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 4.15.0-1034-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 @ d66a145933fceed56963e85d7eba17e632d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e694aa89e93b03243cedbfe58e562f4
third_party/indigo @ 2601c92e49d58d38d4dfe0edcbf90c077e6d1
third_party/libutp @ b3465b942e26b6f2b179eaab4a906e6bb7cf3cf
third_party/muses @ 5ce722118ad823da20955377370c746486ca4966
third_party/pantheon-tunnel @ f86663f58d27af9d42717625ee3a354cc2e02bd
third_party/pcc @ 1af9c958fa0d66d18b623c091a55f8ec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08f2ab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143eb978f3c8f42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3b3db2
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 @ d4b447ea74c6c60a261149af2629566239f9a494
M src/verus.hpp
M tools/plot.py
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>55.70</td>
<td>37.81</td>
<td>30.79</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>47.37</td>
<td>35.87</td>
<td>28.62</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>5</td>
<td>42.55</td>
<td>36.22</td>
<td>27.79</td>
</tr>
<tr>
<td>FillP</td>
<td>5</td>
<td>57.39</td>
<td>39.31</td>
<td>29.50</td>
</tr>
<tr>
<td>FillP-Sheep</td>
<td>5</td>
<td>57.14</td>
<td>38.85</td>
<td>30.24</td>
</tr>
<tr>
<td>Indigo</td>
<td>5</td>
<td>58.46</td>
<td>38.86</td>
<td>29.18</td>
</tr>
<tr>
<td>Indigo-MusesC3</td>
<td>5</td>
<td>60.20</td>
<td>40.08</td>
<td>30.29</td>
</tr>
<tr>
<td>Indigo-MusesC5</td>
<td>5</td>
<td>59.33</td>
<td>39.24</td>
<td>29.33</td>
</tr>
<tr>
<td>Indigo-MusesD</td>
<td>5</td>
<td>61.19</td>
<td>37.82</td>
<td>29.47</td>
</tr>
<tr>
<td>Indigo-MusesT</td>
<td>5</td>
<td>58.18</td>
<td>40.22</td>
<td>30.51</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>5</td>
<td>9.69</td>
<td>7.58</td>
<td>3.79</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>5</td>
<td>55.21</td>
<td>34.35</td>
<td>29.50</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>5</td>
<td>56.65</td>
<td>38.97</td>
<td>25.91</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>5</td>
<td>34.91</td>
<td>22.14</td>
<td>14.27</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>3.00</td>
<td>1.88</td>
<td>1.83</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>5</td>
<td>49.45</td>
<td>37.12</td>
<td>29.40</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>5</td>
<td>35.33</td>
<td>28.60</td>
<td>20.29</td>
</tr>
<tr>
<td>Verus</td>
<td>5</td>
<td>35.55</td>
<td>34.52</td>
<td>26.60</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>5</td>
<td>50.75</td>
<td>31.30</td>
<td>22.72</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>5</td>
<td>1.69</td>
<td>0.93</td>
<td>0.37</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2019-03-27 12:16:30
End at: 2019-03-27 12:17:00
Local clock offset: -2.928 ms
Remote clock offset: 6.614 ms

# Below is generated by plot.py at 2019-03-27 14:15:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.07 Mbit/s
95th percentile per-packet one-way delay: 471.688 ms
Loss rate: 4.11%
-- Flow 1:
Average throughput: 55.68 Mbit/s
95th percentile per-packet one-way delay: 430.521 ms
Loss rate: 2.61%
-- Flow 2:
Average throughput: 37.84 Mbit/s
95th percentile per-packet one-way delay: 623.357 ms
Loss rate: 5.78%
-- Flow 3:
Average throughput: 31.24 Mbit/s
95th percentile per-packet one-way delay: 437.856 ms
Loss rate: 7.82%
Run 1: Report of TCP BBR — Data Link

![Graph of throughput and packet delay over time for different flows.](image-url)
Run 2: Statistics of TCP BBR

Start at: 2019-03-27 12:43:29
End at: 2019-03-27 12:43:59
Local clock offset: -5.66 ms
Remote clock offset: 4.174 ms

# Below is generated by plot.py at 2019-03-27 14:15:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.71 Mbit/s
95th percentile per-packet one-way delay: 482.548 ms
Loss rate: 2.80%
-- Flow 1:
Average throughput: 56.27 Mbit/s
95th percentile per-packet one-way delay: 439.618 ms
Loss rate: 2.50%
-- Flow 2:
Average throughput: 37.47 Mbit/s
95th percentile per-packet one-way delay: 728.165 ms
Loss rate: 3.44%
-- Flow 3:
Average throughput: 29.09 Mbit/s
95th percentile per-packet one-way delay: 412.270 ms
Loss rate: 2.90%
Run 2: Report of TCP BBR — Data Link
Run 3: Statistics of TCP BBR

Start at: 2019-03-27 13:10:38
End at: 2019-03-27 13:11:08
Local clock offset: -4.912 ms
Remote clock offset: 3.487 ms

# Below is generated by plot.py at 2019-03-27 14:16:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.16 Mbit/s
95th percentile per-packet one-way delay: 540.577 ms
Loss rate: 3.43%
-- Flow 1:
Average throughput: 55.76 Mbit/s
95th percentile per-packet one-way delay: 537.985 ms
Loss rate: 2.28%
-- Flow 2:
Average throughput: 37.59 Mbit/s
95th percentile per-packet one-way delay: 649.582 ms
Loss rate: 4.17%
-- Flow 3:
Average throughput: 31.99 Mbit/s
95th percentile per-packet one-way delay: 406.676 ms
Loss rate: 7.54%
Run 3: Report of TCP BBR — Data Link
Run 4: Statistics of TCP BBR

End at: 2019-03-27 13:38:08
Local clock offset: -3.496 ms
Remote clock offset: 3.108 ms

# Below is generated by plot.py at 2019-03-27 14:16:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.32 Mbit/s
95th percentile per-packet one-way delay: 492.164 ms
Loss rate: 3.24%
-- Flow 1:
Average throughput: 55.95 Mbit/s
95th percentile per-packet one-way delay: 397.305 ms
Loss rate: 2.46%
-- Flow 2:
Average throughput: 38.46 Mbit/s
95th percentile per-packet one-way delay: 647.605 ms
Loss rate: 4.22%
-- Flow 3:
Average throughput: 30.51 Mbit/s
95th percentile per-packet one-way delay: 417.041 ms
Loss rate: 5.05%
Run 4: Report of TCP BBR — Data Link

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

![Graph 2: Per-packet one-way round-trip delay (ms)](image)
Run 5: Statistics of TCP BBR

Start at: 2019-03-27 14:04:40
End at: 2019-03-27 14:05:10
Local clock offset: -4.758 ms
Remote clock offset: 4.241 ms

# Below is generated by plot.py at 2019-03-27 14:16:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.09 Mbit/s
95th percentile per-packet one-way delay: 427.617 ms
Loss rate: 4.23%
-- Flow 1:
Average throughput: 54.83 Mbit/s
95th percentile per-packet one-way delay: 419.726 ms
Loss rate: 3.17%
-- Flow 2:
Average throughput: 37.68 Mbit/s
95th percentile per-packet one-way delay: 512.483 ms
Loss rate: 5.36%
-- Flow 3:
Average throughput: 31.12 Mbit/s
95th percentile per-packet one-way delay: 432.791 ms
Loss rate: 6.98%
Run 5: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2019-03-27 12:13:52  
End at: 2019-03-27 12:14:22  
Local clock offset: -2.831 ms  
Remote clock offset: 6.769 ms

# Below is generated by plot.py at 2019-03-27 14:16:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.92 Mbit/s
95th percentile per-packet one-way delay: 213.449 ms
Loss rate: 0.87%

-- Flow 1:
Average throughput: 49.52 Mbit/s
95th percentile per-packet one-way delay: 215.328 ms
Loss rate: 0.54%

-- Flow 2:
Average throughput: 30.14 Mbit/s
95th percentile per-packet one-way delay: 122.831 ms
Loss rate: 1.04%

-- Flow 3:
Average throughput: 28.51 Mbit/s
95th percentile per-packet one-way delay: 179.758 ms
Loss rate: 2.21%
Run 1: Report of Copa — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 49.50 Mbps)**
- **Flow 1 egress (mean 49.52 Mbps)**
- **Flow 2 ingress (mean 30.19 Mbps)**
- **Flow 2 egress (mean 30.14 Mbps)**
- **Flow 3 ingress (mean 26.65 Mbps)**
- **Flow 3 egress (mean 28.51 Mbps)**

---

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

- **Flow 1 (95th percentile 215.33 ms)**
- **Flow 2 (95th percentile 122.83 ms)**
- **Flow 3 (95th percentile 179.76 ms)**
Run 2: Statistics of Copa

Start at: 2019-03-27 12:40:51
End at: 2019-03-27 12:41:21
Local clock offset: -5.64 ms
Remote clock offset: 0.427 ms

# Below is generated by plot.py at 2019-03-27 14:16:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.98 Mbit/s
95th percentile per-packet one-way delay: 220.443 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 43.21 Mbit/s
95th percentile per-packet one-way delay: 222.314 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 36.54 Mbit/s
95th percentile per-packet one-way delay: 136.721 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 171.051 ms
Loss rate: 2.17%
Run 2: Report of Copa — Data Link
Run 3: Statistics of Copa

Start at: 2019-03-27 13:07:59
End at: 2019-03-27 13:08:29
Local clock offset: -4.114 ms
Remote clock offset: 4.461 ms

# Below is generated by plot.py at 2019-03-27 14:16:54
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.36 Mbit/s
  95th percentile per-packet one-way delay: 211.151 ms
  Loss rate: 0.81%
-- Flow 1:
  Average throughput: 50.10 Mbit/s
  95th percentile per-packet one-way delay: 147.584 ms
  Loss rate: 0.71%
-- Flow 2:
  Average throughput: 45.62 Mbit/s
  95th percentile per-packet one-way delay: 182.511 ms
  Loss rate: 0.58%
-- Flow 3:
  Average throughput: 27.21 Mbit/s
  95th percentile per-packet one-way delay: 289.106 ms
  Loss rate: 2.07%
Run 3: Report of Copa — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress** (mean 50.17 Mbps)
- **Flow 1 egress** (mean 50.10 Mbps)
- **Flow 2 ingress** (mean 45.49 Mbps)
- **Flow 2 egress** (mean 45.62 Mbps)
- **Flow 3 ingress** (mean 27.31 Mbps)
- **Flow 3 egress** (mean 27.21 Mbps)

---

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

- **Flow 1** (95th percentile 147.58 ms)
- **Flow 2** (95th percentile 182.51 ms)
- **Flow 3** (95th percentile 289.11 ms)
Run 4: Statistics of Copa

Start at: 2019-03-27 13:35:00
End at: 2019-03-27 13:35:30
Local clock offset: -3.6 ms
Remote clock offset: 4.243 ms

# Below is generated by plot.py at 2019-03-27 14:17:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 78.06 Mbit/s
  95th percentile per-packet one-way delay: 222.337 ms
  Loss rate: 0.93%
  -- Flow 1:
  Average throughput: 46.17 Mbit/s
  95th percentile per-packet one-way delay: 223.475 ms
  Loss rate: 0.49%
  -- Flow 2:
  Average throughput: 32.88 Mbit/s
  95th percentile per-packet one-way delay: 136.046 ms
  Loss rate: 1.11%
  -- Flow 3:
  Average throughput: 30.50 Mbit/s
  95th percentile per-packet one-way delay: 181.285 ms
  Loss rate: 2.55%
Run 4: Report of Copa — Data Link
Run 5: Statistics of Copa

Start at: 2019-03-27 14:02:02
End at: 2019-03-27 14:02:32
Local clock offset: -4.647 ms
Remote clock offset: 5.285 ms

# Below is generated by plot.py at 2019-03-27 14:17:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.73 Mbit/s
  95th percentile per-packet one-way delay: 215.806 ms
  Loss rate: 0.85%
-- Flow 1:
  Average throughput: 47.83 Mbit/s
  95th percentile per-packet one-way delay: 217.857 ms
  Loss rate: 0.55%
-- Flow 2:
  Average throughput: 34.15 Mbit/s
  95th percentile per-packet one-way delay: 143.987 ms
  Loss rate: 0.88%
-- Flow 3:
  Average throughput: 28.02 Mbit/s
  95th percentile per-packet one-way delay: 183.226 ms
  Loss rate: 2.31%
Run 5: Report of Copa — Data Link

Chart 1: Throughput (Mbps) vs Time (s)
- Flow 1 ingress (mean 47.82 Mbps)
- Flow 1 egress (mean 47.83 Mbps)
- Flow 2 ingress (mean 34.16 Mbps)
- Flow 2 egress (mean 34.15 Mbps)
- Flow 3 ingress (mean 28.18 Mbps)
- Flow 3 egress (mean 28.02 Mbps)

Chart 2: Per-packet one-way delay (ms) vs Time (s)
- Flow 1 (95th percentile 217.96 ms)
- Flow 2 (95th percentile 143.99 ms)
- Flow 3 (95th percentile 183.23 ms)
Run 1: Statistics of TCP Cubic

Start at: 2019-03-27 12:20:24
End at: 2019-03-27 12:20:54
Local clock offset: -3.61 ms
Remote clock offset: 6.778 ms

# Below is generated by plot.py at 2019-03-27 14:17:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 77.75 Mbit/s
  95th percentile per-packet one-way delay: 149.697 ms
  Loss rate: 0.74%
-- Flow 1:
  Average throughput: 42.59 Mbit/s
  95th percentile per-packet one-way delay: 182.872 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 35.72 Mbit/s
  95th percentile per-packet one-way delay: 145.427 ms
  Loss rate: 0.75%
-- Flow 3:
  Average throughput: 34.80 Mbit/s
  95th percentile per-packet one-way delay: 140.394 ms
  Loss rate: 2.05%
Run 1: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 42.51 Mbps)
- Flow 1 egress (mean 42.59 Mbps)
- Flow 2 ingress (mean 35.68 Mbps)
- Flow 2 egress (mean 35.72 Mbps)
- Flow 3 ingress (mean 34.92 Mbps)
- Flow 3 egress (mean 34.80 Mbps)

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

- Flow 1 (95th percentile 182.97 ms)
- Flow 2 (95th percentile 145.43 ms)
- Flow 3 (95th percentile 140.39 ms)
Run 2: Statistics of TCP Cubic

End at: 2019-03-27 12:47:53
Local clock offset: -5.556 ms
Remote clock offset: -1.309 ms

# Below is generated by plot.py at 2019-03-27 14:17:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.77 Mbit/s
95th percentile per-packet one-way delay: 143.999 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 47.84 Mbit/s
95th percentile per-packet one-way delay: 148.536 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 43.67 Mbit/s
95th percentile per-packet one-way delay: 127.722 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 2.83 Mbit/s
95th percentile per-packet one-way delay: 95.282 ms
Loss rate: 5.29%
Run 2: Report of TCP Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 47.78 Mbit/s)
Flow 1 egress (mean 47.84 Mbit/s)
Flow 2 ingress (mean 43.75 Mbit/s)
Flow 2 egress (mean 43.67 Mbit/s)
Flow 3 ingress (mean 2.94 Mbit/s)
Flow 3 egress (mean 2.83 Mbit/s)

Round-trip one-way delay (ms)

Time (s)

Flow 1 (95th percentile 148.54 ms)
Flow 2 (95th percentile 127.72 ms)
Flow 3 (95th percentile 95.28 ms)
Run 3: Statistics of TCP Cubic

End at: 2019-03-27 13:15:02
Local clock offset: -4.237 ms
Remote clock offset: 5.008 ms

# Below is generated by plot.py at 2019-03-27 14:17:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 78.13 Mbit/s
  95th percentile per-packet one-way delay: 151.487 ms
  Loss rate: 0.75%
-- Flow 1:
  Average throughput: 42.75 Mbit/s
  95th percentile per-packet one-way delay: 180.459 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 35.71 Mbit/s
  95th percentile per-packet one-way delay: 145.211 ms
  Loss rate: 0.75%
-- Flow 3:
  Average throughput: 35.53 Mbit/s
  95th percentile per-packet one-way delay: 140.499 ms
  Loss rate: 2.05%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

End at: 2019-03-27 13:42:02
Local clock offset: -3.41 ms
Remote clock offset: -0.356 ms

# Below is generated by plot.py at 2019-03-27 14:17:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.28 Mbit/s
95th percentile per-packet one-way delay: 216.209 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 36.87 Mbit/s
95th percentile per-packet one-way delay: 202.359 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 30.66 Mbit/s
95th percentile per-packet one-way delay: 170.889 ms
Loss rate: 2.07%
-- Flow 3:
Average throughput: 30.64 Mbit/s
95th percentile per-packet one-way delay: 279.910 ms
Loss rate: 2.15%
Run 4: Report of TCP Cubic — Data Link

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

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 36.78 Mbps)
Flow 1 egress (mean 36.87 Mbps)
Flow 2 ingress (mean 31.04 Mbps)
Flow 2 egress (mean 30.66 Mbps)
Flow 3 ingress (mean 30.75 Mbps)
Flow 3 egress (mean 30.64 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 202.36 ms)
Flow 2 (95th percentile 170.89 ms)
Flow 3 (95th percentile 279.91 ms)
Run 5: Statistics of TCP Cubic

Start at: 2019-03-27 14:08:33
End at: 2019-03-27 14:09:03
Local clock offset: -5.622 ms
Remote clock offset: 4.536 ms

# Below is generated by plot.py at 2019-03-27 14:17:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 77.74 Mbit/s
  95th percentile per-packet one-way delay: 150.641 ms
  Loss rate: 0.74%

-- Flow 1:
  Average throughput: 42.72 Mbit/s
  95th percentile per-packet one-way delay: 182.254 ms
  Loss rate: 0.38%

-- Flow 2:
  Average throughput: 35.32 Mbit/s
  95th percentile per-packet one-way delay: 141.339 ms
  Loss rate: 0.74%

-- Flow 3:
  Average throughput: 35.17 Mbit/s
  95th percentile per-packet one-way delay: 137.244 ms
  Loss rate: 2.03%
Run 5: Report of TCP Cubic — Data Link

![Graph showing throughput and packet delay over time]
Run 1: Statistics of FillP

Start at: 2019-03-27 12:02:20
End at: 2019-03-27 12:02:50
Local clock offset: -2.863 ms
Remote clock offset: 2.332 ms

# Below is generated by plot.py at 2019-03-27 14:18:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.33 Mbit/s
95th percentile per-packet one-way delay: 255.661 ms
Loss rate: 2.17%
-- Flow 1:
Average throughput: 57.81 Mbit/s
95th percentile per-packet one-way delay: 284.287 ms
Loss rate: 1.88%
-- Flow 2:
Average throughput: 38.89 Mbit/s
95th percentile per-packet one-way delay: 224.716 ms
Loss rate: 2.07%
-- Flow 3:
Average throughput: 29.53 Mbit/s
95th percentile per-packet one-way delay: 220.381 ms
Loss rate: 4.10%
Run 1: Report of FillP — Data Link

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

Legend:
- Flow 1 ingress (mean 58.59 Mbit/s)
- Flow 1 egress (mean 57.81 Mbit/s)
- Flow 2 ingress (mean 59.39 Mbit/s)
- Flow 2 egress (mean 38.89 Mbit/s)
- Flow 3 ingress (mean 30.26 Mbit/s)
- Flow 3 egress (mean 29.53 Mbit/s)

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

Legend:
- Flow 1 (95th percentile 284.29 ms)
- Flow 2 (95th percentile 224.72 ms)
- Flow 3 (95th percentile 220.38 ms)
Run 2: Statistics of FillP

Start at: 2019-03-27 12:29:20
End at: 2019-03-27 12:29:50
Local clock offset: -5.134 ms
Remote clock offset: 5.913 ms

# Below is generated by plot.py at 2019-03-27 14:18:06
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.09 Mbit/s
  95th percentile per-packet one-way delay: 275.217 ms
  Loss rate: 2.33%
-- Flow 1:
  Average throughput: 57.10 Mbit/s
  95th percentile per-packet one-way delay: 251.149 ms
  Loss rate: 0.82%
-- Flow 2:
  Average throughput: 39.71 Mbit/s
  95th percentile per-packet one-way delay: 292.860 ms
  Loss rate: 5.26%
-- Flow 3:
  Average throughput: 29.23 Mbit/s
  95th percentile per-packet one-way delay: 275.859 ms
  Loss rate: 2.81%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2019-03-27 12:56:24
End at: 2019-03-27 12:56:54
Local clock offset: -4.24 ms
Remote clock offset: 3.334 ms

# Below is generated by plot.py at 2019-03-27 14:18:07
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.18 Mbit/s
  95th percentile per-packet one-way delay: 297.332 ms
  Loss rate: 2.55%
-- Flow 1:
  Average throughput: 57.47 Mbit/s
  95th percentile per-packet one-way delay: 318.938 ms
  Loss rate: 1.78%
-- Flow 2:
  Average throughput: 39.20 Mbit/s
  95th percentile per-packet one-way delay: 215.966 ms
  Loss rate: 3.75%
-- Flow 3:
  Average throughput: 29.51 Mbit/s
  95th percentile per-packet one-way delay: 311.473 ms
  Loss rate: 3.81%
Run 3: Report of FillP — Data Link
Run 4: Statistics of FillP

Local clock offset: -3.893 ms
Remote clock offset: 2.913 ms

# Below is generated by plot.py at 2019-03-27 14:18:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.27 Mbit/s
95th percentile per-packet one-way delay: 301.339 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 57.13 Mbit/s
95th percentile per-packet one-way delay: 281.106 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 39.74 Mbit/s
95th percentile per-packet one-way delay: 347.846 ms
Loss rate: 3.46%
-- Flow 3:
Average throughput: 29.64 Mbit/s
95th percentile per-packet one-way delay: 361.604 ms
Loss rate: 4.36%
Run 4: Report of FillP — Data Link
Run 5: Statistics of FillP

End at: 2019-03-27 13:50:59
Local clock offset: -4.775 ms
Remote clock offset: 1.092 ms

# Below is generated by plot.py at 2019-03-27 14:18:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.09 Mbit/s
  95th percentile per-packet one-way delay: 285.315 ms
  Loss rate: 2.16%
-- Flow 1:
  Average throughput: 57.45 Mbit/s
  95th percentile per-packet one-way delay: 307.792 ms
  Loss rate: 2.03%
-- Flow 2:
  Average throughput: 39.03 Mbit/s
  95th percentile per-packet one-way delay: 233.286 ms
  Loss rate: 2.10%
-- Flow 3:
  Average throughput: 29.59 Mbit/s
  95th percentile per-packet one-way delay: 366.113 ms
  Loss rate: 3.02%
Run 5: Report of FillP — Data Link

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

- Flow 1 ingress (mean 58.34 Mbit/s) vs. Flow 1 egress (mean 57.45 Mbit/s)
- Flow 2 ingress (mean 39.52 Mbit/s) vs. Flow 2 egress (mean 39.03 Mbit/s)
- Flow 3 ingress (mean 29.98 Mbit/s) vs. Flow 3 egress (mean 29.59 Mbit/s)

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

- Flow 1 (95th percentile 307.79 ms) vs. Flow 2 (95th percentile 233.29 ms) vs. Flow 3 (95th percentile 366.11 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2019-03-27 12:10:06
End at: 2019-03-27 12:10:36
Local clock offset: -2.888 ms
Remote clock offset: 2.731 ms

# Below is generated by plot.py at 2019-03-27 14:18:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 288.372 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 57.40 Mbit/s
95th percentile per-packet one-way delay: 312.040 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 38.52 Mbit/s
95th percentile per-packet one-way delay: 221.875 ms
Loss rate: 1.57%
-- Flow 3:
Average throughput: 30.43 Mbit/s
95th percentile per-packet one-way delay: 269.703 ms
Loss rate: 3.92%
Run 1: Report of FillP-Sheep — Data Link
Run 2: Statistics of FillP-Sheep

Start at: 2019-03-27 12:37:06
End at: 2019-03-27 12:37:36
Local clock offset: -5.483 ms
Remote clock offset: 3.8 ms

# Below is generated by plot.py at 2019-03-27 14:18:54
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 92.88 Mbit/s
  95th percentile per-packet one-way delay: 276.296 ms
  Loss rate: 1.64%
-- Flow 1:
  Average throughput: 56.90 Mbit/s
  95th percentile per-packet one-way delay: 281.394 ms
  Loss rate: 0.76%
-- Flow 2:
  Average throughput: 39.07 Mbit/s
  95th percentile per-packet one-way delay: 267.269 ms
  Loss rate: 2.82%
-- Flow 3:
  Average throughput: 30.53 Mbit/s
  95th percentile per-packet one-way delay: 327.615 ms
  Loss rate: 3.46%
Run 2: Report of FillP-Sheep — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 57.00 Mbps)  Flow 1 egress (mean 56.90 Mbps)
Flow 2 ingress (mean 39.89 Mbps)  Flow 2 egress (mean 39.07 Mbps)
Flow 3 ingress (mean 31.10 Mbps)  Flow 3 egress (mean 30.53 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 281.39 ms)  Flow 2 (95th percentile 267.27 ms)  Flow 3 (95th percentile 327.62 ms)
Run 3: Statistics of FillP-Sheep

End at: 2019-03-27 13:04:43
Local clock offset: -4.137 ms
Remote clock offset: -1.002 ms

# Below is generated by plot.py at 2019-03-27 14:18:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 271.402 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 57.20 Mbit/s
95th percentile per-packet one-way delay: 291.719 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 39.09 Mbit/s
95th percentile per-packet one-way delay: 253.539 ms
Loss rate: 2.02%
-- Flow 3:
Average throughput: 29.83 Mbit/s
95th percentile per-packet one-way delay: 215.360 ms
Loss rate: 3.74%
Run 3: Report of FillP-Sheep — Data Link

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

- **Flow 1 ingress (mean 57.31 Mbps)**
- **Flow 1 egress (mean 57.20 Mbps)**
- **Flow 2 ingress (mean 39.55 Mbps)**
- **Flow 2 egress (mean 39.09 Mbps)**
- **Flow 3 ingress (mean 30.48 Mbps)**
- **Flow 3 egress (mean 29.83 Mbps)**

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

- **Flow 1 (95th percentile 291.72 ms)**
- **Flow 2 (95th percentile 253.54 ms)**
- **Flow 3 (95th percentile 215.36 ms)**
Run 4: Statistics of FillP-Sheep

End at: 2019-03-27 13:31:45
Local clock offset: -3.686 ms
Remote clock offset: -0.79 ms

# Below is generated by plot.py at 2019-03-27 14:19:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.72 Mbit/s
95th percentile per-packet one-way delay: 315.619 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 56.84 Mbit/s
95th percentile per-packet one-way delay: 327.470 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 39.17 Mbit/s
95th percentile per-packet one-way delay: 229.994 ms
Loss rate: 2.22%
-- Flow 3:
Average throughput: 29.98 Mbit/s
95th percentile per-packet one-way delay: 347.304 ms
Loss rate: 2.86%
Run 4: Report of FillP-Sheep — Data Link

[Graphs showing throughput and per-packet one-way delay over time]
Run 5: Statistics of FillP-Sheep

Start at: 2019-03-27 13:58:16
End at: 2019-03-27 13:58:46
Local clock offset: -4.516 ms
Remote clock offset: 1.259 ms

# Below is generated by plot.py at 2019-03-27 14:19:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.86 Mbit/s
95th percentile per-packet one-way delay: 281.380 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 57.37 Mbit/s
95th percentile per-packet one-way delay: 290.935 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 38.40 Mbit/s
95th percentile per-packet one-way delay: 240.330 ms
Loss rate: 1.32%
-- Flow 3:
Average throughput: 30.41 Mbit/s
95th percentile per-packet one-way delay: 307.763 ms
Loss rate: 4.04%
Run 5: Report of FillP-Sheep — Data Link

![Graph showing network throughput and delay over time.](image-url)
Run 1: Statistics of Indigo

Start at: 2019-03-27 12:24:11
End at: 2019-03-27 12:24:41
Local clock offset: -4.779 ms
Remote clock offset: 8.185 ms

# Below is generated by plot.py at 2019-03-27 14:19:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.80 Mbit/s
95th percentile per-packet one-way delay: 332.139 ms
Loss rate: 4.50%
-- Flow 1:
Average throughput: 58.55 Mbit/s
95th percentile per-packet one-way delay: 340.448 ms
Loss rate: 6.07%
-- Flow 2:
Average throughput: 38.77 Mbit/s
95th percentile per-packet one-way delay: 137.256 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 29.32 Mbit/s
95th percentile per-packet one-way delay: 149.799 ms
Loss rate: 3.21%
Run 1: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 61.98 Mbit/s)
- Flow 1 egress (mean 58.55 Mbit/s)
- Flow 2 ingress (mean 38.91 Mbit/s)
- Flow 2 egress (mean 38.77 Mbit/s)
- Flow 3 ingress (mean 29.77 Mbit/s)
- Flow 3 egress (mean 29.32 Mbit/s)

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

- Flow 1 (95th percentile 340.45 ms)
- Flow 2 (95th percentile 137.26 ms)
- Flow 3 (95th percentile 149.80 ms)
Run 2: Statistics of Indigo

Start at: 2019-03-27 12:51:11
End at: 2019-03-27 12:51:41
Local clock offset: -5.323 ms
Remote clock offset: -1.618 ms

# Below is generated by plot.py at 2019-03-27 14:19:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.64 Mbit/s
  95th percentile per-packet one-way delay: 407.990 ms
  Loss rate: 3.15%
  -- Flow 1:
    Average throughput: 58.37 Mbit/s
    95th percentile per-packet one-way delay: 437.451 ms
    Loss rate: 4.07%
  -- Flow 2:
    Average throughput: 38.87 Mbit/s
    95th percentile per-packet one-way delay: 154.680 ms
    Loss rate: 1.06%
  -- Flow 3:
    Average throughput: 29.20 Mbit/s
    95th percentile per-packet one-way delay: 161.504 ms
    Loss rate: 3.01%
Run 2: Report of Indigo — Data Link

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

- **Flow 1 ingress** (mean 60.49 Mbit/s)
- **Flow 1 egress** (mean 58.37 Mbit/s)
- **Flow 2 ingress** (mean 38.95 Mbit/s)
- **Flow 2 egress** (mean 38.87 Mbit/s)
- **Flow 3 ingress** (mean 29.56 Mbit/s)
- **Flow 3 egress** (mean 29.20 Mbit/s)

- **Flow 1 (95th percentile 437.45 ms)**
- **Flow 2 (95th percentile 154.68 ms)**
- **Flow 3 (95th percentile 161.50 ms)**
Run 3: Statistics of Indigo

End at: 2019-03-27 13:18:50
Local clock offset: -4.084 ms
Remote clock offset: 3.727 ms

# Below is generated by plot.py at 2019-03-27 14:19:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.73 Mbit/s
95th percentile per-packet one-way delay: 371.337 ms
Loss rate: 9.48%
-- Flow 1:
Average throughput: 58.56 Mbit/s
95th percentile per-packet one-way delay: 393.596 ms
Loss rate: 13.57%
-- Flow 2:
Average throughput: 38.85 Mbit/s
95th percentile per-packet one-way delay: 142.115 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 28.90 Mbit/s
95th percentile per-packet one-way delay: 141.212 ms
Loss rate: 2.82%
Run 3: Report of Indigo — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 67.36 Mbps)
- Flow 1 egress (mean 58.56 Mbps)
- Flow 2 ingress (mean 39.04 Mbps)
- Flow 2 egress (mean 38.85 Mbps)
- Flow 3 ingress (mean 29.22 Mbps)
- Flow 3 egress (mean 28.90 Mbps)

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

- Flow 1 (95th percentile 393.60 ms)
- Flow 2 (95th percentile 142.12 ms)
- Flow 3 (95th percentile 141.21 ms)
Run 4: Statistics of Indigo

Start at: 2019-03-27 13:45:20  
End at: 2019-03-27 13:45:50  
Local clock offset: -4.133 ms  
Remote clock offset: 5.986 ms  

# Below is generated by plot.py at 2019-03-27 14:19:49  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 93.69 Mbit/s  
95th percentile per-packet one-way delay: 252.951 ms  
Loss rate: 2.17%  
-- Flow 1:  
Average throughput: 58.29 Mbit/s  
95th percentile per-packet one-way delay: 267.438 ms  
Loss rate: 2.54%  
-- Flow 2:  
Average throughput: 39.04 Mbit/s  
95th percentile per-packet one-way delay: 147.782 ms  
Loss rate: 1.18%  
-- Flow 3:  
Average throughput: 29.24 Mbit/s  
95th percentile per-packet one-way delay: 133.487 ms  
Loss rate: 2.60%
Run 4: Report of Indigo — Data Link
Run 5: Statistics of Indigo

Start at: 2019-03-27 14:12:21
End at: 2019-03-27 14:12:51
Local clock offset: -4.88 ms
Remote clock offset: 6.631 ms

# Below is generated by plot.py at 2019-03-27 14:19:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.72 Mbit/s
95th percentile per-packet one-way delay: 318.802 ms
Loss rate: 4.59%
-- Flow 1:
Average throughput: 58.52 Mbit/s
95th percentile per-packet one-way delay: 341.087 ms
Loss rate: 6.25%
-- Flow 2:
Average throughput: 38.77 Mbit/s
95th percentile per-packet one-way delay: 149.875 ms
Loss rate: 1.32%
-- Flow 3:
Average throughput: 29.23 Mbit/s
95th percentile per-packet one-way delay: 123.233 ms
Loss rate: 2.75%
Run 5: Report of Indigo — Data Link

![Graph showing throughput and packet delay over time for different flows.](image-url)
Run 1: Statistics of Indigo-MusesC3

End at: 2019-03-27 12:23:24
Local clock offset: -4.644 ms
Remote clock offset: 3.083 ms

# Below is generated by plot.py at 2019-03-27 14:20:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.59 Mbit/s
95th percentile per-packet one-way delay: 208.813 ms
Loss rate: 1.86%
-- Flow 1:
Average throughput: 60.05 Mbit/s
95th percentile per-packet one-way delay: 158.296 ms
Loss rate: 1.68%
-- Flow 2:
Average throughput: 39.91 Mbit/s
95th percentile per-packet one-way delay: 269.860 ms
Loss rate: 1.70%
-- Flow 3:
Average throughput: 30.40 Mbit/s
95th percentile per-packet one-way delay: 333.663 ms
Loss rate: 3.57%
Run 1: Report of Indigo-MusesC3 — Data Link
Run 2: Statistics of Indigo-MusesC3

End at: 2019-03-27 12:50:23
Local clock offset: -5.336 ms
Remote clock offset: -1.569 ms

# Below is generated by plot.py at 2019-03-27 14:20:15
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.67 Mbit/s
  95th percentile per-packet one-way delay: 161.721 ms
  Loss rate: 2.45%
-- Flow 1:
  Average throughput: 60.40 Mbit/s
  95th percentile per-packet one-way delay: 131.317 ms
  Loss rate: 2.77%
-- Flow 2:
  Average throughput: 40.37 Mbit/s
  95th percentile per-packet one-way delay: 240.054 ms
  Loss rate: 1.54%
-- Flow 3:
  Average throughput: 29.62 Mbit/s
  95th percentile per-packet one-way delay: 170.349 ms
  Loss rate: 2.99%
Run 2: Report of Indigo-MusesC3 — Data Link

---

**Throughput (Mbps):**
- **Flow 1 ingress:** mean 61.75 Mbps
- **Flow 1 egress:** mean 60.40 Mbps
- **Flow 2 ingress:** mean 40.60 Mbps
- **Flow 2 egress:** mean 40.37 Mbps
- **Flow 3 ingress:** mean 29.86 Mbps
- **Flow 3 egress:** mean 29.62 Mbps

**Per-packet one-way delay (ms):**
- **Flow 1 (95th percentile):** 131.32 ms
- **Flow 2 (95th percentile):** 240.05 ms
- **Flow 3 (95th percentile):** 170.35 ms
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-03-27 13:17:02
End at: 2019-03-27 13:17:32
Local clock offset: -4.086 ms
Remote clock offset: 3.688 ms

# Below is generated by plot.py at 2019-03-27 14:20:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.69 Mbit/s
  95th percentile per-packet one-way delay: 148.305 ms
  Loss rate: 3.06%
-- Flow 1:
  Average throughput: 60.31 Mbit/s
  95th percentile per-packet one-way delay: 131.465 ms
  Loss rate: 3.01%
-- Flow 2:
  Average throughput: 40.08 Mbit/s
  95th percentile per-packet one-way delay: 210.386 ms
  Loss rate: 3.29%
-- Flow 3:
  Average throughput: 29.84 Mbit/s
  95th percentile per-packet one-way delay: 153.681 ms
  Loss rate: 2.69%
Run 3: Report of Indigo-MusesC3 — Data Link

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

Legend:
- Flow 1 ingress (mean 61.81 Mbit/s)
- Flow 1 egress (mean 60.31 Mbit/s)
- Flow 2 ingress (mean 41.07 Mbit/s)
- Flow 2 egress (mean 40.08 Mbit/s)
- Flow 3 ingress (mean 30.03 Mbit/s)
- Flow 3 egress (mean 29.84 Mbit/s)
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-03-27 13:44:02
End at: 2019-03-27 13:44:32
Local clock offset: -4.192 ms
Remote clock offset: -0.443 ms

# Below is generated by plot.py at 2019-03-27 14:20:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.76 Mbit/s
95th percentile per-packet one-way delay: 172.831 ms
Loss rate: 2.44%
-- Flow 1:
Average throughput: 60.32 Mbit/s
95th percentile per-packet one-way delay: 144.355 ms
Loss rate: 2.03%
-- Flow 2:
Average throughput: 40.09 Mbit/s
95th percentile per-packet one-way delay: 210.476 ms
Loss rate: 3.10%
-- Flow 3:
Average throughput: 30.67 Mbit/s
95th percentile per-packet one-way delay: 228.439 ms
Loss rate: 3.34%
Run 4: Report of Indigo-MusesC3 — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 61.21 Mb/s)
Flow 1 egress (mean 60.32 Mb/s)
Flow 2 ingress (mean 40.98 Mb/s)
Flow 2 egress (mean 40.09 Mb/s)
Flow 3 ingress (mean 31.07 Mb/s)
Flow 3 egress (mean 30.67 Mb/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 144.35 ms)
Flow 2 (95th percentile 210.48 ms)
Flow 3 (95th percentile 228.44 ms)
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-03-27 14:11:03
End at: 2019-03-27 14:11:33
Local clock offset: -5.713 ms
Remote clock offset: 5.441 ms

# Below is generated by plot.py at 2019-03-27 14:20:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.59 Mbit/s
95th percentile per-packet one-way delay: 168.422 ms
Loss rate: 2.40%
-- Flow 1:
Average throughput: 59.94 Mbit/s
95th percentile per-packet one-way delay: 145.416 ms
Loss rate: 2.50%
-- Flow 2:
Average throughput: 39.94 Mbit/s
95th percentile per-packet one-way delay: 199.462 ms
Loss rate: 1.91%
-- Flow 3:
Average throughput: 30.93 Mbit/s
95th percentile per-packet one-way delay: 215.599 ms
Loss rate: 3.07%
Run 5: Report of Indigo-MusesC3 — Data Link

![Graph showing throughput and packet delay for different flows over time.](image-url)
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-03-27 12:17:48
End at: 2019-03-27 12:18:18
Local clock offset: -3.276 ms
Remote clock offset: 2.89 ms

# Below is generated by plot.py at 2019-03-27 14:20:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.61 Mbit/s
95th percentile per-packet one-way delay: 255.577 ms
Loss rate: 3.73%
-- Flow 1:
Average throughput: 59.48 Mbit/s
95th percentile per-packet one-way delay: 263.202 ms
Loss rate: 2.88%
-- Flow 2:
Average throughput: 40.08 Mbit/s
95th percentile per-packet one-way delay: 237.181 ms
Loss rate: 4.21%
-- Flow 3:
Average throughput: 30.02 Mbit/s
95th percentile per-packet one-way delay: 247.893 ms
Loss rate: 7.95%
Run 1: Report of Indigo-MusesC5 — Data Link
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-03-27 12:44:48
End at: 2019-03-27 12:45:18
Local clock offset: -4.966 ms
Remote clock offset: -1.341 ms

# Below is generated by plot.py at 2019-03-27 14:20:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.01 Mbit/s
95th percentile per-packet one-way delay: 269.293 ms
Loss rate: 3.13%
-- Flow 1:
Average throughput: 60.03 Mbit/s
95th percentile per-packet one-way delay: 265.669 ms
Loss rate: 2.50%
-- Flow 2:
Average throughput: 38.24 Mbit/s
95th percentile per-packet one-way delay: 300.466 ms
Loss rate: 3.49%
-- Flow 3:
Average throughput: 29.12 Mbit/s
95th percentile per-packet one-way delay: 326.898 ms
Loss rate: 6.42%
Run 2: Report of Indigo-MusesC5 — Data Link
Run 3: Statistics of Indigo-MusesC5

End at: 2019-03-27 13:12:27
Local clock offset: -4.131 ms
Remote clock offset: -0.218 ms

# Below is generated by plot.py at 2019-03-27 14:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.12 Mbit/s
95th percentile per-packet one-way delay: 253.646 ms
Loss rate: 4.56%
-- Flow 1:
Average throughput: 58.66 Mbit/s
95th percentile per-packet one-way delay: 245.644 ms
Loss rate: 3.00%
-- Flow 2:
Average throughput: 38.71 Mbit/s
95th percentile per-packet one-way delay: 276.489 ms
Loss rate: 6.63%
-- Flow 3:
Average throughput: 29.84 Mbit/s
95th percentile per-packet one-way delay: 410.434 ms
Loss rate: 8.69%
Run 3: Report of Indigo-MusesC5 — Data Link

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

- **Flow 1 ingress (mean 60.20 Mbit/s)**
- **Flow 1 egress (mean 58.66 Mbit/s)**
- **Flow 2 ingress (mean 41.08 Mbit/s)**
- **Flow 2 egress (mean 38.71 Mbit/s)**
- **Flow 3 ingress (mean 32.18 Mbit/s)**
- **Flow 3 egress (mean 29.84 Mbit/s)**

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

- **Flow 1 (95th percentile 245.64 ms)**
- **Flow 2 (95th percentile 276.49 ms)**
- **Flow 3 (95th percentile 410.43 ms)**
Run 4: Statistics of Indigo-MusesC5

Local clock offset: -4.214 ms
Remote clock offset: 0.227 ms

# Below is generated by plot.py at 2019-03-27 14:21:03
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.60 Mbit/s
  95th percentile per-packet one-way delay: 283.407 ms
  Loss rate: 4.07%
-- Flow 1:
  Average throughput: 59.58 Mbit/s
  95th percentile per-packet one-way delay: 271.996 ms
  Loss rate: 2.89%
-- Flow 2:
  Average throughput: 40.18 Mbit/s
  95th percentile per-packet one-way delay: 301.961 ms
  Loss rate: 5.07%
-- Flow 3:
  Average throughput: 28.30 Mbit/s
  95th percentile per-packet one-way delay: 338.051 ms
  Loss rate: 9.03%
Run 4: Report of Indigo-MusesC5 — Data Link

- Flow 1 ingress (mean 60.99 Mbit/s)
- Flow 1 egress (mean 59.58 Mbit/s)
- Flow 2 ingress (mean 41.94 Mbit/s)
- Flow 2 egress (mean 40.18 Mbit/s)
- Flow 3 ingress (mean 30.47 Mbit/s)
- Flow 3 egress (mean 28.30 Mbit/s)

- Flow 1 (95th percentile 272.00 ms)
- Flow 2 (95th percentile 301.96 ms)
- Flow 3 (95th percentile 338.05 ms)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-03-27 14:05:58
End at: 2019-03-27 14:06:28
Local clock offset: -4.765 ms
Remote clock offset: 1.598 ms

# Below is generated by plot.py at 2019-03-27 14:21:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.50 Mbit/s
95th percentile per-packet one-way delay: 269.940 ms
Loss rate: 4.00%
-- Flow 1:
Average throughput: 58.88 Mbit/s
95th percentile per-packet one-way delay: 267.321 ms
Loss rate: 2.84%
-- Flow 2:
Average throughput: 38.98 Mbit/s
95th percentile per-packet one-way delay: 267.188 ms
Loss rate: 4.82%
-- Flow 3:
Average throughput: 29.39 Mbit/s
95th percentile per-packet one-way delay: 312.416 ms
Loss rate: 9.21%
Run 5: Report of Indigo-MusesC5 — Data Link
Run 1: Statistics of Indigo-MusesD

Start at: 2019-03-27 12:08:48
End at: 2019-03-27 12:09:18
Local clock offset: -3.661 ms
Remote clock offset: 6.451 ms

# Below is generated by plot.py at 2019-03-27 14:21:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.69 Mbit/s
95th percentile per-packet one-way delay: 205.459 ms
Loss rate: 4.92%
-- Flow 1:
Average throughput: 61.32 Mbit/s
95th percentile per-packet one-way delay: 212.015 ms
Loss rate: 5.64%
-- Flow 2:
Average throughput: 36.46 Mbit/s
95th percentile per-packet one-way delay: 138.809 ms
Loss rate: 2.82%
-- Flow 3:
Average throughput: 31.19 Mbit/s
95th percentile per-packet one-way delay: 175.902 ms
Loss rate: 5.32%
Run 1: Report of Indigo-MusesD — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 64.61 Mbit/s)  Flow 1 egress (mean 61.32 Mbit/s)
Flow 2 ingress (mean 37.17 Mbit/s)  Flow 2 egress (mean 36.46 Mbit/s)
Flow 3 ingress (mean 32.29 Mbit/s)  Flow 3 egress (mean 31.19 Mbit/s)

Packet delay (ms)

Time (s)

Flow 1 (95th percentile 212.01 ms)  Flow 2 (95th percentile 138.81 ms)  Flow 3 (95th percentile 175.90 ms)
Run 2: Statistics of Indigo-MusesD

Start at: 2019-03-27 12:35:48
End at: 2019-03-27 12:36:18
Local clock offset: -5.444 ms
Remote clock offset: 3.985 ms

# Below is generated by plot.py at 2019-03-27 14:21:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.03 Mbit/s
  95th percentile per-packet one-way delay: 205.770 ms
  Loss rate: 4.44%
-- Flow 1:
  Average throughput: 62.38 Mbit/s
  95th percentile per-packet one-way delay: 211.949 ms
  Loss rate: 5.39%
-- Flow 2:
  Average throughput: 36.14 Mbit/s
  95th percentile per-packet one-way delay: 142.807 ms
  Loss rate: 1.40%
-- Flow 3:
  Average throughput: 29.32 Mbit/s
  95th percentile per-packet one-way delay: 186.405 ms
  Loss rate: 5.43%
Run 2: Report of Indigo-MusesD — Data Link
Run 3: Statistics of Indigo-MusesD

Start at: 2019-03-27 13:02:55
End at: 2019-03-27 13:03:25
Local clock offset: -4.907 ms
Remote clock offset: -0.956 ms

# Below is generated by plot.py at 2019-03-27 14:21:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.20 Mbit/s
  95th percentile per-packet one-way delay: 209.300 ms
  Loss rate: 5.12%
-- Flow 1:
  Average throughput: 61.22 Mbit/s
  95th percentile per-packet one-way delay: 213.390 ms
  Loss rate: 5.76%
-- Flow 2:
  Average throughput: 38.47 Mbit/s
  95th percentile per-packet one-way delay: 181.311 ms
  Loss rate: 3.87%
-- Flow 3:
  Average throughput: 28.86 Mbit/s
  95th percentile per-packet one-way delay: 135.640 ms
  Loss rate: 4.03%
Run 3: Report of Indigo-MusesD — Data Link
Run 4: Statistics of Indigo-MusesD

End at: 2019-03-27 13:30:28
Local clock offset: -4.423 ms
Remote clock offset: 0.441 ms

# Below is generated by plot.py at 2019-03-27 14:21:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.92 Mbit/s
95th percentile per-packet one-way delay: 210.749 ms
Loss rate: 4.90%
-- Flow 1:
Average throughput: 60.49 Mbit/s
95th percentile per-packet one-way delay: 215.312 ms
Loss rate: 5.84%
-- Flow 2:
Average throughput: 38.96 Mbit/s
95th percentile per-packet one-way delay: 130.691 ms
Loss rate: 1.90%
-- Flow 3:
Average throughput: 29.18 Mbit/s
95th percentile per-packet one-way delay: 181.252 ms
Loss rate: 6.72%
Run 4: Report of Indigo-MusesD — Data Link
Run 5: Statistics of Indigo-MusesD

Local clock offset: -5.244 ms
Remote clock offset: 0.174 ms

# Below is generated by plot.py at 2019-03-27 14:21:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.96 Mbit/s
95th percentile per-packet one-way delay: 212.309 ms
Loss rate: 5.06%  
-- Flow 1:
Average throughput: 60.53 Mbit/s
95th percentile per-packet one-way delay: 217.182 ms
Loss rate: 5.78%  
-- Flow 2:
Average throughput: 39.06 Mbit/s
95th percentile per-packet one-way delay: 174.818 ms
Loss rate: 3.80%  
-- Flow 3:
Average throughput: 28.82 Mbit/s
95th percentile per-packet one-way delay: 170.874 ms
Loss rate: 3.54%
Run 5: Report of Indigo-MusesD — Data Link
Run 1: Statistics of Indigo-MusesT

Start at: 2019-03-27 12:15:12
End at: 2019-03-27 12:15:42
Local clock offset: -3.59 ms
Remote clock offset: 1.65 ms

# Below is generated by plot.py at 2019-03-27 14:22:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.63 Mbit/s
95th percentile per-packet one-way delay: 444.230 ms
Loss rate: 6.19%
-- Flow 1:
Average throughput: 58.93 Mbit/s
95th percentile per-packet one-way delay: 320.529 ms
Loss rate: 6.89%
-- Flow 2:
Average throughput: 41.76 Mbit/s
95th percentile per-packet one-way delay: 461.869 ms
Loss rate: 4.10%
-- Flow 3:
Average throughput: 30.98 Mbit/s
95th percentile per-packet one-way delay: 529.543 ms
Loss rate: 7.60%
Run 1: Report of Indigo-MusesT — Data Link
Run 2: Statistics of Indigo-MusesT

Start at: 2019-03-27 12:42:11
End at: 2019-03-27 12:42:41
Local clock offset: -4.864 ms
Remote clock offset: 3.051 ms

# Below is generated by plot.py at 2019-03-27 14:22:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 91.47 Mbit/s
  95th percentile per-packet one-way delay: 455.519 ms
  Loss rate: 6.55%
-- Flow 1:
  Average throughput: 56.32 Mbit/s
  95th percentile per-packet one-way delay: 297.520 ms
  Loss rate: 6.66%
-- Flow 2:
  Average throughput: 40.28 Mbit/s
  95th percentile per-packet one-way delay: 401.762 ms
  Loss rate: 4.23%
-- Flow 3:
  Average throughput: 32.51 Mbit/s
  95th percentile per-packet one-way delay: 507.407 ms
  Loss rate: 11.91%
Run 2: Report of Indigo-MusesT — Data Link

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

Lines and markers indicate:
- Flow 1 ingress (mean 59.98 Mbit/s)
- Flow 1 egress (mean 56.32 Mbit/s)
- Flow 2 ingress (mean 41.67 Mbit/s)
- Flow 2 egress (mean 40.28 Mbit/s)
- Flow 3 ingress (mean 36.26 Mbit/s)
- Flow 3 egress (mean 32.51 Mbit/s)

Points represent:
- Flow 1 (95th percentile 297.52 ms)
- Flow 2 (95th percentile 401.76 ms)
- Flow 3 (95th percentile 507.41 ms)
Run 3: Statistics of Indigo-MusesT

Start at: 2019-03-27 13:09:21
End at: 2019-03-27 13:09:51
Local clock offset: -4.212 ms
Remote clock offset: 2.046 ms

# Below is generated by plot.py at 2019-03-27 14:22:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.70 Mbit/s
  95th percentile per-packet one-way delay: 404.907 ms
  Loss rate: 5.88%
-- Flow 1:
  Average throughput: 60.52 Mbit/s
  95th percentile per-packet one-way delay: 363.545 ms
  Loss rate: 5.99%
-- Flow 2:
  Average throughput: 40.49 Mbit/s
  95th percentile per-packet one-way delay: 363.664 ms
  Loss rate: 5.88%
-- Flow 3:
  Average throughput: 28.15 Mbit/s
  95th percentile per-packet one-way delay: 540.586 ms
  Loss rate: 5.03%
Run 3: Report of Indigo-MusesT — Data Link
Run 4: Statistics of Indigo-MusesT

Start at: 2019-03-27 13:36:21
End at: 2019-03-27 13:36:51
Local clock offset: -3.514 ms
Remote clock offset: 5.341 ms

# Below is generated by plot.py at 2019-03-27 14:22:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.87 Mbit/s
95th percentile per-packet one-way delay: 364.129 ms
Loss rate: 5.75%
-- Flow 1:
Average throughput: 57.51 Mbit/s
95th percentile per-packet one-way delay: 345.897 ms
Loss rate: 5.96%
-- Flow 2:
Average throughput: 40.13 Mbit/s
95th percentile per-packet one-way delay: 250.381 ms
Loss rate: 4.91%
-- Flow 3:
Average throughput: 29.91 Mbit/s
95th percentile per-packet one-way delay: 431.866 ms
Loss rate: 6.85%
Run 4: Report of Indigo-MusesT — Data Link
Run 5: Statistics of Indigo-MusesT

Start at: 2019-03-27 14:03:22
End at: 2019-03-27 14:03:52
Local clock offset: -4.749 ms
Remote clock offset: 0.361 ms

# Below is generated by plot.py at 2019-03-27 14:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.26 Mbit/s
95th percentile per-packet one-way delay: 503.762 ms
Loss rate: 6.78%
-- Flow 1:
Average throughput: 57.62 Mbit/s
95th percentile per-packet one-way delay: 490.278 ms
Loss rate: 6.34%
-- Flow 2:
Average throughput: 38.42 Mbit/s
95th percentile per-packet one-way delay: 433.621 ms
Loss rate: 7.71%
-- Flow 3:
Average throughput: 31.00 Mbit/s
95th percentile per-packet one-way delay: 636.047 ms
Loss rate: 6.98%
Run 5: Report of Indigo-MusesT — Data Link
Run 1: Statistics of LEDBAT

Start at: 2019-03-27 11:59:47
End at: 2019-03-27 12:00:17
Local clock offset: -2.894 ms
Remote clock offset: 5.092 ms

# Below is generated by plot.py at 2019-03-27 14:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.20 Mbit/s
95th percentile per-packet one-way delay: 91.494 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 91.401 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 91.508 ms
Loss rate: 1.67%
-- Flow 3:
Average throughput: 3.80 Mbit/s
95th percentile per-packet one-way delay: 91.807 ms
Loss rate: 3.54%
Run 1: Report of LEDBAT — Data Link

Throughput (Mbps/s)

0 5 10 15 20 25

Time (s)

Flow 1 ingress (mean 11.91 Mbps/s)
Flow 1 egress (mean 11.84 Mbps/s)
Flow 2 ingress (mean 7.83 Mbps/s)
Flow 2 egress (mean 7.76 Mbps/s)
Flow 3 ingress (mean 3.87 Mbps/s)
Flow 3 egress (mean 3.80 Mbps/s)

Per-packet one-way delay (ms)

0 5 10 15 20 25 30

Time (s)

Flow 1 (95th percentile 91.40 ms)
Flow 2 (95th percentile 91.51 ms)
Flow 3 (95th percentile 91.81 ms)
Run 2: Statistics of LEDBAT

Start at: 2019-03-27 12:26:47
End at: 2019-03-27 12:27:17
Local clock offset: -4.201 ms
Remote clock offset: 8.252 ms

# Below is generated by plot.py at 2019-03-27 14:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.47 Mbit/s
95th percentile per-packet one-way delay: 90.781 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.09 Mbit/s
95th percentile per-packet one-way delay: 91.137 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 90.195 ms
Loss rate: 1.76%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 90.360 ms
Loss rate: 3.53%
Run 2: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 12.17 Mbit/s)
- Flow 1 egress (mean 12.09 Mbit/s)
- Flow 2 ingress (mean 7.82 Mbit/s)
- Flow 2 egress (mean 7.75 Mbit/s)
- Flow 3 ingress (mean 3.84 Mbit/s)
- Flow 3 egress (mean 3.77 Mbit/s)

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

- Flow 1 (95th percentile 91.14 ms)
- Flow 2 (95th percentile 90.19 ms)
- Flow 3 (95th percentile 90.36 ms)
Run 3: Statistics of LEDBAT

Start at: 2019-03-27 12:53:49
End at: 2019-03-27 12:54:19
Local clock offset: -5.121 ms
Remote clock offset: -1.778 ms

# Below is generated by plot.py at 2019-03-27 14:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 102.335 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 6.20 Mbit/s
95th percentile per-packet one-way delay: 102.379 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 6.61 Mbit/s
95th percentile per-packet one-way delay: 102.687 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 3.79 Mbit/s
95th percentile per-packet one-way delay: 95.812 ms
Loss rate: 3.54%
Run 3: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 6.22 Mbit/s)
- Flow 1 egress (mean 6.20 Mbit/s)
- Flow 2 ingress (mean 6.62 Mbit/s)
- Flow 2 egress (mean 6.61 Mbit/s)
- Flow 3 ingress (mean 3.86 Mbit/s)
- Flow 3 egress (mean 3.79 Mbit/s)
Run 4: Statistics of LEDBAT

Start at: 2019-03-27 13:20:56
End at: 2019-03-27 13:21:26
Local clock offset: -3.906 ms
Remote clock offset: 3.943 ms

# Below is generated by plot.py at 2019-03-27 14:22:34
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 12.77 Mbit/s
  95th percentile per-packet one-way delay: 90.554 ms
  Loss rate: 1.59%
-- Flow 1:
  Average throughput: 6.37 Mbit/s
  95th percentile per-packet one-way delay: 90.603 ms
  Loss rate: 1.12%
-- Flow 2:
  Average throughput: 7.79 Mbit/s
  95th percentile per-packet one-way delay: 90.489 ms
  Loss rate: 1.70%
-- Flow 3:
  Average throughput: 3.79 Mbit/s
  95th percentile per-packet one-way delay: 90.294 ms
  Loss rate: 3.53%
Run 4: Report of LEDBAT — Data Link
Run 5: Statistics of LEDBAT

Local clock offset: -4.422 ms  
Remote clock offset: 3.52 ms

# Below is generated by plot.py at 2019-03-27 14:22:34
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 18.49 Mbit/s
 95th percentile per-packet one-way delay: 91.783 ms
 Loss rate: 1.48%
-- Flow 1:
 Average throughput: 11.97 Mbit/s
 95th percentile per-packet one-way delay: 91.852 ms
 Loss rate: 1.15%
-- Flow 2:
 Average throughput: 7.99 Mbit/s
 95th percentile per-packet one-way delay: 91.131 ms
 Loss rate: 1.73%
-- Flow 3:
 Average throughput: 3.78 Mbit/s
 95th percentile per-packet one-way delay: 91.530 ms
 Loss rate: 3.53%
Run 5: Report of LEDBAT — Data Link

![Graph of throughput over time for different flows](image)

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

Legend:
- Flow 1 ingress (mean 12.04 Mbit/s)
- Flow 1 egress (mean 11.97 Mbit/s)
- Flow 2 ingress (mean 8.06 Mbit/s)
- Flow 2 egress (mean 7.99 Mbit/s)
- Flow 3 ingress (mean 3.85 Mbit/s)
- Flow 3 egress (mean 3.76 Mbit/s)
Run 1: Statistics of PCC-Allegro

Start at: 2019-03-27 11:58:31
End at: 2019-03-27 11:59:01
Local clock offset: -2.842 ms
Remote clock offset: 1.347 ms

# Below is generated by plot.py at 2019-03-27 14:23:06
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 86.01 Mbit/s
  95th percentile per-packet one-way delay: 1435.013 ms
  Loss rate: 20.25%
-- Flow 1:
  Average throughput: 53.95 Mbit/s
  95th percentile per-packet one-way delay: 1446.781 ms
  Loss rate: 22.75%
-- Flow 2:
  Average throughput: 33.87 Mbit/s
  95th percentile per-packet one-way delay: 1184.087 ms
  Loss rate: 12.95%
-- Flow 3:
  Average throughput: 29.50 Mbit/s
  95th percentile per-packet one-way delay: 1510.327 ms
  Loss rate: 21.38%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2019-03-27 12:25:30
End at: 2019-03-27 12:26:00
Local clock offset: -4.895 ms
Remote clock offset: 1.96 ms

# Below is generated by plot.py at 2019-03-27 14:23:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.93 Mbit/s
95th percentile per-packet one-way delay: 1437.394 ms
Loss rate: 20.13%
-- Flow 1:
Average throughput: 54.01 Mbit/s
95th percentile per-packet one-way delay: 1433.161 ms
Loss rate: 23.00%
-- Flow 2:
Average throughput: 33.65 Mbit/s
95th percentile per-packet one-way delay: 1196.396 ms
Loss rate: 11.73%
-- Flow 3:
Average throughput: 29.44 Mbit/s
95th percentile per-packet one-way delay: 1550.309 ms
Loss rate: 21.03%
Run 2: Report of PCC-Allegro — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 ingress (mean 69.74 Mbps)**
- **Flow 1 egress (mean 54.01 Mbps)**
- **Flow 2 ingress (mean 37.79 Mbps)**
- **Flow 2 egress (mean 33.65 Mbps)**
- **Flow 3 ingress (mean 36.62 Mbps)**
- **Flow 3 egress (mean 29.44 Mbps)**

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

- **Flow 1 (95th percentile 1433.16 ms)**
- **Flow 2 (95th percentile 1196.40 ms)**
- **Flow 3 (95th percentile 1550.31 ms)**

118
Run 3: Statistics of PCC-Allegro

Start at: 2019-03-27 12:52:30
End at: 2019-03-27 12:53:00
Local clock offset: -4.47 ms
Remote clock offset: 3.268 ms

# Below is generated by plot.py at 2019-03-27 14:23:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.12 Mbit/s
95th percentile per-packet one-way delay: 1615.242 ms
Loss rate: 23.46%
-- Flow 1:
Average throughput: 55.76 Mbit/s
95th percentile per-packet one-way delay: 1649.505 ms
Loss rate: 27.29%
-- Flow 2:
Average throughput: 35.79 Mbit/s
95th percentile per-packet one-way delay: 1176.022 ms
Loss rate: 14.15%
-- Flow 3:
Average throughput: 29.49 Mbit/s
95th percentile per-packet one-way delay: 1415.482 ms
Loss rate: 20.46%
Run 3: Report of PCC-Allegro — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 76.24 Mbit/s)
Flow 1 egress (mean 55.76 Mbit/s)
Flow 2 ingress (mean 41.33 Mbit/s)
Flow 2 egress (mean 35.79 Mbit/s)
Flow 3 ingress (mean 36.44 Mbit/s)
Flow 3 egress (mean 29.49 Mbit/s)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 1649.51 ms)
Flow 2 (95th percentile 1176.02 ms)
Flow 3 (95th percentile 1415.48 ms)
Run 4: Statistics of PCC-Allegro

End at: 2019-03-27 13:20:09
Local clock offset: -4.027 ms
Remote clock offset: 3.946 ms

# Below is generated by plot.py at 2019-03-27 14:23:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.86 Mbit/s
95th percentile per-packet one-way delay: 1484.546 ms
Loss rate: 22.15%
-- Flow 1:
Average throughput: 56.22 Mbit/s
95th percentile per-packet one-way delay: 1409.403 ms
Loss rate: 26.41%
-- Flow 2:
Average throughput: 33.21 Mbit/s
95th percentile per-packet one-way delay: 1032.915 ms
Loss rate: 9.38%
-- Flow 3:
Average throughput: 29.52 Mbit/s
95th percentile per-packet one-way delay: 1649.838 ms
Loss rate: 20.91%
Run 4: Report of PCC-Allegro — Data Link

**Throughput (Mbps):**
- Flow 1 ingress (mean 75.95 Mbps)
- Flow 1 egress (mean 56.22 Mbps)
- Flow 2 ingress (mean 36.32 Mbps)
- Flow 2 egress (mean 33.21 Mbps)
- Flow 3 ingress (mean 36.67 Mbps)
- Flow 3 egress (mean 29.52 Mbps)

**Per packet one way delay (ms):**
- Flow 1 (95th percentile 1409.40 ms)
- Flow 2 (95th percentile 1032.91 ms)
- Flow 3 (95th percentile 1649.84 ms)
Run 5: Statistics of PCC-Allegro

End at: 2019-03-27 13:47:09
Local clock offset: -3.448 ms
Remote clock offset: 3.579 ms

# Below is generated by plot.py at 2019-03-27 14:23:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.14 Mbit/s
  95th percentile per-packet one-way delay: 1509.694 ms
  Loss rate: 23.28%
-- Flow 1:
  Average throughput: 56.12 Mbit/s
  95th percentile per-packet one-way delay: 1619.712 ms
  Loss rate: 26.20%
-- Flow 2:
  Average throughput: 35.25 Mbit/s
  95th percentile per-packet one-way delay: 1119.003 ms
  Loss rate: 15.79%
-- Flow 3:
  Average throughput: 29.55 Mbit/s
  95th percentile per-packet one-way delay: 1385.524 ms
  Loss rate: 22.16%
Run 5: Report of PCC-Allegro — Data Link

![Throughput and Delay Graphs]

- Flow 1 ingress (mean 75.61 Mbit/s)
- Flow 1 egress (mean 56.12 Mbit/s)
- Flow 2 ingress (mean 41.50 Mbit/s)
- Flow 2 egress (mean 35.25 Mbit/s)
- Flow 3 ingress (mean 37.30 Mbit/s)
- Flow 3 egress (mean 29.55 Mbit/s)

- Flow 1 95th percentile 1619.71 ms
- Flow 2 95th percentile 1119.00 ms
- Flow 3 95th percentile 1385.52 ms
Run 1: Statistics of PCC-Expr

Start at: 2019-03-27 12:03:37
End at: 2019-03-27 12:04:07
Local clock offset: -3.639 ms
Remote clock offset: 1.391 ms

# Below is generated by plot.py at 2019-03-27 14:24:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.95 Mbit/s
95th percentile per-packet one-way delay: 1213.232 ms
Loss rate: 9.05%
-- Flow 1:
Average throughput: 56.43 Mbit/s
95th percentile per-packet one-way delay: 1271.977 ms
Loss rate: 10.66%
-- Flow 2:
Average throughput: 39.13 Mbit/s
95th percentile per-packet one-way delay: 1060.747 ms
Loss rate: 7.50%
-- Flow 3:
Average throughput: 26.24 Mbit/s
95th percentile per-packet one-way delay: 236.827 ms
Loss rate: 2.42%
Run 1: Report of PCC-Expr — Data Link

**Throughput (Mb/s):**
- Flow 1 ingress (mean 62.80 Mb/s)
- Flow 1 egress (mean 56.43 Mb/s)
- Flow 2 ingress (mean 41.94 Mb/s)
- Flow 2 egress (mean 39.13 Mb/s)
- Flow 3 ingress (mean 26.42 Mb/s)
- Flow 3 egress (mean 26.24 Mb/s)

**Per-packet one way delay (ms):**
- Flow 1 (95th percentile 1271.98 ms)
- Flow 2 (95th percentile 1060.75 ms)
- Flow 3 (95th percentile 236.83 ms)
Run 2: Statistics of PCC-Expr

Start at: 2019-03-27 12:30:37
End at: 2019-03-27 12:31:07
Local clock offset: -4.444 ms
Remote clock offset: 1.381 ms

# Below is generated by plot.py at 2019-03-27 14:24:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.99 Mbit/s
95th percentile per-packet one-way delay: 1140.679 ms
Loss rate: 13.69%
-- Flow 1:
Average throughput: 56.73 Mbit/s
95th percentile per-packet one-way delay: 1191.450 ms
Loss rate: 18.12%
-- Flow 2:
Average throughput: 38.91 Mbit/s
95th percentile per-packet one-way delay: 817.310 ms
Loss rate: 5.75%
-- Flow 3:
Average throughput: 25.87 Mbit/s
95th percentile per-packet one-way delay: 249.090 ms
Loss rate: 3.45%
Run 2: Report of PCC-Expr — Data Link
Run 3: Statistics of PCC-Expr

Start at: 2019-03-27 12:57:42
End at: 2019-03-27 12:58:12
Local clock offset: -5.063 ms
Remote clock offset: -2.059 ms

# Below is generated by plot.py at 2019-03-27 14:24:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.93 Mbit/s
95th percentile per-packet one-way delay: 857.670 ms
Loss rate: 22.15%
-- Flow 1:
Average throughput: 56.71 Mbit/s
95th percentile per-packet one-way delay: 857.830 ms
Loss rate: 29.34%
-- Flow 2:
Average throughput: 38.96 Mbit/s
95th percentile per-packet one-way delay: 920.907 ms
Loss rate: 7.32%
-- Flow 3:
Average throughput: 25.66 Mbit/s
95th percentile per-packet one-way delay: 262.419 ms
Loss rate: 3.32%
Run 3: Report of PCC-Expr — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 79.80 Mb/s)  Flow 1 egress (mean 56.71 Mb/s)
Flow 2 ingress (mean 41.67 Mb/s)  Flow 2 egress (mean 38.96 Mb/s)
Flow 3 ingress (mean 26.08 Mb/s)  Flow 3 egress (mean 25.66 Mb/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 857.83 ms)  Flow 2 (95th percentile 920.91 ms)  Flow 3 (95th percentile 262.42 ms)
Run 4: Statistics of PCC-Expr

End at: 2019-03-27 13:25:16
Local clock offset: -3.781 ms
Remote clock offset: 4.061 ms

# Below is generated by plot.py at 2019-03-27 14:25:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.97 Mbit/s
95th percentile per-packet one-way delay: 863.363 ms
Loss rate: 22.19%
-- Flow 1:
Average throughput: 56.70 Mbit/s
95th percentile per-packet one-way delay: 863.560 ms
Loss rate: 29.49%
-- Flow 2:
Average throughput: 38.93 Mbit/s
95th percentile per-packet one-way delay: 912.264 ms
Loss rate: 6.99%
-- Flow 3:
Average throughput: 25.89 Mbit/s
95th percentile per-packet one-way delay: 243.316 ms
Loss rate: 3.32%
Run 4: Report of PCC-Expr — Data Link
Run 5: Statistics of PCC-Expr

Start at: 2019-03-27 13:51:46  
End at: 2019-03-27 13:52:16  
Local clock offset: -4.137 ms  
Remote clock offset: 4.982 ms  

# Below is generated by plot.py at 2019-03-27 14:25:10  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 90.91 Mbit/s  
95th percentile per-packet one-way delay: 841.558 ms  
Loss rate: 21.76%  
-- Flow 1:  
Average throughput: 56.66 Mbit/s  
95th percentile per-packet one-way delay: 855.938 ms  
Loss rate: 29.26%  
-- Flow 2:  
Average throughput: 38.93 Mbit/s  
95th percentile per-packet one-way delay: 800.613 ms  
Loss rate: 5.71%  
-- Flow 3:  
Average throughput: 25.88 Mbit/s  
95th percentile per-packet one-way delay: 243.553 ms  
Loss rate: 3.31%
Run 5: Report of PCC-Expr — Data Link

[Graph showing throughput and per-packet one-way delay over time for different flows]
Run 1: Statistics of QUIC Cubic

Start at: 2019-03-27 12:04:59
End at: 2019-03-27 12:05:29
Local clock offset: -2.888 ms
Remote clock offset: 2.562 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.77 Mbit/s
95th percentile per-packet one-way delay: 175.369 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 30.75 Mbit/s
95th percentile per-packet one-way delay: 138.876 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 24.84 Mbit/s
95th percentile per-packet one-way delay: 177.999 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 13.86 Mbit/s
95th percentile per-packet one-way delay: 429.647 ms
Loss rate: 1.63%
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2019-03-27 12:31:59
End at: 2019-03-27 12:32:29
Local clock offset: -5.304 ms
Remote clock offset: 7.489 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.44 Mbit/s
95th percentile per-packet one-way delay: 183.855 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 35.73 Mbit/s
95th percentile per-packet one-way delay: 144.282 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 23.77 Mbit/s
95th percentile per-packet one-way delay: 189.907 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 420.293 ms
Loss rate: 2.21%
Run 2: Report of QUIC Cubic — Data Link

![Throughput Graph]

![Latency Graph]

Legend:
- Flow 1 ingress (mean 35.73 Mbit/s)
- Flow 1 egress (mean 35.73 Mbit/s)
- Flow 2 ingress (mean 23.90 Mbit/s)
- Flow 2 egress (mean 23.77 Mbit/s)
- Flow 3 ingress (mean 12.10 Mbit/s)
- Flow 3 egress (mean 12.04 Mbit/s)

Legend (Latency Graph):
- Flow 1 (95th percentile 144.28 ms)
- Flow 2 (95th percentile 189.91 ms)
- Flow 3 (95th percentile 420.29 ms)
Run 3: Statistics of QUIC Cubic

Start at: 2019-03-27 12:59:05
End at: 2019-03-27 12:59:35
Local clock offset: -4.198 ms
Remote clock offset: -0.954 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.48 Mbit/s
95th percentile per-packet one-way delay: 187.229 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 35.09 Mbit/s
95th percentile per-packet one-way delay: 138.286 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 23.27 Mbit/s
95th percentile per-packet one-way delay: 193.548 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 15.17 Mbit/s
95th percentile per-packet one-way delay: 305.723 ms
Loss rate: 1.65%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

Start at: 2019-03-27 13:26:08
End at: 2019-03-27 13:26:38
Local clock offset: -3.752 ms
Remote clock offset: -0.764 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 54.17 Mbit/s
  95th percentile per-packet one-way delay: 200.578 ms
  Loss rate: 0.87%
-- Flow 1:
  Average throughput: 35.53 Mbit/s
  95th percentile per-packet one-way delay: 147.728 ms
  Loss rate: 0.55%
-- Flow 2:
  Average throughput: 20.55 Mbit/s
  95th percentile per-packet one-way delay: 211.813 ms
  Loss rate: 1.42%
-- Flow 3:
  Average throughput: 15.36 Mbit/s
  95th percentile per-packet one-way delay: 341.413 ms
  Loss rate: 1.61%
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Start at: 2019-03-27 13:53:08
Local clock offset: -4.245 ms
Remote clock offset: 1.191 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 54.44 Mbit/s
  95th percentile per-packet one-way delay: 208.026 ms
  Loss rate: 1.48%
-- Flow 1:
  Average throughput: 37.45 Mbit/s
  95th percentile per-packet one-way delay: 147.524 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 18.28 Mbit/s
  95th percentile per-packet one-way delay: 286.663 ms
  Loss rate: 1.79%
-- Flow 3:
  Average throughput: 14.90 Mbit/s
  95th percentile per-packet one-way delay: 401.829 ms
  Loss rate: 7.65%
Run 5: Report of QUIC Cubic — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 37.42 Mbit/s)
- Flow 1 egress (mean 37.45 Mbit/s)
- Flow 2 ingress (mean 18.45 Mbit/s)
- Flow 2 egress (mean 18.28 Mbit/s)
- Flow 3 ingress (mean 15.86 Mbit/s)
- Flow 3 egress (mean 14.90 Mbit/s)

![Packet Loss Graph]

- Flow 1 (95th percentile 147.52 ms)
- Flow 2 (95th percentile 286.66 ms)
- Flow 3 (95th percentile 401.83 ms)
Run 1: Statistics of SCReAM

Start at: 2019-03-27 12:11:23
End at: 2019-03-27 12:11:53
Local clock offset: -3.629 ms
Remote clock offset: 7.76 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 87.945 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.807 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.629 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.963 ms
Loss rate: 1.50%
Run 1: Report of SCReAM — Data Link
Run 2: Statistics of SCReAM

Start at: 2019-03-27 12:38:23
End at: 2019-03-27 12:38:53
Local clock offset: ~4.742 ms
Remote clock offset: 3.656 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 90.897 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.738 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.911 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.539 ms
Loss rate: 1.46%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2019-03-27 13:05:30
End at: 2019-03-27 13:06:00
Local clock offset: -4.896 ms
Remote clock offset: 3.011 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 95.542 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 95.551 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.085 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 88.923 ms
Loss rate: 1.50%
Run 3: Report of SCReAM — Data Link

**Throughput (Mbps)**

![Throughput Graph]

**Per-packet round-trip delay (ms)**

![Per-packet Graph]

Legend:
- 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)

Legend:
- Flow 1 (95th percentile 95.5 ms)
- Flow 2 (95th percentile 89.0 ms)
- Flow 3 (95th percentile 88.9 ms)
Run 4: Statistics of SCReAM

End at: 2019-03-27 13:33:02
Local clock offset: -3.611 ms
Remote clock offset: 4.242 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 96.149 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.562 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.830 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 96.170 ms
Loss rate: 1.84%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

End at: 2019-03-27 14:00:03
Local clock offset: -4.565 ms
Remote clock offset: 5.353 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 89.836 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.583 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.845 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.809 ms
Loss rate: 1.85%
Run 5: Report of SCReAM — Data Link

Throughput (Mbps)

Time (s)

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)

Delay (ms)

Time (s)

Flow 1 (95th percentile 89.58 ms) — Flow 2 (95th percentile 89.84 ms) — Flow 3 (95th percentile 89.81 ms)
Run 1: Statistics of Sprout

Start at: 2019-03-27 12:06:15
End at: 2019-03-27 12:06:45
Local clock offset: -3.654 ms
Remote clock offset: 2.671 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.75 Mbit/s
  95th percentile per-packet one-way delay: 97.134 ms
  Loss rate: 0.60%
-- Flow 1:
  Average throughput: 3.13 Mbit/s
  95th percentile per-packet one-way delay: 97.520 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 1.48 Mbit/s
  95th percentile per-packet one-way delay: 95.563 ms
  Loss rate: 1.15%
-- Flow 3:
  Average throughput: 1.98 Mbit/s
  95th percentile per-packet one-way delay: 95.971 ms
  Loss rate: 0.18%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2019-03-27 12:33:14
End at: 2019-03-27 12:33:44
Local clock offset: -5.393 ms
Remote clock offset: 4.95 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.97 Mbit/s
  95th percentile per-packet one-way delay: 96.928 ms
  Loss rate: 1.49%
-- Flow 1:
  Average throughput: 3.13 Mbit/s
  95th percentile per-packet one-way delay: 97.185 ms
  Loss rate: 1.05%
-- Flow 2:
  Average throughput: 1.40 Mbit/s
  95th percentile per-packet one-way delay: 92.588 ms
  Loss rate: 0.90%
-- Flow 3:
  Average throughput: 2.81 Mbit/s
  95th percentile per-packet one-way delay: 97.586 ms
  Loss rate: 3.51%
Run 2: Report of Sprout — Data Link

![Graph](image_url)

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 3.14 Mb/s)  
Flow 1 egress (mean 3.13 Mb/s)  
Flow 2 ingress (mean 1.41 Mb/s)  
Flow 2 egress (mean 1.40 Mb/s)  
Flow 3 ingress (mean 2.85 Mb/s)  
Flow 3 egress (mean 2.81 Mb/s)

![Graph](image_url)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 97.19 ms)  
Flow 2 (95th percentile 92.59 ms)  
Flow 3 (95th percentile 97.59 ms)
Run 3: Statistics of Sprout

Start at: 2019-03-27 13:00:21
End at: 2019-03-27 13:00:51
Local clock offset: -4.16 ms
Remote clock offset: 3.822 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.06 Mbit/s
95th percentile per-packet one-way delay: 98.798 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 2.84 Mbit/s
95th percentile per-packet one-way delay: 98.527 ms
Loss rate: 1.20%
-- Flow 2:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 93.656 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 103.681 ms
Loss rate: 4.13%
Run 3: Report of Sprout — Data Link

[Graph of throughput over time for different flows]

[Graph of packet end-to-end delay over time for different flows]
Run 4: Statistics of Sprout

End at: 2019-03-27 13:27:54
Local clock offset: -4.47 ms
Remote clock offset: 0.423 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.41 Mbit/s
95th percentile per-packet one-way delay: 97.437 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 3.22 Mbit/s
95th percentile per-packet one-way delay: 97.749 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 95.128 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 94.870 ms
Loss rate: 2.35%
Run 4: Report of Sprout — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 3.22 Mbps)
  - Flow 1 egress (mean 3.22 Mbps)
  - Flow 2 ingress (mean 1.15 Mbps)
  - Flow 2 egress (mean 1.16 Mbps)
  - Flow 3 ingress (mean 1.29 Mbps)
  - Flow 3 egress (mean 1.29 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 97.75 ms)
  - Flow 2 (95th percentile 95.13 ms)
  - Flow 3 (95th percentile 94.87 ms)
Run 5: Statistics of Sprout

End at: 2019-03-27 13:54:54
Local clock offset: -5.17 ms
Remote clock offset: 0.125 ms

# Below is generated by plot.py at 2019-03-27 14:25:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.99 Mbit/s
  95th percentile per-packet one-way delay: 99.038 ms
  Loss rate: 0.97%
-- Flow 1:
  Average throughput: 2.67 Mbit/s
  95th percentile per-packet one-way delay: 98.834 ms
  Loss rate: 0.78%
-- Flow 2:
  Average throughput: 2.99 Mbit/s
  95th percentile per-packet one-way delay: 99.562 ms
  Loss rate: 0.98%
-- Flow 3:
  Average throughput: 1.03 Mbit/s
  95th percentile per-packet one-way delay: 95.724 ms
  Loss rate: 2.44%
Run 5: Report of Sprout — Data Link

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

Legend:
- Flow 1 ingress (mean 2.68 Mbit/s)
- Flow 1 egress (mean 2.67 Mbit/s)
- Flow 2 ingress (mean 3.00 Mbit/s)
- Flow 2 egress (mean 2.99 Mbit/s)
- Flow 3 ingress (mean 1.04 Mbit/s)
- Flow 3 egress (mean 1.03 Mbit/s)

Per packet one way delay (ms)
Run 1: Statistics of TaoVA-100x

Start at: 2019-03-27 12:07:28
End at: 2019-03-27 12:07:58
Local clock offset: -2.866 ms
Remote clock offset: 2.423 ms

# Below is generated by plot.py at 2019-03-27 14:26:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.48 Mbit/s
  95th percentile per-packet one-way delay: 159.470 ms
  Loss rate: 0.70%
-- Flow 1:
  Average throughput: 49.28 Mbit/s
  95th percentile per-packet one-way delay: 152.448 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 36.85 Mbit/s
  95th percentile per-packet one-way delay: 167.318 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 29.53 Mbit/s
  95th percentile per-packet one-way delay: 158.804 ms
  Loss rate: 1.81%
Run 1: Report of TaoVA-100x — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress: mean 49.20 Mbps
  - Flow 1 egress: mean 49.28 Mbps
  - Flow 2 ingress: mean 36.83 Mbps
  - Flow 2 egress: mean 36.85 Mbps
  - Flow 3 ingress: mean 29.55 Mbps
  - Flow 3 egress: mean 29.53 Mbps

- **Packet Loss (ms)**
  - Flow 1 95th percentile: 152.45 ms
  - Flow 2 95th percentile: 167.32 ms
  - Flow 3 95th percentile: 158.80 ms
Run 2: Statistics of TaoVA-100x

Start at: 2019-03-27 12:34:27
End at: 2019-03-27 12:34:57
Local clock offset: -5.383 ms
Remote clock offset: 0.464 ms

# Below is generated by plot.py at 2019-03-27 14:26:13
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 84.00 Mbit/s
 95th percentile per-packet one-way delay: 158.637 ms
 Loss rate: 0.72%
-- Flow 1:
 Average throughput: 50.04 Mbit/s
 95th percentile per-packet one-way delay: 156.527 ms
 Loss rate: 0.43%
-- Flow 2:
 Average throughput: 36.87 Mbit/s
 95th percentile per-packet one-way delay: 162.927 ms
 Loss rate: 0.79%
-- Flow 3:
 Average throughput: 28.80 Mbit/s
 95th percentile per-packet one-way delay: 153.261 ms
 Loss rate: 2.03%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2019-03-27 13:01:34
End at: 2019-03-27 13:02:04
Local clock offset: -4.932 ms
Remote clock offset: -0.941 ms

# Below is generated by plot.py at 2019-03-27 14:26:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.23 Mbit/s
95th percentile per-packet one-way delay: 155.498 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 153.474 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 38.03 Mbit/s
95th percentile per-packet one-way delay: 158.488 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 29.61 Mbit/s
95th percentile per-packet one-way delay: 156.534 ms
Loss rate: 1.93%
Run 3: Report of TaoVA-100x — Data Link

![Throughput Graph](chart1.png)

- **Flow 1 Ingress** (mean 50.16 Mbit/s)
- **Flow 1 Egress** (mean 50.24 Mbit/s)
- **Flow 2 Ingress** (mean 38.01 Mbit/s)
- **Flow 2 Egress** (mean 38.03 Mbit/s)
- **Flow 3 Ingress** (mean 29.67 Mbit/s)
- **Flow 3 Egress** (mean 29.61 Mbit/s)

![Round Trip Time (RTT) Graph](chart2.png)

- **Flow 1 (95th percentile 153.47 ms)**
- **Flow 2 (95th percentile 158.49 ms)**
- **Flow 3 (95th percentile 156.53 ms)**
Run 4: Statistics of TaoVA-100x

End at: 2019-03-27 13:29:07
Local clock offset: -4.446 ms
Remote clock offset: 4.188 ms

# Below is generated by plot.py at 2019-03-27 14:26:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.51 Mbit/s
95th percentile per-packet one-way delay: 162.568 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 48.43 Mbit/s
95th percentile per-packet one-way delay: 158.587 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 36.84 Mbit/s
95th percentile per-packet one-way delay: 166.825 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 29.18 Mbit/s
95th percentile per-packet one-way delay: 164.887 ms
Loss rate: 1.79%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

End at: 2019-03-27 13:56:08
Local clock offset: -4.4 ms
Remote clock offset: 6.189 ms

# Below is generated by plot.py at 2019-03-27 14:26:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.67 Mbit/s
95th percentile per-packet one-way delay: 161.438 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 49.24 Mbit/s
95th percentile per-packet one-way delay: 158.384 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 37.01 Mbit/s
95th percentile per-packet one-way delay: 167.034 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 29.87 Mbit/s
95th percentile per-packet one-way delay: 147.342 ms
Loss rate: 2.38%
Run 5: Report of TaoVA-100x — Data Link

[Graph showing throughput and packet one-way delay for different flows]

- Flow 1 ingress (mean 49.26 Mbit/s)
- Flow 1 egress (mean 49.24 Mbit/s)
- Flow 2 ingress (mean 36.96 Mbit/s)
- Flow 2 egress (mean 37.01 Mbit/s)
- Flow 3 ingress (mean 30.16 Mbit/s)
- Flow 3 egress (mean 29.67 Mbit/s)

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

- Flow 1 (95th percentile 158.38 ms)
- Flow 2 (95th percentile 167.03 ms)
- Flow 3 (95th percentile 147.34 ms)
Run 1: Statistics of TCP Vegas

Start at: 2019-03-27 12:12:35
End at: 2019-03-27 12:13:05
Local clock offset: -2.925 ms
Remote clock offset: 1.675 ms

# Below is generated by plot.py at 2019-03-27 14:26:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.38 Mbit/s
95th percentile per-packet one-way delay: 127.710 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 43.22 Mbit/s
95th percentile per-packet one-way delay: 123.867 ms
Loss rate: 1.27%
-- Flow 2:
Average throughput: 24.94 Mbit/s
95th percentile per-packet one-way delay: 107.252 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 20.11 Mbit/s
95th percentile per-packet one-way delay: 179.606 ms
Loss rate: 1.96%
Run 1: Report of TCP Vegas — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress: mean 43.52 Mbps
  - Flow 1 egress: mean 43.22 Mbps
  - Flow 2 ingress: mean 24.97 Mbps
  - Flow 2 egress: mean 24.94 Mbps
  - Flow 3 ingress: mean 20.15 Mbps
  - Flow 3 egress: mean 20.11 Mbps

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile): 123.97 ms
  - Flow 2 (95th percentile): 107.75 ms
  - Flow 3 (95th percentile): 179.61 ms
Run 2: Statistics of TCP Vegas

End at: 2019-03-27 12:40:05
Local clock offset: -4.798 ms
Remote clock offset: 0.572 ms

# Below is generated by plot.py at 2019-03-27 14:26:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 54.88 Mbit/s
  95th percentile per-packet one-way delay: 180.402 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 29.41 Mbit/s
  95th percentile per-packet one-way delay: 214.238 ms
  Loss rate: 0.29%
-- Flow 2:
  Average throughput: 29.15 Mbit/s
  95th percentile per-packet one-way delay: 165.504 ms
  Loss rate: 0.74%
-- Flow 3:
  Average throughput: 18.56 Mbit/s
  95th percentile per-packet one-way delay: 163.542 ms
  Loss rate: 1.95%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2019-03-27 13:06:43
Local clock offset: -4.966 ms
Remote clock offset: -1.786 ms

# Below is generated by plot.py at 2019-03-27 14:26:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.32 Mbit/s
95th percentile per-packet one-way delay: 156.531 ms
Loss rate: 0.87%

-- Flow 1:
Average throughput: 34.79 Mbit/s
95th percentile per-packet one-way delay: 177.969 ms
Loss rate: 0.56%

-- Flow 2:
Average throughput: 33.48 Mbit/s
95th percentile per-packet one-way delay: 119.127 ms
Loss rate: 0.99%

-- Flow 3:
Average throughput: 22.20 Mbit/s
95th percentile per-packet one-way delay: 164.733 ms
Loss rate: 1.93%
Run 3: Report of TCP Vegas — Data Link

![Graph 1: Throughput (Mbps)]

Time (s)

Throughput (Mbps)

Flow 1 ingress (mean 34.79 Mbps)
Flow 1 egress (mean 34.79 Mbps)
Flow 2 ingress (mean 33.52 Mbps)
Flow 2 egress (mean 33.48 Mbps)
Flow 3 ingress (mean 22.29 Mbps)
Flow 3 egress (mean 22.20 Mbps)

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

Time (s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 177.97 ms)
Flow 2 (95th percentile 119.13 ms)
Flow 3 (95th percentile 164.73 ms)
Run 4: Statistics of TCP Vegas

Start at: 2019-03-27 13:33:45  
End at: 2019-03-27 13:34:15  
Local clock offset: -3.601 ms  
Remote clock offset: 0.343 ms

# Below is generated by plot.py at 2019-03-27 14:26:26  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 58.02 Mbit/s  
95th percentile per-packet one-way delay: 187.953 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 34.60 Mbit/s  
95th percentile per-packet one-way delay: 186.007 ms  
Loss rate: 0.41%  
-- Flow 2:  
Average throughput: 25.27 Mbit/s  
95th percentile per-packet one-way delay: 107.092 ms  
Loss rate: 1.00%  
-- Flow 3:  
Average throughput: 20.24 Mbit/s  
95th percentile per-packet one-way delay: 279.914 ms  
Loss rate: 1.73%
Run 4: Report of TCP Vegas — Data Link

![Graph of Throughput and Per-packet one-way delay](image)

- **Throughput (Mbps)**:
  - Flow 1 ingress (mean 34.54 Mbps)
  - Flow 1 egress (mean 34.60 Mbps)
  - Flow 2 ingress (mean 25.30 Mbps)
  - Flow 2 egress (mean 25.27 Mbps)
  - Flow 3 ingress (mean 20.24 Mbps)
  - Flow 3 egress (mean 20.24 Mbps)

- **Per-packet one-way delay (ms)**:
  - Flow 1 (95th percentile 186.01 ms)
  - Flow 2 (95th percentile 107.09 ms)
  - Flow 3 (95th percentile 279.91 ms)
Run 5: Statistics of TCP Vegas

Start at: 2019-03-27 14:00:45
End at: 2019-03-27 14:01:15
Local clock offset: -4.618 ms
Remote clock offset: 1.468 ms

# Below is generated by plot.py at 2019-03-27 14:26:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.35 Mbit/s
95th percentile per-packet one-way delay: 204.851 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 34.64 Mbit/s
95th percentile per-packet one-way delay: 195.129 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 30.16 Mbit/s
95th percentile per-packet one-way delay: 135.949 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 20.35 Mbit/s
95th percentile per-packet one-way delay: 294.076 ms
Loss rate: 2.08%
Run 5: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay](image)

- **Throughput**:
  - Flow 1 ingress (mean 34.58 Mbit/s)
  - Flow 1 egress (mean 34.64 Mbit/s)
  - Flow 2 ingress (mean 30.17 Mbit/s)
  - Flow 2 egress (mean 30.16 Mbit/s)
  - Flow 3 ingress (mean 20.42 Mbit/s)
  - Flow 3 egress (mean 20.35 Mbit/s)

- **Packet Delay**:
  - Flow 1 (95th percentile 195.13 ms)
  - Flow 2 (95th percentile 135.95 ms)
  - Flow 3 (95th percentile 294.08 ms)
Run 1: Statistics of Verus

Start at: 2019-03-27 12:19:06
End at: 2019-03-27 12:19:36
Local clock offset: -3.404 ms
Remote clock offset: 2.973 ms

# Below is generated by plot.py at 2019-03-27 14:26:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.09 Mbit/s
95th percentile per-packet one-way delay: 314.866 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 38.75 Mbit/s
95th percentile per-packet one-way delay: 264.072 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 27.81 Mbit/s
95th percentile per-packet one-way delay: 365.631 ms
Loss rate: 2.46%
-- Flow 3:
Average throughput: 30.44 Mbit/s
95th percentile per-packet one-way delay: 530.593 ms
Loss rate: 3.11%
Run 1: Report of Verus — Data Link

[Graph showing throughput and per-packet one-way delay for different flows over time]
Run 2: Statistics of Verus

Start at: 2019-03-27 12:46:06
End at: 2019-03-27 12:46:36
Local clock offset: -5.692 ms
Remote clock offset: -0.019 ms

# Below is generated by plot.py at 2019-03-27 14:26:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.69 Mbit/s
95th percentile per-packet one-way delay: 287.127 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 36.05 Mbit/s
95th percentile per-packet one-way delay: 283.167 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 44.35 Mbit/s
95th percentile per-packet one-way delay: 284.295 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 25.10 Mbit/s
95th percentile per-packet one-way delay: 304.169 ms
Loss rate: 3.38%
Run 2: Report of Verus — Data Link
Run 3: Statistics of Verus

End at: 2019-03-27 13:13:45
Local clock offset: -4.915 ms
Remote clock offset: 3.633 ms

# Below is generated by plot.py at 2019-03-27 14:26:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.61 Mbit/s
95th percentile per-packet one-way delay: 324.249 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 34.36 Mbit/s
95th percentile per-packet one-way delay: 413.295 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 29.12 Mbit/s
95th percentile per-packet one-way delay: 273.526 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 27.16 Mbit/s
95th percentile per-packet one-way delay: 308.738 ms
Loss rate: 3.01%
Run 3: Report of Verus — Data Link
Run 4: Statistics of Verus

Start at: 2019-03-27 13:40:15
End at: 2019-03-27 13:40:45
Local clock offset: -4.206 ms
Remote clock offset: -0.797 ms

# Below is generated by plot.py at 2019-03-27 14:26:58
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 66.41 Mbit/s
  95th percentile per-packet one-way delay: 284.891 ms
  Loss rate: 1.24%
-- Flow 1:
  Average throughput: 31.38 Mbit/s
  95th percentile per-packet one-way delay: 274.538 ms
  Loss rate: 0.31%
-- Flow 2:
  Average throughput: 39.01 Mbit/s
  95th percentile per-packet one-way delay: 288.660 ms
  Loss rate: 2.00%
-- Flow 3:
  Average throughput: 27.76 Mbit/s
  95th percentile per-packet one-way delay: 337.710 ms
  Loss rate: 2.23%
Run 4: Report of Verus — Data Link

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

- Flow 1 ingress (mean 31.41 Mbps)
- Flow 1 egress (mean 31.38 Mbps)
- Flow 2 ingress (mean 39.46 Mbps)
- Flow 2 egress (mean 39.01 Mbps)
- Flow 3 ingress (mean 28.31 Mbps)
- Flow 3 egress (mean 27.76 Mbps)

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

- Flow 1 (95th percentile 274.54 ms)
- Flow 2 (95th percentile 288.66 ms)
- Flow 3 (95th percentile 337.71 ms)
Run 5: Statistics of Verus

Start at: 2019-03-27 14:07:16
End at: 2019-03-27 14:07:46
Local clock offset: -5.553 ms
Remote clock offset: 5.363 ms

# Below is generated by plot.py at 2019-03-27 14:27:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.06 Mbit/s
95th percentile per-packet one-way delay: 401.022 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 37.20 Mbit/s
95th percentile per-packet one-way delay: 408.256 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 32.33 Mbit/s
95th percentile per-packet one-way delay: 410.363 ms
Loss rate: 1.93%
-- Flow 3:
Average throughput: 22.56 Mbit/s
95th percentile per-packet one-way delay: 365.992 ms
Loss rate: 3.68%
Run 5: Report of Verus — Data Link

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

Throughput (Mbps)

0 5 10 15 20 25 30

Time (s)

Flow 1 ingress (mean 37.35 Mbps)  Flow 1 egress (mean 37.20 Mbps)
Flow 2 ingress (mean 32.69 Mbps)  Flow 2 egress (mean 32.33 Mbps)
Flow 3 ingress (mean 23.03 Mbps)  Flow 3 egress (mean 22.56 Mbps)

Per-packet one-way delay (ms)

0 100 200 300 400 500 600 700

Time (s)

Flow 1 (95th percentile 408.26 ms)  Flow 2 (95th percentile 410.36 ms)  Flow 3 (95th percentile 365.99 ms)
Run 1: Statistics of PCC-Vivace

Start at: 2019-03-27 12:01:01  
End at: 2019-03-27 12:01:31  
Local clock offset: -2.856 ms  
Remote clock offset: 6.366 ms  

# Below is generated by plot.py at 2019-03-27 14:27:15  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 76.13 Mbit/s  
95th percentile per-packet one-way delay: 1132.466 ms  
Loss rate: 3.27%  
-- Flow 1:  
Average throughput: 47.56 Mbit/s  
95th percentile per-packet one-way delay: 1162.017 ms  
Loss rate: 3.54%  
-- Flow 2:  
Average throughput: 31.82 Mbit/s  
95th percentile per-packet one-way delay: 514.792 ms  
Loss rate: 2.78%  
-- Flow 3:  
Average throughput: 22.87 Mbit/s  
95th percentile per-packet one-way delay: 342.938 ms  
Loss rate: 2.98%
Run 1: Report of PCC-Vivace — Data Link

![Graph 1](image1.png)

![Graph 2](image2.png)
Run 2: Statistics of PCC-Vivace

Start at: 2019-03-27 12:28:01
End at: 2019-03-27 12:28:31
Local clock offset: -5.139 ms
Remote clock offset: 3.3 ms

# Below is generated by plot.py at 2019-03-27 14:27:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.76 Mbit/s
  95th percentile per-packet one-way delay: 1970.992 ms
  Loss rate: 5.89%
-- Flow 1:
  Average throughput: 51.68 Mbit/s
  95th percentile per-packet one-way delay: 2048.156 ms
  Loss rate: 6.96%
-- Flow 2:
  Average throughput: 31.32 Mbit/s
  95th percentile per-packet one-way delay: 792.759 ms
  Loss rate: 4.20%
-- Flow 3:
  Average throughput: 22.39 Mbit/s
  95th percentile per-packet one-way delay: 358.305 ms
  Loss rate: 2.91%
Run 3: Statistics of PCC-Vivace

Start at: 2019-03-27 12:55:03
Local clock offset: -5.082 ms
Remote clock offset: 3.126 ms

# Below is generated by plot.py at 2019-03-27 14:27:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.17 Mbit/s
  95th percentile per-packet one-way delay: 473.149 ms
  Loss rate: 2.64%
-- Flow 1:
  Average throughput: 51.38 Mbit/s
  95th percentile per-packet one-way delay: 470.420 ms
  Loss rate: 1.73%
-- Flow 2:
  Average throughput: 30.12 Mbit/s
  95th percentile per-packet one-way delay: 520.681 ms
  Loss rate: 3.41%
-- Flow 3:
  Average throughput: 23.93 Mbit/s
  95th percentile per-packet one-way delay: 175.547 ms
  Loss rate: 6.44%
Run 4: Statistics of PCC-Vivace

Local clock offset: -4.63 ms
Remote clock offset: 3.986 ms

# Below is generated by plot.py at 2019-03-27 14:27:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.81 Mbit/s
95th percentile per-packet one-way delay: 1941.812 ms
Loss rate: 5.09%
-- Flow 1:
Average throughput: 50.89 Mbit/s
95th percentile per-packet one-way delay: 2063.407 ms
Loss rate: 5.68%
-- Flow 2:
Average throughput: 31.24 Mbit/s
95th percentile per-packet one-way delay: 810.691 ms
Loss rate: 4.24%
-- Flow 3:
Average throughput: 22.09 Mbit/s
95th percentile per-packet one-way delay: 361.893 ms
Loss rate: 3.27%
Run 4: Report of PCC-Vivace — Data Link

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

![Graph 2: Per-packet one-way delay (ms)](image2)
Run 5: Statistics of PCC-Vivace

Local clock offset: ~4.602 ms
Remote clock offset: 1.059 ms

# Below is generated by plot.py at 2019-03-27 14:27:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 80.75 Mbit/s
  95th percentile per-packet one-way delay: 1963.863 ms
  Loss rate: 5.33%
-- Flow 1:
  Average throughput: 52.25 Mbit/s
  95th percentile per-packet one-way delay: 2048.756 ms
  Loss rate: 6.06%
-- Flow 2:
  Average throughput: 31.98 Mbit/s
  95th percentile per-packet one-way delay: 807.926 ms
  Loss rate: 4.23%
-- Flow 3:
  Average throughput: 22.32 Mbit/s
  95th percentile per-packet one-way delay: 347.620 ms
  Loss rate: 3.11%
Run 5: Report of PCC-Vivace — Data Link

Throughput (Mbps):

- Flow 1 ingress (mean 55.30 Mbps)
- Flow 1 egress (mean 52.25 Mbps)
- Flow 2 ingress (mean 33.10 Mbps)
- Flow 2 egress (mean 31.98 Mbps)
- Flow 3 ingress (mean 22.64 Mbps)
- Flow 3 egress (mean 22.32 Mbps)

Per-packet one-way delay (ms):

- Flow 1 (95th percentile 2048.76 ms)
- Flow 2 (95th percentile 807.93 ms)
- Flow 3 (95th percentile 347.62 ms)
Run 1: Statistics of WebRTC media

Local clock offset: -3.745 ms
Remote clock offset: 1.681 ms

# Below is generated by plot.py at 2019-03-27 14:27:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.93 Mbit/s
95th percentile per-packet one-way delay: 101.890 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 101.989 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 95.715 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 96.027 ms
Loss rate: 1.94%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-03-27 12:48:40
End at: 2019-03-27 12:49:10
Local clock offset: ~4.643 ms
Remote clock offset: 3.601 ms

# Below is generated by plot.py at 2019-03-27 14:27:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 90.278 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 90.288 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 90.302 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 89.996 ms
Loss rate: 0.92%
Run 2: Report of WebRTC media — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 1.70 Mbps)**
- **Flow 1 egress (mean 1.70 Mbps)**
- **Flow 2 ingress (mean 0.94 Mbps)**
- **Flow 2 egress (mean 0.94 Mbps)**
- **Flow 3 ingress (mean 0.38 Mbps)**
- **Flow 3 egress (mean 0.38 Mbps)**

---

**Packet one-way delay (ms)**

- • **Flow 1 (95th percentile 90.29 ms)**
- • **Flow 2 (95th percentile 90.30 ms)**
- • **Flow 3 (95th percentile 90.00 ms)**

---
Run 3: Statistics of WebRTC media

Start at: 2019-03-27 13:15:49
End at: 2019-03-27 13:16:19
Local clock offset: -4.945 ms
Remote clock offset: -1.089 ms

# Below is generated by plot.py at 2019-03-27 14:27:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.95 Mbit/s
  95th percentile per-packet one-way delay: 100.511 ms
  Loss rate: 0.67%
-- Flow 1:
  Average throughput: 1.68 Mbit/s
  95th percentile per-packet one-way delay: 94.447 ms
  Loss rate: 0.35%
-- Flow 2:
  Average throughput: 0.92 Mbit/s
  95th percentile per-packet one-way delay: 100.741 ms
  Loss rate: 0.77%
-- Flow 3:
  Average throughput: 0.38 Mbit/s
  95th percentile per-packet one-way delay: 94.515 ms
  Loss rate: 1.87%
Run 3: Report of WebRTC media — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 1.68 Mbps)
  - Flow 1 egress (mean 1.68 Mbps)
  - Flow 2 ingress (mean 0.92 Mbps)
  - Flow 2 egress (mean 0.92 Mbps)
  - Flow 3 ingress (mean 0.38 Mbps)
  - Flow 3 egress (mean 0.38 Mbps)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 94.45 ms)
  - Flow 2 (95th percentile 100.74 ms)
  - Flow 3 (95th percentile 94.52 ms)
Run 4: Statistics of WebRTC media

End at: 2019-03-27 13:43:19
Local clock offset: -3.37 ms
Remote clock offset: -0.427 ms

# Below is generated by plot.py at 2019-03-27 14:27:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.97 Mbit/s
95th percentile per-packet one-way delay: 101.571 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 95.373 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 101.776 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 95.575 ms
Loss rate: 0.97%
Run 4: Report of WebRTC media — Data Link

![Throughput and Delay Graphs]

- Flow 1 ingress (mean 1.69 Mbit/s)
- Flow 1 egress (mean 1.70 Mbit/s)
- Flow 2 ingress (mean 0.92 Mbit/s)
- Flow 2 egress (mean 0.92 Mbit/s)
- Flow 3 ingress (mean 0.37 Mbit/s)
- Flow 3 egress (mean 0.37 Mbit/s)
Run 5: Statistics of WebRTC media

Start at: 2019-03-27 14:09:50
End at: 2019-03-27 14:10:20
Local clock offset: -4.912 ms
Remote clock offset: 1.654 ms

# Below is generated by plot.py at 2019-03-27 14:27:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 99.929 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 94.145 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 94.295 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 100.526 ms
Loss rate: 2.92%
Run 5: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 1.70 Mbit/s)
- Flow 1 egress (mean 1.70 Mbit/s)
- Flow 2 ingress (mean 0.94 Mbit/s)
- Flow 2 egress (mean 0.94 Mbit/s)
- Flow 3 ingress (mean 0.37 Mbit/s)
- Flow 3 egress (mean 0.36 Mbit/s)

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

- Flow 1 (95th percentile 94.14 ms)
- Flow 2 (95th percentile 94.30 ms)
- Flow 3 (95th percentile 100.53 ms)