IETF Hackathon

IETF 123
19–20 July 2025
Madrid, Spain

IETF

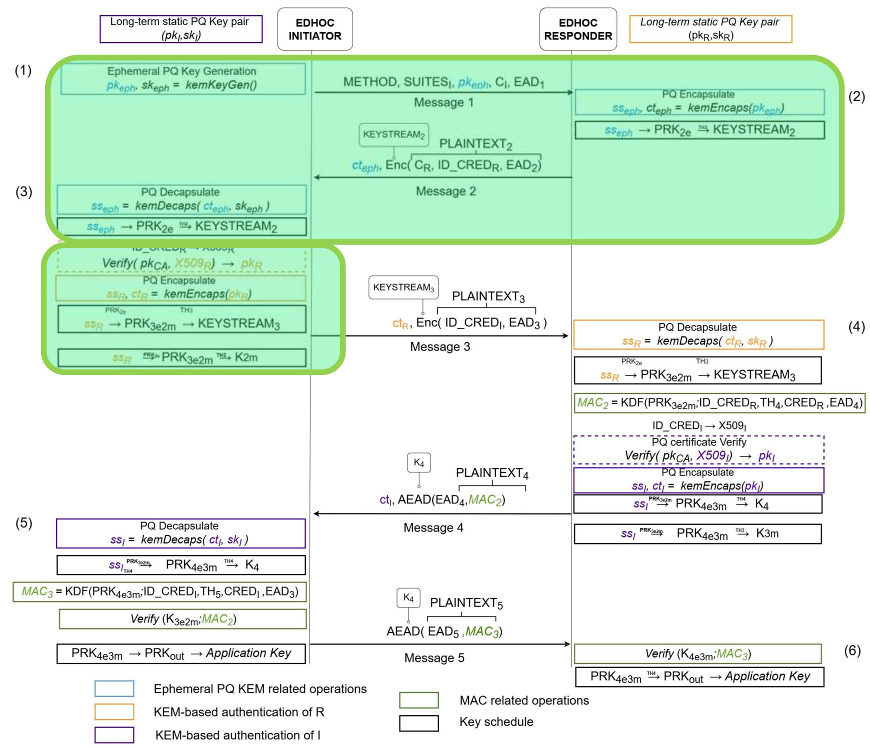
Hackathon Plan

- New authentication method for EDHOC based on Key Exchange Mechanism (KEM)
  - https://datatracker.ietf.org/doc/draft-pocero-authkem-edhoc/
  - https://datatracker.ietf.org/doc/draft-pocero-authkem-ikr-edhoc/

- Extend the KEM-based authentication method on top of the PQ-EDHOC repository, which itself builds upon the uOSCORE-uEDHOC library to support PQC signature-based EDHOC.

What got done

- [New ietf-123-hackathon branch]()
- Added a new KEM-based test vector (ML-KEM-512)
- All messages formatting
- Generation and processing of Message 1 and 2
- Compute the PRK_3e2m key from a combination of:
    - Ephemeral KEM shared secret
    - Responder's Authentication KEM shared secret



Next Steps

- Complete rest of the handshake implementation
- Test in Cortex-M4-based constrained devices
- Benchmark and compare with PQC-signature EDHOC in real-world 6lowpan scenario on the following metrics:
  - Processing time
  - Memory overhead
  - Network overhead
  - Power consumption

Wrap Up

Team members:

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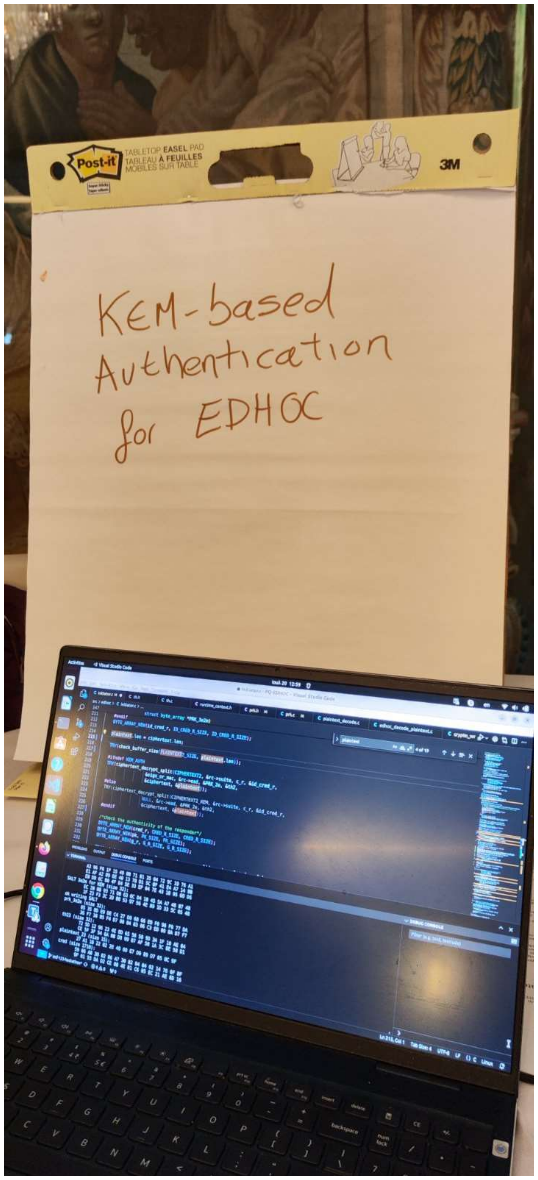

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