Pantheon Report

Data path: India Ethernet (remote) → AWS India 1 Ethernet (local).
Repeated the test of 17 congestion control schemes 10 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
NTP offsets were measured against nets.org.sg and have been applied to correct the timestamps in logs.

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

Git summary:
branch: master @ 7719b900495aa706f8452ab7d4a94dd562e9296e
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436bd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0edcfb90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
third_party/pcc @ 1afc958fa0d66d18b623c091a55fecn872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f613e8ac0d8fa92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cffe2
third_party/scream-reproduce @ f099118d1421aa3131b1ff1964974e1da3b4d2
  M src/ScreamClient
  M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webRTC @ 3f0cc2a9061a41b6f9d9e4735770d143a1fa2851
test from India to AWS India 1, 10 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1     flow 2     flow 3</td>
<td>flow 1     flow 2     flow 3</td>
<td>flow 1     flow 2     flow 3</td>
</tr>
<tr>
<td>TCP BBR</td>
<td>10</td>
<td>55.57      38.22      29.62</td>
<td>49.14      52.05      61.70</td>
<td>4.13       4.82       4.65</td>
</tr>
<tr>
<td>Copa</td>
<td>10</td>
<td>47.08      33.94      25.72</td>
<td>27.81      28.38      26.74</td>
<td>0.05       0.10       0.27</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>10</td>
<td>54.46      35.94      32.99</td>
<td>32.22      34.12      34.14</td>
<td>0.07       0.14       0.33</td>
</tr>
<tr>
<td>FillP</td>
<td>10</td>
<td>53.91      39.71      24.83</td>
<td>51.32      48.41      64.32</td>
<td>2.65       4.34       7.14</td>
</tr>
<tr>
<td>FillP-Sheep</td>
<td>10</td>
<td>55.17      37.44      30.53</td>
<td>44.42      52.42      52.66</td>
<td>1.99       2.63       1.19</td>
</tr>
<tr>
<td>Indigo</td>
<td>10</td>
<td>53.16      39.12      29.44</td>
<td>30.19      30.44      33.93</td>
<td>0.06       0.12       0.31</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>10</td>
<td>45.95      37.31      32.24</td>
<td>31.98      36.74      40.62</td>
<td>0.07       0.17       0.37</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>10</td>
<td>53.56      27.26      30.33</td>
<td>47.82      51.06      36.67</td>
<td>4.34       2.75       0.76</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>10</td>
<td>52.08      32.08      24.94</td>
<td>43.66      49.69      46.93</td>
<td>0.90       0.81       0.70</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>10</td>
<td>53.48      36.47      31.43</td>
<td>36.18      37.30      39.13</td>
<td>0.11       0.20       0.47</td>
</tr>
<tr>
<td>SCReAM</td>
<td>10</td>
<td>0.21       0.21       0.22</td>
<td>20.04      20.00      20.13</td>
<td>0.12       0.19       0.32</td>
</tr>
<tr>
<td>Sprout</td>
<td>10</td>
<td>20.56      20.14      19.50</td>
<td>29.44      30.58      31.64</td>
<td>0.11       0.17       0.39</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>10</td>
<td>49.13      38.53      31.25</td>
<td>48.80      50.99      56.49</td>
<td>0.35       0.72       1.79</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>10</td>
<td>53.74      35.92      31.74</td>
<td>27.93      29.92      30.32</td>
<td>0.05       0.11       0.29</td>
</tr>
<tr>
<td>Verus</td>
<td>10</td>
<td>50.55      35.93      29.80</td>
<td>44.76      49.47      54.25</td>
<td>0.15       0.22       0.56</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>10</td>
<td>46.81      30.25      17.34</td>
<td>43.64      42.44      40.44</td>
<td>0.97       0.44       0.91</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>10</td>
<td>1.61       1.00       0.44</td>
<td>20.96      21.02      21.23</td>
<td>0.03       0.15       0.16</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-08-22 19:03:51
End at: 2018-08-22 19:04:21
Local clock offset: 2.519 ms
Remote clock offset: -63.943 ms

# Below is generated by plot.py at 2018-08-22 22:25:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.16 Mbit/s
95th percentile per-packet one-way delay: 43.755 ms
Loss rate: 3.15%
-- Flow 1:
Average throughput: 64.09 Mbit/s
95th percentile per-packet one-way delay: 43.318 ms
Loss rate: 3.20%
-- Flow 2:
Average throughput: 37.06 Mbit/s
95th percentile per-packet one-way delay: 47.177 ms
Loss rate: 2.92%
-- Flow 3:
Average throughput: 25.31 Mbit/s
95th percentile per-packet one-way delay: 65.557 ms
Loss rate: 3.48%
Run 1: Report of TCP BBR — Data Link

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

Legend:
- Flow 1 ingress (mean 66.13 Mbit/s)
- Flow 1 egress (mean 64.09 Mbit/s)
- Flow 2 ingress (mean 38.13 Mbit/s)
- Flow 2 egress (mean 37.06 Mbit/s)
- Flow 3 ingress (mean 26.14 Mbit/s)
- Flow 3 egress (mean 25.31 Mbit/s)
Run 2: Statistics of TCP BBR

Start at: 2018-08-22 19:24:19
End at: 2018-08-22 19:24:49
Local clock offset: 1.266 ms
Remote clock offset: -64.831 ms

# Below is generated by plot.py at 2018-08-22 22:25:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 87.40 Mbit/s
  95th percentile per-packet one-way delay: 56.120 ms
  Loss rate: 5.08%
-- Flow 1:
  Average throughput: 55.52 Mbit/s
  95th percentile per-packet one-way delay: 53.986 ms
  Loss rate: 4.95%
-- Flow 2:
  Average throughput: 35.68 Mbit/s
  95th percentile per-packet one-way delay: 54.882 ms
  Loss rate: 5.29%
-- Flow 3:
  Average throughput: 24.48 Mbit/s
  95th percentile per-packet one-way delay: 65.413 ms
  Loss rate: 5.32%
Run 2: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 58.33 Mbit/s)
- Flow 1 egress (mean 55.52 Mbit/s)
- Flow 2 ingress (mean 37.63 Mbit/s)
- Flow 2 egress (mean 35.66 Mbit/s)
- Flow 3 ingress (mean 25.78 Mbit/s)
- Flow 3 egress (mean 24.48 Mbit/s)

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

- Flow 1 (95th percentile 53.99 ms)
- Flow 2 (95th percentile 54.88 ms)
- Flow 3 (95th percentile 65.41 ms)
Run 3: Statistics of TCP BBR

Start at: 2018-08-22 19:44:19
End at: 2018-08-22 19:44:49
Local clock offset: 1.855 ms
Remote clock offset: -65.469 ms

# Below is generated by plot.py at 2018-08-22 22:25:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.73 Mbit/s
  95th percentile per-packet one-way delay: 57.507 ms
  Loss rate: 4.90%
-- Flow 1:
  Average throughput: 58.48 Mbit/s
  95th percentile per-packet one-way delay: 50.706 ms
  Loss rate: 4.18%
-- Flow 2:
  Average throughput: 33.90 Mbit/s
  95th percentile per-packet one-way delay: 61.061 ms
  Loss rate: 6.25%
-- Flow 3:
  Average throughput: 23.16 Mbit/s
  95th percentile per-packet one-way delay: 70.328 ms
  Loss rate: 6.29%
Run 3: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 60.97 Mbit/s)
- Flow 1 egress (mean 58.48 Mbit/s)
- Flow 2 ingress (mean 36.11 Mbit/s)
- Flow 2 egress (mean 33.90 Mbit/s)
- Flow 3 ingress (mean 24.64 Mbit/s)
- Flow 3 egress (mean 23.16 Mbit/s)
Run 4: Statistics of TCP BBR

Start at: 2018-08-22 20:04:24
End at: 2018-08-22 20:04:54
Local clock offset: 0.682 ms
Remote clock offset: -63.573 ms

# Below is generated by plot.py at 2018-08-22 22:25:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.00 Mbit/s
95th percentile per-packet one-way delay: 52.844 ms
Loss rate: 5.24%
-- Flow 1:
Average throughput: 49.29 Mbit/s
95th percentile per-packet one-way delay: 50.907 ms
Loss rate: 5.04%
-- Flow 2:
Average throughput: 32.36 Mbit/s
95th percentile per-packet one-way delay: 60.063 ms
Loss rate: 6.08%
-- Flow 3:
Average throughput: 42.63 Mbit/s
95th percentile per-packet one-way delay: 50.010 ms
Loss rate: 4.64%
Run 4: Report of TCP BBR — Data Link

[Graph showing throughput over time for different flows with legend indicating mean throughput rates.

Graph showing per-packet one-way delay over time for different flows with legend indicating 95th percentile delay times.]
Run 5: Statistics of TCP BBR

Start at: 2018-08-22 20:24:14
End at: 2018-08-22 20:24:44
Local clock offset: 0.036 ms
Remote clock offset: -63.89 ms

# Below is generated by plot.py at 2018-08-22 22:25:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.96 Mbit/s
  95th percentile per-packet one-way delay: 53.181 ms
  Loss rate: 4.77%
-- Flow 1:
  Average throughput: 49.93 Mbit/s
  95th percentile per-packet one-way delay: 60.443 ms
  Loss rate: 5.34%
-- Flow 2:
  Average throughput: 41.81 Mbit/s
  95th percentile per-packet one-way delay: 47.423 ms
  Loss rate: 3.99%
-- Flow 3:
  Average throughput: 33.76 Mbit/s
  95th percentile per-packet one-way delay: 51.720 ms
  Loss rate: 4.14%
Run 5: Report of TCP BBR — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 52.70 Mbps)
- Flow 1 egress (mean 49.93 Mbps)
- Flow 2 ingress (mean 43.48 Mbps)
- Flow 2 egress (mean 41.81 Mbps)
- Flow 3 ingress (mean 35.12 Mbps)
- Flow 3 egress (mean 33.76 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 60.44 ms)
- Flow 2 (95th percentile 47.42 ms)
- Flow 3 (95th percentile 51.72 ms)
Run 6: Statistics of TCP BBR

Start at: 2018-08-22 20:44:01
End at: 2018-08-22 20:44:31
Local clock offset: 1.106 ms
Remote clock offset: -64.64 ms

# Below is generated by plot.py at 2018-08-22 22:25:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.75 Mbit/s
  95th percentile per-packet one-way delay: 51.967 ms
  Loss rate: 4.62%
-- Flow 1:
  Average throughput: 54.94 Mbit/s
  95th percentile per-packet one-way delay: 46.317 ms
  Loss rate: 4.39%
-- Flow 2:
  Average throughput: 38.59 Mbit/s
  95th percentile per-packet one-way delay: 50.638 ms
  Loss rate: 5.06%
-- Flow 3:
  Average throughput: 27.49 Mbit/s
  95th percentile per-packet one-way delay: 74.820 ms
  Loss rate: 4.83%
Run 6: Report of TCP BBR — Data Link

![Graph showing network performance metrics over time]
Run 7: Statistics of TCP BBR

Start at: 2018-08-22 21:04:21  
End at: 2018-08-22 21:04:51  
Local clock offset: 2.721 ms  
Remote clock offset: -64.721 ms

# Below is generated by plot.py at 2018-08-22 22:25:36  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 89.96 Mbit/s  
95th percentile per-packet one-way delay: 53.236 ms  
Loss rate: 5.23%  
-- Flow 1:  
Average throughput: 51.00 Mbit/s  
95th percentile per-packet one-way delay: 52.171 ms  
Loss rate: 4.72%  
-- Flow 2:  
Average throughput: 47.47 Mbit/s  
95th percentile per-packet one-way delay: 45.508 ms  
Loss rate: 5.75%  
-- Flow 3:  
Average throughput: 22.15 Mbit/s  
95th percentile per-packet one-way delay: 76.373 ms  
Loss rate: 6.52%
Run 7: Report of TCP BBR — Data Link

![Graph of Throughput and Packet Loss](image1)

![Graph of Packet Loss](image2)
Run 8: Statistics of TCP BBR

Start at: 2018-08-22 21:24:27
End at: 2018-08-22 21:24:57
Local clock offset: 0.416 ms
Remote clock offset: -65.217 ms

# Below is generated by plot.py at 2018-08-22 22:25:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.18 Mbit/s
95th percentile per-packet one-way delay: 54.610 ms
Loss rate: 4.94%
-- Flow 1:
Average throughput: 54.46 Mbit/s
95th percentile per-packet one-way delay: 48.894 ms
Loss rate: 4.12%
-- Flow 2:
Average throughput: 33.69 Mbit/s
95th percentile per-packet one-way delay: 64.274 ms
Loss rate: 6.83%
-- Flow 3:
Average throughput: 31.02 Mbit/s
95th percentile per-packet one-way delay: 55.389 ms
Loss rate: 5.05%
Run 8: Report of TCP BBR — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 56.75 Mbit/s) — Flow 1 egress (mean 54.46 Mbit/s)
Flow 2 ingress (mean 36.12 Mbit/s) — Flow 2 egress (mean 33.69 Mbit/s)
Flow 3 ingress (mean 32.59 Mbit/s) — Flow 3 egress (mean 31.02 Mbit/s)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 48.89 ms) — Flow 2 (95th percentile 64.27 ms) — Flow 3 (95th percentile 55.39 ms)
Run 9: Statistics of TCP BBR

Start at: 2018-08-22 21:44:44
End at: 2018-08-22 21:45:14
Local clock offset: 2.674 ms
Remote clock offset: -62.882 ms

# Below is generated by plot.py at 2018-08-22 22:26:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.15 Mbit/s
95th percentile per-packet one-way delay: 43.187 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 59.00 Mbit/s
95th percentile per-packet one-way delay: 42.715 ms
Loss rate: 2.64%
-- Flow 2:
Average throughput: 40.79 Mbit/s
95th percentile per-packet one-way delay: 43.786 ms
Loss rate: 3.02%
-- Flow 3:
Average throughput: 33.12 Mbit/s
95th percentile per-packet one-way delay: 54.070 ms
Loss rate: 3.24%
Run 9: Report of TCP BBR — Data Link
Run 10: Statistics of TCP BBR

Start at: 2018-08-22 22:04:45
End at: 2018-08-22 22:05:15
Local clock offset: 1.773 ms
Remote clock offset: -62.788 ms

# Below is generated by plot.py at 2018-08-22 22:26:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 97.16 Mbit/s
  95th percentile per-packet one-way delay: 43.261 ms
  Loss rate: 2.81%
-- Flow 1:
  Average throughput: 58.98 Mbit/s
  95th percentile per-packet one-way delay: 41.963 ms
  Loss rate: 2.70%
-- Flow 2:
  Average throughput: 40.88 Mbit/s
  95th percentile per-packet one-way delay: 45.644 ms
  Loss rate: 2.96%
-- Flow 3:
  Average throughput: 33.04 Mbit/s
  95th percentile per-packet one-way delay: 53.305 ms
  Loss rate: 2.99%
Run 10: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2018-08-22 19:16:08
End at: 2018-08-22 19:16:38
Local clock offset: -0.195 ms
Remote clock offset: -64.023 ms

# Below is generated by plot.py at 2018-08-22 22:26:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.50 Mbit/s
95th percentile per-packet one-way delay: 29.141 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 33.97 Mbit/s
95th percentile per-packet one-way delay: 28.002 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 31.96 Mbit/s
95th percentile per-packet one-way delay: 30.303 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 18.82 Mbit/s
95th percentile per-packet one-way delay: 29.534 ms
Loss rate: 0.41%
Run 1: Report of Copa — Data Link

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

- Flow 1 ingress (mean 33.97 Mbit/s)
- Flow 1 egress (mean 33.97 Mbit/s)
- Flow 2 ingress (mean 31.95 Mbit/s)
- Flow 2 egress (mean 31.96 Mbit/s)
- Flow 3 ingress (mean 18.84 Mbit/s)
- Flow 3 egress (mean 16.62 Mbit/s)

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

- Flow 1 (95th percentile 28.00 ms)
- Flow 2 (95th percentile 30.30 ms)
- Flow 3 (95th percentile 29.53 ms)
Run 2: Statistics of Copa

Start at: 2018-08-22 19:36:11
End at: 2018-08-22 19:36:41
Local clock offset: -0.051 ms
Remote clock offset: -65.116 ms

# Below is generated by plot.py at 2018-08-22 22:26:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.56 Mbit/s
95th percentile per-packet one-way delay: 29.024 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 40.39 Mbit/s
95th percentile per-packet one-way delay: 28.722 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 33.21 Mbit/s
95th percentile per-packet one-way delay: 29.882 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 30.30 Mbit/s
95th percentile per-packet one-way delay: 27.230 ms
Loss rate: 0.23%
Run 2: Report of Copa — Data Link

---

**Graph 1:** Throughput vs Time (s)
- **Flow 1 ingress** (mean 40.39 Mbit/s)
- **Flow 1 egress** (mean 40.39 Mbit/s)
- **Flow 2 ingress** (mean 33.19 Mbit/s)
- **Flow 2 egress** (mean 33.21 Mbit/s)
- **Flow 3 ingress** (mean 30.29 Mbit/s)
- **Flow 3 egress** (mean 30.30 Mbit/s)

**Graph 2:** Per-packet one-way delay (ms)
- **Flow 1** (95th percentile 28.72 ms)
- **Flow 2** (95th percentile 29.88 ms)
- **Flow 3** (95th percentile 27.23 ms)

---

27
Run 3: Statistics of Copa

Start at: 2018-08-22 19:56:00
End at: 2018-08-22 19:56:30
Local clock offset: -0.431 ms
Remote clock offset: -63.287 ms

# Below is generated by plot.py at 2018-08-22 22:27:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.31 Mbit/s
95th percentile per-packet one-way delay: 28.039 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 48.23 Mbit/s
95th percentile per-packet one-way delay: 27.739 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 30.44 Mbit/s
95th percentile per-packet one-way delay: 29.683 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 20.53 Mbit/s
95th percentile per-packet one-way delay: 24.605 ms
Loss rate: 0.22%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2018-08-22 20:16:05
End at: 2018-08-22 20:16:35
Local clock offset: 1.277 ms
Remote clock offset: -62.616 ms

# Below is generated by plot.py at 2018-08-22 22:27:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.05 Mbit/s
95th percentile per-packet one-way delay: 26.502 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 48.80 Mbit/s
95th percentile per-packet one-way delay: 26.833 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 41.80 Mbit/s
95th percentile per-packet one-way delay: 26.291 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 22.33 Mbit/s
95th percentile per-packet one-way delay: 25.545 ms
Loss rate: 0.33%
Run 4: Report of Copa — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows with their respective mean and 95th percentile values.]
Run 5: Statistics of Copa

Start at: 2018-08-22 20:35:59
End at: 2018-08-22 20:36:29
Local clock offset: 1.354 ms
Remote clock offset: -64.58 ms

# Below is generated by plot.py at 2018-08-22 22:27:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 80.55 Mbit/s
  95th percentile per-packet one-way delay: 29.123 ms
  Loss rate: 0.09%
-- Flow 1:
  Average throughput: 51.17 Mbit/s
  95th percentile per-packet one-way delay: 29.311 ms
  Loss rate: 0.04%
-- Flow 2:
  Average throughput: 29.80 Mbit/s
  95th percentile per-packet one-way delay: 29.264 ms
  Loss rate: 0.16%
-- Flow 3:
  Average throughput: 28.75 Mbit/s
  95th percentile per-packet one-way delay: 28.043 ms
  Loss rate: 0.20%
Run 5: Report of Copa — Data Link
Run 6: Statistics of Copa

Start at: 2018-08-22 20:56:00
End at: 2018-08-22 20:56:30
Local clock offset: 1.57 ms
Remote clock offset: -64.238 ms

# Below is generated by plot.py at 2018-08-22 22:27:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.85 Mbit/s
95th percentile per-packet one-way delay: 28.113 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 50.13 Mbit/s
95th percentile per-packet one-way delay: 28.399 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 35.34 Mbit/s
95th percentile per-packet one-way delay: 25.836 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 21.66 Mbit/s
95th percentile per-packet one-way delay: 27.901 ms
Loss rate: 0.30%
Run 6: Report of Copa — Data Link

Graph 1: Throughput Over Time
- Flow 1 ingress: 50.10 Mbps (mean)
- Flow 1 egress: 50.13 Mbps (mean)
- Flow 2 ingress: 35.33 Mbps (mean)
- Flow 2 egress: 35.34 Mbps (mean)
- Flow 3 ingress: 21.67 Mbps (mean)
- Flow 3 egress: 21.66 Mbps (mean)

Graph 2: Per-packet One-way Delay Over Time
- Flow 1: 28.40 ms (95th percentile)
- Flow 2: 25.84 ms (95th percentile)
- Flow 3: 27.90 ms (95th percentile)
Run 7: Statistics of Copa

Start at: 2018-08-22 21:16:15
End at: 2018-08-22 21:16:45
Local clock offset: 2.527 ms
Remote clock offset: -64.724 ms

# Below is generated by plot.py at 2018-08-22 22:28:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.28 Mbit/s
95th percentile per-packet one-way delay: 29.322 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 49.73 Mbit/s
95th percentile per-packet one-way delay: 29.156 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 33.89 Mbit/s
95th percentile per-packet one-way delay: 30.985 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 27.05 Mbit/s
95th percentile per-packet one-way delay: 24.926 ms
Loss rate: 0.22%
Run 7: Report of Copa — Data Link

Graph 1: Throughput (Mbps/s) over time (s)
- Flow 1 Ingress (mean 49.72 Mbps/s)
- Flow 1 Egress (mean 49.73 Mbps/s)
- Flow 2 Ingress (mean 33.88 Mbps/s)
- Flow 2 Egress (mean 33.89 Mbps/s)
- Flow 3 Ingress (mean 27.04 Mbps/s)
- Flow 3 Egress (mean 27.05 Mbps/s)

Graph 2: Per-packet one-way delay (ms) over time (s)
- Flow 1 (95th percentile 29.16 ms)
- Flow 2 (95th percentile 30.98 ms)
- Flow 3 (95th percentile 24.93 ms)
Run 8: Statistics of Copa

Start at: 2018-08-22 21:36:20
End at: 2018-08-22 21:36:50
Local clock offset: 1.367 ms
Remote clock offset: -63.664 ms

# Below is generated by plot.py at 2018-08-22 22:28:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.73 Mbit/s
95th percentile per-packet one-way delay: 30.408 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 47.10 Mbit/s
95th percentile per-packet one-way delay: 30.036 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 32.73 Mbit/s
95th percentile per-packet one-way delay: 32.003 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 29.59 Mbit/s
95th percentile per-packet one-way delay: 29.292 ms
Loss rate: 0.31%
Run 8: Report of Copa — Data Link

![Graph showing throughput over time for different flows]

- Flow 1 ingress (mean 47.07 Mbit/s)
- Flow 1 egress (mean 47.10 Mbit/s)
- Flow 2 ingress (mean 32.73 Mbit/s)
- Flow 2 egress (mean 32.73 Mbit/s)
- Flow 3 ingress (mean 29.61 Mbit/s)
- Flow 3 egress (mean 29.59 Mbit/s)

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

- Flow 1 (95th percentile 30.04 ms)
- Flow 2 (95th percentile 32.00 ms)
- Flow 3 (95th percentile 29.29 ms)
Run 9: Statistics of Copa

Start at: 2018-08-22 21:56:32
End at: 2018-08-22 21:57:02
Local clock offset: 1.212 ms
Remote clock offset: -63.344 ms

# Below is generated by plot.py at 2018-08-22 22:28:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.17 Mbit/s
95th percentile per-packet one-way delay: 24.914 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 50.16 Mbit/s
95th percentile per-packet one-way delay: 25.344 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 34.93 Mbit/s
95th percentile per-packet one-way delay: 23.565 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 26.35 Mbit/s
95th percentile per-packet one-way delay: 26.460 ms
Loss rate: 0.16%
Run 9: Report of Copa — Data Link

![Graph showing throughput and packet loss over time for different flows.](image)
Run 10: Statistics of Copa

Start at: 2018-08-22 22:16:40
End at: 2018-08-22 22:17:10
Local clock offset: 2.572 ms
Remote clock offset: -61.52 ms

# Below is generated by plot.py at 2018-08-22 22:28:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.14 Mbit/s
95th percentile per-packet one-way delay: 24.926 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 51.10 Mbit/s
95th percentile per-packet one-way delay: 24.542 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 35.27 Mbit/s
95th percentile per-packet one-way delay: 25.998 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 31.80 Mbit/s
95th percentile per-packet one-way delay: 23.880 ms
Loss rate: 0.33%
Run 10: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2018-08-22 19:05:02
End at: 2018-08-22 19:05:32
Local clock offset: 1.123 ms
Remote clock offset: -64.142 ms

# Below is generated by plot.py at 2018-08-22 22:28:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 96.82 Mbit/s
  95th percentile per-packet one-way delay: 27.995 ms
  Loss rate: 0.11%
-- Flow 1:
  Average throughput: 59.07 Mbit/s
  95th percentile per-packet one-way delay: 27.521 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 40.65 Mbit/s
  95th percentile per-packet one-way delay: 28.765 ms
  Loss rate: 0.15%
-- Flow 3:
  Average throughput: 32.15 Mbit/s
  95th percentile per-packet one-way delay: 28.152 ms
  Loss rate: 0.27%
Run 1: Report of TCP Cubic — Data Link

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

- **Throughput (Mbps)**
  - **Flow 1 Ingress** (mean 59.07 Mbps)
  - **Flow 1 Egress** (mean 59.07 Mbps)
  - **Flow 2 Ingress** (mean 40.66 Mbps)
  - **Flow 2 Egress** (mean 40.65 Mbps)
  - **Flow 3 Ingress** (mean 32.16 Mbps)
  - **Flow 3 Egress** (mean 32.15 Mbps)

- **Per-packet one-way delay (ms)**
  - **Flow 1** (95th percentile 27.52 ms)
  - **Flow 2** (95th percentile 28.77 ms)
  - **Flow 3** (95th percentile 28.15 ms)
Run 2: Statistics of TCP Cubic

Start at: 2018-08-22 19:25:35
End at: 2018-08-22 19:26:05
Local clock offset: 2.568 ms
Remote clock offset: -65.407 ms

# Below is generated by plot.py at 2018-08-22 22:28:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.53 Mbit/s
95th percentile per-packet one-way delay: 39.119 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 58.01 Mbit/s
95th percentile per-packet one-way delay: 39.003 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 32.69 Mbit/s
95th percentile per-packet one-way delay: 39.574 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 20.31 Mbit/s
95th percentile per-packet one-way delay: 38.045 ms
Loss rate: 0.42%
Run 2: Report of TCP Cubic — Data Link

![Graph showing network performance metrics over time.]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 58.00 Mbps)
  - Flow 1 egress (mean 58.01 Mbps)
  - Flow 2 ingress (mean 32.70 Mbps)
  - Flow 2 egress (mean 32.69 Mbps)
  - Flow 3 ingress (mean 20.35 Mbps)
  - Flow 3 egress (mean 20.31 Mbps)

- **Per packet round trip delay (ms):**
  - Flow 1 (95th percentile 39.00 ms)
  - Flow 2 (95th percentile 39.57 ms)
  - Flow 3 (95th percentile 38.05 ms)
Run 3: Statistics of TCP Cubic

Start at: 2018-08-22 19:45:31  
End at: 2018-08-22 19:46:01 
Local clock offset: -0.098 ms 
Remote clock offset: -64.706 ms

# Below is generated by plot.py at 2018-08-22 22:28:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 83.18 Mbit/s  
95th percentile per-packet one-way delay: 33.200 ms  
Loss rate: 0.12%  
-- Flow 1:  
Average throughput: 46.76 Mbit/s 
95th percentile per-packet one-way delay: 32.680 ms  
Loss rate: 0.06%  
-- Flow 2:  
Average throughput: 30.93 Mbit/s  
95th percentile per-packet one-way delay: 34.888 ms  
Loss rate: 0.12%  
-- Flow 3:  
Average throughput: 47.71 Mbit/s  
95th percentile per-packet one-way delay: 32.100 ms  
Loss rate: 0.31%
Run 3: Report of TCP Cubic — Data Link

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

![Graph 2: Per-packet one-way delay vs Time](image2)
Run 4: Statistics of TCP Cubic

Start at: 2018-08-22 20:05:35
End at: 2018-08-22 20:06:05
Local clock offset: 0.293 ms
Remote clock offset: -63.383 ms

# Below is generated by plot.py at 2018-08-22 22:28:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.07 Mbit/s
95th percentile per-packet one-way delay: 35.671 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 49.29 Mbit/s
95th percentile per-packet one-way delay: 34.119 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 34.52 Mbit/s
95th percentile per-packet one-way delay: 36.649 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 32.56 Mbit/s
95th percentile per-packet one-way delay: 39.180 ms
Loss rate: 0.27%
Run 4: Report of TCP Cubic — Data Link

![Graph 1: Throughput vs Time]

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

Legend:
- Flow 1 ingress (mean 49.29 Mbit/s)
- Flow 1 egress (mean 49.29 Mbit/s)
- Flow 2 ingress (mean 34.35 Mbit/s)
- Flow 2 egress (mean 34.52 Mbit/s)
- Flow 3 ingress (mean 32.57 Mbit/s)
- Flow 3 egress (mean 32.56 Mbit/s)

Legend for Per-packet one-way delay:
- Flow 1 (95th percentile 34.12 ms)
- Flow 2 (95th percentile 36.65 ms)
- Flow 3 (95th percentile 39.18 ms)
Run 5: Statistics of TCP Cubic

Start at: 2018-08-22 20:25:26  
End at: 2018-08-22 20:25:56  
Local clock offset: -0.31 ms  
Remote clock offset: -63.258 ms

# Below is generated by plot.py at 2018-08-22 22:29:06  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 86.99 Mbit/s  
95th percentile per-packet one-way delay: 35.526 ms  
Loss rate: 0.12%  
-- Flow 1:  
Average throughput: 49.91 Mbit/s  
95th percentile per-packet one-way delay: 33.422 ms  
Loss rate: 0.07%  
-- Flow 2:  
Average throughput: 44.41 Mbit/s  
95th percentile per-packet one-way delay: 37.416 ms  
Loss rate: 0.15%  
-- Flow 3:  
Average throughput: 22.63 Mbit/s  
95th percentile per-packet one-way delay: 37.403 ms  
Loss rate: 0.32%
Run 5: Report of TCP Cubic — Data Link

![Throughput Graph]

![Packet Delay Graph]

Flow 1 ingress (mean 49.91 Mbit/s)  Flow 1 egress (mean 49.91 Mbit/s)
Flow 2 ingress (mean 44.42 Mbit/s)  Flow 2 egress (mean 44.41 Mbit/s)
Flow 3 ingress (mean 22.64 Mbit/s)  Flow 3 egress (mean 22.63 Mbit/s)
Run 6: Statistics of TCP Cubic

Start at: 2018-08-22 20:45:12
End at: 2018-08-22 20:45:43
Local clock offset: 0.53 ms
Remote clock offset: -64.725 ms

# Below is generated by plot.py at 2018-08-22 22:29:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.00 Mbit/s
95th percentile per-packet one-way delay: 33.465 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 51.57 Mbit/s
95th percentile per-packet one-way delay: 32.571 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 33.97 Mbit/s
95th percentile per-packet one-way delay: 34.142 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 44.62 Mbit/s
95th percentile per-packet one-way delay: 35.554 ms
Loss rate: 0.34%
Run 6: Report of TCP Cubic — Data Link

![Graph 1: Throughput (Mbps/s) over time](image1)

![Graph 2: Per packet one-way delay (ms) over time](image2)
Run 7: Statistics of TCP Cubic

Start at: 2018-08-22 21:05:32
End at: 2018-08-22 21:06:02
Local clock offset: 4.435 ms
Remote clock offset: -64.249 ms

# Below is generated by plot.py at 2018-08-22 22:29:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.00 Mbit/s
95th percentile per-packet one-way delay: 34.200 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 54.18 Mbit/s
95th percentile per-packet one-way delay: 33.848 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 37.56 Mbit/s
95th percentile per-packet one-way delay: 34.431 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 29.57 Mbit/s
95th percentile per-packet one-way delay: 35.338 ms
Loss rate: 0.37%
Run 7: Report of TCP Cubic — Data Link

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

- **Flow 1 ingress** (mean 54.17 Mbps/s)
- **Flow 1 egress** (mean 54.18 Mbps/s)
- **Flow 2 ingress** (mean 37.57 Mbps/s)
- **Flow 2 egress** (mean 37.56 Mbps/s)
- **Flow 3 ingress** (mean 29.61 Mbps/s)
- **Flow 3 egress** (mean 29.57 Mbps/s)

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

- **Flow 1** (95th percentile 33.85 ms)
- **Flow 2** (95th percentile 34.43 ms)
- **Flow 3** (95th percentile 35.34 ms)

Page 57
Run 8: Statistics of TCP Cubic

Start at: 2018-08-22 21:25:40
End at: 2018-08-22 21:26:10
Local clock offset: 2.217 ms
Remote clock offset: -64.505 ms

# Below is generated by plot.py at 2018-08-22 22:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.26 Mbit/s
95th percentile per-packet one-way delay: 36.048 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 60.75 Mbit/s
95th percentile per-packet one-way delay: 34.499 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 28.16 Mbit/s
95th percentile per-packet one-way delay: 40.226 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 20.40 Mbit/s
95th percentile per-packet one-way delay: 40.416 ms
Loss rate: 0.36%
Run 8: Report of TCP Cubic — Data Link

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

- **Throughput (Mbps)**
  - **Flow 1 ingress** (mean 60.76 Mbps)
  - **Flow 1 egress** (mean 60.75 Mbps)
  - **Flow 2 ingress** (mean 28.17 Mbps)
  - **Flow 2 egress** (mean 28.16 Mbps)
  - **Flow 3 ingress** (mean 20.41 Mbps)
  - **Flow 3 egress** (mean 20.40 Mbps)

- **Packet delay (ms)**
  - **Flow 1 (95th percentile 34.50 ms)**
  - **Flow 2 (95th percentile 40.23 ms)**
  - **Flow 3 (95th percentile 40.42 ms)**
Run 9: Statistics of TCP Cubic

Start at: 2018-08-22 21:45:56
End at: 2018-08-22 21:46:26
Local clock offset: 1.072 ms
Remote clock offset: -63.819 ms

# Below is generated by plot.py at 2018-08-22 22:29:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 26.684 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 55.68 Mbit/s
95th percentile per-packet one-way delay: 26.512 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 36.55 Mbit/s
95th percentile per-packet one-way delay: 27.030 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 47.68 Mbit/s
95th percentile per-packet one-way delay: 26.602 ms
Loss rate: 0.33%
Run 10: Statistics of TCP Cubic

Start at: 2018-08-22 22:05:58
End at: 2018-08-22 22:06:28
Local clock offset: 2.92 ms
Remote clock offset: -62.729 ms

# Below is generated by plot.py at 2018-08-22 22:29:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 96.75 Mbit/s
  95th percentile per-packet one-way delay: 28.169 ms
  Loss rate: 0.10%
-- Flow 1:
  Average throughput: 59.41 Mbit/s
  95th percentile per-packet one-way delay: 28.034 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 39.98 Mbit/s
  95th percentile per-packet one-way delay: 28.121 ms
  Loss rate: 0.12%
-- Flow 3:
  Average throughput: 32.26 Mbit/s
  95th percentile per-packet one-way delay: 28.621 ms
  Loss rate: 0.32%
Run 10: Report of TCP Cubic — Data Link

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

Start at: 2018-08-22 19:06:30
End at: 2018-08-22 19:07:00
Local clock offset: -0.166 ms
Remote clock offset: -63.926 ms

# Below is generated by plot.py at 2018-08-22 22:29:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.40 Mbit/s
95th percentile per-packet one-way delay: 54.132 ms
Loss rate: 2.53%
-- Flow 1:
Average throughput: 63.03 Mbit/s
95th percentile per-packet one-way delay: 37.348 ms
Loss rate: 1.59%
-- Flow 2:
Average throughput: 35.55 Mbit/s
95th percentile per-packet one-way delay: 54.981 ms
Loss rate: 3.92%
-- Flow 3:
Average throughput: 23.41 Mbit/s
95th percentile per-packet one-way delay: 56.658 ms
Loss rate: 5.64%
Run 1: Report of FillP — Data Link
Run 2: Statistics of FillP

Start at: 2018-08-22 19:26:45
End at: 2018-08-22 19:27:15
Local clock offset: 2.756 ms
Remote clock offset: -63.832 ms

# Below is generated by plot.py at 2018-08-22 22:30:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.83 Mbit/s
95th percentile per-packet one-way delay: 63.635 ms
Loss rate: 4.19%
-- Flow 1:
Average throughput: 48.50 Mbit/s
95th percentile per-packet one-way delay: 62.347 ms
Loss rate: 3.27%
-- Flow 2:
Average throughput: 44.80 Mbit/s
95th percentile per-packet one-way delay: 44.799 ms
Loss rate: 4.22%
-- Flow 3:
Average throughput: 19.71 Mbit/s
95th percentile per-packet one-way delay: 76.490 ms
Loss rate: 10.42%
Run 2: Report of FillP — Data Link

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

**Legend:**
- Flow 1 Ingress (mean 50.05 Mbps)
- Flow 1 Egress (mean 48.50 Mbps)
- Flow 2 Ingress (mean 46.68 Mbps)
- Flow 2 Egress (mean 44.80 Mbps)
- Flow 3 Ingress (mean 21.95 Mbps)
- Flow 3 Egress (mean 19.71 Mbps)

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

**Legend:**
- Flow 1 (95th percentile 62.35 ms)
- Flow 2 (95th percentile 44.80 ms)
- Flow 3 (95th percentile 76.49 ms)
Run 3: Statistics of FillP

Start at: 2018-08-22 19:46:40
End at: 2018-08-22 19:47:10
Local clock offset: 0.894 ms
Remote clock offset: -65.818 ms

# Below is generated by plot.py at 2018-08-22 22:30:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.78 Mbit/s
  95th percentile per-packet one-way delay: 53.571 ms
  Loss rate: 4.28%
-- Flow 1:
  Average throughput: 52.90 Mbit/s
  95th percentile per-packet one-way delay: 49.081 ms
  Loss rate: 2.84%
-- Flow 2:
  Average throughput: 36.29 Mbit/s
  95th percentile per-packet one-way delay: 52.521 ms
  Loss rate: 6.08%
-- Flow 3:
  Average throughput: 23.25 Mbit/s
  95th percentile per-packet one-way delay: 74.075 ms
  Loss rate: 8.10%
Run 3: Report of FillP — Data Link

- Run 3: Throughput vs. Time
- Run 3: Per-packet one-way delay vs. Time

Legend:
- Blue dashed line: Flow 1 Ingress (mean 54.38 Mbit/s)
- Blue solid line: Flow 1 Egress (mean 52.90 Mbit/s)
- Green dashed line: Flow 2 Ingress (mean 38.37 Mbit/s)
- Green solid line: Flow 2 Egress (mean 36.29 Mbit/s)
- Red dashed line: Flow 3 Ingress (mean 25.21 Mbit/s)
- Red solid line: Flow 3 Egress (mean 23.25 Mbit/s)
Run 4: Statistics of FillP

Start at: 2018-08-22 20:06:43
End at: 2018-08-22 20:07:13
Local clock offset: -0.812 ms
Remote clock offset: -63.03 ms

# Below is generated by plot.py at 2018-08-22 22:30:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 85.36 Mbit/s
  95th percentile per-packet one-way delay: 59.955 ms
  Loss rate: 4.08%
-- Flow 1:
  Average throughput: 49.01 Mbit/s
  95th percentile per-packet one-way delay: 58.561 ms
  Loss rate: 3.12%
-- Flow 2:
  Average throughput: 44.85 Mbit/s
  95th percentile per-packet one-way delay: 41.235 ms
  Loss rate: 4.53%
-- Flow 3:
  Average throughput: 19.71 Mbit/s
  95th percentile per-packet one-way delay: 74.567 ms
  Loss rate: 8.91%
Run 4: Report of FillP — Data Link
Run 5: Statistics of FillP

Start at: 2018-08-22 20:26:36
End at: 2018-08-22 20:27:06
Local clock offset: 2.826 ms
Remote clock offset: -64.043 ms

# Below is generated by plot.py at 2018-08-22 22:30:24
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 85.49 Mbit/s
  95th percentile per-packet one-way delay: 55.244 ms
  Loss rate: 4.19%
-- Flow 1:
  Average throughput: 52.72 Mbit/s
  95th percentile per-packet one-way delay: 52.532 ms
  Loss rate: 2.90%
-- Flow 2:
  Average throughput: 35.51 Mbit/s
  95th percentile per-packet one-way delay: 55.910 ms
  Loss rate: 6.19%
-- Flow 3:
  Average throughput: 27.63 Mbit/s
  95th percentile per-packet one-way delay: 60.669 ms
  Loss rate: 6.25%
Run 5: Report of FillP — Data Link

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

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

**Throughput (Mbps/s)**

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

Legend:

- Flow 1 ingress (mean 54.22 Mbps/s)
- Flow 1 egress (mean 52.72 Mbps/s)
- Flow 2 ingress (mean 37.77 Mbps/s)
- Flow 2 egress (mean 35.51 Mbps/s)
- Flow 3 ingress (mean 29.35 Mbps/s)
- Flow 3 egress (mean 27.63 Mbps/s)
Run 6: Statistics of FillP

Start at: 2018-08-22 20:46:24
End at: 2018-08-22 20:46:54
Local clock offset: 1.637 ms
Remote clock offset: -64.033 ms

# Below is generated by plot.py at 2018-08-22 22:30:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.74 Mbit/s
95th percentile per-packet one-way delay: 50.403 ms
Loss rate: 4.15%
-- Flow 1:
Average throughput: 52.88 Mbit/s
95th percentile per-packet one-way delay: 49.421 ms
Loss rate: 3.52%
-- Flow 2:
Average throughput: 38.78 Mbit/s
95th percentile per-packet one-way delay: 47.630 ms
Loss rate: 4.11%
-- Flow 3:
Average throughput: 27.27 Mbit/s
95th percentile per-packet one-way delay: 64.682 ms
Loss rate: 7.77%
Run 6: Report of FillP — Data Link

Throughput (Mb/s) vs Time (s)

Flow 1 ingress (mean 54.77 Mb/s)  Flow 1 egress (mean 52.88 Mb/s)
Flow 2 ingress (mean 40.36 Mb/s)  Flow 2 egress (mean 38.78 Mb/s)
Flow 3 ingress (mean 29.50 Mb/s)  Flow 3 egress (mean 27.27 Mb/s)

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

Flow 1 (95th percentile 49.42 ms)  Flow 2 (95th percentile 47.63 ms)  Flow 3 (95th percentile 64.68 ms)
Run 7: Statistics of FillP

Start at: 2018-08-22 21:06:43
End at: 2018-08-22 21:07:13
Local clock offset: 3.171 ms
Remote clock offset: -64.789 ms

# Below is generated by plot.py at 2018-08-22 22:30:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.06 Mbit/s
  95th percentile per-packet one-way delay: 59.797 ms
  Loss rate: 3.74%
-- Flow 1:
  Average throughput: 51.21 Mbit/s
  95th percentile per-packet one-way delay: 57.831 ms
  Loss rate: 2.93%
-- Flow 2:
  Average throughput: 44.56 Mbit/s
  95th percentile per-packet one-way delay: 43.442 ms
  Loss rate: 3.87%
-- Flow 3:
  Average throughput: 20.82 Mbit/s
  95th percentile per-packet one-way delay: 71.250 ms
  Loss rate: 8.81%
Run 7: Report of FillP — Data Link

Graph 1: Throughput (Mbps/s) vs Time (s)
- Blue dashed line: Flow 1 ingress (mean 52.72 Mbps/s)
- Blue solid line: Flow 1 egress (mean 51.21 Mbps/s)
- Green dashed line: Flow 2 ingress (mean 46.30 Mbps/s)
- Green solid line: Flow 2 egress (mean 44.56 Mbps/s)
- Red dashed line: Flow 3 ingress (mean 22.73 Mbps/s)
- Red solid line: Flow 3 egress (mean 20.82 Mbps/s)

Graph 2: Per-packet one-way delay (ms) vs Time (s)
- Blue dots: Flow 1 (95th percentile 57.83 ms)
- Green dots: Flow 2 (95th percentile 43.44 ms)
- Red dots: Flow 3 (95th percentile 71.25 ms)
Run 8: Statistics of FillP

Start at: 2018-08-22 21:26:50
End at: 2018-08-22 21:27:20
Local clock offset: 1.723 ms
Remote clock offset: -64.397 ms

# Below is generated by plot.py at 2018-08-22 22:30:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.39 Mbit/s
95th percentile per-packet one-way delay: 54.983 ms
Loss rate: 3.99%
-- Flow 1:
Average throughput: 51.98 Mbit/s
95th percentile per-packet one-way delay: 53.403 ms
Loss rate: 3.25%
-- Flow 2:
Average throughput: 37.19 Mbit/s
95th percentile per-packet one-way delay: 49.073 ms
Loss rate: 4.16%
-- Flow 3:
Average throughput: 26.17 Mbit/s
95th percentile per-packet one-way delay: 68.749 ms
Loss rate: 7.75%
Run 8: Report of FillP — Data Link
Run 9: Statistics of FillP

Start at: 2018-08-22 21:47:05
End at: 2018-08-22 21:47:35
Local clock offset: 0.692 ms
Remote clock offset: -63.989 ms

# Below is generated by plot.py at 2018-08-22 22:31:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.96 Mbit/s
95th percentile per-packet one-way delay: 47.791 ms
Loss rate: 2.27%
-- Flow 1:
Average throughput: 58.42 Mbit/s
95th percentile per-packet one-way delay: 46.878 ms
Loss rate: 1.53%
-- Flow 2:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 47.901 ms
Loss rate: 3.20%
-- Flow 3:
Average throughput: 30.80 Mbit/s
95th percentile per-packet one-way delay: 48.607 ms
Loss rate: 3.98%
Run 9: Report of FillP — Data Link

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

- Flow 1 ingress (mean 59.26 Mbit/s)
- Flow 1 egress (mean 58.42 Mbit/s)
- Flow 2 ingress (mean 40.83 Mbit/s)
- Flow 2 egress (mean 39.99 Mbit/s)
- Flow 3 ingress (mean 31.99 Mbit/s)
- Flow 3 egress (mean 30.80 Mbit/s)

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

- Flow 1 (95th percentile 46.88 ms)
- Flow 2 (95th percentile 47.90 ms)
- Flow 3 (95th percentile 48.61 ms)
Run 10: Statistics of FillP

Start at: 2018-08-22 22:07:08
End at: 2018-08-22 22:07:38
Local clock offset: 1.043 ms
Remote clock offset: -62.278 ms

# Below is generated by plot.py at 2018-08-22 22:31:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.78 Mbit/s
95th percentile per-packet one-way delay: 46.594 ms
Loss rate: 2.25%
-- Flow 1:
Average throughput: 58.46 Mbit/s
95th percentile per-packet one-way delay: 45.801 ms
Loss rate: 1.57%
-- Flow 2:
Average throughput: 39.96 Mbit/s
95th percentile per-packet one-way delay: 46.634 ms
Loss rate: 3.16%
-- Flow 3:
Average throughput: 29.49 Mbit/s
95th percentile per-packet one-way delay: 47.443 ms
Loss rate: 3.76%
Run 10: Report of FillIP — Data Link
Run 1: Statistics of FillP-Sheep

Start at: 2018-08-22 19:01:07  
End at: 2018-08-22 19:01:37  
Local clock offset: 2.122 ms  
Remote clock offset: -63.813 ms

# Below is generated by plot.py at 2018-08-22 22:31:40  
# Datalink statistics  
-- Total of 3 flows:
Average throughput: 96.42 Mbit/s  
95th percentile per-packet one-way delay: 41.769 ms  
Loss rate: 1.49%

-- Flow 1:
Average throughput: 56.64 Mbit/s  
95th percentile per-packet one-way delay: 43.277 ms  
Loss rate: 1.31%

-- Flow 2:
Average throughput: 48.01 Mbit/s  
95th percentile per-packet one-way delay: 39.528 ms  
Loss rate: 1.90%

-- Flow 3:
Average throughput: 23.65 Mbit/s  
95th percentile per-packet one-way delay: 54.942 ms  
Loss rate: 1.21%
Run 1: Report of FillP-Sheep — Data Link

- Flow 1 ingress (mean 57.35 Mbit/s)
- Flow 1 egress (mean 56.64 Mbit/s)
- Flow 2 ingress (mean 48.86 Mbit/s)
- Flow 2 egress (mean 48.01 Mbit/s)
- Flow 3 ingress (mean 23.88 Mbit/s)
- Flow 3 egress (mean 23.65 Mbit/s)

- Flow 1 (95th percentile 43.28 ms)
- Flow 2 (95th percentile 39.53 ms)
- Flow 3 (95th percentile 54.94 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2018-08-22 19:21:58
Local clock offset: 1.255 ms
Remote clock offset: -64.974 ms

# Below is generated by plot.py at 2018-08-22 22:31:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.58 Mbit/s
95th percentile per-packet one-way delay: 54.357 ms
Loss rate: 2.39%
-- Flow 1:
Average throughput: 50.86 Mbit/s
95th percentile per-packet one-way delay: 52.162 ms
Loss rate: 2.69%
-- Flow 2:
Average throughput: 31.93 Mbit/s
95th percentile per-packet one-way delay: 60.036 ms
Loss rate: 2.65%
-- Flow 3:
Average throughput: 43.74 Mbit/s
95th percentile per-packet one-way delay: 48.730 ms
Loss rate: 0.91%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

Start at: 2018-08-22 19:41:56
End at: 2018-08-22 19:42:26
Local clock offset: 0.434 ms
Remote clock offset: -65.854 ms

# Below is generated by plot.py at 2018-08-22 22:31:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.29 Mbit/s
95th percentile per-packet one-way delay: 50.015 ms
Loss rate: 2.03%
-- Flow 1:
Average throughput: 55.86 Mbit/s
95th percentile per-packet one-way delay: 44.553 ms
Loss rate: 1.95%
-- Flow 2:
Average throughput: 35.29 Mbit/s
95th percentile per-packet one-way delay: 58.298 ms
Loss rate: 2.50%
-- Flow 3:
Average throughput: 27.08 Mbit/s
95th percentile per-packet one-way delay: 65.762 ms
Loss rate: 1.22%
Run 3: Report of FillP-Sheep — Data Link

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

- Flow 1 Ingress (mean 56.93 Mbps/s)
- Flow 1 Egress (mean 55.86 Mbps/s)
- Flow 2 Ingress (mean 36.11 Mbps/s)
- Flow 2 Egress (mean 35.29 Mbps/s)
- Flow 3 Ingress (mean 27.28 Mbps/s)
- Flow 3 Egress (mean 27.08 Mbps/s)

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

- Flow 1 (95th percentile 44.55 ms)
- Flow 2 (95th percentile 58.30 ms)
- Flow 3 (95th percentile 65.76 ms)
Run 4: Statistics of FillP-Sheep

Start at: 2018-08-22 20:02:01
End at: 2018-08-22 20:02:31
Local clock offset: 0.851 ms
Remote clock offset: -63.552 ms

# Below is generated by plot.py at 2018-08-22 22:31:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.24 Mbit/s
  95th percentile per-packet one-way delay: 55.492 ms
  Loss rate: 2.52%
-- Flow 1:
  Average throughput: 52.39 Mbit/s
  95th percentile per-packet one-way delay: 43.575 ms
  Loss rate: 2.09%
-- Flow 2:
  Average throughput: 33.39 Mbit/s
  95th percentile per-packet one-way delay: 64.261 ms
  Loss rate: 3.93%
-- Flow 3:
  Average throughput: 26.09 Mbit/s
  95th percentile per-packet one-way delay: 69.583 ms
  Loss rate: 1.36%
Run 4: Report of FillP-Sheep — Data Link

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

- **Throughput**: The top graph shows the throughput in Mbps over time for different flows. The legend explains the colors and line styles used for each flow:
  - Flow 1 ingress (mean 53.47 Mbps)
  - Flow 1 egress (mean 52.39 Mbps)
  - Flow 2 ingress (mean 34.67 Mbps)
  - Flow 2 egress (mean 33.39 Mbps)
  - Flow 3 ingress (mean 26.39 Mbps)
  - Flow 3 egress (mean 26.09 Mbps)

- **Packet Delivery Time**: The bottom graph illustrates the per-packet one-way delivery delay in ms over time. The legend identifies the flows for each color and delay value:
  - Flow 1 (95th percentile 43.58 ms)
  - Flow 2 (95th percentile 64.26 ms)
  - Flow 3 (95th percentile 69.58 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2018-08-22 20:21:54
End at: 2018-08-22 20:22:24
Local clock offset: 1.603 ms
Remote clock offset: -63.032 ms

# Below is generated by plot.py at 2018-08-22 22:31:54
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.46 Mbit/s
  95th percentile per-packet one-way delay: 50.703 ms
  Loss rate: 2.23%
-- Flow 1:
  Average throughput: 58.02 Mbit/s
  95th percentile per-packet one-way delay: 43.305 ms
  Loss rate: 1.61%
-- Flow 2:
  Average throughput: 33.00 Mbit/s
  95th percentile per-packet one-way delay: 68.209 ms
  Loss rate: 4.24%
-- Flow 3:
  Average throughput: 31.70 Mbit/s
  95th percentile per-packet one-way delay: 47.161 ms
  Loss rate: 1.33%
Run 5: Report of FillP-Sheep — Data Link
Run 6: Statistics of FillP-Sheep

Start at: 2018-08-22 20:41:41
End at: 2018-08-22 20:42:11
Local clock offset: 0.763 ms
Remote clock offset: -64.432 ms

# Below is generated by plot.py at 2018-08-22 22:31:55
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.09 Mbit/s
  95th percentile per-packet one-way delay: 47.153 ms
  Loss rate: 2.13%
-- Flow 1:
  Average throughput: 52.86 Mbit/s
  95th percentile per-packet one-way delay: 46.715 ms
  Loss rate: 2.19%
-- Flow 2:
  Average throughput: 34.40 Mbit/s
  95th percentile per-packet one-way delay: 50.525 ms
  Loss rate: 2.70%
-- Flow 3:
  Average throughput: 43.32 Mbit/s
  95th percentile per-packet one-way delay: 42.273 ms
  Loss rate: 0.97%
Run 6: Report of FillP-Sheep — Data Link

![Graph of throughput and packet delay](image-url)
Run 7: Statistics of FillP-Sheep

Start at: 2018-08-22 21:01:57
End at: 2018-08-22 21:02:27
Local clock offset: 1.041 ms
Remote clock offset: -64.438 ms

# Below is generated by plot.py at 2018-08-22 22:32:32
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.03 Mbit/s
  95th percentile per-packet one-way delay: 48.258 ms
  Loss rate: 2.52%
  -- Flow 1:
    Average throughput: 58.29 Mbit/s
    95th percentile per-packet one-way delay: 42.124 ms
    Loss rate: 2.60%
  -- Flow 2:
    Average throughput: 33.45 Mbit/s
    95th percentile per-packet one-way delay: 54.374 ms
    Loss rate: 2.50%
  -- Flow 3:
    Average throughput: 22.56 Mbit/s
    95th percentile per-packet one-way delay: 57.941 ms
    Loss rate: 2.02%
Run 7: Report of FillP-Sheep — Data Link
Run 8: Statistics of FillP-Sheep

End at: 2018-08-22 21:22:34
Local clock offset: -1.055 ms
Remote clock offset: -65.285 ms

# Below is generated by plot.py at 2018-08-22 22:32:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 87.60 Mbit/s
  95th percentile per-packet one-way delay: 47.863 ms
  Loss rate: 2.91%
-- Flow 1:
  Average throughput: 52.50 Mbit/s
  95th percentile per-packet one-way delay: 49.591 ms
  Loss rate: 3.44%
-- Flow 2:
  Average throughput: 37.30 Mbit/s
  95th percentile per-packet one-way delay: 46.643 ms
  Loss rate: 2.56%
-- Flow 3:
  Average throughput: 31.03 Mbit/s
  95th percentile per-packet one-way delay: 47.002 ms
  Loss rate: 1.03%
Run 8: Report of FillP-Sheep — Data Link

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

Flow 1 ingress (mean 54.32 Mbit/s), Flow 1 egress (mean 52.50 Mbit/s), Flow 2 ingress (mean 38.24 Mbit/s), Flow 2 egress (mean 37.30 Mbit/s), Flow 3 ingress (mean 31.28 Mbit/s), Flow 3 egress (mean 31.03 Mbit/s)

Per-packet one-way delay [ms]

Flow 1 (95th percentile 49.59 ms), Flow 2 (95th percentile 46.64 ms), Flow 3 (95th percentile 47.00 ms)
Run 9: Statistics of FillP-Sheep

Start at: 2018-08-22 21:42:19
End at: 2018-08-22 21:42:49
Local clock offset: 0.291 ms
Remote clock offset: -63.723 ms

# Below is generated by plot.py at 2018-08-22 22:32:57
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.90 Mbit/s
  95th percentile per-packet one-way delay: 38.427 ms
  Loss rate: 1.29%
-- Flow 1:
  Average throughput: 55.29 Mbit/s
  95th percentile per-packet one-way delay: 38.244 ms
  Loss rate: 1.14%
-- Flow 2:
  Average throughput: 47.20 Mbit/s
  95th percentile per-packet one-way delay: 38.017 ms
  Loss rate: 1.59%
-- Flow 3:
  Average throughput: 24.78 Mbit/s
  95th percentile per-packet one-way delay: 51.275 ms
  Loss rate: 1.17%
Run 9: Report of FillP-Sheep — Data Link

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

Legend:
- Blue dashed: Flow 1 ingress (mean 55.89 Mbit/s) and egress (mean 55.29 Mbit/s)
- Green dashed: Flow 2 ingress (mean 47.91 Mbit/s) and egress (mean 47.20 Mbit/s)
- Red dashed: Flow 3 ingress (mean 25.01 Mbit/s) and egress (mean 24.78 Mbit/s)

Legend for delay:
- Blue: Flow 1 (95th percentile 38.24 ms)
- Green: Flow 2 (95th percentile 38.02 ms)
- Red: Flow 3 (95th percentile 51.27 ms)
Run 10: Statistics of FillP-Sheep

Start at: 2018-08-22 22:02:19
End at: 2018-08-22 22:02:49
Local clock offset: 3.902 ms
Remote clock offset: -62.948 ms

# Below is generated by plot.py at 2018-08-22 22:33:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.31 Mbit/s
95th percentile per-packet one-way delay: 42.287 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 59.03 Mbit/s
95th percentile per-packet one-way delay: 40.640 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 40.44 Mbit/s
95th percentile per-packet one-way delay: 44.348 ms
Loss rate: 1.71%
-- Flow 3:
Average throughput: 31.30 Mbit/s
95th percentile per-packet one-way delay: 41.916 ms
Loss rate: 0.67%
Run 10: Report of FillP-Sheep — Data Link
Run 1: Statistics of Indigo

Start at: 2018-08-22 19:07:44
End at: 2018-08-22 19:08:14
Local clock offset: 0.165 ms
Remote clock offset: -63.727 ms

# Below is generated by plot.py at 2018-08-22 22:33:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.00 Mbit/s
95th percentile per-packet one-way delay: 26.440 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 59.46 Mbit/s
95th percentile per-packet one-way delay: 23.580 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.56 Mbit/s
95th percentile per-packet one-way delay: 26.565 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 32.23 Mbit/s
95th percentile per-packet one-way delay: 25.538 ms
Loss rate: 0.33%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2018-08-22 19:27:58
End at: 2018-08-22 19:28:28
Local clock offset: -0.119 ms
Remote clock offset: -65.125 ms

# Below is generated by plot.py at 2018-08-22 22:33:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.42 Mbit/s
95th percentile per-packet one-way delay: 31.411 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 46.65 Mbit/s
95th percentile per-packet one-way delay: 32.517 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 48.39 Mbit/s
95th percentile per-packet one-way delay: 29.252 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 20.11 Mbit/s
95th percentile per-packet one-way delay: 36.398 ms
Loss rate: 0.27%
Run 2: Report of Indigo — Data Link

![Throughput over Time](image1)

![Packet Delay over Time](image2)

- Flow 1 ingress (mean 46.63 Mbit/s)
- Flow 1 egress (mean 46.65 Mbit/s)
- Flow 2 ingress (mean 48.41 Mbit/s)
- Flow 2 egress (mean 48.39 Mbit/s)
- Flow 3 ingress (mean 20.12 Mbit/s)
- Flow 3 egress (mean 20.11 Mbit/s)
Run 3: Statistics of Indigo

Start at: 2018-08-22 19:47:49
End at: 2018-08-22 19:48:19
Local clock offset: 3.069 ms
Remote clock offset: -64.837 ms

# Below is generated by plot.py at 2018-08-22 22:33:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.28 Mbit/s
95th percentile per-packet one-way delay: 35.129 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 48.20 Mbit/s
95th percentile per-packet one-way delay: 35.275 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 38.91 Mbit/s
95th percentile per-packet one-way delay: 33.889 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 28.05 Mbit/s
95th percentile per-packet one-way delay: 37.697 ms
Loss rate: 0.33%
Run 3: Report of Indigo — Data Link

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

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 48.19 Mbit/s)
Flow 1 egress (mean 48.20 Mbit/s)
Flow 2 ingress (mean 38.90 Mbit/s)
Flow 2 egress (mean 38.91 Mbit/s)
Flow 3 ingress (mean 28.06 Mbit/s)
Flow 3 egress (mean 28.05 Mbit/s)

Latency (ms)

Time (s)

Flow 1 (95th percentile 35.27 ms)
Flow 2 (95th percentile 33.89 ms)
Flow 3 (95th percentile 37.70 ms)
Run 4: Statistics of Indigo

Start at: 2018-08-22 20:07:52
End at: 2018-08-22 20:08:22
Local clock offset: 2.137 ms
Remote clock offset: -63.838 ms

# Below is generated by plot.py at 2018-08-22 22:33:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.47 Mbit/s
95th percentile per-packet one-way delay: 33.728 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 53.32 Mbit/s
95th percentile per-packet one-way delay: 33.457 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 31.76 Mbit/s
95th percentile per-packet one-way delay: 33.716 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 21.42 Mbit/s
95th percentile per-packet one-way delay: 35.957 ms
Loss rate: 0.35%
Run 4: Report of Indigo — Data Link

[Graphs showing network performance metrics over time.]
Run 5: Statistics of Indigo

Start at: 2018-08-22 20:27:45
End at: 2018-08-22 20:28:15
Local clock offset: 0.484 ms
Remote clock offset: -63.316 ms

# Below is generated by plot.py at 2018-08-22 22:33:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.35 Mbit/s
95th percentile per-packet one-way delay: 31.941 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 47.29 Mbit/s
95th percentile per-packet one-way delay: 32.622 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 44.39 Mbit/s
95th percentile per-packet one-way delay: 28.359 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 26.01 Mbit/s
95th percentile per-packet one-way delay: 40.983 ms
Loss rate: 0.31%
Run 5: Report of Indigo — Data Link

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

- Blue line: Flow 1 ingress (mean 47.27 Mbit/s)
- Blue line: Flow 1 egress (mean 47.29 Mbit/s)
- Green line: Flow 2 ingress (mean 44.39 Mbit/s)
- Green line: Flow 2 egress (mean 44.39 Mbit/s)
- Red line: Flow 3 ingress (mean 26.02 Mbit/s)
- Red line: Flow 3 egress (mean 26.01 Mbit/s)

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

- Blue points: Flow 1 (95th percentile 32.62 ms)
- Green points: Flow 2 (95th percentile 28.36 ms)
- Red points: Flow 3 (95th percentile 40.98 ms)
Run 6: Statistics of Indigo

Start at: 2018-08-22 20:47:36
End at: 2018-08-22 20:48:06
Local clock offset: 3.032 ms
Remote clock offset: -63.3 ms

# Below is generated by plot.py at 2018-08-22 22:33:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.98 Mbit/s
95th percentile per-packet one-way delay: 32.823 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 51.49 Mbit/s
95th percentile per-packet one-way delay: 32.847 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 42.78 Mbit/s
95th percentile per-packet one-way delay: 30.117 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 27.55 Mbit/s
95th percentile per-packet one-way delay: 40.698 ms
Loss rate: 0.31%
Run 6: Report of Indigo — Data Link

---

**Throughput (Mbps)**

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

Legend:
- Flow 1 ingress (mean 51.48 Mbps)
- Flow 1 egress (mean 51.49 Mbps)
- Flow 2 ingress (mean 42.78 Mbps)
- Flow 2 egress (mean 42.78 Mbps)
- Flow 3 ingress (mean 27.57 Mbps)
- Flow 3 egress (mean 27.55 Mbps)

---

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

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

Legend:
- Flow 1 (95th percentile 32.85 ms)
- Flow 2 (95th percentile 30.12 ms)
- Flow 3 (95th percentile 40.70 ms)

---

115
Run 7: Statistics of Indigo

Start at: 2018-08-22 21:07:55
End at: 2018-08-22 21:08:25
Local clock offset: 3.063 ms
Remote clock offset: -64.639 ms

# Below is generated by plot.py at 2018-08-22 22:33:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.26 Mbit/s
95th percentile per-packet one-way delay: 32.877 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 51.61 Mbit/s
95th percentile per-packet one-way delay: 31.362 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 34.84 Mbit/s
95th percentile per-packet one-way delay: 34.614 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 41.04 Mbit/s
95th percentile per-packet one-way delay: 35.634 ms
Loss rate: 0.26%
Run 7: Report of Indigo — Data Link

---

---

---
Run 8: Statistics of Indigo

Start at: 2018-08-22 21:28:02
End at: 2018-08-22 21:28:32
Local clock offset: 0.29 ms
Remote clock offset: -64.091 ms

# Below is generated by plot.py at 2018-08-22 22:33:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.30 Mbit/s
95th percentile per-packet one-way delay: 31.308 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 55.10 Mbit/s
95th percentile per-packet one-way delay: 29.763 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 28.83 Mbit/s
95th percentile per-packet one-way delay: 37.484 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 33.55 Mbit/s
95th percentile per-packet one-way delay: 31.874 ms
Loss rate: 0.30%
Run 8: Report of Indigo — Data Link
Run 9: Statistics of Indigo

Start at: 2018-08-22 21:48:16
End at: 2018-08-22 21:48:46
Local clock offset: 3.737 ms
Remote clock offset: -62.697 ms

# Below is generated by plot.py at 2018-08-22 22:34:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.04 Mbit/s
95th percentile per-packet one-way delay: 28.144 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 59.52 Mbit/s
95th percentile per-packet one-way delay: 26.319 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.51 Mbit/s
95th percentile per-packet one-way delay: 25.870 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.20 Mbit/s
95th percentile per-packet one-way delay: 28.483 ms
Loss rate: 0.32%
Run 9: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 59.51 Mbit/s)
- Flow 1 egress (mean 59.52 Mbit/s)
- Flow 2 ingress (mean 40.51 Mbit/s)
- Flow 2 egress (mean 40.51 Mbit/s)
- Flow 3 ingress (mean 32.29 Mbit/s)
- Flow 3 egress (mean 32.20 Mbit/s)
Run 10: Statistics of Indigo

Start at: 2018-08-22 22:08:17
End at: 2018-08-22 22:08:47
Local clock offset: 1.737 ms
Remote clock offset: -62.797 ms

# Below is generated by plot.py at 2018-08-22 22:34:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.32 Mbit/s
95th percentile per-packet one-way delay: 25.857 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 58.94 Mbit/s
95th percentile per-packet one-way delay: 24.141 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.28 Mbit/s
95th percentile per-packet one-way delay: 24.578 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.25 Mbit/s
95th percentile per-packet one-way delay: 26.087 ms
Loss rate: 0.32%
Run 10: Report of Indigo — Data Link
Run 1: Statistics of LEDBAT

Start at: 2018-08-22 19:02:21
End at: 2018-08-22 19:02:51
Local clock offset: 2.198 ms
Remote clock offset: -64.554 ms

# Below is generated by plot.py at 2018-08-22 22:34:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.38 Mbit/s
  95th percentile per-packet one-way delay: 32.041 ms
  Loss rate: 0.14%
-- Flow 1:
  Average throughput: 53.06 Mbit/s
  95th percentile per-packet one-way delay: 31.859 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 34.83 Mbit/s
  95th percentile per-packet one-way delay: 33.695 ms
  Loss rate: 0.12%
-- Flow 3:
  Average throughput: 42.59 Mbit/s
  95th percentile per-packet one-way delay: 30.834 ms
  Loss rate: 0.41%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

Start at: 2018-08-22 19:23:09
End at: 2018-08-22 19:23:39
Local clock offset: 0.884 ms
Remote clock offset: -64.884 ms

# Below is generated by plot.py at 2018-08-22 22:34:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.00 Mbit/s
95th percentile per-packet one-way delay: 37.979 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 51.43 Mbit/s
95th percentile per-packet one-way delay: 33.489 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 31.97 Mbit/s
95th percentile per-packet one-way delay: 44.941 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 24.97 Mbit/s
95th percentile per-packet one-way delay: 50.354 ms
Loss rate: 0.20%
Run 2: Report of LEDBAT — Data Link
Run 3: Statistics of LEDEBAT

Start at: 2018-08-22 19:43:08
End at: 2018-08-22 19:43:38
Local clock offset: -0.492 ms
Remote clock offset: -65.359 ms

# Below is generated by plot.py at 2018-08-22 22:34:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.13 Mbit/s
95th percentile per-packet one-way delay: 34.279 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 47.61 Mbit/s
95th percentile per-packet one-way delay: 34.870 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 38.83 Mbit/s
95th percentile per-packet one-way delay: 32.228 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 26.10 Mbit/s
95th percentile per-packet one-way delay: 44.254 ms
Loss rate: 0.32%
Run 3: Report of LEDBAT — Data Link
Run 4: Statistics of LEDBAT

Start at: 2018-08-22 20:03:12
End at: 2018-08-22 20:03:42
Local clock offset: 2.042 ms
Remote clock offset: -63.457 ms

# Below is generated by plot.py at 2018-08-22 22:34:39
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.28 Mbit/s
  95th percentile per-packet one-way delay: 40.154 ms
  Loss rate: 0.15%
-- Flow 1:
  Average throughput: 50.60 Mbit/s
  95th percentile per-packet one-way delay: 34.147 ms
  Loss rate: 0.10%
-- Flow 2:
  Average throughput: 30.78 Mbit/s
  95th percentile per-packet one-way delay: 47.993 ms
  Loss rate: 0.15%
-- Flow 3:
  Average throughput: 24.68 Mbit/s
  95th percentile per-packet one-way delay: 50.017 ms
  Loss rate: 0.45%
Run 4: Report of LEDBAT — Data Link

---

**Throughput (Mbps)**

- **Flow 1 Ingress** (mean 50.61 Mbps)
- **Flow 1 Egress** (mean 50.60 Mbps)
- **Flow 2 Ingress** (mean 30.79 Mbps)
- **Flow 2 Egress** (mean 30.78 Mbps)
- **Flow 3 Ingress** (mean 24.73 Mbps)
- **Flow 3 Egress** (mean 24.68 Mbps)

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

- **Flow 1** (95th percentile 34.15 ms)
- **Flow 2** (95th percentile 47.99 ms)
- **Flow 3** (95th percentile 50.02 ms)
Run 5: Statistics of LEDBAT

Start at: 2018-08-22 20:23:04
End at: 2018-08-22 20:23:34
Local clock offset: -0.194 ms
Remote clock offset: -68.214 ms

# Below is generated by plot.py at 2018-08-22 22:34:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 82.48 Mbit/s
  95th percentile per-packet one-way delay: 38.323 ms
  Loss rate: 0.14%
-- Flow 1:
  Average throughput: 50.95 Mbit/s
  95th percentile per-packet one-way delay: 36.314 ms
  Loss rate: 0.09%
-- Flow 2:
  Average throughput: 36.66 Mbit/s
  95th percentile per-packet one-way delay: 37.586 ms
  Loss rate: 0.15%
-- Flow 3:
  Average throughput: 21.49 Mbit/s
  95th percentile per-packet one-way delay: 59.447 ms
  Loss rate: 0.50%
Run 5: Report of LEDBAT — Data Link

![Graph 1: Throughput Over Time]

- **Flow 1 Ingress** (mean 50.96 Mbit/s)
- **Flow 1 Egress** (mean 50.95 Mbit/s)
- **Flow 2 Ingress** (mean 36.67 Mbit/s)
- **Flow 2 Egress** (mean 36.66 Mbit/s)
- **Flow 3 Ingress** (mean 21.56 Mbit/s)
- **Flow 3 Egress** (mean 21.49 Mbit/s)

![Graph 2: Per-Packet One-Way Delay Over Time]

- **Flow 1 (95th Percentile 36.31 ms)**
- **Flow 2 (95th Percentile 37.59 ms)**
- **Flow 3 (95th Percentile 59.45 ms)**
Run 6: Statistics of LEDBAT

Start at: 2018-08-22 20:42:50
End at: 2018-08-22 20:43:20
Local clock offset: 1.08 ms
Remote clock offset: -63.957 ms

# Below is generated by plot.py at 2018-08-22 22:34:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.80 Mbit/s
95th percentile per-packet one-way delay: 34.296 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 48.45 Mbit/s
95th percentile per-packet one-way delay: 33.656 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 32.08 Mbit/s
95th percentile per-packet one-way delay: 37.320 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 42.13 Mbit/s
95th percentile per-packet one-way delay: 30.698 ms
Loss rate: 0.40%
Run 6: Report of LEDBAT — Data Link

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

- Blue dashed line: Flow 1 ingress (mean 48.45 Mbps/s)
- Red solid line: Flow 1 egress (mean 48.45 Mbps/s)
- Green dashed line: Flow 2 ingress (mean 32.08 Mbps/s)
- Green solid line: Flow 2 egress (mean 32.08 Mbps/s)
- Blue solid line: Flow 3 ingress (mean 42.20 Mbps/s)
- Red solid line: Flow 3 egress (mean 42.13 Mbps/s)

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

- Blue line: Flow 1 (95th percentile 33.66 ms)
- Green line: Flow 2 (95th percentile 37.32 ms)
- Red line: Flow 3 (95th percentile 30.70 ms)
Run 7: Statistics of LEDBAT

Start at: 2018-08-22 21:03:08
End at: 2018-08-22 21:03:38
Local clock offset: 2.292 ms
Remote clock offset: -64.123 ms

# Below is generated by plot.py at 2018-08-22 22:35:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.68 Mbit/s
95th percentile per-packet one-way delay: 34.169 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 48.89 Mbit/s
95th percentile per-packet one-way delay: 33.716 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 31.53 Mbit/s
95th percentile per-packet one-way delay: 37.239 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 41.56 Mbit/s
95th percentile per-packet one-way delay: 31.599 ms
Loss rate: 0.29%
Run 7: Report of LEDBAT — Data Link

**Figure 1:** Throughput (Mbps) vs. Time (s)
- Flow 1 ingress (mean 48.89 Mbps)
- Flow 1 egress (mean 48.89 Mbps)
- Flow 2 ingress (mean 31.55 Mbps)
- Flow 2 egress (mean 31.53 Mbps)
- Flow 3 ingress (mean 41.56 Mbps)
- Flow 3 egress (mean 41.56 Mbps)

**Figure 2:** Per-packet round-trip delay (ms)
- Flow 1 (95th percentile 31.72 ms)
- Flow 2 (95th percentile 37.24 ms)
- Flow 3 (95th percentile 31.60 ms)
Run 8: Statistics of LEDBAT

End at: 2018-08-22 21:23:43
Local clock offset: 2.827 ms
Remote clock offset: -64.897 ms

# Below is generated by plot.py at 2018-08-22 22:35:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 52.55 Mbit/s
95th percentile per-packet one-way delay: 36.387 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 21.322 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 60.12 Mbit/s
95th percentile per-packet one-way delay: 34.639 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 37.74 Mbit/s
95th percentile per-packet one-way delay: 44.615 ms
Loss rate: 0.35%
Run 8: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 0.00 Mbit/s)
- Flow 1 egress (mean 0.00 Mbit/s)
- Flow 2 ingress (mean 60.14 Mbit/s)
- Flow 2 egress (mean 60.12 Mbit/s)
- Flow 3 ingress (mean 37.77 Mbit/s)
- Flow 3 egress (mean 37.74 Mbit/s)
Run 9: Statistics of LEDBAT

Start at: 2018-08-22 21:43:31
End at: 2018-08-22 21:44:01
Local clock offset: 1.467 ms
Remote clock offset: -63.912 ms

# Below is generated by plot.py at 2018-08-22 22:35:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.60 Mbit/s
95th percentile per-packet one-way delay: 30.813 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 54.20 Mbit/s
95th percentile per-packet one-way delay: 30.446 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 38.07 Mbit/s
95th percentile per-packet one-way delay: 30.750 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 30.27 Mbit/s
95th percentile per-packet one-way delay: 32.185 ms
Loss rate: 0.39%
Run 9: Report of LEDBAT — Data Link

![Graph showing throughput and per-packet end-to-end delay over time for different flows.]
Run 10: Statistics of LEDBAT

Start at: 2018-08-22 22:03:29
End at: 2018-08-22 22:03:59
Local clock offset: 2.164 ms
Remote clock offset: -63.036 ms

# Below is generated by plot.py at 2018-08-22 22:35:08
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.05 Mbit/s
  95th percentile per-packet one-way delay: 30.638 ms
  Loss rate: 0.14%
-- Flow 1:
  Average throughput: 54.33 Mbit/s
  95th percentile per-packet one-way delay: 29.996 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 38.27 Mbit/s
  95th percentile per-packet one-way delay: 31.035 ms
  Loss rate: 0.17%
-- Flow 3:
  Average throughput: 30.88 Mbit/s
  95th percentile per-packet one-way delay: 32.244 ms
  Loss rate: 0.43%
Run 10: Report of LEDBAT — Data Link
Run 1: Statistics of PCC-Allegro

Start at: 2018-08-22 19:11:12
End at: 2018-08-22 19:11:42
Local clock offset: 0.899 ms
Remote clock offset: -62.924 ms

# Below is generated by plot.py at 2018-08-22 22:35:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.14 Mbit/s
95th percentile per-packet one-way delay: 42.629 ms
Loss rate: 3.66%
-- Flow 1:
Average throughput: 63.96 Mbit/s
95th percentile per-packet one-way delay: 43.149 ms
Loss rate: 4.58%
-- Flow 2:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 22.281 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 31.39 Mbit/s
95th percentile per-packet one-way delay: 42.342 ms
Loss rate: 0.32%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2018-08-22 19:31:31
End at: 2018-08-22 19:32:01
Local clock offset: 2.057 ms
Remote clock offset: -64.657 ms

# Below is generated by plot.py at 2018-08-22 22:35:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.57 Mbit/s
95th percentile per-packet one-way delay: 49.169 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 49.85 Mbit/s
95th percentile per-packet one-way delay: 52.397 ms
Loss rate: 1.91%
-- Flow 2:
Average throughput: 9.54 Mbit/s
95th percentile per-packet one-way delay: 23.362 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 40.68 Mbit/s
95th percentile per-packet one-way delay: 42.544 ms
Loss rate: 0.46%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Start at: 2018-08-22 19:51:15
End at: 2018-08-22 19:51:45
Local clock offset: -0.316 ms
Remote clock offset: -64.088 ms

# Below is generated by plot.py at 2018-08-22 22:35:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.23 Mbit/s
95th percentile per-packet one-way delay: 54.034 ms
Loss rate: 3.12%
-- Flow 1:
Average throughput: 40.24 Mbit/s
95th percentile per-packet one-way delay: 50.675 ms
Loss rate: 2.44%
-- Flow 2:
Average throughput: 30.35 Mbit/s
95th percentile per-packet one-way delay: 67.998 ms
Loss rate: 4.53%
-- Flow 3:
Average throughput: 29.83 Mbit/s
95th percentile per-packet one-way delay: 53.281 ms
Loss rate: 2.97%
Run 3: Report of PCC-Allegro — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 41.19 Mbit/s)  Flow 1 egress (mean 40.24 Mbit/s)
Flow 2 ingress (mean 31.72 Mbit/s)  Flow 2 egress (mean 30.35 Mbit/s)
Flow 3 ingress (mean 30.64 Mbit/s)  Flow 3 egress (mean 29.83 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

* Flow 1 (95th percentile 50.67 ms)  * Flow 2 (95th percentile 68.00 ms)  * Flow 3 (95th percentile 53.28 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2018-08-22 20:11:19
End at: 2018-08-22 20:11:49
Local clock offset: 0.078 ms
Remote clock offset: -62.202 ms

# Below is generated by plot.py at 2018-08-22 22:35:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.73 Mbit/s
  95th percentile per-packet one-way delay: 40.771 ms
  Loss rate: 4.15%
-- Flow 1:
  Average throughput: 56.51 Mbit/s
  95th percentile per-packet one-way delay: 40.923 ms
  Loss rate: 6.27%
-- Flow 2:
  Average throughput: 38.58 Mbit/s
  95th percentile per-packet one-way delay: 39.884 ms
  Loss rate: 0.16%
-- Flow 3:
  Average throughput: 19.99 Mbit/s
  95th percentile per-packet one-way delay: 21.785 ms
  Loss rate: 0.31%
Run 4: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 60.23 Mbit/s)
- Flow 1 egress (mean 56.51 Mbit/s)
- Flow 2 ingress (mean 38.60 Mbit/s)
- Flow 2 egress (mean 38.58 Mbit/s)
- Flow 3 ingress (mean 20.00 Mbit/s)
- Flow 3 egress (mean 19.99 Mbit/s)

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

- Flow 1 (95th percentile 40.92 ms)
- Flow 2 (95th percentile 39.88 ms)
- Flow 3 (95th percentile 21.79 ms)
Run 5: Statistics of PCC-Allegro

Start at: 2018-08-22 20:31:11
End at: 2018-08-22 20:31:41
Local clock offset: -0.155 ms
Remote clock offset: -62.917 ms

# Below is generated by plot.py at 2018-08-22 22:35:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 72.48 Mbit/s
  95th percentile per-packet one-way delay: 49.640 ms
  Loss rate: 1.68%
-- Flow 1:
  Average throughput: 48.63 Mbit/s
  95th percentile per-packet one-way delay: 48.349 ms
  Loss rate: 2.01%
-- Flow 2:
  Average throughput: 20.77 Mbit/s
  95th percentile per-packet one-way delay: 56.702 ms
  Loss rate: 0.77%
-- Flow 3:
  Average throughput: 30.50 Mbit/s
  95th percentile per-packet one-way delay: 50.274 ms
  Loss rate: 1.31%
Run 5: Report of PCC-Allegro — Data Link
Run 6: Statistics of PCC-Allegro

Start at: 2018-08-22 20:51:05
End at: 2018-08-22 20:51:35
Local clock offset: 0.703 ms
Remote clock offset: -64.861 ms

# Below is generated by plot.py at 2018-08-22 22:36:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 81.97 Mbit/s
  95th percentile per-packet one-way delay: 54.708 ms
  Loss rate: 3.81%
-- Flow 1:
  Average throughput: 53.01 Mbit/s
  95th percentile per-packet one-way delay: 46.726 ms
  Loss rate: 4.08%
-- Flow 2:
  Average throughput: 33.85 Mbit/s
  95th percentile per-packet one-way delay: 59.410 ms
  Loss rate: 4.10%
-- Flow 3:
  Average throughput: 19.60 Mbit/s
  95th percentile per-packet one-way delay: 34.103 ms
  Loss rate: 0.48%
Run 7: Statistics of PCC-Allegro

Start at: 2018-08-22 21:11:23
End at: 2018-08-22 21:11:53
Local clock offset: 1.609 ms
Remote clock offset: -64.584 ms

# Below is generated by plot.py at 2018-08-22 22:36:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.84 Mbit/s
95th percentile per-packet one-way delay: 54.362 ms
Loss rate: 5.69%
-- Flow 1:
Average throughput: 53.86 Mbit/s
95th percentile per-packet one-way delay: 49.691 ms
Loss rate: 7.10%
-- Flow 2:
Average throughput: 29.67 Mbit/s
95th percentile per-packet one-way delay: 62.426 ms
Loss rate: 4.69%
-- Flow 3:
Average throughput: 34.24 Mbit/s
95th percentile per-packet one-way delay: 27.542 ms
Loss rate: 0.27%
Run 7: Report of PCC-Allegro — Data Link

![Graph of throughput and per-packet round-trip delay](image-url)

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 57.92 Mbps)
  - Flow 1 egress (mean 53.86 Mbps)
  - Flow 2 ingress (mean 31.07 Mbps)
  - Flow 2 egress (mean 29.67 Mbps)
  - Flow 3 ingress (mean 34.27 Mbps)
  - Flow 3 egress (mean 34.24 Mbps)

- **Per-packet round-trip delay (ms)**
  - Flow 1 (95th percentile 49.69 ms)
  - Flow 2 (95th percentile 62.43 ms)
  - Flow 3 (95th percentile 27.54 ms)
Run 8: Statistics of PCC-Allegro

Start at: 2018-08-22 21:31:30
End at: 2018-08-22 21:32:00
Local clock offset: -0.362 ms
Remote clock offset: -64.477 ms

# Below is generated by plot.py at 2018-08-22 22:36:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.60 Mbit/s
95th percentile per-packet one-way delay: 57.041 ms
Loss rate: 5.80%
-- Flow 1:
Average throughput: 49.59 Mbit/s
95th percentile per-packet one-way delay: 51.698 ms
Loss rate: 7.40%
-- Flow 2:
Average throughput: 29.83 Mbit/s
95th percentile per-packet one-way delay: 64.695 ms
Loss rate: 4.57%
-- Flow 3:
Average throughput: 37.00 Mbit/s
95th percentile per-packet one-way delay: 43.846 ms
Loss rate: 0.91%
Run 8: Report of PCC-Allegro — Data Link

![Graph 1: Throughput over time for different flows with their respective mean values.]

![Graph 2: Per-packet one-way delay over time for different flows with their respective 95th percentile values.]

159
Run 9: Statistics of PCC-Allegro

Start at: 2018-08-22 21:51:47
End at: 2018-08-22 21:52:17
Local clock offset: 1.243 ms
Remote clock offset: -63.608 ms

# Below is generated by plot.py at 2018-08-22 22:36:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.79 Mbit/s
95th percentile per-packet one-way delay: 54.214 ms
Loss rate: 4.97%
-- Flow 1:
Average throughput: 63.62 Mbit/s
95th percentile per-packet one-way delay: 39.617 ms
Loss rate: 5.73%
-- Flow 2:
Average throughput: 35.60 Mbit/s
95th percentile per-packet one-way delay: 57.154 ms
Loss rate: 4.13%
-- Flow 3:
Average throughput: 19.75 Mbit/s
95th percentile per-packet one-way delay: 24.898 ms
Loss rate: 0.31%
Run 9: Report of PCC-Allegro — Data Link

[Graphs showing network performance metrics for different flows over time.]
Run 10: Statistics of PCC-Allegro

Start at: 2018-08-22 22:11:50
End at: 2018-08-22 22:12:20
Local clock offset: 1.682 ms
Remote clock offset: -62.617 ms

# Below is generated by plot.py at 2018-08-22 22:36:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 91.26 Mbit/s
  95th percentile per-packet one-way delay: 55.575 ms
  Loss rate: 2.24%
-- Flow 1:
  Average throughput: 56.32 Mbit/s
  95th percentile per-packet one-way delay: 54.974 ms
  Loss rate: 1.91%
-- Flow 2:
  Average throughput: 32.63 Mbit/s
  95th percentile per-packet one-way delay: 56.646 ms
  Loss rate: 4.22%
-- Flow 3:
  Average throughput: 40.28 Mbit/s
  95th percentile per-packet one-way delay: 26.133 ms
  Loss rate: 0.30%
Run 10: Report of PCC-Allegro — Data Link

[Graphs showing throughput and packet loss over time for different flows]
Run 1: Statistics of PCC-Expr

Start at: 2018-08-22 19:12:21
End at: 2018-08-22 19:12:51
Local clock offset: 0.68 ms
Remote clock offset: -63.472 ms

# Below is generated by plot.py at 2018-08-22 22:37:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 82.96 Mbit/s
  95th percentile per-packet one-way delay: 53.845 ms
  Loss rate: 1.42%
-- Flow 1:
  Average throughput: 55.35 Mbit/s
  95th percentile per-packet one-way delay: 52.340 ms
  Loss rate: 1.67%
-- Flow 2:
  Average throughput: 26.25 Mbit/s
  95th percentile per-packet one-way delay: 57.860 ms
  Loss rate: 1.21%
-- Flow 3:
  Average throughput: 30.79 Mbit/s
  95th percentile per-packet one-way delay: 46.747 ms
  Loss rate: 0.39%
Run 1: Report of PCC-Expr — Data Link

**Graph 1:**
- **Y-axis:** Throughput (Mbit/s)
- **X-axis:** Time (s)
- Lines represent:
  - Flow 1 ingress (mean 55.22 Mbit/s)
  - Flow 1 egress (mean 55.35 Mbit/s)
  - Flow 2 ingress (mean 26.52 Mbit/s)
  - Flow 2 egress (mean 26.25 Mbit/s)
  - Flow 3 ingress (mean 30.85 Mbit/s)
  - Flow 3 egress (mean 30.79 Mbit/s)

**Graph 2:**
- **Y-axis:** Per-packet one-way delay (ms)
- **X-axis:** Time (s)
- Lines represent:
  - Flow 1 (95th percentile 52.34 ms)
  - Flow 2 (95th percentile 57.86 ms)
  - Flow 3 (95th percentile 46.75 ms)
Run 2: Statistics of PCC-Expr

Start at: 2018-08-22 19:32:39
End at: 2018-08-22 19:33:09
Local clock offset: -1.229 ms
Remote clock offset: -65.758 ms

# Below is generated by plot.py at 2018-08-22 22:37:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.14 Mbit/s
95th percentile per-packet one-way delay: 32.094 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 42.64 Mbit/s
95th percentile per-packet one-way delay: 28.442 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 30.51 Mbit/s
95th percentile per-packet one-way delay: 37.415 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 9.75 Mbit/s
95th percentile per-packet one-way delay: 21.801 ms
Loss rate: 0.32%
Run 2: Report of PCC-Expr — Data Link
Run 3: Statistics of PCC-Expr

Start at: 2018-08-22 19:52:23
End at: 2018-08-22 19:52:53
Local clock offset: 2.609 ms
Remote clock offset: -64.372 ms

# Below is generated by plot.py at 2018-08-22 22:37:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.14 Mbit/s
95th percentile per-packet one-way delay: 48.892 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 54.09 Mbit/s
95th percentile per-packet one-way delay: 47.423 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 28.24 Mbit/s
95th percentile per-packet one-way delay: 55.714 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 19.04 Mbit/s
95th percentile per-packet one-way delay: 50.547 ms
Loss rate: 0.47%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2018-08-22 20:12:27
End at: 2018-08-22 20:12:57
Local clock offset: 0.004 ms
Remote clock offset: -62.917 ms

# Below is generated by plot.py at 2018-08-22 22:37:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.08 Mbit/s
95th percentile per-packet one-way delay: 39.791 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 54.29 Mbit/s
95th percentile per-packet one-way delay: 37.013 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 42.23 Mbit/s
95th percentile per-packet one-way delay: 37.202 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 23.35 Mbit/s
95th percentile per-packet one-way delay: 52.129 ms
Loss rate: 0.88%
Run 4: Report of PCC-Expr — Data Link
Run 5: Statistics of PCC-Expr

Start at: 2018-08-22 20:32:19
End at: 2018-08-22 20:32:49
Local clock offset: 1.059 ms
Remote clock offset: -64.368 ms

# Below is generated by plot.py at 2018-08-22 22:37:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.69 Mbit/s
95th percentile per-packet one-way delay: 48.655 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 50.77 Mbit/s
95th percentile per-packet one-way delay: 47.435 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 22.52 Mbit/s
95th percentile per-packet one-way delay: 55.150 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 27.15 Mbit/s
95th percentile per-packet one-way delay: 61.010 ms
Loss rate: 0.61%
Run 5: Report of PCC-Expr — Data Link

Graph 1: Throughput Over Time (Mbps)

Graph 2: Per-packet One-way Delay (ms)

Legend:
- Flow 1 ingress (mean 51.09 Mbps)
- Flow 1 egress (mean 50.77 Mbps)
- Flow 2 ingress (mean 22.57 Mbps)
- Flow 2 egress (mean 22.52 Mbps)
- Flow 3 ingress (mean 27.25 Mbps)
- Flow 3 egress (mean 27.15 Mbps)
Run 6: Statistics of PCC-Expr

Start at: 2018-08-22 20:52:13
End at: 2018-08-22 20:52:43
Local clock offset: 0.33 ms
Remote clock offset: -63.875 ms

# Below is generated by plot.py at 2018-08-22 22:37:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.51 Mbit/s
95th percentile per-packet one-way delay: 46.192 ms
Loss rate: 1.63%
-- Flow 1:
Average throughput: 48.50 Mbit/s
95th percentile per-packet one-way delay: 48.792 ms
Loss rate: 2.37%
-- Flow 2:
Average throughput: 35.61 Mbit/s
95th percentile per-packet one-way delay: 37.514 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 19.20 Mbit/s
95th percentile per-packet one-way delay: 53.811 ms
Loss rate: 0.43%
Run 6: Report of PCC-Expr — Data Link
Run 7: Statistics of PCC-Expr

Start at: 2018-08-22 21:12:34
End at: 2018-08-22 21:13:04
Local clock offset: 3.01 ms
Remote clock offset: -64.884 ms

# Below is generated by plot.py at 2018-08-22 22:38:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.26 Mbit/s
  95th percentile per-packet one-way delay: 50.712 ms
  Loss rate: 1.22%
-- Flow 1:
  Average throughput: 53.39 Mbit/s
  95th percentile per-packet one-way delay: 47.792 ms
  Loss rate: 1.33%
-- Flow 2:
  Average throughput: 32.75 Mbit/s
  95th percentile per-packet one-way delay: 50.747 ms
  Loss rate: 0.74%
-- Flow 3:
  Average throughput: 24.56 Mbit/s
  95th percentile per-packet one-way delay: 60.260 ms
  Loss rate: 1.77%
Run 7: Report of PCC-Expr — Data Link

![Graph 1](graph1.png)

![Graph 2](graph2.png)
Run 8: Statistics of PCC-Expr

Start at: 2018-08-22 21:32:39  
End at: 2018-08-22 21:33:09  
Local clock offset: -0.341 ms  
Remote clock offset: -64.479 ms

# Below is generated by plot.py at 2018-08-22 22:38:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.63 Mbit/s
95th percentile per-packet one-way delay: 52.541 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 47.73 Mbit/s
95th percentile per-packet one-way delay: 52.123 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 33.87 Mbit/s
95th percentile per-packet one-way delay: 55.463 ms
Loss rate: 2.01%
-- Flow 3:
Average throughput: 31.44 Mbit/s
95th percentile per-packet one-way delay: 29.207 ms
Loss rate: 0.23%
Run 9: Statistics of PCC-Expr

Start at: 2018-08-22 21:52:56
End at: 2018-08-22 21:53:26
Local clock offset: 1.077 ms
Remote clock offset: -63.146 ms

# Below is generated by plot.py at 2018-08-22 22:39:00
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.45 Mbit/s
  95th percentile per-packet one-way delay: 50.193 ms
  Loss rate: 0.39%
-- Flow 1:
  Average throughput: 61.10 Mbit/s
  95th percentile per-packet one-way delay: 36.881 ms
  Loss rate: 0.15%
-- Flow 2:
  Average throughput: 33.09 Mbit/s
  95th percentile per-packet one-way delay: 54.332 ms
  Loss rate: 0.93%
-- Flow 3:
  Average throughput: 22.28 Mbit/s
  95th percentile per-packet one-way delay: 55.417 ms
  Loss rate: 0.83%
Run 9: Report of PCC-Expr — Data Link

![Graph 1: Throughput (Mbps)]

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

---

181
Run 10: Statistics of PCC-Expr

Start at: 2018-08-22 22:12:59
End at: 2018-08-22 22:13:29
Local clock offset: 1.519 ms
Remote clock offset: -62.519 ms

# Below is generated by plot.py at 2018-08-22 22:39:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.40 Mbit/s
95th percentile per-packet one-way delay: 51.000 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 52.89 Mbit/s
95th percentile per-packet one-way delay: 38.358 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 35.69 Mbit/s
95th percentile per-packet one-way delay: 55.518 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 41.82 Mbit/s
95th percentile per-packet one-way delay: 38.337 ms
Loss rate: 1.08%
Run 10: Report of PCC-Expr — Data Link

[Graphs showing throughput and packet loss delay over time for different flows with mean values provided]
Run 1: Statistics of QUIC Cubic

Start at: 2018-08-22 19:17:21
End at: 2018-08-22 19:17:51
Local clock offset: 2.133 ms
Remote clock offset: -64.997 ms

# Below is generated by plot.py at 2018-08-22 22:39:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 85.19 Mbit/s
  95th percentile per-packet one-way delay: 39.304 ms
  Loss rate: 0.18%
-- Flow 1:
  Average throughput: 56.42 Mbit/s
  95th percentile per-packet one-way delay: 37.456 ms
  Loss rate: 0.12%
-- Flow 2:
  Average throughput: 32.63 Mbit/s
  95th percentile per-packet one-way delay: 42.027 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 21.44 Mbit/s
  95th percentile per-packet one-way delay: 56.778 ms
  Loss rate: 0.58%
Run 1: Report of QUIC Cubic — Data Link

![Graph showing throughput over time for different flows and their ingress and egress throughputs.]

- Flow 1 ingress (mean 56.44 Mbit/s)
- Flow 1 egress (mean 56.42 Mbit/s)
- Flow 2 ingress (mean 32.66 Mbit/s)
- Flow 2 egress (mean 32.63 Mbit/s)
- Flow 3 ingress (mean 21.51 Mbit/s)
- Flow 3 egress (mean 21.44 Mbit/s)

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

- Flow 1 (95th percentile 37.46 ms)
- Flow 2 (95th percentile 42.03 ms)
- Flow 3 (95th percentile 56.78 ms)
Run 2: Statistics of QUIC Cubic

Start at: 2018-08-22 19:37:23
End at: 2018-08-22 19:37:53
Local clock offset: 0.184 ms
Remote clock offset: -64.867 ms

# Below is generated by plot.py at 2018-08-22 22:39:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 84.79 Mbit/s
  95th percentile per-packet one-way delay: 40.716 ms
  Loss rate: 0.18%
-- Flow 1:
  Average throughput: 56.07 Mbit/s
  95th percentile per-packet one-way delay: 38.335 ms
  Loss rate: 0.12%
-- Flow 2:
  Average throughput: 32.60 Mbit/s
  95th percentile per-packet one-way delay: 43.184 ms
  Loss rate: 0.20%
-- Flow 3:
  Average throughput: 21.32 Mbit/s
  95th percentile per-packet one-way delay: 47.483 ms
  Loss rate: 0.53%
Run 2: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 56.10 Mbit/s)
- Flow 1 egress (mean 56.07 Mbit/s)
- Flow 2 ingress (mean 32.63 Mbit/s)
- Flow 2 egress (mean 32.60 Mbit/s)
- Flow 3 ingress (mean 21.38 Mbit/s)
- Flow 3 egress (mean 21.32 Mbit/s)

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

- Flow 1 (95th percentile 38.34 ms)
- Flow 2 (95th percentile 43.18 ms)
- Flow 3 (95th percentile 47.48 ms)
Run 3: Statistics of QUIC Cubic

Start at: 2018-08-22 19:57:23
End at: 2018-08-22 19:57:53
Local clock offset: 1.641 ms
Remote clock offset: -63.539 ms

# Below is generated by plot.py at 2018-08-22 22:39:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.74 Mbit/s
95th percentile per-packet one-way delay: 37.589 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 52.70 Mbit/s
95th percentile per-packet one-way delay: 35.508 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 37.26 Mbit/s
95th percentile per-packet one-way delay: 37.876 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 25.01 Mbit/s
95th percentile per-packet one-way delay: 54.393 ms
Loss rate: 0.48%
Run 3: Report of QUIC Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 52.72 Mbit/s)
Flow 1 egress (mean 52.70 Mbit/s)
Flow 2 ingress (mean 37.29 Mbit/s)
Flow 2 egress (mean 37.26 Mbit/s)
Flow 3 ingress (mean 25.07 Mbit/s)
Flow 3 egress (mean 25.01 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 35.51 ms)
Flow 2 (95th percentile 37.88 ms)
Flow 3 (95th percentile 54.39 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2018-08-22 20:17:19
End at: 2018-08-22 20:17:49
Local clock offset: 0.709 ms
Remote clock offset: -63.577 ms

# Below is generated by plot.py at 2018-08-22 22:39:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 92.73 Mbit/s
  95th percentile per-packet one-way delay: 30.404 ms
  Loss rate: 0.17%
-- Flow 1:
  Average throughput: 55.99 Mbit/s
  95th percentile per-packet one-way delay: 30.726 ms
  Loss rate: 0.11%
-- Flow 2:
  Average throughput: 39.77 Mbit/s
  95th percentile per-packet one-way delay: 29.441 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 31.15 Mbit/s
  95th percentile per-packet one-way delay: 29.656 ms
  Loss rate: 0.45%
Run 5: Statistics of QUIC Cubic

Start at: 2018-08-22 20:37:11
End at: 2018-08-22 20:37:41
Local clock offset: 2.476 ms
Remote clock offset: -64.266 ms

# Below is generated by plot.py at 2018-08-22 22:39:31
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 85.90 Mbit/s
  95th percentile per-packet one-way delay: 40.459 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 50.20 Mbit/s
  95th percentile per-packet one-way delay: 42.850 ms
  Loss rate: 0.12%
-- Flow 2:
  Average throughput: 38.82 Mbit/s
  95th percentile per-packet one-way delay: 37.217 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 29.93 Mbit/s
  95th percentile per-packet one-way delay: 36.050 ms
  Loss rate: 0.48%
Run 5: Report of QUIC Cubic — Data Link

---

**Throughput (Mbps)**

- Flow 1 ingress (mean 50.20 Mbit/s)
- Flow 1 egress (mean 50.20 Mbit/s)
- Flow 2 ingress (mean 38.84 Mbit/s)
- Flow 2 egress (mean 38.82 Mbit/s)
- Flow 3 ingress (mean 30.00 Mbit/s)
- Flow 3 egress (mean 29.93 Mbit/s)

---

**Per-packet one-way delay [ms]**

- Flow 1 (95th percentile 42.85 ms)
- Flow 2 (95th percentile 37.22 ms)
- Flow 3 (95th percentile 36.05 ms)
Run 6: Statistics of QUIC Cubic

Start at: 2018-08-22 20:57:20
End at: 2018-08-22 20:57:50
Local clock offset: 1.716 ms
Remote clock offset: -65.068 ms

# Below is generated by plot.py at 2018-08-22 22:39:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.23 Mbit/s
95th percentile per-packet one-way delay: 41.314 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 52.55 Mbit/s
95th percentile per-packet one-way delay: 39.160 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.27 Mbit/s
95th percentile per-packet one-way delay: 45.097 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 32.01 Mbit/s
95th percentile per-packet one-way delay: 30.128 ms
Loss rate: 0.44%
Run 7: Statistics of QUIC Cubic

Start at: 2018-08-22 21:17:28
End at: 2018-08-22 21:17:58
Local clock offset: 1.241 ms
Remote clock offset: -64.417 ms

# Below is generated by plot.py at 2018-08-22 22:39:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 87.65 Mbit/s
  95th percentile per-packet one-way delay: 37.268 ms
  Loss rate: 0.18%
-- Flow 1:
  Average throughput: 50.53 Mbit/s
  95th percentile per-packet one-way delay: 35.571 ms
  Loss rate: 0.10%
-- Flow 2:
  Average throughput: 33.26 Mbit/s
  95th percentile per-packet one-way delay: 40.969 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 45.47 Mbit/s
  95th percentile per-packet one-way delay: 37.851 ms
  Loss rate: 0.41%
Run 7: Report of QUIC Cubic — Data Link

![Graph of Throughput vs Time for different flows]

- Flow 1 Ingress (mean 50.54 Mbit/s)
- Flow 1 Egress (mean 50.53 Mbit/s)
- Flow 2 Ingress (mean 33.29 Mbit/s)
- Flow 2 Egress (mean 33.26 Mbit/s)
- Flow 3 Ingress (mean 45.55 Mbit/s)
- Flow 3 Egress (mean 45.47 Mbit/s)

![Graph of Packet Processing Delay vs Time for different flows]

- Flow 1 95th percentile 35.57 ms
- Flow 2 95th percentile 40.97 ms
- Flow 3 95th percentile 37.85 ms

197
Run 8: Statistics of QUIC Cubic

Start at: 2018-08-22 21:37:41
End at: 2018-08-22 21:38:11
Local clock offset: -7.093 ms
Remote clock offset: -70.961 ms

# Below is generated by plot.py at 2018-08-22 22:40:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.27 Mbit/s
95th percentile per-packet one-way delay: 38.843 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 49.82 Mbit/s
95th percentile per-packet one-way delay: 40.418 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 38.35 Mbit/s
95th percentile per-packet one-way delay: 35.657 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 30.16 Mbit/s
95th percentile per-packet one-way delay: 35.577 ms
Loss rate: 0.41%
Run 8: Report of QUIC Cubic — Data Link
Run 9: Statistics of QUIC Cubic

Start at: 2018-08-22 21:57:45
End at: 2018-08-22 21:58:15
Local clock offset: 3.087 ms
Remote clock offset: -63.426 ms

# Below is generated by plot.py at 2018-08-22 22:40:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.58 Mbit/s
95th percentile per-packet one-way delay: 31.228 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 55.99 Mbit/s
95th percentile per-packet one-way delay: 31.361 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 39.52 Mbit/s
95th percentile per-packet one-way delay: 30.540 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 31.20 Mbit/s
95th percentile per-packet one-way delay: 30.436 ms
Loss rate: 0.53%
Run 9: Report of QUIC Cubic — Data Link
Run 10: Statistics of QUIC Cubic

Start at: 2018-08-22 22:17:53
End at: 2018-08-22 22:18:23
Local clock offset: 1.8 ms
Remote clock offset: -62.241 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.96 Mbit/s
95th percentile per-packet one-way delay: 30.451 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 54.51 Mbit/s
95th percentile per-packet one-way delay: 30.412 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.19 Mbit/s
95th percentile per-packet one-way delay: 30.996 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 46.59 Mbit/s
95th percentile per-packet one-way delay: 32.907 ms
Loss rate: 0.40%
Run 10: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2018-08-22 19:08:56
End at: 2018-08-22 19:09:26
Local clock offset: -2.216 ms
Remote clock offset: -69.722 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 21.612 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 21.614 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 21.611 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 21.617 ms
  Loss rate: 0.36%
Run 1: Report of SCReAM — Data Link
Run 2: Statistics of SCReAM

Start at: 2018-08-22 19:29:15
End at: 2018-08-22 19:29:45
Local clock offset: 0.801 ms
Remote clock offset: -64.958 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 20.238 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.204 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.304 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 20.205 ms
  Loss rate: 0.36%
Run 2: Report of SCReAM — Data Link

![Throughput Graph](image1)

![Packet Drop Graph](image2)
Run 3: Statistics of SCReAM

Start at: 2018-08-22 19:49:01
End at: 2018-08-22 19:49:31
Local clock offset: -0.186 ms
Remote clock offset: -65.038 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 19.317 ms
Loss rate: 0.19%

-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 19.308 ms
Loss rate: 0.13%

-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 19.324 ms
Loss rate: 0.19%

-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.922 ms
Loss rate: 0.36%
Run 3: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.21 Mbit/s), Flow 1 egress (mean 0.21 Mbit/s)
- Flow 2 ingress (mean 0.21 Mbit/s), Flow 2 egress (mean 0.21 Mbit/s)
- Flow 3 ingress (mean 0.22 Mbit/s), Flow 3 egress (mean 0.22 Mbit/s)
Run 4: Statistics of SCReAM

Start at: 2018-08-22 20:09:05
End at: 2018-08-22 20:09:35
Local clock offset: 2.825 ms
Remote clock offset: -63.132 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 21.924 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 22.547 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 21.897 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 21.859 ms
  Loss rate: 0.36%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2018-08-22 20:28:57
End at: 2018-08-22 20:29:27
Local clock offset: 1.191 ms
Remote clock offset: -63.574 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 20.108 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.102 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.138 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 20.099 ms
  Loss rate: 0.35%
Run 5: Report of SCReAM — Data Link
Run 6: Statistics of SCReAM

Start at: 2018-08-22 20:48:50
End at: 2018-08-22 20:49:20
Local clock offset: 1.915 ms
Remote clock offset: -64.497 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.42 Mbit/s
  95th percentile per-packet one-way delay: 20.235 ms
  Loss rate: 0.16%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.234 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.257 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 20.225 ms
  Loss rate: 0.35%
Run 6: Report of SCReAM — Data Link
Run 7: Statistics of SCReAM

Start at: 2018-08-22 21:09:06
End at: 2018-08-22 21:09:36
Local clock offset: 3.985 ms
Remote clock offset: -64.576 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 22.140 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 22.014 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 22.119 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 22.964 ms
Loss rate: 0.36%
Run 7: Report of SCReAM — Data Link
Run 8: Statistics of SCReAM

Start at: 2018-08-22 21:29:16
End at: 2018-08-22 21:29:46
Local clock offset: 1.102 ms
Remote clock offset: -64.431 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 20.420 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.399 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 20.434 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 20.457 ms
  Loss rate: 0.36%
Run 8: Report of SCReAM — Data Link

[Graphs showing throughput and packet delay over time for different flows.]
Run 9: Statistics of SCReAM

Start at: 2018-08-22 21:49:30
End at: 2018-08-22 21:50:00
Local clock offset: 0.274 ms
Remote clock offset: -62.544 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 16.786 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 16.786 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 16.784 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 16.787 ms
Loss rate: 0.36%
Run 9: Report of SCReAM — Data Link

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

![Graph 2: Per-packet one-way delay (ms)](image2)
Run 10: Statistics of SCReAM

Start at: 2018-08-22 22:09:35
End at: 2018-08-22 22:10:05
Local clock offset: 0.432 ms
Remote clock offset: -62.127 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 17.181 ms
  Loss rate: 0.13%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 17.181 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 17.170 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 17.193 ms
  Loss rate: 0.00%
Run 10: Report of SCReAM — Data Link

![Graph showing throughput and delay over time for different flows.]
Run 1: Statistics of Sprout

Start at: 2018-08-22 19:19:43
End at: 2018-08-22 19:20:13
Local clock offset: 2.182 ms
Remote clock offset: -64.491 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.62 Mbit/s
95th percentile per-packet one-way delay: 31.935 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 20.61 Mbit/s
95th percentile per-packet one-way delay: 31.341 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 20.35 Mbit/s
95th percentile per-packet one-way delay: 32.115 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 19.64 Mbit/s
95th percentile per-packet one-way delay: 33.370 ms
Loss rate: 0.41%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2018-08-22 19:39:44
End at: 2018-08-22 19:40:14
Local clock offset: 0.432 ms
Remote clock offset: -65.011 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.95 Mbit/s
95th percentile per-packet one-way delay: 31.170 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 20.21 Mbit/s
95th percentile per-packet one-way delay: 30.009 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 19.98 Mbit/s
95th percentile per-packet one-way delay: 31.957 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 19.56 Mbit/s
95th percentile per-packet one-way delay: 32.680 ms
Loss rate: 0.00%
Run 2: Report of Sprout — Data Link

![Data Link Throughout Chart](chart1)

![Data Link Per-packet round trip delay Chart](chart2)
Run 3: Statistics of Sprout

Start at: 2018-08-22 19:59:48
End at: 2018-08-22 20:00:18
Local clock offset: 1.636 ms
Remote clock offset: -63.284 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 40.19 Mbit/s
  95th percentile per-packet one-way delay: 32.203 ms
  Loss rate: 0.15%
-- Flow 1:
  Average throughput: 20.54 Mbit/s
  95th percentile per-packet one-way delay: 31.039 ms
  Loss rate: 0.11%
-- Flow 2:
  Average throughput: 19.96 Mbit/s
  95th percentile per-packet one-way delay: 32.582 ms
  Loss rate: 0.04%
-- Flow 3:
  Average throughput: 19.36 Mbit/s
  95th percentile per-packet one-way delay: 34.495 ms
  Loss rate: 0.52%
Run 3: Report of Sprout — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 (mean 20.55 Mbps)
  - Flow 2 (mean 19.95 Mbps)
  - Flow 3 (mean 19.42 Mbps)

- **Per-packet end-to-end delay (ms)**
  - Flow 1 (95th percentile 31.04 ms)
  - Flow 2 (95th percentile 32.58 ms)
  - Flow 3 (95th percentile 34.49 ms)
Run 4: Statistics of Sprout

Start at: 2018-08-22 20:19:41
End at: 2018-08-22 20:20:11
Local clock offset: -0.474 ms
Remote clock offset: -63.38 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
 -- Total of 3 flows:
  Average throughput: 40.73 Mbit/s
  95th percentile per-packet one-way delay: 28.929 ms
  Loss rate: 0.13%
   -- Flow 1:
  Average throughput: 20.73 Mbit/s
  95th percentile per-packet one-way delay: 27.961 ms
  Loss rate: 0.03%
   -- Flow 2:
  Average throughput: 20.29 Mbit/s
  95th percentile per-packet one-way delay: 29.374 ms
  Loss rate: 0.14%
   -- Flow 3:
  Average throughput: 19.77 Mbit/s
  95th percentile per-packet one-way delay: 30.389 ms
  Loss rate: 0.42%
Run 4: Report of Sprout — Data Link

Throughput (Mbit/s) vs Time (s)

- Flow 1 ingress (mean 20.72 Mbit/s)
- Flow 1 egress (mean 20.73 Mbit/s)
- Flow 2 ingress (mean 20.30 Mbit/s)
- Flow 2 egress (mean 20.29 Mbit/s)
- Flow 3 ingress (mean 19.81 Mbit/s)
- Flow 3 egress (mean 19.77 Mbit/s)

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

- Flow 1 (95th percentile 27.96 ms)
- Flow 2 (95th percentile 29.37 ms)
- Flow 3 (95th percentile 30.39 ms)
Run 5: Statistics of Sprout

Start at: 2018-08-22 20:39:29
End at: 2018-08-22 20:39:59
Local clock offset: 0.538 ms
Remote clock offset: -64.223 ms

# Below is generated by plot.py at 2018-08-22 22:40:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.62 Mbit/s
95th percentile per-packet one-way delay: 29.619 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 20.19 Mbit/s
95th percentile per-packet one-way delay: 29.369 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 19.66 Mbit/s
95th percentile per-packet one-way delay: 29.258 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 19.27 Mbit/s
95th percentile per-packet one-way delay: 30.822 ms
Loss rate: 0.18%
Run 5: Report of Sprout — Data Link
Run 6: Statistics of Sprout

Start at: 2018-08-22 20:59:43
End at: 2018-08-22 21:00:13
Local clock offset: 1.888 ms
Remote clock offset: -64.209 ms

# Below is generated by plot.py at 2018-08-22 22:40:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.12 Mbit/s
95th percentile per-packet one-way delay: 29.179 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 20.38 Mbit/s
95th percentile per-packet one-way delay: 28.086 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 19.90 Mbit/s
95th percentile per-packet one-way delay: 29.849 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 19.73 Mbit/s
95th percentile per-packet one-way delay: 30.631 ms
Loss rate: 0.90%
Run 6: Report of Sprout — Data Link

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

![Graph of per-packet one-way delay for different flows.](image)
Run 7: Statistics of Sprout

Start at: 2018-08-22 21:19:51
End at: 2018-08-22 21:20:21
Local clock offset: 0.053 ms
Remote clock offset: -64.291 ms

# Below is generated by plot.py at 2018-08-22 22:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.56 Mbit/s
95th percentile per-packet one-way delay: 29.317 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 20.77 Mbit/s
95th percentile per-packet one-way delay: 28.482 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 20.05 Mbit/s
95th percentile per-packet one-way delay: 29.798 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 19.60 Mbit/s
95th percentile per-packet one-way delay: 30.522 ms
Loss rate: 0.36%
Run 7: Report of Sprout — Data Link

![Graph showing throughput over time for different flows with their respective ingress and egress averages.]
Run 8: Statistics of Sprout

Start at: 2018-08-22 21:40:05
End at: 2018-08-22 21:40:35
Local clock offset: 2.029 ms
Remote clock offset: -64.303 ms

# Below is generated by plot.py at 2018-08-22 22:40:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.92 Mbit/s
95th percentile per-packet one-way delay: 33.606 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 20.33 Mbit/s
95th percentile per-packet one-way delay: 33.049 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 20.12 Mbit/s
95th percentile per-packet one-way delay: 34.027 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 18.85 Mbit/s
95th percentile per-packet one-way delay: 34.101 ms
Loss rate: 0.23%
Run 8: Report of Sprout — Data Link

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

[Graph 2: Per packet one way delay (ms) over Time (s)]
Run 9: Statistics of Sprout

Start at: 2018-08-22 22:00:06
End at: 2018-08-22 22:00:36
Local clock offset: 1.766 ms
Remote clock offset: -63.283 ms

# Below is generated by plot.py at 2018-08-22 22:40:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 41.23 Mbit/s
  95th percentile per-packet one-way delay: 28.438 ms
  Loss rate: 0.22%
-- Flow 1:
  Average throughput: 21.11 Mbit/s
  95th percentile per-packet one-way delay: 27.801 ms
  Loss rate: 0.14%
-- Flow 2:
  Average throughput: 20.61 Mbit/s
  95th percentile per-packet one-way delay: 28.704 ms
  Loss rate: 0.23%
-- Flow 3:
  Average throughput: 19.44 Mbit/s
  95th percentile per-packet one-way delay: 29.568 ms
  Loss rate: 0.48%
Run 9: Report of Sprout — Data Link

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

- **Flow 1 Ingress**: Mean 21.12 Mbit/s
- **Flow 1 Egress**: Mean 21.11 Mbit/s
- **Flow 2 Ingress**: Mean 20.62 Mbit/s
- **Flow 2 Egress**: Mean 20.61 Mbit/s
- **Flow 3 Ingress**: Mean 19.45 Mbit/s
- **Flow 3 Egress**: Mean 19.44 Mbit/s

![Graph 2: Per-packet Round-trip delay vs Time](image2)

- **Flow 1**: 95th percentile 27.80 ms
- **Flow 2**: 95th percentile 28.70 ms
- **Flow 3**: 95th percentile 29.57 ms

241
Run 10: Statistics of Sprout

End at: 2018-08-22 22:20:43
Local clock offset: 1.002 ms
Remote clock offset: -61.794 ms

# Below is generated by plot.py at 2018-08-22 22:40:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.01 Mbit/s
95th percentile per-packet one-way delay: 27.991 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 20.74 Mbit/s
95th percentile per-packet one-way delay: 27.248 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 20.44 Mbit/s
95th percentile per-packet one-way delay: 28.151 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 19.79 Mbit/s
95th percentile per-packet one-way delay: 29.828 ms
Loss rate: 0.44%
Run 10: Report of Sprout — Data Link

![Graph showing data link performance](image)

- **Flow 1 Ingress (mean 20.76 Mbit/s)**
- **Flow 1 Egress (mean 20.74 Mbit/s)**
- **Flow 2 Ingress (mean 20.48 Mbit/s)**
- **Flow 2 Egress (mean 20.44 Mbit/s)**
- **Flow 3 Ingress (mean 19.83 Mbit/s)**
- **Flow 3 Egress (mean 19.79 Mbit/s)**

![Graph showing per-packet round-trip delay](image)

- **Flow 1 (95th percentile 27.25 ms)**
- **Flow 2 (95th percentile 28.15 ms)**
- **Flow 3 (95th percentile 29.83 ms)**
Run 1: Statistics of TaoVA-100x

Start at: 2018-08-22 19:14:51
End at: 2018-08-22 19:15:21
Local clock offset: 0.19 ms
Remote clock offset: -63.668 ms

# Below is generated by plot.py at 2018-08-22 22:41:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.42 Mbit/s
95th percentile per-packet one-way delay: 49.054 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 48.78 Mbit/s
95th percentile per-packet one-way delay: 46.783 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 31.34 Mbit/s
95th percentile per-packet one-way delay: 53.327 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 29.41 Mbit/s
95th percentile per-packet one-way delay: 63.180 ms
Loss rate: 1.44%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2018-08-22 19:34:59
End at: 2018-08-22 19:35:29
Local clock offset: 3.155 ms
Remote clock offset: -64.977 ms

# Below is generated by plot.py at 2018-08-22 22:41:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.64 Mbit/s
  95th percentile per-packet one-way delay: 51.411 ms
  Loss rate: 1.12%
-- Flow 1:
  Average throughput: 40.57 Mbit/s
  95th percentile per-packet one-way delay: 47.962 ms
  Loss rate: 0.08%
-- Flow 2:
  Average throughput: 40.44 Mbit/s
  95th percentile per-packet one-way delay: 51.285 ms
  Loss rate: 1.75%
-- Flow 3:
  Average throughput: 36.52 Mbit/s
  95th percentile per-packet one-way delay: 54.226 ms
  Loss rate: 3.11%
Run 2: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 40.57 Mbps)
- Flow 1 egress (mean 40.57 Mbps)
- Flow 2 ingress (mean 41.09 Mbps)
- Flow 2 egress (mean 40.44 Mbps)
- Flow 3 ingress (mean 37.36 Mbps)
- Flow 3 egress (mean 36.52 Mbps)

![Graph 2: Per-packet end-to-end delay (ms)](image2)

- Flow 1 (95th percentile 47.96 ms)
- Flow 2 (95th percentile 51.28 ms)
- Flow 3 (95th percentile 54.23 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2018-08-22 19:54:47
End at: 2018-08-22 19:55:17
Local clock offset: 1.583 ms
Remote clock offset: -64.173 ms

# Below is generated by plot.py at 2018-08-22 22:42:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.00 Mbit/s
95th percentile per-packet one-way delay: 57.125 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 42.58 Mbit/s
95th percentile per-packet one-way delay: 47.979 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 34.92 Mbit/s
95th percentile per-packet one-way delay: 61.051 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 42.70 Mbit/s
95th percentile per-packet one-way delay: 45.269 ms
Loss rate: 0.45%
Run 3: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 42.58 Mbit/s)
- Flow 1 egress (mean 42.58 Mbit/s)
- Flow 2 ingress (mean 35.08 Mbit/s)
- Flow 2 egress (mean 34.92 Mbit/s)
- Flow 3 ingress (mean 42.79 Mbit/s)
- Flow 3 egress (mean 42.70 Mbit/s)
Run 4: Statistics of TaoVA-100x

Start at: 2018-08-22 20:14:51
End at: 2018-08-22 20:15:21
Local clock offset: -0.223 ms
Remote clock offset: -62.937 ms

# Below is generated by plot.py at 2018-08-22 22:42:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.18 Mbit/s
95th percentile per-packet one-way delay: 43.191 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 52.59 Mbit/s
95th percentile per-packet one-way delay: 37.510 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 39.81 Mbit/s
95th percentile per-packet one-way delay: 49.728 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 46.37 Mbit/s
95th percentile per-packet one-way delay: 37.674 ms
Loss rate: 0.67%
Run 4: Report of TaoVA-100x — Data Link

![Graph showing throughput and per-packet round-trip time](image-url)

- **Throughput (Mbps)**
  - Flow 1 Ingress: Mean 52.59 Mbps
  - Flow 1 Egress: Mean 52.59 Mbps
  - Flow 2 Ingress: Mean 40.11 Mbps
  - Flow 2 Egress: Mean 39.81 Mbps
  - Flow 3 Ingress: Mean 46.57 Mbps
  - Flow 3 Egress: Mean 46.37 Mbps

- **Per-packet round-trip time (ms)**
  - Flow 1 (95th percentile 37.51 ms)
  - Flow 2 (95th percentile 49.73 ms)
  - Flow 3 (95th percentile 37.67 ms)
Run 5: Statistics of TaoVA-100x

Start at: 2018-08-22 20:34:45
End at: 2018-08-22 20:35:15
Local clock offset: 1.201 ms
Remote clock offset: -63.735 ms

# Below is generated by plot.py at 2018-08-22 22:42:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 82.57 Mbit/s
  95th percentile per-packet one-way delay: 53.227 ms
  Loss rate: 0.60%
-- Flow 1:
  Average throughput: 48.12 Mbit/s
  95th percentile per-packet one-way delay: 51.615 ms
  Loss rate: 0.33%
-- Flow 2:
  Average throughput: 37.02 Mbit/s
  95th percentile per-packet one-way delay: 53.447 ms
  Loss rate: 0.73%
-- Flow 3:
  Average throughput: 29.50 Mbit/s
  95th percentile per-packet one-way delay: 55.483 ms
  Loss rate: 1.56%
Run 5: Report of TaoVA-100x — Data Link
Run 6: Statistics of TaoVA-100x

Start at: 2018-08-22 20:54:39
End at: 2018-08-22 20:55:09
Local clock offset: 4.045 ms
Remote clock offset: -63.498 ms

# Below is generated by plot.py at 2018-08-22 22:42:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 82.43 Mbit/s
  95th percentile per-packet one-way delay: 54.524 ms
  Loss rate: 0.71%
-- Flow 1:
  Average throughput: 48.14 Mbit/s
  95th percentile per-packet one-way delay: 52.647 ms
  Loss rate: 0.39%
-- Flow 2:
  Average throughput: 36.82 Mbit/s
  95th percentile per-packet one-way delay: 54.871 ms
  Loss rate: 0.77%
-- Flow 3:
  Average throughput: 29.43 Mbit/s
  95th percentile per-packet one-way delay: 57.337 ms
  Loss rate: 2.14%
Run 6: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 48.28 Mb/s)
- Flow 1 egress (mean 48.14 Mb/s)
- Flow 2 ingress (mean 37.01 Mb/s)
- Flow 2 egress (mean 36.82 Mb/s)
- Flow 3 ingress (mean 29.92 Mb/s)
- Flow 3 egress (mean 29.43 Mb/s)

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

- Flow 1 (95th percentile 52.65 ms)
- Flow 2 (95th percentile 54.87 ms)
- Flow 3 (95th percentile 57.34 ms)
Run 7: Statistics of TaoVA-100x

Start at: 2018-08-22 21:15:01
End at: 2018-08-22 21:15:31
Local clock offset: 0.759 ms
Remote clock offset: -64.669 ms

# Below is generated by plot.py at 2018-08-22 22:42:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.99 Mbit/s
95th percentile per-packet one-way delay: 56.716 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 53.41 Mbit/s
95th percentile per-packet one-way delay: 42.873 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 34.42 Mbit/s
95th percentile per-packet one-way delay: 57.655 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 23.05 Mbit/s
95th percentile per-packet one-way delay: 62.707 ms
Loss rate: 1.41%
Run 7: Report of TaoVA-100x — Data Link
Run 8: Statistics of TaoVA-100x

Start at: 2018-08-22 21:35:05
End at: 2018-08-22 21:35:35
Local clock offset: 0.014 ms
Remote clock offset: -63.766 ms

# Below is generated by plot.py at 2018-08-22 22:42:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.73 Mbit/s
  95th percentile per-packet one-way delay: 56.698 ms
  Loss rate: 0.25%
-- Flow 1:
  Average throughput: 43.88 Mbit/s
  95th percentile per-packet one-way delay: 56.362 ms
  Loss rate: 0.19%
-- Flow 2:
  Average throughput: 44.06 Mbit/s
  95th percentile per-packet one-way delay: 41.626 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 19.62 Mbit/s
  95th percentile per-packet one-way delay: 83.220 ms
  Loss rate: 0.83%
Run 8: Report of TaoVA-100x — Data Link

![Graph of data link performance with throughput and delay metrics for different flows over time.](image-url)

- **Flow 1 Ingress** (mean 43.93 Mbps)
- **Flow 1 Egress** (mean 43.88 Mbps)
- **Flow 2 Ingress** (mean 44.09 Mbps)
- **Flow 2 Egress** (mean 44.06 Mbps)
- **Flow 3 Ingress** (mean 19.73 Mbps)
- **Flow 3 Egress** (mean 19.62 Mbps)
Run 9: Statistics of TaoVA-100x

Start at: 2018-08-22 21:55:19
End at: 2018-08-22 21:55:49
Local clock offset: 2.058 ms
Remote clock offset: -63.848 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.65 Mbit/s
95th percentile per-packet one-way delay: 57.375 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 55.27 Mbit/s
95th percentile per-packet one-way delay: 57.193 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 46.99 Mbit/s
95th percentile per-packet one-way delay: 39.502 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 24.38 Mbit/s
95th percentile per-packet one-way delay: 58.136 ms
Loss rate: 1.99%
Run 9: Report of TaoVA-100x — Data Link

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

- **Flow 1 Ingress**: mean 55.36 Mbit/s
- **Flow 1 Egress**: mean 55.27 Mbit/s
- **Flow 2 Ingress**: mean 47.02 Mbit/s
- **Flow 2 Egress**: mean 46.99 Mbit/s
- **Flow 3 Ingress**: mean 24.82 Mbit/s
- **Flow 3 Egress**: mean 24.38 Mbit/s

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

- **Flow 1 (95th Percentile)**: 57.19 ms
- **Flow 2 (95th Percentile)**: 39.50 ms
- **Flow 3 (95th Percentile)**: 58.14 ms
Run 10: Statistics of TaoVA-100x

Start at: 2018-08-22 22:15:25
End at: 2018-08-22 22:15:55
Local clock offset: 2.355 ms
Remote clock offset: -61.414 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.72 Mbit/s
95th percentile per-packet one-way delay: 47.352 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 57.97 Mbit/s
95th percentile per-packet one-way delay: 47.047 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 39.49 Mbit/s
95th percentile per-packet one-way delay: 47.399 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 31.54 Mbit/s
95th percentile per-packet one-way delay: 47.655 ms
Loss rate: 4.31%
Run 10: Report of TaoVA-100x — Data Link

![Graph showing network performance metrics over time.]
Run 1: Statistics of TCP Vegas

Start at: 2018-08-22 19:10:01
End at: 2018-08-22 19:10:31
Local clock offset: 0.895 ms
Remote clock offset: -63.169 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 96.26 Mbit/s
  95th percentile per-packet one-way delay: 20.413 ms
  Loss rate: 0.09%
-- Flow 1:
  Average throughput: 59.50 Mbit/s
  95th percentile per-packet one-way delay: 20.465 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 37.53 Mbit/s
  95th percentile per-packet one-way delay: 20.346 ms
  Loss rate: 0.11%
-- Flow 3:
  Average throughput: 35.48 Mbit/s
  95th percentile per-packet one-way delay: 20.502 ms
  Loss rate: 0.25%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2018-08-22 19:30:21
End at: 2018-08-22 19:30:51
Local clock offset: -0.416 ms
Remote clock offset: -64.793 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 86.66 Mbit/s
  95th percentile per-packet one-way delay: 30.173 ms
  Loss rate: 0.10%
-- Flow 1:
  Average throughput: 55.68 Mbit/s
  95th percentile per-packet one-way delay: 28.194 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 31.04 Mbit/s
  95th percentile per-packet one-way delay: 36.572 ms
  Loss rate: 0.14%
-- Flow 3:
  Average throughput: 31.12 Mbit/s
  95th percentile per-packet one-way delay: 27.447 ms
  Loss rate: 0.28%
Run 2: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 55.66 Mbit/s)
- Flow 1 egress (mean 55.68 Mbit/s)
- Flow 2 ingress (mean 31.04 Mbit/s)
- Flow 2 egress (mean 31.04 Mbit/s)
- Flow 3 ingress (mean 31.13 Mbit/s)
- Flow 3 egress (mean 31.12 Mbit/s)

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

- Flow 1 (95th percentile 28.19 ms)
- Flow 2 (95th percentile 36.57 ms)
- Flow 3 (95th percentile 27.45 ms)
Run 3: Statistics of TCP Vegas

Start at: 2018-08-22 19:50:05
End at: 2018-08-22 19:50:35
Local clock offset: 1.229 ms
Remote clock offset: -64.689 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.13 Mbit/s
95th percentile per-packet one-way delay: 34.538 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 48.45 Mbit/s
95th percentile per-packet one-way delay: 34.063 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 33.01 Mbit/s
95th percentile per-packet one-way delay: 37.809 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 38.28 Mbit/s
95th percentile per-packet one-way delay: 26.817 ms
Loss rate: 0.27%
Run 3: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 48.44 Mbit/s)
- Flow 1 egress (mean 48.45 Mbit/s)
- Flow 2 ingress (mean 33.00 Mbit/s)
- Flow 2 egress (mean 33.01 Mbit/s)
- Flow 3 ingress (mean 38.29 Mbit/s)
- Flow 3 egress (mean 30.28 Mbit/s)
Run 4: Statistics of TCP Vegas

Start at: 2018-08-22 20:10:10
End at: 2018-08-22 20:10:40
Local clock offset: 0.381 ms
Remote clock offset: -63.783 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 76.16 Mbit/s
  95th percentile per-packet one-way delay: 33.333 ms
  Loss rate: 0.12%
-- Flow 1:
  Average throughput: 40.71 Mbit/s
  95th percentile per-packet one-way delay: 30.308 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 42.24 Mbit/s
  95th percentile per-packet one-way delay: 36.370 ms
  Loss rate: 0.14%
-- Flow 3:
  Average throughput: 22.04 Mbit/s
  95th percentile per-packet one-way delay: 35.385 ms
  Loss rate: 0.37%
Run 4: Report of TCP Vegas — Data Link

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

- **Flow 1 Ingress (mean 40.69 Mbit/s)**
- **Flow 1 Egress (mean 40.71 Mbit/s)**
- **Flow 2 Ingress (mean 42.25 Mbit/s)**
- **Flow 2 Egress (mean 42.24 Mbit/s)**
- **Flow 3 Ingress (mean 22.07 Mbit/s)**
- **Flow 3 Egress (mean 22.04 Mbit/s)**

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

- **Flow 1 (95th percentile 30.31 ms)**
- **Flow 2 (95th percentile 36.37 ms)**
- **Flow 3 (95th percentile 35.38 ms)**

271
Run 5: Statistics of TCP Vegas

Start at: 2018-08-22 20:30:02
End at: 2018-08-22 20:30:32
Local clock offset: 2.516 ms
Remote clock offset: -63.724 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.40 Mbit/s
95th percentile per-packet one-way delay: 31.469 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 55.21 Mbit/s
95th percentile per-packet one-way delay: 30.372 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 37.72 Mbit/s
95th percentile per-packet one-way delay: 30.479 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 24.32 Mbit/s
95th percentile per-packet one-way delay: 46.006 ms
Loss rate: 0.36%
Run 5: Report of TCP Vegas — Data Link

![Graph showing throughput and packet loss](image1)

**Throughput (Mbit/s)**
- Flow 1 ingress (mean 55.19 Mbit/s)
- Flow 2 ingress (mean 37.72 Mbit/s)
- Flow 3 ingress (mean 24.34 Mbit/s)
- Flow 1 egress (mean 55.21 Mbit/s)
- Flow 2 egress (mean 37.72 Mbit/s)
- Flow 3 egress (mean 24.32 Mbit/s)

![Graph showing packet loss](image2)

**Per-packet one-way delay (ms)**
- Flow 1 (95th percentile 30.37 ms)
- Flow 2 (95th percentile 30.48 ms)
- Flow 3 (95th percentile 46.01 ms)
Run 6: Statistics of TCP Vegas

Start at: 2018-08-22 20:49:55
End at: 2018-08-22 20:50:25
Local clock offset: 3.519 ms
Remote clock offset: -64.986 ms

# Below is generated by plot.py at 2018-08-22 22:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.52 Mbit/s
95th percentile per-packet one-way delay: 32.559 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 56.61 Mbit/s
95th percentile per-packet one-way delay: 32.373 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 28.88 Mbit/s
95th percentile per-packet one-way delay: 29.265 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 38.23 Mbit/s
95th percentile per-packet one-way delay: 36.245 ms
Loss rate: 0.27%
Run 6: Report of TCP Vegas — Data Link

![Graph of throughput vs time showing three flows]

- **Flow 1 ingress** (mean 56.60 Mbit/s)
- **Flow 1 egress** (mean 56.61 Mbit/s)
- **Flow 2 ingress** (mean 28.87 Mbit/s)
- **Flow 2 egress** (mean 28.88 Mbit/s)
- **Flow 3 ingress** (mean 38.24 Mbit/s)
- **Flow 3 egress** (mean 38.23 Mbit/s)

![Graph of per-packet round-trip delay vs time showing three flows]

- **Flow 1** (95th percentile 32.37 ms)
- **Flow 2** (95th percentile 29.27 ms)
- **Flow 3** (95th percentile 36.24 ms)
Run 7: Statistics of TCP Vegas

Start at: 2018-08-22 21:10:11  
End at: 2018-08-22 21:10:41  
Local clock offset: 1.739 ms  
Remote clock offset: -64.732 ms  

# Below is generated by plot.py at 2018-08-22 22:44:14  
# Datalink statistics  
-- Total of 3 flows:  
   Average throughput: 88.89 Mbit/s  
   95th percentile per-packet one-way delay: 31.165 ms  
   Loss rate: 0.10%  
   -- Flow 1:  
   Average throughput: 54.08 Mbit/s  
   95th percentile per-packet one-way delay: 31.122 ms  
   Loss rate: 0.05%  
   -- Flow 2:  
   Average throughput: 33.41 Mbit/s  
   95th percentile per-packet one-way delay: 28.945 ms  
   Loss rate: 0.10%  
   -- Flow 3:  
   Average throughput: 37.86 Mbit/s  
   95th percentile per-packet one-way delay: 36.573 ms  
   Loss rate: 0.30%
Run 7: Report of TCP Vegas — Data Link

![Graph of throughput and packet delay over time for three flows with specified mean rates and 95th percentile delays.](image-url)
Run 8: Statistics of TCP Vegas

Start at: 2018-08-22 21:30:21
End at: 2018-08-22 21:30:51
Local clock offset: 0.243 ms
Remote clock offset: -64.741 ms

# Below is generated by plot.py at 2018-08-22 22:44:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.08 Mbit/s
95th percentile per-packet one-way delay: 31.784 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 53.00 Mbit/s
95th percentile per-packet one-way delay: 29.542 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 31.29 Mbit/s
95th percentile per-packet one-way delay: 37.504 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 30.84 Mbit/s
95th percentile per-packet one-way delay: 30.057 ms
Loss rate: 0.32%
Run 8: Report of TCP Vegas — Data Link
Run 9: Statistics of TCP Vegas

Start at: 2018-08-22 21:50:35
End at: 2018-08-22 21:51:05
Local clock offset: 1.767 ms
Remote clock offset: -63.048 ms

# Below is generated by plot.py at 2018-08-22 22:44:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 20.831 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 55.00 Mbit/s
95th percentile per-packet one-way delay: 20.814 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 48.15 Mbit/s
95th percentile per-packet one-way delay: 20.601 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 24.62 Mbit/s
95th percentile per-packet one-way delay: 21.092 ms
Loss rate: 0.26%
Run 10: Statistics of TCP Vegas

Start at: 2018-08-22 22:10:41
End at: 2018-08-22 22:11:11
Local clock offset: 1.596 ms
Remote clock offset: -62.6 ms

# Below is generated by plot.py at 2018-08-22 22:44:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.26 Mbit/s
  95th percentile per-packet one-way delay: 22.021 ms
  Loss rate: 0.09%
-- Flow 1:
  Average throughput: 59.12 Mbit/s
  95th percentile per-packet one-way delay: 22.063 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 35.95 Mbit/s
  95th percentile per-packet one-way delay: 21.279 ms
  Loss rate: 0.12%
-- Flow 3:
  Average throughput: 34.64 Mbit/s
  95th percentile per-packet one-way delay: 23.029 ms
  Loss rate: 0.22%
Run 10: Report of TCP Vegas — Data Link

![Graph showing throughput and packet round-trip delay over time for different flows.]
Run 1: Statistics of Verus

Start at: 2018-08-22 19:13:36  
End at: 2018-08-22 19:14:06  
Local clock offset: 1.613 ms  
Remote clock offset: -64.169 ms

# Below is generated by plot.py at 2018-08-22 22:44:22  
# Datalink statistics  
-- Total of 3 flows:
Average throughput: 79.16 Mbit/s
95th percentile per-packet one-way delay: 48.175 ms
Loss rate: 0.20%

-- Flow 1:
Average throughput: 42.64 Mbit/s
95th percentile per-packet one-way delay: 48.221 ms
Loss rate: 0.09%

-- Flow 2:
Average throughput: 45.34 Mbit/s
95th percentile per-packet one-way delay: 44.670 ms
Loss rate: 0.27%

-- Flow 3:
Average throughput: 19.08 Mbit/s
95th percentile per-packet one-way delay: 65.968 ms
Loss rate: 0.68%
Run 1: Report of Verus — Data Link

![Graph showing throughput and packet delay over time for different flows.]
Run 2: Statistics of Verus

Start at: 2018-08-22 19:33:50
End at: 2018-08-22 19:34:20
Local clock offset: 2.758 ms
Remote clock offset: -65.751 ms

# Below is generated by plot.py at 2018-08-22 22:44:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.98 Mbit/s
95th percentile per-packet one-way delay: 49.083 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 46.58 Mbit/s
95th percentile per-packet one-way delay: 45.081 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 30.93 Mbit/s
95th percentile per-packet one-way delay: 53.768 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 20.53 Mbit/s
95th percentile per-packet one-way delay: 54.943 ms
Loss rate: 0.16%
Run 2: Report of Verus — Data Link

![Graph of throughput and packet loss](image-url)
Run 3: Statistics of Verus

Start at: 2018-08-22 19:53:37
End at: 2018-08-22 19:54:07
Local clock offset: -0.2 ms
Remote clock offset: -64.616 ms

# Below is generated by plot.py at 2018-08-22 22:44:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.42 Mbit/s
95th percentile per-packet one-way delay: 49.075 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 48.90 Mbit/s
95th percentile per-packet one-way delay: 45.613 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 33.37 Mbit/s
95th percentile per-packet one-way delay: 50.893 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 34.12 Mbit/s
95th percentile per-packet one-way delay: 54.599 ms
Loss rate: 0.49%
Run 3: Report of Verus — Data Link

---

The graphs depict the throughput and packet delivery latency for three flows:

- **Flow 1**: Ingress (mean 48.93 Mbps) and Egress (mean 48.90 Mbps)
- **Flow 2**: Ingress (mean 33.41 Mbps) and Egress (mean 33.37 Mbps)
- **Flow 3**: Ingress (mean 34.20 Mbps) and Egress (mean 34.12 Mbps)

The throughput graph shows a steady increase over time, with slight fluctuations.

The packet delivery latency graph indicates a lower response time, with some variation throughout the observation period.

---

289
Run 4: Statistics of Verus

Start at: 2018-08-22 20:13:40
End at: 2018-08-22 20:14:10
Local clock offset: 1.756 ms
Remote clock offset: -62.884 ms

# Below is generated by plot.py at 2018-08-22 22:45:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.28 Mbit/s
95th percentile per-packet one-way delay: 43.597 ms
Loss rate: 0.27%

-- Flow 1:
Average throughput: 48.19 Mbit/s
95th percentile per-packet one-way delay: 44.646 ms
Loss rate: 0.17%

-- Flow 2:
Average throughput: 35.30 Mbit/s
95th percentile per-packet one-way delay: 46.798 ms
Loss rate: 0.20%

-- Flow 3:
Average throughput: 47.02 Mbit/s
95th percentile per-packet one-way delay: 43.140 ms
Loss rate: 0.65%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

Start at: 2018-08-22 20:33:33
End at: 2018-08-22 20:34:03
Local clock offset: 2.19 ms
Remote clock offset: -64.187 ms

# Below is generated by plot.py at 2018-08-22 22:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.22 Mbit/s
95th percentile per-packet one-way delay: 49.224 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 54.96 Mbit/s
95th percentile per-packet one-way delay: 45.232 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 33.20 Mbit/s
95th percentile per-packet one-way delay: 51.352 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 21.56 Mbit/s
95th percentile per-packet one-way delay: 63.538 ms
Loss rate: 0.70%
Run 5: Report of Verus — Data Link

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

- Flow 1 ingress (mean 55.01 Mbit/s)
- Flow 1 egress (mean 54.96 Mbit/s)
- Flow 2 ingress (mean 33.23 Mbit/s)
- Flow 2 egress (mean 33.20 Mbit/s)
- Flow 3 ingress (mean 21.64 Mbit/s)
- Flow 3 egress (mean 21.56 Mbit/s)

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

- Flow 1 (95th percentile 45.23 ms)
- Flow 2 (95th percentile 51.35 ms)
- Flow 3 (95th percentile 61.54 ms)
Run 6: Statistics of Verus

Start at: 2018-08-22 20:53:27
End at: 2018-08-22 20:53:57
Local clock offset: 1.139 ms
Remote clock offset: -64.11 ms

# Below is generated by plot.py at 2018-08-22 22:45:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.09 Mbit/s
95th percentile per-packet one-way delay: 43.581 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 54.42 Mbit/s
95th percentile per-packet one-way delay: 41.160 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 30.12 Mbit/s
95th percentile per-packet one-way delay: 52.188 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 22.96 Mbit/s
95th percentile per-packet one-way delay: 53.036 ms
Loss rate: 0.48%
Run 6: Report of Verus — Data Link

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

- **Flow 1 Ingress (mean 54.48 Mbps)**
- **Flow 1 Egress (mean 54.42 Mbps)**
- **Flow 2 Ingress (mean 30.15 Mbps)**
- **Flow 2 Egress (mean 30.12 Mbps)**
- **Flow 3 Ingress (mean 23.01 Mbps)**
- **Flow 3 Egress (mean 22.96 Mbps)**

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

- **Flow 1 (95th percentile 41.16 ms)**
- **Flow 2 (95th percentile 52.19 ms)**
- **Flow 3 (95th percentile 53.04 ms)**
Run 7: Statistics of Verus

End at: 2018-08-22 21:14:18
Local clock offset: 2.03 ms
Remote clock offset: -64.397 ms

# Below is generated by plot.py at 2018-08-22 22:45:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 80.60 Mbit/s
  95th percentile per-packet one-way delay: 44.397 ms
  Loss rate: 0.11%
-- Flow 1:
  Average throughput: 50.72 Mbit/s
  95th percentile per-packet one-way delay: 42.727 ms
  Loss rate: 0.08%
-- Flow 2:
  Average throughput: 33.59 Mbit/s
  95th percentile per-packet one-way delay: 46.757 ms
  Loss rate: 0.05%
-- Flow 3:
  Average throughput: 22.69 Mbit/s
  95th percentile per-packet one-way delay: 53.802 ms
  Loss rate: 0.45%
Run 7: Report of Verus — Data Link

![Graph of Throughput and Per-packet end-to-end delay over time for different flows.](image-url)
Run 8: Statistics of Verus

Start at: 2018-08-22 21:33:54
End at: 2018-08-22 21:34:24
Local clock offset: 1.01 ms
Remote clock offset: -63.89 ms

# Below is generated by plot.py at 2018-08-22 22:45:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.91 Mbit/s
  95th percentile per-packet one-way delay: 50.565 ms
  Loss rate: 0.28%
-- Flow 1:
  Average throughput: 48.99 Mbit/s
  95th percentile per-packet one-way delay: 48.517 ms
  Loss rate: 0.19%
-- Flow 2:
  Average throughput: 33.53 Mbit/s
  95th percentile per-packet one-way delay: 53.793 ms
  Loss rate: 0.27%
-- Flow 3:
  Average throughput: 38.03 Mbit/s
  95th percentile per-packet one-way delay: 52.487 ms
  Loss rate: 0.66%
Run 8: Report of Verus — Data Link

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

- **Flow 1 ingress** (mean 49.05 Mbps/s)
- **Flow 1 egress** (mean 48.99 Mbps/s)
- **Flow 2 ingress** (mean 33.38 Mbps/s)
- **Flow 2 egress** (mean 33.53 Mbps/s)
- **Flow 3 ingress** (mean 38.19 Mbps/s)
- **Flow 3 egress** (mean 30.03 Mbps/s)

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

- **Flow 1** (95th percentile 48.52 ms)
- **Flow 2** (95th percentile 53.79 ms)
- **Flow 3** (95th percentile 52.49 ms)
Run 9: Statistics of Verus

Start at: 2018-08-22 21:54:08
End at: 2018-08-22 21:54:38
Local clock offset: 3.499 ms
Remote clock offset: -63.184 ms

# Below is generated by plot.py at 2018-08-22 22:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.39 Mbit/s
95th percentile per-packet one-way delay: 44.937 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 54.52 Mbit/s
95th percentile per-packet one-way delay: 43.947 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 48.83 Mbit/s
95th percentile per-packet one-way delay: 43.900 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 25.20 Mbit/s
95th percentile per-packet one-way delay: 58.378 ms
Loss rate: 0.67%
Run 9: Report of Verus — Data Link
Run 10: Statistics of Verus

Start at: 2018-08-22 22:14:13
End at: 2018-08-22 22:14:43
Local clock offset: 2.171 ms
Remote clock offset: -62.071 ms

# Below is generated by plot.py at 2018-08-22 22:45:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.45 Mbit/s
  95th percentile per-packet one-way delay: 42.717 ms
  Loss rate: 0.31%
-- Flow 1:
  Average throughput: 55.56 Mbit/s
  95th percentile per-packet one-way delay: 42.491 ms
  Loss rate: 0.21%
-- Flow 2:
  Average throughput: 35.14 Mbit/s
  95th percentile per-packet one-way delay: 50.581 ms
  Loss rate: 0.35%
-- Flow 3:
  Average throughput: 46.78 Mbit/s
  95th percentile per-packet one-way delay: 42.601 ms
  Loss rate: 0.62%
Run 10: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2018-08-22 19:18:34
End at: 2018-08-22 19:19:04
Local clock offset: 2.781 ms
Remote clock offset: -64.246 ms

# Below is generated by plot.py at 2018-08-22 22:45:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.09 Mbit/s
95th percentile per-packet one-way delay: 62.611 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 27.11 Mbit/s
95th percentile per-packet one-way delay: 61.574 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 18.14 Mbit/s
95th percentile per-packet one-way delay: 43.423 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 12.74 Mbit/s
95th percentile per-packet one-way delay: 78.746 ms
Loss rate: 1.08%
Run 1: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 27.24 Mbit/s)
- Flow 1 egress (mean 27.11 Mbit/s)
- Flow 2 ingress (mean 18.18 Mbit/s)
- Flow 2 egress (mean 18.14 Mbit/s)
- Flow 3 ingress (mean 12.84 Mbit/s)
- Flow 3 egress (mean 12.74 Mbit/s)

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

- Flow 1 (95th percentile 61.57 ms)
- Flow 2 (95th percentile 43.42 ms)
- Flow 3 (95th percentile 78.75 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-08-22 19:38:34
End at: 2018-08-22 19:39:04
Local clock offset: ~0.44 ms
Remote clock offset: ~65.245 ms

# Below is generated by plot.py at 2018-08-22 22:45:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.37 Mbit/s
95th percentile per-packet one-way delay: 45.346 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 35.77 Mbit/s
95th percentile per-packet one-way delay: 46.361 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 29.34 Mbit/s
95th percentile per-packet one-way delay: 43.785 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 9.37 Mbit/s
95th percentile per-packet one-way delay: 22.064 ms
Loss rate: 0.42%
Run 2: Report of PCC-Vivace — Data Link

![Throughput Graph]

- **Flow 1 ingress** (mean 35.66 Mbit/s)
- **Flow 1 egress** (mean 35.77 Mbit/s)
- **Flow 2 ingress** (mean 29.40 Mbit/s)
- **Flow 2 egress** (mean 29.34 Mbit/s)
- **Flow 3 ingress** (mean 9.38 Mbit/s)
- **Flow 3 egress** (mean 9.37 Mbit/s)

![Per-packet one-way delay Graph]

- **Flow 1 (95th percentile 46.36 ms)**
- **Flow 2 (95th percentile 43.78 ms)**
- **Flow 3 (95th percentile 22.06 ms)**
Run 3: Statistics of PCC-Vivace

Start at: 2018-08-22 19:58:36
End at: 2018-08-22 19:59:06
Local clock offset: 1.581 ms
Remote clock offset: -63.527 ms

# Below is generated by plot.py at 2018-08-22 22:46:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 66.91 Mbit/s
  95th percentile per-packet one-way delay: 48.950 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 45.63 Mbit/s
  95th percentile per-packet one-way delay: 40.710 ms
  Loss rate: 0.16%
-- Flow 2:
  Average throughput: 25.02 Mbit/s
  95th percentile per-packet one-way delay: 61.418 ms
  Loss rate: 1.56%
-- Flow 3:
  Average throughput: 14.05 Mbit/s
  95th percentile per-packet one-way delay: 27.206 ms
  Loss rate: 0.39%
Run 3: Report of PCC-Vivace — Data Link

[Graph showing throughput over time for different flows]

[Graph showing per-packet round-trip delay over time for different flows]

Flow 1 ingress (mean 45.67 Mbit/s)  
Flow 1 egress (mean 45.63 Mbit/s)  
Flow 2 ingress (mean 25.37 Mbit/s)  
Flow 2 egress (mean 25.02 Mbit/s)  
Flow 3 ingress (mean 14.07 Mbit/s)  
Flow 3 egress (mean 14.05 Mbit/s)  

Flow 1 (95th percentile 40.71 ms)  
Flow 2 (95th percentile 61.42 ms)  
Flow 3 (95th percentile 27.21 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2018-08-22 20:18:29
End at: 2018-08-22 20:18:59
Local clock offset: 0.188 ms
Remote clock offset: -63.4 ms

# Below is generated by plot.py at 2018-08-22 22:46:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.91 Mbit/s
95th percentile per-packet one-way delay: 23.813 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 54.85 Mbit/s
95th percentile per-packet one-way delay: 24.886 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 38.65 Mbit/s
95th percentile per-packet one-way delay: 22.479 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 19.24 Mbit/s
95th percentile per-packet one-way delay: 25.436 ms
Loss rate: 0.33%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2018-08-22 20:38:20
End at: 2018-08-22 20:38:50
Local clock offset: 1.464 ms
Remote clock offset: -63.884 ms

# Below is generated by plot.py at 2018-08-22 22:46:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 65.03 Mbit/s
  95th percentile per-packet one-way delay: 45.102 ms
  Loss rate: 2.08%
-- Flow 1:
  Average throughput: 39.57 Mbit/s
  95th percentile per-packet one-way delay: 46.458 ms
  Loss rate: 3.17%
-- Flow 2:
  Average throughput: 34.36 Mbit/s
  95th percentile per-packet one-way delay: 42.382 ms
  Loss rate: 0.29%
-- Flow 3:
  Average throughput: 7.93 Mbit/s
  95th percentile per-packet one-way delay: 23.126 ms
  Loss rate: 0.79%
Run 5: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 40.83 Mbit/s)
- Flow 1 egress (mean 39.57 Mbit/s)
- Flow 2 ingress (mean 34.42 Mbit/s)
- Flow 2 egress (mean 34.36 Mbit/s)
- Flow 3 ingress (mean 7.97 Mbit/s)
- Flow 3 egress (mean 7.93 Mbit/s)

![Graph 2: Per-packet round-trip delay vs Time](image2)

- Flow 1 (95th percentile 46.46 ms)
- Flow 2 (95th percentile 42.38 ms)
- Flow 3 (95th percentile 23.13 ms)
Run 6: Statistics of PCC-Vivace

Start at: 2018-08-22 20:58:31
End at: 2018-08-22 20:59:01
Local clock offset: 2.76 ms
Remote clock offset: -64.33 ms

# Below is generated by plot.py at 2018-08-22 22:46:23
# Datalink statistics
-- Total of 3 flows:
    Average throughput: 75.31 Mbit/s
    95th percentile per-packet one-way delay: 51.925 ms
    Loss rate: 0.74%
-- Flow 1:
    Average throughput: 49.24 Mbit/s
    95th percentile per-packet one-way delay: 51.320 ms
    Loss rate: 0.72%
-- Flow 2:
    Average throughput: 31.60 Mbit/s
    95th percentile per-packet one-way delay: 42.071 ms
    Loss rate: 0.26%
-- Flow 3:
    Average throughput: 15.35 Mbit/s
    95th percentile per-packet one-way delay: 62.257 ms
    Loss rate: 2.80%
Run 6: Report of PCC-Vivace — Data Link
Run 7: Statistics of PCC-Vivace

Start at: 2018-08-22 21:18:39
End at: 2018-08-22 21:19:09
Local clock offset: 1.163 ms
Remote clock offset: -64.65 ms

# Below is generated by plot.py at 2018-08-22 22:46:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 73.61 Mbit/s
  95th percentile per-packet one-way delay: 43.728 ms
  Loss rate: 0.36%
-- Flow 1:
  Average throughput: 46.96 Mbit/s
  95th percentile per-packet one-way delay: 45.780 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 25.71 Mbit/s
  95th percentile per-packet one-way delay: 49.322 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 28.94 Mbit/s
  95th percentile per-packet one-way delay: 21.968 ms
  Loss rate: 0.33%
Run 7: Report of PCC-Vivace — Data Link

---

**Graph 1: Throughput (Mbps)**

- Flow 1 ingress (mean 47.13 Mbps)
- Flow 1 egress (mean 46.96 Mbps)
- Flow 2 ingress (mean 25.74 Mbps)
- Flow 2 egress (mean 25.71 Mbps)
- Flow 3 ingress (mean 28.96 Mbps)
- Flow 3 egress (mean 26.94 Mbps)

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

- Flow 1 (95th percentile 45.78 ms)
- Flow 2 (95th percentile 49.32 ms)
- Flow 3 (95th percentile 21.97 ms)

---

317
Run 8: Statistics of PCC-Vivace

Start at: 2018-08-22 21:38:53
End at: 2018-08-22 21:39:23
Local clock offset: -0.702 ms
Remote clock offset: -63.512 ms

# Below is generated by plot.py at 2018-08-22 22:46:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.02 Mbit/s
95th percentile per-packet one-way delay: 43.726 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 61.81 Mbit/s
95th percentile per-packet one-way delay: 43.848 ms
Loss rate: 3.81%
-- Flow 2:
Average throughput: 24.82 Mbit/s
95th percentile per-packet one-way delay: 44.153 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 14.27 Mbit/s
95th percentile per-packet one-way delay: 32.390 ms
Loss rate: 0.85%
Run 8: Report of PCC-Vivace — Data Link

---

**Throughput (Mbps)**

- Flow 1 ingress (mean 64.19 Mbps)
- Flow 1 egress (mean 61.81 Mbps)
- Flow 2 ingress (mean 24.93 Mbps)
- Flow 2 egress (mean 24.82 Mbps)
- Flow 3 ingress (mean 14.35 Mbps)
- Flow 3 egress (mean 14.27 Mbps)

---

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

- Flow 1 (95th percentile 43.85 ms)
- Flow 2 (95th percentile 44.15 ms)
- Flow 3 (95th percentile 32.39 ms)
Run 9: Statistics of PCC-Vivace

Start at: 2018-08-22 21:58:55
End at: 2018-08-22 21:59:25
Local clock offset: 0.974 ms
Remote clock offset: -63.167 ms

# Below is generated by plot.py at 2018-08-22 22:46:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.94 Mbit/s
95th percentile per-packet one-way delay: 47.192 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 54.83 Mbit/s
95th percentile per-packet one-way delay: 40.593 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 36.46 Mbit/s
95th percentile per-packet one-way delay: 48.599 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 26.89 Mbit/s
95th percentile per-packet one-way delay: 49.542 ms
Loss rate: 0.35%
Run 10: Statistics of PCC-Vivace

Start at: 2018-08-22 22:19:02
End at: 2018-08-22 22:19:32
Local clock offset: 2.648 ms
Remote clock offset: -61.188 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.97 Mbit/s
95th percentile per-packet one-way delay: 47.908 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 52.34 Mbit/s
95th percentile per-packet one-way delay: 34.822 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 38.39 Mbit/s
95th percentile per-packet one-way delay: 26.767 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 24.58 Mbit/s
95th percentile per-packet one-way delay: 61.625 ms
Loss rate: 1.76%
Run 10: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 52.39 Mbit/s)
- Flow 1 egress (mean 52.34 Mbit/s)
- Flow 2 ingress (mean 38.38 Mbit/s)
- Flow 2 egress (mean 38.39 Mbit/s)
- Flow 3 ingress (mean 24.95 Mbit/s)
- Flow 3 egress (mean 24.58 Mbit/s)

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

- Flow 1 (95th percentile 34.82 ms)
- Flow 2 (95th percentile 26.77 ms)
- Flow 3 (95th percentile 61.62 ms)
Run 1: Statistics of WebRTC media

Start at: 2018-08-22 19:00:02
End at: 2018-08-22 19:00:32
Local clock offset: 1.475 ms
Remote clock offset: -63.829 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 19.883 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 19.747 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 19.824 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 20.556 ms
Loss rate: 0.01%
Run 1: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 1.61 Mbps)
- Flow 1 egress (mean 1.61 Mbps)
- Flow 2 ingress (mean 0.96 Mbps)
- Flow 2 egress (mean 0.96 Mbps)
- Flow 3 ingress (mean 0.47 Mbps)
- Flow 3 egress (mean 0.47 Mbps)

![Graph 2: Per-packet end-to-end delay (ms) over time](image2)

- Flow 1 (95th percentile 19.75 ms)
- Flow 2 (95th percentile 19.82 ms)
- Flow 3 (95th percentile 20.56 ms)
Run 2: Statistics of WebRTC media

Start at: 2018-08-22 19:20:53
End at: 2018-08-22 19:21:23
Local clock offset: -0.462 ms
Remote clock offset: -64.421 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
    Average throughput: 3.02 Mbit/s
    95th percentile per-packet one-way delay: 19.386 ms
    Loss rate: 0.10%
-- Flow 1:
    Average throughput: 1.63 Mbit/s
    95th percentile per-packet one-way delay: 19.602 ms
    Loss rate: 0.10%
-- Flow 2:
    Average throughput: 0.99 Mbit/s
    95th percentile per-packet one-way delay: 19.161 ms
    Loss rate: 0.01%
-- Flow 3:
    Average throughput: 0.40 Mbit/s
    95th percentile per-packet one-way delay: 19.189 ms
    Loss rate: 0.30%
Run 2: Report of WebRTC media — Data Link

![Graphs showing network throughput and packet delay over time for different flows.](image-url)
Run 3: Statistics of WebRTC media

Start at: 2018-08-22 19:40:51
End at: 2018-08-22 19:41:21
Local clock offset: 2.093 ms
Remote clock offset: -65.528 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 22.179 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 22.083 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 21.993 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 22.885 ms
Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

---

**Diagram 1:**
Throughput (Mbps)

- **Flow 1 ingress (mean 1.62 Mbit/s)**
- **Flow 1 egress (mean 1.62 Mbit/s)**
- **Flow 2 ingress (mean 1.02 Mbit/s)**
- **Flow 2 egress (mean 1.03 Mbit/s)**
- **Flow 3 ingress (mean 0.44 Mbit/s)**
- **Flow 3 egress (mean 0.44 Mbit/s)**

**Diagram 2:**
Per packet one-way delay [ms]

- **Flow 1 (95th percentile 22.08 ms)**
- **Flow 2 (95th percentile 21.99 ms)**
- **Flow 3 (95th percentile 22.89 ms)**
Run 4: Statistics of WebRTC media

Start at: 2018-08-22 20:00:56
End at: 2018-08-22 20:01:26
Local clock offset: 3.176 ms
Remote clock offset: -63.71 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.06 Mbit/s
95th percentile per-packet one-way delay: 23.209 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 23.101 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 23.283 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 23.767 ms
Loss rate: 0.01%
Run 4: Report of WebRTC media — Data Link

[Data Link Diagram]

---

331
Run 5: Statistics of WebRTC media

Start at: 2018-08-22 20:20:49
End at: 2018-08-22 20:21:19
Local clock offset: 1.517 ms
Remote clock offset: -63.036 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 20.597 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 20.530 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 20.639 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 20.693 ms
Loss rate: 0.66%
Run 5: Report of WebRTC media — Data Link

---

**Throughput (Mbit/s)**

- Flow 1 ingress (mean 1.61 Mbit/s)
- Flow 1 egress (mean 1.61 Mbit/s)
- Flow 2 ingress (mean 1.02 Mbit/s)
- Flow 2 egress (mean 1.02 Mbit/s)
- Flow 3 ingress (mean 0.44 Mbit/s)
- Flow 3 egress (mean 0.43 Mbit/s)

**Packet One-Way Delay (ms)**

- Flow 1 (95th percentile 20.53 ms)
- Flow 2 (95th percentile 20.64 ms)
- Flow 3 (95th percentile 20.69 ms)
Run 6: Statistics of WebRTC media

Start at: 2018-08-22 20:40:36
End at: 2018-08-22 20:41:06
Local clock offset: 2.126 ms
Remote clock offset: -64.496 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.13 Mbit/s
95th percentile per-packet one-way delay: 21.624 ms
Loss rate: 0.09%

-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 21.598 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 21.645 ms
Loss rate: 0.01%

-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 21.627 ms
Loss rate: 0.55%
Run 6: Report of WebRTC media — Data Link

![Graph of throughput and packet loss over time]
Run 7: Statistics of WebRTC media

Start at: 2018-08-22 21:00:52
End at: 2018-08-22 21:01:22
Local clock offset: 1.32 ms
Remote clock offset: -64.928 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.99 Mbit/s
  95th percentile per-packet one-way delay: 19.852 ms
  Loss rate: 0.08%
-- Flow 1:
  Average throughput: 1.59 Mbit/s
  95th percentile per-packet one-way delay: 19.822 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.99 Mbit/s
  95th percentile per-packet one-way delay: 19.685 ms
  Loss rate: 0.03%
-- Flow 3:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 20.363 ms
  Loss rate: 0.00%
Run 7: Report of WebRTC media — Data Link

**Throughput (Mbps)**

- **Flow 1** ingress (mean 1.59 Mbps)  
- **Flow 1** egress (mean 1.59 Mbps)  
- **Flow 2** ingress (mean 0.99 Mbps)  
- **Flow 2** egress (mean 0.99 Mbps)  
- **Flow 3** ingress (mean 0.44 Mbps)  
- **Flow 3** egress (mean 0.44 Mbps)

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

- **Flow 1** (95th percentile 19.02 ms)  
- **Flow 2** (95th percentile 19.68 ms)  
- **Flow 3** (95th percentile 20.36 ms)
Run 8: Statistics of WebRTC media

Start at: 2018-08-22 21:20:59
End at: 2018-08-22 21:21:29
Local clock offset: 2.705 ms
Remote clock offset: -64.769 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.02 Mbit/s
95th percentile per-packet one-way delay: 22.306 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 22.143 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 22.969 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 22.072 ms
Loss rate: 0.00%
Run 8: Report of WebRTC media — Data Link
Run 9: Statistics of WebRTC media

Start at: 2018-08-22 21:41:14
End at: 2018-08-22 21:41:44
Local clock offset: 1.94 ms
Remote clock offset: -63.948 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.01 Mbit/s
  95th percentile per-packet one-way delay: 20.965 ms
  Loss rate: 0.12%
-- Flow 1:
  Average throughput: 1.61 Mbit/s
  95th percentile per-packet one-way delay: 20.948 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.98 Mbit/s
  95th percentile per-packet one-way delay: 20.978 ms
  Loss rate: 0.36%
-- Flow 3:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 20.951 ms
  Loss rate: 0.02%
Run 9: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 1.61 Mbps)
- Flow 1 egress (mean 1.61 Mbps)
- Flow 2 ingress (mean 0.98 Mbps)
- Flow 2 egress (mean 0.98 Mbps)
- Flow 3 ingress (mean 0.43 Mbps)
- Flow 3 egress (mean 0.43 Mbps)

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

- Flow 1 (95th percentile 20.95 ms)
- Flow 2 (95th percentile 20.98 ms)
- Flow 3 (95th percentile 20.95 ms)
Run 10: Statistics of WebRTC media

Start at: 2018-08-22 22:01:14
End at: 2018-08-22 22:01:44
Local clock offset: 2.01 ms
Remote clock offset: -63.399 ms

# Below is generated by plot.py at 2018-08-22 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 20.064 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 20.015 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 20.050 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 20.226 ms
Loss rate: 0.01%
Run 10: Report of WebRTC media — Data Link