



# Propelling innovation forward.

Secure & robust over-the-air updates

## Mender

Robust, secure, and customizable over-the-air updates

### Key Benefits

- ✓ **Focus on innovation.** Leverage a purpose-built OTA infrastructure instead of wasting resources reinventing the wheel.
- ✓ **Gain immediate value.** Enjoy our easy, out-of-the-box solution – sign up, install and start updating in minutes.
- ✓ **Stay in control.** Avoid vendor lock-in with an open-source client-server solution.
- ✓ **Ensure compliance.** Facilitate compliance with device and cybersecurity requirements, such as the EU Cyber Resilience Act, IEC 62443, ISO 27001, and more.
- ✓ **Update effortlessly.** Manage and update any gateway, connected sensor, or micro-controller with state scripts and custom modules.
- ✓ **Save network costs.** Reduce data transfer size with delta update support.
- ✓ **Rely on the experts.** Trust the leader in over-the-air updates with millions of devices already managed.

**+41B**

By 2025, there will be **over 41 billion IoT devices** generating more than 79 zettabytes of data.



### THE CHALLENGE

**Digital transformation, continuous innovation, evolving business landscapes – the challenges organizations must overcome are significant on top of generating revenue and ensuring device security.**

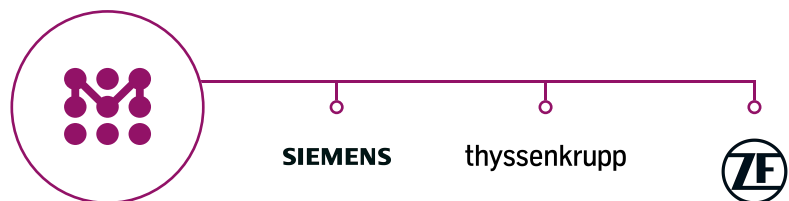
Innovation in a software-centered world requires efficient, robust, and secure over-the-air (OTA) updates. Product updates, security patches, and general management and maintenance require OTA updates to efficiently and effectively deploy updates at scale. Without OTA updates, innovation, and thereby, competitiveness, fail to progress.

**Most enterprises still rely on old, legacy approaches for OTA updates for their connected products.** Focusing resources on building bespoke OTA solutions instead of innovating their core product line is both time- and resource-intensive. Not only is there a tangible cost to homegrown OTA solutions, but there's also an even higher opportunity cost for the business. Similarly, proprietary and vendor-specific OTA solutions inadequately account for the heterogeneous and diverse ecosystem of the businesses today. Vendor lock-in of core infrastructure like OTA updates is a critical concern for companies.

Across industries, device manufacturers need a robust, secure, customizable, and vendor-agnostic OTA solution to innovate, differentiate, and truly compete in today's software-centered marketplace.

## THE SOLUTION

**Mender offers robust, secure, and customizable OTA updates for field devices with its open-source client and server solution.**



Powering OTA updates for field devices for nearly a decade, Mender boasts a proven track record with Fortune 1000 clients, including Siemens, thyssenkrupp, and ZF Group.

With Mender, quickly integrate the market-leading open-source OTA update management solution for connected devices – without the risk of lock-in or instability.

**Deliver secure, robust, and fail-safe remote updates.**

Optimize resource usage and mitigate risks with delta, automated, phased, and dynamic grouping deployments. Ensure your devices are never bricked and inaccessible with a fail-safe design.



**Monitor your fleet in real time.** Identify disruptions with system-wide log monitoring, automated alerts, and email notifications. Manage uptime with real-time visibility of services and applications across your fleet.



**Configure devices and applications with ease.** Define attributes, customize scripts, and track configuration changes. Manage and secure configuration changes with role-based access control, configuration history, and change log audits.



**Troubleshoot instantly, and resolve quickly.** Diagnose and remediate issues immediately with real-time device access, file transfers, and device testing. Ensure security with complete remote terminal session replays, connection logs, and access control.



MENDER FEATURES:

## Enterprise-grade OTA software updates

**Robust A/B Updates.** Eliminate expensive and damaging recalls due to update inconsistency. Instantaneous deployment, automatic rollback upon update failure, and phased, gradual rollouts ensure update success.

**Full On-Premise Support.** Retain complete control and flexibility to migrate as your business evolves. Mender is deployed quickly as a SaaS-hosted service or an on-premise solution.

**Delta, Application, & Configuration Updates.** Improve operations and slash resource requirements. Mender's delta updates and targeted application and configuration updates reduce network traffic and device downtime. Manage updates from the entire connected product to individual sensors and micro-controllers, or an entire fleet (one device to multiple).

**Arbitrary Pre- & Post-Install Actions.** Ensure that safety-critical updates are only installed when appropriate (i.e., maintenance windows) and guarantee successful updates by encoding arbitrary validation conditions in update packages.

**Extensive Logging, Audits & Reporting.** Easily generate reports according to compliance and regulatory requirements with an export of complete product hardware identifiers and software bill-of-materials. Audit key security events like OTA update deployments, including who triggered updates and when.

**Cryptographic Integrity Verification.** Ensure that only authorized, integral binaries are installed on target systems with secure TLS communication between device and server, and cryptographic verification of binary signatures.

**Highest Standards of Secure Software Development.** Enhance security and gain confidence with a trusted, third-party audited solution that ensures no critical vulnerabilities exist. Supporting clients with ongoing cybersecurity lifecycle management processes over the lifetime of every deployment, Mender also offers cybersecurity threat modeling and risk assessments for each OTA integration.

**Regulatory Compliance.** Easily comply with the latest regulations and align to industry standards, such as the EU Cyber Resilience Act, IEC 62443, ISO 27001, and more.



Reduce network traffic by **up to 90%** with Mender delta updates.



Mender offers robust, secure, and customizable over-the-air (OTA) software updates for smart devices. Powering OTA software updates for more than a million devices worldwide over nearly a decade, Mender boasts a proven track record with Fortune 1000 clients, including Siemens, thyssenkrupp, and ZF Group.

Learn more about OTA software update management.

Mender is developed and maintained by Northern.tech. Founded in 2008, Northern.tech is the leader in device lifecycle management with a mission to secure the world's connected devices.



**Learn more** about Mender for over-the-air update management at scale



**Learn more** about Northern.tech for your device security needs