Vertiv™ Alber™ Battery Xplorer Enterprise (BXE) Software

Release Notes (VERSION 4.20.0)

Release Notes Section Outline

1. Updates for This Release (Version 4.20.0)

New Features

- Added support for Vertiv™ EnergyCore Lithium 7 battery monitoring.

- Introduces file integrity checks (hash mechanism).

Enhancements

- Added security improvements, along with removing default SQL install from installer. Users must install their IT-approved versions of SQL express or enterprise editions from Microsoft.

- Network traffic between the Vertiv™ Alber™ BXE monitor engine and SQL server is optimized for better performance for Samsung and Vertiv™ EnergyCore device monitoring.

2. Version 4.19.0 Update Information

Enhancements

- Added capability to the Vertiv™ Alber™ BXE software to support ZincFive monitoring.

- Improved Telerik to enhance the Vertiv™ Alber™ BXE software reports.

- Modified the Web Application Manager (WAM) and Database Import Manager (DIM) database related scripts.

- Added Database sanity check to DIM/WAM.

- Added error propagation to user.

3. Version 4.18.1 Update Information

Enhancements

- Improved the performance of historical trend graphs on cell voltage and cell temperature tabs on the String View page.

4. Version 4.18.0 Update Information

New Features

- Vertiv™ Alber® BXE software now supports:
  - Vertiv™ EnergyCore Lithium 5 monitoring
  - Lithium-Ion recharge capture

Enhancements

- Added the "Higher CPU Usage For Lithium Ion Z5 Discharge Detection" to the System manager on the Administration page. By default, this is set to true. If the CPU usage is still excessive after installing this firmware version, then stop the monitor engine, change the value to false and restart the monitor engine.
- Relocated the connection string information from web.config to DBConn.config.
- Relocated the Active Directory management and Password requirements from the System manager to the Administration tab.
- Improved the Vertiv™ Alber® BXE Database backup feature.
- The software's Monitor Service Manager (MSM) application now connects automatically to DM on startup.
- HPL systems no longer treat 'Rack At Target SOC' as an error condition.

5. Version 4.17.1 Update Information

New Features

- Vertiv™ Alber™ BXE software discharge reports are optimized to resolve out of memory exception.
  - Added new radio button for Export to CSV only option.
  - Added auto scaling option to optimize discharge graphs by showing the entirety of discharge data on one page.
  - Added actual capture frequency option to export the data to a CSV file.

Enhancements

- Accidental HTTPS redirects are prevented when security certificate does not present in the IIS.
- Any filters set from last session on the will be saved until changed.
- HPL LiIon system status "Rack target SOC" will not be flagged as an alarm.
- Fixed the velocity write function for the Vertiv™ Alber™ BDSU-50 units.

6. Version 4.16.2 Update Information

New Features

- Added an optional recharge cycle capture feature for HPL Lithium Ion strings.

Enhancements

- Redesigned alarm analysis reports.

- Enhanced the Vertiv™ Alber™ BXE software reports.

- Enhanced the software to add the following functionality:

  - The Vertiv™ Alber™ Universal Xplorer Industrial Monitor (UXIME) now shows *NA* if the ambient temperature is not enabled.

  - Executive summary reports now show *NA* when cell temperature readings are not supported by the device.

  - The String view page now shows more details, such as the serial number and IP address of the string and port.

- Added a hardware manager link to the System status and Navigation page.

- Enhanced the Database Import Manager (DIM) to accelerate the efficiency of the history delete option.

- Enhanced the Web Application Manager (WAM) for the modification of web.config to allow remote errors.

- Enhanced the following features related to HPL:

  - Added hardware statuses to HPL alarms.

  - Adjusted functionality so that HPL Cell over voltage alarms are now created when the alarm condition is no longer active.

- Enhanced the following features related to the Vertiv™ Alber™ Battery Diagnostic System Universal (BDSU):

  - Adjusted functionality so that newly imported string statuses will show Initialization until the initial data read is completed.

  - Added ability to match the historical snapshot scheduling of the Vertiv™ Alber™ BXE software with the device frequency.

  - Adjusted functionality so that resistance snaphots are made and added to historical data even when there is no pre-existing history.

7. Version 4.15.3 Update Information

New Features

- Added support for two-factor authentication (optional feature).

- Added failed login attempt restrictions; users are only allowed five failed login attempts.

- Added new password support:

  - Admins now have the option of forcing user password changes at next log in.

  - A new "forgot password" option is introduced.

  - The System Access page now allows configuration of complex password requirements.

Enhancements

- Resolved the Active Directory log in issue with WinServer 2022 OS.

- Resolved the issue with the WAM database creating script.

- Enhanced the history delete feature.

8. Version 4.14.5 Update Information

Enhancements

- Resolved the Active Directory log in issue.

- Resolved the Vertiv™ Alber™ Battery Diagnostic System (BDS) driver compatibility issue with .NET4.8.

9. Version 4.14.2 Update Information

New Features

- Added support for the Vertiv™ Alber™ UXIME import over other Modbus ports (port 502 and 602).

- Added functionality so that the Vertiv™ Alber™ BXE reports data can be exported into CSV.

- Added a reminder for service contracts for software support.

- Added functionality for Vertiv™ Alber™ BDS commissioning reports to be imported into Vertiv™ Alber™ BXE.

- Added functionality for load control test data/reports to be imported in to Vertiv™ Alber™ BXE.

Enhancements

- Enhanced functionality on discharge reports.

- Enhanced functionality so that the ELS status now only shows offline when the Controller has a *disconnected* status.

- Enhanced functionality so that string average trending is now available on the cell individual thresholds page and the string average resistance trend line will no longer show the individual cell legend.

- Enhanced functionality so that the intercell resistance tab will not show the intertier readings and vice versa.

- Enhanced functionality so that configuring alarms for Vertiv™ Alber™ BDSU units are correctly executed from the server user interface.

Known Issues

The following known issues are firmware defects and write services from Vertiv™ Alber™ BXE are impacted.

- Write commands to certain Vertiv™ Alber™ BDSU-50 units are failing. The workaround at this time is to use the Vertiv™ Alber™ Battery Xplorer (BX) configurator and USB to configure the unit.

- Changing thresholds on the Vertiv™ Alber™ UXIME devices over Modbus is blocked. The workaround at this time is to use the Vertiv™ Alber™ UXIME configurator tool to connect to the unit (either via Ethernet or a USB connection) to change the thresholds.

10. Version 4.13.5 Update Information

Enhancements

- Restored Vertiv™ Alber™ BDSU-50 individual thresholds setup.

- Enhanced functionality so that discharge reports now scale and start time/end time fields are now working

- Enhanced HPL monitoring so it is now backward compatible with older HPL firmware versions

- Enhanced functionality so that Vertiv™ Alber™ BDSU-50 intercell and intertier baseline values are now shown correctly

- Improved Samsung driver to poll shelf 15 measurements properly

11. Version 4.13.2 Update Information

New Features

This release added support for the latest HPL firmware (version 1.0.8.1) with the Vertiv™ Alber™ BXE software.

Enhancements

- Improved the Vertiv™ Alber™ BDSU-50 resistance snapshots capturing technique.

- Adjusted the string average resistance trend line label to now show "string average."

- Resolved the duplicate cell voltage snapshots issue with Vertiv™ Alber™ UXIME devices.

- Changed functionality so the Vertiv™ Alber™ BXE admin account cannot be deleted or deactivated from the server user interface.

Known Issues

The following known issues are firmware defects and write services from the Vertiv™ Alber™ BXE are impacted.

- Write commands to certain Vertiv™ Alber™ BDSU-50 units are failing. The workaround at this time is to use the Vertiv™ Alber™ BX configurator and USB to configure the unit.

- Changing thresholds on the Vertiv™ Alber™ UXIME devices over Modbus is blocked. The workaround at this time is to use the Vertiv™ Alber™ UXIME configurator tool to connect to the unit (either via Ethernet or a USB connection) to change the thresholds.

12. Version 4.12.3 Update Information

New Features

- Added support for Vertiv™ Alber™ UXIME history auto import through the Vertiv™ Alber™ UXIME driver.

- Added the ability to configure the Vertiv™ Alber™ BXE Server View page to show all strings from different Vertiv™ Alber™ BXE servers on a single page.

- Added an option to show the resistance bar graphs from zero.

Enhancements

- Enhanced the Vertiv™ Alber™ UXIME/ Vertiv™ Alber™ UXTM resistance test historical data capture.

- Added the average string resistance trend on the String View page Resistance tab.

- Optimized Samsung Liion alarm processing.

- Resolved issues with importing BMDM SQL historical data.

13. Version 4.11.0 Update Information

New Features

- Added alarm latch function support for Lithium ion batteries.

- Added option to select resistance bar graphs to show zero on y-axis.

- Added a thermal runaway alarm section to the string alarms page for Vertiv™ Alber™ BDSU systems.

- Added additional display information for Vertiv™ Alber™ BDSU-50 devices in the Vertiv™ Alber™ BXE software:

  - Alarm information and settings now display.

  - Resistance test and historical data collection schedules now display.

Enhancements

- Improved alarm processing for Samsung devices.

- Added Executive overview to the scheduled reports.

- Improved other functionality:

  - The Vertiv™ Alber™ UXIME resistance test historical snapshots are now captured (no longer missing)

  - DIM screen no longer freezes during long imports for the Vertiv™ Alber™ BDSU-50.

14. Version 4.10.1 Update Information

New Features

- Added support for Samsung 24 strings (Chloride UPS).

- Added option to choose ELS level alarms notification email delivery when 10% of the cells in the system are in alarm.

- Vertiv™ Alber™ BXE software now offers on-demand snapshots from string view page.

Enhancements

- Improved Samsung lithium ion driver performance.

- Improved the Vertiv™ Alber™ BDSU driver nightly snapshot of historical data.

- User can now use the Vertiv™ Alber™ BXE application even with database incompatibility (it will be displayed as a warning).

- Improved WAM to better find web.config on any drive

Known Issues

- When installing or upgrading the Vertiv™ Alber™ BXE software, the Vertiv™ Alber™ BX Enterprise Watchdog may not install properly. The workaround at this time is to manually install this service. For more information, refer to the Vertiv™ Alber™ BXE FAQ technical note installed in the software.

15. Version 4.9.7 Update Information

New Features

- When installing the Vertiv™ Alber™ BXE software, the SQL 2014 Express edition is the new default database version.

- The Vertiv™ Alber™ BXE software now updates all install files.

Known Issues

- When installing or upgrading the Vertiv™ Alber™ BXE software, the Vertiv™ Alber™ BX Enterprise Watchdog may not install properly. The workaround at this time is to manually install this service. For more information, refer to the Vertiv™ Alber™ BXE FAQ technical note installed in the software.

16. Version 4.9.6 Update Information

New Features

- Added support for the Samsung 954A battery.

- Added support for ELS2 reports when integrated with the Vertiv™ Alber™ UXIME.

- Added charger cable and ground fault readings to the string summary for Vertiv™ Alber™ UXIME/ Vertiv™ Alber™ UXTM.

Enhancements

- Executive summary report now shows the system status, along with readings and thresholds.

- DIM import now supports 1X24X2, 1X10X12, 1X20X6 Vertiv™ Alber™ UXIME configurations.

- Addressed the missing history records issue with Vertiv™ Alber™ UXIME/ Vertiv™ Alber™ UXTM devices.

- Report books saved in the Vertiv™ Alber™ BXE software can now be scheduled to run at defined frequency.

- DIM delete functionality restored.

- Changes to location, customer, address, battery and string names saved directly to Vertiv™ Alber™ BXE DB.

- Samsung discharge data now collected at two second intervals.

- Resistance test time trigger added for Vertiv™ Alber™ UXIME/ Vertiv™ Alber™ UXTM devices.

- Resistance test can now be scheduled for day of the week and day of the month for Vertiv™ Alber™ UXTM devices.

17. Version 4.8 Update Information

New Features

- Vertiv™ HPL battery support added:
  - Cell and string measurements
  - System status
  - String status
  - Hardware status
  - String and cell alarms
  - Discharge capture
- DIM import now supports Vertiv™ HPL database import.

Enhancements

- Trend graphs (x-axis scale changed from number of days to actual month and date).
- Imported data will be available for setting individual thresholds on the Site manager page.
- Individual thresholds bar graphs will be same as String View page.
- Resistance threshold setting works for 256 cell system.
- Global date select for selected report elements is now supported.
- Intelligence to detect any threshold changes from hardware for Vertiv™ Alber™ BDS type of devices, which is presented to the user to accept or reject.
- Scheduled reports will now be delivered via email with an attachment containing the report.

18. Version 4.7 Update Information

New Features

- Alarm support added for Samsung Liion batteries in the Vertiv™ Alber™ BXE software.
- DIM now creates default thresholds for Samsung Lithium devices.
- Service user can now tag ID and site ID for Samsung Lithium devices.
- The Vertiv™ Alber™ BXE software database can now be restored from web page.

Enhancements

- Service user can now view tag ID and site ID for all applicable devices.
- Reports now have time stamp, along with date created.
- User can now configure and generate scheduled reports.
- Scaling improvements were made on the Y-axis on the Intercell resistance graphs to display the thresholds correctly.
- Individual location address change is now supported.
- WAM connection string improvements were made.
- String View Details page now optimized to handle large number of alarms.
- All the fields that don't apply for Samsung devices are now grayed out on the Site Manager - Cell and String configuration screens.

19. Version 4.6 Update Information

New Features

- ELSi2 monitoring is now supported when integrated with Vertiv™ Alber™ UXIME.

  - Electrolyte level indication added

  - Cell temperature readings added

  - Alarm notifications added

- ELSi2 controller monitoring state is now available on the String View page.

- Hardware manager now provides all the hardware information related to the ELSi2 controller and sensors along with bootloader and firmware versions.

- 1-2 string licensing support added.

- Last resistance test time now displays in system status screen.

- Report scheduler added to tools menu.

- Rebranded the software to Vertiv style.

Enhancements

- Improved performance.

- Added the Hardware manager to the Advanced Users menu.

- Added support for service users to access the Advanced Users menu.

- MSM now shows current monitoring state.

- Improved Vertiv™ Alber™ BDS 40 resistance data retrieval.

- Last Resistance Time and Last Discharge Time is now stored in Strings table.

- Improved the Samsung discharge reports.

- Improved the intertier baseline threshold setup.

- Improved the DIM and WAM connection menu.

20. Version 4.5 Update Information

New Features

- Extended support added for a large number of Samsung battery racks.

- With MSM, users can change the port number in addition to the IP address.

- String View now shows last resistance date/time from the historical database.

- New Vertiv favicon added to the Vertiv™ Alber™ BXE software.

- New tabs open when accessing Report and Site Manager buttons on the String View pages.

- New Reports button on the String View page pre-configures the Reports options.

- Baseline cell data is now shown on the String Configuration page.

- New Hardware Manager page is available in the Administration Access tab.

Enhancements

- Status and Report page now supports international date/time format.

- Added support for status updates and information related to the individual thresholds setting.

- MSM updates added to notify users to optimize database.

- In Site Manager, added battery and location setting enhancements.

- Vertiv™ Alber™ BDSU driver updated to fix missing resistance and missing Intertier tab.

- IIS installer fixes added for Local System and Windows Authentication only.

- Cell temperature readings on the graphs for the Samsung device are now displayed without spaces.

- DIM history imports enhanced to detect pre-existing history.

- Session timeout value is now stored in the database rather than in web config file.

- Cell individual threshold baseline data is now retrieved from the Vertiv™ Alber™ BXE database even if there are pending changes in the Transaction Manager.

- String View Details tab now shows scroll bar when there are more than two graphs.

- Vertiv™ Alber™ BDS driver enhancements:

  - Location name change function is revised to no longer occasionally get extraneous letters.

  - Changing the installation date is now supported.

  - Implemented commands to set individual and intertier threshold of an entire string, and then mark pass or fail on polling.

- Discharge temperature bars will now be displayed in red if temperature readings are above the high cell temperature threshold and displayed in green if the readings are below the threshold.

21. Version 4.4 Update Information

New Features

- Samsung Liion and Liion, LLC:

  - String Detail and Trend SOH added to reports.

  - State of Charge Detail and Trend reports added for lithium strings.

  - Discharge Low State of Charge and Discharge High Cell Temperature added to Site Manager to view-only scaling on the graph.

  - Site Manager - String Alarms has fields to set alarms/thresholds for Low State of Charge and Low State of Health.

- String View page:

  - Discharge details tab - confirmation added when deleting discharges.

Enhancements

- Web:

  - String View – Intertier charts display x-axis numbers only where there are values.

  - Resistance Test Manager String View has 75 and 100 added to the strings per page select box.

  - Discharge tab - Discharge graph is now twice the height, like the graphs on the other tabs.

- Vertiv™ Alber™ BDS/MPM (battery monitoring systems):

  - Introduced Periodic Memory Clear Command to clear the memory full condition.

  - Vertiv™ Alber™ BDS/MPM driver now detects when system loses commissioning and reports via string status.

  - String Name now allows 20 characters.

  - Vertiv™ Alber™ BDS driver updates intertier and inter-cell reading date times with value from Modbus.

- Historical log period and resistance test period command enhancements added to allow a device to store data in persistent storage.

- Vertiv™ Alber™ BDSU-50:

  - Thermal runaway for (cell to cell) alarm is now available.

  - Nightly snapshots enhanced.

- Administration Access:

  - Permission Manager user view now shows all users.

  - In the System Manager, session timeout issues are resolved.

  - Within User Management, any Active Directory user search error messages are now displayed in a pop-up window.

- Site Manager:

  - Cell Alarms - Individual Thresholds page for High Intertier Resistance only shows intertier cells.

  - Critical and Maintenance checkboxes toggle on the String and Cell Alarm Setup page.

- Reports:

  - String Trend Reports improved.

  - Discharge Report start time at top-left of summary now displays the offset from the beginning of the discharge, instead of 00:00.

  - Cell Voltage Details Report data is now in sync with historic data.

22. Version 4.3.14 Update Information

New Features

Samsung Lithium Ion discharge support:

- System Status and Navigation:

  - User will be able to see all battery systems with string status showing discharge/charging status with links to navigate to battery (system) or string (rack) level.

- String View Discharge details:

  - Discharge Summary with:
    - Start date
    - Duration
    - State of Charge (SOC) Lowest
    - Overall Voltage (OV) Lowest
    - String Current (SI) Highest
    - Cell Voltage (CV) Lowest
    - Cell Temperature (CT) Highest

- Discharge playback with trending of graphs for Cell Voltage and Cell Temperature.

- String Summary with trending on the following fields:

  - Overall Voltage

  - Current

  - SOC

- String View Trending Real Time View:

  - Cell Voltage and Cell Temperature bar graphs with trending.

Enhancements

- Vertiv™ Alber™ BDS monitor improvements for Memory and Performance enhancements.

- Vertiv™ Alber™ Universal Xplorer Cell Temperature (UXCT) support for Vertiv™ Alber™ BDSU 50/ Vertiv™ Alber™ BDSUi-50:

  - Cell Temperature

  - UXCT status

- "Historical data view" improved for Active Directory users.

- DIM enhancements added for string removal from a device.

- MSM enhancements added to shut down Vertiv™ Alber™ BXE processes.

23. Version 4.2.0 Update Information

New Features

Lithium ion battery monitoring support:

- System Navigation/Status:

  - User will be able to see all battery systems at top level with links to navigate to battery (system) or string (rack) level.

- Battery View:

  - System Status:
    - Battery Status
    - Monitor Status
    - Hardware Status
  - Battery Summary:
    - String Overall Voltage
    - String Current (actual)
    - Cell Voltage Average
    - Cell Temperature Average
    - SOC
    - SOH
  - String Summary:
    - Overall voltage
    - Current (Actual)
    - Current (Average)
    - SOC
    - SOH
    - Cell Summary(Average, lowest and highest)
  - Cell Voltages
  - Cell Temperatures

- String View:
    - String Summary:
        - Overall voltage
        - Current (Actual)
        - Current (Average)
        - SOC
        - SOH
        - Cell Summary (Average, lowest and highest)
    - Cell Voltages
    - Cell Voltage Balancing
    - Cell Temperatures
    - System Parameter Trends
    - String and Cell Level Trends:
        - SOH
        - SOC
        - Cell Voltage
        - Cell Temperature

Enhancements

- Resistance warning alarm added for Vertiv™ Alber™ BDS/MPM.
- Vertiv™ Alber™ BXE Password Reset option added for Admin account.
- Added Database Backup Now button and Refresh button to see the new backup files.
- Additional configuration parameters added for Active Directory.
- Additional details were added to the error message on the Email Server Configuration page.
- Battery View High/Low/Avg corrected.
- Last reading value now displays correctly on the String View.
- Vertiv™ Alber™ BDS/MPM polling revised to reduce the communication overhead.

24. Version 4.1.5 Update Information

New Features

- Administration-Permission Manager:
    - Admin can now configure user permissions/ access rights.
    - Admin can now assign the batteries/strings to the users.
    - Users will now have access only to the assigned systems.
    - Regular users will now only have access to battery systems, battery alarms and portable devices.
    - Advanced users now have access to Site Manager in addition to the regular user access.
- Site Manager-String Configuration:
    - Delete History now available for cell or for strings.
    - Base line functionality is introduced.

- Units to the corresponding measurement fields were added.

- Site Manager- Cell Alarms:

  - Baseline resistance values are now configurable on the Individual Thresholds page at the cell level and string level.

- DIM / MSM:

  - Added ability to import memos, location and baselines.
  - Device IP address can now be changed from MSM.

Enhancements

- Resistance:

  - Vertiv™ Alber™ BXE BDS/MPM Driver Resistance Snapshot now uses time of last resistance test reported from the device.
  - Multiple snapshots of resistance for MPM systems are resolved.
  - Vertiv™ Alber™ BDS/MPM intertier resistance is now stored in historical data.
  - Location information added to the Resistance Test Manager.

- Site Management:

  - Location information being sent directly to the database rather than to the device for MPM systems.
  - Only single battery/string selection available for Site Manager parameters.

- Performance/Display:

  - Access to Battery Historical View has been restored.
  - Left side String Readings on String View Details tabs now change when a bar is clicked in the chart.
  - Intertier trending on string live view resolved.
  - Vertiv™ Alber™ BDSU driver nightly snapshots timer enhanced to prevent multiple snapshots.
  - String name is now truncated to show seven characters in Battery View.
  - String summary now has a date range selection.

- Report:

  - Report now shows a gap in case of missing cells in the String View detail/graph.
  - Scaling on trend graphs is enhanced to better display measurement data.

- DIM imports:

  - Installation date, manufacturer, model and capacity information is retrieved from imported database.
  - Location data information is retrieved from imported database.
  - Memos information is retrieved from imported database.

- Alarm:

  - Alarm history data is available for the next page selection.
  - Alarm count on the system status page shows correctly for all MPM strings.

25. Version 4.0.4 Update Information

New Features

- Memos for string and cells now available on String View page and Site Manager.

- Historical event capture added for the Vertiv™ Alber™ BDS, MPM, Vertiv™ Alber™ UXTM and the Vertiv™ Alber™ Universal Xplorer Industrial Monitor (UXIM).

- Site Manager is added with limited device update capabilities.

- Graphical analysis added for alarms and reports.

- Memos for string and cells added to reports.

Enhancements

- Changing the cell alarms and string alarms on the first string will now be reflected on the other strings for MPMs (with multiple strings).

- String Capacity is now shown on the String View Page.

- Memos navigation and count has been enabled.

- Author name is pre-populated on memos and is also editable.

- Individual alarms setup is enabled for MPM systems on the Site Manager String Alarms screen.

- Site Manager Log and Test Schedules are now supported for the Vertiv™ Alber™ Universal Xplorer Telcom Monitor (UXTM), UXTMs, UXIM, UXIMs, UXBM/5, UXBM/50, UXDM/62, BDS-40, BDSi, BDS-256 and MPM-100.

- Auto scaling of Y-axis values added for String View Trending Graphs.

- Event Times column header on the Alarm details page now has date format "(MM/DD/YYYY)".

- Vertiv™ Alber™ BXE DB and Vertiv™ Alber™ BDS driver enhancements added for enable/disable commands for historical log and resistance test scheduling.

- DIM import enhanced for MPM system with multiple string data.

- Duplicate string cell voltages on battery view issue resolved.

- WAM configurations file support added for installation on non-standard default folder.

- Reports X-axis now displayed correctly on more than ten cells.

- Removed string and cell ID information from Alarms Details page.

- Active Directory server setting now available on System Manager page.

- Active Directory groups now displayed on User Management page.

- Vertiv™ Alber™ BDS Trending graphs corrected for zero offset.

- Administration and advanced access checked against current user privileges.

- Site Manager now handles special characters to prevent site summary report issue.

- Arrows added on String Historical View to step through charts.

- String View historical pull-down menu now displays the correct reading.

- System Status page now allows selection of location pull-down independent of customer selection.

- Actual installation date now shown in String View.

- Historical bar chart colors are applied according to current threshold values.

- Ambient temperature will now display N/A when measurement not available.

- Session timeout is now user-configurable.

- Display value on system status page now has an "all" option.

- Sorting and column resizing now available on System Status page.

- Optimized loading of String View historical charts.

- DIM deletion of a single device now allowed in a multiple device configuration.

- Discharge playback enhanced to view relative to start point and duration.

- Resistance test command operation restored.

- Detail Overall Voltage Report X-axis now displays correct string number.

- Standardized on US format regardless of region set on local operating system.

- Resistance test chart now displays scaling enhancements.

- DIM fixes for deleting all strings in the system added.

- Alarm active bad dates will now be displayed as 1/1/2016.

- String Trend Reports now display all graphs per report.

- Watermark and date range added for historical charts.

26. Version 3.2 Update Information

Enhancements

- DIM imports for Vertiv™ Alber™ UXTMs now display actual string names.

- Missing help files added for discharge alarm links in alarm details page.

- Spinner added when importing CRT files.

- Displaying of large cell count graphs enhanced to avoid overlays of other graphs.

- Battery model data imported when doing a CRT import.

- Temperature graph can now display in C˚ or F˚ on String View after CRT import.

- User deleted from contact list when user is deleted from Vertiv™ Alber™ BXE.

- Contact user list sorted alphabetically.

- Vertiv™ Alber™ BDS driver stores individual thresholds correctly to avoid system to incorrectly stay offline.

- Battery view temperature now displays in Celsius.

- Conversion of C/F only calculated on temperature tabs to avoid wrong values on all other tabs.

- Swapping of hardware device enhancement added to the DIM.

- Reset and acknowledge alarm feature now successfully sends commands.

- DIM now imports string history data that is only associated with existing strings.

- User can now selectively import history for each string configuration imported.

- Duplicate MPM string names supported.

- MPM history import enhanced when referencing strings that no longer exist.

- Active Directory user email can now be modified after user creation.

- State field increased to 50 characters on customer address form.

- Vertiv™ Alber™ BDSU-50 low cell voltage alarms can now be reset and acknowledged.

- String deletion enhanced in the DIM to remove commands previously sent.

- Notifications are sent when string status changes from normal to critical or maintenance alarm.

- Cell trend and power graphs added to Discharge Reports.

- Report page loading performance improved.

- String View and Battery View loading performance improved.

27. Version 3.01 Update Information

Enhancements

- Added:

  - Active Directory users and groups authentication.

  - HTTPS over SSL support.

  - Vertiv™ Alber™ BDS discharge data capture.

  - From field and ability to clear password on the Email Setup web page.

  - Temperature unit selected reflected on all web pages.

- Improved:

  - Portable devices import.

  - Discharge details web page display.

  - String View page refresh (prevents resetting to top of page, string selector).

  - Graphs for trending of data scaling and date.

  - Online restored email notifications.

  - MSM device signature and HAL device instance assignment.

  - UXIM temperature display corrected when not present.

- Vertiv™ Alber™ BDS resistance test data now stored in historical database.

- Normal operation alarms emails now sent when condition is cleared.

- Active and Normalization notification email delay removed.

- DIM import of Battery Monitor Data Manager (BMDM) SQL data no longer requires an INI file.

- Page size selection now remembered for current web session.

28. Version 3.00 Update Information

Enhancements

- Historical View now only available on String View.

- FIPS encryption support integration added.

- Now automatically update Vertiv™ Alber™ UXTM/ Vertiv™ Alber™ UXIM time on driver start, driver connect and every 24 hours.

- DIM Historical alarm import enhanced.

- Notifications now show correct temperature unit selected on web page.
- Custom UPS link option now available on String and Battery Views.

29. Version 2.05 (Controlled Release) Update Information

Enhancements

- Support for SMTP server authentication added.
- Notification temperature now corresponds to what is set on web page.
- Historical data now displayed correctly on Historical View based on date selection.
- Cell temperature option added to Discharge Reports.
- Offline watermark is now shown when a device is offline.
- Individual resistance thresholds now shown correctly in String View summary.
- Discharge cell temperature data displayed properly in Discharge Playback View.
- Historical data button removed from Battery View.

30. Version 2.04 (Controlled Release) Update Information

Enhancements

- Discharge now updates time on status screen for multiple strings for Vertiv™ Alber™ UXTM/ Vertiv™ Alber™ UXIM.
- Alarm auto-disabled now shown on Vertiv™ Alber™ UXTM/ Vertiv™ Alber™ UXIM status screen.
- Cell temperature displayed on Discharge Reports.
- Email server settings now stored properly on the database using the web site, preventing a crash in Configuration Manager.
- MSM is now properly saving the Historical DB connection string.
- Cell temperature units and values for discharge summary playback and report are now shown properly.

31. Version 2.03 (Controlled Release) Update Information

Enhancements

- Resistance data is now stored in the historical database for Modbus drivers.
- Improved WAM/DIM connection to database when not default password and username settings.
- Added machine names under help/about for all modules.
- No longer stays in "historical mode" after importing CRT data if device is currently being monitored.
- Discharge summary now shows discharges greater than 25 minutes.
- Added scroll bar for historical date selection.
- Fixed issue where importing CRT data to an existing Vertiv™ Alber™ BDS monitored system would cause a crash.
- Notification rules checkboxes now save correctly instead of clearing after save.
- No longer duplicating the same date/times on discharge details for Vertiv™ Alber™ UXTM/ Vertiv™ Alber™ UXIM.
- Enhanced discharge data collection for short discharges that last less than one minute

- Added notifications for system online and device online

- Nightly scheduled resistance data snapshots for Vertiv™ Alber™ UXTM/ Vertiv™ Alber™ UXIM and Vertiv™ Alber™ BDSU are now being captured.

- Added Home link on Discharge Reports web page.

- Alarm times on Vertiv™ Alber™ BDS and Vertiv™ Alber™ BDSU systems are shown on local time now (it was originally off by six hours).

- Added Help/About link to login screen.

- Reduced alarm notifications of alarms that are changing state frequently.

- Overall voltage and string current are displayed in the Discharge Report summary.

- "Report created by" option on report now allows user to enter a custom name.

- Time, in addition to date, is now displayed on resistance test pull-down list on Resistance tab.

- Resistance test snapshot capture improved to prevent Vertiv™ Alber™ UXTM/ Vertiv™ Alber™ UXIM driver crashes.

- Discharge playback no longer loops at the end of the discharge playback.

- Discharge details are sorted by date/time and discharge ID has been removed.

- Multiple drivers running on different computers will not cause multiple instances in Task Manager.

- Temperature units (Celsius or Fahrenheit) selection option now provided under tools menu.

- String analysis option now available for reports.

- Discharge Reports format and performance enhanced.

- Foreign language Windows systems installation support added.

32. Version 2.02 Update Information

Enhancements

- Improved resistance test button state information and feedback.

- Fixed refresh issue when switching between batteries.

- Added support for Lithium Ion batteries.

- Added capability to generate Discharge Reports.

- Enhanced Executive Reports by adding status graphics.

- Discharges are now cleared from a device after successful download of discharge data from Vertiv™ Alber™ UXTM/Vertiv™ Alber™ UXIM.

- Vertiv™ Alber™ UXTM/Vertiv™ Alber™ UXIM resistance test data now captured to historical database to support trending

- Added enhancements to discharge playback for cell voltages on Vertiv™ Alber™ BDSU.

33. Version 2.01 Update Information

Enhancements

- Added ability to create and customize reports (currently supporting Executive Reports).

- All temperatures now display in Fahrenheit.

- Improved on notification overall functionality and quality.

- Discharge data collection support added for Vertiv™ Alber™ UXTM/ Vertiv™ Alber™ UXIM devices.

- Database connection enhanced.

- Fixed issued of not displaying all historical data.

- Improved support security on newer version of Windows.

- Corrected display of string current during discharges.

- Enhanced logging of the monitor engine.

- Added ability to reset user password.

- Correction of measurement values on discharge summary.

34. Version 2.00 Update Information

New Features

- Added discharge capture with playback and trending capabilities.

- Added cell parameter trending.

Enhancements

- Fixes and improvements to notification messages such as improved format and content, added local server time of alarm and improved status information (latch, acknowledged and so on).

- Driver enhancements added to support discharge and resistance test data collectionSupport added for grouping Vertiv™ Alber™ BDSU devices into multiple drivers (new Velocity client support for multiple clients), which allows faster system recovery and less customer impact.

- Vertiv™ Alber™ BDSU driver enhancements to recover from interrupted database communication (for instance, Ethernet connection loss).

- Capability to support installation/database migration to a new server.

- Improved database connectivity (pooling connections and so on).

- Overall page response and performance improvements.

35. Version 1.02 Update Information

Enhancements

- Resistance test improvements for Vertiv™ Alber™ BDSU [046].

- Cellcorder import improvements [080].

- Corrected alarm event times to show local time [122].

- Battery View enhancements [253].

- Modbus drivers communication improvements [274].

- Historical View updates [284]Fixed issue with multiple notification emails [287].

- Added support for Windows Authentication and SQL "sa" account for SQL connections [290].

- 30-day trial activated by default on install [292].

- Fixed problem when importing certain BMDM SQL databases [334].

- Various other internal fixes.