Pantheon Report

Data path: Colombia Ethernet (remote) → AWS Brazil 2 Ethernet (local).
Repeated the test of 17 congestion control schemes 10 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
NTP offsets were measured against gps.ntp.br and have been applied to correct the timestamps in logs.

System info:
Linux 4.15.0-1017-aws
net.core.default_qdisc = fq_codel
net.core.rmem_default = 16777216
net.core.rmem_max = 33554432
net.core.wmem_default = 212992
net.core.wmem_max = 212992
net.ipv4.tcp_rmem = 4096 87380 6291456
net.ipv4.tcp_wmem = 4096 16384 4194304

Git summary:
branch: master @ 7719b900495aa706f8452ab7d4a94dd562e9296e
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0edb9f90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
third_party/pcc @ 1afcf958fa0d66d18b623c091a55feca872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f613e8ad0f8fb92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cffe2
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
  M src/ScreamClient
  M src/ScreamServer
third_party/sprout @ 366ea35c6178b01e31d4a46a1dc74f915f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 2ba68621435ae07a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9d0e4735770d143a1fa2851
test from Colombia to AWS Brazil 2, 10 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
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<tr>
<td>TCP BBR</td>
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<td>45.55</td>
<td>34.50</td>
<td>27.28</td>
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<td>Copa</td>
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<td>50.99</td>
<td>30.84</td>
<td>25.73</td>
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<td>31.66</td>
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<td>Verus</td>
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<td>15.92</td>
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<td>WebRTC media</td>
<td>10</td>
<td>1.75</td>
<td>0.99</td>
<td>0.39</td>
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</table>
Run 1: Statistics of TCP BBR

Start at: 2018-08-22 19:17:20
End at: 2018-08-22 19:17:50
Local clock offset: -4.964 ms
Remote clock offset: 3.706 ms

# Below is generated by plot.py at 2018-08-22 22:34:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.13 Mbit/s
95th percentile per-packet one-way delay: 121.996 ms
Loss rate: 2.04%
-- Flow 1:
Average throughput: 44.47 Mbit/s
95th percentile per-packet one-way delay: 118.629 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 33.33 Mbit/s
95th percentile per-packet one-way delay: 122.855 ms
Loss rate: 2.28%
-- Flow 3:
Average throughput: 25.94 Mbit/s
95th percentile per-packet one-way delay: 124.543 ms
Loss rate: 4.44%
Run 1: Report of TCP BBR — Data Link

![Graph showing throughput and per-packet one-way delay over time.]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 44.87 Mbps)
  - Flow 1 egress (mean 44.47 Mbps)
  - Flow 2 ingress (mean 33.82 Mbps)
  - Flow 2 egress (mean 33.33 Mbps)
  - Flow 3 ingress (mean 26.70 Mbps)
  - Flow 3 egress (mean 25.94 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 118.63 ms)
  - Flow 2 (95th percentile 122.86 ms)
  - Flow 3 (95th percentile 124.54 ms)
Run 2: Statistics of TCP BBR

Start at: 2018-08-22 19:38:28
End at: 2018-08-22 19:38:58
Local clock offset: -4.898 ms
Remote clock offset: 4.559 ms

# Below is generated by plot.py at 2018-08-22 22:34:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.61 Mbit/s
95th percentile per-packet one-way delay: 120.274 ms
Loss rate: 2.16%
-- Flow 1:
Average throughput: 43.90 Mbit/s
95th percentile per-packet one-way delay: 116.387 ms
Loss rate: 1.57%
-- Flow 2:
Average throughput: 34.91 Mbit/s
95th percentile per-packet one-way delay: 118.631 ms
Loss rate: 2.52%
-- Flow 3:
Average throughput: 25.95 Mbit/s
95th percentile per-packet one-way delay: 125.820 ms
Loss rate: 4.17%
Run 2: Report of TCP BBR — Data Link

![Graph 1: Throughput (Mbps)](image)

- Flow 1 ingress (mean 44.36 Mbps)
- Flow 1 egress (mean 43.90 Mbps)
- Flow 2 ingress (mean 35.48 Mbps)
- Flow 2 egress (mean 34.91 Mbps)
- Flow 3 ingress (mean 26.64 Mbps)
- Flow 3 egress (mean 25.95 Mbps)

![Graph 2: Per-packet one-way delay (ms)](image)

- Flow 1 (95th percentile 116.39 ms)
- Flow 2 (95th percentile 118.63 ms)
- Flow 3 (95th percentile 125.82 ms)
Run 3: Statistics of TCP BBR

Start at: 2018-08-22 19:59:46
End at: 2018-08-22 20:00:16
Local clock offset: -8.054 ms
Remote clock offset: 1.795 ms

# Below is generated by plot.py at 2018-08-22 22:34:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 74.32 Mbit/s
  95th percentile per-packet one-way delay: 123.158 ms
  Loss rate: 1.88%
-- Flow 1:
  Average throughput: 42.49 Mbit/s
  95th percentile per-packet one-way delay: 120.913 ms
  Loss rate: 1.21%
-- Flow 2:
  Average throughput: 35.31 Mbit/s
  95th percentile per-packet one-way delay: 122.228 ms
  Loss rate: 2.20%
-- Flow 3:
  Average throughput: 25.51 Mbit/s
  95th percentile per-packet one-way delay: 127.157 ms
  Loss rate: 4.28%
Run 3: Report of TCP BBR — Data Link

![Graph](image)

**Throughput (Mb/s)**

**Time (s)**

- Flow 1 ingress (mean 42.77 Mb/s)
- Flow 1 egress (mean 42.49 Mb/s)
- Flow 2 ingress (mean 35.78 Mb/s)
- Flow 2 egress (mean 35.31 Mb/s)
- Flow 3 ingress (mean 26.20 Mb/s)
- Flow 3 egress (mean 25.51 Mb/s)

![Graph](image)

**Per-packet one-way delay (ms)**

**Time (s)**

- Flow 1 (95th percentile 120.91 ms)
- Flow 2 (95th percentile 122.23 ms)
- Flow 3 (95th percentile 127.16 ms)
Run 4: Statistics of TCP BBR

Start at: 2018-08-22 20:20:50
End at: 2018-08-22 20:21:20
Local clock offset: -8.654 ms
Remote clock offset: 8.36 ms

# Below is generated by plot.py at 2018-08-22 22:34:22
# Datalink statistics
# Total of 3 flows:
Average throughput: 78.00 Mbit/s
95th percentile per-packet one-way delay: 113.471 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 46.78 Mbit/s
95th percentile per-packet one-way delay: 113.029 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 33.34 Mbit/s
95th percentile per-packet one-way delay: 113.927 ms
Loss rate: 2.22%
-- Flow 3:
Average throughput: 27.59 Mbit/s
95th percentile per-packet one-way delay: 112.050 ms
Loss rate: 2.56%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2018-08-22 20:41:51
End at: 2018-08-22 20:42:21
Local clock offset: -10.065 ms
Remote clock offset: 8.778 ms

# Below is generated by plot.py at 2018-08-22 22:34:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.39 Mbit/s
95th percentile per-packet one-way delay: 114.839 ms
Loss rate: 1.71%
-- Flow 1:
Average throughput: 46.10 Mbit/s
95th percentile per-packet one-way delay: 113.391 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 34.87 Mbit/s
95th percentile per-packet one-way delay: 113.421 ms
Loss rate: 2.34%
-- Flow 3:
Average throughput: 27.76 Mbit/s
95th percentile per-packet one-way delay: 118.247 ms
Loss rate: 3.19%
Run 5: Report of TCP BBR — Data Link

![Graph showing network performance metrics for TCP BBR flows. The top graph displays throughput in Mbps over time for three flows, with each flow's ingress and egress rates indicated. The bottom graph illustrates per-packet one-way delay in milliseconds for the same flows, highlighting the 95th percentile delays.]
Run 6: Statistics of TCP BBR

Start at: 2018-08-22 21:03:00
End at: 2018-08-22 21:03:30
Local clock offset: -9.339 ms
Remote clock offset: -5.071 ms

# Below is generated by plot.py at 2018-08-22 22:34:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.22 Mbit/s
95th percentile per-packet one-way delay: 120.149 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 45.87 Mbit/s
95th percentile per-packet one-way delay: 117.688 ms
Loss rate: 1.26%
-- Flow 2:
Average throughput: 33.97 Mbit/s
95th percentile per-packet one-way delay: 119.929 ms
Loss rate: 2.29%
-- Flow 3:
Average throughput: 26.74 Mbit/s
95th percentile per-packet one-way delay: 123.732 ms
Loss rate: 3.99%
Run 6: Report of TCP BBR — Data Link

![Graph showing throughput and per-packet one-way delay for different flows over time.](image)

Legend:
- Flow 1 ingress (mean 46.20 Mbit/s)
- Flow 1 egress (mean 45.87 Mbit/s)
- Flow 2 ingress (mean 34.48 Mbit/s)
- Flow 2 egress (mean 33.97 Mbit/s)
- Flow 3 ingress (mean 27.39 Mbit/s)
- Flow 3 egress (mean 26.74 Mbit/s)

![Graph showing per-packet one-way delay for different flows over time.](image)

Legend:
- Flow 1 (95th percentile 117.69 ms)
- Flow 2 (95th percentile 119.93 ms)
- Flow 3 (95th percentile 123.73 ms)
Run 7: Statistics of TCP BBR

Start at: 2018-08-22 21:24:13
End at: 2018-08-22 21:24:43
Local clock offset: -5.772 ms
Remote clock offset: -1.826 ms

# Below is generated by plot.py at 2018-08-22 22:34:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 74.81 Mbit/s
  95th percentile per-packet one-way delay: 120.163 ms
  Loss rate: 2.03%
-- Flow 1:
  Average throughput: 43.52 Mbit/s
  95th percentile per-packet one-way delay: 118.239 ms
  Loss rate: 1.39%
-- Flow 2:
  Average throughput: 33.66 Mbit/s
  95th percentile per-packet one-way delay: 121.626 ms
  Loss rate: 2.47%
-- Flow 3:
  Average throughput: 27.19 Mbit/s
  95th percentile per-packet one-way delay: 121.314 ms
  Loss rate: 3.99%
Run 7: Report of TCP BBR — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 43.89 Mbps)  Flow 1 egress (mean 43.52 Mbps)
Flow 2 ingress (mean 34.20 Mbps)  Flow 2 egress (mean 33.66 Mbps)
Flow 3 ingress (mean 27.81 Mbps)  Flow 3 egress (mean 27.19 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 118.24 ms)  Flow 2 (95th percentile 121.63 ms)  Flow 3 (95th percentile 121.31 ms)
Run 8: Statistics of TCP BBR

Start at: 2018-08-22 21:45:19
End at: 2018-08-22 21:45:49
Local clock offset: -4.395 ms
Remote clock offset: 5.045 ms

# Below is generated by plot.py at 2018-08-22 22:34:24
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 80.23 Mbit/s
  95th percentile per-packet one-way delay: 114.505 ms
  Loss rate: 2.10%
-- Flow 1:
  Average throughput: 47.49 Mbit/s
  95th percentile per-packet one-way delay: 111.650 ms
  Loss rate: 1.47%
-- Flow 2:
  Average throughput: 35.31 Mbit/s
  95th percentile per-packet one-way delay: 114.961 ms
  Loss rate: 2.11%
-- Flow 3:
  Average throughput: 28.28 Mbit/s
  95th percentile per-packet one-way delay: 114.948 ms
  Loss rate: 5.22%
Run 8: Report of TCP BBR — Data Link
Run 9: Statistics of TCP BBR

Start at: 2018-08-22 22:06:17
End at: 2018-08-22 22:06:47
Local clock offset: -2.78 ms
Remote clock offset: 0.581 ms

# Below is generated by plot.py at 2018-08-22 22:35:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.77 Mbit/s
95th percentile per-packet one-way delay: 114.482 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 46.62 Mbit/s
95th percentile per-packet one-way delay: 114.192 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 35.17 Mbit/s
95th percentile per-packet one-way delay: 114.843 ms
Loss rate: 1.60%
-- Flow 3:
Average throughput: 29.71 Mbit/s
95th percentile per-packet one-way delay: 113.013 ms
Loss rate: 5.08%
Run 9: Report of TCP BBR — Data Link

![Graph 1: Throughput vs Time](image1)

![Graph 2: Per-packet one-way delay vs Time](image2)

Legend:
- Flow 1 ingress (mean 46.91 Mbit/s)
- Flow 1 egress (mean 46.62 Mbit/s)
- Flow 2 ingress (mean 35.47 Mbit/s)
- Flow 2 egress (mean 35.17 Mbit/s)
- Flow 3 ingress (mean 30.82 Mbit/s)
- Flow 3 egress (mean 29.71 Mbit/s)

Legend:
- Flow 1 (95th percentile 114.19 ms)
- Flow 2 (95th percentile 114.84 ms)
- Flow 3 (95th percentile 113.01 ms)
Run 10: Statistics of TCP BBR

Start at: 2018-08-22 22:27:17
End at: 2018-08-22 22:27:47
Local clock offset: -5.715 ms
Remote clock offset: 0.395 ms

# Below is generated by plot.py at 2018-08-22 22:35:06
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 80.91 Mbit/s
  95th percentile per-packet one-way delay: 113.029 ms
  Loss rate: 2.02%
-- Flow 1:
  Average throughput: 48.29 Mbit/s
  95th percentile per-packet one-way delay: 111.373 ms
  Loss rate: 1.29%
-- Flow 2:
  Average throughput: 35.15 Mbit/s
  95th percentile per-packet one-way delay: 113.355 ms
  Loss rate: 2.73%
-- Flow 3:
  Average throughput: 28.17 Mbit/s
  95th percentile per-packet one-way delay: 112.695 ms
  Loss rate: 3.91%
Run 10: Report of TCP BBR — Data Link

**Throughput (Mbps)**

- **Flow 1 ingress (mean 48.67 Mbps)**
- **Flow 1 egress (mean 48.29 Mbps)**
- **Flow 2 ingress (mean 35.86 Mbps)**
- **Flow 2 egress (mean 35.15 Mbps)**
- **Flow 3 ingress (mean 26.86 Mbps)**
- **Flow 3 egress (mean 28.17 Mbps)**

**Per-packet one-way delay (ms)**

- **Flow 1 (95th percentile 111.37 ms)**
- **Flow 2 (95th percentile 113.36 ms)**
- **Flow 3 (95th percentile 112.69 ms)**
Run 1: Statistics of Copa

Start at: 2018-08-22 19:14:46
End at: 2018-08-22 19:15:16
Local clock offset: −4.19 ms
Remote clock offset: 7.172 ms

# Below is generated by plot.py at 2018-08-22 22:35:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.17 Mbit/s
95th percentile per-packet one-way delay: 104.196 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 48.75 Mbit/s
95th percentile per-packet one-way delay: 104.124 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 31.99 Mbit/s
95th percentile per-packet one-way delay: 105.770 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 21.74 Mbit/s
95th percentile per-packet one-way delay: 95.998 ms
Loss rate: 2.15%
Run 1: Report of Copa — Data Link
Run 2: Statistics of Copa

Start at: 2018-08-22 19:35:52
End at: 2018-08-22 19:36:22
Local clock offset: -3.592 ms
Remote clock offset: 4.052 ms

# Below is generated by plot.py at 2018-08-22 22:36:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.20 Mbit/s
95th percentile per-packet one-way delay: 109.902 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 52.53 Mbit/s
95th percentile per-packet one-way delay: 105.927 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 30.51 Mbit/s
95th percentile per-packet one-way delay: 95.993 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 31.57 Mbit/s
95th percentile per-packet one-way delay: 116.875 ms
Loss rate: 2.20%
Run 2: Report of Copa — Data Link

![Graph showing throughput and per-packet round-trip time over time for different flows.](image-url)

- **Flow 1 ingress** (mean 52.42 Mbit/s)
- **Flow 1 egress** (mean 52.53 Mbit/s)
- **Flow 2 ingress** (mean 30.30 Mbit/s)
- **Flow 2 egress** (mean 30.51 Mbit/s)
- **Flow 3 ingress** (mean 31.76 Mbit/s)
- **Flow 3 egress** (mean 31.57 Mbit/s)

![Graph showing per-packet round-trip time for different flows.](image-url)

- **Flow 1** (95th percentile 105.93 ms)
- **Flow 2** (95th percentile 95.99 ms)
- **Flow 3** (95th percentile 116.88 ms)
Run 3: Statistics of Copa

Start at: 2018-08-22 19:57:11
End at: 2018-08-22 19:57:41
Local clock offset: -7.844 ms
Remote clock offset: 6.686 ms

# Below is generated by plot.py at 2018-08-22 22:36:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.97 Mbit/s
95th percentile per-packet one-way delay: 106.423 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 52.62 Mbit/s
95th percentile per-packet one-way delay: 98.598 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 31.61 Mbit/s
95th percentile per-packet one-way delay: 108.969 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 25.35 Mbit/s
95th percentile per-packet one-way delay: 108.658 ms
Loss rate: 2.16%
Run 3: Report of Copa — Data Link

![Graph 1: Throughput vs Time (Mbps/s)]

- Flow 1 ingress (mean 52.61 Mbps/s)
- Flow 1 egress (mean 52.62 Mbps/s)
- Flow 2 ingress (mean 31.57 Mbps/s)
- Flow 2 egress (mean 31.61 Mbps/s)
- Flow 3 ingress (mean 25.49 Mbps/s)
- Flow 3 egress (mean 25.35 Mbps/s)

![Graph 2: Per packet one-way delay (ms)]

- Flow 1 (95th percentile 98.60 ms)
- Flow 2 (95th percentile 108.97 ms)
- Flow 3 (95th percentile 108.66 ms)
Run 4: Statistics of Copa

Start at: 2018-08-22 20:18:15
End at: 2018-08-22 20:18:45
Local clock offset: -9.265 ms
Remote clock offset: 3.368 ms

# Below is generated by plot.py at 2018-08-22 22:36:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.67 Mbit/s
95th percentile per-packet one-way delay: 102.558 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 49.49 Mbit/s
95th percentile per-packet one-way delay: 100.904 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 34.84 Mbit/s
95th percentile per-packet one-way delay: 107.539 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 24.41 Mbit/s
95th percentile per-packet one-way delay: 96.641 ms
Loss rate: 1.35%
Run 4: Report of Copa — Data Link

![Graph showing throughput and delay for different flows over time.]

- **Throughput**: Mean values for each flow are as follows:
  - Flow 1 ingress: 49.35 Mbit/s
  - Flow 1 egress: 49.49 Mbit/s
  - Flow 2 ingress: 34.87 Mbit/s
  - Flow 2 egress: 34.84 Mbit/s
  - Flow 3 ingress: 24.34 Mbit/s
  - Flow 3 egress: 24.41 Mbit/s

- **Delay**: Mean values for each flow are as follows:
  - Flow 1 (95th percentile): 100.90 ms
  - Flow 2 (95th percentile): 107.54 ms
  - Flow 3 (95th percentile): 96.64 ms
Run 5: Statistics of Copa

Start at: 2018-08-22 20:39:17
End at: 2018-08-22 20:39:47
Local clock offset: -9.411 ms
Remote clock offset: 8.537 ms

# Below is generated by plot.py at 2018-08-22 22:36:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.89 Mbit/s
95th percentile per-packet one-way delay: 99.652 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 55.21 Mbit/s
95th percentile per-packet one-way delay: 100.454 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 29.71 Mbit/s
95th percentile per-packet one-way delay: 98.811 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 21.05 Mbit/s
95th percentile per-packet one-way delay: 102.844 ms
Loss rate: 2.54%
Run 5: Report of Copa — Data Link

![Graph 1: Throughput (Mbps)](image1)

Graph 1: Throughput (Mbps) over time with different flow statistics:
- Flow 1 ingress (mean 55.15 Mbps)
- Flow 1 egress (mean 55.21 Mbps)
- Flow 2 ingress (mean 29.67 Mbps)
- Flow 2 egress (mean 29.71 Mbps)
- Flow 3 ingress (mean 21.26 Mbps)
- Flow 3 egress (mean 21.05 Mbps)

![Graph 2: Per-packet one-way delay (ms)](image2)

Graph 2: Per-packet one-way delay (ms) over time with different flow statistics:
- Flow 1 (95th percentile 100.45 ms)
- Flow 2 (95th percentile 98.81 ms)
- Flow 3 (95th percentile 102.84 ms)
Run 6: Statistics of Copa

Start at: 2018-08-22 21:00:26
End at: 2018-08-22 21:00:56
Local clock offset: -10.1 ms
Remote clock offset: -4.579 ms

# Below is generated by plot.py at 2018-08-22 22:36:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.65 Mbit/s
95th percentile per-packet one-way delay: 107.227 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 53.15 Mbit/s
95th percentile per-packet one-way delay: 102.777 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 27.77 Mbit/s
95th percentile per-packet one-way delay: 104.513 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 30.57 Mbit/s
95th percentile per-packet one-way delay: 114.113 ms
Loss rate: 1.11%
Run 6: Report of Copa — Data Link
Run 7: Statistics of Copa

Start at: 2018-08-22 21:21:28
End at: 2018-08-22 21:21:58
Local clock offset: -5.42 ms
Remote clock offset: -3.082 ms

# Below is generated by plot.py at 2018-08-22 22:36:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.32 Mbit/s
95th percentile per-packet one-way delay: 112.033 ms
Loss rate: 12.13%
-- Flow 1:
Average throughput: 47.67 Mbit/s
95th percentile per-packet one-way delay: 104.701 ms
Loss rate: 12.39%
-- Flow 2:
Average throughput: 25.02 Mbit/s
95th percentile per-packet one-way delay: 116.140 ms
Loss rate: 11.38%
-- Flow 3:
Average throughput: 21.37 Mbit/s
95th percentile per-packet one-way delay: 111.313 ms
Loss rate: 12.14%
Run 7: Report of Copa — Data Link

![Graph 1: Throughput Over Time (Mbps)]

- **Flow 1 ingress** (mean 54.12 Mbps)
- **Flow 1 egress** (mean 47.67 Mbps)
- **Flow 2 ingress** (mean 28.00 Mbps)
- **Flow 2 egress** (mean 25.02 Mbps)
- **Flow 3 ingress** (mean 23.92 Mbps)
- **Flow 3 egress** (mean 21.37 Mbps)

![Graph 2: Per Packet One-Way Delay (ms)]

- **Flow 1** (95th percentile 104.70 ms)
- **Flow 2** (95th percentile 116.14 ms)
- **Flow 3** (95th percentile 111.31 ms)
Run 8: Statistics of Copa

Start at: 2018-08-22 21:42:44
End at: 2018-08-22 21:43:14
Local clock offset: -4.49 ms
Remote clock offset: 1.145 ms

# Below is generated by plot.py at 2018-08-22 22:36:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 77.89 Mbit/s
  95th percentile per-packet one-way delay: 103.746 ms
  Loss rate: 0.51%
-- Flow 1:
  Average throughput: 52.32 Mbit/s
  95th percentile per-packet one-way delay: 102.099 ms
  Loss rate: 0.44%
-- Flow 2:
  Average throughput: 26.82 Mbit/s
  95th percentile per-packet one-way delay: 101.203 ms
  Loss rate: 0.62%
-- Flow 3:
  Average throughput: 23.58 Mbit/s
  95th percentile per-packet one-way delay: 109.563 ms
  Loss rate: 0.74%
Run 8: Report of Copa — Data Link

Throughput (Mbps) vs Time (s)

- Flow 1 ingress (mean 52.27 Mbps)
- Flow 1 egress (mean 52.32 Mbps)
- Flow 2 ingress (mean 26.77 Mbps)
- Flow 2 egress (mean 26.82 Mbps)
- Flow 3 ingress (mean 23.36 Mbps)
- Flow 3 egress (mean 23.56 Mbps)

Per packet one way delay (ms)

- Flow 1 (95th percentile 102.10 ms)
- Flow 2 (95th percentile 101.20 ms)
- Flow 3 (95th percentile 109.56 ms)
Run 9: Statistics of Copa

Start at: 2018-08-22 22:03:45
End at: 2018-08-22 22:04:15
Local clock offset: -2.899 ms
Remote clock offset: 2.343 ms

# Below is generated by plot.py at 2018-08-22 22:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.60 Mbit/s
95th percentile per-packet one-way delay: 97.978 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 45.54 Mbit/s
95th percentile per-packet one-way delay: 87.148 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 35.63 Mbit/s
95th percentile per-packet one-way delay: 98.179 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 28.49 Mbit/s
95th percentile per-packet one-way delay: 107.435 ms
Loss rate: 1.24%
Run 9: Report of Copa — Data Link

![图表1](image1)

图表1：三个流量（Flow 1 ingress, Flow 2 ingress, Flow 3 ingress）的吞吐量（Mbps）随时间的变化。每个流量的平均吞吐量分别为45.38 Mbps, 35.58 Mbps, 26.40 Mbps。

![图表2](image2)

图表2：三个流量（Flow 1, Flow 2, Flow 3）的每包往返时延（ms）随时间的变化。每个流量的95百分位数延迟分别为87.15 ms, 98.18 ms, 107.44 ms。
Run 10: Statistics of Copa

Start at: 2018-08-22 22:24:43
Local clock offset: -7.155 ms
Remote clock offset: -1.286 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.10 Mbit/s
95th percentile per-packet one-way delay: 96.918 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 52.59 Mbit/s
95th percentile per-packet one-way delay: 95.621 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 34.48 Mbit/s
95th percentile per-packet one-way delay: 103.970 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 29.15 Mbit/s
95th percentile per-packet one-way delay: 96.568 ms
Loss rate: 1.88%
Run 10: Report of Copa — Data Link

Throughput (Mbps)

Time (s)

0 5 10 15 20 25 30

Flow 1 ingress (mean 52.51 Mbps)  Flow 1 egress (mean 52.59 Mbps)
Flow 2 ingress (mean 34.46 Mbps)  Flow 2 egress (mean 34.48 Mbps)
Flow 3 ingress (mean 29.25 Mbps)  Flow 3 egress (mean 29.15 Mbps)

Per-packet one-way delay (ms)

Time (s)

0 5 10 15 20 25 30

• Flow 1 (95th percentile 95.62 ms)  • Flow 2 (95th percentile 103.97 ms)  • Flow 3 (95th percentile 96.57 ms)
Run 1: Statistics of TCP Cubic

Start at: 2018-08-22 19:06:12
End at: 2018-08-22 19:06:42
Local clock offset: -4.207 ms
Remote clock offset: 5.898 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.49 Mbit/s
95th percentile per-packet one-way delay: 91.317 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 47.25 Mbit/s
95th percentile per-packet one-way delay: 91.279 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 31.35 Mbit/s
95th percentile per-packet one-way delay: 95.589 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 22.55 Mbit/s
95th percentile per-packet one-way delay: 104.555 ms
Loss rate: 2.06%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2018-08-22 19:27:18
End at: 2018-08-22 19:27:48
Local clock offset: -4.236 ms
Remote clock offset: 4.359 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.90 Mbit/s
95th percentile per-packet one-way delay: 96.631 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 43.50 Mbit/s
95th percentile per-packet one-way delay: 96.532 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 32.92 Mbit/s
95th percentile per-packet one-way delay: 101.711 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 22.96 Mbit/s
95th percentile per-packet one-way delay: 113.722 ms
Loss rate: 1.88%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2018-08-22 19:48:37
End at: 2018-08-22 19:49:07
Local clock offset: -6.965 ms
Remote clock offset: 5.994 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.26 Mbit/s
95th percentile per-packet one-way delay: 94.475 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 36.23 Mbit/s
95th percentile per-packet one-way delay: 93.340 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 32.07 Mbit/s
95th percentile per-packet one-way delay: 98.576 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 20.48 Mbit/s
95th percentile per-packet one-way delay: 98.672 ms
Loss rate: 1.90%
Run 3: Report of TCP Cubic — Data Link

---

**Graph 1:**
- **Y-axis:** Throughput (Mbps)
- **X-axis:** Time (s)
- Lines represent:
  - Flow 1 ingress (mean 35.16 Mbps)
  - Flow 1 egress (mean 36.23 Mbps)
  - Flow 2 ingress (mean 32.05 Mbps)
  - Flow 2 egress (mean 32.07 Mbps)
  - Flow 3 ingress (mean 20.33 Mbps)
  - Flow 3 egress (mean 20.48 Mbps)

**Graph 2:**
- **Y-axis:** Per-packet end-to-end delay (ms)
- **X-axis:** Time (s)
- Data points represent:
  - Flow 1 (95th percentile 93.34 ms)
  - Flow 2 (95th percentile 98.58 ms)
  - Flow 3 (95th percentile 98.67 ms)
Run 4: Statistics of TCP Cubic

Start at: 2018-08-22 20:09:41
End at: 2018-08-22 20:10:11
Local clock offset: -9.562 ms
Remote clock offset: 1.871 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.38 Mbit/s
95th percentile per-packet one-way delay: 96.058 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 36.75 Mbit/s
95th percentile per-packet one-way delay: 95.989 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 27.68 Mbit/s
95th percentile per-packet one-way delay: 96.547 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 22.02 Mbit/s
95th percentile per-packet one-way delay: 103.110 ms
Loss rate: 1.89%
Run 4: Report of TCP Cubic — Data Link

![Graph 1: Throughput vs Time](image1)

- Flow 1 ingress (mean 36.68 Mbit/s)
- Flow 1 egress (mean 36.75 Mbit/s)
- Flow 2 ingress (mean 27.64 Mbit/s)
- Flow 2 egress (mean 27.68 Mbit/s)
- Flow 3 ingress (mean 22.08 Mbit/s)
- Flow 3 egress (mean 22.02 Mbit/s)

![Graph 2: Per-Packet One-Way Delay vs Time](image2)

- Flow 1 (95th percentile 95.99 ms)
- Flow 2 (95th percentile 96.55 ms)
- Flow 3 (95th percentile 103.11 ms)
Run 5: Statistics of TCP Cubic

Start at: 2018-08-22 20:30:45
End at: 2018-08-22 20:31:15
Local clock offset: -10.851 ms
Remote clock offset: 3.604 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 72.47 Mbit/s
  95th percentile per-packet one-way delay: 94.639 ms
  Loss rate: 0.59%
-- Flow 1:
  Average throughput: 44.78 Mbit/s
  95th percentile per-packet one-way delay: 94.571 ms
  Loss rate: 0.32%
-- Flow 2:
  Average throughput: 29.78 Mbit/s
  95th percentile per-packet one-way delay: 95.184 ms
  Loss rate: 0.66%
-- Flow 3:
  Average throughput: 24.05 Mbit/s
  95th percentile per-packet one-way delay: 113.039 ms
  Loss rate: 1.91%
Run 5: Report of TCP Cubic — Data Link
Run 6: Statistics of TCP Cubic

Start at: 2018-08-22 20:51:54
End at: 2018-08-22 20:52:24
Local clock offset: -9.122 ms
Remote clock offset: 1.31 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.79 Mbit/s
95th percentile per-packet one-way delay: 94.017 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 45.69 Mbit/s
95th percentile per-packet one-way delay: 93.960 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 32.44 Mbit/s
95th percentile per-packet one-way delay: 95.674 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 22.96 Mbit/s
95th percentile per-packet one-way delay: 105.461 ms
Loss rate: 1.74%
Run 6: Report of TCP Cubic — Data Link

![Graph 1: Throughput vs. Time]

- Flow 1 ingress (mean 45.59 Mbit/s)
- Flow 1 egress (mean 45.69 Mbit/s)
- Flow 2 ingress (mean 32.39 Mbit/s)
- Flow 2 egress (mean 32.44 Mbit/s)
- Flow 3 ingress (mean 23.00 Mbit/s)
- Flow 3 egress (mean 22.96 Mbit/s)

![Graph 2: Per-packet one-way delay vs. Time]

- Flow 1 (95th percentile 93.96 ms)
- Flow 2 (95th percentile 95.67 ms)
- Flow 3 (95th percentile 105.46 ms)
Run 7: Statistics of TCP Cubic

Start at: 2018-08-22 21:12:55
End at: 2018-08-22 21:13:25
Local clock offset: -7.411 ms
Remote clock offset: -1.719 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.78 Mbit/s
95th percentile per-packet one-way delay: 91.655 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 44.74 Mbit/s
95th percentile per-packet one-way delay: 91.634 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 30.56 Mbit/s
95th percentile per-packet one-way delay: 90.145 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 23.55 Mbit/s
95th percentile per-packet one-way delay: 101.903 ms
Loss rate: 1.88%
Run 7: Report of TCP Cubic — Data Link
Run 8: Statistics of TCP Cubic

Start at: 2018-08-22 21:34:09
End at: 2018-08-22 21:34:39
Local clock offset: -4.878 ms
Remote clock offset: 4.278 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.13 Mbit/s
95th percentile per-packet one-way delay: 93.219 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 46.02 Mbit/s
95th percentile per-packet one-way delay: 92.370 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 30.57 Mbit/s
95th percentile per-packet one-way delay: 98.876 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 20.69 Mbit/s
95th percentile per-packet one-way delay: 102.956 ms
Loss rate: 1.95%
Run 8: Report of TCP Cubic — Data Link

![Graph 1: Throughput (Mbps)](image)

- Flow 1 ingress (mean 45.91 Mbps)
- Flow 1 egress (mean 46.02 Mbps)
- Flow 2 ingress (mean 30.34 Mbps)
- Flow 2 egress (mean 30.57 Mbps)
- Flow 3 ingress (mean 20.75 Mbps)
- Flow 3 egress (mean 20.69 Mbps)

![Graph 2: Per-packet one-way delay (ms)](image)

- Flow 1 (95th percentile 92.37 ms)
- Flow 2 (95th percentile 98.88 ms)
- Flow 3 (95th percentile 102.96 ms)
Run 9: Statistics of TCP Cubic

End at: 2018-08-22 21:55:44  
Local clock offset: -4.078 ms  
Remote clock offset: 3.664 ms

# Below is generated by plot.py at 2018-08-22 22:37:51
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 71.76 Mbit/s  
95th percentile per-packet one-way delay: 91.288 ms  
Loss rate: 0.65%  
-- Flow 1:  
Average throughput: 42.80 Mbit/s  
95th percentile per-packet one-way delay: 91.266 ms  
Loss rate: 0.47%  
-- Flow 2:  
Average throughput: 33.21 Mbit/s  
95th percentile per-packet one-way delay: 94.142 ms  
Loss rate: 0.63%  
-- Flow 3:  
Average throughput: 20.95 Mbit/s  
95th percentile per-packet one-way delay: 96.474 ms  
Loss rate: 1.76%
Run 9: Report of TCP Cubic — Data Link
Run 10: Statistics of TCP Cubic

Start at: 2018-08-22 22:16:12
End at: 2018-08-22 22:16:42
Local clock offset: -5.426 ms
Remote clock offset: -0.482 ms

# Below is generated by plot.py at 2018-08-22 22:37:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.32 Mbit/s
95th percentile per-packet one-way delay: 89.915 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 46.26 Mbit/s
95th percentile per-packet one-way delay: 89.453 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 32.10 Mbit/s
95th percentile per-packet one-way delay: 97.109 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 20.51 Mbit/s
95th percentile per-packet one-way delay: 100.943 ms
Loss rate: 1.95%
Run 10: Report of TCP Cubic — Data Link

![Graph 1: Throughput Over Time](image1)

![Graph 2: Per-packet one-way delay](image2)
Run 1: Statistics of FillP

Start at: 2018-08-22 19:11:02  
End at: 2018-08-22 19:11:32  
Local clock offset: -4.95 ms  
Remote clock offset: 7.949 ms  

# Below is generated by plot.py at 2018-08-22 22:38:54  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 87.08 Mbit/s  
95th percentile per-packet one-way delay: 110.497 ms  
Loss rate: 3.59%  
-- Flow 1:  
Average throughput: 53.95 Mbit/s  
95th percentile per-packet one-way delay: 108.259 ms  
Loss rate: 2.36%  
-- Flow 2:  
Average throughput: 36.19 Mbit/s  
95th percentile per-packet one-way delay: 111.308 ms  
Loss rate: 4.83%  
-- Flow 3:  
Average throughput: 27.79 Mbit/s  
95th percentile per-packet one-way delay: 114.429 ms  
Loss rate: 7.38%
Run 1: Report of FillP — Data Link

![Graph showing throughput and per-packet one-way delay for different flows over time.]

- Flow 1 ingress (mean 54.94 Mbit/s)
- Flow 1 egress (mean 53.95 Mbit/s)
- Flow 2 ingress (mean 37.70 Mbit/s)
- Flow 2 egress (mean 36.19 Mbit/s)
- Flow 3 ingress (mean 29.51 Mbit/s)
- Flow 3 egress (mean 27.70 Mbit/s)

Flow 1 (95th percentile 108.26 ms)
Flow 2 (95th percentile 111.31 ms)
Flow 3 (95th percentile 114.43 ms)
Run 2: Statistics of FillP

Start at: 2018-08-22 19:32:07
End at: 2018-08-22 19:32:37
Local clock offset: ~4.306 ms
Remote clock offset: 9.496 ms

# Below is generated by plot.py at 2018-08-22 22:38:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.34 Mbit/s
95th percentile per-packet one-way delay: 108.514 ms
Loss rate: 3.15%
-- Flow 1:
Average throughput: 54.63 Mbit/s
95th percentile per-packet one-way delay: 106.494 ms
Loss rate: 2.05%
-- Flow 2:
Average throughput: 36.93 Mbit/s
95th percentile per-packet one-way delay: 109.581 ms
Loss rate: 4.56%
-- Flow 3:
Average throughput: 28.13 Mbit/s
95th percentile per-packet one-way delay: 111.894 ms
Loss rate: 5.72%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2018-08-22 19:53:26
End at: 2018-08-22 19:53:56
Local clock offset: -8.347 ms
Remote clock offset: 1.949 ms

# Below is generated by plot.py at 2018-08-22 22:38:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.47 Mbit/s
95th percentile per-packet one-way delay: 115.463 ms
Loss rate: 3.05%
-- Flow 1:
Average throughput: 54.90 Mbit/s
95th percentile per-packet one-way delay: 113.069 ms
Loss rate: 1.90%
-- Flow 2:
Average throughput: 36.88 Mbit/s
95th percentile per-packet one-way delay: 116.521 ms
Loss rate: 4.32%
-- Flow 3:
Average throughput: 27.76 Mbit/s
95th percentile per-packet one-way delay: 118.810 ms
Loss rate: 6.31%
Run 3: Report of FillP — Data Link
Run 4: Statistics of FillP

Start at: 2018-08-22 20:14:30
End at: 2018-08-22 20:15:00
Local clock offset: -9.034 ms
Remote clock offset: 2.205 ms

# Below is generated by plot.py at 2018-08-22 22:39:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.31 Mbit/s
95th percentile per-packet one-way delay: 113.165 ms
Loss rate: 2.85%
-- Flow 1:
Average throughput: 57.13 Mbit/s
95th percentile per-packet one-way delay: 109.793 ms
Loss rate: 2.07%
-- Flow 2:
Average throughput: 38.52 Mbit/s
95th percentile per-packet one-way delay: 113.975 ms
Loss rate: 3.81%
-- Flow 3:
Average throughput: 29.31 Mbit/s
95th percentile per-packet one-way delay: 115.007 ms
Loss rate: 4.86%
Run 4: Report of FillP — Data Link

[Graph showing throughput and latency over time for different flows]
Run 5: Statistics of FillP

Start at: 2018-08-22 20:35:34
End at: 2018-08-22 20:36:04
Local clock offset: -11.038 ms
Remote clock offset: 3.739 ms

# Below is generated by plot.py at 2018-08-22 22:39:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.39 Mbit/s
  95th percentile per-packet one-way delay: 112.085 ms
  Loss rate: 3.02%
-- Flow 1:
  Average throughput: 55.42 Mbit/s
  95th percentile per-packet one-way delay: 109.571 ms
  Loss rate: 2.13%
-- Flow 2:
  Average throughput: 37.21 Mbit/s
  95th percentile per-packet one-way delay: 111.933 ms
  Loss rate: 3.74%
-- Flow 3:
  Average throughput: 28.26 Mbit/s
  95th percentile per-packet one-way delay: 116.481 ms
  Loss rate: 6.21%
Run 5: Report of FillP — Data Link

![Graph 1](image1)

<table>
<thead>
<tr>
<th>Throughput (Mbit/s)</th>
<th>Time (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 1 ingress (mean 56.31 Mbit/s)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
<tr>
<td>Flow 2 ingress (mean 38.34 Mbit/s)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
<tr>
<td>Flow 3 ingress (mean 29.63 Mbit/s)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
<tr>
<td>Flow 1 egress (mean 55.42 Mbit/s)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
<tr>
<td>Flow 2 egress (mean 37.21 Mbit/s)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
<tr>
<td>Flow 3 egress (mean 28.26 Mbit/s)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
</tbody>
</table>

![Graph 2](image2)

<table>
<thead>
<tr>
<th>Per-packet one-way delay (ms)</th>
<th>Time (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 1 (95th percentile 109.57 ms)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
<tr>
<td>Flow 2 (95th percentile 111.93 ms)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
<tr>
<td>Flow 3 (95th percentile 116.48 ms)</td>
<td>0 5 10 15 20 25 30</td>
</tr>
</tbody>
</table>
Run 6: Statistics of FILLP

Start at: 2018-08-22 20:56:42
End at: 2018-08-22 20:57:12
Local clock offset: -9.977 ms
Remote clock offset: 2.354 ms

# Below is generated by plot.py at 2018-08-22 22:39:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.54 Mbit/s
95th percentile per-packet one-way delay: 107.489 ms
Loss rate: 3.06%
-- Flow 1:
Average throughput: 55.36 Mbit/s
95th percentile per-packet one-way delay: 104.279 ms
Loss rate: 2.05%
-- Flow 2:
Average throughput: 37.32 Mbit/s
95th percentile per-packet one-way delay: 106.630 ms
Loss rate: 4.34%
-- Flow 3:
Average throughput: 28.68 Mbit/s
95th percentile per-packet one-way delay: 112.751 ms
Loss rate: 5.46%
Run 6: Report of FillP — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 56.21 Mbit/s)
Flow 1 egress (mean 55.36 Mbit/s)
Flow 2 ingress (mean 38.72 Mbit/s)
Flow 2 egress (mean 37.32 Mbit/s)
Flow 3 ingress (mean 29.83 Mbit/s)
Flow 3 egress (mean 28.66 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 104.28 ms)
Flow 2 (95th percentile 106.63 ms)
Flow 3 (95th percentile 112.75 ms)
Run 7: Statistics of FillP

Start at: 2018-08-22 21:17:44
End at: 2018-08-22 21:18:14
Local clock offset: -6.843 ms
Remote clock offset: -2.006 ms

# Below is generated by plot.py at 2018-08-22 22:39:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 77.73 Mbit/s
  95th percentile per-packet one-way delay: 104.449 ms
  Loss rate: 11.77%
-- Flow 1:
  Average throughput: 50.27 Mbit/s
  95th percentile per-packet one-way delay: 99.206 ms
  Loss rate: 8.52%
-- Flow 2:
  Average throughput: 30.99 Mbit/s
  95th percentile per-packet one-way delay: 105.907 ms
  Loss rate: 16.59%
-- Flow 3:
  Average throughput: 25.52 Mbit/s
  95th percentile per-packet one-way delay: 111.175 ms
  Loss rate: 18.42%
Run 7: Report of FillP — Data Link

![Graph showing throughput and delay over time for different flows. The top graph displays throughput in Mbit/s, with lines representing different flows and their ingress/egress rates. The bottom graph shows per-packet one-way delay in ms, with distinct markers for each flow's 95th percentile delay.](image-url)
Run 8: Statistics of FillP

Start at: 2018-08-22 21:38:59
End at: 2018-08-22 21:39:29
Local clock offset: -3.851 ms
Remote clock offset: 0.972 ms

# Below is generated by plot.py at 2018-08-22 22:39:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.15 Mbit/s
95th percentile per-packet one-way delay: 110.834 ms
Loss rate: 15.00%
-- Flow 1:
Average throughput: 45.82 Mbit/s
95th percentile per-packet one-way delay: 103.876 ms
Loss rate: 13.91%
-- Flow 2:
Average throughput: 28.01 Mbit/s
95th percentile per-packet one-way delay: 113.966 ms
Loss rate: 16.36%
-- Flow 3:
Average throughput: 20.55 Mbit/s
95th percentile per-packet one-way delay: 114.576 ms
Loss rate: 18.38%
Run 8: Report of FillP — Data Link

![Graph 1: Throughput vs Time](image1)

- **Flow 1 ingress (mean 52.02 Mbit/s)**
- **Flow 1 egress (mean 45.82 Mbit/s)**
- **Flow 2 ingress (mean 33.19 Mbit/s)**
- **Flow 2 egress (mean 28.01 Mbit/s)**
- **Flow 3 ingress (mean 24.74 Mbit/s)**
- **Flow 3 egress (mean 20.55 Mbit/s)**

![Graph 2: Per-packet one-way delay vs Time](image2)

- **Flow 1 (95th percentile 103.98 ms)**
- **Flow 2 (95th percentile 113.97 ms)**
- **Flow 3 (95th percentile 114.58 ms)**
Run 9: Statistics of FillP

Start at: 2018-08-22 22:00:01
End at: 2018-08-22 22:00:32
Local clock offset: -3.038 ms
Remote clock offset: 2.171 ms

# Below is generated by plot.py at 2018-08-22 22:40:09
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 83.21 Mbit/s
 95th percentile per-packet one-way delay: 107.332 ms
 Loss rate: 9.13%
-- Flow 1:
 Average throughput: 49.13 Mbit/s
 95th percentile per-packet one-way delay: 105.353 ms
 Loss rate: 10.64%
-- Flow 2:
 Average throughput: 36.61 Mbit/s
 95th percentile per-packet one-way delay: 106.375 ms
 Loss rate: 7.80%
-- Flow 3:
 Average throughput: 29.85 Mbit/s
 95th percentile per-packet one-way delay: 109.828 ms
 Loss rate: 4.46%
Run 9: Report of FillP — Data Link

![Graph showing throughput and delay for different flows over time.](image-url)

**Throughput (Mbps):**
- Flow 1 ingress (mean 54.68 Mbps)
- Flow 1 egress (mean 49.13 Mbps)
- Flow 2 ingress (mean 39.39 Mbps)
- Flow 2 egress (mean 36.61 Mbps)
- Flow 3 ingress (mean 30.71 Mbps)
- Flow 3 egress (mean 29.85 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 105.35 ms)
- Flow 2 (95th percentile 106.38 ms)
- Flow 3 (95th percentile 109.83 ms)
Run 10: Statistics of FillP

Start at: 2018-08-22 22:21:00
End at: 2018-08-22 22:21:30
Local clock offset: -6.815 ms
Remote clock offset: 0.067 ms

# Below is generated by plot.py at 2018-08-22 22:40:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.24 Mbit/s
  95th percentile per-packet one-way delay: 107.712 ms
  Loss rate: 3.00%
-- Flow 1:
  Average throughput: 55.26 Mbit/s
  95th percentile per-packet one-way delay: 104.345 ms
  Loss rate: 1.90%
-- Flow 2:
  Average throughput: 37.20 Mbit/s
  95th percentile per-packet one-way delay: 108.884 ms
  Loss rate: 4.28%
-- Flow 3:
  Average throughput: 28.33 Mbit/s
  95th percentile per-packet one-way delay: 111.229 ms
  Loss rate: 5.96%
Run 10: Report of FillP — Data Link

![Graph of throughput and delay over time for different flows.]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 36.05 Mbps)
  - Flow 1 egress (mean 55.26 Mbps)
  - Flow 2 ingress (mean 38.56 Mbps)
  - Flow 2 egress (mean 37.20 Mbps)
  - Flow 3 ingress (mean 29.67 Mbps)
  - Flow 3 egress (mean 28.33 Mbps)

- **Delay (ms):**
  - Flow 1 (95th percentile 104.34 ms)
  - Flow 2 (95th percentile 108.88 ms)
  - Flow 3 (95th percentile 111.23 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2018-08-22 19:01:20
End at: 2018-08-22 19:01:50
Local clock offset: -4.329 ms
Remote clock offset: 2.059 ms

# Below is generated by plot.py at 2018-08-22 22:40:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.96 Mbit/s
95th percentile per-packet one-way delay: 109.873 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 57.25 Mbit/s
95th percentile per-packet one-way delay: 106.683 ms
Loss rate: 1.20%
-- Flow 2:
Average throughput: 38.92 Mbit/s
95th percentile per-packet one-way delay: 111.743 ms
Loss rate: 2.05%
-- Flow 3:
Average throughput: 30.12 Mbit/s
95th percentile per-packet one-way delay: 112.572 ms
Loss rate: 2.88%
Run 1: Report of FillP-Sheep — Data Link

[Graph showing throughput and per-packet one-way delay over time]
Run 2: Statistics of FillP-Sheep

Local clock offset: -3.394 ms
Remote clock offset: 4.118 ms

# Below is generated by plot.py at 2018-08-22 22:40:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.82 Mbit/s
  95th percentile per-packet one-way delay: 113.359 ms
  Loss rate: 2.91%
-- Flow 1:
  Average throughput: 54.68 Mbit/s
  95th percentile per-packet one-way delay: 113.208 ms
  Loss rate: 2.31%
-- Flow 2:
  Average throughput: 37.23 Mbit/s
  95th percentile per-packet one-way delay: 113.234 ms
  Loss rate: 3.38%
-- Flow 3:
  Average throughput: 28.77 Mbit/s
  95th percentile per-packet one-way delay: 114.569 ms
  Loss rate: 5.06%
Run 2: Report of FillP-Sheep — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 55.64 Mbps)
- Flow 1 egress (mean 54.68 Mbps)
- Flow 2 ingress (mean 38.22 Mbps)
- Flow 2 egress (mean 37.23 Mbps)
- Flow 3 ingress (mean 29.77 Mbps)
- Flow 3 egress (mean 28.77 Mbps)

![Graph 2: Per-packet one-way delay (ms)]

- Flow 1 (95th percentile 113.21 ms)
- Flow 2 (95th percentile 113.23 ms)
- Flow 3 (95th percentile 114.57 ms)
Run 3: Statistics of FillP-Sheep

Start at: 2018-08-22 19:43:34
End at: 2018-08-22 19:44:04
Local clock offset: -6.911 ms
Remote clock offset: 2.695 ms

# Below is generated by plot.py at 2018-08-22 22:40:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 72.99 Mbit/s
  95th percentile per-packet one-way delay: 111.699 ms
  Loss rate: 19.44%
-- Flow 1:
  Average throughput: 45.76 Mbit/s
  95th percentile per-packet one-way delay: 109.931 ms
  Loss rate: 18.91%
-- Flow 2:
  Average throughput: 29.37 Mbit/s
  95th percentile per-packet one-way delay: 111.721 ms
  Loss rate: 20.10%
-- Flow 3:
  Average throughput: 23.63 Mbit/s
  95th percentile per-packet one-way delay: 115.507 ms
  Loss rate: 20.92%
Run 3: Report of FillP-Sheep — Data Link

![Graph 1: Throughput (Mbps)](image1.png)

- Flow 1 ingress (mean 56.13 Mbit/s)
- Flow 1 egress (mean 45.76 Mbit/s)
- Flow 2 ingress (mean 36.45 Mbit/s)
- Flow 2 egress (mean 29.37 Mbit/s)
- Flow 3 ingress (mean 29.38 Mbit/s)
- Flow 3 egress (mean 23.63 Mbit/s)

![Graph 2: Per-packet one-way delay (ms)](image2.png)

- Flow 1 (95th percentile 109.93 ms)
- Flow 2 (95th percentile 111.72 ms)
- Flow 3 (95th percentile 115.51 ms)
Run 4: Statistics of FillP-Sheep

Start at: 2018-08-22 20:04:49
End at: 2018-08-22 20:05:19
Local clock offset: -8.47 ms
Remote clock offset: 7.711 ms

# Below is generated by plot.py at 2018-08-22 22:40:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.67 Mbit/s
  95th percentile per-packet one-way delay: 109.425 ms
  Loss rate: 4.57%
-- Flow 1:
  Average throughput: 51.34 Mbit/s
  95th percentile per-packet one-way delay: 107.715 ms
  Loss rate: 3.74%
-- Flow 2:
  Average throughput: 35.16 Mbit/s
  95th percentile per-packet one-way delay: 109.857 ms
  Loss rate: 5.83%
-- Flow 3:
  Average throughput: 27.41 Mbit/s
  95th percentile per-packet one-way delay: 112.937 ms
  Loss rate: 5.97%
Run 4: Report of FillP-Sheep — Data Link
Run 5: Statistics of FillP-Sheep

Start at: 2018-08-22 20:25:53
End at: 2018-08-22 20:26:23
Local clock offset: -10.483 ms
Remote clock offset: 8.508 ms

# Below is generated by plot.py at 2018-08-22 22:40:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 87.42 Mbit/s
  95th percentile per-packet one-way delay: 107.645 ms
  Loss rate: 3.59%
-- Flow 1:
  Average throughput: 53.87 Mbit/s
  95th percentile per-packet one-way delay: 106.341 ms
  Loss rate: 3.10%
-- Flow 2:
  Average throughput: 36.56 Mbit/s
  95th percentile per-packet one-way delay: 109.038 ms
  Loss rate: 4.38%
-- Flow 3:
  Average throughput: 28.38 Mbit/s
  95th percentile per-packet one-way delay: 108.874 ms
  Loss rate: 4.32%
Run 5: Report of FillP-Sheep — Data Link

![Graph showing throughput and packet delay over time for different flows.]

**Throughput (Mbps):**
- **Flow 1 ingress** (mean 55.30 Mbps)
- **Flow 1 egress** (mean 53.87 Mbps)
- **Flow 2 ingress** (mean 37.92 Mbps)
- **Flow 2 egress** (mean 36.56 Mbps)
- **Flow 3 ingress** (mean 29.17 Mbps)
- **Flow 3 egress** (mean 28.30 Mbps)

**Packet delay (ms):**
- **Flow 1 (95th percentile 106.34 ms)**
- **Flow 2 (95th percentile 109.04 ms)**
- **Flow 3 (95th percentile 108.87 ms)**
Run 6: Statistics of FillP-Sheep

Start at: 2018-08-22 20:46:54
End at: 2018-08-22 20:47:24
Local clock offset: -10.651 ms
Remote clock offset: 4.525 ms

# Below is generated by plot.py at 2018-08-22 22:40:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.63 Mbit/s
95th percentile per-packet one-way delay: 106.648 ms
Loss rate: 19.33%
-- Flow 1:
Average throughput: 45.50 Mbit/s
95th percentile per-packet one-way delay: 103.033 ms
Loss rate: 18.90%
-- Flow 2:
Average throughput: 30.75 Mbit/s
95th percentile per-packet one-way delay: 108.956 ms
Loss rate: 20.08%
-- Flow 3:
Average throughput: 23.46 Mbit/s
95th percentile per-packet one-way delay: 107.296 ms
Loss rate: 19.83%
Run 6: Report of FillP-Sheep — Data Link

![Graph 1: Throughput (Mbps)](image1)

- Flow 1 ingress (mean 55.82 Mbps)
- Flow 2 ingress (mean 38.17 Mbps)
- Flow 3 ingress (mean 28.81 Mbps)
- Flow 1 egress (mean 45.50 Mbps)
- Flow 2 egress (mean 30.75 Mbps)
- Flow 3 egress (mean 23.46 Mbps)

![Graph 2: Per packet one way delay (ms)](image2)

- Flow 1 (95th percentile 103.03 ms)
- Flow 2 (95th percentile 108.96 ms)
- Flow 3 (95th percentile 107.30 ms)
Run 7: Statistics of FillP-Sheep

Start at: 2018-08-22 21:08:04
End at: 2018-08-22 21:08:34
Local clock offset: -9.598 ms
Remote clock offset: 0.099 ms

# Below is generated by plot.py at 2018-08-22 22:41:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.62 Mbit/s
  95th percentile per-packet one-way delay: 106.475 ms
  Loss rate: 2.74%
-- Flow 1:
  Average throughput: 55.32 Mbit/s
  95th percentile per-packet one-way delay: 103.769 ms
  Loss rate: 2.12%
-- Flow 2:
  Average throughput: 37.39 Mbit/s
  95th percentile per-packet one-way delay: 107.254 ms
  Loss rate: 3.65%
-- Flow 3:
  Average throughput: 28.91 Mbit/s
  95th percentile per-packet one-way delay: 109.443 ms
  Loss rate: 3.96%
Run 7: Report of FillP-Sheep — Data Link

![Graph 1: Throughput (Mbps) vs Time (s)]

- **Flow 1 ingress** (mean 56.21 Mbps)
- **Flow 1 egress** (mean 55.32 Mbps)
- **Flow 2 ingress** (mean 38.49 Mbps)
- **Flow 2 egress** (mean 37.39 Mbps)
- **Flow 3 ingress** (mean 29.62 Mbps)
- **Flow 3 egress** (mean 28.91 Mbps)

![Graph 2: Per-packet one way delay (ms) vs Time (s)]

- **Flow 1** (95th percentile 103.77 ms)
- **Flow 2** (95th percentile 107.25 ms)
- **Flow 3** (95th percentile 109.44 ms)
Run 8: Statistics of FillP-Sheep

Start at: 2018-08-22 21:29:17
End at: 2018-08-22 21:29:47
Local clock offset: -3.7 ms
Remote clock offset: 0.737 ms

# Below is generated by plot.py at 2018-08-22 22:41:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.02 Mbit/s
95th percentile per-packet one-way delay: 112.850 ms
Loss rate: 2.74%
-- Flow 1:
Average throughput: 54.89 Mbit/s
95th percentile per-packet one-way delay: 111.255 ms
Loss rate: 2.16%
-- Flow 2:
Average throughput: 37.19 Mbit/s
95th percentile per-packet one-way delay: 114.086 ms
Loss rate: 3.68%
-- Flow 3:
Average throughput: 28.80 Mbit/s
95th percentile per-packet one-way delay: 114.676 ms
Loss rate: 3.62%
Run 8: Report of FillP-Sheep — Data Link
Run 9: Statistics of FillP-Sheep

Start at: 2018-08-22 21:50:23
End at: 2018-08-22 21:50:53
Local clock offset: -2.651 ms
Remote clock offset: 4.986 ms

# Below is generated by plot.py at 2018-08-22 22:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.59 Mbit/s
95th percentile per-packet one-way delay: 106.308 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 56.99 Mbit/s
95th percentile per-packet one-way delay: 104.404 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 38.72 Mbit/s
95th percentile per-packet one-way delay: 106.255 ms
Loss rate: 2.06%
-- Flow 3:
Average throughput: 30.14 Mbit/s
95th percentile per-packet one-way delay: 110.633 ms
Loss rate: 2.88%
Run 9: Report of FillP-Sheep — Data Link
Run 10: Statistics of FillP-Sheep

Start at: 2018-08-22 22:11:22
End at: 2018-08-22 22:11:52
Local clock offset: -3.615 ms
Remote clock offset: -0.163 ms

# Below is generated by plot.py at 2018-08-22 22:41:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.88 Mbit/s
95th percentile per-packet one-way delay: 106.251 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 56.98 Mbit/s
95th percentile per-packet one-way delay: 104.885 ms
Loss rate: 1.33%
-- Flow 2:
Average throughput: 39.11 Mbit/s
95th percentile per-packet one-way delay: 106.392 ms
Loss rate: 2.13%
-- Flow 3:
Average throughput: 30.36 Mbit/s
95th percentile per-packet one-way delay: 109.704 ms
Loss rate: 2.61%
Run 10: Report of FillP-Sheep — Data Link
Run 1: Statistics of Indigo

Start at: 2018-08-22 19:16:04
End at: 2018-08-22 19:16:34
Local clock offset: -4.12 ms
Remote clock offset: 4.687 ms

# Below is generated by plot.py at 2018-08-22 22:41:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.89 Mbit/s
95th percentile per-packet one-way delay: 116.481 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 54.91 Mbit/s
95th percentile per-packet one-way delay: 116.041 ms
Loss rate: 2.67%
-- Flow 2:
Average throughput: 35.13 Mbit/s
95th percentile per-packet one-way delay: 116.661 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 26.81 Mbit/s
95th percentile per-packet one-way delay: 117.083 ms
Loss rate: 2.45%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2018-08-22 19:37:11
End at: 2018-08-22 19:37:41
Local clock offset: -5.295 ms
Remote clock offset: 7.427 ms

# Below is generated by plot.py at 2018-08-22 22:41:34
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 86.91 Mbit/s
  95th percentile per-packet one-way delay: 114.751 ms
  Loss rate: 1.85%
-- Flow 1:
  Average throughput: 54.24 Mbit/s
  95th percentile per-packet one-way delay: 113.380 ms
  Loss rate: 2.04%
-- Flow 2:
  Average throughput: 36.37 Mbit/s
  95th percentile per-packet one-way delay: 116.551 ms
  Loss rate: 1.36%
-- Flow 3:
  Average throughput: 26.27 Mbit/s
  95th percentile per-packet one-way delay: 104.749 ms
  Loss rate: 2.09%
Run 2: Report of Indigo — Data Link

![Graph 1: Throughput vs Time](image)

- **Flow 1 ingress (mean 55.05 Mbit/s)**
- **Flow 1 egress (mean 54.24 Mbit/s)**
- **Flow 2 ingress (mean 36.36 Mbit/s)**
- **Flow 2 egress (mean 36.37 Mbit/s)**
- **Flow 3 ingress (mean 26.40 Mbit/s)**
- **Flow 3 egress (mean 26.27 Mbit/s)**

![Graph 2: Per-packet round-trip delay](image)

- **Flow 1 (95th percentile 113.38 ms)**
- **Flow 2 (95th percentile 116.55 ms)**
- **Flow 3 (95th percentile 104.75 ms)**
Run 3: Statistics of Indigo

Start at: 2018-08-22 19:58:29
End at: 2018-08-22 19:58:59
Local clock offset: -7.187 ms
Remote clock offset: 6.592 ms

# Below is generated by plot.py at 2018-08-22 22:41:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.33 Mbit/s
95th percentile per-packet one-way delay: 115.642 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 53.73 Mbit/s
95th percentile per-packet one-way delay: 115.172 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 36.22 Mbit/s
95th percentile per-packet one-way delay: 117.477 ms
Loss rate: 1.38%
-- Flow 3:
Average throughput: 26.37 Mbit/s
95th percentile per-packet one-way delay: 111.857 ms
Loss rate: 2.17%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2018-08-22 20:19:33
End at: 2018-08-22 20:20:03
Local clock offset: -10.106 ms
Remote clock offset: 3.383 ms

# Below is generated by plot.py at 2018-08-22 22:41:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 114.015 ms
Loss rate: 7.51%
-- Flow 1:
Average throughput: 57.86 Mbit/s
95th percentile per-packet one-way delay: 113.169 ms
Loss rate: 10.83%
-- Flow 2:
Average throughput: 38.73 Mbit/s
95th percentile per-packet one-way delay: 117.223 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 29.01 Mbit/s
95th percentile per-packet one-way delay: 102.284 ms
Loss rate: 1.94%
Run 4: Report of Indigo — Data Link

![Graph showing throughput and packet delay over time for different flows.]

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 64.53 Mbps)
Flow 1 egress (mean 57.86 Mbps)
Flow 2 ingress (mean 38.91 Mbps)
Flow 2 egress (mean 38.73 Mbps)
Flow 3 ingress (mean 29.09 Mbps)
Flow 3 egress (mean 29.01 Mbps)

Packet delay (ms)

Time (s)

Flow 1 (95th percentile 113.17 ms)
Flow 2 (95th percentile 117.22 ms)
Flow 3 (95th percentile 102.28 ms)
Run 5: Statistics of Indigo

Start at: 2018-08-22 20:40:34
End at: 2018-08-22 20:41:04
Local clock offset: -10.065 ms
Remote clock offset: 7.403 ms

# Below is generated by plot.py at 2018-08-22 22:42:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.02 Mbit/s
95th percentile per-packet one-way delay: 113.281 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 57.16 Mbit/s
95th percentile per-packet one-way delay: 112.622 ms
Loss rate: 2.04%
-- Flow 2:
Average throughput: 37.33 Mbit/s
95th percentile per-packet one-way delay: 112.726 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 27.99 Mbit/s
95th percentile per-packet one-way delay: 118.606 ms
Loss rate: 2.11%
Run 5: Report of Indigo — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 58.06 Mbps) — Flow 1 egress (mean 57.16 Mbps)
Flow 2 ingress (mean 37.49 Mbps) — Flow 2 egress (mean 37.33 Mbps)
Flow 3 ingress (mean 28.14 Mbps) — Flow 3 egress (mean 27.99 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 112.62 ms) — Flow 2 (95th percentile 112.73 ms) — Flow 3 (95th percentile 118.61 ms)
Run 6: Statistics of Indigo

Start at: 2018-08-22 21:01:44
End at: 2018-08-22 21:02:14
Local clock offset: -10.083 ms
Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-08-22 22:42:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.50 Mbit/s
95th percentile per-packet one-way delay: 114.253 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 54.69 Mbit/s
95th percentile per-packet one-way delay: 111.908 ms
Loss rate: 1.67%
-- Flow 2:
Average throughput: 37.02 Mbit/s
95th percentile per-packet one-way delay: 117.120 ms
Loss rate: 2.00%
-- Flow 3:
Average throughput: 28.47 Mbit/s
95th percentile per-packet one-way delay: 116.643 ms
Loss rate: 2.93%
Run 6: Report of Indigo — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.]

Legend:
- Flow 1 ingress (mean 55.31 Mbit/s)
- Flow 1 egress (mean 54.69 Mbit/s)
- Flow 2 ingress (mean 37.47 Mbit/s)
- Flow 2 egress (mean 37.02 Mbit/s)
- Flow 3 ingress (mean 28.85 Mbit/s)
- Flow 3 egress (mean 26.47 Mbit/s)
Run 7: Statistics of Indigo

Start at: 2018-08-22 21:22:56
End at: 2018-08-22 21:23:26
Local clock offset: -5.181 ms
Remote clock offset: -2.392 ms

# Below is generated by plot.py at 2018-08-22 22:42:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.74 Mbit/s
  95th percentile per-packet one-way delay: 119.288 ms
  Loss rate: 1.94%
-- Flow 1:
  Average throughput: 55.82 Mbit/s
  95th percentile per-packet one-way delay: 119.623 ms
  Loss rate: 2.25%
-- Flow 2:
  Average throughput: 36.01 Mbit/s
  95th percentile per-packet one-way delay: 117.610 ms
  Loss rate: 0.99%
-- Flow 3:
  Average throughput: 27.83 Mbit/s
  95th percentile per-packet one-way delay: 118.395 ms
  Loss rate: 2.55%
Run 7: Report of Indigo — Data Link
Run 8: Statistics of Indigo

Start at: 2018-08-22 21:44:01
End at: 2018-08-22 21:44:31
Local clock offset: -3.672 ms
Remote clock offset: 1.244 ms

# Below is generated by plot.py at 2018-08-22 22:42:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.58 Mbit/s
  95th percentile per-packet one-way delay: 115.003 ms
  Loss rate: 7.86%
-- Flow 1:
  Average throughput: 58.20 Mbit/s
  95th percentile per-packet one-way delay: 113.172 ms
  Loss rate: 11.30%
-- Flow 2:
  Average throughput: 39.03 Mbit/s
  95th percentile per-packet one-way delay: 117.073 ms
  Loss rate: 1.42%
-- Flow 3:
  Average throughput: 29.18 Mbit/s
  95th percentile per-packet one-way delay: 107.400 ms
  Loss rate: 1.98%
Run 8: Report of Indigo — Data Link
Run 9: Statistics of Indigo

Start at: 2018-08-22 22:05:02
End at: 2018-08-22 22:05:32
Local clock offset: -2.886 ms
Remote clock offset: -0.197 ms

# Below is generated by plot.py at 2018-08-22 22:42:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 76.90 Mbit/s
  95th percentile per-packet one-way delay: 112.634 ms
  Loss rate: 12.88%
-- Flow 1:
  Average throughput: 48.58 Mbit/s
  95th percentile per-packet one-way delay: 112.260 ms
  Loss rate: 10.02%
-- Flow 2:
  Average throughput: 31.18 Mbit/s
  95th percentile per-packet one-way delay: 112.925 ms
  Loss rate: 16.69%
-- Flow 3:
  Average throughput: 23.47 Mbit/s
  95th percentile per-packet one-way delay: 113.277 ms
  Loss rate: 19.23%
Run 9: Report of Indigo — Data Link
Run 10: Statistics of Indigo

Start at: 2018-08-22 22:26:01
End at: 2018-08-22 22:26:31
Local clock offset: -7.267 ms
Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.16 Mbit/s
  95th percentile per-packet one-way delay: 111.693 ms
  Loss rate: 1.30%
-- Flow 1:
  Average throughput: 57.90 Mbit/s
  95th percentile per-packet one-way delay: 111.877 ms
  Loss rate: 1.39%
-- Flow 2:
  Average throughput: 38.62 Mbit/s
  95th percentile per-packet one-way delay: 112.163 ms
  Loss rate: 0.90%
-- Flow 3:
  Average throughput: 29.60 Mbit/s
  95th percentile per-packet one-way delay: 98.494 ms
  Loss rate: 1.83%
Run 10: Report of Indigo — Data Link
Run 1: Statistics of LEDBAT

Start at: 2018-08-22 19:03:50
End at: 2018-08-22 19:04:20
Local clock offset: -4.266 ms
Remote clock offset: 1.586 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 20.28 Mbit/s
  95th percentile per-packet one-way delay: 84.137 ms
  Loss rate: 1.08%
-- Flow 1:
  Average throughput: 13.11 Mbit/s
  95th percentile per-packet one-way delay: 84.346 ms
  Loss rate: 0.57%
-- Flow 2:
  Average throughput: 8.75 Mbit/s
  95th percentile per-packet one-way delay: 83.987 ms
  Loss rate: 1.66%
-- Flow 3:
  Average throughput: 4.22 Mbit/s
  95th percentile per-packet one-way delay: 83.847 ms
  Loss rate: 3.37%
Run 2: Statistics of LEDBAT

Start at: 2018-08-22 19:24:55
End at: 2018-08-22 19:25:25
Local clock offset: -4.27 ms
Remote clock offset: 8.044 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.23 Mbit/s
95th percentile per-packet one-way delay: 84.001 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 13.08 Mbit/s
95th percentile per-packet one-way delay: 84.584 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 8.78 Mbit/s
95th percentile per-packet one-way delay: 81.667 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 84.742 ms
Loss rate: 3.41%
Run 2: Report of LEDBAT — Data Link
Run 3: Statistics of LEDBAT

Start at: 2018-08-22 19:46:14
End at: 2018-08-22 19:46:44
Local clock offset: -6.623 ms
Remote clock offset: 3.501 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.41 Mbit/s
95th percentile per-packet one-way delay: 84.690 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 12.36 Mbit/s
95th percentile per-packet one-way delay: 85.076 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 8.70 Mbit/s
95th percentile per-packet one-way delay: 84.261 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 84.157 ms
Loss rate: 3.47%
Run 3: Report of LEDBAT — Data Link
Run 4: Statistics of LEDBAT

Start at: 2018-08-22 20:07:19
End at: 2018-08-22 20:07:49
Local clock offset: -8.581 ms
Remote clock offset: 6.448 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 20.11 Mbit/s
  95th percentile per-packet one-way delay: 84.022 ms
  Loss rate: 1.42%
-- Flow 1:
  Average throughput: 13.08 Mbit/s
  95th percentile per-packet one-way delay: 83.953 ms
  Loss rate: 1.10%
-- Flow 2:
  Average throughput: 8.61 Mbit/s
  95th percentile per-packet one-way delay: 84.449 ms
  Loss rate: 1.66%
-- Flow 3:
  Average throughput: 4.07 Mbit/s
  95th percentile per-packet one-way delay: 83.797 ms
  Loss rate: 3.41%
Run 4: Report of LEDBAT — Data Link

![Graph showing throughput and packet delay over time for different flows]

- **Flow 1 ingress** (mean 13.15 Mbit/s)
- **Flow 1 egress** (mean 13.08 Mbit/s)
- **Flow 2 ingress** (mean 8.88 Mbit/s)
- **Flow 2 egress** (mean 8.61 Mbit/s)
- **Flow 3 ingress** (mean 4.13 Mbit/s)
- **Flow 3 egress** (mean 4.07 Mbit/s)

![Graph showing per-packet one-way delay for different flows]

- **Flow 1 (95th percentile 83.95 ms)**
- **Flow 2 (95th percentile 84.45 ms)**
- **Flow 3 (95th percentile 83.80 ms)**
Run 5: Statistics of LEDBAT

Start at: 2018-08-22 20:28:23
End at: 2018-08-22 20:28:53
Local clock offset: -9.885 ms
Remote clock offset: 3.649 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.20 Mbit/s
95th percentile per-packet one-way delay: 85.904 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 86.074 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 8.72 Mbit/s
95th percentile per-packet one-way delay: 84.495 ms
Loss rate: 1.66%
-- Flow 3:
Average throughput: 4.15 Mbit/s
95th percentile per-packet one-way delay: 88.481 ms
Loss rate: 3.35%
Run 5: Report of LEDBAT — Data Link
Run 6: Statistics of LEDBAT

Start at: 2018-08-22 20:49:32
End at: 2018-08-22 20:50:02
Local clock offset: -9.951 ms
Remote clock offset: 3.503 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 22.98 Mbit/s
95th percentile per-packet one-way delay: 80.288 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 14.92 Mbit/s
95th percentile per-packet one-way delay: 80.913 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 9.93 Mbit/s
95th percentile per-packet one-way delay: 79.609 ms
Loss rate: 1.56%
-- Flow 3:
Average throughput: 4.44 Mbit/s
95th percentile per-packet one-way delay: 79.762 ms
Loss rate: 3.00%
Run 6: Report of LEDBAT — Data Link
Run 7: Statistics of LEDBAT

Start at: 2018-08-22 21:10:33  
End at: 2018-08-22 21:11:03  
Local clock offset: -8.306 ms  
Remote clock offset: -5.098 ms

# Below is generated by plot.py at 2018-08-22 22:42:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.49 Mbit/s
95th percentile per-packet one-way delay: 86.376 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 12.80 Mbit/s
95th percentile per-packet one-way delay: 87.176 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 84.610 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 3.90 Mbit/s
95th percentile per-packet one-way delay: 85.523 ms
Loss rate: 2.95%
Run 8: Statistics of LEDBAT

Start at: 2018-08-22 21:31:47
End at: 2018-08-22 21:32:17
Local clock offset: -5.04 ms
Remote clock offset: 4.973 ms

# Below is generated by plot.py at 2018-08-22 22:42:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 20.15 Mbit/s
  95th percentile per-packet one-way delay: 81.456 ms
  Loss rate: 1.41%
-- Flow 1:
  Average throughput: 13.27 Mbit/s
  95th percentile per-packet one-way delay: 80.910 ms
  Loss rate: 1.08%
-- Flow 2:
  Average throughput: 8.30 Mbit/s
  95th percentile per-packet one-way delay: 82.392 ms
  Loss rate: 1.70%
-- Flow 3:
  Average throughput: 4.21 Mbit/s
  95th percentile per-packet one-way delay: 80.676 ms
  Loss rate: 3.33%
Run 9: Statistics of LEDBAT

Start at: 2018-08-22 21:52:52
End at: 2018-08-22 21:53:22
Local clock offset: -4.178 ms
Remote clock offset: 4.911 ms

# Below is generated by plot.py at 2018-08-22 22:42:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.72 Mbit/s
95th percentile per-packet one-way delay: 79.390 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 14.27 Mbit/s
95th percentile per-packet one-way delay: 79.403 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 79.365 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 4.90 Mbit/s
95th percentile per-packet one-way delay: 79.359 ms
Loss rate: 3.07%
Run 9: Report of LEDBAT — Data Link

![Graph showing throughput and per-packet round-trip delay over time for different flows.]

**Throughput (Mbps):**
- Flow 1 ingress (mean 14.35 Mbps)
- Flow 1 egress (mean 14.27 Mbps)
- Flow 2 ingress (mean 7.33 Mbps)
- Flow 2 egress (mean 7.29 Mbps)
- Flow 3 ingress (mean 4.98 Mbps)
- Flow 3 egress (mean 4.96 Mbps)

**Per-packet round-trip delay (ms):**
- Flow 1 (95th percentile 79.40 ms)
- Flow 2 (95th percentile 79.36 ms)
- Flow 3 (95th percentile 79.36 ms)
Run 10: Statistics of LEDBAT

Start at: 2018-08-22 22:13:51
End at: 2018-08-22 22:14:21
Local clock offset: -5.77 ms
Remote clock offset: 0.858 ms

# Below is generated by plot.py at 2018-08-22 22:42:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 22.72 Mbit/s
95th percentile per-packet one-way delay: 78.415 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 15.23 Mbit/s
95th percentile per-packet one-way delay: 78.576 ms
Loss rate: 1.02%
-- Flow 2:
Average throughput: 8.92 Mbit/s
95th percentile per-packet one-way delay: 78.367 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 4.78 Mbit/s
95th percentile per-packet one-way delay: 77.535 ms
Loss rate: 3.16%
Run 10: Report of LEDBAT — Data Link

- Flow 1 ingress (mean 15.31 Mbit/s)
- Flow 1 egress (mean 15.23 Mbit/s)
- Flow 2 ingress (mean 8.98 Mbit/s)
- Flow 2 egress (mean 8.92 Mbit/s)
- Flow 3 ingress (mean 4.86 Mbit/s)
- Flow 3 egress (mean 4.76 Mbit/s)

- Flow 1 (95th percentile 78.58 ms)
- Flow 2 (95th percentile 78.37 ms)
- Flow 3 (95th percentile 77.53 ms)
Run 1: Statistics of PCC-Allegro

Start at: 2018-08-22 19:13:32
End at: 2018-08-22 19:14:02
Local clock offset: -4.938 ms
Remote clock offset: 6.988 ms

# Below is generated by plot.py at 2018-08-22 22:43:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.80 Mbit/s
95th percentile per-packet one-way delay: 108.964 ms
Loss rate: 5.00%
-- Flow 1:
Average throughput: 52.86 Mbit/s
95th percentile per-packet one-way delay: 106.599 ms
Loss rate: 6.66%
-- Flow 2:
Average throughput: 32.20 Mbit/s
95th percentile per-packet one-way delay: 112.228 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 20.14 Mbit/s
95th percentile per-packet one-way delay: 114.121 ms
Loss rate: 2.69%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2018-08-22 19:34:38
End at: 2018-08-22 19:35:08
Local clock offset: -5.165 ms
Remote clock offset: 5.382 ms

# Below is generated by plot.py at 2018-08-22 22:43:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.28 Mbit/s
95th percentile per-packet one-way delay: 117.366 ms
Loss rate: 6.70%
-- Flow 1:
Average throughput: 49.24 Mbit/s
95th percentile per-packet one-way delay: 112.290 ms
Loss rate: 7.10%
-- Flow 2:
Average throughput: 33.19 Mbit/s
95th percentile per-packet one-way delay: 118.982 ms
Loss rate: 4.60%
-- Flow 3:
Average throughput: 27.70 Mbit/s
95th percentile per-packet one-way delay: 121.268 ms
Loss rate: 9.47%
Run 2: Report of PCC-Allegro — Data Link

![Graph 1: Time vs. Throughput (Mbit/s)]
- Flow 1 ingress (mean 52.71 Mbit/s)
- Flow 1 egress (mean 49.24 Mbit/s)
- Flow 2 ingress (mean 34.49 Mbit/s)
- Flow 2 egress (mean 33.19 Mbit/s)
- Flow 3 ingress (mean 30.08 Mbit/s)
- Flow 3 egress (mean 27.70 Mbit/s)

![Graph 2: Time vs. Packet Delay (ms)]
- Flow 1 (95th percentile 112.29 ms)
- Flow 2 (95th percentile 118.98 ms)
- Flow 3 (95th percentile 121.27 ms)
Run 3: Statistics of PCC-Allegro

End at: 2018-08-22 19:56:27
Local clock offset: -7.719 ms
Remote clock offset: 1.793 ms

# Below is generated by plot.py at 2018-08-22 22:43:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.91 Mbit/s
95th percentile per-packet one-way delay: 118.279 ms
Loss rate: 6.13%
-- Flow 1:
Average throughput: 54.03 Mbit/s
95th percentile per-packet one-way delay: 113.221 ms
Loss rate: 6.67%
-- Flow 2:
Average throughput: 31.22 Mbit/s
95th percentile per-packet one-way delay: 120.411 ms
Loss rate: 4.32%
-- Flow 3:
Average throughput: 28.19 Mbit/s
95th percentile per-packet one-way delay: 122.798 ms
Loss rate: 6.90%
Run 3: Report of PCC-Allegro — Data Link

![Graph of throughput and delay over time for different flows showing variations and performance metrics.]

- Flow 1 (mean 57.55 Mbit/s)
- Flow 1 egress (mean 54.03 Mbit/s)
- Flow 2 (mean 32.37 Mbit/s)
- Flow 2 egress (mean 31.22 Mbit/s)
- Flow 3 (mean 29.73 Mbit/s)
- Flow 3 egress (mean 20.19 Mbit/s)

![Graph of per-packet one-way delay showing variations and performance metrics.]

- Flow 1 (95th percentile 113.22 ms)
- Flow 2 (95th percentile 120.41 ms)
- Flow 3 (95th percentile 122.80 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2018-08-22 20:17:01
End at: 2018-08-22 20:17:31
Local clock offset: -9.966 ms
Remote clock offset: 3.276 ms

# Below is generated by plot.py at 2018-08-22 22:43:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.51 Mbit/s
95th percentile per-packet one-way delay: 113.095 ms
Loss rate: 5.86%
-- Flow 1:
Average throughput: 51.65 Mbit/s
95th percentile per-packet one-way delay: 111.136 ms
Loss rate: 6.86%
-- Flow 2:
Average throughput: 33.80 Mbit/s
95th percentile per-packet one-way delay: 114.086 ms
Loss rate: 3.97%
-- Flow 3:
Average throughput: 28.93 Mbit/s
95th percentile per-packet one-way delay: 114.723 ms
Loss rate: 4.70%
Run 4: Report of PCC-Allegro — Data Link

![Graph 1: Throughput vs Time (Mbps)](image1)

- Flow 1 ingress (mean 55.15 Mbps)
- Flow 1 egress (mean 51.65 Mbps)
- Flow 2 ingress (mean 34.91 Mbps)
- Flow 2 egress (mean 33.80 Mbps)
- Flow 3 ingress (mean 29.85 Mbps)
- Flow 3 egress (mean 20.93 Mbps)

![Graph 2: Per-packet one-way delay (ms)](image2)

- Flow 1 (95th percentile 111.14 ms)
- Flow 2 (95th percentile 114.09 ms)
- Flow 3 (95th percentile 114.72 ms)
Run 5: Statistics of PCC-Allegro

Start at: 2018-08-22 20:38:04
End at: 2018-08-22 20:38:34
Local clock offset: -9.501 ms
Remote clock offset: 7.495 ms

# Below is generated by plot.py at 2018-08-22 22:43:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.53 Mbit/s
95th percentile per-packet one-way delay: 112.301 ms
Loss rate: 6.31%
-- Flow 1:
Average throughput: 52.41 Mbit/s
95th percentile per-packet one-way delay: 106.407 ms
Loss rate: 6.97%
-- Flow 2:
Average throughput: 31.44 Mbit/s
95th percentile per-packet one-way delay: 113.688 ms
Loss rate: 3.76%
-- Flow 3:
Average throughput: 28.36 Mbit/s
95th percentile per-packet one-way delay: 117.207 ms
Loss rate: 8.12%
Run 5: Report of PCC-Allegro — Data Link

Graph 1: Throughput (Mbps)

Graph 2: Per-packet one-way delay (ms)

Legend:
- Flow 1 ingress (mean 56.03 Mbps)
- Flow 1 egress (mean 52.41 Mbps)
- Flow 2 ingress (mean 32.42 Mbps)
- Flow 2 egress (mean 31.44 Mbps)
- Flow 3 ingress (mean 30.38 Mbps)
- Flow 3 egress (mean 20.36 Mbps)

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Run 6: Statistics of PCC-Allegro

Start at: 2018-08-22 20:59:12  
End at: 2018-08-22 20:59:42  
Local clock offset: -10.028 ms  
Remote clock offset: 0.637 ms  

# Below is generated by plot.py at 2018-08-22 22:43:40  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 80.71 Mbit/s  
95th percentile per-packet one-way delay: 113.388 ms  
Loss rate: 6.60%  
-- Flow 1:  
Average throughput: 49.47 Mbit/s  
95th percentile per-packet one-way delay: 108.780 ms  
Loss rate: 7.08%  
-- Flow 2:  
Average throughput: 33.25 Mbit/s  
95th percentile per-packet one-way delay: 115.035 ms  
Loss rate: 4.71%  
-- Flow 3:  
Average throughput: 28.13 Mbit/s  
95th percentile per-packet one-way delay: 117.901 ms  
Loss rate: 8.40%
Run 6: Report of PCC-Allegro — Data Link
Run 7: Statistics of PCC-Allegro

Start at: 2018-08-22 21:20:14
End at: 2018-08-22 21:20:44
Local clock offset: -4.827 ms
Remote clock offset: -3.878 ms

# Below is generated by plot.py at 2018-08-22 22:43:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.89 Mbit/s
95th percentile per-packet one-way delay: 90.170 ms
Loss rate: 4.29%

-- Flow 1:
Average throughput: 61.66 Mbit/s
95th percentile per-packet one-way delay: 91.682 ms
Loss rate: 4.12%

-- Flow 2:
Average throughput: 8.34 Mbit/s
95th percentile per-packet one-way delay: 87.568 ms
Loss rate: 5.34%

-- Flow 3:
Average throughput: 8.28 Mbit/s
95th percentile per-packet one-way delay: 87.163 ms
Loss rate: 5.87%
Run 7: Report of PCC-Allegro — Data Link

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**Throughput (Mbps)**

- Flow 1 ingress (mean 63.96 Mbps/s)
- Flow 1 egress (mean 61.66 Mbps/s)
- Flow 2 ingress (mean 8.74 Mbps/s)
- Flow 2 egress (mean 8.34 Mbps/s)
- Flow 3 ingress (mean 8.63 Mbps/s)
- Flow 3 egress (mean 8.28 Mbps/s)

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**Per-packet one-way delay (ms)**

- Flow 1 (95th percentile 91.68 ms)
- Flow 2 (95th percentile 87.57 ms)
- Flow 3 (95th percentile 87.16 ms)
Run 8: Statistics of PCC-Allegro

Start at: 2018-08-22 21:41:29
End at: 2018-08-22 21:41:59
Local clock offset: -4.523 ms
Remote clock offset: 2.208 ms

# Below is generated by plot.py at 2018-08-22 22:43:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.16 Mbit/s
95th percentile per-packet one-way delay: 113.300 ms
Loss rate: 6.37%
-- Flow 1:
Average throughput: 54.88 Mbit/s
95th percentile per-packet one-way delay: 107.652 ms
Loss rate: 6.94%
-- Flow 2:
Average throughput: 34.25 Mbit/s
95th percentile per-packet one-way delay: 113.416 ms
Loss rate: 5.13%
-- Flow 3:
Average throughput: 29.34 Mbit/s
95th percentile per-packet one-way delay: 116.590 ms
Loss rate: 6.04%
Run 8: Report of PCC-Allegro — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.]
Run 9: Statistics of PCC-Allegro

Start at: 2018-08-22 22:02:31
End at: 2018-08-22 22:03:01
Local clock offset: -2.188 ms
Remote clock offset: 1.344 ms

# Below is generated by plot.py at 2018-08-22 22:44:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.91 Mbit/s
  95th percentile per-packet one-way delay: 110.579 ms
  Loss rate: 6.02%
-- Flow 1:
  Average throughput: 52.31 Mbit/s
  95th percentile per-packet one-way delay: 108.349 ms
  Loss rate: 6.72%
-- Flow 2:
  Average throughput: 34.59 Mbit/s
  95th percentile per-packet one-way delay: 110.859 ms
  Loss rate: 4.80%
-- Flow 3:
  Average throughput: 29.56 Mbit/s
  95th percentile per-packet one-way delay: 113.681 ms
  Loss rate: 5.07%
Run 9: Report of PCC-Allegro — Data Link

![Graph 1: Throughput (Mb/s)]

![Graph 2: Per-packet one-way delay (ms)]

Flow 1 ingress (mean 55.79 Mb/s), Flow 1 egress (mean 52.31 Mb/s), Flow 2 ingress (mean 36.65 Mb/s), Flow 2 egress (mean 34.59 Mb/s), Flow 3 ingress (mean 30.65 Mb/s), Flow 3 egress (mean 29.56 Mb/s)
Run 10: Statistics of PCC-Allegro

Start at: 2018-08-22 22:23:30
End at: 2018-08-22 22:24:00
Local clock offset: -6.242 ms
Remote clock offset: -0.128 ms

# Below is generated by plot.py at 2018-08-22 22:44:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.49 Mbit/s
95th percentile per-packet one-way delay: 110.137 ms
Loss rate: 3.28%
-- Flow 1:
Average throughput: 55.54 Mbit/s
95th percentile per-packet one-way delay: 107.768 ms
Loss rate: 2.98%
-- Flow 2:
Average throughput: 32.26 Mbit/s
95th percentile per-packet one-way delay: 111.839 ms
Loss rate: 3.60%
-- Flow 3:
Average throughput: 29.27 Mbit/s
95th percentile per-packet one-way delay: 110.372 ms
Loss rate: 4.29%
Run 10: Report of PCC-Allegro — Data Link

![Graph showing throughput and per-packet one-way delay over time for Flow 1, Flow 2, and Flow 3.]

- Flow 1 ingress (mean 56.05 Mbit/s)
- Flow 1 egress (mean 55.54 Mbit/s)
- Flow 2 ingress (mean 33.19 Mbit/s)
- Flow 2 egress (mean 32.26 Mbit/s)
- Flow 3 ingress (mean 30.10 Mbit/s)
- Flow 3 egress (mean 29.27 Mbit/s)

![Graph showing per-packet one-way delay over time for Flow 1, Flow 2, and Flow 3.]

- Flow 1 (95th percentile 107.77 ms)
- Flow 2 (95th percentile 111.84 ms)
- Flow 3 (95th percentile 110.37 ms)
Run 1: Statistics of PCC-Expr

Start at: 2018-08-22 19:00:03
End at: 2018-08-22 19:00:33
Local clock offset: -5.165 ms
Remote clock offset: 0.357 ms

# Below is generated by plot.py at 2018-08-22 22:45:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 73.34 Mbit/s
  95th percentile per-packet one-way delay: 117.281 ms
  Loss rate: 1.72%
-- Flow 1:
  Average throughput: 47.57 Mbit/s
  95th percentile per-packet one-way delay: 113.619 ms
  Loss rate: 1.68%
-- Flow 2:
  Average throughput: 27.04 Mbit/s
  95th percentile per-packet one-way delay: 120.892 ms
  Loss rate: 1.76%
-- Flow 3:
  Average throughput: 24.00 Mbit/s
  95th percentile per-packet one-way delay: 117.688 ms
  Loss rate: 1.86%
Run 1: Report of PCC-Expr — Data Link

![Graph 1: Throughput vs Time](image1)

- **Flow 1 Ingress** (mean 48.10 Mbit/s)
- **Flow 1 Egress** (mean 47.57 Mbit/s)
- **Flow 2 Ingress** (mean 27.30 Mbit/s)
- **Flow 2 Egress** (mean 27.04 Mbit/s)
- **Flow 3 Ingress** (mean 24.06 Mbit/s)
- **Flow 3 Egress** (mean 24.00 Mbit/s)

![Graph 2: Ping Time vs Time](image2)

- **Flow 1 (95th percentile 113.62 ms)**
- **Flow 2 (95th percentile 120.89 ms)**
- **Flow 3 (95th percentile 117.69 ms)**

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Run 2: Statistics of PCC-Expr

Start at: 2018-08-22 19:21:07
End at: 2018-08-22 19:21:37
Local clock offset: -4.144 ms
Remote clock offset: 4.047 ms

# Below is generated by plot.py at 2018-08-22 22:45:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.71 Mbit/s
  95th percentile per-packet one-way delay: 115.112 ms
  Loss rate: 1.49%
-- Flow 1:
  Average throughput: 53.69 Mbit/s
  95th percentile per-packet one-way delay: 113.245 ms
  Loss rate: 1.34%
-- Flow 2:
  Average throughput: 34.35 Mbit/s
  95th percentile per-packet one-way delay: 115.794 ms
  Loss rate: 1.46%
-- Flow 3:
  Average throughput: 25.20 Mbit/s
  95th percentile per-packet one-way delay: 117.291 ms
  Loss rate: 2.56%
Run 2: Report of PCC-Expr — Data Link

![Graph 1: Throughput (Mbit/s) vs Time (s)]

- Flow 1 ingress (mean 54.12 Mbit/s)
- Flow 1 egress (mean 53.69 Mbit/s)
- Flow 2 ingress (mean 34.57 Mbit/s)
- Flow 2 egress (mean 34.35 Mbit/s)
- Flow 3 ingress (mean 25.40 Mbit/s)
- Flow 3 egress (mean 25.20 Mbit/s)

![Graph 2: Per packet one way delay (ms) vs Time (s)]

- Flow 1 (95th percentile 113.25 ms)
- Flow 2 (95th percentile 115.78 ms)
- Flow 3 (95th percentile 117.29 ms)
Run 3: Statistics of PCC-Expr

Start at: 2018-08-22 19:42:15
End at: 2018-08-22 19:42:45
Local clock offset: -6.719 ms
Remote clock offset: 7.735 ms

# Below is generated by plot.py at 2018-08-22 22:45:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.66 Mbit/s
95th percentile per-packet one-way delay: 89.648 ms
Loss rate: 9.45%
-- Flow 1:
Average throughput: 62.71 Mbit/s
95th percentile per-packet one-way delay: 90.296 ms
Loss rate: 9.60%
-- Flow 2:
Average throughput: 7.12 Mbit/s
95th percentile per-packet one-way delay: 80.725 ms
Loss rate: 9.77%
-- Flow 3:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 78.142 ms
Loss rate: 6.84%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2018-08-22 20:03:32
End at: 2018-08-22 20:04:02
Local clock offset: -8.38 ms
Remote clock offset: 2.729 ms

# Below is generated by plot.py at 2018-08-22 22:45:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.96 Mbit/s
95th percentile per-packet one-way delay: 116.405 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 44.96 Mbit/s
95th percentile per-packet one-way delay: 114.839 ms
Loss rate: 1.73%
-- Flow 2:
Average throughput: 29.93 Mbit/s
95th percentile per-packet one-way delay: 118.665 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 24.95 Mbit/s
95th percentile per-packet one-way delay: 118.935 ms
Loss rate: 2.01%
Run 4: Report of PCC-Expr — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows with mean rates and 95th percentile delays.](image)

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Run 5: Statistics of PCC-Expr

Start at: 2018-08-22 20:24:36
End at: 2018-08-22 20:25:06
Local clock offset: -9.642 ms
Remote clock offset: 8.443 ms

# Below is generated by plot.py at 2018-08-22 22:45:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 76.19 Mbit/s
  95th percentile per-packet one-way delay: 109.663 ms
  Loss rate: 1.55%
-- Flow 1:
  Average throughput: 47.66 Mbit/s
  95th percentile per-packet one-way delay: 105.538 ms
  Loss rate: 1.41%
-- Flow 2:
  Average throughput: 30.62 Mbit/s
  95th percentile per-packet one-way delay: 112.274 ms
  Loss rate: 1.54%
-- Flow 3:
  Average throughput: 25.19 Mbit/s
  95th percentile per-packet one-way delay: 112.443 ms
  Loss rate: 2.31%
Run 5: Report of PCC-Expr — Data Link

![Graph showing throughput and latency for different flows over time.]

- Flow 1 ingress (mean 48.08 Mbit/s)
- Flow 1 egress (mean 47.66 Mbit/s)
- Flow 2 ingress (mean 30.82 Mbit/s)
- Flow 2 egress (mean 30.62 Mbit/s)
- Flow 3 ingress (mean 25.36 Mbit/s)
- Flow 3 egress (mean 25.19 Mbit/s)

![Graph showing per-packet one-way delay for different flows over time.]

- Flow 1 (95th percentile 105.54 ms)
- Flow 2 (95th percentile 112.27 ms)
- Flow 3 (95th percentile 112.44 ms)
Run 6: Statistics of PCC-Expr

Start at: 2018-08-22 20:45:36
End at: 2018-08-22 20:46:06
Local clock offset: -9.903 ms
Remote clock offset: 5.326 ms

# Below is generated by plot.py at 2018-08-22 22:45:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 74.67 Mbit/s
  95th percentile per-packet one-way delay: 106.512 ms
  Loss rate: 1.17%
-- Flow 1:
  Average throughput: 44.22 Mbit/s
  95th percentile per-packet one-way delay: 105.610 ms
  Loss rate: 0.53%
-- Flow 2:
  Average throughput: 33.45 Mbit/s
  95th percentile per-packet one-way delay: 108.476 ms
  Loss rate: 1.95%
-- Flow 3:
  Average throughput: 25.24 Mbit/s
  95th percentile per-packet one-way delay: 110.214 ms
  Loss rate: 2.49%
Run 6: Report of PCC-Expr — Data Link

![Graph of network traffic throughput over time with metrics for different flows.]

**Throughput (Mbit/s)**
- Flow 1 ingress (mean 44.23 Mbit/s)
- Flow 1 egress (mean 44.22 Mbit/s)
- Flow 2 ingress (mean 33.86 Mbit/s)
- Flow 2 egress (mean 33.45 Mbit/s)
- Flow 3 ingress (mean 25.40 Mbit/s)
- Flow 3 egress (mean 25.24 Mbit/s)

![Graph of network latency over time with percentile delays for different flows.]

**Percentile one way delay (ms)**
- Flow 1 (95th percentile 105.61 ms)
- Flow 2 (95th percentile 108.48 ms)
- Flow 3 (95th percentile 110.21 ms)
Run 7: Statistics of PCC-Expr

Start at: 2018-08-22 21:06:46
End at: 2018-08-22 21:07:16
Local clock offset: -10.234 ms
Remote clock offset: -5.755 ms

# Below is generated by plot.py at 2018-08-22 22:46:08
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.23 Mbit/s
  95th percentile per-packet one-way delay: 112.360 ms
  Loss rate: 1.43%
-- Flow 1:
  Average throughput: 49.81 Mbit/s
  95th percentile per-packet one-way delay: 111.664 ms
  Loss rate: 1.44%
-- Flow 2:
  Average throughput: 31.57 Mbit/s
  95th percentile per-packet one-way delay: 112.823 ms
  Loss rate: 1.07%
-- Flow 3:
  Average throughput: 25.98 Mbit/s
  95th percentile per-packet one-way delay: 114.435 ms
  Loss rate: 2.23%
Run 7: Report of PCC-Expr — Data Link

![Graphs showing network performance metrics](image-url)
Run 8: Statistics of PCC-Expr

Start at: 2018-08-22 21:27:59
End at: 2018-08-22 21:28:29
Local clock offset: -5.368 ms
Remote clock offset: -0.745 ms

# Below is generated by plot.py at 2018-08-22 22:46:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.34 Mbit/s
95th percentile per-packet one-way delay: 114.519 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 46.34 Mbit/s
95th percentile per-packet one-way delay: 112.437 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 33.92 Mbit/s
95th percentile per-packet one-way delay: 115.707 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 26.06 Mbit/s
95th percentile per-packet one-way delay: 117.571 ms
Loss rate: 2.90%
Run 8: Report of PCC-Expr — Data Link
Run 9: Statistics of PCC-Expr

Start at: 2018-08-22 21:49:05
End at: 2018-08-22 21:49:35
Local clock offset: -4.295 ms
Remote clock offset: 6.273 ms

# Below is generated by plot.py at 2018-08-22 22:47:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.82 Mbit/s
  95th percentile per-packet one-way delay: 105.324 ms
  Loss rate: 1.64%
-- Flow 1:
  Average throughput: 56.43 Mbit/s
  95th percentile per-packet one-way delay: 103.587 ms
  Loss rate: 1.79%
-- Flow 2:
  Average throughput: 35.15 Mbit/s
  95th percentile per-packet one-way delay: 105.390 ms
  Loss rate: 1.07%
-- Flow 3:
  Average throughput: 27.74 Mbit/s
  95th percentile per-packet one-way delay: 105.933 ms
  Loss rate: 2.18%
Run 9: Report of PCC-Expr — Data Link
Run 10: Statistics of PCC-Expr

Start at: 2018-08-22 22:10:04
End at: 2018-08-22 22:10:34
Local clock offset: -4.781 ms
Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.55 Mbit/s
95th percentile per-packet one-way delay: 104.265 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 102.896 ms
Loss rate: 2.06%
-- Flow 2:
Average throughput: 36.48 Mbit/s
95th percentile per-packet one-way delay: 105.149 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 26.96 Mbit/s
95th percentile per-packet one-way delay: 107.686 ms
Loss rate: 1.94%
Run 10: Report of PCC-Expr — Data Link

![Graph 1: Throughput (Mbps) over Time (s)]

- Flow 1 ingress (mean 57.44 Mbps)
- Flow 1 egress (mean 56.54 Mbps)
- Flow 2 ingress (mean 36.62 Mbps)
- Flow 2 egress (mean 36.48 Mbps)
- Flow 3 ingress (mean 27.88 Mbps)
- Flow 3 egress (mean 26.96 Mbps)

![Graph 2: Per-packet one-way delay (ms) over Time (s)]

- Flow 1 (95th percentile 102.90 ms)
- Flow 2 (95th percentile 105.15 ms)
- Flow 3 (95th percentile 107.79 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2018-08-22 19:07:27
End at: 2018-08-22 19:07:57
Local clock offset: -4.982 ms
Remote clock offset: 3.502 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 55.76 Mbit/s
  95th percentile per-packet one-way delay: 105.533 ms
  Loss rate: 0.97%
-- Flow 1:
  Average throughput: 33.12 Mbit/s
  95th percentile per-packet one-way delay: 105.072 ms
  Loss rate: 0.60%
-- Flow 2:
  Average throughput: 21.49 Mbit/s
  95th percentile per-packet one-way delay: 105.746 ms
  Loss rate: 1.22%
-- Flow 3:
  Average throughput: 25.60 Mbit/s
  95th percentile per-packet one-way delay: 115.854 ms
  Loss rate: 2.00%
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2018-08-22 19:28:32
End at: 2018-08-22 19:29:02
Local clock offset: -4.992 ms
Remote clock offset: 4.371 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 51.29 Mbit/s
  95th percentile per-packet one-way delay: 104.251 ms
  Loss rate: 1.16%
-- Flow 1:
  Average throughput: 29.94 Mbit/s
  95th percentile per-packet one-way delay: 100.028 ms
  Loss rate: 0.53%
-- Flow 2:
  Average throughput: 22.24 Mbit/s
  95th percentile per-packet one-way delay: 104.288 ms
  Loss rate: 1.16%
-- Flow 3:
  Average throughput: 20.16 Mbit/s
  95th percentile per-packet one-way delay: 113.479 ms
  Loss rate: 3.90%
Run 3: Statistics of QUIC Cubic

Start at: 2018-08-22 19:49:51
End at: 2018-08-22 19:50:21
Local clock offset: -7.904 ms
Remote clock offset: 6.965 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.79 Mbit/s
95th percentile per-packet one-way delay: 104.555 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 29.04 Mbit/s
95th percentile per-packet one-way delay: 99.934 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 23.86 Mbit/s
95th percentile per-packet one-way delay: 101.781 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 21.16 Mbit/s
95th percentile per-packet one-way delay: 115.023 ms
Loss rate: 2.47%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

Start at: 2018-08-22 20:10:55
End at: 2018-08-22 20:11:25
Local clock offset: -9.584 ms
Remote clock offset: 7.798 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 53.26 Mbit/s
  95th percentile per-packet one-way delay: 100.395 ms
  Loss rate: 1.07%
-- Flow 1:
  Average throughput: 31.01 Mbit/s
  95th percentile per-packet one-way delay: 94.350 ms
  Loss rate: 0.67%
-- Flow 2:
  Average throughput: 22.23 Mbit/s
  95th percentile per-packet one-way delay: 100.486 ms
  Loss rate: 1.23%
-- Flow 3:
  Average throughput: 22.96 Mbit/s
  95th percentile per-packet one-way delay: 108.512 ms
  Loss rate: 2.39%
Run 4: Report of QUIC Cubic — Data Link

![Graph showing throughput and packet one-way delay over time for different flows.]
Run 5: Statistics of QUIC Cubic

Start at: 2018-08-22 20:31:59
End at: 2018-08-22 20:32:29
Local clock offset: -10.905 ms
Remote clock offset: 8.463 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 53.39 Mbit/s
  95th percentile per-packet one-way delay: 99.151 ms
  Loss rate: 0.97%
-- Flow 1:
  Average throughput: 30.45 Mbit/s
  95th percentile per-packet one-way delay: 97.287 ms
  Loss rate: 0.55%
-- Flow 2:
  Average throughput: 23.45 Mbit/s
  95th percentile per-packet one-way delay: 101.139 ms
  Loss rate: 1.15%
-- Flow 3:
  Average throughput: 22.54 Mbit/s
  95th percentile per-packet one-way delay: 109.062 ms
  Loss rate: 2.26%
Run 5: Report of QUIC Cubic — Data Link
Run 6: Statistics of QUIC Cubic

Start at: 2018-08-22 20:53:08
End at: 2018-08-22 20:53:38
Local clock offset: -10.676 ms
Remote clock offset: 1.037 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.91 Mbit/s
95th percentile per-packet one-way delay: 102.278 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 25.12 Mbit/s
95th percentile per-packet one-way delay: 99.993 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 22.63 Mbit/s
95th percentile per-packet one-way delay: 103.728 ms
Loss rate: 1.06%
-- Flow 3:
Average throughput: 23.75 Mbit/s
95th percentile per-packet one-way delay: 110.374 ms
Loss rate: 2.10%
Run 6: Report of QUIC Cubic — Data Link

![Graph showing throughput and packet one-way delay over time for different flows.]

Legend:
- Flow 1 ingress (mean 25.15 Mbit/s)
- Flow 1 egress (mean 25.12 Mbit/s)
- Flow 2 ingress (mean 22.69 Mbit/s)
- Flow 2 egress (mean 22.63 Mbit/s)
- Flow 3 ingress (mean 23.90 Mbit/s)
- Flow 3 egress (mean 23.75 Mbit/s)
Run 7: Statistics of QUIC Cubic

Start at: 2018-08-22 21:14:09
End at: 2018-08-22 21:14:39
Local clock offset: -6.919 ms
Remote clock offset: -1.884 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.58 Mbit/s
95th percentile per-packet one-way delay: 102.044 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 30.24 Mbit/s
95th percentile per-packet one-way delay: 94.951 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 23.99 Mbit/s
95th percentile per-packet one-way delay: 104.089 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 22.66 Mbit/s
95th percentile per-packet one-way delay: 110.209 ms
Loss rate: 2.32%
Run 7: Report of QUIC Cubic — Data Link
Run 8: Statistics of QUIC Cubic

Start at: 2018-08-22 21:35:24
End at: 2018-08-22 21:35:54
Local clock offset: -3.266 ms
Remote clock offset: 4.421 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 102.134 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 29.26 Mbit/s
95th percentile per-packet one-way delay: 96.673 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 29.49 Mbit/s
95th percentile per-packet one-way delay: 101.906 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 22.31 Mbit/s
95th percentile per-packet one-way delay: 114.553 ms
Loss rate: 2.34%
Run 8: Report of QUIC Cubic — Data Link

![Graph showing throughput and per-packet end-to-end delay over time for different flows.]

Legend:
- Flow 1 ingress (mean 29.25 Mbit/s)
- Flow 1 egress (mean 29.26 Mbit/s)
- Flow 2 ingress (mean 29.35 Mbit/s)
- Flow 2 egress (mean 29.49 Mbit/s)
- Flow 3 ingress (mean 22.40 Mbit/s)
- Flow 3 egress (mean 22.31 Mbit/s)
Run 9: Statistics of QUIC Cubic

Start at: 2018-08-22 21:56:28
End at: 2018-08-22 21:56:58
Local clock offset: -3.191 ms
Remote clock offset: 3.188 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.64 Mbit/s
95th percentile per-packet one-way delay: 99.929 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 31.46 Mbit/s
95th percentile per-packet one-way delay: 96.968 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 24.07 Mbit/s
95th percentile per-packet one-way delay: 99.874 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 25.12 Mbit/s
95th percentile per-packet one-way delay: 107.186 ms
Loss rate: 2.03%
Run 9: Report of QUIC Cubic — Data Link

![Graph showing network performance metrics over time](image1)

- Flow 1 ingress (mean 31.47 Mbit/s)
- Flow 1 egress (mean 31.46 Mbit/s)
- Flow 2 ingress (mean 24.08 Mbit/s)
- Flow 2 egress (mean 24.07 Mbit/s)
- Flow 3 ingress (mean 25.26 Mbit/s)
- Flow 3 egress (mean 25.12 Mbit/s)

![Graph showing network delay metrics over time](image2)

- Flow 1 (95th percentile 96.97 ms)
- Flow 2 (95th percentile 99.87 ms)
- Flow 3 (95th percentile 107.19 ms)
Run 10: Statistics of QUIC Cubic

Start at: 2018-08-22 22:17:26
End at: 2018-08-22 22:17:56
Local clock offset: -6.393 ms
Remote clock offset: -0.621 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.61 Mbit/s
95th percentile per-packet one-way delay: 97.142 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 28.89 Mbit/s
95th percentile per-packet one-way delay: 93.987 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 17.97 Mbit/s
95th percentile per-packet one-way delay: 99.558 ms
Loss rate: 1.66%
-- Flow 3:
Average throughput: 23.81 Mbit/s
95th percentile per-packet one-way delay: 91.289 ms
Loss rate: 4.10%
Run 10: Report of QUIC Cubic — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.]

Legend:
- Flow 1 ingress (mean 28.97 Mbit/s)
- Flow 1 egress (mean 28.89 Mbit/s)
- Flow 2 ingress (mean 18.13 Mbit/s)
- Flow 2 egress (mean 17.97 Mbit/s)
- Flow 3 ingress (mean 24.43 Mbit/s)
- Flow 3 egress (mean 23.01 Mbit/s)

![Graph showing per-packet one-way delay over time for different flows.]

Legend:
- Flow 1 (95th percentile 93.99 ms)
- Flow 2 (95th percentile 99.56 ms)
- Flow 3 (95th percentile 91.29 ms)
Run 1: Statistics of SCReAM

Start at: 2018-08-22 19:09:51
End at: 2018-08-22 19:10:21
Local clock offset: -4.984 ms
Remote clock offset: 3.95 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 81.134 ms
  Loss rate: 0.77%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 80.894 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 80.871 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 81.211 ms
  Loss rate: 1.45%
Run 1: Report of SCReAM — Data Link

![Graph 1: Throughput vs Time]

![Graph 2: One packet one way delay vs Time]

Legend:
- Flow 1 ingress (mean 0.22 Mbit/s)
- Flow 1 egress (mean 0.22 Mbit/s)
- Flow 2 ingress (mean 0.22 Mbit/s)
- Flow 2 egress (mean 0.22 Mbit/s)
- Flow 3 ingress (mean 0.22 Mbit/s)
- Flow 3 egress (mean 0.22 Mbit/s)

Legend for delay graph:
- Flow 1 (95th percentile 80.89 ms)
- Flow 2 (95th percentile 80.87 ms)
- Flow 3 (95th percentile 81.21 ms)
Run 2: Statistics of SCReAM

Start at: 2018-08-22 19:30:56
End at: 2018-08-22 19:31:26
Local clock offset: -4.276 ms
Remote clock offset: 9.44 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 80.398 ms
  Loss rate: 0.77%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 78.620 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 80.669 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 78.997 ms
  Loss rate: 1.45%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2018-08-22 19:52:15
End at: 2018-08-22 19:52:45
Local clock offset: -6.621 ms
Remote clock offset: 1.951 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 86.023 ms
  Loss rate: 0.77%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 85.837 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 86.161 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 83.769 ms
  Loss rate: 1.45%
Run 3: Report of SCReAM — Data Link

Throughput (Mbps):

- Flow 1 ingress (mean 0.22 Mbps)
- Flow 2 ingress (mean 0.22 Mbps)
- Flow 3 ingress (mean 0.22 Mbps)
- Flow 1 egress (mean 0.22 Mbps)
- Flow 2 egress (mean 0.22 Mbps)
- Flow 3 egress (mean 0.22 Mbps)

Per-packet one-way delay (ms):

- Flow 1 (95th percentile 65.84 ms)
- Flow 2 (95th percentile 86.16 ms)
- Flow 3 (95th percentile 83.77 ms)
Run 4: Statistics of SCReAM

Start at: 2018-08-22 20:13:20
End at: 2018-08-22 20:13:50
Local clock offset: -9.743 ms
Remote clock offset: 1.986 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 84.653 ms
  Loss rate: 0.84%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 82.050 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 84.549 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 84.735 ms
  Loss rate: 1.84%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2018-08-22 20:34:24
End at: 2018-08-22 20:34:54
Local clock offset: -10.224 ms
Remote clock offset: 2.612 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 85.025 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.672 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.326 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.249 ms
Loss rate: 1.45%
Run 5: Report of SCReAM — Data Link
Run 6: Statistics of SCReAM

Start at: 2018-08-22 20:55:32
End at: 2018-08-22 20:56:02
Local clock offset: -10.783 ms
Remote clock offset: 0.261 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 80.250 ms
  Loss rate: 0.77%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 78.375 ms
  Loss rate: 0.50%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 77.906 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 80.469 ms
  Loss rate: 1.44%
Run 6: Report of SCReAM — Data Link
Run 7: Statistics of SCReAM

Start at: 2018-08-22 21:16:34
End at: 2018-08-22 21:17:04
Local clock offset: -6.324 ms
Remote clock offset: -5.808 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 84.678 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.795 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.921 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.087 ms
Loss rate: 1.44%
Run 7: Report of SCReAM — Data Link

![Graph 1: Throughput (Mb/s)]

- Flow 1 ingress (mean 0.22 Mb/s)
- Flow 1 egress (mean 0.22 Mb/s)
- Flow 2 ingress (mean 0.22 Mb/s)
- Flow 2 egress (mean 0.22 Mb/s)
- Flow 3 ingress (mean 0.22 Mb/s)
- Flow 3 egress (mean 0.22 Mb/s)

![Graph 2: Per-packet one-way delay (ms)]

- Flow 1 (95th percentile 84.80 ms)
- Flow 2 (95th percentile 81.92 ms)
- Flow 3 (95th percentile 82.09 ms)
Run 8: Statistics of SCReAM

Start at: 2018-08-22 21:37:48
End at: 2018-08-22 21:38:18
Local clock offset: -3.143 ms
Remote clock offset: 1.958 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
   -- Total of 3 flows:
      Average throughput: 0.44 Mbit/s
      95th percentile per-packet one-way delay: 85.823 ms
      Loss rate: 0.77%
   -- Flow 1:
      Average throughput: 0.22 Mbit/s
      95th percentile per-packet one-way delay: 85.785 ms
      Loss rate: 0.51%
   -- Flow 2:
      Average throughput: 0.22 Mbit/s
      95th percentile per-packet one-way delay: 86.067 ms
      Loss rate: 0.82%
   -- Flow 3:
      Average throughput: 0.22 Mbit/s
      95th percentile per-packet one-way delay: 82.811 ms
      Loss rate: 1.45%
Run 8: Report of SCReAM — Data Link

![Graph of throughput vs time for multiple flows]

![Graph of per-packet one-way delay vs time for multiple flows]

Flow 1 (95th percentile 85.78 ms)  Flow 2 (95th percentile 86.07 ms)  Flow 3 (95th percentile 82.81 ms)
Run 9: Statistics of SCReAM

Start at: 2018-08-22 21:58:51
End at: 2018-08-22 21:59:21
Local clock offset: -3.862 ms
Remote clock offset: 3.685 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 77.889 ms
  Loss rate: 0.77%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 75.516 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 77.913 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 75.676 ms
  Loss rate: 1.44%
Run 9: Report of SCReAM — Data Link

![Graph showing network flow and packet loss over time.](image)

- **Throughput** (Mbps):
  - Flow 1 ingress (mean 0.22 Mbps)
  - Flow 1 egress (mean 0.22 Mbps)
  - Flow 2 ingress (mean 0.22 Mbps)
  - Flow 2 egress (mean 0.22 Mbps)
  - Flow 3 ingress (mean 0.22 Mbps)
  - Flow 3 egress (mean 0.22 Mbps)

- **Packet Loss Time (ms):**
  - Flow 1 (95th percentile 75.52 ms)
  - Flow 2 (95th percentile 77.91 ms)
  - Flow 3 (95th percentile 75.68 ms)
Run 10: Statistics of SCReAM

Start at: 2018-08-22 22:19:50
End at: 2018-08-22 22:20:20
Local clock offset: -5.161 ms
Remote clock offset: 0.124 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 80.200 ms
  Loss rate: 0.76%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 80.100 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 80.240 ms
  Loss rate: 0.81%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 80.142 ms
  Loss rate: 1.42%
Run 10: Report of SCReAM — Data Link

The first chart shows the throughput (Mbps) over time for different flows (1 ingress, 2 ingress, 3 ingress, 1 egress, 2 egress, 3 egress), with the mean throughput marked as 0.22 Mbps for each flow.

The second chart displays the per-packet one-way delay (ms) over time for the same flows, with 95th percentile delays marked as 80.10 ms for flow 1, 80.24 ms for flow 2, and 80.14 ms for flow 3.
Run 1: Statistics of Sprout

Start at: 2018-08-22 19:05:02
End at: 2018-08-22 19:05:32
Local clock offset: -5.062 ms
Remote clock offset: 3.091 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.98 Mbit/s
  95th percentile per-packet one-way delay: 84.287 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 0.47 Mbit/s
  95th percentile per-packet one-way delay: 84.256 ms
  Loss rate: 0.34%
-- Flow 2:
  Average throughput: 0.51 Mbit/s
  95th percentile per-packet one-way delay: 84.414 ms
  Loss rate: 0.24%
-- Flow 3:
  Average throughput: 0.55 Mbit/s
  95th percentile per-packet one-way delay: 84.237 ms
  Loss rate: 1.53%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2018-08-22 19:26:07
End at: 2018-08-22 19:26:37
Local clock offset: -3.452 ms
Remote clock offset: 10.272 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.92 Mbit/s
  95th percentile per-packet one-way delay: 81.329 ms
  Loss rate: 0.38%
-- Flow 1:
  Average throughput: 0.38 Mbit/s
  95th percentile per-packet one-way delay: 78.793 ms
  Loss rate: 0.22%
-- Flow 2:
  Average throughput: 0.40 Mbit/s
  95th percentile per-packet one-way delay: 81.329 ms
  Loss rate: 0.57%
-- Flow 3:
  Average throughput: 0.85 Mbit/s
  95th percentile per-packet one-way delay: 82.189 ms
  Loss rate: 0.43%
Run 2: Report of Sprout — Data Link

![Graph showing throughput and packet round-trip delay over time for different flows.]

- Flow 1 ingress (mean 0.37 Mbit/s)
- Flow 1 egress (mean 0.38 Mbit/s)
- Flow 2 ingress (mean 0.40 Mbit/s)
- Flow 2 egress (mean 0.40 Mbit/s)
- Flow 3 ingress (mean 0.54 Mbit/s)
- Flow 3 egress (mean 0.85 Mbit/s)
Run 3: Statistics of Sprout

Start at: 2018-08-22 19:47:26
End at: 2018-08-22 19:47:56
Local clock offset: -6.789 ms
Remote clock offset: 7.198 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.79 Mbit/s
  95th percentile per-packet one-way delay: 81.400 ms
  Loss rate: 0.54%
-- Flow 1:
  Average throughput: 0.26 Mbit/s
  95th percentile per-packet one-way delay: 81.044 ms
  Loss rate: 0.58%
-- Flow 2:
  Average throughput: 0.49 Mbit/s
  95th percentile per-packet one-way delay: 81.775 ms
  Loss rate: 0.47%
-- Flow 3:
  Average throughput: 0.63 Mbit/s
  95th percentile per-packet one-way delay: 79.397 ms
  Loss rate: 0.59%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2018-08-22 20:08:31
End at: 2018-08-22 20:09:01
Local clock offset: -9.416 ms
Remote clock offset: 6.568 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.89 Mbit/s
  95th percentile per-packet one-way delay: 80.775 ms
  Loss rate: 0.31%
-- Flow 1:
  Average throughput: 0.53 Mbit/s
  95th percentile per-packet one-way delay: 78.749 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 0.34 Mbit/s
  95th percentile per-packet one-way delay: 81.039 ms
  Loss rate: 0.54%
-- Flow 3:
  Average throughput: 0.42 Mbit/s
  95th percentile per-packet one-way delay: 81.145 ms
  Loss rate: 0.85%
Run 4: Report of Sprout — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.]

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.33 Mbps)
Flow 1 egress (mean 0.33 Mbps)
Flow 2 ingress (mean 0.34 Mbps)
Flow 2 egress (mean 0.34 Mbps)
Flow 3 ingress (mean 0.42 Mbps)
Flow 3 egress (mean 0.42 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 78.75 ms)
Flow 2 (95th percentile 81.04 ms)
Flow 3 (95th percentile 81.14 ms)
Run 5: Statistics of Sprout

Start at: 2018-08-22 20:29:35
End at: 2018-08-22 20:30:05
Local clock offset: -9.938 ms
Remote clock offset: 3.691 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 85.003 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 84.976 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 82.390 ms
Loss rate: 1.67%
-- Flow 3:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 85.301 ms
Loss rate: 0.96%
Run 5: Report of Sprout — Data Link

Graph 1: Throughput (Mbps)
- Blue dashed line: Flow 1 ingress (mean 0.27 Mbps)
- Blue solid line: Flow 1 egress (mean 0.27 Mbps)
- Green dashed line: Flow 2 ingress (mean 0.28 Mbps)
- Green solid line: Flow 2 egress (mean 0.28 Mbps)
- Red dashed line: Flow 3 ingress (mean 0.56 Mbps)
- Red solid line: Flow 3 egress (mean 0.56 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Blue circles: Flow 1 (95th percentile 84.96 ms)
- Green circles: Flow 2 (95th percentile 82.39 ms)
- Red circles: Flow 3 (95th percentile 85.30 ms)
Run 6: Statistics of Sprout

Start at: 2018-08-22 20:50:44
End at: 2018-08-22 20:51:14
Local clock offset: -9.88 ms
Remote clock offset: 3.031 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 81.020 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 80.848 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 79.394 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 81.452 ms
Loss rate: 0.03%
Run 6: Report of Sprout — Data Link
Run 7: Statistics of Sprout

Start at: 2018-08-22 21:11:45
End at: 2018-08-22 21:12:15
Local clock offset: -8.574 ms
Remote clock offset: -1.598 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.67 Mbit/s
  95th percentile per-packet one-way delay: 79.766 ms
  Loss rate: 0.64%
-- Flow 1:
  Average throughput: 0.39 Mbit/s
  95th percentile per-packet one-way delay: 78.174 ms
  Loss rate: 0.30%
-- Flow 2:
  Average throughput: 0.23 Mbit/s
  95th percentile per-packet one-way delay: 79.974 ms
  Loss rate: 1.30%
-- Flow 3:
  Average throughput: 0.40 Mbit/s
  95th percentile per-packet one-way delay: 80.271 ms
  Loss rate: 0.90%
Run 7: Report of Sprout — Data Link

---

![Graph 1](image1)

- Flow 1 ingress (mean 0.39 Mbit/s)
- Flow 1 egress (mean 0.39 Mbit/s)
- Flow 2 ingress (mean 0.23 Mbit/s)
- Flow 2 egress (mean 0.23 Mbit/s)
- Flow 3 ingress (mean 0.40 Mbit/s)
- Flow 3 egress (mean 0.40 Mbit/s)

![Graph 2](image2)

- Flow 1 (95th percentile 78.17 ms)
- Flow 2 (95th percentile 79.97 ms)
- Flow 3 (95th percentile 80.27 ms)

---
Run 8: Statistics of Sprout

Start at: 2018-08-22 21:32:59
End at: 2018-08-22 21:33:29
Local clock offset: -4.278 ms
Remote clock offset: 1.423 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 84.006 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 83.293 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 82.582 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 84.729 ms
Loss rate: 0.81%
Run 8: Report of Sprout — Data Link

![Throughput Graph]

![Delay Graph]
Run 9: Statistics of Sprout

Start at: 2018-08-22 21:54:04
End at: 2018-08-22 21:54:34
Local clock offset: -2.523 ms
Remote clock offset: 3.215 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 83.236 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 83.279 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 81.115 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 83.621 ms
Loss rate: 1.67%
Run 9: Report of Sprout — Data Link
Run 10: Statistics of Sprout

Start at: 2018-08-22 22:15:02
End at: 2018-08-22 22:15:32
Local clock offset: -5.972 ms
Remote clock offset: 0.82 ms

# Below is generated by plot.py at 2018-08-22 22:47:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 79.069 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 79.407 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 78.860 ms
Loss rate: 2.09%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 77.054 ms
Loss rate: 1.32%
Run 1: Statistics of TaoVA-100x

Start at: 2018-08-22 19:19:49
End at: 2018-08-22 19:20:19
Local clock offset: -4.973 ms
Remote clock offset: 3.835 ms

# Below is generated by plot.py at 2018-08-22 22:48:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.75 Mbit/s
95th percentile per-packet one-way delay: 116.281 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 47.87 Mbit/s
95th percentile per-packet one-way delay: 113.572 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 35.47 Mbit/s
95th percentile per-packet one-way delay: 117.044 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 28.30 Mbit/s
95th percentile per-packet one-way delay: 119.564 ms
Loss rate: 2.32%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2018-08-22 19:40:57
End at: 2018-08-22 19:41:27
Local clock offset: -5.577 ms
Remote clock offset: 8.897 ms

# Below is generated by plot.py at 2018-08-22 22:48:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.76 Mbit/s
95th percentile per-packet one-way delay: 109.672 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 48.09 Mbit/s
95th percentile per-packet one-way delay: 106.232 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 35.08 Mbit/s
95th percentile per-packet one-way delay: 111.736 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 28.46 Mbit/s
95th percentile per-packet one-way delay: 111.358 ms
Loss rate: 2.39%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2018-08-22 20:02:15
End at: 2018-08-22 20:02:45
Local clock offset: -8.218 ms
Remote clock offset: 2.837 ms

# Below is generated by plot.py at 2018-08-22 22:48:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 76.10 Mbit/s
  95th percentile per-packet one-way delay: 116.404 ms
  Loss rate: 0.75%
-- Flow 1:
  Average throughput: 44.90 Mbit/s
  95th percentile per-packet one-way delay: 113.865 ms
  Loss rate: 0.35%
-- Flow 2:
  Average throughput: 33.50 Mbit/s
  95th percentile per-packet one-way delay: 116.279 ms
  Loss rate: 0.96%
-- Flow 3:
  Average throughput: 27.14 Mbit/s
  95th percentile per-packet one-way delay: 120.411 ms
  Loss rate: 2.21%
Run 3: Report of TaoVA-100x — Data Link

![Graph of Throughput (Mbps)](image1)

- Flow 1 ingress (mean 44.81 Mbps)
- Flow 1 egress (mean 44.90 Mbps)
- Flow 2 ingress (mean 33.55 Mbps)
- Flow 2 egress (mean 33.50 Mbps)
- Flow 3 ingress (mean 27.30 Mbps)
- Flow 3 egress (mean 27.14 Mbps)

![Graph of Per packet one way delay (ms)](image2)

- Flow 1 (95th percentile 113.86 ms)
- Flow 2 (95th percentile 116.28 ms)
- Flow 3 (95th percentile 120.41 ms)
Run 4: Statistics of TaoVA-100x

Start at: 2018-08-22 20:23:18
End at: 2018-08-22 20:23:48
Local clock offset: -10.346 ms
Remote clock offset: 6.133 ms

# Below is generated by plot.py at 2018-08-22 22:48:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 80.65 Mbit/s
  95th percentile per-packet one-way delay: 110.997 ms
  Loss rate: 0.84%
  -- Flow 1:
  Average throughput: 48.19 Mbit/s
  95th percentile per-packet one-way delay: 107.267 ms
  Loss rate: 0.52%
  -- Flow 2:
  Average throughput: 34.92 Mbit/s
  95th percentile per-packet one-way delay: 111.132 ms
  Loss rate: 0.94%
  -- Flow 3:
  Average throughput: 28.19 Mbit/s
  95th percentile per-packet one-way delay: 115.045 ms
  Loss rate: 2.20%
Run 4: Report of TaoVA-100x — Data Link

![Graph 1: Throughput vs Time](Image 1)

- **Flow 1 Ingress** (mean 48.18 Mbit/s)
- **Flow 1 Egress** (mean 48.19 Mbit/s)
- **Flow 2 Ingress** (mean 34.96 Mbit/s)
- **Flow 2 Egress** (mean 34.92 Mbit/s)
- **Flow 3 Ingress** (mean 28.35 Mbit/s)
- **Flow 3 Egress** (mean 20.19 Mbit/s)

![Graph 2: Per-packet one-way delay vs Time](Image 2)

- **Flow 1 95th percentile 107.27 ms**
- **Flow 2 95th percentile 111.13 ms**
- **Flow 3 95th percentile 115.05 ms**
Run 5: Statistics of TaoVA-100x

Start at: 2018-08-22 20:44:19
End at: 2018-08-22 20:44:49
Local clock offset: -10.771 ms
Remote clock offset: 7.197 ms

# Below is generated by plot.py at 2018-08-22 22:48:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.70 Mbit/s
95th percentile per-packet one-way delay: 108.455 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 48.46 Mbit/s
95th percentile per-packet one-way delay: 106.815 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 35.72 Mbit/s
95th percentile per-packet one-way delay: 107.255 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 28.88 Mbit/s
95th percentile per-packet one-way delay: 112.090 ms
Loss rate: 2.69%
Run 5: Report of TaoVA-100x — Data Link
Run 6: Statistics of TaoVA-100x

Start at: 2018-08-22 21:05:28
End at: 2018-08-22 21:05:58
Local clock offset: -9.421 ms
Remote clock offset: -4.369 ms

# Below is generated by plot.py at 2018-08-22 22:48:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.68 Mbit/s
95th percentile per-packet one-way delay: 114.664 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 48.57 Mbit/s
95th percentile per-packet one-way delay: 111.182 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 35.78 Mbit/s
95th percentile per-packet one-way delay: 116.188 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 28.37 Mbit/s
95th percentile per-packet one-way delay: 118.977 ms
Loss rate: 2.16%
Run 6: Report of TaoVA-100x — Data Link
Run 7: Statistics of TaoVA-100x

Start at: 2018-08-22 21:26:41
End at: 2018-08-22 21:27:11
Local clock offset: -4.797 ms
Remote clock offset: 4.908 ms

# Below is generated by plot.py at 2018-08-22 22:48:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.01 Mbit/s
95th percentile per-packet one-way delay: 108.907 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 47.84 Mbit/s
95th percentile per-packet one-way delay: 108.087 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 35.60 Mbit/s
95th percentile per-packet one-way delay: 108.741 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 110.901 ms
Loss rate: 2.07%
Run 7: Report of TaoVA-100x — Data Link

![Graph showing throughput and packet delay over time for different flows.]

- Flow 1 ingress (mean 47.80 Mbit/s)
- Flow 1 egress (mean 47.84 Mbit/s)
- Flow 2 ingress (mean 35.63 Mbit/s)
- Flow 2 egress (mean 35.60 Mbit/s)
- Flow 3 ingress (mean 28.99 Mbit/s)
- Flow 3 egress (mean 20.06 Mbit/s)

![Graph showing packet delay over time for different flows.]

- Flow 1 (95th percentile 108.09 ms)
- Flow 2 (95th percentile 108.74 ms)
- Flow 3 (95th percentile 110.90 ms)

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Run 8: Statistics of TaoVA-100x

Start at: 2018-08-22 21:47:48
End at: 2018-08-22 21:48:18
Local clock offset: -2.752 ms
Remote clock offset: 6.197 ms

# Below is generated by plot.py at 2018-08-22 22:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.91 Mbit/s
95th percentile per-packet one-way delay: 109.570 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 50.36 Mbit/s
95th percentile per-packet one-way delay: 109.216 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 36.96 Mbit/s
95th percentile per-packet one-way delay: 107.845 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 30.35 Mbit/s
95th percentile per-packet one-way delay: 110.062 ms
Loss rate: 2.32%
Run 8: Report of TaoVA-100x — Data Link

![Graph showing throughput and packet delay over time for different flows.]

- Flow 1 ingress (mean 50.52 Mbit/s)
- Flow 1 egress (mean 50.36 Mbit/s)
- Flow 2 ingress (mean 37.05 Mbit/s)
- Flow 2 egress (mean 36.96 Mbit/s)
- Flow 3 ingress (mean 30.38 Mbit/s)
- Flow 3 egress (mean 30.35 Mbit/s)
Run 9: Statistics of TaoVA-100x

Start at: 2018-08-22 22:08:46
End at: 2018-08-22 22:09:16
Local clock offset: -2.718 ms
Remote clock offset: -0.696 ms

# Below is generated by plot.py at 2018-08-22 22:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.35 Mbit/s
95th percentile per-packet one-way delay: 110.795 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 50.37 Mbit/s
95th percentile per-packet one-way delay: 108.060 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 36.22 Mbit/s
95th percentile per-packet one-way delay: 111.073 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 30.13 Mbit/s
95th percentile per-packet one-way delay: 111.010 ms
Loss rate: 2.47%
Run 9: Report of TaoVA-100x — Data Link
Run 10: Statistics of TaoVA-100x

Start at: 2018-08-22 22:29:45
End at: 2018-08-22 22:30:15
Local clock offset: -6.601 ms
Remote clock offset: -0.359 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.80 Mbit/s
  95th percentile per-packet one-way delay: 108.644 ms
  Loss rate: 0.87%
-- Flow 1:
  Average throughput: 50.84 Mbit/s
  95th percentile per-packet one-way delay: 106.659 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 36.31 Mbit/s
  95th percentile per-packet one-way delay: 106.863 ms
  Loss rate: 1.10%
-- Flow 3:
  Average throughput: 29.83 Mbit/s
  95th percentile per-packet one-way delay: 109.851 ms
  Loss rate: 2.09%
Run 10: Report of TaoVA-100x — Data Link

![Graph showing data link throughput and packet delay over time.]
Run 1: Statistics of TCP Vegas

Start at: 2018-08-22 19:18:36
End at: 2018-08-22 19:19:06
Local clock offset: -4.144 ms
Remote clock offset: 8.603 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.13 Mbit/s
95th percentile per-packet one-way delay: 89.453 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 37.26 Mbit/s
95th percentile per-packet one-way delay: 88.137 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 23.83 Mbit/s
95th percentile per-packet one-way delay: 95.104 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 12.33 Mbit/s
95th percentile per-packet one-way delay: 103.576 ms
Loss rate: 2.02%
Run 1: Report of TCP Vegas — Data Link

[Graph showing throughput and packet loss over time for different flows.]

Flow 1 ingress (mean 37.21 Mbit/s)
Flow 1 egress (mean 37.26 Mbit/s)
Flow 2 ingress (mean 23.87 Mbit/s)
Flow 2 egress (mean 23.83 Mbit/s)
Flow 3 ingress (mean 12.37 Mbit/s)
Flow 3 egress (mean 12.33 Mbit/s)

[Graph showing packet loss distribution over time for different flows.]

Flow 1 (95th percentile 88.14 ms)
Flow 2 (95th percentile 95.10 ms)
Flow 3 (95th percentile 103.58 ms)
Run 2: Statistics of TCP Vegas

Start at: 2018-08-22 19:39:44
End at: 2018-08-22 19:40:14
Local clock offset: -6.043 ms
Remote clock offset: 8.087 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 56.51 Mbit/s
  95th percentile per-packet one-way delay: 92.282 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 34.88 Mbit/s
  95th percentile per-packet one-way delay: 89.871 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 22.78 Mbit/s
  95th percentile per-packet one-way delay: 94.883 ms
  Loss rate: 1.00%
-- Flow 3:
  Average throughput: 19.75 Mbit/s
  95th percentile per-packet one-way delay: 107.102 ms
  Loss rate: 1.87%
Run 2: Report of TCP Vegas — Data Link

![Throughput](image1)

![Per-packet one-way delay](image2)

- Flow 1 ingress (mean 34.78 Mbit/s)
- Flow 1 egress (mean 34.88 Mbit/s)
- Flow 2 ingress (mean 22.82 Mbit/s)
- Flow 2 egress (mean 22.78 Mbit/s)
- Flow 3 ingress (mean 19.80 Mbit/s)
- Flow 3 egress (mean 19.75 Mbit/s)
Run 3: Statistics of TCP Vegas

Start at: 2018-08-22 20:01:01
End at: 2018-08-22 20:01:31
Local clock offset: -8.154 ms
Remote clock offset: 2.743 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.59 Mbit/s
95th percentile per-packet one-way delay: 94.317 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 26.63 Mbit/s
95th percentile per-packet one-way delay: 91.692 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 23.73 Mbit/s
95th percentile per-packet one-way delay: 96.005 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 18.86 Mbit/s
95th percentile per-packet one-way delay: 105.138 ms
Loss rate: 1.78%
Run 3: Report of TCP Vegas — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 26.59 Mbit/s)
- Flow 1 egress (mean 26.63 Mbit/s)
- Flow 2 ingress (mean 23.77 Mbit/s)
- Flow 2 egress (mean 23.73 Mbit/s)
- Flow 3 ingress (mean 18.90 Mbit/s)
- Flow 3 egress (mean 18.86 Mbit/s)

![Delay Graph]

- Flow 1 (95th percentile 91.69 ms)
- Flow 2 (95th percentile 96.00 ms)
- Flow 3 (95th percentile 105.14 ms)
Run 4: Statistics of TCP Vegas

Start at: 2018-08-22 20:22:05
End at: 2018-08-22 20:22:35
Local clock offset: -9.523 ms
Remote clock offset: 3.435 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.74 Mbit/s
95th percentile per-packet one-way delay: 94.780 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 24.19 Mbit/s
95th percentile per-packet one-way delay: 95.814 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 22.54 Mbit/s
95th percentile per-packet one-way delay: 94.019 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 20.02 Mbit/s
95th percentile per-packet one-way delay: 92.136 ms
Loss rate: 1.99%
Run 4: Report of TCP Vegas — Data Link

![Graph 1: Throughput over Time](image1)

- **Flow 1 ingress** (mean 24.23 Mbit/s)
- **Flow 1 egress** (mean 24.19 Mbit/s)
- **Flow 2 ingress** (mean 22.48 Mbit/s)
- **Flow 2 egress** (mean 22.54 Mbit/s)
- **Flow 3 ingress** (mean 20.00 Mbit/s)
- **Flow 3 egress** (mean 20.02 Mbit/s)

![Graph 2: Per-packet one-way delay over Time](image2)

- **Flow 1** (95th percentile 95.81 ms)
- **Flow 2** (95th percentile 94.02 ms)
- **Flow 3** (95th percentile 92.14 ms)
Run 5: Statistics of TCP Vegas

Start at: 2018-08-22 20:43:06
End at: 2018-08-22 20:43:36
Local clock offset: -9.965 ms
Remote clock offset: 5.623 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 59.46 Mbit/s
95th percentile per-packet one-way delay: 93.146 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 37.55 Mbit/s
95th percentile per-packet one-way delay: 90.881 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 25.46 Mbit/s
95th percentile per-packet one-way delay: 94.159 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 15.23 Mbit/s
95th percentile per-packet one-way delay: 107.416 ms
Loss rate: 1.66%
Run 5: Report of TCP Vegas — Data Link

![Graph 1](image1)

- **Throughput (Mbps)**
- Time (s)

- Flow 1 ingress (mean 37.50 Mbps)
- Flow 1 egress (mean 37.55 Mbps)
- Flow 2 ingress (mean 25.50 Mbps)
- Flow 2 egress (mean 25.46 Mbps)
- Flow 3 ingress (mean 15.25 Mbps)
- Flow 3 egress (mean 15.23 Mbps)

![Graph 2](image2)

- **Per-packet one-way delay (ms)**
- Time (s)

- Flow 1 (95th percentile 90.88 ms)
- Flow 2 (95th percentile 94.16 ms)
- Flow 3 (95th percentile 107.42 ms)
Run 6: Statistics of TCP Vegas

Start at: 2018-08-22 21:04:15
End at: 2018-08-22 21:04:45
Local clock offset: -10.16 ms
Remote clock offset: -4.264 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.02 Mbit/s
95th percentile per-packet one-way delay: 93.823 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 9.01 Mbit/s
95th percentile per-packet one-way delay: 84.460 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 30.71 Mbit/s
95th percentile per-packet one-way delay: 93.763 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 20.11 Mbit/s
95th percentile per-packet one-way delay: 107.780 ms
Loss rate: 1.88%
Run 6: Report of TCP Vegas — Data Link
Run 7: Statistics of TCP Vegas

Start at: 2018-08-22 21:25:28
End at: 2018-08-22 21:25:58
Local clock offset: -4.864 ms
Remote clock offset: -1.351 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.63 Mbit/s
95th percentile per-packet one-way delay: 96.542 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 33.05 Mbit/s
95th percentile per-packet one-way delay: 94.568 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 18.53 Mbit/s
95th percentile per-packet one-way delay: 102.124 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 13.01 Mbit/s
95th percentile per-packet one-way delay: 114.103 ms
Loss rate: 1.90%
Run 7: Report of TCP Vegas — Data Link

First graph:
- Y-axis: Throughput (Mbps)
- X-axis: Time (s)
- Legends:
  - Flow 1 ingress (mean 32.99 Mbps)
  - Flow 1 egress (mean 33.65 Mbps)
  - Flow 2 ingress (mean 18.51 Mbps)
  - Flow 2 egress (mean 18.53 Mbps)
  - Flow 3 ingress (mean 13.04 Mbps)
  - Flow 3 egress (mean 13.01 Mbps)

Second graph:
- Y-axis: Per-packet one-way delay (ms)
- X-axis: Time (s)
- Legends:
  - Flow 1 (95th percentile 94.57 ms)
  - Flow 2 (95th percentile 102.12 ms)
  - Flow 3 (95th percentile 114.10 ms)
Run 8: Statistics of TCP Vegas

Start at: 2018-08-22 21:46:34
End at: 2018-08-22 21:47:04
Local clock offset: -3.579 ms
Remote clock offset: 5.04 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.62 Mbit/s
95th percentile per-packet one-way delay: 93.182 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 40.25 Mbit/s
95th percentile per-packet one-way delay: 91.351 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 23.85 Mbit/s
95th percentile per-packet one-way delay: 95.724 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 19.84 Mbit/s
95th percentile per-packet one-way delay: 106.382 ms
Loss rate: 1.77%
Run 8: Report of TCP Vegas — Data Link
Run 9: Statistics of TCP Vegas

Start at: 2018-08-22 22:07:33
End at: 2018-08-22 22:08:03
Local clock offset: -3.098 ms
Remote clock offset: -0.779 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.98 Mbit/s
95th percentile per-packet one-way delay: 91.300 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 35.44 Mbit/s
95th percentile per-packet one-way delay: 90.371 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 29.18 Mbit/s
95th percentile per-packet one-way delay: 100.704 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 12.64 Mbit/s
95th percentile per-packet one-way delay: 109.067 ms
Loss rate: 1.83%
Run 10: Statistics of TCP Vegas

Start at: 2018-08-22 22:28:33
End at: 2018-08-22 22:29:03
Local clock offset: -6.539 ms
Remote clock offset: -1.559 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 52.89 Mbit/s
95th percentile per-packet one-way delay: 91.615 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 38.32 Mbit/s
95th percentile per-packet one-way delay: 90.039 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 11.26 Mbit/s
95th percentile per-packet one-way delay: 80.450 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 21.57 Mbit/s
95th percentile per-packet one-way delay: 106.248 ms
Loss rate: 1.75%
Run 10: Report of TCP Vegas — Data Link

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**Throughput (Mbps)**

- **Flow 1 Ingress** (mean 38.27 Mbps)
- **Flow 1 Egress** (mean 38.32 Mbps)
- **Flow 2 Ingress** (mean 11.28 Mbps)
- **Flow 2 Egress** (mean 11.26 Mbps)
- **Flow 3 Ingress** (mean 21.61 Mbps)
- **Flow 3 Egress** (mean 21.57 Mbps)

**Per-packet one-way delay (ms)**

- **Flow 1 (95th percentile 90.04 ms)**
- **Flow 2 (95th percentile 80.45 ms)**
- **Flow 3 (95th percentile 106.25 ms)**

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Run 1: Statistics of Verus

Start at: 2018-08-22 19:02:35
End at: 2018-08-22 19:03:05
Local clock offset: ~4.295 ms
Remote clock offset: 1.241 ms

# Below is generated by plot.py at 2018-08-22 22:50:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.36 Mbit/s
95th percentile per-packet one-way delay: 117.407 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 35.20 Mbit/s
95th percentile per-packet one-way delay: 112.158 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 30.91 Mbit/s
95th percentile per-packet one-way delay: 118.442 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 26.29 Mbit/s
95th percentile per-packet one-way delay: 119.599 ms
Loss rate: 2.47%
Run 1: Report of Verus — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 ingress (mean 35.26 Mbit/s)
- Flow 1 egress (mean 35.20 Mbit/s)
- Flow 2 ingress (mean 31.00 Mbit/s)
- Flow 2 egress (mean 30.91 Mbit/s)
- Flow 3 ingress (mean 26.53 Mbit/s)
- Flow 3 egress (mean 26.29 Mbit/s)

![Graph 2: Per-packet one-way delay vs Time]

- Flow 1 (95th percentile 112.16 ms)
- Flow 2 (95th percentile 118.44 ms)
- Flow 3 (95th percentile 119.60 ms)
Run 2: Statistics of Verus

Start at: 2018-08-22 19:23:40
End at: 2018-08-22 19:24:10
Local clock offset: -3.413 ms
Remote clock offset: 5.382 ms

# Below is generated by plot.py at 2018-08-22 22:50:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.53 Mbit/s
95th percentile per-packet one-way delay: 118.954 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 43.19 Mbit/s
95th percentile per-packet one-way delay: 116.428 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 25.54 Mbit/s
95th percentile per-packet one-way delay: 118.658 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 25.53 Mbit/s
95th percentile per-packet one-way delay: 123.423 ms
Loss rate: 1.13%
Run 2: Report of Verus — Data Link
Run 3: Statistics of Verus

Start at: 2018-08-22 19:44:58
End at: 2018-08-22 19:45:28
Local clock offset: -6.408 ms
Remote clock offset: 6.303 ms

# Below is generated by plot.py at 2018-08-22 22:50:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 62.75 Mbit/s
  95th percentile per-packet one-way delay: 113.552 ms
  Loss rate: 1.21%
-- Flow 1:
  Average throughput: 33.32 Mbit/s
  95th percentile per-packet one-way delay: 113.223 ms
  Loss rate: 0.82%
-- Flow 2:
  Average throughput: 31.97 Mbit/s
  95th percentile per-packet one-way delay: 113.685 ms
  Loss rate: 1.32%
-- Flow 3:
  Average throughput: 24.96 Mbit/s
  95th percentile per-packet one-way delay: 115.927 ms
  Loss rate: 2.48%
Run 3: Report of Verus — Data Link
Run 4: Statistics of Verus

Start at: 2018-08-22 20:06:04
End at: 2018-08-22 20:06:34
Local clock offset: -9.282 ms
Remote clock offset: 6.427 ms

# Below is generated by plot.py at 2018-08-22 22:50:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 57.74 Mbit/s
  95th percentile per-packet one-way delay: 116.596 ms
  Loss rate: 1.21%
-- Flow 1:
  Average throughput: 31.34 Mbit/s
  95th percentile per-packet one-way delay: 114.061 ms
  Loss rate: 0.98%
-- Flow 2:
  Average throughput: 30.02 Mbit/s
  95th percentile per-packet one-way delay: 116.671 ms
  Loss rate: 1.30%
-- Flow 3:
  Average throughput: 19.78 Mbit/s
  95th percentile per-packet one-way delay: 121.450 ms
  Loss rate: 2.07%
Run 4: Report of Verus — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 ingress**: (mean 31.48 Mbps)
- **Flow 1 egress**: (mean 31.34 Mbps)
- **Flow 2 ingress**: (mean 30.31 Mbps)
- **Flow 2 egress**: (mean 30.02 Mbps)
- **Flow 3 ingress**: (mean 19.73 Mbps)
- **Flow 3 egress**: (mean 19.78 Mbps)

![Graph 2: Per-packet end-to-end delay (ms)]

- **Flow 1 (95th percentile)**: 114.06 ms
- **Flow 2 (95th percentile)**: 116.67 ms
- **Flow 3 (95th percentile)**: 121.45 ms
Run 5: Statistics of Verus

Start at: 2018-08-22 20:27:08
End at: 2018-08-22 20:27:38
Local clock offset: -9.809 ms
Remote clock offset: 7.427 ms

# Below is generated by plot.py at 2018-08-22 22:50:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.62 Mbit/s
95th percentile per-packet one-way delay: 111.682 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 38.77 Mbit/s
95th percentile per-packet one-way delay: 109.177 ms
Loss rate: 1.22%
-- Flow 2:
Average throughput: 25.22 Mbit/s
95th percentile per-packet one-way delay: 111.762 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 18.72 Mbit/s
95th percentile per-packet one-way delay: 114.495 ms
Loss rate: 1.09%
Run 5: Report of Verus — Data Link
Run 6: Statistics of Verus

Start at: 2018-08-22 20:48:17
End at: 2018-08-22 20:48:47
Local clock offset: -9.115 ms
Remote clock offset: 2.713 ms

# Below is generated by plot.py at 2018-08-22 22:50:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 57.42 Mbit/s
  95th percentile per-packet one-way delay: 109.411 ms
  Loss rate: 10.15%
-- Flow 1:
  Average throughput: 34.96 Mbit/s
  95th percentile per-packet one-way delay: 107.906 ms
  Loss rate: 9.28%
-- Flow 2:
  Average throughput: 28.23 Mbit/s
  95th percentile per-packet one-way delay: 108.757 ms
  Loss rate: 11.05%
-- Flow 3:
  Average throughput: 11.28 Mbit/s
  95th percentile per-packet one-way delay: 114.424 ms
  Loss rate: 13.60%
Run 6: Report of Verus — Data Link

**Graph 1:**
- X-axis: Time (s)
- Y-axis: Throughput (Mbit/s)
- Legend:
  - Flow 1 ingress (mean 38.37 Mbit/s)
  - Flow 1 egress (mean 34.96 Mbit/s)
  - Flow 2 ingress (mean 31.49 Mbit/s)
  - Flow 2 egress (mean 28.23 Mbit/s)
  - Flow 3 ingress (mean 13.04 Mbit/s)
  - Flow 3 egress (mean 11.28 Mbit/s)

**Graph 2:**
- X-axis: Time (s)
- Y-axis: Per packet one-way delay (ms)
- Legend:
  - Flow 1 (95th percentile 107.91 ms)
  - Flow 2 (95th percentile 108.76 ms)
  - Flow 3 (95th percentile 114.42 ms)
Run 7: Statistics of Verus

Start at: 2018-08-22 21:09:18
End at: 2018-08-22 21:09:48
Local clock offset: -8.886 ms
Remote clock offset: -1.181 ms

# Below is generated by plot.py at 2018-08-22 22:51:05
# Datalink statistics
--- Total of 3 flows:
Average throughput: 55.00 Mbit/s
95th percentile per-packet one-way delay: 113.722 ms
Loss rate: 1.29%
--- Flow 1:
Average throughput: 32.81 Mbit/s
95th percentile per-packet one-way delay: 113.431 ms
Loss rate: 0.91%
--- Flow 2:
Average throughput: 26.04 Mbit/s
95th percentile per-packet one-way delay: 113.490 ms
Loss rate: 1.47%
--- Flow 3:
Average throughput: 15.00 Mbit/s
95th percentile per-packet one-way delay: 116.653 ms
Loss rate: 3.19%
Run 8: Statistics of Verus

Start at: 2018-08-22 21:30:31
End at: 2018-08-22 21:31:01
Local clock offset: -3.611 ms
Remote clock offset: 4.876 ms

# Below is generated by plot.py at 2018-08-22 22:51:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 68.16 Mbit/s
  95th percentile per-packet one-way delay: 113.465 ms
  Loss rate: 1.05%
-- Flow 1:
  Average throughput: 38.99 Mbit/s
  95th percentile per-packet one-way delay: 112.484 ms
  Loss rate: 0.97%
-- Flow 2:
  Average throughput: 31.35 Mbit/s
  95th percentile per-packet one-way delay: 114.621 ms
  Loss rate: 1.11%
-- Flow 3:
  Average throughput: 25.40 Mbit/s
  95th percentile per-packet one-way delay: 117.771 ms
  Loss rate: 1.23%
Run 8: Report of Verus — Data Link

[Graph showing throughput and packet delay over time for different flows with annotations for each flow’s mean throughput and 95th percentile delay.]
Run 9: Statistics of Verus

Start at: 2018-08-22 21:51:38
End at: 2018-08-22 21:52:08
Local clock offset: -3.368 ms
Remote clock offset: 6.572 ms

# Below is generated by plot.py at 2018-08-22 22:51:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.96 Mbit/s
95th percentile per-packet one-way delay: 110.807 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 46.12 Mbit/s
95th percentile per-packet one-way delay: 107.372 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 28.88 Mbit/s
95th percentile per-packet one-way delay: 110.861 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 20.27 Mbit/s
95th percentile per-packet one-way delay: 116.469 ms
Loss rate: 3.04%
Run 9: Report of Verus — Data Link

![Graph showing network traffic over time with different flows and their mean rates.]

- Flow 1 ingress (mean 46.17 Mbit/s)
- Flow 1 egress (mean 46.12 Mbit/s)
- Flow 2 ingress (mean 29.02 Mbit/s)
- Flow 2 egress (mean 26.88 Mbit/s)
- Flow 3 ingress (mean 20.59 Mbit/s)
- Flow 3 egress (mean 20.27 Mbit/s)

![Graph showing per-packet one-way delay with different flows and their 95th percentile delays.]

- Flow 1 (95th percentile 107.37 ms)
- Flow 2 (95th percentile 110.86 ms)
- Flow 3 (95th percentile 116.47 ms)
Run 10: Statistics of Verus

Start at: 2018-08-22 22:12:36
End at: 2018-08-22 22:13:06
Local clock offset: -4.743 ms
Remote clock offset: -1.314 ms

# Below is generated by plot.py at 2018-08-22 22:51:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.77 Mbit/s
95th percentile per-packet one-way delay: 113.566 ms
Loss rate: 3.34%
-- Flow 1:
Average throughput: 38.34 Mbit/s
95th percentile per-packet one-way delay: 109.152 ms
Loss rate: 2.89%
-- Flow 2:
Average throughput: 20.01 Mbit/s
95th percentile per-packet one-way delay: 115.018 ms
Loss rate: 4.84%
-- Flow 3:
Average throughput: 21.71 Mbit/s
95th percentile per-packet one-way delay: 113.703 ms
Loss rate: 2.86%
Run 1: Statistics of PCC-Vivace

Start at: 2018-08-22 19:12:17
End at: 2018-08-22 19:12:47
Local clock offset: -3.331 ms
Remote clock offset: 9.107 ms

# Below is generated by plot.py at 2018-08-22 22:51:35
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 65.81 Mbit/s
 95th percentile per-packet one-way delay: 110.746 ms
 Loss rate: 3.50%
-- Flow 1:
 Average throughput: 36.82 Mbit/s
 95th percentile per-packet one-way delay: 105.861 ms
 Loss rate: 4.53%
-- Flow 2:
 Average throughput: 32.63 Mbit/s
 95th percentile per-packet one-way delay: 111.588 ms
 Loss rate: 1.84%
-- Flow 3:
 Average throughput: 22.46 Mbit/s
 95th percentile per-packet one-way delay: 117.348 ms
 Loss rate: 3.05%
Run 1: Report of PCC-Vivace — Data Link

![Diagram 1: Throughput vs. Time for Different Flows]

- Flow 1 ingress (mean 38.36 Mbit/s)
- Flow 1 egress (mean 36.82 Mbit/s)
- Flow 2 ingress (mean 32.97 Mbit/s)
- Flow 2 egress (mean 32.63 Mbit/s)
- Flow 3 ingress (mean 22.79 Mbit/s)
- Flow 3 egress (mean 22.46 Mbit/s)

![Diagram 2: Per-packet one-way delay vs. Time for Different Flows]

- Flow 1 (95th percentile 105.86 ms)
- Flow 2 (95th percentile 111.59 ms)
- Flow 3 (95th percentile 117.35 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-08-22 19:33:22
End at: 2018-08-22 19:33:52
Local clock offset: -3.56 ms
Remote clock offset: 8.522 ms

# Below is generated by plot.py at 2018-08-22 22:51:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.31 Mbit/s
95th percentile per-packet one-way delay: 96.099 ms
Loss rate: 12.12%
-- Flow 1:
Average throughput: 63.13 Mbit/s
95th percentile per-packet one-way delay: 96.293 ms
Loss rate: 12.05%
-- Flow 2:
Average throughput: 2.46 Mbit/s
95th percentile per-packet one-way delay: 83.143 ms
Loss rate: 14.74%
-- Flow 3:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 80.590 ms
Loss rate: 11.60%
Run 2: Report of PCC-Vivace — Data Link

![Graph 1: Throughput (Mb/s)]

![Graph 2: Packet One Way Delay (ms)]

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Run 3: Statistics of PCC-Vivace

Start at: 2018-08-22 19:54:41
End at: 2018-08-22 19:55:11
Local clock offset: -7.686 ms
Remote clock offset: 5.581 ms

# Below is generated by plot.py at 2018-08-22 22:51:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 71.82 Mbit/s
  95th percentile per-packet one-way delay: 109.130 ms
  Loss rate: 2.00%
-- Flow 1:
  Average throughput: 43.35 Mbit/s
  95th percentile per-packet one-way delay: 100.932 ms
  Loss rate: 1.03%
-- Flow 2:
  Average throughput: 31.75 Mbit/s
  95th percentile per-packet one-way delay: 113.398 ms
  Loss rate: 3.87%
-- Flow 3:
  Average throughput: 22.65 Mbit/s
  95th percentile per-packet one-way delay: 111.519 ms
  Loss rate: 2.25%
Run 3: Report of PCC-Vivace — Data Link
Run 4: Statistics of PCC-Vivace

Start at: 2018-08-22 20:15:45
End at: 2018-08-22 20:16:15
Local clock offset: -9.108 ms
Remote clock offset: 2.269 ms

# Below is generated by plot.py at 2018-08-22 22:51:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.61 Mbit/s
95th percentile per-packet one-way delay: 113.733 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 48.34 Mbit/s
95th percentile per-packet one-way delay: 112.354 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 34.89 Mbit/s
95th percentile per-packet one-way delay: 114.765 ms
Loss rate: 1.86%
-- Flow 3:
Average throughput: 12.65 Mbit/s
95th percentile per-packet one-way delay: 109.400 ms
Loss rate: 3.76%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2018-08-22 20:36:49
End at: 2018-08-22 20:37:19
Local clock offset: -11.181 ms
Remote clock offset: 6.473 ms

# Below is generated by plot.py at 2018-08-22 22:51:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.63 Mbit/s
95th percentile per-packet one-way delay: 102.403 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 38.49 Mbit/s
95th percentile per-packet one-way delay: 103.759 ms
Loss rate: 2.26%
-- Flow 2:
Average throughput: 34.09 Mbit/s
95th percentile per-packet one-way delay: 98.217 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 79.529 ms
Loss rate: 2.28%
Run 5: Report of PCC-Vivace — Data Link

![Graph showing throughput and packet delay over time for different flows.](image1)

![Graph showing packet delay over time for different flows.](image2)
Run 6: Statistics of PCC-Vivace

Start at: 2018-08-22 20:57:56
End at: 2018-08-22 20:58:26
Local clock offset: -10.804 ms
Remote clock offset: 0.881 ms

# Below is generated by plot.py at 2018-08-22 22:52:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.17 Mbit/s
95th percentile per-packet one-way delay: 107.331 ms
Loss rate: 4.84%
-- Flow 1:
Average throughput: 50.30 Mbit/s
95th percentile per-packet one-way delay: 103.956 ms
Loss rate: 5.91%
-- Flow 2:
Average throughput: 31.21 Mbit/s
95th percentile per-packet one-way delay: 107.965 ms
Loss rate: 3.04%
-- Flow 3:
Average throughput: 21.91 Mbit/s
95th percentile per-packet one-way delay: 115.612 ms
Loss rate: 2.32%
Run 6: Report of PCC-Vivace — Data Link

[Graph showing throughput and latency for different flows over time]

- Flow 1 ingress (mean 53.19 Mbit/s)
- Flow 1 egress (mean 50.30 Mbit/s)
- Flow 2 ingress (mean 31.94 Mbit/s)
- Flow 2 egress (mean 31.21 Mbit/s)
- Flow 3 ingress (mean 22.08 Mbit/s)
- Flow 3 egress (mean 21.91 Mbit/s)

[Graph showing per-packet one-way delay for different flows over time]

- Flow 1 (95th percentile 103.96 ms)
- Flow 2 (95th percentile 107.97 ms)
- Flow 3 (95th percentile 115.61 ms)
Run 7: Statistics of PCC-Vivace

Start at: 2018-08-22 21:18:59
End at: 2018-08-22 21:19:29
Local clock offset: -6.653 ms
Remote clock offset: -4.736 ms

# Below is generated by plot.py at 2018-08-22 22:52:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 64.89 Mbit/s
  95th percentile per-packet one-way delay: 94.579 ms
  Loss rate: 6.16%
-- Flow 1:
  Average throughput: 58.34 Mbit/s
  95th percentile per-packet one-way delay: 94.624 ms
  Loss rate: 6.04%
-- Flow 2:
  Average throughput: 8.18 Mbit/s
  95th percentile per-packet one-way delay: 85.434 ms
  Loss rate: 7.36%
-- Flow 3:
  Average throughput: 3.45 Mbit/s
  95th percentile per-packet one-way delay: 85.892 ms
  Loss rate: 6.68%
Run 7: Report of PCC-Vivace — Data Link

![Graph 1: Throughput (Mbps/s)]

![Graph 2: Per-packet one-way delay (ms)]
Run 8: Statistics of PCC-Vivace

Start at: 2018-08-22 21:40:13
End at: 2018-08-22 21:40:43
Local clock offset: -4.581 ms
Remote clock offset: 2.138 ms

# Below is generated by plot.py at 2018-08-22 22:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.81 Mbit/s
95th percentile per-packet one-way delay: 115.490 ms
Loss rate: 3.16%
-- Flow 1:
Average throughput: 49.67 Mbit/s
95th percentile per-packet one-way delay: 111.135 ms
Loss rate: 3.86%
-- Flow 2:
Average throughput: 28.41 Mbit/s
95th percentile per-packet one-way delay: 116.193 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 22.35 Mbit/s
95th percentile per-packet one-way delay: 120.020 ms
Loss rate: 2.74%
Run 8: Report of PCC-Vivace — Data Link

[Graph showing throughput and packet delay over time for different flows]
Run 9: Statistics of PCC-Vivace

Start at: 2018-08-22 22:01:16
End at: 2018-08-22 22:01:46
Local clock offset: -2.235 ms
Remote clock offset: 1.642 ms

# Below is generated by plot.py at 2018-08-22 22:52:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.81 Mbit/s
95th percentile per-packet one-way delay: 109.428 ms
Loss rate: 2.98%
-- Flow 1:
Average throughput: 52.90 Mbit/s
95th percentile per-packet one-way delay: 106.162 ms
Loss rate: 3.73%
-- Flow 2:
Average throughput: 28.67 Mbit/s
95th percentile per-packet one-way delay: 111.177 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 24.15 Mbit/s
95th percentile per-packet one-way delay: 113.916 ms
Loss rate: 2.40%
Run 9: Report of PCC-Vivace — Data Link

- Flow 1 ingress (mean 54.67 Mbit/s)
- Flow 1 egress (mean 52.90 Mbit/s)
- Flow 2 ingress (mean 26.77 Mbit/s)
- Flow 2 egress (mean 26.67 Mbit/s)
- Flow 3 ingress (mean 24.36 Mbit/s)
- Flow 3 egress (mean 24.15 Mbit/s)

- Flow 1 (95th percentile 106.16 ms)
- Flow 2 (95th percentile 111.18 ms)
- Flow 3 (95th percentile 113.92 ms)
Run 10: Statistics of PCC-Vivace

End at: 2018-08-22 22:22:44  
Local clock offset: -6.165 ms  
Remote clock offset: -2.365 ms  

# Below is generated by plot.py at 2018-08-22 22:52:25  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 79.69 Mbit/s  
95th percentile per-packet one-way delay: 110.467 ms  
Loss rate: 5.09%  
-- Flow 1:  
Average throughput: 50.43 Mbit/s  
95th percentile per-packet one-way delay: 107.389 ms  
Loss rate: 5.75%  
-- Flow 2:  
Average throughput: 32.65 Mbit/s  
95th percentile per-packet one-way delay: 112.277 ms  
Loss rate: 4.59%  
-- Flow 3:  
Average throughput: 23.27 Mbit/s  
95th percentile per-packet one-way delay: 114.351 ms  
Loss rate: 2.02%
Run 10: Report of PCC-Vivace — Data Link
Run 1: Statistics of WebRTC media

Start at: 2018-08-22 19:08:41
End at: 2018-08-22 19:09:11
Local clock offset: -3.392 ms
Remote clock offset: 8.543 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.03 Mbit/s
  95th percentile per-packet one-way delay: 80.393 ms
  Loss rate: 0.61%
-- Flow 1:
  Average throughput: 1.75 Mbit/s
  95th percentile per-packet one-way delay: 78.410 ms
  Loss rate: 0.23%
-- Flow 2:
  Average throughput: 0.99 Mbit/s
  95th percentile per-packet one-way delay: 80.776 ms
  Loss rate: 0.70%
-- Flow 3:
  Average throughput: 0.31 Mbit/s
  95th percentile per-packet one-way delay: 79.225 ms
  Loss rate: 2.43%
Run 1: Report of WebRTC media — Data Link

[Graph showing throughput over time with different flow rates indicated by legend]

[Graph showing packet round-trip delay over time with different flow rates indicated by legend]

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Run 2: Statistics of WebRTC media

Start at: 2018-08-22 19:29:46
End at: 2018-08-22 19:30:16
Local clock offset: -5.051 ms
Remote clock offset: 5.562 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.14 Mbit/s
95th percentile per-packet one-way delay: 83.813 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 84.367 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 82.458 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 82.407 ms
Loss rate: 1.78%
Run 2: Report of WebRTC media — Data Link

![Graphs showing throughput and packet delay over time for different flows.]

- **Throughput (Mbps)**: The graphs illustrate the throughput over time for different flows, ranging from 0 to 3.5 Mbps.
- **Time (s)**: The x-axis represents time in seconds, ranging from 0 to 35.
- **Per packet one way delay (ms)**: The graphs show the per packet one way delay for different flows, ranging from 80 to 115 ms.

Legend:
- Flow 1 ingress (mean 1.77 Mbps)
- Flow 1 egress (mean 1.78 Mbps)
- Flow 2 ingress (mean 0.99 Mbps)
- Flow 2 egress (mean 0.99 Mbps)
- Flow 3 ingress (mean 0.40 Mbps)
- Flow 3 egress (mean 0.39 Mbps)
Run 3: Statistics of WebRTC media

Start at: 2018-08-22 19:51:05
End at: 2018-08-22 19:51:35
Local clock offset: -6.487 ms
Remote clock offset: 7.971 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.11 Mbit/s
95th percentile per-packet one-way delay: 80.824 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 81.307 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 78.917 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 79.319 ms
Loss rate: 1.78%
Run 3: Report of WebRTC media — Data Link

![Graph showing throughput and packet delay over time for different flows.]

Flow 1 ingress (mean 1.76 Mbit/s)  Flow 1 egress (mean 1.76 Mbit/s)
Flow 2 ingress (mean 0.98 Mbit/s)  Flow 2 egress (mean 0.98 Mbit/s)
Flow 3 ingress (mean 0.40 Mbit/s)  Flow 3 egress (mean 0.39 Mbit/s)

Flow 1 (95th percentile 81.31 ms)  Flow 2 (95th percentile 78.92 ms)  Flow 3 (95th percentile 79.32 ms)
Run 4: Statistics of WebRTC media

Start at: 2018-08-22 20:12:09
End at: 2018-08-22 20:12:39
Local clock offset: -9.719 ms
Remote clock offset: 1.937 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.11 Mbit/s
95th percentile per-packet one-way delay: 84.506 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 84.630 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 83.012 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 82.997 ms
Loss rate: 2.43%
Run 4: Report of WebRTC media — Data Link

![Data Link Throughput Graph]

![Data Link Delay Graph]

- Flow 1 ingress (mean 1.76 Mbit/s)
- Flow 1 egress (mean 1.76 Mbit/s)
- Flow 2 ingress (mean 0.98 Mbit/s)
- Flow 2 egress (mean 0.98 Mbit/s)
- Flow 3 ingress (mean 0.39 Mbit/s)
- Flow 3 egress (mean 0.39 Mbit/s)

![Flow Diagram with 95th Percentile Delays]
Run 5: Statistics of WebRTC media

Start at: 2018-08-22 20:33:13
End at: 2018-08-22 20:33:43
Local clock offset: -10.168 ms
Remote clock offset: 2.606 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 85.517 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 85.331 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 86.124 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 84.325 ms
Loss rate: 1.68%
Run 5: Report of WebRTC media — Data Link

Graph 1: Throughput (Mbps) over Time (s)

Graph 2: Per-packet one-way delay (ms) over Time (s)

Legend:
- Flow 1 ingress (mean 1.75 Mbps)
- Flow 1 egress (mean 1.75 Mbps)
- Flow 2 ingress (mean 0.98 Mbps)
- Flow 2 egress (mean 0.98 Mbps)
- Flow 3 ingress (mean 0.42 Mbps)
- Flow 3 egress (mean 0.41 Mbps)
Run 6: Statistics of WebRTC media

Start at: 2018-08-22 20:54:21
End at: 2018-08-22 20:54:51
Local clock offset: -10.7 ms
Remote clock offset: 1.758 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.09 Mbit/s
95th percentile per-packet one-way delay: 79.082 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 78.097 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 78.193 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 80.329 ms
Loss rate: 0.90%
Run 6: Report of WebRTC media — Data Link

![Graph showing throughput and packet loss over time.]

- Throughput: Flow 1 ingress (mean 1.74 Mbit/s), Flow 2 ingress (mean 0.98 Mbit/s), Flow 3 ingress (mean 0.40 Mbit/s), Flow 1 egress (mean 1.74 Mbit/s), Flow 2 egress (mean 0.96 Mbit/s), Flow 3 egress (mean 0.39 Mbit/s)
- Packet loss: Flow 1 (95th percentile 78.10 ms), Flow 2 (95th percentile 78.19 ms), Flow 3 (95th percentile 80.33 ms)
Run 7: Statistics of WebRTC media

Start at: 2018-08-22 21:15:23
End at: 2018-08-22 21:15:53
Local clock offset: -7.377 ms
Remote clock offset: -5.915 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.13 Mbit/s
  95th percentile per-packet one-way delay: 83.339 ms
  Loss rate: 0.84%
-- Flow 1:
  Average throughput: 1.76 Mbit/s
  95th percentile per-packet one-way delay: 81.677 ms
  Loss rate: 0.33%
-- Flow 2:
  Average throughput: 0.99 Mbit/s
  95th percentile per-packet one-way delay: 81.882 ms
  Loss rate: 1.02%
-- Flow 3:
  Average throughput: 0.40 Mbit/s
  95th percentile per-packet one-way delay: 84.483 ms
  Loss rate: 2.64%
Run 7: Report of WebRTC media — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 1.76 Mbit/s)
Flow 1 egress (mean 1.76 Mbit/s)
Flow 2 ingress (mean 1.00 Mbit/s)
Flow 2 egress (mean 0.99 Mbit/s)
Flow 3 ingress (mean 0.40 Mbit/s)
Flow 3 egress (mean 0.40 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 81.68 ms)
Flow 2 (95th percentile 81.88 ms)
Flow 3 (95th percentile 84.48 ms)
Run 8: Statistics of WebRTC media

Start at: 2018-08-22 21:36:37
End at: 2018-08-22 21:37:07
Local clock offset: -4.008 ms
Remote clock offset: 5.725 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.08 Mbit/s
  95th percentile per-packet one-way delay: 81.337 ms
  Loss rate: 0.61%
-- Flow 1:
  Average throughput: 1.75 Mbit/s
  95th percentile per-packet one-way delay: 81.325 ms
  Loss rate: 0.32%
-- Flow 2:
  Average throughput: 0.95 Mbit/s
  95th percentile per-packet one-way delay: 81.338 ms
  Loss rate: 0.68%
-- Flow 3:
  Average throughput: 0.39 Mbit/s
  95th percentile per-packet one-way delay: 81.383 ms
  Loss rate: 1.77%
Run 8: Report of WebRTC media — Data Link
Run 9: Statistics of WebRTC media

Start at: 2018-08-22 21:57:41
End at: 2018-08-22 21:58:11
Local clock offset: -3.143 ms
Remote clock offset: 3.722 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 79.590 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 79.588 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 77.664 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 80.131 ms
Loss rate: 1.71%
Run 9: Report of WebRTC media — Data Link

![Graphs showing network performance metrics over time.](image)

- **Top graph:** Throughput in Mbps over time, with lines indicating different flows and their ingress and egress throughput.
  - Flow 1 ingress (mean 1.76 Mbps)
  - Flow 1 egress (mean 1.76 Mbps)
  - Flow 2 ingress (mean 1.01 Mbps)
  - Flow 2 egress (mean 1.01 Mbps)
  - Flow 3 ingress (mean 0.41 Mbps)
  - Flow 3 egress (mean 0.40 Mbps)

- **Bottom graph:** Per-packet one way delay in ms over time, with points indicating different flows and their 95th percentile delay.
  - Flow 1 (95th percentile 79.59 ms)
  - Flow 2 (95th percentile 77.66 ms)
  - Flow 3 (95th percentile 80.13 ms)
Run 10: Statistics of WebRTC media

Start at: 2018-08-22 22:18:39
End at: 2018-08-22 22:19:09
Local clock offset: -6.634 ms
Remote clock offset: -2.098 ms

# Below is generated by plot.py at 2018-08-22 22:52:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.07 Mbit/s
  95th percentile per-packet one-way delay: 81.388 ms
  Loss rate: 0.82%
-- Flow 1:
  Average throughput: 1.67 Mbit/s
  95th percentile per-packet one-way delay: 79.473 ms
  Loss rate: 0.67%
-- Flow 2:
  Average throughput: 1.01 Mbit/s
  95th percentile per-packet one-way delay: 81.865 ms
  Loss rate: 0.70%
-- Flow 3:
  Average throughput: 0.40 Mbit/s
  95th percentile per-packet one-way delay: 81.996 ms
  Loss rate: 1.72%
Run 10: Report of WebRTC media — Data Link

Throughput (Mbit/s) vs Time (s)

- Flow 1 ingress (mean 1.67 Mbit/s)
- Flow 1 egress (mean 1.67 Mbit/s)
- Flow 2 ingress (mean 1.01 Mbit/s)
- Flow 2 egress (mean 1.01 Mbit/s)
- Flow 3 ingress (mean 0.41 Mbit/s)
- Flow 3 egress (mean 0.40 Mbit/s)

Per packet one way delay (ms)

- Flow 1 (95th percentile 79.47 ms)
- Flow 2 (95th percentile 81.86 ms)
- Flow 3 (95th percentile 82.00 ms)