

Project Description

A ready-to-deploy secure FOTA (Flash Over-The-Air) framework harmoniously integrates both backend distributed systems and the bootloader. It's designed for compatibility across a range of architectures and boards, making it ideal for embedded and IoT device systems.

The framework adheres to industry standards in bootloader and software update security, drawing on **u-boot** (Universal Boot Loader for Embedded boards supporting various processors like PowerPC, ARM, MIPS), **uptane** (a Secure Software Update Framework designed for the automotive sector), and **The Update Framework** (a system for securing software updates).

Within this framework, u-boot is extended to encompass OTA (Over-The-Air) update capabilities with a strong emphasis on security, addressing potential threats. It seamlessly integrates with the uptane secure distributed system structure, guaranteeing secure bootloader updates and safeguarding against tampering and eavesdropping.

Moreover, the framework caters to scenarios where the OEM (Original Equipment Manufacturer) manages the devices and ensures compliance with GDPR privacy regulations, which require user acceptance of incoming updates. This includes both OEM and end-user functionalities, facilitated through a web interface that monitors online device versions, allows bulk or individual firmware updates, and tracks user acceptance of updates.

References

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