

Vertiv™ Liebert® IntelliSlot™ Unity Card

Firmware Release Notes

VERSION 8.4.7.0_00166, NOVEMBER 14, 2025

Release Notes Section Outline

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

1. Version and Compatibility

This release contains firmware version IS-UNITY_8.4.7.0_00166 and is compatible with the following products:

- Compatible with the following Vertiv™ Liebert® Communication Cards:
 - IS-UNITY-DP
 - IS-UNITY-SNMP
 - IS-UNITY-LIFE
- Compatible with the following Vertiv™ power and thermal management equipment.

VERTIV™ PRODUCTS COMPATIBLE WITH THIS FIRMWARE VERSION

Alber™ BDSU-50	CoolCenter Immersion with Liebert® iCOM™ Edge	CoolLoop RDHx with Liebert® iCOM™ Edge	CoolPhase Flex	CoolPhase Wall with Liebert™ iCOM™ Edge
Edge UPS	Liebert® AHU with Liebert® iCOM™ Edge	Liebert® APM	Liebert® APM Plus	Liebert® APM2
Liebert® APS	Liebert® Challenger*	Liebert® CRV	Liebert® CW*	Liebert® CWA/CoolLoop Thermal Wall
Liebert® DataMate	Liebert® DCL	Liebert® Deluxe System/3*	Liebert® DME2 with Liebert® iCOM™ Edge	Liebert® DS*
Liebert® DSE	Liebert® DSE Packaged Solution	Liebert® EPM	Liebert® EXL	Liebert® EXL S1
Liebert® EXM	Liebert® EXM2	Liebert® EXS	Liebert® FDC	Liebert® FPC
Liebert® GXE2	Liebert® GXE3	Liebert® GXT3	Liebert® GXT4	Liebert® AFC/CoolLoop Chiller
Liebert® HPC-M	Liebert® HPC-S	Liebert® HPC-W	Liebert® HPM	Liebert® ITA2
Liebert® Mini-Mate	Liebert® MTP	Liebert® NX	Liebert® NXC	Liebert® NXL
Liebert® NXR	Liebert® PCW	Liebert® PDX-PX	Liebert® PDX-PAM	Liebert® PDX-PI

VERTIV™ PRODUCTS COMPATIBLE WITH THIS FIRMWARE VERSION

Liebert® PEX*	Liebert® PEX4	Liebert® PPC	Liebert® PSI5	Liebert® RDC
Liebert® RX	Liebert® STS2	Liebert® Trinergy™ Cube	Liebert® XDC with Liebert® iCOM™ Control	Liebert® XDM
Liebert® XDP with Liebert® iCOM™ Control				

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

• Compatible with the following sensors:

- Vertiv™ Liebert® SN-2D
- Vertiv™ Liebert® SN-3C
- Vertiv™ Liebert® SN-L
- Vertiv™ Liebert® SN-T
- Vertiv™ Liebert® SN-TH
- Vertiv™ Liebert® SN-Z01
- Vertiv™ Liebert® SN-Z02
- Vertiv™ Liebert® SN-Z03

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 Vertiv™ Liebert® NXL, Vertiv™ Liebert® EXL S1 UPS, and Vertiv™ Liebert® PEX	Not Supported	Not Supported	Not Supported

This release supports the following browsers:

- Microsoft Edge (version 142.0.3595.65)
- Mozilla Firefox (version 144.0.2)
- Google Chrome (version 142.0.7444.60)

NOTE: To support UL2900-1 and IEC 62443-4-2 cybersecurity certifications, the default web server mode is HTTPS only (no HTTP redirect).

2. New in this Release

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

- Addressed an intermittent firmware update failure with versions 8.4.4.0 and 8.4.5.0.
- Corrected a SystemEvent.log missing events issue.

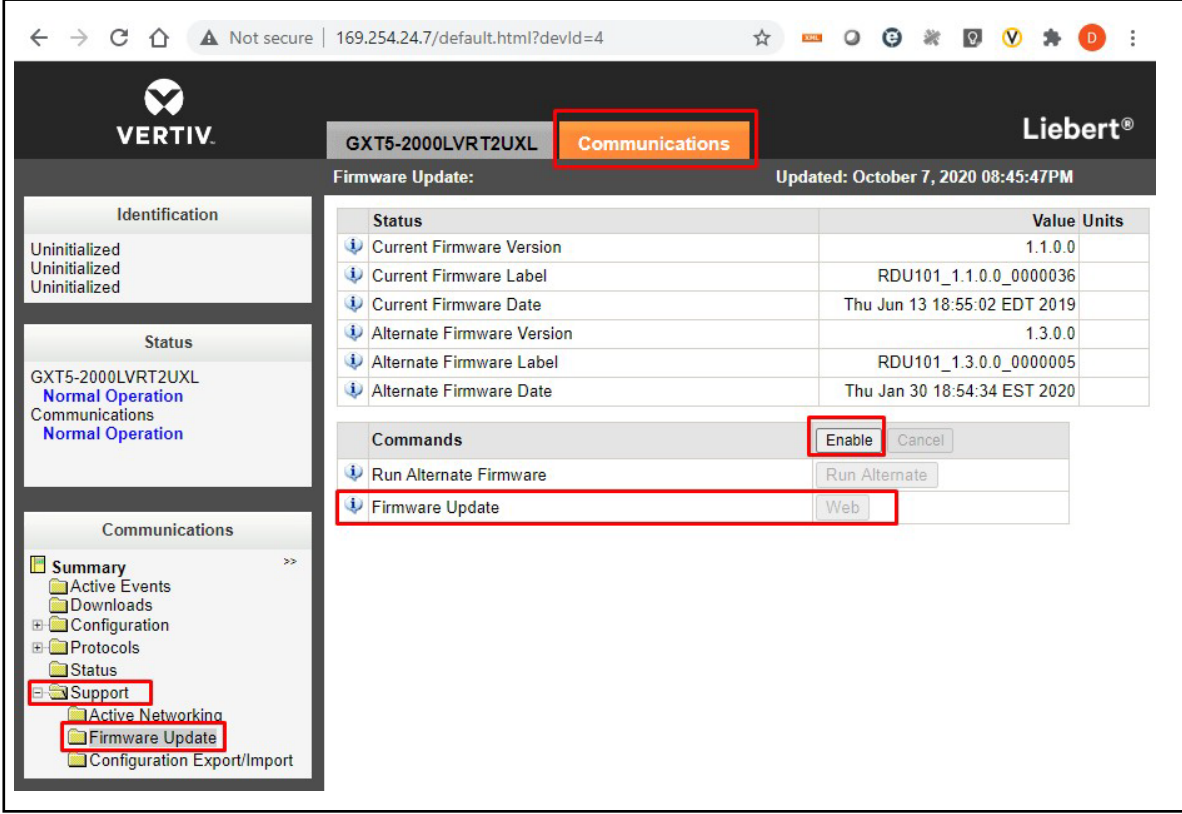
3. Update Instructions

The Vertiv™ 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](#). The firmware update and rediscovery of the system (UPSes, for example) may take up to 15 minutes, depending on network conditions. During this time, you may experience a loss of communication. However, the system operation is not affected.

To update your card:

1. Connect to the card:
 - a. After installing the card, allow time for the card to boot.
 - b. Connect an Ethernet cable from the card to a PC or laptop. A link-local connection 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 Start 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. Navigate to and select the *Communications* tab.
 - a. Select *Support- Firmware Update*.
 - b. Select *Enable*, then select *Web* next to Firmware Update in the Commands section.

Each item you are selecting is shown in the screenshot on the following page.



VERTIV GXT5-2000LVRT2UXL **Communications** Liebert®

Firmware Update: Updated: October 7, 2020 08:45:47PM

Status	Value	Units
Current Firmware Version	1.1.0.0	
Current Firmware Label	RDU101_1.1.0.0_0000036	
Current Firmware Date	Thu Jun 13 18:55:02 EDT 2019	
Alternate Firmware Version	1.3.0.0	
Alternate Firmware Label	RDU101_1.3.0.0_0000005	
Alternate Firmware Date	Thu Jan 30 18:54:34 EST 2020	

Commands Enable Cancel

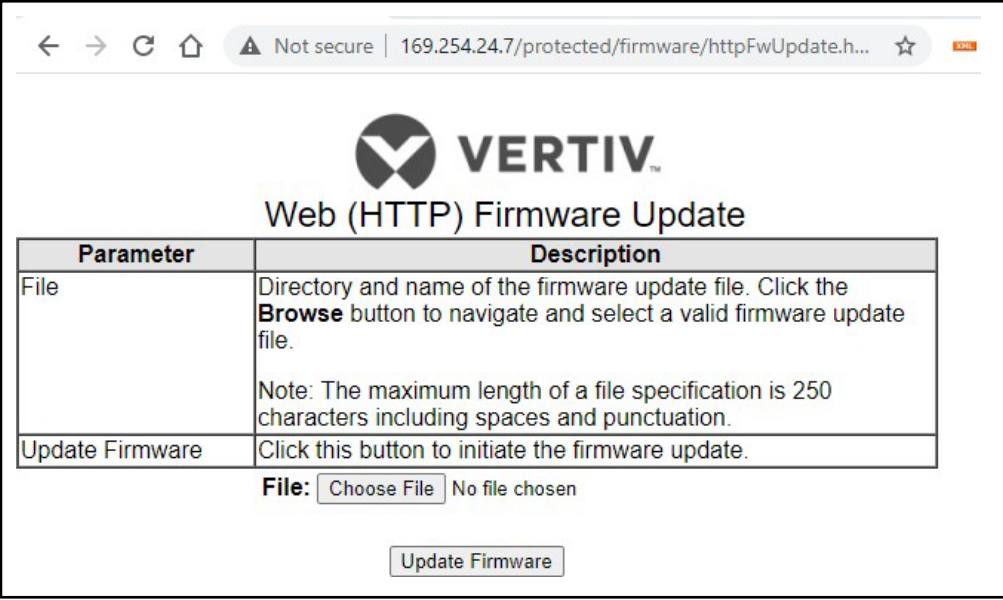
Run Alternate Firmware Run Alternate

Firmware Update Web

Communications

- Summary >>
- Active Events
- Downloads
- Configuration
- Protocols
- Status
- Support**
- Active Networking
- Firmware Update**
- Configuration Export/Import

4. When the Web (HTTP) Firmware Update page opens, select *Choose File* to select the firmware file via Windows File Explorer.



VERTIV™

Web (HTTP) Firmware Update

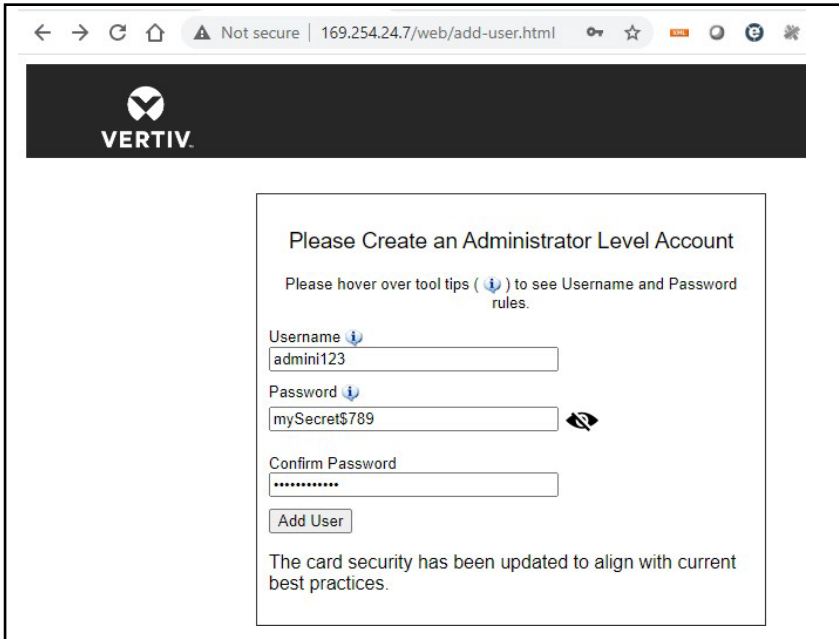
Parameter	Description
File	Directory and name of the firmware update file. Click the Browse button to navigate and select a valid firmware update file. Note: The maximum length of a file specification is 250 characters including spaces and punctuation.
Update Firmware	Click this button to initiate the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

File: Choose File No file chosen

Update Firmware

5. Click *Update Firmware*.

6. After the firmware update, a dialog box appears in the browser to prompt you to create an Administrator Level Account.



- For the Administrator-level account, the customer can provide the credentials, or the installer can choose/create them. If the installer chooses the credentials, the credential information must be communicated to the end customer. To demonstrate how to create an Administrator-level account, example credentials (username and password) are provided in step 7.
- When creating the username, a minimum of two to a maximum of 30 case-sensitive, printable characters are allowed, except for \', <, >, ~, ?, #, double quote, and space.

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

- When creating the password, a minimum of eight to a maximum of 30 case-sensitive, printable characters are allowed, except for \', <, >, ~, ?, #, double quote, and space. The password must contain a combination of uppercase and lowercase letters, numbers (digits), and special characters. You cannot, however, include the username as the password.

**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.**

7. Enter **admini123** as the username and **mySecret\$789** as the example password to create an Administrator account.

NOTE: The account creation process complies with the California IoT Law (SB-327).

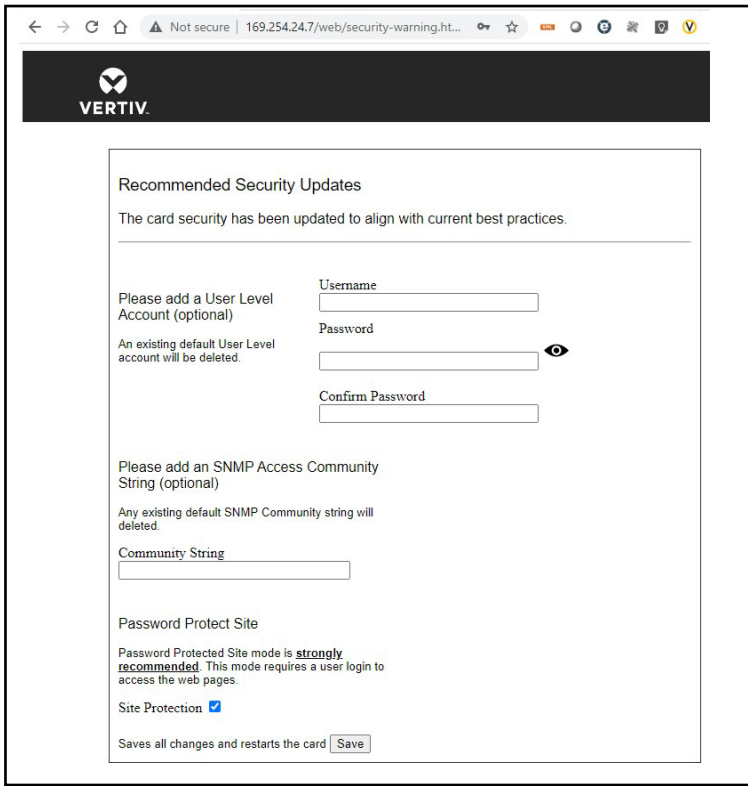
WARNING: Record these credentials in a secure location where they will not be lost. If the Administrator credentials are lost or forgotten, the card must be reset to a factory default state to regain access. For instructions on resetting the card, please see the user guide.

8. Confirm the password, then click *Add User*. A dialog box appears to indicate that a response is needed from the server (*Waiting on response from server...*), and then indicates that updates are being applied (*Applying Updates...*).

NOTE: During this process, do not click the *Back* button in the browser.

If the card is unresponsive in the web browser at any point, re-enter **169.254.24.7** in the address bar.

9. A Recommended Security Updates dialog box may appear. If so, click Save at the bottom of the box to continue.



Recommended Security Updates

The card security has been updated to align with current best practices.

Please add a User Level Account (optional)

An existing default User Level account will be deleted.

Username

Password 

Confirm Password

Please add an SNMP Access Community String (optional)

Any existing default SNMP Community string will be deleted.

Community String

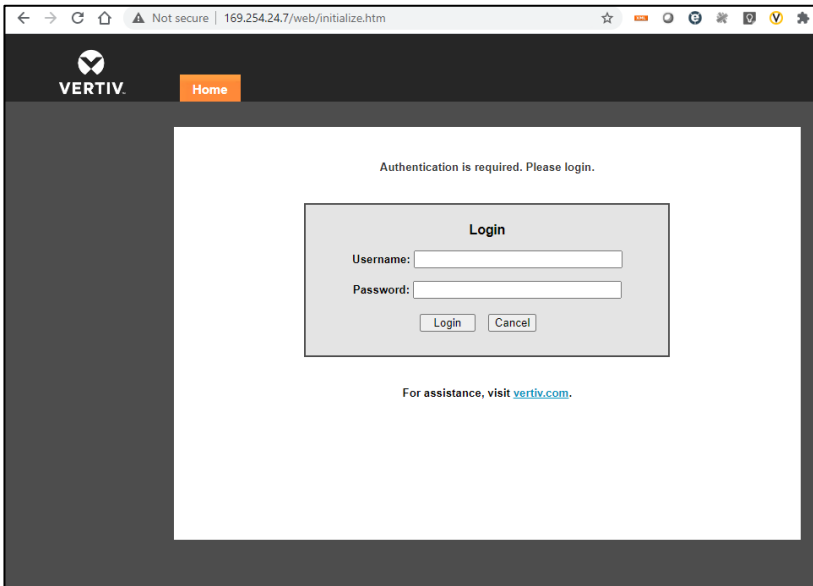
Password Protect Site

Password Protected Site mode is **strongly recommended**. This mode requires a user login to access the web pages.

Site Protection ☒

Saves all changes and restarts the card

10. Another dialog box appears to indicate that a response is needed from the server (*Waiting on response from server...*), then the Password Protected Site login screen appears. Re-enter **admini123** as the username and **mySecret\$789** as the password.



Authentication is required. Please login.

Login

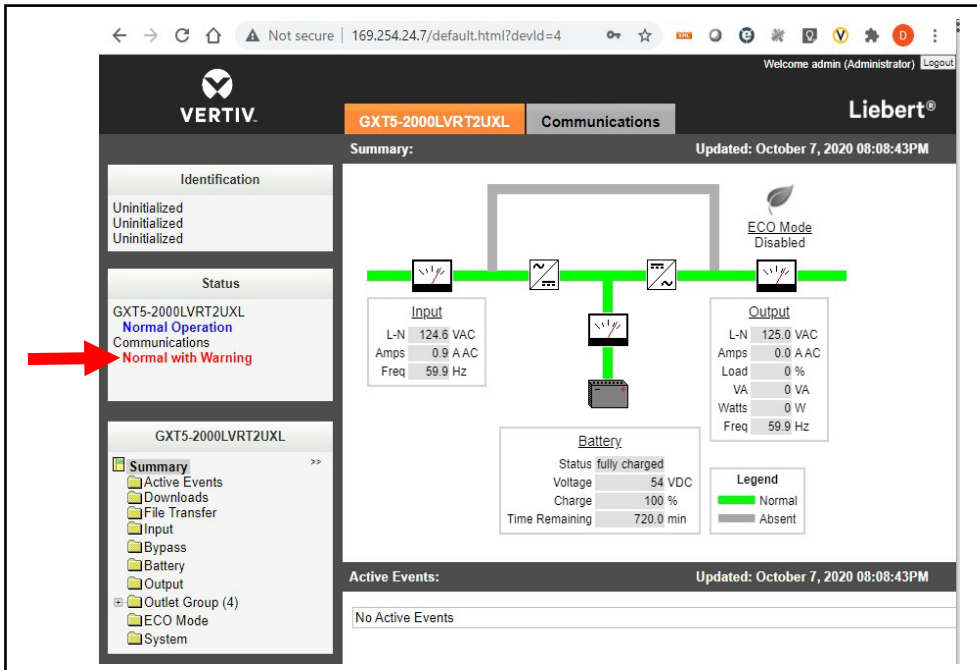
Username:

Password:

For assistance, visit vertiv.com.

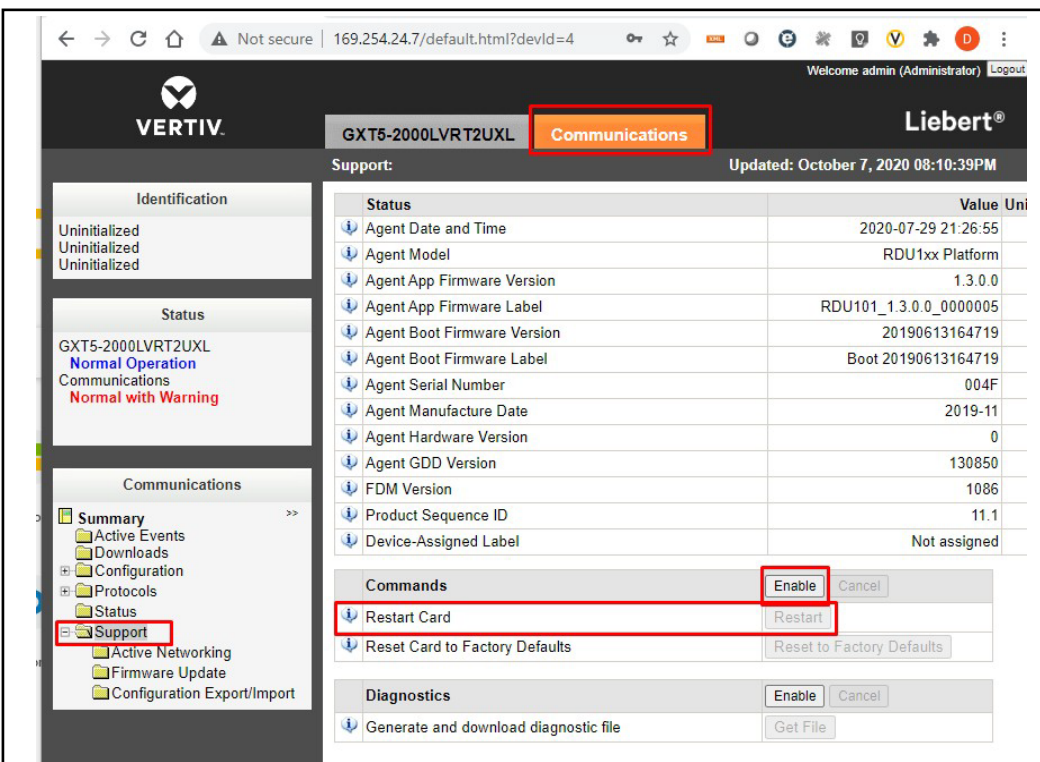
11. Click *Login*.

12. After logging in, the Status area on the left-hand side of the appliance screen may indicate a *Normal with Warning Communications* status.

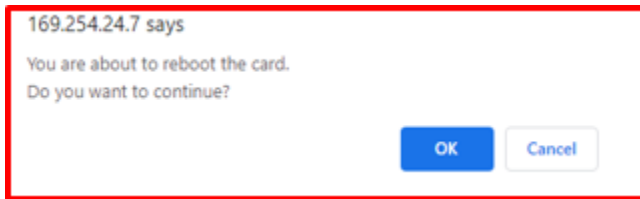


This message can be cleared by restarting the card.

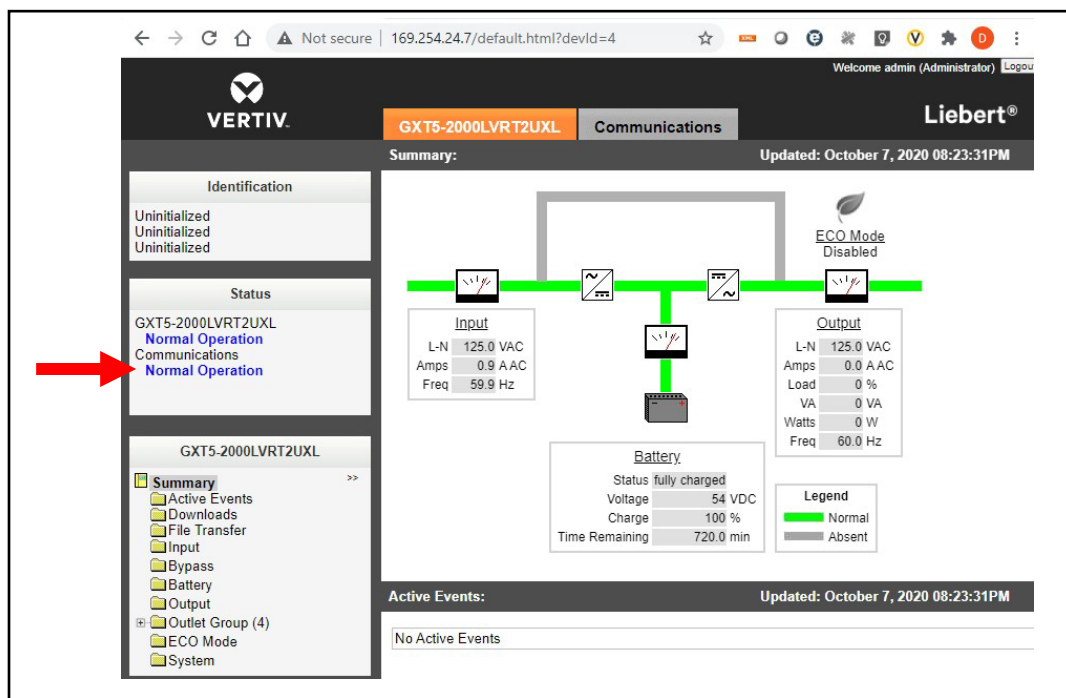
13. To restart the card, select the *Communications* tab.
- In the Communications area on the left-hand side of the screen, select *Support*.
 - In the Commands section, select *Enable- Restart*.



14. A dialog box appears to confirm that you wish to reboot the card. Click **OK**.



15. When the card restarts, log in to the card again as you did in step 10.
16. After logging in, the Status area on the left-hand side of the appliance screen should display a 'Normal Operation Communications' status. This indicates that the Administrator account setup is complete.



4. Known Issues

COMPONENT	DESCRIPTION
Device Settings	When temperature settings are set on some thermal devices, a 'round-off' error of one-tenth of a degree may occur between the requested value and the value displayed by the device 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.
Vertiv™ Liebert® GXT3/4 UPS Support	The IP address of the Unity card may be displayed on the local display of the Vertiv™ Liebert® GXT4 UPS unit. The IP address is pushed to the Vertiv™ 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 expires), the local Vertiv™ Liebert® GXT4 display will continue to show the old address until the card is restarted. While the SNMP OIDS for the Vertiv™ 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 method for changing the display order of 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 release to another version, the web page may become blank and display an authorization error. To recover, enter the IP address of the card followed by <Enter> after the firmware upgrade is complete (this typically takes 5–6 minutes). An update from version 4.3 or older will fail when updating to the v7.7 release or newer. An intermediate (two-step) process is required: update to version 7.6, then update to version 7.7 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 the IP address or DNS name.
Account Lockout	If Remote Authentication is enabled with Local Authentication (for example, RADIUS, then Local), the Local User will be locked out after three unsuccessful logins. The local user must wait 15 minutes before logging in again.
HTTPS Port	HTTPS port is restricted to 443 when HTTPS with redirect mode is configured.

5. Previous Release Updates and Enhancements

RELEASE	DESCRIPTION
v7.0.1.0	This release contained the following enhancements: - Configuration Import/Export: Manual import/export is supported via the web UI. Mass (programmatic) import/export is supported via an HTTP (specification is available) - Remote Authentication: LDAP, RADIUS, TACACS+, Kerberos - Support for new devices: Vertiv™ Liebert® iCOM™ DP400, Vertiv™ Liebert® ITA2 UPS - Vertiv™ Liebert® EXL S1 legacy Modbus mapping support input/bypass/output voltages This release addressed the following issues: - If the administrator username “admin” was used prior to upgrading to Version 7.0.0.0, the user would no longer have write access to the card. Resetting to factory default was required to restore write access to the card. - 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. Resetting to factory default was required to restore write access to the card.
v7.1.0.0	This release contained the following enhancements: (40xxx) support input/bypass/output voltages - BACNet COV persistence - Issues addressed in this Configuration Import/Export: Manual import/export and mass (programmatic) import/export are supported via the web UI and programmatically using HTTP (specification is available) - Remote Authentication: LDAP, RADIUS, TACACS+, Kerberos - Support for new devices: Vertiv™ Liebert® iCOM™ DP400, Vertiv™ Liebert® ITA2 UPS, Vertiv™ Liebert® STS2 Vertiv™ Liebert® EXL S1 legacy Modbus mapping: - If the administrator username “admin” was used prior to upgrading to Version 7.0.0.0, the user would no longer have write access to the card. Resetting to factory default was required to restore write access to the card. - 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. Resetting to factory default was required to restore write access to the card. - The card could fail to write admin credentials to the file system following a restart. A hard restart of the card (removing and then restoring power) was required to regain access.
v7.2.0.0	This release contained the following enhancements: - Added support for new NOR Flash (previous part is obsolete) - Added 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: - Added support for the Vertiv™ Liebert® PSI5 UPS - Added support for the Vertiv™ Liebert® GXE2 UPS - Added support for 2-Factor RSA remote authentication - Configurable DNS hostname
v7.3.1.0	In this release, the following data points were added for Vertiv™ 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 Vertiv™ Liebert® Mini-Mate 2; Vertiv™ Liebert® DataMate, Vertiv™ Liebert® EXS Frame 2, and Vertiv™ Liebert® EXS Frame 3.
v7.5.1.0	This release contained the following enhancements and corrections: • Changed firmware to eliminate Modbus 65535 response data during device discovery • Corrected an alarm latching behavior when monitoring the Vertiv™ Liebert® STS2, Static Transfer Switch
v7.6.0.0	This release contained the following enhancements and corrections: • Vertiv™ Liebert® EXL S1 - increase battery cabinet support to eight. • Vertiv™ Liebert® NXL – new fan and thermal data points • Vertiv™ Liebert® APM600 and Vertiv™ Liebert® EXM MSR – add Lithium-Ion Battery support • Vertiv™ Liebert® PSI5 – add outlet reboot capability • Disabled TLSv1.2 support
v7.6.1.0	This release contained enhancements and corrections for Vertiv™ Liebert® EXL S1 (YDN23).
v7.7.0.0	This release contained enhancements, updates, and corrections for the following products: • Vertiv™ Liebert® CRV/PACC • Vertiv™ Liebert® APM NXr • Vertiv™ Liebert® EXL S1 • Vertiv™ Liebert® iCOM™ PA XDU • Vertiv™ Liebert® ITA2_8K
v7.8.0.0	This release contained the following enhancements, updates, and corrections: • Vertiv™ Edge UPS initial release • Vertiv™ Liebert® CRV10/PACC • Vertiv™ Liebert® EXL • Vertiv™ Liebert® iCOM™ PA XDU • Vertiv™ 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. • Vertiv™ Liebert® Trinergy™ Cube initial release • Vertiv™ Liebert® CR012 • Vertiv™ Liebert® CR025 • Vertiv™ Liebert® CR030 • Vertiv™ Liebert® PEX4 • Vertiv™ Liebert® CWA/Vertiv™ CoolLoop Thermal Wall • Vertiv™ Liebert® XDU/Vertiv™ CoolChip CDU • Vertiv™ Liebert® EXL S1

RELEASE	DESCRIPTION
v8.0.0.0	This release contained the following enhancements, updates, and corrections: • Vertiv™ Liebert® EXM2 • Vertiv™ Liebert® APM160 • Vertiv™ 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 contained the following enhancements, updates, and corrections: • NTP updated to v4 • Web Server HTTPS only mode added (HTTP redirect disabled) • Added the Vertiv™ Liebert® CAHU • Added the Vertiv™ Liebert® CRV4 with Vertiv™ Liebert® iCOM™ Edge • Added the Vertiv™ Liebert® CRV4-12K with Vertiv™ Liebert® iCOM™ Edge • Added the Vertiv™ Liebert® DME2 with Liebert® iCOM™ Edge • Vertiv™ Liebert® EXL S1 - Incremental data point support for Fan Speed and Grid Services
v8.0.3.0	This release contained the following enhancements, updates, and corrections: • Vertiv™ Liebert® STS2 (v4 protocol) • Vertiv™ Liebert® ITA2 Li • Vertiv™ Liebert® EXM • Vertiv™ Liebert® EXM2 • Vertiv™ Liebert® APM600 • Vertiv™ Liebert® iCOM™
v8.1.0.0	This release contained the following enhancements, updates, and corrections: • New PWA to support alternate flash memory • Vertiv™ Liebert® EXM2 • Vertiv™ Liebert® ITA2 30-40K
v8.1.1.0	This release contained the following enhancements, updates, and corrections: • Support added for the following devices: Vertiv™ Liebert® CRC300-600 with Vertiv™ Liebert® iCOM™ Edge and Vertiv™ Liebert® CRD 25-35 with Vertiv™ Liebert® iCOM™ Edge • Incremental data point support for: Vertiv™ Liebert® DME2 with Vertiv™ Liebert® iCOM™ Edge, Vertiv™ Liebert® PEX4WCFC, and Vertiv™ Liebert® CAHU

RELEASE	DESCRIPTION
	This release contained the following enhancements, updates, and corrections: • Partial API support • Remote Syslog • Major package updates to mitigate security vulnerabilities: Apache – 2.4.48, OpenSSL – 1.0.2u, OpenSSH – 8.8p1 • Added support for the Vertiv™ Liebert® APM Plus
v8.2.0.0	
v8.2.1.0	• Added incremental update for the Vertiv™ Liebert® EXL S1 • Corrected NTP behavior where a customer-assigned NTP server address was being overwritten with a DHCP-assigned NTP server address
v8.2.2.0	• Added incremental update for the Vertiv™ Liebert® ITA2
V8.2.3.0	• Added support for the Vertiv™ Liebert® GXE3 6-10kVA
v8.3.0.0	• Updated Remote Services connectivity • Added Vertiv™ Power Insight and VxRail integration • Corrected the SNMPv3 engine reboot count that was not integrating • Updated to include key strength when generating self-signed certificates
v8.3.1.0	• Added support for the Vertiv™ Liebert® GXE3 1-3 kVA
v8.4.0.0	• Added support for the Vertiv™ Liebert® APM2
v8.4.1.0	• Added support for the Vertiv™ Liebert® MTP • Added incremental update for the Vertiv™ Liebert® ITA2 • Added incremental update for the Vertiv™ Liebert® iCOM™ 2
v8.4.2.0	• Added Vertiv™ CoolPhase Wall with Vertiv™ Liebert® iCOM™ Edge • Added Vertiv™ Liebert® CRD30 and Vertiv™ Liebert® CRD40 DX with Vertiv™ Liebert® iCOM™ Edge • Added incremental update for the Vertiv™ Liebert® APM2 • Added incremental updates for the Vertiv™ Liebert® PEX4 • Added incremental updates for the Vertiv™ Liebert® iCOM™ 2 PA • Added incremental updates for the Vertiv™ Liebert® CRV4 • Added incremental updates for the Vertiv™ Liebert® CRD025 – 035 EMEA • Added 802.1X Port-Based Network Access Control (PNAC) • Implemented HTTPS web server mode by default to comply with cybersecurity requirements • Added Admin Account creation dialogue – HTTP Enable option
v8.4.3.0	• Added Vertiv™ CoolCenter Immersion with Vertiv™ Liebert® iCOM™ Edge • Added Vertiv™ CoolLoop RDHx with Vertiv™ Liebert® iCOM™ Edge
v8.4.3.1	• Improved security by preventing Authentication, Stack Buffer Overflow, and CWE (Common Weakness Enumeration) risks

RELEASE	DESCRIPTION
v8.4.4.0	• Added support for the new Vertiv™ CoolPhase Wall • Added incremental update for the Vertiv™ Liebert® EXM • Added incremental update for the Vertiv™ Liebert® EXS • Added incremental update for the Vertiv™ Liebert® EXL S1
v8.4.5.0	• Added incremental update for the Vertiv™ Liebert® PEX