Advantage Series

Power Distribution Unit and **Inline Energy Meter** User Manual



Version: 1.2

CONTENTS

SAFETY INSTRUCTION	5
General Safety Instructions	5
Installation and Operation Safety Instructions	5
Product Labels and Standards	6
PRODUCT DESCRIPTION	9
PRODUCT COMPONENTS	11
Mounting PDU in Server Cabinet	13
Connecting to Power Source	13
Connecting PDU to Network	14
Connecting with Serial Connection	14
Creating Unique Pinout Connection	15
Connecting Sensors (Optional)	17
GETTING STARTED WITH THE PDU	18
Seven Segment LED Display	18
- Phase Level	18
- CB Level	
Indicators and Alarms shown on the Seven Segment LED display	18
OLED Display and Network Management Controller (NMC)	
OLED Navigation	19
Main Menu Selections	20
Setup Menu	20
Network Submenu	20
Device Submenu	21
Screen Submenu	21
Language Submenu	22
USB Submenu	22
Units Submenu	
Alarms Menu	
Power Menu	23
Phase Submenu	25 24
Breaker Submenu	
Outlet Submenu	
Sensors Menu	
WEB USER INTERFACE (UI)	27

Introduction to Web UI	. 27
Navigating through the Web UI	. 28
Home Icon	. 29
Logs icon	. 29
Settings Icon	. 29
Dashboard	. 31
Identification	. 33
Control and Manage	. 34
View Logs	. 35
View Data Logs	. 36
Network Settings	. 37
System Management	. 42
SNMP Management	. 45
Email Setup	. 49
Event Notification	. 51
Trap Receiver	. 52
Defining Thresholds	. 53
Power Thresholds	. 54
Input Phases	. 54
Circuit Breaker	. 56
Control Management	. 57
External Sensors	. 58
Rack Access Control	. 60
Handle and Compatible Cards Types	. 61
Smart Rack Control	. 62
User Settings	. 66
Add Users/Change Password	. 67
LDAP Server Settings	. 68
Radius Configuration	. 70
Roles	. 70
Session Management	. 72
Password Policy	. 73
SNMP	75
Working with MIB Browser	75
Leading the MID file	75
	. 70
REDFISH	77
Redfish URLs Supported with GET Method	. 79
Event Service	81
THE COMMAND LINE INTERFACE (CLI)	82
Logging in with HyperTerminal	. 82

CLI Commands and Prompts	82
CLI Options	
CLI Commands Table	
FTPS	92
SENSORS	92
Sansar Overview	02
Selisor Overview	
Sensor Input Hub Installation Instructions EA0106	
Sensor Input Rub Installation Instructions EA9106	94 05
Door Switch Sensor Installation Instructions EA9109	
TOP Door Mounting Option	
Deer Mounting Option	
Dry Contact Cable Installation Instructions EA0110	96
Spot Eluid Look Sonsor Installation Instructions EA0111	
Pono Eluid Leak Sensor Installation Instructions EA0112	
Rope Fluid Leak Sensor Installation Instructions EA9112	
Configuring Concern	
Viewige and Managing Concerning and Managing Concerning	
Viewing and Managing Sensor Information	
To view Connected Sensors	
Edit External Sensor Threshold	100
	100
DAISY CHAIN AND RNA-REDUNDANT NETWORK ACCESS	101
Deiny Chain Functionality	101
Daisy-chain Functionality	101
Daisy-Chain Setun	101
	101
RNA (Redundant Network Access) Functionality	103
How it Works	103
DNA Codure	100
	103
To Connect PDUs for RNA Setup	103
To Configure RNA Mode in the CLI	103
Daisy Chain and RNA Commands in CLI	104
APPENDIX A: ADVANTAGE SERIES BRACKET MOUNTING INFORMATION	105
	107
ALL LINDIA D. ADVANTAGE SENIES FRODUCT RAINGE FOR EIVIEA	107
APPENDIX C: ADVANTAGE SERIES PRODUCT RANGE FOR NORTH AMERICA	109

APPENDIX D: FIRMWARE UPDATE PROCEDURES	110
USB Method	110
Web Interface Method	111
FTPS Method	111
PCT Software Method	112
How to use PCT Software Tool?	
Firmware Flashing Tool	
Home Page	
New SKU Configuration File Creation	
Creating Configuration File	
Input Settings	
Phase Voltage Settings	
Phase Current Settings	
Control Outlets	
Circuit Breaker	
Data log and Syslog Settings	
SNMP Settings	
Trap Settings	
Date/Time Settings	
Email Setup	
Network Settings	
User Settings – User	
User Settings – Roles	
LDAP Settings	
Sessions Settings	
Password Policies	123
Radius Configuration	123
System Settings	
Event Notification	
Rack Access Control	
Smart Rack access	
Network Services	
Saving Configuration File	
Uploading Configuration File Through PTC	
Help Option	
Additional Notes:	

Safety Instruction

General Safety Instructions

- This Power Distribution Unit (PDU) unit is intended to provide power to the ITE 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 PDU.
- Restrict access authorisations to networks and systems to only persons that need an authorisation and disable unused user accounts.
- This product generates, uses, and radiates radio frequency energy, that 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 authorised personal.
- 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 vapours 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.
- 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 serious injury
- Use only original Enlogic accessories or products recommended by Enlogic along with the Enlogic PDU.

• 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.

Product Labels and Standards

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the **FCC** Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.



This 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.

This unit is delivered in a cardboard box and contains:

- 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 <u>www.enLOGIC.com.</u>

[REGISTER THE PRODUCT	
To register 1	our Enlogic product under the standard 5 year warranty, submit the following informatic PRODUCT REGISTRATION	n below
	First Name Lati Name Enall SNU on Serial Number:	
	्रा Submit	
FOLLOW US ON : 👩 🕑	,	

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:

Table 1: Input Plug Type for Region wise

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
	IEC60309 332P6 or 332P6W	32A SINGLE PHASE
	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
Europe, International	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
	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
Australia	NEMA 5-30P or NEMA L5-30P	30A SINGLE PHASE
	IEC60309 330P9 or 330P9W	30A SINGLE PHASE
	CS8265C	50A SINGLE PHASE
	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
North America/Japan	IEC60309 530P6 or 530P6W or NEMA L22-30P	30A THREE PHASE

Product description

The Advantage Series PDU from Enlogic is a sleek and space saving unit with low profile circuit breakers,

color-coded receptacles and different type of power outlets which can be customised according to needs and IT requirements.

It is an efficient and reliable power distribution system that ensures flawless functioning of the ITE equipment by providing smart and intelligent features like:

- 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/S, and

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

Active Directory

- Daisy Chain up to 32 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 Series from Enlogic

The Advantage Series provides PDU in both current options with unique features:

Single-Phase Models

All Single-Phase model support hydraulic magnetic breakers that are colour coded to the corresponding outlets.

Three-Phase Models

In standard 400V Three-Phase (Wye) configurations, the colour of each circuit breaker and outlet correspond 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 colour 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 model rated above 20 A and 16 A, will also use a colour coding scheme, using 3 colours rather than 2 colours, Black, Blue, and grey.



Product Components





There are 2 displays/5 ports on all standard advantage series models, as shown below.

- 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.
- OLED Settings: Set up, Alarms, Power, Sensors (click menu, select and scroll to operate). Interfaces:
 - 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 Supporting a total of 4 Sensors per sensor port, for example using our EA9103, which will support 3 x Temperature sensors and one Humidity sensor. Sensor 1 also acts as a serial port, it allows the Serial function which is a user interface that enables us to configure Features and update Firmware.
 - Sensor-2: Secondary Sensor Port Supporting a total of 4 Sensors per sensor port, for example using our EA9103, which will support 3 x Temperature sensors and one Humidity sensor.

The Advantage Series Reset Button features enables the user to:

- Press and hold the reset key button till 8 seconds which will trigger RST option in LED display and reset functionality will be initiated.
- Press and hold the reset key button till 20 seconds which will trigger DEF option in LED display and Default functionality will be initiated
- Press and hold the reset key button also press scroll button and hard reboot functionality will be initiated.

Mounting PDU in Server Cabinet

enLOGIC PDUs are built with tool-less mounting in most rack enclosure designs.

For a list of racks that require a mounting bracket for proper installation, refer **Appendix A: Advantage Series Bracket Mounting Information** for a list of compatibility rack manufacturers and installation requirements and *for specific mounting instructions for various rack manufacturers*.

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

- 1. The Advantage Series PDU comes with tool-less mounting pegs for ease and convenience.
- 2. Determine where the Advantage Series PDU will be 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 begin the installation, 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 matching the PDU input-plug type.

Note: When connecting the enLOGIC PDU 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 PDU are set to $\ensuremath{\text{ON}}$.
- 3. Connect each enLOGIC PDU to an appropriately rated branch circuit.

Note: Refer to the label on the PDU for the input ratings.

4. 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 later, 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 EN2.0 range of PDUs are set to obtain an IP address via DHCP by default. Therefore, when an enLOGIC PDU 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 are able to configure the PDU to a Static IP via connecting to the PDU by serial cable or upload of 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 Series 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.)
- 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 as shown in.

Connecting with Serial Connection

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.

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.

- 3. Open a communications program such as HyperTerminal or PUTTY. Select the COM port. Set the communications port as follows:
 - Bits per second: 115200
 - Data bits: 8
 - Parity: None
 - Stop bits: 1
 - Flow control: None

🕵 PuTTY Configuration		? ×
Category: - Session - Logging - Terminal - Keyboard - Bell - Features	Options controllin Select a serial line Serial line to connect to Configure the serial line	ig local serial lines
- Window - Appearance - Behaviour - Translation - Colours - Connection - Connection - Data	Speed (baud) Data bits Stop bits Parity Flow control	115200 8 1 None ~ None ~
Data Proxy Telnet Rlogin SSH Serial		Que Card
About Help		Open Cancel

4. Use the default initial login indicated below. *Note:* Username and Password are both case sensitive.

- Username: admin
- Password: 12345678
- 5. The EN2.0> prompt appears after you have logged in.
- 6. 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

Creating Unique Pinout Connection

enLOGIC recommends to purchase our serial cable (EA9119) for use with the Advantage Series 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.

Connecting Sensors (Optional)

To enable the Advantage Series 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 how many sensor detection points for each sensor use. For example: If you using the 3 Temperature sensor + 1 Humidity sensor (EA9105), 4 sensor points are in use, so only 4 additional sensor points are available.

Table 2: Connecting Sensors

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)	n/a	EA9106
Door Switch Sensor	1	EA9109
Dry Contact Cable	1	EA9110
Spot Fluid Leak Sensor	1	EA9111
Rope Fluid Leak Sensor	1	EA9112
RJ45-DB9 CABLE	1	EA9119
E-Handle (RFID authentication)	2	EA9502
E-Handle (RFID + User PIN authentication)	4	EA9500

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

Getting Started with the PDU

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



PDU Alarm- It shows the user when a Critical Alarms or Warning Alarms happens in a PDU.



Daisy Chain Indicator- It shows the user if the Daisy Chain is connected or not.



Environmental Sensor Alarm- It shows the user if there is an alarm related to the environmental sensors.



Security Sensor Alarm- It shows the user if there is an alarm related to the door sensors.



Circuit Breaker Alarm- It shows the user if there is an alarm related to the circuit breaker.

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** whether 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 30 seconds 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 minute. 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

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.



Device Submenu

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.



Screen Submenu

The Screen submenu allows you to customize settings for Contrast, Rotate, and Always on. 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 Lang. 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.



USB Submenu

The USB submenu allows you to upload firmware 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 will be asked to verify the want to the enter the USB operation and Configuration Mode. After you select Yes, the system will reboot into the USB operation and Configuration Mode.

Note: If a USB drive is not present in the USB slot the PDU will enter normal operation. **Note**: If you are in USB mode and you want to exit USB mode, you must remove the USB drive before existing USB mode. Otherwise, the PDU will reboot and re-enter USB mode.



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.



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.



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 WebGUI 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

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 10 sensors are configured per PDU.



Web User Interface (UI)

Ensure that the ethernet cable is connected and 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 mobile and 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 we login for the first time and 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.

After the initial (First time) login, to change the password inside the web UI:

- 1. Click on the **User Settings** icon, the User Settings page comes to view.
- 2. In the **User** section, click the *let* icon next your **Username** and **Role** to edit/change the password

Users		
Username	Role	Action
admin	admin	\bigcirc

3. Type the new password in the **Password** and **Confirm Password**.

Edit
ser
Username
admin
Password
•••••
Confirm Password

4. Click **Save** button to complete the setting.

Navigating through the Web UI



This is the landing page once you login.



Table 3: Menu Icon Description

lcon	Description
	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.
$\overline{\mathbb{S}}$	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.

	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
B	Link- This Icon indicates the daisy-chain connection status alarms.
	Sensor Warning
	This icon represents the sensor related alarms like:
Ŷ	Temp
	Humidity Dry
₿	This icon indicates the Door and HID sensor status alarms.
	This icon indicates the CB and Outlet status alarms.
	This icon allows the user to select a Language
	Currently seven languages are available to choose: English, French,
	Italian, Korean, German, Spanish, Japanese and Chinese.
\bigcirc	click this icon to find Information about the PDU.
•	Go to www.enLOGIC.com to get more information.

Dashboard

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						
			Summary			
100	0 /0 -1 0020		PDU	Apparent Power	Active Power	% Load
100			PDU 1	0	0	0%
			PDU 2	0	0	0%
			PDU 3	0	0	0%
50			PDU 4	0	0	0%
			PDU 5	0	0	0%
			PDU 6	0	0	0%
			PDU 7	0	0	0%
PDU#1		PDU#32	PDU 8	0	0	0%
			PDU 9	0	0	0%
Total Load	Total Sensors Total E	Total PDUs	PDU 10	0	0	0%
			< Prev	ious		Next >
			NOTE The Bar graph I each bar graph Please click on t	s displaying the total load displays Load in percentar the hyperlink in Summary t	per PDU in percentage ge. To view detailed info able.	. Mouse hover on rmation of PDU,
			Summary table I	s Tabular representation o	f Bar Graph.	





External Sensors			
PDU 14 / T3	Summary		
	PDU Name	Sensor Name	Reading
	PDU 1	gingertea	25.0°C
	PDU 1	blacktea	43%
H Door	PDU 1	DOOR	Open
Dry Spot	PDU 1	lemontea	25.0°C
Rope Smoke	PDU 1	HID	Look
AIR Bescon	PDU 1	Greentea	26.0°C
HID Handle	PDU 2	DOOR SWITCH	Closed
PDU	PDU 2	DOOR SWITCH1	Open
	PDU 3	DOOR SWITCH	Open
	PDU 3	hot or cold	26.0°C
	< Previous		Next >
Total Load Total Sensors Total Energy 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.

Identification								
System Information	n							
Name	Value			Name		Value		
System Name				MAC Address				
Contact Name				IPv4 Address				
Contact Email				IPv6 Link Local A	Address			
Contact Phone				IPv6 Auto Config	gured Address			
Contact Location								
PDU Information								
		DDIIs 1.4	DDIIe 5.8 DDIIe 9.12 DDIIe 13.16		21.24 DD11e 25.28 DD11e 20.32			
			100000 1000012 10001010	1000 11 20 1000	2121 10002020 10002002			
1		2		3		4		
Name	Master PDU	Name	pdu2	Name	pdu3	Name	pdu4	
Core Location	Front	Core Location	Front	Core Location	Front	Core Location	Front	
Core U Position	1	Core U Position	2	Core U Position	3	Core U Position	4	
Model	346-415V, 32A, 22.0kVA, 50/60Hz	Model	346-415V, 32A, 22.0kVA, 50/60Hz	Model	346-415V, 32A, 22.0kVA, 50/60Hz	Model	346-415V, 32A, 22.0kVA, 50/60Hz	
Part Number	EN6810	Part Number	EN6810	Part Number	EN6810	Part Number	EN6810	
Serial Number	WAAL0170	Serial Number	WAAL0161	Serial Number	WAAL0204	Serial Number	WAAL0046	
Boot Version	1.2	Boot Version	1.2	Boot Version	1.2	Boot Version	1.2	
Web Version	1.0.7.3	Web Version	1.0.7.3	Web Version	1.0.7.3	Web Version	1.0.7.3	
Firmware Version	1.0.7.3	Firmware Version	1.0.7.3	Firmware Version	1.0.7.3	Firmware Version	1.0.7.3	
Hardware Version		Hardware Version		Hardware Version		Hardware Version		
PDU Power Rating (k	(VA)22	PDU Power Rating ((VA)22	PDU Power Rating ((kVA)22	PDU Power Rating ((VA)22	
PDU Input Rating (A) 32	PDU Input Rating (A) 32	PDU Input Rating (A	PDU Input Rating (A) 32		PDU Input Rating (A) 32	
PDU Breaker Rating	(A) 16	PDU Breaker Rating	(A) 16	PDU Breaker Rating	(A) 16	PDU Breaker Rating	(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**.

Control & Manage						Actions ~
Outlet Control Enabled						
	1 2 3	4 5 6 7 8 9 10 11	12 13 14 15 16 17 18 1	19 20 21 22 23 24 25 2	6 27 28 29 30 31 32	
	-	Break	ker 1 Breaker 2 Breaker 3 Breaker 4	Breaker 5 Breaker 6 🤌		
Outlet Name	Power Control	On Delay(0~7200s)	Off Delay(0~7200s)	State on Startup	Reboot Duration(5~80s)	
OUTLET 1	OFF	88	8	Ċ	58	Ø
OUTLET 2	DN ●	O	0	Ċ	5	Ø
OUTLET 3	OFF	0	0	Ċ	5	Ø
Outlet 4	ON	7	77	Ċ	55	Ø
OUTLET 5	O TF	0	0	Ċ	5	Ø
OUTLET 6	DN ●	0	0	ወ	5	Ø

- 3. Enable the **Outlet Control Enabled**.
- 4. Click the *left* icon to 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)

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

On the top right side of the Control & Manage page there is an $(Actions \rightarrow)$ icon, to **Reset PDU Energy**

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.
- 1. Click on the System Administration icon to dropdown the System Administration menu.



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

View Logs		L Download Clear
page 1/30		1 2 3 4 5 >> 30
Туре	Description	Date & Time
Audit Log	User admin of PDU 1 from host 10.106.111 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

On the top- right side of the view log page, Click the below options as required:

- Download Log: to download the logs
- 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 System Administration menu.
- 2. Select the View Data Logs to view the information.

		en	LOC	GIC	Outlet M	etered, O	utlet Swi	tched P	DU	1.0.	7.4			(? <u>Lice</u>	ense			
		るの	D 🕹	& *				A d	>	9	8 🖻	W	elcom admin	e 🕞 roð	jout				
Dat	a Log										Data	a Log	Confi	guration		Dowr	lload	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
<																			>

On the top- right side of the View Data Log page, Click the below options as required:

• Data Log Configuration

This button allows us to:

- Enable Data Log Configuration if data log is required.
- Log Interval time that need to be recorded

ata Log Co	onfiguration	
Enable		
Log Interval(1-14	10 Minutes)	
10		

- Download Data Log: to download the logs
- **Clear** Data Log: to delete/clear the logs.

Network Settings

This page allows the management of IP Configuration, Web RESTapi Access 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 Email for network communications.

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

enLogic Outlet Metered, Outlet Switch)U 1.0.7.4	(2 License				
	命 切	0 8				▲ ở 🖗 🔒	•	Welcome admin	B Logout		
		Network Settings									
Network Settings		System Management						se	et Certificate Key	Change Link Speed	Syslog Configuration
Ethernet-1 IP Configur	ration 🖉	SNMP Manager Email Setup	Ethernet-2 IP Configu	uration 🖉		Web/ RESTapi Acces	s Configura	ition 🤌		SSH/FTPs Configuration	
Boot Mode	DHCP	Event Notifications	Boot Mode		DHCP	Web Access	https			SSH Access	\checkmark
IPv4 Address	10.10.106.2	Trap Receiver	IPv4 Address		192.168.2.2	Web Port	443			SSH Port	22
Network Mask	255.255.252	Thresholds	Network Mask		255.255.255.248	RESTapi Access	\times			FTPs Access	\checkmark
Default Gateway	10.10.104.1	Parts Arrest Cantral	Default Gateway		0.0.0.0	Certificate	Vi	iew Certifi	cate	FTPs Port	21
IPv6 Access	\checkmark	Raok Access Control	IPv6 Access		\checkmark						
IPv6 Link Local	fe80::5c7a:c0	Smart Rack Control	IPv6 Link Local Add	ress	fe80::6492:45ff:fe3b:176f						
IPv6 Auto Configured Address	Agdress IPv6 Auto Configured Address IPv6 Auto Configured Address 2001:c0a8:aa01.0:5c7a:c0ff.fe1c:48ac										
Network Time Protoco	<u>ol(NTP)</u>			Date/Time	Settings				Daylight Saving Time	Ø	
Enable	\times			Date		2010/01/04			Enable	×	
Primary NTP Server	0.0.	0.0		Time		20:38:59			Start Month	000	D:0]
Secondary NTP Serve	ver 0.0.0	0.0		Date For	mat	YYYY/MM/DD			End Month	000	0:0]
NTP GMT Offset	(UTC	C) Dublin, Edinburgh, Lisbor	n, London						Time Offset	0 Minu	ites

- 3. Click the icon to edit/change the **IP Configuration** information below,
 - Select **Static** to manually and Type the following information:
 - IPv4 address
 - Network Mask
 - Default Gateway.
 - Select **DHCP**, if you wish to auto-configure the PDU IP address.
 - Click **Save** button to complete setting.

Edit	
IP Configuration	
Boot Mode DHCP Static	
IPv4 Address 10.10.106.128	
Network Mask 255.255.252.0	
Default Gateway 10.10.104.1	
IPv6 Accoss	
Save	

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

Click the *local* 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 setting.

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

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

Click the *licon* 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.

etwork Ti	me Proto	col(NTP)	
Enable			
\bigcirc			
Primary NTP Se	rver		
0.0.0.0			
Secondary NTP	Server		
0.0.0.0			
NTP GMT Offse	t i i i i i i i i i i i i i i i i i i i		
(UTC) Dublin,	Edinburgh, Li	sbon, London	

- 6. You can manually set the internal clock on the PDU.
 - Click the *local* icon 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						
Date/Time Settings						
Date						
2021/01/28	白					
Time						
HH:MM:SS						
16:37:43	Ŀ					
Date Format						
Supported format is [YYYY/MM/DD]						

- 7. Click 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.

Edit						
Daylight Saving Time						
Enable						
Start Month						
Select						
Select						
Select						
0:0:199						
End Month						
End Month::Week::Day::Time						
Select						
Select						
Select						
199:173:0						
Time Offset						
Select						
Save						

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							

• 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.

Edit

Link Speed	
Auto Negotiation	
Auto Negotiation	
10/100 Mbps	
1 Gbps	

• 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.

system Log Configuration					
Ena	ible Syslog Server Access				
Sys	ilog Server Address				
Sys	log Server Port				
51	4				

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.

enLogic Outlet Metered, Outlet Sv	vitched PDU 1874	8019 Milianne
a () 2 a		admin 🕒 Logout
System Management	Upload Firmware	e Upload Configuration Download Configuration Default Settings
System Information 🖉 Rack Location 🧳	LED Edge Color	Select a PDU to Restart
System Name Room Name	LED Color	All
Contact Name Row Name		Restart
Contact Email Row Position		
Contact Phone Rack Name		
Contact Location Rack ID 0		
Rack Height 0		
	PDUs 1-2	
1 2		
Power Panel Name Power Panel Name		
Core Location Front Core Location Front		
Core U Position Core U Position		

- 3. Click the icon to edit/change the **System Information** 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.

Ξ	dit
sys	stem Management
S	ystem Name
h	ai
C	ontact Name
s	
C	ontact Email
h	allo@c.com
C	ontact Phone
8	8
C	ontact Location
b	

4. Click the icon to edit/change the **Rack Location** below,

- 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
Rack Location
Room Name
Row Name
Row Position
Rack Name
Rack ID 0
Rack Height 0
Save
Save

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

Click the *led* icon to edit/change the **LED Edge Color** information below,

- Select the LED Color.
- Select PDU.
- Click Save button to complete setting.

<mark>enL</mark> ଜ ଏ	OGIC Outlet Metered, Outlet Switched PDU 1874 	tionse ▲ & ♥ A	× Edit LED Edge Color
System Management		Upload Firmware Upload Configuratio	LED Color Blue
System Information	Rack Location Room Name Row Name Row Position Rack Name Rack ID 0 Rack Height 0	LED Color	Select PQU All I
	<i>.</i>	POUs 1-2	
1 2	7 2		
Power Panel Name Core Location Front	Power Panel Name Core Location Front		
Core U Position	Core U Position		

6. 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.

Edit				
Power Panel & Core Location				
Power Panel Name				
1				
Core Location				
Front				
Core U Position				
1				
Save				

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 Series PDU(s) remotely.

SNMP allows the user to monitor and detect network faults and to even configure variable data in the PDU.

(Refer SNMP)

- 1. Click on the Settings icon to dropdown the Settings men.
- 2. Select the **SNMP Management** to view the information.
- 3. To access the PDU data inside a MIB Browser.

Click the *local* icon to edit/change the **SNMP General** below,

SNMP General	
Enable	\checkmark
SNMP Version	V1/2c&V3

- Enable the **SNMP General**.
- Click **Save** button to complete setting.

SNMP General	
Enable	
SNMP Version	
V1/2c&V3	
Save	

4. To secure the link between the PDU and the MIB Browser.Click the click the c

SNMP Port	
SNMP Port	161
SNMP Trap Port	162

• Enter the **SNMP Port** number.

- Enter the SNMP Trap Port number.
- Click Save button to complete setting.

Edit		
SNMP Port		
SNMP Port 161		
SNMP Trap Port 162		

5. Configuring users for SNMP V1/V2c.

Click the click

SNMP Management				
SNMP General Enable SNMP Version V1/2c&V3		SNMP Port SNMP Port 161 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
Save

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

Click the 🖉	icon to edit/change the SNM	V3 Manager below,
-------------	-----------------------------	--------------------------

SNIMP VS Manager							
Username	Security Level	Authentication Password	Authentication Algorithm	Privacy Key	Privacy Algorithm	Enable	
	NoAuthNoPriv	*******	MD5	*****	DES	\times	Ø
	NoAuthNoPriv	******	MD5	******	DES	×	Ø
	NoAuthNoPriv	******	MD5	***	DES	×	Ø
	NoAuthNoPriv	******	MD5	***	DES	×	Ø
	NoAuthNoPriv	*****	MD5	******	DES	×	Ø

• Enter the Username.

- Assign the **Security Level** from the dropdown menu.
 - NoAuthNoPriv: No authentication and no privacy. This is the default.
 - AuthNoPriv: Authentication and no privacy.
 - 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.

Edit

SNMP V3 Manager

Username
Security Level
No Auth No Priv
Authentication Password
Authentication Algorithm
MD5
Privacy Key
Privacy Algorithm
DES
Enable
\bigcirc
Save

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 SNMP Management to view the information.

enLogic Outlet Metered, Outlet Switched PDU	0.7.4		① ? Licens	e e		
ଳ ଏ 🚳 ଌ		∆ ° §	0 8 1	Welcome admin Logout		
Email Setup						Send Test Email
SMTP Account Settings 🖉		Email Recip	ients			
Email Server Address		#	Email Address	5	Enable	
Sender Address		1			\times	Ø
Username						
Password		2			×	Ø
Port	25	3			\times	Ø
Number of Sending Retries	3					
Time Interval Between Sending Retries(in Minutes)	6	4			×	Ø
Server Requires Authentication	×	5			×	Ø

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

Click the *local* icon to edit/change the **SMTP Account Settings** below,

- Enter the **Email Server Address**, which is the IP address of the SMTP for accepting messages.
- Enter the Sender Address, which is the email address that the email is sent to.
- 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.

Edit
SMTP Account Settings
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
Save

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.

Test Email Recipients
Recipient Email Address
Send

Event Notification

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 Notification to view information.
- 3. Enable the Email, SNMP Trap and Syslog to the respective Events to receive notification.

Event Notifications			
Events	Email	SNMP Tran	Svslog
Circuit Persian Chevrond			
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.

Tr	ap Receiver				
-	SNMPV1 Trap Receiver				
	Name	Host	Community	Enable	
	admin	10.10.105.95	public	\checkmark	Ø
	LOP1	10.10.106.111	public	\checkmark	Ø
	donald 10	10.10.105.16	public	\checkmark	Ø
	donald 11	10.10.105.84	public	\checkmark	Ø
	admin1	10.10.105.18	public	\checkmark	Ø

Click the *left* icon to edit/change the **SNMP V1 Trap Receiver** 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 V3.
- Click Save button to complete setting.

Edit
SNMPV1 Trap Receiver
Name
admin
Host
10.10.107.135
Community
public
Enable
Save

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

Click the *left* icon to edit/change the **SNMP V3 Trap Receiver** 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.
 - **AuthNoPriv**: Authentication and no privacy.

- 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.

Edit
SNMPv3 Trap Server
Name
aks1
Host
10.10.107.135
Security Level
Auth Priv
Authentication Password
Authentication Algorithm
MD5
Privacy Key
Privacy Algorithm
DES
Enable
Save

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

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,

- a) Choose Power Threshold tab in the PDU Threshold page.
- b) Click icon edit/change the Power Threshold Setting.
- c) In the PDU Power Threshold Setting dialog boxes, change the fields as needed:
 - Low Critical (W)
 - Low Warning (W)
 - High Warning (W)
 - High Critical (W)
 - Reset Threshold (W)
 - Alarm State Change Delay (samples)
- d) Click Save button to complete the setting.
- e) Repeat the steps for all PDUs.

Device Detection	Threshold 🖉						
Threshold(mA)	150						
			Power Thresh	old Input Phases Ci	rcuit Breaker	Control Management External	Sensors
			DDU 4 4 DDU		DU 42.40		
			PDUs 1-4 PDU	Js 5-8 PDUs 9-12 F	20Us 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	

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,

- a) Choose the Input Phases tab in the PDU Threshold page.
- b) Click icon to edit/change the Phase Current Settings.
- c) 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)

Lau		
nput phas	es current alarm settir	ıg
Low Critical (A)		
0		
Enable Low Cri	itical	
\checkmark		
Low Warning (A	٩)	
0		
Enable Low Wa	arning	
\checkmark		
High Warning (A	A)	
0		
Enable High Wa	arning	
\checkmark		
High Critical (A))	
0		
Enable High Cr	itical	
\checkmark		
Reset Threshol	ld (A)	
0		
Alarm State Ch	ange Delay (Samples)	
0		

- d) Click Save button to complete the setting.
- e) Repeat steps 1 4 for all PDUs.
- f) Click clicon to edit/change the Phase Voltage Settings.

Phase Current	Reading(A)	Low Critical	Low Warning	High Warning	High Critical	
Phase1	0.0	0.0	0.0	0.0	0.0	Ø
Phase2	0.0	0.0	0.0	22.0	28.0	Ø
Phase3	0.0	0.0	٥٥	22.0	28.0	Ø

- g) 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)

out phases voltage alarm	setting
ow Critical (V)	
80	
nable Low Critical	
\checkmark	
ow Warning (V)	
90	
nable Low Warning	
\checkmark	
ilgh Warning (V)	
50	
nable High Warning	
\checkmark	
ligh Critical (V)	
60	
inable High Critical	
\checkmark	
leset Threshold (V)	
2	
larm State Change Delay (Samples)	

- h) Click Save button to complete the setting.
- i) Repeat the steps for all PDUs.

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,

a) Choose the **Circuit Breaker** tab in the PDU Threshold page.

		Power Threshold	Input Phases	Circuit Breaker Control	Management External Sensors	
		1 2	3 4 5 6	7 8 9 10 11 12	2 13 14 15 16	
Bank	Low Critical	Low Warning		High Warning	High Critical	
1	0.0	0.0		14.0	16.0	Ø
2	0.0	0.0		14.0	16.0	Ø
3	0.0	0.0		14.0	16.0	Ø

b) Click icon to edit/change the Circuit Breaker Settings,

- Low Critical (A)
- Low Warning (A)
- High Warning (A)
- High Critical (A)
- Reset Threshold (A)
- Alarm State Change Delay (samples)
- c) Click Save button to complete the setting.



d) Repeat the steps for all PDUs.

	dit
38	ank
	Low Critical (A) 0
	Enable Low Critical
	Low Warning (A) 0
	Enable Low Warning
	High Warning (A) 14
	Enable High Warning
	High Critical (A) 16
	Enable High Critical
	Reset Threshold (A) 1
	Alarm State Change Delay (Samples) 0

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.

- a) Choose the **Control Management** tab in the PDU Threshold page.
- b) 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)
- c) Click **Save** button to complete the setting.
- d) Repeat the steps for all PDUs..

(enLogic	Outlet Metered, Outlet Switched PI	DU 1.0.7.4	\oplus	? License				
	n 🖱 🛛 🖧		۸	8	8 🗉	Welcome admin	- Bogout		
PDU Thresholds									
Device Detection Thresho Threshold(mA) 150	id 🖉	Power Threshol	d InputPhases Circui⊁Breaker	Control Man	agement Ext	ernal Senso	rs		
		Power filesion		Control main	agement	ennar Senso	15		
			Bank#1 Bank#2 Bank#3 Bank	#4 Bank#	5 Bank#6				
Name	ı	Low Critical Low Wa	rning	High Warnin	9		High Cri	tical	
OUTLET 1	c	0 0		0			0		Ø
OUTLET 2	(0 0		0			0		Ø
OUTLET 3	c	0 0		0			0		Ø
OUTLET 4	c	0 0		0			0		Ø
OUTLET 5	c	0 0		0			0		Ø

u	tlet Information
L 1	ow Critical (W)
s (et Lower Critical
L 2	ow Warning (W)
s	et Lower Warning
н 3	igh Warning (W)
s (et High Warning
н 4	igh Critical (W)
s	et High Critical
R 1	eset Threshold (W)
A 2	larm State Change Delay (Samples)

External Sensors

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.

- a) Choose the External Sensors tab in the PDU Threshold page
- b) Click icon to edit/change the External Sensors Settings,
 - Low Critical
 - Low Warning
 - High Warning

Advantage Series PDU

enlogic

- High Critical
- c) Click **Save** button to complete the setting.
- d) Repeat the steps for all PDUs.

Edit
External Sensors(1:1)
High Critical 31
Enable High Onical
High Warning 29
Enable High Warning
Low Warning 17
Enable Low Warning
Low Critical 15
Ensteie 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.

		letered, Outlet Switched	d PDU 1.0.6.11.0.7.4	Cicense		
	俞 🕄 🤀 🖧		∆ &	Welcome		
Rack Access Cont	trol					Actions ~
						New
PDU	Card ID	Aisle	User	Date/Time	Action	Remote Control
1	12345678	Cold Aisle	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

New	
Smart Rack	
PDU1	\bigtriangledown
Usemame	
Card ID	
Alsie	
Hot Aisle	\bigtriangledown
Create	

Remote Control

Used to perform Lock, Unlock and Close functions

Edit	
Remote Control	
PDU1	\bigtriangledown
Alsie Hot Aisle	\bigtriangledown
Lock Unlock Close	

AutoLock Settings

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

Edit				
AutoLock Setting				
PDU1	\bigtriangledown			
Alsie				
Hot Aisle	\bigtriangledown			
Interval(1-30 Minutes)				
10				
Save Cancel				

Handle and Compatible Cards Types

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

- a) MYFARE[®] Classic 4K
- b) MYFARE® Plus 2K
- c) MYFARE® DESFire 4K
- d) 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 Handle and Compatible Cards) that has lot of options. 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.

	enLoc	GIC Outlet N	Netered, Outlet Switch	hed PDU 1.0.7.4	(? License
	命 🕚	۵ 🕸	<u>A</u> 8°) () () () () () () () () () () () () ()	Welcome <u>manager</u>	> Logout
Rack Access (Control					Actions ~
Card Id	Username	Card PIN	Start Time	Expiration 7	Time	Actions
12345678	admin	****	8/3/2020, 4:00:00 PM	8/24/2020,	4:00:00 PM	∅ 団
						10

- 3. Click clicon 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.

Edit				
Card				
Card ID 1				
Username logic1				
PIN Please set PIN length in Keypad Settings. Default length is 0.				
Temporary User				
Save				

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

Action



- 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.



- 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.



- 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				
ACU Name				
Firmware Version				
Hardware Version				
Serial				
Save				

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



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

Advantage Series PDU

enlogic



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



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



User Settings

The Advantage Series 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. All other user privileges must be added by the Admin user. 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.

Table 4: User Roles and Default Permission

Role	Default Permissions
Admin	Complete system permissions (that cannot be modified or deleted)
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)

	enLogic Outlet Metered, Outlet Switched PDU 10.7.4							
	⋒ ७ ♥ 2₀		▲ 🖉 🖗 🖻 🖻	Welcome admin	B→ Logout			
User Settings	J S						Add Role	AddUser
Users Ro Jeemanne Ro admin ado uter use manager man	Role Action action I I I I I I I I I I I I I I I I I I I	LDAP Configuration P Enable LDAP Sener Port Type Base Dn Bind Password Searon Lever DN Login Name Attribute User Entry Object Class	X 389 GperLDAP		Radius Configuration of Enable X Sener Port 1912 Secret			
Role Desc Role Desc admin admi user user manager redfi	eeoription Action ann operation I X X eer operation I X X other user I X X	Session Management Sign-In retries allowed Number of Retries Allowed Session Timeout Value Lockout Time	y 10 [bitrules of nactive] 3 [bitrules]		Passeord Polity P Passeord Aging Internal Minimum Passeord Length Maximum Passeord Length Enforce at least one lover case orbander Enforce at least one upper case orbander Enforce at least one numeric character Enforce at least one numeric character	606 8 32 × × × ×		

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

Add Users/Change Password.

To create a new user profile:

- 1. Click on the User Settings, the user settings page opens.
- 2. Click **on the** Add User 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.

Add
User
Username
Password
Confirm Password
Role
O Administrator
O User
O Manager
Save

Modify:

To edit the existing user profile,

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

Edit	
User	
Username	
user	
Password	
•••••	
Confirm Password	
Role	
Administrator	
() User	
O Manager	
Save	

Delete:

To delete the existing user profile,

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

LDAP Server Settings

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.
- 2. Select the LDAP Enable checkbox.
- 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 and Confirm Password fields.
- 6. In the Base DN field, type in the account. i.e. CN=myuser, CN=Users, DC=EMEA, DC=mydomain, DC=com
- 7. Type Password in the Bind Password and Confirm Password fields.
- 8. Search User DN.
- 9. Type SAMAccountName (typically) in the Login Name Attribute field.
- 10. Type Person Name in the User Entry Object Class field.

With these LDAP settings configured, the Bind is complete. (see below)

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	

_			
	2	i	t
	u	I	L

Enable			
LDAP Server			
Port			
389			
Туре			
OpenLDAP			
Base DN			
Bind Password			
Search User DN			
Login Name Attribu	te		
User Entry Object	Jiass		
Test Name	onfigur	ation	
Test Password			

- 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).
 - a) Within the Web Interface, go to User Settings, click on the Add Role button
 - b) Type Role Name, which was created in AD *i.e. PDUAdmin*.
 - c) Administratior privileges must be enabled.

Add
Role
Role Name
PDUAdmin
Description
PrMieges
 Administrator Privileges
Save

- d) Once LDAP authentication is ready to use.
 - To test this, click **save**, then click "LDAP Configuration" again and type Active Directory user name/password into the test box.
 - 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.

Edit
Radius Configuration
Enable
Server
Port
1812
Secret
Save

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.

Add	
Role	
Role Name	
Description	
Privileges Administrator Privileges	
Save	

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**.

Edit		
Role		
Role Na	le	
admin		
Descript	n	
I .		
Privilege		
🕢 Ac	ninistrator Privileges	

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 × | |
| | | | |
| Edit | | | |
| Role | | | |
| Role Name
admin | | | |

Session Management

Description admin operation

Privileges

Save

Administrator Privileges

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

• Click 🖉 to setup the parameters.

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

Edit	
Session Management	
Sign-In retries allowed	
Number of Retries Allowed 3	
Session Timeout Value 10 min	
Lockout Time 3 min	
Save	

Password Policy

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.

- 1. Go to User Setting -> Password Policy.
- 2. If desired, choose a password aging interval from the Password Interval dropdown menu.
- 3. If you wish to specify password criteria, enable the **Strong Password** radio button.
- 4. Set the Minimum Password Length and Maximum 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.
- 6. Click **Save** button to complete the settings.

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	\times
Enforce at least one numeric character	\checkmark
Enforce at least one special character	\times

Edit
Password Policy
Password Aging Interval 60d
Minimum Password Length 8
Maximum Password Length 32
Enforce at least one lower case character
Enforce at least one upper case character
Enforce at least one numeric character
Enforce at least one special character
Save

SNMP

Simple Network Management Protocol (SNMP) is used to manage the Advantage Series 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 UI (Refer SNMP Management)

SNMP General							
Enable	\checkmark						
SNMP Version	V1/2c&V3						

Working with MIB Browser

Download the MIB browser and install it.

1. Open the **MIB browser**-> Type the IP address of the PDU.

					İRe	asoning MIB Browser				•)
File Edit	Operations Tools	Bookmarks	Help								
Address: •	10.10.105.170		-	Advanced	OID: .1.3.6.1.4.1		 Operations: 	Get Next	•	6	Go

2. Click the Advanced button-> The Advance Properties of SNMP Agent window opens.

Adv	anced Properties of SNMP Agent	6
Address Port Read Community SNMP Version		
	Ok Cancel	

- 3. In Advance Properties of SNMP Agent window-> Enter the respective Port, Read Community, Write Community.
- 4. Select the SNMP manager version- 1 / 2 / 3.

Loading the MIB file

Click on File -> select Load MIBs

	Open	6
Look In: 🛅 r	nibchanges	- 🗈 🖄 🍱 🔡 🖿
🗀 mibbrowse	r_proffesional	
Enlogic_2.	0_v1_1.2.mib	
Enlogic_2.	0_v1_1.mib	
Enlogic_2.	0_v1_3.mib	
File <u>N</u> ame:	Enlogic_2.0_v1_3.mib	
Files of Type:	All Files	•
		Open Cancel

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.

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 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	9	Ethernet-2 IP Configu	ration	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 IPv6 Auto	fe80::ca45:44ff fef9:ffd2 2001:c0a6:aa01:0:ca45:44ff fef9:ffd2			SSL Certificate SSL Certificate Choose File No file chosen
						SSL Certificate Key Choose File No file chosen
<u>Network Time Protocol(NTP)</u> Enable	×		Date/Time Settings	2021/01/29	<u>Daylight</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.
 - For **GET** request, type the URL request, basic authentication header with username and password and query the request.



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

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:

}

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

POST V https://192.168.10.128/redfish/v1/SessionService/Sessions							
Authorization Headers (2) Body Pre-request Script Tests							
◎ form-data x-www-form-urlencoded raw binary JSON (application/json) Y							
1 * { 2 "username":"admin", 3 "password":"123456789" 4 }							
Body Cookies Headers (6) Test Results							
connection → keep-alive							
content-length $\rightarrow 0$							
content-type → application/json							
Iocation → /redfish/v1/SessionService/Sessions/330574760							

• Use the **X-Auth Token** from the response body along with the other two headers and basic authentication for any POST requests.

	post 🗸	https://192.168.10.128/redfish/v1/PowerDistribution/1/PowerControl/Loadsegment/1/OutletControl						
Auth	norization	Headers (2)	Body 🔵	Pre-request Script	Tests			
	Key						Value	
>	X-Auth-Tol	(en					330574760	
~	Content-Ty	/pe					application/json	

• For **DELETE** request, type the URL for session or users want to delete along with the basic authentication and send (Refer Fig.5).

🥬 Postman File Edit View Help					-	o ×
🕂 New 🔻 Import R	lunner 📴 *	👪 My Workspace 🗸	< (⊂	SYNC OFF 💽	5 A 4) Sign In
Q Filter	http://192.168.1.126/r http://192.168.1.126/r	+ •••		No Environment	~	• • •
History Collections	DELETE V http://192.168.1.126/redfish/v1/	SessionService/Sessions/1105210873		Params	Send 🗸	Save ~
L+	Authorization Headers (1) Body Pre-	request Script Tests				Cookies Code
You haven't created any collections yet. Postman Collections let you group related requests, making	TYPE Basic Auth	Username	admin			
Henrico response, intering them easier to access and run.	The authorization header will be automatically generated when you send the request. Learn more about authorization Preview Request	Password	Show Password			
	Body Cookies Headers (4) Test Results			Status: 200 OK	Time: 316 ms	Size: 145 B
	Pretty Raw Preview J50N ∨ ⇒ 3 × K 3 } "Session Deleted": 1105210873					Ē Q

Redfish URLs Supported with GET Method

Session Service

S.No	URL
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 S	ervice
S.No	URL
1	/redfish/v1/AccountService
2	/redfish/v1/AccountService/Accounts
3	/redfish/v1/AccountService/Accounts/{username}
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
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}
Branches	
S.No	URL
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Branches
2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id} /Branches/#cbnumber
Outlets	
S.No	URL
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Outlets
2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Outlets/#outletnumber
Sensor	
S.No	URL
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/Power{cbnum#}

2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/Current{cbnum}		
3	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/VoltageAL1N		
4	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/CurrentOUTLET#		
5	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/VoltageOUTLET#		
6	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Sensors/PowerOUTLET#		
7	/redfish/v1/PowerEquipment/RackPDUs/2/Sensors/EnergyOUTLET44		
8	/redfish/v1/PowerEquipment/RackPDUs/2/Sensors/PowerMains1-6		
9	/redfish/v1/PowerEquipment/RackPDUs/2/Sensors/CurrentMains1-3		
10	/redfish/v1/PowerEquipment/RackPDUs/2/Sensors/VoltageMains1-6		
11	/redfish/v1/PowerEquipment/RackPDUs/2/Sensors/FreqMains		
12	/redfish/v1/PowerEquipment/RackPDUs/2/Sensors/PDUPower		
Mains			
S.No	URL		
1	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Mains		
2	/redfish/v1/PowerEquipment/RackPDUs/{pdu_id}/Mains/AC1		
Redfish UF	Redfish URLs Supported with POST Method		
S.No	URL		
1	/redfish/v1/AccountService/Accounts		
2	/redfish/v1/PowerDistribution/{pdu_id}/PowerControl/Loadsegment/{loadseg_id}		
	/OutletControl		
Redfish UF	RLs Supported with DELETE Method		
S.No	URL		
1	/redfish/v1/AccountService/Accounts/test_user		
2	/redfish/v1/SessionService/Sessions/ <sessionid></sessionid>		

Event Service

Subscribe Event Service:

- 1. Using **POST** method, create a session and apply the generated X-auth-token to the headers.
- 2. Query the URL http://<pdu_ip_addr>/redfish/v1/EventService/Subscriptions using POST method with the following body:

{
 "destination":"http://<ip_addr>/redfish/v1/events",
 "events":"Alert",
 "context":"web",
 "protocol":"redfish"

}			
POST V https://10.20.90.238/redfish/v1/EventService/Subscriptions/	Params	Send 🗸	Save 🗸
Authorization Headers (3) Body Pre-request Script Tests			Cookies Code
● form-data ● x-www-form-urlencoded ● raw ● binary JSON (application/json) ∨			
1 * ['destination':"http://10.20.90.229/redfish/vl/events", "events":"http://10.20.90.200.200.200.200.200.200.200.200.			
	Status: 200 C	V Time: 2076 mg	Cine: E70 D
Body Cookies Headers (4) Test Results	Status: 200 O	K Time: 2076 ms	SIZE: 576 D

3. To verify the subscriptions, query the URL using **GET** method to observe the result of subscription added

http://<pdu_ip_addr>/redfish/v1/EventService/Subscriptions/1.

GET ✓ https://10.20.90.230/redfish/v1/EvemService/Subscriptions			Params	Send 🗸	Save ~
Authorization Headers (1) Body Pre-request Script Tests				c	Cookies Code
Key	Value	Description		••• Bulk Edit	Presets 🔻
Authorization	Basic YWRtaW46MTIzNDU2Nzg=				
New key					
Body Cookies Headers (4) Test Results			Status: 200 OK	Time: 2066 ms	Size: 413 B
Pretty Raw Preview JSON V =			D Q		
<pre>1 - { 2</pre>					

4. To Delete the Subscription, query the URL using **DELETE** method to observe the result of subscription deleted **http://<pdu_ip_addr>/redfish/v1/EventService/Subscriptions/1**.

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

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

EN2.0>?			
Sys	PDU system configure and setting		
Net	PDU net application configure and setting		
Usr	PDU user operation		
Dev	PDU device setting		
Pwr	PDU nower setting		

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:

```
EN2.0>sys
parameter Error
sys: system setting
usage:
        sys [date/time/ntp] [2012-09-11/14:16:20/133.100.11.8 133.100.11.9 (serv
erl server2)]
        sys [ver/def/rst]
        sys [ver/def/rst]
        sys upd [pduid] [conf/all]
        sys log [del|edit] [event|data] [on|off] [interval]
        sys ledcolor [pduid]/all] [dark/red/green/yellow/blue/pink/cyan/white]
        sys dualinput get
        sys dualinput set [NA/EMEA]
```

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).

Table 5: 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):
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 [pduid] [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
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

Table 6: Net Commands

Net Commands	Description	Example		
		EN2.0>net ssh		
		SUCCESS		
net ssh [on/off]	Sets ssh on/off	SSH Port: 22		
		SSH server is running		
		EN2.0>net ftps		
		SUCCESS		
net ftps [on/off]	Sets ftps on/off	FTPS Port: 21		
		Service is running		
		ls Ftp		
		EN2.0>net http		
		SUCCESS		
		HTTPS Port: 80		
	Sets https on/off	Status: ON		
		EN2.0>net https on		
net http [on/off]		Reboot required for change to take		
		effort		
		WEB protocol is changed, reboot to		
		validate		
		System Reboot now, Are you		
		sure?(Y/N):		
		EN2.0>net https		
		SUCCESS		
		HTTPS Port: 443		
		Status: OFF		
		EN2.0>net https on		
net https [on/off]	Sets https on/off	Reboot required for change to take		
		effort		
		WEB protocol is changed, reboot to		
		validate		
		System Reboot now, Are you		
		sure?(Y/N):		
		EN2.0>net redfish		
		SUCCESS		
not radfich [an/off]	Sate radfich an /off	Status: ON		
	Sets realish on/off	EN2.0>net redfish off		
		SUCCESS		
		Status: OFF		



		EN2.0>net snmp
		SUCCESS
		v1v2c: ON
net [snmp]		v3: ON
[v1v2c/v3/trap]		trap: ON
[on/off]		
		EN2.0>net snmp v1v2c off
		SUCCESS
net [mac/tcpip]	Displays the mac address,	EN2.0>net mac
	IPv4	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
net tcpip	Changes the network to	EN2.0>net tcpip dhcp eth0dhcp
[eth0dhcp/eth1dhcp/	DHCP or Static mode	Reboot required for change to take
in nm gwl		Network is reconfigured report to
ib iiii 8w]		validate System Reboot now Are you
		sure? (V/N)· V
		FN2 0>net tonin eth1static
		10 10 94 1>
		Reboot required for change to take
		effort
		Network is reconfigured, reboot to
		validate
		System Reboot now. Are vou
		sure?(Y/N):Y

net ip [v4] [v4v6]	Sets ipv4	EN2.0>net ip
		SUCCESS
		IPV4
		EN2.0>net ipv4
		Reboot required for change to take
		effort
		IP protocol is changed, reboot to
		validate
		System Reboot now, Are you
		sure?(Y/N):
net phy	Set the link speed to auto	EN2.0>net phy
[auto/10100mbps]	negotiation/10100mbps	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 cert [def]	Updates the certificate file	EN2.0>net cert
		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
		Pomoving custom cortificato filo in
		(cost /cost ort
		Reboot required for change to take
		effect
		Certificate Setting changed report to
		validate
		System Reboot now Are you
		sure?(V/N).
		Sule: (T/N).

Table 7: Usr Commands

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

Table 8: Dev Commands

Dev Commands	Description	Example	
		EN2.0>dev daisy	
		SUCCESS	
		Daisy chain unit number: 1	
		Daisy chain address list: 0 0 0	
dev daisy [rna/gna]	Setting the PDU	Daisy Mode: QNA	
[init] [create]	Daisychain to RNA or QNA		
	mode	EN2.0>dev daisy qna create	
		Reboot required for change to take	
		effort	
		System Reboot now, Are you	
		sure?(Y/N):	
		EN2.0>dev outlet 1 status	
		SUCCESS	
		Relay Outlet Status	
dev outlet pdu ID	Displays outlet status.	Outlet# 1: Open Outlet# 2: Open	
[status/outlet index]	Turn on/off the outlet	Outlet# 3: Open Outlet# 4: Open	
[on/off]	power	Outlet# 5: Open Outlet# 6: Open	
		Outlet# 7: Open Outlet# 8: Open	
		EN2 0>dev outlet 1 1 op	
		EN2 0>dev sensor	
	Lists out the connected	SUCCESS	
dev [sensor/usb]	sensors on PDU		
[on/off]	Turn on/off the USB	FN2.0>dev usb on	
		SUCCESS	
		EN2.0>dev hid 1	
	Displays the PDU Rack	SUCCESS	
dev hid [cold/hot]	Access details		
[lock/unlock]	Locks/Unlocks the HID	EN2.0>dev hid 1 hot unlock	
		SUCCESS	
dou lodotnia [on/off]	Turne on /off the ledetrie	EN2.0>dev ledstrip on	
dev ledstrip [on/on]	rums on/on the leastrip	SUCCESS	
		EN2.0>dev power share	
		SUCCESS	
	Displays the status of PDU	PDU 1:	
dev nowershare	nower share	Downstream: 0	
		Upstream: 1	
		Mains: 1	
		PDU 2:	
		Downstream: 1	

		Upstream: 1
		Mains: 1
		PDU 3:
		Downstream: 1
		Upstream: 1
		Mains: 1
dev ehandle [pduID]		dev ehandle 1 hot lock
[cold/hot]	Enables ehandle function	
[lock/unlock]		

Table 9: 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 in the Web UI.



- 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.

Sensors

The Advantage Series PDU can monitor conditions (environment and security) with enLOGIC's sensors. Sensors are connected to the Advantage Series 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
- RJ45-DB9 Cable
- LED Light Strip Sensor
- Ext Modbus kit
- HID RACK Access kit
- ehandle

Sensor Overview

For detailed specifications of each sensor, refer to Appendix C of this manual.

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 PDUs and Inline Meters are designed to collect a maximum of 6 sensor measurements each. For example, the 3 Temperature and 1 Humidity sensors (model EA9105) collect 4 sensor measurements. The 1 Temperature and 1 Humidity sensors (model EA9103) collect 2 sensor measurements. All other enLOGIC sensors collect 1 sensor measurement each.

Note: The 3 Temperature and 1 Humidity sensors (model EA9105) can only be plugged directly into the Sensor 1 or Sensor 2 port on the PDU or Inline Meter. It is <u>not</u> recommended to plug EA9105 directly into the Sensor Hub (model EA9106).

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 Series PDU begins to automatically manage sensors. If the sensors are not automanaged, 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 Series 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 (or connected Ethernet 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.
- Only plug the 3 Temperature and 1 Humidity sensors (model EA9105) directly into the Sensor 1 or Sensor 2 port. It is not recommended to plug this sensor into the Sensor Hub (model EA9106).
- 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 Series 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 (or the connected Ethernet cable) into the Sensor 1 or Sensor 2 port on the PDU/Inline Energy Meter or the Sensor Hub (model EA9106).

Note: Only plug the 3 Temperature and 1 Humidity sensors (model EA9105) directly into the Sensor 1 or Sensor 2 port. It is not recommended to plug this sensor into the Sensor Hub (model EA9106).

Door Switch Sensor Installation Instructions EA9109

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.



Inside 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 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.
- 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 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 do0g500000000vv0or 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. (See below.)



- 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 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.



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 PDU, 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 detectionarea.
- If mounting to a cabinet or wall, use the adhesive-backed mount (provided). The adhesivebacked is mounted in the detection area to prevent and notify delay leakage.

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.

enLogic Outlet Metered, Outlet	Switched PDU 1.0.6.4	(? License	
ሰ 🖱 🏶 &	1.0.7.4	▲ 🖋 🖗 🔒 🖻	Welcome admin ⊡	Logout
External Sensors				
PDU 1 / door		Summary		
		PDU Name	Sensor Name	Reading
		PDU 1	door	Off
	T	PDU 2	Balcony	No-Leak
	H Door	PDU 4	т	25.0°C
	Dry Spot	PDU 4	RH	50%
	Rope Smoke	PDU 5	т	24.0°C
	AIR Beacon	PDU 5	RH	52%
	HID PDU	PDU 6	DOOR SWITCH	Open
		PDU 8	abcdefghijklmnop	24.0°C
		PDUS	numicity	34% 26.0°C
		< Previous	iomperatures	Next S
Total Total Total PDUs Load Sensors	Total Energy	NOTE		

Configuring Sensors

To configure the sensor name, location, alarms, notifications, and details, open up 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

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	Τ2	07080002	2	PDU#1	
Temperature	ТЗ	07080002	3	PDU#1	
Humidity	RH	07080002	4	PDU#1	

Edit External Sensor Threshold

- 1. Go to Settings/PDU 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.

	enLogic Outlet Me	tered, Outlet Switched PDU 1A7.31.	0.7.4	? License	
	n 🖱 🙂 🖧		🛆 🛷 🖗 🔒 1	■ Welcome G→ Logout	
PDU Thresholds					
Device Detection Thre Threshold(mA) -95	<u>eshold</u> 🖉 56301139	Power Threshold Input Phases Circ	uit Breaker Control Manage	ment External Sensors	
External Senso	vrs(1·1)	External Sensors(1:2)		External Sensors/1:3)	
Name	DOOR SWITCH 1	Name	т	Name	RH
Туре	Door	Туре	Temperature	Туре	Humidity
Value	Off	Low Critical	17	Low Critical	18
		Low Warning	18	Low Warning	19
		High Warning	19	High Warning	21
		High Critical	20	High Critical	23



Monitoring the External Sensor

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

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.

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 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.



RNA (Redundant Network Access) Functionality

enLOGIC RNA allows to secure the access of PDU data and statistics on 2 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

- 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.

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.
- 2. 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 shouldn't be placed in between the daisy chain system.



PDU setup with LAN for RNA

Daisy Chain and RNA Commands in CLI

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

Table 10: RNA Commands

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):

Appendix A: Advantage Series Bracket Mounting Information

Whenever you mounting the Advantage Series PDU, refer to the table below for specific mounting requirements and verify whether the separate bracket kit is required for proper mounting. *Table 11: Advantage Series Bracket Mounting Information*

Manufacturer	Models	Separate Bracket Kit Required?	Note
APC	Net shelter SX	No	Mount enLOGIC PDU directly in rack.
Chatsworth	Terra frame	Yes	Mount using Chatsworth Power Strip Lashing Bracket, part number 35086-C02 for 42U rack or 35086-Cxx for others.
Chatsworth	Global frame	Yes	Mount using L-shape PDU brackets that are included with rack. Note: mount up to 2 rack PDUs.
Cisco	R-Series	No	Mount enLOGIC PDU directly in rack.
Cooper	Delta3	Yes	Mount using Cooper part number PDUMTGBRKT.
Dell	PowerEdge	No	Mount enLOGIC PDU directly in rack.
Eaton	Paramount	Yes	Mount using Eaton part number PDUBRCKT.
Eaton	Vantage S2	No	Mount enLOGIC PDU directly in rack.
Emerson	DCF Rack	No	Mount enLOGIC PDU directly in rack.
Emerson	DCM Rack	No*	Bracket kit not required, but more advanced mounting options are available with Emerson full- height PDU mounting brackets.
HP	G2 Series	Yes	Mount using enLOGIC part number EA9120.
НР	100 Series	Yes	Mount using enLOGIC part number EA9120.

НР	Intelligent Series Rack	Yes	Mount using enLOGIC part number EA9120.
Knürr	Miracel®	Yes	Mount using PDU mounting brackets included with Miracle rack.
Knürr	DCM	Yes	Mount using small bracket included with rack; more advanced mounting options with Emerson full- height PDU mounting brackets.
Panduit	Net-Serv Cabinets	Yes	Mount with Panduit part number SVPDUB.
Rittal	TS8	Yes	Mount with enLOGIC part number EA9120.
Schroff	Varistar	Yes	Contact Schroff for mounting bracket options.
Wrightline	Paramount	Yes	Mount enLOGIC PDU using Eaton part number PDUBRCKT.
Wrightline	Vantage S2	No	Mount enLOGIC PDU directly in rack.
Wrightline	Vantage	Yes	Mount with Eaton part number 4PRPWRBRKT.

Appendix B: Advantage Series Product Range for EMEA

Table 12: EN2000, EN5000 and EN6000 Series for EMA

EN2000, EN5000, and EN6000 Series								
Phase	Input Circuit	Max Power	Total Outlets	Outlet configuration	Chassis Depth/ (L x W x <u>D)mm</u>	Max Chassis Depth at breaker/mm	Max Chassis Depth at NMC/mm	SKU
	16	3.68 kVA	24	(20)C13, (4)C19	1490 x 52 x 53	53	63	EN2326
	32	7.4 kVA	24	(20)C13, (4)C19	1750 x 52 x 53	53	63	EN2325
	32	7.4 kVA	32	(24)C13, (8)C19	1750 x 52 x 53	75	63	EN2329
Single	32	7.4 kVA	24	(20)C13, (4)C19	1750 x 52 x 53	53	63	EN5325
	32	7.4 kVA	32	(24)C13, (8)C19	1750 x 52 x 53	75	63	EN5329
	32	7.4 kVA	24	(20)C13, (4)C19	1750 x 52 x 53	53	63	EN6325
	32	7.4 kVA	32	(24)C13, (8)C19	1750 x 52 x 53	75	63	EN6329
						May Chassis	Max	
Phase	Input Circuit	Max Power	Total Outlets	Outlet configuration	Chassis Depth/ (L x W x <u>D)mm</u>	Depth at breaker/mm	Chassis Depth at NMC/mm	SKU
Phase	Input Circuit 16	Max Power 11.0 kVA	Total Outlets 24	Outlet configuration (18)C13, (6)C19	Chassis Depth/ (L x W x <u>D)mm</u> 1750 x 52 x 53	Depth at breaker/mm	Chassis Depth at NMC/mm 63	SKU EN2402
Phase	Input Circuit 16 32	Max Power 11.0 kVA 22.0 kVA	Total Outlets 24 24	Outlet configuration (18)C13, (6)C19 (12)C13, (12)C19	Chassis Depth/ (L x W x D)mm 1750 x 52 x 53 1750 x 52 x 53	Depth at breaker/mm 75 75	Chassis Depth at NMC/mm 63 63	SKU EN2402 EN2808
Phase	Input Circuit 16 32 32	Max Power 11.0 kVA 22.0 kVA 22.0 kVA	Total Outlets 24 24 36	Outlet configuration (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19	Chassis Depth/ (L x W x D)mm 1750 x 52 x 53 1750 x 52 x 53 1750 x 85 x 53	Depth at breaker/mm 75 75 53	Chassis Depth at NMC/mm 63 63 63	SKU EN2402 EN2808 EN2810
Phase	Input Circuit 16 32 32 16	Max Power 11.0 kVA 22.0 kVA 22.0 kVA 11.0 kVA	Total Outlets 24 24 36 24	Outlet configuration (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19 (18)C13, (6)C19	Chassis Depth/ (L x W x D)mm 1750 x 52 x 53 1750 x 52 x 53 1750 x 85 x 53 1750 x 52 x 53	Depth at breaker/mm 75 75 53 53	Chassis Depth at NMC/mm 63 63 63 63	SKU EN2402 EN2808 EN2810 EN5402
Phase	Input Circuit 16 32 32 16 32	Max Power 11.0 kVA 22.0 kVA 22.0 kVA 11.0 kVA 22.0 kVA	Total Outlets 24 24 36 24 24 24	Outlet configuration (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19 (18)C13, (6)C19 (12)C13, (12)C19	Chassis Depth/ (L x W x D)mm 1750 x 52 x 53 1750 x 52 x 53 1750 x 85 x 53 1750 x 52 x 53 1750 x 52 x 53	Depth at breaker/mm 75 75 53 53 53 75	Chassis Depth at NMC/mm 63 63 63 63 63	SKU EN2402 EN2808 EN2810 EN5402 EN5808
Phase	Input Circuit 16 32 32 16 32 32 32	Max Power 11.0 kVA 22.0 kVA 22.0 kVA 11.0 kVA 22.0 kVA 22.0 kVA	Total Outlets 24 24 36 24 24 24 24 36	Outlet configuration (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19 (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19	Chassis Depth/ (L x W x D)mm 1750 x 52 x 53 1750 x 52 x 53	Depth at breaker/mm 75 75 53 53 53 75 53 53	Chassis Depth at NMC/mm 63 63 63 63 63 63	SKU EN2402 EN2808 EN2810 EN5402 EN5808 EN5810
Phase	Input Circuit 16 32 32 16 32 32 32 16	Max Power 11.0 kVA 22.0 kVA 22.0 kVA 11.0 kVA 22.0 kVA 22.0 kVA 11.0 kVA	Total Outlets 24 24 36 24 24 36 24 36 24	Outlet configuration (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19 (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19 (24)C13, (12)C19 (18)C13, (6)C19	Chassis Depth/ (L x W x D)mm 1750 x 52 x 53 1750 x 52 x 53 1750 x 85 x 53 1750 x 52 x 53 1750 x 52 x 53 1750 x 85 x 53 1750 x 85 x 53	Max Crassis Depth at breaker/mm 75 75 53 53 75 53 75 53 53 53	Chassis Depth at NMC/mm 63 63 63 63 63 63 63 63	SKU EN2402 EN2808 EN2810 EN5402 EN5808 EN5810 EN6402
Phase	Input Circuit 16 32 32 16 32 32 32 16 32 32	Max Power 11.0 kVA 22.0 kVA 22.0 kVA 11.0 kVA 22.0 kVA 11.0 kVA 22.0 kVA	Total Outlets 24 24 36 24 24 24 36 24 24 24	Outlet configuration (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19 (18)C13, (6)C19 (12)C13, (12)C19 (24)C13, (12)C19 (18)C13, (6)C19 (18)C13, (6)C19 (12)C13, (12)C19	Chassis Depth/ (L x W x D)mm 1750 x 52 x 53 1750 x 52 x 53	Max Crassis Depth at breaker/mm 75 75 53 53 75 53 53 53 53 75 53 75	Chassis Depth at NMC/mm 63 63 63 63 63 63 63 63 63	SKU EN2402 EN2808 EN2810 EN5402 EN5808 EN5810 EN6402 EN6808
				EN1000 Ser	ries			
--------	------------------	--------------	------------------	-------------------------------	--	---	--	--------
Phase	Input Circuit	Max Power	Total Outlets	Outlet configuration	Chassis Depth/ (L x W x <u>D)mm</u>	Max Chassis Depth at breaker/ mm	Max Chassis Depth at NMC/ mm	SKU
	16	3.68 kVA	24	(20)C13, (4)C19	1490 x52 x53	53	63	EN1326
Single	32	7.4 kVA	42	(36)C13, (6)C19	1750 x 52 x 53	53	63	EN1337
	30	5.0 kVA	42	(36)C13, (6)C19	1750 x 52 x 53	95	63	EN1315
Phase	Input Circuit	Max Power	Total Outlets	Outlet configuration	Chassis Depth/ (L x W x <u>D)mm</u>	Max Chassis Depth at breaker/ mm	Max Chassis Depth at NMC/ mm	SKU
	16	11.0 kVA	42	(36)C13, (6)C19	1750 x 52 x 53	53	63	EN1403
	32	22.0 kVA	42	(30)C13, (12)C19	1750 x 55 x 53	75	63	EN1811
Three	30	8.6 kVA	42	(36)C13, (6)C19	1750 x 52 x 53	95	63	EN1805
	30	8.6 KVA	38	(30)C13, (6)C19, (5)5- 20R	1750 x 52 x 53	75	63	EN1806

Table 13: EN1000 Series for EMA

Appendix C: Advantage Series Product Range for North America

			EN2	000, EN5000, ar	nd EN6000 Ser	ies		
Phase	Input Circuit	Max Power	Total Outlets	Outlet configuration	Chassis Depth/ (L x W x <u>D)mm</u>	Max Chassis Depth at breaker/mm	Max Chassis Depth at NMC/mm	SKU
	20	3.3 kVA	16	(12)C13, (4)C19	917 x 52 x 53	53	63	EN2316-E
	30	5.0 kVA	24	(20)C13, (4)C19	1750 x 52 x 53	75	63	EN2324
Single	30	5.0 kVA	36	(30)C13, (6)C19	1750 x 52 x 53	75	63	EN2333
	30	5.0 kVA	24	(20)C13, (4)C19	1750 x 52 x 53	75	63	EN6324
	30	5.0 kVA	36	(30)C13, (6)C19	1750 x 52 x 53	75	63	EN6333
Phase	Input Circuit	Max Power	Total Outlets	Outlet configuration	Chassis Depth/ (L x W x <u>D)mm</u>	Max Chassis Depth at breaker/mm	Max Chassis Depth at NMC/mm	SKU
	30	8.6 kVA	36	(30)C13, (6)C19	1750 x 52 x 53	95	63	EN2804
	30	8.6 kVA	36	(30)C13, (6)C19	1750 x 52 x 53	95	63	EN2804-S
Three	60	17.3 kVA	24	(12)C13, (12)C19	1750 x 52 x 53	75	63	EN2902
Inree	30	8.6 kVA	36	(30)C13, (6)C19	1750 x 52 x 53	95	63	EN6804
	30	8.6 kVA	36	(30)C13, (6)C19	1750 x 52 x 53	95	63	EN6804-S
	60	17.3 kVA	24	(12)C13, (12)C19	1750 x 52 x 53	75	63	EN6902

Table 14: EN2000, EN5000 and EN6000 Series for North America

Firmware Update Procedures

enLOGIC PDUs 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.tar'.
- 2. Extract the 'enlogic.tar' and copy its contents to a folder named update
- 3. Copy the update folder to the USB drive

6		~			
		Name	Date modified	Туре	Size
255		🧾 at91bootstrap	14-04-2020 16:58	BIN File	11 KB
	R	at91-sama5d3_xplained.dtb	28-09-2020 03:52	DTB File	29 KB
ds	A	📄 rootfs.ubi	05-02-2021 12:26	UBI File	33,664 KB
bace	A	🗐 u-boot	02-11-2020 10:10	BIN File	597 KB
nts	*	📄 zlmage	14-04-2020 16:58	File	3,567 KB
	*				

- 4. Insert the USB drive into the USB port of the PDU.
- 5. Go to **Setup-> USB menu** on the OLED.
- 6. 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.

- 7. Remove the USB.
- Go to Setup -> Device -> Firmware to confirm that the Firmware uploaded successfully.

Web Interface Method

- 1. Go to www.enLOGIC.com and download the most recent Firmware version, 'EnLOGIC.tar'. 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.tar file.

	enlogic a 🔊 🛭 🖧	Outlet Metered, Ou	tlet Switched PD	U 1.0.6.4		? <u>License</u> Welcome <u>admin</u>	
System Manageme	nt			Upload Firmwa	are Upload Configura	ation Downloa	
System Information		Rack Location	>	LED LEI	Edge Color Ø		Upload Firmware
Contact Name Contact Email		Row Name Row Position					You must keep your browser window open for the duration of the upload. PDU will reboot once the firmware is Upgraded.
Contact Phone Contact Location		Rack Name Rack ID (Choose PDU PDU 1
		Rack Height	PDUs 1	-4 PDUs 5-8	PDUs 9-12 PDUs 13-16		P001 P002 P003 P004 P005 P006 P006
0	2	Ø 3	6	Ø			PDU 8 PDU 9 PDU 10 PDU 11 PDU 12
Power Panel Name Core Location Fro	Power Panel Nan	e Power Pai	iel Name	Power Panel Name Core Location	Front		PDU 13 PDU 14 PDU 15 PDU 16
Core U Position	Core U Position	Core U Po	sition	Core U Position			

Note: PDU will reboot and Firmware upgrade will complete.

FTPS Method

- To access the PDU using an FTPS program, FTPS must be enabled through the PDU Web Interface or through CLI or through SSH.
 - 8. In the Web Interface, go to Network Settings -> FTPS.
 - 9. Select the check box to enable FTPS Access.
 - 10. Login to an FTP program with a role with administration privileges.
 - 11. Transfer the firmware file enlogic.tar to /fw folder.
 - 12. Connect to the PDU via SSH using a program such as HyperTerm or PUTTY.
 - 13. Login using a role with administration privileges.
 - 14. Type the command sys upd <pduid> all.

After reboot message indication in console, Issue sys upd <pduid> rst (In Daisy chain for slaves). **Note:** For Master PDU / Standalone configuration, type the command sys upd <pduid> all and (Y/N) prompt will be appeared for PDU reboot, type Y. When the upload is finished, the system will reboot automatically.

PCT Software Method

How to use PCT Software Tool?

1. Installing PCT Tool Double click on the PCT_Setup.msi that is shared

_ 🛃 🚽 2.0	5.0						- 0
File Home	Share View						
Pin to Quick Copy access	Paste A Cut Paste Paste shortcut	Move Copy to v to v	New item •	Properties	Select all Select none		
c	lipboard	Organize	New	Open	Select		
$\leftarrow \ \rightarrow \ \checkmark \ \uparrow$	→ Enlogic_PCT → 2.6.0)				ٽ ~	, Search 2.6.0
Quick access Control	* * *	lame ^ ₽ PCT_Setup ≹ setup	Date modified 1/13/2021 9:50 A 1/12/2021 8:25 P	Type Windows Inst. M Application	Size Iller 64,935 KB 531 KB		

- 2. Click on the Next option to proceed and the tool will be installed
- 3. Click on the CIS-PCT-2.0 icon to open the tool

CIS_PCT-2.	

Firmware Flashing Tool

Before working on the PCT tool make sure of the following:

- The SNMP with IP 0.0.0.0 or the system IP (on which the tool is installed) should be enabled. Putting the PDU to default will enable the IP(0.0.0.0)
- Enable SSH with default port 22
- Enable FTPS with default port 21
- Go to Tools in the PCT home page to upload the Firmware

Scan - Give the IP range and scan for the IPs in the network. It will list out all the IPs int the network The format of the scan range should be **192.168.0.1-255** (No spaces between the -)

Scan Type - In the Scan Type, select PDU Only to scan only the Enlogic PDUs

10.10.107.1-255			PDU Only		Sca	n	Save IP Address
					Browse Firmware or	Configuration file	Import IP Address
				100	%		
	IP A	kddress	Username	Password	Device Info	Upload Status	
	1 10.1	10.107.7	admin	******	Enlogic PDU		
	2 10.1	10.107.26	admin	******	Enlogic PDU		
	3 10.1	10.107.30	admin	******	Enlogic PDU		
	4 10.1	10.107.32	admin	*******	Enlogic PDU		
	5 10.1	10.107.31	admin	******	Enlogic PDU		
	6 10.1	10.107.57	admin	*******	Enlogic PDU		
	7 10.1	10.107.152	admin	*******	Enlogic PDU		
	0 10	10.107.153	admin		Enlogic PDU		
	8 10.						
	S 10.						

After scan, it will list out only the Enlogic PDU IPs in the network with the default username and default password

The default username and password displayed will be 'admin' and '12345678'

You can change it to any valid username of 'admin' privilege to upload the firmware/ configuration file Enter the current password of the PDU in the **Password** field

Clear Result - The Clear Result option will clear all the IP entries. Clicking on the button will ask for Confirmation.

Click on the **Yes** button to confirm and delete all the entries.

Select All Pingable IPs to scan all the IPs in the network

10.107.1-255		All Pinga	ble IP(s) 👻 🗍	Scar	n	Save IP Address
				Browse Firmware or	Configuration file	Import IP Address
			1009	6		
#	IP Address	Username	Password	Device Info	Upload Status	
	1 10.10.107.7	admin	******			
	2 10, 10, 107, 21	admin	******			
	3 10.10.107.26	admin				
	4 10.10.107.30	admin				
	5 10.10.107.31	admin	*****			
	6 10.10.107.32	admin				
	7 10.10.107.51	admin	*******			
	8 10.10.107.52	admin	*****			
	9 10.10.107.57	admin	*****			
	10 10.10.107.60	admin	*******			
	11 10.10.107.61	admin	******			
	12 10.10.107.62	admin	*******			
	13 10.10.107.169	admin	*****			
	14 10.10.107.174	admin	*****			
	15 10.10.107.200	admin	******			
	16 10.10.107.255	admin				
	17 10.10.107.72	admin	*****			
	18 10.10.107.87	admin	*****			
	19 10.10.107.98	admin	*******			
	20 10.10.107.153	admin	******			
	21 10.10.107.152	admin				

Advantage Series PDU

Save IP Address - You can save the IP addresses. It will save in a excel sheet in the selected location

			Browse File Location				
0.10.107.1-255						<u>_</u>]	Save IP Address
						Configuration file	Import IP Address
			V Enlogic_PCT				
			> 2.2.0				
	IP Address	Username	2.2.2			Upload Status	
	10.10.107.7	admin	2.3.0				
	10, 10, 107, 21	admin	2.3.0 Final				
	10, 10, 107, 26	admin	2.3.0_latest				
	10.10.107.30	admin	2.3.0-1				
	10.10.107.31	admin	> 2.4.0				
	10.10.107.32	admin	> 2.5.0				
	10.10.107.51	admin	> 2.5.1				
	10.10.107.52	admin	2.5.2				
	10.10.107.57	admin	2.0.0				
	10.10.107.60	admin	> Beta				
	10.10.107.61	admin	conf				
	10.10.107.62	admin	> Final build				
	10.10.107.169	admin	New folder				
	10.10.107.174	admin	> RC Build				
	10.10.107.200	admin	> RC1 build				
	10.10.107.255	admin					
	10.10.107.72	admin					
	10.10.107.87	admin				•	
	10.10.107.98	admin					
	10.10.107.153	admin	Make New Folder	ок	Cancel		
	10.10.107.152	admin					

			pList 🗸				⊖ Sear	ch							Anisha C	atherine 🧭	C B			
File Hon	ne Insert	Page La	yout Fo	ormulas (Data Re	eview V	iew Help)									යි Sha	are 🖓	Commer	nts
Paste v ≪	Calibri B I U	~ 11 ~ 🖽 ~	- A^ A` ⊘ - <u>A</u> -		= ≫~ = = =	>¶ -> at	Wrap Text Merge & Ce	nter 🗸	General \$~%	9 6.0 .00	Condit Format	tional Form	at as Cell le * Styles *	Insert v	Delete For	mat €	Sort & F	ind &	Ideas	
دا Clipboard		Font		L2	A	Alignment		RJ	Num	ber	F <u>u</u>	Styles			Cells		Editing		Ideas	^
AutoSave 💽 0	🖻 📙 り~	~ ~ ⇒																		
(i) UPDATES	AVAILABLE Up	dates for Off	ice are ready	to be installe	d, but first w	e need to clo	ose some app	s. Up	date now											×
A1	• = ×	√ fx	#																	~
	R	6	D	F	F	6	н		1	ĸ		м	N	0	D	0	P	c	т	
1 #	IP Address	Username	Password	Device Info	Unload St	tatus				ĸ		ivi	IN IS	0		ų	IX.			-1-1
2 1	10.10.107.7	admin	12345678	Devicenno	oproduor															
3 2	10.10.107.21	admin	12345678																	
4 3	10.10.107.26	admin	12345678																	
5 4	10.10.107.30	admin	12345678																	
6 5	10.10.107.31	admin	12345678																	
7 6	10.10.107.32	admin	12345678																	
8 7	10.10.107.51	admin	12345678																	
9 8	10.10.107.52	admin	12345678																	
10 9	10.10.107.57	admin	12345678																	
11 10	10.10.107.60	admin	12345678																	
12 11	10.10.107.61	admin	12345678																	
13 12	10.10.107.62	admin	12345678																	
14 13	10.10.107.169	admin	12345678																	
15 14	10.10.107.174	admin	12345678																	
16 15	10.10.107.200	admin	12345678																	
17 16	10.10.107.255	admin	12345678																	
18 17	10.10.107.72	admin	12345678																	
19 18	10.10.107.87	admin	12345678																	
	Sheet1	(+)									:	•								Þ

Import IP Address - You can also import the IP addresses from the excel sheet



From the IP addresses list, if u want u upload the firmware only on specified IPs then you need to delete the remaining IPs from the list by selecting the IP and clicking on `_' button

Edit the PDUs username and password before uploading the firmware file. It will show default username and password. To edit it click on the username and password field and edit it

If you want to add any entry, then click on the '+ ' button. An empty field will appear, and you can enter the IP, username and password

The pen symbol button is used to edit the field. Select the field you want to edit and click on the pen symbol

The tick symbol is to end any edit and the close symbol is to close an edit

Note: After IP scan, even though only one field is highlighted when you select it, the firmware/ conf file upload will happen to all the IPs in the list.

If you want to upload firmware or conf.ini file on only one IP, then either do the following:

- If your IP is in the list, then remove all IPs by selecting it and removing it using the '_' button
- You can skip IP scan and just enter the PDU details (IP, username and password) by clicking on the '+' button to add a new field
- You can also give only your IP in the IP scan range and scan it. It will list out your IP with the default username and password

PDUs with default passwords – For default PDUs enter the default password in the **Password** field. The PDU will get set back to the current password (i.e., 12345678) during Configuration/Firmware Upload

Browse Firmware or Configuration File - Select the firmware file or the configuration file that you want to upload on the scanned IP addresses and click on the Upload Firmware

Note: PCT tool will upload the Firmware only on the master PDU

PCT tool will upload the configuration file on the master and all the slave PDUS connected

10.10.104.231		PDU Only			can	Save IP Address
				Browse Firmware	or Configuration file	Import IP Address
			100	1%		
	IP Address	Username	Password	Device Info	Upload Status	
	22 10.10.104.231	admin		Enlogic PDU		
		🔁 Open			×	
		← → × ↑ 📙 « Enlogic	:2.0 > 1.0.7.4	✓ Č	1 1.0.7.4	
		Organize 🔻 New folder				
		This PC ^ N	lame ^	Date r	modified Type	
		🧊 3D Objects 📑	🖉 enlogic	11/30	/2020 12:18 PM WinR	
		Desktop				
		Documents				
		Downloads				
		Music				
		E Pictures				
		Videos				
		WINDOWS (C:)			>	
		File <u>n</u> ame:	enlogic		~	

Advantage Series User Manual

Home Page

You can see the home page, when you open the enLOGIC PCT Tool. Only New SKU, Tools, Network Services and Help option will be enabled first.



New SKU Configuration File Creation

Select the SKU to create the conf.ini file After the SKU is selected, all the pdu settings will be enabled

Welcome SKU# Please selec	ct SKU number to	create new configure file.			enlogic
_					
	New SKU	New Cor	ifiguration	er Management	System Settings
	Input Settings	SKU Numbers: Pha	EN1335 - EN28045 - S_TYPE EN2804 - S_TYPE EN2902 - S_TYPE EN2402 - S_TYPE EN2402 - S_TYPE EN2403 - S_TYPE EN2403 - S_TYPE	K Access Control	Smart Rack Access
	Current	Energy	ENS325 - MPLUS_TIPE +	Network Services	¢ ⁰

Creating Configuration File

Select each option, edit the settings, and click on the back button Clicking on the back button will auto save the settings. Note:

Do not click on the Home button to go to the next settings page after editing any page as it will not autosave the settings made

Input Settings

Go to Input Settings for Power Threshold settings and Outlet Delay settings

Power Threshold Setttings		Outlet Settings		
Low Critical (W)		Outlet State On PDU Startup		
Low Warning (W)		Outlet On Delay (0 ~ 7200 sec)		
High Warning (W)		Outlet Off Delay (0 ~ 7200 sec)		
High Critical (W)		Outlet Reboot Duration (5 ~ 60 sec)		
Reset Threshold (W)		Device Detect Threshold (50 - 150)	150	
Alarm State Change Delay (Samples)				

Phase Voltage Settings

Go to Phase Voltage page for Input Phase Voltage settings

Phase 1 180			right chlocal (r)	Reset Threshold	Alarm State Change Delay
120	✓ 190		260		
lase 2 100		250	260		
hase 3 180					

Phase Current Settings

Go to the Current page for Input Phase Current settings

PDU Configura	tion Tool 🛖 v2.6.0					- 0	9 ×
🕞 Phase Ci	urrent						
hase	Low Critical (A)	Low Warning (A)	High Warning (A)	High Critical (A)	Reset Threshold	Alarm State Change Delay	
Phase 1							
Phase 2							
Phase 3							
Phase 2 Phase 3				28 28			

Control Outlets

Control Outlets page has Outlet Threshold settings and Outlet name change settings

Numerical index ind	New Critical (N) Image Number Sector (Note) Rest Trendod Composition (Note) Sector (Note) Image Number Sector (Note							
Dechaging Dechaging Dephasing (n) Dephasing (n) <thdephasing (n)<="" th=""> Dephasing (n) Dephasing (n)<th>and and a</th><th>column header he</th><th>ere to group by that column</th><th>1 040</th><th>15-L W 040</th><th>15-6 0-16-1 010</th><th>Derek Threehold</th><th>Charace Dalary</th></thdephasing>	and a	column header he	ere to group by that column	1 040	15-L W 040	15-6 0-16-1 010	Derek Threehold	Charace Dalary
JOLETI JOLETI<				Low warning (w)	nign warning (w)	nigh Critical (vv)	Reset Threshold	Change Delay
Duffer O <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Onleris O O O O <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Materia 0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
JULE15 JULE16 JULE16 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Ditels 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0 0 0 0 0 0 NITETS 0 0 0								
Ditely 0 0 0 0 0 0 NILET9 0 0 0 0 0 0 0 NILET9 0 0 0 0 0 0 0 0 NILET9 0 0 0 0 0 0 0 0 NILET1 0 0 0 0 0 0 0 0 NILET14 0 0 0 0 0 0 0 0 NILET14 0 0 0 0 0 0 0 0 NILET14 0 0 0 0 0 0 0 0 NILET14 0 0 0 0 0 0 0 0 NILET14 0 0 0 0 0 0 0 0 NILET15 0 0 0 0 0 0 0 0 NILET14 0 0 0 0 0 0 0 NILET14 0 0 0 0 0 0 0 NILET2 0 0 0 0 0	0 0							
JDLE1S JDLES JDLES <t< td=""><td>0 0 /td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	0 0							
Micris 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 Ninerio 0 0 0 0 0 0 0 Ninerio 0 0 0 0	0 0							
JULE 10 0 0 0 0 0 0 0 JULE 11 0 0 0 0 0 0 0 0 JULE 13 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0	0 0							
JULETI1 0 0 0 0 0 0 0 JULETI2 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0 JULETI3 0 0 0 0 0 0 0 0 0	1 0							
JULE 12 0 0 0 0 0 0 0 JULE 12 0 0 0 0 0 0 0 0 JULE 13 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0 JULE 14 0 0 0 0 0 0 0 0 0	$\begin{array}{c c c c c c c c c c c c c c c c c c c $							
JULE 13 0 </td <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>DUILET 12</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	DUILET 12						
JULE 114 0<	4 0	DUILET 13						
JUTETIS 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0 JUTETIS 0 0 0 0 0 0 0 0	6 0	DUILET 14						
Offer O <td>s 0 0 0 0 0 0 0 0 7 0</td> <td>DUTLET 15</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	s 0 0 0 0 0 0 0 0 7 0	DUTLET 15						
OUTET17 O </td <td>7 0</td> <td>DUTLET 16</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	7 0	DUTLET 16						
Omeria O <td>a 0</td> <td>JUTLET 17</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	a 0	JUTLET 17						
OMET19 O <td>9 0</td> <td>JUTLET 18</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	9 0	JUTLET 18						
NULET20 0 </td <td>0 0</td> <td>JUTLET 19</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	0 0	JUTLET 19						
JUTET21 O </td <td>11 0 0 0 0 0 2 0 0 0 0 0 0 3 0 0 0 0 0 0 4 0 0 0 0 0 0 5 0 0 0 0 0 0 6 0 0 0 0 0 0</td> <td>JUTLET20</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	11 0 0 0 0 0 2 0 0 0 0 0 0 3 0 0 0 0 0 0 4 0 0 0 0 0 0 5 0 0 0 0 0 0 6 0 0 0 0 0 0	JUTLET20						
JUTET22 0 </td <td>2 0</td> <td>DUTLET21</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	2 0	DUTLET21						
DUTLET23 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 0 0 0 0 0 0 44 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 6 0 0 0 0 0 0 0	UTLET22						
DUTLET24 0 0 0 0 0 0 0	44 0 0 0 0 0 5 0 0 0 0 0 6 0 0 0 0 0	JUTLET23			0			
	5 0 0 0 0 0 0 0 0	JUTLET24					0	
		JUTLET25						

Circuit Breaker

This page contains Circuit Breaker Threshold settings

ircuit breaker	Rating (A)	Connected Outlets	Low Critical (A)	Low warning (A)	High Warning (A)	High Critical (A)	Reset Inreshold	Alarm State Change Delay
81		1-6						
82								
83		13-18						
84		19-24						
85		25-30						
B6		31-36						

Data log and Syslog Settings

Logs page contains Data log and Syslog settings

og Interval (1 - 1440 min) 10	Syslog Server Address
nable Data Logging	Syslog Server Port 514
	Enable Syslog Server Access

SNMP Settings

SNMP Manager/Tra	p Receivers						
eral SNMP Manager Trap Re	ceiver						
V1/2c Manager IP Address		Read Community		Write Community		Enable/Disable	
0.0.0.0		public		private			
0.0.0.0		public		private			
0.0.0.0		public		private			
0.0.0.0		public		private			
0.0.0.0		public		private			
V3 Manager User Name	Searity Level	Auth Password	Auth Algorithm	Privacy Key	Privacy	Algorithm	Enable/Disable
V3 Manager User Name	Security Level No Auth No Priv	Auth Password	Auth Algorithm MDS	Privacy Key	Privacy DES	Algorithm	Enable/Disable
V3 Manager User Name	Searity Level No Auth No Priv No Auth No Priv	Auth Password	Auth Algorithm MDS MDS	Privacy Key	Privacy DES DES	Algorithm	Enable/Disable
V3 Manager User Name	Searity Level No Auth No Priv No Auth No Priv No Auth No Priv	Auth Password	Auth Algorithm MDS MDS MDS	Přívacy Key • •	Privacy DES DES DES	Algorithm	Enable/Disable
V3 Manager Uker Name	Searity Level No Auth No Priv No Auth No Priv No Auth No Priv No Auth No Priv	Auth Password	Auth Algorithm MD5 MD5 MD5 MD5 MD5	Privacy Key	Privacy DES DES DES DES	Algorithm	Enable/Dicable

Advantage Series PDU

Trap Settings

, intering t							
neral SNMP Manager	Trap Receiver						
V1/2c Trap Name		Host		Community		Enable/Disable	
				public			
				public			
				public			
				public			
				public			
				public			
V3 Trap Name	Host	Searity Level	Auth Password	Auth Algorithm	Privacy Key	Privacy Algorithm	Enable/Disable
V3 Trap Name	Host	Security Level	Auth Password	Auth Algorithm MDS	Privacy Key	Privacy Algorithm DES	Enable/Disable
V3 Trap Name	Host	Security Level No Auth No Priv No Auth No Priv	Auth Password	Auth Algorithm MD5 MD5	Přívacy Key	Privacy Algorithm DES DES	Enable/Disable
V3 Trap Name	Host	Security Level No Auth No Priv No Auth No Priv No Auth No Priv	Auth Password	Auth Algorithm MD5 MD5 MD5	Privacy Key	Privacy Algorithm DES DES DES	Enable/Disable
V3 Trap Name	Host	Security Level No Auth No Priv No Auth No Priv No Auth No Priv No Auth No Priv	Auth Password	Auth Algorithm MDS MDS MDS MDS MDS	Privacy Key	Privacy Algorithm DES DES DES DES DES	Enable/Dinable

Date/Time Settings

Date/Time Setting	s	Daylight Saving Time	: (DST)		
Date/Time	2021/01/30 03:04:39	- Enable			
Network Time Prot	ocol (NTP)				
Enable					

Email Setup

SMTP Account Settings	Emai	Recipients	
Email Server Address			
Sender Address			
Port			
Username			
Password			
Number of Sending Retries			
Time Interval Between Sending Retries (In Minutes)			
Server Requires Authentication			

Network Settings

Ethernet-1 IP C	onfiguration	Ethernet-2 IP C	nfiguration	
Boot Mode	DHCP		DHCP	
IPv6 Access		IPv6 Access		
IPv6 DHCP Mode		IPv6 DHCP Mode		
Web/ R£STani A	Access Configuration	SSH//FTPs Confi	uration	
Web/ RESTapi A	Access Configuration	SSH/FTPs Confi	uration	
Web/ RESTapi A Web Access	Iccess Configuration	SSH/FTPs Config	uration	
Web/ RESTapi A Web Access Web Port	Locess Configuration Https 443 - Nuclei	SSH/FTPs Confi SSH Enable SSH Part 22 SSH Part 22	uration	
Web/ RESTapi A Web Access Web Port REST API Access	Access Configuration Https 443 Disable	SSH/FTPs Config SSH Enable SSH Port 22 PTPs Access 21 STIP port 22	uration	
Web/ RESTapi A Web Access Web Port REST API Access	Access Configuration Htps 443 Deable V/Link Sured Configuration	SSH/FTPs Config SSH Enable ✓ SSH Port 22 FTPs Access ✓ FTPs Port 21	uration	
Web/ RESTapi A Web Access Web Port REST API Access Certificate Ke	Access Configuration Https 443 Deable y/Link Speed Configuration	SSH/FTPs Confi SSH Enable ✓ SSH Port 22 PTPs Access ✓ FTPs Port 21	uration	

User Settings – User

This page allows you to add new users with the roles – admin, manager and user It also asks the user to enable/disable **Force Password change** at the time of Web UI login When Force Password Change is Enabled for a user, the PDU will ask for password change after the configuration file is uploaded for that user

When Force Password Change is Disabled, PDU will just login with the current user and will not request for password change

🗧 Use	r Setting	s								
Add Users	Add Roles	LDAP Settings	Session Management	Password Policies	Radius Configuration					
Add U	ser									
Userna	ime						Username	Password	Role	Force Pwd Change
Passwo	ord						admin		admin	
Confirm	n Password						user	******	user	
User R	ole		Admin				manager		manager	
Force F	Password Chan	ge during login								
		Add User			Clear					

Advantage Series PDU

User Settings – Roles

🚺 PDU Config	uration T	ool 🏫 v2.							
🕞 User S	etting	s							
Add Users A	dd Roles	LDAP Settings	Session Management	Password Policies	Radius Configuration				
Add Rol	e								
Role Nam	Role Name						Role	Description	
Descriptio	n						admin	admin operation	
Privileges	User						user	user operation	
		Add Role			Clear		manager	Redfish Manager	

LDAP Settings

PD	U Confi	guration To	vol 🛖 v2.	6.0			
	User	Settings	5				
dd	d Users	Add Roles	LDAP Settings	Session Management	Password Policies	Radius Configuration	
	Settings						
	Enable						
	LDAP Sen	/er					
	Port		389				
	Туре		OpenLDAP				
	Base DN						
	Bind Pass	word					
	Search Us	er DN					
	Login Nar	ne Attribute					
	User Entr	y Object Clas					

Sessions Settings

	uu koles – Li	AP Settings	Session Management	Password Policies	Radius Configuration		
ettings							
jn In Retri	ries Allowed						
umber Of R	Retries Allowe						
ssion Time	eout Value (Mi						
ckout Time	ne (Min)						

Advantage Series PDU

Password Policies

User Settings					
Users Add Roles LDAP Settings	Session Management	Password Policies	Radius Configuration		
Settings					
Password Aging Interval	60d				
Minimum Password Length					
Maximum Password Length					
Enforce at least one lower case charact	er 🗌				
Enforce at least one upper case charac	er 🗌				
Enforce at least one numeric character					
Enforce at least one special character					

Radius Configuration

G	onfiguration T	ool 슈 v2	.6.0		
Us	er Setting	s			
d Users	Add Roles	LDAP Settings	Session Management	Password Policies	Radius Configuration
Sett	inas				
Enabl	le 🔳				
Serve	er				
Port	389				
Secre	et				

System Settings

Bystem Information	Rack Locatio	
System Name	Room Name	
Contact Name	Row Name	
Contact Email	Row Position	
Contact Phone	Rack Name	
Contact Location	Radk ID	
LED Edge Color Blue	✓ Rack Height	
Power Panel Core Location		
Power Panel Name		
Core Location Front		
Core U Position		

Advantage Series PDU

Event Notification

vents	Emails	SNMP Trap	Syslog	
ircuit Breaker Status Changed				
ser Activity				
mart Rack Access				
utlet Power Control Status Changed				
ser Status Changed				
ritical Alarm				
arning Alarm				
assword/Settings Changed				
etwork Card Reset/Start				
xternal Sensor Status Changed				
DU Configuration File Imported/Exported				
ser Role Status Changed				
irmware Update				
ommunication Status Changed				
aisy Chain Status Changed				
nter Bootloader Mode				
DAP/Radius Error				
ower Sharing Status Changed				

Rack Access Control

Add Card Infor	mation						
Card ID				Card ID	Card User	Card Aisle	Created On
Card User							
Card Aisle							
	Add Card	Clear					

Smart Rack access

l Cards	Rack Access Settings	Handle Settings	Keypad Settings	Beacon Settings	LED Settings					
Add Ca	ard									
Card ID						Card ID	Card PIN	Username	Start Time	Expire Time
Card PI	N									
Usernar	me									
Tempor	ary User 🗸									
Start Ti	me									
Expire 1	Time									
	Add Ca	ard		Cle	ar					

Advantage Series PDU

Add Cards Rack Access Add Cards Rack Access Settings Hande Settings Keypad Settings Beacon Settings LED Settings Add Card Card ID Card ID Card ID Card DD 12345 12345 Username Start Time * Start Time * 23456	Add Cards Rack Access Settings Handle Settings Reypad Settings Beacon Settings LED Settings Add Cardd Card ID Card ID Card ID 12345 Card PIN Username Start Time 79901 34567 Start Time Card ID 23456 Expire Time Clear Clear	DDU	Configuratio	n Tool	v2.6.0											
Add Cards Rack Access Settings Handle Settings Keypad Settings Beacon Settings LED Settings Add Card Card ID Card ID Card ID Card ID Card ID 12345 Card ID Start Time Start Time 78901 78901 78901 78901 Start Time	Add Cards Rack Access Settings Handle Settings Keypad Settings Beacon Settings LED Settings Add Card Card ID Card ID Card ID Card ID IIII 2345 Card PIN Start Time <	🗲 Sn	nart Rack	Access							ſ					
Add Card Card ID Card ID <th>Add Card Drag a column header Card ID Card ID Card PIN 23456 Username 34567 Temporary User ✓ Start Time ✓ Expire Time ✓ Add Card Clear</th> <th>Add Cards</th> <th>Rack Acce</th> <th>ss Settings</th> <th>Handle Settings</th> <th>Keypad Settings</th> <th>Beacon Settings</th> <th>LED Settings</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Add Card Drag a column header Card ID Card ID Card PIN 23456 Username 34567 Temporary User ✓ Start Time ✓ Expire Time ✓ Add Card Clear	Add Cards	Rack Acce	ss Settings	Handle Settings	Keypad Settings	Beacon Settings	LED Settings								
Name Card Crag a column header 1 Card ID	Add Card Card ID	Add	Card													
Card ID 12345 1111 Username	Card ID 12345 1111 134567 2222 55798 3333 78901 4444 4444 4444 4444 4444 4444 4444 4444 4444 5555 5555 5555 Card Card Clear Clear Clear Card ID 5555	Aud														
Card PIN 12345 1111 Username 34567 2222 56789 3333 Start Time * Expire Time * Add Card Clear	Card PIN 12345 1111 Username 34567 2222 Temporary User \$ 56789 3333 Start Time • \$ 23456 5555 Expire Time • • 23456 5555	Card								Card ID	Card PIN	Username	Username Start Time	Username Start Time Expire	Username Start Time Expire Time	Username Start Time Expire Time
Username 34567 2222 Temporary User ✓ 56789 3333 Start Time	Username 34567 2222 Temporary User ✓ Start Time ✓ Expire Time ✓ Add Card Clear	Card	PIN							12345		card-one	card-one 2020/11/04 12:00:00	card-one 2020/11/04 12:00:00 2020/1	card-one 2020/11/04 12:00:00 2020/12/08 0	card-one 2020/11/04 12:00:00 2020/12/08 01:0
Temporary User ✓ Start Time → Expire Time → Add Card Clear	Temporary User ✓ Start Time - Expire Time - Add Card Clear	User	name							34567	2222	card-two	card-two 2020/12/01 02:03:04	card-two 2020/12/01 02:03:04 2020/1	card-two 2020/12/01 02:03:04 2020/12/31 0	card-two 2020/12/01 02:03:04 2020/12/31 02:3
Comparison food	Clapson Fold ✓ Start Time ✓ Expire Time ✓ Add Card Clear	Tom	orary liser							56789	3333	card-three	card-three 2020/12/04 10:11:12	card-three 2020/12/04 10:11:12 2021/0	card-three 2020/12/04 10:11:12 2021/01/01 0	card-three 2020/12/04 10:11:12 2021/01/01 02:0
Start Ime - Expire Time - Add Card Clear	Start time - Expire Time - Add Card Clear	Teni		v						78901	4444	card-four	card-four 2020/12/03 09:10:11	card-four 2020/12/03 09:10:11 2020/1	card-four 2020/12/03 09:10:11 2020/12/10 0	card-four 2020/12/03 09:10:11 2020/12/10 05:0
Expire Time Add Card Clear	Expire Time Add Card Clear	Star	Time							23456	5555	card-five	card-five 2020/11/30 04:55:43	card-five 2020/11/30 04:55:43 2020/1	card-five 2020/11/30 04:55:43 2020/12/07 0	card-five 2020/11/30 04:55:43 2020/12/07 02:4
Add Card Clear	Add Card Clear	Expir	e Time													
				Add Ca	rd		Clea	r								

Ehandle card details in GUI after configuration file upload:

< → C ▲	Not secure 10.10.106.1	175/#/smartrack?_k=cs9n	qr		९ 🛧 🖪 🗯 😫 🗄
	enLog	IC Outlet Meter	ed, Outlet Switched PDU 1.0.7.4	<u>License</u>	Â
	俞 🕲 🐵	£•	Δ		
Smart Rack C	ontrol				Actions 🗸
Card Id	Username	Card PIN	Start Time	Expiration Time	Actions
12345	card-one	******	11/4/2020, 12:00:00 PM	12/8/2020, 1:02:03 AM	D 🗇
34567	card-two	大学大学学大学	12/1/2020, 2:03:04 AM	12/31/2020, 2:33:44 AM	D 🗇 🗇
56789	card-three	*****	12/4/2020, 10:11:12 AM	1/1/2021, 2:04:06 AM	D 🖄
78901	card-four	*****	12/3/2020, 9:10:11 AM	12/10/2020, 5:06:07 AM	D 🖄
23456	card-five	******	11/30/2020, 4:55:43 AM	12/7/2020, 2:44:55 AM	D 🖄

Network Services

Enter the start IP and end IP for Ethernet 0 and Ethernet 1 IP addresses with the correct Network mask and Default gateway

A Naturalk Comises					
Network Services					
Ethernet-1 IP Addresses	Ethernet-2 IP	Addresses			
Start IP Address 192.168.0.1 End IP Address	192.168.0.255 Start IP Address	192.168.0.1	End IP Address	192.168.0.255	
Network Mask 255.255.0	Network Mask	255.255.255.0			
Default Gateway 192.168.0.1	Default Gateway	192.168.0.1			

To upload the conf.ini file on multiple PDUs with ipeth0.cfg and ipeth1.cfg follow the below steps:

- 1. In Network Settings, enter the EthO and Eth1 IP addresses with correct Network mask and Default gateway and set it to **Static** mode
- 2. In **Network Services** page, enter the start IP and end IP for Ethernet 0 and Ethernet 1 IP addresses with the correct Network mask and Default gateway
- 3. Save the conf.ini file.

- 4. Four files will be saved:
 - conf.ini
 - econf.ini
 - ipeth0.cfg
 - ipeth1.cfg
- 5. Copy the three files conf.ini, ipeth0.cfg and ipeth1.cfg into the USB and upload the conf file through USB menu
- 6. After upload the eth0 and eth1 IP will be assigned to the start IPs of eth0 and eth1.
- 7. Now, upload to different PDU and the IP of EthO and Eth1 should be incremented.

Saving Configuration File

Once all the settings are saved, click on the Save Configuration option Choose the location where you want to save and click Ok



Uploading Configuration File Through PTC

Go to Tools page. Enter or Scan the IP address Browse the **conf.ini** file Edit the username and password before uploading the conf.ini file

Click on Upload Configuration to upload the file

Advantage Series PDU

10.10.104.231		PDU Only -		Scan		Save IP Address	
				Browse Fi	irmware or Configurati	on file	Import IP Address
			10	00%			1
	IP Address	Username	Password	Device Info		Upload Status	
	1 10.10.104.231	admin		Enlogic PDU			
		A Onen				×	
		w open					
		← → ∽ ↑ <mark></mark> « 2.6.0 »	conf	ب ن	Search conf		
		Organize 🔻 New folder			8≣≣ ▼	• •	
		📰 Pictures 🖈 Na	me		Date modified	Туре	
		Energy_Script_M	conf		1/30/2021 4:23 PM	Conf	
		Screenshots	econf		1/30/2021 4:23 PM	Conf	
		SKU_Verification	ipeth0.cfg		1/30/2021 4:23 PM	CFG I	
		T.E.0.1	ipeth1.cfg		1/30/2021 4:23 PM	CFG I	
		 OneDrive 					
		This PC					
		3D Objects					
		📃 Desktop 🗸 🧹				>	
		File name:	conf			~	

Help Option

\leftrightarrow \rightarrow C $($	nlogic.com/firmware-software/software		☆ 🔼	* 0	:			
	Ne	ws Blog About Us	Contact Us	Careers	-			
CI	ISGLOBAL enlogic							
	PRODUCTS ~ RESOURCES & SUPPORT	✓ PARTNERS ✓	Q					
	FIRMWARE/SOFTWARE							
PCT	(PDU CONFIG TOOL)							
• PC	CT PDU Config Tool (EN1.0 and Inline Energy Meters) :							
This site uses cookies to provide you with a more responsive and personalized service. By using this site you agree to Enlogic use of cookies. Please read the cookie notice for more information on the cookies we use and how to delete or block them.								

Additional Notes:

Prerequisites:

- The SSH access should be enabled with the default port 22
- The FTPS access should be enabled with the default port 21
- The SNMP with IP 0.0.0.0 or system IP should be enabled for Enlogic PDU Discovery. Go to SNMP Manager page to enable it or putting the PDU to default settings will also enable the SNMP IP 0.0.0.0

Current Workflow:

- The PCT tool can scan all the IPs in the network and only the Enlogic PDUs based on the Scan IP selected and the PDUs with SNMP IP 0.0.0.0 enabled
- After IP scan the PCT tool will list out the IPs in the network with the default username and password. So, the user must edit the username and password accordingly
- The PDU password will be set back to the Current password (i.e., 12345678) for default PDUs after Firmware Upload. And, when the user logs in to the WebUI, it will not ask for Password Change and should be logged in with '12345678' password
- The PCT tool will upload on all the scanned IPs even when selecting on the specific IP. So, the user must enter only the IP you want to upload on or delete all the other IPs from the scanned list
- PCT tool will upload the Firmware only on the master PDU
- PCT tool will upload the configuration file on the master and all the slave PDUS connected
- After the settings added in the page click on the back button. This will auto save the settings made
- When New SKU is selected, all the previously added settings should go to default. But only threshold settings go to default. Other settings like Network Settings, System Settings, SNMP and User Settings shows the previous values
- For Static IP Incrementation, the Boot mode should be set to **Static** for both Ethernet 0 and Ethernet1 in Network Settings page of PCT Tool