

User Guide

PR02 Power Distribution Unit (PDU)



Server Technology's newest platform for PDUs, featuring:

- HDOT Cx
- Switched POPS
- Smart POPS
- Switched
- Smart





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.

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

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

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

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About Your User Guide

This user guide was designed for data center staff and administrators who monitor power, control outlet actions, and direct equipment operations in the data center network using Server Technology's firmware (version 8.0x or later), on the PR01/PR02 product group, which includes the following types of intelligent Power Distribution Units (PDUs):

- HDOT Cx
- Switched POPS
- Smart POPS
- Switched
- Smart

Your user guide highlights the unique hardware features of each of these units; provides the installation, connection, and mounting instructions for securing the unit in the equipment rack; and gives detailed, task-based information for working with the PDU through the firmware interface.

If you use the Web interface, this guide offers step-by-step instructions for daily operational tasks on the PR01/PR02, including GUI screen samples for each user action. You will find a chapter for monitoring functions and a chapter for configuration.

If you use the Command Line Interface (CLI), another separate chapter lists each user command in alphabetic order that links to detailed information about syntax, usage, and parameter descriptions.

More PR01/PR02 Resources

Visit <u>www.servertech.com</u> for a wide variety of information for the PR01/PR02 product you have. Brief instructional videos, product support information from our power strategy experts, brochures, a buying guide, questions and answers, detailed specifications, and many more resources – such as the innovate **Build Your Own PDU** and **Product Selector** – are available on the Server Technology website to assist you with product knowledge, best product usage, and an easy ordering process.



Contact Technical Support



be supported.

Experience Server Technology's FREE Technical Support

Server Technology understands that there are often questions when installing and/or using a new product. Free Technical Support is provided from 8 a.m. to 5 p.m. Pacific Time, Monday through Friday.

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Chapter 1. Your PRO2 PDU

Welcome to the Server Technology® PR02

The PRO2 is the latest design in Server Technology's reliable power distribution units, providing flexibility for future power management, cost savings, and advanced solutions for data center customers.



Key Features

The PRO2 offers many features for the next generation of power management, including:

- PIPS[®] and (optionally) POPS[®] high-accuracy measurements for current, voltage, power, and other key metrics. PIPS is a standard feature on all PRO2 units.
- Auto-Flip LED display gives the proper display orientation no matter how the PRO2 is mounted in the cabinet.
- Outlet naming on all PRO2 products (for both Switched and Smart products).
- Hot-swappable network interface card (NIC) allows swapping the card in the field without causing a change in outlet state. The NIC can easily be replaced even when power is applied.
- Support for IPv6 address names and support for SNMPv3.
- Branch current measurements (for both Switched and Smart products), and notification of fuse or breaker failure.
- Several new levels of power monitoring for high-low warning-alarm thresholds and threshold hysteresis.
- If the master unit loses power, redundant power is provided to the master via the first linked unit, ensuring uptime.
- On-board firmware file system to allow direct GUI downloads of system files, firmware version updates, and MIB/OID tree files without using FTP.
- Intuitive and soft-mapped naming conventions used in both the PRO2 hardware and firmware to reflect the system hierarchy of units, cords, lines, phases, over-current protectors (OCPs), branches, outlets, outlet groups, and sensors.

PRO2 PDU

What's the PR01?

Like the PR02, the PR01 (Switched and Smart) is another new PDU design from Server Technology to provide the same type of flexibility for power management, cost savings, and advanced data center solutions that the PR02 delivers.



What's Unique About the PR01?

Server Technology's PR01 design allows for PR02 functionality in a CDU1 form factor. Like the PR02, the PR01 still uses the Sentry4-MIB and the PR02 firmware, version 8.0.x, allowing PR01 products to offer the latest features and functions of the PR02 product family with a smaller form factor.

Feature Comparison: PR01 vs. PR02

The PRO1 is similar to the PRO2 in hardware architecture, object mapping, user interfaces (GUI and CLI), firmware (version 8.0.x or later), and the new Sentry4-MIB, but the PRO1 **does not** include the following PRO2 items:

- Branch Current Monitoring feature.
- TRMS Current Input Monitoring (in some cases rather than PIPS).

For a closer look, the following table compares PR01 and PR02 benefits:

Product	Benefits			
PRO1	PDU with the NIM2/PRO2 network card:			
	 Faster processor and more memory 			
	Hot swap network card			
	 Network card swap with no re-programming (PCM) 			
	 Features/functions can be added as needed 			
	Multi-linking (up to 4 units)			
	 Power from link unit keeps network up if power from master unit goes down 			
	Sentry4-MIB allows additional alarm warning and threshold levels			
PRO2	PRO2 architecture with the NIM2 network card:			
	 PRO1 features, plus additional features 			
	PIPS standard			
	Branch monitoring standard			
	 Locking data and low voltage cables 			
	 Smart products with breaker/fuse branch circuit sensing 			
	All products 60 degrees Celsius rated			
L	1			

PRO1 PDU

PDU Power Pivot®

Server Technology's PDU Power Pivot[®] flexible infeed provides a simplified power cord routing to the PRO2 unit with a design that eliminates bend radius issues.

As illustrated below, the PDU Power Pivot capability can deliver a solution for several types of PDU installations and mountings, setting the correct cord angle for overhead power, offset overhead power, concrete floor, raised floor, and intra-rack power.



PDU Power Pivot – Flexible Cord Design

Star Linking Technology

Server Technology's PR01/PR02 product line introduces the Star Linking technology that supports the optional linking of up to three expansion (link) units per one master unit, allowing a single IP address for multiple cabinets.

Note: The Star Linking feature is available only with PR01/PR02 products.

The following illustrations show multi-linking between separate units and within the cabinet:





Multi-Linked PRO2 Units



Redundant Power and Communication

The Star Linking arrangement is fault tolerant, with redundant power coming from the first link unit. The arrangement also offers significant cost reduction as the link units do not require a network card. Another significant advantage of Star Linking technology is that if power in the master unit is lost, communication will continue with the other link units, which is a major improvement over a daisy-chain linking configuration.

Outlet Grouping

The multi-link arrangement allows outlet grouping across the master and three link units.

Cable Length

The maximum cable length allowed from link unit to master unit is 21-feet (6.4 meters).

Multi-Link Module or Dongle

In the Star Linking arrangement, the first link unit connects through the link port.

However, the second and third link units in this arrangement **attach to either an optional T-shaped module or to a dongle** that connects to the AUX port on the master unit through a 12-inch (30 cm) cable.

The optional multi-link feature is sold as a separate kit purchased from Server Technology. To use the multi-link feature, contact your sales representative to order either the module or dongle kit, described below.

All features and benefits in the multi-link arrangement are the same whether configured with a module or dongle, but for the module, PDU size requirements are noted as follows.

Multi-Link Module Kit

Note: The module fits only on PR01/PR02 products that are 2.2 inches (55.8 mm) wide.

Part number: KIT-PR02LINK-01M.

The module kit contains:

- One T-shaped link module (labeled to show the 2nd and 3rd link units).
- Two link cables: each 21 ft. (6.4 meters).
- Two labels marked: LINK 2 and LINK 3.
- One link cable: 7 in. (178 mm).
- One mounting screw: M3x6mm.



Multi-Link Module



Module Shown Connected to AUX Port

Multi-Linking Dongle Kit

Note: The dongle can be installed on any PR01/PR02 unit.

Part number: KIT-PR02LINK-01D.

The dongle kit contains:

- One dongle.
- Two link cables: each 21 ft. (6.4 meters).
- Two labels marked: LINK 2 and LINK 3.
- One link cable: 7 in. (178 mm).
- One mounting screw: M3x6mm.





Dongle Connected to AUX Port

Multi-Link Dongle

The T-shaped module connects to the AUX port on the PRO2 master unit, as illustrated:



Connection to Bluetooth® Module Port

Unit Persistence

Unit Persistence is an internal PR01/PR02 feature that works as follows:

If a link unit is connected to a master unit, and the link unit is disconnected (powered down or accidentally disconnected), and the master unit is restarted, the link unit will be reported as "Not Found" after the restart because the link unit is no longer physically connected to the master.

However, the association between the master/link units is retained to allow the continuation of alerts. If the disconnected link unit is physically re-connected to the master, the "Not Found" status will return to "Normal" status.

To intentionally remove a link unit from connection with a master unit, the link unit must be purged using the Purge function.

Unit persistence affects **all connected master/link units** whether or not they are connected in a multilinking configuration.

PRO2 Equipment Overview

The following illustration highlights the key operational areas of the PRO2 unit:



PR02 – Equipment Overview

Chapter 2. HDOT Cx PDU

If you have a PRO2 HDOT Cx PDU, this chapter is for you.

Meet the HDOT Cx

With Server Technology's own leading-edge universal outlet, the **Cx**, the **HDOT Cx** rack PDU is a dramatic innovation in outlet technology. The HDOT Cx PDU is a single PDU that offers limitless possibilities in providing power and flexibility to alternating-phase and High Density Outlet Technology (HDOT).



Key Features of the HDOT Cx:

- The C19 outlets are replaced with the universal Cx outlet that accepts either a C14 or C20 connector, automatically increasing the PDU's outlet count.
- Future-proofs your datacenter with fast and easy equipment cord swap-outs while the HDOT Cx stays in place for the lifetime of the PDU. The Cx outlet also eliminates the need to keep several types of cables in inventory for load-balancing.
- Ultimate flexibility for ever-changing rack needs during new hardware installation, as well as limitless possibilities for the power and growth demands of hyperdensity and hyperscale in your datacenter.

HDOT Cx PDU

The Universal Cx Outlet

On the HDOT Cx PDU, the most common C13 and C19 outlets have been combined into Server Technology's new Cx outlet design, a fully-rated hybrid C13/C19 outlet that accepts either a C14 or C20 connector.



Universal Design of the CX Outlet

The unique Cx outlet is the latest innovation in outlet technology that provides ultimate flexibility for the PDU and its outlet count, ensuring that PDUs do not run out of outlets. The new technology of the Cx outlet is designed to meet data center requirements for outlet power today and in the future.

Notes:

- The Cx outlet is not an IEC connector.
- When plugging in a C14 or C20 connector into a Cx outlet, it is recommended to apply moderate force to ensure best cable retention.
- Not every outlet on the HDOT Cx PDU is a Cx outlet. Only the C19 outlets are replaced with Cx outlets. A bank of C13 outlets is still available on the HDOT Cx for use with C14 cables as needed.

About HDOT

High Density Outlet Technology (HDOT) is Server Technology's most advanced solution for limited physical space in data center equipment racks.

In addition, as the smallest form factor PDU, HDOT significantly increases equipment rack real estate by fitting 42 C13s in a 42U high-network managed PDU, over 20 per cent smaller than other similar PDUs using standard outlets, allowing for the most outlets per form factor.

The HDOT design provides a series of multi-outlet modules in a variety of configurations that fit into a typical upright equipment rack, as well as offering high native retention that reduces, or even eliminates, the need for custom locking cord devices. HDOT is also manufactured with robust high-temperature materials for the most demanding data center environments.

HDOT Gets Better with Cx

Server Technology added the innovate and flexible design of the Cx outlet to enhance HDOT alternatingphase rack PDUs. The Cx gives the HDOT higher performance by allowing you to plug in C14 and C20 cables into a single Cx outlet with no other parts needed, and no need to swap-out the PDU from the rack during equipment changes.



The increased outlet count provided by the universal Cx outlet allows the HDOT Cx PDU's high-density benefits to continue uninterrupted because the PDU remains in the rack for its lifetime while you swap-out other data center equipment around it.

The Cx works as two outlets in one: a C13 and a C19 combined into one Cx outlet, allowing many different outlet swap-out configurations on demand.

The universal design of the CX outlet results in a fast, easy, and flexible outlet arrangement on the same PDU exactly where and when outlets are needed.

High-density solutions for power density, capacity planning, and uptime are enhanced by the ultimate flexibility of the Cx outlet.

A C14 and C20 Plug Connected to Cx Outlets

HDOT and HDOT-Cx Side-by-Side

Note that C19 outlets on the HDOT-Cx PDU (left) are now replaced with universal Cx outlets.



Side-by-side comparison of the HDOT-Cx and HDOT PDUs showing the universal Cx outlet.

Locking C14 Cord Retention on the HDOT-Cx

Each HDOT-Cx unit is shipped with an adapter clipped into the Cx outlet to allow a fast and secure retention of the C14 locking plug when you want to use the Cx outlet as a C13 receptacle. The adapter allows retention of a locking C14 plug, ensuring it will be held in the Cx outlet and will not come loose accidentally.

The adapter is easy to remove, so If you are not using locking C14 plugs on your HDOT-Cx PDU, you can save the adapter for future use. For example, if you want to use the flexibility of the Cx outlet as a C19 outlet for a C20 connector, the adapter will be in the way; simply remove it from the PDU chassis.

Notes:

- The adapter is only for <u>C14 locking cords</u> connected to a Cx outlet on the HDOT-Cx PDU.
- The Cx outlet has superior cable retention. Moderate force is required when plugging in a C14 or C20 connector to fully seat the plug and to ensure proper installation. An incorrectly installed plug will be loose and will not provide a reliable connection.
- To greatly reduce the risk of accidental disconnection, <u>all locking C14 connectors</u> on the HDOT Cx PDU must use the adapter shipped with the unit.

Alternating Phase for Easy Load Balancing

Alternating Phase outlets distribute phases on a per receptacle basis, instead of discrete separate banks, and thereby provide shorter cable runs for better air flow, easier load balancing, and other efficiencies. Due to the high density outlet technology in the HDOT and HDOT-Cx PDUs, alternating phase outlets are a practical and beneficial feature resulting in improved efficiency.

Chapter 3. Switched and Smart PDUs

If your PDU is a PR01/PR02 Switched POPS or Smart POPS, this chapter is for you.

Switched PDUs

An outlet on a Switched PDU has the capability of being turned on and off, rebooted individually, and rebooted as multiple outlets within a user-defined outlet group. Switched outlets offer additional features, such as outlet lock-out, power-up sequencing to reduce inrush, and Server Technology's optional feature, Smart Load Shedding, for user-defined load shedding conditions.

The added feature of remote control of the on/off state of each outlet on the Switched PDU is valuable when equipment is locked up and needs to be powered off and powered back on for reboot. Remote rebooting is especially convenient for a 24/7 facility, whether the facility is nearby or thousands of miles away.



Switched POPS PDU

Smart PDUs

Server Technology designed the Smart PDU with ethernet and serial network connection. Beyond measuring current, Smart products provide power metrics, temperature and humidity, and an alarm function. The Smart PDU is the right choice for remote rack-level power monitoring, without the need to monitor or control individual outlets. The Smart PDU's network monitoring is the right feature for tracking power and environmental conditions for multiple data center racks.

What is POPS Technology?

Server Technology's Per Outlet Power Sensing (POPS) feature is **available in both Switched and Smart PDUs** as the added capability to measure current and voltage on every outlet.

POPS allows monitoring and notification if equipment is down so you can see when current is not drawn on a device. The accuracy of these infeed and outlet measurements is +/-1% billable-grade accuracy for energy consumption at each outlet for typical data center equipment loads.

With an all-in-one Switched POPS PDU, you can know how much power each device in your data center is using because POPS measurements provide ultimate efficiency and capacity analysis. The measurements include current, voltage, active power, apparent power, power factor, and crest factor at each outlet. In addition, POPS allows use alerts for high current, high/low voltage, and low power factor for extended visibility.

Chapter 5. Installing the Unit

Before installing your PR01/PR02 unit, look over the following lists to make sure you have all the items shipped with the unit, as well as any other items needed for proper installation.

Standard Accessories

Mounting Hardware

- Vertical Models: Two mounting buttons with two M4 (10 mm) screws.
- Horizontal Models: Two removable L-brackets with four M4 screws (for 1U models), or M5 screws (for 2U models).

Cables/Adapters

- For C2L, C2LG, C2X, C2XG, or SEV models link cables (6P6C connectors).
- Link units are shipped with a 7-inch (17.8 cm) link cable and a 14-foot (426 cm) link cable.

Additional Items

• Units with IEC C20 power inlets: input power cords (ordered separately).

Optional Accessories

- The Star-Link Module Kit (Part No. KIT-PR02LINK-01M) or the Star-Link Dongle Kit (Part No. KIT-PR02LINK-01D).
- Temperature/Humidity Sensors (Part No. EMTH-1-1).
- Environmental Monitor (Part No. EMCU-1-1B).
- Water Sensor (Part No. EMWS-1-1, used with EMCU-1-1B).
- Vertical mounting brackets; additional mounting options are available in the Accessories section of <u>www.servertech.com</u>.

Additional Required Items

- Flathead and Phillip screwdrivers.
- Screws, washers, and nuts to attach the unit to your equipment rack.

Safety Precautions

This section contains important safety and regulatory information that <u>must be reviewed</u> before installing and using the PR01/PR02 unit.

Λ	Only for installation and use in a Restricted Access Location in accordance with the following installation and use instructions.	Destiné à l'installation et l'utilisation dans le cadre de Restricted Access Location selon les instructions d'installation et d'utilisation.	Nur für Installation und Gebrauch in eingeschränkten Betriebszonen gemäß der folgenden Installations-und Gebrauchsanweisungen.
	This equipment should only be installed by trained personnel.	Cet équipement est uniquement destiné à être installé par personnel qualifié.	Dieses Gerät ist nur für den Einbau durch Personal vorgesehen.
Λ	This equipment is designed to be installed on a dedicated circuit. The power supply cord shall be a minimum of 1.5m (4.9ft) and a maximum of 4.5m (15ft). If using an extension power cord, the total length shall also be no more than the maximum allowed. The plug is considered the disconnect device and must be easily accessible.	Cet équipement a été conçu pour être installé que un circuit dédié. Le cordon d'alimentation doit être d'au moins 1,5M et un maximum de 4,5m. Si vous utilisez un cordon de rallonge, la longueur totale est également plus que le maximum autorise. La prise est considérée comme un dispositif de coupure et doit être facilement accessible.	Die Geräte sind für eine Installation an einer fest zugeordneten Leitung ausgelegt. Die Stromzuleitung hat eine Mindestlänge von 1,5m, und hochstens 4,5m. Sollten Sie ein Verlangerrungsnetzkabel, der Gesamtlange auch nicht mehr als die maximal zulassige sein. Der Stecker dient zur Trennung vom Netz und muss einfach erreichbar sein.
	The dedicated circuit must have circuit breaker or fuse protection. PDUs have 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 PDU must be provided and must meet all applicable codes and regulations. In North America, protection must have a 10,000A interrupt capacity.	Le circuit spécialisé doit avoir un disjoncteur ou une protection de fusible. PDUs ont été conçus sans disjoncteur général ni fusible pour éviter que cela devient un seul endroit de panne. C'est la responsabilité du client de fournir une protection adéquate pour le circuit-alimentation spécialisé. Protection de capacité équivalant à la puissance de l'équipement, et respectant tous les codes et normes applicables. Les disjoncteurs ou fusibles destinés à l'installation en Amérique du Nord doivent avoir une capacité d'interruption de 10.000 A.	Der feste Stromkreis muss mit einem Schutzschalter oder einem Sicherungsschutz versehen sein. PDUs verfügt über keinen Hauptschutzschalter bzw. über keine Sicherung, damit kein einzelner Fehlerpunkt entstehen kann. Der Kunde ist dafür verantwortlich, den Stromkreis sachgemäß zu schützen. Der Kapazitätsschutz entspricht der aktuellen Stromstärke der Geräte und muss alle relevanten Codes und Bestimmungen erfüllen. Für Installation in Nordamerika müssen Ausschalter bzw. Sicherung über 10.000 A Unterbrechungskapazität verfügen.
Λ	Models with unterminated power cords: Input connector must be installed by qualified service personnel. Input connector rating must meet all applicable codes and regulations.	Modèles avec cordons d'alimentation non terminées: Le connecteur d'entrée doit être installé par un personnel qualifié. Entrée cote de raccordement doit respecter tous les codes et règlements électriques applicables.	Modelle mit nicht abgeschlossenen Netzkabel: Der Eingangsstecker darf nur von qualifiziertem Wartungspersonal installiert werden. Eingangsanschluss Bewertung müssen alle geltenden und verbindlichen Normen und Vorschriften entsprechen.
Λ	Do not block venting holes when installing this product. Allow for maximum airflow at all times.	Ne bloquez pas les orifices d'aération lors de l'installation de ce produit. Permettre une circulation d'air maximale à tout moment.	Achten Sie darauf, dass keine Belüftungslöcher bei der Installation dieses Produkts. Damit für maximalen Luftstrom zu allen Zeiten.
\triangle	Installation Orientation: Vertical units are designed to be installed in vertical orientation.	Installation Orientation: Les unités vertical sont conçues pour être installées dans une orientation verticale.	Installationsausrichtung: Vertical Einheiten sind zur vertikalen Installation vorgesehen.
	Always disconnect the power supply cord before servicing to avoid electrical shock. For products with two input power cords, both must be disconnected before servicing.	Toujours débrancher le cordon d'alimentation avant de l'ouverture pour éviter un choc électrique. Pour les produits avec deux cordons d'alimentation d'entrée, les deux doivent être déconnectés avant l'entretien.	Trennen Sie das Netzkabel, bevor Sie Wartungsarbeiten Öffnung einen elektrischen Schlag zu vermeiden. Für Produkte mit zwei Eingangsstromkabel, sowohl, müssen vor der Wartung abgeschaltet werden.
Â	WARNING! High leakage current! Earth connection is essential before connecting supply!	ATTENTION! Haut fuite très possible! Une connection de masse est essentielle avant de connecter l'alimentation !	ACHTUNG! Hoher Ableitstrom! Ein Erdungsanschluss ist vor dem Einschalten der Stromzufuhr erforderlich!
Ĩ. Internet state in the state is a	WARNING! Cx-xxE-x units double pole/neutral fusing	ATTENTION! Les unités Cx-xxE-x Double Pôle/Fusible sur le Neutre	ACHTUNG!: Cx-xxE-x Zweipolige bzw. Neutralleiter-Sicherung
	ATTENTION! Observe precautions for handling Electrostatic Sensitive Devices.	Attention ! Respecter les mesures de sécurité en manipulant des dispositifs sensibles aux décharges électrostatiques.	Achtung! Vorsichtshinweise zur Handhabung elektrostatisch empfindlicher Geräte beachten.
Λ	Products rated for 240/415VAC may be fitted with a plug that is rated for a higher voltage. Caution must be taken to assure that the rating of the unit and the supply voltage match.	Les produits prévus pour 240/415VAC peut être équipé d'un bouchon qui est conçu pour une tension plus élevée. Des précautions doivent être prises pour assurer que la cote de l'unité et la tension d'alimentation correspond.	Produkte die für 240/415VAC zugelassen sind können mit einem Stecker der für eine höhere Spannung ausgestattet sein. Vorsicht ist geboten, um sicherzustellen, dass die erlaubten Betriebswerte des Gerätes und der Versorgungsspannung zueinander passen.

Input Power Cord Retention Options: PR01/PR02 Units with IEC C20 Inlets

Determine which Detachable Input Cord was supplied with your PRO2 unit:



For the following Detachable Input Cords with the self-locking IEC C19 feature, follow Procedure A.

PTCORD-L1, PTCORD-L2, PTCORD-L3, PTCORD-L5, PTCORD-L6, or PTCORD-L7.



For the following Detachable Input Cords, follow <u>Procedure B</u>. PTCORD-1, PTCORD-2, PTCORD-3, PTCORD-4, PTCORD-5, PTCORD-6, or PTCORD-7.

Procedure A

If the unit was supplied with a Detachable Input Power Cord with a self-locking IEC C19, install it directly into the C20 inlet.

- 1. Verify the Retention Bracket Assembly (part number KIT-0016) is not installed.
 - **a.** If KIT-0016 is installed, remove the two screws attaching the bracket to the IEC 60320 C20 inlet to the enclosure.
 - b. Remove the Retention Bracket Assembly.
 - c. Re-attach the two screws to the IEC C20 and securely tighten.
- 2. Push the C19 from the Detachable Input Cord firmly into the C20 inlet to ensure it is properly seated.



C20 Inlet Without Retention Bracket Assembly



KIT-0016 Retention Bracket Assembly

Procedure B

If the unit was supplied with a Detachable Input Power Cord without the self-locking C19 feature, install with the Retention Bracket Assembly (part number KIT-0016), followed by the power cord.

- 1. Remove the two screws attaching the IEC 60320 C20 inlet to the enclosure.
- 2. Assemble and attach the Retention Bracket to the enclosure as shown
- **3.** Connect the power cord. Ensure the C19 is fully seated against the C20 inlet. (It may be necessary to loosen some of the Retention Bracket Assembly screws to allow the C19 plug to be properly installed.)
- 4. Tighten the Retention Bracket Assembly to restrain the power cord.

Attaching Safety Earth Ground Connection

Server Technology PDUs are supplied with an external safety ground connection to provide an alternate ground path for fault currents, and to maintain the same ground reference between it and the equipment rack.

NOTE: The auxiliary external ground location may vary. Most PDUs will have it located near the power cord entry located near the *m* symbol.

User-Supplied Materials:

- One 5 mm internal (or external) tooth star washer;
- One 4.0 mm² (10 AWG) wire with 5 mm ring terminal;
- One metric M5 x 6 mm coarse pitch screw.

Instructions:

- 1. Connect one end of the ground wire to the equipment cabinet or local ground.
- 2. Locate the PDU external ground near the *m* symbol.
- **3.** Connect the other end with a ring terminal and a M5 screw to the PDU external ground. To ensure proper grounding to chassis, use a star washer between ring terminal and PDU.



Mounting the Unit

The following illustration shows how to mount the PR01/PR02 unit in vertical or horizontal orientation:



Horizontal/Rack

- 1. Select the appropriate bracket mounting points for proper mounting depth within the rack.
- 2. Attach the L-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 6 mm (0.25 inch) of horizontal adaptability to align with the mounting holes of your rack.

Vertical

PR01/PR02 units are supplied with button mounting kit(s). Distribute the buttons vertically and attach to the unit as appropriate for the cabinet. An additional 19 mm (0.75 inch) of clearance is required at the top of the unit- to allow the button to mount into the keyholes.

Note: For more information about horizontal/vertical mounting options for the PRO1/PRO2, see the Server Technology website at <u>www.servertech.com</u> or contact your Power Strategy Expert.

Attaching the Link Unit

Connect the PR01/PR02 link unit with the provided 6P6C crossover cable at the link port on the unit. The overall length of the crossover cable should not exceed 25 feet.

Connecting to the Power Source

On units with a rating \ge 24 A, the input power cord is attached to the base of the unit. On units with a total maximum output < 24 A, you may need to attach the power cord to the unit before connecting the unit to the power source.

To attach a power cord to the unit:

- 1. Plug the female end of the power cord firmly into its connector on the unit.
- 2. If using the Retention Bracket Assembly (Part No. KIT-0016), 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 arching:

- 1. Keep the on/off switch on the device in the off position until after it is plugged into the outlet.
- 2. Connect the devices to the outlets.

Note: Server Technology recommends even distribution of attached devices across all available outlets to avoid exceeding the outlet, branch, or phase limitations.



Always disconnect ALL power supply cords before opening to avoid electrical shock. Afin d'éviter les chocs électriques, débranchez TOUTES les cables électrique avant d'ouvrir Vor dem Offnen immer Netzleitung abziehen um elektrischen Schlag zu vermeiden.

Connecting the Sensors

The PR01/PR02 is equipped with two mini RJ11 temperature/humidity ports for attachment of the temperature/humidity sensors. Attach the mini RJ11 plug of the sensor(s) to the appropriate temperature/humidity port.

Connecting to the Unit

Connection can be made with a serial (RS232) port or with an Ethernet port, as described:

For the Serial (RS232) Port:

The unit is equipped with an RJ45 serial RS-232 port – for attachment to a PC or networked terminal server – using the supplied RJ45-to-RJ45 crossover cable and the RJ45-to-DB9F serial port adapter, as required.

For the Ethernet Port:

The unit is equipped with an RJ45 10/100Base-T Ethernet port for attachment to an existing network. This connection allows access to the unit via Telnet or Web.

Network Defaults

The PR01/PR02 is configured with the following network defaults to allow unit configuration out-of-the-box through either Telnet or Web. However, note that when the unit is installed on a DHCP-enabled network, the following network defaults **do not apply** because the unit ships with DHCP support enabled by default.

Network Defaults (for **non**-DHCP-enabled networks):

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

Reconfigure the Network Connection

A local PC network connection must be reconfigured as follows. For detailed instructions about this connection, contact your system administrator. Note that a restart of the system may be required for the network reconfiguration to take effect.

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

Chapter 6: Getting Started with the Firmware

This chapter introduces several key features of the firmware (version 8.0x, or later) for the PRO1/PRO2.

Note: The PR01/PR02 firmware, version 8.0, is not compatible with other Server Technology PDUs. There is no upgrade path from earlier PDU products to PR01/PR02 products.

On-Board File System

The firmware Web Interface provides an embedded file system for quick access to system configuration files, as well as the on-board and downloadable Sentry4-MIB and OID Tree for the unit, eliminating website MIB/OID downloads. This UI page also allows GUI-based file uploads (without FTP) for system, configuration, and firmware versions. Note that all configuration/system files, MIB, and the OID Tree can also be accessed via FTP/SFTP.

Intuitive and Consistent Terminology

The design of the firmware includes intuitive and soft-mapped naming conventions between the interfaces (Web and CLI) and the PR01/PR02 products. For example, the firmware GUI areas (cords, lines, phases, over-current protectors, branches, outlets, sensors, etc.) match the same areas designed in the unit's hardware architecture.

Outlet numbers are named 1-n sequentially and the outlet name is not tied to infeeds or branches. Input cords are also simply named 1-n sequentially (like 1-24), no longer 1-n for each phase (like XY 1-8, YZ 1-8, ZX 1-8).

Also, firmware naming formats match the exact silkscreened names on the hardware unit.

Outlet Grouping

An outlet group is named group with a collection of outlets assigned to the group. Outlet groups can be granted access to selected outlets by the administrative user (via the Web interface or CLI), and outlet activity by group can be monitored on a separate Web interface page for outlet group monitoring.

Setting Thresholds

When setting threshold values, the firmware allows expanded alerting capabilities. Threshold values can be set by the administrative-user for multiple low/high warning/alarm levels (and threshold hysteresis), as listed below in the following areas of the unit. Every item shown in the following list – for which a threshold can be set – also has a corresponding Monitoring page for viewing the item's current threshold values and operational status.

- Branch current (low and high).
- Cord power (low and high), cord apparent power (low and high), cord power factor (low), 3-phase out-of-balance (high).
- Line current (low and high).
- Outlet current (low and high), outlet power (low and high), outlet power factor (low).
- Phase voltage (low and high), phase power factor (low).
- Temperature sensor (low and high).
- Humidity sensor (low and high).
- Analog-to-Digital (ADC) sensor (low and high) if an EMCU is connected to the PRO2 unit.

PRO2 Dashboard View

The firmware **Overview > System** page provides a fast and high-level view of the overall condition of the PR01/PR02 unit. The sub-system status view shows the current operational state of individual PDUs (units, cords, lines, etc.).

The color-coded status icon for each area is hot-linked to the corresponding monitoring page to show the operating details behind the status, for example:



Server	PRO2 Sentry Switched PDU PIPS					
Iechnology	Lines					
Overview	Line sta	atus				
Monitoring	ID	Line Name		Current Capacity	State	Status
Units	🖌 AA1	AA:L		30A	On	Normal
Cords	🗹 BA1	BA:L		30A	On	Normal
Lines	Line cu	rrent				
Phases	ID	Line Name	Current (A)		Utilized	Status
OCPs	AA1	AA:L	0.25A	0.0 2 30.0	0.8%	Normal
Branches	BA1	BA:L	0.00A	0.0 2 30.0	0.0%	Normal

The User Interfaces

The Switched unit offers two built-in user interfaces:

- Web interface (GUI) accessed via HTTP-enabled Ethernet connections.
- Command Line Interface (CLI) for serial and Telnet connections.

Both interfaces allow power monitoring of PIPS/POPS data points, temperature/humidity measurements, system/network configuration, outlet control, ST Eye Bluetooth[®] connection, user account management, and numerous other operations for the Switched unit.

Either interface can be used as preferred; most firmware operations can be performed on GUI screens or by CLI commands on the command line. When using either interface, the availability of firmware functions for your user login account depends on your current user access rights as granted by the system administrator.

Note: The GUI images shown in this manual were taken from a Switched POPS PDU. Some documented functionality will not apply to Smart PDUs or non-POPS PDUs.

Usernames and Passwords

The Switched PR01/PR02 units are shipped with one default administrative user account (username/password is admn/admn). There is no "i" in the admn username or password.

Only an administrative user can manage user accounts, such as creating new user accounts, removing user accounts, and changing user passwords.

The PDU supports a maximum of 112 defined user accounts with the following restrictions:

User Account	Length	Case-Sensitive	Spaces Allowed
Usernames	1-32 characters	No	Νο
Passwords	1-32 characters	Yes	Yes

Note: For security, Server Technology recommends first creating a new user account with administrative rights, and then removing the default admn account.

User Access Rights

The following table defines the user rights granted by the administrative user for access to PR01/PR02 operations using either the Web GUI or the Command Line interface (CLI). Only the options for which the user has access rights will be available in the firmware for the user.

User Access Level (highest to lowest)	Description
Administrator	Administrative user; full access for all configuration, user management, all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports.
Power User	Full access for all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports. Note: The Power User does not have access to user management.
User	Partial access for outlet power control actions (On, Off, Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
Reboot-Only User	Partial access for outlet power control actions (Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
On-Only User	Partial access for outlet power control actions (On), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
View-Only User	Partial access for status and pass-thru of assigned outlets, outlet groups, and serial/pass- thru ports.

The administrative user can also grant administrative-level rights to other user accounts, allowing the PDU to have more than one administrative user.

Administrative access rights cannot be removed from the default **admn** user account until an administrative user grants administrative access rights to another user account.

To use administrative commands, the user must be granted administrative user access rights.

IPv4/IPv6 Support

Notes:

- Throughout the Web and CLI firmware interfaces, both IPv4 and IPv6 formats are accepted wherever a hostname or IP address is provided.
- IPv6 allows authentication via RADIUS and LDAP.

Server Technology uses IPv6 "dual stack" support in the firmware of the PR01/PR02 product lines. IPv6 has been designed to succeed IPv4 as the dominant communications protocol for internet traffic, to avoid depletions of the IPv4 address space, and to allow more IP address growth. Many devices already in use support IPv6.

IPv6 has several new operational methods:

- Static IPv6 Address: The IPv6 equivalent of Static IPv4.
- DHCPv6 Address: The IPv6 equivalent of a DHCP IPv4 address, also known as a "stateful" autoconfiguration of DHCPv6.
- IPv6 Stateless Auto-Configured Address (RFC 4862): An automatically-generated unique link-local IPv6 address used for client based configurations. This address is always present in the Server Technology dual stack and cannot be disabled.
- DHCPv6 Stateless Auto-Configured Address (RFC 3736): A "stateless" Dynamic Host Configuration Protocol (DHCP) service for IPv6 (DHCPv6). This address is used by nodes to obtain configuration information, such as addresses of DNS recursive name servers that do not require the maintenance of any dynamic state for individual clients.

Protocol Support for PR01/PR02 Firmware

IPv6 and IPv4 Protocols:

The firmware supports the following network IPv6 and IPv4 protocols:

- DNS Ping
- FTP (or SFTP) Server SNMPv1/2/3
- FTP (or SFTP) Updates SNTP
- HTTP or HTTPS
- SMTP
- Static IPv6 DHCPv6 (stateless and stateful)
- Syslog SNMPv1/2/3 Traps
- Telnet SSH

IPv4-Only Protocols:

The firmware supports the following network IPv4-only protocols:

- Cisco EnergyWise
- LDAP
- Load Shedding *
- RADIUS *
- TACACS+
 - * = may work with IPv6 addresses, but not tested.

Network-Enabled Modes

Notes:

- For all network-enabled modes described below, the PDU will set an auto-configured IPv6 address, and if IPv6 router announcements are active, a stateless DHCP IPv6 address will also be set. Further, in all network-enabled modes, at least one IPv4 **or** one IPv6 address will be active.
- For maximum backward compatibility, the default network mode is "IPv4 only".

Descriptions for the network-enabled modes:

- Network disabled No IPv4 or IPv6 addresses available.
- IPv4 only, DHCP disabled (static IPv4) If the IPv4 Static Address and Net Mask of the PDU are valid, they will be set.
- IPv4 only, DHCP enabled (DHCP IPv4) The PDU will try to resolve an IPv4 DHCP address. If a DHCP address cannot be obtained after 90 seconds, the PDU can: (1) optionally fall back to its static IPv4 settings, or (2) indefinitely wait to acquire an address based on DHCP configuration settings. This setting is the default.
- Dual IPv6/IPv4, DHCP disabled (static IPv6/IPv4) If the IPv6 Static Address and prefix of the PRO2 are valid, they will be set. Otherwise, the PDU will attempt to use DHCPv6 to obtain an IPv6 address. In addition, if the IPv4 Static Address and Net Mask of the PDU are valid, they will be set.
- Dual IPv6/IPv4, DHCP enabled (DHCP IPv6/IPv4) The PDU will try to resolve both its IPv6 and IPv4 addresses by DHCP. If both DHCP requests are answered, the **primary** DNS server of the PR02 will become the **primary** IPv6 DNS server, and the **secondary** DNS server of the PR02 will become the **primary** IPv4 DNS server. If only one of the DHCP requests is answered, the DNS servers of the PR02 will map to the **primary** and **secondary** DNS server from that request. If a DHCP address cannot be obtained after 90 seconds, the PDU can: (1) optionally fall back to its static IPv4 and/or IPv6 settings, or (2) indefinitely wait to acquire an address based on DHCP configuration settings.

Viewing Network Status

You can obtain the IPv6 network status through the firmware Web Interface or Command Line Interface (CLI). For the CLI, use the **show network** command as follows:

```
Switched PDU: show network
Network Configuration
                  Static IPv4
                                  Network:
  State:
                                                  Dual TPv6/TPv4
                                  Negotiation: Auto
  Link:
                 Up
         100 Mbps
  Speed:
                                   Duplex:
                                                  Full
                  00-0A-9C-60-0029
  MAC:
  AutoCfg IPv6: FE80::20A:9CFF:FE60:29/64
  IPv4 Address: 10.1.2.65
                                  Subnet Mask: 255.255.0.0
  IPv4 Gateway: 10.1.1.1
  DNS1:
                  10.1.5.133
  DNS2:
                  10.1.5.134
Static IPv4/IPv6 Settings
  IPv6 Address: ::/64
  IPv6 Gateway: ::
  IPv4 Address: 10.1.2.65
                                                  255.255.0.0
                                  Subnet Mask:
  IPv4 Gateway:
                  10.1.1.1
                 10.1.5.133
  DNS1:
  DNS2:
                  10.1.5.134
DHCP Settings
  DHCP:
                disabled
  FQDN: enabled [sentry-600029]
Boot Delay: disabled
  Static Fallback: disabled
  ZTP <0-Touch>: enabled <not provisioned>
Network Services
  FTP Server: enabled
                         Port:
                                  21
  FTP Updates: disabled Port: 21
SSH: enabled Port: 22
         enabled Port: 22
enabled Port: 23
                                         Auth:
                                                   Password, Kb-Int
  Telnet:
         enabled Port: 80
  HTTP:
                         Port: 443 Installed Cert: Self Generated
Stored Files: None
  HTTPS:
              enabled
    User Cert: Disabled
                                         User Passphrase: (none)
              enabled Port: 161 TrapPort: 162
disabled Port: 161 TrapPort: 162
  SNMPv1/2: enabled
  SNMPv3:
  SPM Access: enabled
```

Note: The fields IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway, DNS1, and DNS2 are equivalent to existing PR01/PR02 IPv4 settings except that current network settings and static settings are displayed separately. This allows you to view both static configuration settings and active network settings that can be obtained using DHCP. DNS addresses may be in IPv4 or IPv6 (based on RFC4291) format at this time.

Chapter 7: Using the Web Interface

This chapter shows how to work with the firmware GUI (version 8.0x or later) for the PR01/PR02.

Logging In

Logging into the Web interface directs the Web client to the configured IP address of the Switched unit.

To login by Web interface:

Authentication Required				
0	http://10.1.2.59 is requesting your username and password. The site says: "Sentry Switched PDU"			
User Name:	admn			
Password:	••••			
	OK Cancel			

In the firmware login window, provide a valid username and password, and click **OK**. If you enter an invalid username or password, you will be prompted again. Three attempts are given for a valid username/password combination, after which the session ends and a protected page will be displayed

Note: The default firmware username/password is admn/admn. There is no "i" in admn.

Quick Tour of the GUI

Note: The GUI images shown in this manual were taken from a Switched POPS PDU. Some documented functionality will not apply to Smart PDUs or non-POPS PDUs.

The web interface provides web-based access to the firmware for the Switched unit. The interface is designed with three major screen sections shown in the following screen example:

- 1. System Header: Displays PR01/PR02 description/location, IP address, and user/access level.
- 2. Navigation Bar: Provides access to the PDU's power monitoring, control actions, and configuration.
- 3. Details Window: Shows control/status information based on option selected in navigation bar.



Example of Firmware Web Interface: Overview > System Page

Note that the optional blinking location string (IP address) in the System Header may not work with all web browsers.

Working with the Pages

Using a configuration page:



Using the All or None global action:


Summary of the GUI Options

Overview

The Overview > System option is the first stop for high-level and fast monitoring of major PDU operational areas. The page displays a quick view of color-coded icons showing current status of the units, cords, branches, lines, phases, sensors. Click an icon for the related monitoring page to view the metrics behind the status.

The System page also shows color-coded graphs for the operational status of line current and temperature/humidity sensor readings.

General system information displays on the page to show firmware version in use, uptime data, Ethernet NIC serial number, and current number of active users.

The System page dynamically updates status and threshold values with a full-screen refresh to reflect the latest PDU details for instant assessment and response.

Monitoring

The Monitoring option provides viewing of dynamically updated metrics for the PDU operational areas that have the highest power impact on the unit and the data center.

The design of the GUI monitoring pages follows the major areas in the hardware architecture of the PDU, providing a separate and detailed page for the overall status of units, cords, lines, OCPs, branches, outlets, groups, and sensors.

Each system object for which a threshold can be configured – such as line current and phase voltage – has a corresponding monitor page that displays up-to-the-minute power metrics.

Many metrics are presented on the pages in color-coded graphs for at-a-glance monitoring. A regular fullpage refresh dynamically updates theses details to reflect the current condition of the PDU, providing the opportunity for instant assessment and fast response to critical system issues.

Control

The Control option allows the issuing of control actions On, Off, and Reboot for all the PDU's individual outlets, global outlets, and named outlet groups.

Outlet details are also available by individual outlet to provide the outlet's general identification, socket type, capacity, operational state, power factor, as well as color-coded graphs for current and power.

A PRO2 unit with Per Outlet Power Sensing (POPS) technology will also display values for current capacity used and reactance.

Configuration

The Configuration option allows administrative access to all options for setting PDU values. The pages are organized into three major areas of configuration:

- System (options for hardware areas)
- **Network** (options for setting up network protocols)
- Access (options for local/remote user access and management)

Network

The Network option provides network setup options for the protocols supported by PR01/PR02 units: DHCP/IP, Email/SMTP, FTP/SFTP, HTTP/HTTPS, LDAP, RADIUS, SNMP, SNTP, Syslog, TACACS+, and Telnet/SSH. The **Network** option only allows the administrator to set up network protocol parameters. To configure how the user will access and use the network and system, see the **Access** option.

Access

The Access option determines how a user works with the network and system by configuring the options related to a user: authentication, privilege levels, user access to the unit, and additional functions for individual local users and user groups. The **Access** option only allows the administrator to configure how the user will access and use the network and system. To set up network protocol parameters, see the **Network** option.

Tools

The Tools option is a collection of several utility options for miscellaneous system actions: changing user password, pinging other network devices, viewing the system/debug log, and uploading new firmware versions. Also included are several options for rebooting the PDU, resetting the PDU to factory defaults, and restarting the PDU with user preferences.

Overview (Viewing the System Dashboard)

The **System** page of the Web interface is the first stop for high-level and fast monitoring of major PR01/PR02 operational areas. The page displays a quick view of color-coded icons showing current status of the units, cords, branches, lines, phases, sensors. Click an icon for the related monitoring page to view the metrics behind the status.

The System page also shows color-coded graphs for the operational status of line current and temperature/humidity sensor readings.

General system information displays on the page to firmware version in use, uptime data, Ethernet NIC serial number, and current number of active users.

The System page dynamically updates status and threshold values with a full-screen refresh to reflect the latest PDU details for instant assessment and response.



How to Read the Metrics

The color-coded status icons and graphs on the System page update dynamically (normal-green, warning-yellow, critical-red) with the latest metrics of the unit, line status, and temperature/humidity sensor status.

About Auto-Scaling

The displayed graphs reflect the internal function of *auto-scaling*. This means that if the threshold range of values changes for the graph, the graph will auto-scale to the appropriate range, allowing the graphs to still present relevant and consistent information.

What To Look For

The dynamic performance of the System page is essential for monitoring new PDU installation or watching for power distribution changes in hi-density environments. High-level status information on the System page gives the chance to correct of an operating condition before it affects the entire device network.

System administrators and power users can also view the System graphs to quickly identify thermal and humidity issues that might otherwise escalate to infrastructure repairs if left unchecked.

Overview > System Page Definitions

The System page uses the following fields and definitions:

Field	Description
ID	System-assigned internal name that cannot be changed.
Name	User-defined descriptive name for each line or temperature/humidity sensor.
Current, Temp, Humidity	Current state of the reported input load (in amps), current temperature (temperature scale °C °F, as configured), or current percent of relative humidity (%RH).
Low Limit	User-defined low limit of the load, temperature, or humidity graph. These values depend on the sensor limitation and cannot be set by the user. For example, a 0°C low limit would be displayed as 0 for a temperature sensor graph in Celsius.
High Limit	Displays the high limit of the load, temperature, or humidity graph. For the temperature/humidity sensors, these values depend on the physical sensor limits and cannot be set by the user. For example, a 100°C high limit would be displayed as 100 in the high limit in a (Celsius) temperature sensor graph.
Sensor Graph and Level Indicator	The horizontal sensor graph shows current operating conditions with color-coded icons, described in the following table, Status Icons and Descriptions". The level indicator appears in the graph to indicate relative position of the current data value with respect to the minimum (low limit) and maximum (high limit) values displayed at the left end and right end of the graph.

Status Icons and Descriptions

The System page uses the following icons to report current operating conditions:

lcon	Status	Description
	Reading	Unit is reading a new or restored sensor.
N	Normal	Normal operation.
	Low/High Warning	Current value outside user-configured threshold range.
8	Low/High Alarm	Current value outside user-configured threshold range.
×	Lost	Connection has been lost to a sensor that was previously detected.
×	Read Error	Error polling data from the PDU.

Sensor Graph Color-Coding

The sensor graph colors change dynamically to communicate operating conditions:



For Line (Load) Status:

Green = Normal

Yellow = low warning/high warning (threshold configured by user)

Red = low alarm/high alarm (threshold configured by user)

Configure line current thresholds and threshold hysteresis at **Configuration > System > Lines.**

For Temperature Status:

Violet = coldest; low alarm (threshold configured by user)

Blue = cold; low warning (threshold configured by user)

Green = acceptable temperature range

Yellow – warm; high warning (threshold configured by user)

Red = hot; high alarm (threshold configured by user)

Configure low/high temperature thresholds and threshold hysteresis at **Configuration > System > Sensors**.

For Humidity Status:

Violet = wettest; high alarm (threshold configured by user)

Blue = wet; high warning (threshold configured by user)

Green = acceptable percentage of relative humidity

Yellow = dry; low warning (threshold configured by user)

Red = driest; low alarm (threshold configured by user)

Configure low/high temperature thresholds and hysteresis at Configuration > System > Sensors.

System Information

This section of the Summary page provides general information:

- Firmware: Current firmware version
- **Uptime:** Cumulative time the PDU has been up and running since the last unit restarted. Shows continuous, real-time system updates with an approximate 5-second automatic refresh. A manual refresh is not required.
- Ethernet NIC S/N: The serial number of the PDU derived from the Ethernet NIC.

• Active Users: Number of active user sessions accessing the firmware. These sessions include serial, Telnet, SSH, and Web sessions. Also shows sessions that an unauthorized user may be attempting to access the system. The number changes instantly as the number of active user sessions changes. A total of 4 concurrent web user sessions are allowed (HTTPS or HTTPS).

Note: Depending on the web browser, multiple web accesses from the same machine are often considered as one active user.

Sub-System Status

This Sub-System section of the Summary page provides a quick status view of the current operational state of major PDU areas (units, cords, branches, etc.) showing a color-coded status icon.

Sub-sys	stem status								
Units	cords	Lines	Phases	OCPs	Branches	Outlets	Sensors		
		×		\checkmark					
Click the	name of one o	of the PRO2 sys	stem areas to o	display					
its corres	ponding Mon	itoring page.							
Line cur	rent								
ID	Line Name	Current (A)						Utilized	Status
🖌 AA1	AA:L1	0.00A	0.0 🗸				32.0	0.0%	Normal
🗹 AA2	AA:L2	0.00A	0.0 🗸				32.0	0.0%	Normal
🖌 AA3	AA:L3	0.00A	0.0 🗸				32.0	0.0%	Normal
🗹 AA4	AA:N	0.00A	0.0 🗸				32.0	0.0%	Normal
BA1	BA:L1	2.17A	0.0				32.0	6.7%	Normal
🗹 BA2	BA:L2	0.00A	0.0 🗸				32.0	0.0%	Normal
BA3	BA:L3	2.23A	0.0				00.0	6.004	Normal
🔀 BA4	BA:N			View detail	led operating st	atus on the N	Aonitoring page	ge. –	Read Error

Also provided is a link from each of the sub-system areas to the related monitoring page:

Monitoring (Analyzing Metrics)

The **Monitoring** section of the Web interface provides viewing of dynamically updated metrics for the PDU operational areas that have the highest power impact on the unit and the data center.

The design of the GUI monitoring pages follows the major areas in the hardware architecture of the PDU, providing a separate and detailed page for the overall status of units, cords, lines, OCPs, branches, outlets, groups, and sensors.

Each system object for which a threshold can be configured – such as line current and phase voltage – has a corresponding monitor page that displays up-to-the-minute power metrics.

Many metrics are presented on the pages in color-coded graphs for at-a-glance monitoring. A regular fullpage refresh dynamically updates theses details to reflect the current condition of the PDU, providing the opportunity for instant assessment and fast response to critical system issues.

Monitoring > Units

The **Units** page is a high-level quick reference for the PRO1/PRO2 units in the network, identifying the connected master/link units (and any connected external monitoring devices), the current LED display orientation of the PRO2 units, and the overall current operational status of all units and devices.

Server	CRO2 Sentry Switched PL	PROP Sentry Switched PDU POPS PIPS								
A brand of Elegrand	Units									
Overview	Unit status									
Monitoring	ID Unit Name	Unit Type	Display Orientation	Outlet Sequence	Status					
Units	🗹 A Master	Master	Auto (Inverted)	Normal	Normal					
Cords	🗹 B Link1	Link	Auto (Inverted)	Normal	Normal					
Lines	C Link2	Link	Auto (Inverted)	Normal	Normal					
Dhases	D Link3	Link	Auto (Inverted)	Normal	Normal					
Phases	-									
OCPs										
Branches										
Outlets										
Groups										
Sensors										
UPS										
Control										
Configuration										
Tools										

What to look for:

The operating status of all units (master and link) should be Normal (green). The Status field reports the overall health of the units and their connectivity, not an exceeded user-defined threshold. Depending on a yellow or red status message, basic troubleshooting will be needed to determine the best solution for the affected unit.

Monitoring > Cords

The **Cords** page displays cord hardware specifications, overall operational status of each cord, and individual color-coded graphs and status for cord active power (W), cord apparent power (VA), power factor (if present), and cord 3-phase out-of-balance level (%).

Note: The inlet type, frequency, power capacity, and energy rating of the cord were determined for the PR01/PR02 product at factory assembly and cannot be user-edited.

<u>S</u> erver	Sentry Switch	ed PDU (2025	-PIPS				
A brand of Diagrams	Cords						
Overview	Cord status						
Monitoring	ID Cord Name	Inlet Type	Frequency	Power Capacity	Energy	State	Status
Units	🗹 AA Master_Cord_A	L21-30	60Hz	8646VA	712.3kWh	On	Normal
Cords	BA Link1_Cord_A	L21-30	60Hz	8646VA	274.6kWh	On	Normal
Lines	CA Link2_Cord_A	L21-30	60Hz	8646VA	2213.1kWh	On	Normal
Dhases	DA Link3_Cord_A	L21-30	60Hz	8646VA	613.3kWh	On	Normal
Phases	Cord power						
OCPs	ID Cord Name	Active Power ()	N)				Status
Branches	🛛 AA Master_Cord_A	ow	0 7		8646		Normal
Outlets	BA Link1_Cord_A	ow	0 🗸		8646		Normal
Groups	CA Link2_Cord_A	ow	0 7		8646		Normal
Sensors	DA Link3_Cord_A	ow	0 7		8646		Normal
UPS	Cord apparent power						
Control	ID Cord Name	Apparent Powe	er (VA)			Utilized	Status
Configuration	AA Master_Cord_A	OVA	0 \		8646	0.0%	Normal
Toolo	BA Link1_Cord_A	OVA	0 7		8646	0.0%	Normal
TOOIS	CA Link2_Cord_A	OVA	0 7		8646	0.0%	Normal
	DA Link3_Cord_A	OVA	0 \		8646	0.0%	Normal
	Cord power factor						
	ID Cord Name	Power Factor					Status
	🛛 AA Master Cord A						Normal
	BA Link1_Cord_A						Normal
	CA Link2_Cord_A						Normal
	DA Link3_Cord_A						Normal
	Cord 3-phase out-of-bal	ance level (%)					
	ID Cord Name	and anti-of	محيمي ممام محاجط	and the second			Statumer

What to look for:

The cord power graphs display a blinking warning (yellow) when the total input load exceeds the userdefined threshold. If an overload occurs, a blinking error condition (red) is displayed. The unit continues to display yellow and red states until the condition changes or the issue has been resolved.

The default input feed high load threshold is 80% of the input feed maximum load capacity.

Cord power thresholds are user-defined at Configuration > System > Cords.

Monitoring > Lines

The Lines page shows overall line operational status, line load capacity, line state, and a color-coded graphic for the current used by each line.

Server	PROE Sentry Switche	ed PDU <i>POPS</i>	ePIPS)			i i
	Lines					
Overview	Line status					
Monitoring	ID Line Name		Current Capacity		State	Status
Units	🗹 AA1 AA:L1		24A		On	Normal
Cosda	🗹 AA2 AA:L2		24A		On	Normal
Cords	🖌 AA3 AA:L3		24A		On	Normal
Lines	BA1 BA:L1		24A		On	Normal
Phases	BA2 BA:L2		24A		On	Normal
OCPs	BA3 BA:L3		24A		On	Normal
Branches	CA1 CA:L1		24A		On	Normal
Outlets	CA2 CA:L2		24A		On	Normal
Groups	CA3 CA:L3		24A		On	Normal
Groups	🗹 DA1 DA:L1		24A		On	Normal
Sensors	DA2 DA:L2		24A		On	Normal
UPS	DA3 DA:L3		24A		On	Normal
Control	Line current					
Configuration	ID Line Name	Current (A)			Utilized	Status
Tools	🖌 AA1 AA:L1	0.00A	0.0 🗸	24.0	0.0%	Normal
	AA2 AA:L2	0.00A	0.0 V	24.0	0.0%	Normal
	🖌 AA3 AA:L3	0.28A	0.0 V	24.0	1.1%	Normal
	BA1 BA:L1	0.28A	0.0 🗸	24.0	1.1%	Normal
	BA2 BA:L2	0.00A	0.0 🗸	24.0	0.0%	Normal
	BA3 BA:L3	0.00A	0.0 🗸	24.0	0.0%	Normal
	CA1 CA:L1	0.00A	0.0	24.0	0.0%	Normal
	CA2 CA:L2	0.00A	0.0 🗸	24.0	0.0%	Normal
	CA3 CA:L3	0.00A	0.0 🗸	24.0	0.0%	Normal
	DA1 DA:L1	0.00A	0.0. 7	24.0	0.0%	Normal

What to look for:

The line status and line current status should be Normal, and the line current should be operating within defined thresholds.

The line current graph displays a blinking warning (yellow) when the total input load on an infeed exceeds the user-defined threshold. If an overload occurs, a blinking error condition (red) is displayed. The unit continues to display yellow and red states until the condition changes or the issue has been resolved.

The default input feed high load threshold is 80% of the input feed maximum load capacity.

The line current thresholds are user-defined at **Configuration > System > Lines**.

Monitoring > Phases

Server	2:02 Sentry	PRO2 Sentry Switched PDU POPS PPS									
Technology	Dhanna										
A brand of legrand	Phases										
Overview	Phase status	and the second					-	C 1 1			
Monitoring	ID Phase M	vame Nominal Volta	ge Current	Active Power	Apparent Power	Crest Factor	Energy	State	Status		
Units	AA1 AA:L1-L	2 208V	0.00A	ow	OVA		3.0kWh	On	Normal		
Cords	AA2 AA:L2-L	3 208V	0.00A	ow	OVA		1.6kWh	On	Normal		
Lines	AA3 AA:L3-L	1 208V	0.00A	ow	OVA		707.7kWh	On	Normal		
Lines	BA1 BA:L1-L	2 208V	0.00A	ow	OVA		0.0kWh	On	Normal		
Phases	BA2 BA:L2-L	3 208V	0.00A	ow	OVA		270.2kWh	On	Normal		
OCPs	BA3 BA:L3-L	1 208V	0.00A	ow	OVA		4.4kWh	On	Normal		
Branches	CA1 CA:L1-L	2 208V	0.00A	ow	OVA		211.3kWh	On	Normal		
Outlets	CA2 CA:L2-L	3 208V	0.00A	ow	OVA		0.1kWh	On	Normal		
Groups	CA3 CA:L3-L	1 208V	0.00A	ow	OVA		2001.7kWh	On	Normal		
Groups	🗹 DA1 DA:L1-L	2 208V	0.00A	ow	OVA		0.0kWh	On	Normal		
Sensors	DA2 DA:L2-L	3 208V	0.00A	ow	OVA		0.0kWh	On	Normal		
UPS	🗹 DA3 DA:L3-L	1 208V	0.00A	ow	OVA		613.3kWh	On	Normal		
Control	Phase voltage										
Configuration	ID Phase N	Vame Voltage (V)						Deviation	Status		
Tools	AA1 AA:L1-L2	2 203.8V	177		/	23	9	-2.1%	Normal		
	AA2 AA:L2-L3	3 205.5V	177		V	23	9	-1.3%	Normal		
	AA3 AA:L3-L	1 203.9V	177		/	23	9	-2.0%	Normal		
	BA1 BA:L1-L	2 204.3V	177		7	23	9	-1.8%	Normal		
	BA2 BA:L2-L	3 205.8V	177		V	23	9	-1.1%	Normal		
	BA3 BA:L3-L	1 204.5V	177		v	23	9	-1.7%	Normal		
	CA1 CA:L1-L	2 204.3V	177		/	23	9	-1.8%	Normal		
	CA2 CA:L2-L	3 205.9V	177	A.,		23	9	-1.1%	Normal		

The **Phases** page reports the current phase status, voltage, and power factor.

What to look for:

The phase status, voltage status, and phase power factor should be Normal, and the phase voltage and power factor should be operating within defined thresholds.

The phase voltage graph displays a blinking warning (yellow) when the total input load on an infeed exceeds the user-defined set threshold. If an overload occurs, a blinking error condition (red) is displayed.

The unit continues to display yellow and red states until the condition changes or the issue has been resolved. The same color-coding applies to the phase power factor graph if the threshold is exceeded.

The default input feed high load threshold is 80% of the input feed maximum load capacity.

Phase voltage and power factor thresholds are user-defined at **Configuration > System > Phases**.

Monitoring > Over-Current Protectors

The **Over-Current Protectors (OCPs)** page displays the current status, type, and current capacity (A) for any OCPs connected to the PDU. If there are no OCPs on the unit, the OCP monitoring page will not be available.

Server	<i>PRO2</i> Se	entry Switched PDU 🜈	OPS=PIPS)								
A brand of Diegrand	Over-Currer	t Protectors									
Overview	Over-curre	Over-current protector status									
Monitoring	ID	OCP Name	Туре	Current Capacity	Status						
Units	🖌 🖌	OCPD_Name	Breaker	20A	Normal						
Cords	🖌 🖌 🖌	OCPD_Name	Breaker	20A	Normal						
Lines	🖌 🖌	OCPD_Name	Breaker	20A	Normal						
Lines	- BA1	OCPD_Name	Breaker	20A	Normal						
Phases	BA2	OCPD_Name	Breaker	20A	Normal						
OCPs	SA3	OCPD_Name	Breaker	20A	Normal						
Branches	CA1	OCPD_Name	Breaker	20A	Normal						
Outlets	CA2	OCPD_Name	Breaker	20A	Normal						
Croups	CA3	OCPD_Name	Breaker	20A	Normal						
Groups	🖌 🗹 🖌 🖌	OCPD_Name	Breaker	20A	Normal						
Sensors	DA2	OCPD_Name	Breaker	20A	Normal						
UPS	DA3	OCPD_Name	Breaker	20A	Normal						
Control											
Configuration											
Tools											

What to look for:

The operating status of all OCPs listed should be Normal.

Monitoring > Branches

The **Branches** page displays branch status for the standard Branch Current Monitoring feature of the PDU, which supports six branches (or units with more than six OCPs/branches).

Branch Current Monitoring allows the configuration of thresholds on the branch circuit to provide notification before a breaker trips. Displayed on the page are branch current (A), percentage of current utilized, and threshold status.

Server	PROP Sentry Switche	d PDU <i>(POPS</i>	= PIPS			
Technology.	Branches					
Overview	Branch status					
Monitoring	ID Branch Name	OCP ID	Phase ID	Current Capacity	State	Status
Unite	AA1 Branch Name	AA1	AA1	20A	On	Normal
Units	AA2 Branch Name	AA2	AA2	20A	On	Normal
Cords	AA3 Branch Name	AA3	AA3	20A	On	Normal
Lines	BA1 Branch_Name	BA1	BA1	20A	On	Normal
Phases	BA2 Branch_Name	BA2	BA2	20A	On	Normal
OCPs	BA3 Branch_Name	BA3	BA3	20A	On	Normal
Branches	CA1 Branch_Name	CA1	CA1	20A	On	Normal
Outlets	CA2 Branch_Name	CA2	CA2	20A	On	Normal
000000	CA3 Branch_Name	CA3	CA3	20A	On	Normal
Groups	DA1 Branch_Name	DA1	DA1	20A	On	Normal
Sensors	DA2 Branch_Name	DA2	DA2	20A	On	Normal
UPS	DA3 Branch_Name	DA3	DA3	20A	On	Normal
Control	Branch current					
Configuration	ID Branch Name	Current (A)			Utilized	Status
Tools	AA1 Branch Name	0.00A	0.0 V		20.0 0.0%	Normal
	AA2 Branch Name	0.00A	0.0 V		20.0 0.0%	Normal
	AA3 Branch_Name	0.00A	0.0 V		20.0 0.0%	Normal
	BA1 Branch_Name	0.00A	0.0 V		20.0 0.0%	Normal
	BA2 Branch_Name	0.00A	0.0 V		20.0 0.0%	Normal
	BA3 Branch_Name	0.00A	0.0 🗸		20.0 0.0%	Normal
	CA1 Branch_Name	0.00A	0.0 🗸		20.0 0.0%	Normal
	CA2 Branch_Name	0.00A	0.0 🗸		20.0 0.0%	Normal
	CA3 Branch_Name	0.00A	0.0 🗸		20.0 0.0%	Normal
	DA1 Branch_Name	0.00A	0.0 7		20.0 0.0%	Normal
	DA2 Branch_Name	0.00A	0.0 🗸		20.0 0.0%	Normal
	DA3 Branch_Name	0.00A	0.0 🗸		20.0 0.0%	Normal

Note	The PDU	allows the c	anahility	v to load	-shed based	d on branch	o current status
NULC.	THE LOO	allows the c	αμανιτιτ	y tu tuau		u un branci	i cui i eni status.

What to look for:

Branch names are set internally on the unit at factory assembly and cannot be changed. Branch operations status should be Normal and branch current should be within defined thresholds. Branch threshold range values are affected by changing the current capacity of an over-current protector (OCP).

The branch status and branch current status displays a blinking warning (yellow) and red (error condition) when a branch exceeds the user-defined thresholds. The branch continues to display yellow and red states until the condition changes or the issue has been resolved.

Branch current thresholds are user-defined at **Configuration > System > Branches**.

Monitoring > Outlets

The **Outlets** page lists the outlets in the PRO1/PRO2 unit with a quick overview of general outlet information, including operational status based on user-configured thresholds for current, active power, and power factor.

Also displayed are the last user action (on, off, reboot) issued on the outlet (shown in the State column), and the outlet's last reported condition (shown in the Control State column).

The page allows a fast drill-down from the ID link for more operational data about a specific outlet in the list.

<u>Ş</u> erver	PRO	Sentry Switched PDU 202	PS = PIPS							1
Iechnology.	Outlet	s								
Overview	Conf	igure global outlet options								
Monitoring	Sequ	ence Interval (seconds):	2							
Control	Rebo	ot Delay (seconds):	15							
Configuration	State	Change Logging:	Enable							
System	List	outlets in selected unit								
About	Folor	tod Unit:	Mactor -							
Bluetooth	Selec	alea onit.	Master							
Branches	Conf	igure unit outlet options	Link1	Socket	Evt	ra On	Wake Up	Locked /	SNMP Trap	Email
Cords	ID	Outlet Name	Link2	Adapter	Del	ay	State	No Control	Notifications	Notifications
Features	AA1	Master_Outlet_1	Link3	C13 💌	0	sec	Last 💌 (On)			
Files	AA2	Master_Outlet_2	C13	None	0	sec	Last 💌 (On)	\checkmark	\checkmark	
Groups	AA3	Master_Outlet_3	C13	None	0	sec	Last 💌 (Off)	v		V
Lines	AA4	Master_Outlet_4	C13	None	0	sec	On 💌			v
Outlets	AA5	Master_Outlet_5	C13	None	0	sec	Off 💌			
OCPs	AA6	Master_Outlet_6	C13	None	0	sec	Last 💌 (On)			
Phases	AA7	Master_Outlet_7	C13	None	0	sec	On 💌		\checkmark	
Ports	AA8	Master_Outlet_8	C13	None	0	sec	On 💌			
Sensors	AA9	Master_Outlet_9	C13	None	16.11			· · · · · · · · · · · · · · · · · · ·		v
Shutdown	AA10	Master_Outlet_10	Cx	C13 💌	IT th	e PDU	is an HDO I	CX, CX^{-1}	WIII	
Trending	AA11	Master_Outlet_11	Cx	C13 💌	disp	olay in t	he Socket /	Adapter fi	eld.	
Units	AA12	Master_Outlet_12	C13	None		_				V
UPS	AA13	Master_Outlet_13	C13	None	0	sec	On 👻		V	V
Network	AA14	Master_Outlet_14	C13	None	0	sec	On 💌			
Access	AA15	Master_Outlet_15	C13	None	0	sec	On 💌			
Tools	AA16	Master_Outlet_16	C13	None	0	sec	on 💌			
10013	AA17	Master_Outlet_17	C13	None	0	Sec	On 💌	and an address the		

What to look for:

The operating status of all outlets should be Normal. If necessary, view operational details for an outlet. The ID and socket type are determined at factory assembly and cannot be user-configured.

Each outlet has a unique number, and the numbering sequence of outlets is not associated with the unit's branch or phase number. For example, a 30-outlet PDU unit (either single-phase or 3-phase) unit will have outlet numbers sequenced from 1 to 30.

The outlet status displays a blinking warning (yellow) and red (error condition) when an outlet exceeds the user-defined thresholds. The status continues to display yellow and red states until the condition changes or the issue has been resolved.

A descriptive text outlet name can be configured at **Configuration > System > Outlets**.

To view details for an outlet:

1. From the Control > Outlets page, click the ID link for any outlet in the list, such as AA2 in this example.



2. The Outlet Details page displays specific information about the selected outlet (AA2 in this example) that includes current/power capacity and usage, as well as the outlet's operational status. Note that POPS units may display additional outlet information and status graphs.

Server	PR	PRO2 Sentry Switched PDU (POPS-PIPS)									
	Outle	et Details									
Overview	Ou	tlet information									
Monitoring	ID	Outlet Name	Socket Type	Socket Adapter	Branch ID	OCP ID	Phase ID	Current Capacity	Power Capacity		
Control	AAS	5	C13	None	AA1	AA1	AA1	15A	3120VA		
Outlets	Ou	tlet status									
Groups		State	Crest Factor	Voltage	Energy			Control State	Status		
Configuration		On		203.9V	OWh			Idle On	Normal		
Tools	Ou	tlet current									
		Current (A)						Utilized	Status		
		0.00A	0.0 🗸	0.0 7				0.0%	Normal		
	Ou	tlet power									
		Active Power (W)						Apparent Power	Status		
		ow	0 🗸			3120		OVA	Normal		
	Ou	tlet power factor									
		Power Factor						Reactance	Status		
									Normal		
	Out	let Control									

3. To return to the previous monitoring page, click the Outlet Control link.

Monitoring > Groups

The **Groups** page shows the status of all outlets in a user-defined outlet group. An outlet group is named group with a collection of PDU outlets assigned to the group.

The page also allows a fast drill-down by outlet ID for more details about the outlet.

Server	PROB	Sentry Switched PDU	S - Pip	25							, i
Technoloay			Select	t an outlet fro	m the d	lrop-down list	. The 📘				
A brand of legrand	Groups		name	of the outlet	group is	s user-defined	I				
Overview	List out	lets in selected group									
Monitoring	Selected	Group:	Γ	ааа	•		•				
Units	Status	of all outlets in selected group		123456789a1234	6789b123	456789c12					
Cords	ID	Outlet Name		987654321z98765	4321y987(654321x98	rent	Active	Power	State	Status
Lines	10	outer Name		aA1!~`!@#\$%^8	*()_++-=	0	rene	Power	Factor	State	Status
Phases	AA1	Master_Outlet_1		655			DOA	ow		On	Normal
OCPs	AA2	123456789z123456789z1234567	89z12	bB2@			DOA	ow		On	Normal
Pranchas	AA3			f			00A	ow		Off	Normal
branches	AA4	aA1!~`!!@##^h		#			AOC	ow		On	Low Alarm
Outlets	AA5						00A	ow		On	Normal
Groups	AA6	Master_Outlet_6		ш			AOC	ow		On	Normal
Sensors	AA7	Master_Outlet_7		s			00A	ow		On	Normal
UPS	AA8	Master_Outlet_8		SS			AOC	ow		On	Normal
Control	🗹 AA9	Master_Outlet_9	C	C13 Non	a i	Idle On (A00.	ow		On	Normal
	AA10) V	C	Cx C13		Idle On (A00.	ow		On	Normal
Configuration	🗹 🗛 1	987654321Q987654321V9876543	321D98 C	Cx C13		Idle On (A00.	ow		On	Normal
Tools	AA12	2	C	C13 Non	e	Idle On (A00.	ow		On	Normal
	AA13	Aa1!_)(*&^%\$#@!~=-=_O	C	C13 Non	e	Idle On (A00.	ow		On	Normai
	AA14	Master_Outlet_14	C	C13 Non	e	Idle On 0	A00.	ow		On	Normal
	AA13	Master_Outlet_15	C	C13 Non	e :	Idle On (A00.	ow		On	Normal
	🗹 🛃	Master_Outlet_16	C	C13 Non	e	Idle On 0	A00.	ow		On	Normal
	AA.1.	Master Outlet 17	C	13 Non		Idle On (A00.	ow		On	Normal

What to look for:

The operating status of all outlets within a selected group should be Normal. If necessary, view operational details for an outlet.

The outlet status for a group displays a blinking warning (yellow) and red (error condition) when an outlet exceeds the user-defined thresholds. The status continues to display yellow and red states until the condition changes or the issue has been resolved.

Creating an outlet group and assigning outlet access to the group is done at **System > Configuration > Groups.**

To view operational details for an outlet in an outlet group:

1. From the Groups page, select an outlet group from the drop down list.

Server		108	Septry Switched PD			
Technoloay			First, select a	n outlet grou	o name.	
A brand of Diegrand	Gro	ups				
Overview	Li	st outle	ets in selected group	_		
Monitoring	Se	Selected Group:				
Units	St	tatus of	all outlets in selected	group		
Cords		ID	Outlet Name	Socket	Socket	Control
Lines		10	outer Name	Туре	Adapter	State
Phases		AA1	Master_Outlet_1	C19	None	On
OCPs		AA2	Master_Outlet_2	C13	None	On
Branches		AA3	Master_Outlet_3	C13	None	On
Diditches		AA19	Master_Outlet_19	C13	None	On
Outlets		AA20	Master_Outlet_20	C19	None	On
Groups		AA21	Master_Outlet_21	C19	None	On
Sensors		AA22	Master_Outlet_22	C13	None	On
UPS		•				
Control						
Configuration	en select an outlet ID.					
Tools						

2. When you click an outlet ID link in the list, the details page for that outlet displays:

<u>Server</u>	PRO	Sentry Switche	d PDU <i>(PIPS</i>	7					
Technology.	Outlet	Details							
Overview	Outle	et information							
Monitoring	ID	Outlet Name	Socket Type	Socket Adapter	Branch ID	OCP ID	Phase ID	Current Capacity	Power Capacity
Units	AA22	Master_Outlet_22	C13	None	AA2	AA2	AA1	15A	3120VA
Cords	Outle	et status							
Lines		State						Control State	Status
Phases		On						On	Normal
OCPs	Group	Monitor							
Branches									
Outlets									
Groups									
Sensors									
UPS									
Control									
Configuration									
Tools									

- **3.** The Outlet Details page displays specific information for the selected outlet that includes capacity and usage, and status graphs for outlet current (A), and outlet power (W).
- 4. To return to the previous monitoring page, click the Group Monitor link.

Monitoring > Sensors

The **Sensors** page provides a quick view and color-coded graphic showing the current temperature/humility operating values of environmental sensors.

O						
Server	PRO2 Sentry Switched	PDU POPS =	PIPS			
Technology						
A brand of legrand	Sensors					
Overview	Temperature sensor status					
Monitoring	ID Sensor Name	Temperature (°C	:)			Status
Units	A1 Temp_Sensor_A1	27.5°C	-8.8	∇	59.8	Normal
Cords	A2 Temp_Sensor_A2	27.7°C	-8.8	∇	59.8	Normal
Liese	B1 Temp_Sensor_B1	28.1°C	-8.8	∇	59.8	Normal
Lines	C1 Temp_Sensor_C1	28.4°C	-8.8	V	59.8	Normal
Phases	C2 Temp_Sensor_C2	28.0°C	-8.8	∇	59.8	Normal
OCPs	D1 Temp_Sensor_D1	29.9°C	-8.8	∇	59.8	Normal
Branches	D2 Temp_Sensor_D2	32.0°C	-8.8	V	59.8	Normal
Outlets	Humidity sensor status					
Groups	ID Sensor Name	Relative Humidit	/ (% RH)			Status
Sensors	A1 Humid_Sensor_A1	17% RH	0.0		100.0	Normal
UPS	🖌 A2 Humid_Sensor_A2	13% RH	0.0		100.0	Normal
Cantral	🖌 B1 Humid_Sensor_B1	15% RH	0.0		100.0	Normal
Control	C1 Humid_Sensor_C1	16% RH	0.0		100.0	Normal
Configuration	C2 Humid_Sensor_C2	14% RH	0.0		100.0	Normal
Tools	D1 Humid_Sensor_D1	14% RH	0.0		100.0	Normal
	D2 Humid_Sensor_D2	13% RH	0.0		100.0	Normal

Note: If a fan is present on the PDU, the fan can also be monitored on this page.

What to look for:

The operating status of all sensors (and fan, if present) should be Normal, and operating temperature or relative humidity should be within defined thresholds.

Temperature Status

The Temperature graph displays a blinking warning or critical error whenever temperature exceeds low or high threshold. The PDU continues to display the status until the condition changes or the issue has been resolved.

Temperature graph colors:

- Violet = coldest; low alarm (threshold configured by user)
- Blue = cold; low warning (threshold configured by user)
- Green = acceptable temperature range
- Yellow warm; high warning (threshold configured by user)
- Red = hot; high alarm (threshold configured by user)

The default range of low/high temperature threshold values is -40 to 123(C°). Temperature threshold values are user-defined at **Configuration > System > Sensors**.

Humidity Status

The Humidity graph displays a blinking warning or critical error whenever humidity exceeds low or high threshold. The PRO1/PRO2 continues to display the status until the condition changes or the issue has been resolved.

Humidity graph colors:

- Violet = wettest; high alarm (threshold configured by user)
- Blue = wet; high warning (threshold configured by user)
- Green = acceptable percentage of relative humidity
- Yellow = dry; low warning (threshold configured by user)
- Red = driest; low alarm (threshold configured by user)

The default range of low/high relative humidity threshold values is 0-100%RH. Humidity threshold values are user-defined at **Configuration > System > Sensors**.

Temperature/Humidity Sensor Status

Status	Description
Found	The PDU found the sensor and connection is established.
Not Found	On a fresh reboot, the PDU does not find a sensor.
Lost	The connection to a previously found sensor is now lost.
No Comm	Communication loss occurred due to a hardware issue (not loss of communication with the probes). ¹

¹ The ENV part of the sensor supports two temperature/humidity (T/H) probes as part of the master unit, two T/H probes as part of the link unit, and the optional EMCU-1-18 (which can support two T/H probes, four contact-closure monitoring points, and one water sensor). The "No Comm" sensor status is not loss of communication with the probes themselves.

Environmental Monitor (EMCU) Status

If an EMCU is connected to the PDU, the Sensors pages will also include monitoring of water, contact closures, and analog-to-digital (ADC) sensors.

Sensors	A2 Humid_Sensor_A2	21% RH	0.0
UPS	B1 Humid_Sensor_B1	19% RH	0.0 🙀 🖉
Control	B2 Humid_Sensor_B2	19% RH	0.0
Control	E1 Humid_Sensor_E1	18% RH	0.0 🔽 🗸
Configuration	E2 Humid_Sensor_E2	25% RH	0.0
Tools	Water sensor status		
	ID Sensor Name		
	E1 Water_Sensor_E1		
	Contact sensor status		
	ID Sensor Name		
	E1 Contact_Sensor_E1		
	E2 Contact_Sensor_E2		
	E3 Contact_Sensor_E3		
	E4 Contact_Sensor_E4		
	Analog-to-Digital voltage sensor	status	
	ID Sensor Name	ADC Value (0-255)	
	E1 ADC_Sensor_E1	19	0

What to look for:

The operating status of all sensors should be Normal and operating within defined thresholds. View the color-coded graph showing current operating range within thresholds for the ADC.

Water and contact closure sensors can have either Normal or Alarm status – there are no other states or value ranges.

The ADC sensors can be configured at **Configuration > System > Sensors**

Monitoring > UPS

The UPS page identifies each UPS device connected to the PDU unit, displaying hostname/IP address and UPS status.

Server	DECE Sentry Sw	vitched PDU <i>(POPS-PIPS)</i>		
A brand of Diegrand	UPS			
Overview	Uninterruptable pow	ver supply status		
Monitoring	UPS Name	Туре	SNMP Host/IP	Status
Units	TEST	Generic RFC1628	142.456.734	Not Found
Cords				
Lines				
Phases				
OCPs				
Branches				
Outlets				
Groups				
Sensors				
UPS				
Control				
Configuration				
Tools				

What to look for:

Monitoring page will be blank if a UPS has not been connected to, and configured for, the PDU. After connecting a UPS to the unit, configure the UPS and the lines to be powered by the UPS at **Configuration > System > UPS**.

Control (Managing Outlets)

The **Control** section of the Web interface allows the issuing of outlet control actions On, Off, and Reboot for individual outlets in a master unit (or in all units), for all outlets globally in a master unit (or in all units), and for named outlet groups.

Outlet details are also available by individual outlet to provide the outlet's general identification, socket type, capacity, operational state, power factor, as well as color-coded graphs for current and power.

A PDU with Per Outlet Power Sensing (POPS)

AA12 Master Outlet 12

AA13 Master_Outlet_13

AA14 Master_Outlet_14

technology will also display values for current capacity used and reactance.

Control > Outlets

Server PRO2 Sentry Switched PDU POPS PPS Technology **Outlet Control** Overview List outlets in selected unit or all units Step 1: From the drop-down menu, select master unit. Monitoring Selected Unit: All link unit, or all units to filter the outlet list. Control Control power to outlets in selected unit(s) Outlets Control Action Control Stat Active ID Outlet Name Groups Step 2: Based on your selection from Step 1, from this -- All --Apply Cancel -Configuration drop-down menu, choose the "All" command action to AA1 Master_Outlet_1 None 👻 Tools Id apply to all outlets in the list: All On, All Off, All Reboot. AA2 Master_Outlet_2 None -L AA3 Master_Outlet_3 None 👻 L Or ... from a drop-down menu for a specific outlet, Id AA4 Master Outlet 4 None 💌 select the command action to apply only to the selected AA5 Master_Outlet_5 None 💌 Id outlet: On, Off, Reboot. Idi AA6 Master_Outlet_6 None -AA7 Master_Outlet_7 None -Idle On 0.00A ow ---On AA8 Master Outlet 8 None . Idle On 0.00A ow ---On AA9 Master_Outlet_9 -Idle On 0.00A ow None On AA10 Master_Outlet_10 None 💌 Idle On 0.00A ow ---On ow ---On AA11 Master_Outlet_11 None 💌 Idle On 0.00A

The **Outlet Control** page displays outlets assigned to the current user:

What to look for:

Provides viewing of outlet current, power, power factor, current control state applied to the PDU, . and status information.

Idle On

Idle On

Idle On

0.00A

0.00A

0.00A

ow

ow

ow

--

None 💌

.

None -

None

- Includes an ID link for viewing detailed operational data about the outlet. •
- Allows the issuing of outlet power control actions (On, Off, Reboot) on individual outlets or on all • outlets globally, in a master unit or in all units.

To issue outlet control actions (globally on all outlets or on individual outlets):

- 1. From the Selected Unit drop-down menu, choose All or Master. The page refreshes to show the outlets available for the selected unit.
- 2. To issue outlet control **globally** on all displayed outlets, from the Control Action drop-down menu, select All On, All Off, or All Reboot. To issue outlet control on one or more individual outlets, from the Control action drop-down menu for the individual outlet(s), select On, Off, or Reboot.
- 3. Click Apply. The command action is issued immediately on the specified outlet(s).

Status

Normal

Normal internal distance

On

On

On

To view detailed operational details for an outlet:

1. From the Outlet Control page, click the Outlet ID link for any outlet in the list, such as AA2 in this example.



2. The Outlet Details page displays for outlet AA2 showing power, capacity, and other operational information:

<u>Ş</u> erver	PR	Sentry Switched PL)u popsopips)	Details pa	go for colort				
lechnology.				Details pa	ige for selecte	a outlet ID.			
A brand of Diegrand	Outl	et Details)			
Overview	Ou	itlet information							
Monitoring	ID	Outlet Name	Socket Type	Socket Adapter	Branch ID	OCP ID	Phase ID	Current Capacity	Power Cap
Control	AA4	4 Master_Outlet_4	C13	None	AA1	AA1	AA1	15A	3120VA
Outlets	Ou	itlet status							
Groups		State	Crest Factor	Voltage	Energy			Control State	Status
Configuration		On		204.4V	73Wh			Idle On	Normal
Tools	Ou	itlet current							
		Current (A)						Utilized	Status
		0.00A	0.0 🗸			15.0		0.0%	Normal
	Ou	itlet power							
		Active Power (W)						Apparent Power	Status
		ow	0 \			3120		AVO	Normal
	Ou	itlet power factor							
		Power Factor						Reactance	Status
		Click lin	k to return to the Out	ets Control page	e.				Normal
	Out	tlet Control 🔴							

Control > Groups

The **Control Groups** page displays outlet groups assigned to a current user and allows power control actions (On, Off, Reboot) to be applied to all outlets in a selected outlet group.

Note: An outlet group is a named collection of outlets in a PDU (up to four enclosures) with a single IP address.

Şerver	PROP Sentry Switched PDU POPS -	IPS)					
lechnology							
A brand of legrand	Group Control	Step 1. Fron	n the drop-dow	/n menu, select	an outlet group		
Overview	Control power to outlets in selected group						
Monitoring	Selected Group:	aaa 📍					
Control	Group Control Action:	None 💌 🗕	Step 2. Fro	m the drop-dow	n menu, select	a control action	
Outlets	Apply Cancel	None	for the out	let group: On, O	ff, or Reboot.		
Groups	Status of all outlets in selected group	On					
Configuration	ID Outlet Name	Off	Current	Active	Power	State	Status
Tools		Reboot		Power	Factor		
	AA1 Master_Outlet_1	Idle On	0.00A	ow		On	Normal
	AA2 Master_Outlet_2	Locked On	0.00A	ow		On	Normal
	AA3 Master_Outlet_3	Locked Off	0.00A	ow		Off	Normal
	AA4 Master_Outlet_4	Idle On	0.00A	ow		On	Normal
	AA5 Master_Outlet_5	Idle On	0.00A	ow		On	Normal
	AA6 Master_Outlet_6	Idle On	0.00A	ow		On	Normal
	AA7 Master_Outlet_7	Idle On	0.00A	ow		On	Normal

To issue outlet control on a specific outlet group:

- 1. From the group drop-down menu, select the outlet group by name.
- 2. From the control action drop-down menu, select the outlet command On, Off, or Reboot.
- 3. Click Apply. The command is issued immediately on all outlets in the selected outlet group.

Outlet State/Control State Descriptions

The following table shows the differences between outlet state and control state

- The **outlet state** is the current operating state of the outlet.
- The **control state** is the last user-issued control action on the outlet.

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.
On	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.
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.
Off/Fuse	On	Outlet should be on but a blown fuse has been detected.
On/Fuse	On	Outlet should be on but a blown fuse has been detected downstream
No Comm	(varies)	Communication to the outlet has been lost – control state will be applied when communication is re-established.

Configuration (Setting Values)

The **Configuration** section allows administrative access to all options for setting PDU values. The pages are organized into three major areas of configuration:

- System (options for hardware areas)
- Network (options for setting up network protocols)
- Access (options for local/remote user access and management)

System > About

The **About** page allows: (1) reference for system-wide configuration data, (2) configuration of the system location, and (3) the option for a blinking system location on GUI monitoring pages.

Server	(PRO2) Sentry Switched PDU (POPS=PIPS)		The Location string displays in the upp	er right corner			
	About		and snows PDU description/location, IP address, and				
Overview	System information		user/access level.				
Monitoring Control	Uptime: Firmware: Build Info:	8 days 0 hour Sentry Switch Rev 2346, Jul	54 minutes 45 seconds d PDU Version 8.0m 1 2018, 18:40:58				
Configuration	Boot Info: Hardware:	4.0m-r246 NIM2-3L (130)	75 MHz, 32MB RAM, 8MB FLASH				
System	Product Series:	PRO2	The Plink ontion determ	ines if the Location			
About	Ethernet NIC S/N:	9600490	string blink option determ	ines in the Location			
Bluetooth	Active Users:	1	string blinks on every w	eb interiace page.			
Branches	Configure system options						
Cords	Location:			Blink			
Features	Apply Cancel						
Files							
Groups							
Lines							
Outlets							
OCPs							
Phases							
Ports							
Sensors							
Shutdown							
Trending							
Units							
UPS							
Network							
Access							
Tools							

Viewing system reference information:

- Uptime: Cumulative time the PDU has been up and running since the last unit restarted. Shows continuous, real-time system updates with an approximate 5-second automatic refresh. A manual refresh is not required.
- Firmware: Current firmware version.
- Build Info: Displays revision number and date/time of most recent firmware version build.
- Boot Info: Identification number from the system boot loader.
- Hardware: Displays information about the PCB used in the PRO2 unit.
- Ethernet NIC S/N: The serial number of the unit derived from the Ethernet NIC.
- Active Users: Number of users currently logged in.

To set the blink option:

- 1. Type a descriptive PDU location name that appears in the system header section of every Web interface page (upper right corner).
- 2. (Optional) Check the Blink checkbox to enable blinking of the unit's location string (IP address) on the Web interface pages. Even if Blink is enabled, the blinking may not work with all web browsers.
- 3. Click Apply.

System > Bluetooth

The **Bluetooth** page allows parameter configuration needed for the Bluetooth[™] mobile monitoring solution.

Server	PROP Sentry Switched PDU POPS PIPS	
Technology.	Bluetooth	
Overview	Configure Bluetooth options	
Monitoring	Bluetooth:	ℤ Enable
Control	Name:	ST Eye
Configuration	Pin Code:	9611
System	Discoverability:	Limited 💌
About	Transmission Power:	0 dbm
Bluetooth	Apply Cancel	
Branches		
Cords		
Features		
Files		
Groups		
Lines		
Outlets		
OCPs		
Phases		

To configure Bluetooth™ options

- 1. To enable Bluetooth mobile monitoring, check Enable.
- 2. Provide a value for the Bluetooth parameters: name, pin code, discoverability, and transmission power, as described in the following table.
- 3. Click Apply.

Bluetooth™ Firmware Parameters

Parameter	Description and Values/Range
Bluetooth Name	Descriptive name of the Bluetooth module that displays in the list of discovered modules on the Android mobile device or Apple iPad/iPhone. The default module name is "ST Eye". Valid length of name is 1-31 characters; the name cannot be blank.
Bluetooth Discoverability	 Settings that determine the current status of the pushbutton on the Bluetooth module: Enabled: The Bluetooth module is discoverable, even without pressing the pushbutton. Limited: (Default) The pushbutton on the Bluetooth module must be pressed to make the module discoverable for 60-seconds. Disabled: The Bluetooth module is never in discoverable mode.
Bluetooth Pin Code	The pin code is available for legacy Bluetooth modules that require a pin to pair the module. Although not used in current Bluetooth modules, the pin code is supported if needed. Default is 9611; must be 4-digits; range is 0000 to 9999.
Bluetooth Transmission Power	Designated transmission power (dbm) for the Bluetooth module. Lowering the transmission power reduces the effective range of the module. Default is 0; range is -6 to 4 dbm.

Notes:

- The ST Eye mobile app and the Bluetooth module may not be included with the PR01/PR02 unit.
- The ST Eye mobile app supports one concurrent session.

System > Branches

The **Branches** page provides the Branch Current Monitoring feature of the PDU which supports up to six branches (or units with more than six OCPs/branches), to measure, report, and alert (in Amps) per branch circuit for breaker and fuse errors.

The **Branches** pages allows setting multiple load levels for low/high warning/alarm values (A) for branch current thresholds, plus threshold hysteresis (A).

The page also sets sets SNMP Trap and Email notifications for branch events.

For dynamic monitoring of branch status and current, see the separate **Monitoring > Branches** page.

Server	(PROB) Sentry Switched PDU (POPS - PIPS)			
lechnoloav				
A brand of Diegrand	Branches			
Overview	Configure branch settings			
Monitoring	ID Branch Name	SNMP Trap Notifications	Email Notifications	
Control	AA1 Branch Name			
Configuration	AA2 Branch_Name			
System	AA3 Branch_Name			
About	BA1 Branch_Name			
Bluetooth	BA2 Branch_Name			
Branches	BA3 Branch_Name			
Cords	CA1 Branch_Name			
Features	CA2 Branch_Name			
Files	CA3 Branch_Name			
Files	DA1 Branch_Name			
Groups	DA2 Branch_Name			
Lines	DA3 Branch_Name			
Outlets	Apply Cancel	All	All	
OCPs	Branch Current Thresholds	None	None	
Phases				

About the branches:

- Branch names are not user-defined and cannot be changed.
- Branch values affect the setting on the OCP, if an OCP is connected to the PDU. Not all units will have an OCP; therefore, branch threshold range values will be affected by changing the current capacity on the OCP.

To configure branch settings:

- 1. For each branch listed on the page, check (or uncheck) the SNMP Trap Notifications and/or Email Notifications checkboxes to enable (or disable) branch event notification for a specific branch.
- 2. Click Apply.

Setting Branch Current Thresholds

From the Branches page, click Branch Current Thresholds to display the related thresholds edit page:

<u>Server</u>	PROP Sentry Switched PDU	S = PIPS			
Technology					
A brand of legrand	Branch Current Thresholds				
Overview	Configure branch current hysteresis				
Monitoring	Hysteresis:	1.0 A			
Control	Configure branch current thresholds				
Configuration	ID Branch Name	Low Alarm	Low Warning	High Warning	High Alarm
System	AA1 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
About	AA2 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Bluetooth	AA3 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Branches	BA1 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Cords	BA2 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Features	BA3 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Files	CA1 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Groups	CA2 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Lines	CA3 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Outlets	DA1 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
OCPs	DA2 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Phases	DA3 Branch_Name	0.0 A	0.0 A	14.0 A	16.0 A
Ports	Apply Cancel	All A	All A	All A	All A
Sensors	Branch Configuration				
Shutdown					

To set branch current thresholds:

- 1. Set the threshold hysteresis value (in Amps). Hysteresis is the values between the event state and recovery. Provide 0.0 to 10.0A. Default is 1.0A.
- 2. Provide the current load (A) for low/high warning/alarm threshold for a displayed branch on the page. Valid range is between 0-max (Max Current) in **show branches** command.
- 3. Click Apply.

System > Cords

The **Cords** page configures the single input power cord in the PDU hardware architecture that reports infeed data for the unit, allowing the setting of multiple cord threshold levels for power, apparent power, power factor, 3-phase out-of-balance, and threshold hysteresis.

The value for *nominal voltage* – the point where an alert is received – is established on the **Cords** page.

The Cords page also sets SNMP Trap and Email notifications for cord events.

For dynamic monitoring of cord status, related power data, and out-of-balance levels, see the separate **Monitoring > Cords** page.

Server	(27.02) Sentry Switched PDU (202	S - PIPS				
Iechnology.	Cords					
Overview	Configure cord settings					
Monitoring	ID Cord Name	Inlet Type	Nominal Voltage	Current Capacity	SNMP Trap Notifications	Email Notifications
Control	AA Master_Cord_A	L21-30	208 V	24 A	V	
Configuration	BA Link1_Cord_A	L21-30	208 V	24 A	V	V
System	CA Link2_Cord_A	L21-30	208 V	24 A		V
About	DA Link3_Cord_A	L21-30	208 V	24 A	V	V
Bluetooth			-		All	All
Branches	Apply Cancel			AIIA	None	None
Cords	Cord Power Thresholds					
Features	Cord Apparent Power Thresholds Cord Power Factor Thresholds	Click these links	for additional (Cord-related pages to se	t	
Files	Cord 3-Phase Out-Of-Balance Thresholds	power threshol	ds and 3-phase	out-of-balance threshol	ds.	
Groups						
Lines						
Outlets						

To configure cord settings:

- 1. In the Cord Name field, provide a descriptive text name, from 0-32 characters. The ID is a systemassigned internal name and cannot be changed.
- 2. View the reported type of inlet displayed for the cord.
- **3.** In the Nominal Voltage field, set the value (in Volts) to be the mid-point of the Monitoring graphs, so that nominal voltage is the point where you are alerted for an alarm. Range is 0-max (max is factory nominal voltage) in the **show cords** command.
- 4. Set the current load for the cord in the Current Capacity field. Range is 0-max (max is factory current capacity) in the **show cords** command.
- 5. For each cord listed, check (or uncheck) SNMP Trap Notifications and/or Email Notifications to enable/disable notifications for cord events.
- 6. Click Apply.

Configuring Cord Power Thresholds

Click the **Cord Power Thresholds** link at the bottom of the Cords page to display the configuration page:

Server	PROP Sentry Switched PDU PC	OPS = PIPS			
lechnology					
A brand of legrand	Cord Power Thresholds				
Overview	Configure cord power hysteresis				
Monitoring	Hysteresis:	100 W			
Control	Configure cord power thresholds				
Configuration	ID Cord Name	Low Alarm	Low Warning	High Warning	High Alarm
System	AA Master_Cord_A	0 W	0 W	6052 W	6917 W
About	BA Link1_Cord_A	0 W	0 W	6052 W	6917 W
Bluetooth	CA Link2_Cord_A	0 W	0 W	6052 W	6917 W
Branches	DA Link3_Cord_A	0 W	0 W	6052 W	6917 W
Cords	Apply Cancel	All W	All W	All W	All W
Features	Cord Configuration				
Files					

To set cord power thresholds:

- 1. Provide the threshold hysteresis between event state and recovery (W). Range is 0-1000W; default is 100W.
- 2. Set the low/high alarm and low/high warning threshold values (W). Cord power does not include power factor. Range is min 0W; max is power capacity shown in cstat command.
- 3. Click Apply.

Configuring Cord Apparent Power Thresholds

Click the **Cord Apparent Power Thresholds** link at the bottom of the Cords page to display the configuration page:

Server	(PROP) Sentry Switched PDU	POPS = PIPS		Ċ	
Iechnology.	Cord Apparent Power Thresholds				
Overview	Configure cord apparent power hyst	eresis			
Monitoring	Hysteresis:	100 VA			
Control	Configure cord apparent power three	sholds			
Configuration	ID Cord Name	Low Alarm	Low Warning	High Warning	High Alarm
System	AA Master_Cord_A	0 VA	0 VA	6052 VA	6917 VA
About	BA Link1_Cord_A	0 VA	0 VA	6052 VA	6917 VA
Bluetooth	CA Link2_Cord_A	0 VA	0 VA	6052 VA	6917 VA
Branches	DA Link3_Cord_A	0 VA	0 VA	6052 VA	6917 VA
Cords	Apply Cancel	All VA	All VA	All VA	All VA
Features	Cord Configuration				
Files					
Groups					

To set cord apparent power thresholds:

- 1. Provide the threshold hysteresis between event state and recovery (VA). Range is 0-1000VA; default is 100VA.
- 2. Set the low/high alarm and low/high warning threshold values (VA). Cord apparent power includes power factor. Range is min 0VA; max is power capacity shown in **cstat** command.
- 3. Click Apply.

Configuring Cord Power Factor Thresholds

Click **Cord Power Factor Thresholds** link at the bottom of the Cords page to display the configuration page:

Server	Sentry Switched PDU	S-PIPS)			
lechnology					
A brand of legrand	Cord Power Factor Thresholds				
Overview	Configure cord power factor hysteresis				
Monitoring	Hysteresis:	0.02			
Control	Configure cord power factor thresholds	Configure cord power factor thresholds			
Configuration	ID Cord Name	Low Alarm	Low Warning		
System	AA Master_Cord_A	0.30	0.40		
About	BA Link1_Cord_A	0.30	0.40		
Bluetooth	CA Link2_Cord_A	0.30	0.40		
Branches	DA Link3_Cord_A	0.30	0.40		
Cords	Apply Cancel	All	All		
Features	E Cord Configuration				
Files	Ĩ				
Groups					

To set cord power factor thresholds:

- 1. Provide a numeric value for the threshold hysteresis between event state and recovery. Range is 0.0-0.20; default is 0.02.
- 2. Set numeric values for the low alarm/warning power factor thresholds. Range is min 0.00; max is 1.00.
- 3. Click Apply.

Configuring Cord 3-Phase Out-Of-Balance Thresholds

Server PROP Sentry Switched PDU POPS -PIPS Technology Cord 3-Phase Out-Of-Balance Thresholds Configure cord 3-phase out-of-balance hysteresis Overview Monitoring 2 % Hysteresis: Control Configure cord 3-phase out-of-balance thresholds Configuration ID Cord Name High Warning High Alarm System 15 20 AA Master_Cord_A % % About BA Link1_Cord_A 15 % 20 % Bluetooth 20 CA Link2_Cord_A % % 15 % 20 Branches DA Link3_Cord_A % Cords Apply Cancel All % All % Features Cord Configuration Files Groups Lines

Click Cord 3-Phase Out-Of-Balance link at the bottom of the Cords page to display the configuration page:

To set cord 3-phase out-of-balance thresholds:

- 1. Provide a percent for threshold hysteresis between event state and recovery. Range is 0-10%; default is 2%.
- 2. Set percent for high warning/alarm out-of-balance thresholds. Range is min 0%, max is 200%.
- 3. Click Apply.

Notes:

- Out-of-balance is the percent power difference between phases of a cord.
- When a device with 3-phase input voltage is out-of-balance, efficiency is reduced and the unit is prevented from reaching maximum capacity, making it necessary to adjust distribution of the loads.

System > Features

The Features page allows the activation of add-on features available from Server Technology.

Server	PROP Sentry Switched PDU POPS PPS				
Technology.	Features				
Overview	Enter a new feature key				
Monitoring	Ethernet NIC S/N:	9600490			
Control	Feature Key:				
Configuration	Apply Cancel	xxxx-xxxx-xxxx			
System	Add-on features installed:				
About		Characters in the Feature Key data box must be			
Bluetooth	The current list of activated and installed	typed exactly as the sample format shown.			
Branches	features will be displayed in this area.				
Cords					
Features					
Files					
Groups					
Lines					
Outlets					
OCPs					
Phases					
Ports					

To activate a feature:

- 1. In the Feature Key field, type the key provided by Server Technology.
- 2. Click Apply (or press Enter). A restart of the unit is required after activating a feature.

Note: For more information about add-on features, such as Smart Load Shedding, contact your Server Technology sales representative.
System > Files

The Files page provides a separate embedded file system to give quick access to system configuration files directly from the firmware GUI page, as well as the on-board and downloadable Sentry4-MIB and OID Tree for the PDU, eliminating website MIB/OID downloads.

Note: Legacy products continue to use the current Sentry3-MIB. The new Sentry4-MIB and its new OID tree are designed exclusively for the PR01/PR02 products.

The page also allows GUI-based file uploads (without FTP) for system, configuration, and firmware versions. However, all PDU configuration/system files, MIB, and OID Tree can also be accessed via FTP at Configuration > Network > FTP.

Server	PROP Sentry Switched PDU (POPS-PIPS)						
	Files						
Overview	Upload firmware or system con	figuration files					
Monitoring	Upload File:	Browse No file selected.					
Control	Upload						
Configuration	System files						
System	Date/Time	File	Size (Bytes)				
About	2017-10-12 10:22	dictionary.sti	2419				
Bluetooth	2018-02-12 08:34	Sentry4.mib Sentry4OIDTree byt	165171				
Branches	2018-02-12 08.34	config.bak	48739				
Cords	2018-09-04 15:31	config.ini	67619				
Features							
Files							
Groups							

Note: There is no CLI equivalent function for the GUI Configuration > System > Files page.

Uploading Files

Simple file upload without the need for FTP. Upload a firmware version or specific system configuration file by browsing and selecting the file in the Upload File field, and clicking **Upload**. A confirmation message displays to indicate the upload was successful and the system will require a restart.

File View

The File View section of the page is a list of displayed files showing date/time stamp, file name, and file size. Several file types are shown in the list, described on the following pages:

dictionary.sti

This dictionary file contains the defined and formatted RADIUS vendor-specific attributes (VSA), generated by, and available from, Server Technology.

The PDU is configured to recognize and use the configuration values in the file as specified by the network administrator, indicating to the RADIUS server that the defined attributes are based on Server Technology's unique enterprise vendor code. For more information about the dictionary file and RADIUS, see <u>About</u> <u>RADIUS Vendor-Specific Attributes (VSA)</u>.

```
#
# dictionary.sti
#
VENDOR STI 1718
#
# Attributes
#
ATTRIBUTE STI-Access-Level 1 integer STI
ATTRIBUTE STI-Env-Mon 2 integer STI
ATTRIBUTE STI-Outlets 3 string STI
ATTRIBUTE STI-Groups 4 string STI
ATTRIBUTE STI-Ports 5 string STI
                            4 string
5 string
                                        STI
STI
ATTRIBUTE STI-Ports
    VALUE STI-Access-Level Admin
                                         1
   VALUE STI-Access-Level Power-User 2
   VALUE STI-Access-Level User 3
VALUE STI-Access-Level Reboot-Only 4
   VALUE STI-Access-Level On-Only
                                         5
   VALUE STI-Access-Level View-Only 6
    VALUE STI-Env-Mon Yes 1
    VALUE STI-Env-Mon No
                             2
```

sentry4.mib

For SNMP network monitoring, values from the PDU are reported using the new Sentry4-MIB. (Note that earlier PDU products continue to use the current Sentry3-MIB). The new Sentry4-MIB and its new OID tree are designed exclusively for PR01/PR02 products.

Reported MIB objects in the Sentry4-MIB are identified with a new "st4" prefix as part of the object name. You may be familiar with MIB objects for the PDU, for example, outletWakeupState. However, when the SNMP monitoring system displays a value for the MIB object name, st4outletWakeupState, based on the "st4" prefix in the name, you will recognize that the reported value is coming from a PR01/PR02 unit, not from an earlier PDU product.

The Sentry4-MIB and OID tree for the PDU can be accessed on-board in the GUI via **Configuration > System > Files**, or accessed by using the Server Technology FTP site the same way as with the Sentry3-MIB and OID tree for the earlier PDU products.

```
Copyright(C) 2003-2014 Server Technology, Inc.
___
    Sentry4-MIB DEFINITIONS ::= BEGIN
    TMPORTS
        MODULE-IDENTITY, enterprises, Integer32,
        OBJECT-TYPE, NOTIFICATION-TYPE
                                                                   FROM SNMPv2-SMI
        OBJECT-GROUP, NOTIFICATION-GROUP, MODULE-COMPLIANCE FROM SNMPv2-CONF
        TEXTUAL-CONVENTION, DisplayString
                                                                  FROM SNMPv2-TC;
    sentry4 MODULE-IDENTITY
        LAST-UPDATED "201412231130Z" -- 23 December 2014
        ORGANIZATION "Server Technology, Inc."
        CONTACT-INFO
              "Server Technology, Inc.
              1040 Sandhill Road
              Reno, NV 89521
              Tel: (775) 284-2000
              Fax: (775) 284-2065
              Email: mibmaster@servertech.com'
        DESCRIPTION
             "This is the MIB module for the fourth generation of the
              Sentry product family. This includes the PRO2 series of
              Smart and Switched Cabinet Distribution Unit (CDU) and
        Power Distribution Unit (PDU) products.
REVISION "2014122311302" -- 23 December 2014
        DESCRIPTION
             "Initial release."
        ::= { serverTech 4 }
          مؤرفو مارغل كي حسبات البادوسيا بالاردان المعاصي ومؤسى معناي ودفك باستقلق غني المتريك المتراوع مريد التركين حسبارك المادي ويدؤد وارديا والسري داد
```

sentry40IDTree.txt

The Sentry40IDTree is the new 0ID tree structure that identifies data objects for SNMP network monitoring. The Sentry40IDTree is not backward-compatible with the Sentry30IDTree.

Continue to use the Sentry30IDTree for SNMP network monitoring of PDU products, and use the Sentry40IDTree exclusively for PR01/PR02 products.



config.bak (or *.bak)

This configuration backup file (firmware version 8.0x or later), when uploaded, restores a unit, including network, SNTP, and FTP settings.

User-configuration values are restored, *except*:

- DHCP/IP values in network settings
- SNAP password
- SNMP sysName (unless restoring to the same unit from which the backup came, based on NIC serial number, in which case the sysName is restored)
- User-loaded x-509 certificate and key
- Factory-configuration values, for example NIC serial number and profile, are not backed up or restored.

System > Groups

The **Groups** page lets the administrator create and name a new outlet group and assign to the group access rights to individual (or all) outlets. For dynamic monitoring of outlets assigned to a group, see the separate **Monitoring > Groups** page.

Server	PRO2 Sentry Switched PDU POPS - PIPS	
Technology.	-	
A brand of legrand	Groups	
Overview	Create a new outlet group	
Monitoring	Group Name:	
Control	Apply Cancel	
Configuration	Edit or remove an existing outlet group	
System	Group Name	Action
About	123456789a123456789b123456789c12	Access Remove
Rhustooth	987654321z987654321y987654321x98	Access Remove
Bidecootii	aA1!~`!@#\$%^&*()_++-=o	Access Remove
Branches	aaa	Access Remove
Cords	bB2@	Access Remove
	f	Access Remove
Features	ff	Access Remove
Files	fff	Access Remove
Crowne	S	Access Remove
Groups	SS	Access Remove
Lines		
Outlets		
OCPs		

To create a new outlet group:

- 1. In the Group Name field, type the new name for the outlet group.
- 2. Click Apply. The newly added name displays in the lower part of the page in a list of group names for editing or removing.

To grant individual outlet access rights to an outlet group:

1. For the group name displayed in the list, click the Access link. The Group Access page displays to allow granting access rights to individual outlets by checking corresponding outlet checkboxes (or unchecking a checkbox to deny rights).

2.	Click Apply.	Access rights	are applied to the	outlets for the outlet g	roup.
----	--------------	---------------	--------------------	--------------------------	-------

Server	PROP Sentry Switched PDU POPS PIPS				
Iechnology.	Group Access				
Overview	Group name being assigned access rights				
Monitoring	bB2@				
Control	Group can access the following selected outlets				
Configuration	ID Outlet Name	Grant Access			
System	AA1 Master_Outlet_1				
About	AA2 Master_Outlet_2				
Bluetooth	AA3 Master_Outlet_3				
Branches	AA4 Master_Outlet_4				
Cords	AA5 Master_Outlet_5				
Cords	AA6 Master_Outlet_6				
Features	AA7 Master_Outlet_7				
Files	AA8 Master_Outlet_8				
Groups	AA9 Master_Outlet_9				
Lines	AA10 Master_Outlet_10				
Outlets	AA11 Master_Outlet_11				
OCPs	AA12 Master_Outlet_12				

To grant access rights to all outlets for an outlet group:

1. For the group name displayed in the list, click the Access link.

Ports	ک 🛅 میں از میں ایک میں دیکھی میں کا معرف کے معرف کی معرف کی معرف کا معنی کا تعلیم مسلم کا کا کھی میں کا کا کھی میں کا ک	
Concorra	DA22 Link3_Outlet_22	- 1
Sensors	DA23 Link3_Outlet_23	
Shutdown	DA24 Link3_Outlet_24	
Trending	DA25 Link3_Outlet_25	
Units	DA26 Link3_Outlet_26	_
UPS	DA27 Link3_Outlet_27 Click the All link to grant access to all outlets	
Network	DA28 Link3_Outlet_28 displayed on the page.	
Access	DA29 Link3_Outlet_29	
Tools	DA30 Link3_Outlet_30	
	Apply Cancel All Non	e
	Group Configuration	
Logout	Copyright © 2002-2018 All Rights Reserved.	

- 2. At the bottom of the Group Access page, click the All link to grant access to all outlets listed on the page (or click the None link to deny access to all outlets listed).
- 3. Click Apply.

System > Lines

The Lines page configures the separate area of the PDU's cord architecture that reports current line load, allowing the setting of multiple line threshold levels, plus threshold hysteresis. The page also sets SNMP Trap and Email notifications for line events.

For dynamic monitoring of line status and current, see the separate **Monitoring > Lines** page.

Server	PROP Sentry Switched PDU (POPS - PIPS)								
lechnology									
A brand of Diegrand	Lines								
Overview	Configure line settings								
Monitoring	ID Line Name	SNMP Trap Notifications	Email Notifications						
Control	AA1 AA:L1		V						
Configuration	AA2 AA:L2								
System	AA3 AA:L3								
About	BA1 BA:L1		\checkmark						
Bluetooth	BA2 BA:L2								
Branches	BA3 BA:L3								
Cords	CA1 CA:L1								
Features	CA2 CA:L2		\checkmark						
File-	CA3 CA:L3		V						
Files	DA1 DA:L1								
Groups	DA2 DA:L2		\checkmark						
Lines	DA3 DA:L3		\checkmark						
Outlets	Apply Cancel	All	All						
OCPs	Line Current Thresholde	None	None						
Phases	Line Current miesholas								
Ports									

To configure line settings:

- For each line listed, check (or uncheck) SNMP Trap Notifications and/or Email Notifications to enable/disable notifications for line events. To enable (or disable) all lines for SNMP Trap or Email notifications, click All (or None).
- 2. Click Apply.

Note: The format of PR01/PR02 line names is a standard and fixed naming structure and cannot be edited.

Example of line names:

AA:L1, AA:L2, AA:L3, AA:N (Master unit: Lines 1, 2, 3, and Line N for neutral)

BA:L1, BA:L2, BA:L3, BA:N (Link unit: Lines 1, 2, 3, and Line N for neutral)

Configuring Line Current Thresholds

Click the Line Current Thresholds link at the bottom of the Lines page to display the configuration page:

<u>Server</u>	PROP Sentry Switched PDU (POPS = PIPS)										
Technology.	Line Current Thresholds										
Overview	Configure line current hysteresis										
Monitoring	Hysteresis:	1.0 A									
Control	Configure line current thresholds										
Configuration	ID Line Name	Low Alarm	Low Warning	High Warning	High Alarm						
System	AA1 AA:L1	0.0 A	0.0 A	16.8 A	19.2 A						
About	AA2 AA:L2	0.0 A	0.0 A	16.8 A	19.2 A						
Bluetooth	AA3 AA:L3	0.0 A	0.0 A	16.8 A	19.2 A						
Branches	BA1 BA:L1	0.0 A	0.0 A	16.8 A	19.2 A						
Cords	BA2 BA:L2	0.0 A	0.0 A	16.8 A	19.2 A						
Features	BA3 BA:L3	0.0 A	0.0 A	16.8 A	19.2 A						
Files	CA1 CA:L1	0.0 A	0.0 A	16.8 A	19.2 A						
Groups	CA2 CA:L2	0.0 A	0.0 A	16.8 A	19.2 A						
Lines	CA3 CA:L3	0.0 A	0.0 A	16.8 A	19.2 A						
Outlets	DA1 Click link to return to the Lines page.	0.0 A	0.0 A	16.8 A	19.2 A						
OCPs	DA2	0.0 A	0.0 A	16.8 A	19.2 A						
Phases	DA3 DA:L3	0.0 A	0.0 A	16.8 A	19.2 A						
Ports	Apply Cancel	All A	All A	All A	All A						
Sensors	Line Configuration										

To set line current thresholds:

- 1. Provide the threshold hysteresis between event state and recovery (A). Range is 0.0-10.0A; default is 1.0A.
- 2. Set the low/high alarm and low/high warning current load threshold values (A). Range is min 0A; max is current limit displayed in **show lines** command.
- 3. Click Apply.

System > Outlets

The **Outlets** page allows configuration of global outlet parameters and outlet shutdown options, including the setting of multiple threshold levels for outlet current, outlet power, and outlet power factor, plus the threshold hysteresis. The page also sets sets SNMP Trap and Email notifications for outlet events.

For outlet management: the issuing of On, Off, and Reboot commands on individual outlets and all outlets globally, see the separate **Control > Outlets** page and **Control > Groups** page.

For dynamic monitoring of outlet status, see the separate **Monitoring > Outlets** page.

For configuring and the assignment of outlets to user-defined outlet groups, see the separate **Configuration > Groups** page.

Server	PRO	2) Sentry Switched PDU	POPS =	PIPS				IP Ad	fress : FE80::20A:90	Location : • U FF:FE60:1E2 • Acce	ser : admn 🛛 📢
Iecnnology.	Outlete	-									
Overview	Confi	gure global outlet options									
Monitoring	Seque	nce Interval (seconds):		2							
Control	Rehoo	t Delay (seconds):		15							
Configuration	State	Change Logging:		Enable							
System	Listo	utlets in selected unit		Endbic							
About	LISU										
Bluetooth	Select	ted Unit:		Master 💌							
Branches	Confi	gure unit outlet options									
Cords	ID	Outlet Name		Socket Type	Socket Adapter	Extra Dela	a On V	Wake Up State	Locked / No Control	SNMP Trap Notifications	Email Notifications
Features	AA1	Master Outlet 1		Cx	C13 -	0	sec	Last 🔻 (O	n) 🔲		
Files	AA2	Master_Outlet_2		C13	None	0	sec	Last 🔻 (O	n) 🔽	V	
Groups	AA3	Master_Outlet_3		C13	None	0	sec	Last 🔻 (O	ff) 🔽		
Lines	AA4	Master_Outlet_4		C13	None	0	sec	On 👻		V	
Outlets	AA5	Master_Outlet_5		C13	None	0	sec	Off 💌		V	
OCPs	AA6	Master_Outlet_6		C13	None	0	sec	Last 💌 (O	n) 🔲	V	\checkmark
Phases	AA7	Master_Outlet_7		C13	None	0	sec	On 🔻		V	
Ports	AA8	Master_Outlet_8		C13	None	0	sec	On 🔻			
Sensors	AA9	Master_Outlet_9		C13	None	0	sec	On 👻			V
	<u>AA10</u>	Master_Outlet_10		Cx	C13.	la	sec	On. 🔻	A Carlos and		-
	ر. مراجع با معرور با ^{مر} وم				ور ور است میں ور عمر المرد					المريار وروالي المراجبة المراجعة المراجع	
Groups	AA14	Master_Outlet_14		C13	None	0	sec	On 💌		V	
Lines	AA15	Master_Outlet_15		C13	None	0	sec	On 💌		V	
Outlets	AA16	Master_Outlet_16		C13	None	0	sec	On 💌		v	v
OCPs	AA17	Master_Outlet_17		C13	None	0	sec	On 💌		V	
Phases	AA18	Master_Outlet_18		C13	None	0	sec	On 💌		V	V
Ports	AA19	Master_Outlet_19		C13	None	0	sec	On 💌		V	
Sensors	AA20	Master_Outlet_20		Cx	C13 -	0	sec	On 💌			
Shutdown	AA21	Master_Outlet_21		CX	1019	0	sec	jon 💌			
Trending	AA22	Master_Outlet_22		C13	None	0	sec	On 💌			V
Units	AA23	Master_Outlet_23		C13	None	0	sec			V	V
UPS	AA24	Master_Outlet_24		C13	None	0	sec				
Network	AA25	Master_Outlet_25		C13	None	0	sec			V	V
Access	AA20	Master_Outlet_20		C12	None		sec				
Tools	AA20	Master_Outlet_27		C12	None		- sec				
	AA20	Master_Outlet_20		C13	None		sec				
	4430	Master Outlet 30		CX	C13 V	0	sec	On 💌			
	A			-						All	All
	App		11-1-1			JAI	sec	All 🕒	None	None	None
	Outle	t Current Thresholds	LINKS to	configura	tion pages						
	Outle	t Power Inresnolds	for out	et thresho	pias.						
Logout	Convri	aht © 2002-2018 All Rights Reserved	1.							www.servertech.c	om 1.775.284.2000
	- Copyin	gine 2002 2010 ran ragino rebelver				_					

To configure outlet options:

- 1. Set the Sequence Delay (in seconds) to determine the delay between turning on the outlets. Range is 0-15 seconds.
- 2. Set the Reboot Delay (in seconds) to set an extra on delay when rebooting an outlet.
- **3.** Check to enable the State Change Logging feature. This option shows outlet state change as a reported event in all system/debug logs.
- 4. In the Outlet Name field, provide a descriptive text name, from 0-32 characters. The ID is a systemassigned internal name and cannot be changed
- 5. View the reported type of socket displayed for the outlet.
- 6. In the Extra On Delay field, for a specific outlet, set the value (in seconds) for an extra delay when turning on the outlet. Range is 0-900 seconds.
- 7. From the drop-down menu, select the On, Off, Last option for the wakeup state of the outlet. Wakeup state sets the default outlet control state after system power up. The option Last is the last known power state of the outlet.
- 8. For the Locked/No Control checkbox, check (to lock the outlet) or uncheck (to unlock the outlet). The Locked feature determines if control actions (on, off, reboot) are enabled/disabled for the outlet after the wakeup state is applied. When an outlet is configured in the locked state, the outlet locks at its current control state (on or off), and the outlet control state changes to Locked On or Locked Off.

Notes:

- The locked outlet will not be affected by group actions or Smart Load Shedding actions.
- SNMP and CLI control actions will be ignored for a locked outlet.
- **9.** For each outlet listed, check (or uncheck) SNMP Trap Notifications and/or Email Notifications to enable (or disable) notifications for outlet events.
- 10. Click Apply.

Configuring Outlet Current Thresholds

Server Technology	Hyste	eresis:	0.0	Α						
	Confi	igure outlet current thresholds								
Overview	ID	Outlet Name	Low Alar	m	Low War	ning	High War	ning	High Alar	rm
Monitoring	AA1	Master_Outlet_1	0.0	A	0.0	A	14.0	A	16.0	A
Control	AA2	Master_Outlet_2	0.0	А	0.0	А	10.5	А	12.0	A
Configuration	AA3	Master_Outlet_3	0.0	A	0.0	A	10.5	А	12.0	A
System	AA4	Master_Outlet_4	0.0	А	0.0	А	10.5	А	12.0	A
About	AA5	Master_Outlet_5	0.0	А	0.0	А	10.5	А	12.0	A
Bluetooth	AA6	Master_Outlet_6	0.0	А	0.0	A	10.5	А	12.0	A
Branches	AA7	Master_Outlet_7	0.0	А	0.0	A	10.5	А	12.0	A
Cords	AA8	Master_Outlet_8	0.0	А	0.0	A	10.5	A	12.0	A
Features	AA9	Master_Outlet_9	0.0	А	0.0	А	10.5	А	12.0	A
Files	AA10	Master_Outlet_10	0.0	А	0.0	A	14.0	А	16.0	Α
Groups	AA11	Master_Outlet_11	0.0	А	0.0	А	14.0	А	16.0	Α
Lines	AA12	Master_Outlet_12	0.0	А	0.0	А	10.5	А	12.0	A
Outlets	AA13	Master_Outlet_13	0.0	А	0.0	А	10.5	А	12.0	А
Over-Current Protectors	AA14	Master_Outlet_14	0.0	А	0.0	А	10.5	А	12.0	Α
Phases	AA15	Master_Outlet_15	0.0	A	0.0	A	10.5	A	12.0	Α

Click **Outlet Current Thresholds** at the bottom of the Outlets page to display the configuration page:

To set outlet current thresholds:

- 1. Provide threshold hysteresis between event state and recovery (A). the range is 0.0-10.0A; the default is 1.0A.
- 2. Set the low/high alarm and low/high warning threshold values (A) for outlet current load. The range is min 0.0A; max is max current shown in the **show outlets** command.
- 3. Click Apply.

Configuring Outlet Power Thresholds

Click the **Outlet Power Thresholds** link at the bottom of the Outlets page to display the configuration page:

Server	PROZ Sentry Switched PDU (POPS=PIPS)										
	Outlet	Power Thresholds									
Overview	Conf	igure outlet power hysteresis									
Monitoring	Hyste	eresis:	23	w							
Control	Conf	iqure outlet power thresholds									
Configuration	ID	Outlet Name	Low Al	arm	Low War	ning	High Warning	High Ala	irm		
System	AA1	Master_Outlet_1	0	w	0	W	2912 W	3328	w		
About	AA2	Master_Outlet_2	0	W	0	W	2184 W	2496	w		
Bluetooth	AA3	Master_Outlet_3	0	W	0	W	2184 W	2496	w		
Branches	AA4	Master_Outlet_4	0	W	0	W	2184 W	2496	w		
Cords	AA5	Master_Outlet_5	0	W	0	W	2184 W	2496	w		
Features	AA6	Master_Outlet_6	0	W	0	W	2184 W	2496	w		
Files	AA7	Master_Outlet_7	0	W	0	W	2184 W	2496	w		
Groups	AA8	Master_Outlet_8	0	W	0	W	2184 W	2496	W		
Lines	AA9	Master_Outlet_9	0	W	0	W	2184 W	2496	w		
Outlets	AA10	Master_Outlet_10	0	W	0	W	2912 W	3328	W		
OCPs	AA11	Master_Outlet_11	0	W	0	W	2912 W	3328	w		
Phases	AA12	Master_Outlet_12	0	W	0	W	2184 W	2496	w		
Ports	AA13	Master_Outlet_13	0	W	0	W	2184 W	2496	W		
Senser and a sense of the sense	AA14	Master_Outlet_14	0	W	0	W	2184 W	2496	W		

To set outlet power thresholds:

- 1. Provide the threshold hysteresis between event state and recovery (W). Range is 0-1000W; default is 10W.
- 2. Set the low/high alarm and low/high warning threshold values (W) for outlet power (without power factor). Range is min 0W, max is power capacity in **ostat** details command.
- 3. Click Apply.

Configuring Outlet Power Factor Thresholds

Click the **Outlet Power Factor** thresholds link at the bottom of the Outlets page to display the configuration page:

Server	PROP Sentry Switched PDL	I (POPS=PIPS)	
Technology.	Outlet Power Factor Thresholds		
Overview	Configure outlet power factor hy	steresis	
Monitoring	Hysteresis:	0.07	
Control	Configure outlet nower factor th	resholds	
Configuration	ID Outlet Name	Low Alarm	Low Warning
System	AA1 Master_Outlet_1	0.30	0.40
About	AA2 Master_Outlet_2	0.30	0.40
Bluetooth	AA3 Master_Outlet_3	0.30	0.40
Branches	AA4 Master_Outlet_4	0.30	0.40
Cords	AA5 Master_Outlet_5	0.30	0.40
Features	AA6 Master_Outlet_6	0.30	0.40
Files	AA7 Master_Outlet_7	0.30	0.40
Groups	AA8 Master_Outlet_8	0.30	0.40
Lines	AA9 Master_Outlet_9	0.30	0.40
Outlets	AA10 Master_Outlet_10	0.30	0.40
OCPs	AA11 Master_Outlet_11	0.30	0.40
Phases	AA12 Master_Outlet_12	0.30	0.40
Ports	AA13 Master_Outlet_13	0.30	0.40
Sensors	AA14 Master_Outlet_14	0.30	0.40
Church water and the second	AA15 Master_Outlet_15	0.30	0.40

To set outlet power factor thresholds:

- 1. Provide a numeric value for the threshold hysteresis between event state and recovery. Range is 0.0-0.20; default is 0.02.
- 2. Set numeric values for the low alarm/warning outlet power factor thresholds. Range is min 0.00; max is 1.00.
- 3. Click Apply.

System > Over-Current Protectors (OCPs)

The **Over-Current Protectors** page configures current load settings for each OCP connected to the unit as a standard and separate area of the PDU's architecture. The page also sets sets SNMP Trap and Email notifications for OCP events.

For dynamic monitoring of OCP status, see the separate **Monitoring > Over-Current Protectors** page. A failed OCP status (for either Switched or Smart PR01/PR02 products) is reported on the monitoring page.

Server	PROB Sentry Switched PDU (POPS = PIPS)									
	Over-Current Protectors									
Overview	Configure over-current protector settings									
Monitoring	ID OCP Name	Туре	Current Capacity	SNMP Trap Notifications	Email Notifications					
Control	AA1 OCPD Name	Breaker	20 A							
Configuration	AA2 OCPD Name	Breaker	20 A							
System	AA3 OCPD_Name	Breaker	20 A							
About	BA1 OCPD_Name	Breaker	20 A							
Bluetooth	BA2 OCPD_Name	Breaker	20 A							
Branches	BA3 OCPD_Name	Breaker	20 A		V					
Cords	CA1 OCPD_Name	Breaker	20 A	\square						
Features	CA2 OCPD_Name	Breaker	20 A	\bigtriangledown						
Files	CA3 OCPD_Name	Breaker	20 A	\checkmark						
Groups	DA1 OCPD_Name	Breaker	20 A	\checkmark						
Lines	DA2 OCPD_Name	Breaker	20 A	V						
Outlets	DA3 OCPD_Name	Breaker	20 A							
OCPs	Apply Cancel		All A	All	All					
Phases			,	None	None					
Ports										

To configure the OCP:

- 1. View the reported type of OCP as displayed on the page, either breaker or fuse.
- 2. Set the Current Capacity (A) for the OCP as its maximum current load. Range is 1-max current as displayed in the **show ocps** command.
- **3.** For each outlet listed, check (or uncheck) SNMP Trap Notifications and/or Email Notifications to enable (or disable) notifications for OCP events.
- 4. Click Apply.

System > Phases

The **Phases** page configures multiple threshold levels for phase voltage and power factor, plus threshold hysteresis (for AC products only). The page also sets sets SNMP Trap and Email notifications for phase events.

For dynamic monitoring of phase status, voltage, and power factor, see the separate **Monitoring > Phases** page.

Server	PROP Sentry Switched PDU POPS PIPS	IP Address : FE80:	Location : • User : admn :20A:9CFF:FE60:1E2 • Access : Admin
lechnology	Bhasar		
A brand of legrand	Phases		
Overview	Configure phase settings		
Monitoring	ID Phase Name	SNMP Trap Notifications	Email Notifications
Control	AA1 AA:L1-L2		
Configuration	AA2 AA:L2-L3		
System	AA3 AA:L3-L1		
About	BA1 BA:L1-L2		
Bluetooth	BA2 BA:L2-L3		
Branches	BA3 BA:L3-L1		
Cords	CA1 CA:L1-L2		
Features	CA2 CA:L2-L3	\checkmark	
Filos	CA3 CA:L3-L1		
Files	DA1 DA:L1-L2		
Groups	DA2 DA:L2-L3		
Lines	DA3 DA:L3-L1		
Outlets	Apply Cancel	All	All
OCPs		None	None
Phases	Phase Power Factor Thresholds		
Ports			
Sensors			

To set phase event notifications:

- 1. For each phase listed, check (or uncheck) SNMP Trap Notifications and/or Email Notifications to enable (or disable) notifications for phase events.
- 2. Click Apply.

Configuring Phase Voltage Thresholds

Click the phase voltage thresholds link at the bottom of the Phases page to display the configuration page:

Server	(PROP) Sentry Switched PDU (PO)	PS = PIPS			1
lechnology.	Phone Velkana Threeholds				
A brand of Diegrand	Phase voltage Infesholds				
Overview	Configure phase voltage hysteresis				
Monitoring	Hysteresis:	2.0 V			
Control	Configure phase voltage thresholds				
Configuration	ID Phase Name	Low Alarm	Low Warning	High Warning	High Alarm
System	AA1 AA:L1-L2	187.2 V	197.6 V	218.4 V	228.8 V
About	AA2 AA:L2-L3	187.2 V	197.6 V	218.4 V	228.8 V
Bluetooth	AA3 AA:L3-L1	187.2 V	197.6 V	218.4 V	228.8 V
Branches	BA1 BA:L1-L2	187.2 V	197.6 V	218.4 V	228.8 V
Cords	BA2 BA:L2-L3	187.2 V	197.6 V	218.4 V	228.8 V
Features	BA3 BA:L3-L1	187.2 V	197.6 V	218.4 V	228.8 V
Files	CA1 CA:L1-L2	187.2 V	197.6 V	218.4 V	228.8 V
Groups	CA2 CA:L2-L3	187.2 V	197.6 V	218.4 V	228.8 V
Lines	CA3 CA:L3-L1	187.2 V	197.6 V	218.4 V	228.8 V
Outlets	DA1 DA:L1-L2	187.2 V	197.6 V	218.4 V	228.8 V
OCPs	DA2 DA:L2-L3	187.2 V	197.6 V	218.4 V	228.8 V
Phases	DA3 DA:L3-L1	187.2 V	197.6 V	218.4 V	228.8 V
Ports	Apply Cancel	All	All V	All V	All V
Sensors	Phase Configuration — Link to retur	n to the Phase page.			
Shutdown)			

To set phase voltage power thresholds:

- 1. Provide the threshold hysteresis between event state and recovery (V). Range is 0.0-20.0V; default is 2.0V.
- 2. Set the low/high alarm and low/high warning threshold values(V) for phase voltage.
- 3. Click Apply.

Note: The range of phase voltage minimum and maximum values varies by product. To verify the nominal phase voltage by product, issue the CLI command **set cord nomvolts**, for example:

```
Switched PDU: set cord nomvolts
Cord name or ID: Master_Cord_A
Cord nominal voltage (200-240 Volts):
```

Configuring Phase Power Factor Thresholds

Click Phase Power Factor Thresholds link at the bottom of the Phases page to display configuration page:

Server	PROZ Sentry Switched PDU	OPS = PIPS	
	Phase Power Factor Thresholds		
Overview	Configure phase power factor hystere	esis	
Monitoring	Hysteresis:	0.02	
Control	Configure phase power factor thresh	olds	
Configuration	ID Phase Name	Low Alarm	Low Warning
System	AA1 AA:L1-L2	0.30	0.40
About	AA2 AA:L2-L3	0.30	0.40
Bluetooth	AA3 AA:L3-L1	0.30	0.40
Branches	BA1 BA:L1-L2	0.30	0.40
Cords	BA2 BA:L2-L3	0.30	0.40
Features	BA3 BA:L3-L1	0.30	0.40
Files	CA1 CA:L1-L2	0.30	0.40
Groups	CA2 CA:L2-L3	0.30	0.40
Lines	CA3 CA:L3-L1	0.30	0.40
Outlets	DA1 DA:L1-L2	0.30	0.40
OCPs	DA2 DA:L2-L3	0.30	0.40
Phases	DA3 DA:L3-L1	0.30	0.40
Ports	Apply Cancel	All	All
Sensors	Phase Configuration Link to return	to the Phase page.	

To set phase power factor thresholds:

- 1. Provide a numeric value for the threshold hysteresis between event state and recovery. he range is 0-0.20; default is 0.02.
- 2. Set numeric values for the low alarm/warning phase power factor thresholds. The range is min 0.00; max is 1.00.
- 3. Click Apply.

System > Ports

<u>Ş</u> erver	EROP Sentry Switched PDU	POPS » P IPS				
lechnology						
A brand of Diegrand	Ports					
Overview	Configure serial port options					
Monitoring	ID Port Name	Locked	Baud Rate	Timeout (0 = None)	DSR Check	RFTAG Support
Control	COM1 Console	No	9600 💌	5		
Configuration	COM2 Aux	Yes	115200 👻	5	\checkmark	
System	Apply Cancel					
About						
Bluetooth						
Branches						
Cords						
Features						
Files						
Groups	_					
Lines	_					
Outlets	_					
OCPs	_					
Phases	_					
Ports	_					
Sensors						

The **Ports** page configures options for the external serial port on the PDU.

To configure the serial port:

- 1. From the Baud Rate drop-down menu, select the data rate.
- 2. Set the Timeout value (in minutes) for the serial port inactivity timeout period. The timeout period defines the maximum period of inactivity before automatically closing the pass-thru session. Range is 0-60 (minutes); default is 5 minutes; setting the value to "0" disables the timeout.
- **3.** From the DSR Check drop-down menu, select On or Off to enable or disable serial port active signal checking.
- 4. Check the RFTAG Support box to enable RF Code tag (RFTAG) support for the selected (and unlocked) port. If the port is locked, any attempts to change this setting will be ignored.
- 5. Click Apply.

Notes:

- Pass-Thru connections can only be initiated from the Command Line Interface (CLI) in a Telnet/SSH session.
- One concurrent Serial session is allowed. If the unit has two serial ports, then two simultaneous serial sessions will be supported.

System > Sensors

The **Sensors** page configures multiple threshold levels for global temperature sensors and relative humidity sensors, plus threshold hysteresis. The page also determines the system-wide temperature scale and sets SNMP Trap and Email notifications for sensor events.

For dynamic monitoring of sensor temperature/humidity and operational status, see the separate **Monitoring > Sensors** page.

Note: If a fan is present on the PDU, the "Fan Sensor Thresholds" link will be displayed on this page to allow configuration of fan operating values. Fan hysteresis and thresholds will be rotations per minute (RPM).

Server	(DECCE) Sentry Switched PDU (POPS - PIPS					
Technology							
A brand of Diegrand	Sensors						
Overview	Configure global sensor settings						
Monitoring	Temperature Scale: Celsius (°C)						
Control	Configure temperature sensors						
Configuration	ID Sensor Name	SNMP Trap	Email				
System		Notifications	Notifications				
About	A1 Temp_Sensor_A1		V				
Bluetooth	A2 Temp_Sensor_A2		V				
Branches	B1 Temp_Sensor_B1	V					
Cords	B2 Temp_Sensor_B2	W.	V				
Features	C1 Temp_Sensor_C1	V					
Filor	C2 Temp_Sensor_C2	V	v				
Creups	D1 Temp_Sensor_D1		v				
Groups	D2 Temp_Sensor_D2		v				
Lines	Configure relative humidity sensors						
Outlets	ID Sensor Name	SNMP Trap	Email				
Dhasas	the latential designs and		mouncadons				
Pridses	A1 Humid_Sensor_A1						
Ports	A2 Humid_Sensor_A2						
Sensors	B1 Humid_Sensor_B1						
Shutdown	B2 Humid_Sensor_B2		v				
Trending	C1 Humid_Sensor_C1		V				
Units	C2 Humid_Sensor_C2		V				
UPS	D1 Humid_Sensor_D1		3				
Network	D2 Humid_Sensor_D2		∠.				
Access	Apply Cancel	All	All				
Tools	Humidity Sensor Thresholds Temperature Sensor Thresholds	Links to configure humidity/temperature sensors.					
Logout	Copyright © 2002-2018 All Rights Reserved.		www.servertech.com				
	and the second s						

To configure global sensor settings:

- 1. From the Temperature Scale drop-down menu, select the desired system-wide scale as Celsius (°C) or Fahrenheit (°F).
- 2. In the Sensor Name field, provide a descriptive text name for individual temperature sensors and/or relative humidity sensors. The ID is a system-assigned internal name and cannot be changed.
- **3.** For each sensor listed (and fan, if present), check (or uncheck) SNMP Trap Notifications and/or Email Notifications to enable (or disable) notifications for sensor events.
- 4. Click Apply.

Configuring Humidity Sensor Thresholds

Click Humidity Sensor Thresholds at the bottom of the Sensors page to display the configuration page:

Şerver	PROB Sentry Switched PDU (POPS PIPS)								
lechnology.	Humidity Sonsor Throsholds								
Abrand of Blegrand	Configure humidity sensor hysteresis	Configure humidity sensor hysteresis							
Monitoring	Hystorosis	2	- 04 PH						
Control	пузетезіз.	²	70 KH						
Configuration	Configure humidity sensor thresholds	Low Al	2000	Low M	amina	High V	/arning	High Al	200
System	10 Humidity Sensor Name	EOW AIR		LOW W		night v		High A	
About	A1 Humid_Sensor_A1	5	% KH	10	% RH	90	% KH	95	% RH
Blueteeth	A2 Humid_Sensor_A2	5	% KH	10	% KH	90	% RH	95	% KH
Branchoc	B1 Humid_Sensor_B1	5	% RH	10	% KH	90	% KH	95	% RH
Cordo	C1 Utumid Sensor C1	5	70 KH	10	% RH	90	70 KH	95	- 0% PU
Cords	C1 Humid_Sensor_C1	5	% RH	10	% RH	90	96 RH	92	% RH
Features	D1 Humid Sensor D1	5	% PH	10	04 PU	90	96 PH	05	96 PH
Files	D2 Humid Sensor D2	5	% RH	10	% RH	90	% RH	95	% RH
Groups	be mana_benon_be	5	-	110		150		55	
Lines	_Apply _Cancel	IAII	% RH	All	% RH	All	% RH	All	% RH
Outlets	Sensor Configuration Link to	return to the Sense	ors page.						
OCPs									
Phases									
Ports									
Sensors									
Shutdown									
Trending									
Units									
UPS									
Network									
Access									
Tools									

To set humidity sensor thresholds:

- 1. Provide the threshold hysteresis between event state and recovery(%RH). Range is 0-20%RH; default is 2%RH.
- 2. Set the low/high alarm and low/high warning threshold values for the humidity sensor(%RH). Range is min 0%RH, max100%RH.
- 3. Click Apply.

Configuring Temperature Sensors Thresholds

Click the Temperature Sensor Thresholds link at the bottom of the Sensors page to display this configuration page:

Server	PROP Sentry Switched PDU	PS = PIPS			
lechnology.					
A brand of Dilegrand	Temperature Sensor Thresholds				
Overview	Configure temperature sensor hysteresis	5			
Monitoring	Hysteresis:	1 °C			
Control	Configure temperature sensor threshold	5			
Configuration	ID Temperature Sensor Name	Low Alarm	Low Warning	High Warning	High Alarm
System	A1 Temp_Sensor_A1	1 °C	5 °C	45 °C	50 °C
About	A2 Temp_Sensor_A2	1 °C	5 °C	45 °C	50 °C
Bluetooth	B1 Temp_Sensor_B1	1 °C	5 °C	45 °C	50 °C
Branches	B2 Temp_Sensor_B2	1 °C	5 °C	45 °C	50 °C
Cords	C1 Temp_Sensor_C1	1 °C	5 °C	45 °C	50 °C
Features	C2 Temp_Sensor_C2	1 °C	5 °C	45 °C	50 °C
Files	D1 Temp_Sensor_D1	1 °C	5 °C	45 °C	50 °C
Groups	D2 Temp_Sensor_D2	1 °C	5 °C	45 °C	50 °C
Lines	Apply Cancel	All °C	All °C	All °C	All °C
Outlets	Sensor Configuration Link to re	turn to the Sensors page.			
OCPs					
Phases					
Ports					
Sensors					
Shutdown					

To set temperature sensor thresholds:

 Provide the threshold hysteresis between event state and recovery temperature. Range is 0-30° Celsius,

or 0-54° Fahrenheit; default is 1° Celsius or 2° Fahrenheit.

- 2. Set the low/high alarm and low/high warning threshold values for the temperature sensor(°). Range is minimum -40° to maximum 123° Celsius, or minimum -40° to maximum 253° Fahrenheit.
- 3. Click Apply.

Configuring Environmental Monitoring (EMCU) Thresholds

If an EMCU is connected to the PDU, the Sensors page will also allow configuration of water, contact closure and analog-to-digital (ADC) voltage sensors – to provide sensor name and SNMP/Email notifications.

In addition, for ADC voltage sensors only, high/low warning/alarm thresholds can be set. Water and contact closure sensors can have either Normal or Alarm status – there are no other states or value ranges.

	Sensors		
	Configure global sensor settings		
Overview	Temperature Scale:	Celsius (°C)	
Monitoring	Configure temperature sensors		
Control	Compare temperature sensors	SNMP Trap	Email
Configuration	ID Sensor Name	Notifications	Notifications
System	A1 Temp_Sensor_A1		
About	A2 Temp_Sensor_A2		
Bluetooth	B1 Temp_Sensor_B1		
Branches	B2 Temp_Sensor_B2		×
Cords	E1 Temp_Sensor_E1		×
Features	E2 Temp_Sensor_E2		V
Files	Configure relative humidity sensors		
Groups	ID Sensor Name	SNMP Trap	Email
Lines	to Describe Research to		reations
Load Shedding	AI Humid_Sensor_AI	×	×
Outlets	A2 Humid_Sensor_A2		×
Over-Current Protectors	P3 Humid Senser P3		×
Phases	E1 Numid_sensor_62	v V	
Ports	E2 Humid Sensor E2	2	
Sensors	Water sensors if present	a.	æ
Shutdown	Configure water sensors water sensors, in present.	SNMP Trap	Fmail
Units	ID Sensor Name	Notifications	Notifications
UPS	E1 Water_Sensor_E1	V	
Network	Configure contact sensors Content sensors, if present.		
Access	ID Sensor Name	SNMP Trap	Email
Tools		Notifications	Notifications
	E1 Contact_Sensor_E1	×	×
	E2 [Contact_Sensor_E2	×	×
	E3 Contact_Sensor_E3	×	×
	E4 [contact_sensor_E4	2	
	Configure analog to digital voltage sensors ADC SENSORS, IT present.		
	ID Sensor Name	Notifications	Notifications
	E1 ADC_Sensor_E1		
	Apply Cancel	All None	All None
	ADC Sensor Thresholds		
Logout	Humidity Sensor Thresholds Temperature Sensor Thresholds		

To set ADC voltage sensor thresholds:

1. Click ADC Sensor Thresholds link at the bottom of the Sensors page to display configuration page:

	(2000) Sentry Switched PDU (2005) PPES	7			
Overview					
Monitoring	ADC Sensor Thresholds				
Control	Configure ADC sensor hysteresis				
Configuration	Hysteresis:	1			
System	Configure ADC sensor thresholds				
About	ID ADC Sensor Name	Low Alarm	Low Warning	High Warning	High Alarm
Bluetooth	E1 ADC_Sensor_E1	0	0	255	255
Branches	Apply Cancel	All	All	All	All
Cords	Sensor Configuration				
Features					
Files					
Groups					
Unes					
Load Shedding					
Outlets					
Over-Current Protectors					
Phases					
Ports					
Sensors					
Shutdown					
Units					
UPS					
Network					
Access					
Tools					

- 2. Provide the threshold hysteresis between event state and recovery. Range is 0-20; default is 1.
- **3.** Set the low/high alarm and low/high warning threshold values for the ADC sensor. Range is 0-255; default is 0.
- 4. Click Apply.

System > Shutdown

The **Shutdown** page configures the remote shutdown options for outlets (for Switched PR01/PR02 products only).

The PDU supports the ability to initiate an orderly shutdown of a specific outlet or outlet group after performing a user-specified shutdown operation.

The shutdown also protects open application files prior to a server being powered down. Shutdown signaling is initiated over the existing TCP/IP network and requires the use of a remote shutdown agent.

PRO2 Sentry Switched PDU	POPS - PIPS		
Shutdown			
List controlled outlets in selected u	nit		
Selected Unit:	Master 💌		
Configure unit shutdown settings			
ID Outlet Name	Shutdown/Delay	Script/Delay	Hostname/IP
AA1 Master_Outlet_1	90 sec	1 min	
AA2 Master_Outlet_2	90 sec	🔲 1 min	
AA3 Master_Outlet_3	90 sec	🔲 📔 min	
AA4 Master_Outlet_4	90 sec	🔲 🚺 min	
AA5 Master_Outlet_5	90 sec	🔲 🚺 min	
AA6 Master_Outlet_6	90 sec	1 min	
AA7 Master_Outlet_7	90 sec	🔲 1 min	
AA8 Master_Outlet_8	90 sec	1 min	
AA9 Master_Outlet_9	90 sec	1 min	
AA10 Master_Outlet_10	90 sec	1 min	
AA11 Master_Outlet_11	90 sec	1 min	
AA12 Master_Outlet_12	90 sec	1 min	
AA13 Master_Outlet_13	90 sec	1 min	
AA14 Master_Outlet_14	90 sec	1 min	
AA15 Master_Outlet_15	90 sec		
AA16 Master_Outlet_16	90 sec	1 min	
	Sentry Switched PDU Shutdown List controlled outlets in selected unit: Configure unit shutdown settings ID Outlet Name AA1 Master_Outlet_1 AA2 Master_Outlet_2 AA3 Master_Outlet_3 AA4 Master_Outlet_4 AA5 Master_Outlet_5 AA6 Master_Outlet_6 AA7 Master_Outlet_7 AA8 Master_Outlet_9 AA10 Master_Outlet_10 AA11 Master_Outlet_12 AA3 Master_Outlet_5 AA6 Master_Outlet_6 AA7 Master_Outlet_13 AA4 Master_Outlet_10 AA11 Master_Outlet_11 AA12 Master_Outlet_12 AA11 Master_Outlet_11 AA12 Master_Outlet_13 AA14 Master_Outlet_15 AA14 Master_Outlet_15 AA16 Master_Outlet_16 AA17 Master_Outlet_17	Sentry Switched PDU POPS PPPS Shutdown List controlled outlets in selected unit Selected Unit: Master • Configure unit shutdown settings ID Outlet Name Shutdown/Delay AA1 Master_Outlet_1 90 sec AA2 Master_Outlet_2 90 sec AA3 Master_Outlet_3 90 sec AA4 Master_Outlet_4 90 sec AA5 Master_Outlet_5 90 sec AA6 Master_Outlet_6 90 sec AA6 Master_Outlet_7 90 sec AA8 Master_Outlet_10 90 sec AA9 Master_Outlet_10 90 sec AA10 Master_Outlet_11 90 sec AA11 Master_Outlet_12 90 sec AA11 Master_Outlet_14 90 sec AA11 Master_Outlet_15 90 sec AA11 Master_Outlet_14 90 sec	Sentry Switched PDU POPS-PIPS Shutdown List controlled outlets in selected unit Selected Unit: Master • Configure unit shutdown settings ID Outlet Name Shutdown/Delay Script/Delay AA1 Master_Outlet_1 90 sec 1 min AA2 Master_Outlet_2 90 sec 1 min AA3 Master_Outlet_3 90 sec 1 min AA3 Master_Outlet_4 90 sec 1 min AA4 Master_Outlet_5 90 sec 1 min AA5 Master_Outlet_6 90 sec 1 min AA6 Master_Outlet_7 90 sec 1 min AA7 Master_Outlet_10 90 sec 1 min AA8 Master_Outlet_11 90 sec 1 min AA8 Master_Outlet_12 90 sec 1 min AA9 Master_Outlet_13 90 sec 1<

To configure shutdown settings:

- For an individual outlet in the list, type the desired Shutdown/Delay for the outlet (in seconds), or accept the 90-second default, and check the corresponding checkbox. The shutdown/delay sets the time to wait after the shutdown notification before changing outlet state; range is 1-900 seconds; default is 90 seconds.
- 2. For an individual outlet in the list, type the desired Script/Delay for the outlet (in minutes) to set the time to wait after the script has executed to change outlet state, and check the corresponding checkbox; range is 1-15 minutes; default is 1 minute.
- 3. Provide the hostname/IP address for the target server.
- 4. Click Apply.

About the Remote Shutdown Feature

When the Remote Shutdown Agent is installed on the server and the Shutdown feature is configured on the PDU, the following **shutdown process** occurs:

- 1. The Off or Reboot command is received by the PDU.
- 2. Shutdown signal is sent to the Remote Shutdown Agent on the target server.
- 3. The Remote Shutdown Agent initiates a systematic shutdown of the target server for all actions that remove power from the outlet (such as the Off and Reboot commands), and allows the execution of user-defined scripts to perform custom activities, like safely shutting down open databases.
- 4. The PDU removes power from the outlet.

Shutdown and Smart Load Shedding

The Smart Load Shedding feature allows the load shedding of outlet loads, both on the PRO1/PRO2 and legacy PDU products, based on UPS condition (on-battery), temperature level, and input current load.

The Shutdown feature for Switched products is also supported by the extended license-key feature Smart Load Shedding. A systematic shutdown is initiated by Smart Load Shedding events such as high temperature, high infeed load, and UPS "on battery" conditions.

Supported Operating Systems for Shutdown

Remote Shutdown Agents are available for the following operating systems:

- Windows: 2000, 2003, XP.
- Linux: Red Hat 7.3, 8.0; Red Hat Enterprise 2.1 ES (update 5); 3.0 ES (update 4); Novell SUSE Linux Enterprise Server.
- Unix: HP-UX 11.0, 11i v1, 11i v2; IBM AIX 4.3, 5.3; Sun Solaris 8, 9, 10.
- Novell Netware: 6

Installing the Shutdown Agent

Note: For all operating systems shown below, if the IP address of the PDU is left blank in the last step of these installation instructions, any PR01/PR02 unit can send a shutdown signal to the server.

Windows

- 1. Browse to the location of the Remote Shutdown Agent installation files.
- 2. Run setup.exe by double-clicking the icon.
- 3. Reply to the standard installation prompts.
- 4. For additional security, when prompted, enter the IP address of the PDU that will be sending the shutdown signal.

Linux

- 1. Browse to the location of the Remote Shutdown Agent installation files.
- 2. Run SetupRA.
- **3.** For additional security, when prompted enter the IP address of the PDU that will be sending the shutdown signal.

Unix

- 1. Browse to the location of the Remote Shutdown Agent installation files.
- 2. Run Install.
- **3.** For additional security, when prompted enter the IP address of the PDU that will be sending the shutdown signal.

Novell Netware

- 1. Browse to the location of the Remote Shutdown Agent installation files.
- 2. From the NetWare system console, load the configuration module (**pmconfig.nlm**) using the default path.
- **3.** For additional security, when prompted enter the IP address of the PDU that will be sending the shutdown signal.

System > Trending

The **Trending** page generates a report (and related source data sets) of measured system trends over a 7day period, with the range of each day from midnight to midnight. The trend data in the report is for viewing and analysis only – no actions occur automatically based on the data.

Each time a measurement is taken on the unit, the measurement is aggregated into the metrics for the current day. The aggregation process includes updating the maximum and minimum values for each measurement, as well as updating the average with the new measurement.

Sorvor	DOD Sentry Switched PD		
	Sentry Switched I D		
Iechnology			
A brand of legrand	Trending		
Overview	Configure data trending options		
Monitoring	Data Trending:	🗷 Enable	
Control	Apply Cancel		
Configuration	Data trending files		
System	Date/Time	File	Size (Bytes)
About	2018-09-12 00:00	STI-PIPS-Cord-180904-6001ea.csv	143
Bluetooth	2018-09-12 00:00	STI-PIPS-Line-180904-6001ea.csv	299
bluetooth	2018-09-12 00:00	STI-PIPS-Phase-180904-6001ea.csv	339
Branches	2018-09-12 00:00	STI-POPS-Outlet-180904-6001ea.csv	4397
Cords	2018-09-12 00:00	STI-PIPS-Cord-180905-6001ea.csv	143
Features	2018-09-12 00:00	STI-PIPS-Line-180905-6001ea.csv	299
Features	2018-09-12 00:00	STI-PIPS-Phase-180905-6001ea.csv	339
Files	2018-09-12 00:00	STI-POPS-Outlet-180905-6001ea.csv	4396
Groups	2018-09-12 00:00	STI-PIPS-Cord-180906-6001ea.csv	143
	2018-09-12 00:00	STI-PIPS-Line-180906-6001ea.csv	299
Lines	2018-09-12 00:00	STI-PIPS-Phase-180906-6001ea.csv	339
Outlets	2018-09-12 00:00	STI-POPS-Outlet-180906-6001ea.csv	4397
OCPs	2018-09-12 00:00	STI-PIPS-Cord-180907-6001ea.csv	143
	2018-09-12 00:00	STI-PIPS-Line-180907-6001ea.csv	299
Phases	2018-09-12 00:00	STI-PIPS-Phase-180907-6001ea.csv	339
Ports	2018-09-12 00:00	STI-POPS-Outlet-180907-6001ea.csv	4397
Canaara	2018-09-12 00:00	STI-PIPS-Cord-180908-6001ea.csv	143
Sensors	2018-09-12 00:00	STI-PIPS-Line-180908-6001ea.csv	299
Shutdown	2018-09-12 00:00	STI-PIPS-Phase-180908-6001ea.csv	339
Trending	2018-09-12 00:00	STI-POPS-Outlet-180908-6001ea.csv	4397
	2018-09-12 00:00	STI-PIPS-Cord-180909-6001ea.csv	143
Units	2018-09-12 00:00	STI-PIPS-Line-180909-6001ea.csv	299
UPS	2018-09-12 00:00	STI-PIPS-Phase-180909-6001ea.csv	339
Network	2018-09-12 00:00	STI-POPS-Outlet-180909-6001ea.csv	4397
	2018-09-12 00:00	STI-PIPS-Cord-180910-6001ea.csv	143
Access	2018-09-12 00:00	STI-PIPS-Line-180910-6001ea.csv	299
Tools	2018-09-12 00:00	STI-PIPS-Pilase-180910-6001ea.csv	4207
	2018-09-12 00:00	CTL DIDC Cord 120011 600100 cmv	4397
	2018-09-12 00:00	STI-FIFS-COU-100911-0001ed.csv	200
	2018-09-12 00:00	STI-FIPS-Lille-100911-0001ea.csv	230
Logout	2018-09-12 00:00	STIL DODE Outlot 180011 600100 csv	4207
Logout	2010-09-12 00.00	511-POP5-Ouder-160911-0001ed.csv	4397

To activate the trending feature:

- 1. Check the Enable checkbox.
- 2. Click **Apply**. The page automatically displays generated .csv trend report files, along with related source data sets, for viewing.

System requirements for trending:

- Firmware, version 8.0x or later.
- SNTP must be enabled (to keep track of when the daily measurements are taken).

What data does trending measure?

■ REQUIREMENTS

For the Trending feature to occur and display (for viewing only) in the GUI at **System > Trending**, SNTP must be enabled to keep track of when daily measurements are taken.

Certain measurements for PIPS and POPS (if POPS is present) are tracked by the Trending feature:

For all PIPS cords/phases/lines, the following measurements are tracked:

- Phase voltage
- Line current
- Cord watts
- Cord power factor

■ WHAT IS MEASURED?

For all POPS outlets, the following measurements are tracked:

- Current
- Watts
- Power factor

■ ADDITIONAL TRACKED METRICS

For all of the above PIPS/POPS measurements, the following metrics will also be tracked:

- Minimum measurement
- Maximum measurement
- "In-use average" measurement

Note: PIPS is a standard feature on all PR01/PR02 units, but if the unit does not have POPS, then only the PIPS measurements will be tracked.

■ REQUIREMENTS

For the Trending feature to occur and display (for viewing only) in the GUI at **System > Trending**, SNTP must be enabled to keep track of when daily measurements are taken.

Certain measurements for PIPS and POPS (if POPS is present) are tracked by the Trending feature:

For all PIPS cords/phases/lines, the following measurements are tracked:

- Phase voltage
- Line current
- Cord watts
- Cord power factor

How Does the Trending Feature Work?

Each time a measurement is taken on the PDU, the measurement is aggregated into the metrics for the current day. The aggregation process includes updating the maximum and minimum values for each measurement, as well as updating the average with the new measurement.

Any measurements that have no current or are turned off will not be aggregated; this means the "in-use average" metric will be the reported metric.

Each day's worth of data will be stored in flash memory with a timestamp for use in generating a trending report. Only data from the last 8 days is kept. The report is not stored in flash memory but is regenerated into RAM after a system reboot.

If there is no data set that is 8 days old (1 week ago) for comparison, the trending data will indicate 100% increase for all reported trending data.

If the system is updated or units are moved/changed/removed/added, all trending will be restarted. In the event of communication loss to link units, trending data will not be lost.

About the Trending Report

- The report (and the data sets the report is generated from) are all stored separately.
- The report is created at midnight.
- The report contains the percent change of the average, maximum, and minimum measurements of the day compared to the daily metrics from the same day on the previous week (7 days ago).
- The data set contains the actual values that the report was generated from: the average, maximum, and minimum for the day

A	L	• : 7	X 🗸	f _x Line	e ID	
	Α	В	С	D	E	
1	Line ID	Amps min	Amps max	Amps avg	6-Jan-201	5
2	AA1	0	0	0		
З	AA2	0.25	1.64	1.021		
4	AA3	0.68	2.13	2.118		
5	AA4	0.25	2.29	1.216		
6	BA1	0.25	0.29	0.256		
7	BA2	0.27	0.29	0.278		
8	BA3	0.29	0.35	0.309		
9	BA4	-	-	-		

Example of Line source data set

A	A1 • : $\times \checkmark f_x$ Line ID						
	Α	В	с	D	E	F	
1	Line ID	Name	% chg Am	% chg Am	% chg Am	11-Jan-15	
2	AA1	AA:L1	-	-	-		
3	AA2	AA:L2	-	-	-		
4	AA3	AA:L3	-	-	-		
5	AA4	AA:N	-	-	-		

Example of Line trend report

Accessing and Distributing the Trend Report and Data Sets

The report (and the individual data sets the report is generated from) are available at all times at **Configuration > System > Trending** as comma delimited text files (HTTP, HTTPS, FTP, SFTP interfaces).

The file format name of the report and data sets is "STI-trend-(object)-yymmdd-macaddress.csv".

Optionally, after the report is generated, the report (and the most recent 24-hour period of data in a data set file) can be sent as an attachment to the primary and secondary "send to" email addresses.

System > Units

The **Units** page sets a descriptive system name for each PDU, configures asset management identification, determines outlet sequence, sets the display orientation of the mounted unit, and sets the Web GUI and CLI display order of the outlets. The page also sets sets SNMP Trap and Email notifications for unit events.

The Purge and Restore link on the Units page displays another page to allow the clearing of current values in non-volatile (NV) memory from individual units, and the resetting of those values back to factory defaults.

Server	PRO2 Sentry	Switched PDU 🔎	P S = PIPS					
Iecnnology	Units							
Overview	Unit identification	ı						
Monitoring	ID Unit Type	Model Number	MFR Date	Product Serial Num	ber	Asset Tag		Identify
Control	A Master	STV-6502M	2000-01-01	1		s		
Configuration	B Link	SEV-6502M	(not set)	GH		12345 6789c12	2	
System	C Link	SEV-6502M	2016-07-14	(not set)				
About	D Link	SEV-6502M	2123-12-31	aA1!!!@\$@#\$%^	%*i	Asset tag m		
Bluetooth	Configure unit se	ttings						
Branches	ID Unit Name			Display Orientation	Outlet Sequence	Outlet Display Order	SNMP Trap Notifications	Email Notifications
Cords	A Master			Auto 💌	Normal 💌	Normal 💌		V
Features	B Link1			Auto 💌	Normal 💌	Normal 💌		v
Files	C Link2		_	Auto 👻	Normal 👻	Normal 👻	V	V
Groups	D Link3			Auto 💌	Normal 💌	Normal 💌		
Lines	Apply Cancel	1					All	All
Outlets	Apply Cancel	1					None	None
OCPs	Unit Purge & Reset	:						
Phases								
Ports								
Sensors								
Shutdown								
Trending								
Units								
UPS								

To configure the PDU:

- 1. (Optional) Provide an asset tag identification for listed master and/or link units, and check the Identity checkbox.
- 2. In the Unit Name field, provide a descriptive text name for the unit, from 0-32 characters. The ID is a system-assigned internal name and cannot be changed.
- 3. From the Display Orientation drop-down menu, select an option:
 - Normal: Sets the LED display to be right-side up (for vertical mounting of the unit), and outlet sequencing to be 1 to n.
 - Inverted: Sets the LED display to be upside down.
 - Auto (Default): Sets automatic LED display orientation using internal orientation sensor.

- **4.** For Switched products, the PDU allows configuration of the power-on sequence of the outlets with the following available options. From the Outlet Sequence drop-down menu, select an option:
 - Normal: (Default) Powers on outlets in ascending numeric order by outlet number, for example, from outlet 1-8.
 - Reversed: Powers on outlets in descending order by outlet number; such as, from outlet 8-1.
- 5. For Switched products, from the Outlet Display Order drop-down menu, select an option to set the Web GUI or CLI outlet display order for the selected unit. Any attempt to change this setting on a device that does not have sequential switched outlets will be ignored:
 - Normal: (Default) Displays outlets in ascending numeric order by outlet number, for example, from outlet 1-8.
 - Reversed: Displays outlets in descending order by outlet number; for example, from outlet 8-1. The Reversed option is useful when the PDU is mounted with inverted orientation and the last outlet (in this example, outlet 8) is in the first position.
- 6. Check (or uncheck) the SNMP Trap Notifications and/or Email Notifications checkboxes to enable (or disable) unit event notification for a specific unit.
- 7. Click Apply.

Set Unit Defaults – System Settings Unchanged

The Set Unit Defaults – System Settings Unchanged function resets the following subset of configuration items (in the NIC of the master unit) to factory default values:

- Power items: Cords, lines, phases, over-current protectors (OCPs), branches, outlets.
- Sensor items: Temperature, humidity, water*, contact closure*, ADC* {* = EMCU unit only}
- User-configuration items related to the above power/sensor areas: Object names, thresholds, hysteresis, nominal values, limits, system location, notification enables, shutdown settings, Bluetooth® options, Smart Load Shedding options, outlet options, and more.

Note: User-configured system-level items **will not be reset** to factory defaults: Users, groups, network, LDAP, TACACS, features, UPS devices, login banner, etc.

To purge/reset NV memory:

1. From the **Units** page, click the Unit Purge & Reset link to display the following page:

<u>S</u> erver	PROP Sentry Switched PDU (POPS-PIPS)							
lechnology	Unit Durg	o & Pocot						
A brand of Diegrand	Durgo a	e a reset unit-related o	opfiguration to factory defau	lte				
Overview	(networ	k, access, and other s	ystem settings unchanged)	105				
Monitoring	ID	Unit Name	Unit Type	Model Number	MFR Date	Product SN	Asset Tag	Status
Control	А	Master	Master	STV-6502M	2000-01-01	1	5	Normal
Configuration	В	Link1	Link	SEV-6502M	(not set)	GH	12345 6789c12	Normal
System	С	Link2	Link	SEV-6502M	2016-07-14	(not set)		Normal
About	D No Actio	Link3	Link	SEV-6502M	2123-12-31	aA1!!!@\$@#\$%^%*I	Asset tag m	Normal
Bluetooth	No Actio	ruige						
Branches	Unit A	ition						
Cords	Unit B							
Features	Unit C							
Files	Unit D							
Groups	All Units							
Lines								
Outlets								
OCPs								

- 2. From the drop-down menu, select a unit as listed on the page by its internal system-assigned number shown in the ID field, such as unit A, unit B, etc., or select the All Units option.
- **3.** Click **Purge**. A message displays to confirm the purge action. The units selected will have NV memory purged and restored to factory default values.

System > UPS

The UPS page manages UPS devices connected to a PR01/PR02 PDU. A connected UPS device can be added to or deleted from the system. Several device options are available for configuration, including a configurable UPS name, and assignment of the PDU's lines to be powered by the UPS.

Server	PROP Sentry Switched PDU (POPS = PIPS)								
Iechnology.	UPS Devices	UPS Devices			Select a name from the supported list				
Overview	Add a new UPS device		OUPSI	or UPS manufacturers.					
Monitoring	UPS Name:								
Control	Туре:		Gene	ric RFC1628 💌					
Configuration	SNMP Host/IP:								
System	Apply Cancel								
About	Edit a UPS device								
Bluetooth	UPS Name	Туре	SNMP Host/IP	SNMP	SNMP Get	Actions			
Branches	TECT	Conoris PEC1639	142 455 724	Port	Community	Edit Romovo			
Cords	IESI	Generic RFC1628	142.450.734	101	public	Edit Remove			
Features									
Files									
Groups									
Lines									
Outlets									
OCPs									
Phases									
Ports									

To add a new UPS:

- **1.** Type a UPS name.
- 2. Select the UPS manufacturer from the Type drop-down menu.
- 3. Type an SNMP hostname/IP address in the field provided.
- **4.** Click **Apply**. The new UPS displays in the list of UPS devices. The list displays in alphabetic order by UPS name.

Configuring a UPS:

For a UPS listed on the page, click the Edit link to display the edit window:

UPS Device Edit					
Edit settings for this UPS device					
UPS Name:	ABC				
Туре:	Generic RFC1628 💌				
SNMP Host/IP:					
SNMP Port:	161 (default 161)				
SNMP Get Community String:	public				
SNMP Status Object ID:	.1.3.6.1.2.1.33.1.4.1.0				
SNMP On Utility Value:	3				
SNMP On Battery Value:	5				
Configure lines powered by this UPS device					
ID Line Name	Powered by this UPS				
AA1 AA:L					
BA1 BA:L					
Apply Cancel	All None				
UPS Configuration					

To configure a UPS:

- 1. From the Type drop-down list, select the UPS manufacturer.
- 2. Type the desired values for the SNMP-related fields or accept the defaults as shown on the page.
- **3.** Check the corresponding checkboxes for the line(s) that are powered by the UPS. To select all lines for the UPS, click All (or click None to deselect all lines).
- 4. Click Apply.

To remove a UPS:

1. For a UPS listed, click the Remove link. You will be prompted to confirm the removal of the UPS.

Network (Setting Up Network Protocols)

The **Network** section of the Web interface provides network setup options for the protocols supported by the PR01/PR02 PDU: DHCP/IP, Email/SMTP, FTP, HTTP/HTTPS, LDAP, RADIUS, SNMP, SNTP, Syslog, TACACS+, and Telnet/SSH.

Note: The **Network** section only allows the administrator to set up network protocol parameters. To configure how the PDU user will access and use the network and system, see the **Access** section.

Network > DHCP/IP

The DHCP/IP page allows configuration of the acquisition method for the protocol stack, viewing of current network communication settings, determining static IPv4/IPv6 address formats, and the enabling of DHCP options.

Server	(PROB) Sentry Switched PDU (POPS + PIPS)						
Technology							
A brand of legrand	DHCP/IP						
Overview	Network configuration						
Monitoring	Network:	Dual IPv6/IPv4 💌					
Control	State:	Static IPv6/IPv4					
Configuration	Link: Speed:	Up 100 Mbps					
System	Duplex:	Full					
Network	Negotiation:	Auto					
DHCP/IP	Ethernet MAC Address:	00-0A-9C-60-01-EA					
Email/SMTP	Autoctg IPv6 Address: IPv6 Address:	FE80::20A:9CFF:FE60:1EA/64 FE80::20A:9CFF:FE60:1E2/64					
FTP	IPv4 Address:	10.1.2.59					
HTTP/HTTPS	IPV4 Subnet Mask:	255.255.0.0					
LDAP	IPv4 Gateway:	10.1.1.1					
RADIUS	Primary DNS: Secondary DNS:	10.1.5.133 10.1.5.134					
SNMP	Configure static IPv4/IPv6 settings						
SNTP		EE801/200/0CEE/EE6011E2					
Syslog	IPV6 Gateway	FE80::204:9CFF:FE60:1B1					
TACACS+							
Telnet/SSH	IPv4 Address:	10.1.2.59					
ZTP	IPv4 Subnet Mask:	255.255.0.0					
Access	IPv4 Gateway:	10.1.1.1					
Tools	Primary DNS:	10.1.5.133					
	Secondary DNS:	10.1.5.134					
	Configure DHCP settings						
	DHCP:	Enable					
	FQDN:	Enable sentry-6001ea					
	Boot Delay:	Enable					
	Static Address Fallback:	🖉 Enable					
	Zero Touch Provisioning (ZTP):	Enable (Not Provisioned)					
Logout	Apply Cancel						

To configure DHCP/IP:

- Network: Determines the acquisition method used for the protocol stack: "Disabled", "Dual IPv6/IPv4", or "IPv4 only". For maximum backward compatibility, accept the default network mode "IPv4 only".
- 2. View the fields in the next section of the page as a quick reference for current network parameters:

For more information about how the PDU handles the network with IPv6/IPv4 options, see <u>Network-Enabled Modes</u> in this user guide.
To configure static IPv4/IPv6:

- 1. IPv4/IPv6 Address/Gateway: Provide the address for these fields in either IPv4 or IPv6 format.
- 2. IPv4 Subnet Mask: If IPv4 is used, supply the IP address for the subnet mask in IPv4 format.
- 3. Primary/Secondary DNS: Provide the IP address for the primary and secondary DNS hostnames.

To configure DHCP settings:

- 1. DHCP: Check or uncheck to enable/disable DHCP support. Default is disabled.
- 2. FQDN: Provide the fully-qualified domain name (FQDN) name and check Enable. Default is enabled.
- 3. Boot Delay: Check or uncheck to enable/disable Boot Delay with the following results:
 - Enable: The Boot Delay option gives the PDU approximately 100-seconds to establish a connection through a DHCP server. The interval allows various network component activities to occur as the unit powers up (such as obtaining SNTP time stamps for logging).
 - Disable: (Default) The Boot Delay option forces the PDU to boot after approximately 5-seconds regardless of the DHCP acquisition state. This speeds up a boot when a DHCP server is connected to one of the outlets in the unit. In this configuration, SNMP traps, SNTP, and other protocols will not be available until a DHCP address has been resolved.

Notes:

- The Boot Delay option executes only when DHCP is enabled.
- The firmware can detect network link integrity and will wait for network connection. This means that if the network is not currently connected, the enabled Boot Delay option will be ignored.
- **4.** Static Address Fallback: Check or uncheck to enable/disable Static Address Fallback with the following results:
 - Enable: (Default) The Static Address Fallback option informs the unit to automatically fall back to a static address if a DHCP server does not respond after 90-seconds.
 - Disable: The Static Address Fallback option generates DHCP server requests until the unit obtains a dynamic address.

Notes:

- The Static Address Fallback option executes only when DHCP is enabled.
- If the DHCP server boot time is excessive, you may need to disable the DHCP Static Address Fallback option.
- The DHCP Static Address Failback option does not apply when WLAN is enabled.

- 1. Zero Touch Provisioning (ZTP): Check or uncheck to enable/disable ZTP with the following results:
 - Enable: The ZTP option allows automated configuration for PR01/PR02 products. PDUs can be provisioned and configured automatically during the initial bootup, or whenever needed, to automate network setup, user permission updates, and other PDU modifications as necessary.
 - Disable: (Default) The ZTP option is turned off and the "Non Provisioned" state displays.

To reset ZTP:

Reset is available only when ZTP is enabled. When reset to "Not Provisioned", the PDU will attempt ZTP again after the next RESTART, behaving as it did prior to being provisioned.

After a PDU has been successfully provisioned by ZTP, to use the GUI to reset ZTP to re-provision the PDU again either after the next RESTART or next DHCP lease renewal, click the **Reset** button on the ZTP window.

Note that the PDU's provisioned state ("provisioned" or, "not provisioned") is not reset by disabling ZTP. When ZTP is re-enabled on a previously provisioned PDU, the state will still show as provisioned.

Note: For more information about the automatic provisioning methodology used with PR01/PR02 products, see the Server Technology website <u>www.servertech.com</u> for Technical Note: 303-9999-44, "Zero Touch Provisioning".

Network Defaults

The PDU has the following network defaults to allow unit configuration through Telnet or Web:

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 follows:

IP Address: 192.168.1.x (where x is 2-253).

Subnet Mask: 255.255.255.0

Note: The PDU must be restarted after network configuration changes.

Network > Email/SMTP

The Email/SMTP page allows configuration of the Email/SMTP protocol and email options.

Server	DROD Sentry	Switched PDU (POPS - PIPS)				
Technology.	Email/SMTP	(SMTD estions				
Overview	Configure email	SMTP options			-	
Monitoring	SMTP Host:		10.1.2.80			
Control	SMTP Port:		27 (default 25	5)		
Configuration	SMTP Authent	cation:	None 💌 wit	th SMTP Username 💌	_	
System	SMTP Usernar	ae:	rogerpf			
Network	SMTP Passwo	ad:	*******		Change	
DHCP/IP	'From' Addres	i:	rogerfromaddress			
Email/SMTP	Primary 'To' A	ddress:	roger59@sti.com			
FTP	Secondary 'To	Address:				
HTTP/HTTPS	Subject ID:		Use Default 💌 [S	Sentry_6001ea]		
LDAP	Configure email	notification options				
RADIUS	Email Notificat	ions:	V Enable			
SNMP	EVENT Mess	ages:	I Enable			
SNTP	AUTH Messo	ges:	☑ Enable			
Suelon	POWER Mes	sages:	🗷 Enable	fo test email: Aft	er configurin	g the
TACACE	CONFIG Me	isages:	🗵 Enable	Email/SMTP page	, you can sen	nd a test
Talaat/66U	Trend Files:		🗷 Enable	amail to the targe	t (primary a	ad
Temet/SSM	Apply Cance		Test	email to the targe	c (prinary a	iu
ZTP			2	secondary) email	destination b	by clicking
Access			l t	the Test button.		
ools						
Authentication	Notes:	 SMTP authentication allows process of sending an email. server. The supported SMTP auther MD5; CRAM-MD5, Login, Plai username/password, or the a 	the mail client in the PDU The mail server may requi ntication types are: None (n, and Any. SMTP authenti Iddress in the 'From' Addr	I to log into the m ire this login to re default, no SMTP cation occurs wit ess field with 'Fr	hail server du elay mail to a dauthenticati th a configure om' Address	iring the inother m on); Diges ed selected

To configure SMTP protocol options:

- 1. Type the hostname/IP address in the SMTP Host field (either IPv4 or IPv6 format).
- 2. Provide the port number or accept the default as shown.
- **3.** From the drop-down menu, select the authentication method, and from the "with" menu, select username or 'from' as described directly above in the notes.
- 4. Type the desired Email/SMTP username; spaces are not allowed.
- 5. Type the password for the username. The password sets the SMTP authentication with the username. Acceptable passwords are 1-32 alphanumeric characters, case-sensitive, and spaces are not allowed. To change the password, type over it, and check the Change box.
- **6.** Provide the 'From' email address.
- 7. Provide the Primary/Secondary 'Send To' email address. If the primary 'send to' address fails, the system then attempts to send the email to the secondary 'send to' address.
- 8. From the Subject ID drop-down menu, select the "Sentry_nnnnn" default option (where "nnnnn" is the last 3 octets of the MAC address), or select the "Location" option to specify the email subject line.
- 9. Click Apply.

To configure Email notification options:

- 1. Check the Enable checkbox to enable Email notifications to be sent.
- 2. For the event notifications shown, check the corresponding Enable checkbox to enable an alert message via email. The events are:

EVENT: System activity event AUTH: Authentication event POWER: Power event CONFIG: System configuration event Trend Files: Sends the trend files via Email

3. Click Apply.

Network > FTP

The FTP configuration page allows configuring the settings required for the FTP client to perform FTP firmware uploads and automatic system uploads/downloads.

Server	PROB Sentry Switched PDU (POPS = PIPS)			
Technology	FTD			
Overview	Configure FTP client options			
Monitoring	Host:	10.1.2.100		
Control	Username:	taxe		
Configuration	Password:	• Change		
System	Directory:	/firmware/8.0m/		
Network	Filename:	pro-v80m.bin		
DHCP/IP	Automatic Updates:	Enable		
Email/SMTP	Scheduled Day:	Everyday 💌		
FTP	Scheduled Hour:	12 AM 💌		
HTTP/HTTPS	Test			
LDAP	Configure FTP server options			
RADIUS	FTP Server:	Enable		
SNMP	Apply Cancel			
SNTP				
Syslog				
TACACS+				
Telnet/SSH				
ZTP				
Access				
Tools				

To configure FTP client options:

- 1. Type the hostname/IP addresses in the Host field (IPv4 or IPv6 format).
- 2. Type the FTP username in the Username field, 1-32 characters, spaces are allowed.
- **3.** Provide a password for the FTP username. To change the password, check the Change box and type the new password.
- 4. Type the file path to be uploaded to the Directory field.
- 5. Type the filename to be uploaded in the Filename field.
- 6. The PDU is capable of scheduling automatic firmware updates. When enabled and configured, the PDU regularly checks the FTP server for a new firmware image and uploads the image. To enable Automatic Updates, check the Enable checkbox.
- 7. From the Scheduled Day and Scheduled Hour drop-down menus, select the desired day/hour for the automatic update to occur.
- 8. The FTP upload configuration validates that the unit is able to contact and log into the specified FTP server, download the firmware file, and verify that the firmware file is valid for the unit. To initiate the test, click the **Test** button.

To configure FTP server options:

1. In the FTP Server area at the bottom of the page, check the Enable checkbox.

Notes:

- The FTP server must be enabled for configuration upload or download.
- Secure File Transport Protocol (SFTP) is also supported for encrypted SSH transport over the network.

Network > HTTP/HTTPS

The HTTP/HTTPS page configures server options for HTTP, HTTPS (secure web server), and SSL, including user-defined certificates. The page also determines secure access settings for the Sentry Power Manager (SPM) enterprise software product and for the Web services API.

Server	PROP Sentry Switched PDU POPS PIPS		ل 200
	HTTP/HTTPS		
Overview	Configure HTTP server options		
Monitoring	HTTP Server:	✓ Enable	
Control	HTTP Port:	80 (default 80)	
Configuration	Configure HTTPS/SSL server & user certificate options		
System	HTTPS Server:	✓ Enable	
Network	HTTPS Port:	443 (default 443)	
DHCP/IP	User Certificate:	Enable	
Email/SMTP	Passphrase:	Change	
FTP	Stored Files:	None Upload	
HTTP/HTTPS	Installed Certificate:	Factory	
LDAP	Configure Web Services (HTTPS Required)		
RADIUS	JSON API Web Service:	🗷 Enable	
SNMP	SPM Secure Access:	🗷 Enable	
SNTP	Password:	Reset	
Syslog	Apply Cancel		
TACACS+			
Telnet/SSH			
ZTP			
Access			
Tools			

To configure HTTP and HTTPS/SSL servers/ports:

- 1. Server: Check (or uncheck) the Enable checkboxes to enable/disable support for the HTTP and/or HTTPS/SSL server options.
- 2. Port: Type a port number or accept the default HTTP/HTTPS/SSL port numbers as displayed. The HTTP default port number is 80; the SSL default port number is 443.
- 3. Click Apply.

NOTES:	•	SSL-encrypted (HTTPS) must be used for secure website connections.
	•	A current web browser with TLS1.2 support is required. Current version of IE, Firefox, Chrome, Opera, and Safari are supported.
	•	The HTTPS server uses the first matching cipher from the client preference list. For more information about PR01/PR02 firmware-supported ciphers, go to <u>www.servertech.com</u> for the technical note: 303-9999-12, PDU Security.
	•	With the support of TLS1.2, self-signed X.509 certificates now use a 2048-bit key and SHA256 as the signature hash algorithm. It is highly recommended (and may even be required by some web browsers), that old/weaker self-signed certificates be removed from certificate stores and new/stronger certificates be regenerated and accepted into certificate stores.
	•	The number of concurrent HTTP/S sessions supported depends on the web browser in use.

To configure user certificate options:

- 1. User Certificate: Check (or uncheck) the Enable checkbox to enable/disable support for custom user certificates.
- 2. Passphrase: Provide a passphrase (0-63 characters) for the new user certificate. To change the passphrase, type a new passphrase and check the Change checkbox
- **3.** Stored Files: This section displays a message (described in the following table) to confirm the upload status of the user certificate and its related public key.

Message	Description and Valid Values/Range
Cert & Key	Both the user certificate and its key were uploaded successfully.
Cert	User certificate was uploaded without a key.
No Cert	User certificate was not uploaded.
Factory Encrypted	User certificate was encrypted and uploaded at product assembly.
None	Neither the user certificate nor its key were uploaded.

Custom User Certificate Messages

4. Installed Certificate: Shows the type of certificate that was installed – Factory, User, Company.

5. Click Apply.

To configure web services:

Web Services API Option:

1. Check the JSON API Web Services checkbox to enable this service.

Sentry Power Manager (SPM) options:

The Sentry Power Manager (SPM) is Server Technology's enterprise management software product for the data center. The configuration options provided allow you to enable/disable SPM and reset the SPM password to its default.

- 1. SPM Secure Access: Check (or uncheck) the Enable checkbox to enable/disable SPM Secure Access. If your operation does not currently use SPM, you can disable this option. However, when the option is disabled, the PDU will not be able to use the secure network features or advanced remote configuration provided by SPM.
- 2. SPM Password: Each PR01/PR02 unit has a unique default SPM password that communicates between SPM and the PDU. For added security, when SPM discovers a PR01/PR02 PDU in the network, SPM changes the default password to a different (and unique) password and continues to manage or alter passwords as required for on-going system security. To reset the SPM password, click the **Reset** button.
- 3. Click Apply.

Notes:

- The SPM options apply only if you are currently using SPM.
- Both HTTP and HTTPS/SSL must be enabled or the SPM Secure Access will not be allowed. When allowed, the SPM Secure Access checkbox is enabled by default.
- Do not reset the SPM Password if SPM communication has already been established.

Network > LDAP

The LDAP page determines the protocol settings required to enable LDAP support.

Note: The **Network > LDAP** page is for LDAP network protocol management only. To manage LDAP user groups, see the **Access > LDAP Groups** page.

Server	Sentry Switched PDU POPS PPS	The Change Access Configuration link takes
Technoloay		you to the Access page to determine the
A brand of Disgund	LDAP	user access method for LDAP.
Overview	Configure LDAP options	
Monitoring	LDAP:	Enabled (remote access then local)
Control		change access configuration
Configuration	Primary Host:	sti-techsupp2.stitech.com
System	Secondary Host:	
Network	Port:	636 (default 636)
DHCP/IP	Bind Type:	TLS 💌
Email/SMTP	Search Bind:	and descend an arrive develop the descent
FTP	DN:	cn=idapsearch,cn=users,dc=stitech,dc=com
HTTP/HTTPS	Password:	Change
LDAP	User Search:	en
RADIUS	Base DN:	ch=users,dc=streen,dc=com
SNMP	Crown Hambarchin Attribute:	(samaccountriame=96s)
SNTP	Group Remoership Attribute:	Final Coshie
System	Base DN:	Enable
TACACS+	User Membership Attribute:	
Telnet/SSH	hade Consul	
770	Apply Cancel	
Access	LDAP Groups	
Tools		
Tools		

To configure LDAP:

- 1. LDAP: Enabled or Disabled displays on the page to show current LDAP status.
- 2. Primary/Secondary Host: Provide the hostname/IP address of the Directory Services server.
- 3. Port: Set the port number for the LDAP server, 1-65535 (Default is 389).
- 4. Bind Type: Sets the bind method for the LDAP server. The PDU supports three standard LDAP bind methods:
 - 1. Simple: Uses unencrypted delivery of username-password over the network to the LDAP server for authentication, showing user credentials in plain text.
 - 2. TLS: Uses a trusted authority certificate to provide encryption of LDAP authentication.
 - 3. MD5: Provides strong protection using 1-way hash encoding that does not transmit the username-password over the network.

From the Bind Type drop-down menu, select Simple, TLS, or MD5. If TLS is selected, MD5 binding is disabled.

Note: IPv6 allows authentication via LDAP.

5. Search Bind: Provide the base distinguished name (DN) for the search bind and the Search Bind Password for the base DN. To change the password, type the new password, and check the Change checkbox.

- 6. User Search: Provide the distinguished name (DN) for the user search.
- 7. Filter: The User Search Filter sets the filter used for the username search at login.
- 8. Group Membership Attribute: Sets the user class distinguished name (DN) or names of groups a user is a member of.
- **9.** Group Search: Click to enable the setting of the bind to search groups for the username (in addition to searching the usernames for its list of group memberships).
- 10. Base DN: Indicates where the LDAP group search will start.
- 11. User Membership Attribute: The user membership option allows the searching of directory entries of groups for a user membership attribute to find the groups for which the user is a member. Provide a comma-delimited string of up to two attribute names whose values in the search results are the users that are members of the group. Maximum numbers of characters is 61.
- 12. Click Apply.

Network > RADIUS

The **RADIUS** page provides configuration options for RADIUS server support.

Server Technology.	RADIUS	The Change Access Configuration link takes you to the Access page to determine the user access method for RADIUS.
Monitoring Control Configuration	RADIUS: Primary Server:	Disabled Change Access Configuration STI-CustSupport.STITech.com
System	Shared Secret:	Change
Network DHCP/IP Email/SMTP	Timeout: Retries:	5 seconds 2
FTP HTTP/HTTPS	Shared Secret: Port:	10.1-5-97
RADIUS SNMP	Timeout Retries: Apply Cancel	5 seconds
Syslog TACACS+		
Telnet/SSH ZTP		
Tools		

To configure the RADIUS server:

- 1. RADIUS: Enabled or Disabled displays on the page to show current RADIUS status.
- 2. Sets the Primary/Secondary RADIUS server hostname/IP address used for RADIUS authentication requests. Maximum 63 characters.
- 3. Shared Secret: The RADIUS authentication key used for authentication requests. Up to 48 uppercase and lowercase alphanumeric and other typed characters (ASCII 33 to 126 decimal) are allowed; spaces are allowed; control characters are not allowed. To change the secret, edit the Shared Secret field (characters are not displayed) and check the Change checkbox.

Notes:

- The secret that was set for the primary server will not be cleared when setting the secret for the secondary server, and vice versa.
- IPv6 allows authentication via RADIUS.
- 4. Port Number: Used by the RADIUS server for incoming RADIUS authentication requests. Provide a custom port number or accept the default port numbers as displayed. Valid range is 1-65535; default as shown on the screen is 1812.
- 5. Timeout: Specifies the time interval (in seconds) to wait for a reply from the RADIUS server before resending an authentication request. Provide the custom timeout value or accept the default timeout as displayed. Valid range is 1-30 seconds; default is 5 seconds.

- 6. Retries: Indicates the number of times an authentication request is sent to the RADIUS server. The PDU attempts authentication on the primary server until the number of retries is reached, then attempts authentication with the secondary server. If the PDU does not receive a response from the retry attempts, the authentication request will be rejected. Provide a number in the Retries field. Valid range is 0-10; default is 2.
- 7. Click Apply.

About RADIUS Vendor-Specific Attributes (VSA)

In addition to the protocol-required attributes, the RADIUS authentication process can be extended by using private vendor-specific attributes (VSA). This extension allows Server Technology to create its own proprietary attributes to support features and services using the PR01/PR02 PDU in the RADIUS authentication process.

Server Technology has defined and formatted RADIUS vendor-specific attributes (VSA) in the dictionary.sti file, which is available from Server Technology. The PDU is configured to recognize and use the configuration values in the file as specified by the network administrator, indicating to the RADIUS server that the defined attributes are based on Server Technology's unique enterprise vendor code.

Using the format of the dictionary.sti file (located on the Server Technology FTP site at ftp.servertech.com), the PR01/PR02 RADIUS implementation supports the following vendor-specific attributes:

Attribute	Description		
STI-Access-Level	Indicates user access level for the Switched PRO1/PRO2; values are 1-6 as follows; a valid access level is required or access to the unit is denied.		
	Valid Access Levels: 1 = Admin 2 = Power User 3 = User 4 = Reboot Only 5 = On Only 6 = View Only		
STI-Env-Mon	Determines user access rights to environmental monitoring; values are Yes or No. For the STI-Access-Level value other than 1 (Admn), if STI-Env-Mon is not included for a user, default is no.		
STI-Outlets	Specifies user access rights to outlets; values are space-delimited strings of absolute IDs, names, or the special keyword "ALL". String values are case-sensitive and limited to 253 characters. This attribute can be repeated to append strings that declare additional access rights. For STI-Access Level values other than 1 (Admn) and 2 (Power User), if STI-Outlets is not included for a user, the default is no outlet.		
STI-Groups	Specifies user access rights to groups of outlets; values are space-delimited strings of absolute IDs, names, or the specifies user "ALL". String values are case-sensitive and limited to 253 characters. This attribute can be repeated to append strings that declare additional access rights. For STI-Access Level values other than 1 (Admn) and 2 (Power User), if S Groups is not included for a user, the default is no group.		
STI-Ports	Specifies user access rights to ports; values are space-delimited strings of absolute IDs, names, or the special keyword "ALL". String values are case-sensitive and limited to 253 characters. This attribute can be repeated to append strings that declare additional access rights. For STI-Access Level values other than 1 (Admn) and 2 (Power User), if STI-Ports is not included for a user, the default is no ports.		

Vendor-Specific Attribute (VSA) Descriptions

Note: User access levels must be configured using the **dictionary.sti** file. If the administrator does not use the **dictionary.sti** file to configure a user, the user will not have access rights to the PDU.

Examples:

Administrator with full access and configuration rights:

```
sti-admin Auth-Type := Local, User-Password == "admin"
STI-Access-Level = Admin
```

Power user with environmental monitoring allowed and full outlet/group/port access rights:

```
sti-power Auth-Type := Local, User-Password == "power"
STI-Access-Level = Power-User,
STI-Env-Mon = Yes
```

User with environmental monitoring not allowed and specific outlet/group/port access rights:

```
sti-user Auth-Type := Local, User-Password == "user"
STI-Access-Level = User,
STI-Env-Mon = No,
STI-Outlets = ".A1 .A2 Rtr1 Rtr2 Srvr1 Srvr2",
STI-Outlets += ".A3 .A4 Rtr3 Rtr4 Srvr3 Srvr4",
STI-Groups = "Routers Servers",
STI-Ports = "Console"
```

View-Only user with environmental monitoring allowed and all outlet and group access rights:

```
sti-view Auth-Type := Local, User-Password == "view"
STI-Access-Level = View-Only,
STI-Env-Mon = Yes,
STI-Outlets = "ALL",
STI-Outlets = "ALL"
```

Network > SNMP

The SNMP page provides the network protocol and agent configuration settings for SNMP support.

Şerver	(PROP Sentry Switched PDU (POPS=PIPS)	
lechnology.		
A brand of Diegrand	SNMP Configure SNMD agent options	
Overview	Compute State agent options	_
Monitoring	SNMPv2 Agent:	☑ Enable
Control	GET Community (RO):	public
Configuration	SET Community (RW):	private
System	SNMPv3 Agent:	🗷 Enable
Network	Engine ID:	800006B602FE8000000000000020A9CFFE6001E2
DHCP/IP	SNMP Trap:	
Email/SMTP	Format:	v2c 💌
FTP	v2 Community:	trap
HTTP/HTTPS	v3 Username:	
LDAP	Destination 1:	10.1.2.80
RADIUS	Destination 2:	
SNMP	Error Repeat Time:	3600 seconds
SNTP	IP Restrictions:	None
Syslog	System Name:	PDU 1023
TACACS+	System Location:	
Telnet/SSH	System Contact: Click the link to add, edit, or o	delete and
ZTP	Apply Cancel SNIMDv3 usor	
Access	SNMPv3 User Configuration	
Tools		

About Concurrent Sessions:

SNMP does not use sessions; therefore, multiple simultaneous manager operations are supported.

About SNMP Versions

- The firmware supports SNMP v1, v2c, and v3.
- SNMP version 3 supports authentication and encryption on a per user basis. Authentication types are None and MD5. Encryption types are None and DES. If you use authentication, you must use encryption.
- Up to eight SNMPv3 users are supported. For each SNMPv3 user you can set access as read only, write only, read/write, or disabled. All eight users have the same configuration parameters, and you can configure each user independently.
- SNMPv2c and SNMPv3 can be enabled or disabled independently. You can have SNMPv2 and/or SNMPv3, or none.

To configure the SNMP v2 agent:

- 1. Check (or uncheck) the Enable checkbox to enable/disable SNMP v2 Agent support.
- 2. GET community (RO): Community strings for GET commands.
- 3. SET community (RW): Community strings for SET commands.
- 4. Click Apply.

Note: The default for SNMP support is **Enabled**. When Server Technology products are shipped, the default SNMP configuration for the GET community string is set to "**public**" and the SET community string is left **blank**.

To configure the SNMP trap:

- 1. Format: Configures the SNMP trap format version. The trap format can be SNMP v1, v2c, or v3. The default is v1, regardless of the versions that are enabled for the agent.
- 2. v2 Community: SNMP trap community for the PDU.
- **3.** v3 Username: (Optional). Provide a trap username to display on SNMP v3 activity logs to identify user actions. The trap username can be 1-31 alphanumeric characters; spaces are allowed; the name is case sensitive.
- 4. For Destination 1 and Destination 2: Provide first and second trap destinations as a hostname or IP address.
- 5. Error Repeat Time: Sets the SNMP trap repeat time for an object in an event condition. Provide a time value from 1 to 65535 (in seconds).
- 6. IP Restrictions: From the drop-down menu, select None (default) or Trap Destinations Only. If Trap Destinations Only is selected, SNMP Manager GET and SET requests are allowed only from the IP address of the defined trap destinations.
- 7. System Name/Location/Contact: (Optional) Type the system name, location, and contact string from 1-63 characters.
- 8. Click Apply.

To configure the SNMPv3 agent:

- 1. Check (or uncheck) the Enable checkbox to enable/disable SNMP v3 Agent support.
- 2. Engine ID: Unique system-assigned ID for each PR01/PR02 unit that cannot be user-edited.
- 3. Click the SNMPv3 User Configuration link at the bottom of the **Network > SNMP** page. The following user configuration page displays to allow you to add (or edit/delete) an SNMPv3 user.

Server	PROP Sentry Switched PDU (POPS = PIPS)			
lechnology.	SNMPv3 Users			
Overview	Add a new SNMPv3 user (The ten section allows the			
Monitoring	SNNPv3 User Name: The top Section allows the			
Control	Access: addition of a new SNMPv3 Disabled			
Configuration	Authentication Method: USET and the configuration None			
System	Authentication Password: of SNMPv3 settings.			
Network				
Access	Apply Cancel			
General	Edit a SNMPv3 user			
Local Users	SP0Pv3 User Name Access Authentication Method Authentication Password Privacy Password Actions			
LDAP Groups	SP#P Network Settings			
SNMPv3 Users	The bottom section displays a list of			
TACACS+ Privileges	Link to return to the			
Tools	Network SNMPv3 page. and/or delete individual users in the list.			

To add a new user:

Note: Up to eight new users can be added to SNMPv3, each user with its own access rights.

From the SNMPv3 Users page (at top of page):

- 1. In the SNMPv3 User Name field, provide a name (1-31 characters) for the new user.
- 2. From the Access drop-down menu, select an option to determine SNMPv3 access rights for the new user: Disabled (default), Read Only, Write Only, or Read/Write.
- **3.** Select an Authentication Method from the drop-down menu: None (default), MD5 authentication only, or MD5 authentication and DES privacy.
- 4. Provide an authentication password (1-31 characters) for the new user.
- 5. Provide a privacy password (1-31 characters) for the new user.
- 6. Click Apply.

To edit an SNMP user:

From the SNMPv3 Users page (at bottom of page):

1. For an SNMPv3 user in the list, click the Edit link to display the following page:

	PROB Sentry Switched PDU	Location : 123456789a123456789b123456789c123456789d123456789e123456789f123 a User : admn IP Address : 10.1.2.69 a Access : Admin
Overview Monitoring Control	SNMPv3 User Edit Edit settings for this SNMPv3 user	
Configuration	SNMPv3 User Name:	snmpv3disabled • Edit settings for this user name.
System	Access:	Read Only
Network	Authentication Method:	None
Access	Authentication Password:	Change 772
General	Privacy Password:	☑ Change
Local Users	Apply Cancel	
LDAP Groups	SNMPv3 User Configuration • When finished ed	iting, return to SNMPv3 Users page.
SNMPv3 Users		
TACACS+ Privileges		
Tools		

- 2. Confirm that the user name selected is the one you want to edit.
- **3.** Revise settings as needed for Access, Authentication Method, Authentication Password, and Privacy Password.
- 4. Click Apply.

To delete an SNMP user:

From the SNMPv3 Users page (at bottom of page):

- 1. For an SNMPv3 user in the list, click the Remove link.
- 2. The prompt "Are you sure" displays to confirm or cancel the deletion. Click **OK** or **Cancel**. If OK, the user will be permanently removed from the SNMPv3 user list.

Network > SNTP

The SNTP page provides configuration options for the SNTP server, time zone, and Daylight Saving Time (DST) automatic clock adjustment.

Server	PRO2 Sentry Switched PDU POPS=PIPS	
Iechnology.		
A brand of Diegrand	SNTP	
Overview	Configure SNTP server, time zone and daylight saving time options	
Monitoring	Local Date/Time:	2018-09-13 13:09:31 (DST) Update
Control	Primary Host:	2.servertech.pool.ntp.org
Configuration	Secondary Host:	1.servertech.pool.ntp.org
System	Local GMT Offset:	-8 💌 : 00
Network	Daylight Saving Time:	🗷 Enable
DHCP/IP	DST Start:	2nd 🗨 Sunday 💌 in March 💌 at 02 : 00 : 00
Email/SMTP	DST End:	1st Sunday in November at 02 : 00 : 00
FTP	Apply Cancel	
HTTP/HTTPS		
LDAP		
RADIUS		
SNMP		
SNTP		
Syslog		
TACACS+		
Telnet/SSH		
ZTP		
Access		
Tools		

About Daylight Saving Time (DST)

Support for DST is enabled by default. When enabled, the date and time are automatically adjusted forward one hour between the starting and ending dates/times, which can be configured.

Note: If DST is enabled, all system time displays will be shown with the current DST start/end date/time settings.

The default time zone is set for the United States until at least 2015. The time zone format is **mo.w.d/h:m:s**, described as follows:

DST Parameter	Description	Value
mo	Both from January to December	1-12
w	Week number	1-4, or last week
d	Day of the week from Sunday to Saturday	0-6
h	Hour	0-23
m	Minute	0-59
S	Second	0-59

To configure the SNTP server:

- 1. Local Date/Time: Displayed to show the local and current DST settings. To increment the settings (based on updates to the options for DST Start/DST End and day/time), click the Update link.
- 2. The Primary/Secondary Host fields contact the SNTP server. The fields are populated with the the external NTP pool time zones "2.servertech.pool.ntp.org" and "1.servertech.pool.ntp.org" as the default for new units that have not yet been time set. To edit the host fields, type the desired hostname/IP address in the Primary/Secondary Host fields.
- **3.** From the Local GMT Offset drop-down menu, select the extended local offset hours and provide minutes. The GMT offset supports all standard international time zones from -12:59 to +14:59. The GMT offset can be set in minutes to accommodate partial-hour time zones.
- 4. To enable Daylight Saving Time (DST), check the Enable box.
- 5. From the DST Start/End drop-down menus, set the start/end date/time options.
- 6. Click Apply.

Network > Syslog

The **Syslog** page supports RFC3164 and RFC5424 compliance and the configuration for standard message logging to enable offline storage and viewing of firmware log messages and system events.

Server	PROP Sentry Switched PDU POPS=PIPS	
lechnology.		
A brand of Diegrand	Syslog	
Overview	Configure Syslog server options	
Monitoring	Host 1:	10.1.2.80
Control	Host 2:	
Configuration	Port:	514 (default 514)
System	Debug Messaging:	Enable
Network	Protocol:	RFC3164 💌
DHCP/IP	Apply Cancel	
Email/SMTP		
FTP		
HTTP/HTTPS		
LDAP		
RADIUS		
SNMP		
SNTP		
Syslog		
TACACS+		
Telnet/SSH		
ZTP		
Access		
Tools		

To configure the Syslog server:

- 1. Host 1/Host2: Set the Syslog server address by typing the hostname/IP address in the Host1 and/or Host2 field(s). Both IPv4 and IPv6 IP address formats are allowed.
- 2. Port: When Syslog support is enabled, the Syslog server responds to requests on the default Syslog port number 514 as displayed on the page. If necessary, edit the port number.
- **3.** Debug Messaging: To enable debug messaging in the Syslog debug log, check the Enable box.
- 4. Protocol: From the drop-down menu, select the RFC protocol that determines behavior of the Syslog server and message transmission
- 5. Click Apply.

Network > TACACS+

The **TACACS+** page allows configuration for TACACS+ server options, encryption key, and user privilege levels.

Server Technology	PROB Sentry Switched PDU POPS
Overview Monitoring Control Configuration System Network DHCP/IP	TACACS+ Configure TACACS+ TACACS+: The Change Access Configuration link takes you to the Access page to determine the user access method for TACACS+. Primary Host: Secondary Host: Port:
Email/SMTP FTP	Apply Cancel Configure TACACS+ encryption key
HTTP/HTTPS LDAP	Encryption Key Status: (not set) New Encryption Key:
RADIUS SNMP	Verify New Encryption Key: Apply Cancel
Syslog TACACS+	TACACS+ Privilege Levels
Telnet/SSH ZTP	
Access Tools	

To configure TACACS+ server options:

- 1. Type the hostname/IP address in the Primary/Secondary Host fields (IPv4 or IPv6 format).
- 2. Type the new port number or accept the default 49 as shown in the screen example. The PDU uses the port number to send TACACS+ requests.
- 3. Click Apply.

About the TACACS+ Encryption Key

The encryption key is used to encrypt all data packets between the PDU and the TACACS+ server:

- The key must match the key configured on the TACACS+ server.
- The key can be up to 60 alphanumeric characters and is case sensitive.
- For security, characters in the key are not displayed.
- If you provide "0" for the key, the result may be that the key is not applied, as "0" may not be supported by the TACACS+ server. It is recommended for product environment and security not to enter "0" for the key.
- The Encryption Key Status field on the screen displays "(set)" or "(not set)" to indicate current status of the key.

To configure the encryption key:

- 1. Type the New Encryption Key in the field provided.
- 2. In the Verify New Encryption Key field, retype the key.
- 3. Click Apply.

Assigning User Access Rights to TACACS+ Privilege Levels

1. At the bottom of the TACACS+ screen, click the TACACS+ Privilege Levels link to display the following edit page which shows the current user access level for each TACACS+ privilege level.

Server	2:02 Sentry Switched PDU (2025-2025)				
Technology	TACACS+ Privilege Levels				
Overview	Edit or assign access rights to a TACACS+ privilege level				
Monitoring	TACACS+ Privilege Level	Access Level	System Monitor	Access Rights	Action
Control	0	User	No	Access	Edit
Configuration	1	User	Yes	Access	Edit
System	Privilege level 15 is assigned by	User	No	Access	Edit
Network	3 A find the first of the statistical by	User	Yes	Access	Edit
Network	4 default for administrator access	On-Only	No	Access	Edit
Access	5 vielte te all DDU assessment fauel	User	No	Access	Edit
General	rights to all PDU resources. Level	User	No	Access	Edit
Local Deces	15 cannot be changed	View-Only Robert Only	Yes	Access	Edit
Local Users	a is cannot be enanged.	Reboot-Only	No	Access	Edit
LDAP Groups	10	Power-Liser	No	Access	Edit
SNMPv3 Users	11	Admin	Yes	ALL	Edit
TACACS+ Privileges	12	User	No	Access	Edit
Incaca+ Privileges	13	Henry	No	Access	Edit
Tools	14		No	Access	Edit
	15 Click link to configu	re	Yes	ALL	Edit
	TACACS+ Network Settings the TACACS+ network	ork.			

2. For a privilege level shown in the above list, click **Access** to display the Privilege Level Access page:

Server	PROP Sentry Switched PDU POPS PPS	
Iecnnology.		
A brand of legrand	TACACS+ Privilege Level Access	
Overview	TACACS+ Privilege Level being assigned access rights	
Monitoring	12	
Control	TACACS+ Privilege Level can access the following selected monitors	
Configuration	Monitor	Grant Access
System	System	
Network	TACACS+ Privilege Level can access the following selected remote ports	
Access	ID Port Name	Grant Access
General	COM1 Console	
Local Users	COM2 Aux	
LDAP Groups		None
SNMPv3 Users	TACACS+ Privilege Level can access the following selected groups	
TACACS+ Privileges	Group Name	Grant Access
Tools	123456789a123456789b123456789c12	
	987654321z987654321y987654321x98	
	aA1!~`!@#\$%^&*()_++-=0	
	ааа	
	bB2@	
	f	
	ff	
	fff	
	s	
	SS	
		All
		None

- 3. Check individual boxes to grant user access (or uncheck boxes to deny access) to specific system resources: monitors, remote ports, outlet groups, and individual outlets. To grant (or deny) access to all (or none) of the resources in a group, click All or None.
- 4. Click Apply.

Configuring TACACS+ Privilege Levels

The PR01/PR02 supports 16 different TACACS+ privilege levels. The administrative-level user can configure 15 privilege levels. One level is reserved by default for access to all PDU resources by the administrative-level user. Six defined user privilege levels are available: Admin, Power User, User, On-Only User, Reboot-Only User, and View-Only User.

1. At the bottom of the TACACS+ screen, click the TACACS+ Privilege Levels link to display the following edit page which shows the current user access level for each TACACS+ privilege level.

Server	DECE Sentry Switched PDU (POPS PIPS)				
lechnology.	TACACS+ Privilege Levels				
Overview	Edit or assign access rights to a TACACS+ privilege level				
Monitoring	TACACS+ Privilege Level	Access Level	System Monitor	Access Rights	Action
Control	0	User	No	Access	Edit
Configuration	1	User	Yes	Access	Edit
System	Privilege level 15 is assigned by	User	No	Access	Edit
Network	3	User	Yes	Access	Edit
Network	4 default for administrator access	On-Only	No	Access	Edit
Access	5 vielete te all DDU assessment avail	User	No	Access	Edit
General	rights to all PDU resources. Level	User	No	Access	Edit
	15 cannot be changed	View-Only	Yes	Access	Edit
Local Users	a 15 cumor be changed.	Reboot-Only	NO	Access	Edit
LDAP Groups	10	Report-Only	No	Access	Edit
SNMPv3 Users	10	Admin	Ves	ALL	Edit
TACACE+ Brivilanos	12	User	No	Access	Edit
TACACS+ Privileges	13	Line	No	Access	Edit
Tools	14		No	Access	Edit
	15 Click link to config	ure	Yes	ALL	Edit
	TACACS+ Network Settings the TACACS+ network	vork.			

2. For a privilege level shown in the above list, click Edit to display the TACACS+ Privilege Level Edit page:

Server Technology.	TACACS+ Privilege Level Edit Set access level and monitoring rights	From the Access Level list, select a user access level for the displayed TACACS+ privilege level.
Monitoring	TACACS+ Privilege Level	2
Control Configuration	Access Level: Apply Cancel	User View Only User
System	TACACS+ Privilege Level Configuration	On Only User
Network		Reboot Only User
Access		User
General		Power-User
Local Users		Administrator
LDAP Groups		
SNMPv3 Users		
TACACS+ Privileges		
Tools		

3. From the Access Level drop-down menu, select a user access level for the displayed TACACS+ privilege level, as described:

User Access Level (highest to lowest)	Description
Administrator	Administrative user; full access for all configuration, all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports.
Power User	Full access for all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports. Note: The Power User does not have access to user management.
User	Partial access for outlet power control actions (On, Off, Reboot), status, and pass- thru of assigned outlets, outlet groups, and serial/pass-thru ports.
Reboot-Only User	Partial access for outlet power control actions (Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
On-Only User	Partial access for outlet power control actions (On), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
View-Only User	Partial access for status and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.

4. Click Apply.

Network > Telnet/SSH

The Telnet/SSH page provides server, port, and authentication options for support of Telnet and SSH.

Server	PROP Sentry Switched PDU POPS PPS	
Technology		
A brand of Diegrand	Telnet/SSH	
Overview	Configure Telnet server options	
Monitoring	Server:	🗹 Enable
Control	Port:	23 (default 23)
Configuration	Configure SSH server options	
System	Server:	V Enable
Network	Port:	22 (default 22)
DHCP/IP	Authentication Method:	Keyboard Interactive Or Password 💌
Email/SMTP	Apply Cancel	
FTP		
HTTP/HTTPS		
LDAP		
RADIUS		
SNMP		
SNTP		
Syslog		
TACACS+		
Telnet/SSH		
ZTP		
Access		
Tools		

To configure the Telnet server and/or SSH server:

- 1. Server: Check (or uncheck) the Enable checkbox to enable/disable support for Telnet and/or SSH.
- 2. Port: Type a custom port number or accept the default port number 23 (for Telnet) or the default port number 22 (for SSH), as displayed on the page.
- **3.** For SSH only Authentication Method: The SSH server supports the following authentication methods.
 - Keyboard Interactive: The SSH server controls an information field followed by one or more prompts requesting credential information from the SSH client. The client gathers credential information typed by the user and sends it back to the server. The Keyboard Interactive method is controlled by the SSH server.
 - Password: The SSH client gathers username/password credentials and makes the authentication request to the SSH server with the credentials. The Password method is controlled by the SSH client.
 - Keyboard Interactive or Password: (Default). Allows either method.
- 4. From the drop-down menu, select one of the security methods described above, or accept the default, as displayed
- 5. Click Apply.

Telnet/SSH Concurrent Sessions

- For Telnet: 4 concurrent sessions allowed; also allowed are 4 Telnet **and** 4 SSH sessions simultaneously.
- For SSH: 4 concurrent sessions allowed; also allowed are 4 SSH **and** 4 Telnet sessions simultaneously.

The WLAN Solution

A high performance Wireless Local Area Network (WLAN) solution is available, for firmware 8.0c or later, and using Wi-Fi capable PR01/PR02 products.

The wireless network solution is designed according to IEEE standards 802.11b/g/n 2.4 GHz for implementing network connectivity using Wi-Fi.

When enabled, the **Configuration > Network** page displays the WLAN option, as follows, where Wi-Fi settings are configured:

Overview						
	WLAN					
Monitoring	Configu	re wireless local are:	a network ontions			
Control	Connigu	re mileless local alea	a network options			
Configuration	WLAN:			Enable		
System	SSID:			Eng		
Network	Key:			******		Chang
DHCP/IP	Securi	ity:		WPA2-PSK AES		
Empil/SMTD	Option	al BSSID:				
EmailySMTP	Apply	Cancel				
FTP						
HTTP/HTTPS	Availabl	e wireless access po	ints			
LDAP	Channel	SSID	BSSID	Security	Networks	Signal
DADULC	1	STI	06:27:22:CF:AB:A0	WPA1WPA2/TKIPAES	11b/g/n	65%
RADIOS	1	Eng	5C:FC:66:68:9B:90	WPA2PSK/AES	11b/g/n	29%
SNMP	1	STI-Guest	0A:27:22:CF:AB:A0	WPA1PSKWPA2PSK/TKIPAES	11b/g/n	50%
SNTP	6	STI	DC:9F:DB:1C:FD:C7	WPA1WPA2/TKIPAES	11b/g/n	44%
3417	6	STI	24:A4:3C:04:15:FE	WPA1WPA2/TKIPAES	11b/g/n	81%
Syslog	11	STI	24:A4:3C:04:18:B4	WPA1WPA2/TKIPAES	11b/g/n	15%
TACACS+	11	STI	00:27:22:FA:13:98	WPA1WPA2/TKIPAES	11b/g/n	34%
	11	Eng	A8:9D:21:9B:7B:30	WPA2PSK/AES	11b/g/n	20%
Telnet/SSH	11	STI-Guest	2A:A4:3C:04:18:B4	WPA1PSKWPA2PSK/TKIPAES	11b/g/n	15%
WLAN	11	STI-Guest	06:27:22:FA:13:98	WPA1PSKWPA2PSK/TKIPAES	11b/g/n	34%
710	11	FW-WIFI-DEV	EC:1A:59:49:70:E0	WPA2PSK/AES	11b/g/n	100%
21P	11	Ellipsis Jetpack 2885	80:D2:1D:50:2B:B5	WPA2PSK/AES	11b/g/n	20%
Access	Scan			Scan Complete		
Fools						

For more information about setting network configurations for the wireless network, a description of the PR01/PR02 products designated for this solution, and considerations for access point (AP) installation, see Server Technology's website, <u>www.servertech.com</u>, for Technical Note, 303-9999-37, "Wi-Fi Solution with 802.11b/g/n Support for Wi-Fi Capable PR01/PR02 Products."

Network > ZTP

The Network > ZTP page provides the settings for using the optional Zero Touch Provisioning (ZTP) feature. ZTP allows PDUs to be provisioned and configured automatically during the initial bootup, or whenever needed, to automate network setup, user permission updates, and other PDU modifications as necessary.

Server	PROP Sentry Switched PDU POPS PPS			
lechnoloav				
A brand of legrand	ZTP			
Overview	Configure Zero Touch Provisioning options (DHCP required)			
Monitoring	Zero Touch Provisioning (ZTP):	🗹 Enable	(Not Provisioned)	Reset
Control	Automatic Updates:	Enable		
Configuration	Scheduled Day:	Everyday	•	
System	Scheduled Hour:	12 AM 💌		
Network	Apply Cancel			
DHCP/IP				
Email/SMTP				
FTP				
HTTP/HTTPS				
LDAP				
RADIUS				
SNMP				
SNTP				
Syslog				
TACACS+				
Telnet/SSH				
ZTP				
Access				
Tools				

About Automatic Provisioning:

Automatic and continuous provisioning means you can revise the ZTP configuration file (config.ini) as needed and push the file down through the ZTP process multiple times. ZTP will recognize the latest revisions in the configuration file, giving you the flexibility of a ZTP process for maintenance as well as for initial provisioning.

Note: For more information about ZTP and the automatic provisioning methodology used with PR01/PR02 products, see the Server Technology website <u>www.servertech.com</u> for Technical Note: 303-9999-44, "Zero Touch Provisioning".

Resetting ZTP:

Reset is available only when ZTP is enabled. When reset to "Not Provisioned", the PDU will attempt ZTP again after the next RESTART, behaving as it did prior to being provisioned.

After a PDU has been successfully provisioned by ZTP, to use the GUI to reset ZTP to re-provision the PDU again either after the next RESTART or next DHCP lease renewal, click the **Reset** button on the ZTP window.

Note that the PDU's provisioned state ("Provisioned" or, "Not Provisioned") is not reset by disabling ZTP. When ZTP is re-enabled on a previously provisioned PDU, the state will still show as provisioned.

To configure Zero Touch Provisioning:

Note: ZTP is enabled "out of the box" by default for PDUs running firmware version 8.0g or later. The Automatic Updates option of ZTP is shipped disabled by default.

- 1. Zero Touch Provisioning (ZTP): Check or uncheck the checkbox to enable/disable ZTP with the following results:
 - Enable: The ZTP option allows automated configuration for PR01/PR02 products.
 - Disable: (Default) The ZTP option is turned off and the "Non Provisioned" state displays.

If necessary, click the **Reset** button. See "Resetting ZTP" above.

- 2. Automatic Updates: Check or uncheck to enable/disable the automatic updates option. When enabled, Automatic Updates takes priority over the "Provisioned" or "Not Provisioned" status.
- 3. Select the Scheduled Day of the week (or Everyday) for automatic updates to occur.
- 4. Select the Scheduled Hour of the day for automatic updates to occur.
- 5. Click the **Apply** button.

Access (Managing Users)

The Access section of the Web interface determines how a PR01/PR02 PDU user works with the network and system by configuring the options related to a user: authentication, privilege levels, user access to the unit, and additional functions for individual local users and user groups.

Note: The **Access** section only allows the administrator to determine how the user will access and use the network and system. To set up network protocol parameters, see the **Network** section.

Access > General

The **General** page allows configuration of local and remote access settings.

Şerver	PROP Sentry Switched PDU POPS PPS
Iechnology.	Access
Overview	Configure local and remote access settings
Monitoring Control Configuration	Access Method: Configuration Reset Button: Local Administrator Account: Configuration Reset Button Configuration Reset Button Configuration Reset Button Configuration Reset Button
System Network	CLI Custom Prompt: (Leave blank for default)
Access	CLI Session Timeout: 50 minutes
General	Web Session Timeout: 144 minutes
Local Users	Web Log Entries Per Page: 100
LDAP Groups	Default Log Order: Newest First 💌
SNMPv3 Users	StartUp Stick:
TACACS+ Privileges	Apply Cancel pages: I DAP_RADIUS and TACACS+
Tools	LDAP © RADIUS © TACACS+ Network Settings Login Banner and a link to the Login Banner.

To configure general system access:

Access Method: From the drop-down menu, select an option to enable one of several authentication methods to control user access to the PDU. Only one method can be enabled at a time: Local Only (default), LDAP Only, LDAP Then Local, RADIUS Only, RADIUS Then Local, TACACS+ Only, TACACS+ Then Local.

Button Configuration Reset: Check (or uncheck) the Enable checkbox to enable (or disable) physical access to the **Reset** button on the PR01/PR02 hardware.

The PDU is designed with a reset button on the hardware unit that can be used when a forgotten firmware password prevents logging into the unit. The reset button sets all configuration values back to factory default settings, allowing the administrator to retrieve the admn/admn default administrator login.

To access the button on the unit, you need a non-conductive metallic tool that fits inside the recess. If you press and hold the **Reset** button on the unit for more than 15 seconds, the reset action will terminate.

Note: This method of physical access to the unit will not work if the reset button has already been disabled by the administrator through the firmware GUI at Configuration > Access > General > Button Configuration Reset (show in the screen example above) or through the firmware CLI with the set access button [enabled/disabled] command. For security, the administrator can choose to disable the button through firmware to inhiibit a user from causing a reset on the unit. Local Administrator Account: Removes the last local administrator account when remote authentication (LDAP, TACACS+, or RADIUS) is in use. Only a remotely-authenicated administrator can remove the last local administrator account.

Accept the "Required" option (default), or select "Optional". Selecting "Optional" disables the restriction to remove the last local administrator, and also enables the Configuration Reset Button.

In turn, disabling the Configuration Reset Button automatically changes the Local Administrator Account to "Required". When this change occurs, if no local administrator accounts are present, the Configuration Reset Button will be set back to enabled.

Both the Local Administrator Account drop-down and the Configuration Reset Button turn the other field on if one of them has an Optional setting or is unchecked (disabled).

Note: For PR01/PR02 units only. If LDAP, TACACS+, or RADIUS is unreachable, or if LDAP, TACACS+, or RADIUS parameters have changed, you may not be able to log into the unit.

- Strong Passwords: From the drop-down menu, select Optional or Required. The PR01/PR02 supports strong passwords for enhanced system security. From the Strong Passwords drop-down menu, select Optional or Required. If Required, the strong password requirement is applied against all new passwords with the following rules:
 - Minimum of 8 characters long, at least one uppercase letter, at least one lowercase letter, one number, and one special character.
 - When a strong password is changed, a minimum of four characters positions must be changed to define the new password.
- 2. Custom CLI Prompt: Type a custom text string for the Command Line Interface (CLI) prompt, or leave blank for the default prompt "Switched PDU:"
- **3.** CLI Session Timeout: Enter a timeout period (in minutes). The valid timeout range is 1 to 1440 minutes (24 hours); the default is 5 minutes.
- **4.** Web Session Timeout: Enter a timeout period (in minutes). The valid timeout range is 1 to 1440 minutes (24 hours); the default is 5 minutes.
- 5. Web Log Entries Per Page: Set the number of entries displayed on the system log, from 10 to 250.
- 6. Default Log Order: From the drop-down menu, specify the order of the event entries on the system log oldest events or newest events displayed first in the log.
- 7. StartUp Stick: Check (or uncheck) to enable (or disable) StartUp Stick[®]. StartUp Stick is a separate Server Technology tool for streamlining the mass configuration of PDU operating parameters.
- 8. Click Apply.

Login Banner:

Clicking the Login Banner link displays a blank banner edit window. The following example shows a custom message:



Type the banner text and click Apply. To clear the typed entry and start over, click Cancel.

Notes:

- The login banner can be up to 2070 characters long and will be displayed prior to the login prompt.
- If the login banner is left blank, the user will be taken directly to the login prompt.
- For an SSH connection, the banner length is truncated to 1500 bytes in SSH packets to avoid failure of the SSH connection when configured with a long text banner.

Access > Local Users

The Local Users page allows the administrator to manage options for local users, including creating new users, changing user passwords, setting user access level, and granting user access to various resources of the PDU.

Server	PRO2 Sentry Switched PDU POPS PIPS				
lechnology					
A brand of Diegrand	Local Users				
Overview	Create a new local user				
Monitoring	User Name:				
Control	Password:				
Configuration	Verify Password:				
System	Apply Cancel				
Network	Edit, remove, or assign access rights to an existing local	user			
Access	User Name	Access Level	System Monitor	Access Rights	Action
General	123456789d123456789f123456789d12	User	No	Access	Edit Remove
Local Users	123456789m123456789n123456789b12	User	No	Access	Edit Remove
LDAP Groups	аа	User	No	Access	Edit Remove
	aA1!!@	User	No	Access	Edit Remove
SNMPv3 Users	aA1!!deffd	User	No	Access	Edit Remove
TACACS+ Privileges	aA2@~`!@#\$%\$^&&*&*(_)_=iy	User	No	Access	Edit Remove
Tools	aaa	User	No	Access	Edit Remove
10015	aaaa	User	No	Access	Edit Remove
	admn	Admin	Yes	ALL	Edit
	d	User	No	Access	Edit Remove
	h	View-Only	No	Access	Edit Remove
	hh	User	No	Access	Edit Remove
	hhh	User	No	Access	Edit Remove
	hhhhfff	User	No	Access	Edit Remove
	hhhhfffsss	User	No	Access	Edit Remove
	v	User	No	Access	Edit Remove
	VERIFY	On-Only	Yes	Access	Edit Remove
	wather	User	No	Access	Edit Remove

To create a new local user:

- 1. In the User Name field, type a 1-32 character user name; no spaces; user names are not casesensitive.
- 2. Type the user's password; type a 1-32 character password; ASCII 33 to 126 decimal characters are allowed; passwords are case-sensitive.
- 3. Verify the password.
- 4. Click Apply.

To grant access rights to a user:

- For the user name displayed in the list, click the Access link. The Local User Access page displays to allow granting access rights to selected PDU monitors, remote ports, outlet groups, and individual outlets by checking corresponding checkboxes. To deny access to an individual resource, uncheck the related checkbox. To grant (or deny) access to all resources in a displayed group, click All or None.
- 2. Click Apply.

To set a user's access level:

- 1. For the user name displayed in the list, click the Edit link. The Local User Edit page displays.
- 2. From the Access Level drop-down menu, select the desired user access level as described in the table below.
- 3. Click Apply.

User Access Level (highest to lowest)	Description
Administrator	Administrative user; Full access for all configuration, all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports.
Power User	Full access for all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports.
	Note: The Power User does not have access to user management.
User	Partial access for outlet power control actions (On, Off, Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
Reboot-Only User	Partial access for outlet power control actions (Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
On-Only User	Partial access for outlet power control actions (On), status, and pass- thru of assigned outlets, outlet groups, and serial/pass-thru ports.
View-Only User	Partial access for status and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
System Monitor	Access to all "stat" commands on the Command Line Interface (CLI).

To change a user's password:

- 1. For the user name displayed in the list, click the Edit link. The Local User Edit page displays.
- 2. Type the user's new password; type a 1-32 character password; ASCII 33 to 126 decimal characters are allowed; passwords are case-sensitive.
- 3. Verify the new password.
- 4. Click Apply.

To delete a local user:

- 1. For the user name displayed in the list, click the Remove link. You will be prompted with a confirmation for the delete action.
- 2. Click OK or Cancel.

Note: The **admn** default administrator account cannot be removed unless administrative access has already been granted to another administrative account.

Access > LDAP Groups

The LDAP Groups page allows the administrator to manage options for LDAP user groups, including creating new LDAP groups, establishing the LDAP group access level, and granting LDAP group access to various resources of the PDU.

lechnology					
	LDAP Groups				
Overview	Create a new LDAP group				
Monitoring	LDAP Group Name:				
Control	Apply Cancel				
Configuration	Edit, remove, or assign access rights to an existing	LDAP group			
System	LDAP Group Name	Access Level	System Monitor	Access Rights	Action
Network	droup?	liser	Yes	Access	Edit Remove
Access	Idaporoup	Admin	Yes	ALL	Edit Remove
General	LDAPVERIFY	View-Only	Yes	Access	Edit Remove
Local Usors	nmb	Reboot-Only	No	Access	Edit Remove
Local Osers	user_test	Power-User	No	Access	Edit Remove
LDAP Groups	WDFAWDF	User	No	Access	Edit Remove
SNMPv3 Users	LDAP Network Settings				
TACACS+ Privileges					
Tools	The LDAP Groups page is for LD	AP group manage	ment on	ly. To configure	parameters
	for the IDAP network protocol	go to Configuration	on > Netv	work > I DAP. or	click the
	LDAP Network Settings link on this page.				
	l)

To create a new LDAP group:

- 1. In the LDAP Group Name field, type a 1-32 character LDAP group name; no spaces; LDAP group names are not case-sensitive.
- 2. Click Apply.

To grant access rights to an LDAP group:

- For the LDAP group name displayed in the list, click the Access link. The LDAP Group Access page displays to allow granting access rights to selected PDU monitors, remote ports, outlet groups, and individual outlets by checking corresponding checkboxes. To deny access to an individual resource, uncheck the related checkbox. To grant (or deny) access to all resources in a displayed group, click All or None.
- 2. Click Apply.

To set an LDAP group's access level:

- 1. For the LDAP group name displayed in the list, click the Edit link. The LDAP Group Edit page displays.
- 2. From the Access Level drop-down menu, select the desired user access level as described in the table below.
- 3. Click Apply.

User Access Level (highest to lowest)	Description
Administrator	Administrative user; Full access for all configuration, all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports.
Power User	Full access for all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports.
	Note: The Power User does not have access to user management.
User	Partial access for outlet power control actions (On, Off, Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
Reboot-Only User	Partial access for outlet power control actions (Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
On-Only User	Partial access for outlet power control actions (On), status, and pass- thru of assigned outlets, outlet groups, and serial/pass-thru ports.
View-Only User	Partial access for status and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
System Monitor	Access to all "stat" commands on the Command Line Interface (CLI).

To delete an LDAP group:

- 1. For the LDAP group name displayed in the list, click the Remove link. You will be prompted with a confirmation for the delete action.
- 2. Click OK or Cancel.
Access > TACACS+ Privileges

The **TACACS+ Privileges** page allows the administrator to manage options for TACACS+ user groups, including establishing TACACS+ privilege levels and granting TACACS+ privilege level access to various areas of the PR01/PR02.

Note: The PDU supports 16 different TACACS+ privilege levels with 15 configurable levels and 1 level ("0") reserved by default for administrator-level access to all PDU resources.

Server	(27.02) Sentry Switched PDU (POPS = PIPS)				
lechnology					
A brand of Diegrand	TACACS+ Privilege Levels				
Overview	Edit or assign access rights to a TACACS+ privilege leve	el			
Monitoring	TACACS+ Privilege Level	Access Level	System Monitor	Access Rights	Action
Control	0	User	No	Access	Edit
Configuration	1	User	Yes	Access	Edit
System	2	User	No	Access	Edit
System	3	User	Yes	Access	Edit
Network	4	On-Only	No	Access	Edit
Access	5	User	No	Access	Edit
Concerni	6	User	No	Access	Edit
General	7	View-Only	Yes	Access	Edit
Local Users	8	Reboot-Only	No	Access	Edit
LDAP Groups	9	Reboot-Only	No	Access	Edit
LOAP Groups	10	Power-User	No	Access	Edit
SNMPv3 Users	11	Admin	Yes	ALL	Edit
TACACS+ Privileges	12	User	No	Access	Edit
Taala	13	User	No	Access	Edit
TOOIS	14	User	No	Access	Edit
	15	Admin	Yes	ALL	Edit
	TACACS+ Network Settings				

The TACACS+ Privileges page is for TACACS+ privilege management only. To configure parameters for the TACACS+ network protocol, go to **Configuration > Network > TACACS+**, or click the TACACS+ Network Settings link on this page.

To set a TACACS+ privilege level:

- 1. For the TACACS+ Privilege Level displayed in the list, click the Edit link. The TACACS+ Privilege Level Edit page displays.
- 2. From the Access Level drop-down menu, select the desired user access level as described in the table below.
- 3. Click Apply.

User Access Level (highest to lowest)	Description
Administrator	Administrative user; Full access for all configuration, all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports.
Power User	Full access for all outlet power control actions (On, Off, Reboot), status, and serial/pass-thru ports. Note: The Power User does not have access to user management.
User	Partial access for outlet power control actions (On, Off, Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
Reboot-Only User	Partial access for outlet power control actions (Reboot), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
On-Only User	Partial access for outlet power control actions (On), status, and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
View-Only User	Partial access for status and pass-thru of assigned outlets, outlet groups, and serial/pass-thru ports.
System Monitor	Access to all "stat" commands on the Command Line Interface (CLI).

To grant access rights to a TACACS+ privilege level:

- For the TACACS+ Privilege Level displayed in the list, click the Access link. The TACACS+ Privilege Level Access page displays to allow granting access rights to selected PDU monitors, remote ports, outlet groups, and individual outlets by checking corresponding checkboxes. To deny access to an individual resource, uncheck the related checkbox. To grant (or deny) access to all resources in a displayed group, click All or None.
- 2. Click Apply.

Tools (Using Support Functions)

The **Tools** section of the Web interface is a collection of several utility options for miscellaneous system actions: changing user password, pinging other network devices, viewing the system/debug log, and uploading new firmware versions.

Also included are several options for rebooting the PDU, resetting the PDU to factory defaults, and restarting the PDU with user preferences.

Tools > Change Password

This Change Password option allows firmware users to change their own passwords.

<u>Ş</u> erver	PRO2 Sentry Switched PDU POPS - PIPS
lechnology.	
A brand of legrand	Change Password
Overview	Enter current and new password
Monitoring	Current Password:
Control	New Password:
Configuration	Verify New Password:
Tools	Apply Cancel
Change Password	The administrative user can assign a
Ping	new password to another firmware
Restart	user at any time.
View Log	

To change your password:

- 1. Type your current password, your new password, and verify the new password.
- 2. Click Apply.

Tools > Ping

The **Ping** option tests the ability of the PDU to contact the IP address of another Ethernet-enabled device.

Server	PRO2 Sentry Switched PDU POPS - PIPS						
Iechnology.	Ping						
Overview	Enter Host Name or IP Address to Ping						
Monitoring	Apply						
Control							
Configuration	For LDAP support, the Ping feature can test						
Tools	the configuration of the DNS IP address by						
Change Password							
Ping							
Restart							
View Log							

To issue a ping:

- 1. Type the hostname/IP address to ping (IPv4 or IPv6 format).
- 2. Click Apply (or press Enter).

If the ping was successful, a responding message is displayed, similar to:

10.1.1.70 is responding (<1ms)

Tools > Restart

The **Restart** option offers several options for restarting the PDU.

Server	(27.02) Sentry Switched PDU (POPS=PIPS)								
Technology.	Restart								
Overview	Initiate a system restart								
Monitoring	Action:	Restart and reset to factory defaults							
Control	Apply Cancel	None							
Configuration		Restart							
Tools		Restart and reset to factory defaults							
Change Password		Restart and reset to factory defaults, except network							
Ping		Restart and download firmware via FTP							
Restart		Restart and generate a new X.509 certificate							
View Log		Restart and compute new SSH keys							

To initiate a system restart:

- 1. From the Action drop-down menu, select a restart option as described in the table below.
- 2. Click Apply.

Restart Options for the PR01/PR02:

Note about unit persistence:

The PR01/PR02 products support unit persistence. This means that if a link unit is connected to a master unit, and the link unit is disconnected (powered down or accidentally disconnected), and the master unit is restarted, the link unit will be reported as "Not Found" after the restart because the link unit is no longer physically connected to the master.

However, the association between the master/link units is retained to allow the continuation of alerts. If the disconnected link unit is physically re-connected to the master, the "Not Found" status will return to "Normal" status.

To intentionally remove a link unit from connection with a master unit, the link unit must be purged using the Purge function.

Unit persistence affects **all connected master/link units** whether or not they are connected in a multilinking configuration.

This restart option	performs this action on the PR01/PR02
Restart	Performs a warm boot; system user/outlet/outlet group configuration settings and outlet states are not changed or reset with the restart command.
Restart and reset to factory defaults	Resets the non-volatile RAM where configuration values are stored. This option clears all administrator-editabled fields and resets all CLI configurable options to their factory default values, including all user accounts.
	Resetting the PDU to factory default values also resets all TCP/IP and Telnet/Web configurations. Reconfiguring TCIP/IP and Telnet/Web settings is required.
Restart and reset to factory defaults, except network	Same action as "Restart and reset to factory defaults" described directly above, but network protocol settings are not changed.
Restart and download firmware via FTP	New versions of firmware can be uploaded using FTP. To begin an FTP upload session, you must first configure the FTP host address, username/password, filename, and filepath.
	When initiating an FTP upload session, the PDU restarts and uploads the firmware file specified with the FTP filename command from the previously configured FTP host.
Restart and generate a new X.509 certificate	Generates a new X.509 certificate issued and signed by a certificate-authority.
Restart and compute new SSH keys	Generates new private and public SSH keys with the proper location and permisssion.

About the Reset Button on the PR01/PR02 Unit:

The PDU is designed with a **Reset** button on the hardware unit that can be used when a forgotten firmware password prevents logging into the unit. The **Reset** button sets all configuration values back to factory default settings, allowing the administrator to retrieve the admn/admn default administrator login.

To access the button on the unit, you need a non-conductive metallic tool that fits inside the recess. If you press and hold the **Reset** button on the unit for more than 15 seconds, the reset action will terminate.

Note: This method of physical access to the unit will not work if the **Reset** button has already been disabled by the administrator through the firmware GUI at **Configuration > Access > General > Configuration Reset Button**, or through the firmware CLI with the **set access button** [enabled/disabled] command. For security, the administrator can choose to disable the button through firmware to inhiibit a user from causing a reset on the unit.

Tools > View Log

The View Log option displays the internal system log message list or debug log message list for viewing by the administrative user. System memory stores more than 4,000 entries in a continuously aging log. For permanent off-system log storage, the Syslog protocol is supported.

The System Log

The system log records all authentication attempts, power actions, configuration changes, and other system events, and also supports email notifications.

Server	PRO2 Sentry Switched PDU POPS PPS					
Technoloav						
A brand of Diegrand	View Log					
Overview	Log Filter	:			Filter Clear	
Monitoring	System	og message list (han	7 0		
Control	V Index	Date/Time	Lvl	Type	Message	
Configuration	<< First P	age < Previous Pa	age	Next	Page > Last Page >>	
Tools	111	Sep 13 10:59:18	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP	
Change Password	110	Sep 12 18:51:59	6	AUTH	User 'admn' logged out from 10.1.2.80 using HTTP	
Pina	109	Sep 12 18:17:58	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP	
Restart	108	Sep 12 18:17:58	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP	
Nestart.	107	Sep 12 17:41:33	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP	
View Log	106	Sep 12 11:17:17	6	AUTH	User 'admn' logged in from 10.1.2.80 using HTTP	
	105	Sep 12 09:18:16	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP	
	104	Sep 11 16:29:48	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP	
	103	Sep 11 14:27:42	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP	
	102	Sep 11 12:03:13	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP	
	101	Sep 11 08:02:21	4	AUTH	User " tried unsuccessfully to log in from 10.1.6.222 using HTTP	
	100	Sep 11 08:02:16	4	AUTH	User " tried unsuccessfully to log in from 10.1.6.222 using HTTP	
	! 99	Sep 11 08:02:11	4	AUTH	User " tried unsuccessfully to log in from 10.1.6.222 using HTTP	
	98	Sep 11 08:02:04	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP	
	97	Sep 10 19:41:16	6	AUTH	User 'admn' logged out from 10.1.2.80 using HTTP	
	96	Sep 10 14:14:23	6	AUTH	User 'admn' logged in from 10.1.2.80 using HTTP	
	95	Sep 7 18:44:50	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP	
	1 94	Sep 7 15:24:40	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP	
	93	Sep 7 14:34:55	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP	
	92	Sep 7 11:14:47	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP	
	91	Sep 5 19:25:19	6	AUTH	User 'admn' logged out from 10.1.2.80 using HTTP	
	i 90	Sep 5 16:22:01	6	AUTH	User 'admn' logged in from 10.1.2.80 using HTTP	
and the second s	1 89	Sep 5 12:41:08	6	AUTH	User 'admn' logged out from 10.1.2.80 using HTTP	

System log status icons:

N	Normal Status
8	Configuration Change
	Low/High Warning
8	Low/High Alarm
×	No Communication

The Debug Log

The Debug log displays a record of debugging statements and activities.

Server	Sentry Switched PDU POPSAPPS	Location : • User : admn E2 • Access : Admin
Technology.		
A brand of Diegrand	View Log	
Overview	Log Filter: Filter Clear	
Monitoring	Debug log message list Change	
Control	V Index Date/Time LvI Type Message	
Configuration	<< First Page < Previous Page Next Page > Last Page >>	
Tools	D 3382 Sep 13 14:02:28 7 DEBUG (014 03:04:59.79) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACT	DRY erase (offset 0x7c8)
Change Password	3381 Sep 13 14:02:28 7 DEBUG (014 03:04:59.77) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info record (offset 0x7	d4) updated for Outlet BA22
Ping	3380 Sep 13 14:02:27 7 DEBUG (014 03:04:58.70) nvms: hourly service	
Restart	3379 Sep 13 13:22:02 7 DEBUG (014 02:24:33.46) drv: status - IPMQ_B6[0,0x6c] watt-hour update queued for Outlet I	JA22
View Log	3378 Sep 13 13:02:28 7 DEBUG (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour 10 (014 02:04:59.24) drv: status - NVM_B[0,0xa0] NVMS Watt-Hou	ORY erase (offset 0x7bc)
view Log	3377 Sep 13 13:02:28 7 DEBUG (014 02:04:59.21) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info record (offset 0x7	c8) updated for Outlet BA22
	3376 Sep 13 13:02:27 7 DEBUG (014 02:04:58.04) nvms: hourly service	
	3375 Sep 13 12:11:45 7 DEBUG (014 01:14:17.81) drv: status - IPMQ_B6[0,0x6c] watt-hour update queued for Outlet B	JA22
	3374 Sep 13 12:02:26 7 DEBUG (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour 10.000 (014 01:04:58.45) drv: status - NVM_B[0,0xa0] NVMS Watt-Ho	ORY erase (offset 0x7b0)
	3373 Sep 13 12:02:26 7 DEBUG (014 01:04:58.41) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info record (offset 0x7	bc) updated for Outlet BA22
	3372 Sep 13 12:02:25 7 DEBUG (014 01:04:57.23) nvms: hourly service	
	3371 Sep 13 11:36:35 7 DEBUG (014 00:39:07.84) drv: status - IPMQ_B6[0,0x6c] watt-hour update queued for Outlet B	3A22
	3370 Sep 13 11:02:26 7 DEBUG (014 00:04:58.21) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACTOR	ORY erase (offset 0x7a4)
	3369 Sep 13 11:02:26 7 DEBUG (014 00:04:58.16) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info record (offset 0x7	b0) updated for Outlet BA22
	3368 Sep 13 11:02:25 7 DEBUG (014 00:04:57.07) nvms: hourly service	
	3367 Sep 13 10:59:30 7 DEBUG (014 00:02:02.76) smtp: SMTP host not responding, err -4	
	3366 Sep 13 10:26:18 7 DEBUG (013 23:28:50.06) drv: status - IPMQ_B6[0,0x6c] watt-hour update queued for Outlet B	JA22
	3365 Sep 13 10:02:25 7 DEBUG (013 23:04:57.99) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info CLEANUP or FACT	ORY erase (offset 0x798)
	3364 Sep 13 10:02:25 7 DEBUG (013 23:04:57.94) drv: status - NVM_B[0,0xa0] NVMS Watt-Hour Info record (offset 0x7	a4) updated for Outlet BA22
and the second	3363 Sep 13 10:02:24 7 DEBUG (013 23:04:56.77) nvms: hourly service	

The Debug Log functions the same as the System log with the following exceptions:

- The only log type (noted in the Type column) is DEBUG.
- The only icon displayed on log entries indicates a debug entry: 🔍

Changing Log View

Either the System log or Debug log can be switched to the other log. To switch between logs, click the Change link as shown in the following example.

If you have a filter in place, such as "admn", and you change log views, the "admn" filter will stay in place and continue to filter on the changed log.

Server	PRO2 Sentry Switched PDU POPS PPS	
lechnology	View Log	
A brand of Diegrand		
Overview	Log Filter: Filter Clear	
Monitoring	System log message list Change	
Control	V Index Date/Time	
Configuration	<< First Page < Previo Click the Change link to switch between	
Tools	Image: 111 Sep 13 10:5 the System Log and the Debug Log. 222 using HTTP	
Change Password	110 Sep 12 18:51.55 C AUTT OSET Bannin Togged Out from 10.1.2.80 using HTTP	
Pina	Image: 109 Sep 12 18:17:58 6 AUTH User 'admn' logged out from 10.1.6.222 using HTTP	
Postart	108 Sep 12 18:17:58 6 AUTH User 'admn' logged in from 10.1.6.222 using HTTP	
Restart	107 Sep 12 17:41:33 6 AUTH User 'admn' logged out from 10.1.6.222 using HTTP	
View Log	106 Sep 12 11:17:17 6 AUTH User 'admn' logged in from 10.1.2.80 using HTTP	
	Image: 105 Sep 12 09:18:16 6 AUTH User 'admn' logged in from 10.1.6.222 using HTTP	
	104 Sep 11 16:29:48 6 AUTH User 'admn' logged out from 10.1.6.222 using HTTP	
	103 Sep 11 14:27:42 6 AUTH User 'admn' logged in from 10.1.6.222 using HTTP	
	102 Sep 11 12:03:13 6 AUTH User 'admn' logged out from 10.1.6.222 using HTTP	
	101 Sep 11 08:02:21 4 AUTH User "tried unsuccessfully to log in from 10.1.6.222	using HTTP
	100 Sep 11 08:02:16 4 AUTH User "tried unsuccessfully to log in from 10.1.6.222	using HTTP
and the first state of the state of the	99 Sep 11 08:02:11 4 AUTH User " tried unsuccessfully to log in from 10.1.6.222	using HTTP

Filtering Logs

You can filter the System Log and Debug log to list returned entries for a specific search.

View Log					
Log Filter:	normal status				Filter Clear
System lo	g message list 🛛 🤇	Char	ige		
V Index	Date/Time	Lvl	Туре	Messa	ge
<< First Pag	ge < Previous Pag	ge	Next Pa	age >	Last Page >>
5	May 25 11:48:44	5	EVENT	Norma	<mark>il status r</mark> estored on unit 'Link1' [B]
<< First Pag	ge < Previous Pa	ge	Next Pa	age >	Last Page >>

To filter a log:

- 1. Type a text string in the Log Filter box, such as "normal status" highlighted in the example above, and click the Filter button.
- 2. The log is searched by the entered text and displays only the matching entries. Note the highlighted "Normal status" returned in the filtered log.
- 3. To clear the filtered page and return to a full log, click the Clear button.

Log Filter Persistence: If you have a filter in place on either the System log or the Debug log, and you change views from one log to the other log using the Change link, your filter will stay in place on the changed log and will continue to filter. You can still change logs or clear the filter at any time.

Navigating the Logs

Navigation links for first, previous, next, and last page are available at the top and bottom of both logs.

PROP Sentry Switched PDU POPSOPIPS							
View	/ Log						
Log	Filter:				Filter Clear		
Sys	stem log	g message list 🛛 🤇	Char	nge			
V	Index	Date/Time	Lvl	Туре	Message Browse the System or Debug log by		
<<	First Pag	je < Previous Pa	ge	Next Pa	'age > Last Page >> ● using the page navigation links at the		
0	29	Jun 1 09:55:45	6	AUTH	User 'admn' logged in fro		
	28	Jun 1 09:35:06	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP		
0	27	Jun 1 09:27:05	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP		
	26	Jun 1 09:24:55	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP		
8	25	Jun 1 09:19:41	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP		
	24	May 31 10:30:01	6	AUTH	User 'admn' logged out from 10.1.6.222 using HTTP		
8	23	May 31 10:21:20	6	AUTH	User 'admn' logged in from 10.1.6.222 using HTTP		
	22	May 26 14:11:26	6	AUTH	User 'admn' logged out from COM1 [Console]		

Working with Log Headings

Sorting system log entries:

The entries in the System and Debug log can be displayed in ascending or descending order (based on the internal index number in the Index column) by clicking one of the following icons:

For ascending order, click \bigwedge . For descending order, click \bigvee .

About the index:

The index number is assigned internally to control the sequence and identity of displayed System or Debug log entries. The Index cannot be user-edited.

Date/Time stamp:

The date and time stamp records the details of the system event timeframe. To display the date/time stamp, SNTP server support must be configured.

Level (Lvl):

Indicates the level of the status icons displayed in the System Log.

Type:

The System log supports the following types of event messages:

- AUTH: All attempts to authenticate
- CONFIG: All changes in system configuration
- EVENT: All general system events, for example, exceeded threshold limits
- POWER: All requests for a power state change

Note: The Debug log supports only one type of event message: DEBUG.

Message Text:

A text line that describes the detailed parameters of the event. For the System log, If the event is associated with a user, the user's name will be included in the message text.

Setting Options for Log Viewing

Server PROP Sentry Switched PDU POPS - PIPS IP Addre Technology, Access A brand of D Configure local and remote access settings Overview LDAP Then Local Monitoring Access Method: -Control **Configuration Reset Button:** Enable Required -Local Administrator Account: Configuration Optional 👻 Strong Passwords: System **CLI Custom Prompt:** Network (Leave blank for default) Access CLI Session Timeout: 50 minutes General minutes Web Session Timeout: 144 Local Users Web Log Entries Per Page: 100 Default Log Order: Newest First 👻 LDAP Groups StartUp Stick: Enable SNMPv3 Users TACACS+ Privileges Apply Cancel Tools LDAP . RADIUS . TACACS+ Network Settings Login Banner

Viewing options for the System Log are set on the **Configuration > Access** page:

- Web Log Entries Per Page: Specifies the number of entries displayed on the System Log and the • Debug Log. The maximum number of entries in the Debug Log can be set to 4,000. If the total number of entries exceed the maximum entries allowed, then Syslog will be used.
- Default Log Order: Sets the display of the Debug Log to the newest entry first or the oldest entry first.

Chapter 8: Using the Command Line Interface (CLI)

This chapter shows how to work with the firmware CLI (version 8.0x or later) for the PR01/PR02 products

Note: Certain CLI commands documented in this chapter may not apply to a Smart PDU or to non-POPS PDUs.

Logging In

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

A login through the console (RS232) port requires the use of a terminal or terminal emulation software configured to support ANSI or VT100, and a supported data rate of 300, 1200, 2400, 4800, 9699, 19200, 38400, 57600, or 115200 bps (default rate is 9600); 8 data bits-no parity, 1 stop bit, and device ready output signal (DTR or DSR).

To login by Telnet or RS232 (CLI):

At the command prompt, initiate a Telnet session (telnet [IP address]). The Telnet session automatically opens the login prompt, showing the current product and firmware version.

```
Sentry Switched PDU Version 8.0g
Username: admn
Password:
Location: STIC input again and again
Switched PDU:
```

The default administrative-level user login (admn/admn) was used for this example.

Press Enter.

The command line prompt, such as "Switched PDU:" (for Power Distribution Unit) in this example, displays for the PR01/PR02 product, and you are now logged into the firmware Command Line Interface (CLI).

If a location identifier was user-defined, that location will also be displayed, as shown in the example.

Quick Tour of the Command Line

The features and requirements of the command line are presented in this section.

Running Commands

To run a command, type the command, and while it is displayed on the command line, press Enter.

When a command is used to edit configuration settings, the values will be updated immediately.

Commands can be typed in any combination of uppercase and lowercase characters. All characters in the command must be entered correctly and command abbreviations are invalid.

If an invalid command or an incorrectly typed command is entered, one of the following messages displays:

- "Invalid parameter" with a display of the correct menu options, or
- "[command] is not recognized as an internal or external command, operable program, or batch file."

Using the Escape (ESC) Feature

At any time during the typing of a command, press **ESC** to cancel and clear all typed characters from the command line.

Even when setting a user password or other command where a specific prompt has displayed, pressing ESC quickly cancels the displayed prompt and the typed command.

Using CTRL-C to Cancel Commands

CLI command operations can be cancelled by using the keys CTRL-C, where applicable.

Editing Commands

Several editing actions are available when typing a command:

This edit action	does this on the command line
Left Arrow C	Moves cursor to the left to correct a typed character.
Right Arrow →	Moves cursor to the right to correct a typed character.
Backspace Key	Deletes typed command one character at a time.
Insert Key	Inserts a character in the command.
Delete Key	Deletes a character in the command.
Home Key	Moves to the first character of the command.
End Key	Moves to the last character of the command.
Esc	Clears typed characters from the command line.
CRTL-C	Cancels CLI operations, where applicable.

Retrieving Command History

The CLI provides a command history feature for the last X commands entered, using the **Up** and **Down** keys.

To display a previously entered command, press the \uparrow arrow key. After the \uparrow arrow key has been pressed, you can then press the \downarrow arrow key to display a previously entered command in reverse order. Pressing the keys displays one command at a time.

To erase the command history, press Esc.

Displaying the Command Menu

The main menu of valid top-level commands can be displayed at any time during a CLI session.

At the command prompt, do one of the following:

- Type help and press Enter
- Type ? and press Enter

Example:

Switched PDU: help

Switched PDU commands:

add bstat connect create cstat delete dir list login logmon logout lstat ocpstat off on ostat password ping pstat reboot remove restart senstat set show shutdown status sysstat upsstat ustat version

Example:

```
Switched PDU: ?
```

Switched PDU commands:

add bstat connect create cstat delete dir list login logmon logout lstat ocpstat off on ostat password ping pstat reboot remove restart senstat set show shutdown status sysstat upstat ustat version

Displaying the Submenus

To view submenus of valid options for a command, type the main command and press Enter:

Example:

```
Switched PDU: set
'set' menu options:
    access banner bluetooth branch config cord dhcp dns email
    energywise feature ftp http https ipv4 ipv6 ldap ldapgroup line
    loadshed location net ocp outlet phase port radius sensor snmp
    sntp spm ssh syslog tacacs tacpriv telnet unit ups user
```

Example::

Switched PDU: show

'show' menu options:

access bluetooth branches config cords email energywise features ftp ldap lines loadshed log network ocps outlets phases ports radius sensors shutdown snmp sntp syslog system tacacs units ups

Command Syntax Notes

The following conventions apply to the command syntax shown in the Command Details section:

[argument] mandatory argument that is not prompted for.

[argument] optional argument that is not prompted for.

<argument> argument that will be prompted for if not specified on the command line.

{argument} argument that can only be prompted for.

Example (set access command):

set access

Sets user access configurations.
set access button [disabled enabled]
set access clitimeout <value></value>
set access localadmin [required optional]
set access logorder [newest oldest]
set access method [localonly ldaponly ldaplocal radiusonly radiuslocal tacacsonly tacacslocal]
set access prompt <prompt string=""></prompt>
set access strongpw [optional required]
set access webloglen <value></value>
set access webtimeout <value></value>

List of Commands

Click a linked command name in the following table to display detailed information about using the command.

Command	Description
Add Commands	The Add command group adds control access for outlets/outlet groups, and connection pass-thru to specified ports for LDAP, TACACS+, and local users.
add grouptoldap	Adds control access for an outlet group to an LDAP group.
add grouptotacacs	Adds control access for an outlet group to a TACACS+ privilege level.
add grouptouser	Adds control access for an outlet group to a local user.
add outlettogroup	Adds control access for an outlet to an outlet group.
add outlettoldap	Adds control access for an outlet to an LDAP group.
add outlettotacacs	Adds control access for an outlet to a TACACS+ privilege level.
add outlettouser	Adds control access for an outlet to a local user.
add porttoldap	Adds access to use a connection pass-thru to a specified port to an LDAP group.
add porttotacacs	Adds access to use a connection pass-thru to a specified port to a TACACS+ privilege level.
add porttouser	Adds access to use a connection pass-thru to a specified port to a local user.
<u>bstat</u>	Displays the latest status and metrics for all branches in the system.
<u>connect</u>	Redirects the current CLI session to the target port.
Create Commands	The Create command group creates new outlet groups, LDAP groups, UPS devices, and local users.
create group	Creates a new outlet group.
<u>create ldapgroup</u>	Creates a new LDAP group.
<u>create snmpuser</u>	Adds a new SNMPv3 user.
<u>create ups</u>	Creates a new uninterruptable power supply (UPS).
<u>create user</u>	Creates a new local user.
cstat	Displays the latest status and metrics for all cords in the system.
Delete Commands	The Delete command group deletes access for outlets, outlet groups, and connection pass-thru to a specified port from LDAP groups, TACACS+ privilege levels, and local users.
delete groupfromldap	Deletes control access for an outlet group from an LDAP group.

Command	Description
delete groupfromtacacs	Deletes control access for an outlet group from a TACACS+ privilege level.
<u>delete groupfromuser</u>	Deletes control access for an outlet group from a local user.
delete outletfromgroup	Deletes control access for an outlet from an outlet group.
<u>delete outletfromldap</u>	Deletes control access for an outlet from an LDAP group.
delete outletfromtacacs	Deletes control access for an outlet from a TACACS+ privilege level.
delete outletfromuser	Deletes control access for an outlet from a local user.
delete portfromldap	Deletes access to use a connection pass-thru to a specified port from an LDAP group
delete portfromtacacs	Deletes access to use a connection pass-thru to a specified port from a TACACS+ privilege level.
<u>delete portfromuser</u>	Deletes access to use a connection pass-thru to a specified port to a local user.
<u>dir</u>	Directory; displays the contents of the active working path in the file system.
List Commands	The List command displays outlets in an outlet group, users, user groups, outlets, ports, and TACACS+ privileges.
<u>list group</u>	Lists the outlets that are collected in an outlet group.
<u>list groups</u>	Lists all outlet groups.
<u>list ldapgroup</u>	Lists the access level of an LDAP group and any outlet groups, outlets, and ports assigned to that LDAP group.
<u>list ldapgroups</u>	Lists all LDAP groups.
<u>list outlets</u>	Lists all outlets.
<u>list ports</u>	Lists all ports.
<u>list snmpuser</u>	Lists all details for an SNMPv3 user (or all users).
list snmpusers	Lists access level and authentication method for all SNMPv3 users.
<u>list tacpriv</u>	Lists the access level of a TACACS+ privilege level and any outlet groups, outlets, and ports assigned to that TACACS+ privilege level.
<u>list tacprivs</u>	Lists all TACACS+ privilege levels.
list ups	Lists configurations for all UPS's.
list upss	Displays all UPS's.
<u>list user</u>	Lists the access level of a local user and any outlet groups, outlets, and ports assigned to that user.

Command	Description
<u>list users</u>	Lists all local users.
<u>login</u>	Performs system login and access verification.
<u>logmon</u>	Displays the system log (monitor) messages in the CLI session as they occur.
<u>logout</u>	Quits the current CLI session.
<u>lstat</u>	Displays the latest status and metrics for all lines in the system.
<u>ocpstat</u>	Displays the latest status and metrics for all over-current protectors (OCPs) in the system.
<u>off</u>	Turns off the specified outlet or outlet group. Note: For Switched products only.
on	Turns on the specified outlet or outlet group. Note: For Switched products only.
<u>ostat</u>	Displays the latest status and metrics for all outlets in the system.
<u>password</u>	Changes the password for the current local user.
ping	Tests the ability of the PDU to contact an IP address for another Ethernet-enabled device.
<u>pstat</u>	Displays the latest status and metrics for all phases in the system.
<u>reboot</u>	Turns off the specified outlet or outlet group, and then turns it back on after a delay. Note: For Switched products only.
Remove Commands	The Remove command group removes outlet groups, LDAP groups, UPS devices, and local users from the system.
<u>remove group</u>	Removes an outlet group from the system.
<u>remove ldapgroup</u>	Removes an LDAP group from the system.
<u>remove snmpuser</u>	Removes an SNMPv3 user from the system.
<u>remove ups</u>	Removes a UPS from the system.
<u>remove user</u>	Removes a local user from the system.
<u>restart</u>	Restarts the system.
<u>senstat</u>	Displays the latest status and metrics for all sensors in the system.
Set Commands	The Set command group sets the configuration values for numerous system areas.
set access	Sets user configuration access.
set banner	Sets the system banner that displays before a user authenticates a user session.
<u>set bluetooth</u>	Sets Bluetooth [®] configuration values.

Command	Description
<u>set branch</u>	Sets branch configuration values.
set cord	Sets cord configuration values.
set dhcp	Sets DHCP configuration values.
set dns	Sets Domain Name System (DNS) server configuration values.
set email	Sets email configuration values.
set energywise	Sets Cisco EnergyWise configuration values.
<u>set feature</u>	Enables new system features.
<u>set ftp</u>	Sets FTP configuration values.
<u>set http</u>	Sets HTTP configuration values.
<u>set https</u>	Sets HTTPS configuration values.
<u>set ipv4, set ipv6</u>	Sets IPv4 and IPv6 configuration values.
<u>set ldap</u>	Sets LDAP configuration values.
<u>set ldapgroup</u>	Sets configuration values for LDAP group access rights.
<u>set line</u>	Sets line configuration values.
set loadshed	Sets Smart Load Shedding configuration values.
	Note: Only available if the Smart Load Shedding feature is activated.
set location	Sets the system location string.
<u>set net</u>	Sets network mode configuration values.
set ocp	Sets over-current protector (OCP) configuration values.
<u>set outlet</u>	Sets outlet configuration values.
<u>set phase</u>	Sets phase configuration values.
<u>set port</u>	Sets serial port configuration values.
<u>set radius</u>	Sets Radius server configuration values.
set sensor	Sets sensor configuration values.
set snmp	Sets SNMP configuration values.
set snmpuser	Sets SNMPv3 user configuration values.

Command	Description
<u>set sntp</u>	Sets SNTP configuration values.
<u>set spm</u>	Sets Sentry Power Manager (SPM) access configuration values.
<u>set ssh</u>	Sets SSH configuration values.
set syslog	Sets Syslog configuration values.
set tacacs	Sets TACACS+ server configuration values.
<u>set tacpriv</u>	Sets TACACS+ configuration values for privilege level access rights.
<u>set telnet</u>	Sets Telnet configuration values.
<u>set trend</u>	Sets power trending configurations.
<u>set unit</u>	Sets configuration values.
<u>set ups</u>	Sets UPS device configuration values.
<u>set user</u>	Sets configuration values for local user access rights.
<u>set web</u>	Sets configuration parameters for Web services.
<u>set wlan</u>	Sets the wireless network configuration (for the WLAN solution on specific Wi-Fi capable units).
<u>set ztp</u>	Sets the Zero Touch Provisioning (ZTP) feature and related parameters.
Show Commands	The Show command group displays the current configuration values in the system.
show access	Shows user access configuration values.
show bluetooth	Shows Bluetooth configuration values.
show branches	Shows branch configuration values.
show cords	Shows cord configuration values.
show email	Shows email configuration values.
show energywise	Shows Cisco EnergyWise configuration values.
show features	Shows the enabled system features.
show ftp	Shows FTP configuration values.
show ldap	Shows LDAP configuration values.
show lines	Shows line configuration values.

Command	Description
show loadshed	Shows Smart Load Shedding configuration values. Note: Only available if the Smart Load Shedding feature is activated.
show log	Shows the system event log.
show network	Shows network configuration values.
show ocps	Shows over-current protector (OCP) configuration values.
show outlets	Shows outlet configuration values.
show phases	Shows phase configuration values.
show ports	Shows port configuration values.
show radius	Shows Radius server configuration values.
show sensors	Shows sensor configuration values.
show shutdown	Shows outlet shutdown configuration values. Note: For Switched products only.
show snmp	Shows SNMP configuration values.
show sntp	Shows SNTP configuration values.
show syslog	Shows Syslog configuration values.
<u>show system</u>	Shows system uptime, firmware version, firmware build information, boot version, number of active users, and location string.
show tacacs	Shows TACACS+ configuration values.
show trend	Shows power trending configurations.
<u>show units</u>	Shows configuration values.
<u>show waps</u>	Displays the available wireless access points (for the WLAN solution on specific Wi-Fi capable units).
<u>show wlan</u>	Displays the wireless network configurations (for the WLAN solution on specific Wi-Fi capable units).
show ztp	Displays the Zero Touch Provisioning (ZTP) network configurations.
<u>shutdown</u>	Turns off a specified outlet or outlet group after performing a user-specified shutdown operation. Note: For Switched products only.

<u>status</u>	Displays the latest status and control state for a specified outlet or outlet group. Note: For Switched products only.
<u>sysstat</u>	Displays the count of all system objects (by type), the latest status of the objects, and the count of objects currently in an event condition.
<u>upsstat</u>	Displays the latest status and metrics for all UPS devices in the system.
<u>ustat</u>	Displays the latest status and metrics for all units in the system.
version	Displays the current firmware version.

Command Details

add grouptoldap

	Adds control access for an outlet group to an LDAP group.
Command Syntax	
	add grouptoldap <group all="" name="" =""> <ldap group="" name=""> add gtl <group all="" name="" =""> <ldap group="" name=""></ldap></group></ldap></group>
Command Access	
	Admin level only

add grouptotacad	S
	Adds control access for an outlet group to an TACACS+ privilege level.
Command Syntax	
	add grouptotacacs <group all="" name="" =""> <tacacs+ level="" privilege=""> add gtt <group all="" name="" =""> <tacacs+ level="" privilege=""></tacacs+></group></tacacs+></group>
Command Access	
	Admin level only

add grouptouser	
	Adds control access for an outlet group to a local user.
Command Syntax	
	add grouptouser <group all="" name="" =""> <local name="" user=""> add gtu <group all="" name="" =""> <local name="" user=""></local></group></local></group>
Command Access	
	Admin level only

 add outlettogroup
 Adds control access for an outlet to an outlet group.

 Command Syntax
 add outlettogroup <outlet name | id | ALL> <group name> add otg <outlet name | id | ALL> <group name>

 Command Access
 Admin level only

add outlettoldap

	Adds control access for an outlet to an LDAP group.
Command Syntax	
	add outlettoldap <outlet all="" id="" name="" =""> <ldap group="" name=""> add otl <outlet all="" id="" name="" =""> <ldap group="" name=""></ldap></outlet></ldap></outlet>
Command Access	
	Admin level only

add outlettotacacs

	Adds control access for an outlet to a TACACS+ privilege level.
Command Syntax	
	add outlettotacacs <outlet all="" id="" name="" =""> <tacacs+ level="" privilege=""> add ott <outlet all="" id="" name="" =""> <tacacs+ level="" privilege=""></tacacs+></outlet></tacacs+></outlet>
Command Access	
	Admin level only

add outlettouser	
	Adds control access for an outlet to a local user.
Command Syntax	
	add outlettouser <outlet all="" id="" name="" =""> <local name="" user=""> add otu <outlet all="" id="" name="" =""> <local name="" user=""></local></outlet></local></outlet>
Command Access	
	Admin level only
add norttoldan	
	Adds access to use a connection pass-thru to a specified port to an LDAP group.
Command Syntax	add partialdan sport name lid All > sl DAD group names
	add portoidap <port all="" id="" name="" =""> <ldap group="" name=""> add ptl <port all="" id="" name="" =""> <ldap group="" name=""></ldap></port></ldap></port>
Command Access	
	Admin level only

add porttotacacs

	Adds access to use a connection pass-thru to a specified port to a TACACS+ privilege level.
Command Syntax	
	add porttotacacs <port all="" id="" name="" =""> <tacacs+ level="" privilege=""></tacacs+></port>
Command Access	add ptt <port all="" id="" name="" =""> <1 ACACS+ privilege level></port>
	Admin level only

add porttouser

	Adds access to use a connection pass-thru to a specified port to a local user.
Command Syntax	
	add porttouser <port all="" id="" name="" =""> <local name="" user=""></local></port>
	add ptu <port all="" id="" name="" =""> <local name="" user=""></local></port>
Command Access	
	Admin level only

bstat

	Displays the latest status and metrics for all branches in the system.
Command Syntax	
	bstat
Command Access	
	System Monitor access
connect	

	Redirects the current CLI session to the target port.
Command Syntax	
	connect <target port=""></target>
Command Access	
	Any access level for command; for user level lower than admin, access must be granted to a port for successful connection.

create group

	Creates a new outlet group.
Command Syntax	
	create group <name></name>
Command Access	
	Admin level only

create Idapgroup

	Creates a new LDAP group
Command Syntax	create ldapgroup <name></name>
Command Access	

Admin level only

create ups

Creates a new uninterruptable power supply (UPS).

Command Syntax

create ups <name | ups type |> <hostname>

Parameters

The **create ups** command uses the following parameters:

hostname	Hostname or IP address of the UPS.
ups type	Selects UPS type from list of manufacturers. (1-11).

Command Access

Admin level only

create snmpuser

Adds a new SNMPv3 user.

Note: Up to eight new users can be added to SNMPv3, each user with its own access rights.

Command Syntax	
	create <snmpuser></snmpuser>
Command Access	
	Admin level only
list snmpuser	
	Lists all details for an SNMPv3 user (or all users).
Command Syntax	
	list <snmpuser> ALL</snmpuser>
Command Access	
	Admin level only
list snmpusers	
	Lists the access level and authentication method for all SNMPv3 users.
Command Syntax	

Command Access

Admin level only

list <snmpusers>

create user

	Creates a new local user.
Command Syntax	
	create user <name> {password} {verify password}</name>
Command Access	
	Admin level only
cstat	
	Displays the latest status and metrics for all cords in the system.
Command Syntax	
	cstat
Command Access	
	System Monitor access

delete groupfromIdap

	Deletes control access for an outlet group from an LDAP group.
Command Syntax	
	delete groupfromldap <group all="" name="" =""> <ldap group="" name=""> delete gfl <group all="" name="" =""> <ldap group="" name=""></ldap></group></ldap></group>
Command Access	
	Admin level only

delete groupfromtacacs

	Deletes control access for an outlet group from a TACACS+ privilege level.
Command Syntax	
	delete groupfromtacacs <group all="" name="" =""> <tacacs+ level="" privilege=""> delete gft <group all="" name="" =""> <tacacs+ level="" privilege=""></tacacs+></group></tacacs+></group>
Command Access	
	Admin level only

delete groupfromuser

	Deletes control access for an outlet group from a local user.
Command Syntax	
	delete groupfromuser <group all="" name="" =""> <local name="" user=""> delete gfu <group all="" name="" =""> <local name="" user=""></local></group></local></group>
Command Access	
	Admin level only

delete outletfromgroup

	Deletes control access for an outlet from an outlet group.	
Command Syntax		
	delete outletfromgroup <outlet all="" id="" name="" =""> <group name=""> delete ofg <outlet all="" id="" name="" =""> <group name=""></group></outlet></group></outlet>	
Command Access		
	Admin level only	

delete outletfromIdap

	Deletes control access for an outlet from an LDAP group.	
Command Syntax		
	delete outletfromIdap <outlet all="" id="" name="" =""> <ldap group="" name=""> delete ofI <outlet all="" id="" name="" =""> <ldap group="" name=""></ldap></outlet></ldap></outlet>	
Command Access		
	Admin level only	

delete outletfromtacacs

	Deletes control access for an outlet from a TACACS+ privilege level.
Command Syntax	
	delete outletfromtacacs <outlet all="" id="" name="" =""> <tacacs+ level="" privilege=""> delete oft <outlet all="" id="" name="" =""> <tacacs+ level="" privilege=""></tacacs+></outlet></tacacs+></outlet>
Command Access	
	Admin level only

delete outletfromuser

	Deletes control access for an outlet from a local user.
Command Syntax	
	delete outletfromuser <outlet all="" id="" name="" =""> <local name="" user=""> delete ofu <outlet all="" id="" name="" =""> <local name="" user=""></local></outlet></local></outlet>
Command Access	
	Admin level only

delete portfromIdap

	Deletes access to use a connection pass-thru to a specified port from an LDAP group.
Command Syntax	
	delete portfromIdap <port all="" id="" name="" =""> <ldap group="" name=""></ldap></port>
	delete pfl <port all="" id="" name="" =""> <ldap group="" name=""></ldap></port>
Command Access	
	Admin level only

delete portfromtacacs

	Deletes access to use a connection pass-thru to a specified port from a TACACS privilege level.
Command Syntax	
	delete portfromtacacs <port all="" id="" name="" =""> <tacacs+ level="" privilege=""></tacacs+></port>
	delete pft <port all="" id="" name="" =""> <tacacs+ level="" privilege=""></tacacs+></port>
Command Access	

Admin level only

delete portfromuser

	Deletes access to use a connection pass-thru to a specified port to a local user.		
Command Syntax	delete portfromuser <port all="" id="" name="" =""> <local name="" user=""></local></port>		
Command Access			
	Admin level only		
dir			
	(Directory) Displa	ys the contents of the active working path in the file system.	
Command Syntax			
	dir [.] dir [path] [volume]		
Parameters			
	The dir command	uses the following parameters.	
	""	Displays the current path.	
	path	Specifies a path.	
	volume	(FLASH0 RAM0)	
Command Access			
	Aumin level only		
list group			
	Lists the outlets that are contained in an outlet group.		
Command Syntax	list group <group all="" name="" =""></group>		
Command Access	ior group Agroup Harrie MEL>		
	Any access level		
list groups			
	Lists all outlet groups.		
Command Syntax	list groups		
Command Access			

Any access level

list ldapgroup

Lists access level of an LDAP group and any outlet groups, outlets, and ports assigned to that LDAP group.

Command Syntax list Idapgroup <LDAP group name>

Command Access

Admin level only

list ldapgroups

	Lists all LDAP groups.
Command Syntax	list Idapgroups
Command Access	

Admin level only

list outlets

	Lists all outlets.
Command Syntax	
	list outlets
Command Access	
	Any access level

list ports

	Lists all ports.
Command Syntax	
	list ports
Command Access	
	Any access level

list tacpriv	
	Lists access level of a TACACS+ privilege level and any outlet groups, outlets, and ports assigned to that TACACS+ privilege level.
Command Syntax	
Command Accoss	list tacpriv <tacacs+ level="" privilege=""></tacacs+>
	Admin level only
list tacprivs	
	Lists all TACACS+ privilege levels.
Command Syntax	list tacprivs
Command Access	
	Admin level only
list ups	
	Displays configurations for all UPS's.
Command Syntax	
Commond Assocs	list ups <name all="" =""></name>
Command Access	Admin level only
list upss	
	Displays all UPS's.
Command Syntax	
	list upss
Command Access	Admin level only
list users	
	Lists all local users
Command Svntax	
	list users
Command Access	
	Admin level only
list users

	Lists all local use	rs.
Command Syntax		
Command Access	list users	
	Admin level only	
	· · · · · · · · · · · · · · · · · · ·	
login		
	Performs system	login and access verification.
Command Syntax	La sta	
Command Access	login	
	Any access level	
logmon		
	Log Monitor. Displa	ays the system log (monitor) messages in the CLI session as they occur.
Command Syntax		
Command Cyntax	logmon [filter]	
Parameters		
	The logmon comr	nand uses the following parameter.
	filter	Keyword filter for log entries.
Usage Guidelines	-	
Command Accoss	The log monitor co	ommand runs until ESC or RETURN is pressed.
Commanu Access	Admin level only	
logout	Adminitever only	
ισμοτι	Quite the surrent	CLL cossion
Command Syntax		
	logout	
Command Access		
Commanu ACCESS	Any access level	

lstat

	Displays the latest status and metrics for all lines in the system.	
Command Syntax	Istat	
Command Access		
	System monitor access	
ocpstat		
	Displays the latest status and metrics for all over-current protectors (OCPs) in the system.	
Command Syntax		
	ocpstat	
Command Access	System monitor accoss	
	System monitor access	
off	Note: For Switched products only.	
Command Suntax	Turns off the specified outlet or outlet group.	
Command Syntax	off <name all="" group="" id="" =""></name>	
Usage Guidelines		
	The off command is for Switched PR01/PR02 products only.	
Command Access		
	User level and above	

Command SyntaxTurns on the specified outlet or outlet group.Command SyntaxThe on command is for Switched PR01/PR02 products only.Command AccessOn-Only users or User level and aboveostatDisplays the latest status and metrics for all outlets in the system. ostat <name all="" group="" id="" outlet="" ="">Command AccessSystem monitor accesspasswordChanges the password for the current local user. Password (password) (verify password)Command AccessAny access level</name>
Command Syntaxon <name all="" group="" id="" ="">Usage GuidelinesThe on command is for Switched PR01/PR02 products only.Command AccessOn-Only users or User level and aboveostatDisplays the latest status and metrics for all outlets in the system.Command SyntaxOstat <name all="" group="" id="" outlet="" ="">Command AccessSystem monitor accesspasswordChanges the password for the current local user.Command AccessAny access level</name></name>
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Any access level
ning.
Dete the reachability of a best on the ID nativerk
Command Syntax
ping <hostname></hostname>
Parameters
The ping command uses the following parameter.
hostname Specifies the host to ping, 0-63 characters.
Command Access
Anv access level

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pstat

	Displays the latest status and metrics for all phases in the system.
Command Syntax	pstat
Command Access	
	System monitor access
reboot	Note: For Switched products only.
	Turns off the specified outlet or outlet group and then turns it back on after a delay.
Command Syntax	reboot <name all="" group="" id="" =""></name>
Usage Guidelines	The Reboot command is for Switched PR01/PR02 products only.
0	
Command Access	Reboot-Only users or User level and above
remove group	Removes an outlet group from the system.
Command Syntax	
Command Access	remove group <name></name>
	Admin level only
remove ldapgroup	
Command Sumtan	Removes an LDAP group from the system.
	remove ldapgroup <name></name>
	Admin level only

remove snmpuser

	Removes an SNMPv3 user from the system.
Command Syntax Command Access	remove snmpuser <name></name>
	Admin level only
remove ups	
	Removes an uninterruptable power supply (UPS) from the system.
Command Syntax	
Command Access	remove ups <name></name>
	Admin level only
remove user	
	Removes a local user from the system.
Command Syntax	
Command Access	remove ups <name></name>
	Admin level only

restart

Restarts the system.

Command Syntax

restart [factkeepnet | factory | ftpload | newx509cert | newsshkeys | normal]

Parameters

The **restart** command uses the following parameters.

Note: None of the parameters in the following table performs a normal system restart.

factkeepnet	Removes all system configurations except network configuration.
factory	Removes all system configurations.
ftpload	Performs a system update through an FTP load.
newx509cert	Creates a new self-signed SSL X509 certificate.
newsshkeys	Creates a new set of public and private SSH keys.
normal	Performs a normal system restart.

Command Access

Admin level only; no access in Demo mode

senstat

Displays the latest status and metrics for all sensors (and fan, when present) in the system.

Command Syntax

senstat

Command Access

System monitor access

set access

Sets user access configurations.

Command Syntax

set access button [disabled | enabled] set access clitimeout <value> set access localadmin [required | optional] set access logorder [newest | oldest] set access method [localonly | ldaponly | ldaplocal | radiusonly | radiuslocal | tacacsonly | tacacslocal] set access prompt <prompt string> set access startupstick [disabled | enabled] set access strongpw [optional | required] set access webloglen <value> set access webtimeout <value>

Parameters

The set access command uses the following parameters:

button	Sets if the Configuration Reset button can reset the system configuration.
clitimeout	Set the CLI session idle time before automatic logout [1-1440 minutes].
localadmin	Removes the restriction to not allow the last local administrator to be removed when remote authentication (LDAP, TACACS+, or RADIUS) is in use.
logorder	Sets the default order of the system log when displayed.
method	Sets the allowed access methods for users.
prompt	Sets the system CLI prompt (0-32 characters).
startupstick	Enables/disables the Startup Stick tool for mass PDU configuration.
strongpw	Sets if strong passwords are required for local users.
webloglen	Sets the number of log entries per page when viewing the log on the Web [10- 250 entries].
webtimeout	Sets the Web session idle time before automatic logout [1-1440 minutes].

Sub-Parameters

The set access command uses the following sub-parameters:

localonly	Local authentication only.
ldaponly	Authentication using only the configured LDAP servers.
ldaplocal	Authentication using the configured LDAP servers, then locally if no LDAP match is found.
radiusonly	Authentication using only the configured Radius servers.
radiuslocal	Authentication using the configured Radius servers, then locally if no Radius match is found.
tacacsonly	Authentication using only the configured TACACS servers.
tacacslocal	Authentication using the configured TACACS+ servers, then locally if no TACACS+ match is found.

Admin level only	
set banner	
Sets the system banner that displays before a user authenticates a user s	session.
Command Syntax set banner <banner text=""></banner>	
Parameters The set banner command uses the following sub-parameters:	
banner text Text for system banner, 0-2070 characters.	
 Usage Guidelines The banner accepts all printable ASCII characters, plus CRLF. CTL-Z terminates banner input. 	
Admin level only; no access in Demo mode	
set bluetooth Sets Bluetooth® configuration values. Command Syntax set bluetooth [disabled enabled] set bluetooth discover [disabled enabled limited]	
set bluetooth name <name> set bluetooth pincode <value> set bluetooth transpwr <value> Parameters</value></value></name>	
The set bluetooth command uses the following parameters:	
discover Sets the discoverability of the Bluetooth module.	
name Sets the name of the Bluetooth module (1-31 characters).	
pincode Sets the pin code used for Bluetooth pairing (0000-9999).	
transpwr Sets the transmission power for Bluetooth communications.	
Sub-Parameters The set bluetooth command uses the following sub-parameter:	
limited The Bluetooth module will be discoverable to 60-seconds after t module button has been pressed.	he
Command Access Admin level only: no access in Demo mode	

set branch

Sets branch configuration values.

Command Syntax

set branch email [disabled | enabled] <name | id | ALL> set branch load [alarmhi | alarmlo | warnhi | warnlow] <name | id | ALL> <value> set branch load hyst <value> set branch snmpt [disabled | enabled] <name | id | ALL>

Parameters

The **set branch** command uses the following parameters:

email	Email notifications for branch events.
hyst	Hysteresis between event state and recovery (0.0 to 10.0).
load	Current load for a branch. min=0A; max (max current) in show branches command; hyst=0.0-10.0A; default-1.0A.
snmpt	SNMP trap notifications for branch events.

Sub Parameters

The set branch command uses the following sub-parameters:

alarmhi	High alarm value.
alarmlo	Low alarm value.
warnhi	High warning alarm.
warnlo	Low warning alarm.

Usage Guidelines

min <= alarmlo <= warnlo <= warnhi <= alarmhi <= max

Command Access

set cord

Sets cord configuration values.

Command Syntax

set cord email [disabled | enabled] <name | id | ALL> set cord loadmax <name | id | ALL> <value> set cord name <name | id> <name string> set cord nomvolts <name | id | ALL> <value> set cord outofbal [alarmhi | warnhi] <name | id | ALL> <value> set cord outofbal hyst <value> set cord outofbal hyst <value> set cord pf [alarmlo | warnlo] <name | id | ALL> <value> set cord pf hyst <value> set cord snmpt [disabled | enabled] <name | id | ALL> set cord va [alarmhi | alarmlo | warnhi | warnlo] <name | id | ALL> <value> set cord va hyst <value> set cord watts [alarmhi | alarmlo | warnhi | warnlo] <name | id | ALL> <value>

Parameters

The **set cord** command uses the following parameters:

email	Email notifications for cord events.
hyst	Hysteresis between event state and recovery.
loadmax	Maximum current load for a cord. 1-max factory current in show cords command.
name	Name for the cord. 0-32 characters.
nomvolts	Nominal voltage for the cord. 0-max factory voltage in show cords command.
outofbal	Out-of-balance; the percent power difference between phases of a cord. min 0%, max 200%, hyst 0-10% (default 2%).
pf	Power factor. min 0.00, max 1.00, hyst 0.0-0.20 (default 0.02).
snmpt	SNMP trap notifications for cord events.
va	Power (with power factor included). min 0VA, max (power capacity) in cstat command, hyst 0-1000VA (default 100VA).
watts	Power (without power factor included). Min 0W, max (power capacity) in cstat command, hyst 0-1000W (default 100W).

Sub-Parameters

The **set cord** command uses the following sub-parameters:

alarmhi	High alarm value.
alarmlo	Low alarm value.
warnhi	High warning alarm.
warnlo	Low warning alarm.

Usage Guidelines min <=alarmlo <=warnlo <=warnhi <=alarmhi <=max

Command Access Admin level only

set dhcp		
	Sets DHCP configu	ration values.
Command Syntax		
	set dhcp [disabled e	enabled]
	set dhcp fqdn [disabl	led enabled]
	set dhcp fqdn name	<name></name>
	set dhop staticfallbac	ck [disabled enabled]
Parameters	set and booldelay [
	The set dhcp comm	and uses the following parameters:
	fqdn	Fully-qualified domain name (FQDN).
	staticfallback	Falls back to static IP address if DHCP fails.
		Note: The staticfallback option does not apply when WLAN is enabled.
	bootdelay	Delays system boot by 100 seconds.
Sub-Parameters		
	The set dhcp comm	and uses the following sub-parameter:
	name	FQDN name. 0-63 characters.
Command Access		
	Admin level only	
set dns		
	Sets domain name	system (DNS) server configuration values.
Command Syntax		
	set dns [primary se	condary] <ipy4 ipy6=""></ipy4>
Parameters		
	The set dns comm	and uses the following parameters:
	primary	Sets the first DNS server. 0-46 characters.
	secondary	Sets the secondary DNS server. 0-46 characters.
Command Access		
	Admin level only: r	no access in Demo mode

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set email

Sets email configuration values.

Command Syntax

set email auth [disabled | enabled] set email config [disabled | enabled] set email [disabled | enabled] set email event [disabled | enabled] set email fromaddr <email addr> set email power [disabled | enabled] See Note below. set email smtp authtype [any | crammd5 | digestmd5 | login | plain | none] set email smtp host <hostname> set email smtp password <password> set email smtp port <port> set email smtp usefromaddr set email smtp username <user name> set email smtp useusername set email test set email toaddr1 <email addr> set email toaddr2 <email addr> set email trendfiles [disabled | enabled] set email usesubjloc set email usesubjdef

Note: The set email power command is for Switched products only.

Parameters

The **set email** command uses the following parameters:

auth	Sets if authentication log messages are relayed by email
config	Sets if configuration log messages are relayed by email.
event	Sets if event log messages are relayed by email.
fromaddr	Sets the email address the messages are relayed from. 0-48 characters.
power	Sets if power log messages are relayed by email.
authtype	Sets the type of authentication to use when logging into the relay SMTP server.
host	Sets the host where the relay SMTP server is located. 0-63 characters.
password	Sets the password for logging into the relay SMTP server 0-32 characters.
port	Sets the port number for the relay SMTP server, 1-65535 (default 25).
toaddr1	Sets the first address to send email messages to. 0-48 characters.
toaddr2	Sets the second address to send email messages to. 0-48 characters.

trendfiles	Sets the preference to have new trending report files sent out daily to both "toaddrr" addresses at midnight.
userfromaddr	Sets to log into the relay SMTP server using the from address.
username	Sets the username for logging into the relay SMTP server. 0-32 characters, spaces are not allowed.
test	Tests the email setting for logging into the relay SMTP.
usesubjloc	Uses the location string as the subject of the relayed emails.
usesubjdef	Uses the default subject as the subject of the relayed emails. (sentry@macoui).
useusername	Set to log into the relay SMTP server using the SMTP username.

Sub-Parameters

The **set email** command uses the following sub-parameters:

any	Uses any of the authentication methods described in this table.
crammd5	Uses only CRAM-MD5 for authentication.
digestmd5	Uses only Digest MD5 for authentication
login	Uses only login authentication.
plain	Uses only plain authentication.
none	Uses only no authentication.

Command Access

set energywise

Sets Cisco EnergyWise configuration values.

Command Syntax

set energywise [disabled | enabled] set energywise port <UDP port> set energywise domain <domain name> set energywise refresh <refresh rate> set energywise secret <secret key>

Parameters

The **set energywise** command uses the following parameters:

port	Sets the port number of the EnergyWise host. 1-65535 (default 43440).
domain	Sets the domain of the EnergyWise host. 0-63 characters.
refresh	Sets the refresh rate that sends new EnergyWise discovery packets. 30-600 seconds.
secret	Sets the secret key for the EnergyWise server. 0-80 characters.

Command Access

Admin level only; no access in Demo mode

set feature

Enables new system features.

Command Syntax

set feature <feature key>

Parameters

The set feature command uses the following parameter:

feature key Key for unlocking system features (XXXX-XXXX-XXXX), where X = 0-9 or A-Z.

Command Access

set ftp

Sets FTP configuration values.

Command Syntax

set ftp autoupdate [disabled | enabled] set ftp autoupdate day [sunday-saturday | everyday] set ftp autoupdate hour [1am-12am | 1pm-12pm] set ftp directory <path name> set ftp filename <filename> set ftp host <hostname> set ftp host <hostname> set ftp password <password> set ftp server [disabled | enabled] set ftp test [*full*] set ftp username <username>

Parameters

The **set ftp** command uses the following parameters:

autoupdate	Sets to use automatic system firmware updates.
directory	Sets the directory of the update file in remote FTP update server. 0-64 characters.
filename	Sets the name of the update file in remote FTP update server. 0-32 characters.
host	Sets the hostname of remote FTP update server. 0-63 characters.
password	Sets the password for logging into the remote FTP update server. 0-32 characters.
server	Sets if the system can be an FTP server to serve system files.
test	Tests current FTP settings. Using the <i>full</i> sub-parameter ensures connection to the FTP server is correct, verifies firmware can be sent to the PDU, and downloads firmware to the PDU (but does not install firmware).
username	Sets the username for logging into the remote FTP update server. 0-32 characters.

Sub-Parameters

The **set ftp** command uses the following sub-parameters:

day	Sets the day of the week to automatically update system firmware.
hour	Sets the hour of the day to automatically update system firmware.

Command Access

set http		
	Sets HTTP confi	guration values.
Command Syntax	set http [disabled set http port <port< td=""><td> enabled] ></td></port<>	enabled] >
r ai ainetei s	The set http command uses the following parameter:	
	port	Sets the port for HTTP connections. 1-65535 (default 443).
Command Access	Admin level only	r; no access in Demo mode

set https

Sets HTTPS configuration values.

Command Syntax

set https [disabled | enabled] set https port <port> set https usercert [disabled | enabled] set https userpass <passphrase>

Parameters

The **set https** command uses the following parameters:

port	Sets the port for HTTPS connections.1-65535 (default 80).
usercert	Sets to use user-provided certificates instead of system self-signed certificates.
userpass	Sets the pass phrase for user-provided certificates. 0-63 characters.

Command Access

Admin level only; no access in Demo mode

set ipv4, set ipv6

Sets IPv4 and IPv6 configuration values.

Command Syntax

set ipv4 address <ipv4 address> set ipv4 gateway <ipv4 address> set ipv4 subnet <ipv4 address> set ipv6 address <ipv6 address> set ipv6 gateway <ipv6 address> set ipv6 prefix <ipv6 CIDR prefix>

Parameters

The set ipv4 and set ipv6 commands use the following parameters:

lpv4 address	Uses the format of XXX.XXX.XXX.XXX, where XXX=0-255.
lpv6 address	Uses the format of XXX.XXX.XXX.XXX.XXX.XXX.XXX, where XXXX=0- 0xFFFF.
lpv6 CIDR prefix	Uses the format of /0-64.

Command Access

set ldap

Sets LDAP configuration values.

Command Syntax

set Idap bind [simple | tls | md5] set Idap binddn <distinguished name> set Idap bindpw <password> set Idap groupattr <group attribute> set Idap groupsearch basedn <distinguished name> set Idap groupsearch [disabled | enabled] set Idap groupsearch useattr <user attribute> set Idap groupsearch useattr <user attribute> set Idap primary <hostname> set Idap secondary <hostname> set Idap port <port> set Idap userbasedn <distinguished name> set Idap userbasedn <distinguished name>

Parameters

The **set Idap** command uses the following parameters:

bind	Sets the bind method for the LDAP server.
binddn	Sets the distinguished name (DN) for the bind.
bindpw	Sets the password for the bind.
groupattr	Sets the user class distinguished name (DN) or names of groups a user is a member of.
groupsearch	Sets the bind to search groups for the username in addition to searching the usernames for its list of group memberships.
hostname	Sets the hostname of the Directory Services server.
port	Sets the port number for the LDAP server. 1-65535 (default 389).
userbasedn	Sets the base distinguished name (DN) for the username search at login.
userfilter	Sets the filter used for the username search at login.

Sub-Parameters

The set Idap command uses the following sub-parameters:

simple	Uses simple bind method.
tls	Uses bind with TLS. (TLS version 1.2).
md5	Uses Digest MD5 bind.
basedn	Base Distinguished Name (DN).
useattr	Sets the user attribute to search for.

Command Access

set ldapgroup

Sets configuration values for LDAP group access rights.

Command Syntax

set Idapgroup access [admin }| admin | ononly | poweruser | rebootonly | user | viewonly] <groupname>

set ldapgroup sysmon [disabled | enabled] <groupname>

Parameters

The **set Idap group** command uses the following parameters:

sysmon	Sets system monitor access for an LDAP group.
	Note: On-Only, Reboot-Only, and View-Only are available for Switched PR01/PR02 products.
access	Sets the access type of an LDAP group.

Sub-Parameters

The set Idap group command uses the following sub-parameter:

groupname	Name of the LDAP group to change access rights. 0-32 characters.
-----------	--

Command Access

set line

Sets line configuration values.

Command Syntax

set line email [disabled | enabled] <name | id | ALL> set line load [alarmhi | alarmlo | warnhi | warnlo] <name | id | ALL> <value> set line load hyst <value> set line snmpt [disabled | enabled] <name | id | ALL>

Parameters

The **set line** command uses the following parameters:

Email	Email notification for line events.
Hyst	Hysteresis between event state and recovery.
Load	Current load for a line. min = 0A, max (current limit) in show lines command, hyst 0.0-10.0A (default 1.0A).
SNMPT	SNMP trap notifications for line events.

Sub-Parameters

The set line command uses the following sub-parameters:

alarmhi	High alarm value.
alarmlo	Low alarm value.
warnhi	High warning alarm.
warnlo	Low warning alarm.

min <= alarmlo <= warnlo <= warnhi <= alarmhi <= max

Command Access

set loadshed Note: Only available if the Smart Load Shedding feature is activated.

Sets Smart Load Shedding configuration values.

Command Syntax

set loadshed branch [disabled | enabled] set loadshed line [disabled | enabled] set loadshed sensor [disabled | enabled] set loadshed sensor contact [recoveroff | recoveron] <contact sensor name | id | ALL> set loadshed sensor temp [recoveroff | recoveron] <temp sensor name | id | ALL> set loadshed sensor water [recoveroff | recoveron] <water sensor name | id | ALL> set loadshed ups [all | any] <line name | id | ALL> set loadshed ups [disabled | enabled] set loadshed ups [recoveroff | recoveron] set loadshed ups [recoveroff | recoveron] set loadshed ups [recoveroff | recoveron]

Parameters

The **set loadshed** command uses the following parameters:

branch	Sets to allow branch shedding events.
line	Sets to allow line shedding events.
sensor	Sets to allows sensor shedding events.
ups	Sets to allow UPS shedding events.

Sub-Parameters

The set loadshed command uses the following sub-parameters:

all	Sheds outlets only when all UP devices on an upstream line go to "on battery".
any	Sheds outlets when any UPS device on an upstream line goes to "on battery".
recoverdelay	The delay that a UPS device needs to be "on utility" before recovering outlets. 0-10 minutes.
recovery off	Shed outlets are not recovered Does not recover shed outlets when even conditions are cleared.
recovery on	Automatically recover shed outlets when event conditions are cleared.
sheddelay	The delay that a UPS device needs to be "on battery" before shedding outlets. 0-10 minutes.

Usage Guidelines

The Smart Load Shedding feature must be enabled.

Command Access

set location			
	Sets the system location string.		
Command Syntax			
Parameters	set location <location string=""></location>		
	The set location of	command uses the following parameter:	
	location string	Location string text for system location. 0-63 characters.	
Command Access	Admin level only		
set net			
	Sets network mo	de configuration values.	
Command Syntax			
	set net [disabled	ipv4only dualv6v4]	
Parameters	T I		
	The set net comm	and uses the following parameters:	
	disabled	Disables network access to system.	
	ipv4only	System only allows IPv4 functionality.	
	Dualv6v4	System allows IPv6 and IPv4 functionality.	
Command Access	Admin level only	; no access in Demo mode.	
set ocp			
	Sets over-curren	t protector (OCP) configuration values.	
Command Syntax Parameters	set ocp email [disa set ocp loadmax < set ocp snmpt [disa	ibled enabled] <name all="" id="" =""> name id ALL> <value> abled enabled] <name all="" id="" =""></name></value></name>	
	The set ocp com	nand uses the following parameters:	
	email	Email notifications for OCP events.	
	loadmax	Maximum current load for an OCP. Valid range is 1 to "max factory current" from the show ocps command.	
	snmpt	SNMP trap notifications for OCP events.	
Command Access	Admin level only		

set outlet

Sets outlet configuration values.

Command Syntax

set outlet branchevent [disabled | enabled] <name | id | ALL> set outlet chglogging [disabled | enabled] set outlet email [disabled | enabled] <name | id | ALL> set outlet load [alarmhi | alarmlo | warnhi | warnlo] <name | id | ALL> <value> set outlet load hyst <value> set outlet name <name | id> <new name> set outlet snmpt [disabled | enabled] <name | id | ALL> set outlet watts [alarmhi | alarmlo | warnhi | warnlo] <name | id | ALL> <value> set outlet watts [alarmhi | alarmlo | warnhi | warnlo] <name | id | ALL> <value>

For Switched PRO1/PRO2 products only:

set outlet extondelay <name | id | ALL> <value> set outlet host <name | id> <hostname> set outlet lock [disabled | enabled] <name | id | ALL> set outlet rebootdelay <value> set outlet script [disabled | enabled] <name | id | ALL> set outlet script delay <name | id | ALL> <value> set outlet seqdelay <value> set outlet shutdown [disabled | enabled] <name | id | ALL> set outlet shutdown [disabled | enabled] <name | id | ALL> set outlet shutdown delay <name | id | ALL> <value> set outlet shutdown delay <name | id | ALL> <value>

For the enabled Smart Load Shedding feature:

set outlet contactevent [disabled | enabled] <name | id | ALL> <contact sensor name | id | ALL> set outlet lineevent [disabled | enabled] <name | id | ALL> set outlet sensoraction [off | on] set outlet tempevent [disabled | enabled] <name | id | ALL> <temp sensor name | id | ALL> set outlet upsevent [disabled | enabled] <name | id | ALL> set outlet waterevent [disabled | enabled] <name | id | ALL>

For AC products only:

set outlet pf [alarmlo | warnlo] <name | id | ALL> <value> set outlet pf hyst <value>

Parameters

The set outlet command uses the following parameters:

branchevent	Sets if load shedding (due to branch events) is allowed for an outlet.
chglogging	Sets logging for system outlet state changes
contactevent	Sets if load shedding (due to contact sensor events) is allowed for an outlet.
email	Sets email notifications for outlet events.

extondelay	Sets an extra on delay when turning on an outlet. 0-900 seconds.		
host	Sets the hostname for an outlet for script or shutdown actions. 0-63 characters.		
hyst	Sets the hysteresis between event state and recovery.		
load	Sets the current load for an outlet. min 0.0A, max (max current) in show outlets command, hyst 1.0-10.0A (default 1.0A)		
lineevent	Sets if load shedding (due to outlet current load events) is allowed for an outlet.		
lock	Sets if control actions are disabled for an outlet after wakeup state is applied.		
pf	Sets the power factor. min 0.00, max 1.00, hyst 0.0-0.20 (default 0.02)		
rebootdelay	Sets an extra on delay when rebooting an outlet (5-600 seconds).		
script	Sets to additionally send request to have shutdown agent run a script before shutting down the host.		
sensoraction	Sets the load shedding outlet control action for all sensor alarm events.		
seqdelay	Sets the delay between turning on outlets. 0-15 seconds.		
shutdown	Sets if notification of pending off state of outlet is sent to outlet host before changing state.		
shutdown delay	Sets the remote shutdown delay for an outlet. 1-900 seconds.		
snmpt	Sets if SNMP trap notifications for outlet events.		
tempevent	Sets if load shedding (due to temperature sensor events) is allowed for an outlet.		
upsevent	Sets if load shedding (due to UPS events) are allowed for an outlet.		
wakeup	Sets the default outlet control state after system power up.		
waterevent	Sets if load shedding (due to water sensor events) is allowed for an outlet		
watts	Sets the power (without power factor). min 0W, max (power capacity) in ostat details , hyst 0-1000W (default 10W).		

Parameters

The set outlet	command	uses the	e followina	sub-parameters:
	oominana		, iono ming	ous paramotoro.

script delay	Sets the time to wait after the script has executed to outlet state change. 1-15 seconds.
shutdown delay	Sets the time to wait after the shutdown notification to host before outlet state change. Valid range is 1-900 seconds.
on	Sets outlet to sequence on after system boot.
off	Sets outlet to remain off after system boot.
last	Sets outlet to match its last state prior to system boot after system boot.
alarmhi	Sets high alarm value.
alarmlo	Sets low alarm value.
warnhi	Sets high warning value.
warnlo	Sets low warning value.

min <= alarmlo <= warnlo <= warnhi <= alarmhi <= max

Command Access

set phase

Sets phase configuration values.

Command Syntax

set phase email [disabled | enabled] <name | id | ALL> set phase pf [alarmlo | warnlo] <name | id | ALL> <value> set phase snmpt [disabled | enabled] <name | id | ALL> set phase volts [alarmhi | alarmlo | warnhi | warnlo] <name | id | ALL> <value> set phase volts hyst <value>

For AC products only:

set phase pf hyst <value>

Parameters

The **set phase** command uses the following parameters:

email	Sets email notifications for phase events.
hyst	Sets hysteresis between event state and recovery.
pf	Sets power factor. min 0.00, max 1.00, hyst 0.0-0.20 (default 0.02).
snmpt	Sets SNMP trap notifications for phase events.
volts	Sets voltage. min and max vary by product [*] , hyst 0.0-20 (default 0.02). * For the min-max range, issue set cord nomvolts all command (press ESC to quit command).

Sub-Parameters

The **set phase** command uses the following sub-parameters:

alarmhi	Sets high alarm value.
alarmlo	Sets low alarm value.
warnhi	Sets high warning value.
warnlo	Sets low warning value.

Command Access

Admin level only

set port

Sets serial port configuration values.

Command Syntax

set port [baud | speed] [1200 | 2400 | 4800 | 9600 | 19200 | 38400 | 57600 | 115200] <name | id > set port dsrcheck [disabled | enabled] <name | id > set port timeout <name | id > <timeout>

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Parameters

The set port command uses t	the following parameters:
-----------------------------	---------------------------

baud/speed	Sets the number of symbols per second of the serial port.
dsrcheck	Sets to use DSR before making a serial connection.
rftag	Sets RF Code tag (RFTAG) support for selected unlocked port. Note: If port is locked, any attempts to change this setting will be ignored.
timeout	Sets the connection idle timeout for pass-thru connections to this port. 0-60 minutes (default 5 minutes).

Command Access

Admin level only

set radius

Sets Radius server configuration values.

Command Syntax

set radius [primary secondary] port <port></port>
set radius [primary secondary] retries <retries></retries>
set radius [primary secondary] host <hostname></hostname>
set radius [primary secondary] secret <shared secret=""></shared>
set radius [primary secondary] timeout <timeout></timeout>

Parameters

The set radius command uses the following parameters:

primary	Sets the first Radius server.
secondary	Sets the second Radius server.
port	Sets the port for Radius sever connections. 1-65535 (default 1812).
retries	Set the maximum retry count for the Radius server. 0-10 (default 2).
host	Sets the Radius server hostname. 0-63 characters.
secret	Sets the shared secret value for the Radius server. 0-48 characters. Note: The secret that was set for the primary server will not be cleared when setting the secret for the secondary server, and vice versa.
timeout	Sets the connection timeout for the Radius server. 1-30 seconds (default 5 seconds).

Command Access

set sensor

Sets sensor configuration values.

Command Syntax

set sensor adc [alarmhi alarmlo warnhi warnlo] <name all="" id="" =""> <value></value></name>
set sensor adc email [disabled enabled] <name all="" id="" =""></name>
set sensor adc hyst <value></value>
set sensor adc name <name id="" =""> <name></name></name>
set sensor adc snmpt [disabled enabled] <name all="" id="" =""></name>
set sensor contact email [disabled enabled] <name all="" id="" =""></name>
set sensor contact name <name id="" =""> <name></name></name>
set sensor contact snmpt [disabled enabled] <name all="" id="" =""></name>
set sensor fan [alarmlo alarmhi email hyst name snmpt warnlo warnhi]
set sensor humid [alarmhi alarmlo warnhi warnlo] <name all="" id="" =""> <value></value></name>
set sensor humid email [disabled enabled] <name all="" id="" =""></name>
set sensor humid hyst <value></value>
set sensor humid name <name id="" =""> <name></name></name>
set sensor humid snmpt [disabled enabled] <name all="" id="" =""></name>
set sensor temp [alarmhi alarmlo warnhi warnlo] <name all="" id="" =""> <value></value></name>
set sensor temp email [disabled enabled] <name all="" id="" =""></name>
set sensor temp hyst <value></value>
set sensor temp name <name id="" =""> <name></name></name>
set sensor temp snmpt [disabled enabled] <name all="" id="" =""></name>
set sensor water email [disabled enabled] <name all="" id="" =""></name>
set sensor water name <name id="" =""> <name></name></name>
set sensor water snmpt [disabled enabled] <name all="" id="" =""></name>
set sensor temp scale [celsius fahrenheit]

Parameters

The set sensor command uses the following parameters:

adc	Sets the analog-to-digital converter sensor. min 0, max 255, hyst 0-20 (default 1).
contact	Sets the contact closure sensor.
fan	Sets the fan values when a fan is present.
humid	Sets the humidity sensor. min 0%RH, max 100%RH, hyst 0-20%RH (default 2%RH).
temp	Sets temperature sensor. For Celsius: min -40°, max 123°, hyst 0-30°, default 1°; For Fahrenheit: min -40°, max 253°, hyst 0-54°, default 2°.
water	Sets the water sensor.
email	Sets the email notifications for sensor events.
hyst	Sets the hysteresis between event state and recovery.
name	Sets the name of the sensor.
snmpt	SNMP trap notifications for sensor events.
scale	Sets temperature scale.

Sub-Parameters

The set sensor command uses the following sub-parameters:

alarmhi	Sets high alarm value.
alarmlo	Sets low alarm value.
warnhi	Sets high warning value.
warnlo	Sets low warning value.

min <= alarmlo <= warnlo <= warnhi <= alarmhi <= max

Command Access

Admin level only

set snmp

Sets SNMP configuration values.

Command Syntax

set snmp iprestrict [none | trapdests] set snmp syscontact <system contact> set snmp syslocation <location> set snmp sysname <system name> set snmp trap dest1 <hostname> set snmp trap dest2 <hostname> set snmp trap format [v1 | v2c | v3] set snmp trap repeat <repeat time> set snmp v2 [disabled | enabled] set snmp v2 [getcomm | setcomm | trapcomm] <comm string> set snmp v3 [disabled | enabled]

The set snmp command uses the following parameters:

iprestrict	Sets to only allow to trap destinations to have SNMP access
syscontact	System contact string. 0-63 characters.
syslocation	System location string. 0-63 characters.
sysname	System name string. 0-63 characters.
trap	Sets trap notification options.
v2	Sets to allow access with SNMPv2.
v3	Sets to allow access with SNMPv3.

Sub-Parameters

dest1	First SNMP trap destination. 0-63 characters.
dest2	Second SNMP trap destination. 0-63 characters.
format	Format of SNMP trap and header.
repeat	Sets the SNMP trap repeat time for object in an event condition. 1- 65535 seconds.
getcomm	Read community string for SNMPv2. 0-32 characters. Default is public.
setcomm	Read/write community string in SNMPv3. 0-32 characters. Default is blank.
trapcomm	Community string in SNMPv2 traps for authentication. 0-32 characters.
none	No authentication or privacy is used (authpass and privpass are not used).
md5	Authentication but not privacy is used (privpass is not used).
md5des	Authentication and privacy are used.

The **set snmp** command uses the following sub-parameters:

Command Access

set snmpuser

Command Syntax	Sets SNMPv3 user configuration values.
	set snmpuser access [disabled readonly writeonly readwrite] set snmpuser authmode [MD5 MD5DES none]
	set snmpuser authpass

set snmpuser privpass

Parameters

The set snmpuser command uses the following parameters:

access	Sets
authmode	Sets
authpass	Sets
privpass	Sets

Sub-Parameters

The set snmpuser command uses the following sub-parameters:

disabled	Disables access to the the SNMPv3 user
readonly	Sets read only access for an SNMPv3 user.
writeonly	Sets write only access for an SNMPv3 user.
readwrite	Sets read/write access for an SNMPv3 user.
MD5	Sets Digest MD5 for SNMPv3 user authentication.
MD5DES	Sets MD5DES for SNMPv3 user authentication.
none	Uses no authentication method for an SNMPv3 user.
authpass	Sets the authentication password for an SNMPv3 user. 0-39 characters.
privpass	Sets the privacy password for an SNMPv3 user. 0-31 characters.

set sntp

Sets SNTP configuration values.

Command Syntax

set sntp dst [disabled | enabled] set sntp dst [end | start] <tz string> set sntp gmtoffset <offset> set sntp primary <hostname> set sntp secondary <hostname>

Parameters

The **set sntp** command uses the following parameters:

dst	Sets to automatically adjust for Daylight Saving Time (DST).
gmtoffset	Sets the adjustment from Coordinated Universal Time (UTC). (-12 to 14). GMT Offset includes both extended hours and minutes.
primary	Sets the first SNTP server. 0-63 characters.
secondary	Sets the second SNTP server. 0-63 characters.

Sub-Parameters

The **set sntp** command uses the following sub-parameters:

end	Date to end DST.	
start	Date to start DST.	

Command Access

Admin level only; no access in Demo mode

set spm

Sets Sentry Power Manager (SPM) access configuration values.

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Command Syntax

set spm [disabled | enabled]

set spm resetpw

Parameters

The **set spm** command uses the following parameter:

```
resetpw Sets to reset SPM secure password back to default.
```

Command Access

set ssh			
	Sets SSH configu	uration values.	
Command Syntax Parameters	set ssh [disabled set ssh port set ssh authmetho	enabled] od [all kbint password]	
	The set ssh command uses the following parameters:		
	port	Sets port for SSH connections 1-65535 (default is 22).	
	authmethod	Sets authentication method for SSH connections.	
Sub-Parameters	The set ssh comm	nand uses the following sub-parameters:	
	all	Allows either of the authentication methods described in this table.	
	kbint	Allows only keyboard-interactive authentication.	
	password	Allows only password authentication.	
Command Access	Admin level only	; no access in Demo mode	
set syslog			
Command Suptav	Sets Syslog configuration values.		
Command Syntax	set syslog debugmsg [disabled enabled] set syslog host1 <hostname> set syslog host2 <hostname> set syslog port <port> set syslog protocol [rfc3164 rfc5424]</port></hostname></hostname>		
Parameters	The set system of	ammand uses the following parameters:	
	debugmsg	Sets to send debug log messages in addition to system log messages.	
	host1	Sets the first Syslog server. 0-63 characters.	
	host2	Sets the second Syslog server. 0-63 characters.	
	port	Sets the port for the Syslog servers. 1-65535 (default 514).	
	protocol	Sets the format of the Syslog messages.	
Command Access	Admin level only	; no access in Demo mode	

set tacacs				
	Sets TACACS+	- server configuration values.		
Command Syntax	set tacacs primary <hostname> set tacacs secondary <hostname> set tacacs port <port> set tacacs key /key}</port></hostname></hostname>			
Parameters	T			
	The set tacacs	command uses the following parameters:		
	primary	Sets the first TACACS+ server (0-63 characters).		
	secondary	Sets the second TACACS+ server (0-63 characters).		
	port	Sets the port for the TACACS+ servers 1-65535 (default is 49).		
	key	Sets the key for authentication with the TACACS+ servers.		
set tacpriv Command Syntax Parameters	Sets TACACS+ set tacpriv acce set tacpriv sysn	- configuration values for privilege level access rights. ess [admin ononly poweruser rebootonly user viewonly] <priv level:<br="">non [disabled enabled] <priv level=""></priv></priv>		
	access	Sets the access type for a level. Note: On-Only, Reboot-Only, and View-Only are available for Switched PRO1/PRO2 products.		
	sysmon	Sets the system monitor access for a level.		
Sub-Parameters	The set tacpriv	<i>r</i> command uses the following sub-parameter:		
	priv level	The ID of the TACACS+ privilege level to change access rights (0-15).		
Command Access	Admin level o	nly		

set telnet			
	Sets Telnet configuration values.		
Command Syntax	set telnet [disabled enabled] set telnet port <port></port>		
Parameters	The set telnet command uses the following parameters:		
	port	Sets the port for Telnet connections 1-65535 (default is 23).	
Command Access	Admin level only; no access in Demo mode		
set trend			
Common d Comtou	Sets power trending configurations.		
Command Syntax	set trend [disabled enabled]		
	Admin level only; no access in Demo mode		
set unit			
	Sets PR02 config	guration values.	
Command Syntax	set unit assettag <name id="" =""> <asset tag=""> set unit display [auto inverted normal] <name all="" id="" =""> set unit email [disabled enabled] <name all="" ="" id=""> set unit identify [disabled enabled] <name all="" id="" =""> set unit name <name id="" =""> <new name=""></new></name></name></name></name></asset></name>		
	For Switched PRO2 products only:		
	set unit osequence [normal reversed] <name all="" id="" =""> set unit odisporder [normal reversed] <name all="" id="" =""></name></name>		
	Confirmation required:		
	set unit purge <name all="" id="" =""> set unit snmpt [disabled enabled] <name all="" id="" =""></name></name>		
Parameters	The set unit command uses the following parameters:		
	assettag	The asset tag value of the unit. 0-32 characters.	
	display	Sets the orientation of the displays on a unit.	
	email	Email notifications for an event.	
	identify	Set to enable/disable flashing display.	
name	The name of the unit. 0-32 characters.		
------------	--		
odisporder	Sets the Web GUI and CLI outlet display order for a unit. Note: The unit must have sequential switched outlets or this parameter will be ignored.		
osequence	Sets the outlet sequence order for a unit.		
purge	Removes all stored information for a unit.		
snmpt	SNMP trap notifications for unit events.		

Sub-Parameters

The set unit command uses the following sub-parameters:

auto	Set automatic display orientation using internal orientation sensor.	
Inverted	Set display to be upside down.	
normal	Set display to be right-side up; set outlet sequencing to be 1 to n.	
reversed	Set outlet sequencing to be n to 1.	

Command Access

Admin level only

set ups

Sets UPS device configuration values.

Command Syntax

set ups addline <UPS#> <line name | id | ALL> set ups commstr <UPS#> <get community string> set ups delline <UPS#> <line name | id | ALL> set ups host <UPS#> <hostname> set ups oidspoll <UPS#> <oid> set ups onbattery <UPS#> <value> set ups onutility <UPS#> <value> set ups onutility <UPS#> <value> set ups port <UPS#> <port> set ups type <UPS#> <value>

Parameters

The **set ups** command uses the following parameters:

UPS#	The number of the UPS to change. 1-8.
addline	Adds the specified line to be protected by the UPS.
commstr	Sets the community string for polling the UPS by SNMP. 0-32 characters.
delline	Removes the specified line from a UPS.

	host	Hostname for polling the UPS by SNMP. 0-63 characters.
	oidspoll	The OID for getting the "on battery"/"on utility" value when polling the UPS by SNMP.
	onbattery	Value of the OID when the UPS is in an "on battery" state. 1-65535.
	onutility	Value of the OID when the UPS is in an "on utility" state. 1-65535.
	port	Port number for polling the UPS by SNMP. 1-65535 (default 161).
	type	Sets the type of the UPS; sets default commstr, oidspoll, onbattery, onutility, and port. 1-11.
Sub-Parameters The set ups command uses the following sub-parameter:		
	oid	The OID string with sequences of a dot and a number. 1-65535.
Command Access	Admin level only	

set user

Sets configuration values for local user access rights.

Command Syntax

set user access [admin | ononly | poweruser | rebootonly | user | viewonly] <username> set user password <username> {password} {verify password} set user sysmon [disabled | enabled] <username>

Parameters

The set user command uses the following parameters:

access	Sets the access type of a local user.
	Note: On-Only, Reboot-Only, and View-Only are available for Switched PR01/PR02 products.
password	Sets the password for a local user.
sysmon	Sets system monitor access for a local user.

Sub-Parameters

The set user command uses the following sub-parameter:

username	The ID of the local user to change access rights. 0-32 characters.

Command Access

Admin level only

set web

Sets configuration parameters to provide Web services.

Command Syntax

set web http [disabled | enabled | port] set web https [disabled | enabled | port] set web https usercert [disabled | enabled] set web https userpass {password} set web svcapi [disabled | enabled] set web spm [disabled | enabled | resetpw]

Parameters

The **set web** command uses the following parameters:

http	Enables/disables support for the HTTP server option.
https	Enables/disables support for the HTTPS server option.
usercert	Enables/disables user certificate, if needed.
userpass	Sets the password for the user certificate.
svcapi	Enables/disables the Web API service for PR01 and PR02 units.
spm	Enables/disables the SPM secure access option to use secure SPM network features and configuration.

Sub-Parameters

The **set web** command uses the following sub-parameter:

port	Sets the port number (1 to 65535) for the HTTP or HTTPS server options. Default port number is 80.
resetpw	Resets the unique SPM default password for a discovered PRO2 after SPM changed the password for network security.

Command Access

Admin level only

set wlan

Description:

Sets the wireless network configuration.

Command Syntax:

set wlan [disabled | enabled] set wlan bssid <ap bssid> set wlan key <ap key> set wlan mac <mac address> set wlan security [open | wep-open | wep-shared | wpapsk-aes | wpapsk-tkip | wpapsk-tkipaes | wpa2psk-aes | wpa2psk-tkip | wpa2psk-tkipaes]

set wlan ssid <ap ssid>

Command Access:

Admin level only; wireless module installed.

set ztp

Description:

Sets the Zero Touch Provisioning (ZTP) feature.

Command Syntax:

set ztp [autoupdate | disabled | enabled | resetprov] set ztp autoupdate [day |disabled |enabled | hour] set ztp resetprov

Parameters

The set ztp command uses the following parameters:

autoupdate	Sets the day and hour when Zero Touch Provisioning (ZTP) automatic updates will occur.
resetprov	Allows the resetting of the PDU provisioning state for the Zero Touch Provisioning (ZTP) feature.

Sub-Parameters

The set ztp autoupdate command uses the following sub-parameters:

day	Sets the day of the week (Sunday through Saturday), or Everyday when the Zero Touch Provisioning (ZTP) automatic updates will occur.
hour	Sets the hour of the day (12AM through 11PM), when the Zero Touch Provisioning (ZTP) automatic updates will occur.

Command Access:

Admin level only

show access

Shows user access configuration values.

Command Syntax		
Command Access	show access	
	Admin level only	
Example		
	Switched PDU: show access	
	Access Configuration	
	Access Method: Configuration Reset Button: Local Administrator Account: Strong Passwords: CLI Custom Prompt: CLI Timeout: Web Timeout: Web Log Entries: Default Log Order: StartUp Stick:	LDAP then local enabled required optional <none> 5 minute<s> 5 minute<s> 100 <per page=""> newest first enabled</per></s></s></none>

show bluetooth

Shows Bluetooth [®] co	nfiguration values.
---------------------------------	---------------------

Command	Syntax
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show bluetooth

Command Access

Admin level only

Example

Switched PDU: show bluetooth

Bluetooth Configuration

Bluetooth:	enabled
Name:	BT-Mod1
Pin code:	0000
Discoverability:	enabled
Transmission Power:	0 (dbm)

show branches

	Shows branch configuration values.									
Command Syntax										
Command Access	show branches									
	Admin	Admin level only								
Example										
	Switch	ed PDU: show	/ branches							
	ID	Branch Nar	ne							
	–– AA1 AA2 AA3 BA1 BA2 BA3	AA:Branch AA:Branch AA:Branch BA:Branch BA:Branch BA:Branch	1 2 3 1 2 2 3							
	ID	SNMP Notif.	Email Notif.	Max Current	Current Lo-Alrm	Current Lo-Warn	Current Hi-Warn	Current Hi-Alrm		
	AA1 AA2 AA3 BA1 BA2 BA3 Commo	enabled enabled enabled enabled enabled enabled on Branch Se	enabled enabled enabled enabled enabled enabled	20A 20A 20A 20A 20A 20A 20A	0.0A 0.0A 0.0A 0.0A 0.0A 0.0A	0.0A 0.0A 0.0A 0.0A 0.0A 0.0A	14.0A 14.0A 14.0A 14.0A 14.0A 14.0A 14.0A	16.0A 16.0A 16.0A 16.0A 16.0A 16.0A		
	Bra	anch Current	Hysteresis:		1.0A					

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show cords

Shows cord configuration values.

Command Syntax

show cords

Command Access

Admin level only

Example

Switched PDU: show cords

ID	Cord Name							
AA	Master_Cord_A							
BA	Link_Cord_A							
ID	SNMP	Email	User /	Factory	User /	Factory		
	Notif.	Notif.	Current	Capacity	Nominal	Voltage		
AA	enabled	enabled	30A /	30A	230V	/ 230V		
BA	enabled	enabled	30A /	30A	230V	/ 230V		
ID	Power	Power	Power	Power	Balance	Balance		
	Lo-Alrm	Lo-Warn	Hi-Warn	Hi-Alrm	Hi-Warn	Hi-Alrm		
AA	OW	OW	14490W	16560W	15%	20%		
BA	OW	OW	14490W	16560W	15%	20%		
ID	App Pwr	App Pwr	App Pwr	App Pwr	PF	PF		
	Lo-Alrm	Lo-Warn	Hi-Warn	Hi-Alrm	Lo-Alrm	Lo-Warn		
aa ba	0VA 0VA 0VA	0VA 0VA	 14490VA 14490VA	16560VA 16560VA	0.70 0.70	0.80 0.80		

Common Cord Settings

Cord	Power Hysteresis:	100
Cord	Apparent Power Hysteresis:	100
Cord	Power Factor Hysteresis:	0.0
Cord	3-Phase Out-Of-Balance Hyst:	2%

show email

	Shows email configuration values.					
Command Syntax						
Command Access	show email					
	Admin level only					
Example						
	Switched PDU: show email					
	Email/SMTP Configuration					
	SMTP Host:(not set)SMTP Port:25SMTP Authentication:None with SMTP UsernameSMTP Username:					
	SMIP Osername: SMTP Password: 'From' Addr: 'To' Address 1:	(not set)				
	'To' Address 2: Subject ID: [Sentry_60000a]					
	Email Notifications: EVENT Messages: AUTH Messages: POWER Messages: CONFIG Messages: Trend Files:	disabled enabled disabled disabled disabled disabled				
show energywise						
	Shows Cisco EnergyWise	e configuration values.				
Command Syntax						
Command Access	show energywise					
Command Access	Admin level only					
Frample						
Lxample	Switched PDU: show energy	wwise				
	EnergyWise Configuratio	on				
	EnergyWise Endpoint: Port: Domain: Refresh Rate: Secret:	disabled 43440 (not set) 180 (not set)				

show features

	Shows the enabled system features.					
Command Syntax Command Access	show features					
Example	Admin level only					
	Switched PDU: show features Add-on features installed on this system Smart Load Shedding					
show ftp						
	Shows FTP configuration values.					
Command Syntax Command Access	show ftp					
	Admin level only					
Example						
	Switched PDU: sho	w ftp				
	FTP Client Conf	iguration				
	Host: Username: Password: Directory:	10.1.2.230 swcdu8 <not set=""></not>				
	Filename:	firmware.bin				
	Auto Upgrades: Update Day: Update Hour	disabled Everyday 12 AM				
	FTP Server Confi	guration				
	Server:	enabled				

show ldap

	Shows LDAP configuration values.					
Command Syntax						
Command Access	show Idap					
Command Access						
	Admin level only					
Example						
	Switched PDU: show ld	ap				
	LDAP Configuration					
	LDAP: Primary Host: Secondary Host: Port: Bind Type:	disabled <not set=""> <not set=""> 389 Simple</not></not>				
	Search Bind DN: Password: User Search Base DN: Filter:	<not set=""></not>				
	Group Membership Attribute:					
	Group Search: Base DN: User Member	disabled				

Attribute:

show lines

Shows line configuration values.

Command Syntax

show lines

Command Access

Admin level only

Example

Switched PDU: show lines

ID	Line Name						
AA1	AA:L1						
CA1	CA:L1						
DA1	DA:L1						
	SNMP	Email	Max	Current	Current	Current	Current
ID	Notif.	Notif.	Current	Lo-Alrm	Lo-Warn	Hi-Warn	Hi-Alrm
AA1	enabled	enabled	30A	0.0A	0.0A	21.0A	24.0A
CA1	enabled	enabled	30A	0.0A	0.0A	21.0A	24.0A
DA1	enabled	enabled	30A	0.0A	0.0A	21.0A	24.0A
Commo	n Line Setti	ngs					

Line Current Hysteresis:

1.0A

show loadshed

$\label{eq:Note:Only available if the Smart Load Shedding feature is activated.$

Shows load shedding configuration values.

Command Syntax

Command Access

Example

show loadshed

Admin level only

Switched	PDU:	show	loadshed

Ge	enera	al load shedding options:	Status		Act	ion Delay
	UPS	On-Battery Load Shedding:	disable	ed	0 m	minute(s)
	UPS	On-Utility Auto Recovery:	enabled	ł	0 m	minute(s)
	Line	e Load Shedding:	disable	ed		
	Brar	nch Load Shedding:	disable	ed		
	Sens	sor Load Shedding:	disable	ed		
L	ine s	shedding event settings:				
	ID	Line Name	On-Bat	Shed	Hig	gh Current
	AA1	AA:L1	disable	ed	24.	.0A
	BA1	BA:L1	disable	ed	24.	.0A
Se	ensoi	shedding event settings:				
	ID	Sensor Name	Туре	Auto-Rec	2	High Temp
					-	
	E1	Contact_Sensor_E1	CS	disabled	ł	
	E2	Contact_Sensor_E2	CS	disabled	t	
	EЗ	Contact_Sensor_E3	CS	disabled	t	
	Ε4	Contact_Sensor_E4	CS	disabled	ł	
	A1	Temp_Sensor_A1	TS	disabled	ł	50C
	A2	Temp_Sensor_A2	TS	disabled	ł	50C
	В1	Temp_Sensor_B1	TS	disabled	ł	50C
	В2	Temp_Sensor_B2	TS	disabled	ł	50C
	E1	Temp_Sensor_E1	TS	disabled	ł	50C
	E2	Temp_Sensor_E2	TS	disabled	ł	15C
	E1	Water_Sensor_E1	WS	disabled	ł	

Outlet load shedding events:

		-Enabled	Load-Shed	Events-
ID	Outlet Name	UPS	Line	Branch
AA1	Master_Outlet_1	-	-	-
AA2	Master_Outlet_2	-	-	-
AA3	Master_Outlet_3	-	-	-
AA4	Master_Outlet_4	-	-	-
AA5	Master Outlet 5	-	-	-

show log

Shows the system event log.

Command Syntax

show log [filter]

Parameters

The **show log** command uses the following parameter:

filter	Keyword filter fo	or long entries.
	,	5

Command Access

Admin level only

Example

Switched PDU: show log

There are 8 messages in the system log (#1-#8)

[1] L6 EVENT: Network stack started

[2] L6 EVENT: System boot complete

[3] L2 EVENT: High alarm (temperature 22.9C) detected on temperature sensor 'Temp_Sensor_C2' [C2]

[4] L5 EVENT: Normal temperature restored on temperature sensor 'Temp_Sensor_C2'[C2]

[5] May 5 13:54:56 L2 EVENT: High alarm (power 1W) detected on outlet 'Master_Outlet_30' [AA30]

[6] May 5 13:54:56 L2 EVENT: Low alarm (power factor 0.03) detected on outlet 'Master_Outlet_30'
[AA30]

[7] May 5 13:54:56 L5 EVENT: Normal power factor restored on outlet 'Master_Outlet_30' [AA30]

[8] May 5 14:38:34 L6 AUTH: User 'admn' logged in from 10.1.7.30 using TELNET

show network

Shows network configuration values.

Command Syntax

show network

Command Access

Admin level only

Example

Switched PDU: show network

Network Configuration

State: Link: Speed: Ethernet MAC AutoCfg IPv6 IPv4 Address IPv4 Gateway DNS1.	Static Up 100 Mb; : 00-0A- : FE80:: : 10.1.2 : 10.1.1	IPv4 9C-60-00 20A:9CFF .205 .1 133	Net Neg Dup -OA :FE60:A Suk	work: gotiation: blex: A/64 pnet Mask:	IPv4 only Auto Full 255.255.0.0	
DNS2:	10.1.5	.134				
Static IPv4/IP	v6 Settings					
IPv6 Address IPv6 Gateway IPv4 Address IPv4 Gateway DNS1: DNS2:	: FD01::: FD01::: 10.1.2 10.1.1 10.1.5 10.1.5	A01:305/ A01:585 .205 .1 .133 .134	54 Suk	onet Mask:	255.255.0.0	
DHCP Settings						
DHCP: FQDN: Boot Delay: Static Fallb ZTP (0-Touch	disabl enable disabl ack: enable): enable	ed d [sentry ed d d (not p:	y-fffff rovisio	f] oned)		
Network Servic	es					
FTP Server: FTP Updates: SSH: Telnet: HTTP:	enabled disabled enabled enabled enabled	Port: Port: Port: Port: Port:	21 21 22 23 80	Auth:	Password, Kb-1	Int
HTTPS: User Cert:	enabled enabled	Port:	443	Installed	Cert: Factory	
SNMPv1/2: SNMPv3: Web Svc API:	enabled disabled enabled	Port: Port:	161 161	SSL User C User Passp Uploaded E TrapPort: TrapPort:	Certificates: hrase: <none> 'iles: None 162 162</none>	enabled

show ocps

Shows over-current protection (OCP) configuration values.

Command Syntax

show ocps

Command Access

Admin level only

Example

Switched PDU: show ocps

ID	Over-Current Protector Name	SNMP	Email	User / Factory
		Notif.	Notif.	Current Capacity
AA1	AA:Breaker_1	enabled	enabled	20A / 20A
AA2	AA:Breaker_2	enabled	enabled	20A / 20A
AA3	AA:Breaker_3	enabled	enabled	20A / 20A

show outlets

Shows outlet configuration values.

Command Syntax

show outlets

Command Access

Admin level only

Example

Switched PDU: show outlets

ID AA1 AA2 AA3	Outlet N Master_O Master_O Master_O	ame utlet_1 utlet_2 utlet_3		S N e e e	SNMP Notif. enabled enabled enabled	Email Notif. enabled enabled enabled	Max Curre: 20A 15A 15A	nt
ID AA1 AA2 AA3	Extra On Delay O sec O sec O sec O sec	Wakeu State On On On	p Lo No No No No	ocked Ctl		PF Lo-Alrm 0.70 0.70 0.70 0.70	PF Lo-Warn 0.80 0.80 0.80 0.80	
ID AA1 AA2 AA3	Current Lo-Alrm 0.0A 0.0A 0.0A	Current Lo-Warn 0.0A 0.0A 0.0A	Current Hi-Warn 14.0A 10.5A 10.5A	Current Hi-Alrm 16.0A 12.0A 12.0A	Power Lo-Alrm OW OW OW	Power Lo-Warn OW OW OW	Power Hi-Warn 2912W 2184W 2184W	Power Hi-Alrm 3328W 2496W 2496W

Common Outlet Settings

Sequence Delay:	2 second(s)
Reboot Delay:	15 second(s)
Outlet State Change Logging:	disabled
Outlet Current Hysteresis:	1.0A
Outlet Power Hysteresis:	1 O W
Outlet Power Factor Hysteresis:	0.02

show phases

Shows phase configuration values.

Command Syntax

show phases

Command Access

Admin level only

Example

Switched PDU: show phases							
ID	Phase Na	me					
AA1 AA2 AA3	AA:L1-L2 AA:L2-L3 AA:L3-L1						
ID	SNMP Notif.	Email Notif	. V	Jominal Voltage			
AA1 AA2 AA3	enabled enabled enabled	enabl enabl enabl	ed 2 ed 2 ed 2	208V 208V 208V			
ID	Voltage Lo-Alrm	Voltage Lo-Warn	Voltage Hi-Warr	e Voltage Hi-Alrm	PF Lo-Alrm	PF Lo-Warn	
AA1 AA2 AA3	187.2V 187.2V 187.2V	197.6V 197.6V 197.6V	218.4V 218.4V 218.4V	228.8V 228.8V 228.8V	 	 	
Commo	Common Phase Settings						

Phase	Voltage	Hyste	eresis:	2.0V
Phase	Power F	actor	Hysteresis:	0.02

show ports

	Showe	port configuratio						
Command Syntax	SHUWS	port configuratio	n values.					
Commune Oyman	show ports							
Command Access								
	Admin	level only						
- .								
Example	Switche	d PDU: show ports						
	ID 	Port Name	Locked	Baud	Timeout	DSR Chk	RFTAG	
	COM1 COM2	Console Aux	No No	9600 115200	5 min 5 min	enabled enabled	enabled disabled	

show radius

Shows Radius server configuration values.

Command Syntax

show radius

Command Access

Admin level only

Example

Switched PDU: show	radius
RADIUS Configura	tion
RADIUS:	disabled
Primary Server: Shared Secret: Port: Timeout: Retries:	(not set) (not set) 1812 5 second(s) 2
Secondary Server: Shared Secret: Port: Timeout: Retries:	(not set) (not set) 1812 5 second(s) 2

show sensors

Shows sensor (and fan, when present) configuration values.

Command Syntax

show sensors

Command Access

Admin level only

Example

Switched PI). UC	show sensors
Sensor	ID	Sensor Name
Temp	A1	Temp_Sensor_A1
Temp	A2	Temp Sensor A2
Temp	C1	Temp_Sensor_C1
Temp	C2	Temp_Sensor_C2
Humid	A1	Humid_Sensor_A1
Humid	A2	Humid Sensor A2
Humid	C1	Humid_Sensor_C1
Humid	C2	Humid_Sensor_C2
Contact	C1	Contact_Sensor_C1
Contact	C2	Contact_Sensor_C2
Contact	CЗ	Contact_Sensor_C3
Contact	C4	Contact_Sensor_C4
Water	C1	Water Sensor Cl
ADC	C1	ADC_Sensor_C1

		SNMP	Email				
Sensor	ID	Notif.	Notif.	Lo-Alrm	Lo-Warn	Hi-Warn	Hi-Alrm
Temp	A1	enabled	enabled	1C	5C	45C	50C
Temp	A2	enabled	enabled	1C	5C	45C	50C
Temp	C1	enabled	enabled	1C	5C	45C	50C
Temp	C2	enabled	enabled	1C	5C	45C	50C
Humid	A1	enabled	enabled	5% RH	10% RH	90% RH	95% RH
Humid	A2	enabled	enabled	5% RH	10% RH	90% RH	95% RH
Humid	C1	enabled	enabled	5% RH	10% RH	90% RH	95% RH
Humid	C2	enabled	enabled	5% RH	10% RH	90% RH	95% RH
Contact	C1	enabled	enabled				
Contact	C2	enabled	enabled				
Contact	CЗ	enabled	enabled				
Contact	С4	enabled	enabled				
Water	C1	enabled	enabled				
ADC	C1	disabled	disabled	0	0	255	255

Common Sensor Settings

Temperature Scale:	Celsius
Temperature Sensor Hystere	sis: 1C
Humidity Sensor Hysteresis	: 2% RH
ADC Sensor Hysteresis:	1

show shutdown	Note:	For Switched products only.		
	Shows	outlet shutdown configuration v	alues.	
Command Syntax				
Usago Guidolinos	show s	hutdown		
Usage Guidennes	This co	mmand is for Switched products on	lv	
Command Access				
	Admin	level only		
Example				
	Switche	ed PDU: show shutdown		
	ID	Outlet Name	Shutdown/Delay	Script/Delay
	 AA1	 Master Outlet 1	Off / 90 sec	Off / 1 min
	AA2	Master Outlet 2	Off / 90 sec	Off / 1 min
	AA3	Master_Outlet_3	Off / 90 sec	Off / 1 min
	AA4	Master_Outlet_4	Off / 90 sec	Off / 1 min
	AA5	Master_Outlet_5	Off / 90 sec	Off / 1 min
	AA 6	Master_Outlet_6	Off / 90 sec	Off / 1 min
	ID	Outlet Hostname/IP		
	AA1	(not set)		

AA2(not set)AA3(not set)AA4(not set)AA5(not set)AA6(not set)

show snmp

Shows SNMP configuration values.

Command Syntax

show snmp

Command Access

Admin level only

Example

Switched PDU: show snmp	
SNMP Configuration	
SNMPv2 Agent:	enabled
Get Community <ro>: Set Community <rw>:</rw></ro>	public
SNMPv3 Agent:	disabled
Engine ID:	8000006B602
RW User Name: RW User Auth Method: RW User Auth Password: RW User Privacy Pass: RO User Name: RO User Auth Method: RO User Auth Password: RO User Privacy Pass: SNMP Trap:	<pre><not set=""> none </not></pre> <pre><not set=""> <not set=""> </not> </not></not></not></not></not></not></not></pre>
Format: v2 Community: trap v3 Username: <not Destination 1: Destination 2: IP Restrictions: Error Repeat Time:</not 	v1 set> No Restrictions 60 second(s)
SNMP SysName: SNMP SysLocation: SNMP SysContact:	Sentry_60000a FIRMWARE PIPS-POPS Switched 3P

show sntp

	Shows SNTP configuration values.		
Command Syntax			
	show sntp		
Command Access			
	Admin level only		
Example			
	Switched PDU: show sntp		
	SNTP Configuration		
	Local Date/Time: Primary Host: Secondary Host: Local GMT Offset:	2014-05-06 14:30:41 (DST) 2.servertech.pool.ntp.org 1.servertech.pool.ntp.org -8:00 hours	
	Daylight Saving Time: DST Start: DST End:	enabled 2nd Sunday in March at 02:00:00 1st Sunday in November at 02:00:00	

show syslog

Shows Syslog configuration values.

Command	Syntax
Command	Access

show syslog

Admin level only

Example

Switched PDU: show syslog

SYSLOG Configuration

Host 1:	<not set=""></not>
Host 2:	<not set=""></not>
Port:	514
Protocol:	RFC3164
Debug Messaging:	disabled

show system Shows system uptime, firmware version, firmware build information, boot version, hardware version, number of active users, and location string. **Command Syntax** show system **Command Access** Admin level only Example Switched PDU: show system System Information Uptime: 1 day 20 hours 0 minutes 13 seconds Firmware: Firmware: Sentry Switched PDU Version 8.0a Build Info: Rev 1032, January 7 2015, 10:52:42 Boot Info: 4.0d-r139 Hardware: NIM2-1L (129), 75 MHz, 16MB RAM, 4MB FLASH NIC S/N: 9600165 Active Users: 1 Location: PIPS-POPS Switched show tacacs Shows TACACS+ configuration values. **Command Syntax** show tacacs **Command Access** Admin level only Example Switched PDU: show tacacs TACACS+ Configuration TACACS+: disabled Primary Host: <not set>

Secondary Host: <not set>

49 <not set>

Port:

Key:

show trend

Commond Cumtor	Shows power trendi	ng configurations.
Command Syntax	show trend	
Command Access		
	Admin level only	
Example		
	Switched PDU: show th	rend
	Data Trending:	tion
	Data Hending.	enabred
show units		
	Shows PDU configur	ration values.
Command Syntax	Ĵ	
	show units	
Command Access		
	Admin level only	
Example		
	Switched PDU: show up	nits
	Unit Name: Type: Model Number: Product S/N: Asset Tag: Display Orient: Outlet Sequence: SNMP Notif.: Email Notif.:	Master <a> Master STV-6503K STVU0000118 testtag1asdf Auto <normal> Normal enabled enabled</normal>
	Unit Name: Type: Model Number: Product S/N: Asset Tag: Display Orient: Outlet Sequence: Outlet Dsp Order: SNMP Notif.: Email Notif:	Link Link SEV-4503K <not set=""> AGHWERAFSasdf Auto <normal> Normal Normal enabled enabled</normal></not>

show waps

Description:

Displays the available wireless access points.

Command Syntax:

show waps

Command Access:

Admin level only; wireless module installed.

show wlan

Description:

Displays the wireless network configurations.

Command Syntax:

show wlan

Command Access:

Admin level only; wireless module installed.

show ztp

Description:

Displays the Zero Touch Provisioning (ZTP) network configurations.

Command Syntax:

show ztp

Command Access:

Admin level only

Example

Switched PDU: show ztp

Zero Touch Provisioning Configuration <DHCP required>

ZTP: enabled <not provisioned> Auto Updates: disabled Update Day: Everyday Update Hour: 12 AM

shutdown	Note: For Switched products only.
	Turns off a specified outlet or outlet group after performing a user-specified shutdown operation.
Command Syntax	
Usago Guidalinos	shutdown <name all="" group="" id="" =""></name>
Command Access	For Switched PDU products only.
	Admin and Power User
Example	
	Switched PDU: shutdown
	Outlet name or ID, group name or ALL:

status Note: For Switched products only. Displays the latest status and control state for a specified outlet or outlet group. **Command Syntax** status <name | id | group | ALL> **Usage Guidelines Command Access** Any access level Example Switched PDU: status all Outlet Name ID Control State State Status ___ _____ ----- -----Master Outlet 1 Idle On On Normal AA1 AA2 ormal

AUT .	Master Outret I	TOTE OIL	011	NOLMAL
AA2	Master Outlet 2	Idle On	On	Normal
AA3	Master Outlet 3	Idle On	On	Normal
AA4	Master Outlet 4	Idle On	On	Normal
AA5	Master_Outlet_5	Idle On	On	Normal
AA6	Master_Outlet_6	Idle On	On	Normal

sysstat

Displays the count of all system objects (by type), the latest status of the objects, and the count of objects currently in an event condition.

Command Syntax

Command Access

System Monitor access

sysstat

Example

Switched PDU: sysstat

Qty	Sub-System	Status	Events
2	Units	Normal	0
1	Cords	Normal	0
3	Lines	Normal	0
3	Phases	Normal	0
3	OCPs	Normal	0
3	Branches	Normal	0
30	Outlets	Normal	0
14	Sensors	Normal	0
1	UPS	Normal	0

upsstat

Command Suptav	Display	ys the latest status and metr	rics for	all UPS devices in the system.
Command Syntax	upsstat			
Command Access				
	System	n Monitor access		
Example				
	Switche	ed PDU: upsstat		
	ID 	UPS Type		Status
	1	Generic RFC1628		Not Found
ustat				
	Display	ys the latest status and metr	rics for	all PDUs in the system.
Command Syntax				
Command Access	ustat			
Command Access	System	n Monitor access		
Example				
	Switche	ed PDU: ustat		
	ID	Unit Name	Туре	Status
	A	Master	Master	Normal
	ID	Display Orientation		
	 A	Auto <inverted></inverted>		
version				
	Display	ys the current firmware vers	sion.	
Command Syntax				
Command Access	version			
	Any ac	cess level		
Example				
	Switche	ed PDU: version		
	Sentry	Switched PDU Version 8.0		

Appendix A: Hardware Items

LED Indicators

The following input current LED indicators can be displayed on the Switched PR01/PR02 products:

Behavior/Indicator	Description	Comments/User Action
"" (flashing double dashes)	Occurs during normal boots, restarts, and firmware flash updates but should revert to displaying amperage values upon completion. Internal communication bus error is indicated if behavior is endless.	If the behavior is endless, contact Server Technology Technical Support at: 1-800-835-1515 or <u>support@servertech.com</u>
(flashing amperage value)	The current exceeds user-defined "high load" threshold (default setting is 80% of maximum input feed capacity).	Unit blinks a half-second on, half-second off.
"bE"	Breaker Error. The PDU has detected an error with the circuit- breaker Branch Circuit Protection.	Display alternates between showing amperage value for two seconds and flashing "bE" three times. Check to see if the breaker was tripped.
"FE"	Fuse Error. The PDU has detected an error with the fused Branch Circuit Protection.	Display alternates between showing amperage value for two seconds and flashing "FE" three times. Check to see if the fuse was blown or removed.
"oL" (flashing)	Overload.	Current exceeds the input feed capacity.
"UA", "Ub", "UC", "Ud"	Occurs when you select the Configuration > Units > Identify option.	Not an error code; no user action required. Display alternates between showing amperage value for two seconds and flashing "UA", "Ub", "UC", or "Ud" three times. If unit is a master, "UA" (unit A) flashes. If unit is one of up-to-three possible link types, these indicators flash: "Ub" (unit B), "UC" (unit C), or "Ud" (unit D).

Branch Circuit Protection

Server Technology PDUs are equipped with one of several types of Branch Circuit Protection, including internal fuses, retractable fuse holders, and circuit breakers, as illustrated below.

These fuses and circuit breakers meet the strict safety requirements of UL 60950-1 and EN 60950-1 for Branch Circuit Protection.











Circuit Breaker

Compact Fuse Holder

Fuse Retractor

Fuse Access Window

Fuse Access Cover

Circuit Breaker

If a circuit breaker is tripped, it can be reset by pressing or switching it back ON once the cause of the overload or short circuit has been identified, removed, or resolved. Intelligent PDUs with branch circuit sensing will display a flashing *FE* on the input current LED(s) to indicate *Fuse Error*.



Alternatively, the circuit breaker can be turned OFF manually by inserting a slotted or flat-blade tool into the OFF switch as shown in the illustration on the left.

It is not necessary to disconnect the AC power source to perform this operation.

NOTE: This circuit breaker contains no user-serviceable parts. Do not open or disassemble this part.

Compact Fuse Holder

The Compact Fuse Holder is a UL 98 listed Fused Disconnect Switch that allows the user to turn OFF the branch circuit and safely service the fuse without having to disconnect the PDU AC power source prior to performing this operation.



To help identify which fuse is open, blown, or missing, the Open Fuse Indicator Light glows orange when the PDU is powered and the Switch Handle is in the ON position.

Additionally, intelligent PDUs with branch circuit sensing will display a flashing *FE* on the input current LEDs to indicate *Fuse Error*.



To service the fuse or turn OFF the branch, rotate the Switch Handle toward the Fuse Access Door.

Next, rotate the Fuse Access Door counter clock-wise until it opens.

Only replace the fuse with the same size, type, and ratings as the original fuse.

Reverse these steps after the new fuse(s) is installed.

CAUTION:

- Failure to replace the fuse with the same size, type, and ratings will damage the PDU and the connected and nearby equipment, and will cause electrical shock, fire, explosion, or injury/death.
- Do not attempt to open the Fuse Access Door without first setting the Switch Handle in the OFF position. Forcibly rotating the Fuse Access Door will damage the fused holder.

Fuse Retractor, Fuse Access Window, and Fuse Access Cover



The PDU AC power source must be disconnected prior to servicing a unit with the Fuse Retractor, Fuse Access Window, and Fuse Access Cover.

Intelligent PDUs with branch circuit sensing will display a flashing *FE* on the input current LEDs to indicate *Fault Error*.

For the fuse retractor, rotate the fuse holder exposing the fuse.

For the fuse access window or cover, remove the screws that secure the plastic cover.







Fuse Retractor

Fuse Access Window

Fuse Access Cover

Once the fuses are exposed, carefully remove and replace with a new one of the same size, type, and ratings as the original. A fuse puller may be needed for fuse access windows and covers.

Reverse these steps after the new fuse(s) is installed.

CAUTION:

Failure to replace the fuse with the same size, type, and ratings will damage the PDU and the connected and nearby equipment, and will cause electrical shock, fire, explosion, or injury/death.

Data Connections

Although not provided with your PDU when shipped, the RJ45 rolled cable and the RJ45 to DB9F serial port adapter still work together to allow access to the serial CLI interface from a terminal with a standard DB9M serial port.

You can order the cable and adapter from Server Technology using the following part numbers:

- RJ45 to RJ45 Rolled Patch Cable: Part# CAB-1205
- RJ45 to DB9F Serial Port Adapter: Part# ADP-0019

RS-232 Port

The PR01/PR02 units are equipped standard with an RJ45 DTE RS-232c serial port. This connector can be used for direct local access or from other serial devices such as a terminal server.

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

In addition, an RJ45 to DB9F serial port adapter can be used in conjunction with the RJ45 rolled cable to connect to a PC DB9M DCE serial port. The pinouts below show the use of the serial port adapter with the RJ45 rolled cable.

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



Time-Delay Fuses – Class G

Ampere Rating	Voltage	Interrupting Rating	Bussman Part No.*	Server Technology Part No.
20 A	600 Vac	100,000 A RMS Sym. AC	SC-20	FUSE-SC20G

NOTE: Server Technology PDUs ship with Bussman SC-20 fuses.

* Cooper Bussman Technical Data Sheet 1024

For technical support or service with time-delay fuses, contact Server Technology as follows:



Experience Server Technology's FREE Technical Support

Server Technology understands that there are often questions when installing and/or using a new product. Free Technical Support is provided from 8 a.m. to 5 p.m. Pacific Time, Monday through Friday.

Server Technology, Inc. (a brand of Legrand)

1040 Sandhill Road	Tel:1-800-835-1515
Reno, Nevada 89521 USA	Fax: 775-284-2065

Web:www.servertech.comEmail:support@servertech.com

PROx Network Interface Card (NIC) Swap

The NIC in your PROx PDU is a hot-swappable assembly that can be removed and installed without the loss of output voltage, as described in the following instructions:

1. Remove the Phillips-head retention screws and save for step 4.

Note: Some models have either one or two screws, shown in the following two images:





- 2. Using equal pressure on both sides, pull the NIC out of the PDU enclosure.
- **3.** Install the new NIC, ensuring the NIC is orientated so that it lines up with the connector inside of the PDU enclosure, as illustrated below.



4. Install the Phillips-head retention screws.

Appendix B: Regulatory Compliance

Product Safety

Units have been safety tested and certified to the following standards:

- USA/Canada UL 62368-1:2019 and CAN/CSA 22.2 No. 62368-1:2019
- European Union EN IEC 62368-1:2020+A11:2020
- IEC CB Scheme IEC 62368-1:2018

This product is also designed for Norwegian IT power system with phase-to phase voltage 230V.

Notifications

USA Notification

Note: 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 in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

Canadian Notification

This Class A digital apparatus complies meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigencies du Règlement sur le matériel brouilleur du Canada.

European Union Notification

WARNING: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

Products with CE Marking comply with the EMC Directive (2014/30/EU), Low Voltage Directive (2014/35/EU) and RoHS 2 Directive (2011/65/EU) issued by the Commission of the European Community.

Compliance with the following harmonized standards demonstrate conformity with the EMC and Low Voltage Directives.

- EN 55032
- EN 55035
- EN IEC 62368-1
U.K. Notification

Products with UKCA Marking comply with the *The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (RoHS), Electrical Equipment (Safety) Regulations 2016 and Electromagnetic Compatibility Regulations 2016.*

Japanese Notification

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 本製品に同梱または付属しております電源コードは、本製品専用です。本製品以外の製品ならびに他の用途に使用しないで下さい。

Republic of Korea Notification

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기

바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다

Chinese Notification

关于符合中国《电气电子产品有害物质限制使用管理办法》的声明

产品中有毒有害物质的名称及含量

部件名称		有毒有害物质或元素 (Hazardous Substance)							
	(Parts)	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)		
机箱子组件 (Chassis Subassembly)		0	0	0	0	0	0		
印刷板组件 (PCAs)		Х	0	0	0	0	0		
0	本表按照 SJ/T 11364-2014 的规定编制 。 This table has been prepared in accordance with the provisions of SJ/T 11364-2014. O 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572-2011 标准规定的限量要求以下。 Indicates that this hazardous substance contained in all homogeneous materials of this part is below the limit requirement in GB/T 26572- 2011.								
x	表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572-2011 标准 规定的限量要求。 Indicates that this hazardous substance contained in at least one of the homogeneous materials of this part is above the limit requirement in GB/T 26572-2011.								

Product Recycling

Recycling



Server Technology Inc. encourages the recycling of its products. Disposal facilities, environmental conditions and regulations vary across local, state and country jurisdictions, so Server Technology encourages consultation with qualified professional and applicable regulations and authorities within your region to ensure proper disposal.

Waste Electrical and Electronic Equipment (WEEE)



In the European Union, this label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

Appendix C: Product Support Information

Warranty

For Server Technology warranty information, visit our website: <u>www.servertech.com</u>

Contact Technical Support



Experience Server Technology's FREE Technical Support

Server Technology understands that there are often questions when installing and/or using a new product. Free Technical Support is provided from 8 a.m. to 5 p.m. Pacific Time, Monday through Friday.

Server Technology, Inc. (a brand of Legrand)

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