Temperature	Operating	0° to 50° C (32° to 122° F)	
	Storage	-40° to 85° C (-40° to 185° F)	
Relative Humidity	Operating	10 to 90%, non-condensing	
	Storage	10 to 90%, non-condensing	
Approvals		FCC Class A, Part 15 cTUVus (US & Canada) to UL 60950:2003 and CAN/CSA 22.2 No 60950-1-03 European Union (TUVGS mark) EN60950-1:2001	

Data Connections

RS-232 port

All units are equipped standard with an RJ45 DTE RS-232c serial port. This connector may be used for direct local access or from other serial devices such as a terminal server. An RJ45 serial rollover cable is provided for connection to an RJ45 DTE serial port.

Table C-5. RS-232 Port

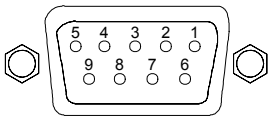


Pin	DTE Signal Name		Input/Output
1	Request to Send	RTS	Output
2	Data Terminal Ready	DTR	Output
3	Transmit Data	TD	Output
4	Signal Ground		
5	Signal Ground		
6	Receive Data	RD	Input
7	Data Set Ready	DSR	Input
8	Clear to Send	CTS	Input

RJ45 to DB9F serial port adapter

An RJ45 to DB9F serial port adapter is provided for use in conjunction with the RJ45 serial rollover cable to connect to a PC DB9M DTE serial port. The adapter pinouts below reflect use of the adapter with the provided RJ45 serial rollover cable.

Table C-6. RJ45 to DB9 Serial Port Adapter



Pin	DCE Signal Name		Input/Output
1			
2	Receive Data	RD	Output
3	Transmit Data	TD	Input
4	Data Terminal Ready	DTR	Input
5	Signal Ground		
6	Data Set Ready	DSR	Output
7	Request to Send	RTS	Input
8	Clear to Send	CTS	Output

Ethernet LED Indicators

Table C-7. LED Description

LED	Color	Description
Network Link	Yellow (lower)	Network Link is operational. On (continuously) indicates that an Ethernet connection is made.
Network Activity	Green (upper)	Network Activity: on when network traffic detected, off when no network traffic detected.
		Diagnostics: flashes three times in even duration during power up or reset, indicating a successful startup.

Outlet LED Indicators

Units are equipped with a status LED for each power receptacle. A lit/on LED indicates that power is being supplied at the port and a darkened/off LED indicates that there is no power at the port.

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D: Compliance Information

(according to ISO/IEC Guide 22 and EN 45014)

Manufacturer's Name & Address:
Lantronix 15353 Barranca Parkway, Irvine, CA 92618 USA

Declares that the following product:

Product Name Model: SecureLinx SLP Remote Power Manager

Conforms to the following standards or other normative documents:

USA and Canada

FCC Class A, Part 15

cTUVus (US & Canada) to UL 60950:2003 and CAN/CSA 22.2 No 60950-1-03

European Union

(TUVGS mark) EN60950-1:2001

Manufacturer's Contact:
Director of Quality Assurance, Lantronix
15353 Barranca Parkway, Irvine, CA 92618 USA
Tel: 949-453-3990
Fax: 949-453-3995

Warranty

Lantronix warrants each Lantronix product to be free from defects in material and workmanship for a period of **TWO YEARS** after the date of shipment. During this period, if a customer is unable to resolve a product problem with Lantronix Technical Support, a Return Material Authorization (RMA) will be issued. Following receipt of an RMA number, the customer shall return the product to Lantronix, freight prepaid. Upon verification of warranty, Lantronix will -- at its option -- repair or replace the product and return it to the customer freight prepaid. If the product is not under warranty, the customer may have Lantronix repair the unit on a fee basis or return it. No services are handled at the customer's site under this warranty. This warranty is voided if the customer uses the product in an unauthorized or improper way, or in an environment for which it was not designed.

Lantronix warrants the media containing its software product to be free from defects and warrants that the software will operate substantially according to Lantronix specifications for a period of **60 DAYS** after the date of shipment. The customer will ship defective media to Lantronix. Lantronix will ship the replacement media to the customer.

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In no event will Lantronix be responsible to the user in contract, in tort (including negligence), strict liability or otherwise for any special, indirect, incidental or consequential damage or loss of equipment, plant or power system, cost of capital, loss of profits or revenues, cost of replacement power, additional expenses in the use of existing software, hardware, equipment or facilities, or claims against the user by its employees or customers resulting from the use of the information, recommendations, descriptions and safety notations supplied by Lantronix. Lantronix liability is limited (at its election) to:

refund of buyer's purchase price for such affected products (without interest)

repair or replacement of such products, provided that the buyer follows the above procedures.

There are no understandings, agreements, representations or warranties, express or implied, including warranties of merchantability or fitness for a particular purpose, other than those specifically set out above or by any existing contract between the parties. Any such contract states the entire obligation of Lantronix. The contents of this document shall not become part of or modify any prior or existing agreement, commitment or relationship.

For details on the Lantronix warranty replacement policy, go to our web site at www.lantronix.com/support/warranty .