

TrustnPlay for Zephyr OS

A Secure RTOS for your embedded device

In Brief

What could be worse than having your innovation stolen or seeing your product used to attack your customer's network ?

However, securing an embedded device can be a challenge due to constrained hardware & software, limited knowledges in cybersecurity technologies and a fast-changing market shaped by new regulations and customer expectations.

TrustnPlay for Zephyr OS is a hardened version of the well-known open source RTOS. complete, portable & easy to use security framework designed to protect your MCU based products and fulfill requirements of new cybersecurity oriented regulations like the radio equipment directive 2014/53/EU or the

Complete

- Secure Bootloader with Secure Element support
- Secure communications & FOTA with SE support
- Secure Key & Data Storage with SE support

Portable

- Compatible with all MCUs supported by Zephyr OS
- Support both ARM and RISC architectures
- Implements the Standardized PSA Interfaces

Simple

- Secure by Default
- Comes with Provisioning Tools
- No Proprietary Toolchain Required

Applications



INDUSTRIAL
INTERNET
OF THINGS



Security,
Defense &
Space



Key features

Secure Bootloader

- Based on MCUboot
- Low footprint (< 64 KB)
- FW verification using ECDSA P-256/384 or RSA 3072
- FW encryption using AES128/256
- Anti-rollback
- Powerloss resistant update
- Support FW update from an external flash
- Relies on PSA Crypto API

Secure Comms. & FOTA

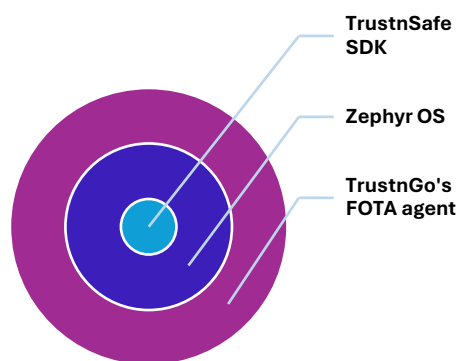
- Based on MbedTLS with support of mTLS 1.2.
- Support of an external Secure Element for crypto. computations.
- Secure key storage based on internal flash or an external SE.
- FOTA agent for securing update through the MQTT protocol.

Supporting modules & tools

- Secure Storage
 - *ARM PSA ITS API*
- Secure Attestation
 - *ARM PSA Attestation API*
- Secure Update
 - *ARM PSA FWU API*
- Toolchain
 - *Image signing tool*
 - *Provisioning tool*
 - *PKI tool*

Architecture

TrustnPlay for Zephyr OS is a version of Zephyr OS that natively embeds the Trustngo's **TrustnSafe SDK**. This SDK allows you to secure your device beyond what is achievable with vanilla Zephyr OS. In addition, **TrustnPlay for Zephyr OS** comes with provisioning tools and a FOTA agent that allow you to securely and safely download updates using the MQTT protocol.



A Turn-key Security Platform

TrustnPlay for Zephyr OS includes all the software and guidance needed to secure your connected device and meet most of the requirements of the EN 18031 harmonized standard. The modularity of the solution allows you to secure your device whatever the network interface or the communication protocol you are using.

Evaluation Kit, Training & Consulting

TrustnGo offers an evaluation kit for **TrustnPlay for Zephyr OS**. This evaluation kit includes the full software with a pre-programmed Nucleo-F439ZI board from ST Microelectronics.

