Routscout

ROUTESCOUT is a closed-loop control system that dynamically adapts how a stub AS forwards its outgoing traffic across multiple policy-compliant routes according to observed performance and the operator's objectives. By evaluating average delays and losses of all routes at regular intervals, ROUTSCOUT makes splitting decisions according to the operator's objectives. This code mimics the ROUTSCOUT implementation for a pcap.

Getting Started

1. **Dependencies**

   The following Python libraries should be installed to run the code:
   scapy, mmh3 (hash) and ipaddr

2. **Installation and Execution**

   - Download the following .py files: DelayMonitor.py, LossMonitor.py, pcap_parser.py, and main.py.
   - Download the pcaps to be run on Routscout implementation.
   - In main.py code, replace the input with pcap you want to test implementation on. Make sure that all the files are in a single folder.
   - To run on the terminal, go to the file directory where the files are downloaded and execute the following command:
     "python3 main.py"

Output interpretation

The output displays two lists:
1. The first one is the list of average delays collected at every second.
2. The second one is the list of percentage changes in average delays between consecutive intervals.
Note that the time interval for collecting delays can be altered as required.

Reference

The complete implementation is based on the research paper "Performance-Driven Internet Path Selection". Here's the link:

https://conferences.sigcomm.org/sosr/2021/papers/s21.pdf