IETF Hackathon

IETF 121
2–3 Nov 2024
Dublin, Ireland

Rocca-S

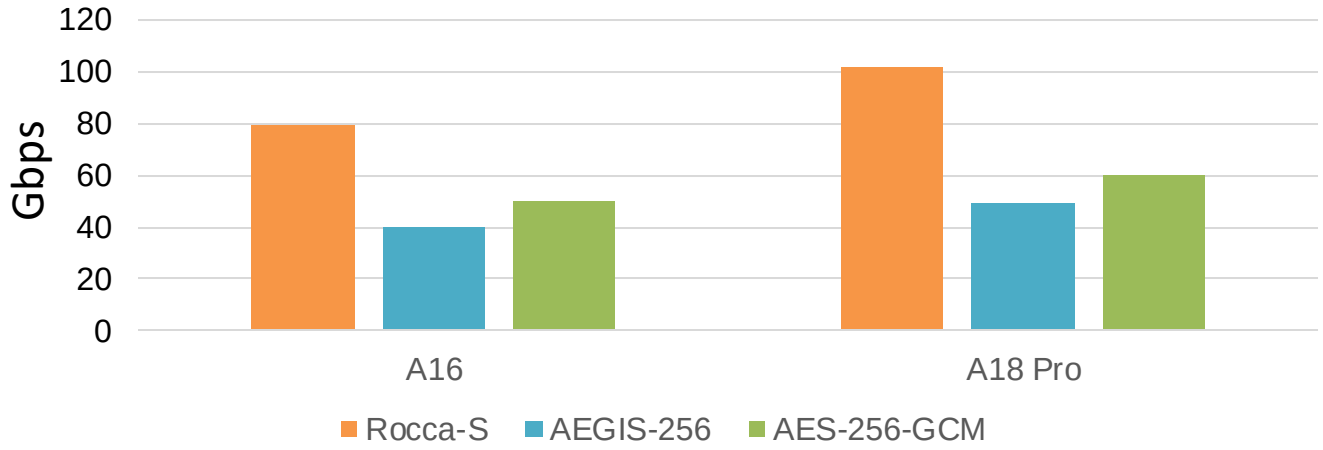
- Design
  - Sponge-based construction
  - 256-bit key and 256-bit tag
  - Three modes: AEAD, encryption only and keystream generation
- Security (in nonce respecting setting)
  - Classical setting: 256-bit security against key-recovery and 192-bit security against forgery
  - Quantum setting: 128-bit security against key-recovery and forgery
- Internet draft: https://datatracker.ietf.org/doc/draft-nakano-rocca-s/
- Implementations: https://github.com/yt-nakano/
  - Including the result of IETF #118 hackathon (quictls+Rocca-S)
- The paper is presented at ESORICS 2023

Hackathon Plan

- Implement Rocca-S for mobile phones for performance evaluation
  - Use openssl as a base and include ciphers
  - Use ‘openssl speed -aead’ to measure the throughput

What got done

- Verified the performance advantage of Rocca-S to other algorithms
- Rocca-S achieved 102Gbit/s



Wrap Up

Team members:

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First timers @ IETF/Hackathon:

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