Security and Network Protocols

Overview

Our system consists of the Hype Collection, which includes sensors and a gateway, and the Flow platform, where the collected data is processed and made available for analysis.

Because this system handles potentially sensitive information, every part of the architecture has been designed with security and data protection as top priorities. We minimize external exposure, apply strong encryption at every stage, and never share data with third parties without the explicit consent of the data owner.

Communication Security

Sensor-to-gateway communication runs on OpenThread with end-to-end AES-128 encryption. OpenThread is an open, standardized protocol widely used in IoT and industry, ensuring secure and reliable device networking.

AES-128 (Advanced Encryption Standard, 128-bit) is internationally recognized and trusted by governments, banks, and critical industries. Its key length makes brute-force attacks practically impossible, keeping sensor data confidential and protected from tampering during transmission.

Gateways connect to our servers via the MQTT protocol secured with TLS encryption. TLS (Transport Layer Security) is the standard for online banking and e-commerce. It ensures confidentiality, integrity, and authentication, so communication cannot be intercepted, altered, or impersonated. Combined with MQTT, TLS guarantees secure gateway-to-server communication at the highest industry level.

Data Hosting and Storage

All data is stored exclusively within the European Union, on secure servers located in Ireland. Access to the database is restricted solely to our system administrator. No external parties have access to its contents. The database is dedicated exclusively to our service and operated under strict EU data protection regulations (GDPR). We maintain full control of all data at all times.

Data Sharing & Consent

We do not share, sell, or transmit data to third parties. Any data sharing beyond the operation of our system requires explicit prior consent from the data owner.

Compliance & Trust

Our infrastructure and processes are fully aligned with the EU General Data Protection Regulation (GDPR).

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