



GadgEon
Engineering Smartness



Smart Water Meter

Company needed to build complete solution for the homeowner to control the water inlet, leak detection and remote valve control

Project Period : 6 Months

Team Size : 10 members

Protocols Used: Thread, MQTT, 6LowPan

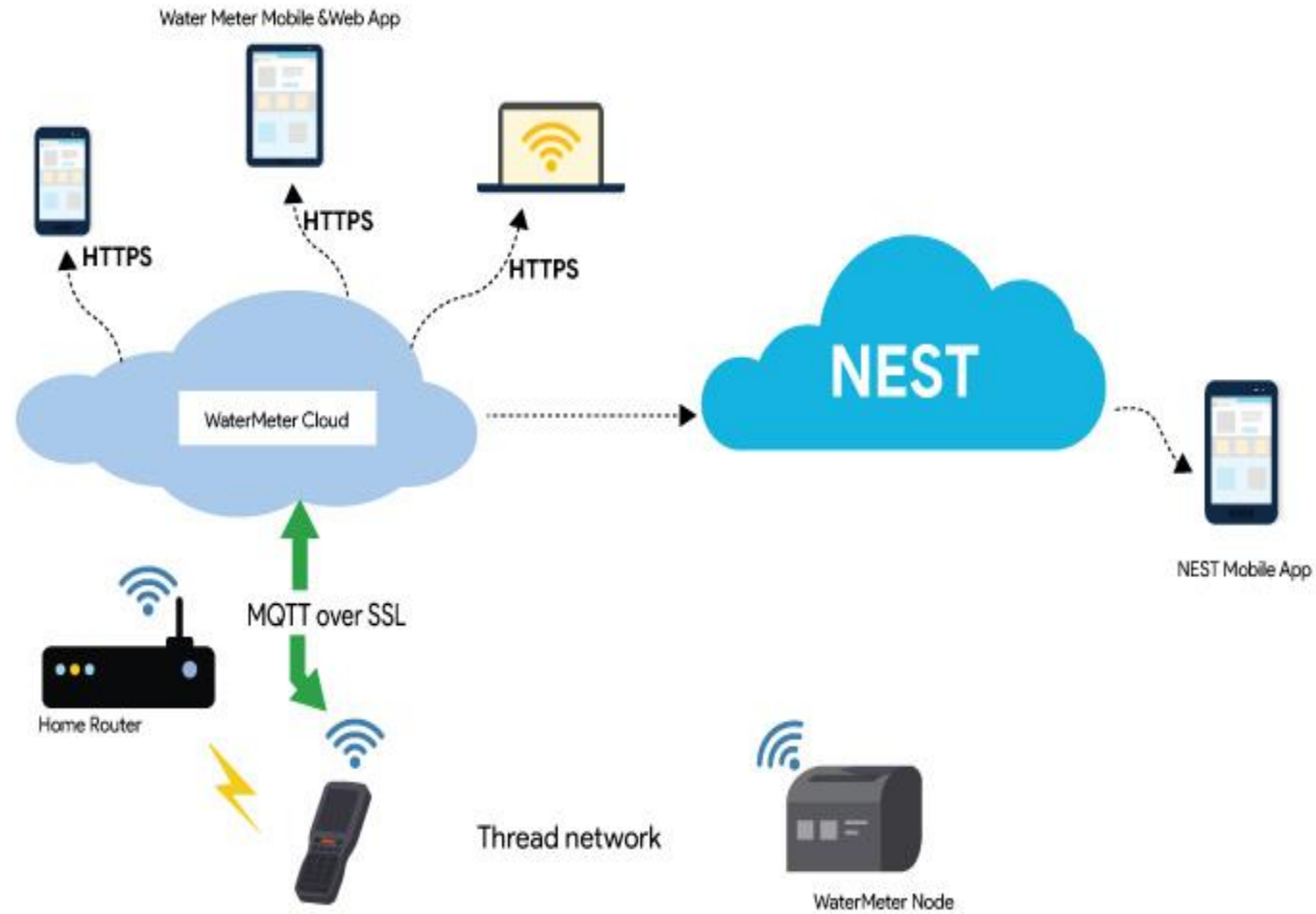
Challenge

- The water meter provides monitoring of the primary inlet
- Interoperate with thread devices and Nest ecosystem

Outcome

- Used Off the shelf components to realize the Gateway – Link7688
- Silabs MCU EM358x used for end node realization
- Cloud and Mobile App implementation for the watermeter solution

Watermeter – Data Flow Diagram



WHAT DID GADGEON DO?	PLATFORMS/ TECHNOLOGIES USED
1) Architecture for complete system including ZigBee based end node, ZigBee Hub, Gateway, Cloud and Mobile App	Requirements Gathering & Analysis, Uses cases, Architecture development, identification of functional components.
2) Hardware design, prototyping, boardbring up for ZigBee based end node and Hub	Cadence allegro, optimized for battery powered operation,
3) Linux Gateway	Off-the-shelf Hardware (beaglebone Black) was used with the Linux application(cpp), Silicon labs radio chip for Thread protocol, MQTT to connect to the server.
4) Cloud server	Express framework based node.js REST API server, AWS RDS database, MongoDB and AWS S3 for storage, sms notifications using Twilio server, push notifications via Google Cloud Messaging and Apple Push Notification Service, eMail using SMTP server. AWS platform for hosting the cloud server: Mosquito MQTT broker
5) Mobile App design and development for controlling and managing the watermeter	MVC architecture, encrypted databases, realtime notifications using MQTT & GCM, REST API based alert generation, Followed the recommended design patterns from Apple and Google.





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