



OS Image for UC-8200 Series CTO Models (MIL3.4.1) Release Notes

Version: v1.5	Build: 25101605
Release Date: Oct 27, 2025	

Applicable Products

UC-8200 Series

Supported Operating Systems

Moxa Industrial Linux 3 (Debian 11)

New Features

- Moxa Connection Manager (MCM) v1.7.14.
 - Supports for configuring DHCP lease time and IP range in Wi-Fi Soft-AP mode.
 - Adds encryption mode options for Wi-Fi Soft-AP (OPEN and WPA2) in addition to WPA1+WPA2.
 - The DHCP server now supports the DNS configuration option.

Enhancements

- Moxa Connection Manager (MCM) v1.7.14.
 - Improves SIM card switching time for Telit 4G modules.
 - Adds an option to allow non-MCM managed Ethernet interfaces to be controlled by the networking service.
 - Allows an empty IP gateway value to be set.
 - Adds support to enable the DHCP server on multiple LAN interfaces simultaneously (previously limited to one).
 - Improves invalid Wi-Fi SSID and password detection in the MCM GUI; users are now blocked from saving configurations with invalid characters.
 - Allows the & character in Wi-Fi passwords.

Bugs Fixed

- Moxa Computer Interface Manager (MCIM):
 - An issue where the legacy method for configuring push-button actions (supported in MIL 3.0–3.3) was not available in MIL 3.4.0; support has been restored in MIL 3.4.1.
 - An issue where the legacy method for configuring Digital Input (DI) event scripts (supported in MIL 3.0–3.3) was not supported in MIL 3.4.0; support is now restored in MIL 3.4.1.
- Moxa Connection Manager (MCM) v1.7.14:
 - An issue where configuring the out-of-the-box UC cellular connection with a SIM card that has a PIN lock fails to connect to the Internet until the system was rebooted.
 - Unstable reconnections when connecting to Wi-Fi BSSIDs under the same SSID.
 - An issue where an unresponsive GPSD service caused MCM to stop working during GPS port sync by adding a timeout.
 - An issue where MCM v1.2/v1.3 configuration files became incompatible when upgrading to v1.7.5 (MIL 3.4.0) via v1.4 or v1.5. The issue does not occur when upgrading directly from v1.2/v1.3 to v1.7.5 or v1.4/v1.5 to v1.7.5.
- Moxa Software Updater (MSU):
 - An issue where using the command `mx-sw-updater upgrade --local` to upgrade the system via the offline method may still require Internet access for dependency download.



Changes

N/A

Notes

- In MIL 3.4.0 released in September, 2025, it introduced new commands in the Moxa Computer Interface Manager (MCIM) utility to make it easier to customize digital input (DI) and push-button (RESET button) event scripts. However, we discovered that the legacy configuration methods supported in MIL 3.0 to 3.3—such as setting the push-button to restore a snapshot or trigger a user-defined script—were unintentionally not backward compatible in MIL 3.4.0.
If you have provisioning scripts that rely on "mx-interface-mgmt dio" or "mx-interface-mgmt button" created under MIL 3.0–3.3, please ensure that you use this version of the OS image.
- If you prefer to upgrade MIL offline, you can use the offline upgrade package included in the downloaded .zip file and apply it with the mx-sw-updater utility.



Version: v1.4	Build: 25052908
Release Date: Sep 19, 2025	

Applicable Products

UC-8200 Series

Supported Operating Systems

Moxa Industrial Linux 3 (Debian 11)

New Features

- Supports mDNS for device discovery with the default port 5353 enabled.
 - Moxa Connection Manager (MCM):
 - Adds the "dyn_conf" option to the "moxa-connect-manager" command to modify the configuration cache.
 - Software Wi-Fi AP support enables remote access to devices.
- The software Wi-Fi AP supports up to three clients, operates only on the 2.4 GHz frequency, and is recommended for troubleshooting purposes rather than critical data transmission or essential functions.
- Supports "Multi-WAN", a new interface type to route traffic to the interface from which it originates.

Enhancements

- EN 18031-1 (RED) compliant wireless cybersecurity.

To comply with EN 18031-1 wireless cybersecurity, the standard version of Moxa Industrial Linux (MIL) 3.4 includes the following changes:

 - Adds a PAM login policy
 - The "pam_tally2" mechanism locks the account for 300 seconds after five failed login attempts.
 - Disables SNMPv1 and SNMPv2.
 - Moxa Guardian (MG): Adds a new mode 4 in moxa-guardian.
- Moxa Computer Interface Manager (MCIM):
 - Adds a snapshot script for the push-button.
 - The auto-mount partition feature provides additional log information to verify the success or failure of the mount operation.
 - Supports new DIO commands: add/delete/list/set hook scripts.
 - Supports new button commands: add/delete/list action scripts.
- Moxa Connection Manager (MCM):
 - Adds RSSI and RSRQ signal values.
 - Supports up to two IP target hosts for the ping mechanism.
 - Supports recovery of the cellular module when it unexpectedly stops responding
- Moxa System Decommission (MSM): Enhances the "moxa-system-manager" decommission workflow to improve resilience against interruptions, such as power failures, ensuring reliable system decommissioning.
- All tools: Adds a "-J" command option to support JSON format output for Moxa tools, including MCIM, MCM, MBM, and MSU.
- The Ethernet DHCP client ID, previously fixed to the client's MAC address, can now be configured/modified.
- The username and password fields are auto-populated when the credentials are available in the APN profile data.
- The log-rotate strategy for standard models has been adjusted to apply daily rotation with 14 logs retained in the rsyslog group.

Bugs Fixed

- Configuring eth0 as a Docker interface causes the MCM tool to fail.
- Moxa Bootloader Manager (MBM): The bootloader log is displayed incorrectly in cases where it

wraps (e.g., in a circular buffer).

- A case of the USB ports in the UC-8200 Series failing to detect USB devices.

Changes

- Moxa Computer Interface Manager (MCIM):
 - Deprecates the "user-defined" option for a button. Use the "add_action" command to add an action script for unique names.
 - Deprecates the "DIO reload" command for UC-4400A and UC-8200 Series. The active status is now automatically updated.
- Moxa Connection Manager (MCM):
 - The software Wi-Fi AP and Wi-Fi P2P mode cannot be enabled simultaneously
 - The DHCP server will be enabled by default when the Ethernet interface is configured as a LAN.
- The USB LED on the UC-8200 Series is modified to change from Green to Yellow when the FN button is pressed.
- Disabling "CONFIG_RT_GROUP_SCHED" removes real-time thread restrictions in CGroup v2.

Notes

- The standard models of the UC-1200A, UC-2200A, UC-3400A, UC-4400A, and UC-8200 Series can achieve EN 18031-1 (RED) compliant wireless cybersecurity via two methods:
 - Clean OS installation: The default system is preconfigured to comply with EN 18031-1 (RED) compliant wireless cybersecurity requirements.
 - System upgrade: After upgrading to the latest OS version, execute the mx-guardian red set command to ensure EN 18031-1 (RED) compliant wireless cybersecurity.
- The "SNR metric" has been renamed to "SINR for LTE/NR cellular interfaces" in both the CLI and D-Bus interfaces.
- Known Issues:

Using the command "mx-sw-updater upgrade --local" to upgrade the system may fail if the device does not have Internet access.

The root cause is that the default installation strategy of "moxa-software-updater" (aligned with APT package management tool) also includes "Recommends" (not mandatory for the standard releases) packages, which may need Internet access to install.

Workaround: Before performing the upgrade, run the command "echo 'APT::Install-Recommends \"false\";' | sudo tee /etc/apt/apt.conf.d/99no-recommends" to exclude the "Recommends" packages from the installation process. After the upgrade is complete, run the command "sudo rm -f /etc/apt/apt.conf.d/99no-recommends" to remove this temporary setting.



Version: v1.3	Build: 241220_072353
Release Date: Feb 19, 2025	

Applicable Products

UC-8200 Series

Supported Operating Systems

Moxa Industrial Linux 3 (Debian 11)

New Features

- Supports encryption of external disk partitions such as a USB drive and SD card.
- Supports Telit LE910C4-WWxD module on Asia-Pacific models.
- MCIM Tool:
 - Supports enable/disable of peripheral interfaces (Ethernet, console port, serial port) with Moxa Computer Interface Manager (MCIM).
 - Supports I/O status settings for UC-8200 Series (U-boot version 3.2 or higher) and UC-1200A/2200A Series (U-boot version 1.2 or higher) with in MCIM.
- MCM Tool:
 - Supports AutoAPN with Moxa Connection Manager (MCM) (enabled when the APN field is left blank).
 - Supports automatic time synchronization with an NTP server, GPS location, or cellular base station with MCM.
 - Supports the "WiFi-p2p" interface with MCM.
 - Supports monitoring of cellular and Wi-Fi signals with MCM to enable accurate triggering of failover.
 - Supports lock-down of cellular 3G/4G/5G connections with MCM.
- MSU Tool:
 - Supports MIL online/ offline updates with Moxa Software Updater (MSU).

Enhancements

- Includes the latest security patches.
- MCM Tool:
 - Supports IPv6 address on LAN1 when the Type changes from "managed" to "none" in Moxa Connection Manager (MCM).
 - Supports monitoring gpsd with MCM to ensure GPS port.
 - Supports SIM activation with MCM to ensure higher success with SIM registrations.
- Supports a serial port to connect to UPort "-G2" Series devices.
- Supports alias name "mg" for "mx-guardian" command.
- MSM Tool:
 - Supports compression function with Moxa System Manager (MSM) to reduce backup file size.
- Supports creating snapshots, replicas, and backups in cold mode that ensures data integrity.

Bugs Fixed

- LAN1 sometimes fails to obtain IPv4 and IPv6 addresses when Type is set to "none" in Moxa Connection Manager (MCM).
- Cellular data usage is displayed as zero in MCM.
- Manually (via CLI) turning off power to the cellular module will restart MCM.

Changes

- Disables the Debian "networking" parameter in "moxa-connection-manager.service".
- The "set to default" option will only reset the configuration file and does not restart MCM.

Notes

- For detailed release notes, including a change list for the packages, visit the Moxa Industrial Linux



document center at: <https://docs.moxa.online/mil/>.

Version: v1.2	Build: 240809_102239
Release Date: Sep 06, 2024	

Applicable Products

UC-8210-T-LX-S, UC-8220-T-LX, UC-8220-T-LX-AP-S, UC-8220-T-LX-EU-S, UC-8220-T-LX-US-S

Supported Operating Systems

Moxa Industrial Linux 3 (Debian 11)

New Features

N/A

Enhancements

- Includes an important enhancement to fix the increased computer shutdown time because of the May 10, 2024, update to the cellular modem power sequence in MIL 3.1.1 (MIL 3 image v1.1). The shutdown time has been reduced by 25 seconds.

Bugs Fixed

- The /boot_device/p2 and /var/log failed to unmount properly during device shutdown.
- Security patch for CVE-2024-1086.

Changes

- Updates MIL from version 3.1.1 to 3.1.2.

Notes

- This update includes fixes for security vulnerabilities in the Linux kernel and Debian 11. It is highly recommended that you update your device to maintain its security. A detailed record of changes made to Moxa Industrial Linux, including package added, upgrades, and removals, as well as security patches applied, is available at: <https://docs.moxa.online/mil/>.
- You can also use OTA update from APT software repositories to apply this change. For instructions, please refer to Tech Note: "Keeping IIoT Gateway Software Up-to-date" available at <https://www.moxa.com/en/products/industrial-computing/arm-based-computers/uc-8200-series#resources>. Ensure that the device is rebooted after the update to apply the changes.
- After a successful update, the MIL version should be v3.1.1, and the Image version should be v1.1. You can query the MIL and Image versions using the commands 'mx-ver -M' for MIL and 'mx-ver -v' for Image.
- This update includes Moxa Industrial Linux 3 (Debian 11) and is not compatible with UC-8200 devices currently running Moxa Industrial Linux 1 (Debian 9). Direct upgrades are not possible without Moxa assistance. If you wish to upgrade from Moxa Industrial Linux 1 (Debian 9) to Moxa Industrial Linux 3 (Debian 11), please contact your regional sales representative for assistance.



Version: v1.1	Build: 240202_143550
Release Date: May 10, 2024	

Applicable Products

UC-8200 Series

Supported Operating Systems

Moxa Industrial Linux 3 (Debian 11)

New Features

- Adds WireGuard kernel module.
- Moxa Guardian utility adds the capability to backup and restore current security configurations.
- Adds roaming SIM card support to the Moxa Connection Manager (MCM).
- Adds a CLI command in Moxa Connection Manager (MCM) to toggle GPS functionality on or off, with the default state being on (active).

Enhancements

- Includes the latest security patches.
- Enhances the connection check-alive feature in Moxa Connection Manager (MCM) to include domain server name pinging.
- Adds a check-alive criterion in Moxa Connection Manager (MCM) to confirm IP acquisition by the network interface, eliminating the need to ping the server.
- Adds seamless failover mechanism in Moxa Connection Manager (MCM), minimizing downtime during connection transitions.
- Upgrades Moxa Industrial Linux 3 from version 3.0.0 to 3.1.1.

Bugs Fixed

- An issue in the Moxa System Manager's backup function.

Changes

- Adjusts the power sequence for the Telit LE910C4 modem to address a rare issue where the modem could enter protected mode due to excessively rapid shutdowns. This change will extend the shutdown time for the UC-8200 Series devices with built-in cellular connectivity (UC-8220-T-LX-EU, UC-8220-T-LX-US, UC-8220-T-LX-AP) by 25 seconds. If a shorter shutdown time is critical for your application, you may want to refrain from applying this update. We are collaborating with Telit to develop a faster power sequence that will reduce device shutdown times in the upcoming release.
- Removes the 'add_hook' and 'remove_hook' commands from the Moxa Computer Interface Manager (MCIM) DIO control.
You can now simply put the scripts under '/etc/moxa/MoxaComputerInterfaceManager/dio-scripts/' for Moxa service to automatically handle run the corresponding script when the DIO status changes. The new method is more secure, flexible, and eliminates the need to repeatedly call 'add_hook' for every DIO status change. For details, see "Moxa Industrial Linux 3 (Debian 11) Manual for Arm-based Computers" on UC-8200 Series product page or the 'README' file located in the '/etc/moxa/MoxaComputerInterfaceManager/dio-scripts/' folder.
- Deprecates the digital output (DO) event script function in the Moxa Computer Interface Manager (MCIM).
This function will be officially removed in the next MIL3 release. Because the control of the DO status is managed by user code, it is more practical for actions related to DO status changes to be implemented directly within customer programs rather than through MCIM.



Notes

- This OS image is applicable only to the CTO models of the UC-8200 Series.
- This version includes fixes for security vulnerabilities in the Linux kernel and Debian 11. It is highly recommended that you update your device to maintain its security. A detailed record of changes made to Moxa Industrial Linux, including packages added, upgraded, and removed, and security patches applied, can be found in the Moxa Linux Document Center at: <https://docs.moxa.online/mil/>.
- You can also use OTA updates from our APT software repositories to apply this change. For instructions, please refer to "Tech Note: Keeping IIoT Gateway Software Up-to-date" available at <https://www.moxa.com/en/products/industrial-computing/arm-based-computers/uc-8200-series#resources>.
- Ensure that the device is rebooted after the updates.
- After a successful update, the MIL version should be v3.1.1, and the Image version should be v1.1. You can query the MIL and Image versions using the commands 'mx-ver -M' for MIL and 'mx-ver -v' for the Image.
- This update includes Moxa Industrial Linux 3 (Debian 11) and is not compatible with UC-8200 devices currently running Moxa Industrial Linux 1 (Debian 9). Direct upgrades are not possible without Moxa assistance. If you wish to upgrade from Moxa Industrial Linux 1 (Debian 9) to Moxa Industrial Linux 3 (Debian 11), please contact your regional sales representative for assistance.



Version: v1.0	Build: 221223_154337
Release Date: Mar 06, 2023	

Applicable Products

UC-8200 Series

Supported Operating Systems

Moxa Industrial Linux 3 (Debian 11)

New Features

- First release.

Enhancements

N/A

Bugs Fixed

N/A

Changes

N/A

Notes

- For details of all packages in Moxa Industrial Linux 3 (Debian 11), visit the Moxa Linux document center at: <https://docs.moxa.online/mil/>