Liebert® IntelliSlot™ RDU101 Card
Version 1.4.0.1_0000001 Firmware
Release Notes
December 7th, 2020

This document outlines:

1. Version and Compatibility Information
2. What's New
3. Security Issues Addressed
4. Upgrade Instructions
5. Known Issues

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1. Version and Compatibility

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This release contains the following firmware version:

RDU101_1.4.0.1_0000001

This release is compatible with the following Liebert IntelliSlot communication cards:

RDU101

This release is compatible with the following power and thermal management equipment:

Liebert GXT5
Liebert TFX
Liebert RXE

This release is 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 features:

Communication Card	LIFE™ Services Support	Sensor Support	Communication Protocol							
			HTTP/ HTTPS	Velocity Protocol	Email	SMS	Third-Party Protocols			
							SNMP v1,v2c,v3	BACnet IP/MSTP	Modbus TCP/RTU	YDN23
RDU101	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Sensor Support			✓	✓	✓	✓	✓	-	-	-

*Please note that **BACnet MSTP and Modbus RTU require P/N USB485I**; a USB to RS-485 adapter.*

This release supports the following browsers:

- Microsoft Internet Explorer®
  - IE10 - 10.0.9200.17457
  - IE11 - 11.557.17763.0
  - Edge - 44.17763.831.0
- Mozilla Firefox® - ver. 59.02
- Google Chrome™ - ver. 84.0.4147.89

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2. What's New

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This release contains the following enhancements:

- Adjust scaling factor for several current data points in the DPM - Power Distribution monitoring system (TFX, RXE, etc.)

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3. Security Issues Addressed

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The following highly publicized security vulnerabilities have already been addressed in this release:

Name	Description
"ShellShock"	The appropriate version of ***bash*** is implemented
"Poodle"	SSLv3 is disabled
Cross-Scripting	Cross-Scripting entries via the Web user Interface are restricted
"Clickjacking"	Clickjacking is addressed in this release.
"Beast" and "Logjam"	The "Beast" and "Logjam" vulnerabilities are addressed
"Sweet 32 Birthday Attack"	Vulnerability Birthday attacks against TLS ciphers with 64bit block size vulnerability (Sweet32) is addressed.
California IoT Security Law; SB-327	User must now configure unique administrator credentials to access the card. This was addressed in the 1.2.2.0 release.
CVE-2004-0583 Lack of Account Lockout	This vulnerability could allow a brute force ID/Password attack. This was addressed in the 1.4 release. The account lockout time is 15 minutes. If login is attempted during the timeout period, the timeout period will restart.
Password Complexity	8-30 case-sensitive, printable ASCII characters (excluding: \ : ' < > ~ ? # , double quote and space) Must contain a combination of upper and lower case, digit, and special characters. The password cannot contain the User Name.

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4. Update Instructions

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The RDU01 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-installeruser-guide.pdf and the Mass Firmware and Configuration Update Tool

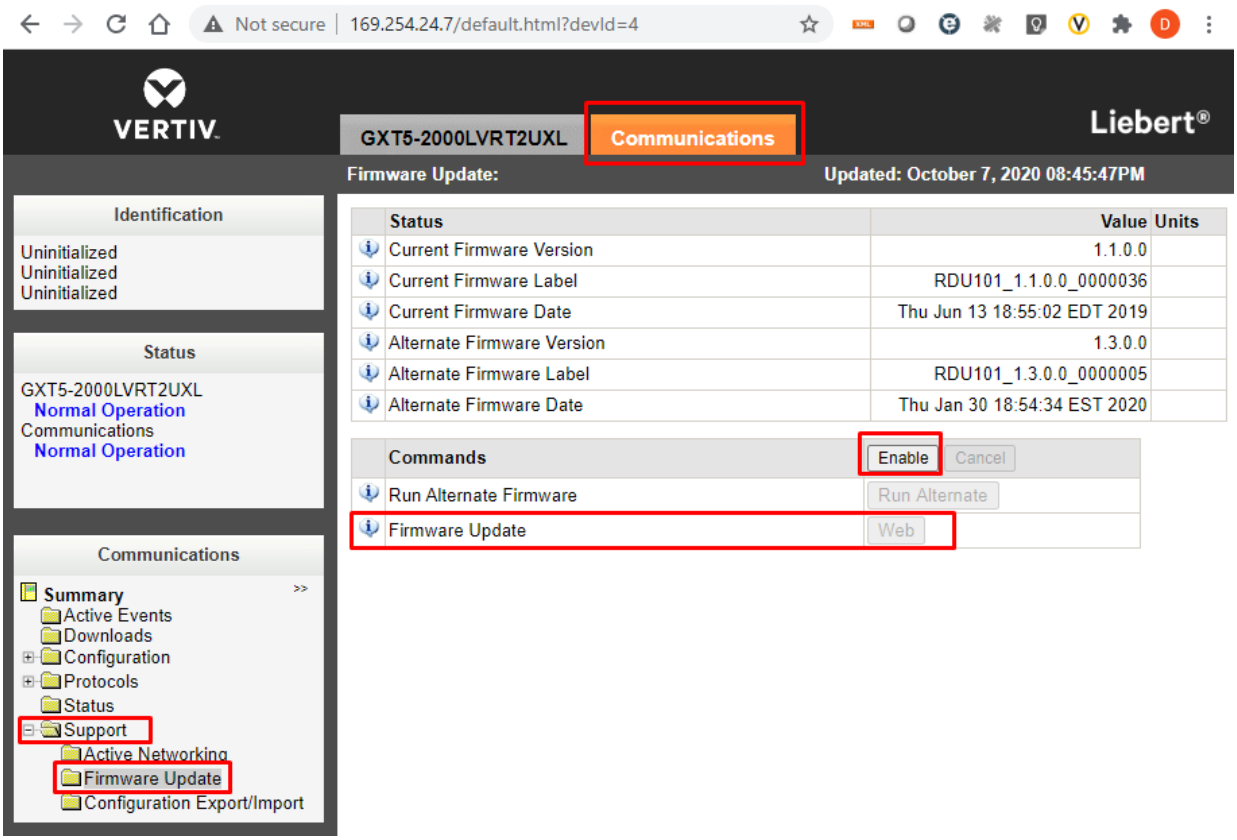
1) **Connecting to the card**
   After installing the card, allow time for the card to boot. Connect an Ethernet cable from the card to a PC or Laptop. A link local connect can be established. This is a direct PC-to-card Ethernet connection. The PC acquires a local address and the card is accessed at 169.254.24.7. Please consult the Quick 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.

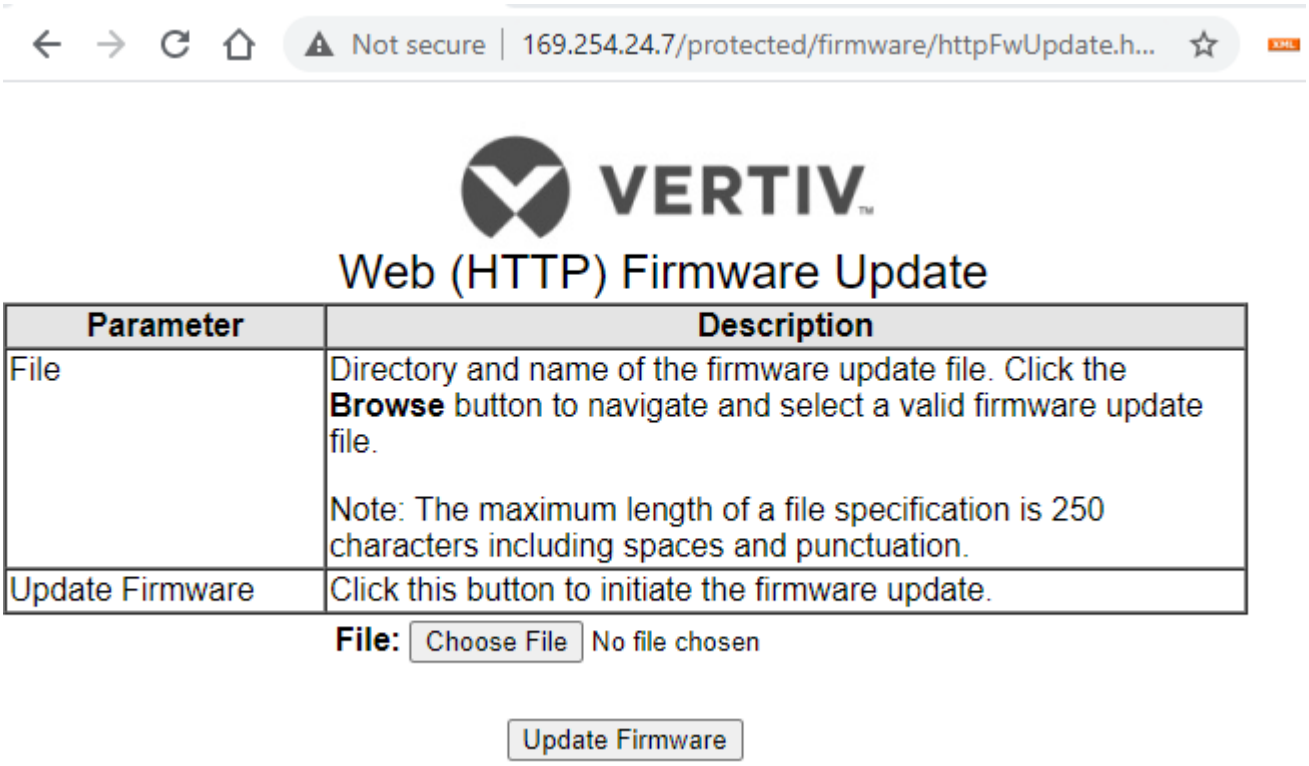
3) Update the card firmware.

   Navigate to:

   a. “Communications” tab
   b. “Support” folder
   c. “Firmware Update” folder
   d. Click “Enable”
   e. Click “Web”

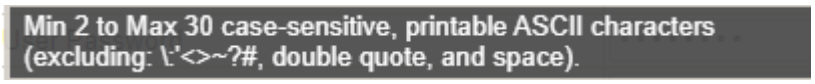


4) The Firmware Update page will appear.
   a. Use the “Choose File” button to select the firmware file via Windows File Explorer.
   b. Click the “Update Firmware” button.



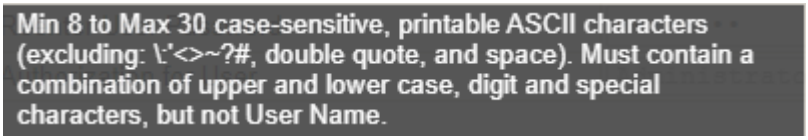
5) Following the firmware update, the **"Please Create an Administrator Level Account"** dialogue will appear in the browser.
   a. The customer will provide the credentials.
      -or-
   b. The installer can choose/create the credentials. The credentials must be communicated to the end customer.

User Name – Allowable characters



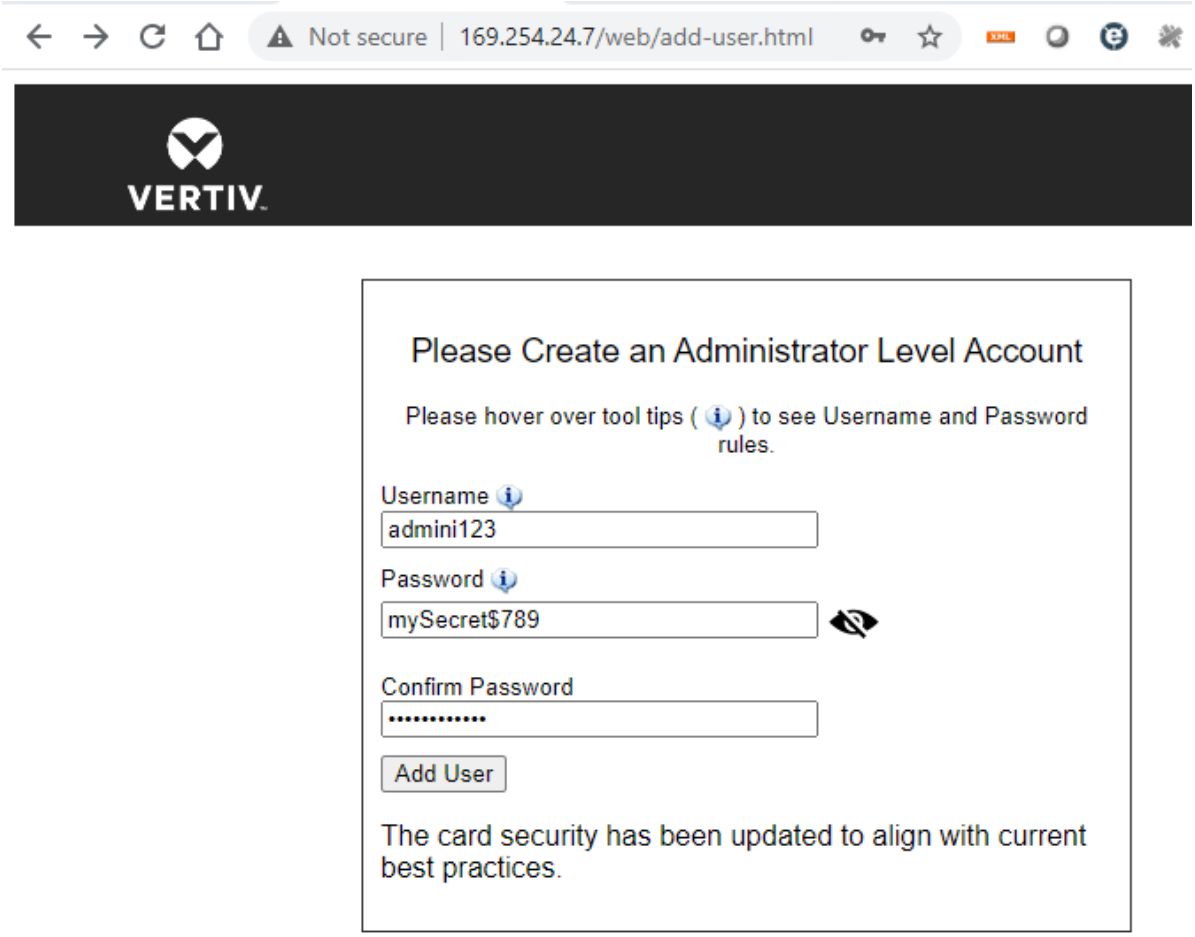
Minimum of 2 to a maximum of 30 case-sensitive, printable characters (excluding: \'<>~?#, double quote and space.

Password – Allowable characters



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

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"**.

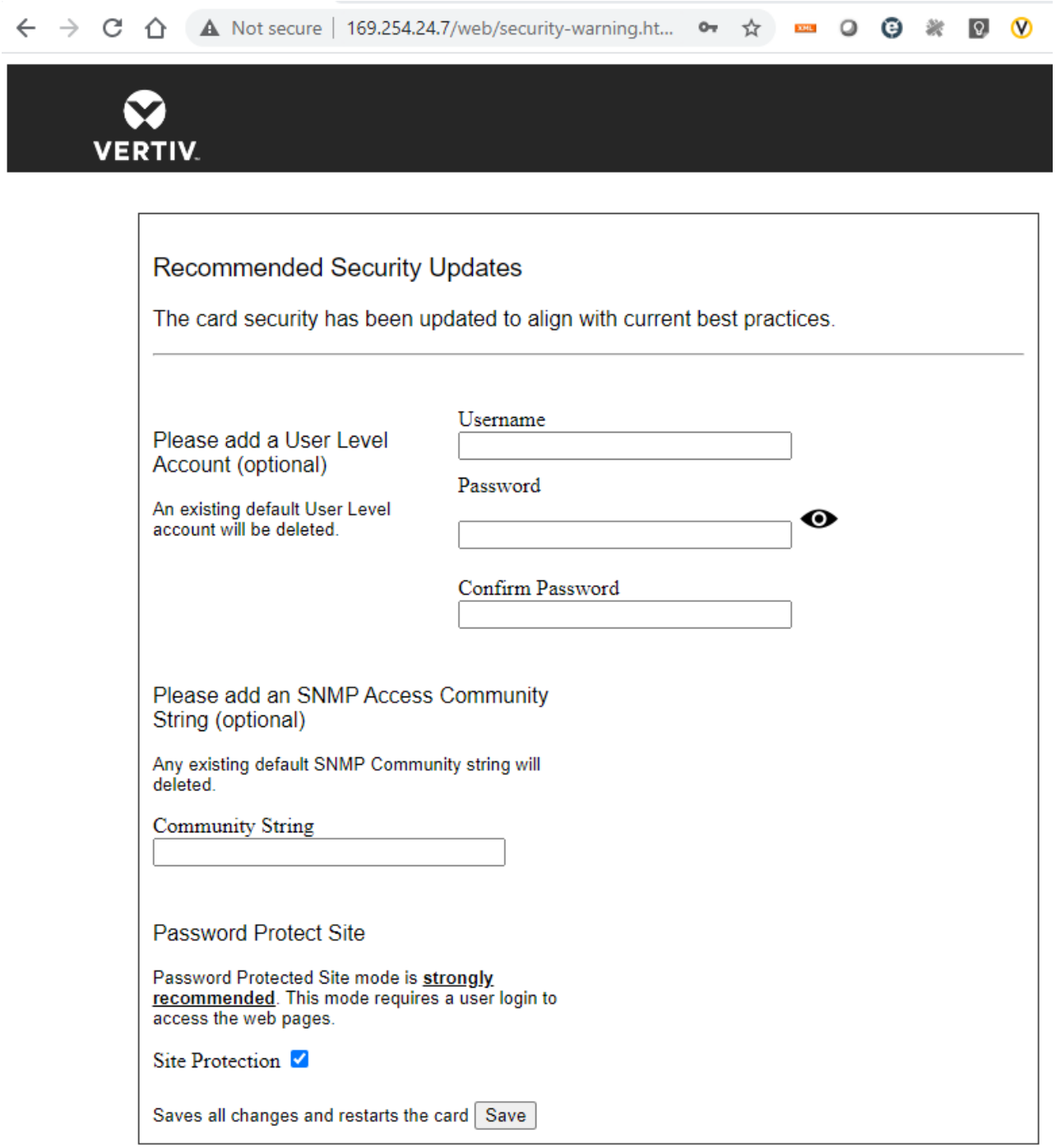
9) The dialogue will briefly indicate - "Waiting on response from server……."

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 169.154.24.7 in the address bar.

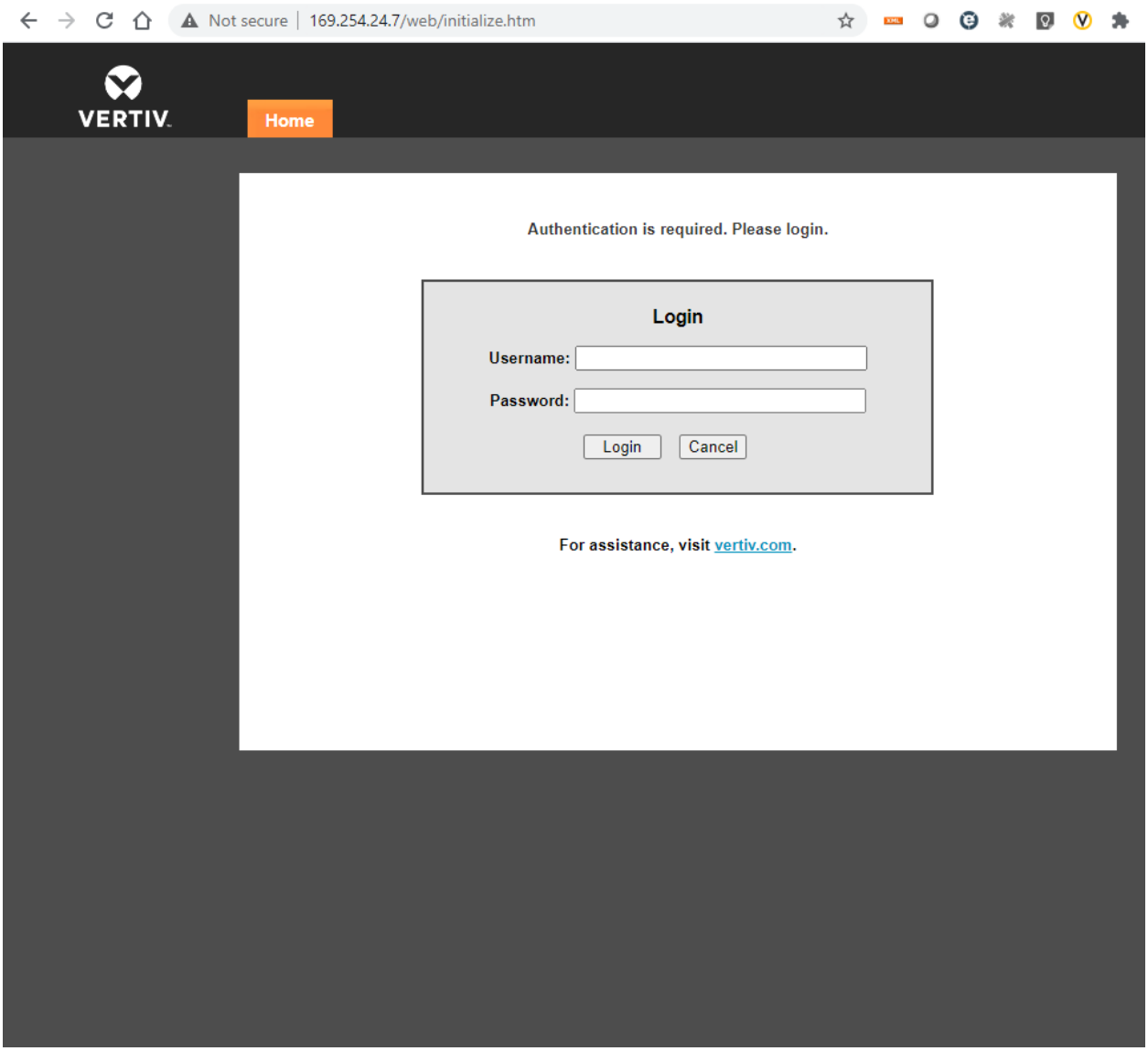
11) A second dialogue – **"Recommended Security Updates"** may appear. If it does, just click the **"Save"** button at the bottom to continue.



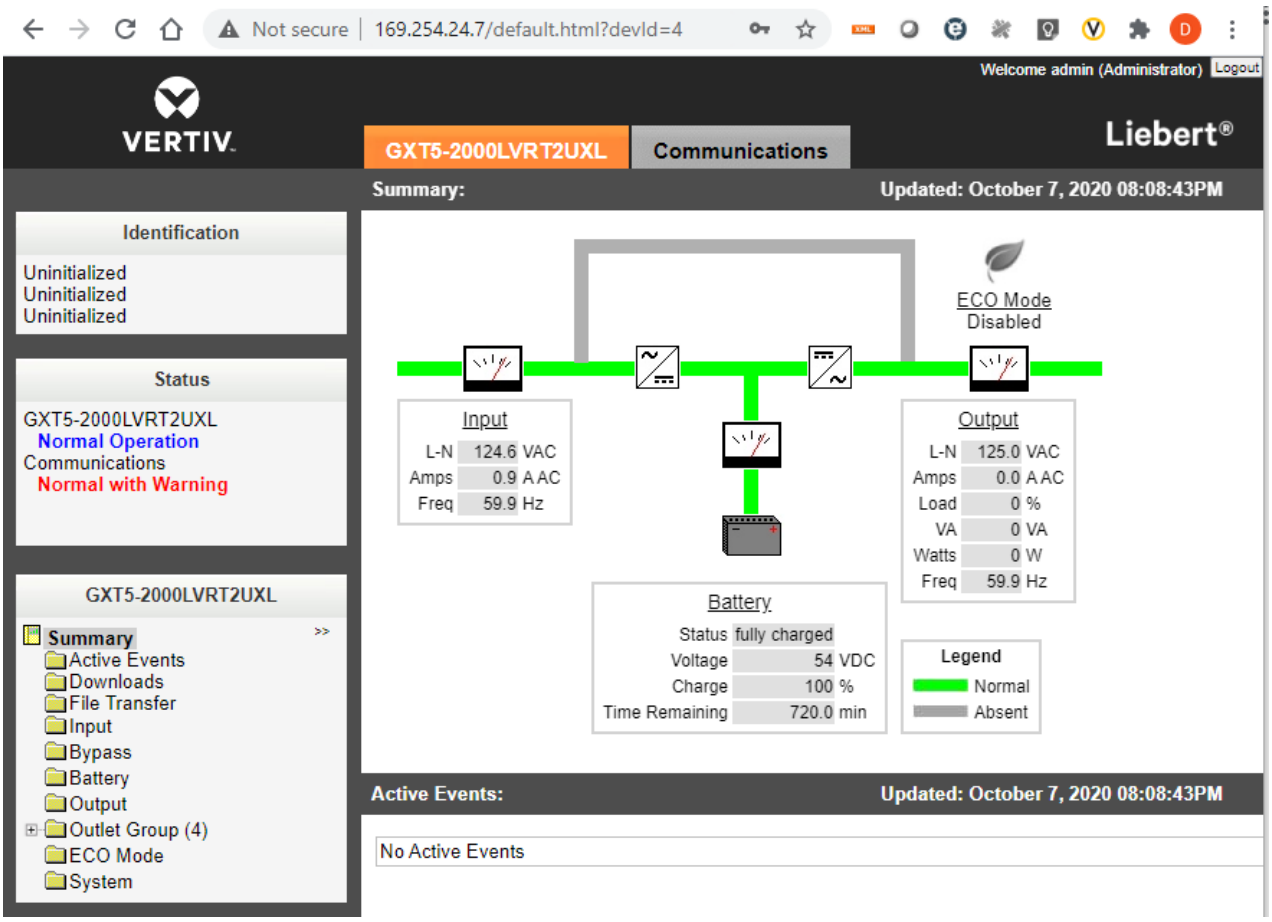
12) The dialogue will briefly indicate - "Waiting on response from server……."
13) The Password Protected Site login screen is presented. Please login with the administrator credentials created p above. Please reference step 7)

Username = xxxxxxxxxx

Password = xxxxxxxxxxx



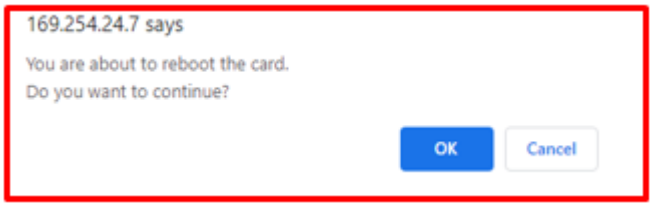
14) Communications Status = Normal with Warning may appear as shown in the example page below.

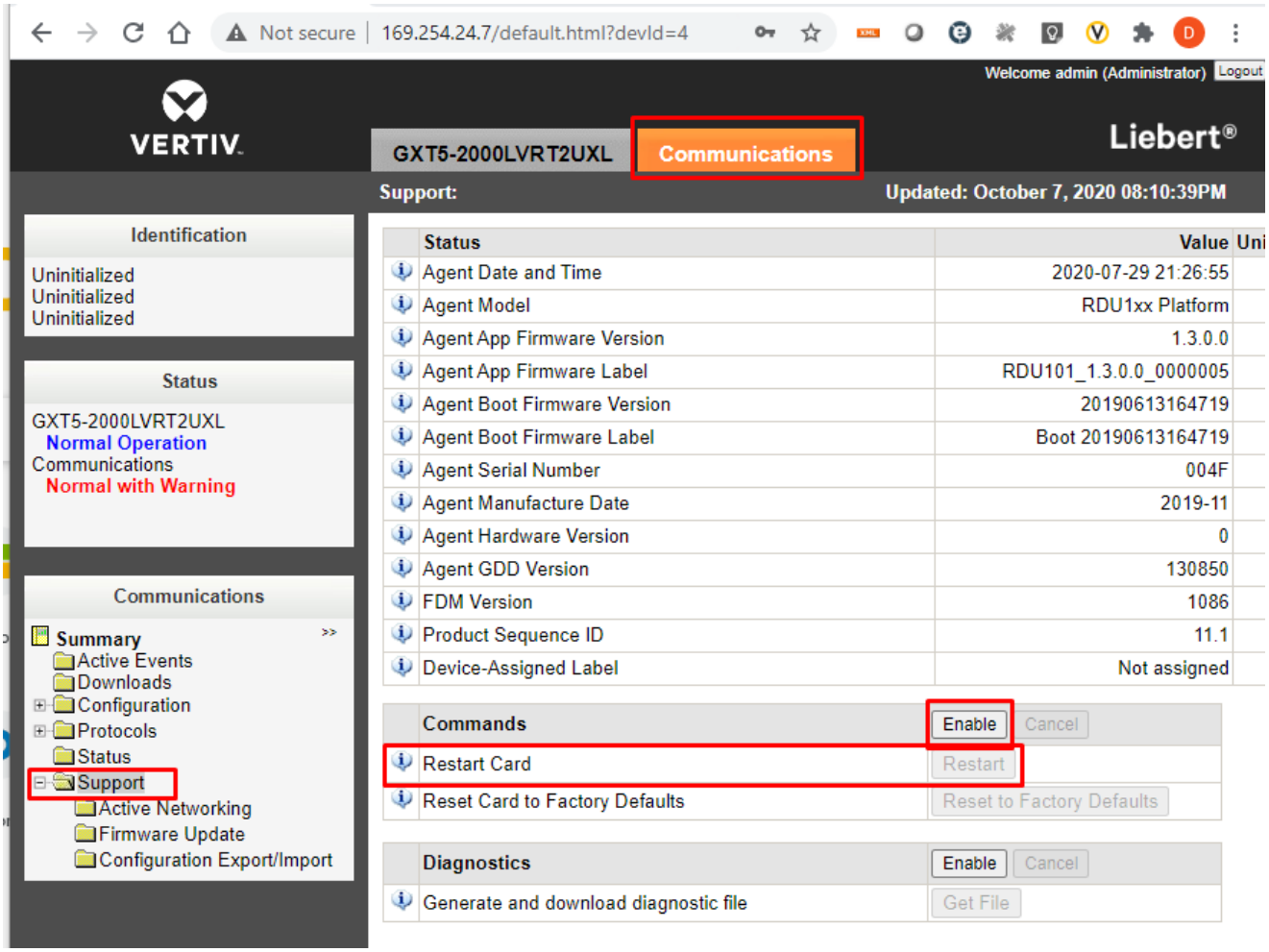


15) The Normal with Warning message can be cleared by **Restarting** the card.

Navigate to:

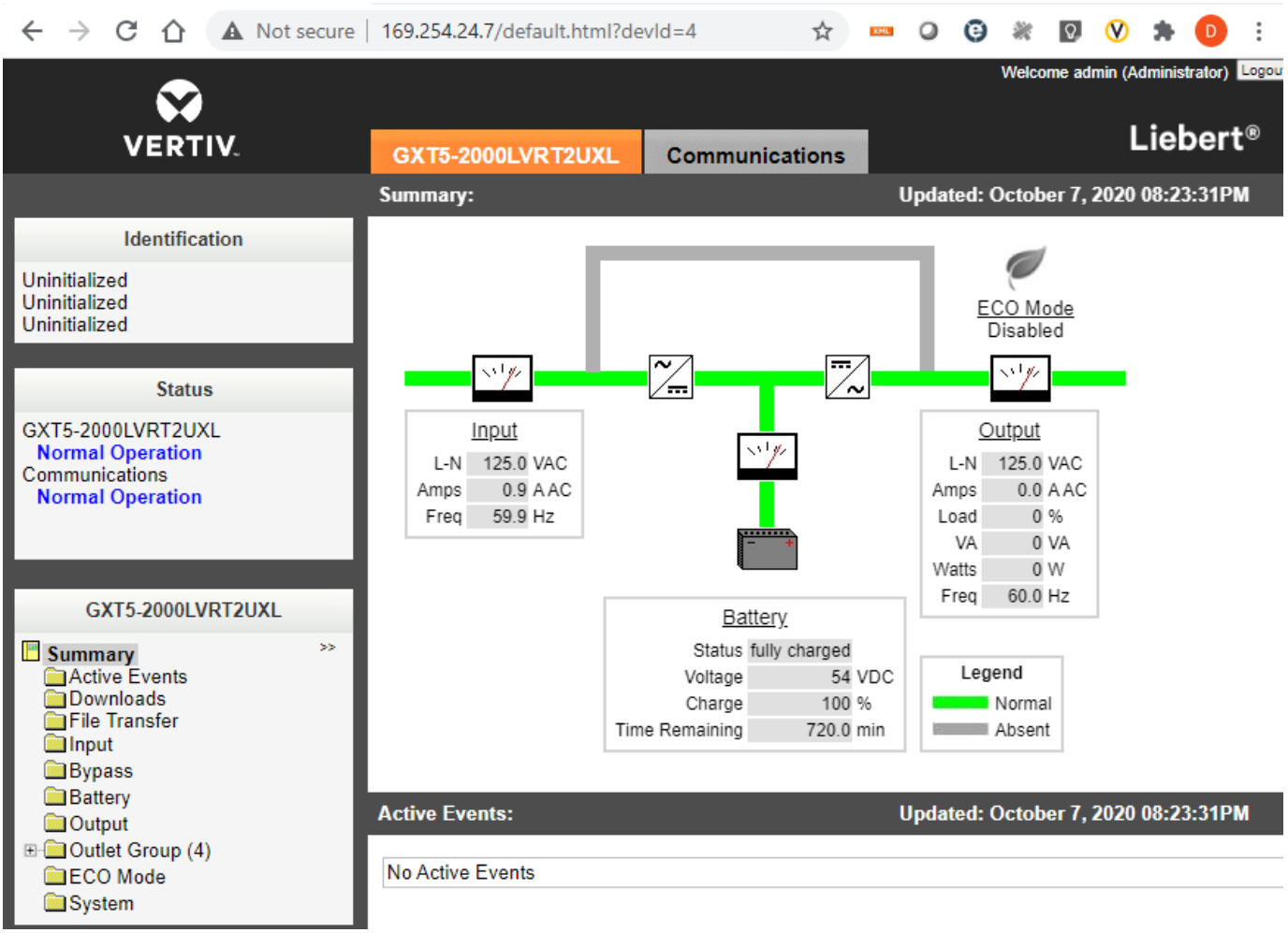
a. “Communications” tab
b. “Support” folder
c. Click “Enable”
d. Click “restart”
e. Click “OK” in the browser pop-up dialogue





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.**

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5. Issues Addressed

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Component	Description
Web – Firmware update	Empty page after firmware image uploaded successfully on Microsoft Edge browser.
User Access	User access fails when user name is configured as “admin”.
Password Protected Site	Password Protected Site checkbox does not indicate enabled, even though the feature is enabled. Following a reboot the checkbox indicates enabled

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6. Known Issues

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Component	Description
None	

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7. Previous Release Updates and Enhancements

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<table>
<tr><th>Release</th><th>Description</th></tr>
<tr><td>v1.0.0.0</td><td>This release contains the following enhancements:
This is the initial release of the RDU101 in support of GXT5</td></tr>
<tr><td>v1.0.0.3</td><td>This release contains the following enhancements:
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 contains the following enhancements:
<table>
<tr><th>LED</th><th>Description</th></tr>
<tr><td>Green On</td><td>Full network connectivity, DHCP, static or BootP</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 (Ex. GXT5) are unavailable</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>
</table>
Modbus TCP support was added.
Status LED operation per the following tables implemented</td></tr>
<tr><td>v1.2.2.0</td><td>This release contains the following enhancements:
BACnet/IP and MSTP support.
Modbus RTU support.

Please note that BACnet MSTP and Modbus RTU require P/N USB485I; a USB to RS-485 adapter. This adapter will be available for order as an accessory to the RDU101 card in near the future.</td></tr>
</table>

Release	Description
V1.3.0.0	This release contains the following enhancements: • Add support for Liebert TFX – Large Power Distribution system