UNIVERSITY
OF OSLO

Master's thesis

TCP PEP

Extension of a TCP Performance Enhancing Proxy to
Support Non-interactive Applications

Joe Bayer

Informatikk: programmering og systemarkitektur
60 ECTS study points

Department of Informatics
Faculty of Mathematics and Natural Sciences

Autumn 2022

Joe Bayer

TCP PEP

Extension of a TCP Performance
Enhancing Proxy to Support
Non-interactive Applications

Supervisor:
Michael Welzl

Contents

1 Intro **2**

2 Background **3**
2.1 5G 3
2.2 TCP/IP 3
2.2.1 Congestion control 3
2.3 PEPs 3
2.4 0 RTT 3

3 Implementation | Design **4**

4 Evaluation **5**

5 Conclusion **6**

Chapter 1

Intro

Chapter 2

Background

2.1 5G

Future of wireless communication.
Millimeter frequency bands. Highly fluctuating bandwidth with wireless networks, especially with mmWave.

2.2 TCP/IP

Interactive traffic uses TCP? source End to end argument. TCP handshake..

2.2.1 Congestion control

Congestion controller domains (different congestion controllers.) [2].

2.3 PEPs

More logic inside the networks.

2.4 0 RTT

0RTT Transport Converter [1].

Chapter 3

Implementation | Design

Chapter 4

Evaluation

Chapter 5

Conclusion

Bibliography

[1] Olivier Bonaventure, Mohamed Boucadair, Sri Gundavelli, SungHoon Seo, and Benjamin Hesmans. 0-RTT TCP Convert Protocol. RFC 8803, July 2020.

[2] M. Welzl and W. Eddy. Congestion control in the rfc series. RFC 5783, RFC Editor, February 2010. `https://www.rfc-editor.org/info/rfc5783`.