NetBotz® Rack Monitor 250

Release Notes for: NBRK0250

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What's in This Document

Affected Revision Levels

Component	Version	Details
APC Operating System	apc_hw05_aos_682.bin	Network Management Card (NMC) Operating System & TCP/IP Stack for Hardware Platform v05.
NetBotz 250 Application	apc_hw05_nb250_680.bin	NetBotz 250 Application
PowerNet® Application	powernet430.mib	PowerNet SNMP Management Information Base (MIB)

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 2000, Windows Server® 2003, Windows Server 2012, and, on 32- and 64-bit versions of Windows Vista®, Windows XP, Windows Server 2008, Windows 7, Windows 8, and Windows 10 operating systems. This utility supports cards that have firmware version 3.X.X or higher and is for IPv4 only.

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

1. Go to *www.apc.com/tools/download* and select **Software Upgrades - Wizards and Configurators** from the **Filter by Software/Firmware** drop-down list

2. Click **Submit** to view the list of utilities available for download.

3. Click **Download** to download the **Network Management Device IP Configuration Wizard**.

Supported Browsers and Platforms

Most modern Web browsers are compatible with the Rack Monitor 250 Web UI. Use the most recent version of your Web browser to mitigate the risk of software security vulnerabilities.

New Features

APC Operating System (apc_hw05_aos_682.bin)

- **California Law.** Due to the introduction of a US California state law (Senate Bill SB-327), which starts on January 1st, 2020, any manufacturer of a device that connects "directly or indirectly" to the internet must equip it with "reasonable" security features, designed to prevent unauthorized access, modification, or information disclosure. The following security features have been implemented:
  - The first time the Super User successfully logs on with the default credentials, they will be presented with a screen requiring them to change their password. It is strongly recommended that users create strong passwords which adhere to their company's password requirements.
  - The user accounts which are shipped on the Network Management Card (NMC) are disabled by default. These accounts cannot be enabled until the user changes the associated passwords for each account.
  - New User Account Creation: A user account can be created in the Web UI without a password being specified. These accounts cannot be enabled until a password is added. In the CLI, a password is required to create a user account.
  - Protocol Status Overview Screen: The protocol status overview screen contains a list of current system protocols and their current enabled values. This feature is available in the Web and CLI.
    - Web UI: On first logon, the user is directed to the **Protocol Status Overview** page. The web page can be accessed at any point thereafter from **Configuration > Network > Summary**.
    - CLI: The existing banner has been modified to permanently include the current system protocols and their current values. This will show every time the user logs in to the CLI as it currently does.
  - All login protocols are now disabled by default, with the exception of SSH, HTTPS, and console (serial or USB).
    - These protocols allow the user to change the password.
    - While FTP is a standard (albeit unsecure) login method, there is no way to force the password change through this interface, so it is disabled by default.
    - HTTP and Telnet are unsecure due to network data being transmitted in clear text, so they are disabled by default.
  - Some communication protocols have been disabled by default until the user changes their associated passwords, community names, or authentication/encryption phrases:
    - SNMPv1 is disabled by default and the community names are blank.
    - SNMPv3 auth priv phrases are blank by default.
  - SCP will not allow a file transfer until the initial super user password is changed.
- Remote Monitoring Service (RMS) has been removed.
- An EcoStruxure® logo/link has been added to the login page and application header pages.
- Stop bits on MODBUS display units are now configurable.

NetBotz 250 Application (apc_hw05_nb250_680.bin)

None.

Fixed Issues

APC Operating System (apc_hw05_aos_682.bin)
• SNMPv3 settings changed on CLI now take effect correctly.   • The SNMPv3 configuration is applied properly when changed through the CLI.   • The NMC no longer hosts HTTP when HTTP is disabled.   • Fixed previously in 6.7.2: CVE-2018-7820: A clear text password vulnerability was fixed in the Remote Monitoring Service (RMS). Schneider Electric recognizes Taran Dhillon of Hacklabs for identifying this vulnerability.
NetBotz 250 Application (apc_hw05_nb250_680.bin)   None.

Known Issues

APC Operating System (apc_hw05_aos_682.bin)
1. Disabling an individual event for email notification may cause an unexpected network interface restart.   2. Modifying RADIUS settings via config.ini may cause an unexpected network interface restart.   3. The NMC may experience an unexpected network interface restart while editing a firewall policy.   4. Modifying large groups of event actions by severity may cause an unexpected network interface restart.   5. IPv6 connectivity outside of local subnet does not work in all environments.   6. SNMPv3 communication and monitoring on some third party SNMP management tools such as ManageEngine OpManager does not work properly.   7. SNMP traps do not work for some AOS events.   8. File transfers using SCP do not work properly with WinSCP client   9. Certain privileges in the CLI are not consistent with the user privileges in the Web UI.   10. The Trap receiver NMS settings incorrectly allow for a NULL entry.   11. SNMP Trap Recipients are activated only after a previous Trap recipient can send Traps.   12. Firewall rules configured through the Web UI are active even when the firewall is not enabled. A fix to this issue is planned for an upcoming release.

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NetBotz 250 Application (apc_hw05_nb250_680.bin)

Updates and upgrades

1. **Upgrade the NetBotz Rack Monitor 250 firmware before first use.** Download the most recent version of the NetBotz Rack Monitor 250 firmware from *www.apc.com*. See *Update the Appliance, page 8* for basic instructions, or see the *User Guide* on *www.apc.com* for detailed instructions to upgrade the firmware.

2. **Upgrade the NetBotz Wireless Sensor firmware before first use.** Download the NetBotz Wireless Firmware Update Utility from *www.apc.com* or *help.ecostruxureit.com*. Install the Utility as an administrator and see *Update the Wireless Sensor Network , page 9* or the *User Guide* on *www.apc.com* for information on how to upgrade the wireless sensors on your Rack Monitor 250 wireless network.

   NOTE: You must upgrade the wireless sensors on one Rack Monitor 250 at a time, using the coordinator and sensor(s) from its wireless network.

3. **Update the NetBotz 250 Data Center Expert (DCE) Scanner Device Definition File (DDF) to a version more recent than 6:** Verify the DDF used by DCE under **Device > SNMP Device Communication Settings > Device Definition Files**. The most recent scanner DDF version is 17. Contact your local technical support for an up-to-date scanner DDF.

4. **Rack access devices are temporarily removed from the user interface during the firmware update.** The firmware update for the Rack Monitor 250 happens first, then the update for the rack access devices follows. Once the Rack Monitor 250 firmware update completes, it takes about ten minutes for the rack access devices to reappear in the list. All configured settings remain as expected.

5. **Do not reboot the appliance while a firmware upgrade is in progress.** When a Sensor Pod 150 is connected to the appliance, an informational alarm occurs and error messages are reported on the home page for connected sensors while the Sensor Pod's firmware upgrades. The errors clear and accurate status messages are displayed after the upgrade. The status of the upgrade process can be viewed from **Configuration > Device > NetBotz** in the Web UI.

6. **If the appliance is downgraded to firmware v6.6.7 or lower, the wireless coordinator status and wireless sensor commission list may not display correctly.** To correct the display, wait until the download is complete, then reboot the network management interface.

StruxureWare Data Center Expert® (DCE) and EcoStruxure IT Gateway®

1. **Unplugged sensors in Data Center Expert (DCE) can be deleted**. NetBotz Rack Monitor 250 alarm generation enabled/disabled sensors reporting as unplugged in DCE can safely be deleted. Humidity sensors reporting as unplugged on temperature-only sensors can also safely be deleted. These sensors were erroneously included in the device definition file (DDF), and have been removed in version 16 and newer.

2. StruxureWare Data Center Expert® (DCE) and EcoStruxure IT Gateway® do not include support for the NetBotz 250 outputs (beacon, switched outlet, output relay). Support for these features is planned for future updates of DCE and EcoStruxure IT.

3. EcoStruxure IT Gateway does not automatically update user-configured values (sensor names, for example). To update these values in EcoStruxure IT Gateway, click the menu icon, select **Discovery**, then select **RUN** to rediscover the updated Rack Monitor 250.

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Sensors, pods, and rack access devices

1. **The NetBotz Sensor Pod 180 (NBPD0180) is not supported by the NetBotz 250 appliance.** The Sensor Pod 180 will not be supported on firmware v6.5.0 and later.

2. If sensors are connected to all six ports on the Rack Monitor 250, the NB Module page may not display all six sensors. You can view all connected sensors on the Home page. You can also view connected sensors by selecting **Configuration > Device > Wired Sensor**. To find the NB Module page, go to **Configuration > Device > NetBotz** and select the **Module Name**.

3. After replacing a sensor with a different type of sensor, you must reboot the Rack Monitor 250 to display the new sensor correctly.

4. After replacing a sensor with a different sensor, the name of the previously connected sensor is displayed. This is not resolved by rebooting the Rack Monitor 250. The sensor will report accurate values as expected.

5. Sensors connected to a Sensor Pod 150 can be mapped for the beacon only, and not for the switched outlet or output relay. Door switch sensors connected to Door 1 or Door 2 ports can be mapped for the beacon only, and not for switched outlet or output relay. Alarm mapping is not available for any wireless sensors.

6. State sensors do not appear in the data log. Wireless sensors and Sensor Pod 150 devices without at least one numeric sensor do not appear in the data log filtering list.

7. When a rack access handle and door switch are left open for longer than the time specified in the Door Open Alarm Threshold, the auto relock alarm occurs rather than the door open alarm.

8. The CLI command `spsensor` can have a delay up to 7 seconds under some circumstances. The delay is longer when accessing humidity and threshold values and when no sensors are attached to sensor pods.

9. **The automatic card-format recognition feature cannot distinguish between card formats that have the same ID length.** For example, these two card formats have the same ID length: **H10302 - 37 bit w/o facility code**, and **H10304 - 37 bit w/ facility code**. By default, the appliance expects H10302 cards, so H10304 cards are automatically registered as H10302 cards. If someone manually changes the expected card format to H10304, the appliance will not recognize any cards registered as H10302.

   The following supported card formats have the same ID lengths:

	37-bit ID	7-byte ID
Default format	**H10302 - 37 bit w/o facility code**	**Mifare Classic 7 byte**
	H10304 - 37 bit w/ facility code	Mifare Plus
		Mifare DESFire

   If your cards are a non-default format, manually select the expected card format from **Configuration > Device > Rack Access > Lock Properties** before swiping the first card. This will ensure the appliance registers the correct card format.

Miscellaneous

1. A full config.ini file may take up to 20 minutes to load. A config.ini file with a 200-user [AccessPXUser] section may take up to 10 minutes to load.

2. **Unable to communicate with the appliance using the USB console port**. You may need to install a serial-to-USB driver to communicate with the Rack Monitor 250. The driver is available for download from the USB vendor FTDI. Please review FAQ article FA158350.

3. The management interface may reboot when receiving a config.ini file with 200 rack users if over 20 alarms are active. To avoid this, upload the [AccessPXUser] section separately: first upload config.ini without the [AccessPXUser] section, then upload config.ini with only the [AccessPXUser] section.

4. The wirelessSensorConfigName OID allows values with more than 20 characters. Sensor names will be truncated in interfaces that enforce the 20-character limit.

5. The message "NB: Communication established" is not received by SNMP traps or syslog.

Miscellaneous

Recover from a Lost Password

1. Connect the USB A–USB mini B configuration cable to the console port on the Rack Monitor 250 and to a USB port of the computer.

   NOTE: You may need to install a serial-to-USB virtual COM port driver. The USB vendor is FTDI; the driver type is VCP. Driver downloads are available on the FTDI Chip website. For more information, see FAQ article FA158350 on www.apc.com.

2. Open a terminal program such as HyperTerminal or PuTTY, configure the port as follows, and press Enter.

   - Default baud rate: 9600 bps
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
   - Flow Control: 1

3. Press Enter, repeatedly, until the **User Name** prompt is displayed. If the **User Name** prompt is not displayed, verify the following:

   - The USB port is not in use by another application.
   - The terminal settings are correct.
   - The correct cable is being used.
   - Scroll Lock is not turned on.

4. Press and release the **Reset** button near the power LED once. The Status LED will turn off for 5–7 seconds, then flash rapidly orange and green. Press the **Reset** button a second time while the Status LED flashes to temporarily reset the user name and password to their default values (**apc**/**apc**).

5. Press Enter as many times as necessary to display the **User Name** prompt, then use the default user name and password (**apc** and **apc**) to log on.

   NOTE: If you take longer than 30 seconds to log on, you must repeat steps 4 and 5.

6. At the CLI, use the following commands to change the password setting for the Super User account, for which the user name is always **apc**, and the password is now temporarily **apc**:
   ```
   user –n apc –pw yourNewSuperUserPassword
   ```

   Example: to change the Super User's password to p@ssword type:
   ```
   user –n apc –pw p@ssword
   ```

   NOTE: Because the Super User can also reset the password for any account, you can reset other user's passwords as well.

   Example: to change the password for user bmadmin to p@ssword type:
   ```
   user –n bmadmin –pw p@ssword
   ```

   NOTE: Changing user name information is not supported in the CLI. To change a user name, you must delete and re-create the user account. The Super User will also have access now to log in and adjust the password for any other user.

7. Type `quit`, `exit`, or `bye` to log off. Reconnect any USB cable you have disconnected, and restart any service you have disabled.

Update the Appliance

It is recommended that you update the Rack Monitor 250 firmware to the most recent version before first use.

1. Download the latest firmware version free from *www.apc.com/tools/download* or *help.ecostruxureit.com*. If you have a Windows computer, you can use the firmware executable to upgrade the firmware. If you have any other type of computer, you must use FTP, SCP, or XMODEM to manually upload each firmware upgrade file to the Rack Monitor 250. You must upload these .bin files one at a time in this order:

    a. Boot Monitor (bootmon), equivalent to the BIOS

    b. APC Operating System (AOS), the Rack Monitor 250 operating system

    c. Application Module, the NetBotz Rack Monitor 250 specific file

    For more information about using FTP, SCP, or XMODEM to manually update the Rack Monitor 250 firmware files, see the *User Guide* on *www.apc.com*.

    NOTE: Rack access devices are temporarily removed from the user interface during the firmware upgrade.

2. When the upgrade has completed, log in to the Rack Monitor 250 and go to **Configuration > Device > NetBotz**. Once the status of all connected devices has changed from **FW Upgrade** to **Normal** (or **Warning** or **Critical** if there is an active alarm), and the rack access devices are displayed as expected, the Rack Monitor 250 is ready for use.

Update the Wireless Sensor Network

It is recommended that you update the Wireless Temperature Sensor firmware before first use.

1. Download the NetBotz Wireless Sensor Update Utility. Go to *www.apc.com*, and select **Support > Resources & Tools > Software/Firmware**. Under **Filter by Software/Firmware**, select **Software Upgrades - Software for NetBotz appliances**.

   NOTE: The Wireless Sensor Upgrade Utility is only available for Windows.

2. Install the Utility as an administrator.

3. Remove the plastic cover over the Wireless port. Remove the coordinator and connect it to a USB port on the computer where you installed the Utility.

4. Record the MAC address of the Wireless Temperature Sensor that came with the Rack Monitor 250. Turn on the Wireless Temperature Sensor.

5. In the Windows Start menu, type the following: `NetBotz Wireless Update Utility`. Right-click the Utility, and select **Run as Administrator.**

   NOTE: The Utility may not execute correctly if you do not select **Run as Administrator**.

   NOTE: If you are unable to launch the Utility, you may need to install a serial-to-USB virtual COM port driver on your computer. The required driver is available in the "drivers" folder of the Utility.

6. Enter the MAC address of the sensor in the commission list field. If you have more than one wireless sensor, make sure they are all turned on, and add their MAC addresses also. Click **OK** to start the Utility.

7. Browse to the wireless firmware .zip file installed with the Utility.

8. Click **Apply** to upgrade the wireless sensor firmware.

9. When the firmware upgrade is complete, reconnect the coordinator to the Rack Monitor 250 Wireless port and replace the plastic cover. DO NOT connect the coordinator to any other USB port on the appliance.

For more information about updating the wireless sensor firmware, see the documentation included with the Wireless Sensor Update Utility.

Event Support List

To obtain the event names and event codes for all events supported by a currently connected APC by Schneider Electric device, first use FTP to retrieve the config.ini file from the Network Management Card:

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 Network Management Card:

   `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

The MIB Reference Guide, available on *www.apc.com*, 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 powernet430.mib is downloadable from *www.apc.com*).

Hash Signatures

MD5	d20e50f570da7a9f423c2c08ae0c4031
SHA-1	588c8c3b73cf6489b134fde0257375ab507c1960
SHA-256	5ec3c6220e67c888e512fbdee683cdba2830ed4122ed4708bfb310a4a42ced8f