

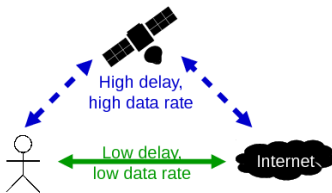
Lehrstuhl Informatik 7

Rechnernetze und Kommunikationssysteme



Bachelor-/Master-/Abschlussarbeit

Multipath TCP with Satellite Internet and Middleboxes



Motivation

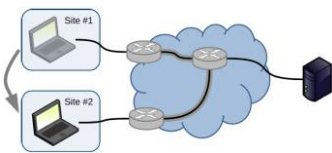
Satellite communication is a way to provide internet access all over the world with data rates around 20-30 Mbit/s. However, the large propagation delay leading to round trip times above 600ms is negative for many applications. The performance of satellite internet depends on providers and protocols. Moreover, Performance Enhancement Proxies (PEPs) are middleboxes commonly deployed in satellite communication networks to mitigate negative effects of large RTTs experienced with TCP. Such middleboxes impact the performance of TCP connections.

As nowadays computers and smartphones very often have multiple (possibly heterogeneous) internet access links, it is desirable to use these links simultaneously to increase data rates and reliability. Multipath protocols, e.g. Multipath TCP, are used in this context.



Task description

In this thesis, Multipath TCP [1] and a PEP (e.g. PEPsal [2]) shall be set up in a testbed. The performance shall then be evaluated and compared in different scenarios. A comparison with PEPs from actual satellite internet providers is optional.



Required skills

- Solid knowledge of communication networks and protocols
- Interest in configuring, deploying and evaluating protocol implementations in a Linux testbed

This work can be done in English or German language.

- [1] multipath-tcp.org
[2] ieeexplore.ieee.org/document/1683339
github.com/danielinux/pepsal

Kontakt

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