EDHOC-OSCORE profile of ACE-OAuth

draft-selander-ace-edhoc-oscore-profile-00

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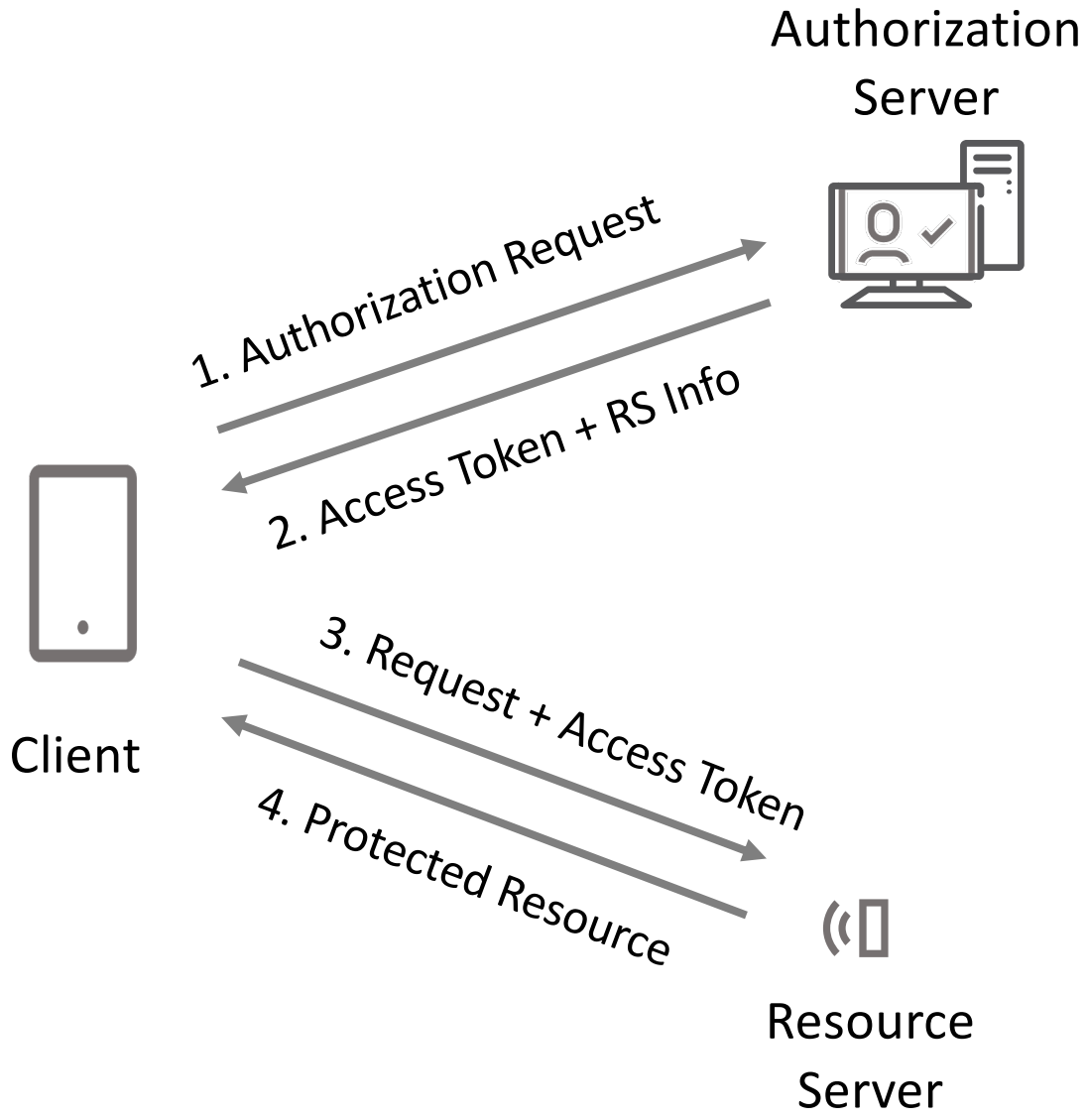
Motivation

- *coap-oscore* profile of ACE–OAuth (RFC 9203)
  - defines authorization and access control Client for access to resources at a Resource Server
  - provisioning of access rights and associated secret symmetric key
  - uses OSCORE (RFC 8613)

- This profile (*coap-edhoc-oscore*)
  - provisioning of access rights and associated asymmetric key (authentication credential)
  - uses EDHOC (draft-ietf-lake-edhoc)
    - and then OSCORE with the shared secret

- More strict trust model than RFC 9203
- Lower overhead than RFC 9202



Compare RFC 9202 / RFC 9203

Compared to RFC 9202 (*coap-dtls*)

Identical token provisioning

EDHOC instead of DTLS handshake

OSCORE instead of record layer

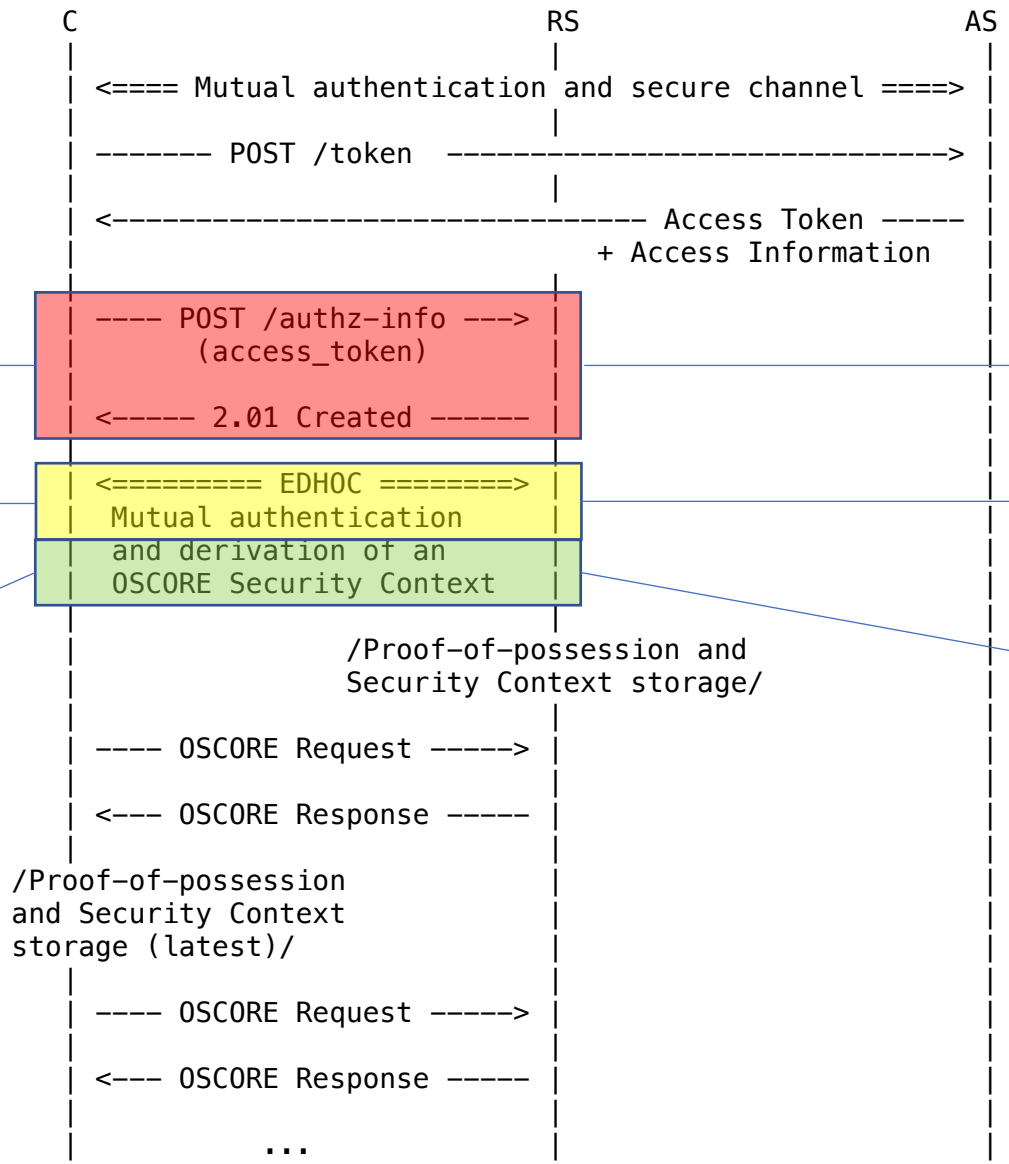


Figure 1: Protocol Overview

Compared to RFC 9203 (*coap-oscore*)

Nonce/ID exchange in RFC 9203

No EDHOC exchange in RFC 9203

OSCORE security context derivation in both

Other properties of *coap-edhoc-oscore*

- Supports update of access rights
  - Introduces the term "token series"
    - Highlight existing access tokens between same C and RS (same series)

- Supports update of security context without updating access rights
  - EDHOC-KeyUpdate (see EDHOC)
  - Key Update for OSCORE (draft-ietf-core-oscore-key-update)

- Supports the use of authentication credential by reference and by value (like EDHOC)

- Specifies EDHOC Information for use by C or RS when determining application profile of EDHOC
  - May be included in message exchange before running EDHOC
  - Registers parameters and claims used by EDHOC

Examples in Appendix A

Optimizations

- Access Token may be carried in the EAD_1 field of EDHOC message_1
  - instead of a separate POST /authz-info exchange

- EDHOC and OSCORE can be combined in two round trips
  - draft-ietf-core-oscore-edhoc
  - (optionally with Access Token in message_1)

Alternate flow

- AS, instead of C, may POST /authz-info to RS
  - Generalize to framework?

Next steps

— Already very detailed

— Minor update: Parameter informing C that RS supports KUDOS

— Ready for WG review