**Thesis B.Sc.**

IDP

# "1, 2 oder 3" — Dependability in Multi-Path Scenarios

Motivation

Redundancy in transmissions is one possibility to counteract possible data loss in best-effort networks. By transmitting redundant information via different paths, the impact of single link failures can be drastically reduced. One example along these lines is FRER, as introduced in IEEE 802.1CB [1], duplicating each frame — a significant overhead. In context of this work, an alternative to this approach, developed at our chair, is in focus. Instead of duplicating all frames, for groups of frames an additional frame is transmitted, allowing to restore any frame of its group. To achieve this, a protocol draft exists defining relevant messages and their interplay.

Goal of this thesis is to emulate and evaluate a first implementation draft of the suggested protocol in mininet [2].
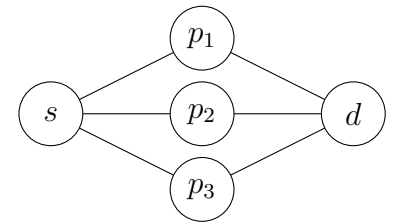
multiple paths connect s and d
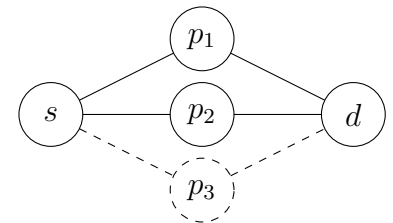
path failures require mitigation, e.g., via redundancy

Your Task

- Familiarize yourself with mininet
- Implement the drafted protocol
- Model the system's expected performance via pre-defined criteria
- Evaluate system performance in the chair's testbed [3]

[1] IEEE 802.1CB
[2] mininet
[3] The pos Framework: A Methodology and Toolchain for Reproducible Network Experiments

Applicants should have previous hands-on experience with the topics involved.

Contact

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