Pantheon Report

Data path: Colombia on p4p1 (remote) →AWS Brazil 2 on ens5 (local).
Repeated the test of 21 congestion control schemes 5 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 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fceed6963885d7e8a1e6326419
third_party/fillp-sheep @ 0e5bb722943babac2db0907d26fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b03b2143c5d6f585e852f4
third_party/indigo @ 2601c92e4aa9d5838dc4dfe0edcbf90c07e64d
third_party/libutp @ b346b942e2826f2b179eaab4a906ce6b7cf3cf
third_party/muses @ 5ce721187ad8232da20955337730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27af6d942717625ee3a354cc2e802bd
third_party/pcc @ 1af9c958fa0d661b623c091a5f3ec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a827323a86b42f1cb8143e9c978f3cfc4f2
third_party/scream-reproduce @ f096d13d1421aa3131bf11ff1964974e1da3b2b7
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562539f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
test from Colombia to AWS Brazil 2, 5 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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
</tr>
<tr>
<td>TCP BBR</td>
<td>5</td>
<td>55.74</td>
<td>38.23</td>
<td>30.24</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>46.38</td>
<td>33.81</td>
<td>27.96</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>5</td>
<td>44.08</td>
<td>35.11</td>
<td>32.98</td>
</tr>
<tr>
<td>FillP</td>
<td>5</td>
<td>57.34</td>
<td>39.46</td>
<td>29.69</td>
</tr>
<tr>
<td>FillP-Sheep</td>
<td>5</td>
<td>56.95</td>
<td>39.32</td>
<td>30.01</td>
</tr>
<tr>
<td>Indigo</td>
<td>5</td>
<td>58.72</td>
<td>38.97</td>
<td>28.81</td>
</tr>
<tr>
<td>Indigo-MusesC3</td>
<td>5</td>
<td>60.19</td>
<td>39.91</td>
<td>29.99</td>
</tr>
<tr>
<td>Indigo-MusesC5</td>
<td>5</td>
<td>58.83</td>
<td>40.80</td>
<td>29.16</td>
</tr>
<tr>
<td>Indigo-MusesD</td>
<td>5</td>
<td>60.64</td>
<td>38.08</td>
<td>29.04</td>
</tr>
<tr>
<td>Indigo-MusesT</td>
<td>5</td>
<td>59.70</td>
<td>40.50</td>
<td>29.42</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>5</td>
<td>12.01</td>
<td>7.88</td>
<td>3.84</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>5</td>
<td>54.99</td>
<td>34.52</td>
<td>29.50</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>5</td>
<td>56.70</td>
<td>38.94</td>
<td>25.86</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>5</td>
<td>30.75</td>
<td>23.04</td>
<td>15.58</td>
</tr>
<tr>
<td>SCReAM</td>
<td>5</td>
<td>0.22</td>
<td>0.22</td>
<td>0.22</td>
</tr>
<tr>
<td>Sprout</td>
<td>5</td>
<td>2.56</td>
<td>3.06</td>
<td>1.71</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>5</td>
<td>49.79</td>
<td>37.42</td>
<td>29.75</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>5</td>
<td>34.23</td>
<td>27.22</td>
<td>19.68</td>
</tr>
<tr>
<td>Verus</td>
<td>5</td>
<td>43.59</td>
<td>29.22</td>
<td>22.22</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>5</td>
<td>51.27</td>
<td>31.23</td>
<td>22.71</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>5</td>
<td>1.68</td>
<td>0.92</td>
<td>0.37</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2019-02-20 09:55:02
End at: 2019-02-20 09:55:32
Local clock offset: -62.246 ms
Remote clock offset: 3.966 ms

# Below is generated by plot.py at 2019-02-20 12:11:32
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.77 Mbit/s
  95th percentile per-packet one-way delay: 498.919 ms
  Loss rate: 3.83%
  -- Flow 1:
  Average throughput: 55.40 Mbit/s
  95th percentile per-packet one-way delay: 460.013 ms
  Loss rate: 2.63%
  -- Flow 2:
  Average throughput: 37.27 Mbit/s
  95th percentile per-packet one-way delay: 652.591 ms
  Loss rate: 4.36%
  -- Flow 3:
  Average throughput: 32.31 Mbit/s
  95th percentile per-packet one-way delay: 601.465 ms
  Loss rate: 8.50%
Run 1: Report of TCP BBR — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows with mean values in Mbit/s and 95th percentile delay in ms.](image)

**Throughput (Mbit/s)**
- Flow 1 ingress (mean 56.56 Mbit/s)
- Flow 2 ingress (mean 38.63 Mbit/s)
- Flow 3 ingress (mean 34.68 Mbit/s)
- Flow 1 egress (mean 55.40 Mbit/s)
- Flow 2 egress (mean 37.27 Mbit/s)
- Flow 3 egress (mean 32.31 Mbit/s)

**Per-packet one-way delay (ms)**
- Flow 1 (95th percentile 460.01 ms)
- Flow 2 (95th percentile 652.59 ms)
- Flow 3 (95th percentile 601.47 ms)
Run 2: Statistics of TCP BBR

Start at: 2019-02-20 10:22:08
End at: 2019-02-20 10:22:38
Local clock offset: -62.031 ms
Remote clock offset: 3.202 ms

# Below is generated by plot.py at 2019-02-20 12:11:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.70 Mbit/s
95th percentile per-packet one-way delay: 421.666 ms
Loss rate: 3.01%
-- Flow 1:
Average throughput: 54.83 Mbit/s
95th percentile per-packet one-way delay: 379.617 ms
Loss rate: 2.22%
-- Flow 2:
Average throughput: 38.16 Mbit/s
95th percentile per-packet one-way delay: 523.919 ms
Loss rate: 4.47%
-- Flow 3:
Average throughput: 29.02 Mbit/s
95th percentile per-packet one-way delay: 373.449 ms
Loss rate: 3.57%
Run 2: Report of TCP BBR — Data Link
Run 3: Statistics of TCP BBR

Start at: 2019-02-20 10:49:12
End at: 2019-02-20 10:49:42
Local clock offset: -57.824 ms
Remote clock offset: 7.066 ms

# Below is generated by plot.py at 2019-02-20 12:11:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.45 Mbit/s
95th percentile per-packet one-way delay: 370.408 ms
Loss rate: 3.67%
-- Flow 1:
Average throughput: 55.85 Mbit/s
95th percentile per-packet one-way delay: 361.843 ms
Loss rate: 2.53%
-- Flow 2:
Average throughput: 38.15 Mbit/s
95th percentile per-packet one-way delay: 414.357 ms
Loss rate: 4.46%
-- Flow 3:
Average throughput: 31.24 Mbit/s
95th percentile per-packet one-way delay: 344.860 ms
Loss rate: 7.68%
Run 3: Report of TCP BBR — Data Link
Run 4: Statistics of TCP BBR

Start at: 2019-02-20 11:16:17
End at: 2019-02-20 11:16:47
Local clock offset: -57.006 ms
Remote clock offset: 6.205 ms

# Below is generated by plot.py at 2019-02-20 12:11:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.91 Mbit/s
95th percentile per-packet one-way delay: 368.046 ms
Loss rate: 3.53%
-- Flow 1:
Average throughput: 55.73 Mbit/s
95th percentile per-packet one-way delay: 345.854 ms
Loss rate: 2.36%
-- Flow 2:
Average throughput: 38.63 Mbit/s
95th percentile per-packet one-way delay: 403.470 ms
Loss rate: 6.10%
-- Flow 3:
Average throughput: 28.96 Mbit/s
95th percentile per-packet one-way delay: 366.604 ms
Loss rate: 3.18%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2019-02-20 11:43:22
End at: 2019-02-20 11:43:52
Local clock offset: -56.927 ms
Remote clock offset: 1.805 ms

# Below is generated by plot.py at 2019-02-20 12:11:33
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 92.43 Mbit/s
  95th percentile per-packet one-way delay: 359.021 ms
  Loss rate: 3.47%
-- Flow 1:
  Average throughput: 56.88 Mbit/s
  95th percentile per-packet one-way delay: 343.986 ms
  Loss rate: 2.18%
-- Flow 2:
  Average throughput: 38.94 Mbit/s
  95th percentile per-packet one-way delay: 411.284 ms
  Loss rate: 4.80%
-- Flow 3:
  Average throughput: 29.68 Mbit/s
  95th percentile per-packet one-way delay: 356.077 ms
  Loss rate: 7.18%
Run 5: Report of TCP BBR — Data Link

![Graphs showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 1: Statistics of Copa

Start at: 2019-02-20 10:01:31
End at: 2019-02-20 10:02:01
Local clock offset: -62.346 ms
Remote clock offset: 8.113 ms

# Below is generated by plot.py at 2019-02-20 12:12:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 80.70 Mbit/s
  95th percentile per-packet one-way delay: 204.938 ms
  Loss rate: 0.78%
-- Flow 1:
  Average throughput: 49.82 Mbit/s
  95th percentile per-packet one-way delay: 171.540 ms
  Loss rate: 0.50%
-- Flow 2:
  Average throughput: 33.06 Mbit/s
  95th percentile per-packet one-way delay: 230.231 ms
  Loss rate: 0.91%
-- Flow 3:
  Average throughput: 27.11 Mbit/s
  95th percentile per-packet one-way delay: 70.134 ms
  Loss rate: 2.02%
Run 1: Report of Copa — Data Link

![Graph of throughput and packet delay over time]

- **Flow 1 ingress** (mean 49.78 Mbit/s)
- **Flow 1 egress** (mean 49.82 Mbit/s)
- **Flow 2 ingress** (mean 33.08 Mbit/s)
- **Flow 2 egress** (mean 33.06 Mbit/s)
- **Flow 3 ingress** (mean 27.19 Mbit/s)
- **Flow 3 egress** (mean 27.11 Mbit/s)

- **Flow 1 (95th percentile 171.54 ms)**
- **Flow 2 (95th percentile 235.23 ms)**
- **Flow 3 (95th percentile 70.13 ms)**

16
Run 2: Statistics of Copa

Start at: 2019-02-20 10:28:37
End at: 2019-02-20 10:29:07
Local clock offset: -62.065 ms
Remote clock offset: 3.401 ms

# Below is generated by plot.py at 2019-02-20 12:12:18
# Datalink statistics
# -- Total of 3 flows:
Average throughput: 72.43 Mbit/s
95th percentile per-packet one-way delay: 176.685 ms
Loss rate: 0.42%

-- Flow 1:
Average throughput: 43.72 Mbit/s
95th percentile per-packet one-way delay: 175.655 ms
Loss rate: 0.32%

-- Flow 2:
Average throughput: 31.93 Mbit/s
95th percentile per-packet one-way delay: 189.280 ms
Loss rate: 0.45%

-- Flow 3:
Average throughput: 22.78 Mbit/s
95th percentile per-packet one-way delay: 63.260 ms
Loss rate: 0.95%
Run 2: Report of Copa — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 ingress** (mean 43.61 Mbps)
- **Flow 1 egress** (mean 43.72 Mbps)
- **Flow 2 ingress** (mean 31.81 Mbps)
- **Flow 2 egress** (mean 31.95 Mbps)
- **Flow 3 ingress** (mean 22.60 Mbps)
- **Flow 3 egress** (mean 22.70 Mbps)

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

- **Flow 1** (95th percentile 175.66 ms)
- **Flow 2** (95th percentile 189.28 ms)
- **Flow 3** (95th percentile 63.26 ms)
Run 3: Statistics of Copa

End at: 2019-02-20 10:56:11
Local clock offset: -57.471 ms
Remote clock offset: 5.801 ms

# Below is generated by plot.py at 2019-02-20 12:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.11 Mbit/s
95th percentile per-packet one-way delay: 161.601 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 48.40 Mbit/s
95th percentile per-packet one-way delay: 163.956 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 31.72 Mbit/s
95th percentile per-packet one-way delay: 72.552 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 81.528 ms
Loss rate: 2.02%
Run 3: Report of Copa — Data Link

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

- **Throughput**: The graphs show the throughput in Mbps (megabits per second) over time for different flows. The throughput varies significantly across different times and flows.
  - Flow 1 ingress (mean 48.40 Mbps)
  - Flow 1 egress (mean 48.40 Mbps)
  - Flow 2 ingress (mean 31.67 Mbps)
  - Flow 2 egress (mean 31.72 Mbps)
  - Flow 3 ingress (mean 32.45 Mbps)
  - Flow 3 egress (mean 32.34 Mbps)

- **Packet Delays**: The graphs also show the per-packet one-way delay (ms) over time for different flows. The delays vary widely, with spikes indicating periods of high delay.
  - Flow 1 (95th percentile 163.96 ms)
  - Flow 2 (95th percentile 72.55 ms)
  - Flow 3 (95th percentile 81.53 ms)
Run 4: Statistics of Copa

End at: 2019-02-20 11:23:17
Local clock offset: -56.44 ms
Remote clock offset: 6.071 ms

# Below is generated by plot.py at 2019-02-20 12:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.77 Mbit/s
95th percentile per-packet one-way delay: 170.754 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 44.70 Mbit/s
95th percentile per-packet one-way delay: 171.238 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 171.536 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 27.61 Mbit/s
95th percentile per-packet one-way delay: 61.387 ms
Loss rate: 1.87%
Run 5: Statistics of Copa

Start at: 2019-02-20 11:49:52
End at: 2019-02-20 11:50:22
Local clock offset: -56.979 ms
Remote clock offset: 8.155 ms

# Below is generated by plot.py at 2019-02-20 12:13:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 76.17 Mbit/s
  95th percentile per-packet one-way delay: 206.353 ms
  Loss rate: 0.89%
-- Flow 1:
  Average throughput: 45.25 Mbit/s
  95th percentile per-packet one-way delay: 160.003 ms
  Loss rate: 0.58%
-- Flow 2:
  Average throughput: 31.70 Mbit/s
  95th percentile per-packet one-way delay: 211.916 ms
  Loss rate: 0.99%
-- Flow 3:
  Average throughput: 29.96 Mbit/s
  95th percentile per-packet one-way delay: 299.878 ms
  Loss rate: 2.10%
Run 5: Report of Copa — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 45.26 Mbit/s)  Flow 2 ingress (mean 31.75 Mbit/s)  Flow 3 ingress (mean 30.68 Mbit/s)

Flow 1 egress (mean 45.25 Mbit/s)  Flow 2 egress (mean 31.70 Mbit/s)  Flow 3 egress (mean 29.96 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 160.00 ms)  Flow 2 (95th percentile 211.92 ms)  Flow 3 (95th percentile 299.88 ms)
Run 1: Statistics of TCP Cubic

Start at: 2019-02-20 10:18:20
End at: 2019-02-20 10:18:50
Local clock offset: -61.994 ms
Remote clock offset: 7.246 ms

# Below is generated by plot.py at 2019-02-20 12:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.61 Mbit/s
95th percentile per-packet one-way delay: 87.162 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 49.40 Mbit/s
95th percentile per-packet one-way delay: 86.384 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 32.23 Mbit/s
95th percentile per-packet one-way delay: 109.091 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 23.76 Mbit/s
95th percentile per-packet one-way delay: 68.530 ms
Loss rate: 2.02%
Run 1: Report of TCP Cubic — Data Link

---

Throughput (Mbps) vs. Time (s)

- Flow 1 ingress (mean 49.43 Mbps)
- Flow 1 egress (mean 49.40 Mbps)
- Flow 2 ingress (mean 32.15 Mbps)
- Flow 2 egress (mean 32.23 Mbps)
- Flow 3 ingress (mean 23.83 Mbps)
- Flow 3 egress (mean 23.76 Mbps)

---

Per-packet one way delay (ns) vs. Time (s)

- Flow 1 (95th percentile 86.30 ns)
- Flow 2 (95th percentile 109.09 ns)
- Flow 3 (95th percentile 68.53 ns)
Run 2: Statistics of TCP Cubic

Start at: 2019-02-20 10:45:24
End at: 2019-02-20 10:45:54
Local clock offset: -58.143 ms
Remote clock offset: 3.369 ms

# Below is generated by plot.py at 2019-02-20 12:13:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 77.76 Mbit/s
  95th percentile per-packet one-way delay: 99.075 ms
  Loss rate: 0.73%
-- Flow 1:
  Average throughput: 42.49 Mbit/s
  95th percentile per-packet one-way delay: 133.264 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 35.69 Mbit/s
  95th percentile per-packet one-way delay: 95.023 ms
  Loss rate: 0.74%
-- Flow 3:
  Average throughput: 35.25 Mbit/s
  95th percentile per-packet one-way delay: 80.816 ms
  Loss rate: 2.04%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2019-02-20 11:12:29
End at: 2019-02-20 11:12:59
Local clock offset: -57.143 ms
Remote clock offset: 2.494 ms

# Below is generated by plot.py at 2019-02-20 12:13:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 78.26 Mbit/s
  95th percentile per-packet one-way delay: 93.337 ms
  Loss rate: 0.86%
-- Flow 1:
  Average throughput: 42.69 Mbit/s
  95th percentile per-packet one-way delay: 128.511 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 35.68 Mbit/s
  95th percentile per-packet one-way delay: 91.335 ms
  Loss rate: 0.85%
-- Flow 3:
  Average throughput: 36.14 Mbit/s
  95th percentile per-packet one-way delay: 50.036 ms
  Loss rate: 2.61%
Run 3: Report of TCP Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 42.61 Mbps)  Flow 1 egress (mean 42.69 Mbps)
Flow 2 ingress (mean 35.68 Mbps)  Flow 2 egress (mean 35.66 Mbps)
Flow 3 ingress (mean 36.48 Mbps)  Flow 3 egress (mean 36.14 Mbps)

Per-packet one-way delay (ms)

Time (s)

* Flow 1 (95th percentile 128.51 ms)  * Flow 2 (95th percentile 91.33 ms)  * Flow 3 (95th percentile 50.04 ms)
Run 4: Statistics of TCP Cubic

Start at: 2019-02-20 11:39:35
End at: 2019-02-20 11:40:05
Local clock offset: -57.231 ms
Remote clock offset: 2.88 ms

# Below is generated by plot.py at 2019-02-20 12:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.34 Mbit/s
95th percentile per-packet one-way delay: 94.459 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 43.09 Mbit/s
95th percentile per-packet one-way delay: 124.716 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 35.93 Mbit/s
95th percentile per-packet one-way delay: 80.026 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 34.73 Mbit/s
95th percentile per-packet one-way delay: 84.951 ms
Loss rate: 2.11%
Run 4: Report of TCP Cubic — Data Link

![Graph of Throughput and Latency](image)

**Throughput (Bps)**
- Flow 1 ingress (mean 43.00 Mbit/s)
- Flow 1 egress (mean 43.09 Mbit/s)
- Flow 2 ingress (mean 35.89 Mbit/s)
- Flow 2 egress (mean 35.93 Mbit/s)
- Flow 3 ingress (mean 34.85 Mbit/s)
- Flow 3 egress (mean 34.73 Mbit/s)

**Per-packet one way delay (ms)**
- Flow 1 (95th percentile 124.72 ms)
- Flow 2 (95th percentile 60.03 ms)
- Flow 3 (95th percentile 84.95 ms)
Run 5: Statistics of TCP Cubic

Start at: 2019-02-20 12:06:40
End at: 2019-02-20 12:07:10
Local clock offset: -59.758 ms
Remote clock offset: 2.955 ms

# Below is generated by plot.py at 2019-02-20 12:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.14 Mbit/s
95th percentile per-packet one-way delay: 97.374 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 42.71 Mbit/s
95th percentile per-packet one-way delay: 130.384 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 36.02 Mbit/s
95th percentile per-packet one-way delay: 91.191 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 35.04 Mbit/s
95th percentile per-packet one-way delay: 86.360 ms
Loss rate: 2.05%
Run 5: Report of TCP Cubic — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 42.62 Mbps)
  - Flow 1 egress (mean 42.71 Mbps)
  - Flow 2 ingress (mean 35.98 Mbps)
  - Flow 2 egress (mean 36.02 Mbps)
  - Flow 3 ingress (mean 35.16 Mbps)
  - Flow 3 egress (mean 35.04 Mbps)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 130.38 ms)
  - Flow 2 (95th percentile 91.19 ms)
  - Flow 3 (95th percentile 86.36 ms)
Run 1: Statistics of FillP

Start at: 2019-02-20 10:05:28
End at: 2019-02-20 10:05:58
Local clock offset: -62.175 ms
Remote clock offset: 7.08 ms

# Below is generated by plot.py at 2019-02-20 12:13:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 209.324 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 57.34 Mbit/s
95th percentile per-packet one-way delay: 206.961 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 39.66 Mbit/s
95th percentile per-packet one-way delay: 205.306 ms
Loss rate: 3.49%
-- Flow 3:
Average throughput: 29.56 Mbit/s
95th percentile per-packet one-way delay: 273.864 ms
Loss rate: 2.85%
Run 1: Report of FillP — Data Link
Run 2: Statistics of FillP

Start at: 2019-02-20 10:32:32
End at: 2019-02-20 10:33:02
Local clock offset: -60.978 ms
Remote clock offset: 3.432 ms

# Below is generated by plot.py at 2019-02-20 12:13:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.24 Mbit/s
95th percentile per-packet one-way delay: 190.002 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 57.36 Mbit/s
95th percentile per-packet one-way delay: 210.821 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 39.37 Mbit/s
95th percentile per-packet one-way delay: 173.223 ms
Loss rate: 3.24%
-- Flow 3:
Average throughput: 29.69 Mbit/s
95th percentile per-packet one-way delay: 186.085 ms
Loss rate: 4.90%
Run 2: Report of FillP — Data Link

![Throughput Graph](image)

- Flow 1 ingress (mean 57.70 Mbit/s)
- Flow 1 egress (mean 57.36 Mbit/s)
- Flow 2 ingress (mean 40.35 Mbit/s)
- Flow 2 egress (mean 39.37 Mbit/s)
- Flow 3 ingress (mean 30.73 Mbit/s)
- Flow 3 egress (mean 29.69 Mbit/s)

![Per-packet Error Delay Graph](image)

- Flow 1 (95th percentile 210.82 ms)
- Flow 2 (95th percentile 173.22 ms)
- Flow 3 (95th percentile 166.09 ms)
Run 3: Statistics of FillP

Start at: 2019-02-20 10:59:37
End at: 2019-02-20 11:00:07
Local clock offset: -57.059 ms
Remote clock offset: 6.681 ms

# Below is generated by plot.py at 2019-02-20 12:13:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.28 Mbit/s
95th percentile per-packet one-way delay: 211.202 ms
Loss rate: 2.28%
-- Flow 1:
Average throughput: 57.79 Mbit/s
95th percentile per-packet one-way delay: 226.171 ms
Loss rate: 1.92%
-- Flow 2:
Average throughput: 38.74 Mbit/s
95th percentile per-packet one-way delay: 175.561 ms
Loss rate: 2.16%
-- Flow 3:
Average throughput: 29.70 Mbit/s
95th percentile per-packet one-way delay: 322.814 ms
Loss rate: 4.67%
Run 3: Report of FillP — Data Link

---

**Throughput (Mbps)**

Time (s)

- **Flow 1 ingress (mean 58.59 Mbps)**
- **Flow 1 egress (mean 57.79 Mbps)**
- **Flow 2 ingress (mean 39.29 Mbps)**
- **Flow 2 egress (mean 38.74 Mbps)**
- **Flow 3 ingress (mean 30.63 Mbps)**
- **Flow 3 egress (mean 29.70 Mbps)**

---

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

Time (s)

- **Flow 1 (95th percentile 226.17 ms)**
- **Flow 2 (95th percentile 175.56 ms)**
- **Flow 3 (95th percentile 322.81 ms)**
Run 4: Statistics of FillP

Start at: 2019-02-20 11:26:44
End at: 2019-02-20 11:27:14
Local clock offset: -56.209 ms
Remote clock offset: 7.47 ms

# Below is generated by plot.py at 2019-02-20 12:13:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.32 Mbit/s
95th percentile per-packet one-way delay: 216.771 ms
Loss rate: 2.16%

-- Flow 1:
Average throughput: 57.09 Mbit/s
95th percentile per-packet one-way delay: 212.837 ms
Loss rate: 0.66%

-- Flow 2:
Average throughput: 39.78 Mbit/s
95th percentile per-packet one-way delay: 217.997 ms
Loss rate: 4.89%

-- Flow 3:
Average throughput: 29.90 Mbit/s
95th percentile per-packet one-way delay: 263.649 ms
Loss rate: 3.19%
Run 4: Report of FillP — Data Link

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

- Flow 1 ingress (mean 57.14 Mbit/s)
- Flow 2 ingress (mean 41.51 Mbit/s)
- Flow 3 ingress (mean 30.39 Mbit/s)
- Flow 1 egress (mean 57.09 Mbit/s)
- Flow 2 egress (mean 39.78 Mbit/s)
- Flow 3 egress (mean 29.90 Mbit/s)

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

- Flow 1 (95th percentile 212.94 ms)
- Flow 2 (95th percentile 218.00 ms)
- Flow 3 (95th percentile 263.65 ms)
Run 5: Statistics of FillP

Start at: 2019-02-20 11:53:48
End at: 2019-02-20 11:54:18
Local clock offset: -56.904 ms
Remote clock offset: 8.049 ms

# Below is generated by plot.py at 2019-02-20 12:14:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.26 Mbit/s
  95th percentile per-packet one-way delay: 233.659 ms
  Loss rate: 1.94%
-- Flow 1:
  Average throughput: 57.13 Mbit/s
  95th percentile per-packet one-way delay: 234.402 ms
  Loss rate: 0.83%
-- Flow 2:
  Average throughput: 39.76 Mbit/s
  95th percentile per-packet one-way delay: 233.278 ms
  Loss rate: 3.92%
-- Flow 3:
  Average throughput: 29.59 Mbit/s
  95th percentile per-packet one-way delay: 228.603 ms
  Loss rate: 2.82%
Run 5: Report of FillP — Data Link

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

- Flow 1 ingress (mean 57.27 Mbit/s)
- Flow 1 egress (mean 57.13 Mbit/s)
- Flow 2 ingress (mean 41.65 Mbit/s)
- Flow 2 egress (mean 39.76 Mbit/s)
- Flow 3 ingress (mean 29.94 Mbit/s)
- Flow 3 egress (mean 29.59 Mbit/s)

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

- Flow 1 (95th percentile 234.40 ms)
- Flow 2 (95th percentile 233.28 ms)
- Flow 3 (95th percentile 228.60 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-20 10:11:52
End at: 2019-02-20 10:12:22
Local clock offset: -62.068 ms
Remote clock offset: 8.695 ms

# Below is generated by plot.py at 2019-02-20 12:14:26
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 92.83 Mbit/s
   95th percentile per-packet one-way delay: 200.851 ms
   Loss rate: 1.90%
-- Flow 1:
   Average throughput: 56.76 Mbit/s
   95th percentile per-packet one-way delay: 220.263 ms
   Loss rate: 0.98%
-- Flow 2:
   Average throughput: 39.21 Mbit/s
   95th percentile per-packet one-way delay: 167.284 ms
   Loss rate: 1.95%
-- Flow 3:
   Average throughput: 30.46 Mbit/s
   95th percentile per-packet one-way delay: 175.189 ms
   Loss rate: 6.66%
Run 1: Report of FillP-Sheep — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 56.74 Mbps)
- Flow 1 egress (mean 56.76 Mbps)
- Flow 2 ingress (mean 39.68 Mbps)
- Flow 2 egress (mean 39.21 Mbps)
- Flow 3 ingress (mean 32.06 Mbps)
- Flow 3 egress (mean 30.46 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 220.26 ms)
- Flow 2 (95th percentile 167.28 ms)
- Flow 3 (95th percentile 175.19 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-20 10:38:57
End at: 2019-02-20 10:39:27
Local clock offset: -59.178 ms
Remote clock offset: 3.432 ms

# Below is generated by plot.py at 2019-02-20 12:14:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.89 Mbit/s
95th percentile per-packet one-way delay: 211.404 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 56.94 Mbit/s
95th percentile per-packet one-way delay: 225.331 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 39.25 Mbit/s
95th percentile per-packet one-way delay: 171.808 ms
Loss rate: 2.18%
-- Flow 3:
Average throughput: 30.12 Mbit/s
95th percentile per-packet one-way delay: 268.495 ms
Loss rate: 3.38%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-20 11:06:02
End at: 2019-02-20 11:06:32
Local clock offset: -56.89 ms
Remote clock offset: 2.824 ms

# Below is generated by plot.py at 2019-02-20 12:14:38
# Datalink statistics

-- Total of 3 flows:
Average throughput: 92.83 Mbit/s
95th percentile per-packet one-way delay: 206.142 ms
Loss rate: 1.35%

-- Flow 1:
Average throughput: 57.03 Mbit/s
95th percentile per-packet one-way delay: 214.453 ms
Loss rate: 0.75%

-- Flow 2:
Average throughput: 39.34 Mbit/s
95th percentile per-packet one-way delay: 199.297 ms
Loss rate: 2.33%

-- Flow 3:
Average throughput: 29.45 Mbit/s
95th percentile per-packet one-way delay: 228.463 ms
Loss rate: 2.17%
Run 3: Report of FillP-Sheep — Data Link

Throughput Over Time

- **Flow 1 Ingress (mean 57.14 Mbit/s)**
- **Flow 1 Egress (mean 57.03 Mbit/s)**
- **Flow 2 Ingress (mean 39.97 Mbit/s)**
- **Flow 2 Egress (mean 39.34 Mbit/s)**
- **Flow 3 Ingress (mean 29.60 Mbit/s)**
- **Flow 3 Egress (mean 29.45 Mbit/s)**

Packet Delay Over Time

- **Flow 1 (95th percentile 214.45 ms)**
- **Flow 2 (95th percentile 199.30 ms)**
- **Flow 3 (95th percentile 228.46 ms)**
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-20 11:33:08
End at: 2019-02-20 11:33:38
Local clock offset: -56.508 ms
Remote clock offset: 7.713 ms

# Below is generated by plot.py at 2019-02-20 12:14:57
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.06 Mbit/s
  95th percentile per-packet one-way delay: 236.387 ms
  Loss rate: 1.46%
-- Flow 1:
  Average throughput: 57.01 Mbit/s
  95th percentile per-packet one-way delay: 221.287 ms
  Loss rate: 0.69%
-- Flow 2:
  Average throughput: 39.63 Mbit/s
  95th percentile per-packet one-way delay: 254.942 ms
  Loss rate: 2.75%
-- Flow 3:
  Average throughput: 29.66 Mbit/s
  95th percentile per-packet one-way delay: 231.798 ms
  Loss rate: 2.41%
Run 4: Report of FillP-Sheep — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-20 12:00:13
End at: 2019-02-20 12:00:43
Local clock offset: -57.05 ms
Remote clock offset: 8.571 ms

# Below is generated by plot.py at 2019-02-20 12:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 230.152 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 56.99 Mbit/s
95th percentile per-packet one-way delay: 246.058 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 39.15 Mbit/s
95th percentile per-packet one-way delay: 171.446 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 30.34 Mbit/s
95th percentile per-packet one-way delay: 279.283 ms
Loss rate: 3.78%
Run 5: Report of FillP-Sheep — Data Link

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

- Flow 1 ingress (mean 57.10 Mbit/s)
- Flow 1 egress (mean 56.99 Mbit/s)
- Flow 2 ingress (mean 39.54 Mbit/s)
- Flow 2 egress (mean 39.15 Mbit/s)
- Flow 3 ingress (mean 30.99 Mbit/s)
- Flow 3 egress (mean 30.34 Mbit/s)

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

- Flow 1 (95th percentile 246.06 ms)
- Flow 2 (95th percentile 171.45 ms)
- Flow 3 (95th percentile 279.28 ms)
Run 1: Statistics of Indigo

Start at: 2019-02-20 10:14:26
End at: 2019-02-20 10:14:56
Local clock offset: -61.933 ms
Remote clock offset: 4.918 ms

# Below is generated by plot.py at 2019-02-20 12:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.10 Mbit/s
95th percentile per-packet one-way delay: 334.732 ms
Loss rate: 5.80%
-- Flow 1:
Average throughput: 58.95 Mbit/s
95th percentile per-packet one-way delay: 369.604 ms
Loss rate: 8.12%
-- Flow 2:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 88.162 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 28.71 Mbit/s
95th percentile per-packet one-way delay: 91.702 ms
Loss rate: 2.75%
Run 1: Report of Indigo — Data Link

![Throughput graph](image1)

![Delay graph](image2)
Run 2: Statistics of Indigo

Start at: 2019-02-20 10:41:30
End at: 2019-02-20 10:42:00
Local clock offset: -58.656 ms
Remote clock offset: 8.617 ms

# Below is generated by plot.py at 2019-02-20 12:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.76 Mbit/s
95th percentile per-packet one-way delay: 316.881 ms
Loss rate: 4.48%
-- Flow 1:
Average throughput: 58.46 Mbit/s
95th percentile per-packet one-way delay: 352.062 ms
Loss rate: 5.75%
-- Flow 2:
Average throughput: 39.16 Mbit/s
95th percentile per-packet one-way delay: 106.258 ms
Loss rate: 2.31%
-- Flow 3:
Average throughput: 28.73 Mbit/s
95th percentile per-packet one-way delay: 59.942 ms
Loss rate: 2.30%
Run 2: Report of Indigo — Data Link

![Graph of data link throughput and per-packet one-way delay over time for different flows.](image-url)
Run 3: Statistics of Indigo

Start at: 2019-02-20 11:08:35
End at: 2019-02-20 11:09:05
Local clock offset: -56.839 ms
Remote clock offset: 2.776 ms

# Below is generated by plot.py at 2019-02-20 12:15:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.78 Mbit/s
95th percentile per-packet one-way delay: 324.455 ms
Loss rate: 5.71%
-- Flow 1:
Average throughput: 58.66 Mbit/s
95th percentile per-packet one-way delay: 373.916 ms
Loss rate: 7.94%
-- Flow 2:
Average throughput: 38.82 Mbit/s
95th percentile per-packet one-way delay: 90.239 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 28.83 Mbit/s
95th percentile per-packet one-way delay: 81.962 ms
Loss rate: 3.31%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2019-02-20 11:35:41
End at: 2019-02-20 11:36:11
Local clock offset: -56.655 ms
Remote clock offset: 2.994 ms

# Below is generated by plot.py at 2019-02-20 12:15:33
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.22 Mbit/s
  95th percentile per-packet one-way delay: 286.634 ms
  Loss rate: 4.56%
-- Flow 1:
  Average throughput: 58.93 Mbit/s
  95th percentile per-packet one-way delay: 321.565 ms
  Loss rate: 6.13%
-- Flow 2:
  Average throughput: 39.08 Mbit/s
  95th percentile per-packet one-way delay: 91.183 ms
  Loss rate: 1.69%
-- Flow 3:
  Average throughput: 28.86 Mbit/s
  95th percentile per-packet one-way delay: 57.244 ms
  Loss rate: 2.14%
Run 4: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 62.42 Mbit/s)
- Flow 1 egress (mean 58.93 Mbit/s)
- Flow 2 ingress (mean 39.41 Mbit/s)
- Flow 2 egress (mean 39.08 Mbit/s)
- Flow 3 ingress (mean 28.98 Mbit/s)
- Flow 3 egress (mean 28.86 Mbit/s)
Run 5: Statistics of Indigo

Start at: 2019-02-20 12:02:46
End at: 2019-02-20 12:03:16
Local clock offset: -58.27 ms
Remote clock offset: 7.723 ms

# Below is generated by plot.py at 2019-02-20 12:15:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.78 Mbit/s
95th percentile per-packet one-way delay: 306.811 ms
Loss rate: 4.11%
-- Flow 1:
Average throughput: 58.62 Mbit/s
95th percentile per-packet one-way delay: 347.640 ms
Loss rate: 5.50%
-- Flow 2:
Average throughput: 38.84 Mbit/s
95th percentile per-packet one-way delay: 81.489 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 28.93 Mbit/s
95th percentile per-packet one-way delay: 79.876 ms
Loss rate: 2.91%
Run 5: Report of Indigo — Data Link

---

**Throughput (Mbps):**
- **Flow 1 ingress (mean 61.68 Mbps)**
- **Flow 1 egress (mean 58.62 Mbps)**
- **Flow 2 ingress (mean 39.00 Mbps)**
- **Flow 2 egress (mean 38.84 Mbps)**
- **Flow 3 ingress (mean 29.28 Mbps)**
- **Flow 3 egress (mean 28.93 Mbps)**

---

**Packet one-way delay (ms):**
- **Flow 1 (95th percentile 347.64 ms)**
- **Flow 2 (95th percentile 81.49 ms)**
- **Flow 3 (95th percentile 79.88 ms)**
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:02:52
End at: 2019-02-20 10:03:22
Local clock offset: -62.31 ms
Remote clock offset: 4.305 ms

# Below is generated by plot.py at 2019-02-20 12:15:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.71 Mbit/s
95th percentile per-packet one-way delay: 102.851 ms
Loss rate: 2.21%
-- Flow 1:
Average throughput: 59.80 Mbit/s
95th percentile per-packet one-way delay: 84.131 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 39.76 Mbit/s
95th percentile per-packet one-way delay: 190.759 ms
Loss rate: 2.47%
-- Flow 3:
Average throughput: 29.38 Mbit/s
95th percentile per-packet one-way delay: 94.088 ms
Loss rate: 3.29%
Run 1: Report of Indigo-MusesC3 — Data Link
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:29:57
End at: 2019-02-20 10:30:27
Local clock offset: -62.039 ms
Remote clock offset: 8.283 ms

# Below is generated by plot.py at 2019-02-20 12:15:57
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.78 Mbit/s
  95th percentile per-packet one-way delay: 97.186 ms
  Loss rate: 2.68%
-- Flow 1:
  Average throughput: 60.44 Mbit/s
  95th percentile per-packet one-way delay: 78.587 ms
  Loss rate: 1.84%
-- Flow 2:
  Average throughput: 40.13 Mbit/s
  95th percentile per-packet one-way delay: 94.408 ms
  Loss rate: 4.16%
-- Flow 3:
  Average throughput: 30.26 Mbit/s
  95th percentile per-packet one-way delay: 175.118 ms
  Loss rate: 3.97%
Run 2: Report of Indigo-MusesC3 — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 61.21 Mbps)
Flow 1 egress (mean 60.44 Mbps)
Flow 2 ingress (mean 41.49 Mbps)
Flow 2 egress (mean 40.13 Mbps)
Flow 3 ingress (mean 30.84 Mbps)
Flow 3 egress (mean 30.26 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 78.59 ms)
Flow 2 (95th percentile 94.41 ms)
Flow 3 (95th percentile 175.12 ms)
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:57:02
End at: 2019-02-20 10:57:32
Local clock offset: -57.264 ms
Remote clock offset: 5.868 ms

# Below is generated by plot.py at 2019-02-20 12:15:58
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.23 Mbit/s
  95th percentile per-packet one-way delay: 93.230 ms
  Loss rate: 2.60%
-- Flow 1:
  Average throughput: 60.35 Mbit/s
  95th percentile per-packet one-way delay: 86.273 ms
  Loss rate: 2.25%
-- Flow 2:
  Average throughput: 39.53 Mbit/s
  95th percentile per-packet one-way delay: 121.322 ms
  Loss rate: 3.03%
-- Flow 3:
  Average throughput: 29.75 Mbit/s
  95th percentile per-packet one-way delay: 89.198 ms
  Loss rate: 3.75%
Run 3: Report of Indigo-MusesC3 — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 61.38 Mbps)
- Flow 1 egress (mean 60.35 Mbps)
- Flow 2 ingress (mean 40.39 Mbps)
- Flow 2 egress (mean 39.53 Mbps)
- Flow 3 ingress (mean 30.27 Mbps)
- Flow 3 egress (mean 29.75 Mbps)

Graph 2: Packet one-way delay (ms)
- Flow 1 (95th percentile 86.27 ms)
- Flow 2 (95th percentile 121.32 ms)
- Flow 3 (95th percentile 89.20 ms)
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-20 11:24:08
End at: 2019-02-20 11:24:38
Local clock offset: -56.362 ms
Remote clock offset: 1.056 ms

# Below is generated by plot.py at 2019-02-20 12:16:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.38 Mbit/s
95th percentile per-packet one-way delay: 125.692 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 60.10 Mbit/s
95th percentile per-packet one-way delay: 93.580 ms
Loss rate: 2.08%
-- Flow 2:
Average throughput: 39.75 Mbit/s
95th percentile per-packet one-way delay: 252.699 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 30.48 Mbit/s
95th percentile per-packet one-way delay: 104.754 ms
Loss rate: 2.77%
Run 4: Report of Indigo-MusesC3 — Data Link

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

- Flow 1 ingress (mean 61.03 Mbit/s)
- Flow 1 egress (mean 60.10 Mbit/s)
- Flow 2 ingress (mean 39.92 Mbit/s)
- Flow 2 egress (mean 39.75 Mbit/s)
- Flow 3 ingress (mean 30.71 Mbit/s)
- Flow 3 egress (mean 30.48 Mbit/s)

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

- Flow 1 (95th percentile 93.58 ms)
- Flow 2 (95th percentile 252.70 ms)
- Flow 3 (95th percentile 104.75 ms)
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-20 11:51:13
End at: 2019-02-20 11:51:43
Local clock offset: -56.919 ms
Remote clock offset: 6.896 ms

# Below is generated by plot.py at 2019-02-20 12:16:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.77 Mbit/s
  95th percentile per-packet one-way delay: 105.113 ms
  Loss rate: 1.92%
-- Flow 1:
  Average throughput: 60.27 Mbit/s
  95th percentile per-packet one-way delay: 99.325 ms
  Loss rate: 1.79%
-- Flow 2:
  Average throughput: 40.39 Mbit/s
  95th percentile per-packet one-way delay: 134.554 ms
  Loss rate: 1.94%
-- Flow 3:
  Average throughput: 30.10 Mbit/s
  95th percentile per-packet one-way delay: 96.016 ms
  Loss rate: 2.83%
Run 5: Report of Indigo-MusesC3 — Data Link
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:04:10
End at: 2019-02-20 10:04:40
Local clock offset: -62.166 ms
Remote clock offset: 4.469 ms

# Below is generated by plot.py at 2019-02-20 12:16:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.90 Mbit/s
95th percentile per-packet one-way delay: 217.323 ms
Loss rate: 4.00%
-- Flow 1:
Average throughput: 58.25 Mbit/s
95th percentile per-packet one-way delay: 201.809 ms
Loss rate: 3.57%
-- Flow 2:
Average throughput: 42.34 Mbit/s
95th percentile per-packet one-way delay: 237.247 ms
Loss rate: 4.04%
-- Flow 3:
Average throughput: 29.78 Mbit/s
95th percentile per-packet one-way delay: 321.407 ms
Loss rate: 6.73%
Run 1: Report of Indigo-MusesC5 — Data Link
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:31:15
End at: 2019-02-20 10:31:45
Local clock offset: -61.537 ms
Remote clock offset: 4.449 ms

# Below is generated by plot.py at 2019-02-20 12:16:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.15 Mbit/s
  95th percentile per-packet one-way delay: 188.278 ms
  Loss rate: 4.79%
-- Flow 1:
  Average throughput: 59.05 Mbit/s
  95th percentile per-packet one-way delay: 188.563 ms
  Loss rate: 4.53%
-- Flow 2:
  Average throughput: 39.78 Mbit/s
  95th percentile per-packet one-way delay: 186.377 ms
  Loss rate: 4.95%
-- Flow 3:
  Average throughput: 29.23 Mbit/s
  95th percentile per-packet one-way delay: 229.217 ms
  Loss rate: 6.05%
Run 2: Report of Indigo-MusesC5 — Data Link

Throughput

Flow 1 ingress (mean 61.44 Mbit/s)  
Flow 1 egress (mean 59.05 Mbit/s)  
Flow 2 ingress (mean 41.46 Mbit/s)  
Flow 2 egress (mean 39.78 Mbit/s)  
Flow 3 ingress (mean 36.32 Mbit/s)  
Flow 3 egress (mean 29.23 Mbit/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 188.56 ms)  
Flow 2 (95th percentile 186.38 ms)  
Flow 3 (95th percentile 229.22 ms)
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:58:19  
End at: 2019-02-20 10:58:49  
Local clock offset: -57.123 ms  
Remote clock offset: 3.153 ms

# Below is generated by plot.py at 2019-02-20 12:16:43  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 93.90 Mbit/s  
95th percentile per-packet one-way delay: 203.071 ms  
Loss rate: 4.54%  
-- Flow 1:  
Average throughput: 59.77 Mbit/s  
95th percentile per-packet one-way delay: 197.588 ms  
Loss rate: 4.38%  
-- Flow 2:  
Average throughput: 40.37 Mbit/s  
95th percentile per-packet one-way delay: 189.116 ms  
Loss rate: 4.72%  
-- Flow 3:  
Average throughput: 28.45 Mbit/s  
95th percentile per-packet one-way delay: 244.264 ms  
Loss rate: 5.07%
Run 3: Report of Indigo-MusesC5 — Data Link

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

- Flow 1 ingress (mean 62.13 Mbit/s)
- Flow 1 egress (mean 59.77 Mbit/s)
- Flow 2 ingress (mean 42.60 Mbit/s)
- Flow 2 egress (mean 60.37 Mbit/s)
- Flow 3 ingress (mean 29.38 Mbit/s)
- Flow 3 egress (mean 28.45 Mbit/s)
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:25:26
End at: 2019-02-20 11:25:56
Local clock offset: -56.258 ms
Remote clock offset: 2.302 ms

# Below is generated by plot.py at 2019-02-20 12:16:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.16 Mbit/s
95th percentile per-packet one-way delay: 187.920 ms
Loss rate: 4.20%
-- Flow 1:
Average throughput: 57.61 Mbit/s
95th percentile per-packet one-way delay: 171.110 ms
Loss rate: 3.26%
-- Flow 2:
Average throughput: 42.12 Mbit/s
95th percentile per-packet one-way delay: 198.129 ms
Loss rate: 5.44%
-- Flow 3:
Average throughput: 29.28 Mbit/s
95th percentile per-packet one-way delay: 227.761 ms
Loss rate: 6.41%
Run 4: Report of Indigo-MusesC5 — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 59.19 Mbit/s)
Flow 2 ingress (mean 44.15 Mbit/s)
Flow 3 ingress (mean 30.65 Mbit/s)
Flow 1 egress (mean 57.61 Mbit/s)
Flow 2 egress (mean 42.12 Mbit/s)
Flow 3 egress (mean 29.28 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 171.11 ms)
Flow 2 (95th percentile 198.13 ms)
Flow 3 (95th percentile 227.76 ms)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:52:31
End at: 2019-02-20 11:53:01
Local clock offset: -56.974 ms
Remote clock offset: 7.182 ms

# Below is generated by plot.py at 2019-02-20 12:16:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.28 Mbit/s
  95th percentile per-packet one-way delay: 208.350 ms
  Loss rate: 2.76%
-- Flow 1:
  Average throughput: 59.49 Mbit/s
  95th percentile per-packet one-way delay: 204.967 ms
  Loss rate: 1.67%
-- Flow 2:
  Average throughput: 39.39 Mbit/s
  95th percentile per-packet one-way delay: 229.643 ms
  Loss rate: 3.25%
-- Flow 3:
  Average throughput: 29.06 Mbit/s
  95th percentile per-packet one-way delay: 240.874 ms
  Loss rate: 8.64%
Run 5: Report of Indigo-MusesC5 — Data Link

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

Legend:
- Flow 1 ingress (mean 60.26 Mbit/s)
- Flow 1 egress (mean 59.49 Mbit/s)
- Flow 2 ingress (mean 40.35 Mbit/s)
- Flow 2 egress (mean 39.39 Mbit/s)
- Flow 3 ingress (mean 31.17 Mbit/s)
- Flow 3 egress (mean 29.06 Mbit/s)

Legend for per-packet one-way delay:
- Flow 1 (95th percentile 204.97 ms)
- Flow 2 (95th percentile 229.64 ms)
- Flow 3 (95th percentile 240.87 ms)
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:00:14
End at: 2019-02-20 10:00:44
Local clock offset: -62.534 ms
Remote clock offset: 9.015 ms

# Below is generated by plot.py at 2019-02-20 12:16:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.90 Mbit/s
  95th percentile per-packet one-way delay: 159.994 ms
  Loss rate: 5.15%
-- Flow 1:
  Average throughput: 60.44 Mbit/s
  95th percentile per-packet one-way delay: 171.943 ms
  Loss rate: 6.28%
-- Flow 2:
  Average throughput: 36.62 Mbit/s
  95th percentile per-packet one-way delay: 108.078 ms
  Loss rate: 1.98%
-- Flow 3:
  Average throughput: 28.84 Mbit/s
  95th percentile per-packet one-way delay: 119.821 ms
  Loss rate: 5.86%
Run 1: Report of Indigo-MusesD — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 64.07 Mb/s)
Flow 1 egress (mean 60.44 Mb/s)
Flow 2 ingress (mean 37.02 Mb/s)
Flow 2 egress (mean 36.62 Mb/s)
Flow 3 ingress (mean 30.02 Mb/s)
Flow 3 egress (mean 28.84 Mb/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 171.94 ms)
Flow 2 (95th percentile 108.08 ms)
Flow 3 (95th percentile 119.82 ms)
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:27:19
End at: 2019-02-20 10:27:49
Local clock offset: -62.043 ms
Remote clock offset: 8.257 ms

# Below is generated by plot.py at 2019-02-20 12:17:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.80 Mbit/s
95th percentile per-packet one-way delay: 158.462 ms
Loss rate: 7.55%
-- Flow 1:
Average throughput: 59.95 Mbit/s
95th percentile per-packet one-way delay: 153.148 ms
Loss rate: 5.96%
-- Flow 2:
Average throughput: 40.21 Mbit/s
95th percentile per-packet one-way delay: 176.516 ms
Loss rate: 12.06%
-- Flow 3:
Average throughput: 27.78 Mbit/s
95th percentile per-packet one-way delay: 87.574 ms
Loss rate: 3.78%
Run 2: Report of Indigo-MusesD — Data Link

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

- Flow 1 ingress (mean 63.37 Mbit/s)
- Flow 1 egress (mean 59.95 Mbit/s)
- Flow 2 ingress (mean 45.30 Mbit/s)
- Flow 2 egress (mean 40.21 Mbit/s)
- Flow 3 ingress (mean 28.28 Mbit/s)
- Flow 3 egress (mean 27.76 Mbit/s)

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

- Flow 1 (95th percentile 153.15 ms)
- Flow 2 (95th percentile 176.52 ms)
- Flow 3 (95th percentile 87.57 ms)
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:54:23
End at: 2019-02-20 10:54:53
Local clock offset: -57.375 ms
Remote clock offset: 7.367 ms

# Below is generated by plot.py at 2019-02-20 12:17:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.93 Mbit/s
95th percentile per-packet one-way delay: 153.851 ms
Loss rate: 5.48%
-- Flow 1:
Average throughput: 60.83 Mbit/s
95th percentile per-packet one-way delay: 157.978 ms
Loss rate: 5.78%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 138.325 ms
Loss rate: 5.29%
-- Flow 3:
Average throughput: 26.76 Mbit/s
95th percentile per-packet one-way delay: 86.359 ms
Loss rate: 3.64%
Run 3: Report of Indigo-MusesD — Data Link

- Throughput (Mbps):
  - Flow 1 ingress (mean 64.18 Mbps)
  - Flow 2 ingress (mean 41.29 Mbps)
  - Flow 3 ingress (mean 27.20 Mbps)
  - Flow 1 egress (mean 60.83 Mbps)
  - Flow 2 egress (mean 39.46 Mbps)
  - Flow 3 egress (mean 26.76 Mbps)

- Per-packet one-way delay (ms):
  - Flow 1 (95th percentile 157.98 ms)
  - Flow 2 (95th percentile 138.32 ms)
  - Flow 3 (95th percentile 86.36 ms)
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-20 11:21:29
End at: 2019-02-20 11:21:59
Local clock offset: -56.406 ms
Remote clock offset: 4.756 ms

# Below is generated by plot.py at 2019-02-20 12:17:39
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.00 Mbit/s
  95th percentile per-packet one-way delay: 151.326 ms
  Loss rate: 5.68%
-- Flow 1:
  Average throughput: 61.36 Mbit/s
  95th percentile per-packet one-way delay: 160.575 ms
  Loss rate: 6.95%
-- Flow 2:
  Average throughput: 37.02 Mbit/s
  95th percentile per-packet one-way delay: 78.648 ms
  Loss rate: 2.33%
-- Flow 3:
  Average throughput: 30.73 Mbit/s
  95th percentile per-packet one-way delay: 126.502 ms
  Loss rate: 5.47%
Run 4: Report of Indigo-MusesD — Data Link

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

- Flow 1 ingress (mean 65.56 Mbps)
- Flow 1 egress (mean 61.36 Mbps)
- Flow 2 ingress (mean 37.55 Mbps)
- Flow 2 egress (mean 37.02 Mbps)
- Flow 3 ingress (mean 31.85 Mbps)
- Flow 3 egress (mean 30.73 Mbps)

![Graph 2: Packet delay (ms)](image2)

- Flow 1 (95th percentile 160.57 ms)
- Flow 2 (95th percentile 78.65 ms)
- Flow 3 (95th percentile 126.50 ms)
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-20 11:48:34
End at: 2019-02-20 11:49:04
Local clock offset: -57.419 ms
Remote clock offset: 6.979 ms

# Below is generated by plot.py at 2019-02-20 12:17:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.50 Mbit/s
95th percentile per-packet one-way delay: 148.698 ms
Loss rate: 5.03%
-- Flow 1:
Average throughput: 60.62 Mbit/s
95th percentile per-packet one-way delay: 153.191 ms
Loss rate: 5.78%
-- Flow 2:
Average throughput: 37.08 Mbit/s
95th percentile per-packet one-way delay: 103.572 ms
Loss rate: 2.84%
-- Flow 3:
Average throughput: 31.08 Mbit/s
95th percentile per-packet one-way delay: 133.195 ms
Loss rate: 5.58%
Run 5: Report of Indigo-MusesD — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 63.96 Mbps)  
Flow 1 egress (mean 60.62 Mbps)

Flow 2 ingress (mean 37.81 Mbps)  
Flow 2 egress (mean 37.08 Mbps)

Flow 3 ingress (mean 32.24 Mbps)  
Flow 3 egress (mean 31.08 Mbps)

Per packet one way delay (ms)

Flow 1 (95th percentile 153.19 ms)  
Flow 2 (95th percentile 103.57 ms)  
Flow 3 (95th percentile 133.19 ms)
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-20 09:53:44
End at: 2019-02-20 09:54:14
Local clock offset: -62.188 ms
Remote clock offset: 7.936 ms

# Below is generated by plot.py at 2019-02-20 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.32 Mbit/s
95th percentile per-packet one-way delay: 493.827 ms
Loss rate: 6.43%
-- Flow 1:
Average throughput: 57.65 Mbit/s
95th percentile per-packet one-way delay: 395.305 ms
Loss rate: 6.71%
-- Flow 2:
Average throughput: 41.96 Mbit/s
95th percentile per-packet one-way delay: 356.322 ms
Loss rate: 3.48%
-- Flow 3:
Average throughput: 23.35 Mbit/s
95th percentile per-packet one-way delay: 1077.814 ms
Loss rate: 14.70%
Run 1: Report of Indigo-MusesT — Data Link
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-20 10:20:50
End at: 2019-02-20 10:21:20
Local clock offset: -61.957 ms
Remote clock offset: 4.505 ms

# Below is generated by plot.py at 2019-02-20 12:17:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.85 Mbit/s
95th percentile per-packet one-way delay: 381.143 ms
Loss rate: 6.12%
-- Flow 1:
Average throughput: 60.19 Mbit/s
95th percentile per-packet one-way delay: 355.549 ms
Loss rate: 5.62%
-- Flow 2:
Average throughput: 40.19 Mbit/s
95th percentile per-packet one-way delay: 378.288 ms
Loss rate: 6.54%
-- Flow 3:
Average throughput: 30.53 Mbit/s
95th percentile per-packet one-way delay: 422.866 ms
Loss rate: 8.22%
Run 2: Report of Indigo-MusesT — Data Link

![Graph showing throughput and packet delay]

- Flow 1 ingress (mean 63.45 Mbit/s)
- Flow 1 egress (mean 60.19 Mbit/s)
- Flow 2 ingress (mean 43.31 Mbit/s)
- Flow 2 egress (mean 40.19 Mbit/s)
- Flow 3 ingress (mean 32.81 Mbit/s)
- Flow 3 egress (mean 30.53 Mbit/s)

- Flow 1 (95th percentile 355.55 ms)
- Flow 2 (95th percentile 378.29 ms)
- Flow 3 (95th percentile 422.87 ms)
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-20 10:47:54
End at: 2019-02-20 10:48:24
Local clock offset: -57.851 ms
Remote clock offset: 8.339 ms

# Below is generated by plot.py at 2019-02-20 12:18:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.05 Mbit/s
95th percentile per-packet one-way delay: 318.518 ms
Loss rate: 6.62%
-- Flow 1:
Average throughput: 61.31 Mbit/s
95th percentile per-packet one-way delay: 223.969 ms
Loss rate: 6.82%
-- Flow 2:
Average throughput: 40.35 Mbit/s
95th percentile per-packet one-way delay: 329.820 ms
Loss rate: 6.25%
-- Flow 3:
Average throughput: 27.13 Mbit/s
95th percentile per-packet one-way delay: 484.423 ms
Loss rate: 6.29%
Run 3: Report of Indigo-MusesT — Data Link

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

- Flow 1 ingress (mean 65.44 MB/s)
- Flow 1 egress (mean 61.31 MB/s)
- Flow 2 ingress (mean 42.64 MB/s)
- Flow 2 egress (mean 40.35 MB/s)
- Flow 3 ingress (mean 28.37 MB/s)
- Flow 3 egress (mean 27.13 MB/s)

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

- Flow 1 (95th percentile 223.97 ms)
- Flow 2 (95th percentile 329.82 ms)
- Flow 3 (95th percentile 484.42 ms)
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:14:59
End at: 2019-02-20 11:15:29
Local clock offset: -56.682 ms
Remote clock offset: 2.414 ms

# Below is generated by plot.py at 2019-02-20 12:18:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 364.173 ms
Loss rate: 9.71%
-- Flow 1:
Average throughput: 59.02 Mbit/s
95th percentile per-packet one-way delay: 301.227 ms
Loss rate: 7.44%
-- Flow 2:
Average throughput: 40.38 Mbit/s
95th percentile per-packet one-way delay: 397.408 ms
Loss rate: 14.45%
-- Flow 3:
Average throughput: 34.90 Mbit/s
95th percentile per-packet one-way delay: 371.156 ms
Loss rate: 9.76%
Run 4: Report of Indigo-MusesT — Data Link

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

- Flow 1 ingress (mean 63.37 Mbit/s)
- Flow 1 egress (mean 59.92 Mbit/s)
- Flow 2 ingress (mean 46.78 Mbit/s)
- Flow 2 egress (mean 40.38 Mbit/s)
- Flow 3 ingress (mean 37.92 Mbit/s)
- Flow 3 egress (mean 34.90 Mbit/s)

![Graph 2: Packet Delay vs Time](image2.png)

- Flow 1 (95th percentile 301.23 ms)
- Flow 2 (95th percentile 397.41 ms)
- Flow 3 (95th percentile 371.16 ms)
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:42:04
End at: 2019-02-20 11:42:34
Local clock offset: -56.9 ms
Remote clock offset: 5.7 ms

# Below is generated by plot.py at 2019-02-20 12:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.72 Mbit/s
95th percentile per-packet one-way delay: 394.934 ms
Loss rate: 5.77%
-- Flow 1:
Average throughput: 60.34 Mbit/s
95th percentile per-packet one-way delay: 203.879 ms
Loss rate: 4.90%
-- Flow 2:
Average throughput: 39.60 Mbit/s
95th percentile per-packet one-way delay: 454.718 ms
Loss rate: 6.93%
-- Flow 3:
Average throughput: 31.21 Mbit/s
95th percentile per-packet one-way delay: 433.255 ms
Loss rate: 8.20%
Run 5: Report of Indigo-MusesT — Data Link
Run 1: Statistics of LEDBAT

Start at: 2019-02-20 10:09:16
End at: 2019-02-20 10:09:46
Local clock offset: -61.989 ms
Remote clock offset: 3.644 ms

# Below is generated by plot.py at 2019-02-20 12:18:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 18.87 Mbit/s
  95th percentile per-packet one-way delay: 38.598 ms
  Loss rate: 1.47%
-- Flow 1:
  Average throughput: 12.37 Mbit/s
  95th percentile per-packet one-way delay: 38.198 ms
  Loss rate: 1.14%
-- Flow 2:
  Average throughput: 7.89 Mbit/s
  95th percentile per-packet one-way delay: 38.865 ms
  Loss rate: 1.75%
-- Flow 3:
  Average throughput: 3.92 Mbit/s
  95th percentile per-packet one-way delay: 36.962 ms
  Loss rate: 3.47%
Run 1: Report of LEDBAT — Data Link

![Graph of throughput and per-packet one-way delay over time](image)

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 12.44 Mbps)
  - Flow 1 egress (mean 12.37 Mbps)
  - Flow 2 ingress (mean 7.96 Mbps)
  - Flow 2 egress (mean 7.89 Mbps)
  - Flow 3 ingress (mean 3.99 Mbps)
  - Flow 3 egress (mean 3.92 Mbps)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 38.20 ms)
  - Flow 2 (95th percentile 38.87 ms)
  - Flow 3 (95th percentile 36.96 ms)
Run 2: Statistics of LEDBAT

Start at: 2019-02-20 10:36:20
End at: 2019-02-20 10:36:50
Local clock offset: -59.802 ms
Remote clock offset: 9.628 ms

# Below is generated by plot.py at 2019-02-20 12:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.34 Mbit/s
95th percentile per-packet one-way delay: 32.522 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 32.389 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 7.96 Mbit/s
95th percentile per-packet one-way delay: 32.804 ms
Loss rate: 1.73%
-- Flow 3:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 32.276 ms
Loss rate: 3.53%
Run 2: Report of LEDBAT — Data Link
Run 3: Statistics of LEDBAT

Start at: 2019-02-20 11:03:25
End at: 2019-02-20 11:03:55
Local clock offset: -57.105 ms
Remote clock offset: 6.905 ms

# Below is generated by plot.py at 2019-02-20 12:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.27 Mbit/s
95th percentile per-packet one-way delay: 34.016 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 11.85 Mbit/s
95th percentile per-packet one-way delay: 33.588 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 34.441 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 3.79 Mbit/s
95th percentile per-packet one-way delay: 32.971 ms
Loss rate: 3.56%
Run 3: Report of LEDBAT — Data Link

![Graph showing data link performance over time with throughput and packet delay metrics for different flows.](image_url)
Run 4: Statistics of LEDBAT

Start at: 2019-02-20 11:30:31
End at: 2019-02-20 11:31:01
Local clock offset: -56.228 ms
Remote clock offset: 5.655 ms

# Below is generated by plot.py at 2019-02-20 12:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.32 Mbit/s
95th percentile per-packet one-way delay: 35.999 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 11.95 Mbit/s
95th percentile per-packet one-way delay: 36.072 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 35.090 ms
Loss rate: 1.76%
-- Flow 3:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 34.471 ms
Loss rate: 3.56%
Run 4: Report of LEDBAT — Data Link

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 12.06 Mbps/s)
  - Flow 1 egress (mean 11.95 Mbps/s)
  - Flow 2 ingress (mean 7.85 Mbps/s)
  - Flow 2 egress (mean 7.78 Mbps/s)
  - Flow 3 ingress (mean 3.85 Mbps/s)
  - Flow 3 egress (mean 3.76 Mbps/s)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 36.07 ms)
  - Flow 2 (95th percentile 35.09 ms)
  - Flow 3 (95th percentile 34.47 ms)
Run 5: Statistics of LEDBAT

Start at: 2019-02-20 11:57:36
End at: 2019-02-20 11:58:06
Local clock offset: -56.868 ms
Remote clock offset: 7.145 ms

# Below is generated by plot.py at 2019-02-20 12:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.53 Mbit/s
95th percentile per-packet one-way delay: 33.943 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 33.736 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 34.049 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 32.304 ms
Loss rate: 3.48%
Run 5: Report of LEDBAT — Data Link

![Graph showing data link performance metrics for different flows over time.](image)

**Legend:**
- Blue dashed line: Flow 1 ingress (mean 12.11 Mbit/s)
- Blue solid line: Flow 1 egress (mean 12.04 Mbit/s)
- Green dashed line: Flow 2 ingress (mean 7.97 Mbit/s)
- Green solid line: Flow 2 egress (mean 7.90 Mbit/s)
- Red dashed line: Flow 3 ingress (mean 3.99 Mbit/s)
- Red solid line: Flow 3 egress (mean 3.92 Mbit/s)

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

**Legend:**
- Blue circles: Flow 1 (95th percentile 33.74 ms)
- Green circles: Flow 2 (95th percentile 34.05 ms)
- Red circles: Flow 3 (95th percentile 32.30 ms)
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-20 10:07:59
End at: 2019-02-20 10:08:29
Local clock offset: -62.133 ms
Remote clock offset: 8.496 ms

# Below is generated by plot.py at 2019-02-20 12:18:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.97 Mbit/s
95th percentile per-packet one-way delay: 1385.673 ms
Loss rate: 22.55%
-- Flow 1:
Average throughput: 55.61 Mbit/s
95th percentile per-packet one-way delay: 1427.805 ms
Loss rate: 25.31%
-- Flow 2:
Average throughput: 34.27 Mbit/s
95th percentile per-packet one-way delay: 1127.866 ms
Loss rate: 15.72%
-- Flow 3:
Average throughput: 29.48 Mbit/s
95th percentile per-packet one-way delay: 1298.686 ms
Loss rate: 20.77%
Run 1: Report of PCC-Allegro — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows. The graph illustrates the performance and variability of each flow during the test period.]
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-20 10:35:03
End at: 2019-02-20 10:35:33
Local clock offset: -60.115 ms
Remote clock offset: 3.538 ms

# Below is generated by plot.py at 2019-02-20 12:18:58
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.52 Mbit/s
  95th percentile per-packet one-way delay: 1422.077 ms
  Loss rate: 23.24%
-- Flow 1:
  Average throughput: 55.85 Mbit/s
  95th percentile per-packet one-way delay: 1503.805 ms
  Loss rate: 26.45%
-- Flow 2:
  Average throughput: 34.72 Mbit/s
  95th percentile per-packet one-way delay: 1077.340 ms
  Loss rate: 15.58%
-- Flow 3:
  Average throughput: 29.61 Mbit/s
  95th percentile per-packet one-way delay: 1363.444 ms
  Loss rate: 20.36%
Run 2: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 75.50 Mbit/s)
- Flow 1 egress (mean 55.85 Mbit/s)
- Flow 2 ingress (mean 40.76 Mbit/s)
- Flow 2 egress (mean 34.72 Mbit/s)
- Flow 3 ingress (mean 36.54 Mbit/s)
- Flow 3 egress (mean 29.61 Mbit/s)

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

- Flow 1 (95th percentile 1503.81 ms)
- Flow 2 (95th percentile 1077.34 ms)
- Flow 3 (95th percentile 1363.44 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-20 11:02:08
End at: 2019-02-20 11:02:38
Local clock offset: -57.04 ms
Remote clock offset: 6.82 ms

# Below is generated by plot.py at 2019-02-20 12:18:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.65 Mbit/s
  95th percentile per-packet one-way delay: 1372.492 ms
  Loss rate: 22.99%
-- Flow 1:
  Average throughput: 56.30 Mbit/s
  95th percentile per-packet one-way delay: 1433.612 ms
  Loss rate: 25.69%
-- Flow 2:
  Average throughput: 34.29 Mbit/s
  95th percentile per-packet one-way delay: 1097.785 ms
  Loss rate: 15.84%
-- Flow 3:
  Average throughput: 29.49 Mbit/s
  95th percentile per-packet one-way delay: 1296.005 ms
  Loss rate: 22.10%
Run 3: Report of PCC-Allegro — Data Link

**Graph 1:**
Throughput (Mbps) vs. Time (s)
- Blue dashed line: Flow 1 ingress (mean 75.33 Mbps)
- Blue solid line: Flow 1 egress (mean 56.30 Mbps)
- Green dashed line: Flow 2 ingress (mean 40.41 Mbps)
- Green solid line: Flow 2 egress (mean 34.29 Mbps)
- Red dashed line: Flow 3 ingress (mean 37.18 Mbps)
- Red solid line: Flow 3 egress (mean 29.49 Mbps)

**Graph 2:**
Per-packet one-way delay (ms) vs. Time (s)
- Blue markers: Flow 1 (95th percentile 1433.61 ms)
- Green markers: Flow 2 (95th percentile 1097.79 ms)
- Red markers: Flow 3 (95th percentile 1296.01 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-20 11:29:14
End at: 2019-02-20 11:29:44
Local clock offset: -56.19 ms
Remote clock offset: 6.393 ms

# Below is generated by plot.py at 2019-02-20 12:19:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 85.64 Mbit/s
  95th percentile per-packet one-way delay: 1449.575 ms
  Loss rate: 20.97%
-- Flow 1:
  Average throughput: 52.79 Mbit/s
  95th percentile per-packet one-way delay: 1551.568 ms
  Loss rate: 22.95%
-- Flow 2:
  Average throughput: 35.06 Mbit/s
  95th percentile per-packet one-way delay: 1052.440 ms
  Loss rate: 16.26%
-- Flow 3:
  Average throughput: 29.46 Mbit/s
  95th percentile per-packet one-way delay: 1338.526 ms
  Loss rate: 20.58%
Run 4: Report of PCC-Allegro — Data Link

Throughput (Mbit/s):
- Flow 1 ingress (mean 68.12 Mbit/s)
- Flow 1 egress (mean 52.79 Mbit/s)
- Flow 2 ingress (mean 41.51 Mbit/s)
- Flow 2 egress (mean 35.06 Mbit/s)
- Flow 3 ingress (mean 36.44 Mbit/s)
- Flow 3 egress (mean 29.46 Mbit/s)

Per-packet one-way delay (ms):
- Flow 1 (95th percentile 1551.57 ms)
- Flow 2 (95th percentile 1052.44 ms)
- Flow 3 (95th percentile 1338.53 ms)
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-20 11:56:19
End at: 2019-02-20 11:56:49
Local clock offset: -57.017 ms
Remote clock offset: 2.981 ms

# Below is generated by plot.py at 2019-02-20 12:19:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.72 Mbit/s
95th percentile per-packet one-way delay: 1361.289 ms
Loss rate: 23.29%
-- Flow 1:
Average throughput: 54.38 Mbit/s
95th percentile per-packet one-way delay: 1416.930 ms
Loss rate: 25.76%
-- Flow 2:
Average throughput: 34.27 Mbit/s
95th percentile per-packet one-way delay: 1032.226 ms
Loss rate: 17.06%
-- Flow 3:
Average throughput: 29.47 Mbit/s
95th percentile per-packet one-way delay: 1293.660 ms
Loss rate: 22.51%
Run 5: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 72.82 Mbit/s)
- Flow 1 egress (mean 54.38 Mbit/s)
- Flow 2 ingress (mean 40.97 Mbit/s)
- Flow 2 egress (mean 34.27 Mbit/s)
- Flow 3 ingress (mean 37.38 Mbit/s)
- Flow 3 egress (mean 29.47 Mbit/s)
Run 1: Statistics of PCC-Expr

Start at: 2019-02-20 10:10:31
End at: 2019-02-20 10:11:01
Local clock offset: -61.985 ms
Remote clock offset: 9.651 ms

# Below is generated by plot.py at 2019-02-20 12:20:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.92 Mbit/s
95th percentile per-packet one-way delay: 1218.492 ms
Loss rate: 8.22%
-- Flow 1:
Average throughput: 56.65 Mbit/s
95th percentile per-packet one-way delay: 1282.150 ms
Loss rate: 9.31%
-- Flow 2:
Average throughput: 38.93 Mbit/s
95th percentile per-packet one-way delay: 891.718 ms
Loss rate: 7.30%
-- Flow 3:
Average throughput: 25.88 Mbit/s
95th percentile per-packet one-way delay: 185.790 ms
Loss rate: 3.36%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2019-02-20 10:37:35
End at: 2019-02-20 10:38:05
Local clock offset: -59.481 ms
Remote clock offset: 4.565 ms

# Below is generated by plot.py at 2019-02-20 12:20:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.00 Mbit/s
95th percentile per-packet one-way delay: 785.179 ms
Loss rate: 22.31%
-- Flow 1:
Average throughput: 56.72 Mbit/s
95th percentile per-packet one-way delay: 776.590 ms
Loss rate: 29.51%
-- Flow 2:
Average throughput: 38.92 Mbit/s
95th percentile per-packet one-way delay: 855.344 ms
Loss rate: 7.40%
-- Flow 3:
Average throughput: 25.96 Mbit/s
95th percentile per-packet one-way delay: 160.623 ms
Loss rate: 3.76%
Run 3: Statistics of PCC-Expr

Start at: 2019-02-20 11:04:40
End at: 2019-02-20 11:05:10
Local clock offset: -56.993 ms
Remote clock offset: 1.723 ms

# Below is generated by plot.py at 2019-02-20 12:20:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.94 Mbit/s
  95th percentile per-packet one-way delay: 799.215 ms
  Loss rate: 19.75%
-- Flow 1:
  Average throughput: 56.68 Mbit/s
  95th percentile per-packet one-way delay: 793.497 ms
  Loss rate: 26.03%
-- Flow 2:
  Average throughput: 38.93 Mbit/s
  95th percentile per-packet one-way delay: 842.125 ms
  Loss rate: 7.69%
-- Flow 3:
  Average throughput: 25.85 Mbit/s
  95th percentile per-packet one-way delay: 193.356 ms
  Loss rate: 3.30%
Run 3: Report of PCC-Expr — Data Link

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

- **Flow 1 ingress** (mean 76.20 Mbit/s)
- **Flow 1 egress** (mean 56.68 Mbit/s)
- **Flow 2 ingress** (mean 41.81 Mbit/s)
- **Flow 2 egress** (mean 38.93 Mbit/s)
- **Flow 3 ingress** (mean 26.26 Mbit/s)
- **Flow 3 egress** (mean 25.85 Mbit/s)

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

- **Flow 1** (95th percentile 793.50 ms)
- **Flow 2** (95th percentile 842.12 ms)
- **Flow 3** (95th percentile 193.36 ms)
Run 4: Statistics of PCC-Expr

Start at: 2019-02-20 11:31:46
End at: 2019-02-20 11:32:16
Local clock offset: -56.31 ms
Remote clock offset: 2.795 ms

# Below is generated by plot.py at 2019-02-20 12:20:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.95 Mbit/s
  95th percentile per-packet one-way delay: 824.064 ms
  Loss rate: 18.52%
-- Flow 1:
  Average throughput: 56.69 Mbit/s
  95th percentile per-packet one-way delay: 828.020 ms
  Loss rate: 24.19%
-- Flow 2:
  Average throughput: 38.95 Mbit/s
  95th percentile per-packet one-way delay: 827.313 ms
  Loss rate: 7.72%
-- Flow 3:
  Average throughput: 25.81 Mbit/s
  95th percentile per-packet one-way delay: 153.321 ms
  Loss rate: 4.81%
Run 4: Report of PCC-Expr — Data Link

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

Start at: 2019-02-20 11:58:51
End at: 2019-02-20 11:59:21
Local clock offset: -56.844 ms
Remote clock offset: 6.104 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.02 Mbit/s
95th percentile per-packet one-way delay: 787.509 ms
Loss rate: 22.50%
-- Flow 1:
Average throughput: 56.76 Mbit/s
95th percentile per-packet one-way delay: 769.347 ms
Loss rate: 29.73%
-- Flow 2:
Average throughput: 38.96 Mbit/s
95th percentile per-packet one-way delay: 839.422 ms
Loss rate: 7.54%
-- Flow 3:
Average throughput: 25.78 Mbit/s
95th percentile per-packet one-way delay: 185.596 ms
Loss rate: 3.47%
Run 5: Report of PCC-Expr — Data Link

![Graph showing throughput and delay over time for different flows with specified mean values.]
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-20 09:57:39
End at: 2019-02-20 09:58:09
Local clock offset: -62.336 ms
Remote clock offset: 2.872 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 53.80 Mbit/s
  95th percentile per-packet one-way delay: 107.036 ms
  Loss rate: 1.15%
-- Flow 1:
  Average throughput: 29.40 Mbit/s
  95th percentile per-packet one-way delay: 87.430 ms
  Loss rate: 0.74%
-- Flow 2:
  Average throughput: 25.70 Mbit/s
  95th percentile per-packet one-way delay: 143.745 ms
  Loss rate: 1.22%
-- Flow 3:
  Average throughput: 22.46 Mbit/s
  95th percentile per-packet one-way delay: 141.220 ms
  Loss rate: 2.62%
Run 1: Report of QUIC Cubic — Data Link

![Throughput and Latency Graphs]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 29.45 Mbps)
  - Flow 1 egress (mean 29.40 Mbps)
  - Flow 2 ingress (mean 25.79 Mbps)
  - Flow 2 egress (mean 25.70 Mbps)
  - Flow 3 ingress (mean 22.66 Mbps)
  - Flow 3 egress (mean 22.46 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 87.43 ms)
  - Flow 2 (95th percentile 143.75 ms)
  - Flow 3 (95th percentile 141.22 ms)
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-20 10:24:44
End at: 2019-02-20 10:25:14
Local clock offset: -62.068 ms
Remote clock offset: 3.206 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.50 Mbit/s
95th percentile per-packet one-way delay: 117.058 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 30.64 Mbit/s
95th percentile per-packet one-way delay: 81.832 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 25.10 Mbit/s
95th percentile per-packet one-way delay: 123.677 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 12.88 Mbit/s
95th percentile per-packet one-way delay: 307.161 ms
Loss rate: 9.23%
Run 2: Report of QUIC Cubic — Data Link

![Graph of throughput and end-to-end delay over time for three flows, showing fluctuations and mean values for ingress and egress traffic.]
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-20 10:51:48
End at: 2019-02-20 10:52:18
Local clock offset: -57.591 ms
Remote clock offset: 7.56 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 45.84 Mbit/s
  95th percentile per-packet one-way delay: 155.533 ms
  Loss rate: 1.54%
-- Flow 1:
  Average throughput: 29.06 Mbit/s
  95th percentile per-packet one-way delay: 86.032 ms
  Loss rate: 0.78%
-- Flow 2:
  Average throughput: 18.16 Mbit/s
  95th percentile per-packet one-way delay: 169.029 ms
  Loss rate: 3.26%
-- Flow 3:
  Average throughput: 14.51 Mbit/s
  95th percentile per-packet one-way delay: 284.141 ms
  Loss rate: 1.68%
Run 3: Report of QUIC Cubic — Data Link

`Throughput (Mbit/s)`

- Flow 1 ingress (mean 29.12 Mbit/s)
- Flow 2 ingress (mean 18.60 Mbit/s)
- Flow 3 ingress (mean 14.52 Mbit/s)
- Flow 1 egress (mean 29.06 Mbit/s)
- Flow 2 egress (mean 18.16 Mbit/s)
- Flow 3 egress (mean 14.51 Mbit/s)

`Round-trip one-way delay (ms)`

- Flow 1 (95th percentile 86.03 ms)
- Flow 2 (95th percentile 169.03 ms)
- Flow 3 (95th percentile 284.14 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-20 11:18:54
End at: 2019-02-20 11:19:24
Local clock offset: -56.552 ms
Remote clock offset: 5.961 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.14 Mbit/s
95th percentile per-packet one-way delay: 115.397 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 30.25 Mbit/s
95th percentile per-packet one-way delay: 73.544 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 24.35 Mbit/s
95th percentile per-packet one-way delay: 113.205 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 14.53 Mbit/s
95th percentile per-packet one-way delay: 315.750 ms
Loss rate: 2.14%
Run 4: Report of QUIC Cubic — Data Link

![Graph of Throughput and Delay over Time]

- Delay: Flow 1 (95th percentile 73.54 ms), Flow 2 (95th percentile 113.20 ms), Flow 3 (95th percentile 315.75 ms)
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-20 11:45:59
End at: 2019-02-20 11:46:29
Local clock offset: -56.913 ms
Remote clock offset: 6.892 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 53.35 Mbit/s
  95th percentile per-packet one-way delay: 148.393 ms
  Loss rate: 1.14%
-- Flow 1:
  Average throughput: 34.40 Mbit/s
  95th percentile per-packet one-way delay: 77.363 ms
  Loss rate: 0.56%
-- Flow 2:
  Average throughput: 21.90 Mbit/s
  95th percentile per-packet one-way delay: 170.133 ms
  Loss rate: 1.08%
-- Flow 3:
  Average throughput: 13.52 Mbit/s
  95th percentile per-packet one-way delay: 291.735 ms
  Loss rate: 5.56%
Run 5: Report of QUIC Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 34.41 Mbit/s)  Flow 1 egress (mean 34.40 Mbit/s)
Flow 2 ingress (mean 21.94 Mbit/s)  Flow 2 egress (mean 21.90 Mbit/s)
Flow 3 ingress (mean 14.06 Mbit/s)  Flow 3 egress (mean 13.52 Mbit/s)

Round-trip one-way delay (ms)

Time (s)

Flow 1 (95th percentile 77.36 ms)  Flow 2 (95th percentile 170.13 ms)  Flow 3 (95th percentile 291.74 ms)
Run 1: Statistics of SCReAM

Start at: 2019-02-20 10:19:37
End at: 2019-02-20 10:20:07
Local clock offset: -62.011 ms
Remote clock offset: 7.234 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 38.493 ms
  Loss rate: 0.91%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 32.324 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 38.506 ms
  Loss rate: 1.03%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 34.064 ms
  Loss rate: 1.85%
Run 1: Report of SCReAM — Data Link

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

[Legend for graphs: 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).]
Run 2: Statistics of SCReAM

Start at: 2019-02-20 10:46:41
End at: 2019-02-20 10:47:11
Local clock offset: -58.009 ms
Remote clock offset: 4.753 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 36.596 ms
  Loss rate: 0.83%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 34.858 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 36.610 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 34.778 ms
  Loss rate: 1.84%
Run 2: Report of SCReAM — Data Link

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

- **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 Round-Trip Delay (ms)**
  - **Flow 1 (95th percentile 34.86 ms)**
  - **Flow 2 (95th percentile 36.61 ms)**
  - **Flow 3 (95th percentile 34.78 ms)**
Run 3: Statistics of SCReAM

Start at: 2019-02-20 11:13:46
End at: 2019-02-20 11:14:16
Local clock offset: -56.68 ms
Remote clock offset: 7.433 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 36.143 ms
  Loss rate: 0.78%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 31.750 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 29.727 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 36.162 ms
  Loss rate: 1.50%
Run 3: Report of SCReAM — Data Link

![Graph of Throughput vs Time](image1)

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

- **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)

- **Per-packet one way delay (ms):**
  - Flow 1 (95th percentile 31.75 ms)
  - Flow 2 (95th percentile 29.73 ms)
  - Flow 3 (95th percentile 36.16 ms)
Run 4: Statistics of SCReAM

Start at: 2019-02-20 11:40:52
End at: 2019-02-20 11:41:22
Local clock offset: -57.043 ms
Remote clock offset: 7.006 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 32.675 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.601 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 32.651 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 32.692 ms
Loss rate: 1.85%
Run 4: Report of SCReAM — Data Link

[Graphs showing throughput and per-packet error rates over time for different flows.]
Run 5: Statistics of SCReAM

Start at: 2019-02-20 12:07:58
End at: 2019-02-20 12:08:28
Local clock offset: -60.14 ms
Remote clock offset: 8.008 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 33.098 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.069 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.113 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 31.112 ms
Loss rate: 1.85%
Run 5: Report of SCReAM — Data Link
Run 1: Statistics of Sprout

Start at: 2019-02-20 10:17:06
End at: 2019-02-20 10:17:36
Local clock offset: -62.019 ms
Remote clock offset: 7.419 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 6.59 Mbit/s
  95th percentile per-packet one-way delay: 47.323 ms
  Loss rate: 1.12%
-- Flow 1:
  Average throughput: 3.62 Mbit/s
  95th percentile per-packet one-way delay: 46.058 ms
  Loss rate: 0.92%
-- Flow 2:
  Average throughput: 3.87 Mbit/s
  95th percentile per-packet one-way delay: 49.578 ms
  Loss rate: 1.23%
-- Flow 3:
  Average throughput: 1.25 Mbit/s
  95th percentile per-packet one-way delay: 38.662 ms
  Loss rate: 2.20%
Run 1: Report of Sprout — Data Link

![Graph showing network performance metrics over time. The graph includes two plots: one for throughput in Mbps and another for packet one-way delay in ms. Each plot has multiple lines representing different data flows with their respective throughput and latency characteristics.]
Run 2: Statistics of Sprout

Start at: 2019-02-20 10:44:11
End at: 2019-02-20 10:44:41
Local clock offset: -58.359 ms
Remote clock offset: 4.596 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.37 Mbit/s
  95th percentile per-packet one-way delay: 42.337 ms
  Loss rate: 1.27%
-- Flow 1:
  Average throughput: 2.36 Mbit/s
  95th percentile per-packet one-way delay: 42.625 ms
  Loss rate: 0.96%
-- Flow 2:
  Average throughput: 2.42 Mbit/s
  95th percentile per-packet one-way delay: 42.446 ms
  Loss rate: 1.34%
-- Flow 3:
  Average throughput: 1.26 Mbit/s
  95th percentile per-packet one-way delay: 40.151 ms
  Loss rate: 2.84%
Run 2: Report of Sprout — Data Link

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

- **Throughput (Mbps/s)**
  - Flow 1 Ingress (mean 2.37 Mbps/s)
  - Flow 1 Egress (mean 2.36 Mbps/s)
  - Flow 2 Ingress (mean 2.43 Mbps/s)
  - Flow 2 Egress (mean 2.42 Mbps/s)
  - Flow 3 Ingress (mean 1.27 Mbps/s)
  - Flow 3 Egress (mean 1.26 Mbps/s)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 42.62 ms)
  - Flow 2 (95th percentile 42.45 ms)
  - Flow 3 (95th percentile 40.15 ms)
Run 3: Statistics of Sprout

Start at: 2019-02-20 11:11:16
End at: 2019-02-20 11:11:46
Local clock offset: -56.803 ms
Remote clock offset: 2.633 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 6.15 Mbit/s
  95th percentile per-packet one-way delay: 44.504 ms
  Loss rate: 0.55%
-- Flow 1:
  Average throughput: 2.81 Mbit/s
  95th percentile per-packet one-way delay: 43.119 ms
  Loss rate: 0.76%
-- Flow 2:
  Average throughput: 3.93 Mbit/s
  95th percentile per-packet one-way delay: 46.342 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 2.26 Mbit/s
  95th percentile per-packet one-way delay: 38.726 ms
  Loss rate: 1.64%
Run 3: Report of Sprout — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 2.81 Mbit/s)  
Flow 1 egress (mean 2.81 Mbit/s)  
Flow 2 ingress (mean 3.90 Mbit/s)  
Flow 2 egress (mean 3.93 Mbit/s)  
Flow 3 ingress (mean 2.25 Mbit/s)  
Flow 3 egress (mean 2.26 Mbit/s)

Per-packet end-to-end delay (ms)

Time (s)

Flow 1 (95th percentile 43.12 ms)  
Flow 2 (95th percentile 46.34 ms)  
Flow 3 (95th percentile 38.73 ms)
Run 4: Statistics of Sprout

Start at: 2019-02-20 11:38:22
End at: 2019-02-20 11:38:52
Local clock offset: -56.824 ms
Remote clock offset: 6.832 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.32 Mbit/s
95th percentile per-packet one-way delay: 36.946 ms
Loss rate: 1.71%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 36.210 ms
Loss rate: 1.28%
-- Flow 2:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 37.693 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 2.86 Mbit/s
95th percentile per-packet one-way delay: 35.969 ms
Loss rate: 2.93%
Run 5: Statistics of Sprout

Start at: 2019-02-20 12:05:27
End at: 2019-02-20 12:05:57
Local clock offset: -59.33 ms
Remote clock offset: 4.085 ms

# Below is generated by plot.py at 2019-02-20 12:21:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.30 Mbit/s
  95th percentile per-packet one-way delay: 40.690 ms
  Loss rate: 1.31%
-- Flow 1:
  Average throughput: 2.39 Mbit/s
  95th percentile per-packet one-way delay: 41.245 ms
  Loss rate: 1.27%
-- Flow 2:
  Average throughput: 2.42 Mbit/s
  95th percentile per-packet one-way delay: 39.650 ms
  Loss rate: 1.11%
-- Flow 3:
  Average throughput: 0.92 Mbit/s
  95th percentile per-packet one-way delay: 38.849 ms
  Loss rate: 2.64%
Run 5: Report of Sprout — Data Link

![Graph showing throughput and latency over time for different flows.](image-url)
Run 1: Statistics of TaoVA-100x

Start at: 2019-02-20 10:15:45
End at: 2019-02-20 10:16:15
Local clock offset: -61.981 ms
Remote clock offset: 4.801 ms

# Below is generated by plot.py at 2019-02-20 12:21:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.85 Mbit/s
  95th percentile per-packet one-way delay: 106.236 ms
  Loss rate: 0.80%
-- Flow 1:
  Average throughput: 50.03 Mbit/s
  95th percentile per-packet one-way delay: 99.514 ms
  Loss rate: 0.50%
-- Flow 2:
  Average throughput: 37.84 Mbit/s
  95th percentile per-packet one-way delay: 116.298 ms
  Loss rate: 0.91%
-- Flow 3:
  Average throughput: 29.44 Mbit/s
  95th percentile per-packet one-way delay: 103.451 ms
  Loss rate: 2.06%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2019-02-20 10:42:49
End at: 2019-02-20 10:43:19
Local clock offset: -58.537 ms
Remote clock offset: 9.785 ms

# Below is generated by plot.py at 2019-02-20 12:22:00
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.12 Mbit/s
  95th percentile per-packet one-way delay: 97.425 ms
  Loss rate: 0.69%
-- Flow 1:
  Average throughput: 49.49 Mbit/s
  95th percentile per-packet one-way delay: 97.366 ms
  Loss rate: 0.41%
-- Flow 2:
  Average throughput: 37.44 Mbit/s
  95th percentile per-packet one-way delay: 98.717 ms
  Loss rate: 0.73%
-- Flow 3:
  Average throughput: 29.66 Mbit/s
  95th percentile per-packet one-way delay: 89.892 ms
  Loss rate: 1.95%
Run 2: Report of TaoVA-100x — Data Link

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

- Throughput (kbps)
- Time (s)
- Flow 1 ingress (mean 49.41 Mbps)
- Flow 1 egress (mean 49.49 Mbps)
- Flow 2 ingress (mean 37.40 Mbps)
- Flow 2 egress (mean 37.44 Mbps)
- Flow 3 ingress (mean 29.72 Mbps)
- Flow 3 egress (mean 29.66 Mbps)

- Per-packet one-way delay (ms)
- Time (s)
- Flow 1 (95th percentile 97.37 ms)
- Flow 2 (95th percentile 98.72 ms)
- Flow 3 (95th percentile 89.89 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2019-02-20 11:09:54
End at: 2019-02-20 11:10:24
Local clock offset: -56.883 ms
Remote clock offset: 7.587 ms

# Below is generated by plot.py at 2019-02-20 12:22:07
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.40 Mbit/s
  95th percentile per-packet one-way delay: 100.677 ms
  Loss rate: 0.71%
-- Flow 1:
  Average throughput: 49.59 Mbit/s
  95th percentile per-packet one-way delay: 96.969 ms
  Loss rate: 0.41%
-- Flow 2:
  Average throughput: 36.30 Mbit/s
  95th percentile per-packet one-way delay: 105.889 ms
  Loss rate: 0.84%
-- Flow 3:
  Average throughput: 29.55 Mbit/s
  95th percentile per-packet one-way delay: 99.272 ms
  Loss rate: 1.91%
Run 3: Report of TaoVA-100x — Data Link

[Graph showing throughput and per-packet one-way delay over time for different flows with their respective 95th percentile delays.

Throughput: 0 to 80 Mbps
Time (s): 0 to 30

Per-packet one-way delay: 0 to 160 ms
Time (s): 0 to 30]
Run 4: Statistics of TaoVA-100x

Start at: 2019-02-20 11:37:00
End at: 2019-02-20 11:37:30
Local clock offset: -56.763 ms
Remote clock offset: 1.934 ms

# Below is generated by plot.py at 2019-02-20 12:22:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.17 Mbit/s
95th percentile per-packet one-way delay: 104.471 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 49.99 Mbit/s
95th percentile per-packet one-way delay: 101.818 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 38.08 Mbit/s
95th percentile per-packet one-way delay: 111.518 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 30.03 Mbit/s
95th percentile per-packet one-way delay: 96.651 ms
Loss rate: 2.52%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2019-02-20 12:04:06
End at: 2019-02-20 12:04:36
Local clock offset: -58.967 ms
Remote clock offset: 6.614 ms

# Below is generated by plot.py at 2019-02-20 12:22:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.58 Mbit/s
  95th percentile per-packet one-way delay: 103.900 ms
  Loss rate: 0.74%
-- Flow 1:
  Average throughput: 49.83 Mbit/s
  95th percentile per-packet one-way delay: 98.264 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 37.44 Mbit/s
  95th percentile per-packet one-way delay: 113.600 ms
  Loss rate: 0.92%
-- Flow 3:
  Average throughput: 30.08 Mbit/s
  95th percentile per-packet one-way delay: 94.171 ms
  Loss rate: 1.89%
Run 5: Report of TaoVA-100x — Data Link

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

- **Flow 1 ingress (mean 49.75 Mbit/s)**
- **Flow 1 egress (mean 49.83 Mbit/s)**
- **Flow 2 ingress (mean 37.45 Mbit/s)**
- **Flow 2 egress (mean 37.44 Mbit/s)**
- **Flow 3 ingress (mean 30.14 Mbit/s)**
- **Flow 3 egress (mean 30.08 Mbit/s)**

![Graph 2: Per-Packet Delay vs Time](image2.png)

- **Flow 1 (95th percentile 98.26 ms)**
- **Flow 2 (95th percentile 113.60 ms)**
- **Flow 3 (95th percentile 94.17 ms)**
Run 1: Statistics of TCP Vegas

Start at: 2019-02-20 10:13:09
End at: 2019-02-20 10:13:39
Local clock offset: -61.976 ms
Remote clock offset: 4.896 ms

# Below is generated by plot.py at 2019-02-20 12:22:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 64.73 Mbit/s
  95th percentile per-packet one-way delay: 110.261 ms
  Loss rate: 0.79%
-- Flow 1:
  Average throughput: 34.94 Mbit/s
  95th percentile per-packet one-way delay: 135.789 ms
  Loss rate: 0.41%
-- Flow 2:
  Average throughput: 33.44 Mbit/s
  95th percentile per-packet one-way delay: 59.461 ms
  Loss rate: 0.98%
-- Flow 3:
  Average throughput: 23.07 Mbit/s
  95th percentile per-packet one-way delay: 121.955 ms
  Loss rate: 1.95%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2019-02-20 10:40:14
End at: 2019-02-20 10:40:44
Local clock offset: -58.876 ms
Remote clock offset: 8.384 ms

# Below is generated by plot.py at 2019-02-20 12:22:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.42 Mbit/s
95th percentile per-packet one-way delay: 124.878 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 32.08 Mbit/s
95th percentile per-packet one-way delay: 139.113 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 21.92 Mbit/s
95th percentile per-packet one-way delay: 124.093 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 20.64 Mbit/s
95th percentile per-packet one-way delay: 92.715 ms
Loss rate: 1.89%
Run 2: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay for flow ingress and egress.]
Run 3: Statistics of TCP Vegas

Start at: 2019-02-20 11:07:19
End at: 2019-02-20 11:07:49
Local clock offset: -56.878 ms
Remote clock offset: 1.707 ms

# Below is generated by plot.py at 2019-02-20 12:22:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 56.92 Mbit/s
  95th percentile per-packet one-way delay: 131.193 ms
  Loss rate: 0.88%
-- Flow 1:
  Average throughput: 37.47 Mbit/s
  95th percentile per-packet one-way delay: 113.212 ms
  Loss rate: 0.72%
-- Flow 2:
  Average throughput: 22.34 Mbit/s
  95th percentile per-packet one-way delay: 130.274 ms
  Loss rate: 0.99%
-- Flow 3:
  Average throughput: 14.06 Mbit/s
  95th percentile per-packet one-way delay: 182.390 ms
  Loss rate: 1.82%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

Start at: 2019-02-20 11:34:25
End at: 2019-02-20 11:34:55
Local clock offset: -56.726 ms
Remote clock offset: 6.99 ms

# Below is generated by plot.py at 2019-02-20 12:22:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 54.34 Mbit/s
  95th percentile per-packet one-way delay: 128.304 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 31.99 Mbit/s
  95th percentile per-packet one-way delay: 140.721 ms
  Loss rate: 0.43%
-- Flow 2:
  Average throughput: 24.52 Mbit/s
  95th percentile per-packet one-way delay: 121.314 ms
  Loss rate: 0.49%
-- Flow 3:
  Average throughput: 18.47 Mbit/s
  95th percentile per-packet one-way delay: 118.570 ms
  Loss rate: 2.21%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

Start at: 2019-02-20 12:01:30
End at: 2019-02-20 12:02:00
Local clock offset: -57.677 ms
Remote clock offset: 3.843 ms

# Below is generated by plot.py at 2019-02-20 12:22:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.44 Mbit/s
95th percentile per-packet one-way delay: 102.900 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 34.67 Mbit/s
95th percentile per-packet one-way delay: 127.399 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 33.88 Mbit/s
95th percentile per-packet one-way delay: 60.693 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 22.14 Mbit/s
95th percentile per-packet one-way delay: 109.051 ms
Loss rate: 1.91%
Run 5: Report of TCP Vegas — Data Link
Run 1: Statistics of Verus

Start at: 2019-02-20 09:56:21
End at: 2019-02-20 09:56:51
Local clock offset: -62.47 ms
Remote clock offset: 7.832 ms

# Below is generated by plot.py at 2019-02-20 12:22:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.01 Mbit/s
95th percentile per-packet one-way delay: 291.262 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 43.52 Mbit/s
95th percentile per-packet one-way delay: 259.695 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 25.73 Mbit/s
95th percentile per-packet one-way delay: 344.739 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 22.52 Mbit/s
95th percentile per-packet one-way delay: 328.909 ms
Loss rate: 2.97%
Run 1: Report of Verus — Data Link

![Throughput Graph]

![Delay Graph]
Run 2: Statistics of Verus

Start at: 2019-02-20 10:23:26
End at: 2019-02-20 10:23:56
Local clock offset: -61.972 ms
Remote clock offset: 8.417 ms

# Below is generated by plot.py at 2019-02-20 12:22:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.65 Mbit/s
95th percentile per-packet one-way delay: 436.184 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 38.74 Mbit/s
95th percentile per-packet one-way delay: 265.984 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 26.39 Mbit/s
95th percentile per-packet one-way delay: 1738.026 ms
Loss rate: 1.98%
-- Flow 3:
Average throughput: 29.32 Mbit/s
95th percentile per-packet one-way delay: 172.159 ms
Loss rate: 2.83%
Run 2: Report of Verus — Data Link

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

- **Throughput**:
  - Flow 1 ingress: mean 38.74 Mbit/s
  - Flow 1 egress: mean 38.74 Mbit/s
  - Flow 2 ingress: mean 26.70 Mbit/s
  - Flow 2 egress: mean 26.39 Mbit/s
  - Flow 3 ingress: mean 29.32 Mbit/s
  - Flow 3 egress: mean 29.32 Mbit/s

- **Per-packet round-trip delay**:
  - Flow 1: 95th percentile 265.98 ms
  - Flow 2: 95th percentile 1738.03 ms
  - Flow 3: 95th percentile 172.16 ms
Run 3: Statistics of Verus

Start at: 2019-02-20 10:50:30
End at: 2019-02-20 10:51:00
Local clock offset: -57.63 ms
Remote clock offset: 3.019 ms

# Below is generated by plot.py at 2019-02-20 12:22:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.83 Mbit/s
95th percentile per-packet one-way delay: 434.230 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 262.368 ms
Loss rate: 1.28%
-- Flow 2:
Average throughput: 29.91 Mbit/s
95th percentile per-packet one-way delay: 1102.812 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 24.39 Mbit/s
95th percentile per-packet one-way delay: 387.532 ms
Loss rate: 4.69%
Run 3: Report of Verus — Data Link

![Graphs showing throughput and one-way delay over time for different flows with mean values indicated.](image-url)
Run 4: Statistics of Verus

Start at: 2019-02-20 11:17:36
End at: 2019-02-20 11:18:06
Local clock offset: -56.625 ms
Remote clock offset: 6.285 ms

# Below is generated by plot.py at 2019-02-20 12:22:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.81 Mbit/s
95th percentile per-packet one-way delay: 207.512 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 49.57 Mbit/s
95th percentile per-packet one-way delay: 206.405 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 36.29 Mbit/s
95th percentile per-packet one-way delay: 193.734 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 15.76 Mbit/s
95th percentile per-packet one-way delay: 253.019 ms
Loss rate: 7.56%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

Start at: 2019-02-20 11:44:42
End at: 2019-02-20 11:45:12
Local clock offset: -56.908 ms
Remote clock offset: 3.077 ms

# Below is generated by plot.py at 2019-02-20 12:22:57
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 70.89 Mbit/s
  95th percentile per-packet one-way delay: 219.548 ms
  Loss rate: 1.14%
-- Flow 1:
  Average throughput: 46.16 Mbit/s
  95th percentile per-packet one-way delay: 208.093 ms
  Loss rate: 0.86%
-- Flow 2:
  Average throughput: 27.80 Mbit/s
  95th percentile per-packet one-way delay: 226.894 ms
  Loss rate: 1.25%
-- Flow 3:
  Average throughput: 19.12 Mbit/s
  95th percentile per-packet one-way delay: 227.148 ms
  Loss rate: 2.84%
Run 5: Report of Verus — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-20 09:58:55
End at: 2019-02-20 09:59:25
Local clock offset: -62.435 ms
Remote clock offset: 7.925 ms

# Below is generated by plot.py at 2019-02-20 12:23:14
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.99 Mbit/s
  95th percentile per-packet one-way delay: 1784.644 ms
  Loss rate: 5.82%
-- Flow 1:
  Average throughput: 51.54 Mbit/s
  95th percentile per-packet one-way delay: 1912.745 ms
  Loss rate: 6.26%
-- Flow 2:
  Average throughput: 31.81 Mbit/s
  95th percentile per-packet one-way delay: 470.443 ms
  Loss rate: 5.62%
-- Flow 3:
  Average throughput: 22.45 Mbit/s
  95th percentile per-packet one-way delay: 272.788 ms
  Loss rate: 3.20%
Run 1: Report of PCC-Vivace — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 ingress (mean 54.67 Mbit/s)
- Flow 1 egress (mean 51.54 Mbit/s)
- Flow 2 ingress (mean 33.42 Mbit/s)
- Flow 2 egress (mean 31.81 Mbit/s)
- Flow 3 ingress (mean 22.80 Mbit/s)
- Flow 3 egress (mean 22.45 Mbit/s)

![Graph 2: End-to-end delay vs Time]

- Flow 1 (95th percentile 1912.74 ms)
- Flow 2 (95th percentile 470.44 ms)
- Flow 3 (95th percentile 272.79 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-20 10:26:00
End at: 2019-02-20 10:26:30
Local clock offset: -62.039 ms
Remote clock offset: 8.243 ms

# Below is generated by plot.py at 2019-02-20 12:23:15
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.52 Mbit/s
  95th percentile per-packet one-way delay: 1812.986 ms
  Loss rate: 9.14%
-- Flow 1:
  Average throughput: 50.86 Mbit/s
  95th percentile per-packet one-way delay: 1836.600 ms
  Loss rate: 11.18%
-- Flow 2:
  Average throughput: 31.97 Mbit/s
  95th percentile per-packet one-way delay: 940.853 ms
  Loss rate: 6.12%
-- Flow 3:
  Average throughput: 22.76 Mbit/s
  95th percentile per-packet one-way delay: 278.906 ms
  Loss rate: 2.85%
Run 2: Report of PCC-Vivace — Data Link
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-20 10:53:04
End at: 2019-02-20 10:53:34
Local clock offset: -57.428 ms
Remote clock offset: 3.554 ms

# Below is generated by plot.py at 2019-02-20 12:23:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.69 Mbit/s
95th percentile per-packet one-way delay: 2008.831 ms
Loss rate: 7.61%
-- Flow 1:
Average throughput: 50.89 Mbit/s
95th percentile per-packet one-way delay: 2020.402 ms
Loss rate: 8.53%
-- Flow 2:
Average throughput: 31.86 Mbit/s
95th percentile per-packet one-way delay: 799.216 ms
Loss rate: 6.07%
-- Flow 3:
Average throughput: 23.49 Mbit/s
95th percentile per-packet one-way delay: 127.881 ms
Loss rate: 5.57%
Run 3: Report of PCC-Vivace — Data Link

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

- **Throughput (Mbps)**
  - **Flow 1 ingress (mean 55.31 Mbit/s)**
  - **Flow 2 ingress (mean 33.63 Mbit/s)**
  - **Flow 3 ingress (mean 24.44 Mbit/s)**
  - **Flow 1 egress (mean 50.89 Mbit/s)**
  - **Flow 2 egress (mean 31.86 Mbit/s)**
  - **Flow 3 egress (mean 23.49 Mbit/s)**

- **Delay (ms)**
  - **Flow 1 (95th percentile 2020.40 ms)**
  - **Flow 2 (95th percentile 799.22 ms)**
  - **Flow 3 (95th percentile 127.88 ms)**
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-20 11:20:10
End at: 2019-02-20 11:20:40
Local clock offset: -56.935 ms
Remote clock offset: 7.44 ms

# Below is generated by plot.py at 2019-02-20 12:23:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.64 Mbit/s
95th percentile per-packet one-way delay: 1908.499 ms
Loss rate: 8.12%
-- Flow 1:
Average throughput: 51.75 Mbit/s
95th percentile per-packet one-way delay: 1992.906 ms
Loss rate: 10.36%
-- Flow 2:
Average throughput: 31.05 Mbit/s
95th percentile per-packet one-way delay: 658.667 ms
Loss rate: 3.89%
-- Flow 3:
Average throughput: 22.31 Mbit/s
95th percentile per-packet one-way delay: 297.014 ms
Loss rate: 2.93%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-20 11:47:16
End at: 2019-02-20 11:47:46
Local clock offset: -56.989 ms
Remote clock offset: 5.465 ms

# Below is generated by plot.py at 2019-02-20 12:23:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.21 Mbit/s
95th percentile per-packet one-way delay: 1792.829 ms
Loss rate: 4.22%
-- Flow 1:
Average throughput: 51.32 Mbit/s
95th percentile per-packet one-way delay: 1957.240 ms
Loss rate: 4.98%
-- Flow 2:
Average throughput: 29.44 Mbit/s
95th percentile per-packet one-way delay: 320.281 ms
Loss rate: 2.56%
-- Flow 3:
Average throughput: 22.53 Mbit/s
95th percentile per-packet one-way delay: 277.347 ms
Loss rate: 3.26%
Run 5: Report of PCC-Vivace — Data Link
Run 1: Statistics of WebRTC media

Start at: 2019-02-20 10:06:46
End at: 2019-02-20 10:07:16
Local clock offset: -62.111 ms
Remote clock offset: 8.565 ms

# Below is generated by plot.py at 2019-02-20 12:23:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 33.248 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 33.281 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 33.250 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 31.867 ms
Loss rate: 1.43%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-02-20 10:33:50
End at: 2019-02-20 10:34:20
Local clock offset: -60.493 ms
Remote clock offset: 4.507 ms

# Below is generated by plot.py at 2019-02-20 12:23:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 41.270 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 35.031 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 41.474 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 35.355 ms
Loss rate: 1.84%
Run 2: Report of WebRTC media — Data Link

![Graph showing throughput and packet loss over time]

**Throughput (Mbps)**
- Flow 1 ingress (mean 1.68 Mbps)
- Flow 1 egress (mean 1.68 Mbps)
- Flow 2 ingress (mean 0.94 Mbps)
- Flow 2 egress (mean 0.94 Mbps)
- Flow 3 ingress (mean 0.39 Mbps)
- Flow 3 egress (mean 0.38 Mbps)

**Per packet one-way delay (ms)**
- Flow 1 (95th percentile 35.03 ms)
- Flow 2 (95th percentile 41.47 ms)
- Flow 3 (95th percentile 35.35 ms)
Run 3: Statistics of WebRTC media

Start at: 2019-02-20 11:00:55  
End at: 2019-02-20 11:01:25  
Local clock offset: -57.097 ms  
Remote clock offset: 1.843 ms

# Below is generated by plot.py at 2019-02-20 12:23:24  
# Datalink statistics
-- Total of 3 flows:  
  Average throughput: 2.97 Mbit/s  
  95th percentile per-packet one-way delay: 38.504 ms  
  Loss rate: 0.63%  
-- Flow 1:  
  Average throughput: 1.69 Mbit/s  
  95th percentile per-packet one-way delay: 38.360 ms  
  Loss rate: 0.23%  
-- Flow 2:  
  Average throughput: 0.92 Mbit/s  
  95th percentile per-packet one-way delay: 38.460 ms  
  Loss rate: 0.75%  
-- Flow 3:  
  Average throughput: 0.38 Mbit/s  
  95th percentile per-packet one-way delay: 38.913 ms  
  Loss rate: 2.11%
Run 3: Report of WebRTC media — Data Link
Run 4: Statistics of WebRTC media

Start at: 2019-02-20 11:28:01
End at: 2019-02-20 11:28:31
Local clock offset: -56.159 ms
Remote clock offset: 7.78 ms

# Below is generated by plot.py at 2019-02-20 12:23:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.90 Mbit/s
95th percentile per-packet one-way delay: 36.565 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 30.385 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 36.728 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 36.501 ms
Loss rate: 1.76%
Run 4: Report of WebRTC media — Data Link
Run 5: Statistics of WebRTC media

Start at: 2019-02-20 11:55:06
End at: 2019-02-20 11:55:36
Local clock offset: -56.889 ms
Remote clock offset: 2.011 ms

# Below is generated by plot.py at 2019-02-20 12:23:24
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.95 Mbit/s
  95th percentile per-packet one-way delay: 42.979 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 1.68 Mbit/s
  95th percentile per-packet one-way delay: 42.870 ms
  Loss rate: 0.33%
-- Flow 2:
  Average throughput: 0.92 Mbit/s
  95th percentile per-packet one-way delay: 43.092 ms
  Loss rate: 0.76%
-- Flow 3:
  Average throughput: 0.38 Mbit/s
  95th percentile per-packet one-way delay: 38.696 ms
  Loss rate: 1.85%
Run 5: Report of WebRTC media — Data Link

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

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