Authorization for IoT using OAuth

draft-seitz-ace-oauth-authz-00

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IETF ACE WG meeting
November, 2015

This draft

- Merge of two proposals
  - ACRE
    - draft-seitz-ace-core-authz
  - OAuth
    - draft-tschofenig-ace-oauth-iot
    - draft-wahlstroem-ace-oauth-introspection

Design Principles

1) Allow security at different layers

2) Allow different authorization schemes

3) RESTful transfer of authorization information

4) (New!) Build on existing authorization protocols

- OAuth 2.0 (profiled for CoRE)
- Building blocks: CoAP, CBOR, COSE, OSCOAP

Basic OAuth Flow

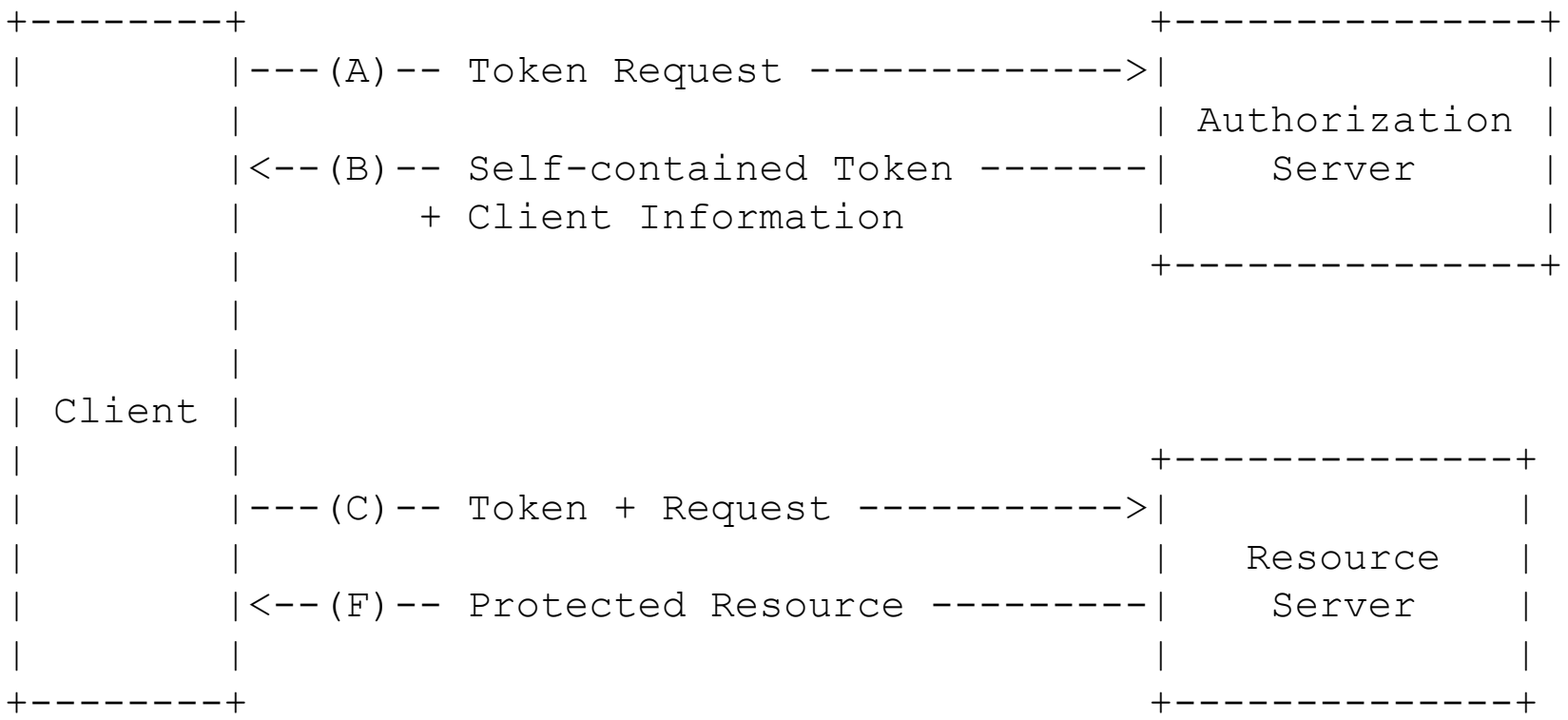
- Different deployment scenarios
- Not all steps in every scenario

Profiling OAuth 2.0 for CoRE

- AS support for setting up Communication Security
  - Establish security context and security protocol C ↔ RS
- Resource for sending access tokens to RS
  - For provisioning the token independently of the request
- Authorization Information Format
  - Interoperable format for access control data in tokens
- CBOR instead of JSON
  - More compact tokens and client information
- CBOR Web Tokens
  - Compact variant of JSON Web Tokens (JWT)

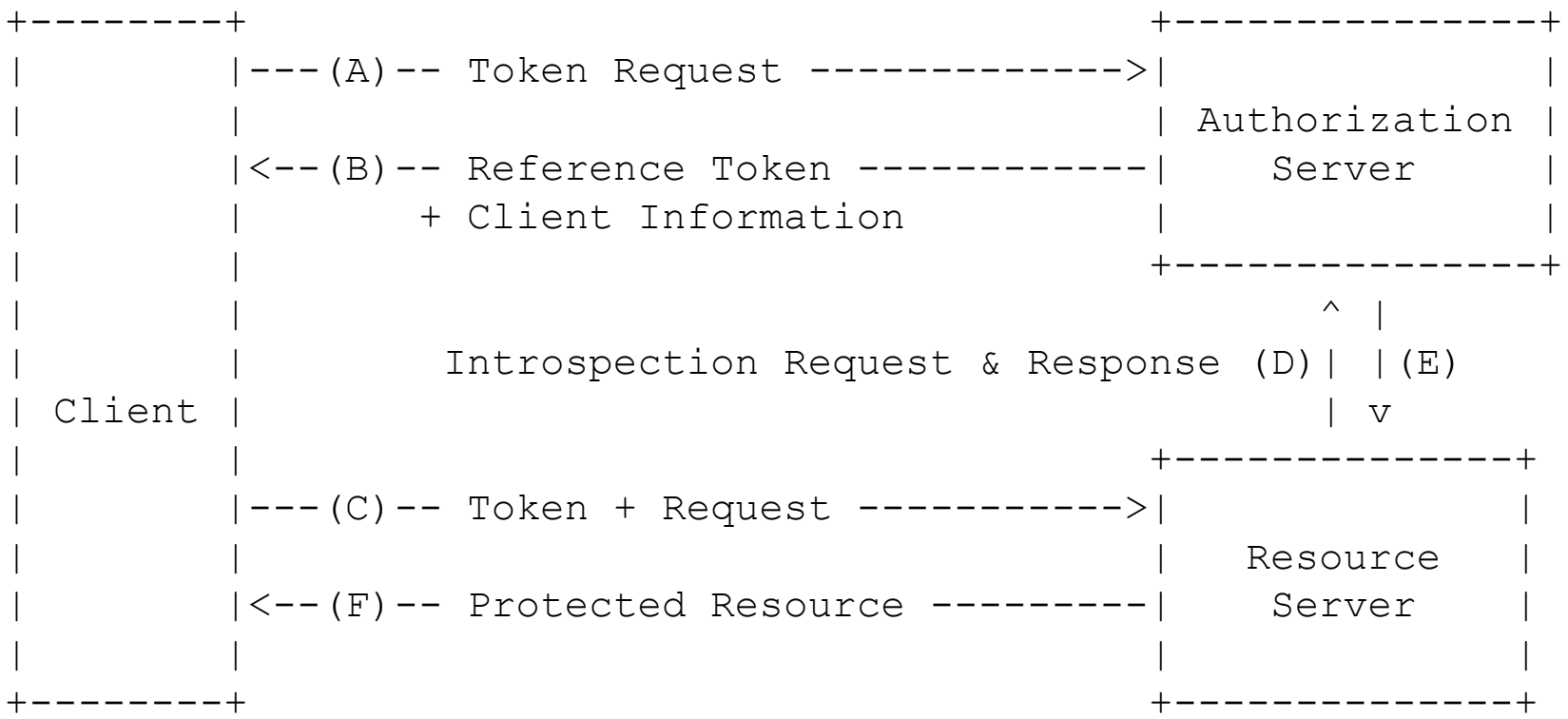
→ Enable the different constrained scenarios

Example:
RS has intermittent connectivity



Token needs to be self-contained, i.e. RS can evaluate it offline

Example:
C has intermittent connectivity



- A + B done when client has connectivity, e.g. at commissioning
- Token may be a reference (i.e. does not encode specific rights)

Advantages

- OAuth already an IETF standard
  - Well-established
  - Widely deployed
- Interoperable (Internet ↔ Internet of Things)
- Compatible with existing IAM frameworks and policies already used with other OAuth deployments
- Optimized to meet CoRE constraints

Next Steps

- Details of OAuth profiling
- Check integration with OMA LWM2M

Thank you!

Questions/comments?