Using the Extensible Authentication Protocol with Ephemeral Diffie-Hellman over COSE (EDHOC)

Advances and Changes for draft-ietf-emu-eap-edhoc-01

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IETF 120

Summary of main items

- Quick recap
- Changes in the Flag Field
  - Variable length EDHOC Message Length
- Advances in implementation
  - Paris Hackathon participation
- Next steps

Quick recap

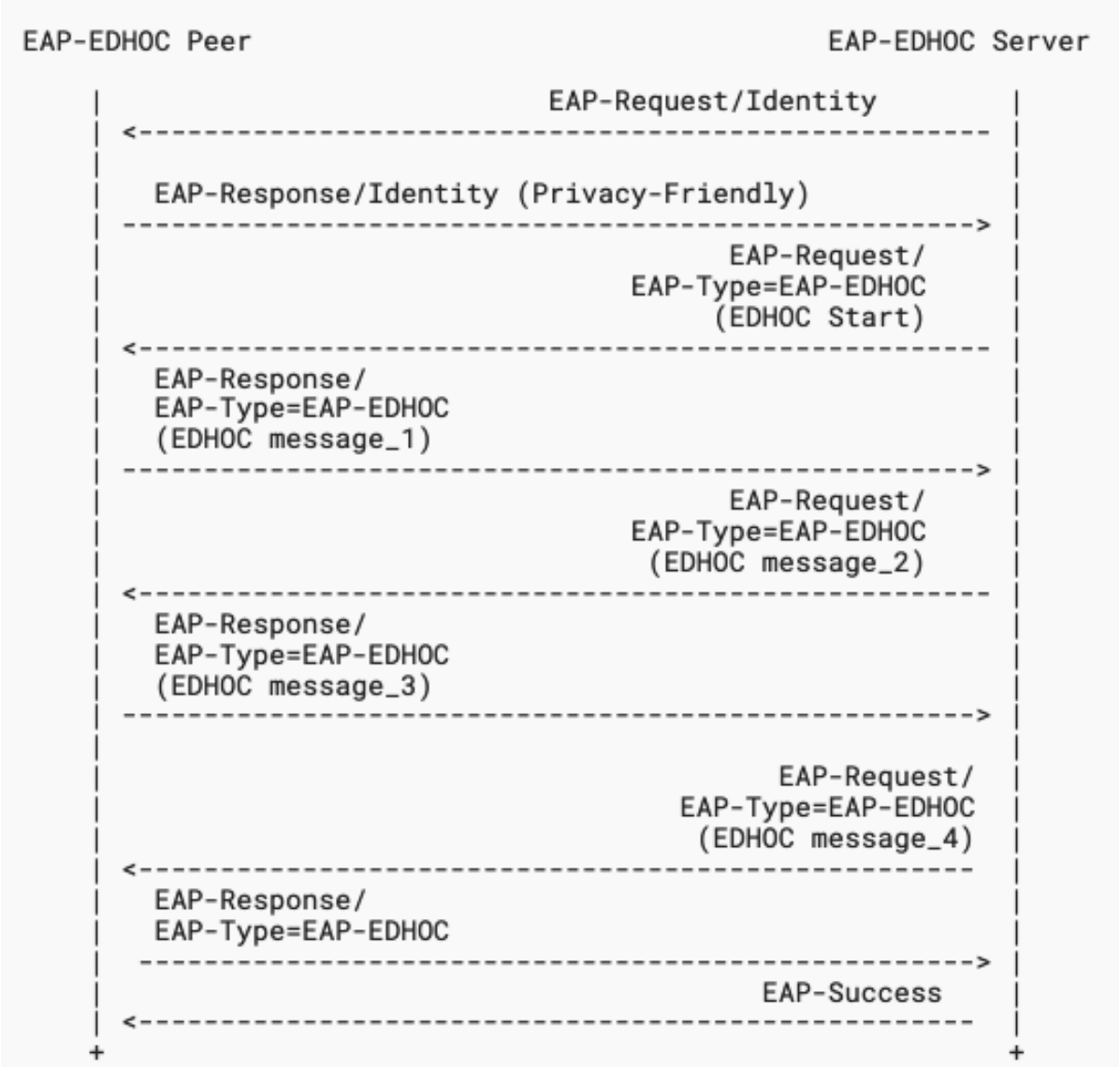
Context

EDHOC [**RFC 9528**] provides a compact and lightweight authenticated Diffie-Hellman key exchange

Use of CBOR and COSE

Credentials

Certificates and RPK



Changes in Flag Field

Context

- With the goal of saving bytes we implement the following changes in the flag field

Approach

Request

```
 0 1 2 3 4 5 6 7 8
+-+-+-+-+-+-+-+-+-+
|R R R S M L L L|
+-+-+-+-+-+-+-+-+-+
```

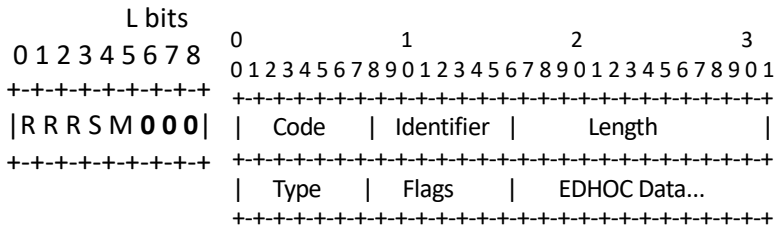
R = Reserved
S = EAP-EDHOC start
M = More fragments
L = Nº of bytes of EDHOC Message Length

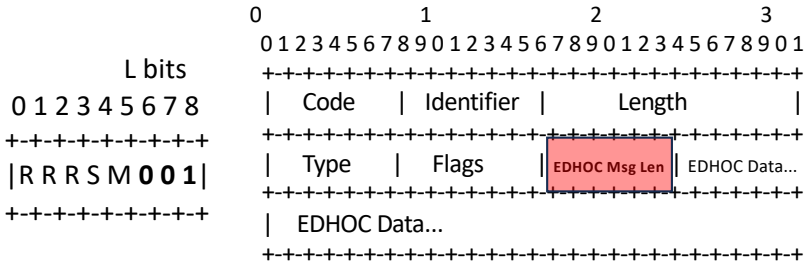
Response

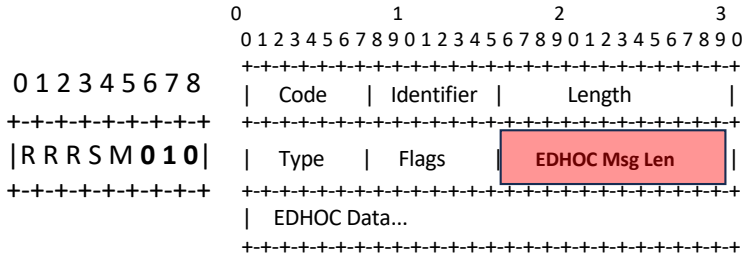
```
 0 1 2 3 4 5 6 7 8
+-+-+-+-+-+-+-+-+-+
|R R R R M L L L|
+-+-+-+-+-+-+-+-+-+
```

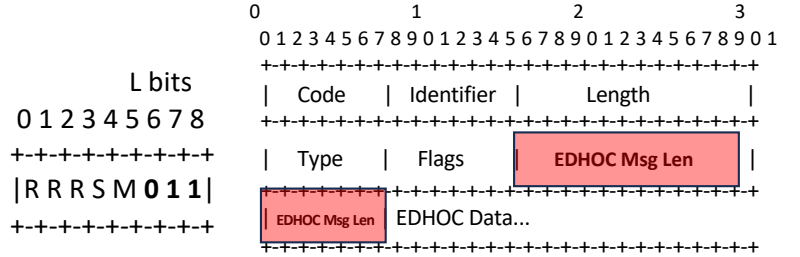
R = Reserved
M = More fragments
L = Nº of bytes of EDHOC Message Length

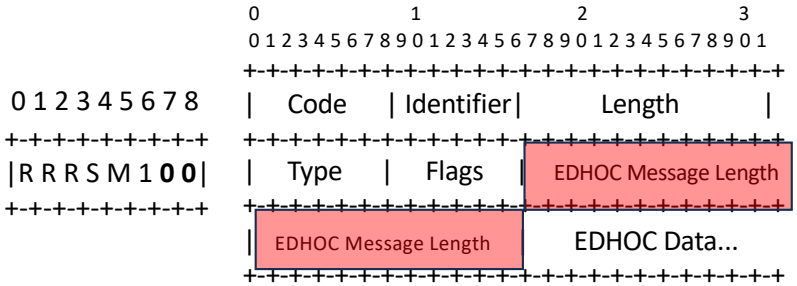
Changes in Flag Field
Variable length EDHOC Message Length











Advances in implementation
Paris Hackathon (INRIA)

Context

- Currently , we have two implementations : University of Murcia's (UMU) and University of Uniovi's (UNIVOVI) of EAP-EDHOC peer and EAP-EDHOC server.

EAP peer

- OpenPANA 0.2.4 (UNIOVI) and hostapd - WPA-Supplicant v2.11-dev (UMU)

EAP server

- freeRADIUS 3.2.3 with uOSCORE-uEDHOC v3.0.4 (UMU)
- freeRADIUS 3.2.1 with uOSCORE-uEDHOC v1.0.5 (Uniovi)

Advances

- UMU has tested the method using a real access point.
- We have just finished fragmentation support (UMU)

Acknowledgments

- We appreciate Francisco López Gómez effort on developing EAP-EDHOC for hostapd - WPA-Supplicant v2.11-dev and freeRADIUS 3.2.3

Next steps

- We would appreciate reviewers for the document
- Adapt implementation to I-D v01

THANK YOU