Vertiv™ Upgradeable Rack Power Distribution Unit (PDU) and Rack Transfer Switch (RTS)

Firmware Release Notes

VERSION 6.3.0, DECEMBER 20, 2024

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1. Overview

The Vertiv™ Upgradeable Rack PDU and RTS version 6.3.0 firmware release is compatible with Vertiv™ Upgradeable Rack PDUs and RTS units equipped with Vertiv™ 3E, 3E-G, 3E-S, 03E, 03E-G and 03E-S models of Upgradeable Interchangeable Monitoring Devices (IMDs) which are currently running firmware versions 5.0 and later, and Vertiv™ Upgradeable IMD-5M models which are currently running firmware version 6.0 and later.

IMPORTANT NOTE: Immediately following system startup, this firmware may update the internal rack PDU and/or RTS components, which can take up to 30 minutes to complete, depending on the device model and prior firmware version. During this time, a *Component Update in Progress* message displays. Please ensure the rack PDU or RTS is not reset or powered off during this process. If the PDU or RTS is powered off during the process, the firmware update must be reinstalled to re-run the component update.

2. Features and Enhancements

This release includes the following features and enhancements:

- **Security Features and Enhancements:**
  - Added Network Access Control which allows users to access Vertiv™ IMDs from specific IP addresses only. Includes the ability to specify:
    - Separate access control address lists for HTTP/HTTPS, SSH and SNMP protocols.
    - Separate access control lists for IPv4 and IPv6.
    - Up to 32 IP addresses or IP address ranges for each protocol and IP version.
  - Updated OpenSSH version.
  - Remediated the regreSSHion vulnerability for the Vertiv™ IMD-5 module, which was first available with the Vertiv™ IMD-3 6.2.1 firmware (CVE-2024-6387).
  - Performed miscellaneous library version updates.
  - Added logging of Command Line Interface (CLI) logins and logouts.
- **Reporting Features and Enhancements:**
  - Added reporting of voltage frequency via the Application Programming Interface (API), CLI and web UI.
  - Added nameplate capacities for reporting and alarming including:
    - Ability for the user to configure maximum current ratings of inputs, circuits and outlets.
    - Ability to display load as a percentage of maximum load.
    - Ability to log and alarm on percentage of maximum load.

- **Configuration Features and Enhancements:**
  - Added ability to configure the default network route (gateway) at the same time as a Vertiv™ IMD IP address.
  - Added ability to manually override the state of an alarm controlled switched rack PDU outlet.
- **Vertiv™ IMD-5M Touchscreen Display Enabling Features and Enhancements:**
  - Added the following capabilities for the touchscreen:
    - Restart the monitoring device.
    - Reset user and network configurations for the monitoring device.
    - Reset all configurations for the monitoring device.
    - Backup and restore monitoring device configurations to USB storage media.
    - Optionally set the default display to cycle through input, phase, and line measurements.
    - Display and acknowledge active alarms.
    - Set the display orientation.
- **Miscellaneous Features and Enhancements:**
  - Improved event log (syslog) characterizations for network, security, process, event priority (notice, warning, error), and logging of user defined alarms.
  - Added ability to update rack PDU component firmware separately from the Vertiv™ IMD firmware and the ability to display rack PDU component firmware versions.
  - Improved Vertiv™ IMD-5M error indication when no rack PDU components are detected.

3. Fixes

This release addresses the following issue:
- Fixed issue where the user was unable to log in after resetting or power cycling the rack PDU immediately after configuring a rack PDU user.
  - Fixed a web UI [state.lossof.load.detected] mouse over message displayed in error.
- Fixed issue where the user was not aware of TLS certificate update completion in the web UI.
- Fixed issue where the user was receiving 0xffff or 65535 over Modbus API.

4. Known Issues

This release includes the following known issues:
- **Network Loop Configuration Known Issues:**
  - The Vertiv™ IMD-5M using the Rapid Spanning Tree Protocol (RSTP) may take an extended period to converge while it computes and spans a new tree. This period may further increase depending on the network configurations applied to the switches. An unmanaged/non-RSTP participating switch should be connected to the Vertiv™ IMD-5M node.
- **Current Rating Known Issues:**
  - When the current rating is not configured, the graphical user interface (GUI) may display an incorrect current rating.
  - Customer-defined current ratings may not reset when it is restored to default.
  - API and GUI current ratings use different units (mA and A).
- **SSH Key Known Issues:**
  - The SSH Key Exchange method ecdh-sha2-nistp384 was replaced with curve25519-sha256. Therefore, the only SSH Key Exchange method that is now supported is curve25519-sha256, and users must ensure they are using version .71 or later of PuTTY.

5. Notes and Limitations

The following notes and limitations apply to this release:

- **Network Access Control Notes and Limitations:**
  - IPv6 link local cannot be specified as permitted IP addresses.
  - Network Access Control cannot be enabled when no IP addresses are defined.
  - Network Access Control is reset to default values when resetting network settings or when resetting all settings.
  - Provisioner will only operate when Network Access Control enables access to the devices being provisioned.

- **Network Notes and Limitations:**
  - When DHCP is enabled but a DHCP server is not available, a 169.254.0.0/16 network IPv4 link local address is assigned to the port.
  - DHCP address assignments and reservations may change when updating from firmware versions 5.10.4 or 5.10.8 to 6.1.0 or later. This is due to a correction to an erroneous DHCP client-id setting present in 5.10.4 and 5.10.8 firmware.
  - Some Vertiv™ IMD-3x network configuration changes, such as DNS, can take 20 or more seconds and may result in a *Network Connectivity Has Been Disrupted* error message followed by the display of a partially populated web page. However, the requested configuration change then completes normally, and the user must re-authenticate after refreshing the web page.

- **Provisioner Notes and Limitations:**
  - Discovery progress is indicated for IP address scan discovery only.
  - IP address scan discovery does not discover the rack PDU performing the discovery.
  - IP address scan discovery does not discover array devices; however, array managers are discovered.
  - For Provisioner to operate correctly, HTTPS must be enabled, and the default port number must be used.
  - Target devices must use firmware version 6.1.0 or later to perform initial admin user configurations.

- **Vertiv™ IMD-5M Notes and Limitations:**
  - Non-roman alphabet device labels may not display correctly on the Vertiv™ IMD touchscreen display.
  - Phase and sensor labels longer than 10 characters may not display fully on the Vertiv™ IMD touchscreen display.
  - USB Wi-Fi dongles can only be used with rack PDUs that support outlet monitoring, outlet switching, or residual current monitoring, due to the maximum USB load being reduced to 0.5W when not using these rack PDUs.
  - Redundant power is turned on nine seconds after the device is powered on.
  - If the touchscreen is used while the Provisioner is executing a request, the display may temporarily lockup and prevent the Provisioner from completing the operation. To avoid this issue, do not touch the touchscreen while the Provisioner is completing a requested operation.

- **Vertiv Intelligence Director Notes and Limitations:**
  - Alarm-controlled switched rack PDU outlets that are part of an outlet group do not change state when the group outlet state is changed.
  - When an array device HTTP protocol is enabled, the array manager web browser cache must be refreshed for the Devices page redirection link to work.
  - When the array controller uses firmware version 6.1.0 or later, existing array devices that use Vertiv™ IMD-02x controllers must be updated to version 3.4.0.
  - To manage Vertiv™ IMD-5M array devices, Vertiv Intelligence Director (aggregation) IMD-3x array controllers must be updated to firmware version 6.1.0 or later.
  - Due to enhanced system security requirements, Vertiv Intelligence Director (Aggregation) no longer supports Vertiv™ IMD models 02XV, 02XH, 02EH, and 02EV array devices when using an array controller with firmware version 6.1.0 or later. Attempting to onboard a Vertiv™ IMD-02x rack PDU will result in an Unknown Device error. However, existing previously onboarded Vertiv™ IMD-02x rack PDU array devices will continue to operate normally. To remove this limitation, upgrade these rack PDUs to a Vertiv™ IMD-03x or IMD-5M.

- **Firmware Notes and Limitations:**
  - It is not possible to upload and install older firmware. Users can only revert to the previous installed version.

- **Password Expiry Notes and Limitations:**
  - Changing the system date does not change the password aging expiry date.
  - Password aging expiry is not flagged when the rack PDU is accessed through the API.
  - Updating the rack PDU firmware may cause password aging expiry timers to reset to default values.
- **Miscellaneous Notes and Limitations:**
  - Power readings may not be available for up to 30 seconds after the device is powered on.
  - The RTAFHD3 sensor temperature, airflow, humidity, and dewpoint sensor will display an airflow value of '- -' while calibrating for the first 30 seconds after sensor connection or device power on.