



IoT Week Bilbao 2018

4-7 JUNE 2018, BILBAO (SPAIN)
EUSKALDUNA CONFERENCE CENTRE

IOT WEEK 2018 OPENING PLENARY SESSION

Resource-constrained devices in the Web of Things

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BILBAO, JUNE THE 6TH 2018

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IoT•Forum



Interoperability in IoT

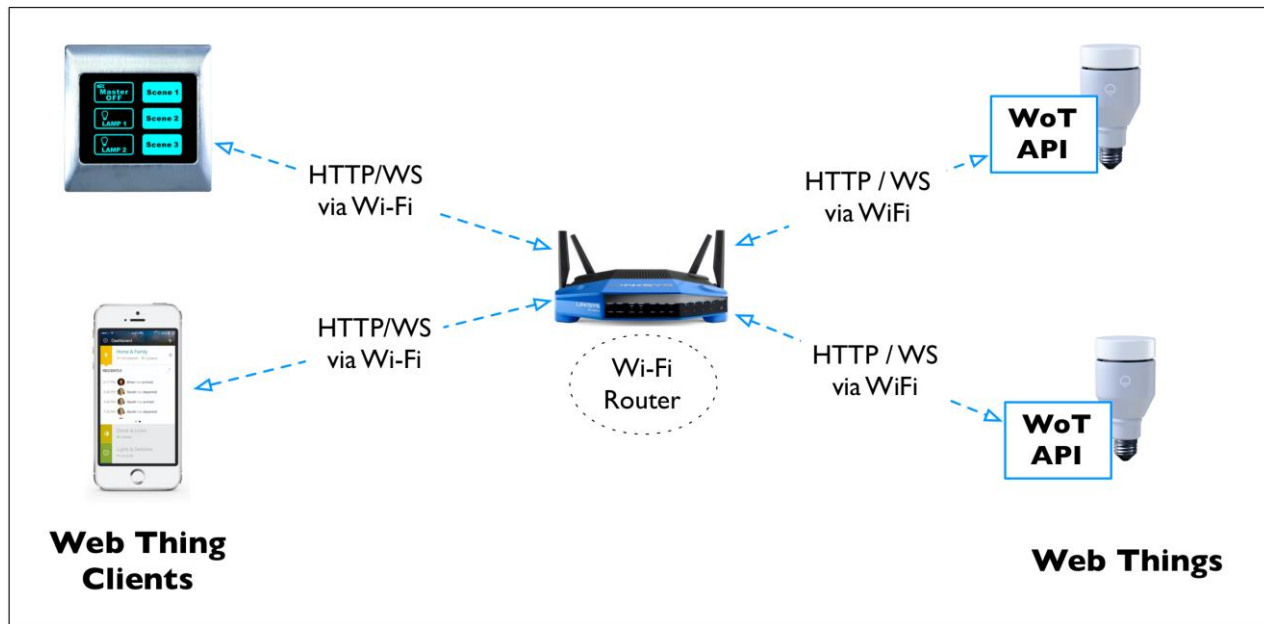
- There is a general **interoperability issue** between IoT technologies
- interoperability clashes turn IoT networks into isolated networks → **fragmented IoT**
- the connection and integration of services, interfaces and data from several Things is very **costly and complex**

Web of Things

- Integration of Internet mature technologies on the Things to **remove the interoperability gap**
 - **(re-)use and leverage** already available Web protocols and standards and apply them on top of IoT
 - discovery, identification, orchestration, management, composition, extensions
- ... direct integration is not always possible due to the **capability and resource limitations** of many typical IoT devices

Integration Patterns

Direct Connectivity

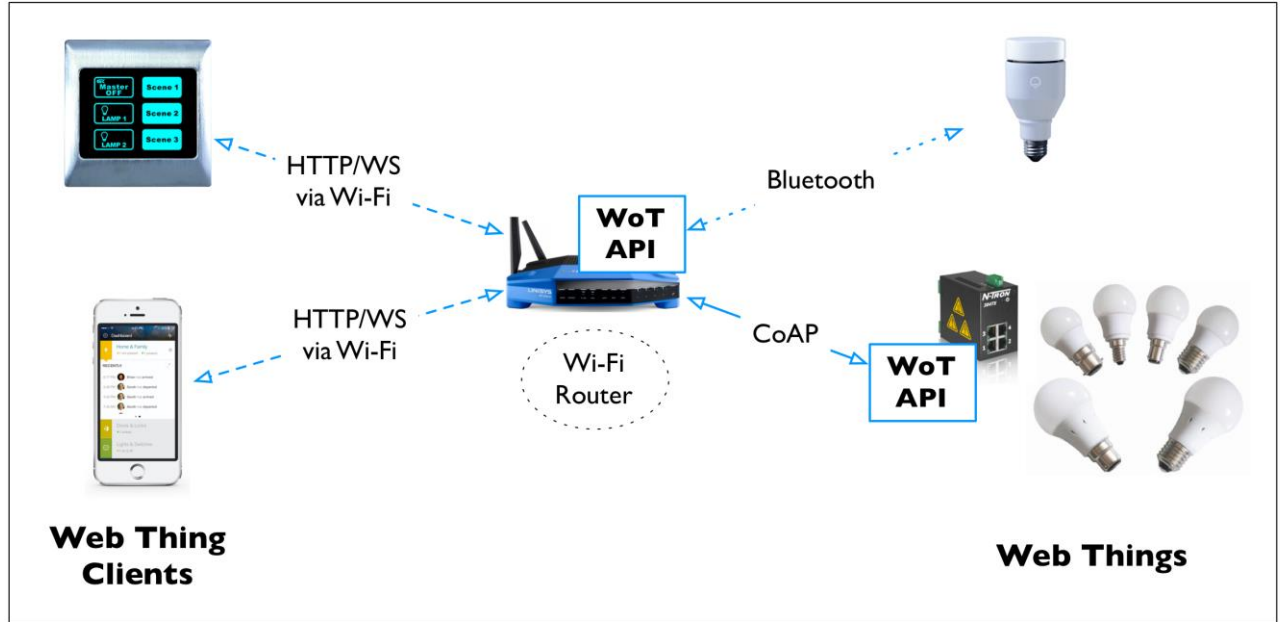


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Integration Patterns

Gateway-Based Connectivity

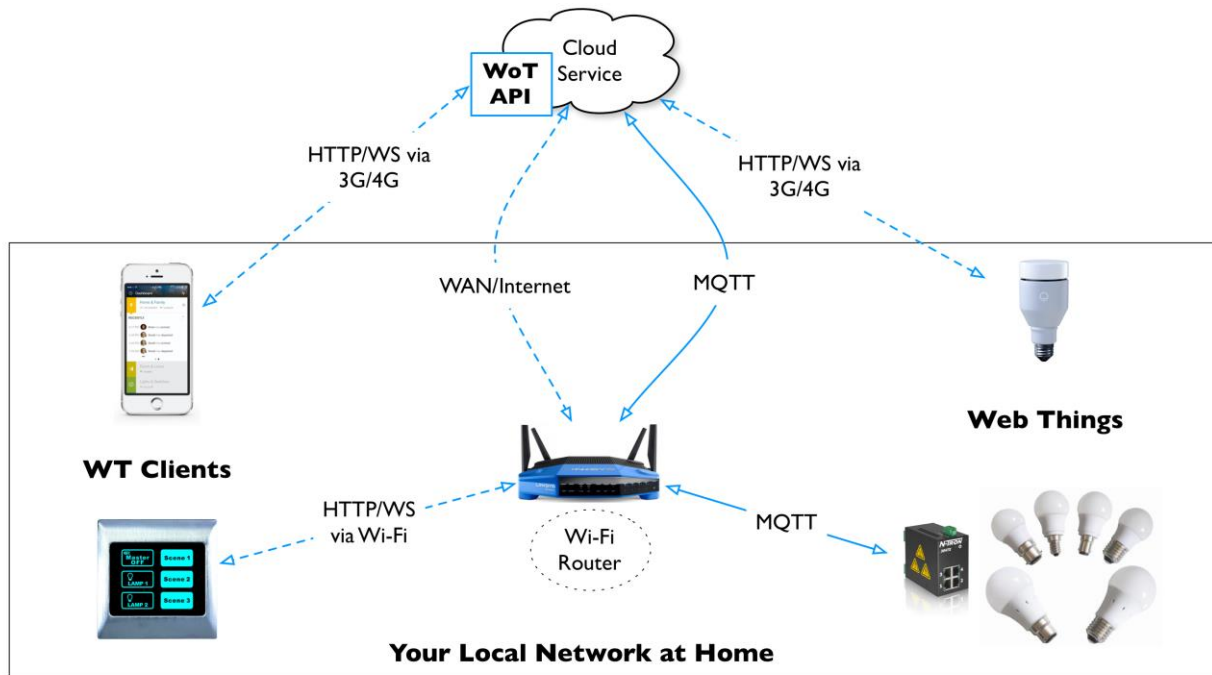


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Integration Patterns

Cloud-Based Connectivity

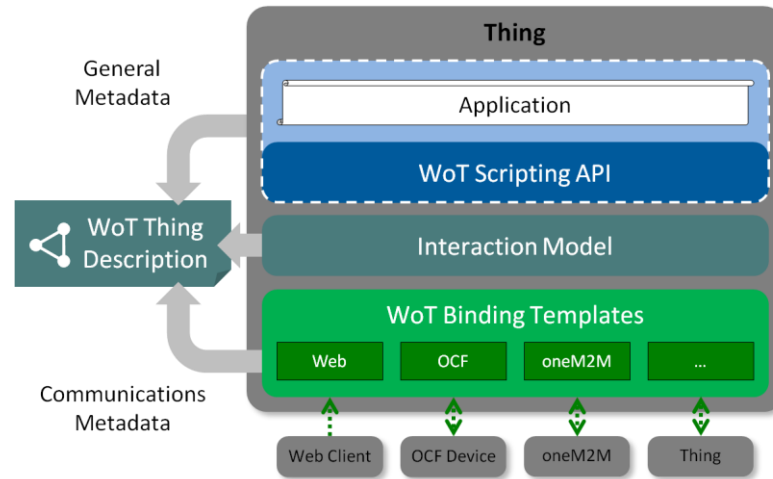


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WoT Architecture

Thing Description → where the interoperability magic happens



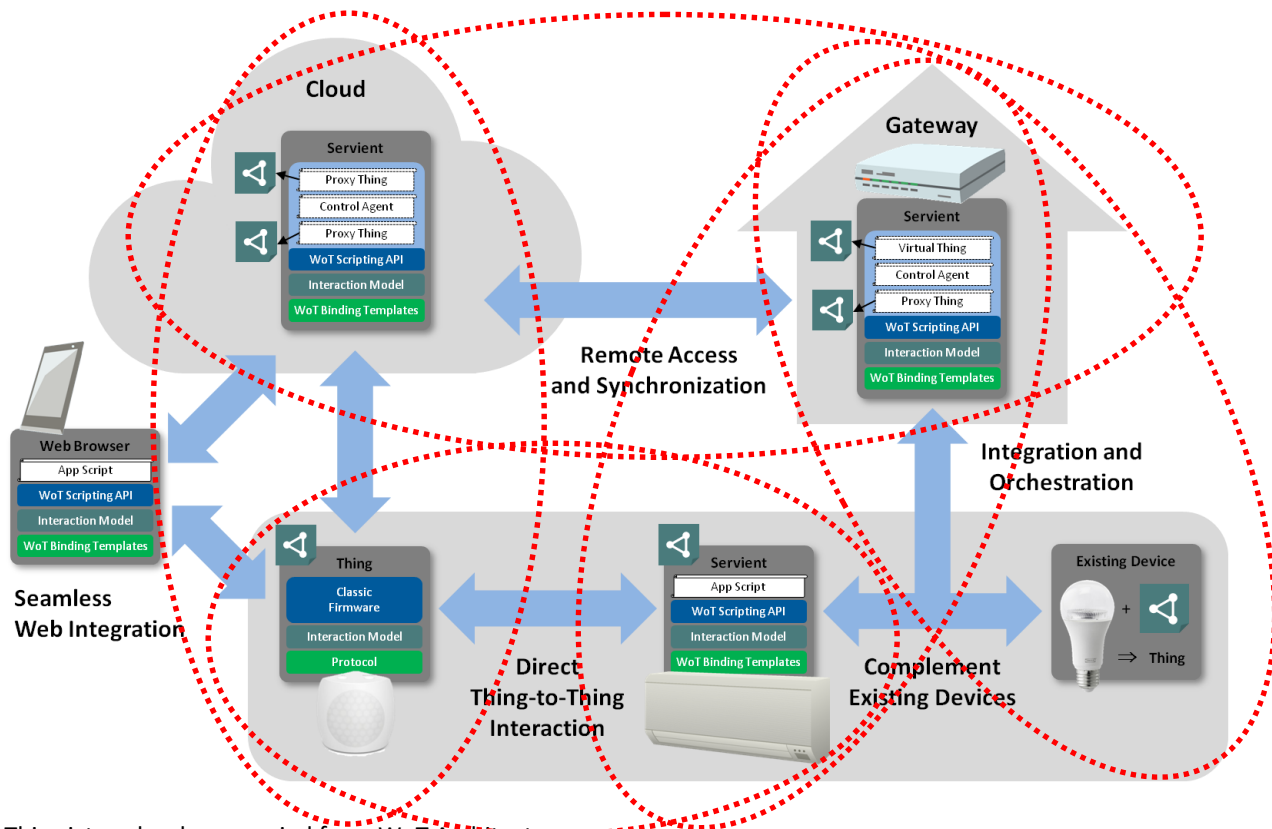
Metadata about...

- interaction model
- data model
- communication
- security

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WoT Architecture

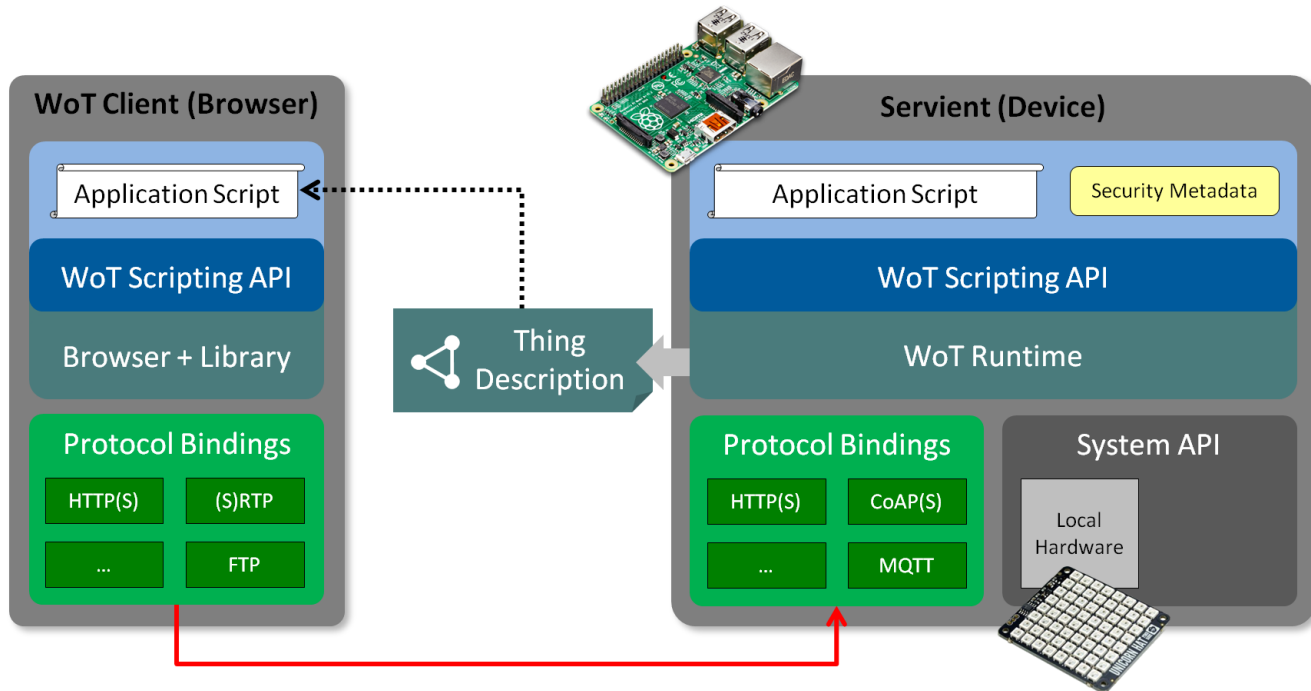


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WoT Architecture

The device is a Web Thing ... not always possible

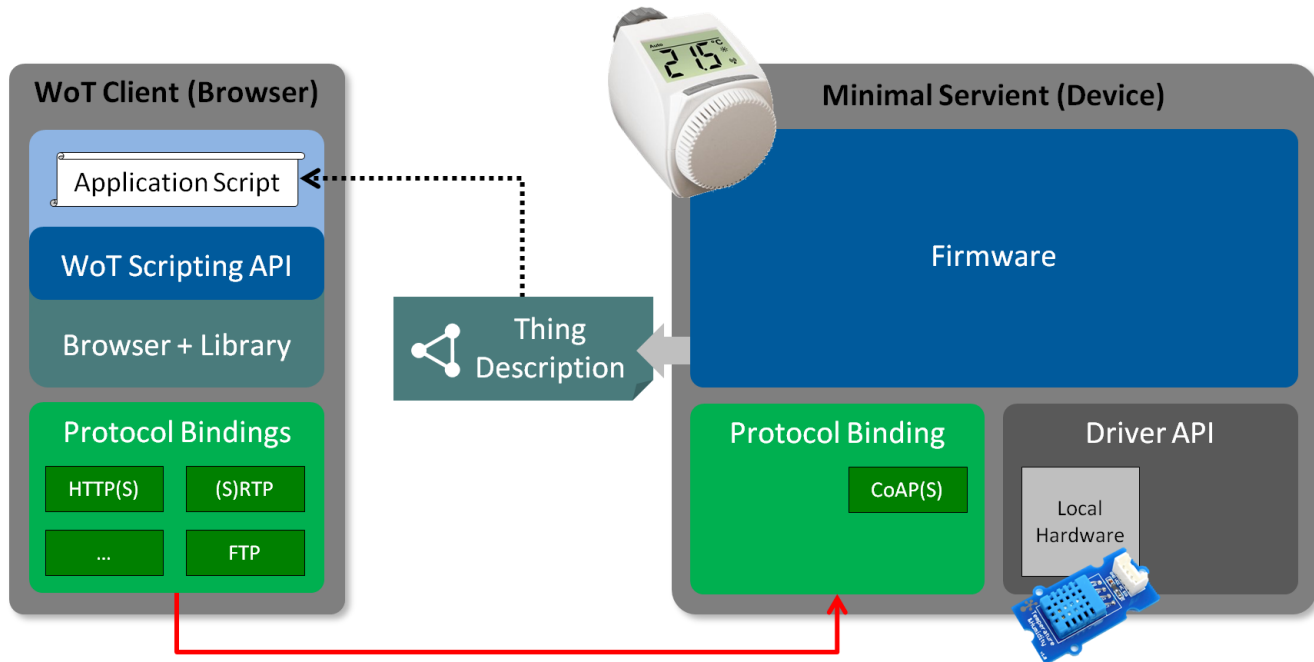


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WoT Architecture

The device is a ~~Web~~ Thing

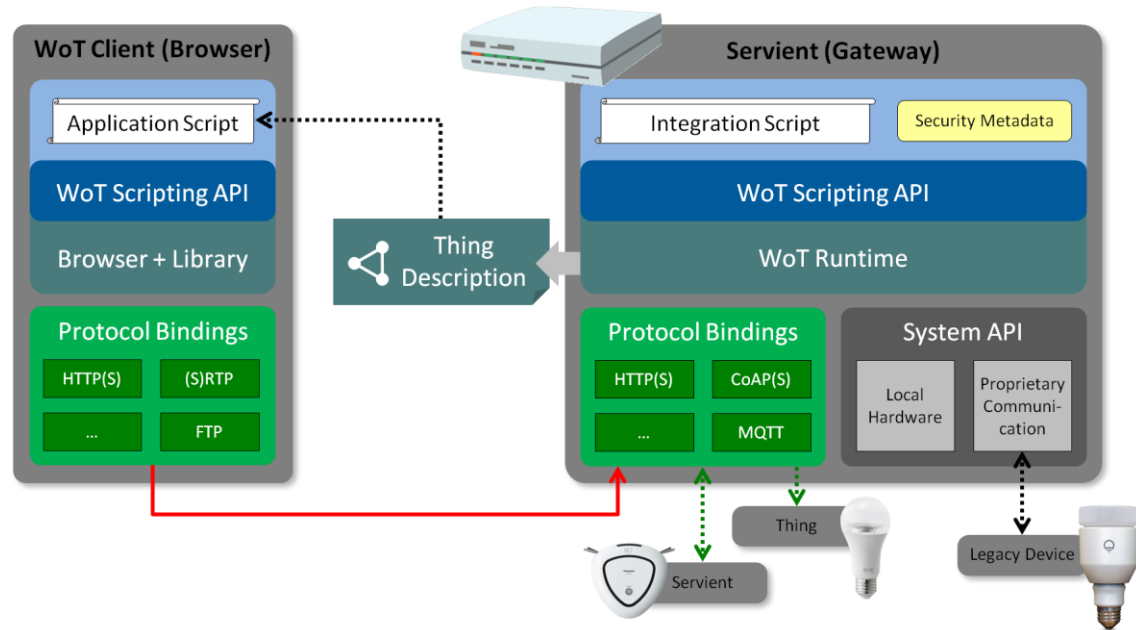


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WoT Architecture

Legacy Systems/Resource-constrained Devices → Gateway



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Conclusions

- **Flexible architecture** to accommodate use cases for resource-constrained devices
- **Application-independent** standard description and interoperability mechanisms
 - separation between description and implementation
 - update the Thing(s) Description not the client/GW firmware



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