Vertiv™ Liebert® IntelliSlot™ RDU101 Communications Card

Firmware Release Notes

VERSION 1.9.1.2_0000001, FEBRUARY 28, 2025

Release Notes Section Outline

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1. Version and Compatibility Information

This release contains firmware version RDU_1.9.1.2_0000001 and is compatible with the following products:

- Compatible with the following Vertiv™ Liebert® Communication Card:
  - Vertiv™ Liebert® IntelliSlot™ RDU101 card
- Compatible with the following power and thermal management equipment:
  - Vertiv™ Liebert® GXT5 UPS
  - Vertiv™ Liebert® RXA Power Distribution System
  - Vertiv™ Liebert® RXV Power Distribution System
  - Vertiv™ Liebert® TFX Power Distribution System
  - Vertiv™ Liebert® Trinergy™ UPS
- Compatible with the following sensors:
  - Vertiv™ Liebert® SN-T
  - Vertiv™ Liebert® SN-TH
  - Vertiv™ Liebert® SN-2D
  - Vertiv™ Liebert® SN-3C
  - Vertiv™ Liebert® SN-Z01
  - Vertiv™ Liebert® SN-Z02
  - Vertiv™ Liebert® SN-Z03

  NOTE: Vertiv™ Liebert® SN-L1 and SN-L20 are not compatible.

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2. Client Browser Support Information

BROWSER	SUPPORTED VERSION	OPERATING SYSTEM
Microsoft Edge	131.0.2903.99 (official build)	64-bit
Mozilla Firefox	133.0.3	64-bit
Google Chrome	131.0.6778.205 (official build)	64-bit

3. Vertiv™ Liebert® IntelliSlot™ RDU101 Card and Sensors Feature Support Information

SUPPORTED FEATURES	COMMUNICATIONS CARD	SENSORS
LIFE™ Services Support	Supported	Not Supported
Sensor Support	Supported	Not Supported
COMMUNICATION PROTOCOLS		
HTTP/HTTPS	Supported	Supported
Velocity Protocol	Supported	Supported
Email	Supported	Supported
SMS	Supported	Supported
THIRD-PARTY COMMUNICATION PROTOCOLS		
SNMP v1, v2c, v3	Supported	Supported
*BACnet IP/MSTP	Supported	Not Supported
*Modbus TCP/RTU	Supported	Not Supported
YDN23	Not Supported	Not Supported

*** NOTE: BACnet MSTP and Modbus RTU require the Vertiv™ Liebert® IntelliSlot™ RDU101 RS-485 Converter Accessory: Part Number USB485I.**

4. Features and Enhancements

The following features and enhancements are available with this release of the Vertiv™ Liebert® IntelliSlot™ RDU101 Communications Card:

- Improved security by preventing Authentication, Stack Buffer Overflow and CWE (Common Weakness Enumeration) risks.

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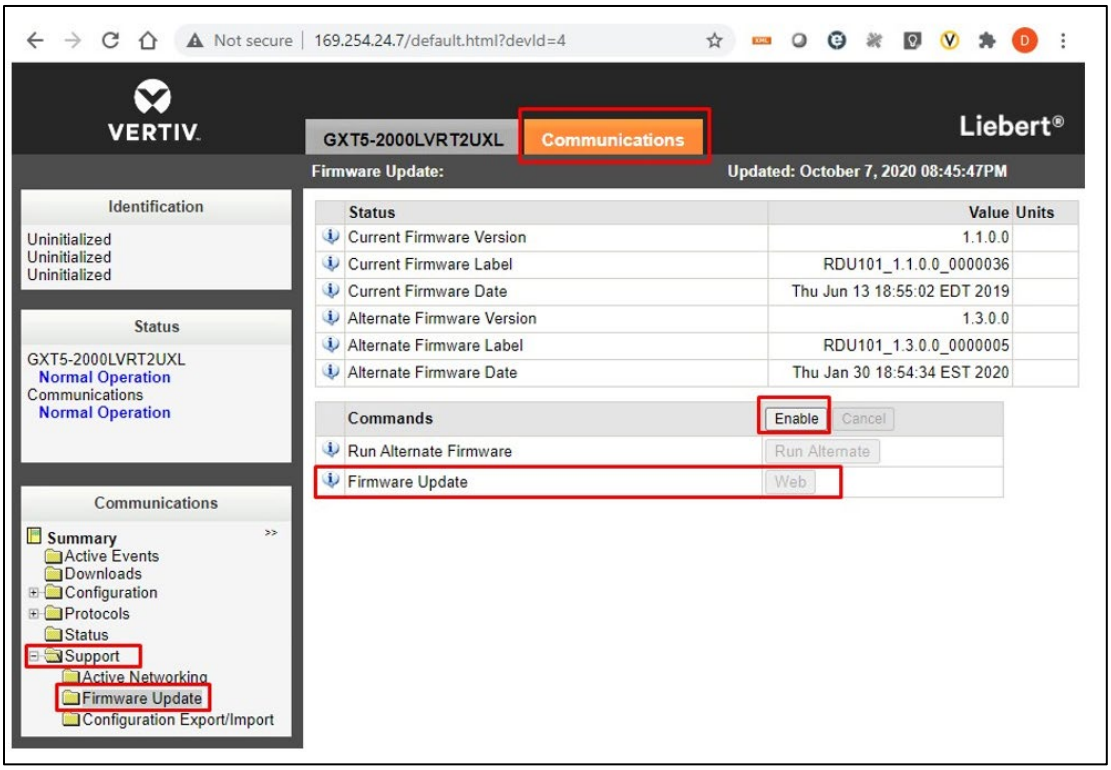
5. Update Instructions

The Vertiv™ Liebert® IntelliSlot RDU101 Communications 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 RDU101 Communications Card User Guide (SL-70352) and the Mass Firmware and Configuration Update Tool. The firmware update may take up to 15 minutes depending on network conditions. During this time, you may experience a loss of communications. However, the monitored equipment 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 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 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.

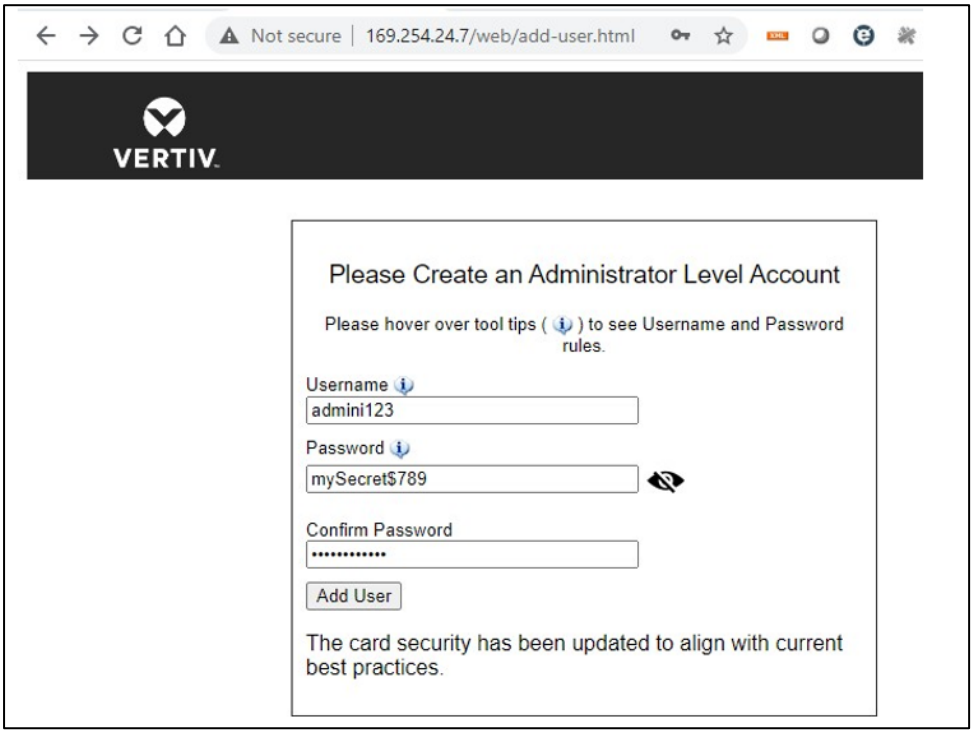
   Each item you are selecting is shown in the screenshot on the following page.



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

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.

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- 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 upper- and lower-case 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 the login credentials to create an Administrator account. For example: **admini123** as the username and **mySecret$789** as the password.

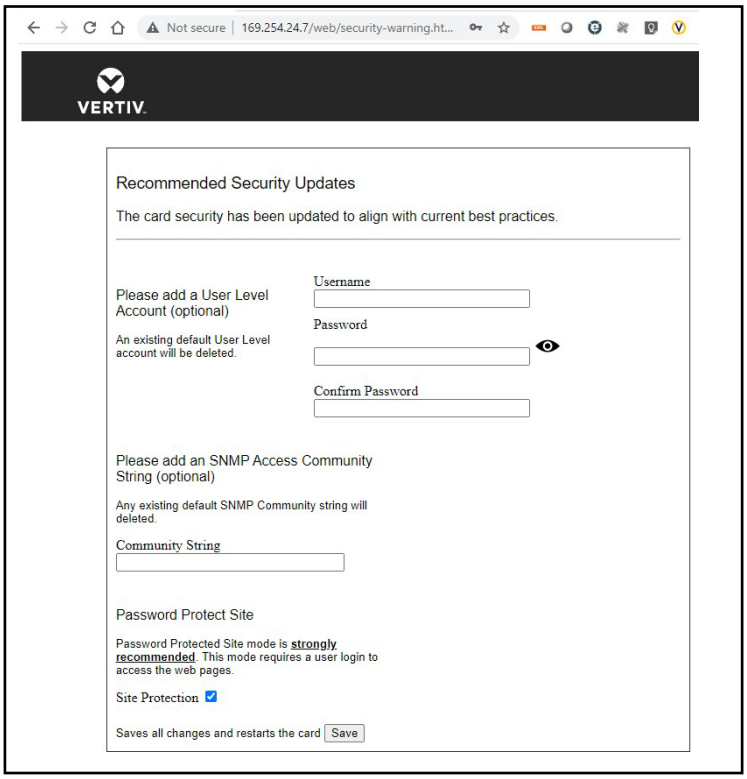
   WARNING: **Write down/log these credentials in a location where the information will not be lost. If the Administrator credentials are lost or forgotten, the card must be reset to a factory default state to regain access. For instructions on resetting the card, please see the user guide.**

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…*).

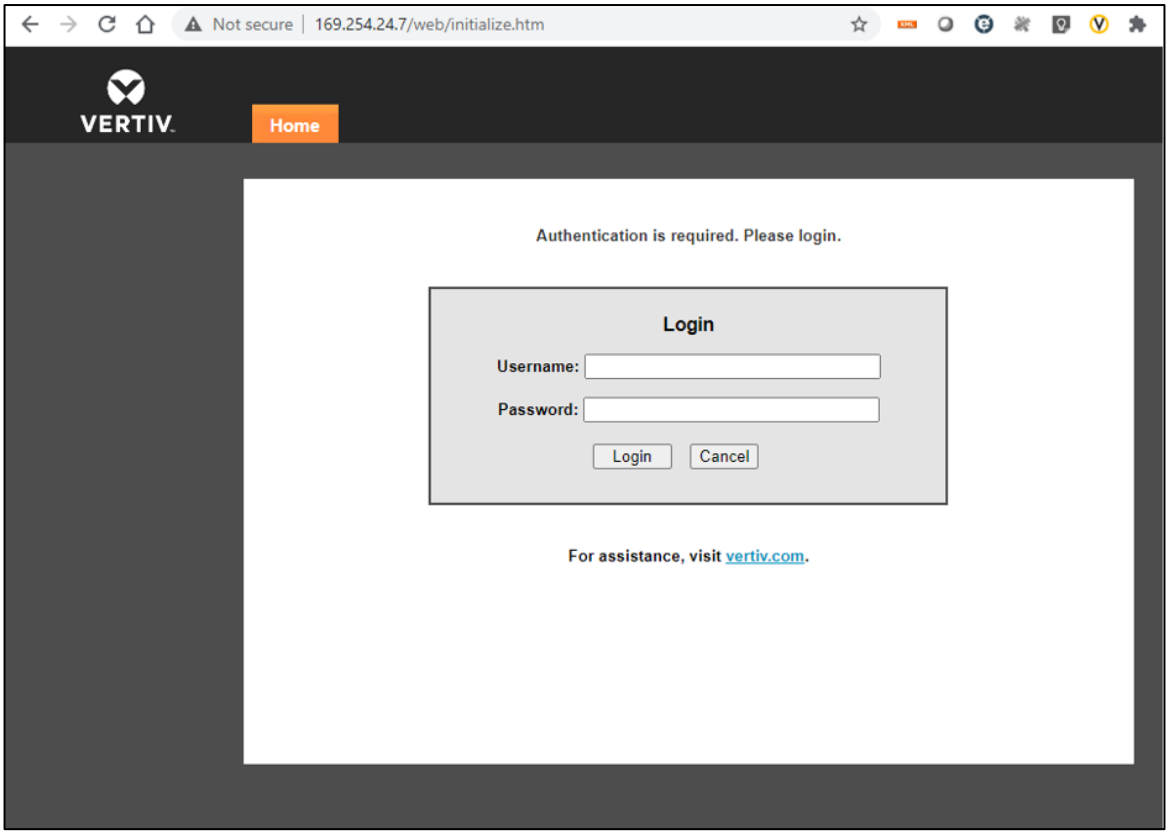
   NOTE: During this process, do not click the *Back* button in the browser.

   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.

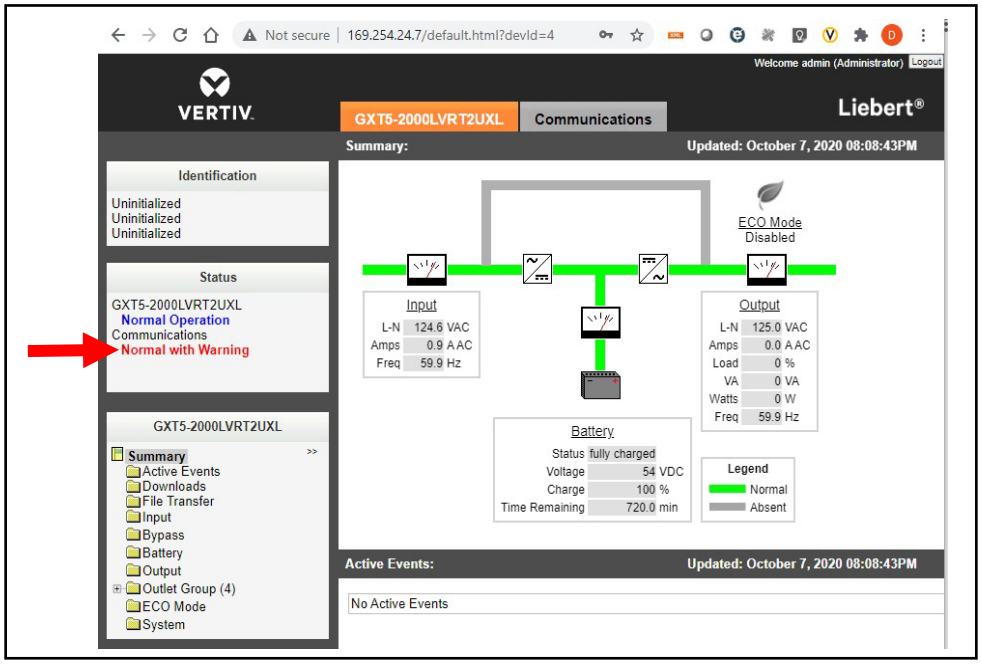


10. Another dialog box appears to indicate that a response is needed from the server (*Waiting on response from server…)*, then the Password Protected Site log in screen appears. Re-enter **admini123** as the username and **mySecret$789** as the password.



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.

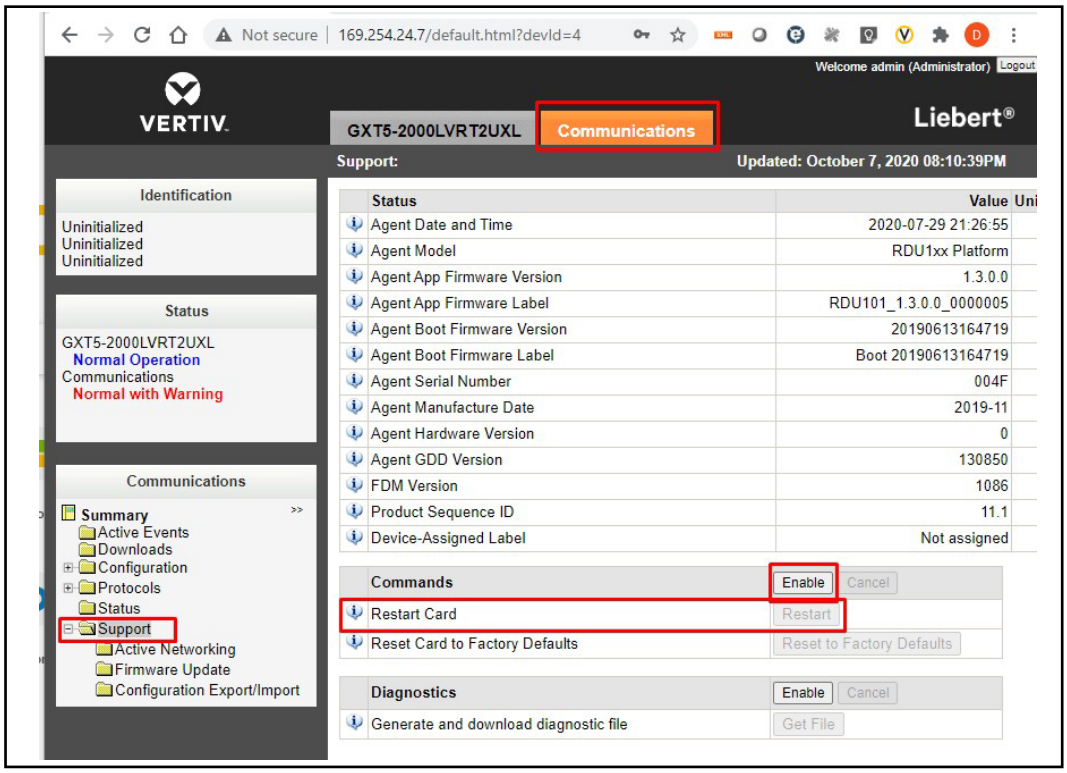


This message can be cleared by restarting the card.

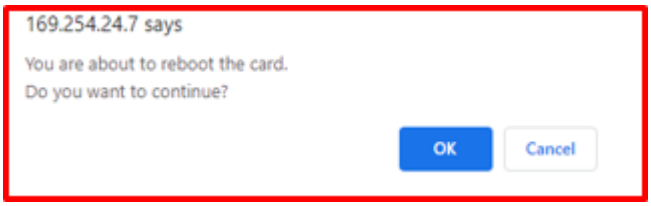
13. To restart the card, select the *Communications* tab.

    a. In the Communications area on the left-hand side of the screen, select *Support*.

    b. In the Commands section, select *Enable- Restart*.

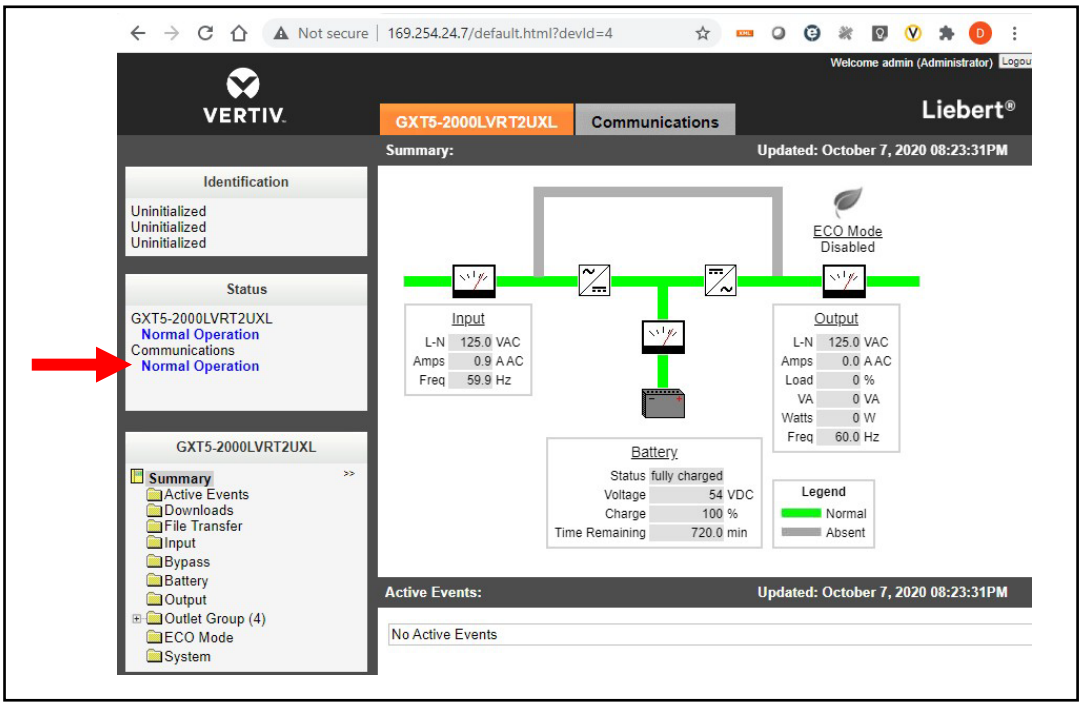


14. A dialog box appears to confirm that you wish to reboot the card. Click *OK*.



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 indicate a *Normal Operation* Communications status. This indicates that the Administrator account set up is complete.



6. Resolved Issues

RELEASE	COMPONENT	DESCRIPTION
v.1.0.0.3	Web – Active Networking Page	Resolved the issue of the Active Networking Web page indicating incorrect information.
v.1.2.1.0	User Access	User Access fails when username is configured as “admin”.
v.1.2.2.0	Web - Firmware Update	Empty page after firmware image uploaded successfully on the Microsoft Edge browser.
v.1.4.0.0	Password Protected Site	Password Protected Site checkbox does not indicate enabled even though the feature is enabled. Following a reboot, the checkbox indicates enabled.
v.1.4.0.2	SSL Certificate	Corrected the inability to upload new certificates.
v.1.5.0.1	Firmware Update	Improved firmware update performance over high latency network connections such as VPN.
v.1.5.1.0	HTTPS	Enable TLS v1.2 support and disable TLS v1.1 support.
v.1.6.0.0	Vertiv™ Liebert® GXT5 Firmware Update	Unauthorized report when entering credential on File Transfer page.
v.1.7.0.0	Firmware Update	Re-authorization required to get progress update.
v1.8.0.0	N/A	No issues were addressed with this release; only feature enhancements were implemented.
v.1.8.1.0	N/A	No issues were addressed with this release; only feature enhancements were implemented.
v1.9.0.0	N/A	No issues were addressed with this release; only feature enhancements were implemented.
v1.9.1.0	N/A	No issues were addressed with this release; only feature enhancements were implemented.

7. Known Issues

COMPONENT	DESCRIPTION
Firmware Update	• Firmware v.1.3.0.0 and below are experiencing firmware update failures over high latency networks connections while the “Password Protect Site” feature is enabled. • A blank page may appear after the firmware file transfer has completed. Please navigate to the IP address of the card to restore connectivity.
Reset to Factory Defaults	The reset to factory defaults can take 90+ seconds to reset to factory defaults on firmware versions V1.3.0.0 and older.
SN-L20	The SN-L20 sensor does not function properly unless another SN-x sensor is connected to the Environmental Sensor Bus. Example: SN-T

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8. Previous Release Updates and Enhancements

<table>
<tr><th>RELEASE</th><th>DESCRIPTION</th></tr>
<tr><td>v1.0.0.0</td><td>This is the initial release of the Vertiv™ Liebert® IntelliSlot™ RDU101 Card in support of the Vertiv™ Liebert® GXT5.</td></tr>
<tr><td>v1.0.03</td><td>This release contained the following enhancement: the web bezel (power flow diagram) was enhanced to provide a more accurate UPS status. Example: battery charging in addition to battery discharging is now available.</td></tr>
<tr><td>v1.1.0.0</td><td>This release contained the following enhancements: Modbus TCP support was added. Status LED operation was implemented per the following table.
<table>
<tr><th>LED</th><th>DESCRIPTION</th></tr>
<tr><td>Green On</td><td>Full network connectivity, DHCP</td></tr>
<tr><td>Green Off</td><td>No network connectivity</td></tr>
<tr><td>Green Blinking</td><td>Link local address only</td></tr>
<tr><td>Red On</td><td>Web pages for the monitored device are unavailable (Vertiv™ Liebert® GXT5, for example).</td></tr>
<tr><td>Red Off</td><td>Web pages for the monitored device are available</td></tr>
<tr><td>Red Blink Fast</td><td>Web pages for the monitored device are initializing. Blink rate is 0.25 sec.</td></tr>
<tr><td>Red Blink Slow</td><td>Device not available. Blink rate is 1.50 sec.</td></tr>
<tr><td>Green and Red Toggling</td><td>Reset to Factory Defaults has been recognized</td></tr>
</table></td></tr>
<tr><td>v1.2.2.0</td><td>This release contained support for BACnet/IP, MSTP, and Modbus RTU.

Note: BACnet MSTP and Modbus RTU require a USB to RS-485 adapter (part number USB485I). This adapter will soon be available for order as an accessory to the Vertiv™ Liebert® IntelliSlot™ RDU101 card.</td></tr>
<tr><td>v1.3.0.0</td><td>This release contained support for Liebert® TFX Power Distribution System.</td></tr>
<tr><td>v1.4.0.0</td><td>This release contained support for Liebert® RXA.</td></tr>
<tr><td>v1.4.0.1</td><td>This release contained the adjustment of scaling factor for several current data points in Power Distribution Monitoring System (Vertiv™ Liebert® TFX, Vertiv™ Liebert® RXA, and so on).</td></tr>
<tr><td>v1.5.0.0</td><td>This release contained expanded data set support for Vertiv™ Liebert® GXT5.

The following support was added for Vertiv™ Liebert® TFX and Vertiv™ Liebert® RXA:

• Added BMC data points
• UOM corrected for 3 Peak Demand data points
• Added Sub-Feed Phase Over-Current Warning data points</td></tr>
</table>

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RELEASE	DESCRIPTION
v1.5.1.0	• Vertiv™ Liebert® GXT5 with Lithium-Ion batteries: data set support • Remote Services (LSC) connectivity was improved • Firmware update: user feedback has been improved • Vertiv™ Liebert® TFX, Vertiv™ Liebert® RXA: add status data points for Branch PB and sub feed PB reports to annunciate alarms on the web bezel.
v1.6.0.0	VxRail Shutdown Support Integration Power Insight: • It is recommended to use Local IntelliSlot Authentication when configuring VxRail (Third Party Integration) users. • It is recommended to not use Remote Authentication with the VxRail feature enabled if the Remote Authentication Server is in the shutdown cluster. Please note that Kerberos based authentication is not supported. Vertiv™ Liebert® TFX, Vertiv™ Liebert® RXA: • Added high temperature alarm data points
v1.7.0.0	• Alternate the Vertiv™ Liebert® IntelliSlot™ RDU101 PCBA to support a new ETH PHY. • IPv4 DHCP fail-over to a secondary DHCP server.
v1.8.0.0	• Update Remote Services connectivity. • NTPv4 support. • Support time server address from DHCP.
v1.8.1.0	Added support for Vertiv™ Liebert® SOLA GXT5
v1.9.0.0	Added firmware update support for Vertiv™ Liebert® SOLA GXT5
v1.9.1.0	• Added new device support for the Vertiv™ Liebert® Trinergy™ UPS • Added 802.1x port Based Network Access Control • Added capability for IPv6 DHCP failover to a second DHCP server • Implemented incremental API update for firmware upgrade status enhancements
v1.9.1.1	• Incremental update for the Vertiv™ Liebert® Trinergy™ UPS

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