

Enabling Near-Real-Time IoT Insights for Adra using Azure SQL



Butterfly Data upgraded AWS to Azure, enabling near-time sensor data via TTN & SQL, with scalable, user-friendly insights for Adra Housing.

Challenge

Adra Housing, the largest housing association in North Wales, is committed to achieving low-carbon, net-zero housing. To support this ambition, Adra piloted IoT sensors in test homes to track temperature, humidity, illumination, CO₂ levels, movement, and door status.

The existing setup, built on AWS and InfluxDB, was increasingly difficult to scale and no longer aligned with the organisation's Microsoft-led infrastructure strategy.

Adra needed a new system hosted on Azure that could securely integrate with The Things Network (TTN), deliver near-real-time data streams, and allow future expansion to additional sensor types.

Solution

Butterfly Data designed and deployed an end-to-end IoT data integration pipeline within Adra's Azure environment.

The new system included:

- A secure SQL database for centralised storage and management of incoming data
- Integration with The Things Network to capture and decode IoT sensor feeds, supplemented with metadata for richer context
- Encrypted streaming into Azure IoT Hub, supported by API calls to enhance usability
- Near-real-time data transfer, making sensor readings accessible almost instantly
- Pre-built data views (such as average readings, last uploads, and device location) to simplify dashboard development
- A scalable architecture designed for future growth, enabling Adra to integrate new sensor types with ease

Comprehensive documentation and knowledge transfer ensured that Adra's team could operate, maintain, and expand the platform independently.

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Butterfly Data successfully delivered our project to integrate The Things Network (TTN) with our Azure infrastructure, ensuring seamless real-time data transfer and secure storage to a SQL back end. They met all our technical and security requirements, followed best development practices, and provided comprehensive documentation. Their professionalism and expertise made the process smooth, and we are very pleased with the outcome.

Richard Nightingale,
Delivery Lead at Adra Housing

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Impact

The project was delivered on time and without disruption, giving Adra a robust, scalable IoT platform aligned with its Azure infrastructure strategy. The move to near-real-time data access represents a step change from the legacy system, enabling proactive rather than retrospective monitoring of environmental conditions.

By enriching and structuring the data, Butterfly Data has reduced the manual processing burden and made insights more accessible to both technical and non-technical users. Adra can now identify issues earlier, such as variations in air quality or temperature, helping the organisation improve tenant wellbeing while advancing its net-zero housing goals.

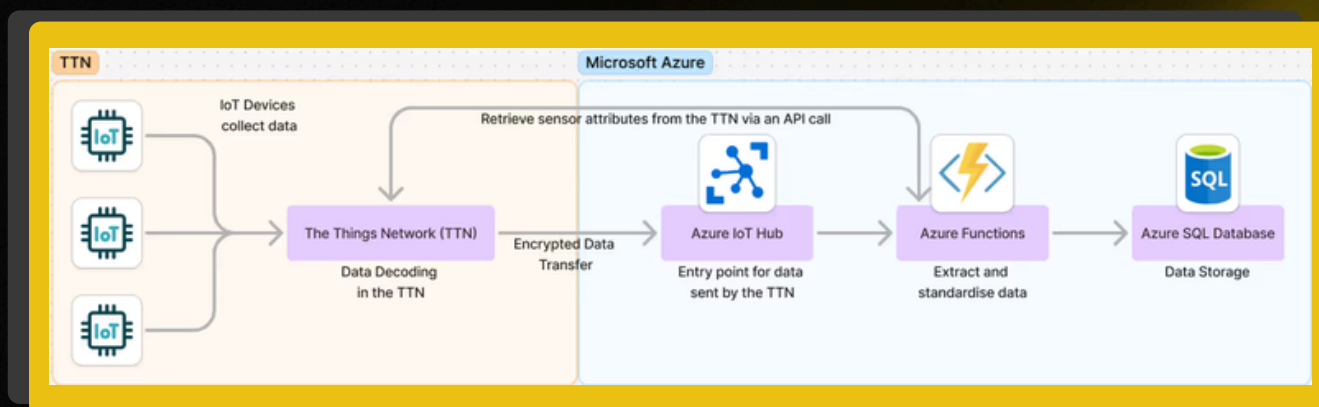


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