

Moxa Industrial Linux

Moxa's Debian-based industrial-grade stable Linux distribution for long-term projects



Features and Benefits

- Debian-based distribution that can use all standard Debian packages
- Developed as per IEC 62443-4-1 and compliant with IEC 62443-4-2 industrial cybersecurity standards (Moxa Industrial Linux 3 Secure)
- Long-term support until 2027 for Moxa Industrial Linux 1 and 2031 for Moxa Industrial Linux 3
- Wireless connection management utility with automatic network keep alive and failover
- Ready-to-use APIs and library to ease access to hardware and I/O interfaces
- Crash-free robust file system
- Over-the-air (OTA) software updates

Introduction

Moxa Industrial Linux (MIL) is a high-performance industrial-grade Linux distribution developed by Moxa to help accelerate your industrial projects. MIL is based on Debian and the standard Linux kernel, which makes it easy to deploy your applications on multiple systems.

To address the long-term system needs of smart cities and industries such as power, water, oil and gas, transportation, and factory automation, every odd-number version (e.g., MIL v1.0, MIL v3.0) of MIL comes with 10-year Linux support that includes security patches and bug fixes, making industrial projects secure and sustainable.

In addition, Moxa is working with industry leaders to create a reliable and secure Linux-based embedded software platform that can be sustained for more than 10 years. Moxa is a member of The Linux Foundation® and is part of its Civil Infrastructure Platform (CIP) project that aims to create an open-source platform for managing and monitoring smart cities, civil infrastructure, and factories, to make them secure, reliable, scalable, and sustainable.

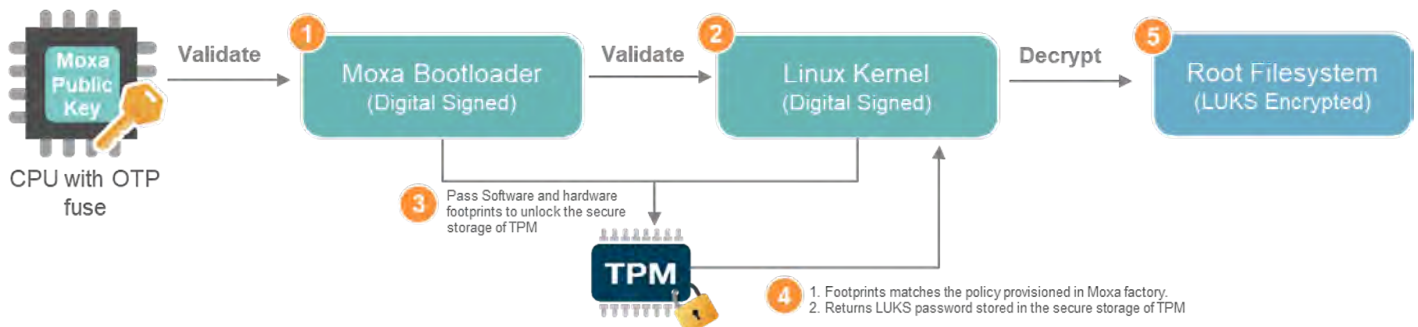
Debian Compatibility

Moxa Industrial Linux is a Debian-based distribution that can use all standard Debian packages for the kernel version. Benefits include:

- Access to the comprehensive repository of packages from Debian
- Field-proven OS stability

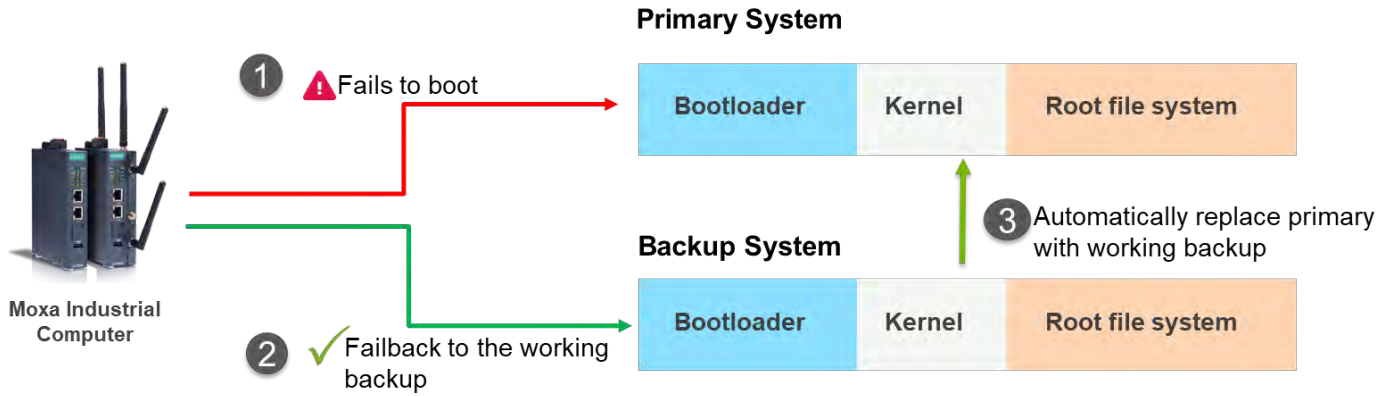
Hardware Root of Trust Secure Boot (MIL2 and later only in secure version of models)

A one-time-programmable (OTP) fuse is used as the hardware Root of Trust to initiate a chain of trust validation sequence during boot up, which ensures the integrity and authenticity of the bootloader and kernel before allowing access to the root filesystem.



Automatic System Failback (MIL2 and later)

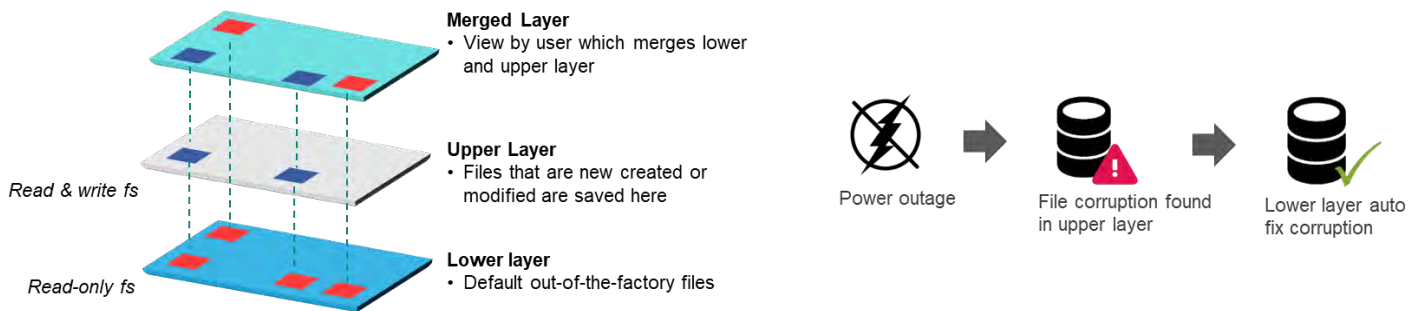
Automatically restores the system to the last known secure working state when the system fails to boot due to a power outage during a critical update or due to an unauthorized change to a critical software that causes Secure Boot to fail.



Robust File System

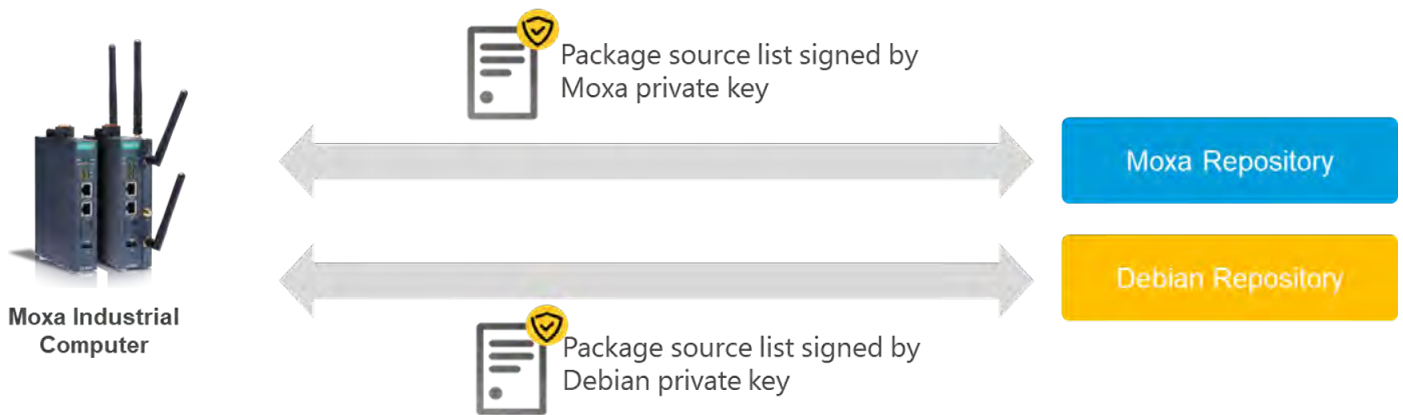
The robust file system integrated into Moxa Industrial Linux provides extra protection during firmware upgrades and downgrades with:

- Guaranteed system operation when there are power losses during firmware upgrades/downgrades
- Fast and secure reset-to-default function built into the system



Over-the-air (OTA) Software Updates

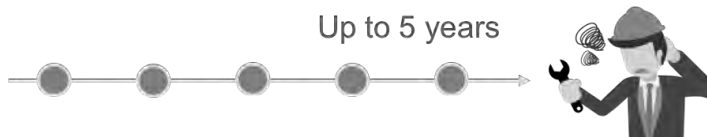
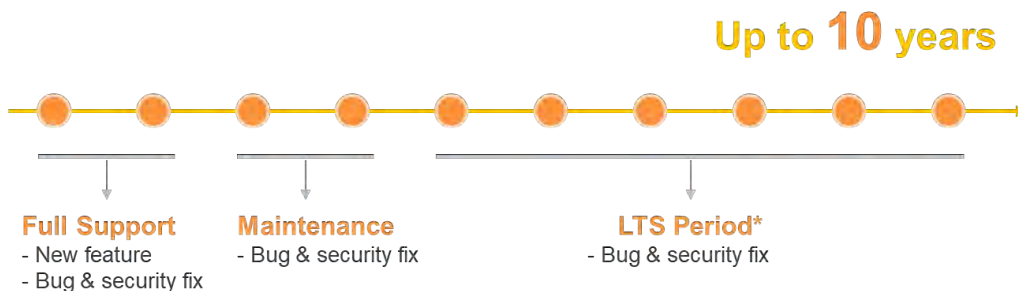
Because gateway computers are usually located at remote sites, it is a challenge to upgrade the system and applications. A suitable way to upgrade the firmware on remote computers is to use wireless technology such as cellular or Wi-Fi. Moxa Industrial Linux supports secure Advanced Packaging Tools (APT) for OTA remote update and uses a GPG Key to validate the package source list obtained from the software repository.



Long-term Support

Moxa Industrial Linux allows users to keep the same kernel version and Debian user space without having to frequently upgrade the entire system. In addition, subscription services for Moxa Industrial Linux, throughout its 10-year life-cycle phase provide security updates and bug fixes that include:

- Critical security patches
- High-priority bug fixes



Specifications

Security Functions

Hardware-based Security	Moxa Industrial Linux: TPM 2.0 Moxa Industrial Linux: Hardware Root of Trust Secure Boot
Intrusion Detection	Moxa Industrial Linux: Host-based Intrusion Detection
Security Tools	Moxa Industrial Linux: Security Diagnostic Tool Moxa Industrial Linux: Security Event Auditing Moxa Industrial Linux: Secure Update
Disk Protection	Moxa Industrial Linux: LUKS Disk Encryption
Recovery	Moxa Industrial Linux: One-step recovery to the last known secure state Moxa Industrial Linux: Dual-system design with automatic failback
Reliability	Moxa Industrial Linux: Network Keep Alive Moxa Industrial Linux: Network Failover and Failback

Supported Devices

Moxa Industrial Linux 1	Moxa Industrial Linux: All Models Revision 1.0.0 and Later: - UC-2100/2100-W Series - UC-3100 Series - UC-5100 Series - UC-8100A-ME-T Series - UC-8200 Series - UC-8540/8580 Series Revision 2.1.0 and Later: - UC-8410A Series: Models UC-8410A (CTO) and UC-8410A-T (CTO) Revision 3.0.0 and later: - UC-8100 Series - UC-8100-ME-T Series
Moxa Industrial Linux 2	Moxa Industrial Linux: - V2406C Series: WL models (Revision 1.0.0 and later)
Moxa Industrial Linux 3	Moxa Industrial Linux: - UC-8200 Series Models (Revision 1.0.0 and later): UC-8220-T-LX (CTO)/ T-LX-S (CTO), UC-8220-T-LX-US-S (CTO)/ EU-S (CTO)/ AP-S (CTO)

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