Chair of Network Architectures and Services
Department of Informatics
Technical University of Munich

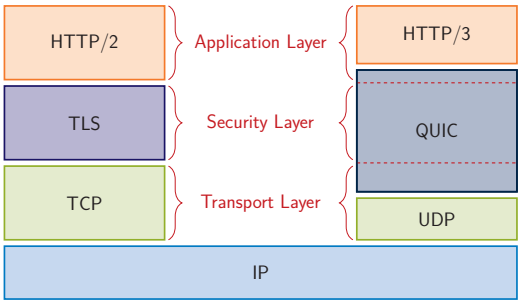
Thesis M.Sc.

IDP

Analyzing Quic in the wild

Motivation

While Quic is still specified by the IETF [1], a lot of implementations exist [2] and as shown by related work [3] deployment is on the rise. A major goal of Quic is to combine a fast connection establishment, with reduced overhead and early encryption.



Therefore, it is build on UDP and directly incorporates TLS. UDP provides a lightweight transport protocol with widespread compatibility in network devices, while TLS, majorly version 1.3, provides state-of-the-art encryption and 0-RTT or 1-RTT handshakes.
This makes the analysis of configurations and real-world behavior based on passive traffic captures nearly impossible. Thus, a proper analysis requires active scans.
While Rüth et al. [3] focus on the detection of Quic deployments and seen versions, this work focuses on the analysis of deployed devices and their behavior in a stateful approach.

Your Task

- Implement and set up Quic scans
- Analyze different input sources
- Analyze the behavior of targets and differences to a TLS + TCP setup

Requirements

- Basic programming knowledge in Python or Go
- Familiarity with GIYF-Based work approaches

Bibliography

[1] https://www.ietf.org/id/draft-ietf-quic-transport-31.txt
[2] https://github.com/quicwg/base-drafts/wiki/Implementations
[3] Rüth, Jan, et al. "A First Look at QUIC in the Wild." International Conference on Passive and Active Network Measurement. 2018.

Contact

Johannes Zirngibl zirngibl@net.in.tum.de
Patrick Sattler sattler@net.in.tum.de
Benedikt Jaeger jaeger@net.in.tum.de

https://net.in.tum.de/members/zirngibl/