EAP-based Authentication Service for CoAP

draft-ietf-ace-wg-coap-eap-04

Rafael Marín-López, University of Murcia
Dan García-Carrillo, University of Oviedo

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Summary of v04

- Discovery of EAP authenticator
- Sending server resource in the first message
- Crytposuite negotiation and SID and RID
- OSCORE for keys confirmation in CoAP-EAP
- Considerations for Proxies
- Extensible CBOR structure
- Current flow of operation
- DTLS exchange in Annex

Discovery of the EAP authenticator

- Out of scope
- A brief discussion on this will be added to the next version - 04
  - First approach, to receive the IPv6 of the Border Router (e.g., RA) and send there the initial message

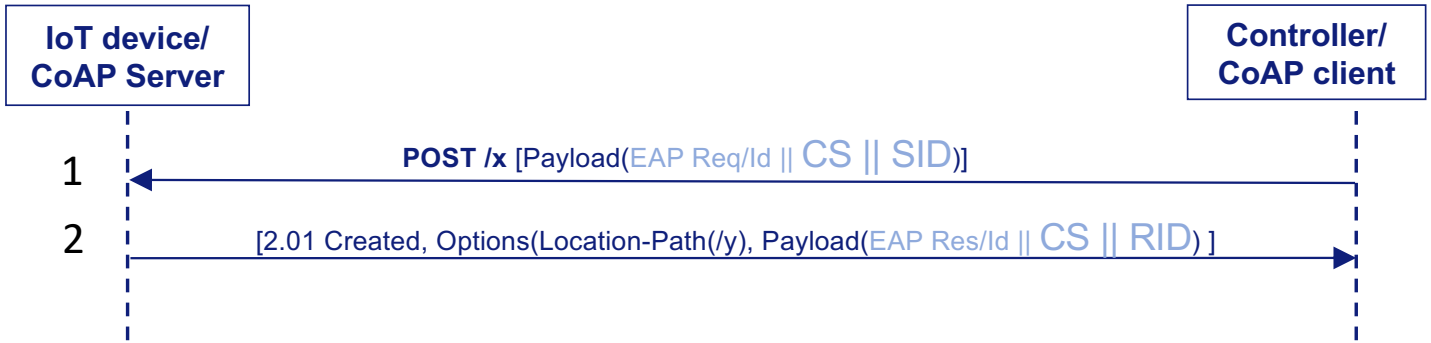
  Other approaches to be considered
  - DHCPv6 [RFC8415]
  - mDNS [RFC6762]

Sending the resource on the first message

- Saves bytes over the air: well-known only sent once
- Avoids the CoAP server receiving unexpected well-known messages

Crytposuite negotiation and SID and RID

- The cryptosuite is negotiated in the next exchange
- The entities choose the RID and SID for OSCORE

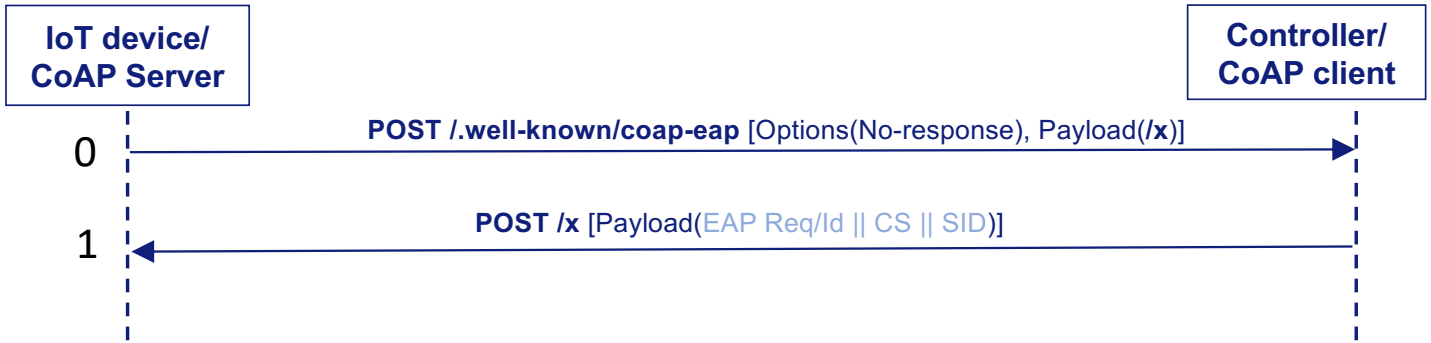


OSCORE for keys confirmation in CoAP-EAP

- OSCORE for key confirmation and establishing its Security Association
  - An OSCORE message can be treated as alternate success indication
  - An OSCORE security context can be pre-defined, leaving the key to be completed after the EAP success is processed and the MSK is retrieved to complete security context
  - Recipient and Sender ID are now sent in Steps 1 and 2

Consideration for proxies

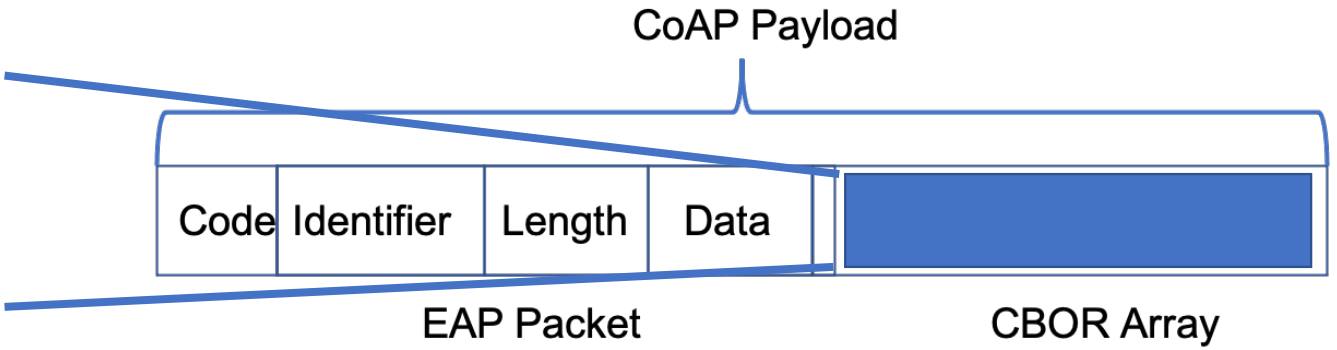
- There is a role reversal in the first and second message.
- This has to be considered when using proxies



Tagged CBOR structure

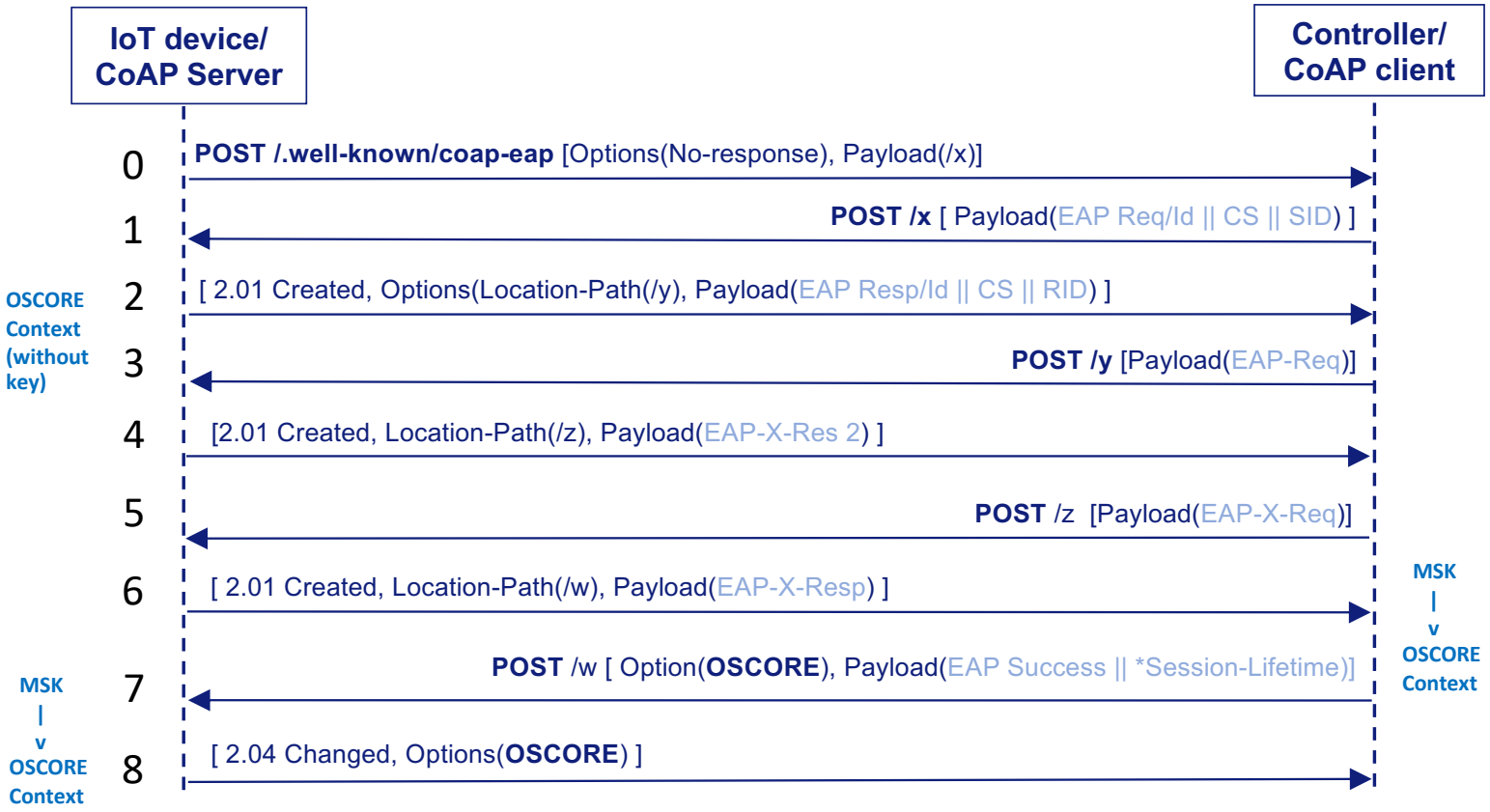
```
CoAP-EAP_Info = {

  ? 1 : array, ; ciphersuite
  ? 2 : bstr, ; SID
  ? 3 : bstr, ; RID
  ? 4 : uint ; Session-Lifetime
}
```



Extensible CBOR structure

Current flow of operation



DTLS considerations in Annex

- In DTLS we reuse the same fields as OSCORE
  - Cryptosuite negotiation
  - The key ID is generated by concatenating SID and RID
  - Client Hello message is used as alternate success indication

THANK YOU