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Advantage & Secure

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Power Distribution Units

USER MANUAL VERSION 1.0

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Statutory Information



Safety Instruction

General Safety Instructions

- This Power Distribution Unit (PDU) unit is intended to provide power to the IT equipment only. Do not connect the secondary power units to the outlets of the PDU.
- It is recommended not to operate the system with Internet from a public network, but with an internal network protected externally with firewalls.
- When remote accesses are deployed, select a secure access path, such as VPN (Virtual Private Network) or HTTPS.
- Ensure that the current Enlogic firmware is installed on all Enlogic iPDUs.
- Restrict access authorizations to networks and systems to only persons that need an authorization and disable unused user accounts.
- This product generates, uses, and radiates radio frequency energy, which can cause harmful interference to radio communications if not installed and used in accordance with the instruction manual. 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 his own expense.

Installation and Operation Safety Instructions

- Assembly and installation of the PDU may only be performed by experienced, trained, and authorized personnel.
- Please observe the valid regulations for electrical installation in the country in which the PDU is installed and operated, and the national regulations for accident prevention. Please also observe any internal company regulations, such as work, operating and safety regulations.
- Operating the system in direct contact with water, aggressive materials or inflammable gases and vapors is prohibited.
- The PDU must not be opened. It does not contain any parts that need servicing.
- Internal parts of the PDU can get extremely hot during operation. Be cautious before handling.

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- There is a risk of electrical shock from the ground conductor leakage. If the total leakage current exceeds 3.5 mA or if leakage current of the connected load is unknown, connect the ground terminal of the PDU to a dependable ground/earth connection.
- This equipment must be connected to an electrical supply with protected ground outlets and a branch circuit breaker with the same current rating as the equipment. Test all outlets for proper polarity and grounding. Failure to comply with this requirement can result in severe injury.
- Use only original Enlogic accessories or products recommended by Enlogic along with the Enlogic iPDU.
- Changes and modifications to this equipment can affect the warranty. Enlogic is not responsible for damage to this product, resulting from accident, disaster, or misuse.

Safety Instructions – Disclaimer

Enlogic by nVent accepts no liability for any errors in this documentation. To the maximum extent permissible by law, any liability for damage, direct or indirect, arising from the supply or use of this documentation is excluded.

Enlogic by nVent retains the right to modify this document, including the liability disclaimer, at any time without notice and accepts no liability for any consequences of such alterations.



Safety Symbols

In these original operating instructions, warning notices point out residual risks that cannot be avoided by constructive means when installing or operating the Enlogic iPDU. The warning notices are classified according to severity of the damage occurring and its statistic occurrence.

|--|--|

SymbolBrief description of the dangerSymbolThe signal word DANGER indicates an immediate danger.
Non-observance will result in severe injuries or death.

A WARNING		
Symbol	Brief description of the danger The signal word WARNING indicates a danger.	

	Brief description of the danger
Symbol	The signal word CAUTION indicates a danger.
	Non-observance can lead to injuries.

ATTENTION

Brief description

The signal word ATTENTION indicates damages to equipment. Non-observance can lead to damage to the device.



Important Information

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Safety Information for Operators

COCCUPERTOR OF Only trained specialists are authorized to carry out assembly, commissioning, completion, maintenance, and service of the Enlogic iPDU. The nationally applicable health and safety regulations must be adhered as well.

WARNING



Risk of injury due to insufficient personal protective equipment

- If you use wrong / no protective equipment at all, serious injuries are possible.
- Wear protective equipment adapted to the work processes.
 - Check the protective equipment before each use to ensure that it is intact!
 - Use only approved protective equipment.



Product Labels and Standards

This equipment has been evaluated 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 product is CE compliant, and UL tested. An appropriate declaration of conformity has been issued and can be supplied on request.

The Power Cable of this product must be used exclusively for the respective PDU only.



References and Architecture Specifications

Related Documents

This product meets the requirements of the following specifications:

Electromagnetic Compatibility

The requirements of the following EMC standards for electrical equipment are fulfilled and verified via an independent EMC test laboratory.

- EN 61326-1 class B group 1
- EN 61000-3-3
- EN 61000-3-2

CE / UKCA Compliance

- LVD 2014/35/EU
- EMC 2014/30/EU
- Low-Voltage Directive

Basic Immunity

Limitation of voltage changes, voltage fluctuations and flicker

Limits for harmonic current emissions

- Electromagnetic Compatibility Directive
- RoHS 2011/65/EU RoHS Directive-2

Products fulfilling those requirements are marked with a CE/UKCA label.

For Declarations of Conformity of this product please visit www.enlogic.com



General Installation

Unpacking

ATTENTION

When opening the shipping carton, use caution to avoid damaging the system.

Consider the following when unpacking and storing the system:

- Leave the system packed until it is needed for immediate installation.
- After unpacking the system, save and store the packaging material in case the system must be returned.

If the packaging is damaged and system damage is present, report to the shipper and analyze the damage.

Initial Operation



△ WARNING

Risk of injury and accidents due to insufficiently qualified personnel! The installation may only be carried out by qualified personnel who are authorized to do so according to the valid safety regulations, e.g., by authorized specialized companies or authorized departments of the company.

Ensure that the system has not been damaged during transport, storage, or assembly.

CC CRATCING



UL 2900 Certified by UL CAP

Enlogic iPDUs have been certified by Underwriter Laboratories through the UL Cybersecurity Assurance Program (UL CAP) against the presence of vulnerabilities, malware and security-relevant software weaknesses for cybersecurity assured products.

UL2900 certification specifies the methods by which a product is evaluated and tested for the presence of vulnerabilities, software weaknesses and malware. It has been adopted as an American National Standards Institute (ANSI) standard. The standard includes requirements and methods to evaluate and test network-connectable products, including:

- Software developer requirements and risk management process for the product.
- Evaluation and test methods for the presence of vulnerabilities, software weaknesses, and malware.
- Security risk control requirements for the architecture and design of a product.

As the world becomes more sustainable and electrified and global demand for data continues to grow, we will continue to develop innovative solutions to connect, protect and manage heat in critical systems for our data solutions customers. From energy-efficient cooling solutions to keeping operations safe from cyber threats, we are ready to meet our customers' ever-changing needs.





Product & Documents

This unit is delivered in a cardboard box and contains:

- PDU & NMC
- PLUGS & WIRES
- QUICK START GUIDE
- SAFETY INFORMATION SHEET
- WARRANTY CARD

Check the unit for any damage that may have occurred during transport. Any damage and other faults, e.g., incomplete delivery, should be reported immediately, in writing, to the shipping company and to Enlogic Systems LLC.

Use the information provided in the enclosed warranty card to register your product online at www.enlogic.com

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	products \star resources a support \star find the partner Q	
]	REGISTER THE PRODUCT	
	PRODUCT REGISTRATION First Name Last Name Email BitM and Senial Numbers	

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Regions Supported

COCCI CARGO Follow all local and national codes, when installing the PDU. The PDU should be connected to a dedicated circuit protected by a branch circuit breaker matching the PDU input plug-type for your region:

Regions	PDU Input Plug Type	Input Rating
	IEC60320 C20 Inlet (Removable Power Cord)	16A SINGLE PHASE
	CEE 7/4, CEE 7/5, CEE 7/7 Plugs	16A SINGLE PHASE
	IEC60309 316P6 or 316P6W	16A SINGLE PHASE
Europe.	IEC60309 332P6 or 332P6W	32A SINGLE PHASE
International	IEC60309 363P6 or 363P6W	32A SINGLE PHASE
	IEC60309 516P6 or 516P6W	16A THREE PHASE
	IEC60309 532P6 or 532P6W	32A THREE PHASE
	IEC60309 563P6 or 563P6W	63A THREE PHASE
	3-pin (2P+G)	20A SINGLE PHASE
	3-pin (2P+G)	32A SINGLE PHASE
	5-pin (3P+N+G)	20A THREE PHASE
	5-pin (3P+N+G)	32A THREE PHASE
Australia	IEC60320 C20 Inlet (Removable Power Cord)	20A SINGLE PHASE
	NEMA 5-20P or NEMA L5-20P	20A SINGLE PHASE
	NEMA 6-20P or NEMA L6-20P	20A SINGLE PHASE
	NEMA 6-30P or NEMA L6-30P	30A SINGLE PHASE
	NEMA 5-30P or NEMA L5-30P	30A SINGLE PHASE
	IEC60309 330P9 or 330P9W	30A SINGLE PHASE
	CS8265C	50A SINGLE PHASE
North America/Japan	NEMA L21-20P or NEMA L15-20P	20A THREE PHASE
	NEMA L21-30P or NEMA L15-30P	30A THREE PHASE
	CS8365C	50A THREE PHASE
	IEC60309 460P9 or 460P9W	60A THREE PHASE
	IEC60309 520P6 or 520P6W	20A THREE PHASE
	IEC60309 530P6 or 530P6W or NEMA L22- 30P	30A THREE PHASE





Product & Components



Product Description

The Advantage Secure PDU from Enlogic is a sleek and space saving unit with low profile circuit breakers, color-coded receptacles and different types of power outlets which can be customized according to the user needs and IT requirements.

The PDU provides efficient and reliable power distribution capabilities, ensuring maximum uptime of IT equipment through intelligent features such as:

- Full featured network management and alerting capabilities supporting HTTP, HTTPS, SSH, SNMP, • and email.
- Strong encryption, passwords, and advanced authorization options including local permissions, LDAP, ٠ and Active Directory.
- Daisy Chain up to 64 Rack PDUs and supports a maximum of 10 environmental sensors each.
- Power Sharing feature that allows the data of the PDU to be recorded even during a Power Failure. The power distribution systems offered by the Advantage Secure from Enlogic are as follows:

Product Series	Inlet Power Measurement (Metered)	Outlet Power Measurement	Switchable Outlet
EN1000 Series	Ø		
EN2000 Series	\bigcirc		Ø
EN5000 Series	Ø	Ø	
EN6000 Series	Ø	Ø	
EZ1000 Series	Ø		



Single-Phase Models

COCCULATION OF CONTRACT OF CONTRACT. All Single-Phase models support hydraulic-magnetic breakers that are color coded to the corresponding outlets.

Three-Phase Models

- In standard, 415 V Three-Phase (Wye) configurations, the color of each circuit breaker and outlet corresponds to the appropriate input phase. The PDU is labelled to indicate the input phase associated with each circuit breaker and outlets.
- In North America 208 V Three-phase (delta) configurations, the color of the circuit breaker • corresponds to the line connections and includes a label of the two connected input-phases, (i.e., L1-L2, L2-L3, or L3-L1).
- All Three-Phase models rated above 20 A and 16 A, will also use an outlet indicator LED in color Green.



iPDU & its Components





Product Components Network



Digital SENSOR Port 1 – Dual Function – Sensor or Serial Connectivity

Digital Sensor Port 2 – Sensor Connectivity

[Supports up to 10 physical sensors with the help of sensor hub]

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Displays

There are two displays on all standard Advantage Secure models, as specified below:

- The Seven Segment LED display shows data in high visibility at Phase Level and CB Level.
 - LED Graphical Alarm Icons: PDU Alarm, Cascade Error Alarm, Temperature Alarm, Security Handle Alarm, and Circuit Breaker Alarm.
 - Display (AMPS, CB BANK): Largest In-class HD Metering Display.
- The OLED screen will display a status bar, when the PDU operating system is loading.
 - OLED display: Set up, Alarms, Power, Sensors (click menu, select, and scroll to operate).

Interfaces

There are five interfaces on all standard Advantage Secure models, as specified below:

- USB-C: Fast Configuration, Fast upload of firmware and download log files.
- Ethernet Port 1 (10/100/1000): Primary network port / Power Share.
- Ethernet Port 2 (10/100): Daisy chain / Power Share / RNA / Network.
- Sensor-1: Primary Sensor Port / Serial Port The Serial function is a user interface that enables the user to configure Features and update Firmware.
- Sensor-2: Secondary Sensor Port This port also can connect the sensors.

Note – Overall, the sensor ports support connecting up to total 10 sensors with the help of the sensor hub.

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Reset Button

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Reset But	ton	
Outcome	Action	
NMC Reboot [RST]	Use a pin, press, and hold the recessed RESET key button for about 8 seconds, which will initiate the reset option without changing any configuration values. The OLED display will show the RST during this operation.	-
NMC Reboot [DEF] To set it to default settings if user does not know the password	Use a pin, press, and hold the RESET key button for about 20 seconds, which will initiate the DEF option in the LED display. This action initiates the NMC to reset to the factory default settings.	
NMC Quick/Forced Restart	Use the pin, press, and hold the RESET key button along the scroll button simultaneously. This action initiates a quick/forced NMC restart.	







Advanced Network Management Controller (NMC) Network Security

Enlogic iPDUs and in-line meters are equipped with:

- The latest network security protocols (secured by encryption algorithms).
- The latest support for remote authentication (Active Directory, LDAP & RADIUS) and
- Aggressive USER Login and Password Policies.

The Firmware updates are released on a quarterly basis, to ensure that Enlogic iPDUs will always provide the highest-level network security, which protects against attacks in high-risk environments.

Encryption

Communication Protocol	Supported Encryption	
HTTP/HTTPS/REDFISH API	TLS 1.2	
	2048 key length supported	
SNMPv2c/v3	SNMPv2c	
	Encryption: Based on community string	
	SNMPv3	
	Authentication: MD5, SHA,	
	Privacy: AES128, AES192, AES256	
SSH	TCP/IP SSL	
	Support for user-defined ports	
	Up to 16 SSH user sessions at the same time	
FTP/FTPS	File Transport Protocol (FTP)	
	File Transport Protocol Secure (FTPS) (TLS1.2 encryption)	
Active Directory, Open LDAP,	Privilege assignment over Active Directory, LDAP, and	
and RADIUS	RADIUS	

Remote Authentication

Authentication Protocol	Supported
Active Directory	YES Supported
Open LDAP	YES Supported
RADIUS	YES Supported



Login & Password Policy

Login & Password P	olicy	
Security Tools	Supported	
Strong Password	Supports alphanumeric and symbols	
Minimum password length	Passwords must be greater than eight characters	
Forced password change on	User must assign an 8~16-character password at first login	
first login		
User blocking after failed	User definable number of attempts	
attempts		
Password Aging Interval	1-to-365-days expiration, or	
	set it to 'never expire'	
User blocking after failed	User defines number of allowed attempts	
attempts		
Automatic Idle Out	User definable idle out timer	

Certificates

Enlogic iPDUs supports X.509 PEM digital certificates to create secure encrypted connections. The device is loaded with built-in default SSL certificate (1024 or 2048 key length), or the user can choose created SSL certificates. Key lengths supported are 1024 or 2048 bit.

Firmware and Conf file Encryption

Secure Encryption Design is adopted for files used to configure iPDU.

Firmware File

- enlogic.fw is a secured firmware file.
- The below mentioned attributes makes enlogic.fw secure:
 - Supports Secure Boot. •
 - Supports Chain of Trust. •
 - Support Firmware file signature.
 - Encrypted using AES256.

File	Encryption
Checksum	SHA256
Encryption Algorithm	AES256
Chain of Trust	AES192, AES256, RSA4096, SHA256
Signature Algorithm	ECDSA, SHA256



Chain of Trust Firmware Signature

Validation:

- File tampering is rejected from firmware to overcome Denial of Service (DoS).
- With strong algorithm check process, foreign file penetration into firmware application is avoided.

Secure Boot

Secure Boot makes sure that a device boots using only software that is trusted.

Conf File

- CONF File downloaded is encrypted using AES256.
- EEPROM version validation is added to make sure NMC gets exact conf file.

File	Encryption
Encryption	AES256
Checksum	SHA256

Other Vulnerabilities:

Following vulnerabilities are avoided in firmware:

- WEBSERVER Weak Ciphers
 - Weak Ciphers are removed from TLS Support.
- WEBSERVER Privilege Escalation & Improper Authentication
 - Unique Role and ID is assigned to each user.
- WEBSERVER Click Jacking
 - X-Frame option request header is added.
- UNUSED Ports
 - All unused ports in firmware are closed.
 - Ports used for internal use will not be accepting any external requests.



Network Security Hardening Guide

This section provides recommendations for hardening the security of products that connects to the network using an Advanced Network Management Controller (NMC).

Recommendations

To ensure that the product has the latest security enhancements and features available, verify that it is running the latest firmware version. Visit the Enlogic website at: https://Enlogic.com/firmware-software/firmware to find the latest firmware for your device.

Disable all unused protocols

If a protocol is not in use, ensure it is disabled to reduce your threat surface. This applies to protocols such as HTTP, HTTPS, SSH, SMTP, FTP, FTPS, etc.

Use custom network ports where applicable

If a non-standard port is in use, the device may not be detected by scans, which verify only standard ports. This applies to protocols such as HTTP, HTTPS, SSH, SMTP, FTP, FTPS, etc.

Disable HTTP and enable HTTPS for web support

To use secure and encrypted web protocol, disable HTTP and enable HTTPS. By default, HTTP is disabled on Network Management Controller-enabled products.

Disable older versions of TLS

Transport Layer Security (TLS) is a cryptographic protocol that provides communication security over the internet. Ensure that older versions of TLS are disabled on your Network Management Controller-enabled device and use the latest version available. PDU latest firmware supports ONLY TLS 1.2

Disable FTPS

For secure, encrypted file transfer protocol, enable FTPS if it is disabled. When FTPS is not in use, disable it to help harden security on your device. By default, PDU firmware supports data communication over TLS1.2.

Note: If FTP login data is sent over plain text (not secured) from computer FTP client to the PDU FTPS server, the PDU authentication server will close the connection with error code 421.



Disable SNMPv1 and enable SNMPv3

For encrypted SNMP protocol, disable SNMPv1 if it is enabled and enable SNMPv3. It is recommended to use SNMPv3 as it is more secure than SNMPv1. By default, SNMPv1 is Enabled and SNMPv3 is disabled.

Note: When SNMPv1 is not in use, it is recommended to disable SNMPv1.

Configure SNMPv3 to use AES/SHA

Configure SNMPv3 to use the most secure algorithms, AES, and SHA, to provide encryption and authentication.

Change the admin User account password

After installation and initial configuration of your Network Management Controller-enabled device, immediately change the default admin user account password.

Note: You will be prompted to change the admin password at first login to the NMC.

Enable Strong Passwords

Enable this feature to ensure strong passwords are created. All passwords will be required to be a minimum length and contain special characters to make passwords harder to guess.



Default Ports

COCCULARS - COCCU Following are the default ports the NMC supports. The list of enabled and disabled ports is also mentioned below:

Default Enabled Ports		
Port Number	Protocol	
port 21	FTP over TLS1.2	
port 22	SSH	
port 443	HTTPS	
port 8001	Cascade Function – Not accessible on Network	
port 161	SNMP	
Default Disabled Ports		
port 80	HTTP	
port 162	SNMP Traps	
port 514	SYSLOG	
port 389	LDAP	
port 25	SMTP	



Seven Segment LED Display

The Seven Segment LED display shows data in high visibility at Phase Level and CB Level.

• Phase Level

In this level information about the Current Input at each respective line, L1, L2 and L3.

CB Level

In this level information about the Current Input at each respective Circuit breaker, 1, 2 and 3.



Indicators and Alarms shown on the Seven Segment LED display



- 1. **PDU Alarm -** It shows the user when a Critical Alarms or Warning Alarms happens in a PDU.
- 2. Daisy Chain Indicator It shows the user if the Daisy Chain is connected or not.
- 3. **Environmental Sensor Alarm -** It shows the user if there is an alarm related to the environmental sensors.
- 4. **Circuit Breaker Alarm -** It shows the user if there is an alarm related to the circuit breaker.
- 5. **Security Sensor Alarm -** It shows the user if there is an alarm related to the door sensors.



OLED Display and Network Management Controller (NMC)

The Onboard Display provides information about the PDU and connected devices. The Network Management Controller (NMC) of the PDU has a three-button. Use the buttons to change the screen display and retrieve specific data.

OLED Navigation



- Press on the **Menu** button to access the OLED **Main Menu** or previous **Submenu**.
- Press on the **Scroll** button to navigate through the options.
- Press on the **Select** button to choose the option.



Note: The highlighted menu item is ready to be selected.



The Network Controller Display has three modes:

1. Menu mode: (Network Controller Display main menu): When the PDU is powered up or when a button is pushed while in Standby Mode or Power Save mode.



2. Standby mode: This happens when a PDU is idle (no buttons pushed) for 2 minutes while in Menu mode. The following screen savers with the respective data comes into view.



3. Power Save mode: The PDU enters Power Save mode when it has been in Standby mode for 30 minutes. The screen is switched off to save power. To exit Power Save mode, press any button on the display.

Main Menu Selections

The PDU menu selection hierarchy consists of Setup, Alarms, Power, and Sensors. On the main menu, scroll down to highlight Setup. Press Select. Scroll down to select a submenu and press **Select** to display the submenu options. Press **Menu** to return to the previous menu.



Setup Menu

The **Setup** menu provides user configuration options including Network, Device, Screen, Language, USB, and Units.





Network Submenu

CONTRACTOR The **Network** submenu allows you to view IP address IPv4 or IPv6. On the **Setup** menu, scroll down to Network. Press Select to enter the Network Submenu. Scroll down to highlight the selected option from the menu. Press **Select** to display the screens that display the IP address. Press **Menu** to return to the previous menu.



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Device Submenu

COCCOCCOCCOCC The **Device** submenu provides the SKU number, Serial number, MAC address and Firmware version. On the **Setup** menu, scroll down to highlight **Device** submenu. Press **Select** to enter the Device Submenu. Scroll down to the item you wish to display, and press Select. Press **Menu** to return to the previous menu.



B.


Screen Submenu

The Screen submenu allows you to customize settings for Contrast and Rotate. In the Setup menu, scroll down to highlight Screen. Press Select to select the submenu. Press Menu to return to the previous menu.



Language Submenu

The Language submenu allows you to select the language you need to use. On the Setup menu, scroll down to highlight Language. Press Select to display the screens to select the submenu. After you select the values, press Select to set the values as displayed on the screen. Press Menu to return to the previous menu.



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USB Submenu

COLOR COL The **USB** submenu allows you to upload firmware file, upload configuration file and download event log or data log.

On the Setup menu, scroll down to highlight USB. Press Select to enter the USB Submenu. The user can select the Operation and Mode to proceed further.

Note: If a USB drive is not present in the USB slot the PDU will enter normal operation.



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Units Submenu

The Units submenu displays the temperature units. On the Setup menu, scroll down to highlight Units. Press Select to enter the Units Submenu. After you select the values, press Select to set the values as displayed on the screen. Press Menu to return to the previous menu.

Note: This can only be done locally at the PDU and also using the WEBUI.



Alarms Menu

The Alarms menu displays active alarms for the PDU. On the Main Menu, scroll down to highlight Alarms. Press Select to display the Alarm Screen. When you finish your review, press Menu to return to the main menu.



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Power Menu

The **Power** menu manages Device, Phase, Breaker, and Outlet. On the **Main** Menu, scroll down to highlight **Power**. Press **Select**. Scroll down to select a submenu and press **Select** to display the submenu options. Press **Menu** to return to the previous menu.



Device Submenu

The **Device** submenu is to Display Current, Voltage and Power. On the **Power** menu, scroll down to highlight **Device**. Press **Select** to display the power values for the entire PDU. Press **Menu** to return to the previous menu.





Phase Submenu

The **Phase** submenu is to display the status of 3-Phase. On the **Power** menu, scroll down to highlight Phase. Press **Select** to display the screens to set the values for the submenu. After you select the phase, press **Select** to display the values for that phase on the screen. Press **Menu** to return to the previous menu.



Breaker Submenu

The Breaker submenu is to display power values for the breakers. Press Select to display the values of the first breaker. To go to the next breaker, Select Next. Press Menu to return to the previous menu.





Outlet Submenu

The **Outlet** submenu is to display voltage, current and power from outlet number 1 to number n. On the **Power** menu, scroll down to highlight **Outlet**. Press **Select** to display values for the first outlet. To go to the next outlet, **Select** next. Press **Menu** to return to the previous menu.

Note: Custom outlet names noted in the Web GUI do not make changes to the local display. This is done to make it easier to map to outlet numbers which can locally be seen on the outlets themselves.





Sensors Menu

COCCE CARGO The Sensor menu is to display temperature, humidity, door switch, fluid leak etc. On the Main Menu, scroll down to highlight Sensor. Press Select. This will display the sensor data for the first sensor. To go to the next sensor, Select next. Press Menu to return to the previous menu.

Note: Maximum of ten sensors are configured per PDU.



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NMC Hot Swap

The Network Management Controller (NMC) for a vertical iPDU, is a hot-swappable unit.



Disconnect the NMC

1. Write down the details of the ports and the RJ45 plugs connected, this will enable reconnecting them after installing the replacement NMC.

2. Remove all the connectors from the ports of the existing NMC (Ethernet, Serial, Sensor, etc.).



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Ribbon Cable

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3. Push the bottom snap lock button **UP**. Gently pull the NMC to unmount, without disconnecting the Ribbon cable. The Ribbon cable can be extended only to a comfortable length, care should be taken to avoid any damages to the Ribbon cable.

Note - Do not disconnect the Ribbon cable from the PDU back board.

 Only, in case of damages to the existing Ribbon cable, replace it with the new Ribbon cable provided in the box package. Then, detach the Ribbon cable from the PDU back board also and then re-plug it.



Installing the new NMC

5. Plug the Ribbon cable into the connecting socket on the top section of the replacement NMC. Gently fold the Ribbon cable. Mount the NMC back into the PDU chassis.



6. Align the NMC and connect the Ribbon cable back to the PDU back board. Now, slide the top flange to align in the slot. Push the bottom snap lock button **UP** and gently fix the NMC into the PDU chassis.

Note - Do not strain or kink any of the wires in the Ribbon cable.

- 7. Verify if replaced NMC is powered **ON**.
- 8. The replacement NMC is mounted on the PDU chassis.





Outlet Units

Combo Outlets

The Advantage Secure PDU features a C13/C15 and C13/C15/C19 combination Outlet Port configuration, which increases the adaptability.

This helps the user to get the highest level of versatility allowing the connection of both ICE C14 and C16 plugs into the same C13/C15 (2-in-1) combination Outlet Port and ICE C14, C16 and C20 plugs into the same C13/ C15/C19 (3-in-1) combination Outlet Port.



Combo Outlet

C13/C15 [2 in 1] Outlet

NAM & EAU 10 A / 250 V

C13/C15/C19 [3-in-1] Outlet

NAM & EAU 16 A / 250 V

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Apollo Outlet

The Advantage Secure PDU features a C13 and C19 combination discreet Outlet Port configurations.

The specifications of the Outlet Unit are as follows:



Apollo Outlet

C13 Outlet NAM & EAU 10A / 250V

C19 Outlet

NAM & EAU 16A / 250V

- Degree of protection by enclosure according to IEC60529 is IP20.
- Mating plug inserting force is 70 N max.
- Mechanical operation cycles without load are 1000 cycles and with load is 500 cycles.
- Temperature range: 25 °C 100 °C.
- Rated impulse voltage: 2.5 kV. •



Self- Locking Combo Outlet

The Advantage Secure PDU features C13/C15 and C13/C15/C19 combination Locking Outlet Port configurations.



Locking Combo Outlet port features both the Combo Outlet C13/C15 [2 in 1] Outlet NAM & EAU 10 A / 250 V and C13/C15/C19 [3-in-1] Outlet NAM & EAU 16 A / 250 V with an additional locking port facility.

The specifications of these Locking Combo Outlet Units are :

- The release button must be fully pressed [depress it] prior to installing the plug.
- Both type of plugs with and without locking clips can be inserted.
- The plugs can be installed just by pushing into the outlets directly without depressing release button.
- To unlock, fully depress release button and remove plug. •



Self-Locking Cable & Non-Locking Cable

The IEC plug connectors will securely lock into the combo outlets. Both connections require deliberate action in order to plug/release the locking/non-locking buttons.

The locking/non-locking power cord is an inventive step to avoid loose IEC power connections and accidently unplugging the equipment. Enlogic's reliable and secure locking power cords ensures reduction of risk and protection of vital IT assets.



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operation Formatic : mirror_mod.use_x - True mirror_mod.use_y - False

Asole from at the end add bac rear_ob.select-1 difier_ob.select-1 y.context.scene.objects.active int("Selected" + str(modifier_ob Rmirnor_ob.select = 0 ne = bpy.context.selected of sy.data.objects[one.name].selected

Getting Started



Mounting PDU in Server Cabinet

Enlogic iPDUs are built with tool-less mounting in most rack enclosure designs.

(If the standard mounting pegs or mounting bracket do not comply with your rack configuration, contact Enlogic support for assistance.) Installation of a bracket can require a screwdriver.

- 1. The Advantage Secure PDU comes with tool-less mounting pegs for ease and convenience.
- 2. Determine where the Advantage Secure PDU is mounted in the inside of the server cabinet.

Note: If your rack does not require mounting brackets, skip step 4 and 5. If required, attach the mounting brackets to the server cabinet. The standard Enlogic mounting brackets are secured to the rack using a screwdriver.



- 3. Attach the enclosed mounting brackets to the server cabinet using the screws.
- 4. Insert the pegs into the server rack mounting holes or into the mounting brackets and tighten the mounting pegs into place.

Note: The distance between the mounting pegs varies depending on PDU models.

5. Pull the power cord through the cabinet and tighten the mounting pegs. Proceed with connecting to a power source.



Connecting to Power Source

Before initiating the installation procedure, check the Branch Circuit Rating in the Safety Information section of this manual. Always follow local and national codes when installing the PDU. The PDU should be connected to a dedicated circuit protected by a branch circuit breaker that matches the PDU input-plug type.

Note: When connecting the Enlogic iPDU to a Power Source, make sure that you have enough length in the PDU power cord to reach the PDU power source.

- 1. Turn Off the feed circuit breaker.
- 2. Make sure that all circuit breakers on the Enlogic iPDU are set to ON.
- 3. Connect each Enlogic iPDU to an appropriately rated branch circuit.
- 4. Note: Refer to the label on the PDU for the input ratings.
- 5. Turn ON the feed circuit breaker.

The OLED screen will display a status bar, when the PDU operating system is loading. The LED code on the OLED screen will flash in light pink. After 3 seconds, the Main Menu (Setup, Alarms, Power, Sensors) will display on the LED screen. Switched PDUs in the EN2000 series or EN6000 series show a light corresponding to each outlet as it is powered up.

Connecting PDU to Network

The Enlogic range of PDUs are set to obtain an IP address via DHCP by default. Therefore, when an Enlogic iPDU is connected to a network for the first time, the PDU will automatically obtain an IP address. In case the PDU is placed within a static network environment, users can configure the PDU to a Static IP via connecting to the PDU by serial cable or uploading a configuration file via USB. The PDU automatically obtains an IP address via DHCP, when connected to a network. Login to the Web UI to configure the PDU and assign a static IP address (if required).

- 1. Connect a standard Ethernet patch cable to Ethernet Port1/Port2 on the Advantage Secure PDU.
- 2. Connect the other end of the Ethernet cable to the LAN.
- 3. Make sure that the Ethernet port on the PDU shows a solid green light on the left and a flashing yellow light on the right to indicate successful connectivity to the network. (Gigabit Router is used in this network connection.)
- 4. Use the menu buttons to look up the IP address of the device on the OLED display by selecting Setup > Network > IPv4 or IPv6 as applicable.
- 5. In a standard web browser, type the PDU IP address and proceed to configure the PDU.



Alternatively, you can configure the network settings using the command line interface (CLI) with a serial connection. Users can either connect serially using the optional Enlogic RJ45-DB9 Cable (SKU EA9119) or by creating a unique pinout as described below.

- 1. Connect the RJ45 end of the serial cable into the port sensor 1 on the PDU.
- 2. Connect the DB9 end of the cable into the communications (COM) port on your computer.
- 3. Note: You can need to use a DB9 serial to USB connection cable for this step to connect via USB, if a DB9 serial port is not available on your computer.

4. Open a communications program such as HyperTerminal or PUTTY. Select the COM port. Set the communications port as follows:

- t the communications port as roll
- Bits per second: 115200
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None
- 1. Use the default initial login indicated below. Note: Username and Password are both case sensitive.
 - Username: admin
 - Password: 12345678
- 2. The EN2.0> prompt appears after you have logged in.
- To configure network settings, Type the appropriate net commands in Command prompt and press Enter button. All commands are case sensitive. You can type "?" to access the commands.
 - For the Net eth0 and eth1 IPv4 DHCP configuration, configure the below parameter.
 - net tcpip eth0dhcp
 - net tcpip eth1dhcp
 - Enter "Y" to validate and reboot the network management card.
 - For the static IPv4 configuration, configure the below parameters.
 - net tcpip eth0static x.x.x.x (ipaddress) x.x.x.x (netmask) x.x.x.x (gateway) Example: net tcpip eth0static 192.168.1.100 255.255.255.0 192.168.1.1
 - Enter "Y" to validate and reboot the network management card.

OR

 net tcpip eth1static x.x.x.x (ipaddress) x.x.x.x (netmask) x.x.x.x (gateway) Example net tcpip eth1static 192.168.1.100 255.255.255.0 192.168.1.1



E- Session	Options controlling	g local serial lines
	Select a serial line Serial line to connect to Configure the serial line	COM1
Window Appearance	Speed (baud)	115200
Behaviour Translation Selection	Stop bits Parity	1 None
Colours Connection Data	Flow control	None ~
Proxy Telnet Riogin ⊕- SSH Serial		



Creating Unique Pinout Connection

CO CARA COLORI Enlogic recommends purchasing our serial cable for use with the Advantage Secure iPDU. This ensures an accurate connection. However, to create your own pinout connection for the RJ45 to Serial cable, make the wired connections as shown:

Refer to the Web UI section and Command Line Interface section for more information about managing the PDU.



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Connecting Sensors (Optional)

To enable the Advantage Secure device to detect Enlogic conditions, connect one or more sensors to the PDU sensor port 1 or 2. The maximum distance for sensor cabling, which is plugged into the device sensor port should not exceed 100 feet (30 m). The maximum number of sensor detection points should not exceed 10.

Refer to the table below to determine the sensor detection points for each sensor used. For example: If you are using the 3 Temperature sensor + 1 Humidity sensor, 4 sensor points are in use, so only 4 additional sensor points are available.





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Accessories & Sensor Description	No of Sensor Points	Enlogic SKU
Temperature Sensor	1	EA9102
Temperature and Humidity Sensor	2	EA9103
(3) Temperature + (1) Humidity Sensor	4	EA9105
Sensor Input Hub (3 sensor inputs)	NA	EA9106
Door Switch Sensor	1	EA9109
Dry Contact Cable	1	EA9110
Spot Fluid Leak Sensor	1	EA9111
Rope Fluid Leak Sensor	1	EA9112
LED Light Strip Sensor	1	EA9125
RJ45-DB9 CABLE	1	EA9119
USB TO RS232 CABLE	1	EA9128
HID RACK ACCESS Kit	1	EA9130
E-Handle (RFID) – no keypad available	2	EA9551
• E-Handle (with addition sensors of 3 Temperature + 1 Door)	6	
E-Handle (RFID & User PIN authentication) – with keypad	2	EA950
 E-Handle (with addition sensors of 3 Temperature + 1 Door) 	6	

For more information about Enlogic sensors, refer to the Installation sheet included with each sensor.



Connecting Asset Management Module

U-level Asset management and tracking products and solutions are an important aspect of asset management. Enlogic Asset Management Module's MC-RFID (Magnetic Control + RFID) is contactless technology. It does not rely on electrical connection to transmit data, and not impacted by poor contact at the contact point; at the same time, it avoids the interference of traditional RFID always transmitting signals to the device.

Some of the benefits of an Asset Management module are:

- Real-time Auto Find IT Asset.
- Real-time Auto Audit IT Asset.
- Real-time Monitor U-level Resource.
- IT Asset Whole-life Management.
- IT Asset Consumption Management.
- Real-time Record and Analysis for Asset and Resource.
- Very Early Warning for Fire.





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Change Default Password

Current Password

New Password

Confirm New Password

Change Password



Web User Interface (UI)

CARGE CON Connect the ethernet cable to the NMC, ensure it is active, which is indicated by a solid green light on the right and a flashing yellow light on the left. This indicates successful connectivity to the network.

Use the menu buttons to look up the IP address of the device on the OLED display by selecting Setup > Network > IPv4 or IPv6 as applicable.

In a standard web browser, enter the PDU IP address ("https://IP ADDRESS") and proceed to configure the PDU as shown in the Web Configuration section. The supported Web browsers are Google Chrome (mobile and desktop), Mozilla Firefox, and Microsoft Edge on desktop. If browser displays "can't reach this page" please double check that you are using the "https://" protocol not "http://"

Introduction to Web UI

When the user logs in for the first time or in the case of a password expiry, the password must be entered on the login page.

On the login page:

- 1. A Change Default Password screen comes to view.
- 2. Type the Current Password, New Password and Confirmed New Password.



3. Click **Change Password** button to complete the process.



If the user needs to change the password using the web UI:

COCCO COCCO 1. Click on the **User Settings** icon, the User Settings page comes to view.

LNX board -	Agile B 💠 I	NX boa	ird - Ag	gile B	💠 LCES board - Ag	ile G ComP	sych Corporat 🔇 Sign In	NetShelter Rack PD	🔕 Micros	oft Office Ho	SharePoint	🔹 💠 Monthly Operation 🧯	Redirecting 🔇	Enlogic 2.0
		(er	L	OGIC	Outlet Me	etered, Outlet Swite	ched PDU 8.1.8			• 7	License		
		înî	U	۲	&			∆ <i>&</i>	88	We e	lcome <u>dmin</u> ⊡	Logout		
ser Settir	ngs											• F	Add Role	Add Use
Users							LDAP Configuration				Radius C	onfiguration 🖉		
Username	Unit Role	A	ction				Enable	×			Enable	×		
admin	° F admin		Ø				LDAP Server				Server			
							Port	389			Port	1812		
user	° F user		Ø	×			Туре	OpenLDAP			Secret	****		
manager	° F manag	er	Ø	×			Base DN							
							Bind Password	****						
							Search User DN							
							Login Name Attribute							
							User Entry Object Class							
Roles							Session Management 🖉				Passwor	1 Policy 🤌		
Role	Description	Act	tion				Sign-In retries allowed	\checkmark			Passwo	rd Aging Interval	60d	
admin	admin operation	n					Number of Retries Allowed	3			Minimur	n Password Length	8	
user	user operation						Session Timeout Value	10 [Minutes of Inacl	ivity]		Maximu	m Password Length	32	
manager	redfish user						Lockout Time	3 [Minutes]			Enforce	at least one lower case charact	ler 🗙	

2. In the **Users** section, under the category **Action**, click your Username and Role to edit/change the password the icon next

P

ser Settir	igs		
Users			
Username	Unit	Role	Action
admin	°F	admin	Ø
user	°F	user	Ø ×
manager	°F	manager	Ø ×



- 3. Type the new password in the **Password** and **Confirm Password**.
- 4. Click **Save** button to complete the setting.

Luit	
ser	
Username	
admin	
Password	
•••••	
Confirm Password	
•••••	



Navigating through the Web UI

The landing page, followed by the login page.





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Icon	Description	
Î	Home Icon Click this Home icon to redirect/move to home page. Home page provides an overview of the PDU with access to the Dashboard, Identification and Control & Manage.	
\mathbf{v}	Logs icon Click this icon to view and download the logs and data logs of the PDU.	
*	Settings Icon This settings icon allows the user to setup the Network Settings, System Management, SNMP Manager, Email Setup, Event Notifications, Trap Receiver, Thresholds, Rack Access Control and Smart Rack Control.	
2 *	User Settings Icon Click this icon to view the logged-in user or admin or manager. Also, the user can change the account passwords and manage user accounts through this page. Users and Roles can be added. Also, configure the RADIUS and LDAP servers	
	Alarms Click this Alarm icon to view the details of the active critical alarms and active warning alarms. The Alarms are configured, based on different Thresholds which are set by the user on different parameters like Power, Voltage,	
	 Input Phase, Circuit Breaker, and External Sensors. Icon colors can be changed based on PDU alarm status. Critical Alarm always have high precedence over warnings. Red - Critical Alarms Yellow - Warnings 	
39	Link This Icon indicates the daisy-chain connection status alarms.	

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0	Sensor Warning This icon represents the sensor related alarms like: • Temp • Humidity	
₩ A	Dry Status Alarms This icon indicates the Door and HID sensor status alarms.	
	Status Alarms This icon indicates the CB and Outlet status alarms.	
	Select a Language This icon allows the user to select a Language. Currently eight languages are available to choose: English, French, Italian, Korean, German, Spanish, Japanese and Chinese.	
?	Click this icon to download system diagnostic logs or navigate to the user guide.	



Dashboard

COCCE CREATE In this page, the user can view information of Total Load, Total Sensors, Total Energy and Total PDUs.

- 1. Click on the **Home** icon to dropdown the Home menu.
- 2. Select **Dashboard** to view information



Total Load

COLOGIC Outlet Metered, Outlet Switched PDU 30.3	۸ <i>۵</i> ۵			
		adi 🖳 🔤	min Cogour	
Total Load				
	Summary	Apparent Power(VA)	Active Power(W)	% Load
	PDU 1	746	746	3.4%
	PDU 2	613	597	2.8%
34% 28% 0%	PDU 3	0	0	0%
PDU#1 PDU#2 PDU#3	PDU 4	0	0	0%
0 % PDUM4 Total Load Total Sensors Total Energy Total PDU(s)				

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Total Energy



Total Sensors

External Sensors

enLogic Outlet Metered, Outlet Switched PDU 30.3	Clicense
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Total Constraints of the constra

Summary		
PDU Name	Sensor Name	Reading
PDU 1	Т6	28.0 °C
PDU 1	RH_PDU1	41%
PDU 1	T3_PDU1	26.0 °C
PDU 1	T1	28.0 °C
PDU 1	T2	26.0 °C
PDU 1	T1_PDU1	27.0 °C
PDU 1	RH1	41%
PDU 1	Temp3_PDU1	26.0 °C
PDU 2	DOORSWITCHPDU5	Open
PDU 3	T2_PDU1	29.0 °C
< Previous		Next >

E.

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Total PDUs





Identification

In this page, the user can view the **System Information**, and individual **PDU Information**.

- 1. Click on the **Home** icon to dropdown the Home menu
- 2. Select **Identification** to view the information and details about the External sensors connected.

System Information									
Name	Value			Name		Value			
System Name	saidarshan_EN2.0			MAC Address		C8-45-44-50-1C-17			
Contact Name	ENLOGIC2.0_EN6810_32 PDI	J_SETUP		IPv4 Address		10.10.107.225			
Contact Email	eennllooggiicc2882088880@g	eennllooggiicc2882088880@gmail.com			IPv8 Link Local Address		fe80::ca45:44ff:fe50:1c17		
Contact Phone	1234567890123456789012345678901234567890			IPv8 Auto Config	ured Address	2001:c0a8:aa01:0:ca45:44ff	:fe50:1c17		
Contact Location	INDIA_LAB BANGLORE SETU	PINDIA_LAB BANGLORE	SETUP						
U Information									
		PDUs 1-4	PDUs 5-8 PDUs 9-12 PDUs 13-16	PDUs 17-20 PDUs 1	21-24 PDUs 25-28 PDUs 29-32				
		2		3		4			
1 Name	Master PDU	2 Name	pdu2	3 Name	pdu3	4 Name	pdu4		
l Name Core Location	Master PDU Front	2 Name Core Location	pdu2 Front	3 Name Core Location	pdu3 Front	4 Name Core Location	pdu4 Front		
Name Core Location Core U Position	Master PDU Front 1	2 Name Core Location Core U Position	pdu2 Front 2	3 Name Core Location Core U Position	pdu3 Front 3	4 Name Core Location Core U Position	pdu4 Front 4		
lame Core Location Core U Position Nodel	Master PDU Front 1 346-415V, 32A, 22.0KVA, 50/60Hz	2 Name Core Location Core U Position Model	pdu2 Front 2 348-415V, 32A, 22.0kVA, 50/80Hz	3 Name Core Location Core U Position Model	pdu3 Front 3 348-415V, 32A, 22.0kVA, 50/80Hz	4 Name Core Location Core U Position Model	pdu4 Front 4 346-415V, 32A, 22.0kVA, 50/60F		
l Name Core Location Core U Position Viodel Part Number	Master PDU Front 1 346-415V, 32A, 22.0kVA, 50/60Hz EN4810	2 Name Core Location Core U Position Model Part Number	pdu2 Front 2 348-415V, 32A, 22.0kVA, 50/60Hz ENØ810	3 Name Core Location Core U Position Model Part Number	pdu3 Front 3 348-415V, 32A, 22.0kVA, 50/60Hz EN8810	4 Name Core Location Core U Position Model Part Number	pdu4 Front 4 346-415V, 32A, 22.0kVA, 50/60F EN6810		
lame Core Location Core U Position Addel Part Number Serial Number	Master PDU Front 14-415V. 32A, 22.0kVA, 50/60Hz EN6810 WAAL0170	2 Name Core Location Core U Position Model Part Number Serial Number	pdu2 Front 2 346-415V, 32A, 22.0kVA, 50/60Hz EN8810 WAAL0161	3 Name Core Location Core U Position Model Part Number Serial Number	pdu3 Front 3 46-415V, 32A, 22.0kVA, 50/60Hz EN8810 WAAL0204	4 Name Core Location Core U Position Model Part Number Serial Number	pdu4 Front 4 346-415V, 32A, 22.0kVA, 50/60F EN8310 WAAL0046		
lame Core Location Jore U Position Addel Part Number Sectial Number Soct Version	Master PDU Front 1 346-415V. 32A, 22.0kVA, 50/60Hz EN6810 WAAL0170 1.2	2 Name Core Location Core U Position Model Part Number Serial Number Boot Version	pdu2 Front 2 346-416V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0161 1.2	3 Name Core Location Core U Position Model Part Number Serial Number Boot Version	pdu3 Front 346-416V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0204 1.2	4 Name Core Location Core U Position Model Part Number Serial Number Boot Version	pdu4 Front 4 46-415V, 32A, 22.0KVA, 50/60F EN8810 WAAL0046 1.2		
I Name Core Location Model Part Number Part Number Soot Version Neb Version	Master PDU Front 1 346-415V, 32A, 22.0kVA, 50/60Hz EN4810 WAAL0170 1.2 1.0.7.3	2 Name Core Location Core U Position Model Part Number Serial Number Boot Version Web Version	pdu2 Front 2 348-415V, 32A, 22 0KVA, 50/60Hz EN8810 WAAL0161 1.2 1.0.7.3	3 Name Core Location Core U Position Model Part Number Serial Number Boot Version Web Version	pdu3 Front 3 346-415V, 32A, 22.0kVA, 50/60Hz EN8510 WAAL0204 1.2 1.0.7.3	4 Name Core Location Core U Position Model Part Number Serial Number Boot Version Web Version	pdu4 Front 4 348-415V, 32A, 22.0kVA, 50/60F EN8810 WAAL0046 1.2 1.0.7.3		
Name Core Location Core U Position Model Part Number Serial Number Serial Number Soot Version Veb Version Firmware Version	Master PDU Front 1 346-415V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0170 12 1.0.7.3 1.0.7.3	2 Name Core Location Core U Position Model Part Number Boti Version Firmware Version Firmware Version	pdu2 Front 2 346-415V, 32A, 22,0kVA, 50/60Hz EN8810 WAALD161 1,2 1,0,7,3 1,0,7,3	3 Name Core Location Core U Position Model Part Number Boot Version Firmware Version Firmware Version	pdu3 Front 346-415V, 32A, 22.0xVA, 50/60Hz EN6810 WAAL0204 1.2 1.0.7.3 1.0.7.3	4 Name Core Location Core U Position Model Part Number Serial Number Boot Version Web Version Firmware Version	pdu4 Front 4 46-415V, 32A, 22 0kVA, 50/60F EN6810 WAAL0046 1,2 1,0,7,3 1,0,7,3		
Name Core Location Core U Position Wodel Part Number Serial Number Boot Varsion Veb Version Tirmware Version Hardware Version	Master PDU Front 1 346-415V, 32A, 22.0kVA, 50/60Hz EN4810 WXAL0170 1.2 1.0.7.3 1.0.7.3	2 Name Core Location Core U Position Model Part Number Serial Number Boot Version Veb Version Firmware Version Hardware Version	pdu2 Front 2 348-415V, 32A, 22.0kVA, 50/60Hz EN9810 WAALD161 1.2 1.0.7.3 1.0.7.3	3 Name Core Location Core U Position Model Part Number Serial Number Serial Number Serial Number Vesion Firmware Version Hardware Version	pdu3 Front 3 48-415V, 32A, 22 0kVA, 50/60Hz EN6810 WAAL0204 1.2 1.0.7.3 1.0.7.3	4 Name Core Location Core U Position Model Part Number Serial Number Boot Version Veb Version Firmware Version Hardware Version	pdu4 Front 4 346-415V, 32A, 22.0kVA, 50/80F EN8810 WAAL0048 1.2 1.0.7.3 1.0.7.3		
Name Core Loostion Core U Position Model Part Number Serial Number Soct Version Veb Version Firmware Version PDU Power Rating (X	Master PDU Front 1 346-415V, 32A, 22.0kVA, 50/60Hz EN8810 WAAL0170 1,2 1,0,7,3 1,0,7,3 1,0,7,3	2 Name Core Location Core U Position Model Part Number Serial Number Bot Version Firmware Version Hardware Version PDU Power Rating ()	pdu2 Front 2 346-415V, 32A, 22.0K/A, 50/60Hz EN6810 WAAL0161 1.2 1.0.7.3 1.0.7.3 1.0.7.3	3 Name Core Location Core U Position Model Part Number Serial Number Boot Version Firmware Version Hardware Version PDU Power Rating (I	pdu3 Front 3 48-415V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0204 1.2 1.0 7.3 1.0 7.3 1.0 7.3 KVA)22	4 Name Core Location Core U Position Model Part Number Serial Number Boot Version Veb Version Firmware Version FUD Yower Rating	pdu4 Front 4 346-415V, 32A, 22 0KVA, 50/60H EN8810 WAAL0046 1.2 1.0.7.3 1.0.7.3 1.0.7.3 KVA)22		
Jame Jone Location Jone U Position Jone U Position Part Number Serial Number Serial Number Serial Number Serial Number Jone Version Timware Version Jandware Version Jone Power Rating (A)	Master PDU Front 1 346-416V, 32A, 22.0xVA, 50/60Hz EN8810 WAAL0170 1.2 1.0.7.3 1.0.7.3 VAJ22 32	2 Name Core Location Core U Position Model Part Number Boot Version Web Version Firmware Version Hardware Version PDU Dower Rating (A PDU Input Rating (A	pdu2 Front 2 346-415V, 32A, 22.0kVA, 50/00Hz, EN6810 WAALD181 1.2 1.0.7.3 1.0.7.3 NVA)22) 32	3 Name Core Location Core U Position Model Part Number Boot Vension Web Version Firmware Vension Hardware Vension PDU Power Rating (A PDU Input Rating (A	pdu3 Front 346-415V, 32A, 22 0xVA, 50/60Hz EN6810 WAAL0204 1.2 1.0.7.3 1.0.7.3 1.0.7.3 1.0.7.3 WVA)22 0 32	4 Name Core Location Core U Position Model Part Number Boot Version Web Version Firmware Version Hardware Version PDU Power Rating (PDU Input Rating (4)	pdu4 Front 4 346-415V, 32A, 22.0KVA, 50/60F EN6810 WAAL0046 1.2 1.0.7.3 1.0.7.3 1.0.7.3 kVA)22 V 32		
1 Vame Core Loostion Core Loostion Vodel Part Number Soot Version Timware Version Tardware Version Tardware Version 10U Prove Reating (A) 10U Breaker Rating (A)	Master PDU Front 1 346-416V, 32A, 22.0xVA, 50/60Hz EN6810 WAAL0170 1.2 1.0.7.3 1.0.7.3 1.0.7.3 22 32 A) 16	2 Name Core Location Core U Position Model Part Number Bort Vension Web Version Firmware Vension Hardware Vension PDU Dower Rating (A PDU Breaker Rating	pdu2 Front 2 346-416V, 32A, 22.0kVA, 50/00Hz EN6810 WAALD181 1.2 1.0.7.3 1.0.7.3 1.0.7.3 VVA)22) 32 (A) 16	3 Name Core Location Core U Position Model Part Number Bost Version Web Version Firmware Version Hardware Version PDU Dower Rating (A PDU Breaker Rating	pdu3 Front 346-416V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0204 1.2 1.0.7.3 1.0.7.3 1.0.7.3 WAQ22 0) 32 (A) 16	4 Name Core Location Core U Position Model Part Number Boot Version Web Version Firmware Version PDU Power Rating PDU Input Rating (# PDU Breaker Rating	pdu4 Front 4 346-415V, 32A, 22.0KVA, 50/60H EN6810 WAAL0046 1.2 1.0.7.3 1.0.7.3 1.0.7.3 XVA)22 v) 32 (A) 16		
Aame Core Loostion Core U Position Model Part Number Secial Number Secia	Master PDU Front 1 346-415V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0170 1.2 1.0.7.3 1.0.7.3 VA)22 32 A) 16	2 Name Core Location Core U Position Model Part Number Boot Version Web Version Boot Version Hardware Version Hardware Version POU Power Rating (A POU Input Rating (A POU Breaker Rating	pdu2 Front 2 346-416V, 32A, 22.0kVA, 50/60Hz EN8810 WAAL0161 1.2 1.0.7.3 1.0.7.3 1.0.7.3 VVA)22) 32 (A) 16	3 Name Core Location Core U Position Model Part Number Boot Version Web Version Verbour Version Hardware Version PDU Power Rating (A PDU Input Rating (A PDU Breaker Rating	pdu3 Front 346-416V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0204 1.2 1.0.7.3 1.0.7.3 1.0.7.3 VVA)22 V) 32 (A) 16	4 Name Core Location Core U Position Model Part Number Boot Version Web Version Firmware Version PDU Power Rating PDU Input Rating (/ PDU Breaker Rating	pdu4 Front 4 346-415V, 32A, 22.0KVA, 50/60F EN6810 WAAL0046 1.2 1.0.7.3 1.0.7.3 WA322 V) 32 (A) 16		
A dame Core Location Core U Position Model Part Number Sact Version Sact Version Veo Version Hardware Version dardware Version PDU Input Rating (A) PDU Input Rating (A) PDU Breaker Rating (C) External Sessors	Master PDU Front 1 346-415V, 32A, 22.0kVA, 50/60Hz EN6810 WAAL0170 1.2 1.0.7.3 1.0.7.3 VA)22 32 A) 16	2 Name Core Location Core U Position Model Part Number Bort Version Web Version Hort Version Hor	pdu2 Front 2 346-416V, 32A, 22.0kVA, 50/00Hz EN810 WAAL0161 1.2 1.0.7.3 1.0.7.3 1.0.7.3 (A) 18	3 Name Core Location Core U Position Model Part Number Beot Venion Web Version Firmware Version Hardware Version PDU Power Rating (A PDU Input Rating (A	pdu3 Front 346-415V, 32A, 22.0kVA, 50/60Hz EN8810 WAAL0204 1.2 1.0.7.3 1.0.7.3 1.0.7.3 VVA[22 V) 32 (A) 10	4 Name Core Location Core U Position Model Part Number Boot Version Web Version Firmware Version POU Input Rating (PDU Input Rating (pdu4 Front 4 346-415V, 32A, 22.0KVA, 50/60F EN6810 WVAL0046 1.2 1.0.7.3 1.0.7.3 VVA)22 V 32 (A) 16		



Control and Manage

In this page, the user can view and control the **Power Outlet** of the PDU.

- 1. Click on the Home icon to dropdown the Home menu
- 2. Select Control & Manage.
- 3. Enable the Outlet Control Enabled.
- 4. Click on the 🦻 icon.
- 5. Edit/change the Outlet information below:
 - Outlet name to identify the outlet
 - **On delay time** (0-7200 seconds)
 - Off delay time (0-7200 seconds)
 - **State on startup** (On, Off, and last known can be selected)
 - **Reboot duration** (configure time between 5 to 60 seconds)

Outlet Name	
OUTLET 1	
On Delay(0~72006)	
88	
Off Delay(0~7200s)	
8	
State on Startup	
Off	
Reboot Duration(5~60s)	
58	

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6. On the top right side of the Control & Manage page there is an Actions icon, to Reset PDU Energy

Control & Manage						Actions Y
Outlet Control Enabled						
	1 2 3	4 5 6 7 8 9 10 11 Breake	12 13 14 15 16 17 18 19	20 21 22 23 24 25 26 Breaker 5 Breaker 6	27 28 29 30 31 32	
Outlet Name	Power Control	On Delay(0~7200s)	Off Delay(0~7200s)	State on Startup	Reboot Duration(5~60s)	
OUTLET 1	OFF	88	8	U	58	Ø
OUTLET 2	ON	0	0	Ċ	δ	Ø
OUTLET 3	OFF	٥	٥	Ċ	5	Ø
Outlet 4	ON D	7	77	Ċ	55	Ø
OUTLET 5	OFF	0	٥	Ċ	5	Ø
OUTLET 6	ON O	0	0	Ċ	5	Ø

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View Logs

In this page, the user can view, download, and clear the Actions performed by the PDU.

Some of the actions performed by the PDU are:

- Generating Event, Audit and Application logs,
- Recording Power Share details.

Click on the **System Administration** icon to dropdown the menu.

1. Select the **View Logs** to view the information.



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View Logs		🛃 Download Clear
page 1/30		1 2 2 4 5 >> 30
Туре	Description	Date & Time
Audit Log	User admin of PDU 1 from host 10.10.108.111 logged out	2021/09/14, 09:39:59
Audit Log	User admin of PDU 1 from host 10.10.105.39 logged in	2021/09/14, 09:38:49
Audit Log	User admin of PDU 1 from host 10.10.105.39 logged out	2021/09/14, 09:37:44
Event Log	External sensor HID of PDU 27 communication lost	2021/09/14, 09:37:40
Event Log	External sensor DOOR of PDU 27 communication lost	2021/09/14, 09:37:40
Audit Log	User admin of PDU 1 from host 10.10.105.194 logged in	2021/09/14, 09:35:55
Audit Log	User admin of PDU 1 from host 10.10.105.95 time out	2021/09/14, 09:33:34
Audit Log	User admin of PDU 1 from host 10.10.105.39 logged in	2021/09/14, 09:30:39

- 2. On the top-right side of the view log page, Click the below options as required:
- 3. Download Log: to download the logs
- 4. **Clear** Log: to delete/clear the logs.





View Data Logs

In this page, the user can view, configure, download, and clear the Data recorded by the PDU. The Data recorded by the PDU are:

- Energy information
- **Power** information
- Date and Time information
- 1. Click on the **System Administration** icon to dropdown the menu.
- 2. Select the **View Data Logs** to view the information.

	en	LOC	SIC	Outlet Metered, Outlet Switched PDU 1.0.7.4						<u>License</u>								
	俞 代	0 0	<i>2</i> *				▲ &	٩	2	8 0	W	elcom admin	^e [→ Log	out				
Data Log										Data	Log	Confi	guration		Dowr	load	Clea	ar
Date(DD/MM/YY)	Time(HH:MM:SS)	PDUID	Pwr.kW	PwrMax.kW	PwrApp.kW	Energy.kWh	PH.VOL.1	2	3	PH.CUR.1	2	3	PH.PEAK.1	2	3	PH.PWR.1	2	3
04/01/2010	20:31:17	2	0.000	0.000	0.000	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.0
04/01/2010	20:31:16	1	0.000	0.000	0.000	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.0
٢																		>

- 3. On the top- right side of the View Data Log page, Click the below options as required:
 - **Data Log Configuration,** Click on this button to:
 - Enable Data Log Configuration if data log is required.
 - Log Interval time that needs to be recorded.
- **Download** Data Log: to download the logs.
- **Clear** Data Log: to delete/clear the logs.

ata Log Configuration	
ata Log configuration	
Enable	
Log Interval(1-1440 Minutes)	
10	

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Network Settings

This page allows the management of IP Configuration, Web Configuration, RESTapi Configuration, DNS Configuration, SSH/FTPs Configuration, Network Time Protocol (NTP), Date/Time Settings and Daylight-Savings Time.

This PDU supports IPv4 and IPV6 with full featured network management and alerting capabilities. After you select your Internet protocol option, you will be able to communicate via HTTP, HTTPS, SNMP, FTPS and SSH and Email for network communications.

- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select the **Network Settings** to view the information.

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fin 🖑 🤅	æ 2.		▲ 🛷	9	8 0	Welcome admin	₿	Logout	
Network Settings				(Set Co	ertificate Key		Change Link Speed	Syslog Configuration
Ethernet-1 IP Configuration		Domain Name System 🥟							
Network Mode	IPv4/IPv6 Dual	Manually Override Servers			\times				
Boot Mode	DHCP	Primary DNS Server			0.0.0.0	1			
Boot Mode IPv6	Autoconfig	Secondary DNS Server			0.0.0.0	1			
IPv4 Address	10.10.106.188	Edit Hostname/Domain			\times				
Network Mask	255.255.252.0	Host Name							
Default Gateway	10.10.104.254	Domain Name(IPv4/IPv6)							
IPv6 Link Local Address	fe80::ca45:44ff;feb5:8ef								
IPv6 Global Configured Address	2001:c0a8:aa01::dc8								
Web/ RESTapi Access Configuration 🖉			SSH/FTP	s Config	uration 🖉	8			
Web Access	https		SSH Ac	Cess					/
Web Port	443		SSH Po	rt				2	2
RESTapi Access	×		FTPs Ac	Cess					/
Certificate	View Certificate		FTPs Po	ort				2	1

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- 3. Click on the *icon* to edit/change the **IP Configuration** information below:
 - **Network Mode** .
 - **Boot Mode**
 - **Boot Mode Ipv6** •
 - IPv4 Address •
 - Network Mask
 - Default Gateway
 - IPv6 Auto Configured Address
 - Subnet Prefix Length (Ipv6)
 - Default Gateway (Ipv6)
 - Click **Save** button to complete setting.

ation information below: Edit	
Edit	41
P Configuration	
Network Mode	
Boot Mode STATIC	
Boot Mode IPv6 STATIC	
IPv4 Address 10.88.16.17	
Network Mask 255 255 255 192	
Default Gateway 10.88.16.1	
IPv6 Auto Configured Address 2007 cba9:8765/4321::1009	
Subnet Prefix Length (IPV5) 64	
Default Gateway (IPV6) 2007 cba9:8765:4321::1	

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4. By default, accessing the PDU uses HTTPS port setting.

Click the 🛛 🔊 icon to edit/change the

Web/RESTapi Access Configuration information below:

- Web Access (HTTP or HTTPS).
- Web *Port* (Default 80 for HTTP, and 443 for HTTPS).
- Enable **RESTapi Access**.
- To access the HTTPS settings, upload the SSL Certificate and SSL Certificate Key provided by Enlogic.
- Click Save button to complete the settings.

Edit

Web/ RESTapi Access Configuration

C. ART COL

Web Access Https	
Https	
Web Port	
Default 80 for Http, 443 for Https	
443	
RESTapi Access	
Enable	
SSL Certificate Choose File No file chosen	
SSL Certificate Choose File No file chosen SSL Certificate Key	

5. Edit the SSH/FTPS configuration Settings information below:

Click the *i*con to edit/change the **SSH/FTPs Configuration** information below:

- Enable SSH Access.
- **SSH Port** (Default 22).
- Enable FTPs Access.
- **FTPs Port** (Default 21).
- Click Save button to complete the settings.

Edit sh/f	IPs Con	ıfigura	ation	
SSH Ac	ess	5		
SSH Po	t			
Default :	2			
22				
FTPs Ac	cess			
FTPs Po	rt			
Default :	:1			
~ .				



6. You can link the PDU to a **Network Time Protocol (NTP)** server and let it set the date and time.

Click the icon // to edit/change the NTP Setting information below:

- **Enable** the NTP settings.
- To synchronize the PDU time with a selected server,
- Type the valid **Primary** NTP server address
- Type the valid **Secondary** NTP server address
- Select the desired **NTP GMT offset** time from the dropdown list.
- Click **Test** button to check if the network is valid or not.
- Click **Save** button to complete setting.



Click the *licon* to edit/change the **Date/Time Setting** information below:

- Type the **Date** in YYYY/MM/DD format or use the calendar icon.
- Type the **Time** in HH: MM: SS format and time is measured in 24-hour format.
- Click **Save** button to complete setting.

Edit

Enable	
Primary NTP Server	
0.0.0.0	
Secondary NTP Server	
0.0.0.0	
NTP GMT Offset	
(UTC) Dublin, Edinburgh, Lisbon, London	

ate/Time Settings	
Date	
2021/01/28	É
Time	
HH:MM:SS	
16:37:43	C
Date Format	
Supported format is [YYYY/MM/DD]	



- 8. Click on the 📝 icon to edit/change the Daylight-Saving Time information below:
 - **Enable** the Daylight-Saving Time.
 - Select the specifics of the **Start Month**:
 - Month
 - Week
 - Day
 - Time
 - Select the specifics of the **End Month**:
 - Month
 - Week
 - Day
 - Time
 - Assign the **Time Offset**.
 - Click **Save** button to complete setting.

Enable		
\bigcirc		
Start Month		
Select		
Select		
Select		
0:0:199		
End Month		
End Month::Week	::Day::Time	
Select		
Select		
Select		
199:173:0		
Time Offset		
Select		

Edit

9. On the top-right side of the Network Settings page, Click the below options as required:

Set Certificate Key

Below are the steps to edit SSL Certificate Key Length.

- Click **Set Certificate Key** button.
- Select **bits** (1024/2048) from dropdown menu.
- Click **Save** button to complete setting.

Edit	
SSL Certificate Key Length	
SSL Certificate Key Length 2048 bits	
Save	

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Change Link Speed

Below are the steps to change the Ethernet link speed.

- Click Change Link Speed button.
- Select speed (as required below) from dropdown menu.
 - Auto Negotiation
 - _ 10/100 Mbps
 - _ 1 Gbps
- Click **Save** button to complete setting.

	000
Edit	The second se
Ethernet Link Speed	
Link Speed Auto Negotiation	
Save	

E.

Syslog Configuration

Below are the steps to configure the Syslog.

- Click Syslog Configuration button.
- Enable the **Enable Syslog Server Access**.
- Type the **Syslog Server Address**.
- Select **Syslog Server Port** number.
- Click **Save** button to complete setting.

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System Log Configuration

Syslog Server Address	
Syslog Server Port	
514	



System Management

This page allows the user to perform functions like, **Uploading Firmware**, **Uploading Configuration**, **Downloading Configuration** and setting the PDU to its **Default Settings**. It also allows the user to **Restart** the PDU.

- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select the **System Management** to view the information.

en 命	LOGIC Outlet M ම @ &	letered, Outlet Switched PDU 1874	⊕ ? <u>License</u> ▲ & ♥ ⊕ 団	Welcome		
System Management			Upload Firmware	Upload Configuration	Download Configuration	Default Settings
System Information		Rack Location	LED Edge Color	Se	elect a PDU to Restart	
System Name		Room Name	LED Color		All	\bigtriangledown
Contact Name		Row Name			Restart	
Contact Email		Row Position				
Contact Phone		Rack Name				
Contact Location		Rack ID 0				
		Rack Height 0				
			PDUs 1-2			
Ø	Ø					
1	2					
Power Panel Name	Power Panel Name					
Core Location Front	Core Location Front					
Core U Position	Core U Position					

- 3. Click on *interaction below.*
 - Enter the **System Name** of the PDU for identification
 - Enter the **Contact Name** of the contact person.
 - Enter the **Contact Email** of the contact person.
 - Enter the **Contact Phone** of the contact person.
 - Enter the **Contact Location** of the contact person.
 - Click **Save** button to complete setting.

System Name	
hai	
Contact Name	
s	
Contact Email	
hallo@c.com	
Contact Phone	
88	
Contact Location	
b	

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4. Information below:

Click on the icon 🛛 🖉 to edit the Rack Location

- Enter the Room Name to identify the cabinet or room where the PDU is located.
- Enter the **Row Name** where the PDU is located on the rack.
- Enter the **Row Position** where the PDU is located on the rack.
- Enter the **Rack Name** where the PDU is • located.
- Enter the Rack ID for identification of • rack.
- Enter the Rack Height where the PDU is located on the rack.
- Click Save button to complete setting.

Edit	
Luit	
Rack Location	
Room Name	
Row Name	
Row Position	
Rack Name	
Rack ID	
0	
Rack Height	
0	

4. The LED Edge Color can be configured into 7 different colors for the easy identification. The colors are red, blue, white, yellow, green, cyan, and pink.

Click the *i*con to edit/change the **LED Edge Color** information below:

- Select the LED Color. •
- Select PDU. •

Ealt	
LED Edge Color	
LED Color	
Blue	
Select PDU	
All	\bigtriangledown



5. Click the 🧪 icon to edit/change the

Power Panel & Core Location information below:

- Enter the **Power Panel Name** to identify the PDU.
- Select Core Location to identify which side the PDU is located Front or Back
- Enter **Core U Position** to identify the rack location.
- Click **Save** button to complete setting.

SNMP Management

This page allows the user to manage the transfer of data from the PDU to the MIB Browser. Simple Network Management Protocol (SNMP) is used to manage the Advantage Secure PDU(s) remotely. SNMP allows the user to monitor and detect PDU faults and to even configure variable data in the PDU.

1. Click on the Settings icon to dropdown the	SNMP General
Settings menu.	Enable 🗸
 information. 3. To access the PDU data inside a MIB Browser. 	SNMP Version V1/2c&V3
Enable the SNMP General	SNMP General
settings.	Enable
	SNMP Version V1/2c&V3

Save

Edit Power Panel & Core Location

Core Location	
Front	
Core U Position	
1	

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- 5. To secure the link between the PDU and the MIB Browser.
- 6. Click the *icon* to edit/change the SNMP Port below:
 - Enter the **SNMP Port** number.
 - Enter the **SNMP Trap Port** number.
 - Click **Save** button to complete setting.

Ed	it	
SNMF	Port	
SNMP 161	Port	
SNMP 162	¹ Trap Port	
Sa	ve	

SNMP Port

SNMP Port

SNMP Trap Port

* DI 3

161

162

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7. Configuring Users for SNMP V1/V2c. Click on the icon *icon* to edit/change the SNMP V1/2c Manager below:

SNMP Management				
<u>SNMP General</u>		SNMP Port Ø		
SNMP Version V1/2c&V3		SNMP Trap Port 162		
SNMP V1/2c Manager				
IP Address	Read Community	Write Community	Enable	
10.10.107.135	public	private	\checkmark	Ø
0.0.0.0	public	private	×	Ø
0.0.0.0	public	private	×	Ø
0.0.0.0	public	private	×	Ø
0.0.0.0	public	private	×	Ø



- Enter the **IP Address**. •
- Define the security to **public** or **private** in the
 - **Read Community** •
 - Write Community
- Enable the SNMP V1/V2c.
- Click **Save** button to complete setting.

Edit	
SNMP V1/2c Manager	
IP Address	
10.10.107.135	
Read Community	
public	
Write Community	
private	
Enable	

8. Configuring users for SNMP V3 to ensure higher security of data transfer, to the MIB browser.

Click on the *icon* to edit/change the **SNMP V3 Manager** below:

SNMP V3 Manager							
Username	Security Level	Authentication Password	Authentication Algorithm	Privacy Key	Privacy Algorithm	Enable	
	NoAuthNoPriv	*******	MD5	*******	DES	×	0
	NoAuthNoPriv	*****	MD5	*****	DES	×	Ø
	NoAuthNoPriv	******	MD5	*****	DES	×	Ø
	NoAuthNoPriv	******	MD5	****	DES	×	Ø
	NoAuthNoPriv	*****	MD5	*******	DES	\times	Ø

- AuthPriv: Authentication and privacy.
- Type a new unique password as the Authentication Password.
- Select the Authentication Algorithm.
- MD5
- SHA
- Type a new unique password as the **Privacy Key**
- Select the **Privacy Algorithm.**
 - DES
 - AES-128
 - AES-192
 - AES-256
- **Enable** the SNMP V3.
- Click Save button to complete setting.

MP V2 Managor	
wir vo manager	
Username	
Security Level	
No Auth No Priv	
Authentication Password	
Authentication Algorithm	
MD5	
Privacy Key	
Privacy Algorithm	
DES	
AES 128	



Email Setup

In this page, the user can configure the PDU to send alerts or event messages via email. To do this, the information about the Simple Mail Transfer Protocol (SMTP) server needs to be configured.

- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select the **Email Setup** to view the information.

enLOGIC Outlet Metered, Out	let Switched PDU 1874	⊕ ? <u>License</u> ∧ & ♥ ⊖ च ^{Welcome} →	Logout	
Email Setup		aomin - aomin		Send Test Email
SMTP Account Settings		Email Recipients		
Email Server Address		# Email Address	Enable	
Sender Address		1	×	Ø
Username				
Password		2	×	Ø
Port	25	3	×	Ø
Number of Sending Retries	3			
Time Interval Between Sending Retries(in Minutes)	6	4	×	Ø
Server Requires Authentication	×	5	×	Ø

icon to edit/change the SMTP Account Settings below:

- 3. To set the SMTP server settings to receive Emails and notifications.
 - Click the

A

- Enter the **Email Server Address**, which is the IP address or Fully qualified Domain Name of the SMTP server to route the emails to the recipient.
- Enter the **Sender Address**, which is the email address that the email is sent **From**.
- Configure the **Port** number, which is the communication endpoint on the server. The default is **25**.
- Enter the **Username** for SMTP security.
- Enter the **Password** for SMTP security.
- Assign the **Number of Sending Retries**, which is the number of times the PDU will attempt to resend a message if the message fails. The default is **3**.
- Type the **Time Interval Between Sending Retries** (in minutes). The default is **6** minutes.
- Enable the **Server Requires Authentication** to password protect the SMTP.
- Click **Save** button to complete setting.

Email Server Address	
Sender Address	
Port	
25	
Username	
Password	
Number of Sending Retries	
3	
Time Interval Between Sending Retries(in Minutes)	
6	
Server Requires Authentication	
\sim	

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On the top- right side of the Email Setup page, Click the below options as required:

Send Test Email

This button allows us to send a test mail to check if the feature is active or not.

- Enter the **Recipient Email Address**.
- Click the **Send** button to send the Email.

0, 6 BP	
options as required:	NOC
Test Email Recipients	;
Recipient Email Address	
Send	



Event Notifications

COCCEPTION OF THE STREET In this page the user can assign the Event notifications from the PDU to the Syslog, SNMP Trap, and Email.

An event notification has two parts:

- Event: the situation where the PDU meets certain condition (i.e., temperature sensor exceeds the warning limit. Or circuit breaker status is changed).
- Action: the response to the event (i.e., send an SMTP message and SNMP trap).
- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select **Event Notifications** to view information.
- 3. Enable the Email, SNMP Trap and Syslog to the respective Events to receive notification.

Event Notifications			
Events	🕢 Email	SNMP Trap	Syslog
Circuit Breaker Status Changed			
User Activity			
Smart Rack Access			
Outlet Power Control Status Changed			
User Status Changed			
Critical Alarm			
Warning Alarm			
Password/Settings Changed			
Network Card Reset/Start			
External Sensor Status Changed			
PDU Configuration File Imported/Exported			
User Role Status Changed			
Firmware Update			
Communication Status Changed			
Daisy Chain Status Changed			
Enter Bootloader Mode			
LDAP/Radius Error			
Power Sharing Status Changed			

The Critical and Warning Alarms are enabled at the SNMP Trap, as default. The notifications for these default events enabled, can only be received after the configuration of **Traps Receiver**.



Trap Receiver

This page allows us to configure the Trap receiver by typing in name, host, and community. Typically, the Read Community and Write Community are public.

- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select **Trap Receiver** to view information.
- 3. Configuring users for SNMP V1 Trap Settings that allows the communication to the MIB browser.

Trap Receiver				
\$NMPV1 Trap Receiver				
Name	Host	Community	Enable	
admin	10.10.105.95	public	~	Ø
LOP1	10.10.105.111	public	1	Ø
donald 10	10.10.105.16	public	1	Ø
donald 11	10.10.105.84	public	\checkmark	Ø
admin1	10.10.105.18	public	1	Ø

Click on the **Receiver**

R

icon to edit/change the **SNMP V1 Trap** settings below:

- Enter the **Name**, which allows us to identify the different receivers.
- Enter the **Host** IP address to which the traps are sent.
- Assign the **Community** to **public** or **private** security.
- **Enable** the SNMP V1.
- Click **Save** to complete the settings.

Edit

SNMPV1 Trap Receiver

admin		
Host		
10.10.107.135		
Community		
public		
Enable		
Savo		

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4. Configuring users for SNMP V3 Trap Settings that allows for encrypted communication to the MIB browser.

> Click the *conto edit/change the* **SNMP V3** Trap Server settings below,

- Enter the Name, which allows us to • identify the different receivers.
- Enter the **Host** IP address to which the • traps are sent.
- Assign the **Security Level** from the dropdown menu.
- **NoAuthNoPriv:** No authentication and no privacy. This is the default.
- privacy.
- **AuthPriv**: Authentication and privacy.
- Type a new unique password as the • Authentication Password.
- Select the **Authentication Algorithm**.

Edit SNMPv3 Trap Server

Name Host Security Level No Auth No Priv

Authentication Password

Authentication Algorithm

MD5

Privacy Key

AES128

Save

Enable \bigcirc

Privacy Algorithm

STARS - COL

AuthNoPriv: Authentication and no

- - MD5
 - SHA
- Type a new unique password as the **Privacy Key**.
- Select the **Privacy Algorithm.**
 - DES
 - **AES-128**
 - AES-192
 - AES-256
- **Enable** the SNMP V3
- Click Save button to complete settings. •

On the top-right side of the Email Setup page, Click the below options as required:

Send Test Trap - This button allows us to send a test Trap to check if the feature is active or not.



Defining Thresholds

COCCEPTION OF THE PARTY OF THE The Thresholds are limits, defined by the user over parameters like power, phase, circuit breaker and sensor to send alert notifications when the value crosses above or below the limit.

To access the PDU Thresholds page,

- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select Thresholds to view information.

Power Thresholds

The PDU will send alert notifications when a power threshold wattage crosses above or below the settings you specify in the Power Threshold.

Below are the steps to change the Power Thresholds settings and alarm notifications,

- 1. Choose **Power Threshold** tab in the PDU Threshold page.
- 2. Click 🖉 icon edit/change the Power Threshold Setting.

Device Detection	Threshold						
Threshold(mA)	150						
			Power T	hreshold Input Phases C	ircuit Breaker	Control Management E	xternal Sensors
			DDU- 1.1		0011- 42-40		
			PDUS 1-4	PD05 5-6 PD05 9-12 1	PDUS 13-16		
Ø		Ø		Ø		Ø	
1 (Watts)		2 (Watts)		3 (Watts)		4 (Watts)	
High Critical	0	High Critical	0	High Critical	0	High Critical	0
High Warning	0	High Warning	0	High Warning	0	High Warning	0
Low Warning	0	Low Warning	0	Low Warning	0	Low Warning	0
Low Critical	0	Low Critical	0	Low Critical	0	Low Critical	0



3. In the PDU Power Threshold Setting dialog boxes,

- change the fields as needed:
 - a. Low Critical (W)
 - b. Low Warning (W)
 - c. High Warning (W)
 - d. High Critical (W)
 - e. Reset Threshold (W)
 - f. Alarm State Change Delay (samples)
- 4. Click **Save** button to complete the setting.
- 5. Repeat the steps for all PDUs.

oo _s	Â7	
	B. 13	
	X	
		07/0
1:4		
DU Power Threshold (W)		
High Critical		
Enable High Critical		
High Warning 0		
Enable High Warning		
Low Warning 0		
Enable Low Warning		
Low Critical 0		
Enable Low Critical		
Reset Threshold 0		
Alarm State Change Delay (Samples) 0		

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Input Phases

The PDU will send alert notifications when a phase current and voltage alarm crosses above or below the settings you specify in the Input Phase Threshold.

Below are the steps to change the Input Phase Settings and alarm notifications,

- 1. Choose the **Input Phases** tab in the PDU Threshold page.
- 2. Click 🖉 icon to edit/change the Phase Current Settings.

	enLogic	Outlet Metered, Outlet Swi	tched PDU 3.0.1	⊕ ?	License		
	命 🕄 🏶 🗞		L	1 8 8 5	Welcome admin → Logout		
PDU Thresholds							
Device Detection Threshold(mA)	old 🖉						
		Power Threshold	Input Phases Circuit Breake	r Control Management	External Sensors		
			1				
Phase Current	Reading(/	A) Low Critical	Low Warning	High W	Varning	High Critical	
Phase1	0.0	0.0	0.0	22.0		28.0	
Phase2	0.0	0.0	0.0	22.0		28.0	Ø
Phase3	0.0	0.0	0.0	22.0		28.0	Ø

3. In the **Input Phase Current Alarm Setting** dialog boxes, change the fields as needed:

- Low Critical (A)
- Low Warning (A)
- High Warning (A)
- High Critical (A)
- Reset Threshold (A)
- Alarm State Change Delay (samples)
- 4. Click **Save** button to complete the setting
- 5. Repeat Steps 1 to 4 for all PDUs

6. Click on the *le* icon to edit/change the Phase Voltage Settings

ow Critical (A)				
D				
Enable Low Crit	ical			
0				
Low Warning (A)			
0				
Enable Low Wa	rning			
0				
High Warning (A	A)			
22				
Enable High Wa	irning			
\checkmark				
High Critical (A)				
28				
Enable High Cri	tical			
\checkmark				
Reset Threshold	d (A) b			
1				
Alarm State Cha	ange Delay	(Sample	s)	
0				

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- COCCUSION CONTRACTOR 7. In the **Input Phase Voltage Alarm Setting** dialog boxes, change the fields as needed:
 - Low Critical (V) •
 - Low Warning (V) •
 - High Warning (V) •
 - High Critical (V) •
 - Reset Threshold (V) •
 - Alarm State Change Delay (samples) •
 - 8. Click **Save** button to complete the setting.
 - 9. Repeat the steps for all PDUs.

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Circuit Breaker

The PDU will send alert notifications when a circuit breaker amperage crosses above or below the settings you specify in the Circuit Breaker Threshold.

Below are the steps to change the Circuit Breaker Settings and alarm notifications,

- 1. Choose the **Circuit Breaker** tab in the PDU Threshold page.
 - Low Critical (A)
 - Warning Thresholds
 - High Warning (A)
 - High Critical (A)
 - Reset Threshold (A)
 - Alarm State Change Delay (samples)
- 2. Click **Save** button to complete the setting.
- 3. Repeat the steps for all PDUs.

	dit
aı	nk
L(ии Critical (A)
E	nable Low Critical
L(w Warning (A)
E	nable Low Warning
н 1	igh Warning (A) 1
E	nable High Warning
н 1-	igh Critical (A) 4
E	nable High Critical
R 1	eset Threshold (A)
A 0	arm State Change Delay (Samples)

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Circuit Breaker List

enL	OGI	C by nvent		0,	
Circui	t Break	ker List			
PN	Manu factur er	Manufacturer Part Number	Amperage	AIC	Application
810-00975	BSB	B3D1-16.0-240-1500B-A2-C1-G-K	16A,1P	5KA	Vertical
810-00977	BSB	B3D1-20.0-240-1500B-A2-C1-G-K	20A,1P	5KA	Vertical
810-00976	BSB	B3D1-20.0-240-2520B-A2-C1-G-K	20A,2P	5KA	Vertical
810-00980	BSB	B2R1-16.0-250-1200B-A2-F2-K-C	16A,1P	5KA	Horizon tal
810-00978	BSB	B2R1-16.0-250-1300B-A2-F2-K-C	16A,1P	5KA	Vertical
810-00981	BSB	B2R1-20.0-250-1200B-A2-F2-K-C	20A,1P	5KA	Horizon tal
810-01151	BSB	B2R6-20.0/127-1300B-A2-F1-K-K	20A,1P	5KA	Vertical
810-00982	BSB	B2R1-20.0-250-2220B-A2-F2-K-C	20A,2P	5KA	Horizon tal
810-00979	BSB	B2R1-20.0-250-2320B-A2-F2-K-C	20A,2P	5KA	Vertical
810-01203	BSB	B3H3-20.0/240-1100B-A2-F2-G-K	20A,1P	10KA	Vertical
810-01204	BSB	B3H3-20.0/240S-2100B-A2-F2-G-K	20A,2P	10KA	Vertical
810-01205	BSB	B3H3-16.0/240-1100B-A2-F2-G-K	16A,1P	10KA	Vertical
810-01206	BSB	B2HR6-16.0/240-1A00B-A2-F1-K-K	16A,1P	10KA	Vertical
810-01207	BSB	B2HR6-20.0/240-1A00B-A2-F1-K-K	20A,1P	10KA	Vertical
810-01208	BSB	B2HR6-20.0/240-2A20B-A2-F1-K-K	20A,2P	10KA	Vertical
810-01209	BSB	B2HE4-16.0/240-1200B-A2-F1-K-K	16A,1P	10KA	Horizon tal
810-01210	BSB	B2HE4-20.0/240-1200B-A2-F1-K-K	20A,1P	10KA	Horizon tal
810-01211	BSB	B2HE4-20.0/240-2230B-A2-F1-K-K	20A,2P	10KA	Horizon tal



Control Management

The PDU will send alert notifications when an outlet wattage crosses above or below the settings you specify in the Control Management Threshold.

1. Choose the **Control Management** tab in the PDU Threshold page.

en	LOGIC Outlet Metered,	Outlet Switched PDU 1874	? License		
ក្រ	1 · · · · · · · · · · · · · · · · · · ·		∆ ở የ 8 🖬 [∨]	/elcome → Logout admin	
PDU Thresholds					
Device Detection Threshold	9				
Threshold(mA) 150					
		Power Threshold Input Phases	Circuit Breaker Control Management Extern	al Sensors	
			1 2		
		Bank#1 Bank#2	Bank#3 Bank#4 Bank#5 Bank#6		
Name	Low Critical	Low Warning	High Warning	High Critical	
OUTLET 1	0	0	0	0	Ø
	~				0
OUTLET 2	U	U	0	0	Ø
OUTLET 3	0	o	0	0	Ø
OUTLET 4	0	0	0	0	Ø
OUTLET 5	0	0	0	0	Ø
OUTLET 6	0	0	0	0	Ø

- 2. Click / icon to edit/change the Control Management Settings,
 - Low Critical (W) •
 - Low Warning (W) •
 - High Warning (W) •
 - High Critical (W) •
 - Reset Threshold (W) •
 - Alarm State Change Delay (samples) •
- 3. Click **Save** button to complete the setting.
- 4. Repeat the steps for all PDUs.

ι	ow Critical (W)
1	
	Set Lower Critical
(
L	ow Warning (W)
2	1
5	Set Lower Warning
(
+	ligh Warning (W)
	3
	Set High Warning
(2
	ligh Critical (W)
2	i de la construcción de la constru
5	Set High Critical
(
F	Reset Threshold (W)
1	
ł	larm State Change Delay (Samples)

Edit



The PDU will communicate about the sensor location, alarms, notifications, and details. The External Sensors section displays the connected sensors on the PDU. Choose the External Sensors tab PDU Threshold page.

- 1. Choose the **External Sensors** tab in the PDU Threshold page
- 2. Click of icon to edit/change the External Sensors Settings,
 - Low Critical
 - Low Warning
 - High Warning
 - High Critical
- 3. Click **Save** button to complete the setting.
- 4. Repeat the steps for all PDUs.

O _*	
	A. A
	a AT
Edit	
External Sensors(1:1)	
High Circuit 31	X
Emelow High Onlical	
High Warning 29	
Enable High Warring	
Low Warring 12	
Enable Law Warring	
Low Orbit	
Control Low Critical	
Save	



Rack Access Control

This page allows you to configure the Rack Access functions to control and monitor the Racks.

- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select Rack Access Control to view information.

		enlogic Outlet M	etered, Outlet Switched PDU 10	 A & P	C Licanse C Licanse Welcome E+ Logout		
R	Rack Access Cont	rol					Actions ~
	PDU	Card ID	Aisle U	Jser	Date/Time	Action	New Remote Control
	1	12345678	Cold Aisle C	Card1	1/5/2010 11 22 51	×	AutoLock Setting

On the top- right side of the Rack Access Control page, Click the below options as required:

- Actions
- New

To Assign new Rack Access to the PDU

mart Rack	
PDU1	\bigtriangledown
Usemame	
Card ID	
Alsie	
Hot Aisle	\bigtriangledown

E.

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Remote Control

Used to perform Lock, Unlock and Close functions.

emote Control	
PDU1	\bigtriangledown
Alsie	
Hot Aisle	\bigtriangledown



AutoLock Settings

To assign Automatic locking functions within a time limit to the PDU

	er e	
	1. 170 °	
		200
		Con Alton
dit		
tol ock Setting		
torock setting		
PDU1	7	~
Alsie	~	7
Alsie Hot Aisle		***
Alsie Hot Aisle Interval(1-30 Minutes)		

Handle and Compatible Card Types

Below are the card lists which are supported on the different swing handle,

- 1. MYFARE® Classic 4K
- 2. MYFARE® Plus 2K
- 3. MYFARE® DESFire 4K
- 4. HID® iCLASS



Smart Rack Control

This page allows you to configure the Smart Rack Access functions to control and monitor the Racks. It is used to set up the access control server door Handle (above 4 Handles and Compatible Cards). So, the user can use the editing option to modify the data as required. A total of 200 cards are compatible with the smart rack control.

- 1. Click on the **Settings** icon to dropdown the Settings menu.
- 2. Select **Smart Rack Control** to view information.

	enLo	OGIC	Outle	et Metered,	Outlet Sw	itche	ed PD	DU 1	.0.6.4			? License	
	俞	0	€\$		Δ	00	9	₿	ē	Welcome manager	₿	Logout	
Rack Access Cont	trol											Actions	~
Card Id Us	sername		Card PIN	Start Ti	me			Ex	piration	Time		Actions	
12345678 ad	dmin		******	8/3/202	20, 4:00:00 PM			8/2	24/2020	, 4:00:00 PM		Ø 🖞	
												10	

3. Click icon to edit/change the Rack Access Control Settings

- Enter the **Card ID** to ensure security and restrictive access.
- Enter **Username** of the card holder.
- Enter **PIN** (as set in card configuration page).
- Enable or Disable **Temporary User** as per user status
- Click **Save** button to complete setting.

a	
rd ID	
ername	
1	
ase set PIN length	in Card Configuration page. Default length i
mporary User	

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4. On the top-right side of the Rack Access Control page, Click the below options as required:

Action

5. On the top-right side of the Rack Access Control page, click the below options as required. Click on the Actions, Edit button

- 6. To add card details, select **Add Card**.
 - Enter the Card ID
 - Enter **Username** of the card holder.
 - Enter **PIN** (as set in card configuration page)
 - Enable or Disable Temporary User as per user status
 - Click **Save** button to complete setting.

7. To edit rack access details, select **Rack Access Settings**.

- Select **Aisle Control** to **Standalone** or **Combined** as per rack.
- Set Autolock Time.
- Set Door Open Time.
- Set Max Door Open Time.
- Select the access type in **Work Mode**.
- Click **Save** button to complete setting.

Edi	t
ack /	ccess Settings
Aisle C	ontrol
Hot/Co	ld Standalone
Autoloc	k Time(Sec)
10	
Door O	pen Time(Sec)
10	
Max. D	oor Open Time(Sec)

COC CARACTER



8. To edit handle settings, select **Rack Access Settings**. – Enter **Handle** name for identification.

- Enter **ACU Name** for identification.
- The Firmware Version and Hardware Version are non-editable fields and are filled by default in their respective Versions.
- Enter **Serial** number of the handle. Click **Save** button to complete setting.

Edit

Handle Settings

Handle PDU 1 - Cold	
ACU Name	
COLD AISLE	
Work Mode	
RFID Only	
Firmware Version	
Hardware Version	
Serial	
4C0000331	

9. Select **Remote Control** to perform **Lock**, **Unlock** and **Close** functions.

10. Select **Beacon Settings** to **Enable Beacon** Lock and **Color**. Click **Save** button to complete setting.

Edit
Remote Control
PDU PDU 1 - Cold
Lock Unlock Close
Edit
Beacon Settings
Function Standby
Color Green
Save



11. Select **Status LED Settings** to configure **Function** and **Color** of the LED. Click **Save** button to complete setting.

_			
	2	iŧ.	
	u		

Status LED Settings

Function Standby On			
Color Green			
Save)		

AND COLORISA COLORIS COLORIS

12. Select **Sensor Harness Configuration** to configure the sensor harness. Click **Save** button to complete setting.

Keypad Settings				
Pin Mode				
Pin Length				
4				



User Settings

The Advantage Secure PDU comes with a standard **Admin** profile and a standard **User** profile.

- The Admin profile is typically the system administrator, and it has the "Admin Role" with full operating permissions.
- The default User profile includes the default "User Role" permissions. The Admin user must add all other user privileges. Users are defined by their unique login credentials and by their user role.

Before setting up the user profile, determine the roles required. Each user must be given a Role. These Roles define the permissions which are granted to the user.

1. Click on the **User Settings** icon to dropdown the User Settings menu.

💠 LNX board	- Agile B 💠 LNX b	oard - Ag	ile B 💠 LCES board - A	Agile G Com	Psych Corporat 🔇 Sign In	S NetShelter Rack PD	Microsoft Office He	o 🔇 Shar	ePoint 🔇	Monthly Operation	Redirecting	S Enlogic 2.0
		en	LOGIC	Outlet M	etered, Outlet Swite	ched PDU 3.1.3		(? Lia	ense		
	តា	${f O}$	🐵 2o			∆ & §	080	Welcome admin	[→ Log	out		
User Setti	ings									•F	Add Role	Add User
Users					LDAP Configuration			Rad	ius Config	uration		
Username	e Unit Role	Action			Enable	×		Er	able 🗙			
admin	° F admin	Ø			LDAP Server			Se	rver			
		•			Port	389		Po	ort 18	12		
user	° F user	Ø	X		Туре	OpenLDAP		Se	ecret ***	****		
manager	° F manager	Ø	×		Base DN							
					Bind Password	****						
					Search User DN							
					Login Name Attribute							
					User Entry Object Class							
Roles					Session Management 🤌			Pas	sword Poli	cy Ø		
Role	Description /	Action			Sign-In retries allowed	\checkmark		Pa	issword Ag	ng Interval	60d	
admin	admin operation				Number of Retries Allowed	3		M	nimum Pas	sword Length	8	
user	user operation				Session Timeout Value	10 [Minutes of Inactivity]		M	aximum Pa	ssword Length	32	
manager	redfish user				Lockout Time	3 [Minutes]		Er	force at lea	ist one lower case chara	acter 🗙	

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Role	Default Permissions	Sec.
Admin	Complete system permissions (that cannot be modified or deleted)	1º
User	Limited permissions that can be modified or deleted. By default, these permissions are: Change own Password	
Manager	Complete system permissions (that cannot be modified or deleted)	

On the top- right side of the User Settings page, Click the below options as required

Add Users

To create a new user profile:

- 1. Click on the **User Settings**, the user settings page opens.
- 2. Click **on** (Add User) the icon, to create a new user profile.
- 3. The add user window opens, enter the information:
 - Username
 - Password
 - Confirm Password
- 4. In the add user window assign role to set admin, user, or manager privileges.
- 5. Select **Save** to save the new user profile.

Modify

To edit the existing user profile,

- 1 In **User Settings** select the Edit next to the username to modify.
- 2 Update the user profile and select **Save** to save the new user profile.

Delete:

To delete the existing user profile,

- 1 Go to User Settings.
- 2 Go to the username.
- 3 Select the X next to the username to delete.

lear			
User			
Username			
Password			
Confirm Password			
Role			
0	Č.		
O Administrato			
O Administrato			

Iser	
Usemame	
user	
Password	
•••••	
Confirm Password	
tole	
O Administrator	
Administrator User	



LDAP Server Settings

COCCURATE ON COL To setup LDAP to access the Active Directory (AD) and provide authentication when logging into the PDU via the Web Interface:

- 1 In **User Setting,** go to LDAP Configuration.
- Select the LDAP Enable. 2
- 3 From the **Type** (Type of LDAP Server) drop down menu, select Open LDAP.
- 4 Type Port number. Note: For Microsoft, this is typically 389.
- 5 Type Password in the Bind Password box
- 6 In the Base DN field, type in the account. Example - CN=myuser, CN=Users, DC=EMEA, DC=mydomain, DC=com
- Search User DN. 7
- 8 Type SAMAccountName (typically) in the Login Name Attribute field.
- 9 Type Person Name in the User Entry Object Class field.
- 10 With these LDAP settings configured, the Bind is complete.

LDAP Configuration	
Enable	\times
LDAP Server	
Port	389
Туре	OpenLDAP
Base DN	admin
Bind Password	****
Search User DN	
Login Name Attribute	
User Entry Object Class	



11 Once the LDAP is configured, the PDU must understand for which group authentication occurs. A role must be created on the PDU to reference a group within Active Directory (AD).



- 12 Within the Web Interface, go to **User Settings**, click on the **Add Role** button
- 13 Type **Role Name,** which was created in AD *i.e., PDUAdmin.*
- 14 Administrator privileges must be enabled





- 15 Once LDAP authentication is ready to use.
- 16 To test this, click **save**, then click **``LDAP Configuration**" again and type **Active Directory username/password** into the test box.
- 17 Click **Test LDAP Configuration**. If a box pops up with all green "SUCCEEDED" (no X's), the LDAP is successfully configured.

Radius Configuration

- 1. In the **User Settings** go to **Radius Configuration** and click the edit pencil.
- 2. Select the Enable button.
 - Type Server IP address, Port number, and Secret in the corresponding field.
 - Click **save** button to complete the Radius authentication.

adius Configuration	
Enable	
Server	
Port	
Secret	

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Roles

In the **User Settings,** go to **Roles** to change user roles, privileges, and settings.

To create a new role:

- 1. Click **Add Role** button on the top right corner.
- 2. type the **Role Name** and **Description**.
- 3. In the Privileges tab, click Edit.
- 4. Select the privileges to add to that user role. Set parameters if necessary.
- 5. Click **OK**.
- 6. Click **Save**.

Role Name	
Description	
Privileges	



To modify a custom user role:

- 1. Select the role.
- 2. click Edit Button.
- 3. Edit the role name and privileges as needed. click **Save**.

Ed	1:+
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Role

Role Name	
admin	
Description	
admin operation	
Privileges	
Administrator Privileges	

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To delete a user role:

- 1. Select the role.
- 2. Click **Delete** Button.
- 3. click **Yes** to confirm the change.

Roles			
Role	Description	Action	
admin	admin operation	Ø	×
user	user operation	Ø	×
manager	redfish user	Ø	×



Session Management

COCCEPTER STATES Session management supports the users to manage the Sign-In retries, number of retries allowed session timeout value and lockout time.

- Click on the *conto edit/change the Session Management settings.* 1.
- Add the required data and click on **Save** button to update the new settings. 2.

Session Management 🤌	
Sign-In retries allowed	\checkmark
Number of Retries Allowed	3
Session Timeout Value	10 [Minutes of Inactivity]
Lockout Time	3 [Minutes]
	c [limiterco]

* DI 3

Edit

Session Management

Number of Retries Allowed	
3	
Session Timeout Value	
10 min	
Lockout Time	
3 min	


Password Policy

COCCUPATION OF CONTRACT OF CONTRACT. You can set a requirement for users to change their password at set intervals using the Password Aging Interval policy. You can also specify criteria for passwords to ensure that your users enter strong passwords.

- Go to User Setting, click on **Password Policy**. 1.
- If desired, choose a password aging interval from 2. the Password Interval dropdown menu.
- If you wish to specify password criteria, enable 3. the Strong Password radio button.

Password Policy

Password Aging Interval	60d
Minimum Password Length	8
Maximum Password Length	32
Enforce at least one lower case character	\times
Enforce at least one upper case character	×
Enforce at least one numeric character	\checkmark
Enforce at least one special character	×

Set the Minimum Password Length and Maximum 4. Password Length from the dropdown menus.

Note: Minimum password length cannot be below 8 characters and the maximum allowed up to 32.

- 5. Enable the **checkboxes** to force the users to use specific types of characters within the password.
- Click Save button to complete the settings. 6.

Edit

Password Policy Password Aging Interval



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SNMP

Simple Network Management Protocol (SNMP) is used to manage the Advantage Secure PDU(s) remotely. SNMP allows the user to monitor and detect network faults and to even configure variable data in the PDU.

Enable the	SNMP	in the	Web U	I (Refer	SNMP	Management)

Working with MIB Browser

Download the MIB browser and install it.

1. Open the **MIB browse and** Type the IP address of the PDU.

			iReasoning MIB Browser		۵ ۵
File Edit Oper	ations Tools Bookmarks	Неір			
Address: + 10.1).105.170	 Advanced 	OID: .1.3.6.1.4.1	Operations: Get Next	👻 🌈 Go

- 2. Click the Advanced button, in the **Advanced Properties of SNMP Agent** window , enter the respective Port, Read Community and Write Community information.
- 3. Select the SNMP manager version- 1 / 2 / 3.

Adv	vanced Properties of SNMP Agent	8
Address Port		
Read Community		
Write Community		
SNMP Version		•
	Ok Cancel	

3	
SNMP General	
Enable 🗸	
SNMP Version V1/2c&V3	



Loading the MIB file

Click on File and select Load MIBs

The **Open** window comes to view:

- 1. Select the latest version of the **mib file**
- 2. Click **Open->** The **mib file** gets loaded.
- 3. The MIB Tree comes to view on the SNMP MIBs-> Expand the MIB Tree and select the iso.org.dod.internet
- 4. Right click on the **iso.org.dod.internet** and select **walk** to monitor the PDU data.



6.7



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Redfish

Redfish API is tested using POSTMAN, which is a Google Chrome extension app for GET, POST and DELETE method requests.

- 1. To setup the **Redfish access**, type the PDU IP in chrome browser and login to the PDU using the credentials.
- 2. Go to Network Settings and enable RESTapi Access Configuration.

Network Settings					Set Certificate Ke	Edit
Ethernet-1 IP Configuration	P	Ethernet-2 IP Configu	ration Ø	Web/ RESTapi Acces	s Configuration	Web/ RESTapi Access Configuration
Boot Mode	DHCP	Boot Mode	Static	Web Access	https	Web Access Https
IPv4 Address Network Mask	192.168.2.3 255.255.255.248	IPv4 Address Network Mask	10.10.106.33 255.255.252.0	Web Port RESTapi Access	443 ~	Web Port Default 80 for Http, 443 for Https
Default Gateway	0.0.0.0	Default Gateway	10.10.104.1	Certificate	View Certificate	RESTapi Access Enable
IPv6 Link Local Address	fe80.:ca45 44ff fef9 ff61	IPv6 Link Local Address	fe80ca45.44ff fef9 ffd2			SSL Certificate
		IPv6 Auto Configured Address	2001:c0a8 aa01:0:ca45:44ff fef9 ffd2			Choose File No file chosen SSL Certificate Key
						Choose File No file chosen
Network Time Protocol(NTP). Enable	×		Date/Time Settings	2021/01/29	<u>Davlight</u> Enable	Save

- 3. Click Save, Confirm, and apply changes. The PDU will reboot
- 4. Open **POSTMAN** app. Add the basic authentication header, which is required for all the query requests.

CONTRACTOR



_	u un	iù quely the request.	
-	٣	https://10.105.219/redfish/v1	Send •
	Raw	Preview Visualize JSON 🔻 🚍	
£	"Id": "Acco "Json" "Json" "@oda "Name "@oda "Mana "Mana "J,	<pre>: "RootService", ountService": { "@odata.id": "/redfish/v1/AccountService" nSchemas": { "@odata.id": "/redfish/v1/Schemas" ata.type": "ServiceRoot.v1_6_0.ServiceRoot", e": "Redfish Root Service", ata.id": "/redfish/v1", ager": { "@odata.id": "/redfish/v1/Managers" "@odata.id": "/redfish/v1/Managers"</pre>	
	"Powe " "Sess }, "link	<pre>PDistribution": { "@odata.id": "/redfish/v1/PowerEquipment/RackPDUs" sionService": { "@odata.id": "/redfish/v1/SessionService" ks": { "Session": { "@odata.id": "/redfish/v1/SessionService/Sessions" "Session": Setting Service/Sessions" "@odata.id": "/redfish/v1/SessionService/Sessions" "@odata.id": "/redfish/v1/SessionService/Sessions" "@odata.id": "/redfish/v1/SessionService/Sessions" "Setting Second Service/SessionService/SessionService/Second Service/SessionService/SessionService/Second Service/Second Service/</pre>	
5	} }, "Even	} ntService": { "@ndata.id": "/redfish/v1/EventService"	

For **POST** request, include the json object type along with the basic authentication header. Create a session using POST method:

🥖 Hom	e Workspaces × API Network × R	Reports Explore		Q Search Postman		6	_{ମ୍+} Invite ଔ	\$ [°] ¢	í 🌔	Upgrade
A My Work	kspace New Import	🐼 Overview 🕼 Cre	ate Monitor	GET https://10.10.105.58/rec ●	+ •••			No Environ	ment	~
Collections	+ =	https://10.10.105.58/redfish/v1/Pov	werDistribution/{pdu	_id}/PowerMeasurement/Loads	egmentMeasu	urement		Save	~	/
00 APIs		GET v https://10.1015.58/redfish/v1/PowerDistribution/(pdu_id)/PowerMeasurement/LoadsegmentMeasurement							Send 🗸	
		Params Authorization • Hea	ders (9) Body	Pre-request Script Tests	Settings					Cookies
Environments	TAL	Type Basic Aut	h ~ (!)	Heads up! These parameters he recommend using variables. Le	old sensitive dat arn more about	ata. To keep this data secure while It variables 7	e working in a collab	orative env	rironment,	we ×
Mock Servers	You have no monitors set up	The authorization header will be auto generated when you send the reques	omatically st.							
Monitors	to check for its performance and response.	Learn more about authorization >	User	Username		admin				
ef ⁰	Create a Monitor		Pass	sword		123456789				
Flows						Show Password				
History										

6,3



COLORADO COLORADO POST query the URL http://{pdu_ip}/redfish/v1/SessionService/Sessions along with the two headers (basic auth and json object type) and the body:

1. https://{pdu_ip}/redfish/v1/SessionService/Sessions

```
{
"username":"admin",
"password":"123456789"
}
```

Postman File Edit View Help	- 0 ×
+ New Import Runner 🕞 🗸 🔡 My Workspace	e v A Invite 😵 🗞 🌣 🗘 🛇 Sign In
	ET h_• POST h• POST h• GET h_• -> + coo
On Untitled Request	BUILD 🧷 📃
POST	Send 🔻 Save 👻
Params Authorization Headers (11) Body Pre-request Script Tests Settings	Cookles Code
none form-data x-www-form-urlencoded raw binary GraphQL JSON	Beautify
1 { 2 "username":"admin", 3 "password":"123456789" 4 } 5	
Body Cookies Headers (6) Test Results	😫 Status: 201 Created Time: 18.46 s Size: 205 B Save Response 🔻
Server ①	Enlogic/1.4.0
X-Auth-Token ③	148187123
Location ()	/redfish/v1/SessionService/Sessions/148187123 -
Connection (j)	keep-alive
Content-Type ()	application/json
Content-Length ①	0

· · · · ·



2. https://{pdu_ip}/redfish/v1/AccountService/Accounts

{
"username":"new_user",
"password":"11223344",
"email":" admin@mycompany.com",
"chkenable":true,
"frpasschk":true,
"rolename":"manager",
"temperature":1
}





3. PDU1 – Outlet Control

Contraction of the second seco https://{pdu_ip}/redfish/v1/PowerEquipment/RackPDUs/1/Outlets/OUTLET5/ **Outlet.PowerControl**

{ "OutletNumber":6, "StartupState":"off", "Outletname":"OUTLETFive", "OnDelay":5, "OffDelay":6, "RebootDelay":7, "OutletStatus":"off" }

P File	stman Edit View Help								-	٥	×
+	New Import Runner 🗔 🗸 🌐	My Workspace	∕ °+ Invite				<i>\$</i> \$	c, tộ	¢ (🤉 Sig	n In
1) 17	GET h	GET h GET 1	n	POST h.	GET h	> + •••	No Environme	ent	Ŧ	\odot	-0
00	Untitled Request								BUILD		
	POST	/Outlet.PowerContro	bl					Send	•	Save	Ŧ
	Params Authorization Headers (11) Body Pre-request Script Tests	Settings							C	Cookies	Code
	🔵 none 🔍 form-data 🔍 x-www-form-urlencoded 🛛 🧶 raw 🔍 binary 🔍 GraphQL	JSON 🔻								Beau	utify
	<pre>1 { 2 "OutletNumber":5, 3 "StateupState":"off", 4 "OutletName":"OUTEFFive", 5 "On0elay":6, 6 "Offolay":7, 7 "RebootDelay":8, 8 "OutletStatus":"off"</pre>										
	9 2										
	Body Cookies Headers (4) Test Results				¢	Status: 200 O	C Time: 15.48 s	Size: 160 B	Save	Respon	se 🔻
	Pretty Raw Preview Visualize JSON *										Q
	1 X 2 "OutletNumber": 5,										Т
	4 b										I

5. B. D



4. PDU2 – Outlet Control https://{pdu_ip}/redfish/v1/PowerEquipment/RackPDUs/2/Outlets/OUTLET3/ Outlet.PowerControl

⊘ Postman File Edit View Help	- 0 ×
+ New Import Runner 🖓 × 🔠 My Workspace × 🗚 Invite	रू 🗞 🕼 🗘 🛇 Sign In
10 (¬] ←) GET h● GET h● GET h● [DELETE● GET h● GET h● GET h● GET h● GET h● GET h● POST h.● POST h.● GET h●	→ + ∞ No Environment • ⊚
So Untitled Request	BUILD 🧷 🗉
POST https://10.106.4/redfish/v1/PowerEquipment/RackPDUs/2/Outlets/OUTLET3/Outlet.PowerControl	Send v Save v
Params Authorization Headers (11) Body Pre-request Script Tests Settings	Cookies Code
Postman File Edit. View Fielp Post File Edit. View Fielp File Edit. View Fi	Beautify
1 d 2 "OutletNumber":3,	
3 "StateupState":"off", 4 "Outletname":"OUTLET three",	
5 "OnDelay":6,	
6 °OffDelay*:7,	
<pre>% Reporteday:s, % OutletStatus:"off"</pre>	
9)	
Body Cookies Headers (4) Test Results	Status: 200 OK Time: 21.38 s Size: 160 B Save Response 🔻
Pretty Raw Preview Visualize JSON * 🛱	Ē Q
1 👩	T
2 "Outlethumber": 3, 3 "OutletStatuer" "neff"	
4	1

Note : Every highlighted text must be provided in the body section as shown in captured screenshots

Along with authorization & X-Auth-Token generated

1. 1013



COCCART COCCA For **DELETE** request, type the URL for session or users want to delete along with the basic authentication and send

🧐 Postman File Edit View Help				-	
🖸 New 🔻 Import R	Runner 📴 -	🚦 My Workspace 🔹	· •	t 🗿 sviic der 🛛 🖉 🌲 🖤) Sign In
C Filter History Collections Vou haven't created any collections yet. Postman Collections yet. Postman Collections yet. Postman them easies to access and run.	http://192.168.1.126/ http://192.168.1.126/ DELETE http://192.168.1.126/ Authorization Headers (1) Body TYPE Basic Auth The authorization header will be automatically	+ + + + + + + + + + + + + + + + +	edmin ••••••	No Environment V Params Send V	Save ~
	generated when you send the request. Learn more about authorization Preview Request Body Cookies Headers (4) Test Ru Pretty Raw Preview JSON V	endes	Show Password	Status: 200 OK Time: 316 ms	Size: 145 B
	1 * K 2 "Session Deleted": 1185210873 3 }				

1. https://{pdu_ip}/redfish/v1/AccountService/Accounts/{username}

🥝 P File	ostman Edit View Help	– Ø ×
	New Import Runner 🕞 V 🔠 My Workspace V 👫 Invite	弦 & 袋 ಧ ♡ Sign In
1) []	GET h	\rightarrow + ∞ No Environment \bullet \odot
%	Untitled Request	BUILD 🧷 📃
	DELETE	Send v Save v
	Params Authorization Headers (11) Body Pre-request Script Tests Settings	Cookies Code
	● none ● form-data ● x-www-form-urlencoded ● raw ● binary ● GraphQL JSON ▼	Beautify
	1 2	
	Body Cookies Headers (4) Test Results	Status: 200 OK Time: 990 ms Size: 150 B Save Response ▼
	Pretty Raw Preview Visualize JSON 🔻 🚍	■ Q
	1 2 "User Deleted": "new_username" 3	T

HT



2. https://{pdu_ip}/redfish/v1/SessionService/Sessions/{session_id}

P File	stman Edit View Help				- 0	×
	New Import Runner 🗔 🗸	品 My Workspa	ce ~ Å Invite	必 & 袋	\$ ♡	
1	←) GET h● GET h● [DELETE● GET h	● GET h● GET h● GET h●	GET h DEL h POST h GET h	→ + ∞∞ No Environment	* @	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Untitled Request				BUILD	
	DELETE • https://10.10.106.4/redfish/v1/SessionSe	rvice/Sessions/964194279		Send	▼ Sa	ve 🔻
	Params Authorization • Headers (11) Body •	Pre-request Script Tests Settings			Cook	ies Code
	ТҮРЕ	Username	admin			
	Basic Auth 💌	Password				- I
	The authorization header will be automatically generated when you send the request. Learn more about authorization		Show Password			
	Body Cookies Headers (4) Test Results		¢	Status: 200 OK Time: 192 ms Size: 148 B	Save Res	ponse 🔻
	Pretty Raw Preview Visualize JSON <b>v</b>	<b>1</b>				Q 🗐
	1					Т
	3					I



## **Redfish URLs Supported with GET Method**

#### Session Service

		10 /2 C.S.
Redfis Session	sh URLs Supported with GET Method Service	
S.No	URL	A CONTRACTOR
1	https:// <ip_addr>/redfish/v1</ip_addr>	
2	/redfish/v1/SessionService	
3	/redfish/v1/SessionService/Sessions	
4	/redfish/v1/SessionService/Sessions/{session_ids}	
Account	Service	

#### Account Service

S.No	URL
1	/redfish/v1/AccountService
2	/redfish/v1/AccountService/Accounts
3	/redfish/v1/AccountService/Accounts/{userid}
4	/redfish/v1/AccountService/Roles
5	/redfish/v1/AccountService/Roles/{rolename}

#### Managers

S.No	URL
1	/redfish/v1/Managers
2	/redfish/v1/Managers/manager
3	/redfish/v1//Managers/manager/NetworkProtocol
4	/redfish/v1//Managers/1/LogServices
5	/redfish/v1//Managers/1/LogServices/Log
6	/redfish/v1//Managers/1/LogServices/Log/Entries
Motrice	

#### Metrics

S.No	URL
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Metrics

#### **Power Equipment**

S.No	URL
1	/redfish/v1/PowerEquipment
2	/redfish/v1/PowerEquipment/RackPDUs
3	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}

617 1.1.1.



#### Branches

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Branches	s		
S.No	URL	Ye	
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Branches	Q	
2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id} /Branches/#cbnumber	V	
3	/redfish/v1/PowerEquipment/RackPDUs/{pdu id}/Branches/A		
4	/redfish/v1/PowerEquipment/RackPDUs/{pdu id}/Branches/B		
5	/redfish/v1/PowerEquipment/RackPDUs/{pdu id}/Branches/C		
6	/redfish/v1/PowerEquipment/RackPDUs/{pdu id}/Branches/D		
7	/redfish/v1/PowerEquipment/RackPDUs/{pdu id}/Branches/E		
8	/redfish/v1/PowerEquipment/RackPDUs/{pdu id}/Branches/F		

#### Outlets

S.No	URL
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Outlets
2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Outlets/#outletnumber

#### Sensors

S.No	URL	
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors	
2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/Power{cbnum#}	
3	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/Current{cbnum#}	
4	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/Voltage{cbnum#}	
5	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/CurrentOUTLET#	
6	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/VoltageOUTLET#	
7	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/PowerOUTLET#	
8	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/EnergyOUTLET#	
9	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/PowerMains1-6 (for WYE	
	type PDUs)	
	<pre>/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/PowerMains1-3 (for DELTA type PDUs)</pre>	
10	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/CurrentMains1-3	
11	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/VoltageMains1-6 (for	
	WYE type PDUs)	
	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/VoltageMains1-3 (for	
	DELTA type PDUs)	
12	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/FreqMains	
13	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/PDUPower	



#### Mains

en	LOGIC by nvent	0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
Mains		COCCO PARTICICA
S.No	URL	
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Mains	
2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Mains/AC1	

#### Redfish URLs Supported with POST Method

S.No	URL
1	/redfish/v1/SessionService/Sessions
2	/redfish/v1/AccountService/Accounts
3	/redfish/v1/PowerEquipment/RackPDUs/{pduid}/Outlets/OUTLET#/Outlet.PowerControl
4	/redfish/v1/PowerEquipment/RackPDUs/{pduid}/Outlets/OUTLET#/Outlet.PowerControl
5	/redfish/v1/PowerEquipment/RackPDUs/4/Outlets/OUTLET24/Outlet.PowerControl

#### Redfish URLs Supported with DELETE Method

S.No	URL
1	/redfish/v1/AccountService/Accounts/{username}
2	/redfish/v1/SessionService/Sessions/{session_id}



## The Command Line Interface (CLI)

The Command Line Interface (CLI) is an alternate method used to manage and control the PDU status and parameters, as well as basic admin functions. Through the CLI a user can:

- Reset the PDU
- Display PDU and network properties
- Configure the PDU and network settings
- Switch outlets on/off
- View user information

The CLI can be accessed over a serial connection using a program such as HyperTerminal.

## Logging in with HyperTerminal

To login through HyperTerminal, set the COM settings to the following parameters:

- Bits per second: 115200
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None



## **CLI Commands and Prompts**

**CLI Options** 

1. To display a list of available options in the CLI, **type '?'** in the command prompt. This will display the 5 main menus and sub menus of command options available: sys, net, usr, dev & pwr.

EN2.0>?
sys: system setting
usage:
sys [date/time/ntp] [2012-09-11/14:16:20/133.100.11.8 133.100.11.9 (server1 server2)]
sys [ver/def/rst]
sys upd [conf/all]
sys log [del]edit] [event]data] [on]off] [interval]
sys leacolor [pauld]/all] [red/green/yellow/blue/pink/cyan/white]
sys dualinput get sys dualinput set [NA/EMEA]
sys dualinput set [NA/LINEA]
user: user setting
usage:
usr list
usr login
usr unlock [username]
net: network configuration command
usage:
net [ssh/ftps/http/https/redfish] [on/off]
net snmp [v1v2c/v3] [on/off]
net snmp port [portnumber]
net snmp trap [on/off/port] [portnumber]
net snmp v1v2c <index> <ipaddress> <read_community> <write_community></write_community></read_community></ipaddress></index>
<enable disable=""></enable>
net snmp v3 <index> <username> <securitylevel[ap anp="" nanp]=""></securitylevel[ap></username></index>
<pre><autin_passworu> <autin_algo[imd5 sma]=""> <priv_key> </priv_key></autin_algo[imd5></autin_passworu></pre>
<riv_aiyu[de3 ae3120="" ae3132="" ae3230]=""></riv_aiyu[de3>



<Enable/Disable> net [mac/tcpip] net tcpip [eth0dhcp/eth1dhcp/eth0static/eth1static ip nm gw] net tcpip [v6eth0dhcp/v6eth1dhcp/v6eth0static/v6eth1static ip pl gw] net ip [v4] [v6] [v4v6] net phy [auto/10100mbps/1gbps] net dns [-h <hostname> -d <domain> -s1 <server1> -s2 <server2>] net dns [disable/enable] [dnsname/servername]] net cert [def] dev: device setting usage: dev daisy [rna/qna] [init] [create]

dev dalsy [ma/qha] [mit] [create] dev outlet pduID [status] dev outlet pduID [outletindex] [on/off/rebootdelay/ondelay/offdelay] dev [sensor/usb] [on/off] dev ledstrip [on/off] dev powershare [pduID] [func] [on/off] dev handle [pduID] [cold/hot] [lock/unlock] dev hid [cold/hot] [lock/unlock]

pwr: pdu information usage: pwr [unit/phase/cb/outlet] [idx]



2. To display a list of options available for one of the menus (sys, net, usr, dev or pwr), type the menu command and press enter.

Note: You can also type the menu command with '?' to show a list of commands. For example, below shows the available system options:





## **CLI Commands Table**

The following is a list of commands available in the CLI to execute. The commands are divided into 5 main categories: System setting (sys), Network configuration (net), User setting (usr), Device setting (dev) and Power (pwr).

#### **SYS** Commands

Sys Commands	Description	Example
sys date [yyyy-mm- dd]	Sets the user input date	EN2.0>sys date 2013-08-12 SUCCESS
sys date	Query on PDU date	EN2.0>sys date SUCCESS Date:2013-08-12 Time:04:58:16
sys time[hh:mm:ss]	Sets the user input time	EN2.0>sys time 09:20:50 SUCCESS
sys time	Query on PDU time	EN2.0>sys time SUCCESS Date:2013-08-12 Time:09:20:53
sys ntp [primary_ip] [secondary_ip]	Sets the NTP	EN2.0>sys ntp 129.6.15.28 129.6.15.29 SUCCESS
sys ver	Query on the system versions – firmware, web, boot loader and language version	EN2.0>sys ver SUCCESS Firmware Version: 1.0.6.1 Boot loader Version: 1.1 LANGUAGE Version: 1.01 Web Version: 1.0.5.8
sys def	Set the PDU system to default settings	EN2.0>sys def Reboot required for change to take effort System Reboot now, Are you sure?(Y/N):



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sys rst	Resets the PDU system	EN2.0>sys rst Reboot required for change to take effort System Reboot now, Are you sure?(Y/N):		
sys upd [conf/all]	Updates the configuration file	EN2.0>sys upd conf Reboot required for change to take effort System Reboot now, Are you sure?(Y/N):		
sys log [del edit] [event data] [on off] [interval]	Edits the data log configuration interval	EN2.0>sys log edit data on 5 SUCCESS EN2.0>sys log edit data off SUCCESS		
sys ledcolor [pduid]/all] [dark/red/green/yello w/blue/pink/cyan/whi te]	Update color of LED	EN2.0>sys ledcolor pduid dark SUCCESS		
sys dualinput get	Displays the current region of the PDU	EN2.0>sys dualinput get SUCCESS EMEA rating is active Rating: 346-415V, 32A, 22.0kVA, 50/60Hz		
sys dualinput set	Toggle the region of the PDU between NA/EMEA	EN2.0>sys dualinput set NA SUCCESS Input current updated to 24 and voltage updated to 240 Reboot required for change to take effect System Reboot now, Are you sure?(Y/N):Y		



enlogic by nvent				
Net Commands				
Net Commands	Description	Example		
net ssh [on/off]	Sets ssh on/off	EN2.0>net ssh SUCCESS SSH Port: 22 SSH server is running		
net ftps [on/off]	Sets ftps on/off	EN2.0>net ftps SUCCESS FTPS Port: 21 Service is running Is Ftp		
net http [on/off]	Sets https on/off	EN2.0>net http SUCCESS HTTPS Port: 80 Status: ON EN2.0>net https on Reboot required for change to take effort WEB protocol is changed, reboot to validate System Reboot now, Are you		
net https [on/off]	Sets https on/off	EN2.0>net https SUCCESS HTTPS Port: 443 Status: OFF EN2.0>net https on Reboot required for change to take effort WEB protocol is changed, reboot to validate System Reboot now, Are you sure?(Y/N):		



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net redfish [on/off]	Sets redfish on/off	EN2.0>net redfish SUCCESS Status: ON EN2.0>net redfish off SUCCESS Status: OFF	
net snmp trap [on/off/port] [portnumber]	Changes the snmp trap port number or turns off/on the snmp trap	EN2.0>net snmp trap port 162 Reboot required for change to take effect SNMP trap port is changed, Please reboot to validate System Reboot now, Are you sure?(Y/N):Y	



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net snmp v1v2c <index> <ipaddress> <read_community> <write_community> <enable disable=""></enable></write_community></read_community></ipaddress></index>	Configure the SNMP v1/v2c manager	EN2.0>net snmp v1v2c 5 10.10.105.120 public private enable SUCCESS		
net snmp v3 <index> <username> <securitylevel[ap anp<br="">/NANP]&gt; <auth_password> <auth_algo[md5 sha]=""> <priv_key> <priv_algo[des <br="">AES128/AES192/ AES256]&gt; <enable disable=""></enable></priv_algo[des></priv_key></auth_algo[md5></auth_password></securitylevel[ap></username></index>	Configure the SNMP v3 manager	EN2.0>net snmp v3 3 user1 AP 12345 SHA 12345 AES256 enable SUCCESS		
net [mac/tcpip]	Displays the mac address, IPv4	EN2.0>net mac SUCCESS MAC Addr: C8-45-44-66-2B-65 MAC Addr: C8-45-44-66-2B-67 EN2.0>net tcpip SUCCESS eth0 IPv4 Addr: 10.10.105.37 eth0 IPv6 Link Local Addr: fe80:ca45:44ff: fe66:2b65 eth0 IPv6 DHCP Addr: 2001:c0a8: aa01:0:ca45:44ff: fe66:2b65 eth1 IPv4 Addr: 192.168.2.2		



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net tcpip [eth0dhcp/eth1dhcp/ eth0static/eth1static ip nm gw]	Changes the IPv4 network to DHCP or Static mode	EN2.0>net tcpip dhcp eth0dhcp Reboot required for change to take effort Network is reconfigured, reboot to validate System Reboot now, Are you sure? (Y/N): Y EN2.0>net tcpip eth1static <10.10.94.20 255.255.255.0 10.10.94.1> Reboot required for change to take effort Network is reconfigured, reboot to validate System Reboot now, Are you sure?(Y/N):Y		
net tcpip [v6eth0dhcp/v6eth1dhcp/ v6eth0static/v6eth1static ip pl gw]	Changes the IPv6 network to DHCP or Static mode	EN2.0>net tcpip v6eth0dhcp Reboot required for change to take effect Network is reconfigured, Please reboot to validate System Reboot now, Are you sure?(Y/N):Y		



net ip [v4] [v6] [v4v6]	Changes the mode between DUAL, IPv4 or IPv6 Only	EN2.0>net ip SUCCESS IPV4 EN2.0>net ip v6 Reboot required for change to take effort IP protocol is changed, reboot to validate System Reboot now, Are you sure?(Y/N):
net phy [auto/10100mbps/1gbps]	Set the link speed to auto negotiation/10100mbps/ 1gbps	EN2.0>net phy SUCCESS link speed: auto negotiation EN2.0>net phy 10100mbps Reboot required for change to take effort Phy speed is changed, reboot to validate System Reboot now, Are you sure?(Y/N):



net dns [-h <hostname> -d <domain> -s1 <server1> -s2 <server2>]</server2></server1></domain></hostname>	Changes the DNS domain name, host name, primary and secondary server	EN2.0>net dns -h admin -d test -s1 10.10.105.20 -s2 10.10.105.21
_		Reboot required for change to take effect IP protocol is changed, Please reboot to validate System Reboot now, Are you sure?(Y/N):Y
net dns [disable/enable] [dnsname/servername]]	Enables/Disables the DNS server or host by name	EN2.0>net dns enable dnsname Reboot required for change to take effect IP protocol is changed, Please reboot to validate System Reboot now, Are you sure?(Y/N):Y



net cert [def]	Updates the certificate	EN2.0>net cert
	file	SUCCESS
		Custom certificate key file active,
		in
		/cert/cert.key
		Custom certificate cert file active,
		in
		/cert/cert.crt
		EN2.0>net cert def
		Removing custom certificate key file, in /cert/cert.key
		Removing custom certificate file,
		in /sout/sout out
		Reboot required for change to take effect
		Certificate Setting changed, reboot to validate
		System Reboot now, Are you
		Sule:(T/N):

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#### **USR Commands**

Usr Commands	Description	Example
usr list	Lists out the PDU users	EN2.0>usr list SUCCESS Usr Role Privilege Role id ====================================
		admin Administrator 1 user 2 manager Administrator 3
usr login	Displays the logged in user details	EN2.0>usr login SUCCESS username: admin ip address: 10.10.94.211 client type: SSH
usr unlock [username]	Unlocks the blocked user	EN2.0>usr unlock en_user SUCCESS



#### **DEV Commands**

Dev Commands	Description	Example
dev daisy [rna/qna] [init] [create]	Setting the PDU Daisychain to RNA or QNA mode	EN2.0>dev daisy SUCCESS Daisy chain unit number: 1 Daisy chain address list: 0 0 0 Daisy Mode: QNA EN2.0>dev daisy qna create Reboot required for change to take effort System Reboot now, Are you sure?(Y/N):
dev outlet pduID [status]	Displays outlet status.	EN2.0>dev outlet 1 status SUCCESS Relay Outlet Status Outlet# 1: Open Outlet# 2: Open Outlet# 3: Open Outlet# 4: Open Outlet# 5: Open Outlet# 6: Open Outlet# 7: Open Outlet# 8: Open



dev outlet pduID [outletindex] [on/off/rebootdelay/ ondelay/offdelay]	Command to Turn on/off/offdelay/ ondelay/rebootdelay the outlet power	EN2.0>dev outlet 1 1 on SUCCESS EN2.0>dev outlet 1 1 rebootdelay SUCCESS
dev [sensor/usb] [on/off]	Lists out the connected sensors on PDU Turn on/off the USB	EN2.0>dev sensor SUCCESS
		EN2.0>dev usb on SUCCESS
dev hid [cold/hot] [lock/unlock]	Displays the PDU Rack Access details Locks/Unlocks the HID	EN2.0>dev hid 1 SUCCESS
		EN2.0>dev hid 1 hot unlock SUCCESS
dev ledstrip [on/off]	Turns on/off the ledstrip	EN2.0>dev ledstrip on SUCCESS

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dev powershare	Displays the status of PDU power share	EN2.0>dev power share SUCCESS PDU 1: Downstream: 0 Upstream: 1 Mains: 1 PDU 2: Downstream: 1 Upstream: 1 Mains: 1 PDU 3: Downstream: 1 Upstream: 1 Mains: 1
dev handle [pduID] [cold/hot] [lock/unlock]	Enables handle function	dev handle 1 hot lock



#### **PWR Commands**

Pwr Commands	Description	Example
pwr [unit/phase/cb/outlet] [idx]	Displays the power readings	EN2.0>pwr unit 1 SUCCESS UNIT power Feature voltage: 0V current: 0.0A active power: 0W apparent power: 0W power factor: 1.00 energy: 0.000kWh EN2.0>pwr outlet 3 SUCCESS OUTLET 3 power Feature voltage: 0V current: 0.0A active power: 0W apparent power: 0W



## **FTPS**

File Transfer Protocol is used to transfer files from the PDU file system into the local drives under a secure network and vice-versa.

1. Enable the FTPS Access through Web UI

Host: 10.10.106.119 Lysemame: admin Passgord: ++++++++++++++++++++++++++++++++++++				
Status: Retrieving directory listing of "/				
Status: Directory listing of "/" successful Status: Betrieving directory listing of "/fw"				
Jautus – Nettening une toty insting of <i>Imp</i> –				
	×			
Local site: C\	Remote site: /			
C: (OSDisk)				
B SWIREAgent				
	+ System			
- Documents and Settings				
B- Eclipse				
Heil vS				
Filename Filesize Filetype Last modified	Filename Filesize Filetype Last modifi Permissi Owner/Gr			
Keil_v5 File folder 2023-04-06 12				
Microsoft File folder 2023-04-06 12:-	Tw File Folder 2023 01-10, drw-rw-r, ENLOGIC			
Perfloor Sile folder 2023-04-05 2:2	system File folder 2023-01-10 drw-rw-r ENLOGIC			
PolicyAgent PolicyD File folder 2013-12-04-04 7/5	IIIL 178 File 2023-01-10 HWHWH ENLOGIC			
Program Files File folder 2023-08-02 9-0_				
Program Files (x86) File folder 2023-08-02 9:0				
ProgramData File folder 2023-08-03 10				
Recovery File folder 2023-04-11 8:0				
System Volume Info File folder 2023-08-09 1:1				
Users File folder 2023-05-15 8:2				
Windows File folder 2023-08-07 9:0				
4 files and 18 directories. Total size: 5,117,059,072 bytes	1 file and 2 directories. Total size: 178 bytes			
Server/Local file Direc Remote file Size Priority Status				
Annual film Solid humber Summed transfer				
Queueo mes i raneo transfersi Successful transfers				

- 2. Enter the IP address of the PDU at the Host.
- 3. Enter the **Username** and **Password** of a person with the role having administrative privileges.
- 4. Enter the **Port** number set for the FTPS.
- 5. Click the **Quickconnect** button to connect the PDU and Local Drive through the FTPS Client.
- 6. The **Local Site** containing the local drives and **Remote Site** containing the PDU file system comes to view.
- 7. Using Drag and Drop we can transfer the files between Local and Remote site. We can also use right click and select the upload and download function to perform the file transfer.

## enlogic by nvent

### Sensors

The Advantage Secure PDU can monitor conditions (environment and security) with Enlogic's sensors. Sensors are connected to the Advantage Secure PDU through the RJ45 connection or Sensor Input Hub, which can connect to three additional sensors. Following are the sensors available:

- Temperature Sensor
- Temperature and Humidity Sensor
- (3) Temperature + (1) Humidity Sensor
- Sensor Input Hub (3 sensor inputs)
- Door Switch Sensor
- Dry Contact Cable
- Spot Fluid Leak Sensor
- Rope Fluid Leak Sensor
- LED Light Strip Sensor
- RJ45-DB9 Cable
- USB to RS232 Cable
- HID RACK Access kit
- ehandle with RFID
- ehandle with RFID + PIN

#### **Sensor Overview**

Enlogic sensors allow the users and administrators to monitor, report, and alarm specific conditions in and around a PDU, Inline Meter, and server rack. Conditions such as temperature, humidity, leak, and switches are vital aspects of maintaining an efficient-working data center atmosphere.

Enlogic iPDUs and Inline Meters are designed to collect a maximum of 10 sensor measurements

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1. Plug the sensor into the PDU through the RJ45 connection or Sensor Input Hub.

*Note:* It can take 1-3 minutes (depending on model and configuration) for PDU to recognize the sensor.

2. Log in to the Enlogic Web UI. (The sensors are identified and displayed, after login).

3. Identify each sensor through the serial number in the External Sensors section of the Enlogic Web UI.

4. Make sure that the Advantage Secure PDU begins to automatically manage sensors. If the sensors are not auto managed, refer to the **Viewing and Managing Sensor Information** section.

5. Click **Setup** button to configure the sensor name, description, location, and alarm setup. Refer to the **Viewing and Managing Sensor Information** section for more information.

## Temperature and Humidity Sensor Installation Instructions EA9102, EA9103, and EA9105

1. Secure the sensor box to the perforated rack enclosure door by threading a cable tie through the recessed channel in the sensor box and door.

**Note**: There are two recessed channels on the back of the sensor box, which is included with a magnet to secure the sensor.

- 2. Secure the RJ45 cable along with the desired path to the PDU using the remaining cable ties.
- 3. For the 3 Temperature and 1 Humidity sensors (model EA9105) only: Secure the two additional temperature probes near the top and the bottom of the perforated rack enclosure door using the cable ties.
- 4. Use the RJ45 Quick Disconnect Coupler and Ethernet Cable to extend the length of the sensor input cable and/or to serve as an easy disconnect point for rack door removal. Refer to the Advantage Secure User Manual for instructions on, how to create custom cord lengths using the RJ45 Quick Disconnect Coupler.

**Note**: Use either the 1.8m Ethernet cable included with the Enlogic sensor or any other CAT5 or CAT6 Ethernet cable with a standard RJ45 plug.



5. Plug the sensor cable into the Sensor 1 or Sensor 2 port on the PDU/Inline Energy Meter or the Sensor Hub (model EA9106).

**Note:** It can take 1-3 minutes (depending on model and configuration) for PDU to recognize the sensor.

6. The Enlogic sensor is installed and ready for use.

## **Sensor Input Hub Installation Instructions** EA9106

1. Secure the sensor box to the perforated rack enclosure door by threading a cable tie through the recessed channel in the sensor box and door.

Note: There are two recessed channels on back of the sensor box, which includes the magnet to secure the sensor.

- 2. Secure the RJ45 cable along the desired path to the PDU using the remaining cable ties.
- 3. For the 3 Temperature and 1 Humidity sensors (model EA9105) only: Secure the two additional temperature probes near the top and the bottom of the perforated rack enclosure door using the cable ties.
- 4. Use the RJ45 Quick Disconnect Coupler and an Ethernet cable to extend the length of the sensor input cable and/or to serve as an easy disconnect point for rack door removal. Refer to the Advantage Secure User Manual for instructions on how to create custom cord lengths using the RJ45 Quick Disconnect Coupler.

**Note**: Use either the 1.8m Ethernet cable included with the Enlogic sensor or any other CAT5 or CAT6 Ethernet cable with a standard RJ45 plug.

5. Plug the sensor cable into the Sensor 1 or Sensor 2 port on the PDU/Inline Energy Meter or the Sensor Hub (model EA9106).


# **Door Switch Sensor Installation Instructions**

**Top Door Mounting Option** 

- 1. Attach the door switch assembly to the top of the rack using the Adhesive backed mount and cable ties.
- 2. Attach the Switch Sensor to the top corner of the rack (on the side that the rack door will close) using double-sided tape. Secure the cable to the top of the rack using cable ties.
- 3. Attach the Magnetic Sensor to the rack door using double-sided tape.



- 4. Thread the sensor connection cable through the rack. Secure the cable with cable ties. Plug the cable into a sensor port on the PDU.
- 5. Log into the Web Interface, or Serial to manage the door sensor alarm and notification settings. The sensor is designed to alarm if the door is opened more than 10 mm.
- 6. Attach the Door Switch assembly to the top of the rack using the Adhesive backed mount and cable ties.
- 7. Attach the Switch Sensor to the inside of the rack (on the side that the rack door will close) using 4 screws (FS00041). Secure the cable to the top of the rack using cable ties.
- 8. Attach the Magnetic Sensor to the rack door using screws.
- 9. Thread the sensor connection cable through the rack. Secure the cable with cable ties. Plug the cable into a sensor port on the PDU.
- 10. Log into the Web Interface, or Serial to manage the door sensor alarm and notification settings. The sensor is designed to alarm if the door is opened more than 10 mm.



#### **Door Mounting Option**

1. Attach the Door Switch assembly to the top of a door jamb using the Adhesive backed mount and cable ties.

2. Attach the Switch Sensor to the door (on the side that the rack do0g5000000000vv0or will close) using the 4 screws (FS00041). Secure the cable to the top of the rack using cable ties.

3. Attach the Magnetic Sensor to the rack door using screws.



4. Thread the sensor connection cable through the rack. Secure the cable with cable ties. Plug the cable into a sensor port on the PDU.

5. Log into the Web Interface, or Serial to manage the Door Sensor alarm and notification settings. The sensor is designed to alarm if the door is opened more than 10mm.



#### **Dry Contact Cable Installation Instructions** EA9110

- 1. Attach the open wire leads on the dry contact cable to a dry contact sensor. *Refer* to instructions for the dry contact sensor for this step.
- 2. Connect the RJ-45 jack of the Enlogic Dry Contact Cable to a sensor port on the PDU, Inline Energy Meter, or Sensor Hub (model EA9106).
- 3. Go to the Enlogic Web UI to setup specific conditions to monitor and alarm for this sensor.

#### Spot Fluid Leak Sensor Installation Instructions EA9111

1. Place the fluid sensor on the surface to be monitored. Secure the cable using cable ties and/or adhesive mounts.

**Note**: The Spot Fluid Leak Sensor uses electronic circuits to detect the presence of liquid. Certain materials, such as metal surfaces or cement floor, can activate a false leak signal. To avoid this occurrence, place the sensor on the installation pad, (provided). The installation pad is best to install on a clean, dry surface.



- 2. Plug the RJ-45 cable into a sensor port on the Enlogic iPDU, Inline Energy Meter, or Sensor Hub (model EA9106)
- 3. Go to the Enlogic Web UI to setup specific conditions to monitor and alarm for this sensor.



# **Rope Fluid Leak Sensor Installation Instructions EA9112**

- 1. Connect the RJ-45 jack on the Rope Fluid Leak Sensor assembly to a sensor port on the Enlogic iPDU, Inline Energy Meter, or Sensor Hub (model EA9106).
- 2. Thread the Rope Fluid Leak Sensor cable (EW00253) through the rack and along the desired path of detection.

*Note:* Up to 5 Rope Fluid Leak Sensor Cables can be connected to lengthen the detection zone. These can be purchased through Enlogic.

3. Secure the Rope Fluid Leak Sensor cable to the rack and ground using the cable ties and/or adhesive mounting strips provided.

#### Note:

- The wire mount (shown here) is for installation on the floor or ground surface. This must be used in the detection area.
- If mounting to a cabinet or wall, use the adhesive-backed mount (provided). The adhesive backed is mounted in the detection area to prevent and notify delay leakage.

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#### **Detecting Sensors**

The sensor serial number is listed in the Enlogic Web UI when the sensor is detected. To identify each detected sensor:

- 1. Go to Overview/Dashboard
- 2. Select Total Sensors to view all connected sensors

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ƙ 🕲 🐵 L.	▲ 🖋 🖗 🗄 🖻	Welcome	Logout
External Sensors			
PDU 1 / door	Summary		
	PDU Name	Sensor Name	Reading
	PDU 1	door	Off
	PDU 2	Balcony	No-Leak
H	PDU 4	т	25.0°C
Dry	PDU 4	RH	50%
Rope	PDU 5	т	24.0°C
Smoke	PDU 5	RH	52%
Beacon	PDU 6	DOOR SWITCH	Open
PDU	PDU 8	abcdefghijklmnop	24.0°C
	PDU 8	Humidity	54%
	PDU 8	Temperature3	26.0°C
	< Previous		Next >
Total Total Total Total Energy	NOTE		

#### **Configuring Sensors**

To configure the sensor name, location, alarms, notifications, and details, open the Web UI:

- 1. Go to **Dashboard** to view all connected external sensors.
- 2. Select **Total Sensors** to view the External Sensors page.
- 3. Go to Settings -> Threshold -> External Sensors to configure.
- 4. In the **Edit** dialog box, type new data in the following fields, (for example in the 3 Temperature and 1 Humidity sensor):
  - High Critical
  - High Warning
  - Low Warning
  - Low Critical
- 5. Click **Save** to complete the sensor setup. Repeat this process for additional sensors.



# **Viewing and Managing Sensor Information**

SCOCIE CARGO Readings of the sensors are available in the Enlogic Web UI when they are connected properly. The main Dashboard page and External Sensors page show the connected sensors information.

**To View Connected Sensors** 

- 1. Open the **Dashboard**.
- 2. View the External Sensors section on the Dashboard page to see:
  - A list of sensors, which can be connected.
  - Information of each managed sensor: Sensor Name, Location, and Measurement.
- 3. Go to **Overview/Identification** (bottom of the page shows all connected sensors).
- 4. Below information is displayed for each connected sensor:
  - Type
  - Name
  - Serial number
  - ID
  - PDU Name
  - Location

External Sensors					
External Sensors, Type	Sensor Name	Serial Number	Sensor ID	PDU	Location
Temperature	T1	07080002	1	PDU#1	
Temperature	T2	07080002	2	PDU#1	
Temperature	ТЗ	07080002	3	PDU#1	
Humidity	RH	07080002	4	PDU#1	



# **Edit External Sensor Threshold**

- 1. Go to **Settings>>Thresholds** to view all connected external sensors.
- 2. In the **External Sensor** section, select the sensor to edit.
- 3. Click **Edit** icon in the **Action** field.
- 4. Type new data in the following fields, for example in the 3 Temperature & 1 Humidity sensor:
  - High Critical
  - High Warning
  - Low Warning
  - Low Critical
- 5. Click **Save** to proceed further.

### **Toggle Temperature Units between Celsius &** Fahrenheit

- 1. Go to User **Settings** page.
- 2. On the top-right corner, a toggle button is displayed.
- 3. Click and Toggle between Celsius C  $^\circ$  to Fahrenheit F  $^\circ$  based on the requirements.

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	1	<u>ک</u> ش	۵ ک				Δ.	e 9	8 î	9	Welcome admin	₿L	.ogout			
User Setti	ings													O °c	Add Role	Add User
Users					LDAP Configuration						I	Radius (	Configuration	1 🖉		
Username	Unit Role	Action			Enable	$\times$						Enable	$\times$			
admin	°C admin	Ø			LDAP Server							Server				
	°C 1100r	ß	$\sim$		Port	389						Port	1812			
usei	C user	Ø	^		Туре	OpenLDAP						Secret	*******			
manager	°C manage	r 🖉	×		Base DN											
					Bind Password											
					Search User DN											
					Login Name Attribute											
					User Entry Object Class											
Roles					Session Management	P					1	Passwoi	rd Policy 🥖	<b>&gt;</b>		
Role	Description	Action			Sign-In retries allowed	$\checkmark$						Passw	ord Aging Inte	rval	60d	
admin	admin operation				Number of Retries Allowe	ed 3						Minimu	m Password	Length	8	
user	user operation				Session Timeout Value	10 [Minute:	of Inact	tivity]				Maxim	um Password	Length	32	
manager	redfish user				Lockout Time	3 [Minutes]						Enforce	e at least one	lower case character	$\times$	
												Enforce	e at least one	upper case character	$\times$	

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4. Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Click and Toggle on Celsius C° and view the tempera         Power Threshold         Power Threshold Input Phases Circuit Breaker Control Management         External Sensors(1:1)         Power Threshold Input Phases Circuit Breaker Control Management         External Sensors(1:2)         Name         RH         Name       T3         Name       T1         Type       Temperature       Type         Low Critical       15       Low Critical       15	e information stored i	n Celsius
Cinicologic Outlet Metered, Outlet Switched PDU XXXX   Image: Second		
Image: Imag	? License	4
U Thresholds	oome min ⊟→ Logout	
exice Detection Threshold Power Threshold Input Phases Circuit Breaker Control Management  Power Threshold Input Phases Circuit Breaker Control Management  External Sensors(1:1).  External Sensors(1:2).  External Sensors(1:2).  External Sensors(1:3).  External Sensors(1:3).  Low Critical 15 Low Critical 15		
External Sensors(1:1)         External Sensors(1:2)         External Sensors(1:3)         External Sensors(1:3)         External Sensors(1:3)         Image: Comparison of C	ernal Sensors	
Name         RH         Name         T3         Name         T1           Type         Humidity         Type         Temperature         Type         Tem           Low Critical         16         Low Critical         15         Low Critical         15		
Type         Humidity         Type         Temperature         Type         Temperature           Low Critical         16         Low Critical         15         Low Critical         15	External Sensors(1:4)	
Low Critical 16 Low Critical 15 Low Critical 15	External Sensors(1:4).	
	External Sensors(1:4). Name T2 re Type Tempera	sture
Low Warning 17 Low Warning 18 Low Warning 18	External Sensors(1:4).     Image: Constraint of the sensors(1:4).       Name     T2       re     Type       Type     Tempera       Low Critical     12	sture
High Warning 18 High Warning 27 High Warning 27	External Sensors(1:4)     Image: Constraint of the sensors of the sens	ature

5. Click and Toggle on **Fahrenheit F** ^o and view the temperature information stored in Fahrenheit °

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	ሰ 🖱 🗢 🖧			∆ «° ¶ ⊟	Welcome G	> Logout	
PDU Thresholds							
Device Detection Thresh	nold 🖉	Power Threshold	nput Phases Circuit I	Breaker Control Mana	gement External Ser	nsors	
External Sensors	(1:1). 🥟	External Sensors(1:2	)_ Ø	External Sensors(1:3	)L 🥟	External Sensors(1:4	A)_ Ø
Name	RH	Name	ТЗ	Name	T1	Name	T2
Туре	Humidity	Туре	Temperature	Туре	Temperature	Туре	Temperature
Low Critical	16	Low Critical	59	Low Critical	59	Low Critical	
							54
Low Warning	17	Low Warning	64	Low Warning	64	Low Warning	54 55
Low Warning High Warning	17 18	Low Warning High Warning	64 81	Low Warning High Warning	64 81	Low Warning High Warning	54 55 57
Low Warning High Warning High Critical	17 18 19	Low Warning High Warning High Critical	64 81 90	Low Warning High Warning High Critical	64 81 90	Low Warning High Warning High Critical	54 55 57 59

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#### **Monitoring the External Sensor**

You can view the sensor details including name, location, value, etc.

COCC. CART 1. From the Dashboard in the Web Interface, go to the External Sensors section or Settings/PDU thresholds to view all connected external sensors to view details.

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Thresholds					
e Detection Three	shold 🖉				
anoid(met) =000					
		Power Threshold Input Phases Circo	uit Breaker Control Manageme	External Sensors	
External Sensor	<u>s(1:1)</u>	Power Threshold Input Phases Circo	uit Breaker Control Managemer	External Sensors	
External Sensor Name	<u>s(1:1)</u> DOOR SWITCH 1	Power Threshold Input Phases Circo <u>External Sensors(1:2)</u> Name	uit Breaker Control Managemen	nt External Sensors External Sensors(1:3).	
External Sensor Name Type	s(1:1) DOOR SWITCH 1 Door	Power Threshold Input Phases Circo External Sensors(1:2) Name Type	uit Breaker Control Managemen T Temperature	nt External Sensors	
External Sensor Name Type Value	s(1:1) DOOR SWITCH 1 Door Off	Power Threshold Input Phases Circo External Sensors(1:2) Name Type Low Critical	uit Breaker Control Managemen T Temperature 17	nt External Sensors	
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High Critical	
20	
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# Daisy Chain and RNA–Redundant Network Access Daisy-Chain Functionality

In daisy chain mode, up to **64** PDUs can be connected via one (1) IP address. This allows the user to gather information and data of all daisy chained PDUs from the master PDU. The daisy chain functionality reduces the network services cost for PDUs. For example, a standard network switch is used in a data center can contain 24 ports. Without using the daisy chain function, each port supplies network services to one (1) PDU. However, if using the daisy chain features of Enlogic, a typical network switch with 24 ports can supply network services for up to **1536** PDUs.

# **Daisy-Chain Setup**

Follow below steps to setup the connection up to **64** PDUs of the same SKU via single IP address:

1. Configure the PDU, which is first in line on the Daisy Chain.

*Note: Refer to the Network* Settings *section for more information.* 

2. After the initial PDU is configured, connect the Ethernet cord from the 10/100 port (on the configured PDU) to the 10/100/1000 port (on the second PDU) in the daisy chain line.

3. Repeat **step 2**, connecting PDUs from the 10/100 port to the 10/100/1000 port for up to **64** PDUs.

*Note:* The length of the Ethernet cords connecting the PDUs must be less than 6 m (20 ft.).

4. By default, the Daisy Chain command is enabled in the PDU configuration file and default mode of the PDU is QNA. Go to the **web interface** (or management software) to manage and control the PDUs in the Daisy Chain.

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# **RNA (Redundant Network Access) Functionality**

Enlogic RNA allows secure access of PDU data and statistics on two separate private networks. RNA is used with a redundant power delivery design including two rack PDUs for each IT rack. PDUs are used in RNA applications that must be the same SKU.





#### **How it Works**

- COLOR COLOR Using Enlogic RNA, the landlord and tenant maintain two separate private networks that do not overlap.
- Enlogic RNA works using a redundant power delivery design (i.e., two rack PDUs for each IT rack).
- Each PDU is separately connected to the Tenant or Landlord's private communications network.
- The two PDUs are connected with the data communications bus to allow PDUs to share user-defined information.
- Each PDU acts like a master PDU to report PDU data to both networks.

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### **RNA Setup**

To setup RNA mode on Daisy chain setup the user must,

- 1. Configure the PDU for RNA Mode (using CLI).
- 2. Connect the LAN Network cords and Ethernet cords between PDUs.

# **To Connect PDUs for RNA Setup**

After the PDUs are configured for RNA

- 1. Connect the LAN network cable from network switch to the PDU1 Port1.
- 2. Connect another LAN NETWORK cable to Port 2 of last PDU in the daisy chain setup.

3. Connect the Ethernet cable from the Landlord PDU port 2 to Tenant PDU port 1 (to establish daisy chain connection).

4. Next step is to configure RNA mode to establish RNA connection.

# **To Configure RNA Mode in the CLI**

1. Login to the CLI and type the command 'dev daisy rna' on the last PDU of daisy chain setup.

- The following message will appear: SUCCESS System Reboot now, Are you sure? (Y/ N)
- 3. Type Y to confirm reboot.
- 4. After reboot, the PDU will be setup to RNA Mode.

Note: RNA mode enabled PDU's should not be placed in between the daisy chain system.

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# **Daisy Chain and RNA Commands in CLI**

The following is a list of executable commands available in the CLI for Enlogic RNA use only.

Command	Description	Example
dev daisy rna	Changes mode from daisy chain to RNA	EN2.0> dev daisy rna System Reboot now, Are you sure?(Y/ N):
dev daisy qna	Changes mode from RNA to daisy chain	EN2.0> dev daisy qna System Reboot now, Are you sure?(Y/ N):



### **Firmware Update Procedures**

Enlogic iPDUs and Inline Meters can be updated to support the most recent firmware by Enlogic in a variety of ways.

#### **USB** Method

- 1. Go to www.enlogic.com and download the most recent Firmware version, 'enlogic.fw'.
- 2. Select Firmware Upload and click Yes to confirm.

Note: The OLED will show the Firmware update progress. It also shows the process of updating. When the update is complete, the PDU will automatically reboot.

3. Go to Setup and select Device and Firmware to confirm that the Firmware uploaded successfully.



# Web Interface Method

- 1. Go to <u>www.enlogic.com</u> and download the most recent Firmware version, enlogic.fw . Save this file into a folder location.
- 2. Go to System management page and select the Upload Firmware option.
- 3. Select the PDU you want to upload firmware and upload the enlogic.fw file.

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System Managemer	t		Upload Firmware Upload Configuration Down	102
System Information System Name Contact Name Contact Email Contact Phone Contact Location		Rack Location Room Name Row Name Row Position Rack Name Rack ID 0 Rack Height 0	LED Edge Color	Upload Firmware You must keep your browser vindow open for the duration of the upload. PDU will reboot once the firmware is Upgraded. Choose PDU PDU 1 PDU 1 PDU 2 PDU 3
P 1 Power Panel Name Core Location From Core U Position	2 Power Panel Name Core Location F Core LI Position	Pure Panel Name Front Core Location Front Core U Position	DUS 1-4 PDUS 5-8 PDUS 9-12 PDUS 13-16  4 Power Panel Name Core Location Front Core U Position	PDU 5 PDU 6 PDU 7 PDU 8 PDU 9 PDU 9 PDU 10 PDU 11 PDU 12 PDU 12 PDU 14 PDU 15 PDU 16

Note: PDU will reboot, and Firmware upgrade will complete.

4. To access the PDU using an FTPS program, FTPS must be enabled through the PDU Web Interface or through CLI or through SSH.

- 5. In the Web Interface, go to Network Settings -> FTPS.
- 6. Select the check box to **enable FTPS Access**.
- 7. Login to an FTP program with a role with administration privileges.
- 8. Transfer the firmware file enlogic.fw to /fw folder.
- 9. Connect to the PDU via SSH using a program such as HyperTerm or PUTTY.
- 10. Login using a role with administration privileges.
- 11. Execute the CLI command "sys upd all" to perform the FW upload operation.

After reboot message indication in console, push the "Y" from the prompt (Y/N) displays for the PDU reboot **Note:** For Master PDU / Standalone configuration, at the (Y/N) prompt will be appeared foevr PDU reboot, type Y. When the upload is finished, the system will reboot automatically.



# **Questions and Answers (FAQs)**

Q1. What are the differences between Advantage Series and Advantage Secure PDUs (or NMCs)?"

Answer: Advantage Secure is a newer offer that adds a cybersecurity feature called Secure Boot. This adds hardware support to provide a "root of trust" that increases protection against attempts to load non-authenticated firmware to the PDU. It also adds additional flash memory for future use.

Q2. Are there any changes to the firmware file's format from earlier iterations for the Enlogic Firmware?

Answer: Unlike previous compressed or zipped files [.tar/.zip], the firmware file for all new versions will be provided in the **enlogic.fw** format.

Q3. How can we upgrade current or new NMCs to the new firmware version 3.1.3?

Answer: Follow the steps mentioned before for the current in use or new NMCs:

- The firmware upgrades should be performed in the following order for Advantage Series NMCs:
  - Firmware version 2.0.6.7 .
  - Upgrade Bridge firmware 3.0.0.2 using the update folder in the USB, or enlogic.tar using the WEBUI & FTPS.
  - From, 3.0.0.2 [bridge firmware] to flash new firmware [3.1.3] use **enlogic.fw** using USB, WEBUI & FTPS.
- The firmware upgrades should be performed in the following order for Advantage Secure NMCs:
  - Firmware version 3.0.4 .
  - From, 3.0.4 to flash new firmware [3.1.3] use enlogic.fw using USB, WEBUI & FTPS.

Q4. Will the MIB files in the new Firmware support IPv6 addresses?

Answer: The new Firmware will support a new MIB file that contains IPv6 addresses.

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Q5. When updating from a lower firmware version to a version 3.1.3 or later, are there any specific actions recommended?

Answer: It is recommended for users to execute the command "**dbg energyclr**", to erase all previously saved energy accumulation values from the PDU. Customer service can assist by providing a script that can accommodate a list of PDU addresses.

Q6. When updating from a lower firmware version to a version 3.1.3 or later, can the firmware then be downgraded to a previous version?

Answer: Due to underlying file system improvements made in version 3.1.3, downgrades to a previous firmware version are not supported.

Q7. Can older iPDUs support the new Advantage Secure NMCs and Hot Swapping?

Answer: Older iPDU's NMCs cannot be hot swapped with the new Advantage Secure NMCs.

**Q8.** After updating firmware to a new version, can I use a configuration file created from the previous firmware version?

Answer: After flashing the new Firmware, previously stored configuration files cannot be used.

Q9. What should a user do if they see an iPDU transitioning into an unknown state?

Answer: If this happens, the user can perform a soft RESET on the iPDU.

				01120010
NMC Reboot [RST]	Use a pin, press, and hold the recessed RESET key button for about 8 seconds, which will initiate the reset option without changing	Setup Plans Power Sessors Sessors Neset	Reset Key Button : Use this recessed Pin hole for the Reset functionality	
	any configuration values. The OLED	61 Advantage Secure	Reset functionality.	ta B
	display will show			Advantage Secure
	the RST during			
	this operation.			

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