Pantheon Report

Generated at 2019-12-12 03:02:12 (UTC).
Data path: GCE Iowa on ens4 (local) → GCE Tokyo on ens4 (remote).
Repeated the test of 24 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 5.0.0-1025-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 @ de42328552b3776a75a932a94dafd72257b0ec
third_party/fillp @ d64a1459332fcee56963885d7e8a7e6a32d4f19
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdef58e552f4
third_party/indigo @ 2061c924aa9d58d38dc4dfef0e4c8bf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaeb4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da209533773730c746486ca4966
third_party/muses_dtree @ 387225f7b56f1dbee92d708a8869fbb84eb3200
third_party/pantheon-tunnel @ f86663f58d27af9427176255ee3a354cc2e802bd
third_party/pcc @ 1af9c928f0d66b823c091a55fe872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8ac00f92c4eb24f974ab
third_party/proto-quic @ 77961fa182733a86b42f1bc8143ebc978f3c4f4
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3db2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a6ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ 34b447ea74c6c60a2611a9c2b2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9d0e4735770d143a1fa2851
test from GCE Iowa 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></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
</tr>
<tr>
<td>TCP BBR</td>
<td>5</td>
<td>624.28</td>
<td>521.38</td>
<td>456.47</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>262.79</td>
<td>262.35</td>
<td>220.42</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>5</td>
<td>420.95</td>
<td>394.25</td>
<td>227.37</td>
</tr>
<tr>
<td>FillP</td>
<td>5</td>
<td>529.62</td>
<td>345.72</td>
<td>255.51</td>
</tr>
<tr>
<td>FillP-Sheep</td>
<td>5</td>
<td>402.96</td>
<td>305.22</td>
<td>221.71</td>
</tr>
<tr>
<td>Indigo</td>
<td>5</td>
<td>207.24</td>
<td>187.35</td>
<td>151.33</td>
</tr>
<tr>
<td>Indigo-MusesC3</td>
<td>4</td>
<td>448.38</td>
<td>379.42</td>
<td>248.19</td>
</tr>
<tr>
<td>Indigo-MusesC5</td>
<td>5</td>
<td>476.77</td>
<td>400.72</td>
<td>252.16</td>
</tr>
<tr>
<td>Indigo-MusesD</td>
<td>5</td>
<td>434.73</td>
<td>340.81</td>
<td>268.15</td>
</tr>
<tr>
<td>Indigo-MusesT</td>
<td>4</td>
<td>483.07</td>
<td>406.25</td>
<td>280.34</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>5</td>
<td>25.27</td>
<td>16.40</td>
<td>8.05</td>
</tr>
<tr>
<td>Muses_DecisionTree</td>
<td>5</td>
<td>358.73</td>
<td>307.91</td>
<td>240.59</td>
</tr>
<tr>
<td>Muses_DecisionTreeH0</td>
<td>5</td>
<td>340.25</td>
<td>308.89</td>
<td>260.27</td>
</tr>
<tr>
<td>Muses_DecisionTreeR0</td>
<td>5</td>
<td>406.09</td>
<td>331.13</td>
<td>251.43</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>5</td>
<td>411.98</td>
<td>313.30</td>
<td>249.67</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>5</td>
<td>280.16</td>
<td>244.37</td>
<td>142.46</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>5</td>
<td>46.68</td>
<td>36.27</td>
<td>26.43</td>
</tr>
<tr>
<td>SCReAM</td>
<td>5</td>
<td>0.22</td>
<td>0.22</td>
<td>0.22</td>
</tr>
<tr>
<td>Sprout</td>
<td>5</td>
<td>7.01</td>
<td>6.87</td>
<td>6.54</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>5</td>
<td>187.62</td>
<td>222.79</td>
<td>205.16</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>5</td>
<td>331.68</td>
<td>343.06</td>
<td>297.29</td>
</tr>
<tr>
<td>Verus</td>
<td>5</td>
<td>134.07</td>
<td>127.01</td>
<td>100.00</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>5</td>
<td>235.88</td>
<td>226.16</td>
<td>129.03</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>5</td>
<td>0.90</td>
<td>0.83</td>
<td>0.40</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2019-12-11 20:06:36
End at: 2019-12-11 20:07:06
Local clock offset: -0.079 ms
Remote clock offset: -0.188 ms

# Below is generated by plot.py at 2019-12-12 00:13:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1128.24 Mbit/s
95th percentile per-packet one-way delay: 141.770 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 691.70 Mbit/s
95th percentile per-packet one-way delay: 130.248 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 395.28 Mbit/s
95th percentile per-packet one-way delay: 186.467 ms
Loss rate: 2.93%
-- Flow 3:
Average throughput: 519.54 Mbit/s
95th percentile per-packet one-way delay: 130.082 ms
Loss rate: 0.45%
Run 1: Report of TCP BBR — Data Link

![Graph 1: Throughput vs Time] (Throughput graph showing data for different flows with mean throughput values indicated.)

![Graph 2: Per-packet end-to-end delay vs Time] (Per-packet end-to-end delay graph showing data for different flows with 95th percentile delay values indicated.)
Run 2: Statistics of TCP BBR

Start at: 2019-12-11 20:47:33
End at: 2019-12-11 20:48:03
Local clock offset: 0.001 ms
Remote clock offset: -0.302 ms

# Below is generated by plot.py at 2019-12-12 00:13:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1148.34 Mbit/s
95th percentile per-packet one-way delay: 180.581 ms
Loss rate: 3.37%
-- Flow 1:
Average throughput: 614.65 Mbit/s
95th percentile per-packet one-way delay: 150.472 ms
Loss rate: 1.59%
-- Flow 2:
Average throughput: 599.84 Mbit/s
95th percentile per-packet one-way delay: 198.010 ms
Loss rate: 6.41%
-- Flow 3:
Average throughput: 405.02 Mbit/s
95th percentile per-packet one-way delay: 196.512 ms
Loss rate: 1.97%
Run 2: Report of TCP BBR — Data Link
Run 3: Statistics of TCP BBR

Start at: 2019-12-11 21:28:42
End at: 2019-12-11 21:29:12
Local clock offset: -0.053 ms
Remote clock offset: -0.163 ms

# Below is generated by plot.py at 2019-12-12 00:13:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1082.66 Mbit/s
95th percentile per-packet one-way delay: 176.555 ms
Loss rate: 2.76%
-- Flow 1:
Average throughput: 568.95 Mbit/s
95th percentile per-packet one-way delay: 169.914 ms
Loss rate: 3.58%
-- Flow 2:
Average throughput: 536.71 Mbit/s
95th percentile per-packet one-way delay: 166.560 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 466.78 Mbit/s
95th percentile per-packet one-way delay: 210.758 ms
Loss rate: 4.21%
Run 3: Report of TCP BBR — Data Link

![Graph showing network throughput and delay for different flows over time.](image-url)
Run 4: Statistics of TCP BBR

Start at: 2019-12-11 22:09:46
End at: 2019-12-11 22:10:16
Local clock offset: 0.002 ms
Remote clock offset: -0.164 ms

# Below is generated by plot.py at 2019-12-12 00:13:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1043.81 Mbit/s
95th percentile per-packet one-way delay: 170.560 ms
Loss rate: 2.72%
-- Flow 1:
Average throughput: 549.95 Mbit/s
95th percentile per-packet one-way delay: 176.702 ms
Loss rate: 2.17%
-- Flow 2:
Average throughput: 547.92 Mbit/s
95th percentile per-packet one-way delay: 156.881 ms
Loss rate: 4.45%
-- Flow 3:
Average throughput: 388.21 Mbit/s
95th percentile per-packet one-way delay: 158.932 ms
Loss rate: 0.00%
Run 4: Report of TCP BBR — Data Link

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

![Graph of Per-packet one-way delay (ms) vs Time (s)]
Run 5: Statistics of TCP BBR

Start at: 2019-12-11 22:50:41
End at: 2019-12-11 22:51:11
Local clock offset: -0.031 ms
Remote clock offset: -0.082 ms

# Below is generated by plot.py at 2019-12-12 00:15:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1213.80 Mbit/s
95th percentile per-packet one-way delay: 172.731 ms
Loss rate: 4.99%
-- Flow 1:
Average throughput: 696.13 Mbit/s
95th percentile per-packet one-way delay: 174.421 ms
Loss rate: 6.57%
-- Flow 2:
Average throughput: 527.15 Mbit/s
95th percentile per-packet one-way delay: 157.407 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 502.81 Mbit/s
95th percentile per-packet one-way delay: 193.465 ms
Loss rate: 5.99%
Run 5: Report of TCP BBR — Data Link

---

**Throughput (Mbps)**

- Flow 1 ingress (mean 745.05 Mbps)
- Flow 1 egress (mean 696.13 Mbps)
- Flow 2 ingress (mean 533.54 Mbps)
- Flow 2 egress (mean 527.15 Mbps)
- Flow 3 ingress (mean 534.85 Mbps)
- Flow 3 egress (mean 502.81 Mbps)

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

- Flow 1 (95th percentile 174.42 ms)
- Flow 2 (95th percentile 157.41 ms)
- Flow 3 (95th percentile 193.47 ms)
Run 1: Statistics of Copa

Start at: 2019-12-11 20:27:08
End at: 2019-12-11 20:27:38
Local clock offset: -0.057 ms
Remote clock offset: -0.107 ms

# Below is generated by plot.py at 2019-12-12 00:15:08
# Datalink statistics
-- Total of 3 flows:
    Average throughput: 546.72 Mbit/s
    95th percentile per-packet one-way delay: 92.768 ms
    Loss rate: 0.00%
-- Flow 1:
    Average throughput: 303.03 Mbit/s
    95th percentile per-packet one-way delay: 84.986 ms
    Loss rate: 0.00%
-- Flow 2:
    Average throughput: 246.71 Mbit/s
    95th percentile per-packet one-way delay: 128.288 ms
    Loss rate: 0.01%
-- Flow 3:
    Average throughput: 230.39 Mbit/s
    95th percentile per-packet one-way delay: 84.518 ms
    Loss rate: 0.00%
Run 1: Report of Copa — Data Link

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

- **Flow 1 ingress** (mean 303.03 Mbit/s)
- **Flow 1 egress** (mean 303.03 Mbit/s)
- **Flow 2 ingress** (mean 246.70 Mbit/s)
- **Flow 2 egress** (mean 246.71 Mbit/s)
- **Flow 3 ingress** (mean 230.44 Mbit/s)
- **Flow 3 egress** (mean 230.39 Mbit/s)

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

- **Flow 1** (95th percentile 84.99 ms)
- **Flow 2** (95th percentile 128.29 ms)
- **Flow 3** (95th percentile 84.52 ms)
Run 2: Statistics of Copa

Start at: 2019-12-11 21:08:12
End at: 2019-12-11 21:08:42
Local clock offset: -0.043 ms
Remote clock offset: -0.139 ms

# Below is generated by plot.py at 2019-12-12 00:15:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 546.84 Mbit/s
95th percentile per-packet one-way delay: 91.917 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 297.47 Mbit/s
95th percentile per-packet one-way delay: 88.195 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 247.37 Mbit/s
95th percentile per-packet one-way delay: 96.882 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 255.00 Mbit/s
95th percentile per-packet one-way delay: 89.765 ms
Loss rate: 0.03%
Run 2: Report of Copa — Data Link

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

Legend:
- Flow 1 ingress (mean 297.51 Mbps)
- Flow 1 egress (mean 297.47 Mbps)
- Flow 2 ingress (mean 247.37 Mbps)
- Flow 2 egress (mean 247.37 Mbps)
- Flow 3 ingress (mean 255.08 Mbps)
- Flow 3 egress (mean 255.00 Mbps)

Legend for packet delay:
- Flow 1 (95th percentile 88.19 ms)
- Flow 2 (95th percentile 96.88 ms)
- Flow 3 (95th percentile 89.77 ms)
Run 3: Statistics of Copa

Start at: 2019-12-11 21:49:30
End at: 2019-12-11 21:50:00
Local clock offset: -0.081 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2019-12-12 00:15:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 388.43 Mbit/s
95th percentile per-packet one-way delay: 83.992 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 153.44 Mbit/s
95th percentile per-packet one-way delay: 66.609 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 274.48 Mbit/s
95th percentile per-packet one-way delay: 95.533 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 156.06 Mbit/s
95th percentile per-packet one-way delay: 71.123 ms
Loss rate: 0.00%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2019-12-11 22:30:26
End at: 2019-12-11 22:30:56
Local clock offset: 0.036 ms
Remote clock offset: -0.15 ms

# Below is generated by plot.py at 2019-12-12 00:24:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.46 Mbit/s
95th percentile per-packet one-way delay: 90.335 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 270.21 Mbit/s
95th percentile per-packet one-way delay: 103.159 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 269.30 Mbit/s
95th percentile per-packet one-way delay: 77.954 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 216.53 Mbit/s
95th percentile per-packet one-way delay: 85.219 ms
Loss rate: 0.00%
Run 4: Report of Copa — Data Link
Run 5: Statistics of Copa

Start at: 2019-12-11 23:11:33
End at: 2019-12-11 23:12:03
Local clock offset: -0.061 ms
Remote clock offset: 0.003 ms

# Below is generated by plot.py at 2019-12-12 00:32:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 553.21 Mbit/s
95th percentile per-packet one-way delay: 90.902 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 289.80 Mbit/s
95th percentile per-packet one-way delay: 98.681 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 273.91 Mbit/s
95th percentile per-packet one-way delay: 85.528 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 244.10 Mbit/s
95th percentile per-packet one-way delay: 89.914 ms
Loss rate: 0.00%
Run 5: Report of Copa — Data Link

![Graph of data link throughput and packet delay over time]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 289.79 Mbps)
  - Flow 1 egress (mean 289.80 Mbps)
  - Flow 2 ingress (mean 273.32 Mbps)
  - Flow 2 egress (mean 273.91 Mbps)
  - Flow 3 ingress (mean 244.10 Mbps)
  - Flow 3 egress (mean 244.10 Mbps)

- **Packet Delay (ms):**
  - Flow 1 (95th percentile 98.68 ms)
  - Flow 2 (95th percentile 85.53 ms)
  - Flow 3 (95th percentile 89.91 ms)
Run 1: Statistics of TCP Cubic

Start at: 2019-12-11 20:08:40
End at: 2019-12-11 20:09:10
Local clock offset: -0.077 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2019-12-12 00:32:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 776.92 Mbit/s
95th percentile per-packet one-way delay: 125.823 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 453.10 Mbit/s
95th percentile per-packet one-way delay: 129.349 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 357.14 Mbit/s
95th percentile per-packet one-way delay: 109.273 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 258.71 Mbit/s
95th percentile per-packet one-way delay: 84.196 ms
Loss rate: 0.00%
Run 1: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 452.70 Mbit/s)
- Flow 1 egress (mean 453.10 Mbit/s)
- Flow 2 ingress (mean 356.58 Mbit/s)
- Flow 2 egress (mean 357.14 Mbit/s)
- Flow 3 ingress (mean 257.88 Mbit/s)
- Flow 3 egress (mean 258.71 Mbit/s)

- Flow 1 (95th percentile 129.35 ms)
- Flow 2 (95th percentile 109.27 ms)
- Flow 3 (95th percentile 84.20 ms)
Run 2: Statistics of TCP Cubic

Start at: 2019-12-11 20:49:40
End at: 2019-12-11 20:50:10
Local clock offset: 0.02 ms
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2019-12-12 00:32:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 699.14 Mbit/s
95th percentile per-packet one-way delay: 98.550 ms
Loss rate: 0.06%

-- Flow 1:
Average throughput: 396.90 Mbit/s
95th percentile per-packet one-way delay: 78.011 ms
Loss rate: 0.06%

-- Flow 2:
Average throughput: 353.99 Mbit/s
95th percentile per-packet one-way delay: 129.261 ms
Loss rate: 0.03%

-- Flow 3:
Average throughput: 200.02 Mbit/s
95th percentile per-packet one-way delay: 90.370 ms
Loss rate: 0.19%
Run 2: Report of TCP Cubic — Data Link

The figure shows the performance of TCP Cubic over a data link, with two main graphs:

1. **Throughput (Mbps)**: This graph plots the throughput over time for different flows. The throughput is shown for both ingress and egress directions. The legend indicates flow information with mean rates for each flow:
   - Flow 1 ingress (mean 396.98 Mbps)
   - Flow 1 egress (mean 396.90 Mbps)
   - Flow 2 ingress (mean 353.82 Mbps)
   - Flow 2 egress (mean 353.99 Mbps)
   - Flow 3 ingress (mean 290.26 Mbps)
   - Flow 3 egress (mean 290.02 Mbps)

2. **Per-packet one-way delay (ms)**: This graph plots the per-packet delay over time for the same flows. The legend indicates flow information with 95th percentile delay:
   - Flow 1 (95th percentile 78.01 ms)
   - Flow 2 (95th percentile 129.26 ms)
   - Flow 3 (95th percentile 90.37 ms)

The graphs illustrate the network performance under varying conditions, with key metrics such as throughput and delay.
Run 3: Statistics of TCP Cubic

Start at: 2019-12-11 21:30:47
End at: 2019-12-11 21:31:17
Local clock offset: -0.041 ms
Remote clock offset: 0.066 ms

# Below is generated by plot.py at 2019-12-12 00:32:00
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 854.62 Mbit/s
  95th percentile per-packet one-way delay: 162.989 ms
  Loss rate: 0.07%
-- Flow 1:
  Average throughput: 432.58 Mbit/s
  95th percentile per-packet one-way delay: 169.950 ms
  Loss rate: 0.11%
-- Flow 2:
  Average throughput: 539.21 Mbit/s
  95th percentile per-packet one-way delay: 139.476 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 189.27 Mbit/s
  95th percentile per-packet one-way delay: 71.128 ms
  Loss rate: 0.00%
Run 3: Report of TCP Cubic — Data Link

![Graph showing throughput and per-packet round-trip delay for different data flows over time.](image-url)
Run 4: Statistics of TCP Cubic

Start at: 2019-12-11 22:11:49
End at: 2019-12-11 22:12:19
Local clock offset: -0.015 ms
Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2019-12-12 00:32:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 782.02 Mbit/s
95th percentile per-packet one-way delay: 169.260 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 449.93 Mbit/s
95th percentile per-packet one-way delay: 162.546 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 354.64 Mbit/s
95th percentile per-packet one-way delay: 172.621 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 288.75 Mbit/s
95th percentile per-packet one-way delay: 172.809 ms
Loss rate: 0.85%
Run 4: Report of TCP Cubic — Data Link

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

- **Flow 1 ingress (mean 451.80 Mbit/s)**
- **Flow 1 egress (mean 449.93 Mbit/s)**
- **Flow 2 ingress (mean 356.12 Mbit/s)**
- **Flow 2 egress (mean 354.64 Mbit/s)**
- **Flow 3 ingress (mean 291.21 Mbit/s)**
- **Flow 3 egress (mean 288.75 Mbit/s)**

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

- **Flow 1 (95th percentile 162.55 ms)**
- **Flow 2 (95th percentile 172.62 ms)**
- **Flow 3 (95th percentile 172.81 ms)**
Run 5: Statistics of TCP Cubic

Start at: 2019-12-11 22:52:50
End at: 2019-12-11 22:53:20
Local clock offset: -0.032 ms
Remote clock offset: -0.131 ms

# Below is generated by plot.py at 2019-12-12 00:32:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 682.68 Mbit/s
95th percentile per-packet one-way delay: 159.827 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 372.25 Mbit/s
95th percentile per-packet one-way delay: 68.907 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 366.27 Mbit/s
95th percentile per-packet one-way delay: 174.265 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 200.11 Mbit/s
95th percentile per-packet one-way delay: 78.349 ms
Loss rate: 0.00%
Run 5: Report of TCP Cubic — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 372.25 Mbps)
- Flow 1 egress (mean 372.25 Mbps)
- Flow 2 ingress (mean 366.96 Mbps)
- Flow 2 egress (mean 366.27 Mbps)
- Flow 3 ingress (mean 200.11 Mbps)
- Flow 3 egress (mean 200.11 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 68.91 ms)
- Flow 2 (95th percentile 174.26 ms)
- Flow 3 (95th percentile 78.35 ms)
Run 1: Statistics of FillP

Start at: 2019-12-11 20:15:19
End at: 2019-12-11 20:15:49
Local clock offset: -0.08 ms
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2019-12-12 00:35:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 887.57 Mbit/s
95th percentile per-packet one-way delay: 67.526 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 562.57 Mbit/s
95th percentile per-packet one-way delay: 68.013 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 342.39 Mbit/s
95th percentile per-packet one-way delay: 66.935 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 290.51 Mbit/s
95th percentile per-packet one-way delay: 66.739 ms
Loss rate: 0.05%
Run 1: Report of FillP — Data Link

![Graph showing throughput and per-packet delay over time with legend indicating flow rates and delays.](image-url)

Legend:
- **Flow 1 Ingress (mean 562.56 Mbit/s)**
- **Flow 1 Egress (mean 562.57 Mbit/s)**
- **Flow 2 Ingress (mean 342.39 Mbit/s)**
- **Flow 2 Egress (mean 342.39 Mbit/s)**
- **Flow 3 Ingress (mean 290.78 Mbit/s)**
- **Flow 3 Egress (mean 290.53 Mbit/s)**
Run 2: Statistics of FillP

Start at: 2019-12-11 20:56:21
End at: 2019-12-11 20:56:51
Local clock offset: -0.007 ms
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2019-12-12 00:45:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 829.32 Mbit/s
95th percentile per-packet one-way delay: 108.754 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 521.81 Mbit/s
95th percentile per-packet one-way delay: 113.368 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 344.99 Mbit/s
95th percentile per-packet one-way delay: 64.403 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 235.17 Mbit/s
95th percentile per-packet one-way delay: 66.150 ms
Loss rate: 0.00%
Run 2: Report of FillP — Data Link

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

- Flow 1 ingress (mean 524.35 Mbps)
- Flow 2 ingress (mean 344.99 Mbps)
- Flow 1 egress (mean 521.81 Mbps)
- Flow 2 egress (mean 344.99 Mbps)
- Flow 3 ingress (mean 235.17 Mbps)
- Flow 3 egress (mean 235.17 Mbps)

![Graph of packet delay distribution over time for different flows]

- Flow 1 (95th percentile 113.37 ms)
- Flow 2 (95th percentile 64.40 ms)
- Flow 3 (95th percentile 66.15 ms)
Run 3: Statistics of FillP

Start at: 2019-12-11 21:37:36
End at: 2019-12-11 21:38:06
Local clock offset: -0.081 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-12-12 00:46:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 839.16 Mbit/s
95th percentile per-packet one-way delay: 97.257 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 520.92 Mbit/s
95th percentile per-packet one-way delay: 103.699 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 342.30 Mbit/s
95th percentile per-packet one-way delay: 67.559 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 274.17 Mbit/s
95th percentile per-packet one-way delay: 65.796 ms
Loss rate: 0.00%
Run 3: Report of FillP — Data Link

**Throughput (Mb/s)**

- Flow 1 ingress (mean 522.00 Mb/s)
- Flow 1 egress (mean 520.92 Mb/s)
- Flow 2 ingress (mean 342.30 Mb/s)
- Flow 2 egress (mean 342.30 Mb/s)
- Flow 3 ingress (mean 274.17 Mb/s)
- Flow 3 egress (mean 274.17 Mb/s)

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

- Flow 1 (95th percentile 103.70 ms)
- Flow 2 (95th percentile 67.56 ms)
- Flow 3 (95th percentile 65.80 ms)
Run 4: Statistics of FillP

Start at: 2019-12-11 22:18:36
End at: 2019-12-11 22:19:06
Local clock offset: -0.043 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2019-12-12 00:46:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 796.39 Mbit/s
95th percentile per-packet one-way delay: 121.169 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 497.08 Mbit/s
95th percentile per-packet one-way delay: 125.249 ms
Loss rate: 2.15%
-- Flow 2:
Average throughput: 338.36 Mbit/s
95th percentile per-packet one-way delay: 64.648 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 220.57 Mbit/s
95th percentile per-packet one-way delay: 61.883 ms
Loss rate: 0.00%
Run 4: Report of FillP — Data Link

![Throughput Graph](image1)

- **Flow 1 Ingress** (mean 508.09 Mbps)
- **Flow 1 Egress** (mean 497.08 Mbps)
- **Flow 2 Ingress** (mean 338.51 Mbps)
- **Flow 2 Egress** (mean 338.36 Mbps)
- **Flow 3 Ingress** (mean 220.57 Mbps)
- **Flow 3 Egress** (mean 220.57 Mbps)

![Delay Graph](image2)

- **Flow 1** (95th percentile 125.25 ms)
- **Flow 2** (95th percentile 64.65 ms)
- **Flow 3** (95th percentile 61.88 ms)
Run 5: Statistics of FillP

Start at: 2019-12-11 22:59:40
End at: 2019-12-11 23:00:10
Local clock offset: -0.045 ms
Remote clock offset: 0.015 ms

# Below is generated by plot.py at 2019-12-12 00:49:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 870.70 Mbit/s
95th percentile per-packet one-way delay: 108.289 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 545.73 Mbit/s
95th percentile per-packet one-way delay: 112.890 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 360.55 Mbit/s
95th percentile per-packet one-way delay: 64.182 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 257.13 Mbit/s
95th percentile per-packet one-way delay: 63.862 ms
Loss rate: 0.00%
Run 5: Report of FillP — Data Link
Run 1: Statistics of FillP-Sheep

Start at: 2019-12-11 20:40:17
End at: 2019-12-11 20:40:47
Local clock offset: -0.019 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2019-12-12 00:49:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 737.01 Mbit/s
95th percentile per-packet one-way delay: 66.227 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 469.38 Mbit/s
95th percentile per-packet one-way delay: 69.415 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 294.24 Mbit/s
95th percentile per-packet one-way delay: 64.149 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 215.34 Mbit/s
95th percentile per-packet one-way delay: 61.982 ms
Loss rate: 0.00%
Run 1: Report of FillP-Sheep — Data Link
Run 2: Statistics of FillP-Sheep

Start at: 2019-12-11 21:21:22
End at: 2019-12-11 21:21:52
Local clock offset: -0.048 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-12-12 00:49:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 786.28 Mbit/s
  95th percentile per-packet one-way delay: 86.418 ms
  Loss rate: 0.05%
-- Flow 1:
  Average throughput: 499.13 Mbit/s
  95th percentile per-packet one-way delay: 94.270 ms
  Loss rate: 0.08%
-- Flow 2:
  Average throughput: 317.44 Mbit/s
  95th percentile per-packet one-way delay: 63.272 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 228.04 Mbit/s
  95th percentile per-packet one-way delay: 62.951 ms
  Loss rate: 0.00%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

Start at: 2019-12-11 22:02:27
End at: 2019-12-11 22:02:57
Local clock offset: -0.075 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2019-12-12 00:51:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 793.90 Mbit/s
95th percentile per-packet one-way delay: 69.118 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 507.48 Mbit/s
95th percentile per-packet one-way delay: 73.273 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 315.66 Mbit/s
95th percentile per-packet one-way delay: 64.522 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 232.41 Mbit/s
95th percentile per-packet one-way delay: 63.282 ms
Loss rate: 0.00%
Run 3: Report of FillP-Sheep — Data Link

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

- Flow 1 ingress: mean 307.47 Mbit/s
- Flow 1 egress: mean 307.48 Mbit/s
- Flow 2 ingress: mean 315.66 Mbit/s
- Flow 2 egress: mean 315.66 Mbit/s
- Flow 3 ingress: mean 232.41 Mbit/s
- Flow 3 egress: mean 232.41 Mbit/s

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

- Flow 1 (95th percentile: 73.27 ms)
- Flow 2 (95th percentile: 64.52 ms)
- Flow 3 (95th percentile: 63.28 ms)
Run 4: Statistics of FillP-Sheep

Start at: 2019-12-11 22:43:40
End at: 2019-12-11 22:44:10
Local clock offset: 0.018 ms
Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2019-12-12 00:51:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 298.70 Mbit/s
95th percentile per-packet one-way delay: 66.094 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 34.03 Mbit/s
95th percentile per-packet one-way delay: 70.192 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 295.72 Mbit/s
95th percentile per-packet one-way delay: 66.207 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 205.69 Mbit/s
95th percentile per-packet one-way delay: 62.638 ms
Loss rate: 0.00%
Run 4: Report of FillP-Sheep — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 34.03 Mbps)
  - Flow 1 egress (mean 34.03 Mbps)
  - Flow 2 ingress (mean 295.72 Mbps)
  - Flow 2 egress (mean 295.72 Mbps)
  - Flow 3 ingress (mean 205.69 Mbps)
  - Flow 3 egress (mean 205.69 Mbps)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 70.19 ms)
  - Flow 2 (95th percentile 66.21 ms)
  - Flow 3 (95th percentile 62.64 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2019-12-11 23:24:53
End at: 2019-12-11 23:25:23
Local clock offset: -0.062 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-12-12 01:04:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 781.01 Mbit/s
95th percentile per-packet one-way delay: 85.792 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 504.80 Mbit/s
95th percentile per-packet one-way delay: 91.562 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 303.03 Mbit/s
95th percentile per-packet one-way delay: 63.697 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 227.08 Mbit/s
95th percentile per-packet one-way delay: 65.792 ms
Loss rate: 0.17%
Run 5: Report of FillP-Sheep — Data Link

![Graph 1](image1)

![Graph 2](image2)
Run 1: Statistics of Indigo

Start at: 2019-12-11 20:31:00
End at: 2019-12-11 20:31:30
Local clock offset: -0.028 ms
Remote clock offset: -0.209 ms

# Below is generated by plot.py at 2019-12-12 01:04:03
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 381.63 Mbit/s
  95th percentile per-packet one-way delay: 65.150 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 212.60 Mbit/s
  95th percentile per-packet one-way delay: 65.755 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 182.53 Mbit/s
  95th percentile per-packet one-way delay: 64.926 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 148.30 Mbit/s
  95th percentile per-packet one-way delay: 60.681 ms
  Loss rate: 0.00%
Run 1: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 212.59 Mbit/s) vs Flow 1 egress (mean 212.60 Mbit/s)
- Flow 2 ingress (mean 182.53 Mbit/s) vs Flow 2 egress (mean 182.53 Mbit/s)
- Flow 3 ingress (mean 148.30 Mbit/s) vs Flow 3 egress (mean 148.30 Mbit/s)

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

- Flow 1 (95th percentile 65.75 ms)
- Flow 2 (95th percentile 64.93 ms)
- Flow 3 (95th percentile 60.68 ms)
Run 2: Statistics of Indigo

Start at: 2019-12-11 21:12:07
End at: 2019-12-11 21:12:37
Local clock offset: -0.069 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2019-12-12 01:04:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 378.36 Mbit/s
95th percentile per-packet one-way delay: 64.093 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 193.52 Mbit/s
95th percentile per-packet one-way delay: 62.956 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 200.48 Mbit/s
95th percentile per-packet one-way delay: 66.096 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 160.93 Mbit/s
95th percentile per-packet one-way delay: 63.732 ms
Loss rate: 0.00%
Run 2: Report of Indigo — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 ingress (mean 193.53 Mbit/s)
- Flow 1 egress (mean 193.52 Mbit/s)
- Flow 2 ingress (mean 200.48 Mbit/s)
- Flow 2 egress (mean 200.48 Mbit/s)
- Flow 3 ingress (mean 160.93 Mbit/s)
- Flow 3 egress (mean 160.93 Mbit/s)

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

- Flow 1 (95th percentile 62.96 ms)
- Flow 2 (95th percentile 66.10 ms)
- Flow 3 (95th percentile 63.73 ms)
Run 3: Statistics of Indigo

Start at: 2019-12-11 21:53:09
End at: 2019-12-11 21:53:39
Local clock offset: -0.068 ms
Remote clock offset: -0.071 ms

# Below is generated by plot.py at 2019-12-12 01:04:03
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 377.72 Mbit/s
  95th percentile per-packet one-way delay: 67.165 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 205.65 Mbit/s
  95th percentile per-packet one-way delay: 68.143 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 190.95 Mbit/s
  95th percentile per-packet one-way delay: 63.344 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 141.74 Mbit/s
  95th percentile per-packet one-way delay: 61.802 ms
  Loss rate: 0.00%
Run 3: Report of Indigo — Data Link

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

Flow 1 ingress (mean 205.65 Mbit/s) | Flow 1 egress (mean 205.65 Mbit/s)
Flow 2 ingress (mean 190.95 Mbit/s) | Flow 2 egress (mean 190.95 Mbit/s)
Flow 3 ingress (mean 141.74 Mbit/s) | Flow 3 egress (mean 141.74 Mbit/s)

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

Flow 1 (95th percentile 68.14 ms)  | Flow 2 (95th percentile 63.34 ms)  | Flow 3 (95th percentile 61.80 ms)
Run 4: Statistics of Indigo

Start at: 2019-12-11 22:34:21
End at: 2019-12-11 22:34:51
Local clock offset: 0.051 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2019-12-12 01:04:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 379.27 Mbit/s
95th percentile per-packet one-way delay: 64.953 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 213.41 Mbit/s
95th percentile per-packet one-way delay: 63.846 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 176.12 Mbit/s
95th percentile per-packet one-way delay: 65.737 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 154.25 Mbit/s
95th percentile per-packet one-way delay: 64.812 ms
Loss rate: 0.00%
Run 4: Report of Indigo — Data Link

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

### Throughput Analysis
- Flow 1: Ingress (mean 213.40 Mbit/s)
- Flow 1: Egress (mean 213.41 Mbit/s)
- Flow 2: Ingress (mean 176.12 Mbit/s)
- Flow 2: Egress (mean 176.12 Mbit/s)
- Flow 3: Ingress (mean 154.25 Mbit/s)
- Flow 3: Egress (mean 154.25 Mbit/s)

### Delay Analysis
- Flow 1: 95th percentile 63.85 ms
- Flow 2: 95th percentile 65.74 ms
- Flow 3: 95th percentile 64.81 ms
Run 5: Statistics of Indigo

Start at: 2019-12-11 23:15:32
End at: 2019-12-11 23:16:02
Local clock offset: -0.011 ms
Remote clock offset: 0.09 ms

# Below is generated by plot.py at 2019-12-12 01:04:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 383.64 Mbit/s
95th percentile per-packet one-way delay: 65.985 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 211.04 Mbit/s
95th percentile per-packet one-way delay: 65.971 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 186.68 Mbit/s
95th percentile per-packet one-way delay: 66.257 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 151.43 Mbit/s
95th percentile per-packet one-way delay: 64.936 ms
Loss rate: 0.00%
Run 5: Report of Indigo — Data Link

![Graph of Throughput (Mbps) vs Time (s)]

- Flow 1 ingress (mean 211.04 Mbps)
- Flow 1 egress (mean 211.04 Mbps)
- Flow 2 ingress (mean 186.68 Mbps)
- Flow 2 egress (mean 186.68 Mbps)
- Flow 3 ingress (mean 151.43 Mbps)
- Flow 3 egress (mean 151.43 Mbps)

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

- Flow 1 (95th percentile 65.97 ms)
- Flow 2 (95th percentile 66.26 ms)
- Flow 3 (95th percentile 64.94 ms)
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-12-11 20:12:22
End at: 2019-12-11 20:12:52
Local clock offset: -0.087 ms
Remote clock offset: -0.055 ms
Run 1: Report of Indigo-MusesC3 — Data Link
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-12-11 20:53:13
End at: 2019-12-11 20:53:43
Local clock offset: -0.007 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2019-12-12 01:06:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 752.99 Mbit/s
95th percentile per-packet one-way delay: 73.060 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 439.56 Mbit/s
95th percentile per-packet one-way delay: 75.881 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 387.94 Mbit/s
95th percentile per-packet one-way delay: 71.868 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 273.43 Mbit/s
95th percentile per-packet one-way delay: 62.627 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesC3 — Data Link

---

Throughput vs Time

Flow 1 ingress (mean 439.55 Mbit/s)  Flow 1 egress (mean 439.56 Mbit/s)
Flow 2 ingress (mean 387.97 Mbit/s)  Flow 2 egress (mean 387.94 Mbit/s)
Flow 3 ingress (mean 273.42 Mbit/s)  Flow 3 egress (mean 273.43 Mbit/s)

---

Per-packet one-way delay vs Time

Flow 1 (95th percentile 75.88 ms)  Flow 2 (95th percentile 71.87 ms)  Flow 3 (95th percentile 62.63 ms)

---

68
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-12-11 21:34:28
End at: 2019-12-11 21:34:58
Local clock offset: -0.071 ms
Remote clock offset: -0.052 ms

# Below is generated by plot.py at 2019-12-12 01:15:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 757.69 Mbit/s
95th percentile per-packet one-way delay: 79.916 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 455.29 Mbit/s
95th percentile per-packet one-way delay: 90.506 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 367.01 Mbit/s
95th percentile per-packet one-way delay: 66.014 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 262.91 Mbit/s
95th percentile per-packet one-way delay: 66.675 ms
Loss rate: 0.00%
Run 3: Report of Indigo-MusesC3 — Data Link
Run 4: Statistics of Indigo-MusesC3

End at: 2019-12-11 22:15:58
Local clock offset: -0.015 ms
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2019-12-12 01:15:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 739.54 Mbit/s
95th percentile per-packet one-way delay: 76.882 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 443.91 Mbit/s
95th percentile per-packet one-way delay: 80.742 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 377.81 Mbit/s
95th percentile per-packet one-way delay: 72.102 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 221.63 Mbit/s
95th percentile per-packet one-way delay: 62.396 ms
Loss rate: 0.00%
Run 4: Report of Indigo-MusesC3 — Data Link

![Graph of data link throughput and packet loss delay](image)

- **Throughput**:
  - Flow 1 ingress (mean 443.84 Mbit/s)
  - Flow 1 egress (mean 443.91 Mbit/s)
  - Flow 2 ingress (mean 377.81 Mbit/s)
  - Flow 2 egress (mean 377.81 Mbit/s)
  - Flow 3 ingress (mean 221.63 Mbit/s)
  - Flow 3 egress (mean 221.63 Mbit/s)

- **Packet Loss Delay**:
  - Flow 1 (95th percentile 80.74 ms)
  - Flow 2 (95th percentile 72.10 ms)
  - Flow 3 (95th percentile 62.40 ms)
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-12-11 22:56:33
End at: 2019-12-11 22:57:03
Local clock offset: -0.035 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2019-12-12 01:16:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 756.49 Mbit/s
95th percentile per-packet one-way delay: 82.050 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 454.74 Mbit/s
95th percentile per-packet one-way delay: 87.440 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 384.91 Mbit/s
95th percentile per-packet one-way delay: 69.386 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 234.81 Mbit/s
95th percentile per-packet one-way delay: 64.135 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesC3 — Data Link

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

- Flow 1 ingress (mean 454.73 Mbit/s)
- Flow 1 egress (mean 454.74 Mbit/s)
- Flow 2 ingress (mean 384.91 Mbit/s)
- Flow 2 egress (mean 384.91 Mbit/s)
- Flow 3 ingress (mean 234.81 Mbit/s)
- Flow 3 egress (mean 234.81 Mbit/s)

Per-packet one-way delay (ms):

- Flow 1 (95th percentile 87.44 ms)
- Flow 2 (95th percentile 69.39 ms)
- Flow 3 (95th percentile 64.14 ms)
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-12-11 20:29:11
End at: 2019-12-11 20:29:41
Local clock offset: -0.041 ms
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2019-12-12 01:16:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 751.24 Mbit/s
95th percentile per-packet one-way delay: 91.108 ms
Loss rate: 0.00%

-- Flow 1:
Average throughput: 483.53 Mbit/s
95th percentile per-packet one-way delay: 96.014 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 369.67 Mbit/s
95th percentile per-packet one-way delay: 79.470 ms
Loss rate: 0.00%

-- Flow 3:
Average throughput: 124.36 Mbit/s
95th percentile per-packet one-way delay: 65.805 ms
Loss rate: 0.05%
Run 1: Report of Indigo-MusesC5 — Data Link

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

- **Flow 1 Ingress** (mean 483.50 Mbit/s)
- **Flow 1 Egress** (mean 483.53 Mbit/s)
- **Flow 2 Ingress** (mean 369.66 Mbit/s)
- **Flow 2 Egress** (mean 369.67 Mbit/s)
- **Flow 3 Ingress** (mean 124.38 Mbit/s)
- **Flow 3 Egress** (mean 124.36 Mbit/s)

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

- **Flow 1 (95th percentile 96.01 ms)**
- **Flow 2 (95th percentile 79.47 ms)**
- **Flow 3 (95th percentile 65.81 ms)**

76
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-12-11 21:10:16  
End at: 2019-12-11 21:10:46    
Local clock offset: -0.016 ms  
Remote clock offset: -0.075 ms

# Below is generated by plot.py at 2019-12-12 01:17:29  
# Datalink statistics

-- Total of 3 flows:
  Average throughput: 831.71 Mbit/s
  95th percentile per-packet one-way delay: 78.363 ms
  Loss rate: 0.00%

-- Flow 1:
  Average throughput: 499.49 Mbit/s
  95th percentile per-packet one-way delay: 80.772 ms
  Loss rate: 0.00%

-- Flow 2:
  Average throughput: 392.92 Mbit/s
  95th percentile per-packet one-way delay: 74.836 ms
  Loss rate: 0.00%

-- Flow 3:
  Average throughput: 259.95 Mbit/s
  95th percentile per-packet one-way delay: 67.878 ms
  Loss rate: 0.00%
Run 2: Report of Indigo-MusesC5 — Data Link
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-12-11 21:51:20
End at: 2019-12-11 21:51:50
Local clock offset: -0.088 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2019-12-12 01:19:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 777.30 Mbit/s
95th percentile per-packet one-way delay: 95.958 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 443.31 Mbit/s
95th percentile per-packet one-way delay: 102.442 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 384.41 Mbit/s
95th percentile per-packet one-way delay: 66.186 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 331.16 Mbit/s
95th percentile per-packet one-way delay: 77.045 ms
Loss rate: 0.00%
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-12-11 22:32:30
End at: 2019-12-11 22:33:00
Local clock offset: 0.02 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2019-12-12 01:20:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 807.10 Mbit/s
95th percentile per-packet one-way delay: 103.679 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 455.91 Mbit/s
95th percentile per-packet one-way delay: 117.239 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 431.71 Mbit/s
95th percentile per-packet one-way delay: 75.744 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 290.98 Mbit/s
95th percentile per-packet one-way delay: 73.194 ms
Loss rate: 0.00%
Run 4: Report of Indigo-MusesC5 — Data Link

![Graph showing throughput and packet delay over time](image_url)

- **Flow 1 ing (mean 455.17 Mbit/s)**
- **Flow 1 egress (mean 455.91 Mbit/s)**
- **Flow 2 ing (mean 431.72 Mbit/s)**
- **Flow 2 egress (mean 431.71 Mbit/s)**
- **Flow 3 ing (mean 290.83 Mbit/s)**
- **Flow 3 egress (mean 290.98 Mbit/s)**

![Graph showing packet delay over time](image_url)

- **Flow 1 (95th percentile 117.24 ms)**
- **Flow 2 (95th percentile 75.74 ms)**
- **Flow 3 (95th percentile 73.19 ms)**
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-12-11 23:13:38
End at: 2019-12-11 23:14:08
Local clock offset: -0.042 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2019-12-12 01:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 834.52 Mbit/s
95th percentile per-packet one-way delay: 105.478 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 501.62 Mbit/s
95th percentile per-packet one-way delay: 117.625 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 424.90 Mbit/s
95th percentile per-packet one-way delay: 83.284 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 254.35 Mbit/s
95th percentile per-packet one-way delay: 67.519 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesC5 — Data Link

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

- Flow 1 ingress (mean 501.53 Mbit/s)
- Flow 1 egress (mean 501.62 Mbit/s)
- Flow 2 ingress (mean 424.66 Mbit/s)
- Flow 2 egress (mean 424.90 Mbit/s)
- Flow 3 ingress (mean 253.80 Mbit/s)
- Flow 3 egress (mean 254.35 Mbit/s)
Run 1: Statistics of Indigo-MusesD

Start at: 2019-12-11 20:42:01
End at: 2019-12-11 20:42:31
Local clock offset: -0.025 ms
Remote clock offset: -0.172 ms

# Below is generated by plot.py at 2019-12-12 01:28:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 692.08 Mbit/s
95th percentile per-packet one-way delay: 65.441 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 441.46 Mbit/s
95th percentile per-packet one-way delay: 66.827 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 264.92 Mbit/s
95th percentile per-packet one-way delay: 61.554 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 299.02 Mbit/s
95th percentile per-packet one-way delay: 64.865 ms
Loss rate: 0.00%
Run 1: Report of Indigo-MusesD — Data Link

---

**Throughput (Mbps)**

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

Legend:
- Flow 1 ingress (mean 441.45 Mbps)
- Flow 1 egress (mean 441.46 Mbps)
- Flow 2 ingress (mean 264.91 Mbps)
- Flow 2 egress (mean 264.92 Mbps)
- Flow 3 ingress (mean 299.08 Mbps)
- Flow 3 egress (mean 299.02 Mbps)

---

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

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

Legend:
- Flow 1 (95th percentile 66.83 ms)
- Flow 2 (95th percentile 61.55 ms)
- Flow 3 (95th percentile 64.86 ms)

---

86
Run 2: Statistics of Indigo-MusesD

Start at: 2019-12-11 21:23:08
End at: 2019-12-11 21:23:38
Local clock offset: -0.025 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2019-12-12 01:30:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 737.79 Mbit/s
95th percentile per-packet one-way delay: 84.543 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 441.65 Mbit/s
95th percentile per-packet one-way delay: 89.615 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 376.88 Mbit/s
95th percentile per-packet one-way delay: 75.718 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 240.57 Mbit/s
95th percentile per-packet one-way delay: 66.140 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesD — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 441.62 Mbit/s)
Flow 1 egress (mean 441.65 Mbit/s)
Flow 2 ingress (mean 376.94 Mbit/s)
Flow 2 egress (mean 376.88 Mbit/s)
Flow 3 ingress (mean 240.58 Mbit/s)
Flow 3 egress (mean 240.57 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 89.61 ms)
Flow 2 (95th percentile 75.72 ms)
Flow 3 (95th percentile 66.14 ms)
Run 3: Statistics of Indigo-MusesD

Start at: 2019-12-11 22:04:13
End at: 2019-12-11 22:04:43
Local clock offset: -0.085 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2019-12-12 01:30:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 706.17 Mbit/s
  95th percentile per-packet one-way delay: 76.766 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 413.60 Mbit/s
  95th percentile per-packet one-way delay: 82.394 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 361.38 Mbit/s
  95th percentile per-packet one-way delay: 67.942 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 267.06 Mbit/s
  95th percentile per-packet one-way delay: 64.737 ms
  Loss rate: 0.00%
Run 3: Report of Indigo-MusesD — Data Link

![Graph showing data link throughput and per-packet one way delay](image-url)
Run 4: Statistics of Indigo-MusesD

Start at: 2019-12-11 22:45:06
End at: 2019-12-11 22:45:36
Local clock offset: 0.007 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2019-12-12 01:30:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 724.66 Mbit/s
95th percentile per-packet one-way delay: 76.471 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 432.34 Mbit/s
95th percentile per-packet one-way delay: 83.539 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 358.09 Mbit/s
95th percentile per-packet one-way delay: 64.427 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 264.91 Mbit/s
95th percentile per-packet one-way delay: 66.093 ms
Loss rate: 0.00%
Run 5: Statistics of Indigo-MusesD

Start at: 2019-12-11 23:26:39
End at: 2019-12-11 23:27:09
Local clock offset: -0.053 ms
Remote clock offset: -0.168 ms

# Below is generated by plot.py at 2019-12-12 01:32:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 727.32 Mbit/s
95th percentile per-packet one-way delay: 91.548 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 444.58 Mbit/s
95th percentile per-packet one-way delay: 98.838 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 342.79 Mbit/s
95th percentile per-packet one-way delay: 63.346 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 269.18 Mbit/s
95th percentile per-packet one-way delay: 64.329 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesD — Data Link

![Graph showing throughput and packet delay over time for different flows. The graphs depict the mean throughput and 95th percentile delay for each flow.]
Run 1: Statistics of Indigo-MusesT

Start at: 2019-12-11 20:05:23
End at: 2019-12-11 20:05:53
Local clock offset: -0.098 ms
Remote clock offset: 0.006 ms
Run 1: Report of Indigo-MusesT — Data Link

Figure is missing

Figure is missing
Run 2: Statistics of Indigo-MusesT

Start at: 2019-12-11 20:45:41
End at: 2019-12-11 20:46:11
Local clock offset: 0.003 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2019-12-12 01:35:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 832.79 Mbit/s
95th percentile per-packet one-way delay: 68.041 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 494.16 Mbit/s
95th percentile per-packet one-way delay: 69.692 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 423.27 Mbit/s
95th percentile per-packet one-way delay: 65.705 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 276.71 Mbit/s
95th percentile per-packet one-way delay: 65.453 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesT — Data Link

---

**Throughput (Mbit/s)**

- Flow 1 ingress (mean 494.14 Mbit/s)
- Flow 1 egress (mean 494.16 Mbit/s)
- Flow 2 ingress (mean 423.29 Mbit/s)
- Flow 2 egress (mean 423.27 Mbit/s)
- Flow 3 ingress (mean 276.78 Mbit/s)
- Flow 3 egress (mean 276.71 Mbit/s)

---

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

- Flow 1 (95th percentile 69.69 ms)
- Flow 2 (95th percentile 65.70 ms)
- Flow 3 (95th percentile 65.45 ms)
Run 3: Statistics of Indigo-MusesT

Start at: 2019-12-11 21:26:51
End at: 2019-12-11 21:27:21
Local clock offset: -0.016 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2019-12-12 01:35:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 793.52 Mbit/s
95th percentile per-packet one-way delay: 90.093 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 472.45 Mbit/s
95th percentile per-packet one-way delay: 95.456 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 395.99 Mbit/s
95th percentile per-packet one-way delay: 71.067 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 282.63 Mbit/s
95th percentile per-packet one-way delay: 67.155 ms
Loss rate: 0.00%
Run 3: Report of Indigo-MusesT — Data Link
Run 4: Statistics of Indigo-MusesT

Start at: 2019-12-11 22:07:54
End at: 2019-12-11 22:08:24
Local clock offset: -0.049 ms
Remote clock offset: -0.154 ms

# Below is generated by plot.py at 2019-12-12 01:39:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 814.50 Mbit/s
95th percentile per-packet one-way delay: 89.082 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 490.78 Mbit/s
95th percentile per-packet one-way delay: 97.188 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 406.23 Mbit/s
95th percentile per-packet one-way delay: 69.482 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 276.38 Mbit/s
95th percentile per-packet one-way delay: 67.703 ms
Loss rate: 0.00%
Run 4: Report of Indigo-MusesT — Data Link

![Graph of Throughput and Packet Loss](image)

**Throughput (Mbps):**
- Flow 1 ingress (mean 490.20 Mbps)
- Flow 1 egress (mean 490.78 Mbps)
- Flow 2 ingress (mean 406.23 Mbps)
- Flow 2 egress (mean 406.23 Mbps)
- Flow 3 ingress (mean 276.38 Mbps)
- Flow 3 egress (mean 276.38 Mbps)

**Packet Loss (ms):**
- Flow 1 (95th percentile 97.19 ms)
- Flow 2 (95th percentile 69.48 ms)
- Flow 3 (95th percentile 67.70 ms)
Run 5: Statistics of Indigo-MusesT

End at: 2019-12-11 22:49:20
Local clock offset: -0.008 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2019-12-12 01:44:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 799.05 Mbit/s
  95th percentile per-packet one-way delay: 112.239 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 474.91 Mbit/s
  95th percentile per-packet one-way delay: 124.968 ms
  Loss rate: 0.02%
-- Flow 2:
  Average throughput: 399.50 Mbit/s
  95th percentile per-packet one-way delay: 69.424 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 285.65 Mbit/s
  95th percentile per-packet one-way delay: 66.139 ms
  Loss rate: 0.00%
Run 5: Report of Indigo-MusesT — Data Link
Run 1: Statistics of LEDBAT

Start at: 2019-12-11 20:32:49
End at: 2019-12-11 20:33:19
Local clock offset: 0.01 ms
Remote clock offset: -0.183 ms

# Below is generated by plot.py at 2019-12-12 01:44:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.56 Mbit/s
95th percentile per-packet one-way delay: 62.698 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 25.59 Mbit/s
95th percentile per-packet one-way delay: 61.300 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 17.17 Mbit/s
95th percentile per-packet one-way delay: 60.477 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.68 Mbit/s
95th percentile per-packet one-way delay: 63.151 ms
Loss rate: 0.00%
Run 1: Report of LEDBAT — Data Link

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

Time (s) vs. Throughput (Mbps)

- Flow 1 ingress (mean 25.59 Mbps)
- Flow 1 egress (mean 25.59 Mbps)
- Flow 2 ingress (mean 17.17 Mbps)
- Flow 2 egress (mean 17.17 Mbps)
- Flow 3 ingress (mean 7.68 Mbps)
- Flow 3 egress (mean 7.68 Mbps)

---

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

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

- Flow 1 (95th percentile 61.30 ms)
- Flow 2 (95th percentile 60.48 ms)
- Flow 3 (95th percentile 61.15 ms)
Run 2: Statistics of LEDBAT

End at: 2019-12-11 21:14:25
Local clock offset: -0.063 ms
Remote clock offset: -0.175 ms

# Below is generated by plot.py at 2019-12-12 01:44:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.40 Mbit/s
95th percentile per-packet one-way delay: 63.342 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.73 Mbit/s
95th percentile per-packet one-way delay: 63.477 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.57 Mbit/s
95th percentile per-packet one-way delay: 63.169 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 63.077 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.]

- Flow 1 ingress (mean 24.73 Mbit/s)
- Flow 1 egress (mean 24.73 Mbit/s)
- Flow 2 ingress (mean 16.57 Mbit/s)
- Flow 2 egress (mean 16.57 Mbit/s)
- Flow 3 ingress (mean 8.16 Mbit/s)
- Flow 3 egress (mean 8.16 Mbit/s)
Run 3: Statistics of LEDBAT

Start at: 2019-12-11 21:54:58
Local clock offset: -0.086 ms
Remote clock offset: 0.041 ms

# Below is generated by plot.py at 2019-12-12 01:44:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 38.65 Mbit/s
  95th percentile per-packet one-way delay: 63.670 ms
  Loss rate: 0.00%
  -- Flow 1:
    Average throughput: 24.63 Mbit/s
    95th percentile per-packet one-way delay: 63.993 ms
    Loss rate: 0.00%
  -- Flow 2:
    Average throughput: 17.08 Mbit/s
    95th percentile per-packet one-way delay: 61.358 ms
    Loss rate: 0.00%
  -- Flow 3:
    Average throughput: 8.10 Mbit/s
    95th percentile per-packet one-way delay: 63.514 ms
    Loss rate: 0.00%
Run 3: Report of LEDBAT — Data Link
Run 4: Statistics of LEDBAT

Start at: 2019-12-11 22:36:10
End at: 2019-12-11 22:36:40
Local clock offset: 0.027 ms
Remote clock offset: -0.158 ms

# Below is generated by plot.py at 2019-12-12 01:44:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.42 Mbit/s
95th percentile per-packet one-way delay: 62.664 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 25.84 Mbit/s
95th percentile per-packet one-way delay: 61.420 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.93 Mbit/s
95th percentile per-packet one-way delay: 63.151 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.07 Mbit/s
95th percentile per-packet one-way delay: 61.455 ms
Loss rate: 0.00%
Run 4: Report of LEDBAT — Data Link
Run 5: Statistics of LEDBAT

Start at: 2019-12-11 23:17:21
End at: 2019-12-11 23:17:51
Local clock offset: -0.006 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2019-12-12 01:44:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.09 Mbit/s
95th percentile per-packet one-way delay: 61.226 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 25.57 Mbit/s
95th percentile per-packet one-way delay: 61.220 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.24 Mbit/s
95th percentile per-packet one-way delay: 61.452 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.24 Mbit/s
95th percentile per-packet one-way delay: 60.341 ms
Loss rate: 0.00%
Run 5: Report of LEDBAT — Data Link
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-12-11 20:38:35
End at: 2019-12-11 20:39:05
Local clock offset: -0.009 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2019-12-12 01:44:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 560.19 Mbit/s
  95th percentile per-packet one-way delay: 62.531 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 262.27 Mbit/s
  95th percentile per-packet one-way delay: 61.578 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 324.36 Mbit/s
  95th percentile per-packet one-way delay: 60.529 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 256.66 Mbit/s
  95th percentile per-packet one-way delay: 64.688 ms
  Loss rate: 0.00%
Run 1: Report of Muses_DecisionTree — Data Link
Run 2: Statistics of Muses\_DecisionTree

Start at: 2019-12-11 21:19:32  
End at: 2019-12-11 21:20:02  
Local clock offset: -0.069 ms  
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2019-12-12 01:47:44  
# Datalink statistics

-- Total of 3 flows:  
Average throughput: 744.97 Mbit/s  
95th percentile per-packet one-way delay: 73.879 ms  
Loss rate: 0.02%

-- Flow 1:  
Average throughput: 430.59 Mbit/s  
95th percentile per-packet one-way delay: 77.806 ms  
Loss rate: 0.01%

-- Flow 2:  
Average throughput: 361.70 Mbit/s  
95th percentile per-packet one-way delay: 66.221 ms  
Loss rate: 0.01%

-- Flow 3:  
Average throughput: 237.18 Mbit/s  
95th percentile per-packet one-way delay: 64.753 ms  
Loss rate: 0.11%
Run 2: Report of Muses

**DecisionTree — Data Link**

**Graph 1:**
- X-axis: Time (s)
- Y-axis: Throughput (Mbit/s)
- Legend:
  - Flow 1 ingress (mean 430.56 Mbit/s)
  - Flow 1 egress (mean 430.59 Mbit/s)
  - Flow 2 ingress (mean 361.77 Mbit/s)
  - Flow 2 egress (mean 361.70 Mbit/s)
  - Flow 3 ingress (mean 237.32 Mbit/s)
  - Flow 3 egress (mean 237.18 Mbit/s)

**Graph 2:**
- X-axis: Time (s)
- Y-axis: Per-packet one-way delay (ms)
- Legend:
  - Flow 1 (95th percentile 77.81 ms)
  - Flow 2 (95th percentile 66.22 ms)
  - Flow 3 (95th percentile 64.75 ms)

118
Run 3: Statistics of Muses\_DecisionTree

Start at: 2019-12-11 22:00:46
End at: 2019-12-11 22:01:16
Local clock offset: -0.071 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-12-12 01:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 543.25 Mbit/s
95th percentile per-packet one-way delay: 65.430 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 291.28 Mbit/s
95th percentile per-packet one-way delay: 62.555 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 249.58 Mbit/s
95th percentile per-packet one-way delay: 61.487 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 277.33 Mbit/s
95th percentile per-packet one-way delay: 67.185 ms
Loss rate: 0.03%
Run 3: Report of Muses

DecisionTree — Data Link

---

Graph showing throughput and per packet one-way delay over time for different flows.
Run 4: Statistics of Muses\_DecisionTree

Start at: 2019-12-11 22:41:54
End at: 2019-12-11 22:42:24
Local clock offset: -0.009 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2019-12-12 01:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 651.94 Mbit/s
95th percentile per-packet one-way delay: 85.477 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 407.31 Mbit/s
95th percentile per-packet one-way delay: 88.123 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 272.18 Mbit/s
95th percentile per-packet one-way delay: 62.109 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 205.34 Mbit/s
95th percentile per-packet one-way delay: 61.110 ms
Loss rate: 0.00%
Run 4: Report of Muses Decision Tree — Data Link

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

- Flow 1 ingress (mean 407.30 Mbps)
- Flow 1 egress (mean 407.31 Mbps)
- Flow 2 ingress (mean 272.18 Mbps)
- Flow 2 egress (mean 272.18 Mbps)
- Flow 3 ingress (mean 205.33 Mbps)
- Flow 3 egress (mean 205.34 Mbps)
Run 5: Statistics of Muses\_DecisionTree

Start at: 2019-12-11 23:23:05
End at: 2019-12-11 23:23:35
Local clock offset: -0.058 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2019-12-12 01:49:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 694.47 Mbit/s
95th percentile per-packet one-way delay: 76.570 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 402.21 Mbit/s
95th percentile per-packet one-way delay: 82.828 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 331.72 Mbit/s
95th percentile per-packet one-way delay: 64.285 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 226.45 Mbit/s
95th percentile per-packet one-way delay: 64.163 ms
Loss rate: 0.00%
Run 5: Report of Muses_DecisionTree — Data Link

[Graph showing throughput and packet delay over time for different flows.]
Run 1: Statistics of Muses\_DecisionTreeH0

Start at: 2019-12-11 20:21:49
End at: 2019-12-11 20:22:19
Local clock offset: -0.027 ms
Remote clock offset: -0.172 ms

# Below is generated by plot.py at 2019-12-12 01:49:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 664.75 Mbit/s
95th percentile per-packet one-way delay: 99.785 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 341.13 Mbit/s
95th percentile per-packet one-way delay: 106.056 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 358.29 Mbit/s
95th percentile per-packet one-way delay: 90.756 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 269.28 Mbit/s
95th percentile per-packet one-way delay: 73.185 ms
Loss rate: 0.03%
Run 1: Report of Muses_DecisionTreeH0 — Data Link

![Graph showing network traffic and packet delay over time for different flows with annotations for mean throughput and 95th percentile delay.]

- Flow 1 ingress (mean 341.26 Mb/s)
- Flow 1 egress (mean 341.13 Mb/s)
- Flow 2 ingress (mean 358.24 Mb/s)
- Flow 2 egress (mean 358.29 Mb/s)
- Flow 3 ingress (mean 269.32 Mb/s)
- Flow 3 egress (mean 269.28 Mb/s)

- Flow 1 (95th percentile 106.06 ms)
- Flow 2 (95th percentile 90.76 ms)
- Flow 3 (95th percentile 73.19 ms)
Run 2: Statistics of Muses\_DecisionTreeH0

Start at: 2019-12-11 21:02:47
End at: 2019-12-11 21:03:17
Local clock offset: -0.042 ms
Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2019-12-12 01:51:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 584.69 Mbit/s
  95th percentile per-packet one-way delay: 108.321 ms
  Loss rate: 0.47%
-- Flow 1:
  Average throughput: 335.72 Mbit/s
  95th percentile per-packet one-way delay: 117.167 ms
  Loss rate: 0.67%
-- Flow 2:
  Average throughput: 259.88 Mbit/s
  95th percentile per-packet one-way delay: 105.735 ms
  Loss rate: 0.28%
-- Flow 3:
  Average throughput: 241.80 Mbit/s
  95th percentile per-packet one-way delay: 76.146 ms
  Loss rate: 0.00%
Run 2: Report of Muses_DecisionTreeH0 — Data Link
Run 3: Statistics of Muses\_DecisionTreeH0

Start at: 2019-12-11 21:43:58
End at: 2019-12-11 21:44:28
Local clock offset: -0.067 ms
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2019-12-12 01:56:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 674.59 Mbit/s
95th percentile per-packet one-way delay: 100.034 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 374.33 Mbit/s
95th percentile per-packet one-way delay: 106.393 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 330.50 Mbit/s
95th percentile per-packet one-way delay: 95.056 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 258.25 Mbit/s
95th percentile per-packet one-way delay: 64.993 ms
Loss rate: 0.00%
Run 3: Report of Muses

DecisionTreeH0 — Data Link

---

The diagram shows the throughput and packet delay for different flows over a 30-second period. The upper graph illustrates the throughput in Mbps, with each line representing a different flow, and the lower graph shows the per-packet one-way delay (ms) for the same flows.

Key highlights:

- **Throughput**:
  - Flow 1 ingress: mean 375.03 Mbps
  - Flow 1 egress: mean 374.33 Mbps
  - Flow 2 ingress: mean 330.49 Mbps
  - Flow 2 egress: mean 330.50 Mbps
  - Flow 3 ingress: mean 258.26 Mbps
  - Flow 3 egress: mean 258.25 Mbps

- **Delay**:
  - Flow 1: 95th percentile 106.39 ms
  - Flow 2: 95th percentile 95.06 ms
  - Flow 3: 95th percentile 64.99 ms
Run 4: Statistics of Muses\_DecisionTreeHO

Start at: 2019-12-11 22:25:00
End at: 2019-12-11 22:25:30
Local clock offset: -0.01 ms
Remote clock offset: -0.206 ms

# Below is generated by plot.py at 2019-12-12 01:57:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 643.30 Mbit/s
  95th percentile per-packet one-way delay: 102.719 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 356.16 Mbit/s
  95th percentile per-packet one-way delay: 104.381 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 298.42 Mbit/s
  95th percentile per-packet one-way delay: 100.914 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 282.54 Mbit/s
  95th percentile per-packet one-way delay: 70.774 ms
  Loss rate: 0.03%
Run 4: Report of Muses\_DecisionTreeH0 — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 356.13 Mbps)**
- **Flow 1 egress (mean 356.16 Mbps)**
- **Flow 2 ingress (mean 298.42 Mbps)**
- **Flow 2 egress (mean 298.42 Mbps)**
- **Flow 3 ingress (mean 282.59 Mbps)**
- **Flow 3 egress (mean 282.54 Mbps)**

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

- **Flow 1 (95th percentile 104.38 ms)**
- **Flow 2 (95th percentile 100.91 ms)**
- **Flow 3 (95th percentile 70.77 ms)**

---

132
Run 5: Statistics of Muses\_DecisionTreeH0

Start at: 2019-12-11 23:06:08
End at: 2019-12-11 23:06:38
Local clock offset: -0.069 ms
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2019-12-12 01:57:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.23 Mbit/s
95th percentile per-packet one-way delay: 116.636 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 293.91 Mbit/s
95th percentile per-packet one-way delay: 126.183 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 297.35 Mbit/s
95th percentile per-packet one-way delay: 80.188 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 249.48 Mbit/s
95th percentile per-packet one-way delay: 69.975 ms
Loss rate: 0.00%
Run 5: Report of Muses_DocumentTreeH0 — Data Link
Run 1: Statistics of Muses\_DecisionTreeR0

Start at: 2019-12-11 20:19:58
End at: 2019-12-11 20:20:28
Local clock offset: -0.068 ms
Remote clock offset: -0.205 ms

# Below is generated by plot.py at 2019-12-12 02:02:45
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 775.00 Mbit/s
   95th percentile per-packet one-way delay: 68.195 ms
   Loss rate: 0.00%
-- Flow 1:
   Average throughput: 472.33 Mbit/s
   95th percentile per-packet one-way delay: 72.729 ms
   Loss rate: 0.00%
-- Flow 2:
   Average throughput: 323.78 Mbit/s
   95th percentile per-packet one-way delay: 60.916 ms
   Loss rate: 0.00%
-- Flow 3:
   Average throughput: 251.19 Mbit/s
   95th percentile per-packet one-way delay: 61.181 ms
   Loss rate: 0.00%
Run 1: Report of Muses_DecisionTreeR0 — Data Link
Run 2: Statistics of Muses\_DecisionTreeR0

Start at: 2019-12-11 21:01:01
End at: 2019-12-11 21:01:31
Local clock offset: -0.037 ms
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2019-12-12 02:02:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 710.66 Mbit/s
95th percentile per-packet one-way delay: 87.387 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 378.90 Mbit/s
95th percentile per-packet one-way delay: 90.995 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 366.46 Mbit/s
95th percentile per-packet one-way delay: 86.694 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 227.16 Mbit/s
95th percentile per-packet one-way delay: 61.795 ms
Loss rate: 0.00%
Run 2: Report of Muses DecisionTreeR0 — Data Link

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

- Flow 1 ingress (mean 378.88 Mbps)
- Flow 1 egress (mean 378.90 Mbps)
- Flow 2 ingress (mean 366.46 Mbps)
- Flow 2 egress (mean 366.46 Mbps)
- Flow 3 ingress (mean 227.16 Mbps)
- Flow 3 egress (mean 227.16 Mbps)

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

- Flow 1 (95th percentile 91.00 ms)
- Flow 2 (95th percentile 86.69 ms)
- Flow 3 (95th percentile 61.80 ms)
Run 3: Statistics of Muses\_DecisionTreeR0

Start at: 2019-12-11 21:42:10
End at: 2019-12-11 21:42:40
Local clock offset: -0.067 ms
Remote clock offset: -0.026 ms

# Below is generated by plot.py at 2019-12-12 02:04:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 713.86 Mbit/s
95th percentile per-packet one-way delay: 75.179 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 430.75 Mbit/s
95th percentile per-packet one-way delay: 79.428 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 301.15 Mbit/s
95th percentile per-packet one-way delay: 63.825 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 260.81 Mbit/s
95th percentile per-packet one-way delay: 62.050 ms
Loss rate: 0.00%
Run 3: Report of Muses_DecisionTreeR0 — Data Link
Run 4: Statistics of Muses\_DecisionTreeR0

End at: 2019-12-11 22:23:44
Local clock offset: 0.013 ms
Remote clock offset: -0.096 ms

# Below is generated by plot.py at 2019-12-12 02:04:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 667.71 Mbit/s
95th percentile per-packet one-way delay: 73.570 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 361.87 Mbit/s
95th percentile per-packet one-way delay: 83.511 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 334.20 Mbit/s
95th percentile per-packet one-way delay: 63.526 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 269.34 Mbit/s
95th percentile per-packet one-way delay: 66.308 ms
Loss rate: 0.00%
Run 4: Report of Muses_DecisionTreeR0 — Data Link

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

- Flow 1 ingress (mean 361.87 Mbit/s)
- Flow 1 egress (mean 361.87 Mbit/s)
- Flow 2 ingress (mean 334.20 Mbit/s)
- Flow 2 egress (mean 334.20 Mbit/s)
- Flow 3 ingress (mean 269.11 Mbit/s)
- Flow 3 egress (mean 269.34 Mbit/s)
Run 5: Statistics of Muses\_DecisionTreeR0

Start at: 2019-12-11 23:04:20
End at: 2019-12-11 23:04:50
Local clock offset: -0.095 ms
Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2019-12-12 02:05:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 683.91 Mbit/s
95th percentile per-packet one-way delay: 69.198 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 386.58 Mbit/s
95th percentile per-packet one-way delay: 70.981 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 330.06 Mbit/s
95th percentile per-packet one-way delay: 69.409 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 248.67 Mbit/s
95th percentile per-packet one-way delay: 61.871 ms
Loss rate: 0.00%
Run 5: Report of Muses_DecisionTreeR0 — Data Link
Run 1: Statistics of PCC-Allegro

Start at: 2019-12-11 20:36:34
End at: 2019-12-11 20:37:04
Local clock offset: -0.014 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2019-12-12 02:25:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 736.25 Mbit/s
95th percentile per-packet one-way delay: 199.600 ms
Loss rate: 3.07%
-- Flow 1:
Average throughput: 427.46 Mbit/s
95th percentile per-packet one-way delay: 197.165 ms
Loss rate: 2.95%
-- Flow 2:
Average throughput: 312.32 Mbit/s
95th percentile per-packet one-way delay: 183.949 ms
Loss rate: 1.51%
-- Flow 3:
Average throughput: 305.37 Mbit/s
95th percentile per-packet one-way delay: 222.903 ms
Loss rate: 6.58%
Run 1: Report of PCC-Allegro — Data Link

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

- **Flow 1 ingress** (mean 440.51 Mbit/s)
- **Flow 1 egress** (mean 427.46 Mbit/s)
- **Flow 2 ingress** (mean 317.08 Mbit/s)
- **Flow 2 egress** (mean 312.32 Mbit/s)
- **Flow 3 ingress** (mean 327.63 Mbit/s)
- **Flow 3 egress** (mean 305.37 Mbit/s)

![Graph showing packet delay over time](image)

- **Flow 1** (95th percentile 197.16 ms)
- **Flow 2** (95th percentile 183.95 ms)
- **Flow 3** (95th percentile 222.90 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2019-12-11 21:17:38
End at: 2019-12-11 21:18:08
Local clock offset: -0.025 ms
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2019-12-12 02:25:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 610.28 Mbit/s
95th percentile per-packet one-way delay: 137.783 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 372.40 Mbit/s
95th percentile per-packet one-way delay: 146.097 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 273.67 Mbit/s
95th percentile per-packet one-way delay: 98.819 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 170.23 Mbit/s
95th percentile per-packet one-way delay: 108.813 ms
Loss rate: 0.00%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Start at: 2019-12-11 21:58:42
End at: 2019-12-11 21:59:12
Local clock offset: -0.067 ms
Remote clock offset: -0.141 ms

# Below is generated by plot.py at 2019-12-12 02:28:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 760.18 Mbit/s
95th percentile per-packet one-way delay: 211.541 ms
Loss rate: 5.78%
-- Flow 1:
Average throughput: 402.88 Mbit/s
95th percentile per-packet one-way delay: 215.320 ms
Loss rate: 5.56%
-- Flow 2:
Average throughput: 405.91 Mbit/s
95th percentile per-packet one-way delay: 209.809 ms
Loss rate: 7.84%
-- Flow 3:
Average throughput: 265.99 Mbit/s
95th percentile per-packet one-way delay: 135.521 ms
Loss rate: 0.00%
Run 3: Report of PCC-Allegro — Data Link
Run 4: Statistics of PCC-Allegro

Start at: 2019-12-11 22:39:54
End at: 2019-12-11 22:40:24
Local clock offset: -0.01 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2019-12-12 02:29:29
# Datalink statistics
-- Total of 3 flows:
95th percentile per-packet one-way delay: 193.426 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 411.93 Mbit/s
95th percentile per-packet one-way delay: 200.273 ms
Loss rate: 4.05%
-- Flow 2:
Average throughput: 291.37 Mbit/s
95th percentile per-packet one-way delay: 73.603 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 270.74 Mbit/s
95th percentile per-packet one-way delay: 146.159 ms
Loss rate: 0.22%
Run 4: Report of PCC-Allegro — Data Link

![Graph showing throughput and packet delay over time]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 429.33 Mbps)
  - Flow 1 egress (mean 411.93 Mbps)
  - Flow 2 ingress (mean 291.63 Mbps)
  - Flow 2 egress (mean 291.37 Mbps)
  - Flow 3 ingress (mean 271.34 Mbps)
  - Flow 3 egress (mean 270.74 Mbps)

- **Packet Delay (ms):**
  - Flow 1 (95th percentile 200.27 ms)
  - Flow 2 (95th percentile 73.60 ms)
  - Flow 3 (95th percentile 146.16 ms)
Run 5: Statistics of PCC-Allegro

Start at: 2019-12-11 23:21:05
End at: 2019-12-11 23:21:35
Local clock offset: -0.053 ms
Remote clock offset: 0.087 ms

# Below is generated by plot.py at 2019-12-12 02:30:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 711.27 Mbit/s
95th percentile per-packet one-way delay: 179.583 ms
Loss rate: 2.50%
-- Flow 1:
Average throughput: 445.23 Mbit/s
95th percentile per-packet one-way delay: 189.408 ms
Loss rate: 3.93%
-- Flow 2:
Average throughput: 283.23 Mbit/s
95th percentile per-packet one-way delay: 79.564 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 236.04 Mbit/s
95th percentile per-packet one-way delay: 125.123 ms
Loss rate: 0.00%
Run 5: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 463.48 Mbit/s)
- Flow 1 egress (mean 445.23 Mbit/s)
- Flow 2 ingress (mean 283.23 Mbit/s)
- Flow 2 egress (mean 283.32 Mbit/s)
- Flow 3 ingress (mean 236.10 Mbit/s)
- Flow 3 egress (mean 236.04 Mbit/s)

![Graph 2: Round-trip delay over Time](image2)

- Flow 1 (95th percentile 189.41 ms)
- Flow 2 (95th percentile 79.56 ms)
- Flow 3 (95th percentile 125.12 ms)
Run 1: Statistics of PCC-Expr

Start at: 2019-12-11 20:25:08
End at: 2019-12-11 20:25:38
Local clock offset: -0.035 ms
Remote clock offset: -0.183 ms

# Below is generated by plot.py at 2019-12-12 02:30:48
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 512.76 Mbit/s
  95th percentile per-packet one-way delay: 175.465 ms
  Loss rate: 2.47%
-- Flow 1:
  Average throughput: 304.91 Mbit/s
  95th percentile per-packet one-way delay: 155.513 ms
  Loss rate: 0.91%
-- Flow 2:
  Average throughput: 262.47 Mbit/s
  95th percentile per-packet one-way delay: 183.656 ms
  Loss rate: 5.45%
-- Flow 3:
  Average throughput: 95.37 Mbit/s
  95th percentile per-packet one-way delay: 63.346 ms
  Loss rate: 0.00%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2019-12-11 21:06:14
End at: 2019-12-11 21:06:44
Local clock offset: -0.04 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2019-12-12 02:30:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 495.78 Mbit/s
95th percentile per-packet one-way delay: 164.490 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 282.75 Mbit/s
95th percentile per-packet one-way delay: 168.078 ms
Loss rate: 1.35%
-- Flow 2:
Average throughput: 242.50 Mbit/s
95th percentile per-packet one-way delay: 129.057 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 156.89 Mbit/s
95th percentile per-packet one-way delay: 77.471 ms
Loss rate: 0.00%
Run 2: Report of PCC-Expr — Data Link

![Graph showing network throughput and delay over time for different flows.](image-url)
Run 3: Statistics of PCC-Expr

Start at: 2019-12-11 21:47:31
End at: 2019-12-11 21:48:01
Local clock offset: -0.061 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2019-12-12 02:30:48
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 502.77 Mbit/s
  95th percentile per-packet one-way delay: 172.804 ms
  Loss rate: 1.23%
-- Flow 1:
  Average throughput: 282.75 Mbit/s
  95th percentile per-packet one-way delay: 177.300 ms
  Loss rate: 2.07%
-- Flow 2:
  Average throughput: 240.26 Mbit/s
  95th percentile per-packet one-way delay: 148.329 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 182.85 Mbit/s
  95th percentile per-packet one-way delay: 114.395 ms
  Loss rate: 0.00%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2019-12-11 22:28:30
End at: 2019-12-11 22:29:00
Local clock offset: 0.005 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2019-12-12 02:38:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 477.20 Mbit/s
95th percentile per-packet one-way delay: 101.562 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 253.93 Mbit/s
95th percentile per-packet one-way delay: 100.115 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 249.45 Mbit/s
95th percentile per-packet one-way delay: 112.322 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 173.30 Mbit/s
95th percentile per-packet one-way delay: 85.527 ms
Loss rate: 0.00%
Run 4: Report of PCC-Expr — Data Link

![Graph 1: Throughput vs. Time]

- **Flow 1 ingress (mean 253.93 Mbit/s)**
- **Flow 1 egress (mean 253.93 Mbit/s)**
- **Flow 2 ingress (mean 249.48 Mbit/s)**
- **Flow 2 egress (mean 249.45 Mbit/s)**
- **Flow 3 ingress (mean 173.29 Mbit/s)**
- **Flow 3 egress (mean 173.30 Mbit/s)**

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

- **Flow 1 (95th percentile 100.11 ms)**
- **Flow 2 (95th percentile 112.32 ms)**
- **Flow 3 (95th percentile 85.53 ms)**
Run 5: Statistics of PCC-Expr

Start at: 2019-12-11 23:09:37
End at: 2019-12-11 23:10:07
Local clock offset: -0.031 ms
Remote clock offset: -0.174 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 461.74 Mbit/s
95th percentile per-packet one-way delay: 172.309 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 276.44 Mbit/s
95th percentile per-packet one-way delay: 180.090 ms
Loss rate: 2.32%
-- Flow 2:
Average throughput: 227.17 Mbit/s
95th percentile per-packet one-way delay: 116.855 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 103.88 Mbit/s
95th percentile per-packet one-way delay: 64.510 ms
Loss rate: 0.00%
Run 5: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 283.03 Mbps)
- Flow 1 egress (mean 276.44 Mbps)
- Flow 2 ingress (mean 227.19 Mbps)
- Flow 2 egress (mean 227.17 Mbps)
- Flow 3 ingress (mean 103.88 Mbps)
- Flow 3 egress (mean 103.88 Mbps)

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

- Flow 1 (95th percentile 180.09 ms)
- Flow 2 (95th percentile 116.88 ms)
- Flow 3 (95th percentile 64.51 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2019-12-11 20:14:04
End at: 2019-12-11 20:14:34
Local clock offset: -0.087 ms
Remote clock offset: -0.116 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 14.74 Mbit/s
  95th percentile per-packet one-way delay: 59.755 ms
  Loss rate: 0.00%
  -- Flow 1:
  Average throughput: 0.01 Mbit/s
  95th percentile per-packet one-way delay: 60.746 ms
  Loss rate: 0.00%
  -- Flow 2:
  Average throughput: 0.01 Mbit/s
  95th percentile per-packet one-way delay: 60.287 ms
  Loss rate: 0.00%
  -- Flow 3:
  Average throughput: 44.90 Mbit/s
  95th percentile per-packet one-way delay: 59.755 ms
  Loss rate: 0.00%
Run 2: Statistics of QUIC Cubic

Start at: 2019-12-11 20:55:02
End at: 2019-12-11 20:55:32
Local clock offset: -0.011 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.71 Mbit/s
95th percentile per-packet one-way delay: 65.401 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 63.88 Mbit/s
95th percentile per-packet one-way delay: 62.401 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 43.85 Mbit/s
95th percentile per-packet one-way delay: 65.438 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 23.56 Mbit/s
95th percentile per-packet one-way delay: 59.802 ms
Loss rate: 0.00%
Run 2: Report of QUIC Cubic — Data Link
Run 3: Statistics of QUIC Cubic

Start at: 2019-12-11 21:36:17
End at: 2019-12-11 21:36:47
Local clock offset: -0.035 ms
Remote clock offset: -0.16 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.50 Mbit/s
95th percentile per-packet one-way delay: 62.725 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.46 Mbit/s
95th percentile per-packet one-way delay: 62.742 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.64 Mbit/s
95th percentile per-packet one-way delay: 59.681 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 26.66 Mbit/s
95th percentile per-packet one-way delay: 62.096 ms
Loss rate: 0.00%
Run 3: Report of QUIC Cubic — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 60.46 Mbps)
- Flow 2 ingress (mean 42.64 Mbps)
- Flow 3 ingress (mean 26.66 Mbps)
- Flow 1 egress (mean 60.46 Mbps)
- Flow 2 egress (mean 42.64 Mbps)
- Flow 3 egress (mean 26.66 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 62.74 ms)
- Flow 2 (95th percentile 59.68 ms)
- Flow 3 (95th percentile 62.10 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2019-12-11 22:17:17
End at: 2019-12-11 22:17:47
Local clock offset: 0.0 ms
Remote clock offset: 0.024 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 62.413 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 52.63 Mbit/s
95th percentile per-packet one-way delay: 60.010 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 52.67 Mbit/s
95th percentile per-packet one-way delay: 62.443 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.04 Mbit/s
95th percentile per-packet one-way delay: 60.050 ms
Loss rate: 0.00%
Run 4: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 52.63 Mbit/s)
- Flow 1 egress (mean 52.63 Mbit/s)
- Flow 2 ingress (mean 52.67 Mbit/s)
- Flow 2 egress (mean 52.67 Mbit/s)
- Flow 3 ingress (mean 20.04 Mbit/s)
- Flow 3 egress (mean 20.04 Mbit/s)

- Flow 1 (95th percentile 60.01 ms)
- Flow 2 (95th percentile 62.44 ms)
- Flow 3 (95th percentile 60.05 ms)
Run 5: Statistics of QUIC Cubic

Start at: 2019-12-11 22:58:21
End at: 2019-12-11 22:58:51
Local clock offset: -0.043 ms
Remote clock offset: 0.034 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.99 Mbit/s
95th percentile per-packet one-way delay: 62.605 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.43 Mbit/s
95th percentile per-packet one-way delay: 62.619 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.17 Mbit/s
95th percentile per-packet one-way delay: 59.814 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.98 Mbit/s
95th percentile per-packet one-way delay: 60.339 ms
Loss rate: 0.00%
Run 5: Report of QUIC Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 56.43 Mbps)
Flow 1 egress (mean 56.43 Mbps)
Flow 2 ingress (mean 42.17 Mbps)
Flow 2 egress (mean 42.17 Mbps)
Flow 3 ingress (mean 16.98 Mbps)
Flow 3 egress (mean 16.98 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 62.62 ms)
Flow 2 (95th percentile 59.81 ms)
Flow 3 (95th percentile 60.34 ms)
Run 1: Statistics of SCReAM

Start at: 2019-12-11 20:18:46
End at: 2019-12-11 20:19:16
Local clock offset: -0.041 ms
Remote clock offset: -0.158 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 62.114 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.136 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.897 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.675 ms
Loss rate: 0.00%
Run 1: Report of SCReAM — Data Link

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

![Graph of Delay vs Time](attachment:image2.png)
Run 2: Statistics of SCReAM

Start at: 2019-12-11 20:59:48
End at: 2019-12-11 21:00:18
Local clock offset: -0.023 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.003 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.875 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.373 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.047 ms
Loss rate: 0.00%
Run 2: Report of SCReAM — Data Link

---

Graph 1: Throughput (Mbps) over Time (s)
- Flow 1 ingress (mean 0.22 Mbps)
- Flow 1 egress (mean 0.22 Mbps)
- Flow 2 ingress (mean 0.22 Mbps)
- Flow 2 egress (mean 0.22 Mbps)
- Flow 3 ingress (mean 0.22 Mbps)
- Flow 3 egress (mean 0.22 Mbps)

Graph 2: Per-packet one-way delay (ms) over Time (s)
- Flow 1 (95th percentile 59.88 ms)
- Flow 2 (95th percentile 60.37 ms)
- Flow 3 (95th percentile 61.05 ms)
Run 3: Statistics of SCReAM

Start at: 2019-12-11 21:40:57
End at: 2019-12-11 21:41:27
Local clock offset: -0.069 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 62.349 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.371 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.048 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.884 ms
Loss rate: 0.00%
Run 3: Report of SCReAM — Data Link

Throughput (Mb/s) vs Time (s)

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

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

- Flow 1 (95th percentile 62.37 ms)
- Flow 2 (95th percentile 60.05 ms)
- Flow 3 (95th percentile 59.88 ms)
Run 4: Statistics of SCReAM

Start at: 2019-12-11 22:22:02
Local clock offset: 0.007 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.214 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.232 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.159 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.207 ms
Loss rate: 0.00%
Run 4: Report of SCReAM — Data Link

![Graph showing network performance metrics over time.]
Run 5: Statistics of SCReAM

Start at: 2019-12-11 23:03:08
End at: 2019-12-11 23:03:38
Local clock offset: -0.05 ms
Remote clock offset: -0.202 ms

# Below is generated by plot.py at 2019-12-12 02:41:15
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 65.269 ms
  Loss rate: 0.06%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 60.173 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 65.240 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 65.325 ms
  Loss rate: 0.35%
Run 5: Report of SCReAM — Data Link
Run 1: Statistics of Sprout

Start at: 2019-12-11 20:35:19
End at: 2019-12-11 20:35:49
Local clock offset: -0.03 ms
Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2019-12-12 02:41:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.88 Mbit/s
95th percentile per-packet one-way delay: 62.412 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.03 Mbit/s
95th percentile per-packet one-way delay: 60.615 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.98 Mbit/s
95th percentile per-packet one-way delay: 60.421 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.57 Mbit/s
95th percentile per-packet one-way delay: 62.898 ms
Loss rate: 0.00%
Run 1: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 7.03 Mbit/s) vs. Flow 1 egress (mean 7.03 Mbit/s)
- Flow 2 ingress (mean 6.98 Mbit/s) vs. Flow 2 egress (mean 6.98 Mbit/s)
- Flow 3 ingress (mean 6.57 Mbit/s) vs. Flow 3 egress (mean 6.57 Mbit/s)
Run 2: Statistics of Sprout

Start at: 2019-12-11 21:16:24
End at: 2019-12-11 21:16:54
Local clock offset: -0.021 ms
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2019-12-12 02:41:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.88 Mbit/s
95th percentile per-packet one-way delay: 62.512 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.08 Mbit/s
95th percentile per-packet one-way delay: 60.413 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.94 Mbit/s
95th percentile per-packet one-way delay: 60.500 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.64 Mbit/s
95th percentile per-packet one-way delay: 63.040 ms
Loss rate: 0.00%
Run 2: Report of Sprout — Data Link

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

Legend:
- Blue dashed line: Flow 1 ingress (mean 7.08 Mbit/s)
- Blue solid line: Flow 1 egress (mean 7.08 Mbit/s)
- Green dashed line: Flow 2 ingress (mean 6.94 Mbit/s)
- Green solid line: Flow 2 egress (mean 6.94 Mbit/s)
- Red dashed line: Flow 3 ingress (mean 6.64 Mbit/s)
- Red solid line: Flow 3 egress (mean 6.64 Mbit/s)

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

Legend:
- Blue circles: Flow 1 (95th percentile 60.41 ms)
- Green circles: Flow 2 (95th percentile 60.50 ms)
- Red circles: Flow 3 (95th percentile 61.04 ms)
Run 3: Statistics of Sprout

Start at: 2019-12-11 21:57:27
End at: 2019-12-11 21:57:57
Local clock offset: -0.067 ms
Remote clock offset: -0.193 ms

# Below is generated by plot.py at 2019-12-12 02:41:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.84 Mbit/s
95th percentile per-packet one-way delay: 63.033 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.09 Mbit/s
95th percentile per-packet one-way delay: 60.451 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 60.832 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.55 Mbit/s
95th percentile per-packet one-way delay: 63.494 ms
Loss rate: 0.00%
Run 4: Statistics of Sprout

Start at: 2019-12-11 22:38:40
End at: 2019-12-11 22:39:10
Local clock offset: 0.005 ms
Remote clock offset: -0.214 ms

# Below is generated by plot.py at 2019-12-12 02:41:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.43 Mbit/s
95th percentile per-packet one-way delay: 63.385 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 63.344 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.60 Mbit/s
95th percentile per-packet one-way delay: 63.465 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.51 Mbit/s
95th percentile per-packet one-way delay: 63.278 ms
Loss rate: 0.00%
Run 4: Report of Sprout — Data Link

![Graph 1](chart1.png)

![Graph 2](chart2.png)
Run 5: Statistics of Sprout

Start at: 2019-12-11 23:19:51
End at: 2019-12-11 23:20:21
Local clock offset: -0.028 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2019-12-12 02:41:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 13.69 Mbit/s
  95th percentile per-packet one-way delay: 62.635 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 6.96 Mbit/s
  95th percentile per-packet one-way delay: 62.774 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 6.93 Mbit/s
  95th percentile per-packet one-way delay: 60.628 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 6.44 Mbit/s
  95th percentile per-packet one-way delay: 60.787 ms
  Loss rate: 0.00%
Run 5: Report of Sprout — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 6.96 Mbps)**
- **Flow 1 egress (mean 6.96 Mbps)**
- **Flow 2 ingress (mean 6.93 Mbps)**
- **Flow 2 egress (mean 6.93 Mbps)**
- **Flow 3 ingress (mean 6.44 Mbps)**
- **Flow 3 egress (mean 6.44 Mbps)**

---

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

- **Flow 1 (95th percentile 62.77 ms)**
- **Flow 2 (95th percentile 60.63 ms)**
- **Flow 3 (95th percentile 60.79 ms)**
Run 1: Statistics of TaoVA-100x

Start at: 2019-12-11 20:43:46
End at: 2019-12-11 20:44:16
Local clock offset: 0.004 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2019-12-12 02:44:58
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 432.18 Mbit/s
  95th percentile per-packet one-way delay: 63.344 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 224.49 Mbit/s
  95th percentile per-packet one-way delay: 62.355 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 212.63 Mbit/s
  95th percentile per-packet one-way delay: 62.188 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 198.90 Mbit/s
  95th percentile per-packet one-way delay: 67.367 ms
  Loss rate: 0.00%
Run 1: Report of TaoVA-100x — Data Link

---

**Graph 1:**
Throughput (Mbps) vs Time (s)

- Flow 1 ingress (mean 224.51 Mbps)
- Flow 1 egress (mean 224.49 Mbps)
- Flow 2 ingress (mean 212.63 Mbps)
- Flow 2 egress (mean 212.63 Mbps)
- Flow 3 ingress (mean 198.89 Mbps)
- Flow 3 egress (mean 198.90 Mbps)

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

- Flow 1 (95th percentile 62.35 ms)
- Flow 2 (95th percentile 62.19 ms)
- Flow 3 (95th percentile 67.37 ms)
Run 2: Statistics of TaoVA-100x

Start at: 2019-12-11 21:24:56  
End at: 2019-12-11 21:25:26  
Local clock offset: -0.052 ms  
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2019-12-12 02:46:07  
# Datalink statistics

-- Total of 3 flows:
   Average throughput: 440.06 Mbit/s  
95th percentile per-packet one-way delay: 66.615 ms  
Loss rate: 0.00%

-- Flow 1:
   Average throughput: 229.72 Mbit/s  
95th percentile per-packet one-way delay: 65.542 ms  
Loss rate: 0.00%

-- Flow 2:
   Average throughput: 223.55 Mbit/s  
95th percentile per-packet one-way delay: 68.307 ms  
Loss rate: 0.01%

-- Flow 3:
   Average throughput: 185.17 Mbit/s  
95th percentile per-packet one-way delay: 67.094 ms  
Loss rate: 0.00%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2019-12-11 22:06:00
End at: 2019-12-11 22:06:30
Local clock offset: -0.078 ms
Remote clock offset: -0.024 ms

# Below is generated by plot.py at 2019-12-12 02:46:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 438.67 Mbit/s
95th percentile per-packet one-way delay: 66.481 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 225.18 Mbit/s
95th percentile per-packet one-way delay: 64.189 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 217.10 Mbit/s
95th percentile per-packet one-way delay: 68.221 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 207.36 Mbit/s
95th percentile per-packet one-way delay: 68.765 ms
Loss rate: 0.00%
Run 3: Report of TaoVA-100x — Data Link

![Graph 1: Throughput (Mbps)]
- Flow 1 ingress (mean 225.18 Mbps)
- Flow 1 egress (mean 225.18 Mbps)
- Flow 2 ingress (mean 217.09 Mbps)
- Flow 2 egress (mean 217.10 Mbps)
- Flow 3 ingress (mean 207.36 Mbps)
- Flow 3 egress (mean 207.36 Mbps)

![Graph 2: Per-packet end-to-end delay (ms)]
- Flow 1 (95th percentile 64.19 ms)
- Flow 2 (95th percentile 68.22 ms)
- Flow 3 (95th percentile 68.77 ms)
Run 4: Statistics of TaoVA-100x

Start at: 2019-12-11 22:46:54
End at: 2019-12-11 22:47:24
Local clock offset: 0.005 ms
Remote clock offset: -0.16 ms

# Below is generated by plot.py at 2019-12-12 02:46:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 450.15 Mbit/s
95th percentile per-packet one-way delay: 63.884 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 229.48 Mbit/s
95th percentile per-packet one-way delay: 62.794 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 222.52 Mbit/s
95th percentile per-packet one-way delay: 64.428 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 218.51 Mbit/s
95th percentile per-packet one-way delay: 66.069 ms
Loss rate: 0.00%
Run 4: Report of TaoVA-100x — Data Link

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

Legend:
- Flow 1 ingress (mean 229.48 Mb/s)
- Flow 1 egress (mean 229.48 Mb/s)
- Flow 2 ingress (mean 222.61 Mb/s)
- Flow 2 egress (mean 222.52 Mb/s)
- Flow 3 ingress (mean 218.51 Mb/s)
- Flow 3 egress (mean 218.51 Mb/s)

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

Legend:
- Flow 1 (95th percentile 62.79 ms)
- Flow 2 (95th percentile 64.43 ms)
- Flow 3 (95th percentile 66.07 ms)
Run 5: Statistics of TaoVA-100x

Start at: 2019-12-11 23:28:26
End at: 2019-12-11 23:28:56
Local clock offset: -0.054 ms
Remote clock offset: -0.099 ms

# Below is generated by plot.py at 2019-12-12 02:46:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 259.56 Mbit/s
  95th percentile per-packet one-way delay: 64.322 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 29.24 Mbit/s
  95th percentile per-packet one-way delay: 59.739 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 238.15 Mbit/s
  95th percentile per-packet one-way delay: 62.444 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 215.86 Mbit/s
  95th percentile per-packet one-way delay: 66.207 ms
  Loss rate: 0.01%
Run 5: Report of TaoVA-100x — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 29.24 Mbps)
- Flow 1 egress (mean 29.24 Mbps)
- Flow 2 ingress (mean 238.16 Mbps)
- Flow 2 egress (mean 238.15 Mbps)
- Flow 3 ingress (mean 215.82 Mbps)
- Flow 3 egress (mean 215.86 Mbps)

**Per-packet one way delay (ms):**
- Flow 1 (95th percentile 59.74 ms)
- Flow 2 (95th percentile 62.44 ms)
- Flow 3 (95th percentile 66.21 ms)
Run 1: Statistics of TCP Vegas

Start at: 2019-12-11 20:10:33
End at: 2019-12-11 20:11:03
Local clock offset: -0.063 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2019-12-12 02:46:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 701.48 Mbit/s
95th percentile per-packet one-way delay: 63.238 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 431.37 Mbit/s
95th percentile per-packet one-way delay: 63.630 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 274.38 Mbit/s
95th percentile per-packet one-way delay: 60.391 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 262.86 Mbit/s
95th percentile per-packet one-way delay: 73.100 ms
Loss rate: 0.00%
Run 1: Report of TCP Vegas — Data Link

![Graph showing TCP Vegas data link performance](image)

![Graph showing packet per second over delay](image)
Run 2: Statistics of TCP Vegas

Start at: 2019-12-11 20:51:29
End at: 2019-12-11 20:51:59
Local clock offset: 0.039 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2019-12-12 02:51:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 596.88 Mbit/s
95th percentile per-packet one-way delay: 73.563 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 178.57 Mbit/s
95th percentile per-packet one-way delay: 63.503 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 426.58 Mbit/s
95th percentile per-packet one-way delay: 70.031 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 403.95 Mbit/s
95th percentile per-packet one-way delay: 98.540 ms
Loss rate: 0.01%
Run 2: Report of TCP Vegas — Data Link

---

---

---
Run 3: Statistics of TCP Vegas

Start at: 2019-12-11 21:32:43
End at: 2019-12-11 21:33:13
Local clock offset: -0.04 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2019-12-12 02:51:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 595.74 Mbit/s
95th percentile per-packet one-way delay: 75.341 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 223.53 Mbit/s
95th percentile per-packet one-way delay: 95.575 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 389.69 Mbit/s
95th percentile per-packet one-way delay: 74.255 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 339.36 Mbit/s
95th percentile per-packet one-way delay: 67.857 ms
Loss rate: 0.00%
Run 3: Report of TCP Vegas — Data Link

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

- **Throughput:**
  - Flow 1 ingress (mean 223.53 Mbit/s)
  - Flow 1 egress (mean 223.53 Mbit/s)
  - Flow 2 ingress (mean 389.65 Mbit/s)
  - Flow 2 egress (mean 389.69 Mbit/s)
  - Flow 3 ingress (mean 339.35 Mbit/s)
  - Flow 3 egress (mean 339.26 Mbit/s)

- **Per-packet one-way delay:**
  - Flow 1 (95th percentile 95.58 ms)
  - Flow 2 (95th percentile 74.25 ms)
  - Flow 3 (95th percentile 67.86 ms)
Run 4: Statistics of TCP Vegas

End at: 2019-12-11 22:14:13
Local clock offset: -0.006 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2019-12-12 02:53:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 603.47 Mbit/s
  95th percentile per-packet one-way delay: 78.553 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 386.43 Mbit/s
  95th percentile per-packet one-way delay: 80.540 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 199.57 Mbit/s
  95th percentile per-packet one-way delay: 62.629 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 253.35 Mbit/s
  95th percentile per-packet one-way delay: 65.764 ms
  Loss rate: 0.00%
Run 4: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 386.35 Mbit/s)
- Flow 1 egress (mean 386.43 Mbit/s)
- Flow 2 ingress (mean 199.57 Mbit/s)
- Flow 2 egress (mean 199.57 Mbit/s)
- Flow 3 ingress (mean 253.35 Mbit/s)
- Flow 3 egress (mean 253.35 Mbit/s)
Run 5: Statistics of TCP Vegas

Start at: 2019-12-11 22:54:38
End at: 2019-12-11 22:55:08
Local clock offset: -0.024 ms
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2019-12-12 03:00:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 797.00 Mbit/s
95th percentile per-packet one-way delay: 78.352 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 438.49 Mbit/s
95th percentile per-packet one-way delay: 76.698 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 425.07 Mbit/s
95th percentile per-packet one-way delay: 80.070 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 226.93 Mbit/s
95th percentile per-packet one-way delay: 79.884 ms
Loss rate: 0.00%
Run 5: Report of TCP Vegas — Data Link
Run 1: Statistics of Verus

Start at: 2019-12-11 20:17:09
End at: 2019-12-11 20:17:39
Local clock offset: -0.077 ms
Remote clock offset: -0.103 ms

# Below is generated by plot.py at 2019-12-12 03:00:42
# Datalink statistics
-- Total of 3 flows:
    Average throughput: 249.63 Mbit/s
    95th percentile per-packet one-way delay: 150.986 ms
    Loss rate: 0.12%
-- Flow 1:
    Average throughput: 113.73 Mbit/s
    95th percentile per-packet one-way delay: 80.849 ms
    Loss rate: 0.00%
-- Flow 2:
    Average throughput: 126.58 Mbit/s
    95th percentile per-packet one-way delay: 198.228 ms
    Loss rate: 0.29%
-- Flow 3:
    Average throughput: 157.25 Mbit/s
    95th percentile per-packet one-way delay: 139.787 ms
    Loss rate: 0.10%
Run 1: Report of Verus — Data Link

![Graph showing throughput and delay over time](image)

Flow 1 ingress (mean 113.73 Mbit/s) - Flow 1 egress (mean 113.73 Mbit/s)
Flow 2 ingress (mean 127.26 Mbit/s) - Flow 2 egress (mean 126.58 Mbit/s)
Flow 3 ingress (mean 157.69 Mbit/s) - Flow 3 egress (mean 157.25 Mbit/s)

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

Flow 1 (95th percentile 80.85 ms) - Flow 2 (95th percentile 198.23 ms) - Flow 3 (95th percentile 139.79 ms)
Run 2: Statistics of Verus

Start at: 2019-12-11 20:58:09
End at: 2019-12-11 20:58:39
Local clock offset: -0.019 ms
Remote clock offset: -0.099 ms

# Below is generated by plot.py at 2019-12-12 03:00:42
# Datalink statistics

-- Total of 3 flows:
Average throughput: 273.15 Mbit/s
95th percentile per-packet one-way delay: 146.840 ms
Loss rate: 0.05%

-- Flow 1:
Average throughput: 177.07 Mbit/s
95th percentile per-packet one-way delay: 156.925 ms
Loss rate: 0.04%

-- Flow 2:
Average throughput: 113.61 Mbit/s
95th percentile per-packet one-way delay: 83.985 ms
Loss rate: 0.09%

-- Flow 3:
Average throughput: 62.45 Mbit/s
95th percentile per-packet one-way delay: 64.260 ms
Loss rate: 0.00%
Run 2: Report of Verus — Data Link

[Graph showing throughput and latency over time for different network flows]
Run 3: Statistics of Verus

Start at: 2019-12-11 21:39:24
End at: 2019-12-11 21:39:54
Local clock offset: -0.065 ms
Remote clock offset: 0.186 ms

# Below is generated by plot.py at 2019-12-12 03:00:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 209.80 Mbit/s
95th percentile per-packet one-way delay: 105.900 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 103.10 Mbit/s
95th percentile per-packet one-way delay: 73.016 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 118.04 Mbit/s
95th percentile per-packet one-way delay: 149.903 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 86.63 Mbit/s
95th percentile per-packet one-way delay: 71.230 ms
Loss rate: 0.00%
Run 3: Report of Verus — Data Link

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

- Flow 1 ingress (mean 103.18 Mbit/s)
- Flow 1 egress (mean 103.10 Mbit/s)
- Flow 2 ingress (mean 119.25 Mbit/s)
- Flow 2 egress (mean 118.04 Mbit/s)
- Flow 3 ingress (mean 86.63 Mbit/s)
- Flow 3 egress (mean 86.63 Mbit/s)

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

- Flow 1 (95th percentile 73.02 ms)
- Flow 2 (95th percentile 149.90 ms)
- Flow 3 (95th percentile 71.23 ms)
Run 4: Statistics of Verus

Start at: 2019-12-11 22:20:22
End at: 2019-12-11 22:20:52
Local clock offset: -0.032 ms
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2019-12-12 03:00:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 275.89 Mbit/s
95th percentile per-packet one-way delay: 167.266 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 161.99 Mbit/s
95th percentile per-packet one-way delay: 167.492 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 140.06 Mbit/s
95th percentile per-packet one-way delay: 175.319 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 63.28 Mbit/s
95th percentile per-packet one-way delay: 107.970 ms
Loss rate: 0.00%
Run 4: Report of Verus — Data Link

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

Legend:
- Flow 1 ingress (mean 162.69 Mbit/s)
- Flow 1 egress (mean 161.99 Mbit/s)
- Flow 2 ingress (mean 141.74 Mbit/s)
- Flow 2 egress (mean 140.06 Mbit/s)
- Flow 3 ingress (mean 63.28 Mbit/s)
- Flow 3 egress (mean 63.28 Mbit/s)

![Graph showing packet delay per flow over time.]

Legend:
- Flow 1 (95th percentile 167.49 ms)
- Flow 2 (95th percentile 175.32 ms)
- Flow 3 (95th percentile 107.97 ms)
Run 5: Statistics of Verus

Start at: 2019-12-11 23:01:29
End at: 2019-12-11 23:01:59
Local clock offset: -0.053 ms
Remote clock offset: -0.024 ms

# Below is generated by plot.py at 2019-12-12 03:00:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 248.11 Mbit/s
  95th percentile per-packet one-way delay: 160.407 ms
  Loss rate: 0.60%
-- Flow 1:
  Average throughput: 114.45 Mbit/s
  95th percentile per-packet one-way delay: 90.634 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 136.77 Mbit/s
  95th percentile per-packet one-way delay: 195.358 ms
  Loss rate: 0.69%
-- Flow 3:
  Average throughput: 130.37 Mbit/s
  95th percentile per-packet one-way delay: 214.010 ms
  Loss rate: 1.95%
Run 5: Report of Verus — Data Link

[Graph showing throughput and delay over time for different flows with mean values provided]
Run 1: Statistics of PCC-Vivace

Start at: 2019-12-11 20:23:35
End at: 2019-12-11 20:24:05
Local clock offset: -0.04 ms
Remote clock offset: 0.018 ms

# Below is generated by plot.py at 2019-12-12 03:00:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 273.38 Mbit/s
95th percentile per-packet one-way delay: 68.439 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 52.86 Mbit/s
95th percentile per-packet one-way delay: 63.193 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 249.91 Mbit/s
95th percentile per-packet one-way delay: 71.224 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 161.77 Mbit/s
95th percentile per-packet one-way delay: 64.668 ms
Loss rate: 0.00%
Run 1: Report of PCC-Vivace — Data Link

![Graph showing data link performance metrics]

Legend:
- Blue dashed line: Flow 1 ingress (mean 52.86 Mbit/s)
- Light blue dashed line: Flow 1 egress (mean 52.86 Mbit/s)
- Green dash-dotted line: Flow 2 ingress (mean 249.91 Mbit/s)
- Dark green dash-dotted line: Flow 2 egress (mean 249.91 Mbit/s)
- Red dotted line: Flow 3 ingress (mean 161.77 Mbit/s)
- Grey dotted line: Flow 3 egress (mean 161.77 Mbit/s)

![Graph showing packet delay]

Legend:
- Blue line: Flow 1 (95th percentile 63.19 ms)
- Green line: Flow 2 (95th percentile 71.22 ms)
- Red line: Flow 3 (95th percentile 64.67 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2019-12-11 21:04:29
End at: 2019-12-11 21:04:59
Local clock offset: -0.043 ms
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2019-12-12 03:01:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 453.87 Mbit/s
  95th percentile per-packet one-way delay: 140.440 ms
  Loss rate: 0.04%
-- Flow 1:
  Average throughput: 278.53 Mbit/s
  95th percentile per-packet one-way delay: 157.580 ms
  Loss rate: 0.06%
-- Flow 2:
  Average throughput: 221.09 Mbit/s
  95th percentile per-packet one-way delay: 61.546 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 85.73 Mbit/s
  95th percentile per-packet one-way delay: 59.990 ms
  Loss rate: 0.00%
Run 2: Report of PCC-Vivace — Data Link

Throughput (Mbps):
- Flow 1 ingress (mean 278.68 Mbps)
- Flow 1 egress (mean 278.53 Mbps)
- Flow 2 ingress (mean 221.10 Mbps)
- Flow 2 egress (mean 221.09 Mbps)
- Flow 3 ingress (mean 85.73 Mbps)
- Flow 3 egress (mean 85.73 Mbps)

Per-packet one-way delay (ms):
- Flow 1 (95th percentile 157.58 ms)
- Flow 2 (95th percentile 61.55 ms)
- Flow 3 (95th percentile 59.99 ms)
Run 3: Statistics of PCC-Vivace

Start at: 2019-12-11 21:45:45
End at: 2019-12-11 21:46:15
Local clock offset: -0.093 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-12-12 03:01:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.99 Mbit/s
95th percentile per-packet one-way delay: 177.142 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 264.19 Mbit/s
95th percentile per-packet one-way delay: 66.126 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 223.53 Mbit/s
95th percentile per-packet one-way delay: 193.895 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 168.41 Mbit/s
95th percentile per-packet one-way delay: 64.992 ms
Loss rate: 0.00%
Run 3: Report of PCC-Vivace — Data Link
Run 4: Statistics of PCC-Vivace

Start at: 2019-12-11 22:26:46
End at: 2019-12-11 22:27:16
Local clock offset: 0.032 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2019-12-12 03:01:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 445.20 Mbit/s
95th percentile per-packet one-way delay: 66.544 ms
Loss rate: 0.00%

-- Flow 1:
Average throughput: 279.56 Mbit/s
95th percentile per-packet one-way delay: 68.284 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 220.72 Mbit/s
95th percentile per-packet one-way delay: 61.379 ms
Loss rate: 0.00%

-- Flow 3:
Average throughput: 57.23 Mbit/s
95th percentile per-packet one-way delay: 60.120 ms
Loss rate: 0.00%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2019-12-11 23:07:49
End at: 2019-12-11 23:08:19
Local clock offset: -0.044 ms
Remote clock offset: -0.052 ms

# Below is generated by plot.py at 2019-12-12 03:02:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 504.29 Mbit/s
95th percentile per-packet one-way delay: 78.084 ms
Loss rate: 0.00%

-- Flow 1:
Average throughput: 304.26 Mbit/s
95th percentile per-packet one-way delay: 88.180 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 215.55 Mbit/s
95th percentile per-packet one-way delay: 65.420 ms
Loss rate: 0.00%

-- Flow 3:
Average throughput: 172.03 Mbit/s
95th percentile per-packet one-way delay: 65.869 ms
Loss rate: 0.04%
Run 5: Report of PCC-Vivace — Data Link

---

**Graph 1: Throughput (Mbps)**
- **Flow 1 ingress (mean 394.26 Mbps)**
- **Flow 1 egress (mean 394.26 Mbps)**
- **Flow 2 ingress (mean 215.55 Mbps)**
- **Flow 2 egress (mean 215.55 Mbps)**
- **Flow 3 ingress (mean 172.11 Mbps)**
- **Flow 3 egress (mean 172.03 Mbps)**

**Graph 2: Per-packet one-way delay (ms)**
- **Flow 1 (95th percentile 88.18 ms)**
- **Flow 2 (95th percentile 65.42 ms)**
- **Flow 3 (95th percentile 65.87 ms)**

---

234
Run 1: Statistics of WebRTC media

Start at: 2019-12-11 20:34:06
End at: 2019-12-11 20:34:36
Local clock offset: -0.079 ms
Remote clock offset: -0.185 ms

# Below is generated by plot.py at 2019-12-12 03:02:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.11 Mbit/s
95th percentile per-packet one-way delay: 62.120 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 59.708 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 59.997 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 62.164 ms
Loss rate: 0.00%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-12-11 21:15:12
End at: 2019-12-11 21:15:42
Local clock offset: -0.026 ms
Remote clock offset: -0.113 ms

# Below is generated by plot.py at 2019-12-12 03:02:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 59.899 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 59.874 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 59.989 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 62.360 ms
Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link

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

- **Throughput (Mbps):**
  - **Flow 1 ingress (mean 2.21 Mbps):**
  - **Flow 1 egress (mean 2.21 Mbps):**
  - **Flow 2 ingress (mean 0.06 Mbps):**
  - **Flow 2 egress (mean 0.06 Mbps):**
  - **Flow 3 ingress (mean 0.06 Mbps):**
  - **Flow 3 egress (mean 0.06 Mbps):**

- **Packet Delay (ms):**
  - **Flow 1 (95th percentile 59.87 ms):**
  - **Flow 2 (95th percentile 59.99 ms):**
  - **Flow 3 (95th percentile 62.36 ms):**
Run 3: Statistics of WebRTC media

Start at: 2019-12-11 21:56:15
End at: 2019-12-11 21:56:45
Local clock offset: -0.073 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-12-12 03:02:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 60.209 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.254 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.019 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 59.998 ms
Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

Graph 1: Throughput (Mbps) vs. Time (s)

Graph 2: Per packet one-way delay (μs) vs. Time (s)
Run 4: Statistics of WebRTC media

Start at: 2019-12-11 22:37:27
End at: 2019-12-11 22:37:57
Local clock offset: -0.0 ms
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2019-12-12 03:02:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 62.985 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 59.879 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 60.041 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 63.057 ms
Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link

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

- **Flow 1** ingress (mean 2.18 Mbit/s), egress (mean 2.18 Mbit/s)
- **Flow 2** ingress (mean 1.75 Mbit/s), egress (mean 1.75 Mbit/s)
- **Flow 3** ingress (mean 0.62 Mbit/s), egress (mean 0.62 Mbit/s)

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

- **Flow 1** (95th percentile 59.88 ms)
- **Flow 2** (95th percentile 60.04 ms)
- **Flow 3** (95th percentile 61.06 ms)
Run 5: Statistics of WebRTC media

Start at: 2019-12-11 23:18:38
End at: 2019-12-11 23:19:08
Local clock offset: -0.004 ms
Remote clock offset: -0.105 ms

# Below is generated by plot.py at 2019-12-12 03:02:07
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.15 Mbit/s
  95th percentile per-packet one-way delay: 62.289 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 62.324 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.08 Mbit/s
  95th percentile per-packet one-way delay: 59.925 ms
  Loss rate: 0.05%
-- Flow 3:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 59.721 ms
  Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link

![Graph of WebRTC media data link throughput and packet delay](image-url)

- **Throughput**: Blue line for Flow 1 ingress (mean 0.05 Mbit/s), Blue dashed line for Flow 1 egress (mean 0.05 Mbit/s), Green line for Flow 2 ingress (mean 0.06 Mbit/s), Green dashed line for Flow 2 egress (mean 0.08 Mbit/s), Red line for Flow 3 ingress (mean 0.05 Mbit/s), Red dashed line for Flow 3 egress (mean 0.05 Mbit/s).

- **Packet Delay**: Black line for Flow 1 (95th percentile 62.32 ms), Black dashed line for Flow 2 (95th percentile 59.92 ms), Red line for Flow 3 (95th percentile 59.72 ms).