Pantheon Report

Generated at 2019-02-21 06:47:20 (UTC).
Data path: GCE Sydney on ens4 (local) → GCE Tokyo on ens4 (remote).
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 time.google.com and have been applied to correct the timestamps in logs.

System info:
Linux 4.15.0-1026-gcp
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 @ d6da1459332fcee56963885d7e6ba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e694aa89e93b032143cedbfe58e562f4
third_party/indigo @ 2601c9e4a9d58d38dc4d4ce0deb9f90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
third_party/pcc @ 1af9c958fa0d6618b623c091a55f8c872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8ac08fab92c4eb24f974ab
third_party/PROTO-QUIC @ 77961f1a82733a86b42f1bc8143ebc978f3c5f42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1969747e1da3dbd2
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 @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
test from GCE Sydney to GCE Tokyo, 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>TCP BBR</td>
<td>5</td>
<td>511.37 477.29 437.02</td>
<td>166.59 166.72 171.14</td>
<td>0.89 1.08 1.82</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>250.04 264.53 256.32</td>
<td>64.23 67.83 72.34</td>
<td>0.00 0.00 0.04</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>5</td>
<td>526.73 463.05 444.07</td>
<td>102.57 96.41 135.49</td>
<td>0.04 0.07 0.29</td>
</tr>
<tr>
<td>FillP</td>
<td>5</td>
<td>581.05 395.57 259.46</td>
<td>80.38 64.42 63.84</td>
<td>0.17 0.04 0.06</td>
</tr>
<tr>
<td>FillP-Sheep</td>
<td>5</td>
<td>533.11 323.10 242.46</td>
<td>70.74 61.76 62.80</td>
<td>0.07 0.03 0.04</td>
</tr>
<tr>
<td>Indigo</td>
<td>5</td>
<td>192.24 194.71 160.97</td>
<td>60.09 59.59 60.44</td>
<td>0.00 0.01 0.03</td>
</tr>
<tr>
<td>Indigo-MusesC3</td>
<td>5</td>
<td>429.69 372.85 271.03</td>
<td>61.03 61.58 60.04</td>
<td>0.00 0.00 0.00</td>
</tr>
<tr>
<td>Indigo-MusesC5</td>
<td>5</td>
<td>455.85 403.75 264.13</td>
<td>65.87 80.33 59.97</td>
<td>0.03 0.08 0.02</td>
</tr>
<tr>
<td>Indigo-MusesD</td>
<td>5</td>
<td>386.23 353.69 262.20</td>
<td>61.87 64.87 60.10</td>
<td>0.01 0.01 0.01</td>
</tr>
<tr>
<td>Indigo-MusesT</td>
<td>5</td>
<td>490.55 405.13 222.36</td>
<td>76.41 72.72 61.43</td>
<td>0.01 0.01 0.02</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>5</td>
<td>26.11 17.50 9.22</td>
<td>59.51 58.22 58.09</td>
<td>0.00 0.02 0.00</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>5</td>
<td>406.24 310.96 256.77</td>
<td>190.49 150.00 143.58</td>
<td>5.09 1.71 4.18</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>5</td>
<td>303.27 249.08 140.39</td>
<td>129.78 132.61 76.50</td>
<td>1.74 0.92 0.02</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>5</td>
<td>36.64 50.46 33.17</td>
<td>58.30 57.52 58.22</td>
<td>0.00 0.00 0.50</td>
</tr>
<tr>
<td>SCReAM</td>
<td>5</td>
<td>0.22 0.22 0.22</td>
<td>58.45 58.18 57.57</td>
<td>0.00 0.00 0.07</td>
</tr>
<tr>
<td>Sprout</td>
<td>5</td>
<td>7.49 7.13 6.53</td>
<td>58.95 59.67 60.53</td>
<td>0.00 0.00 0.00</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>5</td>
<td>222.68 215.90 213.14</td>
<td>58.76 59.53 58.43</td>
<td>0.01 0.01 0.00</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>5</td>
<td>436.88 448.51 389.30</td>
<td>68.18 76.04 73.34</td>
<td>0.01 0.01 0.24</td>
</tr>
<tr>
<td>Verus</td>
<td>5</td>
<td>147.13 123.66 74.24</td>
<td>122.20 116.02 97.54</td>
<td>0.03 1.06 0.01</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>5</td>
<td>336.04 215.57 145.83</td>
<td>65.31 59.05 66.26</td>
<td>0.01 0.00 0.01</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>5</td>
<td>1.24 0.55 0.23</td>
<td>57.44 57.38 57.21</td>
<td>0.00 0.00 0.01</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2019-02-21 00:06:33
End at: 2019-02-21 00:07:03
Local clock offset: 0.885 ms
Remote clock offset: -1.547 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1002.09 Mbit/s
95th percentile per-packet one-way delay: 167.350 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 522.79 Mbit/s
95th percentile per-packet one-way delay: 170.333 ms
Loss rate: 1.69%
-- Flow 2:
Average throughput: 488.41 Mbit/s
95th percentile per-packet one-way delay: 170.736 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 462.46 Mbit/s
95th percentile per-packet one-way delay: 118.341 ms
Loss rate: 0.11%
Run 1: Report of TCP BBR — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 531.72 Mbps)
- Flow 1 egress (mean 522.79 Mbps)
- Flow 2 ingress (mean 493.37 Mbps)
- Flow 2 egress (mean 488.41 Mbps)
- Flow 3 ingress (mean 463.02 Mbps)
- Flow 3 egress (mean 462.46 Mbps)

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

- Flow 1 (95th percentile 170.33 ms)
- Flow 2 (95th percentile 170.74 ms)
- Flow 3 (95th percentile 118.34 ms)
Run 2: Statistics of TCP BBR

Start at: 2019-02-21 00:50:53
End at: 2019-02-21 00:51:23
Local clock offset: -0.152 ms
Remote clock offset: 1.228 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 989.56 Mbit/s
95th percentile per-packet one-way delay: 168.034 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 523.44 Mbit/s
95th percentile per-packet one-way delay: 172.128 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 478.40 Mbit/s
95th percentile per-packet one-way delay: 150.396 ms
Loss rate: 1.21%
-- Flow 3:
Average throughput: 448.79 Mbit/s
95th percentile per-packet one-way delay: 153.477 ms
Loss rate: 0.04%
Run 2: Report of TCP BBR — Data Link

[Graphs showing throughput and packet delay over time for different flows.]
Run 3: Statistics of TCP BBR

Start at: 2019-02-21 01:35:01
End at: 2019-02-21 01:35:31
Local clock offset: 0.078 ms
Remote clock offset: -0.197 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 948.94 Mbit/s
95th percentile per-packet one-way delay: 165.309 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 495.87 Mbit/s
95th percentile per-packet one-way delay: 166.441 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 460.94 Mbit/s
95th percentile per-packet one-way delay: 176.037 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 437.87 Mbit/s
95th percentile per-packet one-way delay: 156.470 ms
Loss rate: 1.56%
Run 3: Report of TCP BBR — Data Link

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**Throughput (Mbps):**

- Flow 1 ingress (mean 590.72 Mbps)
- Flow 1 egress (mean 495.87 Mbps)
- Flow 2 ingress (mean 497.29 Mbps)
- Flow 2 egress (mean 460.94 Mbps)
- Flow 3 ingress (mean 444.87 Mbps)
- Flow 3 egress (mean 437.87 Mbps)

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

- Flow 1 (95th percentile 166.44 ms)
- Flow 2 (95th percentile 176.04 ms)
- Flow 3 (95th percentile 156.47 ms)
Run 4: Statistics of TCP BBR

Start at: 2019-02-21 02:19:01
End at: 2019-02-21 02:19:31
Local clock offset: 0.269 ms
Remote clock offset: 0.698 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 941.28 Mbit/s
95th percentile per-packet one-way delay: 185.229 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 495.73 Mbit/s
95th percentile per-packet one-way delay: 149.290 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 470.08 Mbit/s
95th percentile per-packet one-way delay: 176.045 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 398.63 Mbit/s
95th percentile per-packet one-way delay: 225.315 ms
Loss rate: 4.01%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2019-02-21 03:01:45
End at: 2019-02-21 03:02:15
Local clock offset: -0.271 ms
Remote clock offset: -1.556 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 989.87 Mbit/s
 95th percentile per-packet one-way delay: 179.128 ms
 Loss rate: 0.91%
-- Flow 1:
 Average throughput: 519.04 Mbit/s
 95th percentile per-packet one-way delay: 174.768 ms
 Loss rate: 0.59%
-- Flow 2:
 Average throughput: 488.63 Mbit/s
 95th percentile per-packet one-way delay: 160.371 ms
 Loss rate: 0.29%
-- Flow 3:
 Average throughput: 437.35 Mbit/s
 95th percentile per-packet one-way delay: 202.092 ms
 Loss rate: 3.38%
Run 5: Report of TCP BBR — Data Link

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

Flow 1 ingress (mean 522.07 Mbit/s)  Flow 1 egress (mean 519.04 Mbit/s)
Flow 2 ingress (mean 490.05 Mbit/s)  Flow 2 egress (mean 488.63 Mbit/s)
Flow 3 ingress (mean 452.89 Mbit/s)  Flow 3 egress (mean 437.35 Mbit/s)

![Graph 2: Delay per Packet over Time](image2)

Flow 1 (95th percentile 174.77 ms)  Flow 2 (95th percentile 160.37 ms)  Flow 3 (95th percentile 202.09 ms)
Run 1: Statistics of Copa

Start at: 2019-02-21 00:25:11
End at: 2019-02-21 00:25:41
Local clock offset: -0.047 ms
Remote clock offset: -0.501 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics

-- Total of 3 flows:
Average throughput: 520.92 Mbit/s
95th percentile per-packet one-way delay: 65.880 ms
Loss rate: 0.00%

-- Flow 1:
Average throughput: 265.47 Mbit/s
95th percentile per-packet one-way delay: 61.045 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 261.08 Mbit/s
95th percentile per-packet one-way delay: 68.936 ms
Loss rate: 0.00%

-- Flow 3:
Average throughput: 245.53 Mbit/s
95th percentile per-packet one-way delay: 68.925 ms
Loss rate: 0.00%
Run 1: Report of Copa — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 265.47 Mbps)  Flow 1 egress (mean 265.47 Mbps)
Flow 2 ingress (mean 261.08 Mbps)  Flow 2 egress (mean 261.08 Mbps)
Flow 3 ingress (mean 245.54 Mbps)  Flow 3 egress (mean 245.53 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 61.05 ms)  Flow 2 (95th percentile 68.94 ms)  Flow 3 (95th percentile 68.92 ms)
Run 2: Statistics of Copa

Start at: 2019-02-21 01:09:20
End at: 2019-02-21 01:09:50
Local clock offset: -0.042 ms
Remote clock offset: 1.197 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 529.19 Mbit/s
95th percentile per-packet one-way delay: 69.912 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 261.04 Mbit/s
95th percentile per-packet one-way delay: 65.738 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 273.70 Mbit/s
95th percentile per-packet one-way delay: 78.401 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 258.42 Mbit/s
95th percentile per-packet one-way delay: 70.555 ms
Loss rate: 0.04%
Run 2: Report of Copa — Data Link

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

- Flow 1 ingress (mean 261.07 Mbps)
- Flow 1 egress (mean 261.04 Mbps)
- Flow 2 ingress (mean 273.71 Mbps)
- Flow 2 egress (mean 273.70 Mbps)
- Flow 3 ingress (mean 258.56 Mbps)
- Flow 3 egress (mean 258.42 Mbps)

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

- Flow 1 (95th percentile 65.74 ms)
- Flow 2 (95th percentile 78.40 ms)
- Flow 3 (95th percentile 70.56 ms)
Run 3: Statistics of Copa

Start at: 2019-02-21 01:53:43
End at: 2019-02-21 01:54:13
Local clock offset: -0.027 ms
Remote clock offset: -0.294 ms

# Below is generated by plot.py at 2019-02-21 04:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 487.55 Mbit/s
95th percentile per-packet one-way delay: 65.548 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 231.50 Mbit/s
95th percentile per-packet one-way delay: 61.680 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 250.99 Mbit/s
95th percentile per-packet one-way delay: 60.700 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 267.28 Mbit/s
95th percentile per-packet one-way delay: 75.856 ms
Loss rate: 0.00%
Run 3: Report of Copa — Data Link

![Data Link Graphs]

- Flow 1 ingress (mean 231.50 Mbit/s)
- Flow 1 egress (mean 231.50 Mbit/s)
- Flow 2 ingress (mean 250.99 Mbit/s)
- Flow 2 egress (mean 250.99 Mbit/s)
- Flow 3 ingress (mean 267.27 Mbit/s)
- Flow 3 egress (mean 267.28 Mbit/s)

![Packet Delay Graphs]

- Flow 1 (95th percentile 61.68 ms)
- Flow 2 (95th percentile 60.70 ms)
- Flow 3 (95th percentile 75.86 ms)
Run 4: Statistics of Copa

Start at: 2019-02-21 02:36:59
End at: 2019-02-21 02:37:29
Local clock offset: -0.038 ms
Remote clock offset: -0.896 ms

# Below is generated by plot.py at 2019-02-21 04:35:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 558.12 Mbit/s
95th percentile per-packet one-way delay: 69.565 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 288.29 Mbit/s
95th percentile per-packet one-way delay: 66.905 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 280.27 Mbit/s
95th percentile per-packet one-way delay: 64.196 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 250.18 Mbit/s
95th percentile per-packet one-way delay: 80.802 ms
Loss rate: 0.15%
Run 4: Report of Copa — Data Link

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[Diagrams showing network performance metrics with annotations for different flows and their respective mean and 95th percentile delays.]
Run 5: Statistics of Copa

Start at: 2019-02-21 03:21:10  
End at: 2019-02-21 03:21:40  
Local clock offset: -0.085 ms  
Remote clock offset: 1.329 ms

# Below is generated by plot.py at 2019-02-21 04:35:36  
# Datalink statistics

-- Total of 3 flows:
Average throughput: 461.24 Mbit/s
95th percentile per-packet one-way delay: 66.030 ms
Loss rate: 0.00%

-- Flow 1:
Average throughput: 203.89 Mbit/s
95th percentile per-packet one-way delay: 65.777 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 256.60 Mbit/s
95th percentile per-packet one-way delay: 66.922 ms
Loss rate: 0.00%

-- Flow 3:
Average throughput: 260.19 Mbit/s
95th percentile per-packet one-way delay: 65.569 ms
Loss rate: 0.00%
Run 5: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2019-02-21 00:27:37
End at: 2019-02-21 00:28:07
Local clock offset: -0.053 ms
Remote clock offset: -1.459 ms

# Below is generated by plot.py at 2019-02-21 04:35:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 966.38 Mbit/s
95th percentile per-packet one-way delay: 93.329 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 530.67 Mbit/s
95th percentile per-packet one-way delay: 86.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 425.78 Mbit/s
95th percentile per-packet one-way delay: 70.224 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 457.99 Mbit/s
95th percentile per-packet one-way delay: 108.778 ms
Loss rate: 0.01%
Run 1: Report of TCP Cubic — Data Link

![Graph of throughput and latency for different flows over time. The graphs show the throughput and latency for three different flows, with each flow represented by a different line color. The throughput graph shows the variation in throughput over time, while the latency graph shows the variation in latency over time.]
Run 2: Statistics of TCP Cubic

Start at: 2019-02-21 01:11:47
End at: 2019-02-21 01:12:17
Local clock offset: -0.38 ms
Remote clock offset: 0.358 ms

# Below is generated by plot.py at 2019-02-21 04:35:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 970.65 Mbit/s
  95th percentile per-packet one-way delay: 132.722 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 548.28 Mbit/s
  95th percentile per-packet one-way delay: 138.146 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 436.42 Mbit/s
  95th percentile per-packet one-way delay: 73.613 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 396.29 Mbit/s
  95th percentile per-packet one-way delay: 151.985 ms
  Loss rate: 0.00%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2019-02-21 01:56:23
End at: 2019-02-21 01:56:53
Local clock offset: 0.153 ms
Remote clock offset: 0.603 ms

# Below is generated by plot.py at 2019-02-21 04:37:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1086.79 Mbit/s
95th percentile per-packet one-way delay: 153.348 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 570.93 Mbit/s
95th percentile per-packet one-way delay: 115.879 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 542.17 Mbit/s
95th percentile per-packet one-way delay: 158.816 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 465.60 Mbit/s
95th percentile per-packet one-way delay: 163.085 ms
Loss rate: 0.71%
Run 3: Report of TCP Cubic — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 571.91 Mbit/s)
Flow 1 egress (mean 570.93 Mbit/s)
Flow 2 ingress (mean 543.49 Mbit/s)
Flow 2 egress (mean 542.17 Mbit/s)
Flow 3 ingress (mean 468.81 Mbit/s)
Flow 3 egress (mean 465.60 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 115.88 ms)
Flow 2 (95th percentile 158.82 ms)
Flow 3 (95th percentile 163.09 ms)
Run 4: Statistics of TCP Cubic

Start at: 2019-02-21 02:39:31
End at: 2019-02-21 02:40:01
Local clock offset: -0.424 ms
Remote clock offset: -0.792 ms

# Below is generated by plot.py at 2019-02-21 04:37:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 841.62 Mbit/s
95th percentile per-packet one-way delay: 96.359 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 452.33 Mbit/s
95th percentile per-packet one-way delay: 82.516 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 363.48 Mbit/s
95th percentile per-packet one-way delay: 80.129 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 442.53 Mbit/s
95th percentile per-packet one-way delay: 108.083 ms
Loss rate: 0.36%
Run 4: Report of TCP Cubic — Data Link
Run 5: Statistics of TCP Cubic

Start at: 2019-02-21 03:23:32
End at: 2019-02-21 03:24:02
Local clock offset: -0.007 ms
Remote clock offset: -1.515 ms

# Below is generated by plot.py at 2019-02-21 04:37:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1048.19 Mbit/s
95th percentile per-packet one-way delay: 105.757 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 531.43 Mbit/s
95th percentile per-packet one-way delay: 90.283 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 547.39 Mbit/s
95th percentile per-packet one-way delay: 99.285 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 457.94 Mbit/s
95th percentile per-packet one-way delay: 145.520 ms
Loss rate: 0.36%
Run 5: Report of TCP Cubic — Data Link

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

- **Flow 1** (ingress mean: 531.55 Mbit/s, egress mean: 531.43 Mbit/s)
- **Flow 2** (ingress mean: 548.06 Mbit/s, egress mean: 547.39 Mbit/s)
- **Flow 3** (ingress mean: 459.44 Mbit/s, egress mean: 457.04 Mbit/s)

![Graph showing network packet delay](image)

- **Flow 1** (95th percentile: 90.28 ms)
- **Flow 2** (95th percentile: 99.28 ms)
- **Flow 3** (95th percentile: 145.52 ms)
Run 1: Statistics of FillP

Start at: 2019-02-21 00:39:53
End at: 2019-02-21 00:40:23
Local clock offset: -0.168 ms
Remote clock offset: -0.579 ms

# Below is generated by plot.py at 2019-02-21 04:38:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 917.22 Mbit/s
95th percentile per-packet one-way delay: 64.900 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 576.01 Mbit/s
95th percentile per-packet one-way delay: 65.081 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 392.18 Mbit/s
95th percentile per-packet one-way delay: 65.054 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 240.42 Mbit/s
95th percentile per-packet one-way delay: 58.576 ms
Loss rate: 0.01%
Run 1: Report of FillP — Data Link

![Graph showing throughput over time for different flows and ingress/egress rates.]

![Graph showing packet delay over time for different flows and 95th percentile delays.]

Flow 1 ingress (mean 576.16 Mbit/s) - Flow 1 egress (mean 576.01 Mbit/s)
Flow 2 ingress (mean 392.25 Mbit/s) - Flow 2 egress (mean 392.18 Mbit/s)
Flow 3 ingress (mean 240.42 Mbit/s) - Flow 3 egress (mean 240.42 Mbit/s)

Flow 1 (95th percentile 65.08 ms) - Flow 2 (95th percentile 65.05 ms) - Flow 3 (95th percentile 58.58 ms)
Run 2: Statistics of FillP

Start at: 2019-02-21 01:24:03
End at: 2019-02-21 01:24:33
Local clock offset: -0.324 ms
Remote clock offset: 0.564 ms

# Below is generated by plot.py at 2019-02-21 04:53:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 890.16 Mbit/s
95th percentile per-packet one-way delay: 94.618 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 567.16 Mbit/s
95th percentile per-packet one-way delay: 109.498 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 373.66 Mbit/s
95th percentile per-packet one-way delay: 64.926 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 224.24 Mbit/s
95th percentile per-packet one-way delay: 60.887 ms
Loss rate: 0.06%
Run 2: Report of FillIP — Data Link

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

- Flow 1 ingress (mean 571.37 Mbps)
- Flow 1 egress (mean 567.16 Mbps)
- Flow 2 ingress (mean 373.77 Mbps)
- Flow 2 egress (mean 373.66 Mbps)
- Flow 3 ingress (mean 224.37 Mbps)
- Flow 3 egress (mean 224.24 Mbps)

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

- Flow 1 (95th percentile 109.50 ms)
- Flow 2 (95th percentile 64.93 ms)
- Flow 3 (95th percentile 60.89 ms)
Run 3: Statistics of FillP

Start at: 2019-02-21 02:08:19
End at: 2019-02-21 02:08:49
Local clock offset: -0.352 ms
Remote clock offset: -0.267 ms

# Below is generated by plot.py at 2019-02-21 04:55:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 956.16 Mbit/s
95th percentile per-packet one-way delay: 75.330 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 588.27 Mbit/s
95th percentile per-packet one-way delay: 78.909 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 417.79 Mbit/s
95th percentile per-packet one-way delay: 61.237 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 271.31 Mbit/s
95th percentile per-packet one-way delay: 66.636 ms
Loss rate: 0.04%
Run 3: Report of FillP — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 Ingress** (mean 588.55 Mbps)
- **Flow 1 Egress** (mean 588.27 Mbps)
- **Flow 2 Ingress** (mean 417.94 Mbps)
- **Flow 2 Egress** (mean 417.79 Mbps)
- **Flow 3 Ingress** (mean 271.41 Mbps)
- **Flow 3 Egress** (mean 271.31 Mbps)

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

- **Flow 1** (95th percentile 78.91 ms)
- **Flow 2** (95th percentile 61.24 ms)
- **Flow 3** (95th percentile 66.64 ms)
Run 4: Statistics of FillP

Start at: 2019-02-21 02:51:19
End at: 2019-02-21 02:51:49
Local clock offset: -0.255 ms
Remote clock offset: 0.265 ms

# Below is generated by plot.py at 2019-02-21 04:56:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 909.62 Mbit/s
95th percentile per-packet one-way delay: 71.575 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 582.24 Mbit/s
95th percentile per-packet one-way delay: 76.183 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 357.29 Mbit/s
95th percentile per-packet one-way delay: 61.025 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 271.06 Mbit/s
95th percentile per-packet one-way delay: 69.448 ms
Loss rate: 0.10%
Run 4: Report of FillP — Data Link

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

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

Flow 1 Ingress (mean 582.30 Mbps)  Flow 1 Egress (mean 582.24 Mbps)
Flow 2 Ingress (mean 357.29 Mbps)  Flow 2 Egress (mean 357.29 Mbps)
Flow 3 Ingress (mean 271.68 Mbps)  Flow 3 Egress (mean 271.06 Mbps)
Run 5: Statistics of FillP

Start at: 2019-02-21 03:35:39
End at: 2019-02-21 03:36:09
Local clock offset: 0.06 ms
Remote clock offset: 0.42 ms

# Below is generated by plot.py at 2019-02-21 04:57:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 978.19 Mbit/s
  95th percentile per-packet one-way delay: 70.127 ms
  Loss rate: 0.06%
-- Flow 1:
  Average throughput: 591.55 Mbit/s
  95th percentile per-packet one-way delay: 72.220 ms
  Loss rate: 0.02%
-- Flow 2:
  Average throughput: 436.93 Mbit/s
  95th percentile per-packet one-way delay: 69.838 ms
  Loss rate: 0.14%
-- Flow 3:
  Average throughput: 290.29 Mbit/s
  95th percentile per-packet one-way delay: 63.665 ms
  Loss rate: 0.10%
Run 5: Report of FillP — Data Link

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

- **Flow 1 Ingress (mean 591.67 Mbit/s)**
- **Flow 1 Egress (mean 591.55 Mbit/s)**
- **Flow 2 Ingress (mean 437.55 Mbit/s)**
- **Flow 2 Egress (mean 436.93 Mbit/s)**
- **Flow 3 Ingress (mean 290.58 Mbit/s)**
- **Flow 3 Egress (mean 290.29 Mbit/s)**

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

- **Flow 1 (95th percentile 72.22 ms)**
- **Flow 2 (95th percentile 69.84 ms)**
- **Flow 3 (95th percentile 63.66 ms)**
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-21 00:13:56
End at: 2019-02-21 00:14:26
Local clock offset: 0.737 ms
Remote clock offset: -0.969 ms

# Below is generated by plot.py at 2019-02-21 04:57:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 841.94 Mbit/s
  95th percentile per-packet one-way delay: 66.692 ms
  Loss rate: 0.03%
-- Flow 1:
  Average throughput: 543.15 Mbit/s
  95th percentile per-packet one-way delay: 67.663 ms
  Loss rate: 0.03%
-- Flow 2:
  Average throughput: 324.98 Mbit/s
  95th percentile per-packet one-way delay: 57.007 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 248.49 Mbit/s
  95th percentile per-packet one-way delay: 65.041 ms
  Loss rate: 0.10%
Run 1: Report of FillP-Sheep — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-21 00:58:23
End at: 2019-02-21 00:58:53
Local clock offset: -0.06 ms
Remote clock offset: -0.604 ms

# Below is generated by plot.py at 2019-02-21 04:57:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.66 Mbit/s
95th percentile per-packet one-way delay: 72.843 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 537.60 Mbit/s
95th percentile per-packet one-way delay: 76.002 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 354.38 Mbit/s
95th percentile per-packet one-way delay: 64.075 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 242.49 Mbit/s
95th percentile per-packet one-way delay: 65.097 ms
Loss rate: 0.04%
Run 2: Report of FillP-Sheep — Data Link

![Graph 1: Throughput vs Time]
- **Flow 1 Ingress** (mean 538.35 Mbit/s)
- **Flow 1 Egress** (mean 537.60 Mbit/s)
- **Flow 2 Ingress** (mean 353.85 Mbit/s)
- **Flow 2 Egress** (mean 354.38 Mbit/s)
- **Flow 3 Ingress** (mean 241.53 Mbit/s)
- **Flow 3 Egress** (mean 242.49 Mbit/s)

![Graph 2: Per-packet one-way delay vs Time]
- **Flow 1** (95th percentile 76.00 ms)
- **Flow 2** (95th percentile 64.08 ms)
- **Flow 3** (95th percentile 65.10 ms)
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-21 01:42:41
End at: 2019-02-21 01:43:11
Local clock offset: -0.077 ms
Remote clock offset: 1.174 ms

# Below is generated by plot.py at 2019-02-21 04:57:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 798.35 Mbit/s
95th percentile per-packet one-way delay: 68.239 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 515.81 Mbit/s
95th percentile per-packet one-way delay: 71.994 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 310.82 Mbit/s
95th percentile per-packet one-way delay: 64.481 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 229.13 Mbit/s
95th percentile per-packet one-way delay: 60.166 ms
Loss rate: 0.05%
Run 3: Report of FillP-Sheep — Data Link

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**Graph 1:**

Throughput (Mbps)

- Flow 1 ingress (mean 515.95 Mbps)
- Flow 1 egress (mean 515.81 Mbps)
- Flow 2 ingress (mean 310.99 Mbps)
- Flow 2 egress (mean 310.82 Mbps)
- Flow 3 ingress (mean 229.25 Mbps)
- Flow 3 egress (mean 229.13 Mbps)

---

**Graph 2:**

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

- Flow 1 (95th percentile 71.99 ms)
- Flow 2 (95th percentile 64.48 ms)
- Flow 3 (95th percentile 60.17 ms)

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Run 4: Statistics of FillP-Sheep

Start at: 2019-02-21 02:26:14
End at: 2019-02-21 02:26:44
Local clock offset: 0.065 ms
Remote clock offset: -0.703 ms

# Below is generated by plot.py at 2019-02-21 04:57:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 813.67 Mbit/s
  95th percentile per-packet one-way delay: 68.326 ms
  Loss rate: 0.04%
-- Flow 1:
  Average throughput: 526.34 Mbit/s
  95th percentile per-packet one-way delay: 73.319 ms
  Loss rate: 0.06%
-- Flow 2:
  Average throughput: 314.78 Mbit/s
  95th percentile per-packet one-way delay: 61.288 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 234.71 Mbit/s
  95th percentile per-packet one-way delay: 57.764 ms
  Loss rate: 0.00%
Run 4: Report of FillP-Sheep — Data Link

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

![Graph 2: Packet Size vs Time](image2)
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-21 03:09:29  
End at: 2019-02-21 03:09:59  
Local clock offset: -0.315 ms  
Remote clock offset: 0.408 ms

# Below is generated by plot.py at 2019-02-21 05:12:33  
# Datalink statistics
-- Total of 3 flows:
Average throughput: 833.82 Mbit/s  
95th percentile per-packet one-way delay: 64.574 ms  
Loss rate: 0.03%  
-- Flow 1:
Average throughput: 542.63 Mbit/s  
95th percentile per-packet one-way delay: 64.705 ms  
Loss rate: 0.00%  
-- Flow 2:
Average throughput: 310.56 Mbit/s  
95th percentile per-packet one-way delay: 61.932 ms  
Loss rate: 0.09%  
-- Flow 3:
Average throughput: 257.50 Mbit/s  
95th percentile per-packet one-way delay: 65.910 ms  
Loss rate: 0.01%
Run 5: Report of FillP-Sheep — Data Link

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

Legend:
- Flow 1 ingress (mean 542.66 Mbit/s)
- Flow 1 egress (mean 542.63 Mbit/s)
- Flow 2 ingress (mean 311.40 Mbit/s)
- Flow 2 egress (mean 310.56 Mbit/s)
- Flow 3 ingress (mean 257.60 Mbit/s)
- Flow 3 egress (mean 257.50 Mbit/s)
Run 1: Statistics of Indigo

Start at: 2019-02-21 00:10:36
End at: 2019-02-21 00:11:06
Local clock offset: 0.247 ms
Remote clock offset: -0.243 ms

# Below is generated by plot.py at 2019-02-21 05:12:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 304.40 Mbit/s
95th percentile per-packet one-way delay: 60.660 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 132.25 Mbit/s
95th percentile per-packet one-way delay: 58.440 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 182.16 Mbit/s
95th percentile per-packet one-way delay: 58.347 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 158.57 Mbit/s
95th percentile per-packet one-way delay: 61.451 ms
Loss rate: 0.02%
Run 1: Report of Indigo — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 132.25 Mbps)  Flow 2 ingress (mean 132.25 Mbps)
Flow 1 egress (mean 132.25 Mbps)  Flow 2 egress (mean 132.25 Mbps)
Flow 3 ingress (mean 158.55 Mbps)  Flow 3 egress (mean 158.57 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 58.44 ms)  Flow 2 (95th percentile 58.35 ms)  Flow 3 (95th percentile 61.45 ms)
Run 2: Statistics of Indigo

Start at: 2019-02-21 00:54:51
End at: 2019-02-21 00:55:21
Local clock offset: 0.069 ms
Remote clock offset: -0.126 ms

# Below is generated by plot.py at 2019-02-21 05:12:33
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 396.48 Mbit/s
  95th percentile per-packet one-way delay: 61.593 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 211.69 Mbit/s
  95th percentile per-packet one-way delay: 61.859 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 196.83 Mbit/s
  95th percentile per-packet one-way delay: 61.489 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 166.70 Mbit/s
  95th percentile per-packet one-way delay: 58.395 ms
  Loss rate: 0.02%
Run 2: Report of Indigo — Data Link

- Flow 1 ingress (mean 211.68 Mbit/s)
- Flow 1 egress (mean 211.69 Mbit/s)
- Flow 2 ingress (mean 196.76 Mbit/s)
- Flow 2 egress (mean 196.83 Mbit/s)
- Flow 3 ingress (mean 166.73 Mbit/s)
- Flow 3 egress (mean 166.70 Mbit/s)
Run 3: Statistics of Indigo

Start at: 2019-02-21 01:39:07
End at: 2019-02-21 01:39:37
Local clock offset: -0.407 ms
Remote clock offset: 1.204 ms

# Below is generated by plot.py at 2019-02-21 05:12:33
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 399.87 Mbit/s
  95th percentile per-packet one-way delay: 62.890 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 211.17 Mbit/s
  95th percentile per-packet one-way delay: 63.225 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 200.88 Mbit/s
  95th percentile per-packet one-way delay: 61.187 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 172.16 Mbit/s
  95th percentile per-packet one-way delay: 62.094 ms
  Loss rate: 0.00%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2019-02-21 02:22:57
End at: 2019-02-21 02:23:27
Local clock offset: 0.166 ms
Remote clock offset: -0.048 ms

# Below is generated by plot.py at 2019-02-21 05:12:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 371.45 Mbit/s
95th percentile per-packet one-way delay: 60.335 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 195.74 Mbit/s
95th percentile per-packet one-way delay: 57.936 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 197.20 Mbit/s
95th percentile per-packet one-way delay: 58.284 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 140.31 Mbit/s
95th percentile per-packet one-way delay: 61.312 ms
Loss rate: 0.06%
Run 4: Report of Indigo — Data Link
Run 5: Statistics of Indigo

Start at: 2019-02-21 03:05:58
End at: 2019-02-21 03:06:29
Local clock offset: -0.174 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2019-02-21 05:12:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 394.77 Mbit/s
95th percentile per-packet one-way delay: 58.869 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 210.35 Mbit/s
95th percentile per-packet one-way delay: 58.982 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 196.47 Mbit/s
95th percentile per-packet one-way delay: 58.641 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 167.09 Mbit/s
95th percentile per-packet one-way delay: 58.932 ms
Loss rate: 0.06%
Run 5: Report of Indigo — Data Link

![Graph showing throughput and per-packet end-to-end delay over time for different flows with specified mean throughput values.](image-url)
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-21 00:42:14
End at: 2019-02-21 00:42:44
Local clock offset: -0.174 ms
Remote clock offset: -0.369 ms

# Below is generated by plot.py at 2019-02-21 05:12:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 781.22 Mbit/s
95th percentile per-packet one-way delay: 62.165 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 459.61 Mbit/s
95th percentile per-packet one-way delay: 61.969 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 381.00 Mbit/s
95th percentile per-packet one-way delay: 63.249 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 267.83 Mbit/s
95th percentile per-packet one-way delay: 60.066 ms
Loss rate: 0.00%
Run 1: Report of Indigo-MusesC3 — Data Link

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

- **Flow 1 Ingress (mean 459.63 Mbit/s)**
- **Flow 1 Egress (mean 459.61 Mbit/s)**
- **Flow 2 Ingress (mean 380.99 Mbit/s)**
- **Flow 2 Egress (mean 381.00 Mbit/s)**
- **Flow 3 Ingress (mean 267.84 Mbit/s)**
- **Flow 3 Egress (mean 267.83 Mbit/s)**

![Graph showing per-packet round-trip time delay.]

- **Flow 1 (95th percentile 61.97 ms)**
- **Flow 2 (95th percentile 63.25 ms)**
- **Flow 3 (95th percentile 60.07 ms)**
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-21 01:26:17
End at: 2019-02-21 01:26:47
Local clock offset: -0.471 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-02-21 05:12:33
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 714.66 Mbit/s
  95th percentile per-packet one-way delay: 60.053 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 411.05 Mbit/s
  95th percentile per-packet one-way delay: 59.979 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 341.03 Mbit/s
  95th percentile per-packet one-way delay: 60.157 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 284.20 Mbit/s
  95th percentile per-packet one-way delay: 60.288 ms
  Loss rate: 0.02%
Run 2: Report of Indigo-MusesC3 — Data Link

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

- Flow 1 ingress (mean 411.06 Mbit/s)
- Flow 1 egress (mean 411.05 Mbit/s)
- Flow 2 ingress (mean 341.68 Mbit/s)
- Flow 2 egress (mean 341.03 Mbit/s)
- Flow 3 ingress (mean 284.32 Mbit/s)
- Flow 3 egress (mean 284.20 Mbit/s)

![Graph showing packet delay data for different flows.]

- Flow 1 (95th percentile 59.98 ms)
- Flow 2 (95th percentile 60.16 ms)
- Flow 3 (95th percentile 60.29 ms)
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-21 02:10:45
End at: 2019-02-21 02:11:15
Local clock offset: -0.376 ms
Remote clock offset: -0.427 ms

# Below is generated by plot.py at 2019-02-21 05:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 754.01 Mbit/s
95th percentile per-packet one-way delay: 61.982 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 437.23 Mbit/s
95th percentile per-packet one-way delay: 60.025 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 383.55 Mbit/s
95th percentile per-packet one-way delay: 63.466 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 260.24 Mbit/s
95th percentile per-packet one-way delay: 59.663 ms
Loss rate: 0.00%
Run 3: Report of Indigo-MusesC3 — Data Link

[Graph showing throughput over time with different flow labels and their respective means and 95th percentiles for delay.]
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-21 02:53:36
End at: 2019-02-21 02:54:06
Local clock offset: -0.248 ms
Remote clock offset: 0.111 ms

# Below is generated by plot.py at 2019-02-21 05:23:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 714.44 Mbit/s
95th percentile per-packet one-way delay: 60.592 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 395.64 Mbit/s
95th percentile per-packet one-way delay: 61.042 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 380.85 Mbit/s
95th percentile per-packet one-way delay: 60.014 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 259.30 Mbit/s
95th percentile per-packet one-way delay: 59.681 ms
Loss rate: 0.00%
Run 4: Report of Indigo-MusesC3 — Data Link

---

**Throughput (Mbps)**

![Graph showing throughput in Mbps over time](image1)

Legend:
- Flow 1 ingress (mean 395.56 Mbps)
- Flow 1 egress (mean 395.64 Mbps)
- Flow 2 ingress (mean 380.86 Mbps)
- Flow 2 egress (mean 380.85 Mbps)
- Flow 3 ingress (mean 259.29 Mbps)
- Flow 3 egress (mean 259.30 Mbps)

---

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

![Graph showing per-packet delay over time](image2)

Legend:
- Flow 1 (95th percentile 61.04 ms)
- Flow 2 (95th percentile 60.01 ms)
- Flow 3 (95th percentile 59.68 ms)

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Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-21 03:37:58
End at: 2019-02-21 03:38:28
Local clock offset: 0.005 ms
Remote clock offset: -0.268 ms

# Below is generated by plot.py at 2019-02-21 05:24:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 766.21 Mbit/s
95th percentile per-packet one-way delay: 61.546 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 444.90 Mbit/s
95th percentile per-packet one-way delay: 62.126 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 377.80 Mbit/s
95th percentile per-packet one-way delay: 60.993 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 283.57 Mbit/s
95th percentile per-packet one-way delay: 60.501 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesC3 — Data Link
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-21 00:22:55
End at: 2019-02-21 00:23:25
Local clock offset: -0.217 ms
Remote clock offset: -1.011 ms

# Below is generated by plot.py at 2019-02-21 05:25:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 796.91 Mbit/s
95th percentile per-packet one-way delay: 70.284 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 447.19 Mbit/s
95th percentile per-packet one-way delay: 62.734 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 430.39 Mbit/s
95th percentile per-packet one-way delay: 105.282 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 265.94 Mbit/s
95th percentile per-packet one-way delay: 63.523 ms
Loss rate: 0.00%
Run 1: Report of Indigo-MusesC5 — Data Link
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-21 01:07:06
End at: 2019-02-21 01:07:37
Local clock offset: -0.093 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2019-02-21 05:25:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 752.18 Mbit/s
95th percentile per-packet one-way delay: 67.784 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 450.87 Mbit/s
95th percentile per-packet one-way delay: 63.032 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 433.18 Mbit/s
95th percentile per-packet one-way delay: 76.469 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 97.73 Mbit/s
95th percentile per-packet one-way delay: 57.796 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesC5 — Data Link
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-21 01:51:20
End at: 2019-02-21 01:51:50
Local clock offset: 0.336 ms
Remote clock offset: 0.377 ms

# Below is generated by plot.py at 2019-02-21 05:26:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 827.74 Mbit/s
  95th percentile per-packet one-way delay: 73.492 ms
  Loss rate: 0.06%
-- Flow 1:
  Average throughput: 479.64 Mbit/s
  95th percentile per-packet one-way delay: 73.098 ms
  Loss rate: 0.06%
-- Flow 2:
  Average throughput: 437.41 Mbit/s
  95th percentile per-packet one-way delay: 82.241 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 267.93 Mbit/s
  95th percentile per-packet one-way delay: 62.549 ms
  Loss rate: 0.00%
Run 3: Report of Indigo-MusesC5 — Data Link

![Graph of run 3 showing throughput and per-packet one-way delay over time for different flows.]

**Throughput (Mbps):**
- Blue dashed line: Flow 1 ingress (mean 479.92 Mbps)
- Dark blue line: Flow 1 egress (mean 479.64 Mbps)
- Green dashed line: Flow 2 ingress (mean 437.65 Mbps)
- Green line: Flow 2 egress (mean 437.41 Mbps)
- Black dashed line: Flow 3 ingress (mean 267.84 Mbps)
- Black line: Flow 3 egress (mean 267.93 Mbps)

**Per-packet one-way delay (ms):**
- Blue dots: Flow 1 (95th percentile 73.10 ms)
- Green dots: Flow 2 (95th percentile 82.24 ms)
- Red dots: Flow 3 (95th percentile 62.55 ms)
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-21 02:34:49
End at: 2019-02-21 02:35:19
Local clock offset: -0.61 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2019-02-21 05:26:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 766.31 Mbit/s
95th percentile per-packet one-way delay: 66.519 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 466.87 Mbit/s
95th percentile per-packet one-way delay: 64.010 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 436.37 Mbit/s
95th percentile per-packet one-way delay: 71.436 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 87.09 Mbit/s
95th percentile per-packet one-way delay: 58.308 ms
Loss rate: 0.09%
Run 4: Report of Indigo-MusesC5 — Data Link

![Graph showing network throughput over time for different flows.](image1)

![Graph showing per-packet one-way delay over time for different flows.](image2)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-21 03:18:58
End at: 2019-02-21 03:19:28
Local clock offset: -0.055 ms
Remote clock offset: -0.362 ms

# Below is generated by plot.py at 2019-02-21 05:26:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 729.49 Mbit/s
95th percentile per-packet one-way delay: 66.135 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 434.69 Mbit/s
95th percentile per-packet one-way delay: 66.493 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 416.39 Mbit/s
95th percentile per-packet one-way delay: 66.203 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 101.97 Mbit/s
95th percentile per-packet one-way delay: 57.661 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesC5 — Data Link
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-21 00:18:17
End at: 2019-02-21 00:18:47
Local clock offset: 0.143 ms
Remote clock offset: -0.734 ms

# Below is generated by plot.py at 2019-02-21 05:31:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 696.45 Mbit/s
95th percentile per-packet one-way delay: 62.881 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 402.25 Mbit/s
95th percentile per-packet one-way delay: 62.987 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 358.60 Mbit/s
95th percentile per-packet one-way delay: 62.997 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 237.16 Mbit/s
95th percentile per-packet one-way delay: 59.034 ms
Loss rate: 0.01%
Run 1: Report of Indigo-MusesD — Data Link
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-21 01:02:40
End at: 2019-02-21 01:03:10
Local clock offset: 0.457 ms
Remote clock offset: 0.616 ms

# Below is generated by plot.py at 2019-02-21 05:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 654.60 Mbit/s
95th percentile per-packet one-way delay: 61.186 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 370.61 Mbit/s
95th percentile per-packet one-way delay: 60.311 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 340.40 Mbit/s
95th percentile per-packet one-way delay: 66.315 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 259.14 Mbit/s
95th percentile per-packet one-way delay: 59.432 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesD — Data Link

![Graph showing data link throughput and packet loss](image-url)
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-21 01:47:06
End at: 2019-02-21 01:47:36
Local clock offset: -0.043 ms
Remote clock offset: 1.009 ms

# Below is generated by plot.py at 2019-02-21 05:36:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 687.83 Mbit/s
95th percentile per-packet one-way delay: 61.757 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 388.48 Mbit/s
95th percentile per-packet one-way delay: 61.827 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 370.87 Mbit/s
95th percentile per-packet one-way delay: 62.045 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 256.09 Mbit/s
95th percentile per-packet one-way delay: 60.526 ms
Loss rate: 0.00%
Run 3: Report of Indigo-MusesD — Data Link
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-21 02:30:33
End at: 2019-02-21 02:31:03
Local clock offset: -0.443 ms
Remote clock offset: -0.903 ms

# Below is generated by plot.py at 2019-02-21 05:38:32
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 698.03 Mbit/s
  95th percentile per-packet one-way delay: 67.705 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 405.71 Mbit/s
  95th percentile per-packet one-way delay: 64.261 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 349.63 Mbit/s
  95th percentile per-packet one-way delay: 72.494 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 277.62 Mbit/s
  95th percentile per-packet one-way delay: 62.200 ms
  Loss rate: 0.06%
Run 4: Report of Indigo-MusesD — Data Link
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-21 03:14:23
End at: 2019-02-21 03:14:53
Local clock offset: -0.465 ms
Remote clock offset: -0.832 ms

# Below is generated by plot.py at 2019-02-21 05:38:32
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 667.79 Mbit/s
  95th percentile per-packet one-way delay: 60.043 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 364.10 Mbit/s
  95th percentile per-packet one-way delay: 59.983 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 348.95 Mbit/s
  95th percentile per-packet one-way delay: 60.484 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 280.98 Mbit/s
  95th percentile per-packet one-way delay: 59.287 ms
  Loss rate: 0.00%
Run 5: Report of Indigo-MusesD — Data Link

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

- Flow 1 ingress (mean 363.88 Mbit/s)
- Flow 1 egress (mean 364.10 Mbit/s)
- Flow 2 ingress (mean 349.00 Mbit/s)
- Flow 2 egress (mean 348.95 Mbit/s)
- Flow 3 ingress (mean 280.98 Mbit/s)
- Flow 3 egress (mean 280.98 Mbit/s)

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

- Flow 1 (95th percentile 59.98 ms)
- Flow 2 (95th percentile 60.48 ms)
- Flow 3 (95th percentile 59.29 ms)
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-21 00:16:02
End at: 2019-02-21 00:16:32
Local clock offset: 0.2 ms
Remote clock offset: -0.931 ms

# Below is generated by plot.py at 2019-02-21 05:42:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 846.51 Mbit/s
95th percentile per-packet one-way delay: 67.940 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 492.62 Mbit/s
95th percentile per-packet one-way delay: 71.119 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 421.68 Mbit/s
95th percentile per-packet one-way delay: 59.238 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 296.89 Mbit/s
95th percentile per-packet one-way delay: 64.889 ms
Loss rate: 0.05%
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-21 01:00:30
End at: 2019-02-21 01:01:00
Local clock offset: 0.065 ms
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2019-02-21 05:42:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 734.38 Mbit/s
95th percentile per-packet one-way delay: 66.026 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 456.54 Mbit/s
95th percentile per-packet one-way delay: 65.225 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 394.28 Mbit/s
95th percentile per-packet one-way delay: 68.221 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 103.51 Mbit/s
95th percentile per-packet one-way delay: 57.720 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesT — Data Link

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

Flow 1 ingress (mean 456.60 Mbit/s)  Flow 1 egress (mean 456.54 Mbit/s)
Flow 2 ingress (mean 394.28 Mbit/s)  Flow 2 egress (mean 394.28 Mbit/s)
Flow 3 ingress (mean 103.52 Mbit/s)  Flow 3 egress (mean 103.51 Mbit/s)

Per packet one way delay (ms)

Flow 1 (95th percentile 65.22 ms)  Flow 2 (95th percentile 68.22 ms)  Flow 3 (95th percentile 57.72 ms)

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Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-21 01:44:44
End at: 2019-02-21 01:45:14
Local clock offset: -0.015 ms
Remote clock offset: -0.237 ms

# Below is generated by plot.py at 2019-02-21 05:42:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 826.78 Mbit/s
95th percentile per-packet one-way delay: 69.299 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 495.64 Mbit/s
95th percentile per-packet one-way delay: 67.792 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 393.19 Mbit/s
95th percentile per-packet one-way delay: 81.682 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 301.80 Mbit/s
95th percentile per-packet one-way delay: 60.817 ms
Loss rate: 0.00%
Run 3: Report of Indigo-MusesT — Data Link

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

- Flow 1 ingress (mean 495.68 Mbit/s)
- Flow 1 egress (mean 495.64 Mbit/s)
- Flow 2 ingress (mean 393.23 Mbit/s)
- Flow 2 egress (mean 393.19 Mbit/s)
- Flow 3 ingress (mean 301.67 Mbit/s)
- Flow 3 egress (mean 301.80 Mbit/s)

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

- Flow 1 (95th percentile 67.79 ms)
- Flow 2 (95th percentile 81.68 ms)
- Flow 3 (95th percentile 60.82 ms)
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-21 02:28:20
End at: 2019-02-21 02:28:50
Local clock offset: -0.17 ms
Remote clock offset: 0.531 ms

# Below is generated by plot.py at 2019-02-21 05:47:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 805.20 Mbit/s
95th percentile per-packet one-way delay: 104.061 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 508.14 Mbit/s
95th percentile per-packet one-way delay: 107.334 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 414.95 Mbit/s
95th percentile per-packet one-way delay: 87.689 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 108.08 Mbit/s
95th percentile per-packet one-way delay: 61.976 ms
Loss rate: 0.06%
Run 4: Report of Indigo-MusesT — Data Link

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

Flow 1 ingress (mean 508.19 Mbit/s) — Flow 1 egress (mean 508.14 Mbit/s)
Flow 2 ingress (mean 415.00 Mbit/s) — Flow 2 egress (mean 414.95 Mbit/s)
Flow 3 ingress (mean 108.09 Mbit/s) — Flow 3 egress (mean 108.08 Mbit/s)

Flow 1 (95th percentile 107.33 ms) — Flow 2 (95th percentile 87.69 ms) — Flow 3 (95th percentile 61.98 ms)
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-21 03:11:50
End at: 2019-02-21 03:12:20
Local clock offset: -0.15 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2019-02-21 05:49:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 836.91 Mbit/s
95th percentile per-packet one-way delay: 68.780 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 499.80 Mbit/s
95th percentile per-packet one-way delay: 70.583 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 401.55 Mbit/s
95th percentile per-packet one-way delay: 66.749 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 301.51 Mbit/s
95th percentile per-packet one-way delay: 61.732 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesT — Data Link
Run 1: Statistics of LEDBAT

Start at: 2019-02-21 00:09:18
End at: 2019-02-21 00:09:48
Local clock offset: 0.458 ms
Remote clock offset: -1.553 ms

# Below is generated by plot.py at 2019-02-21 05:49:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.48 Mbit/s
95th percentile per-packet one-way delay: 56.568 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 26.99 Mbit/s
95th percentile per-packet one-way delay: 56.621 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 18.99 Mbit/s
95th percentile per-packet one-way delay: 56.454 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.79 Mbit/s
95th percentile per-packet one-way delay: 56.533 ms
Loss rate: 0.00%
Run 1: Report of LEDBAT — Data Link

![Graph showing throughput and packet delay over time]

**Throughput (Mbps)**

- Blue dashed line: Flow 1 ingress (mean 26.99 Mbps)
- Blue solid line: Flow 1 egress (mean 26.99 Mbps)
- Green dashed line: Flow 2 ingress (mean 18.99 Mbps)
- Green solid line: Flow 2 egress (mean 18.99 Mbps)
- Red dashed line: Flow 3 ingress (mean 8.79 Mbps)
- Red solid line: Flow 3 egress (mean 8.79 Mbps)

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

- Blue solid line: Flow 1 (95th percentile 56.62 ms)
- Green solid line: Flow 2 (95th percentile 56.45 ms)
- Red solid line: Flow 3 (95th percentile 56.53 ms)
Run 2: Statistics of LEDBAT

Start at: 2019-02-21 00:53:32
End at: 2019-02-21 00:54:02
Local clock offset: 0.035 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-02-21 05:49:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.87 Mbit/s
95th percentile per-packet one-way delay: 61.073 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 26.22 Mbit/s
95th percentile per-packet one-way delay: 61.245 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 18.86 Mbit/s
95th percentile per-packet one-way delay: 58.124 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 57.756 ms
Loss rate: 0.00%
Run 2: Report of LEDBAT — Data Link

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

- **Flow 1 ingress** (mean 26.22 Mbit/s)
- **Flow 1 egress** (mean 26.22 Mbit/s)
- **Flow 2 ingress** (mean 18.86 Mbit/s)
- **Flow 2 egress** (mean 18.86 Mbit/s)
- **Flow 3 ingress** (mean 9.39 Mbit/s)
- **Flow 3 egress** (mean 9.39 Mbit/s)
Run 3: Statistics of LEDBAT

Start at: 2019-02-21 01:37:46
End at: 2019-02-21 01:38:16
Local clock offset: -0.115 ms
Remote clock offset: -0.163 ms

# Below is generated by plot.py at 2019-02-21 05:49:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.54 Mbit/s
95th percentile per-packet one-way delay: 58.158 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.44 Mbit/s
95th percentile per-packet one-way delay: 58.262 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 18.05 Mbit/s
95th percentile per-packet one-way delay: 57.878 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.40 Mbit/s
95th percentile per-packet one-way delay: 57.675 ms
Loss rate: 0.00%
Run 3: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 28.44 Mbit/s)
- Flow 1 egress (mean 28.44 Mbit/s)
- Flow 2 ingress (mean 18.05 Mbit/s)
- Flow 2 egress (mean 18.05 Mbit/s)
- Flow 3 ingress (mean 9.40 Mbit/s)
- Flow 3 egress (mean 9.40 Mbit/s)
Run 4: Statistics of LEDBAT

Start at: 2019-02-21 02:21:38
End at: 2019-02-21 02:22:08
Local clock offset: -0.207 ms
Remote clock offset: -0.143 ms

# Below is generated by plot.py at 2019-02-21 05:49:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 41.90 Mbit/s
  95th percentile per-packet one-way delay: 58.214 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 26.94 Mbit/s
  95th percentile per-packet one-way delay: 58.248 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 17.87 Mbit/s
  95th percentile per-packet one-way delay: 58.166 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 9.38 Mbit/s
  95th percentile per-packet one-way delay: 58.026 ms
  Loss rate: 0.00%
Run 4: Report of LEDBAT — Data Link
Run 5: Statistics of LEDBAT

Start at: 2019-02-21 03:04:40
End at: 2019-02-21 03:05:10
Local clock offset: -0.393 ms
Remote clock offset: 1.284 ms

# Below is generated by plot.py at 2019-02-21 05:49:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.10 Mbit/s
95th percentile per-packet one-way delay: 62.982 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 21.94 Mbit/s
95th percentile per-packet one-way delay: 63.198 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 13.74 Mbit/s
95th percentile per-packet one-way delay: 60.487 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 9.15 Mbit/s
95th percentile per-packet one-way delay: 60.483 ms
Loss rate: 0.00%
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-21 00:01:06
End at: 2019-02-21 00:01:36
Local clock offset: 0.793 ms
Remote clock offset: -0.894 ms

# Below is generated by plot.py at 2019-02-21 06:06:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 690.30 Mbit/s
  95th percentile per-packet one-way delay: 246.660 ms
  Loss rate: 10.15%
-- Flow 1:
  Average throughput: 398.33 Mbit/s
  95th percentile per-packet one-way delay: 219.396 ms
  Loss rate: 11.45%
-- Flow 2:
  Average throughput: 318.38 Mbit/s
  95th percentile per-packet one-way delay: 232.499 ms
  Loss rate: 3.07%
-- Flow 3:
  Average throughput: 243.15 Mbit/s
  95th percentile per-packet one-way delay: 276.608 ms
  Loss rate: 19.80%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-21 00:44:28
End at: 2019-02-21 00:44:58
Local clock offset: -0.206 ms
Remote clock offset: -0.253 ms

# Below is generated by plot.py at 2019-02-21 06:08:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 740.43 Mbit/s
95th percentile per-packet one-way delay: 179.478 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 461.13 Mbit/s
95th percentile per-packet one-way delay: 181.380 ms
Loss rate: 3.70%
-- Flow 2:
Average throughput: 281.77 Mbit/s
95th percentile per-packet one-way delay: 168.113 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 278.68 Mbit/s
95th percentile per-packet one-way delay: 78.178 ms
Loss rate: 0.09%
Run 2: Report of PCC-Allegro — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 Ingress (mean 479.01 Mbps)
  - Flow 1 Egress (mean 461.13 Mbps)
  - Flow 2 Ingress (mean 282.64 Mbps)
  - Flow 2 Egress (mean 281.77 Mbps)
  - Flow 3 Ingress (mean 279.21 Mbps)
  - Flow 3 Egress (mean 278.68 Mbps)

- **Packet Delay (ms):**
  - Flow 1 (95th percentile 181.38 ms)
  - Flow 2 (95th percentile 168.11 ms)
  - Flow 3 (95th percentile 78.18 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-21 01:28:33  
End at: 2019-02-21 01:29:03  
Local clock offset: -0.081 ms  
Remote clock offset: 0.599 ms

# Below is generated by plot.py at 2019-02-21 06:10:02  
# Datalink statistics

-- Total of 3 flows:
AVERAGE THROUGHPUT: 766.11 Mbit/s
95TH PERCENTILE PER-PACKET ONE-WAY DELAY: 192.385 ms
LOSS RATE: 4.37%

-- Flow 1:
AVERAGE THROUGHPUT: 424.43 Mbit/s
95TH PERCENTILE PER-PACKET ONE-WAY DELAY: 201.955 ms
LOSS RATE: 4.56%

-- Flow 2:
AVERAGE THROUGHPUT: 390.41 Mbit/s
95TH PERCENTILE PER-PACKET ONE-WAY DELAY: 188.781 ms
LOSS RATE: 5.15%

-- Flow 3:
AVERAGE THROUGHPUT: 248.75 Mbit/s
95TH PERCENTILE PER-PACKET ONE-WAY DELAY: 146.872 ms
LOSS RATE: 0.81%
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-21 02:13:02
End at: 2019-02-21 02:13:32
Local clock offset: 0.31 ms
Remote clock offset: -1.516 ms

# Below is generated by plot.py at 2019-02-21 06:10:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 705.75 Mbit/s
  95th percentile per-packet one-way delay: 171.941 ms
  Loss rate: 2.05%
-- Flow 1:
  Average throughput: 438.92 Mbit/s
  95th percentile per-packet one-way delay: 177.115 ms
  Loss rate: 3.24%
-- Flow 2:
  Average throughput: 283.09 Mbit/s
  95th percentile per-packet one-way delay: 83.941 ms
  Loss rate: 0.05%
-- Flow 3:
  Average throughput: 238.96 Mbit/s
  95th percentile per-packet one-way delay: 68.180 ms
  Loss rate: 0.00%
Run 4: Report of PCC-Allegro — Data Link

![Throughput Graph](image1)

- **Flow 1 ingress (mean 453.63 Mbit/s)**
- **Flow 1 egress (mean 438.92 Mbit/s)**
- **Flow 2 ingress (mean 283.24 Mbit/s)**
- **Flow 2 egress (mean 283.09 Mbit/s)**
- **Flow 3 ingress (mean 236.97 Mbit/s)**
- **Flow 3 egress (mean 238.96 Mbit/s)**

![Delay Graph](image2)

- **Flow 1 (95th percentile 177.12 ms)**
- **Flow 2 (95th percentile 83.94 ms)**
- **Flow 3 (95th percentile 68.18 ms)**

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Run 5: Statistics of PCC-Allegro

Start at: 2019-02-21 02:55:53
End at: 2019-02-21 02:56:23
Local clock offset: -0.037 ms
Remote clock offset: -1.504 ms

# Below is generated by plot.py at 2019-02-21 06:10:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 585.63 Mbit/s
95th percentile per-packet one-way delay: 169.096 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 308.41 Mbit/s
95th percentile per-packet one-way delay: 172.612 ms
Loss rate: 2.50%
-- Flow 2:
Average throughput: 281.15 Mbit/s
95th percentile per-packet one-way delay: 76.682 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 274.31 Mbit/s
95th percentile per-packet one-way delay: 148.081 ms
Loss rate: 0.18%
Run 5: Report of PCC-Allegro — Data Link

![Graph showing throughput and packet latency over time]

- Flow 1 ingress (mean 316.32 Mb/s)
- Flow 1 egress (mean 308.41 Mb/s)
- Flow 2 ingress (mean 281.15 Mb/s)
- Flow 2 egress (mean 281.15 Mb/s)
- Flow 3 ingress (mean 274.85 Mb/s)
- Flow 3 egress (mean 274.31 Mb/s)

![Graph showing packet latency over time]

- Flow 1 (95th percentile 172.61 ms)
- Flow 2 (95th percentile 76.68 ms)
- Flow 3 (95th percentile 148.08 ms)
Run 1: Statistics of PCC-Expr

Start at: 2019-02-21 00:30:07
End at: 2019-02-21 00:30:37
Local clock offset: -0.362 ms
Remote clock offset: -0.907 ms

# Below is generated by plot.py at 2019-02-21 06:10:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 536.32 Mbit/s
  95th percentile per-packet one-way delay: 131.083 ms
  Loss rate: 0.54%
-- Flow 1:
  Average throughput: 297.41 Mbit/s
  95th percentile per-packet one-way delay: 86.143 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 263.40 Mbit/s
  95th percentile per-packet one-way delay: 153.406 ms
  Loss rate: 0.77%
-- Flow 3:
  Average throughput: 191.24 Mbit/s
  95th percentile per-packet one-way delay: 72.346 ms
  Loss rate: 0.01%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2019-02-21 01:14:21
End at: 2019-02-21 01:14:51
Local clock offset: -0.364 ms
Remote clock offset: 1.118 ms

# Below is generated by plot.py at 2019-02-21 06:10:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 522.54 Mbit/s
95th percentile per-packet one-way delay: 167.911 ms
Loss rate: 3.31%
-- Flow 1:
Average throughput: 320.08 Mbit/s
95th percentile per-packet one-way delay: 171.750 ms
Loss rate: 5.29%
-- Flow 2:
Average throughput: 218.93 Mbit/s
95th percentile per-packet one-way delay: 76.772 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 172.63 Mbit/s
95th percentile per-packet one-way delay: 118.082 ms
Loss rate: 0.00%
Run 2: Report of PCC-Expr — Data Link

The graphs show the throughput and one-way delay for three flows over time.

Throughput Graph:
- Flow 1 ingress (mean 337.96 Mbit/s)
- Flow 2 ingress (mean 218.93 Mbit/s)
- Flow 3 ingress (mean 172.63 Mbit/s)
- Flow 1 egress (mean 320.08 Mbit/s)
- Flow 2 egress (mean 218.93 Mbit/s)
- Flow 3 egress (mean 172.63 Mbit/s)

Delay Graph:
- Flow 1 (95th percentile 171.75 ms)
- Flow 2 (95th percentile 76.77 ms)
- Flow 3 (95th percentile 118.08 ms)
Run 3: Statistics of PCC-Expr

Start at: 2019-02-21 01:58:57  
End at: 2019-02-21 01:59:27  
Local clock offset: -0.088 ms  
Remote clock offset: 1.093 ms

# Below is generated by plot.py at 2019-02-21 06:10:02  
# Datalink statistics
   -- Total of 3 flows:
   Average throughput: 474.64 Mbit/s
   95th percentile per-packet one-way delay: 159.829 ms
   Loss rate: 1.36%
   -- Flow 1:
   Average throughput: 288.56 Mbit/s
   95th percentile per-packet one-way delay: 104.526 ms
   Loss rate: 0.44%
   -- Flow 2:
   Average throughput: 259.89 Mbit/s
   95th percentile per-packet one-way delay: 169.672 ms
   Loss rate: 2.95%
   -- Flow 3:
   Average throughput: 41.39 Mbit/s
   95th percentile per-packet one-way delay: 62.302 ms
   Loss rate: 0.00%
Run 3: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 289.87 Mbit/s)
- Flow 1 egress (mean 288.56 Mbit/s)
- Flow 2 ingress (mean 267.79 Mbit/s)
- Flow 2 egress (mean 259.89 Mbit/s)
- Flow 3 ingress (mean 41.38 Mbit/s)
- Flow 3 egress (mean 41.39 Mbit/s)
Run 4: Statistics of PCC-Expr

Start at: 2019-02-21 02:41:56
End at: 2019-02-21 02:42:26
Local clock offset: -0.455 ms
Remote clock offset: -0.237 ms

# Below is generated by plot.py at 2019-02-21 06:18:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 521.33 Mbit/s
  95th percentile per-packet one-way delay: 123.904 ms
  Loss rate: 0.42%
-- Flow 1:
  Average throughput: 301.95 Mbit/s
  95th percentile per-packet one-way delay: 118.428 ms
  Loss rate: 0.25%
-- Flow 2:
  Average throughput: 274.22 Mbit/s
  95th percentile per-packet one-way delay: 143.643 ms
  Loss rate: 0.79%
-- Flow 3:
  Average throughput: 112.27 Mbit/s
  95th percentile per-packet one-way delay: 58.457 ms
  Loss rate: 0.02%
Run 4: Report of PCC-Expr — Data Link

The first graph represents the throughput (Mbps) over time (s) for different flows:
- Flow 1 ingress (mean 302.69 Mbps)
- Flow 1 egress (mean 301.05 Mbps)
- Flow 2 ingress (mean 276.39 Mbps)
- Flow 2 egress (mean 274.22 Mbps)
- Flow 3 ingress (mean 112.26 Mbps)
- Flow 3 egress (mean 112.27 Mbps)

The second graph shows the round-trip packet delay (ms) over time (s) for different flows:
- Flow 1 (95th percentile 118.43 ms)
- Flow 2 (95th percentile 143.64 ms)
- Flow 3 (95th percentile 58.46 ms)
Run 5: Statistics of PCC-Expr

Start at: 2019-02-21 03:26:15
End at: 2019-02-21 03:26:45
Local clock offset: 0.031 ms
Remote clock offset: -0.383 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.31 Mbit/s
95th percentile per-packet one-way delay: 165.512 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 308.36 Mbit/s
95th percentile per-packet one-way delay: 168.048 ms
Loss rate: 2.20%
-- Flow 2:
Average throughput: 228.98 Mbit/s
95th percentile per-packet one-way delay: 119.536 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 184.40 Mbit/s
95th percentile per-packet one-way delay: 71.294 ms
Loss rate: 0.05%
Run 5: Report of PCC-Expr — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 315.29 Mbit/s)
Flow 1 egress (mean 308.36 Mbit/s)
Flow 2 ingress (mean 229.16 Mbit/s)
Flow 2 egress (mean 228.98 Mbit/s)
Flow 3 ingress (mean 184.44 Mbit/s)
Flow 3 egress (mean 184.40 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 168.05 ms)
Flow 2 (95th percentile 119.54 ms)
Flow 3 (95th percentile 71.29 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-21 00:38:35
End at: 2019-02-21 00:39:05
Local clock offset: -0.066 ms
Remote clock offset: -0.742 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 48.98 Mbit/s
  95th percentile per-packet one-way delay: 59.717 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.01 Mbit/s
  95th percentile per-packet one-way delay: 56.756 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 57.03 Mbit/s
  95th percentile per-packet one-way delay: 56.440 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 33.83 Mbit/s
  95th percentile per-packet one-way delay: 59.836 ms
  Loss rate: 0.01%
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-21 01:22:41
End at: 2019-02-21 01:23:11
Local clock offset: -0.534 ms
Remote clock offset: -0.156 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.26 Mbit/s
  95th percentile per-packet one-way delay: 57.743 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 49.87 Mbit/s
  95th percentile per-packet one-way delay: 57.653 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 38.44 Mbit/s
  95th percentile per-packet one-way delay: 57.834 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 27.03 Mbit/s
  95th percentile per-packet one-way delay: 57.612 ms
  Loss rate: 0.00%
Run 2: Report of QUIC Cubic — Data Link

[Graph showing throughput and packet delay over time for different flows with specified mean throughputs and delays]
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-21 02:06:55
End at: 2019-02-21 02:07:25
Local clock offset: -0.282 ms
Remote clock offset: 0.722 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 104.79 Mbit/s
95th percentile per-packet one-way delay: 58.181 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 43.10 Mbit/s
95th percentile per-packet one-way delay: 58.214 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 80.43 Mbit/s
95th percentile per-packet one-way delay: 58.137 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 25.32 Mbit/s
95th percentile per-packet one-way delay: 58.181 ms
Loss rate: 2.49%
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-21 02:50:01
End at: 2019-02-21 02:50:31
Local clock offset: -0.193 ms
Remote clock offset: 0.619 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.46 Mbit/s
95th percentile per-packet one-way delay: 57.972 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 47.82 Mbit/s
95th percentile per-packet one-way delay: 57.981 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 36.05 Mbit/s
95th percentile per-packet one-way delay: 57.966 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 17.60 Mbit/s
95th percentile per-packet one-way delay: 57.923 ms
Loss rate: 0.00%
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-21 03:34:18
End at: 2019-02-21 03:34:48
Local clock offset: 0.431 ms
Remote clock offset: 0.421 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.24 Mbit/s
95th percentile per-packet one-way delay: 60.846 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 42.42 Mbit/s
95th percentile per-packet one-way delay: 60.903 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 40.36 Mbit/s
95th percentile per-packet one-way delay: 57.205 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.07 Mbit/s
95th percentile per-packet one-way delay: 57.524 ms
Loss rate: 0.00%
Run 5: Report of QUIC Cubic — Data Link

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**Throughput (Mbps)**

<table>
<thead>
<tr>
<th>Time (s)</th>
<th>Flow 1 ingress (mean 42.42 Mbps)</th>
<th>Flow 1 egress (mean 42.42 Mbps)</th>
<th>Flow 2 ingress (mean 40.36 Mbps)</th>
<th>Flow 2 egress (mean 40.36 Mbps)</th>
<th>Flow 3 ingress (mean 62.07 Mbps)</th>
<th>Flow 3 egress (mean 62.07 Mbps)</th>
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**Per-packet one-way delay (ms)**

<table>
<thead>
<tr>
<th>Time (s)</th>
<th>Flow 1 (95th percentile 60.90 ms)</th>
<th>Flow 2 (95th percentile 57.20 ms)</th>
<th>Flow 3 (95th percentile 57.52 ms)</th>
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Run 1: Statistics of SCReAM

Start at: 2019-02-21 00:03:08
End at: 2019-02-21 00:03:38
Local clock offset: 0.839 ms
Remote clock offset: -0.785 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 59.931 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 59.962 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 56.345 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 56.260 ms
  Loss rate: 0.00%
Run 1: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.22 Mbit/s)
- Flow 1 egress (mean 0.22 Mbit/s)
- Flow 2 ingress (mean 0.22 Mbit/s)
- Flow 2 egress (mean 0.22 Mbit/s)
- Flow 3 ingress (mean 0.22 Mbit/s)
- Flow 3 egress (mean 0.22 Mbit/s)
Run 2: Statistics of SCReAM

Start at: 2019-02-21 00:47:07
End at: 2019-02-21 00:47:37
Local clock offset: -0.034 ms
Remote clock offset: -1.236 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 56.218 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.267 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.115 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.206 ms
Loss rate: 0.00%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2019-02-21 01:31:12
End at: 2019-02-21 01:31:42
Local clock offset: 0.111 ms
Remote clock offset: -0.216 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 60.226 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.262 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.040 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.792 ms
Loss rate: 0.00%
Run 3: Report of SCReAM — Data Link
Run 4: Statistics of SCReAM

Start at: 2019-02-21 02:15:33
End at: 2019-02-21 02:16:03
Local clock offset: -0.584 ms
Remote clock offset: -0.21 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 60.616 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 57.970 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 60.674 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 57.577 ms
  Loss rate: 0.00%
Run 4: Report of SCReAM — Data Link

![Graph 1: Throughput (Mbps)]

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

![Graph 2: One-packet roundtrip delay (ms)]

- Flow 1 (95th percentile 57.97 ms)
- Flow 2 (95th percentile 60.67 ms)
- Flow 3 (95th percentile 57.58 ms)
Run 5: Statistics of SCReAM

Start at: 2019-02-21 02:58:10
End at: 2019-02-21 02:58:40
Local clock offset: 0.131 ms
Remote clock offset: 0.589 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 60.923 ms
  Loss rate: 0.06%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 57.791 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 60.733 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 61.037 ms
  Loss rate: 0.35%
Run 5: Report of SCReAM — Data Link

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

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

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 57.79 ms)
  - Flow 2 (95th percentile 60.73 ms)
  - Flow 3 (95th percentile 61.04 ms)
Run 1: Statistics of Sprout

Start at: 2019-02-21 00:32:50
End at: 2019-02-21 00:33:20
Local clock offset: -0.386 ms
Remote clock offset: -0.619 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.54 Mbit/s
95th percentile per-packet one-way delay: 60.975 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 57.501 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 60.849 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 61.270 ms
Loss rate: 0.00%
Run 1: Report of Sprout — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 7.85 Mbit/s)  Flow 1 egress (mean 7.85 Mbit/s)
Flow 2 ingress (mean 6.82 Mbit/s)  Flow 2 egress (mean 6.82 Mbit/s)
Flow 3 ingress (mean 6.47 Mbit/s)  Flow 3 egress (mean 6.47 Mbit/s)

Per packet one way delay [ms]

Time (s)

Flow 1 (95th percentile 57.50 ms)  Flow 2 (95th percentile 60.85 ms)  Flow 3 (95th percentile 61.27 ms)
Run 2: Statistics of Sprout

Start at: 2019-02-21 01:16:54
End at: 2019-02-21 01:17:25
Local clock offset: -0.29 ms
Remote clock offset: 1.011 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
   -- Total of 3 flows:
      Average throughput: 14.94 Mbit/s
      95th percentile per-packet one-way delay: 59.002 ms
      Loss rate: 0.00%
   -- Flow 1:
      Average throughput: 7.85 Mbit/s
      95th percentile per-packet one-way delay: 58.839 ms
      Loss rate: 0.00%
   -- Flow 2:
      Average throughput: 7.40 Mbit/s
      95th percentile per-packet one-way delay: 59.025 ms
      Loss rate: 0.00%
   -- Flow 3:
      Average throughput: 6.57 Mbit/s
      95th percentile per-packet one-way delay: 59.116 ms
      Loss rate: 0.00%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2019-02-21 02:01:26
End at: 2019-02-21 02:01:56
Local clock offset: -0.355 ms
Remote clock offset: 0.717 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.87 Mbit/s
95th percentile per-packet one-way delay: 62.232 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.07 Mbit/s
95th percentile per-packet one-way delay: 58.807 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 62.318 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 62.457 ms
Loss rate: 0.00%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2019-02-21 02:44:33
End at: 2019-02-21 02:45:03
Local clock offset: -0.642 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.44 Mbit/s
95th percentile per-packet one-way delay: 58.410 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.71 Mbit/s
95th percentile per-packet one-way delay: 58.285 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 58.490 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.52 Mbit/s
95th percentile per-packet one-way delay: 58.563 ms
Loss rate: 0.00%
Run 4: Report of Sprout — Data Link

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

![Diagram 2: Per-packet one-way delay (ms)]
Run 5: Statistics of Sprout

Start at: 2019-02-21 03:28:45
End at: 2019-02-21 03:29:15
Local clock offset: -0.169 ms
Remote clock offset: -0.156 ms

# Below is generated by plot.py at 2019-02-21 06:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.17 Mbit/s
95th percentile per-packet one-way delay: 61.227 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.98 Mbit/s
95th percentile per-packet one-way delay: 61.339 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.64 Mbit/s
95th percentile per-packet one-way delay: 57.671 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 61.250 ms
Loss rate: 0.00%
Run 5: Report of Sprout — Data Link

![Graph showing throughput and packet delay over time for different flows. The graphs display the performance metrics for each flow, comparing ingress and egress rates as well as packet delay.](image-url)
Run 1: Statistics of TaoVA-100x

Start at: 2019-02-21 00:04:20
End at: 2019-02-21 00:04:51
Local clock offset: 0.419 ms
Remote clock offset: -0.837 ms

# Below is generated by plot.py at 2019-02-21 06:26:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 436.31 Mbit/s
  95th percentile per-packet one-way delay: 60.183 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 216.94 Mbit/s
  95th percentile per-packet one-way delay: 60.360 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 217.34 Mbit/s
  95th percentile per-packet one-way delay: 57.079 ms
  Loss rate: 0.03%
-- Flow 3:
  Average throughput: 220.09 Mbit/s
  95th percentile per-packet one-way delay: 57.103 ms
  Loss rate: 0.00%
Run 1: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 216.95 Mbit/s)
- Flow 1 egress (mean 216.94 Mbit/s)
- Flow 2 ingress (mean 217.80 Mbit/s)
- Flow 2 egress (mean 217.34 Mbit/s)
- Flow 3 ingress (mean 220.07 Mbit/s)
- Flow 3 egress (mean 220.09 Mbit/s)

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

- Flow 1 (95th percentile 60.36 ms)
- Flow 2 (95th percentile 57.08 ms)
- Flow 3 (95th percentile 57.10 ms)
Run 2: Statistics of TaoVA-100x

Start at: 2019-02-21 00:48:19
End at: 2019-02-21 00:48:49
Local clock offset: -0.197 ms
Remote clock offset: -0.717 ms

# Below is generated by plot.py at 2019-02-21 06:26:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 433.46 Mbit/s
  95th percentile per-packet one-way delay: 60.906 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 223.38 Mbit/s
  95th percentile per-packet one-way delay: 57.877 ms
  Loss rate: 0.02%
-- Flow 2:
  Average throughput: 214.90 Mbit/s
  95th percentile per-packet one-way delay: 61.832 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 201.68 Mbit/s
  95th percentile per-packet one-way delay: 57.740 ms
  Loss rate: 0.00%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2019-02-21 01:32:25
End at: 2019-02-21 01:32:55
Local clock offset: -0.35 ms
Remote clock offset: 1.085 ms

# Below is generated by plot.py at 2019-02-21 06:26:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 431.22 Mbit/s
  95th percentile per-packet one-way delay: 62.256 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 221.25 Mbit/s
  95th percentile per-packet one-way delay: 60.058 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 214.38 Mbit/s
  95th percentile per-packet one-way delay: 62.616 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 201.93 Mbit/s
  95th percentile per-packet one-way delay: 61.420 ms
  Loss rate: 0.00%
Run 3: Report of TaoVA-100x — Data Link

Throughput (Mbps)

- Flow 1 ingress (mean 221.26 Mbps)
- Flow 1 egress (mean 221.25 Mbps)
- Flow 2 ingress (mean 214.38 Mbps)
- Flow 2 egress (mean 214.38 Mbps)
- Flow 3 ingress (mean 201.93 Mbps)
- Flow 3 egress (mean 201.93 Mbps)

Per-packet end to end delay (ms)

- Flow 1 (95th percentile 60.06 ms)
- Flow 2 (95th percentile 62.62 ms)
- Flow 3 (95th percentile 61.42 ms)
Run 4: Statistics of TaoVA-100x

Start at: 2019-02-21 02:16:45
End at: 2019-02-21 02:17:15
Local clock offset: -0.289 ms
Remote clock offset: -0.116 ms

# Below is generated by plot.py at 2019-02-21 06:26:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 447.68 Mbit/s
  95th percentile per-packet one-way delay: 58.083 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 227.28 Mbit/s
  95th percentile per-packet one-way delay: 57.832 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 220.17 Mbit/s
  95th percentile per-packet one-way delay: 58.330 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 222.05 Mbit/s
  95th percentile per-packet one-way delay: 58.324 ms
  Loss rate: 0.00%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2019-02-21 02:59:22
End at: 2019-02-21 02:59:52
Local clock offset: -0.314 ms
Remote clock offset: -0.164 ms

# Below is generated by plot.py at 2019-02-21 06:26:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 439.38 Mbit/s
95th percentile per-packet one-way delay: 57.707 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 224.54 Mbit/s
95th percentile per-packet one-way delay: 57.693 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 212.70 Mbit/s
95th percentile per-packet one-way delay: 57.810 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 219.94 Mbit/s
95th percentile per-packet one-way delay: 57.550 ms
Loss rate: 0.00%
Run 5: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-21 00:34:04
End at: 2019-02-21 00:34:34
Local clock offset: -0.413 ms
Remote clock offset: -0.816 ms

# Below is generated by plot.py at 2019-02-21 06:26:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 788.02 Mbit/s
95th percentile per-packet one-way delay: 77.816 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 402.18 Mbit/s
95th percentile per-packet one-way delay: 58.722 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 465.08 Mbit/s
95th percentile per-packet one-way delay: 88.977 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 229.18 Mbit/s
95th percentile per-packet one-way delay: 58.566 ms
Loss rate: 0.00%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2019-02-21 01:18:09
End at: 2019-02-21 01:18:39
Local clock offset: -0.548 ms
Remote clock offset: 1.282 ms

# Below is generated by plot.py at 2019-02-21 06:38:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 920.37 Mbit/s
95th percentile per-packet one-way delay: 82.028 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 473.53 Mbit/s
95th percentile per-packet one-way delay: 79.042 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 454.08 Mbit/s
95th percentile per-packet one-way delay: 84.473 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 434.57 Mbit/s
95th percentile per-packet one-way delay: 84.983 ms
Loss rate: 0.00%
Run 2: Report of TCP Vegas — Data Link

**Throughput (Mbit/s)**

- Flow 1 ingress (mean 473.63 Mbit/s)
- Flow 1 egress (mean 473.53 Mbit/s)
- Flow 2 ingress (mean 454.09 Mbit/s)
- Flow 2 egress (mean 454.08 Mbit/s)
- Flow 3 ingress (mean 434.58 Mbit/s)
- Flow 3 egress (mean 434.57 Mbit/s)

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

- Flow 1 (95th percentile 79.04 ms)
- Flow 2 (95th percentile 84.47 ms)
- Flow 3 (95th percentile 84.98 ms)
Run 3: Statistics of TCP Vegas

Start at: 2019-02-21 02:02:41
End at: 2019-02-21 02:03:11
Local clock offset: -0.278 ms
Remote clock offset: 1.113 ms

# Below is generated by plot.py at 2019-02-21 06:39:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 810.79 Mbit/s
  95th percentile per-packet one-way delay: 64.776 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 386.20 Mbit/s
  95th percentile per-packet one-way delay: 63.531 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 417.96 Mbit/s
  95th percentile per-packet one-way delay: 64.071 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 439.50 Mbit/s
  95th percentile per-packet one-way delay: 69.833 ms
  Loss rate: 0.00%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

Start at: 2019-02-21 02:45:47
End at: 2019-02-21 02:46:17
Local clock offset: -0.214 ms
Remote clock offset: -0.209 ms

# Below is generated by plot.py at 2019-02-21 06:44:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 925.93 Mbit/s
95th percentile per-packet one-way delay: 77.209 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 471.36 Mbit/s
95th percentile per-packet one-way delay: 71.770 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 478.55 Mbit/s
95th percentile per-packet one-way delay: 74.887 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 409.05 Mbit/s
95th percentile per-packet one-way delay: 85.076 ms
Loss rate: 0.09%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

Start at: 2019-02-21 03:29:59
End at: 2019-02-21 03:30:29
Local clock offset: -0.437 ms
Remote clock offset: -0.38 ms

# Below is generated by plot.py at 2019-02-21 06:44:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 879.51 Mbit/s
  95th percentile per-packet one-way delay: 67.898 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 451.12 Mbit/s
  95th percentile per-packet one-way delay: 67.821 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 426.89 Mbit/s
  95th percentile per-packet one-way delay: 67.780 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 434.20 Mbit/s
  95th percentile per-packet one-way delay: 68.264 ms
  Loss rate: 1.12%
Run 5: Report of TCP Vegas — Data Link

Throughput (Mb/s)

0 10 20 30 40 50 60

Time (s)

Flow 1 ingress (mean 451.12 Mb/s)
Flow 1 egress (mean 451.12 Mb/s)
Flow 2 ingress (mean 426.80 Mb/s)
Flow 2 egress (mean 426.99 Mb/s)
Flow 3 ingress (mean 439.58 Mb/s)
Flow 3 egress (mean 434.20 Mb/s)

Per-packet one-way delay (ms)

0 60 120 180

Time (s)

Flow 1 (95th percentile 67.82 ms)
Flow 2 (95th percentile 67.78 ms)
Flow 3 (95th percentile 68.26 ms)
Run 1: Statistics of Verus

Start at: 2019-02-21 00:36:36
End at: 2019-02-21 00:37:06
Local clock offset: -0.584 ms
Remote clock offset: -0.855 ms

# Below is generated by plot.py at 2019-02-21 06:44:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 281.75 Mbit/s
95th percentile per-packet one-way delay: 134.499 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 158.05 Mbit/s
95th percentile per-packet one-way delay: 138.248 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 154.00 Mbit/s
95th percentile per-packet one-way delay: 125.413 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 67.10 Mbit/s
95th percentile per-packet one-way delay: 135.316 ms
Loss rate: 0.00%
Run 1: Report of Verus — Data Link

![Graphs showing network throughput and per-packet delay over time for flows 1, 2, and 3. Flows have different mean throughputs and delays as indicated by the legend.]
Run 2: Statistics of Verus

Start at: 2019-02-21 01:20:40
End at: 2019-02-21 01:21:10
Local clock offset: -0.127 ms
Remote clock offset: -0.713 ms

# Below is generated by plot.py at 2019-02-21 06:44:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 241.55 Mbit/s
95th percentile per-packet one-way delay: 104.326 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 134.92 Mbit/s
95th percentile per-packet one-way delay: 124.508 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 110.34 Mbit/s
95th percentile per-packet one-way delay: 72.383 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 101.44 Mbit/s
95th percentile per-packet one-way delay: 96.680 ms
Loss rate: 0.02%
Run 2: Report of Verus — Data Link

![Throughput Graph]

- **Flow 1 ingress** (mean 134.96 Mbit/s)  
- **Flow 1 egress** (mean 134.92 Mbit/s)  
- **Flow 2 ingress** (mean 110.38 Mbit/s)  
- **Flow 2 egress** (mean 110.34 Mbit/s)  
- **Flow 3 ingress** (mean 101.47 Mbit/s)  
- **Flow 3 egress** (mean 101.44 Mbit/s)

![Delay Graph]

- **Flow 1** (95th percentile 124.51 ms)  
- **Flow 2** (95th percentile 72.38 ms)  
- **Flow 3** (95th percentile 96.68 ms)
Run 3: Statistics of Verus

Start at: 2019-02-21 02:04:59
End at: 2019-02-21 02:05:29
Local clock offset: 0.328 ms
Remote clock offset: -0.314 ms

# Below is generated by plot.py at 2019-02-21 06:44:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 247.67 Mbit/s
95th percentile per-packet one-way delay: 166.556 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 133.84 Mbit/s
95th percentile per-packet one-way delay: 87.840 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 135.16 Mbit/s
95th percentile per-packet one-way delay: 228.881 ms
Loss rate: 5.19%
-- Flow 3:
Average throughput: 73.68 Mbit/s
95th percentile per-packet one-way delay: 128.469 ms
Loss rate: 0.00%
Run 3: Report of Verus — Data Link

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

- Flow 1 ingress (mean 133.87 Mbit/s)
- Flow 1 egress (mean 133.84 Mbit/s)
- Flow 2 ingress (mean 142.55 Mbit/s)
- Flow 2 egress (mean 135.16 Mbit/s)
- Flow 3 ingress (mean 73.69 Mbit/s)
- Flow 3 egress (mean 73.68 Mbit/s)

- Flow 1 (95th percentile: 87.84 ms)
- Flow 2 (95th percentile: 228.88 ms)
- Flow 3 (95th percentile: 128.47 ms)
Run 4: Statistics of Verus

Start at: 2019-02-21 02:48:12
End at: 2019-02-21 02:48:42
Local clock offset: -0.482 ms
Remote clock offset: 0.627 ms

# Below is generated by plot.py at 2019-02-21 06:44:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 233.67 Mbit/s
95th percentile per-packet one-way delay: 89.107 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 138.28 Mbit/s
95th percentile per-packet one-way delay: 110.190 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 107.16 Mbit/s
95th percentile per-packet one-way delay: 82.226 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 74.35 Mbit/s
95th percentile per-packet one-way delay: 65.177 ms
Loss rate: 0.02%
Run 4: Report of Verus — Data Link

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

- Flow 1 ingress (mean 138.73 Mbit/s)
- Flow 1 egress (mean 138.28 Mbit/s)
- Flow 2 ingress (mean 107.18 Mbit/s)
- Flow 2 egress (mean 107.16 Mbit/s)
- Flow 3 ingress (mean 74.35 Mbit/s)
- Flow 3 egress (mean 74.35 Mbit/s)

- Flow 1 (95th percentile 110.19 ms)
- Flow 2 (95th percentile 82.13 ms)
- Flow 3 (95th percentile 65.18 ms)
Run 5: Statistics of Verus

Start at: 2019-02-21 03:32:26
End at: 2019-02-21 03:32:56
Local clock offset: 0.043 ms
Remote clock offset: -0.228 ms

# Below is generated by plot.py at 2019-02-21 06:45:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 262.63 Mbit/s
95th percentile per-packet one-way delay: 142.412 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 170.58 Mbit/s
95th percentile per-packet one-way delay: 150.202 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 111.66 Mbit/s
95th percentile per-packet one-way delay: 71.203 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 54.61 Mbit/s
95th percentile per-packet one-way delay: 62.060 ms
Loss rate: 0.00%
Run 5: Report of Verus — Data Link

[Graph showing throughput and delay over time for different flows, with annotations for each flow’s ingress and egress mean rates.]
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-21 00:20:30
End at: 2019-02-21 00:21:00
Local clock offset: 0.114 ms
Remote clock offset: -0.865 ms

# Below is generated by plot.py at 2019-02-21 06:46:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 558.24 Mbit/s
95th percentile per-packet one-way delay: 59.831 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 355.92 Mbit/s
95th percentile per-packet one-way delay: 58.813 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 254.91 Mbit/s
95th percentile per-packet one-way delay: 58.425 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 99.02 Mbit/s
95th percentile per-packet one-way delay: 62.828 ms
Loss rate: 0.02%
Run 1: Report of PCC-Vivace — Data Link
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-21 01:04:47
End at: 2019-02-21 01:05:17
Local clock offset: -0.122 ms
Remote clock offset: 0.611 ms

# Below is generated by plot.py at 2019-02-21 06:46:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 520.46 Mbit/s
95th percentile per-packet one-way delay: 61.671 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 345.19 Mbit/s
95th percentile per-packet one-way delay: 63.220 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 218.88 Mbit/s
95th percentile per-packet one-way delay: 59.657 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 90.13 Mbit/s
95th percentile per-packet one-way delay: 58.608 ms
Loss rate: 0.00%
Run 2: Report of PCC-Vivace — Data Link
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-21 01:49:11
End at: 2019-02-21 01:49:41
Local clock offset: -0.308 ms
Remote clock offset: 1.058 ms

# Below is generated by plot.py at 2019-02-21 06:46:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 559.23 Mbit/s
95th percentile per-packet one-way delay: 74.684 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 323.68 Mbit/s
95th percentile per-packet one-way delay: 77.008 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 240.81 Mbit/s
95th percentile per-packet one-way delay: 60.809 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 228.82 Mbit/s
95th percentile per-packet one-way delay: 86.820 ms
Loss rate: 0.00%
Run 3: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 323.68 Mbit/s)
- Flow 1 egress (mean 323.68 Mbit/s)
- Flow 2 ingress (mean 240.81 Mbit/s)
- Flow 2 egress (mean 240.81 Mbit/s)
- Flow 3 ingress (mean 228.82 Mbit/s)
- Flow 3 egress (mean 228.82 Mbit/s)

- Flow 1 (95th percentile 77.01 ms)
- Flow 2 (95th percentile 60.81 ms)
- Flow 3 (95th percentile 86.82 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-21 02:32:35  
End at: 2019-02-21 02:33:05  
Local clock offset: 0.224 ms  
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2019-02-21 06:47:16  
# Datalink statistics
-- Total of 3 flows:  
Average throughput: 517.84 Mbit/s  
95th percentile per-packet one-way delay: 62.898 ms  
Loss rate: 0.01%  
-- Flow 1:  
Average throughput: 343.30 Mbit/s  
95th percentile per-packet one-way delay: 63.420 ms  
Loss rate: 0.01%  
-- Flow 2:  
Average throughput: 231.26 Mbit/s  
95th percentile per-packet one-way delay: 59.906 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 62.91 Mbit/s  
95th percentile per-packet one-way delay: 57.040 ms  
Loss rate: 0.00%
Run 4: Report of PCC-Vivace — Data Link

![Graph of data link performance](image)

**Throughput (Mbit/s)**

- Flow 1 ingress (mean 343.32 Mbit/s)
- Flow 1 egress (mean 343.30 Mbit/s)
- Flow 2 ingress (mean 231.27 Mbit/s)
- Flow 2 egress (mean 231.26 Mbit/s)
- Flow 3 ingress (mean 62.91 Mbit/s)
- Flow 3 egress (mean 62.90 Mbit/s)

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

- Flow 1 (95th percentile 63.42 ms)
- Flow 2 (95th percentile 59.91 ms)
- Flow 3 (95th percentile 57.04 ms)
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-21 03:16:43
End at: 2019-02-21 03:17:13
Local clock offset: -0.3 ms
Remote clock offset: -1.702 ms

# Below is generated by plot.py at 2019-02-21 06:47:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.58 Mbit/s
95th percentile per-packet one-way delay: 62.592 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 312.10 Mbit/s
95th percentile per-packet one-way delay: 64.076 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 132.00 Mbit/s
95th percentile per-packet one-way delay: 56.458 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 248.28 Mbit/s
95th percentile per-packet one-way delay: 66.017 ms
Loss rate: 0.02%
Run 5: Report of PCC-Vivace — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 312.37 Mbps)
  - Flow 1 egress (mean 312.10 Mbps)
  - Flow 2 ingress (mean 131.98 Mbps)
  - Flow 2 egress (mean 132.00 Mbps)
  - Flow 3 ingress (mean 248.30 Mbps)
  - Flow 3 egress (mean 248.28 Mbps)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 64.08 ms)
  - Flow 2 (95th percentile 56.46 ms)
  - Flow 3 (95th percentile 66.02 ms)
Run 1: Statistics of WebRTC media

Start at: 2019-02-21 00:12:43
End at: 2019-02-21 00:13:13
Local clock offset: 0.408 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2019-02-21 06:47:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.76 Mbit/s
95th percentile per-packet one-way delay: 57.588 ms
Loss rate: 0.01%

-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 57.583 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 57.652 ms
Loss rate: 0.02%

-- Flow 3:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 57.370 ms
Loss rate: 0.00%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-02-21 00:57:10
End at: 2019-02-21 00:57:40
Local clock offset: -0.315 ms
Remote clock offset: -1.147 ms

# Below is generated by plot.py at 2019-02-21 06:47:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 56.794 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 56.862 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 56.591 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 56.512 ms
Loss rate: 0.05%
Run 2: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 0.05 Mbit/s)
- Flow 1 egress (mean 0.05 Mbit/s)
- Flow 2 ingress (mean 0.05 Mbit/s)
- Flow 2 egress (mean 0.05 Mbit/s)
- Flow 3 ingress (mean 0.04 Mbit/s)
- Flow 3 egress (mean 0.05 Mbit/s)

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

- Flow 1 (95th percentile 56.86 ms)
- Flow 2 (95th percentile 56.59 ms)
- Flow 3 (95th percentile 56.51 ms)
Run 3: Statistics of WebRTC media

Start at: 2019-02-21 01:41:29
End at: 2019-02-21 01:41:59
Local clock offset: -0.233 ms
Remote clock offset: 1.132 ms

# Below is generated by plot.py at 2019-02-21 06:47:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 58.755 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.659 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.815 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.619 ms
Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link
Run 4: Statistics of WebRTC media

Start at: 2019-02-21 02:25:00
End at: 2019-02-21 02:25:31
Local clock offset: 0.013 ms
Remote clock offset: -0.104 ms

# Below is generated by plot.py at 2019-02-21 06:47:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.68 Mbit/s
  95th percentile per-packet one-way delay: 57.488 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.02 Mbit/s
  95th percentile per-packet one-way delay: 57.533 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.21 Mbit/s
  95th percentile per-packet one-way delay: 57.163 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.46 Mbit/s
  95th percentile per-packet one-way delay: 57.138 ms
  Loss rate: 0.00%
Run 5: Statistics of WebRTC media

Start at: 2019-02-21 03:08:16  
End at: 2019-02-21 03:08:46  
Local clock offset: 0.018 ms  
Remote clock offset: -0.892 ms

# Below is generated by plot.py at 2019-02-21 06:47:16  
# Datalink statistics
-- Total of 3 flows:  
Average throughput: 2.19 Mbit/s  
95th percentile per-packet one-way delay: 56.565 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.11 Mbit/s  
95th percentile per-packet one-way delay: 56.565 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 56.686 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 56.423 ms  
Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link