

# Vertiv™ Liebert® IntelliSlot™ Unity Card

#### Firmware Release Notes

VERSION 8.3.0.0\_00138, March 28, 2023

#### **Release Notes Section Outline**

- 1. Version and Compatibility
- 2. New in this Release
- 3. Security Issues Addressed
- 4. Update Instructions
- 5. Known Issues
- 6. Previous Release Updates and Enhancements

#### 1. Version and Compatibility

This release contains firmware version IS-UNITY\_8.3.0.0\_00138 and is compatible with the following products:

- Compatible with the following Liebert® Communication Card:
  - IS-UNITY-DP
  - IS-UNITY-SNMP
  - IS-UNITY-LIFE
- · Compatible with the following power and thermal management equipment:
  - Albér™ BDSU-50
  - Liebert® AHU with Liebert® iCOM™ Edge
  - Liebert® APM
  - Liebert® APM160
  - Liebert® APM600
  - Liebert® APM Plus
  - Liebert® APS
  - Liebert® CRC 300-600 with Liebert® iCOM™ Edge
  - Liebert® CRD 25-35 with Liebert® iCOM™ Edge
  - Liebert® CRV
  - Liebert® CRV with iCOM™ Edge
  - Liebert® CRV 4-12kW with Liebert® iCOM™ Edge

- Liebert® CW\*
- Liebert® CWA
- Liebert® Challenger\*
- Liebert® DataMate
- Liebert® DME2 with Liebert® iCOM™ Edge
- Liebert® Deluxe
   System 3\*
- Liebert® DCL
- Liebert® DCP
- Liebert® DP400
- Liebert® DS\*
- Liebert® DSE
- Liebert® EPM
- Liebert® EXC
- Liebert® EXL
- Liebert® EXL S1

- Liebert® EXM
- Liebert® EXM2
- Liebert® EXS
- Liebert® FDC
- Liebert® FPC
- Liebert® GXE2
- Liebert® GXE3 6-10kVA
- Liebert® GXT3
- Liebert® GXT4
- Liebert® HPC-S
- Liebert® HPC -M
- Liebert® HPC -R
- Liebert® HPC -W
- Liebert® HPC Generic
- Liebert® HPM
- Liebert® ITA2

- Liebert® Mini-Mate
- Liebert® NX 225-600kVA
- Liebert® NXC
- Liebert® NXL
- Liebert® NXR
- Liebert® PCW
- Liebert® PDX
- Liebert® PeX\*
- Liebert® PeX4
- Liebert® PPC
- Liebert® PSI5
- Liebert® RDC
   Liebert® RX
- Liebert® STS2
- Liebert® XDC with Liebert® iCOM™ Control



 Liebert® XDP with Liebert® iCOM™ Control • Liebert® XDP-Cray

Liebert® XDU

Liebert® XDM

Vertiv™ Edge

Vertiv<sup>™</sup> Trinergy<sup>™</sup>
 Cube

\* Liebert® iCOM™ Firmware PA1.04.033.STD versions or later

- Compatible with the following sensors:
  - Liebert® SN-T
  - Liebert® SN-TH
  - Liebert® SN-2D
  - Liebert® SN-3C
  - Liebert® SN-Z01
  - Liebert® SN-Z02
  - Liebert® SN-Z03
  - Liebert® SN-L

This release supports the following browsers:

- Microsoft:
  - IE11 (version 11.0.175 / 17134.1304 or later)
  - Edge (version 110.0.1587.57 or later)
- Mozilla Firefox (version 109.0.1)
- Google Chrome (version 110.0.5481.178)
- Safari:
  - MacBook (version 13.1.2 / Catalina 10.15.6)
  - iPad (version 7.1)

#### Unity Cards and Sensors Feature Information

SUPPORTED FEATURES	IS-UNITY-DP CARD	IS-UNITY-LIFE CARD	IS-UNITY-SNMP CARD	SENSORS
LIFE™ Services Support	Supported	Supported	Supported	Not Supported
Sensor Support	Supported	Supported	Not Supported	Not Supported
HTTP/HTTPS	Supported	Supported	Supported	Supported
Velocity Protocol	Supported	Supported	Supported	Supported
Email	Supported	Supported	Supported	Supported
SMS	Supported	Supported	Supported	Supported
SNMP v1, v2c, v3	Supported	Not Supported	Supported	Supported
BACnet IP/*MSTP	Supported	Not Supported	Not Supported	Not Supported
Modbus TCP/*RTU	Supported	Not Supported	Not Supported	Not Supported
YDN23	Supported by Liebert® NXL, Liebert® EXL S1 UPS, and Liebert® PeX	Not Supported	Not Supported	Not Supported



#### 2. New in this Release

This release adds support for the following enhancements, updates, and corrections:

- Updated Remote Services connectivity
- Added Power Insight and VxRail Integration for virtual server shutdown
- Corrected SNMPv3 Engine reboot count since it was not incrementing
- Key strength is now included when generating self-signed certificates

#### 3. Security Issues Addressed

The following table details highly publicized security vulnerabilities that have been addressed.

NAME	DESCRIPTION
ShellShock	The appropriate version of bash was implemented in release 4.2
Poodle	SSLv3 was disabled in release 5.0.
Cross-Scripting	Cross-Scripting entries via web User Interface were restricted in release 5.1.
Clickjacking, CVE-2016-0734	Clickjacking was resolved in the 6.2 release.
Beast and Logjam	Beast and Logjam vulnerabilities have been addressed in 6.3 release.
TLS 1.0 Access	TLS 1.0 has been disabled so only newer versions are used. This was addressed in the 6.3 release.
Sweet 32 Birthday Attack	Vulnerability Birthday attacks against TLS ciphers with 64-bit block size vulnerability (Sweet 32) were resolved in the 7.0 release.
TLS 1.1 Access	TLS 1.1 has been disabled. TLS 1.2 is now the minimum version used. This was addressed in the 7.6 release.
CV-2004-0582 Lack of Account Lockout	This vulnerability could allow a brute force ID/Password attack. This was addressed in the 7.8 release. The account lockout time is 15 minutes. If login is attempted during the timeout period, the timeout period will restart.
California IoT Security Law, SB-327	User must now configure unique administrator credentials to access the card. This was addressed in the 7.8 release.
Password Complexity CWE-521	Minimum of 8 to a maximum of 30 case-sensitive, printable characters (excluding: \'<>~?#, double quote, and space). Must contain a combination of upper and lower case, digit, and special characters. The password cannot contain the Username.
CV-2018-0459 Authorization Management	This vulnerability could allow an unauthorized (non-admin) user to make changes to the card configuration.



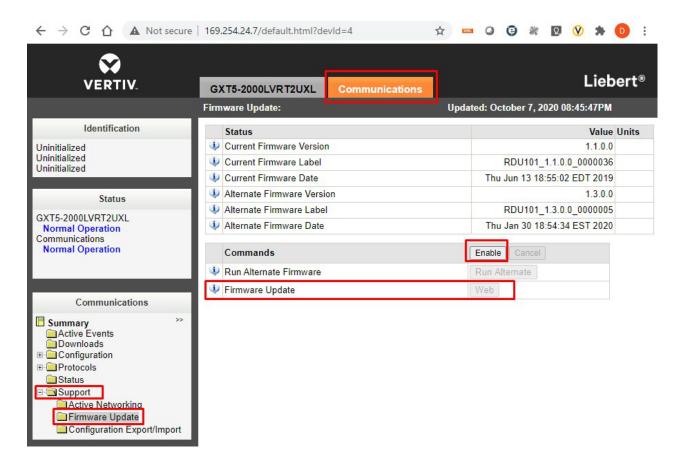
#### 4. Update Instructions

The Liebert® IntelliSlot™ Unity cards may be updated to this firmware version using the web-based Firmware Upload feature. Please refer to the Firmware Updates and Card Configuration sections of the Liebert® IntelliSlot™ Unity Card User Guide (SL-52645) and the Mass Firmware and Configuration Update Tool. Please note that the firmware update process and rediscovery of the system (UPS, etc.) can take up to 15 minutes. The operation of the system operation is not affected.

#### 1. Connecting to the card

After installing the card, allow time for the card to boot. Connect an Ethernet cable from the card to a PC or Laptop. A link local connect can be established. This is a direct PC-to-card Ethernet connection. The PC acquires a local address, and the card is accessed at 169.254.24.7. Please consult the Quick Install Guide and User Guide for further details if needed.

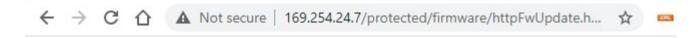
- 2. Open a web browser (such as Chrome) and enter 169.254.24.7 in the address bar.
- 3. Update the card firmware. Navigate to:
- "Communications" tab
- "Support" folder
- "Firmware Update" folder
- Click "Enable"
- Click "Web"





#### 4. The Firmware Update page will appear.

- Use the "Choose File" button to select the firmware file via Windows File Explorer
- Click the "Update Firmware" button





## Web (HTTP) Firmware Update

Parameter	Description	
File	Directory and name of the firmware update file. Click the <b>Browse</b> button to navigate and select a valid firmware update file.  Note: The maximum length of a file specification is 250 characters including spaces and punctuation.	
	characters including spaces and punctuation.	
Update Firmware	Click this button to initiate the firmware update.	

File: Choose File No file chosen

Update Firmware

#### 5. Following the firmware update, the "Please Create an Administrator Level Account" dialogue will appear in the browser.

- The customer will provide the credentials.
  - -or-
- The installer can choose/create the credentials. The credentials must be communicated to the end customer.

#### Username - Allowable characters

Min 2 to Max 30 case-sensitive, printable ASCII characters (excluding: \:'<>~?#, double quote, and space).

Minimum of 2 to a maximum of 30 case-sensitive, printable characters (excluding: \'<>~?#, double quote, and space).

#### Password - Allowable characters

Min 8 to Max 30 case-sensitive, printable ASCII characters (excluding: \'<>~?#, double quote, and space). Must contain a combination of upper and lower case, digit and special characters, but not User Name.

Minimum of 8 to a maximum of 30 case-sensitive, printable characters (excluding: \'<>-?#, double quote, and space). Must contain a combination of upper and lower case, digit, and special characters. The password cannot contain the Username.



- 6. Create an Administrator account as shown in the example below:
- Username = admini123
- Password = mySecret\$789





7. Take careful note of the actual credentials that are entered in the dialogue shown above.

Note: If the Administrator credentials are lost or forgotten, the card must be reset to a Factory Default state to regain access. Please reference the User Guide for instructions to reset the card.

- 8. Click "Add User".
- 9. The dialogue will briefly indicate "Waiting on response from server..."
- 10. Next, the dialogue will briefly indicate "Applying Updates...."

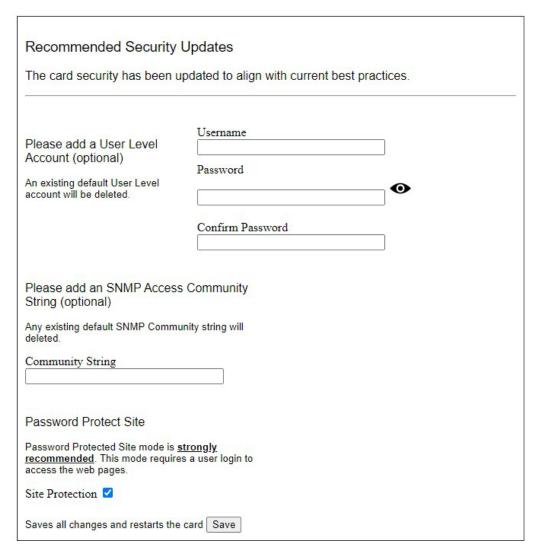
Note: Do not click the "Back" button in the web browser

If the card appears to be unresponsive in the web browser at any point, please re-enter the 169.254.24.7. in the address bar.

11. A second dialogue - "Recommended Security Updates" may appear. If it does, just click the "Save" button at the bottom to continue.



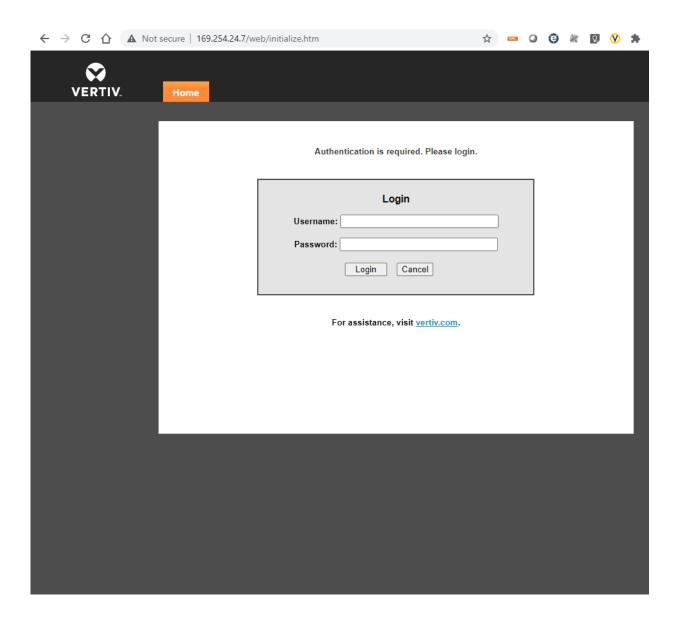




12. The dialogue will briefly indicate - "Waiting on response from server......"

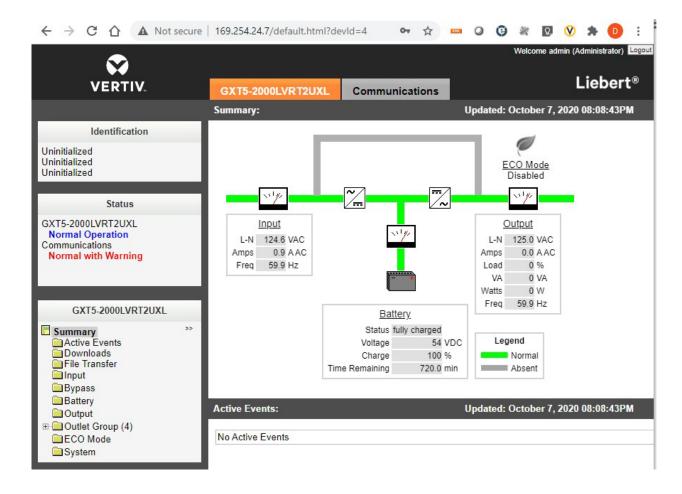
13. The Password Protected Site login screen is presented. Please login with the administrator credentials created above. (Please reference step 7).





14. Communications Status = "Normal with Warning" may appear as shown in the example page below.





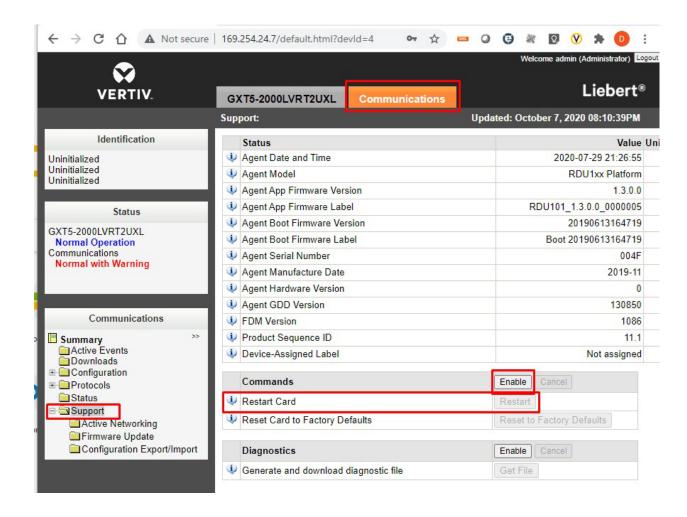
#### 15. The "Normal with Warning" message can be cleared by Restarting the card.

#### Navigate to:

- · "Communications" tab
- "Support" folder
- Click "Enable"
- Click "restart"
- Click "OK" in the browser pop-up dialogue

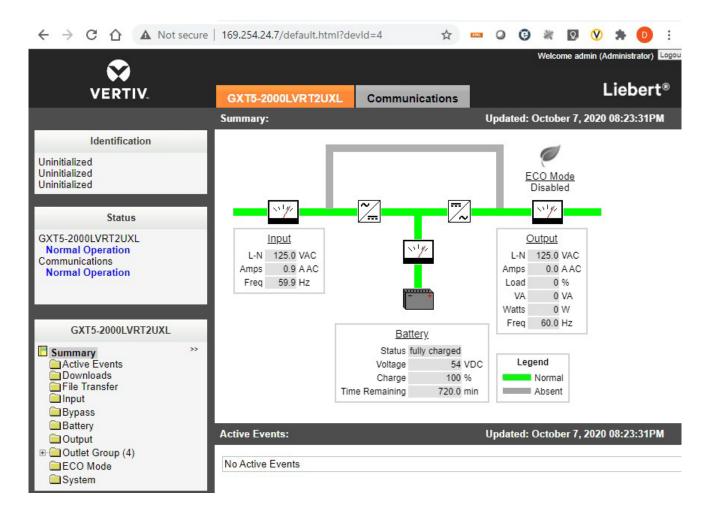






- 16. Following the card restart, login to the card again (same as step 10 above).
- 17. The card web page will be normal as shown below.





18. The administrator account setup is complete.



### 5. Known Issues

COMPONENT	DESCRIPTION
Device Settings	When temperature settings are set on some thermal devices, there may be a 'round-off' error of one tenth of a degree between what was requested and what the device shows after the change. This is a known limitation of some thermal device firmware versions and will be corrected in future versions of the device controller firmware.
Liebert GXT3/4 UPS Support	The IP address of the Unity card may be displayed on the local display of the Liebert® GXT4 UPS unit. The IP address is pushed to the Liebert® GXT4 when the card starts up. If the address changes (for example, if it is changed by the DHCP server when the DHCP lease runs out), the local Liebert® GXT4 display will continue to show the old address until the card is restarted.
	While the SNMP OIDS for the Liebert® GXT4 is backward compatible with those from the IS-WEBCARD, the text values in some SNMP varbinds and email/SMS notifications have changed slightly to use the Unity card equivalent.
Sensor Support	The preferred way to change the display order for multiple sensors is through the web user interface. If the order is changed using one of the supported protocols, then the entire list of sensors should be set in the correct order (including slots that should become blank) to ensure that all sensors are still included.
SNMP	SNMP getnext requests may fail on some tables if there are multiple varbinds in the request. If this occurs, use single-varbind requests.
Firmware Update	When using the Microsoft Edge browser to upgrade firmware from a 7.5.0.0 or 7.5.1.0 to another release, the web page will become blank and display an authorization error. To recover, enter the IP address of the card followed by <enter> after the firmware upgrade completes (this typically takes 5 – 6 minutes).</enter>
	An update from version 4.3 or older will fail when updating to the v7.7 release or newer. An intermediated (two step) process is required - update to v7.6, then update to v7.7 or newer. Please contact Monitoring Application support to obtain the 7.6 firmware version.
	A blank page can appear following a firmware update. If this occurs, please navigate back to the card using in IP address or DNS name.
Account Lockout	If Remote Authentication is enabled with Local Authentication (example: RADIUS then Local) the Local User will be locked out after three unsuccessful logins. The local user must wait 15 minutes to login again.
HTTPS Port	HTTPS port is restricted to 443 when the HTTPS with redirect mode is configured.



6. Previous Release Upo	dates and Enhancements  DESCRIPTION
v7.0.1.0	This release contained the following enhancements:
	<ul> <li>Configuration Import/Export: Manual import/export is supported via the web UI. Mass (programmatic) import/export is supported via an HTTP (specification is available).</li> <li>Remote Authentication: LDAP, RADIUS, TACACS+, Kerberos</li> <li>Support for new devices: Liebert® iCOM™ DP400, Liebert® ITA2 UPS</li> <li>Liebert® EXL S1 legacy modbus mapping support input/bypass/output voltages</li> </ul>
	This release addressed the following issues:
	<ul> <li>If the administer username "admin" was used prior to upgrading to Version 7.0.0.0, the user would no longer have write access to the card. Reset to factory default was required to restore write access to the card.</li> <li>If a user upgraded to version 7.0.0.0 and never changed the default administrator credentials in cards that were originally shipped with version 5.0.0.0 or earlier, the users' entries would become corrupted. Reset to factory default was required to restore write access to the card.</li> </ul>
v7.1.0.0	This release contained the following enhancements:
	<ul> <li>(40xxx) support input/bypass/output voltages.</li> <li>BACNet COV persistence</li> <li>Issues address in this Configuration Import/Export: Manual import/export and mass (programmatic) import/export is supported via the web UI and programmatically using HTTP (specification is available).</li> <li>Remote Authentication: LDAP, RADIUS, TACACS+, Kerberos</li> <li>Support for new devices: Liebert® iCOM™ DP400, Liebert® ITA2 UPS, Liebert® STS2</li> <li>Liebert® EXL S1 legacy modbus mapping:</li> <li>If the administer username "admin" was used prior to upgrading to Version 7.0.0.0, the user would no longer have write access to the card. Reset to factory default was required to restore write access to the card.</li> <li>If a user upgraded to version 7.0.0.0 and never changed the default administrator credentials in cards that were originally shipped with version 5.0.0.0 or earlier, the users' entries would become corrupted. Reset to factory default was required to restore write access to the card.</li> <li>The card could fail to write admin credentials to the file system following a restart. A hard restart of the card (remove</li> </ul>
v7.2.0.0	and restore power) was required to regain access.  This release contained the following enhancements:  Support for new NOR Flash (previous part is obsolete)  Support for new NAND Flash (previous part is obsolete)  IPv4 network address configuration via the diagnostics console (implemented for Apple retail)
v7.3.0.0	This release contained the following enhancements:  Liebert® PSI5 UPS support  Liebert® GXE2 UPS support  2-Factor RSA support for remote authentication  Configurable DNS hostname
v7.3.1.0	In this release, the following data points were added for Liebert® EXL S1:  Bypass Input Current Phase A Bypass Input Current Phase B Bypass Input Current Phase C



RELEASE	DESCRIPTION
v7.5.0.0	In this release, support was added for Liebert® Mini-Mate 2; Liebert® DataMate, Liebert® EXS Frame 2, and Liebert® EXS Frame 3
v7.5.1.0	This release contains the following enhancements and corrections:
	<ul> <li>Change firmware to eliminate Modbus 65535 response data during device discovery.</li> <li>Correct an alarm latching behavior when monitoring the Liebert® STS2, Static Transfer Switch.</li> </ul>
v7.6.0.0	<ul> <li>Liebert® EXL S1 - increase battery cabinet support to eight.</li> <li>Liebert® NXL - new fan and thermal data points.</li> <li>Liebert® APM600 and Liebert® EXM MSR - add Lithium-Ion Battery support.</li> <li>Liebert® PSI5 - add outlet reboot capability.</li> <li>Disable TLSv1.2 support.</li> </ul>
v7.6.1.0	This release contained enhancements and corrections for Liebert® EXL S1 (YDN23).
v7.7.0.0	This release contained enhancements, updates, and corrections for the following products:  • Liebert® CRV/PACC  • Liebert® APM NXr  • Liebert® EXL S1  • Liebert® iCOM™ PA XDU  • Liebert® ITA2_8K
v7.8.0.0	This release contained the following enhancements, updates, and corrections:  • Vertiv™ Edge initial release • CRV10/PACC • Liebert® EXL • Liebert® iCOM™ PA XDU • Liebert® EXS Frame 2, Frame 3 • Compliance with California IoT Law • Account lockout for 15 minutes after 3 failed login attempts
V7.9.2.0	This release contained the following enhancements, updates, and corrections:  Corrected an unintended reboot condition when a BACnet/MSTP BMS was in use.  Liebert® Trinergy™ Cube initial release  Liebert® iCOM™ Edge CR012,  Liebert® iCOM™ Edge CR025  Liebert® iCOM™ Edge CR030  Liebert® iCOM™ Edge PeX4  Liebert® iCOM™ CWA  Liebert® iCOM™ XDU  Liebert® EXL S1



RELEASE	DESCRIPTION
v8.0.0.0	This release contained the following enhancements, updates, and corrections:  Liebert® EXM2 Liebert® APM160 Liebert® XDM LLDP protocol support Password Complexity implemented Authorization Management Vulnerability mitigated
v8.0.0.1	Corrected the "Generate Self-Signed SSL Certificate" functionality.
v8.0.0.2	Corrected the issue on the IS-UNITY-SNMP card where several pages under the Communication tab were not displayed.
v8.0.2.0	This release contains the following enhancements, updates, and corrections:  NTP updated to v4 Web Server HTTPS only mode added (HTTP redirect disabled) Added CAHU Added CRV4 Added CRV4-12K Added DME2 Liebert® EXL S1 - Incremental data point support for Fan Speed and Grid Services
v8.0.3.0	This release contains the following enhancements, updates, and corrections:  Liebert® STS2 (v4 protocol)  Liebert® ITA2 Li  Liebert® EXM  Liebert® EXM2  Liebert® APM600  Liebert® iCOM™
v8.1.0.0	This release contains the following enhancements, updates, and corrections:  New PWA to support alternate flash memory Liebert® EXM2 Liebert® ITA2 30-40K
v8.1.1.0	<ul> <li>This release contains the following enhancements, updates, and corrections:</li> <li>Support added for the following devices: Liebert® CRC300-600 with Liebert® iCOM™ Edge and Liebert® CRD 25-35 with Liebert® iCOM™ Edge</li> <li>Incremental data point support for: Liebert® DME2 with Liebert® iCOM™ Edge, Liebert® PEX4WCFC, and Liebert® CAHU</li> </ul>



RELEASE	DESCRIPTION
v8.2.0.0	<ul> <li>Partial API support</li> <li>Remote Syslog</li> <li>Major package updates to mitigate sec package updates to mitigate security vulnerabilities: Apache – 2.4.48, OpenSSL - 1.0.2u, OpenSSH – 8.8p1</li> <li>New device support: Liebert® APM Plus</li> </ul>
v8.2.1.0	<ul> <li>This release contains the following enhancements, updates, and corrections:</li> <li>Liebert® EXL S1 incremental update</li> <li>Corrected NTP behavior where a customer assigned NTP server address was being overwritten with a DHCP assigned NTP server address</li> </ul>
v8.2.2.0	Liebert® ITA2 incremental update
V8.2.3.0	Liebert® GXE3 6-10kVA, new product support

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