

# Solution overview

The proliferation of internet connected embedded devices across a variety of markets has surfaced one of the biggest industry challenges in developing competitive products, which is the ability to efficiently deliver remote software updates at scale. Mender addresses these challenges with an end-to-end over-the-air (OTA) software update manager whose prime directive is security and robustness of the update mechanism. Mender provides a free open source version with a set of core features and extends this capability to commercial plans to address scalability, risk management and security issues that are vastly apparent in enterprises small and big. Mender ensures the different needs of customers are fully met from product prototyping to production and post-production.

## Industry Challenges with OTA software updates

## Mender's approach

## Business value

High degree of fragmentation in device HW/SW.

Support for large and varied number of binary and custom hardware and operating systems.

Provides flexibility to product planning from prototyping to production with no lock in to any specific platform.

Development, integration, and maintenance of an end-to-end solution.

Client-server architecture with built in security and robustness.

Reduces total cost of ownership in product lifecycle.

Varying software update requirements in the product life cycle.

Application and system updates with capability to customize with Update Modules and state scripts.

Enables faster time to monetization with more frequent features and services updates.

Ability to automate and manage deployments across a large global fleet of connected devices.

Features and support level for any scale fleet management from small to large enterprises.

Provides high levels of risk management with significant time and cost savings.

Integration with existing infrastructure without commitment to a specific platform.

Open source with on-premise or hosted server setups.

No vendor lock in with flexibility over infrastructure setup.

## Customers and partners

Mender is trusted by and has relationships with some of the world's most respected brands. Mender has partnerships with Google Cloud and Azure IoT To make over-the-air (OTA) software updates easier for anyone using the cloud platform by enabling a shared device registration, identity and secret key credentials. Mender extends its partnerships with major semiconductor companies such as NXP, and hardware vendors such as Toradex to provide their customers with an out-of-the-box OTA solution in their products. Mender's customers include Lyft, Vaillant Heating Systems, Siemens Rail, Schindler Digital Group, Panasonic, Airbus and many more all securely managing and deploying software updates remotely anywhere, anytime.

## Consulting services and support

Mender's consulting services and technical support has deep expertise for all sized projects, specializing in the rapid implementation of OTA update management. Mender also provides consulting for more generic embedded devices, including system design architecture and recommendations. Contact us today to ensure your project's success.

## Mender add-ons: Troubleshoot, Configure, and Monitor

Mender offers optional add-on packages, containing a set of features, for solving device management use cases. These add-on packages can be enabled on your commercial Mender subscription (both hosted and on-premise) for an additional subscription fee. Some of the add-on features are also available as open source.

TROUBLESHOOT add-on	Open Source	Basic	Professional	Enterprise
<b>Remote terminal</b> Secure access to a device to quickly diagnose and fix issues	✓	✓	✓	✓
<b>File transfer</b> Copy files to/from device to do deep analysis and quick updates	✓	✓	✓	✓
<b>Port forward</b> Forward a port to/via the device to test and connect to services	✓	✓	✓	✓
<b>Remote terminal session log</b> Replay the complete terminal session				✓
<b>Role-based access control</b> Limit which users can connect with given groups of devices				✓
<b>Audit log</b> See who connected to the devices and when				✓

CONFIGURE add-on	Open Source	Basic	Professional	Enterprise
<b>Configuration UI</b> Define a set of key-value attributes to configure a device to your needs	✓	✓	✓	✓
<b>Reporting</b> Track applied configuration as reported by device	✓	✓	✓	✓
<b>Scripting</b> Define exactly how any given configuration is applied to a device	✓	✓	✓	✓
<b>Role-based access control</b> Limit which users can configure devices				✓
<b>Audit log</b> See history of configuration settings applied on each device and by whom				✓

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Monitor add-on	Open Source	Basic	Professional	Enterprise
<b>Service and application monitoring (systemd)</b> Get instant visibility into potential problems with your device fleet when key services are not running			✓	✓
<b>Log monitoring</b> Detect problematic patterns in system or application logs, such as indications of restart-loops or disconnection of peripherals.			✓	✓
<b>Log collection on Alert</b> See relevant log lines triggering Alert			✓	✓
<b>D-Bus signal monitoring</b> Detect issues emitted by applications sending D-Bus signals			✓	✓
<b>Edge processing of Alerts</b> Save bandwidth costs and perform instant local actions			✓	✓
<b>Email Alert notifications</b> Easily notify your team about potential problems with your device fleet			✓	✓

## Mender Hub Community

Mender Hub is an online open source community dedicated to enabling OTA software updates on any hardware platform and operating system with a fast-growing number of boards and operating systems. There are a large number of users contributing to the rapid adoption of over-the-air software updates across new hardware and software revisions and internet connected device types.

### Compare plans

Open Source	Basic***	Professional***	Enterprise***
<b>PRICE</b>			
Free	\$29 /month*	\$249 /month**	Custom
<b>KEY DIFFERENTIATORS</b>			
Robust, secure, end-to-end, system & application updates.	Open source with secure server we host for you.	Advanced features with secure server we host for you.	Hosted or self-hosted, enterprise features, SLA support.
<b>BEST FOR</b>			
Small projects.	Rapid prototyping and testing.	Scale-as-you-go Production.	Production with enterprise grade needs.
<b>KEY FEATURES</b>			
<ul style="list-style-type: none"><li>- Full image atomic &amp; failsafe</li><li>- Application &amp; system updates</li><li>- Signing and verification of image artifacts</li><li>- Secure TLS server/client communication</li></ul>	<ul style="list-style-type: none"><li>- Full image atomic &amp; failsafe</li><li>- Application &amp; system updates</li><li>- Signing and verification of image artifacts</li><li>- Secure TLS server/client communication</li></ul>	<ul style="list-style-type: none"><li>- Robust delta updates</li><li>- Scheduling deployments</li><li>- Two factor authentication</li><li>- Device filtering</li></ul>	<ul style="list-style-type: none"><li>- Automatic delta updates</li><li>- Auto retrieval of failed updates</li><li>- Phased rollout</li><li>- Multi-tenancy</li></ul>
<b>WHY</b>			
Do it yourself.	Low up-front time-spend and cost.	Spend less time to manage devices and deployments + support.	Infrastructure options, expert support, custom volume pricing .

\*For first 50 devices with support for larger device fleets

\*\*For first 250 devices with support for larger device fleets

\*\*\* Visit [Mender.io/plans/pricing](https://mender.io/plans/pricing) to learn more about add-on pricing and contact us



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#### Learn more

Website: <https://mender.io/>  
Get started on Mender: <https://docs.mender.io/getting-started>  
Join the Mender Hub community: <https://hub.mender.io>  
Mender on Github: <https://github.com/mendersoftware/>