Proposal

Performance evaluation of different queue management schemes and their impacts on QoS metrics.

Team:
Abir Benslimane, abir.benslimane@unine.ch
Anukriti Shrimal, anukriti.shrimal@students.unibe.ch
Jasmine Kohli, jasmine.kohli@students.unibe.ch

Roadmap:

26.10.2016: Installation and setup of OMNeT++ framework.
03.10.2016: Understanding of queue types and their simulation in OMNeT++.
10.10.2016: Sample implementation for each type and preparation of intermediate presentation.
17.10.2016: Intermediate presentation.
24.10.2016: Write test scenarios for the queue types.
31.10.2016: Define ini file for all queue types.
14.11.2016: Complete implementation and fine-tuning of test-beds.
28.11.2016: Perform tests and record results.
05.12.2016: Work on final report and presentation
12.12.2016: Final presentation and report submission.

Concepts:

Congestion in the Internet is still common in backbone links, edge routers, access networks. To handle this, following queue management components are used:

- Scheduling disciplines
- Dropping mechanism
- Buffer management

Examples of such queue management techniques include FIFO scheduling, Priority Scheduling, Weighted fair queueing, Round robin, Token bucket.

Measurement setup:

We'll use OMNet++ with the INET framework.

Documentation:

http://www.omnetpp.org/
https://inet.omnetpp.org/
Recommendations on Queue Management and Congestion Avoidance in the Internet:
https://tools.ietf.org/html/rfc2309
IETF Recommendations Regarding Active Queue Management:
https://tools.ietf.org/html/rfc7567