Network Management Card 2 (NMC 2) Firmware v6.9.4 for Smart-UPS and Single-Phase Symmetra Release Notes

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The Smart-UPS and single-phase Symmetra application firmware v6.9.4 release notes apply to the following NMC cards:
- **AP9630 (CH) UPS Network Management Card 2**
- **AP9631 (CH) UPS Network Management Card 2**
- **AP9635 (CH) UPS Network Management Card 2**
- **Single-Phase UPS models with an integrated Network Management Card 2 – AP9537SUM (e.g. All Smart-UPS SRT models 5kVA and above)**

Affected Revision Levels

Component	File	Details
APC Operating System	apc_hw05_aos_694.bin	Network Management Card Operating System & TCP/IP Stack for Hardware Platform
Smart-UPS Application	apc_hw05_sumx_694.bin	UPS Application for Smart-UPS, Smart-UPS XL, Smart-UPS RT, Smart-UPS VT, Smart-UPS DP, Smart-UPS OL, MGE Galaxy 3500
Symmetra Application	apc_hw05_sy_694.bin	UPS Application for Single-Phase Symmetra, Symmetra LX

For details on upgrading the UPS Network Management Card 2 (NMC 2) firmware, see the **User Guide** on the APC website or Utility CD.

Schneider Electric Device IP Configuration Wizard

The Device IP Configuration Wizard is a Windows application designed specifically to remotely configure the basic TCP/IP settings of Network Management Cards. The Wizard runs on Windows® Server 2012, Windows Server 2016, Windows Server 2019, Windows 8.1, and Windows 10. This utility supports cards that have firmware version 3.X.X or higher and is for IPv4 only.

NOTE: In firmware version v6.8.0 and higher:

- The Device IP Configuration Utility only supports the discovery of unassigned devices.
- You cannot search for assigned devices already on the network using an IP range unless you enable SNMPv1 and set the **Community Name** to "public". For more information on SNMPv1, see the **User Guide**.
- When the NMC IP address settings are configured, to access the NMC Web UI in a browser, you must update the URL from http to http**s**.

The Wizard is available as a free download from the APC website at www.apc.com:

1. Go to https://www.apc.com/shop/us/en/tools/software-firmware and click **Show More** from the list of checkboxes in **Filter by > Software / Firmware**.
2. Select **Wizards and Configurators** to view the list of utilities available for download.
3. Click the **Download** button to download the **Device IP Configuration Wizard**.

New Features

New Feature	UPS Family	
	Smart-UPS	**Single-Phase Symmetra**
Ripple20 Vulnerability Fixes v6.9.4 addresses Ripple20 vulnerabilities affecting Treck Inc.'s embedded TCP/IP stack, defined in the following CVEs: CVE-2020-11896, CVE-2020-11898, CVE-2020-11899, CVE-2020-11898, CVE-2020-11901, CVE-2020-11902, CVE-2020-11904, CVE-2020-11905, CVE-2020-11906, CVE-2020-11907, CVE-2020-11909, CVE-2020-11910, CVE-2020-11911, CVE-2020-11912, CVE-2020-11913, CVE-2020-1191. For more information, see Schneider Electric/APC security bulletin: https://www.se.com/ww/en/download/document/SEVD-2020-174-01/	♦	♦

Fixed Issues

Fixed Issues	UPS Family	
	Smart-UPS	**Single-Phase Symmetra**
Accessing the Web UI with a hostname no longer redirects the session to its IPv6 address.	♦	♦
A host header injection vulnerability that was identified has been fixed.	♦	♦
The PowerChute Network Shutdown **Authentication Phrase** field no longer appears as a hidden value in the Web UI after using the `format` command in the CLI. **NOTE:** This issue was only applicable for Microlink UPS devices. See Knowledge Base article FA230533 for more information.	♦	

Known Issues

Known Issue	UPS Family	
	Smart-UPS	**Single-Phase Symmetra**
It is no longer possible to launch to a device through StruxureWare Data Center Expert if the device contains the 6.9.4 release of the AOS. This issue will be addressed in the upcoming release of Data Center Expert (7.8.1).	♦	♦
When upgrading the NMC's firmware via the NMC Firmware Update Utility using SCP as the protocol, the update may be unsuccessful. If you click the **Start Update** button again, the following error messages may appear: Resume not supported for SCP transfers Could not retrieve configuration file via this method, please recheck the settings. Workaround: use FTP as the protocol.	♦	♦
You cannot update the UPS device's firmware via the Web UI (**Configuration > Firmware Update**) using Microsoft Edge. Workaround: use an alternative browser: Google Chrome, Mozilla Firefox, Internet Explorer etc.	♦	♦
If SCP is chosen and the **Backup log files prior to update** checkbox is selected when upgrading the NMC's firmware via the NMC Firmware Upgrade Utility, the upgrade will freeze at the "Download Event Log" stage. Workaround: Use FTP as the protocol, or back up your files before initiating the update and unselect the **Backup log files prior to update** checkbox.	♦	♦
Modbus TCP cannot be enabled via the CLI on AP9630 and AP9631 NMCs. Workaround: use the Web UI to enable Modbus TCP.	♦	♦
The NMC management interface (e.g. the Web UI, CLI) may restart if large groups of event actions ordered by severity are modified.	♦	♦
There is no line break at the end of the payload message when using Syslog TCP.	♦	♦
SNMPv3 communication and monitoring on some third-party SNMP management tools may not work correctly.	♦	♦
IPv6 connectivity outside of the local subnet does not work in all environments.	♦	♦
There may be formatting errors in the Firewall Log displayed in the NMC Web UI if long values are present in some columns.	♦	♦

Known Issue	UPS Family	
	Smart-UPS	**Single-Phase Symmetra**
If a firewall rule is created with a subnet value without the correct CIDR notation, no error is displayed, and the policy can be created with an incorrect subnet value.	♦	♦
If a firewall rule is created with a subnet and port range defined, connections are not correctly limited to the ports defined in the rule.	♦	♦
If a firewall rule is created with the option to Log set to 'No', the rule is incorrectly logged to the Firewall Policy Log.	♦	♦
If a firewall rule is created with Protocol set to ICMP and Action set to Discard, ICMP messages such as ping are not stopped as expected.	♦	♦
If a firewall rule is created with the source host set to the IP address of the NMC, the NMC will not be accessible when the firewall policy is enabled.	♦	♦
"System: Detected an unauthorized user attempting to access the FTP interface" and "System: Password Changed" events do not send SNMP Traps.	♦	♦
Device level user privileges in the Command Line Interface (CLI) are not consistent with the device user privileges in the Web interface.	♦	♦
In the Config.ini, the SystemDateTime primary and secondary server keywords return strange values when long strings are applied.	♦	♦
The DNS Domain Name validation doesn't conform to RFC1035 Standards for formatting.	♦	♦
"System: Email: Could not mail, queue full." event log message is repeatedly recorded in the event log when a fourth email recipient is configured, even though the recipient is receiving the notification.	♦	♦
Some column headers in the data.txt download file are not displayed correctly in Russian.	♦	♦
File transfers using SCP do not work properly with WinSCP GUI client.	♦	♦

Known Issue	UPS Family	
	Smart-UPS	Single-Phase Symmetra
NMC interface may restart when multiple alarms are logged simultaneously.	♦	♦
Authenticated/secure email server settings could be potentially altered during an upgrade from an AOS prior to 6.1.8.	♦	♦
Files do not successfully upload to the NMC via a TFTP server when used with DHCP options 66 and 67.	♦	♦
When a firewall policy is created through the web UI with a name longer than 16 characters, it cannot be successfully edited, or updated with new rules.	♦	♦
The NMC may enter a reboot loop when downloading the config.ini file over FTP, when DHCP with options 66 and 67 are enabled. This reboot loop can be fixed by disabling DHCP or by closing the FTP server.	♦	♦
When using the "Test Settings" option to test a RADIUS server configuration, the web UI will not accept a username or password longer than 16 characters.	♦	♦
When configuring the SMTP server of an email recipient in the web UI, if the server is set to 'recipient', the 'From:' address field is incorrectly populated with the 'To:' address. When an email is then sent to the recipient, it incorrectly appears that the email has been sent from the recipient's own email address.	♦	♦
When connecting to the command line interface of the NMC via SSH, after a period of time the NMC management interface may reboot.	♦	♦
If the maximum number of SMTP Traps and Email Recipients are configured, the maximum number of Web UI sessions, Command Line Interface sessions, Telnet sessions, and FTP sessions are created, and the maximum number of alarms is generated at once, the NMC user interface will become unresponsive, and the NMC will reboot.	♦	♦
A UPS that has been deliberately put into sleep mode can behave inconsistently. For example, a UPS can turn off after only a few seconds of being in the "Graceful shutdown initiated" state, or can turn on after only a few seconds of being in the "Turned off for a defined period" state.	♦	♦

Known Issue	UPS Family	
	Smart-UPS	**Single-Phase Symmetra**
When a scheduled shutdown is configured with a long interval (e.g. 2 weeks), the UPS shuts down on schedule, but if a power outage occurs before the UPS restarts, the UPS will not shut down at the next scheduled date, and the next scheduled shutdown will be moved forward by one week.	♦	♦
USB drives of a capacity greater than 32GB are often formatted using an NTFS or ExFAT file system. The NMC is compatible with FAT, FAT16 or FAT32 file systems only. For UPS firmware upgrades via USB, or NMC card firmware upgrade via USB, the NMC does not support USB drives with a capacity greater than 32GB.	♦	♦
The configuration of the Universal I/O relay state (open/closed) is not persisted if the NMC is removed and then reinserted into the SmartSlot of the UPS.	♦	♦
The BACnet Device Communication Control Password is displayed in plain text in the config.ini file. It is recommended that you use high security to access your NMC. A fix to this issue is planned for a future release.	♦	♦
SNMP traps are not sent if the SNMPv3 User Name is greater than 30 characters in length.	♦	♦
No error message is shown for the ledblink command in the Command Line Interface (CLI), and incorrectly reports E000: Success when an invalid parameter is entered.	♦	♦
The dir command in the Command Line Interface (CLI), which does not accept parameters, reports E000: Success when a parameter is entered.	♦	♦
An NMC that never establishes communication with UPS does not give an alarm.	♦	♦
When universal I/O sensors* are connected to the NMC and UPS output relay and input contact alarms are triggered, the alarms do not display in the StruxureWare Data Center Expert UI. * Temperature sensor (AP9335T), temperature/humidity sensor (AP9335TH), Dry Contact I/O Accessory (AP9810). **NOTE:** This issue is only applicable to XU2K0LLXXRCC UPS devices. Workaround: disconnect the universal I/O sensors to see the UPS output relay and input contact alarms in the StruxureWare Data Center Expert UI.	♦	
UPS devices with the XU prefix (for example, XU1K3LLXXRCC and XU2K0LLXXRCC) do not turn off power to the connected load. When regulated and protected input power is not available, these UPS devices provide unregulated grid power to the connected load. As a result, you may experience intermittent issues in the NMC web UI.	♦	

Known Issue	UPS Family	
	Smart-UPS	Single-Phase Symmetra
For some UPS models, the "The output power is turned off" and "The output power is now turned on" events are logged multiple times in the event log when the NMC management interface reboots after the UPS or its outlet groups are manually turned off.	♦	
If the NMC is installed in a low-priority slot in the Triple Expansion Chassis, and a Graceful Shutdown event is initiated by a card with higher priority, the UPS: Graceful Shutdown event is recorded twice in the event log of the low-priority NMC, and is not recorded in the event log of the high-priority card.	♦	
If the AP9617, AP9618, or AP9619 NMC is installed in a high- priority slot in the Triple Expansion Chassis, and a Graceful Shutdown event is initiated by a AP9630/AP9631/AP9635 NMC with lower priority, the Graceful Shutdown alarm does not clear on the AP9617, AP9618, or AP9619 Management Card.	♦	
Device Sensors for StruxureWare Data Center Expert and NetBotz appliances detect critical Internal Battery Temperature Violation events, but do not generate an alert.	♦	
When the outlet group control commands are configured to perform turn on and turn off actions within less than 3 seconds of each other, the commands may be delayed or canceled.	♦	
For some UPS models, bypass alarms do not clear if a graceful off, reboot, or sleep command is initiated while the UPS is in bypass.	♦	
If a UPS Control command is in progress and another UPS Control command is initiated, the original command is canceled and the most recent command succeeds.	♦	
SNMP does not support the UPS or Switched Outlet Group sequencing delay commands.	♦	
For Smart-UPS VT, the Web Redundancy Alarm can only be configured at the display interface.	♦	
On "UPS - Outlet Group - Control", selecting Turn Off UPS immediately sometimes logs the turn off and turn on many times.	♦	
For SNMPv1, upsAdvConfigRatedOutputVoltageSNMP OID can be set but the new value only displays correctly after you refresh two or three times (using an SNMP Walk).	♦	
MGE Galaxy 3500 UPS: upsAdvInputMinLineVoltageSNMP OID does not return the correct value.	♦	

Known Issue	UPS Family	
	Smart-UPS	Single-Phase Symmetra
MGE Galaxy 3500 UPS: NMC Web UI-> Diagnostics: Calibration test result shows Pass while aborting the test in UPS power view.	♦	
MGE Galaxy 3500 UPS: NMC Status for external battery cabinet rating is not matching with the same in Powerview status data.	♦	
MGE Galaxy 3500 UPS: Uploading Invalid sleep time values through config.ini causes sleep time to be reset to 0.	♦	
Smart-UPS models excluding those with prefix SMT, SMX, SURTD or SRT have limited event list filtering, and may display events not relevant to the UPS model on the Event List and Control Policy web interface pages.	♦	
For certain UPS models, some output frequency settings do not display properly on the NMC interfaces.	♦	
The web interface page Configuration > Firmware Upgrade is not available to a Device User.	♦	
For certain Smart-UPS RT models, attempting to change the output voltage with the output powered on will cause the lower and upper bypass voltage settings to be reported incorrectly.	♦	
An SNMP trap is not sent when the "Site Wiring Fault" event occurs.	♦	
An SNMP trap is not sent when the NMC initiates a self-test.		♦
A Graceful Shutdown is logged twice in the event log when initiated from an upstream device. In this context, an upstream device is closer to the UPS on the UPS-Link communication bus than a downstream device (the UPS being the source of the data).		♦
The "Graceful Shutdown Initiated" alarm does not clear on an NMC device if the reboot is initiated by a downstream NMC. In this context, a downstream device is further away from the UPS on the UPS-Link comm bus than an upstream device (the UPS being the source of the data).		♦
Certain characters are not allowed in the Name field for the UPS (Administration - General) but no error message displays. Avoid using non-alphabetic symbols like !, #, -.		♦

Miscellaneous

Recovering from a Lost Password

See the User Guide on the Utility CD or on the APC website for instructions on how to recover from a lost password.

Event Support List

To obtain the event names and event codes for all events supported by a currently connected APC device, first retrieve the config.ini file from the attached NMC. To use FTP to retrieve config.ini from a configured NMC:

1. Open a connection to the NMC, using its IP Address:

   ftp > open <ip_address>

2. Log on using the Administrator user name and password

3. Retrieve the config.ini file containing the settings of the NMC of the UPS:

   ftp > get config.ini

   The file is written to the folder from which you launched FTP.

   In the config.ini file, find the section heading [EventActionConfig]. In the list of events under that section heading, substitute 0x for the initial E in the code for any event to obtain the hexadecimal event code shown in the user interface and in the documentation. For example, the hexadecimal code for the code E0033 in the config.ini file (for the event "System: Configuration change") is 0x0033.

PowerNet MIB Reference Guide

Note: The MIB Reference Guide, available on the NMC CD and on the APC website explains the structure of the MIB, types of OIDs, and the procedure for defining SNMP trap receivers. For information on specific OIDs, use a MIB browser to view their definitions and available values directly from the MIB itself. You can view the definitions of traps at the end of the MIB itself (the file powernet432.mib on the NMC CD and also downloadable from the APC website).

Hash Signatures

Signatures	apc_hw05_aos694_sumx694_bootmon109	apc_hw05_aos694_sy694_bootmon109
MD5	42c8076495b5758b45c94241fb60face	5e48282b51686361ab1be5c57944ede5
SHA-1	6bbce10cf3a9f5c2e44d17ff93b43130b3cc4378	ead3426d9e755735ecc6e1dbcfec5a8b4891fbfc
SHA-256	17d0d49273adfa4d60fca4e7245a690a8212267a7f8b68d0ae1d7109b71f4be5	dddd3a78d021ddc91aef86fc574730f8ee24fc31d534b21be4f5f7404799c2d9

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