

ACE Use Cases & Design Patterns

draft-seitz-ace-usecases-01

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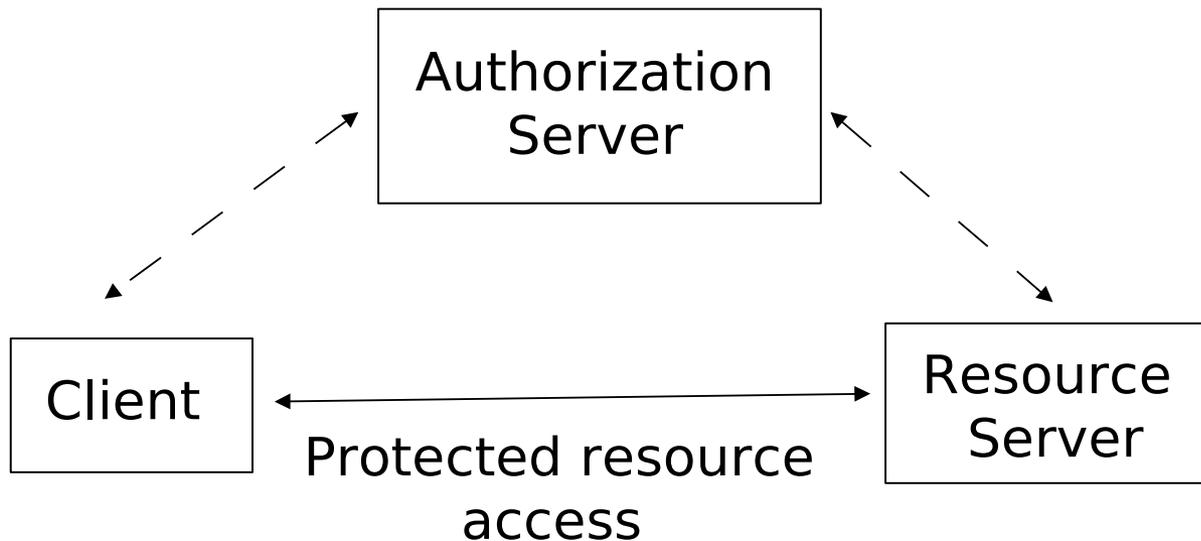
Overview

- IoT use cases
 - Container Monitoring
 - Home Automation
 - Building Automation
 - Smart Metering

Feel free to volunteer your use case!
(e.g. Industrial Control Systems, Automotive)

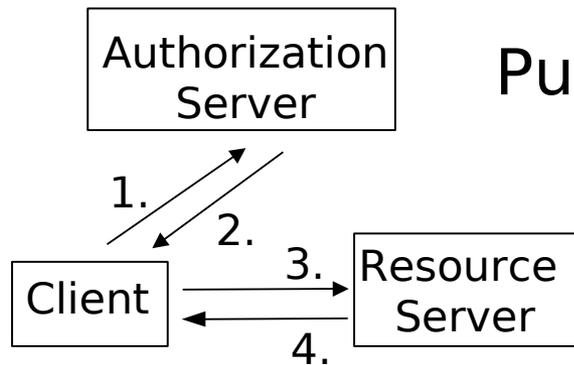
Question

- Is the three-party architecture sufficient to cover these use cases?
- Are all parts of that architecture necessary for these use cases ?



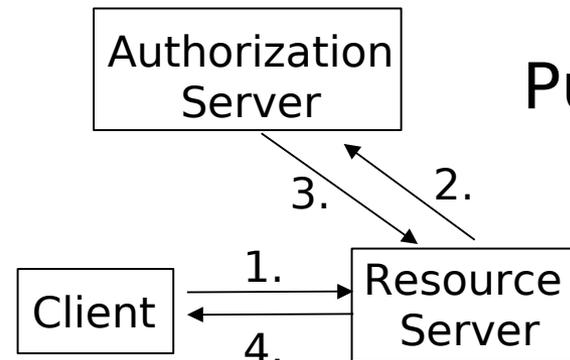
Question ctd

- Which message sequence and design pattern do we want to focus on (cf. RFC 2904)



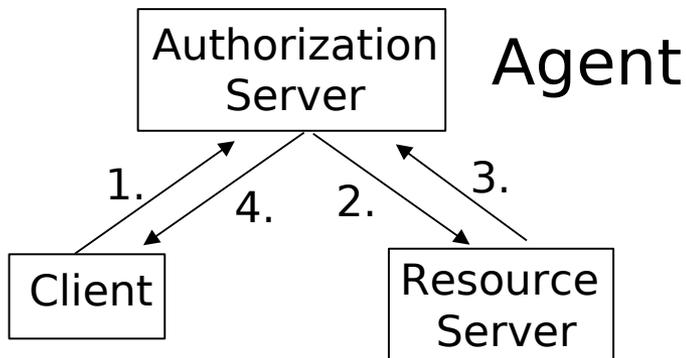
Push

e.g. OAuth, Kerberos

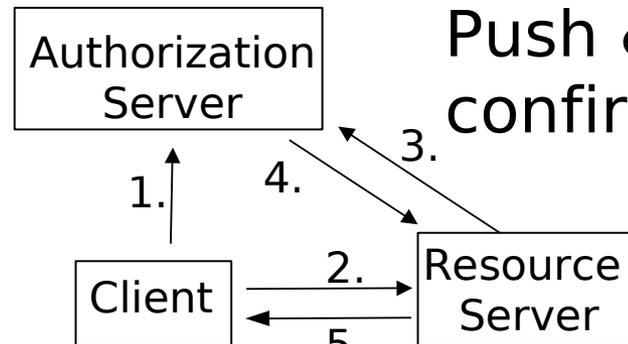


Pull

e.g. EAP, ABFAB



Agent



Push & confirm

e.g. OAuth token introspection

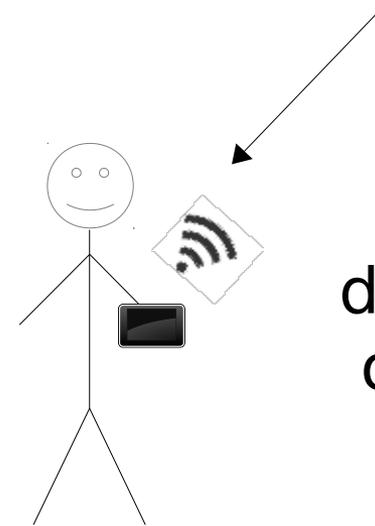
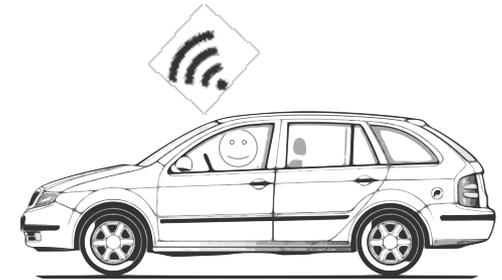
Container Monitoring



Container Monitoring

- (Presented at IETF 89)
- Containers equipped with sensors and actuators
 - Monitor and control environment
 - Monitor position
 - Log and report condition of cargo
- Stakeholders with different access rights
 - Owner
 - Transporters
 - Storage
- RS needs to do access control while offline
 - Needs push message sequence

Home Automation

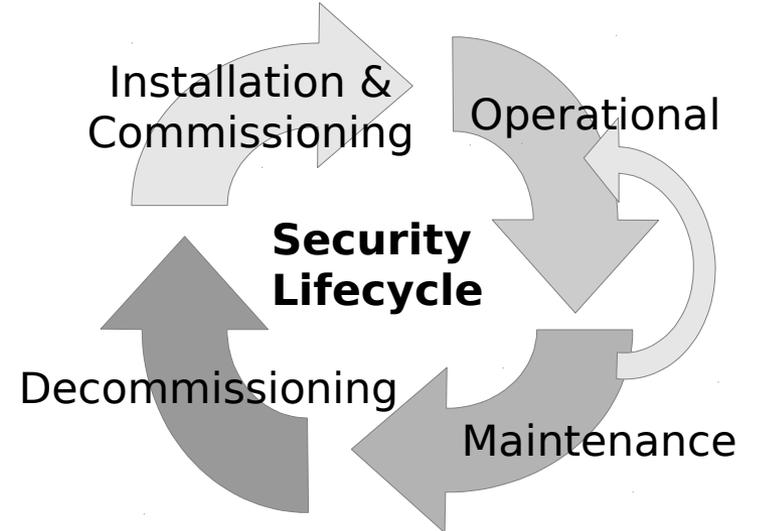
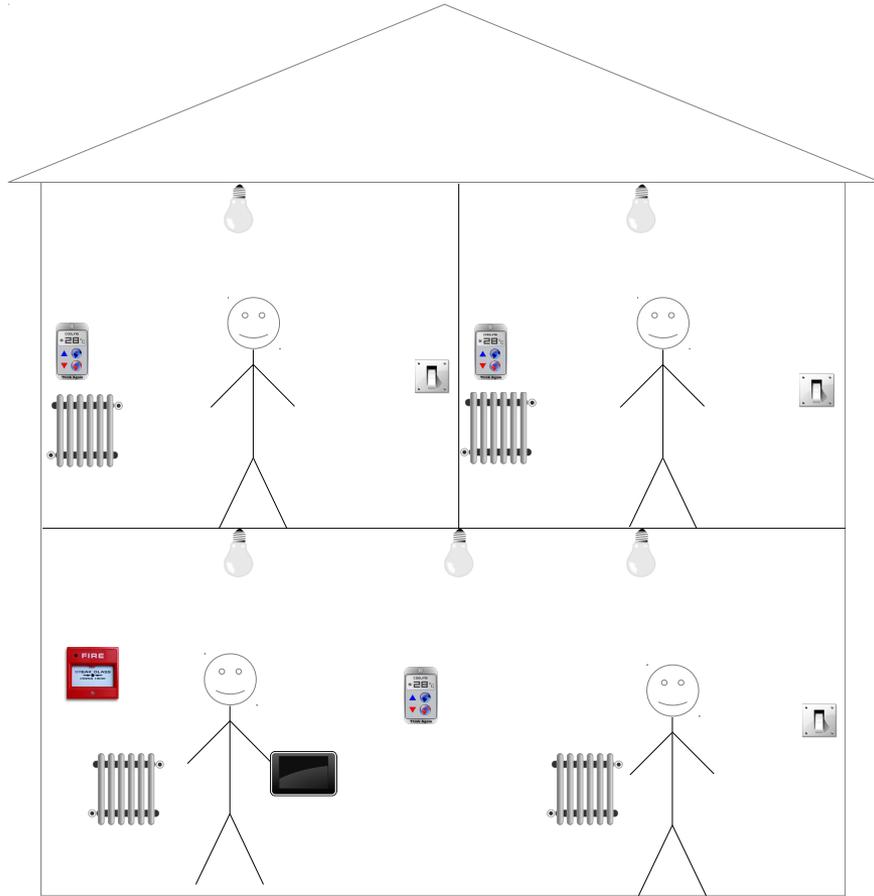


Remote
delegation
of access
rights

Home Automation

- Smart door lock + alarm
- Remote delegation of physical access rights

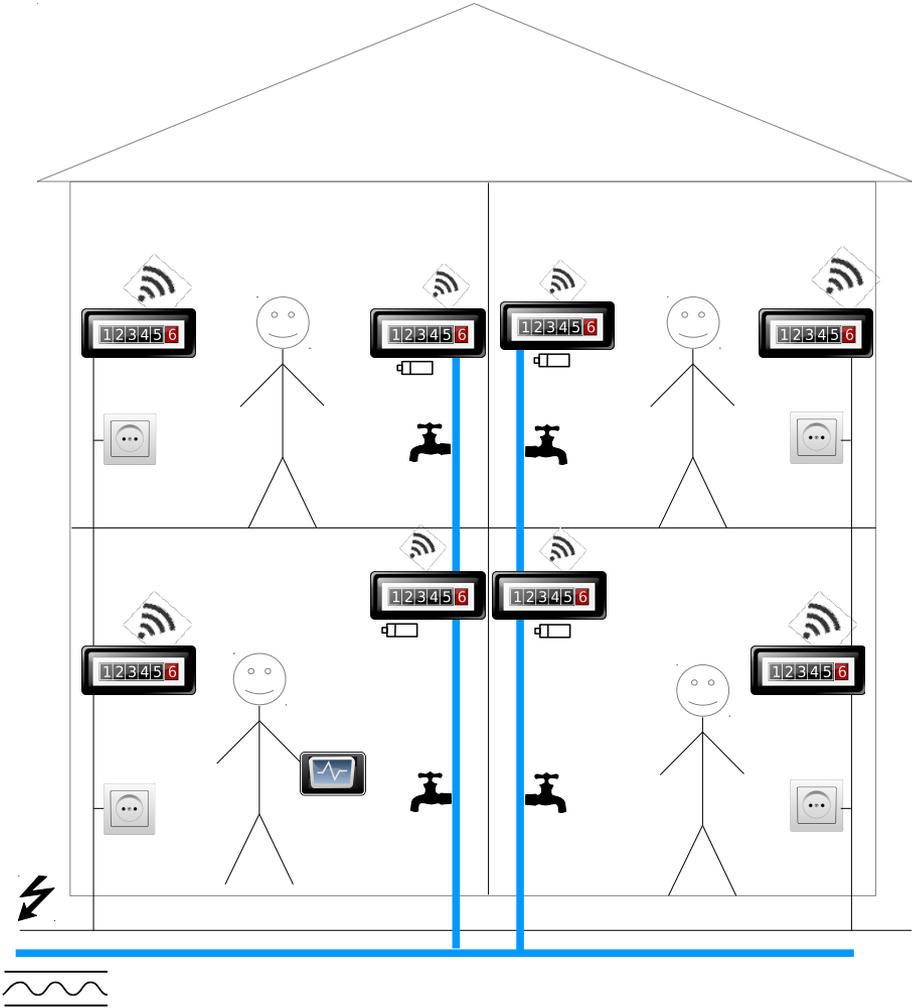
Building Automation



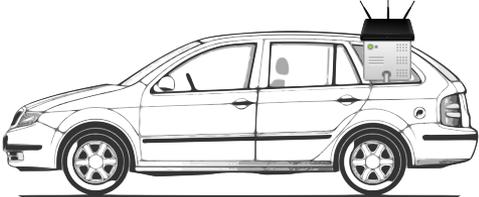
Building Automation

- Device lifecycle
 - Installation and commissioning
 - Operational
 - Maintenance
 - Decommissioning
- Context-based authorization
 - Access to light + HVAC if in the room
- Emergency override of access rights
 - Manual HVAC controls disabled by fire alarm

Smart Metering



Base station



Smart Metering

- Meters ↔ base stations: wireless comm
 - Dense urban environment → very short range
 - Water & Gas meters battery powered
- Fixed base stations too expensive
 - Too many needed to cover all meters
 - “Hostile environment” (sabotage, tampering)
- Solution: “Drive-by metering”
 - Needs push message sequence
- Power meters are mains powered (duh!)
 - Can use more powerful comm → longer range
 - Other meters could piggyback on that

Thank you!

Questions/comments?