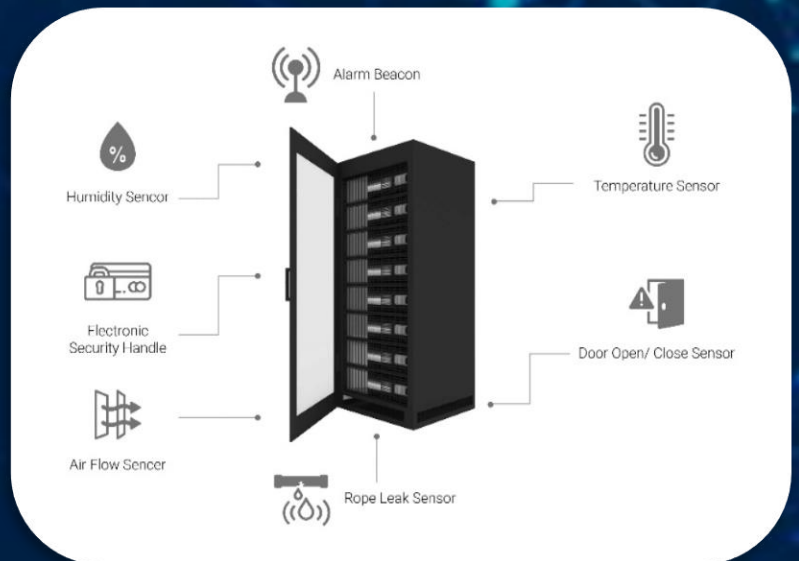
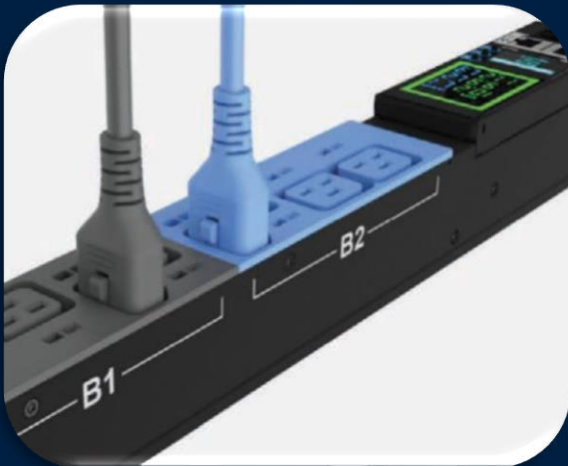


# ENLOGIC



**Advantage & Secure**

Release Notes

Document Version – 1.5

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# 1 GENERAL

## 1.1 SCOPE

The Release Notes for Advantage & Secure firmware version 3.2.1 are contained in this document.

## 1.2 ABBREVIATIONS AND ACRONYMS

To help better comprehend this document, attached is a list of the key acronyms and abbreviations.

| Acronym     | Abbreviation                          |
|-------------|---------------------------------------|
| <i>PDU</i>  | Power Distribution Unit               |
| <i>GUI</i>  | Graphical User Interface              |
| <i>SSH</i>  | Secure Shell Protocol                 |
| <i>SNMP</i> | Simple Network Management Protocol    |
| <i>SMTP</i> | Simple Mail Transfer Protocol         |
| <i>LDAP</i> | Lightweight Directory Access Protocol |
| <i>CLI</i>  | Command Line Interface                |
| <i>FTPS</i> | File Transfer Protocol Secure         |
| <i>MAC</i>  | Media Access Control                  |
| <i>IP</i>   | Internet Protocol                     |
| <i>SKU</i>  | Stock Keeping Unit                    |
| <i>EMEA</i> | Europe Middle East Asia Pacific       |
| <i>NA</i>   | North America                         |

## 2 RELEASED FILES

### 2.1 PACKAGED FILE

|                             |   |
|-----------------------------|---|
| <b>Firmware</b>             | <b>enlogic.fw</b>   |
| <b>Checksum/<br/>SHA256</b> | <b>cae50cefae11f3cf868105c82a2faade1a1892258c7c7f096a2c7c55c783380e</b> |

### 2.2 SOFTWARE VERSION

FIRMWARE VERSION – 3.2.1

## 3 PRODUCT FAMILY

| <b>Product Type</b>                                  | <b>Description</b>   |
|--|--|
| <i>Input Metered PDU (MI)</i>                        | PDU with metering capability at the input of the PDU.  |
| <i>Monitored Switched (MS)</i>                       | PDU with metering capability at the input of the PDU plus the ability to control outlets on and off. |
| <i>Outlet Metered PDUs (MO)</i>                      | PDU with metering capability per outlet.   |
| <i>Monitored and Switched per Outlet PDUs (MSPO)</i> | PDU with metering capability per outlet plus the ability to control outlets on and off.              |
| <i>Inline Energy Meter (IEM)</i>                     | Inline meter that provides metering capability at the input of the attached IT equipment.            |

## 4 SKUS SUPPORTED

| Type   | SKU Numbers   |
|--|---|
| <i>Input Metered PDU (MI)</i>                        | EN1315, EN1325, EN1326, EN1327, EN1334, EN1337, EN1339, EN1341, EN1343, EN1345, EN1350, EN1351, EN1354, EN1355, EN1356, EN1357, EN1450, EN1451, EN1805, EN1805S, EN1806, EN1811, EN1814, EN1815, EN1821, EN1822, EN1823, EN1826, EN1827, EN1829, EN1850, EN1851, EN1853, EN1854, EN1855, EN1856, EN1880, EN1902, EN1906, EN1907, EN1908, EN1915, EN1917, EN1919, EN1926, EN1927, EN1932, EN1939, EN1940, EN1942, EN1950, EN1951, EN1952, EN1953, EN1955, EN1956, EN1982, EN1983, EN19HA, EN19HB, EN19HC, EN19HD, EN19JA |
| <i>Monitored Switched (MS)</i>                       | EN2315, EN2316E, EN2317, EN2319, EN2324, EN2325, EN2326, EN2329, EN2333, EN2337, EN2339, EN2350, EN2351, EN2354, EN2380, EN2402, EN2403, EN2404, EN2450, EN2804, EN2804S, EN2808, EN2810, EN2812, EN2823, EN2850, EN2851, EN2852, EN2880, EN2902, EN2907, EN2950, EN2951, EN2952, EN2953, EN2980, EN2982  |
| <i>Outlet Metered PDUs (MO)</i>                      | EN5325, EN5329, EN5337, EN5380, EN5402, EN5808, EN5810, EN5850, EN5886, EN5952, EN5956  |
| <i>Monitored and Switched per Outlet PDUs (MSPO)</i> | EN6324, EN6325, EN6326, EN6329, EN6333, EN6337, EN6338, EN6341, EN6350, EN6351, EN6353, EN6380, EN6381, EN6385, EN6386, EN6399, EN6402, EN6404, EN6450, EN6602, EN6804, EN6804S, EN6808, EN6810, EN6812, EN6827, EN6829, EN6833, EN6834, EN6835, EN6850, EN6851, EN6852, EN6880, EN6881, EN6883, EN6885, EN6902, EN6905, EN6908, EN6909, EN6910, EN6911, EN6950, EN6951, EN6952, EN6954, EN6956, EN6957, EN6958, EN6959, EN6961, EN6962, EN6980, EN6982, EN6990, EN69HA, EN69HB   |
| <i>Inline Energy Meter (IEM)</i>                     | EZ1430, EZ1530, EZ1550, EZ1560, EZ1616, EZ1632, EZ1663, EZ1716, EZ1732, EZ1763  |
| <i>UPDU (Universal Power Distribution Unit)</i>      | EN13UA_20A3WYE, EN13UA_16A3WYE, EN13UA_20A1L-L, EN13UA_16A1L-N  |
| <i>1U/2U Horizontal PDU</i>                          | EN1862, EN1960, EN1965, EN1966, EN2355, EN2954, EN6354, EN6383, EN6957  |

## 5 PRODUCT DESCRIPTION

| FEATURES   | Input Metered (MI) | Outlet Switched (MS) | Outlet Metered (MO) | Metered and Switched per Outlet (MSPO) |
|--|--------------------|----------------------|---------------------|--|
| <b>DESIGN</b> <ul style="list-style-type: none"> <li>▪ Low profile, space saving design.</li> <li>▪ Ultra-low-profile circuit breakers on most models</li> <li>▪ Adjustable tool-less mounting system</li> </ul>   | YES                | YES                  | YES                 | YES                                    |
| <b>PDU POWER MONITORING</b> <ul style="list-style-type: none"> <li>▪ PDU level watt hour power metering (kWh)</li> <li>▪ PDU level power measurements (W)</li> <li>▪ Input phase level power measurements (V, A, VA, kWh, pf)</li> <li>▪ Circuit Breaker level current measurements</li> <li>▪ High accuracy, metering capabilities</li> <li>▪ Persistent Data Log to record/view/report historical data.</li> <li>▪ User customizable alarm thresholds &amp; notifications</li> </ul> | YES                | YES                  | YES                 | YES                                    |
| <b>OUTLET LEVEL SWITCHING</b> <ul style="list-style-type: none"> <li>▪ Remote ON/OFF Power control by individual outlet</li> <li>▪ User defined power-on time delay to sequence IT equipment</li> <li>▪ Automatic sequencing to avoid inrush current overload.</li> <li>▪ Controlled with assignable roles and user access</li> </ul>  |                    | YES                  |                     | YES                                    |
| <b>OUTLET LEVEL POWER MONITORING</b> <ul style="list-style-type: none"> <li>▪ Outlet level watt-hour energy metering(kWh)</li> <li>▪ Outlet level power measurements (V, A, VA, W, pf)</li> </ul>  |                    |                      | YES                 | YES                                    |
| <b>ENVIRONMENTAL MANAGMENT</b> <ul style="list-style-type: none"> <li>▪ Optional Plug and Play environmental sensors including temperature, humidity, and water leak.</li> </ul>   | YES                | YES                  | YES                 | YES                                    |

|   |     |     |     |     |
|---|-----|-----|-----|-----|
| <b>PHYSICAL SECURITY MANAGEMENT</b> <ul style="list-style-type: none"> <li>▪ Rack access monitoring with door contact switch</li> <li>▪ Customizable alarm thresholds and notifications</li> </ul>  | YES | YES | YES | YES |
| <b>NETWORK MANAGEMENT AND LOCAL DISPLAY INTERFACE</b> <ul style="list-style-type: none"> <li>▪ Active LED display for power measurements</li> <li>▪ OLED display with high contrast ratio, easy to navigate menu and visual graphic bars for phase load balancing.</li> <li>▪ Full featured network management and alerting capabilities supporting HTTP, HTTPS, SSH, SNMP, FTP and SMTP.</li> <li>▪ Strong encryption, passwords and advanced authorization options including local permissions, LDAP, and Active Directory.</li> <li>▪ Daisy Chain up to 64 Rack PDUs, each up to ten sensors.</li> </ul> | YES | YES | YES | YES |
| <b>BRANCH CIRCUIT LOAD MONITORING</b>   | YES | YES | YES | YES |
| <b>CIRCUIT BREAKER STATUS</b>   |     | YES | YES | YES |

## 6 UPDATED FEATURES

### 6.1 3.2.1 FIRMWARE UPGRADE

1. The new firmware version 3.2.1 is available on the **Enlogic** website for download. It is mandatory for all users to download this file before initiating the firmware upgrade process.
2. For the existing customer the firmware upgrades should be performed in the following order for Advantage Series NMCs:
  - a. Verify if the existing firmware versions are 2.0.6.7 or below versions.
  - b. Upgrade **Bridge firmware 3.0.0.2 using the update folder** in the USB, or **enlogic.tar** using the WEBUI & FTPS.
  - c. Now, upgrade to new firmware 3.2.1 using **enlogic.fw** using USB, WEBUI & FTPS.
  - d. Firmware upgrade using USB on standalone PDUs is recommended. To perform this step, detach the daisy chain cables from the PDUs and ensure USB is in FAT32 file system and only firmware files are present in it.
3. The firmware upgrades should be performed in the following order for Advantage Secure NMCs:
  - a. Firmware version 3.0.4.
  - b. From 3.0.4, to upgrade new firmware 3.2.1 use **enlogic.fw** using USB, WEBUI & FTPS. Firmware upgrade using USB on standalone PDUs is recommended. To perform this step, detach the daisy chain cables from the PDUs.
  - c. USB firmware upgrade is recommended.
  - d. USB should be in FAT32 file system, no other files are present in it.



## 6.2 FIRMWARE ASSETS FROM 3.1.3 VERSION ONWARDS

1. As opposed to previous firmware releases that used compressed or zipped files [.tar/.zip], firmware version from 3.1.3 and later will use the **enlogic.fw** format.
2. Improved ability for Advantage Series NMCs to work with Advantage Secure NMCs. This includes a change to the firmware upgrade file format which is now a '.fw' file rather than a '.tar' file.
3. Note that there will be two restarts during the upgrade procedure as opposed to the typical one when the bridge firmware is updated to version 3.1.3.
4. Previously stored configuration files cannot be used after updating to the latest version 3.2.1.
5. Due to underlying file system improvements made from firmware version 3.1.3, downgrades to a previous firmware version are not supported.
6. From firmware version 3.1.3 upgrade activity via USB, ensure that the USB does not contain the **update** folder.
7. If updating PDUs in a daisy chain configuration and one or more Node PDUs do not upgrade successfully, those Node PDUs will need to be individually updated. This can be done using the USB method.
8. PDUs cannot be Daisy chained from an NMC with an older firmware version to a newer firmware version 3.2.1.
9. From the 3.1.3 firmware version, hot swapping of NMCs is allowed only if both the PDUs are upgraded with the latest firmware version.
10. From firmware version 3.2.1, web pages now have a queuing system in place with the OpenSSL updates, so users will experience improved responsiveness of web pages.
11. From the firmware version 3.1.3 onwards, the MAC address appended to the DNS hostname is removed.

### 6.3 NEW FEATURES OF FIRMWARE 3.2.1

This section lists the new features released with firmware version 3.2.1:

1. The firmware version 3.2.1 supports the new 1U/2U Horizontal Orientation iPDUs and NMCs.
  - a. The horizontal iPDUs have two types of NMCs based on the choice of units selected. In contrast with vertical iPDUs, horizontal iPDU NMCs don't comprise of 7-segment display (that shows current and alarm values), instead, it has a status LED to indicate alarms/warnings. Green indicates no alarms, orange for warnings and red for critical alarms. Unlike vertical iPDUs, horizontal iPDU NMCs have a status LED to signify alarms and warnings in place of a 7-segment display. The LED color amber denotes cautions, red denotes serious alerts, and green shows no alarms.
  - b. A CLI/SSH command is added to control the Status LED to on/off.
  - c. All the languages supported by vertical iPDUs are also supported by Horizontal iPDUs. For further details, refer the User Manual.
2. The firmware supports airflow sensor and beacon.
3. The firmware is released together with PCT version 3.0.7.
4. The firmware supports new Redfish URLs. For further details commands and procedures, refer the User Manual.
5. The firmware supports 'password hashing', with the addition of a unique salt to enhance the security of potential data. Hashing of passwords encompasses the following scenarios:
  - a. New User creation and validation
  - b. Default users
  - c. Existing User login validation
  - d. Upload Configuration file
  - e. Hot Swapping NMC
6. Outlet grouping makes it simple for the user to group the outlets of interest from any of the PDUs in the daisy chain configuration, monitor, and control the entire group. Control involves turning on, off, and rebooting the outlets without delays.
7. In CLI/SSH interface additional commands related to Outlet grouping and 1U/2U Status LED are added, refer the User Manual.

8. The following OIDs are updated for Outlet grouping
  - a. pduOutletGroupSwitchedCount - Total Outlet Groups Count
  - b. pduOutletGroupSwitchedNames - Perform Get/Set Group Names.
  - c. pduOutletGroupSwitchedGroupMemberID - Perform Get/Set Group Member information i.e., Outlets associated with respective PDUs in the Group.
  - d. pduOutletGroupSwitchedControl - Perform Get/Set Group control (On/Off/Reboot/OnDelay/Offdelay/RebootDelay).
  - e. pduOutletGroupSwitchedActivePower - Perform Get Active power of the corresponding Outlet Groups.
  - f. pduOutletGroupSwitchedApparentPower - Perform Get Apparent power of the corresponding Outlet Groups.

#### 6.4 ENHANCEMENTS

1. OLED screensaver ON time is reduced to avoid pixel burn-in and increase the life of the OLED display. After 30 seconds from the last button activity performed, the screensaver starts running for around three mins before OLED turns off.
2. FTPS & LDAPS now support TLS 1.3 for enhanced security.
3. Users can now create roles in radius server that may be used during new user creation.
4. The firmware version facilitates enhanced daisy chain capabilities. Probability of Data corruption is reduced.

## 7 Resolved Issues

This section lists some of the resolved issues for the firmware version 3.2.1.

Fixed an issue where...

1. Redfish queries for newly created users will fail since when there are no roles available.
2. Energy values on the phase data page (mention the interface) do not match the total energy value or the energy since value.
3. SSH & CLI do not have a command to configure the Telnet port.
4. The User could access the Telnet on both default port and customized port.
5. In the Network Settings page, the User is unable to view the certificate in HTTPS mode.
6. When the 'contact name' is updated on the System management page, the Syslog is not generated.
7. The 'OutletCount' SNMP value is displayed incorrectly.
8. The IP address is inaccessible after switching from http to https.
9. Querying Redfish URLs is taking more time than expected.
10. For any outlet-controlled operations performed, only first outlet of respective PDU is being controlled.
11. The command 'dev outlet 1 9 on/off' cannot control the specified outlet.
12. The outlet's LED is ON when the CB is turned off and outlet status is shown turned ON in all other interfaces too.
13. When a bulk URL request is sent, the en20sys process restarts.

## 8 Known Issues

This section lists some information about the firmware version 3.2.1.

1. When uploading configuration files, if the specific configuration file has changes pertaining to outlet status, an outlet status mismatch will be seen.

## 9 Additional Information

This section lists some information about the firmware version 3.2.1.

1. In a daisy chain setup, bulk configuration could sometimes result in some latency.
2. Verify that any configuration files download in the past are no longer usable after the firmware is upgraded to version 3.2.1.
3. After a task is finished, the event triggering time is delayed.
4. There could be latency in WEBUI performance when bulk set action is performed from Redfish.
5. Check to see if WEBUI sessions conclude thoroughly. If not, a system reboot is recommended. After using the system, close any active sessions. If the session timeout is set for a longer period, the user must restart it (if it exceeds 10 sessions).
6. If any of the Node PDUs data becomes blank during the reboot scenario, it is advised to do another reboot on that specific PDU/NMC to restore it to a proper state.