

## Highlights from the IETF ACE WG

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# Authentication and Authorization for Constrained Environments (ACE)

- ▶ WG formed on 2015-06-16
- ▶ Goals
  - ▶ Fine-grained **authorization** on constrained clients and servers
  - ▶ Focus on REST-based architectures
- ▶ Objectives
  - ▶ Look at existing technologies
  - ▶ Identify what is needed to support constrained devices
  - ▶ Focus on CoAP and DTLS in the beginning
- ▶ Tasks
  1. Produce use cases and requirements
  2. Identify authentication and authorization mechanisms suitable for resource access in constrained environments.

# Current Status

- ▶ One working group item: draft-ietf-ace-usecases
- ▶ Discussion on actors in the ACE architecture:  
draft-gerdes-ace-actors
- ▶ Various input that may be relevant for solution(s)
  - ▶ Use cases: draft-rahman-ace-public-safety-use-case,  
draft-somaraju-ace-multicast, draft-yang-ace-groupauth
  - ▶ Integration with existing (Web) infrastructure:  
draft-maler-ace-oauth-uma, draft-gerdes-ace-dcaf-examples
  - ▶ Protocols and protocol flows: draft-gerdes-ace-dcaf-authorize,  
draft-cuellar-ace-pat-priv-enhanced-authz-tokens,  
draft-seitz-ace-core-authz
- ▶ Object security
  - ▶ Look beyond *Coap+DTLS*
  - ▶ Closely related to IETF WG COSE (= JOSE - json + cbor)
  - ▶ Data formats: draft-ietf-cose-msg
  - ▶ Protocols: draft-selander-ace-object-security

# Toolbox

- ▶ Key exchange: draft-hardjono-ace-fluffy, draft-schmitt-ace-twowayauth-for-iot, draft-gerdes-ace-dcaf-authorize, draft-somaraju-ace-multicast
- ▶ OAuth compatibility: draft-wahlstroem-ace-oauth-introspection, draft-maler-ace-oauth-uma, draft-gerdes-ace-dcaf-examples
- ▶ Data formats: draft-bormann-core-ace-aif, draft-gerdes-ace-dcaf-authorize, draft-tschofenig-ace-oauth-iot, draft-tschofenig-ace-oauth-bt,
- ▶ Group communication: draft-somaraju-ace-multicast, draft-yang-ace-groupauth

# Status Summary

- ▶ High-Level
  - ▶ Use-Cases seem to largely cover the problem space
    - ▶ (But: More reviews needed!)
  - ▶ Agreement on terminology and architecture
  - ▶ Relationships of actors in the architecture
- ▶ Low-Level
  - ▶ Lots of tools for constrained applications are available for authentication and authorization?

## (Some) Open Questions

- ▶ For any tool T: Where and to what extent does this tool help to solve a problem stated in draft-ietf-ace-usecases?
- ▶ What is missing from the perspective of other consortia, e.g. W3C WoT IG?
- ▶ For any use-case U: What protocol flow can be used to solve (aspects of) use-case U with the existing tool set?
- ▶ What protocol elements, interfaces, are missing to solve use-case U?
- ▶ Which interoperability requirements exist for *your* favorite scenario?