Pantheon Report

Generated at 2018-07-04 14:44:01 (UTC).
Data path: India Ethernet (remote) \(\rightarrow\) 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.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
NTP offsets were measured against nets.org.sg and have been applied to correct the timestamps in logs.

Git summary:
branch: master @ 9250dbec7fb57193cddf1ba8c440b4e16ab30f0
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ 37162fe9af85249aeccac061c93e75640ef710b5
third_party/genericCC @ d0153f8e594a89e93b032143cedbdf5e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c0776e4d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d36bf9840f65b82ce8f464b1b39
third_party/pcc @ 1af958fa00d66d1b623c091a55fc872b4981e1
M receiver/src/core.cpp
M receiver/src/buffer.h
M sender/src/core.cpp
M sender/src/buffer.h
M tools/plot.py
third_party/pcc-experimental @ cd43e34e3f5f5613e8ac08fab92c4eb24f974ab
third_party/proto-quic @ 77961fa18273a86b42f1bc8143ebc978f3ceff42
third_party/scream-reproduce @ f099118d1421aa3131bf1ff1964974e1da3dbd2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af26295625f39f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211345ae071a32f96b7d8c504587f5d7f4
third_party/webRTC @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
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)

95th percentile one-way delay (ms)
0
20
40
60
80
100

Average throughput (Mbit/s)

FillP
FillP-Sheep
Copa
Indigo
QUIC Cubic
TCP Cubic
Sprout
PCC-Vivace
SCReAM
TCP Vegas
TCP BBR
Verus
PCC-Allegro
PCC-Expr
WebRTC media
TaoVA-100x
LEDBAT
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
</tr>
<tr>
<td>TCP BBR</td>
<td>10</td>
<td>58.74</td>
<td>39.83</td>
<td>33.07</td>
</tr>
<tr>
<td>Copa</td>
<td>10</td>
<td>46.06</td>
<td>32.70</td>
<td>27.53</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>10</td>
<td>58.06</td>
<td>38.76</td>
<td>31.91</td>
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<tr>
<td>FillP</td>
<td>10</td>
<td>58.78</td>
<td>37.88</td>
<td>28.67</td>
</tr>
<tr>
<td>FillP-Sheep</td>
<td>10</td>
<td>59.24</td>
<td>39.11</td>
<td>30.97</td>
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<tr>
<td>Indigo</td>
<td>10</td>
<td>55.48</td>
<td>38.25</td>
<td>30.04</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>10</td>
<td>50.81</td>
<td>36.45</td>
<td>32.02</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>10</td>
<td>46.15</td>
<td>37.04</td>
<td>24.43</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>10</td>
<td>50.64</td>
<td>27.34</td>
<td>29.00</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>10</td>
<td>55.10</td>
<td>37.53</td>
<td>34.43</td>
</tr>
<tr>
<td>SCReAM</td>
<td>10</td>
<td>0.21</td>
<td>0.21</td>
<td>0.22</td>
</tr>
<tr>
<td>Sprout</td>
<td>10</td>
<td>18.43</td>
<td>18.20</td>
<td>17.80</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>10</td>
<td>55.35</td>
<td>41.66</td>
<td>29.24</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>10</td>
<td>49.03</td>
<td>39.97</td>
<td>30.94</td>
</tr>
<tr>
<td>Verus</td>
<td>10</td>
<td>53.22</td>
<td>40.72</td>
<td>33.95</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>10</td>
<td>47.62</td>
<td>24.10</td>
<td>18.97</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>10</td>
<td>1.64</td>
<td>0.99</td>
<td>0.43</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-07-04 10:51:40
End at: 2018-07-04 10:52:10
Local clock offset: 0.298 ms
Remote clock offset: 0.127 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.05 Mbit/s
95th percentile per-packet one-way delay: 42.339 ms
Loss rate: 3.90%
-- Flow 1:
Average throughput: 56.37 Mbit/s
95th percentile per-packet one-way delay: 41.627 ms
Loss rate: 2.56%
-- Flow 2:
Average throughput: 37.02 Mbit/s
95th percentile per-packet one-way delay: 47.649 ms
Loss rate: 5.92%
-- Flow 3:
Average throughput: 48.27 Mbit/s
95th percentile per-packet one-way delay: 39.910 ms
Loss rate: 5.35%
Run 1: Report of TCP BBR — Data Link
Run 2: Statistics of TCP BBR

Start at: 2018-07-04 11:11:56
End at: 2018-07-04 11:12:26
Local clock offset: -1.291 ms
Remote clock offset: 2.806 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.82 Mbit/s
95th percentile per-packet one-way delay: 42.790 ms
Loss rate: 2.83%
-- Flow 1:
Average throughput: 56.22 Mbit/s
95th percentile per-packet one-way delay: 42.855 ms
Loss rate: 1.91%
-- Flow 2:
Average throughput: 36.62 Mbit/s
95th percentile per-packet one-way delay: 45.721 ms
Loss rate: 4.22%
-- Flow 3:
Average throughput: 48.87 Mbit/s
95th percentile per-packet one-way delay: 39.703 ms
Loss rate: 3.85%
Run 2: Report of TCP BBR — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 57.27 Mbps)
  - Flow 1 egress (mean 56.22 Mbps)
  - Flow 2 ingress (mean 38.18 Mbps)
  - Flow 2 egress (mean 36.62 Mbps)
  - Flow 3 ingress (mean 50.69 Mbps)
  - Flow 3 egress (mean 48.87 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 42.85 ms)
  - Flow 2 (95th percentile 45.72 ms)
  - Flow 3 (95th percentile 39.70 ms)
Run 3: Statistics of TCP BBR

Start at: 2018-07-04 11:32:25  
End at: 2018-07-04 11:32:55  
Local clock offset: 1.441 ms  
Remote clock offset: 3.477 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 96.83 Mbit/s
  95th percentile per-packet one-way delay: 55.741 ms
  Loss rate: 3.29%
-- Flow 1:
  Average throughput: 63.79 Mbit/s
  95th percentile per-packet one-way delay: 46.630 ms
  Loss rate: 2.37%
-- Flow 2:
  Average throughput: 37.03 Mbit/s
  95th percentile per-packet one-way delay: 62.229 ms
  Loss rate: 5.06%
-- Flow 3:
  Average throughput: 25.29 Mbit/s
  95th percentile per-packet one-way delay: 68.822 ms
  Loss rate: 4.88%
Run 3: Report of TCP BBR — Data Link
Run 4: Statistics of TCP BBR

Start at: 2018-07-04 11:53:25
End at: 2018-07-04 11:53:55
Local clock offset: -0.856 ms
Remote clock offset: 0.309 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.62 Mbit/s
95th percentile per-packet one-way delay: 51.919 ms
Loss rate: 3.95%
-- Flow 1:
Average throughput: 58.68 Mbit/s
95th percentile per-packet one-way delay: 47.481 ms
Loss rate: 2.71%
-- Flow 2:
Average throughput: 42.50 Mbit/s
95th percentile per-packet one-way delay: 52.241 ms
Loss rate: 5.76%
-- Flow 3:
Average throughput: 29.09 Mbit/s
95th percentile per-packet one-way delay: 54.761 ms
Loss rate: 5.91%
Run 4: Report of TCP BBR — Data Link

![Throughput Graph]

- **Flow 1 ingress (mean 60.23 Mbit/s)**
- **Flow 1 egress (mean 58.68 Mbit/s)**
- **Flow 2 ingress (mean 45.01 Mbit/s)**
- **Flow 2 egress (mean 42.50 Mbit/s)**
- **Flow 3 ingress (mean 30.79 Mbit/s)**
- **Flow 3 egress (mean 29.09 Mbit/s)**

![Delay Graph]

- **Flow 1 (95th percentile 47.48 ms)**
- **Flow 2 (95th percentile 52.24 ms)**
- **Flow 3 (95th percentile 54.76 ms)**

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Run 5: Statistics of TCP BBR

Start at: 2018-07-04 12:14:08
End at: 2018-07-04 12:14:38
Local clock offset: 0.648 ms
Remote clock offset: -3.477 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.47 Mbit/s
95th percentile per-packet one-way delay: 60.088 ms
Loss rate: 3.74%
-- Flow 1:
Average throughput: 55.05 Mbit/s
95th percentile per-packet one-way delay: 56.169 ms
Loss rate: 2.76%
-- Flow 2:
Average throughput: 46.81 Mbit/s
95th percentile per-packet one-way delay: 52.024 ms
Loss rate: 5.20%
-- Flow 3:
Average throughput: 24.89 Mbit/s
95th percentile per-packet one-way delay: 68.923 ms
Loss rate: 4.55%
Run 5: Report of TCP BBR — Data Link

![Graphs showing network traffic over time]

- **Flow 1 ingress** (mean 56.54 Mbit/s)
- **Flow 1 egress** (mean 55.05 Mbit/s)
- **Flow 2 ingress** (mean 49.27 Mbit/s)
- **Flow 2 egress** (mean 46.81 Mbit/s)
- **Flow 3 ingress** (mean 25.98 Mbit/s)
- **Flow 3 egress** (mean 24.89 Mbit/s)

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

  - **Flow 1** (95th percentile 56.17 ms)
  - **Flow 2** (95th percentile 52.02 ms)
  - **Flow 3** (95th percentile 68.92 ms)
Run 6: Statistics of TCP BBR

Start at: 2018-07-04 12:34:50
End at: 2018-07-04 12:35:20
Local clock offset: -0.833 ms
Remote clock offset: -8.522 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.74 Mbit/s
95th percentile per-packet one-way delay: 54.816 ms
Loss rate: 3.78%
-- Flow 1:
Average throughput: 55.28 Mbit/s
95th percentile per-packet one-way delay: 52.850 ms
Loss rate: 3.52%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 63.335 ms
Loss rate: 4.16%
-- Flow 3:
Average throughput: 46.94 Mbit/s
95th percentile per-packet one-way delay: 52.146 ms
Loss rate: 4.15%
Run 6: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 57.23 Mbit/s)
- Flow 1 egress (mean 55.28 Mbit/s)
- Flow 2 ingress (mean 37.39 Mbit/s)
- Flow 2 egress (mean 35.89 Mbit/s)
- Flow 3 ingress (mean 46.80 Mbit/s)
- Flow 3 egress (mean 46.94 Mbit/s)

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

- Flow 1 (95th percentile 52.85 ms)
- Flow 2 (95th percentile 63.34 ms)
- Flow 3 (95th percentile 52.15 ms)
Run 7: Statistics of TCP BBR

End at: 2018-07-04 12:56:17
Local clock offset: 1.59 ms
Remote clock offset: -7.927 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.79 Mbit/s
95th percentile per-packet one-way delay: 45.916 ms
Loss rate: 3.37%
-- Flow 1:
Average throughput: 55.43 Mbit/s
95th percentile per-packet one-way delay: 43.723 ms
Loss rate: 2.93%
-- Flow 2:
Average throughput: 48.23 Mbit/s
95th percentile per-packet one-way delay: 41.378 ms
Loss rate: 3.96%
-- Flow 3:
Average throughput: 24.87 Mbit/s
95th percentile per-packet one-way delay: 62.651 ms
Loss rate: 4.01%
Run 7: Report of TCP BBR — Data Link

![Graph showing throughput and one-way delay over time for different flows with specified statistical measures for ingress and egress rates.]

- Flow 1 ingress (mean 57.05 Mbit/s)
- Flow 1 egress (mean 55.43 Mbit/s)
- Flow 2 ingress (mean 50.15 Mbit/s)
- Flow 2 egress (mean 48.23 Mbit/s)
- Flow 3 ingress (mean 25.84 Mbit/s)
- Flow 3 egress (mean 24.87 Mbit/s)

![Graph showing per-packet one-way delay distribution with 95th percentile values for different flows.]

- Flow 1 (95th percentile 43.72 ms)
- Flow 2 (95th percentile 41.38 ms)
- Flow 3 (95th percentile 62.65 ms)
Run 8: Statistics of TCP BBR

End at: 2018-07-04 13:16:37
Local clock offset: 0.684 ms
Remote clock offset: -9.535 ms

# Below is generated by plot.py at 2018-07-04 14:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.61 Mbit/s
95th percentile per-packet one-way delay: 44.653 ms
Loss rate: 3.29%
-- Flow 1:
Average throughput: 63.47 Mbit/s
95th percentile per-packet one-way delay: 43.115 ms
Loss rate: 3.10%
-- Flow 2:
Average throughput: 37.11 Mbit/s
95th percentile per-packet one-way delay: 49.363 ms
Loss rate: 3.63%
-- Flow 3:
Average throughput: 25.43 Mbit/s
95th percentile per-packet one-way delay: 65.444 ms
Loss rate: 3.67%
Run 8: Report of TCP BBR — Data Link
Run 9: Statistics of TCP BBR

End at: 2018-07-04 13:36:58
Local clock offset: -0.693 ms
Remote clock offset: -8.491 ms

# Below is generated by plot.py at 2018-07-04 14:23:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.62 Mbit/s
95th percentile per-packet one-way delay: 41.697 ms
Loss rate: 3.68%
-- Flow 1:
Average throughput: 64.03 Mbit/s
95th percentile per-packet one-way delay: 41.416 ms
Loss rate: 3.44%
-- Flow 2:
Average throughput: 36.66 Mbit/s
95th percentile per-packet one-way delay: 41.815 ms
Loss rate: 4.23%
-- Flow 3:
Average throughput: 24.66 Mbit/s
95th percentile per-packet one-way delay: 63.804 ms
Loss rate: 3.85%
Run 9: Report of TCP BBR — Data Link

Graph 1: Throughput (Mbps)

- Flow 1 ingress (mean 66.25 Mbps)
- Flow 1 egress (mean 64.03 Mbps)
- Flow 2 ingress (mean 38.22 Mbps)
- Flow 2 egress (mean 36.66 Mbps)
- Flow 3 ingress (mean 25.58 Mbps)
- Flow 3 egress (mean 24.66 Mbps)

Graph 2: Per packet one way delay (ms)

- Flow 1 (95th percentile 41.42 ms)
- Flow 2 (95th percentile 41.81 ms)
- Flow 3 (95th percentile 63.80 ms)
Run 10: Statistics of TCP BBR

Local clock offset: -0.382 ms  
Remote clock offset: -5.663 ms

# Below is generated by plot.py at 2018-07-04 14:23:19  
# Datalink statistics

-- Total of 3 flows:
Average throughput: 96.81 Mbit/s  
95th percentile per-packet one-way delay: 47.233 ms  
Loss rate: 3.54%

-- Flow 1:
Average throughput: 59.11 Mbit/s  
95th percentile per-packet one-way delay: 43.052 ms  
Loss rate: 3.24%

-- Flow 2:
Average throughput: 40.46 Mbit/s  
95th percentile per-packet one-way delay: 45.785 ms  
Loss rate: 4.13%

-- Flow 3:
Average throughput: 32.43 Mbit/s  
95th percentile per-packet one-way delay: 49.835 ms  
Loss rate: 3.70%
Run 10: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2018-07-04 11:07:05
End at: 2018-07-04 11:07:35
Local clock offset: -1.089 ms
Remote clock offset: 6.12 ms

# Below is generated by plot.py at 2018-07-04 14:23:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 65.69 Mbit/s
  95th percentile per-packet one-way delay: 15.953 ms
  Loss rate: 0.11%
-- Flow 1:
  Average throughput: 35.56 Mbit/s
  95th percentile per-packet one-way delay: 15.539 ms
  Loss rate: 0.11%
-- Flow 2:
  Average throughput: 32.42 Mbit/s
  95th percentile per-packet one-way delay: 16.207 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 25.75 Mbit/s
  95th percentile per-packet one-way delay: 16.570 ms
  Loss rate: 0.25%
Run 1: Report of Copa — Data Link

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

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

Legend:
- Flow 1 ingress (mean 35.57 Mbps/s)
- Flow 1 egress (mean 35.56 Mbps/s)
- Flow 2 ingress (mean 32.40 Mbps/s)
- Flow 2 egress (mean 32.42 Mbps/s)
- Flow 3 ingress (mean 25.75 Mbps/s)
- Flow 3 egress (mean 25.75 Mbps/s)
- Flow 1 (95th percentile 15.54 ms)
- Flow 2 (95th percentile 16.21 ms)
- Flow 3 (95th percentile 16.57 ms)
Run 2: Statistics of Copa

End at: 2018-07-04 11:27:59
Local clock offset: 0.984 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2018-07-04 14:23:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 65.84 Mbit/s
  95th percentile per-packet one-way delay: 24.169 ms
  Loss rate: 0.15%
-- Flow 1:
  Average throughput: 36.39 Mbit/s
  95th percentile per-packet one-way delay: 23.633 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 31.46 Mbit/s
  95th percentile per-packet one-way delay: 24.394 ms
  Loss rate: 0.14%
-- Flow 3:
  Average throughput: 25.62 Mbit/s
  95th percentile per-packet one-way delay: 26.022 ms
  Loss rate: 0.47%
Run 2: Report of Copa — Data Link

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

Legend:
- Flow 1 ingress (mean 36.38 Mbit/s)
- Flow 1 egress (mean 36.39 Mbit/s)
- Flow 2 ingress (mean 31.46 Mbit/s)
- Flow 2 egress (mean 31.46 Mbit/s)
- Flow 3 ingress (mean 25.66 Mbit/s)
- Flow 3 egress (mean 25.62 Mbit/s)

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

Legend:
- Flow 1 (95th percentile 23.63 ms)
- Flow 2 (95th percentile 24.39 ms)
- Flow 3 (95th percentile 26.02 ms)
Run 3: Statistics of Copa

End at: 2018-07-04 11:48:51
Local clock offset: 3.537 ms
Remote clock offset: 3.56 ms

# Below is generated by plot.py at 2018-07-04 14:23:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.60 Mbit/s
95th percentile per-packet one-way delay: 28.112 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 29.82 Mbit/s
95th percentile per-packet one-way delay: 28.169 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 23.08 Mbit/s
95th percentile per-packet one-way delay: 28.705 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 19.31 Mbit/s
95th percentile per-packet one-way delay: 27.462 ms
Loss rate: 0.24%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2018-07-04 12:09:09
End at: 2018-07-04 12:09:39
Local clock offset: 2.508 ms
Remote clock offset: -2.971 ms

# Below is generated by plot.py at 2018-07-04 14:23:55
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 78.13 Mbit/s
  95th percentile per-packet one-way delay: 29.621 ms
  Loss rate: 0.13%
-- Flow 1:
  Average throughput: 43.49 Mbit/s
  95th percentile per-packet one-way delay: 29.209 ms
  Loss rate: 0.06%
-- Flow 2:
  Average throughput: 35.54 Mbit/s
  95th percentile per-packet one-way delay: 30.452 ms
  Loss rate: 0.16%
-- Flow 3:
  Average throughput: 33.03 Mbit/s
  95th percentile per-packet one-way delay: 28.895 ms
  Loss rate: 0.32%
Run 4: Report of Copa — Data Link

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

- Flow 1 ingress (mean 43.47 Mbit/s)
- Flow 1 egress (mean 43.49 Mbit/s)
- Flow 2 ingress (mean 35.54 Mbit/s)
- Flow 2 egress (mean 35.54 Mbit/s)
- Flow 3 ingress (mean 33.02 Mbit/s)
- Flow 3 egress (mean 33.03 Mbit/s)

![Graph of Per Packet One Way Delay vs Time](image2.png)

- Flow 1 (95th percentile 29.21 ms)
- Flow 2 (95th percentile 30.45 ms)
- Flow 3 (95th percentile 28.89 ms)
Run 5: Statistics of Copa

End at: 2018-07-04 12:30:25
Local clock offset: -2.52 ms
Remote clock offset: -5.597 ms

# Below is generated by plot.py at 2018-07-04 14:24:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.86 Mbit/s
95th percentile per-packet one-way delay: 28.681 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 50.70 Mbit/s
95th percentile per-packet one-way delay: 28.470 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 29.99 Mbit/s
95th percentile per-packet one-way delay: 29.535 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 33.79 Mbit/s
95th percentile per-packet one-way delay: 28.539 ms
Loss rate: 0.32%
Run 5: Report of Copa — Data Link

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

- Flow 1 ingress (mean 50.68 Mbps/s)
- Flow 1 egress (mean 50.70 Mbps/s)
- Flow 2 ingress (mean 30.00 Mbps/s)
- Flow 2 egress (mean 29.99 Mbps/s)
- Flow 3 ingress (mean 33.78 Mbps/s)
- Flow 3 egress (mean 33.79 Mbps/s)

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

- Flow 1 (95th percentile 28.47 ms)
- Flow 2 (95th percentile 29.54 ms)
- Flow 3 (95th percentile 28.54 ms)
Run 6: Statistics of Copa

Start at: 2018-07-04 12:50:27
End at: 2018-07-04 12:50:57
Local clock offset: 2.964 ms
Remote clock offset: -6.489 ms

# Below is generated by plot.py at 2018-07-04 14:24:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.35 Mbit/s
95th percentile per-packet one-way delay: 32.240 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 54.88 Mbit/s
95th percentile per-packet one-way delay: 32.931 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 33.12 Mbit/s
95th percentile per-packet one-way delay: 30.609 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 31.40 Mbit/s
95th percentile per-packet one-way delay: 32.407 ms
Loss rate: 0.34%
Run 6: Report of Copa — Data Link

---

### Throughput [Mbps/s]

- **Flow 1 ing:** mean 54.86 Mbps/s
- **Flow 1 egress:** mean 54.88 Mbps/s
- **Flow 2 ing:** mean 33.11 Mbps/s
- **Flow 2 egress:** mean 33.12 Mbps/s
- **Flow 3 ing:** mean 31.40 Mbps/s
- **Flow 3 egress:** mean 31.40 Mbps/s

---

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

- **Flow 1:** 95th percentile 32.93 ms
- **Flow 2:** 95th percentile 30.61 ms
- **Flow 3:** 95th percentile 32.41 ms
Run 7: Statistics of Copa

Start at: 2018-07-04 13:11:12
End at: 2018-07-04 13:11:42
Local clock offset: 1.706 ms
Remote clock offset: -9.882 ms

# Below is generated by plot.py at 2018-07-04 14:25:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.01 Mbit/s
95th percentile per-packet one-way delay: 28.416 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 50.62 Mbit/s
95th percentile per-packet one-way delay: 28.604 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 37.13 Mbit/s
95th percentile per-packet one-way delay: 28.541 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 26.11 Mbit/s
95th percentile per-packet one-way delay: 26.728 ms
Loss rate: 0.32%
Run 7: Report of Copa — Data Link

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

Graph labels:
- Flow 1 ingress (mean 50.61 Mbps)
- Flow 1 egress (mean 50.62 Mbps)
- Flow 2 ingress (mean 37.12 Mbps)
- Flow 2 egress (mean 37.13 Mbps)
- Flow 3 ingress (mean 26.13 Mbps)
- Flow 3 egress (mean 26.11 Mbps)

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

Graph labels:
- Flow 1 (95th percentile 28.60 ms)
- Flow 2 (95th percentile 28.54 ms)
- Flow 3 (95th percentile 26.73 ms)
Run 8: Statistics of Copa

End at: 2018-07-04 13:32:09
Local clock offset: -1.204 ms
Remote clock offset: -12.759 ms

# Below is generated by plot.py at 2018-07-04 14:25:11
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 80.45 Mbit/s
   95th percentile per-packet one-way delay: 31.715 ms
   Loss rate: 0.05%
-- Flow 1:
   Average throughput: 47.71 Mbit/s
   95th percentile per-packet one-way delay: 31.309 ms
   Loss rate: 0.01%
-- Flow 2:
   Average throughput: 37.21 Mbit/s
   95th percentile per-packet one-way delay: 34.554 ms
   Loss rate: 0.05%
-- Flow 3:
   Average throughput: 23.98 Mbit/s
   95th percentile per-packet one-way delay: 36.921 ms
   Loss rate: 0.28%
Run 8: Report of Copa — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 47.68 Mbit/s)
Flow 1 egress (mean 47.71 Mbit/s)
Flow 2 ingress (mean 37.19 Mbit/s)
Flow 2 egress (mean 37.21 Mbit/s)
Flow 3 ingress (mean 23.99 Mbit/s)
Flow 3 egress (mean 23.98 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 31.31 ms)
Flow 2 (95th percentile 34.55 ms)
Flow 3 (95th percentile 36.92 ms)
Run 9: Statistics of Copa

End at: 2018-07-04 13:52:44
Local clock offset: -1.323 ms
Remote clock offset: -5.524 ms

# Below is generated by plot.py at 2018-07-04 14:25:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.09 Mbit/s
  95th percentile per-packet one-way delay: 21.028 ms
  Loss rate: 0.09%
-- Flow 1:
  Average throughput: 56.42 Mbit/s
  95th percentile per-packet one-way delay: 20.540 ms
  Loss rate: 0.09%
-- Flow 2:
  Average throughput: 32.93 Mbit/s
  95th percentile per-packet one-way delay: 20.941 ms
  Loss rate: 0.07%
-- Flow 3:
  Average throughput: 29.33 Mbit/s
  95th percentile per-packet one-way delay: 23.802 ms
  Loss rate: 0.19%
Run 9: Report of Copa — Data Link

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

![Graph 2: Per-PackageName Delay vs Time](image2)
Run 10: Statistics of Copa

Start at: 2018-07-04 14:14:02
End at: 2018-07-04 14:14:32
Local clock offset: 1.674 ms
Remote clock offset: -8.259 ms

# Below is generated by plot.py at 2018-07-04 14:25:31
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 86.72 Mbit/s
  95th percentile per-packet one-way delay: 24.110 ms
  Loss rate: 0.10%
-- Flow 1:
  Average throughput: 55.05 Mbit/s
  95th percentile per-packet one-way delay: 24.496 ms
  Loss rate: 0.06%
-- Flow 2:
  Average throughput: 34.11 Mbit/s
  95th percentile per-packet one-way delay: 23.372 ms
  Loss rate: 0.11%
-- Flow 3:
  Average throughput: 26.96 Mbit/s
  95th percentile per-packet one-way delay: 24.336 ms
  Loss rate: 0.32%
Run 10: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2018-07-04 11:02:24
End at: 2018-07-04 11:02:54
Local clock offset: 0.874 ms
Remote clock offset: 4.825 ms

# Below is generated by plot.py at 2018-07-04 14:25:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.96 Mbit/s
95th percentile per-packet one-way delay: 26.366 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 56.92 Mbit/s
95th percentile per-packet one-way delay: 26.021 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 39.84 Mbit/s
95th percentile per-packet one-way delay: 26.312 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 31.73 Mbit/s
95th percentile per-packet one-way delay: 27.562 ms
Loss rate: 0.38%
Run 1: Report of TCP Cubic — Data Link

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

![Graph showing per-packet one-way delay for different flows and their 95th percentile values.]
Run 2: Statistics of TCP Cubic

End at: 2018-07-04 11:23:11
Local clock offset: 2.243 ms
Remote clock offset: -1.271 ms

# Below is generated by plot.py at 2018-07-04 14:25:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.52 Mbit/s
95th percentile per-packet one-way delay: 37.438 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 57.12 Mbit/s
95th percentile per-packet one-way delay: 36.369 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 39.55 Mbit/s
95th percentile per-packet one-way delay: 37.288 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 33.34 Mbit/s
95th percentile per-packet one-way delay: 41.890 ms
Loss rate: 0.36%
Run 2: Report of TCP Cubic — Data Link

![Graph showing network performance metrics](image)

- Flow 1 ingress (mean 57.11 Mbit/s)
- Flow 1 egress (mean 57.12 Mbit/s)
- Flow 2 ingress (mean 39.55 Mbit/s)
- Flow 2 egress (mean 39.55 Mbit/s)
- Flow 3 ingress (mean 33.37 Mbit/s)
- Flow 3 egress (mean 33.34 Mbit/s)

- Flow 1 (95th percentile 36.37 ms)
- Flow 2 (95th percentile 37.29 ms)
- Flow 3 (95th percentile 41.89 ms)
Run 3: Statistics of TCP Cubic

Start at: 2018-07-04 11:43:37
End at: 2018-07-04 11:44:07
Local clock offset: -0.3 ms
Remote clock offset: 3.585 ms

# Below is generated by plot.py at 2018-07-04 14:25:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.89 Mbit/s
95th percentile per-packet one-way delay: 33.886 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 61.42 Mbit/s
95th percentile per-packet one-way delay: 32.822 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 35.09 Mbit/s
95th percentile per-packet one-way delay: 40.222 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 24.41 Mbit/s
95th percentile per-packet one-way delay: 52.611 ms
Loss rate: 0.48%
Run 3: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 61.42 Mbit/s)
- Flow 1 egress (mean 61.42 Mbit/s)
- Flow 2 ingress (mean 35.09 Mbit/s)
- Flow 2 egress (mean 35.09 Mbit/s)
- Flow 3 ingress (mean 24.44 Mbit/s)
- Flow 3 egress (mean 24.41 Mbit/s)

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

- Flow 1 (95th percentile 32.82 ms)
- Flow 2 (95th percentile 40.22 ms)
- Flow 3 (95th percentile 52.61 ms)
Run 4: Statistics of TCP Cubic

Start at: 2018-07-04 12:04:18
End at: 2018-07-04 12:04:48
Local clock offset: 0.466 ms
Remote clock offset: -2.792 ms

# Below is generated by plot.py at 2018-07-04 14:25:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.74 Mbit/s
95th percentile per-packet one-way delay: 32.746 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 55.07 Mbit/s
95th percentile per-packet one-way delay: 31.731 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 46.21 Mbit/s
95th percentile per-packet one-way delay: 33.561 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 23.88 Mbit/s
95th percentile per-packet one-way delay: 65.551 ms
Loss rate: 0.52%
Run 4: Report of TCP Cubic — Data Link

Throughput (Mbit/s)

<table>
<thead>
<tr>
<th>Flow 1 ingress (mean 55.04 Mbit/s)</th>
<th>Flow 1 egress (mean 55.07 Mbit/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 2 ingress (mean 46.22 Mbit/s)</td>
<td>Flow 2 egress (mean 46.21 Mbit/s)</td>
</tr>
<tr>
<td>Flow 3 ingress (mean 23.92 Mbit/s)</td>
<td>Flow 3 egress (mean 23.88 Mbit/s)</td>
</tr>
</tbody>
</table>

Per packet one way delay (ms)

- Flow 1 (95th percentile 31.73 ms)
- Flow 2 (95th percentile 33.56 ms)
- Flow 3 (95th percentile 65.55 ms)
Run 5: Statistics of TCP Cubic

Start at: 2018-07-04 12:25:09
End at: 2018-07-04 12:25:39
Local clock offset: 1.464 ms
Remote clock offset: -4.705 ms

# Below is generated by plot.py at 2018-07-04 14:25:53
# Datalink statistics
-- Total of 3 flows:
    Average throughput: 93.64 Mbit/s
    95th percentile per-packet one-way delay: 34.982 ms
    Loss rate: 0.13%

-- Flow 1:
    Average throughput: 57.24 Mbit/s
    95th percentile per-packet one-way delay: 35.105 ms
    Loss rate: 0.08%

-- Flow 2:
    Average throughput: 40.00 Mbit/s
    95th percentile per-packet one-way delay: 33.970 ms
    Loss rate: 0.16%

-- Flow 3:
    Average throughput: 29.49 Mbit/s
    95th percentile per-packet one-way delay: 43.487 ms
    Loss rate: 0.40%
Run 5: Report of TCP Cubic — Data Link

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 57.22 Mbps)
  - Flow 1 egress (mean 57.24 Mbps)
  - Flow 2 ingress (mean 40.00 Mbps)
  - Flow 2 egress (mean 40.00 Mbps)
  - Flow 3 ingress (mean 29.50 Mbps)
  - Flow 3 egress (mean 29.49 Mbps)

- **Per-packet one way delay (ms)**
  - Flow 1 (95th percentile 35.10 ms)
  - Flow 2 (95th percentile 33.97 ms)
  - Flow 3 (95th percentile 43.49 ms)
Run 6: Statistics of TCP Cubic

Start at: 2018-07-04 12:45:41
End at: 2018-07-04 12:46:11
Local clock offset: -2.27 ms
Remote clock offset: -7.809 ms

# Below is generated by plot.py at 2018-07-04 14:26:06
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 92.93 Mbit/s
  95th percentile per-packet one-way delay: 30.394 ms
  Loss rate: 0.13%
-- Flow 1:
  Average throughput: 52.45 Mbit/s
  95th percentile per-packet one-way delay: 30.810 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 36.75 Mbit/s
  95th percentile per-packet one-way delay: 30.458 ms
  Loss rate: 0.14%
-- Flow 3:
  Average throughput: 48.27 Mbit/s
  95th percentile per-packet one-way delay: 29.405 ms
  Loss rate: 0.33%
Run 6: Report of TCP Cubic — Data Link
Run 7: Statistics of TCP Cubic

Start at: 2018-07-04 13:06:30
End at: 2018-07-04 13:07:00
Local clock offset: 1.995 ms
Remote clock offset: -9.752 ms

# Below is generated by plot.py at 2018-07-04 14:26:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.24 Mbit/s
95th percentile per-packet one-way delay: 29.780 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 58.70 Mbit/s
95th percentile per-packet one-way delay: 29.539 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 40.24 Mbit/s
95th percentile per-packet one-way delay: 30.146 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.42 Mbit/s
95th percentile per-packet one-way delay: 29.786 ms
Loss rate: 0.36%
Run 7: Report of TCP Cubic — Data Link

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

Flow 1 ingress (mean 58.69 Mbit/s)  
Flow 1 egress (mean 58.70 Mbit/s)  
Flow 2 ingress (mean 40.23 Mbit/s)  
Flow 2 egress (mean 40.24 Mbit/s)  
Flow 3 ingress (mean 32.45 Mbit/s)  
Flow 3 egress (mean 32.42 Mbit/s)

Flow 1 (95th percentile 29.54 ms)  
Flow 2 (95th percentile 30.15 ms)  
Flow 3 (95th percentile 29.79 ms)
Run 8: Statistics of TCP Cubic

Start at: 2018-07-04 13:26:58
Local clock offset: 1.255 ms
Remote clock offset: -10.007 ms

# Below is generated by plot.py at 2018-07-04 14:26:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.75 Mbit/s
95th percentile per-packet one-way delay: 30.808 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 61.58 Mbit/s
95th percentile per-packet one-way delay: 30.534 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.32 Mbit/s
95th percentile per-packet one-way delay: 31.387 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 24.04 Mbit/s
95th percentile per-packet one-way delay: 30.767 ms
Loss rate: 0.30%
Run 8: Report of TCP Cubic — Data Link

![Graph]

- Flow 1 ingress (mean 61.58 Mbit/s)
- Flow 1 egress (mean 61.58 Mbit/s)
- Flow 2 ingress (mean 36.32 Mbit/s)
- Flow 2 egress (mean 36.32 Mbit/s)
- Flow 3 ingress (mean 24.05 Mbit/s)
- Flow 3 egress (mean 24.04 Mbit/s)

![Graph]

- Flow 1 (95th percentile 30.53 ms)
- Flow 2 (95th percentile 31.39 ms)
- Flow 3 (95th percentile 30.77 ms)
Run 9: Statistics of TCP Cubic

End at: 2018-07-04 13:47:51
Local clock offset: 1.872 ms
Remote clock offset: -5.502 ms

# Below is generated by plot.py at 2018-07-04 14:26:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.64 Mbit/s
95th percentile per-packet one-way delay: 26.673 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 56.29 Mbit/s
95th percentile per-packet one-way delay: 26.497 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 36.96 Mbit/s
95th percentile per-packet one-way delay: 26.855 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 47.50 Mbit/s
95th percentile per-packet one-way delay: 26.791 ms
Loss rate: 0.28%
Run 9: Report of TCP Cubic — Data Link
Run 10: Statistics of TCP Cubic

Start at: 2018-07-04 14:09:16
End at: 2018-07-04 14:09:46
Local clock offset: -0.412 ms
Remote clock offset: -7.437 ms

# Below is generated by plot.py at 2018-07-04 14:26:23
# Datalink statistics
-- Total of 3 flows:
    Average throughput: 96.22 Mbit/s
    95th percentile per-packet one-way delay: 24.233 ms
    Loss rate: 0.11%
-- Flow 1:
    Average throughput: 63.84 Mbit/s
    95th percentile per-packet one-way delay: 24.224 ms
    Loss rate: 0.07%
-- Flow 2:
    Average throughput: 36.65 Mbit/s
    95th percentile per-packet one-way delay: 24.186 ms
    Loss rate: 0.15%
-- Flow 3:
    Average throughput: 24.06 Mbit/s
    95th percentile per-packet one-way delay: 24.510 ms
    Loss rate: 0.35%
Run 10: Report of TCP Cubic — Data Link

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

Flow 1 ingress (mean 63.83 Mbit/s)  
Flow 1 egress (mean 63.84 Mbit/s)  
Flow 2 ingress (mean 36.66 Mbit/s)  
Flow 2 egress (mean 36.65 Mbit/s)  
Flow 3 ingress (mean 24.09 Mbit/s)  
Flow 3 egress (mean 24.06 Mbit/s)
Run 1: Statistics of FillP

Start at: 2018-07-04 11:01:11
End at: 2018-07-04 11:01:41
Local clock offset: 1.048 ms
Remote clock offset: 3.811 ms

# Below is generated by plot.py at 2018-07-04 14:26:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.99 Mbit/s
95th percentile per-packet one-way delay: 45.798 ms
Loss rate: 2.39%
-- Flow 1:
Average throughput: 59.22 Mbit/s
95th percentile per-packet one-way delay: 44.922 ms
Loss rate: 1.57%
-- Flow 2:
Average throughput: 38.30 Mbit/s
95th percentile per-packet one-way delay: 45.883 ms
Loss rate: 3.64%
-- Flow 3:
Average throughput: 31.01 Mbit/s
95th percentile per-packet one-way delay: 46.690 ms
Loss rate: 3.89%
Run 1: Report of FillP — Data Link
Run 2: Statistics of FillP

End at: 2018-07-04 11:21:58
Local clock offset: 1.773 ms
Remote clock offset: 0.63 ms

# Below is generated by plot.py at 2018-07-04 14:26:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.97 Mbit/s
95th percentile per-packet one-way delay: 49.819 ms
Loss rate: 9.77%
-- Flow 1:
Average throughput: 53.39 Mbit/s
95th percentile per-packet one-way delay: 48.972 ms
Loss rate: 7.66%
-- Flow 2:
Average throughput: 34.39 Mbit/s
95th percentile per-packet one-way delay: 49.811 ms
Loss rate: 16.47%
-- Flow 3:
Average throughput: 29.34 Mbit/s
95th percentile per-packet one-way delay: 50.822 ms
Loss rate: 3.65%
Run 2: Report of FillP — Data Link

---

**Graph 1:**
- **Y-axis:** Throughput (Mbit/s)
- **X-axis:** Time (s)
- **Legend:**
  - Flow 1 ingress (mean 57.75 Mbit/s)
  - Flow 1 egress (mean 53.39 Mbit/s)
  - Flow 2 ingress (mean 41.11 Mbit/s)
  - Flow 2 egress (mean 34.39 Mbit/s)
  - Flow 3 ingress (mean 30.33 Mbit/s)
  - Flow 3 egress (mean 29.34 Mbit/s)

**Graph 2:**
- **Y-axis:** Per-packet one-way delay (ms)
- **X-axis:** Time (s)
- **Legend:**
  - Flow 1 (95th percentile 48.97 ms)
  - Flow 2 (95th percentile 49.81 ms)
  - Flow 3 (95th percentile 50.82 ms)
Run 3: Statistics of FillP

End at: 2018-07-04 11:42:54
Local clock offset: 0.3 ms
Remote clock offset: 3.607 ms

# Below is generated by plot.py at 2018-07-04 14:27:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.95 Mbit/s
  95th percentile per-packet one-way delay: 58.411 ms
  Loss rate: 2.57%
-- Flow 1:
  Average throughput: 63.55 Mbit/s
  95th percentile per-packet one-way delay: 42.148 ms
  Loss rate: 1.65%
-- Flow 2:
  Average throughput: 35.69 Mbit/s
  95th percentile per-packet one-way delay: 59.529 ms
  Loss rate: 4.18%
-- Flow 3:
  Average throughput: 23.07 Mbit/s
  95th percentile per-packet one-way delay: 61.349 ms
  Loss rate: 4.96%
Run 3: Report of FillP — Data Link
Run 4: Statistics of FillP

Start at: 2018-07-04 12:03:07
End at: 2018-07-04 12:03:37
Local clock offset: -0.738 ms
Remote clock offset: -3.192 ms

# Below is generated by plot.py at 2018-07-04 14:27:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.73 Mbit/s
95th percentile per-packet one-way delay: 58.191 ms
Loss rate: 2.74%
-- Flow 1:
Average throughput: 62.72 Mbit/s
95th percentile per-packet one-way delay: 41.249 ms
Loss rate: 1.75%
-- Flow 2:
Average throughput: 35.23 Mbit/s
95th percentile per-packet one-way delay: 59.490 ms
Loss rate: 4.88%
-- Flow 3:
Average throughput: 22.95 Mbit/s
95th percentile per-packet one-way delay: 61.548 ms
Loss rate: 4.09%
Run 4: Report of FillP — Data Link

Run 4:

---

**Graph 1:**

**Time (s)**

Throughput (Mbps)

- **Flow 1 ingress** (mean 63.75 Mbps)
- **Flow 1 egress** (mean 62.72 Mbps)
- **Flow 2 ingress** (mean 36.95 Mbps)
- **Flow 2 egress** (mean 35.23 Mbps)
- **Flow 3 ingress** (mean 23.87 Mbps)
- **Flow 3 egress** (mean 22.95 Mbps)

---

**Graph 2:**

**Time (s)**

Per-packet one-way delay (ms)

- **Flow 1** (95th percentile 41.25 ms)
- **Flow 2** (95th percentile 59.49 ms)
- **Flow 3** (95th percentile 61.55 ms)

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Run 5: Statistics of FillIP

End at: 2018-07-04 12:24:29
Local clock offset: 2.027 ms
Remote clock offset: -4.794 ms

# Below is generated by plot.py at 2018-07-04 14:27:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.61 Mbit/s
95th percentile per-packet one-way delay: 62.664 ms
Loss rate: 2.99%
-- Flow 1:
Average throughput: 61.55 Mbit/s
95th percentile per-packet one-way delay: 45.632 ms
Loss rate: 1.99%
-- Flow 2:
Average throughput: 35.13 Mbit/s
95th percentile per-packet one-way delay: 63.708 ms
Loss rate: 4.57%
-- Flow 3:
Average throughput: 23.17 Mbit/s
95th percentile per-packet one-way delay: 65.748 ms
Loss rate: 5.90%
Run 5: Report of FillP — Data Link
Run 6: Statistics of FillP

Start at: 2018-07-04 12:44:27
End at: 2018-07-04 12:44:57
Local clock offset: -1.659 ms
Remote clock offset: -6.344 ms

# Below is generated by plot.py at 2018-07-04 14:27:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.80 Mbit/s
95th percentile per-packet one-way delay: 51.555 ms
Loss rate: 2.45%
-- Flow 1:
Average throughput: 57.54 Mbit/s
95th percentile per-packet one-way delay: 49.646 ms
Loss rate: 1.70%
-- Flow 2:
Average throughput: 39.33 Mbit/s
95th percentile per-packet one-way delay: 57.033 ms
Loss rate: 3.61%
-- Flow 3:
Average throughput: 30.43 Mbit/s
95th percentile per-packet one-way delay: 49.384 ms
Loss rate: 3.65%
Run 6: Report of FillP — Data Link

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

- Flow 1 ingress (mean 58.45 Mbit/s)
- Flow 1 egress (mean 57.54 Mbit/s)
- Flow 2 ingress (mean 40.74 Mbit/s)
- Flow 2 egress (mean 39.33 Mbit/s)
- Flow 3 ingress (mean 31.48 Mbit/s)
- Flow 3 egress (mean 30.43 Mbit/s)

The graphs demonstrate the throughput (Mbps) and packet delay over time for three different flows, showing variations and trends in network performance.
Run 7: Statistics of FillP

Start at: 2018-07-04 13:05:20
End at: 2018-07-04 13:05:50
Local clock offset: 1.154 ms
Remote clock offset: -9.872 ms

# Below is generated by plot.py at 2018-07-04 14:27:36
# Datalink statistics

-- Total of 3 flows:
Average throughput: 94.37 Mbit/s
95th percentile per-packet one-way delay: 49.197 ms
Loss rate: 2.16%

-- Flow 1:
Average throughput: 59.06 Mbit/s
95th percentile per-packet one-way delay: 48.316 ms
Loss rate: 1.43%

-- Flow 2:
Average throughput: 38.58 Mbit/s
95th percentile per-packet one-way delay: 49.158 ms
Loss rate: 3.30%

-- Flow 3:
Average throughput: 29.15 Mbit/s
95th percentile per-packet one-way delay: 50.275 ms
Loss rate: 3.55%
Run 7: Report of FillP — Data Link
Run 8: Statistics of FillP

End at: 2018-07-04 13:26:16
Local clock offset: -0.553 ms
Remote clock offset: -9.95 ms

# Below is generated by plot.py at 2018-07-04 14:27:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.59 Mbit/s
95th percentile per-packet one-way delay: 55.662 ms
Loss rate: 2.01%
-- Flow 1:
Average throughput: 55.30 Mbit/s
95th percentile per-packet one-way delay: 55.460 ms
Loss rate: 1.38%
-- Flow 2:
Average throughput: 47.39 Mbit/s
95th percentile per-packet one-way delay: 39.180 ms
Loss rate: 2.62%
-- Flow 3:
Average throughput: 23.46 Mbit/s
95th percentile per-packet one-way delay: 58.312 ms
Loss rate: 3.95%
Run 8: Report of FillP — Data Link
Run 9: Statistics of FillP

End at: 2018-07-04 13:46:42
Local clock offset: 2.128 ms
Remote clock offset: -5.704 ms

# Below is generated by plot.py at 2018-07-04 14:28:00
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 95.17 Mbit/s
  95th percentile per-packet one-way delay: 54.994 ms
  Loss rate: 2.22%
-- Flow 1:
  Average throughput: 57.34 Mbit/s
  95th percentile per-packet one-way delay: 54.347 ms
  Loss rate: 1.53%
-- Flow 2:
  Average throughput: 35.16 Mbit/s
  95th percentile per-packet one-way delay: 56.388 ms
  Loss rate: 3.42%
-- Flow 3:
  Average throughput: 43.62 Mbit/s
  95th percentile per-packet one-way delay: 38.923 ms
  Loss rate: 2.99%
Run 9: Report of FillP — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 58.18 Mbit/s) — Flow 1 egress (mean 57.34 Mbit/s)
Flow 2 ingress (mean 36.33 Mbit/s) — Flow 2 egress (mean 35.16 Mbit/s)
Flow 3 ingress (mean 44.83 Mbit/s) — Flow 3 egress (mean 43.62 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 54.35 ms) — Flow 2 (95th percentile 56.39 ms) — Flow 3 (95th percentile 38.92 ms)
Run 10: Statistics of FillP

Start at: 2018-07-04 14:08:01
End at: 2018-07-04 14:08:31
Local clock offset: 0.193 ms
Remote clock offset: -8.582 ms

# Below is generated by plot.py at 2018-07-04 14:28:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.64 Mbit/s
  95th percentile per-packet one-way delay: 46.644 ms
  Loss rate: 2.73%
-- Flow 1:
  Average throughput: 58.18 Mbit/s
  95th percentile per-packet one-way delay: 45.843 ms
  Loss rate: 1.79%
-- Flow 2:
  Average throughput: 39.59 Mbit/s
  95th percentile per-packet one-way delay: 46.691 ms
  Loss rate: 3.75%
-- Flow 3:
  Average throughput: 30.51 Mbit/s
  95th percentile per-packet one-way delay: 48.258 ms
  Loss rate: 5.29%
Run 10: Report of FillP — Data Link

![Graph 1: Throughput (Mbps)]

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

Legend:
- Flow 1 ingress (mean 59.19 Mbps) — Flow 1 egress (mean 58.18 Mbps)
- Flow 2 ingress (mean 41.67 Mbps) — Flow 2 egress (mean 39.59 Mbps)
- Flow 3 ingress (mean 32.08 Mbps) — Flow 3 egress (mean 30.51 Mbps)

Legend 2:
- Flow 1 (95th percentile 45.84 ms)
- Flow 2 (95th percentile 46.69 ms)
- Flow 3 (95th percentile 48.26 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2018-07-04 11:05:53
End at: 2018-07-04 11:06:23
Local clock offset: -2.614 ms
Remote clock offset: 6.359 ms

# Below is generated by plot.py at 2018-07-04 14:28:39
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 96.24 Mbit/s
  95th percentile per-packet one-way delay: 38.680 ms
  Loss rate: 2.52%
-- Flow 1:
  Average throughput: 58.77 Mbit/s
  95th percentile per-packet one-way delay: 37.576 ms
  Loss rate: 1.73%
-- Flow 2:
  Average throughput: 40.33 Mbit/s
  95th percentile per-packet one-way delay: 38.430 ms
  Loss rate: 3.49%
-- Flow 3:
  Average throughput: 32.10 Mbit/s
  95th percentile per-packet one-way delay: 40.035 ms
  Loss rate: 4.34%
Run 1: Report of FillP-Sheep — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 59.73 Mbps)
- Flow 1 egress (mean 58.77 Mbps)
- Flow 2 ingress (mean 41.74 Mbps)
- Flow 2 egress (mean 40.33 Mbps)
- Flow 3 ingress (mean 33.45 Mbps)
- Flow 3 egress (mean 32.10 Mbps)

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

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 37.58 ms)
- Flow 2 (95th percentile 38.43 ms)
- Flow 3 (95th percentile 40.03 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2018-07-04 11:26:17
End at: 2018-07-04 11:26:47
Local clock offset: 0.195 ms
Remote clock offset: 0.463 ms

# Below is generated by plot.py at 2018-07-04 14:28:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.79 Mbit/s
95th percentile per-packet one-way delay: 47.491 ms
Loss rate: 2.82%
-- Flow 1:
Average throughput: 59.07 Mbit/s
95th percentile per-packet one-way delay: 46.662 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 39.12 Mbit/s
95th percentile per-packet one-way delay: 47.366 ms
Loss rate: 4.35%
-- Flow 3:
Average throughput: 32.27 Mbit/s
95th percentile per-packet one-way delay: 48.878 ms
Loss rate: 3.94%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

Start at: 2018-07-04 11:47:07
End at: 2018-07-04 11:47:37
Local clock offset: 0.914 ms
Remote clock offset: 3.678 ms

# Below is generated by plot.py at 2018-07-04 14:28:48
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 96.05 Mbit/s
  95th percentile per-packet one-way delay: 51.189 ms
  Loss rate: 2.46%
-- Flow 1:
  Average throughput: 58.82 Mbit/s
  95th percentile per-packet one-way delay: 48.915 ms
  Loss rate: 1.65%
-- Flow 2:
  Average throughput: 40.19 Mbit/s
  95th percentile per-packet one-way delay: 51.269 ms
  Loss rate: 3.65%
-- Flow 3:
  Average throughput: 31.74 Mbit/s
  95th percentile per-packet one-way delay: 52.587 ms
  Loss rate: 3.90%
Run 3: Report of FillP-Sheep — Data Link
Run 4: Statistics of FillP-Sheep

Start at: 2018-07-04 12:07:51
End at: 2018-07-04 12:08:21
Local clock offset: 1.493 ms
Remote clock offset: -2.439 ms

# Below is generated by plot.py at 2018-07-04 14:28:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 95.28 Mbit/s
  95th percentile per-packet one-way delay: 59.695 ms
  Loss rate: 3.32%
-- Flow 1:
  Average throughput: 63.46 Mbit/s
  95th percentile per-packet one-way delay: 42.784 ms
  Loss rate: 2.41%
-- Flow 2:
  Average throughput: 36.10 Mbit/s
  95th percentile per-packet one-way delay: 61.144 ms
  Loss rate: 4.83%
-- Flow 3:
  Average throughput: 23.53 Mbit/s
  95th percentile per-packet one-way delay: 63.389 ms
  Loss rate: 5.79%
Run 4: Report of FillP-Sheep — Data Link

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

Start at: 2018-07-04 12:28:42
End at: 2018-07-04 12:29:12
Local clock offset: -0.783 ms
Remote clock offset: -4.631 ms

# Below is generated by plot.py at 2018-07-04 14:28:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.28 Mbit/s
95th percentile per-packet one-way delay: 58.603 ms
Loss rate: 3.40%
-- Flow 1:
Average throughput: 62.11 Mbit/s
95th percentile per-packet one-way delay: 41.626 ms
Loss rate: 2.78%
-- Flow 2:
Average throughput: 36.36 Mbit/s
95th percentile per-packet one-way delay: 59.741 ms
Loss rate: 4.40%
-- Flow 3:
Average throughput: 24.14 Mbit/s
95th percentile per-packet one-way delay: 61.122 ms
Loss rate: 5.09%
Run 5: Report of FillP-Sheep — Data Link
Run 6: Statistics of FillP-Sheep

End at: 2018-07-04 12:49:44
Local clock offset: -0.793 ms
Remote clock offset: -7.959 ms

# Below is generated by plot.py at 2018-07-04 14:29:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.71 Mbit/s
95th percentile per-packet one-way delay: 57.913 ms
Loss rate: 3.49%
-- Flow 1:
Average throughput: 56.43 Mbit/s
95th percentile per-packet one-way delay: 57.258 ms
Loss rate: 2.53%
-- Flow 2:
Average throughput: 35.41 Mbit/s
95th percentile per-packet one-way delay: 59.198 ms
Loss rate: 4.56%
-- Flow 3:
Average throughput: 44.50 Mbit/s
95th percentile per-packet one-way delay: 42.048 ms
Loss rate: 5.35%
Run 6: Report of FillP-Sheep — Data Link
Run 7: Statistics of FillP-Sheep

Start at: 2018-07-04 13:10:00
End at: 2018-07-04 13:10:30
Local clock offset: 2.027 ms
Remote clock offset: -9.487 ms

# Below is generated by plot.py at 2018-07-04 14:29:24
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 95.20 Mbit/s
  95th percentile per-packet one-way delay: 54.804 ms
  Loss rate: 3.14%
-- Flow 1:
  Average throughput: 56.21 Mbit/s
  95th percentile per-packet one-way delay: 53.181 ms
  Loss rate: 2.34%
-- Flow 2:
  Average throughput: 46.36 Mbit/s
  95th percentile per-packet one-way delay: 41.037 ms
  Loss rate: 4.19%
-- Flow 3:
  Average throughput: 24.51 Mbit/s
  95th percentile per-packet one-way delay: 60.110 ms
  Loss rate: 4.51%
Run 7: Report of FillP-Sheep — Data Link

[Graph showing throughput and packet delay over time for different flows]
Run 8: Statistics of FillP-Sheep

Start at: 2018-07-04 13:30:29
End at: 2018-07-04 13:30:59
Local clock offset: 0.081 ms
Remote clock offset: -10.153 ms

# Below is generated by plot.py at 2018-07-04 14:29:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.81 Mbit/s
95th percentile per-packet one-way delay: 48.338 ms
Loss rate: 3.02%

-- Flow 1:
Average throughput: 59.15 Mbit/s
95th percentile per-packet one-way delay: 47.975 ms
Loss rate: 2.17%

-- Flow 2:
Average throughput: 39.05 Mbit/s
95th percentile per-packet one-way delay: 48.148 ms
Loss rate: 4.14%

-- Flow 3:
Average throughput: 32.25 Mbit/s
95th percentile per-packet one-way delay: 49.485 ms
Loss rate: 4.89%
Run 8: Report of FillP-Sheep — Data Link

Throughput (Mbps)

Time (s)

- Flow 1 ingress (mean 60.26 Mbps)
- Flow 1 egress (mean 59.15 Mbps)
- Flow 2 ingress (mean 40.61 Mbps)
- Flow 2 egress (mean 39.05 Mbps)
- Flow 3 ingress (mean 33.58 Mbps)
- Flow 3 egress (mean 32.25 Mbps)

Per-packet one-way delay (ms)

Time (s)

- Flow 1 (95th percentile 47.98 ms)
- Flow 2 (95th percentile 48.15 ms)
- Flow 3 (95th percentile 49.48 ms)
Run 9: Statistics of FillP-Sheep

End at: 2018-07-04 13:51:29
Local clock offset: 1.097 ms
Remote clock offset: -5.931 ms

# Below is generated by plot.py at 2018-07-04 14:30:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.87 Mbit/s
95th percentile per-packet one-way delay: 46.934 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 59.18 Mbit/s
95th percentile per-packet one-way delay: 46.331 ms
Loss rate: 1.92%
-- Flow 2:
Average throughput: 39.07 Mbit/s
95th percentile per-packet one-way delay: 46.732 ms
Loss rate: 4.61%
-- Flow 3:
Average throughput: 32.33 Mbit/s
95th percentile per-packet one-way delay: 48.023 ms
Loss rate: 4.12%
Run 9: Report of FillP-Sheep — Data Link

[Graph showing throughput and round-trip time over time for different flows]

- Flow 1 ingress (mean 60.26 Mbit/s)
- Flow 1 egress (mean 59.18 Mbit/s)
- Flow 2 ingress (mean 40.68 Mbit/s)
- Flow 2 egress (mean 39.07 Mbit/s)
- Flow 3 ingress (mean 33.58 Mbit/s)
- Flow 3 egress (mean 32.33 Mbit/s)

[Graph showing round-trip time for different flows]

- Flow 1 (95th percentile 46.33 ms)
- Flow 2 (95th percentile 46.73 ms)
- Flow 3 (95th percentile 48.02 ms)
Run 10: Statistics of FillP-Sheep

Start at: 2018-07-04 14:12:50
End at: 2018-07-04 14:13:20
Local clock offset: -0.442 ms
Remote clock offset: -8.153 ms

# Below is generated by plot.py at 2018-07-04 14:30:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 95.89 Mbit/s
  95th percentile per-packet one-way delay: 44.592 ms
  Loss rate: 3.55%
-- Flow 1:
  Average throughput: 59.17 Mbit/s
  95th percentile per-packet one-way delay: 43.392 ms
  Loss rate: 2.82%
-- Flow 2:
  Average throughput: 39.09 Mbit/s
  95th percentile per-packet one-way delay: 44.653 ms
  Loss rate: 4.85%
-- Flow 3:
  Average throughput: 32.36 Mbit/s
  95th percentile per-packet one-way delay: 45.699 ms
  Loss rate: 4.32%
Run 10: Report of FillIP-Sheep — Data Link

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

Flow 1 ingress (mean 60.84 Mbit/s) | Flow 1 egress (mean 59.17 Mbit/s)
Flow 2 ingress (mean 41.03 Mbit/s) | Flow 2 egress (mean 39.09 Mbit/s)
Flow 3 ingress (mean 33.69 Mbit/s) | Flow 3 egress (mean 32.36 Mbit/s)

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

Flow 1 (95th percentile 43.39 ms) | Flow 2 (95th percentile 44.65 ms) | Flow 3 (95th percentile 45.70 ms)
Run 1: Statistics of Indigo

Start at: 2018-07-04 11:03:36
End at: 2018-07-04 11:04:06
Local clock offset: -3.487 ms
Remote clock offset: 0.226 ms

# Below is generated by plot.py at 2018-07-04 14:30:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.57 Mbit/s
95th percentile per-packet one-way delay: 23.194 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 51.84 Mbit/s
95th percentile per-packet one-way delay: 22.641 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 37.07 Mbit/s
95th percentile per-packet one-way delay: 23.670 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 30.79 Mbit/s
95th percentile per-packet one-way delay: 24.093 ms
Loss rate: 0.31%
Run 1: Report of Indigo — Data Link

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

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

End at: 2018-07-04 11:24:28
Local clock offset: 2.236 ms
Remote clock offset: 0.342 ms

# Below is generated by plot.py at 2018-07-04 14:30:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.68 Mbit/s
95th percentile per-packet one-way delay: 27.434 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 53.07 Mbit/s
95th percentile per-packet one-way delay: 26.586 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 36.18 Mbit/s
95th percentile per-packet one-way delay: 28.183 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 26.09 Mbit/s
95th percentile per-packet one-way delay: 31.174 ms
Loss rate: 0.33%
Run 2: Report of Indigo — Data Link
Run 3: Statistics of Indigo

Start at: 2018-07-04 11:44:50
End at: 2018-07-04 11:45:20
Local clock offset: 3.057 ms
Remote clock offset: 4.049 ms

# Below is generated by plot.py at 2018-07-04 14:30:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.80 Mbit/s
95th percentile per-packet one-way delay: 30.693 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 36.66 Mbit/s
95th percentile per-packet one-way delay: 29.419 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 32.22 Mbit/s
95th percentile per-packet one-way delay: 31.093 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 29.59 Mbit/s
95th percentile per-packet one-way delay: 33.454 ms
Loss rate: 0.45%
Run 3: Report of Indigo — Data Link

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

- **Flow 1 Ingress** (mean 36.66 Mbps/s)
- **Flow 2 Ingress** (mean 32.21 Mbps/s)
- **Flow 3 Ingress** (mean 29.63 Mbps/s)
- **Flow 1 Egress** (mean 36.66 Mbps/s)
- **Flow 2 Egress** (mean 32.22 Mbps/s)
- **Flow 3 Egress** (mean 29.59 Mbps/s)

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

- **Flow 1** (95th percentile 29.42 ms)
- **Flow 2** (95th percentile 31.09 ms)
- **Flow 3** (95th percentile 33.45 ms)

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Run 4: Statistics of Indigo

Start at: 2018-07-04 12:05:30
End at: 2018-07-04 12:06:00
Local clock offset: 3.094 ms
Remote clock offset: -3.246 ms

# Below is generated by plot.py at 2018-07-04 14:30:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.32 Mbit/s
95th percentile per-packet one-way delay: 32.354 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 55.50 Mbit/s
95th percentile per-packet one-way delay: 31.487 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 39.74 Mbit/s
95th percentile per-packet one-way delay: 32.030 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 31.70 Mbit/s
95th percentile per-packet one-way delay: 43.184 ms
Loss rate: 0.38%
Run 4: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 55.48 Mbps)
- Flow 1 egress (mean 55.50 Mbps)
- Flow 2 ingress (mean 39.73 Mbps)
- Flow 2 egress (mean 39.74 Mbps)
- Flow 3 ingress (mean 31.72 Mbps)
- Flow 3 egress (mean 31.70 Mbps)

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

- Flow 1 (95th percentile 31.49 ms)
- Flow 2 (95th percentile 32.03 ms)
- Flow 3 (95th percentile 43.18 ms)
Run 5: Statistics of Indigo

Start at: 2018-07-04 12:26:19
End at: 2018-07-04 12:26:49
Local clock offset: 1.637 ms
Remote clock offset: -5.788 ms

# Below is generated by plot.py at 2018-07-04 14:30:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.23 Mbit/s
95th percentile per-packet one-way delay: 35.950 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 55.30 Mbit/s
95th percentile per-packet one-way delay: 34.953 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 36.12 Mbit/s
95th percentile per-packet one-way delay: 36.233 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 45.48 Mbit/s
95th percentile per-packet one-way delay: 40.347 ms
Loss rate: 0.36%
Run 5: Report of Indigo — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 55.28 Mbps)
- Flow 1 egress (mean 55.30 Mbps)
- Flow 2 ingress (mean 36.69 Mbps)
- Flow 2 egress (mean 36.12 Mbps)
- Flow 3 ingress (mean 45.49 Mbps)
- Flow 3 egress (mean 45.48 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 34.95 ms)
- Flow 2 (95th percentile 36.23 ms)
- Flow 3 (95th percentile 40.35 ms)
Run 6: Statistics of Indigo

End at: 2018-07-04 12:47:23
Local clock offset: 2.249 ms
Remote clock offset: -7.519 ms

# Below is generated by plot.py at 2018-07-04 14:30:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.42 Mbit/s
95th percentile per-packet one-way delay: 32.694 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 58.82 Mbit/s
95th percentile per-packet one-way delay: 31.533 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 39.10 Mbit/s
95th percentile per-packet one-way delay: 37.229 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 32.39 Mbit/s
95th percentile per-packet one-way delay: 33.987 ms
Loss rate: 0.42%
Run 6: Report of Indigo — Data Link
Run 7: Statistics of Indigo

Start at: 2018-07-04 13:07:42
End at: 2018-07-04 13:08:12
Local clock offset: 0.583 ms
Remote clock offset: -9.622 ms

# Below is generated by plot.py at 2018-07-04 14:30:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.34 Mbit/s
95th percentile per-packet one-way delay: 27.225 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 64.56 Mbit/s
95th percentile per-packet one-way delay: 24.717 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.10 Mbit/s
95th percentile per-packet one-way delay: 30.373 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 23.73 Mbit/s
95th percentile per-packet one-way delay: 30.690 ms
Loss rate: 0.34%
Run 7: Report of Indigo — Data Link

[Graphs showing throughput and per-packet one-way delay over time for different flows.]
Run 8: Statistics of Indigo

Local clock offset: 2.647 ms
Remote clock offset: -9.447 ms

# Below is generated by plot.py at 2018-07-04 14:30:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.32 Mbit/s
95th percentile per-packet one-way delay: 30.419 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 54.85 Mbit/s
95th percentile per-packet one-way delay: 30.987 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 48.89 Mbit/s
95th percentile per-packet one-way delay: 27.016 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 24.31 Mbit/s
95th percentile per-packet one-way delay: 36.127 ms
Loss rate: 0.36%
Run 8: Report of Indigo — Data Link

![Throughput Graph](image1)

![Delay Graph](image2)
Run 9: Statistics of Indigo

End at: 2018-07-04 13:49:06
Local clock offset: -1.144 ms
Remote clock offset: -5.955 ms

# Below is generated by plot.py at 2018-07-04 14:30:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.92 Mbit/s
95th percentile per-packet one-way delay: 22.468 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 59.42 Mbit/s
95th percentile per-packet one-way delay: 20.776 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 40.51 Mbit/s
95th percentile per-packet one-way delay: 22.582 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 22.726 ms
Loss rate: 0.34%
Run 9: Report of Indigo — Data Link

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

Flow 1 ingress (mean 59.43 Mbit/s)  Flow 1 egress (mean 59.42 Mbit/s)
Flow 2 ingress (mean 40.51 Mbit/s)  Flow 2 egress (mean 40.51 Mbit/s)
Flow 3 ingress (mean 32.21 Mbit/s)  Flow 3 egress (mean 32.19 Mbit/s)

Flow 1 (95th percentile 20.78 ms)  Flow 2 (95th percentile 22.58 ms)  Flow 3 (95th percentile 22.73 ms)
Run 10: Statistics of Indigo

Start at: 2018-07-04 14:10:28
End at: 2018-07-04 14:10:58
Local clock offset: 2.684 ms
Remote clock offset: -7.257 ms

# Below is generated by plot.py at 2018-07-04 14:31:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.99 Mbit/s
95th percentile per-packet one-way delay: 27.653 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 64.77 Mbit/s
95th percentile per-packet one-way delay: 23.060 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 36.54 Mbit/s
95th percentile per-packet one-way delay: 27.814 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 24.16 Mbit/s
95th percentile per-packet one-way delay: 27.920 ms
Loss rate: 1.29%
Run 10: Report of Indigo — Data Link

通过流量（Mbps）

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
Time (s)

- 流 1 ingress (mean 64.77 Mbps)
- 流 1 egress (mean 64.77 Mbps)
- 流 2 ingress (mean 36.54 Mbps)
- 流 2 egress (mean 36.54 Mbps)
- 流 3 ingress (mean 24.16 Mbps)
- 流 3 egress (mean 24.16 Mbps)

每个包的端到端延迟（ms）

0 5 10 15 20 25 30 35 40 45 50 55 60
Time (s)

- 流 1 (95th percentile 23.06 ms)
- 流 2 (95th percentile 27.81 ms)
- 流 3 (95th percentile 27.92 ms)
Run 1: Statistics of LEDBAT

Start at: 2018-07-04 10:54:04
End at: 2018-07-04 10:54:34
Local clock offset: -2.952 ms
Remote clock offset: 3.031 ms

# Below is generated by plot.py at 2018-07-04 14:31:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.41 Mbit/s
95th percentile per-packet one-way delay: 27.974 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 51.29 Mbit/s
95th percentile per-packet one-way delay: 26.699 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 35.31 Mbit/s
95th percentile per-packet one-way delay: 29.799 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 40.98 Mbit/s
95th percentile per-packet one-way delay: 27.253 ms
Loss rate: 0.37%
Run 1: Report of LEDBAT — Data Link

![Graph of throughput over time](image)

![Graph of per-packet one-way delay](image)
Run 2: Statistics of LEDBAT

Start at: 2018-07-04 11:14:25
End at: 2018-07-04 11:14:55
Local clock offset: 0.155 ms
Remote clock offset: 2.691 ms

# Below is generated by plot.py at 2018-07-04 14:31:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.86 Mbit/s
  95th percentile per-packet one-way delay: 30.307 ms
  Loss rate: 0.14%
-- Flow 1:
  Average throughput: 52.97 Mbit/s
  95th percentile per-packet one-way delay: 30.011 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 34.49 Mbit/s
  95th percentile per-packet one-way delay: 31.813 ms
  Loss rate: 0.13%
-- Flow 3:
  Average throughput: 41.99 Mbit/s
  95th percentile per-packet one-way delay: 28.426 ms
  Loss rate: 0.39%
Run 3: Statistics of LEDBAT

Start at: 2018-07-04 11:35:03
End at: 2018-07-04 11:35:33
Local clock offset: 1.699 ms
Remote clock offset: 3.103 ms

# Below is generated by plot.py at 2018-07-04 14:31:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.47 Mbit/s
  95th percentile per-packet one-way delay: 47.306 ms
  Loss rate: 0.22%
-- Flow 1:
  Average throughput: 49.92 Mbit/s
  95th percentile per-packet one-way delay: 45.377 ms
  Loss rate: 0.17%
-- Flow 2:
  Average throughput: 33.02 Mbit/s
  95th percentile per-packet one-way delay: 49.399 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 22.81 Mbit/s
  95th percentile per-packet one-way delay: 50.025 ms
  Loss rate: 0.68%
Run 3: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 49.94 Mbit/s)
- Flow 1 egress (mean 49.92 Mbit/s)
- Flow 2 ingress (mean 33.00 Mbit/s)
- Flow 2 egress (mean 33.02 Mbit/s)
- Flow 3 ingress (mean 22.85 Mbit/s)
- Flow 3 egress (mean 22.81 Mbit/s)

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

- Flow 1 (95th percentile 45.38 ms)
- Flow 2 (95th percentile 49.40 ms)
- Flow 3 (95th percentile 59.02 ms)
Run 4: Statistics of LEDBAT

End at: 2018-07-04 11:56:29
Local clock offset: 0.496 ms
Remote clock offset: -0.575 ms

# Below is generated by plot.py at 2018-07-04 14:31:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.03 Mbit/s
95th percentile per-packet one-way delay: 36.433 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 43.29 Mbit/s
95th percentile per-packet one-way delay: 36.401 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 33.60 Mbit/s
95th percentile per-packet one-way delay: 38.304 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 37.40 Mbit/s
95th percentile per-packet one-way delay: 35.049 ms
Loss rate: 0.32%
Run 4: Report of LEDBAT — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows. The graphs display data for Flow 1, Flow 2, and Flow 3, with various throughput and delay measurements.]
Run 5: Statistics of LEDBAT

Start at: 2018-07-04 12:16:48
End at: 2018-07-04 12:17:18
Local clock offset: 2.502 ms
Remote clock offset: -3.661 ms

# Below is generated by plot.py at 2018-07-04 14:31:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.42 Mbit/s
95th percentile per-packet one-way delay: 37.601 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 47.76 Mbit/s
95th percentile per-packet one-way delay: 37.255 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 34.71 Mbit/s
95th percentile per-packet one-way delay: 39.907 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 37.83 Mbit/s
95th percentile per-packet one-way delay: 35.418 ms
Loss rate: 0.34%
Run 5: Report of LEDBAT — Data Link
Run 6: Statistics of LEDEBAT

Start at: 2018-07-04 12:37:26
End at: 2018-07-04 12:37:56
Local clock offset: 0.007 ms
Remote clock offset: -8.352 ms

# Below is generated by plot.py at 2018-07-04 14:31:56
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 84.69 Mbit/s
   95th percentile per-packet one-way delay: 35.623 ms
   Loss rate: 0.14%
   -- Flow 1:
   Average throughput: 49.35 Mbit/s
   95th percentile per-packet one-way delay: 35.149 ms
   Loss rate: 0.09%
   -- Flow 2:
   Average throughput: 33.82 Mbit/s
   95th percentile per-packet one-way delay: 37.870 ms
   Loss rate: 0.15%
   -- Flow 3:
   Average throughput: 38.70 Mbit/s
   95th percentile per-packet one-way delay: 34.600 ms
   Loss rate: 0.30%
Run 6: Report of LEDBAT — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 7: Statistics of LEDBAT

Start at: 2018-07-04 12:58:19
End at: 2018-07-04 12:58:49
Local clock offset: -0.478 ms
Remote clock offset: -9.403 ms

# Below is generated by plot.py at 2018-07-04 14:32:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.37 Mbit/s
95th percentile per-packet one-way delay: 29.511 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 52.62 Mbit/s
95th percentile per-packet one-way delay: 29.181 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 37.44 Mbit/s
95th percentile per-packet one-way delay: 30.255 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 29.63 Mbit/s
95th percentile per-packet one-way delay: 29.630 ms
Loss rate: 0.36%
Run 7: Report of LEDBAT — Data Link
Run 8: Statistics of LEDBAT

End at: 2018-07-04 13:19:02
Local clock offset: 1.564 ms
Remote clock offset: -9.421 ms

# Below is generated by plot.py at 2018-07-04 14:32:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.86 Mbit/s
95th percentile per-packet one-way delay: 32.280 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 50.65 Mbit/s
95th percentile per-packet one-way delay: 31.488 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 41.09 Mbit/s
95th percentile per-packet one-way delay: 32.685 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 29.68 Mbit/s
95th percentile per-packet one-way delay: 33.016 ms
Loss rate: 0.32%
Run 9: Statistics of LEDBAT

Local clock offset: -0.594 ms
Remote clock offset: -7.932 ms

# Below is generated by plot.py at 2018-07-04 14:32:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.78 Mbit/s
  95th percentile per-packet one-way delay: 29.026 ms
  Loss rate: 0.13%
-- Flow 1:
  Average throughput: 51.78 Mbit/s
  95th percentile per-packet one-way delay: 28.742 ms
  Loss rate: 0.08%
-- Flow 2:
  Average throughput: 35.12 Mbit/s
  95th percentile per-packet one-way delay: 30.961 ms
  Loss rate: 0.12%
-- Flow 3:
  Average throughput: 41.13 Mbit/s
  95th percentile per-packet one-way delay: 27.875 ms
  Loss rate: 0.32%
Run 9: Report of LEDBAT — Data Link

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

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 51.78 Mb/s)
Flow 1 egress (mean 51.78 Mb/s)
Flow 2 ingress (mean 35.11 Mb/s)
Flow 2 egress (mean 35.12 Mb/s)
Flow 3 ingress (mean 41.15 Mb/s)
Flow 3 egress (mean 41.13 Mb/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 28.74 ms)
Flow 2 (95th percentile 30.96 ms)
Flow 3 (95th percentile 27.88 ms)
Run 10: Statistics of LEDBAT

Start at: 2018-07-04 14:00:18
End at: 2018-07-04 14:00:48
Local clock offset: 1.49 ms
Remote clock offset: -5.669 ms

# Below is generated by plot.py at 2018-07-04 14:32:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.01 Mbit/s
95th percentile per-packet one-way delay: 26.974 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 58.50 Mbit/s
95th percentile per-packet one-way delay: 26.599 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 45.85 Mbit/s
95th percentile per-packet one-way delay: 27.323 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 17.586 ms
Loss rate: 0.00%
Run 10: Report of LEDBAT — Data Link

![Throughput and Delay Graphs]

- **Throughput Graph**
  - Flow 1 ingress (mean 58.51 Mbit/s)
  - Flow 1 egress (mean 58.50 Mbit/s)
  - Flow 2 ingress (mean 45.85 Mbit/s)
  - Flow 2 egress (mean 45.85 Mbit/s)
  - Flow 3 ingress (mean 0.00 Mbit/s)
  - Flow 3 egress (mean 0.00 Mbit/s)

- **Delay Graph**
  - Flow 1 (95th percentile 26.60 ms)
  - Flow 2 (95th percentile 27.32 ms)
  - Flow 3 (95th percentile 17.59 ms)
Run 1: Statistics of PCC-Allegro

Start at: 2018-07-04 10:50:31
End at: 2018-07-04 10:51:01
Local clock offset: -2.387 ms
Remote clock offset: 0.683 ms

# Below is generated by plot.py at 2018-07-04 14:32:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.69 Mbit/s
95th percentile per-packet one-way delay: 34.463 ms
Loss rate: 1.61%
-- Flow 1:
Average throughput: 11.70 Mbit/s
95th percentile per-packet one-way delay: 14.336 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 62.00 Mbit/s
95th percentile per-packet one-way delay: 34.760 ms
Loss rate: 2.36%
-- Flow 3:
Average throughput: 32.76 Mbit/s
95th percentile per-packet one-way delay: 36.226 ms
Loss rate: 0.34%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2018-07-04 11:10:49  
End at: 2018-07-04 11:11:19  
Local clock offset: -1.122 ms  
Remote clock offset: 3.374 ms  

# Below is generated by plot.py at 2018-07-04 14:32:27  
# Datalink statistics  
-- Total of 3 flows:  
  Average throughput: 49.22 Mbit/s  
  95th percentile per-packet one-way delay: 18.734 ms  
  Loss rate: 0.16%  
-- Flow 1:  
  Average throughput: 35.66 Mbit/s  
  95th percentile per-packet one-way delay: 18.094 ms  
  Loss rate: 0.10%  
-- Flow 2:  
  Average throughput: 3.97 Mbit/s  
  95th percentile per-packet one-way delay: 17.980 ms  
  Loss rate: 0.20%  
-- Flow 3:  
  Average throughput: 33.22 Mbit/s  
  95th percentile per-packet one-way delay: 20.185 ms  
  Loss rate: 0.33%
Run 2: Report of PCC-Allegro — Data Link

![Graph of data link performance](image)

The graphs depict the throughput and per-packet one-way delay over time for different flows in the PCC-Allegro data link. The throughput graph shows the average data rate for each flow, with markers indicating the mean values. The per-packet one-way delay graph shows the variability in delay across different time periods.

Key observations:
- **Flow 1** (blue dashed line): Ingress (mean 35.66 Mbit/s) and Egress (mean 35.66 Mbit/s)
- **Flow 2** (green dashed line): Ingress (mean 3.97 Mbit/s) and Egress (mean 3.97 Mbit/s)
- **Flow 3** (red dashed line): Ingress (mean 33.23 Mbit/s) and Egress (mean 33.22 Mbit/s)

The graphs illustrate the performance metrics for each flow, providing insights into the efficiency and reliability of the data link.
Run 3: Statistics of PCC-Allegro

Start at: 2018-07-04 11:31:12
End at: 2018-07-04 11:31:42
Local clock offset: -0.139 ms
Remote clock offset: 2.642 ms

# Below is generated by plot.py at 2018-07-04 14:32:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 86.00 Mbit/s
  95th percentile per-packet one-way delay: 46.729 ms
  Loss rate: 1.75%
-- Flow 1:
  Average throughput: 58.47 Mbit/s
  95th percentile per-packet one-way delay: 47.198 ms
  Loss rate: 2.45%
-- Flow 2:
  Average throughput: 33.11 Mbit/s
  95th percentile per-packet one-way delay: 29.538 ms
  Loss rate: 0.20%
-- Flow 3:
  Average throughput: 16.81 Mbit/s
  95th percentile per-packet one-way delay: 25.692 ms
  Loss rate: 0.36%
Run 3: Report of PCC-Allegro — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 59.87 Mbps)
- Flow 1 egress (mean 58.47 Mbps)
- Flow 2 ingress (mean 33.12 Mbps)
- Flow 2 egress (mean 33.11 Mbps)
- Flow 3 ingress (mean 16.82 Mbps)
- Flow 3 egress (mean 16.81 Mbps)

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

- Flow 1 (95th percentile 47.20 ms)
- Flow 2 (95th percentile 29.54 ms)
- Flow 3 (95th percentile 25.69 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2018-07-04 11:52:15
End at: 2018-07-04 11:52:45
Local clock offset: 3.344 ms
Remote clock offset: 1.35 ms

# Below is generated by plot.py at 2018-07-04 14:32:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.73 Mbit/s
95th percentile per-packet one-way delay: 24.776 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 2.62 Mbit/s
95th percentile per-packet one-way delay: 24.787 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 57.30 Mbit/s
95th percentile per-packet one-way delay: 24.766 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 24.548 ms
Loss rate: 0.00%
Run 4: Report of PCC-Allegro — Data Link

![Throughput Graph]

![Packet Delay Graph]
Run 5: Statistics of PCC-Allegro

Start at: 2018-07-04 12:12:56
End at: 2018-07-04 12:13:26
Local clock offset: 0.791 ms
Remote clock offset: -3.237 ms

# Below is generated by plot.py at 2018-07-04 14:33:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 85.64 Mbit/s
  95th percentile per-packet one-way delay: 45.938 ms
  Loss rate: 2.55%
-- Flow 1:
  Average throughput: 59.01 Mbit/s
  95th percentile per-packet one-way delay: 46.706 ms
  Loss rate: 3.57%
-- Flow 2:
  Average throughput: 32.66 Mbit/s
  95th percentile per-packet one-way delay: 25.884 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 14.96 Mbit/s
  95th percentile per-packet one-way delay: 27.804 ms
  Loss rate: 0.32%
Run 5: Report of PCC-Allegro — Data Link
Run 6: Statistics of PCC-Allegro

Start at: 2018-07-04 12:33:38
End at: 2018-07-04 12:34:08
Local clock offset: -1.364 ms
Remote clock offset: -9.201 ms

# Below is generated by plot.py at 2018-07-04 14:33:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.60 Mbit/s
95th percentile per-packet one-way delay: 60.576 ms
Loss rate: 5.66%
-- Flow 1:
Average throughput: 55.62 Mbit/s
95th percentile per-packet one-way delay: 56.058 ms
Loss rate: 7.20%
-- Flow 2:
Average throughput: 32.55 Mbit/s
95th percentile per-packet one-way delay: 64.779 ms
Loss rate: 4.44%
-- Flow 3:
Average throughput: 40.58 Mbit/s
95th percentile per-packet one-way delay: 47.335 ms
Loss rate: 0.82%
Run 6: Report of PCC-Allegro — Data Link
Run 7: Statistics of PCC-Allegro

Start at: 2018-07-04 12:54:32
End at: 2018-07-04 12:55:02
Local clock offset: 1.153 ms
Remote clock offset: -8.037 ms

# Below is generated by plot.py at 2018-07-04 14:33:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.17 Mbit/s
95th percentile per-packet one-way delay: 55.026 ms
Loss rate: 5.46%
-- Flow 1:
Average throughput: 58.66 Mbit/s
95th percentile per-packet one-way delay: 50.456 ms
Loss rate: 6.31%
-- Flow 2:
Average throughput: 37.07 Mbit/s
95th percentile per-packet one-way delay: 55.871 ms
Loss rate: 4.06%
-- Flow 3:
Average throughput: 30.00 Mbit/s
95th percentile per-packet one-way delay: 57.633 ms
Loss rate: 3.74%
Run 7: Report of PCC-Allegro — Data Link
Run 8: Statistics of PCC-Allegro

Start at: 2018-07-04 13:14:56
End at: 2018-07-04 13:15:26
Local clock offset: -0.242 ms
Remote clock offset: -10.536 ms

# Below is generated by plot.py at 2018-07-04 14:33:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.28 Mbit/s
95th percentile per-packet one-way delay: 53.759 ms
Loss rate: 5.03%
-- Flow 1:
Average throughput: 57.97 Mbit/s
95th percentile per-packet one-way delay: 49.957 ms
Loss rate: 6.25%
-- Flow 2:
Average throughput: 34.02 Mbit/s
95th percentile per-packet one-way delay: 57.409 ms
Loss rate: 4.35%
-- Flow 3:
Average throughput: 38.61 Mbit/s
95th percentile per-packet one-way delay: 25.706 ms
Loss rate: 0.38%
Run 8: Report of PCC-Allegro — Data Link

![Graphs showing network data](image-url)

- Flow 1 ingress (mean 61.76 Mbit/s)
- Flow 1 egress (mean 57.97 Mbit/s)
- Flow 2 ingress (mean 35.50 Mbit/s)
- Flow 2 egress (mean 34.02 Mbit/s)
- Flow 3 ingress (mean 38.65 Mbit/s)
- Flow 3 egress (mean 38.61 Mbit/s)

![Graphs showing network delay](image-url)

- Flow 1 (95th percentile 49.96 ms)
- Flow 2 (95th percentile 57.41 ms)
- Flow 3 (95th percentile 23.71 ms)
Run 9: Statistics of PCC-Allegro

Start at: 2018-07-04 13:35:17
End at: 2018-07-04 13:35:47
Local clock offset: 0.85 ms
Remote clock offset: -8.799 ms

# Below is generated by plot.py at 2018-07-04 14:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.89 Mbit/s
95th percentile per-packet one-way delay: 50.566 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 61.97 Mbit/s
95th percentile per-packet one-way delay: 40.554 ms
Loss rate: 1.35%
-- Flow 2:
Average throughput: 36.84 Mbit/s
95th percentile per-packet one-way delay: 52.900 ms
Loss rate: 2.73%
-- Flow 3:
Average throughput: 16.52 Mbit/s
95th percentile per-packet one-way delay: 34.335 ms
Loss rate: 0.32%
Run 9: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 62.77 Mbit/s)
- Flow 1 egress (mean 61.97 Mbit/s)
- Flow 2 ingress (mean 37.82 Mbit/s)
- Flow 2 egress (mean 36.84 Mbit/s)
- Flow 3 ingress (mean 16.54 Mbit/s)
- Flow 3 egress (mean 16.52 Mbit/s)
Run 10: Statistics of PCC-Allegro

Start at: 2018-07-04 13:56:06
End at: 2018-07-04 13:56:36
Local clock offset: 1.109 ms
Remote clock offset: -5.705 ms

# Below is generated by plot.py at 2018-07-04 14:33:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.91 Mbit/s
95th percentile per-packet one-way delay: 44.915 ms
Loss rate: 5.01%
-- Flow 1:
Average throughput: 59.87 Mbit/s
95th percentile per-packet one-way delay: 42.334 ms
Loss rate: 6.10%
-- Flow 2:
Average throughput: 40.89 Mbit/s
95th percentile per-packet one-way delay: 45.841 ms
Loss rate: 3.68%
-- Flow 3:
Average throughput: 20.88 Mbit/s
95th percentile per-packet one-way delay: 21.629 ms
Loss rate: 0.34%
Run 10: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 63.68 Mbit/s)
- Flow 1 egress (mean 59.87 Mbit/s)
- Flow 2 ingress (mean 42.38 Mbit/s)
- Flow 2 egress (mean 40.89 Mbit/s)
- Flow 3 ingress (mean 20.89 Mbit/s)
- Flow 3 egress (mean 20.88 Mbit/s)
Run 1: Statistics of PCC-Expr

Start at: 2018-07-04 10:52:56
End at: 2018-07-04 10:53:26
Local clock offset: 0.288 ms
Remote clock offset: 1.811 ms

# Below is generated by plot.py at 2018-07-04 14:33:34
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 21.68 Mbit/s
  95th percentile per-packet one-way delay: 15.803 ms
  Loss rate: 0.12%
-- Flow 1:
  Average throughput: 9.98 Mbit/s
  95th percentile per-packet one-way delay: 15.797 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 9.81 Mbit/s
  95th percentile per-packet one-way delay: 15.785 ms
  Loss rate: 0.05%
-- Flow 3:
  Average throughput: 15.72 Mbit/s
  95th percentile per-packet one-way delay: 15.827 ms
  Loss rate: 0.35%
Run 1: Report of PCC-Expr — Data Link

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

Start at: 2018-07-04 11:13:09
End at: 2018-07-04 11:13:39
Local clock offset: -0.012 ms
Remote clock offset: 3.822 ms

# Below is generated by plot.py at 2018-07-04 14:34:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.17 Mbit/s
95th percentile per-packet one-way delay: 51.122 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 35.22 Mbit/s
95th percentile per-packet one-way delay: 50.873 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 26.06 Mbit/s
95th percentile per-packet one-way delay: 53.668 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 41.33 Mbit/s
95th percentile per-packet one-way delay: 35.907 ms
Loss rate: 0.73%
Run 2: Report of PCC-Expr — Data Link
Run 3: Statistics of PCC-Expr

Start at: 2018-07-04 11:33:46
End at: 2018-07-04 11:34:16
Local clock offset: 2.008 ms
Remote clock offset: 2.661 ms

# Below is generated by plot.py at 2018-07-04 14:34:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.60 Mbit/s
95th percentile per-packet one-way delay: 38.656 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 70.67 Mbit/s
95th percentile per-packet one-way delay: 38.769 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 10.47 Mbit/s
95th percentile per-packet one-way delay: 25.951 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 15.07 Mbit/s
95th percentile per-packet one-way delay: 26.011 ms
Loss rate: 0.56%
Run 3: Report of PCC-Expr — Data Link

**Throughput (Mbps)**

![Graph showing throughput in Mbps over time.]

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

![Graph showing per packet one way delay over time.]

Legend:
- Flow 1 ingress (mean 70.69 Mbps)
- Flow 1 egress (mean 70.67 Mbps)
- Flow 2 ingress (mean 10.47 Mbps)
- Flow 2 egress (mean 10.47 Mbps)
- Flow 3 ingress (mean 15.09 Mbps)
- Flow 3 egress (mean 15.07 Mbps)

Flow 1 (95th percentile 38.77 ms)
Flow 2 (95th percentile 25.93 ms)
Flow 3 (95th percentile 26.01 ms)
Run 4: Statistics of PCC-Expr

Start at: 2018-07-04 11:54:42  
End at: 2018-07-04 11:55:12  
Local clock offset: 0.363 ms  
Remote clock offset: -0.339 ms

# Below is generated by plot.py at 2018-07-04 14:34:56  
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.43 Mbit/s
95th percentile per-packet one-way delay: 36.780 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 69.71 Mbit/s
95th percentile per-packet one-way delay: 37.081 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 14.16 Mbit/s
95th percentile per-packet one-way delay: 23.339 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 16.10 Mbit/s
95th percentile per-packet one-way delay: 24.777 ms
Loss rate: 0.55%
Run 4: Report of PCC-Expr — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 69.72 Mbps)
- Flow 1 egress (mean 69.71 Mbps)
- Flow 2 ingress (mean 14.16 Mbps)
- Flow 2 egress (mean 14.16 Mbps)
- Flow 3 ingress (mean 16.13 Mbps)
- Flow 3 egress (mean 16.10 Mbps)

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

- Flow 1 95th percentile 37.08 ms
- Flow 2 95th percentile 23.34 ms
- Flow 3 95th percentile 24.78 ms
Run 5: Statistics of PCC-Expr

Start at: 2018-07-04 12:15:27
End at: 2018-07-04 12:15:57
Local clock offset: 1.158 ms
Remote clock offset: -3.301 ms

# Below is generated by plot.py at 2018-07-04 14:35:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.69 Mbit/s
95th percentile per-packet one-way delay: 51.889 ms
Loss rate: 1.73%
-- Flow 1:
Average throughput: 52.24 Mbit/s
95th percentile per-packet one-way delay: 49.518 ms
Loss rate: 2.02%
-- Flow 2:
Average throughput: 36.37 Mbit/s
95th percentile per-packet one-way delay: 52.485 ms
Loss rate: 1.48%
-- Flow 3:
Average throughput: 28.13 Mbit/s
95th percentile per-packet one-way delay: 52.575 ms
Loss rate: 0.70%
Run 5: Report of PCC-Expr — Data Link
Run 6: Statistics of PCC-Expr

Start at: 2018-07-04 12:36:11
End at: 2018-07-04 12:36:41
Local clock offset: -2.537 ms
Remote clock offset: -8.932 ms

# Below is generated by plot.py at 2018-07-04 14:35:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.02 Mbit/s
95th percentile per-packet one-way delay: 57.818 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 48.92 Mbit/s
95th percentile per-packet one-way delay: 57.848 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 36.12 Mbit/s
95th percentile per-packet one-way delay: 58.271 ms
Loss rate: 2.05%
-- Flow 3:
Average throughput: 39.65 Mbit/s
95th percentile per-packet one-way delay: 43.350 ms
Loss rate: 1.17%
Run 6: Report of PCC-Expr — Data Link
Run 7: Statistics of PCC-Expr

Start at: 2018-07-04 12:57:03
End at: 2018-07-04 12:57:33
Local clock offset: -0.642 ms
Remote clock offset: -11.089 ms

# Below is generated by plot.py at 2018-07-04 14:35:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.71 Mbit/s
95th percentile per-packet one-way delay: 55.049 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 50.09 Mbit/s
95th percentile per-packet one-way delay: 54.786 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 34.37 Mbit/s
95th percentile per-packet one-way delay: 55.939 ms
Loss rate: 1.40%
-- Flow 3:
Average throughput: 41.80 Mbit/s
95th percentile per-packet one-way delay: 38.251 ms
Loss rate: 0.46%
Run 7: Report of PCC-Expr — Data Link
Run 8: Statistics of PCC-Expr

Start at: 2018-07-04 13:17:19
End at: 2018-07-04 13:17:49
Local clock offset: 0.85 ms
Remote clock offset: -10.203 ms

# Below is generated by plot.py at 2018-07-04 14:35:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.64 Mbit/s
95th percentile per-packet one-way delay: 48.357 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 54.52 Mbit/s
95th percentile per-packet one-way delay: 48.027 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 35.43 Mbit/s
95th percentile per-packet one-way delay: 45.638 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 32.06 Mbit/s
95th percentile per-packet one-way delay: 48.922 ms
Loss rate: 0.83%
Run 8: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 54.67 Mbps)
- Flow 1 egress (mean 54.52 Mbps)
- Flow 2 ingress (mean 35.46 Mbps)
- Flow 2 egress (mean 35.43 Mbps)
- Flow 3 ingress (mean 32.24 Mbps)
- Flow 3 egress (mean 32.06 Mbps)

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

- Flow 1 (95th percentile 48.03 ms)
- Flow 2 (95th percentile 45.64 ms)
- Flow 3 (95th percentile 48.92 ms)
Run 9: Statistics of PCC-Expr

Start at: 2018-07-04 13:37:45
End at: 2018-07-04 13:38:15
Local clock offset: -0.556 ms
Remote clock offset: -8.784 ms

# Below is generated by plot.py at 2018-07-04 14:35:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.22 Mbit/s
95th percentile per-packet one-way delay: 46.652 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 58.71 Mbit/s
95th percentile per-packet one-way delay: 46.170 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 31.92 Mbit/s
95th percentile per-packet one-way delay: 46.906 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 31.23 Mbit/s
95th percentile per-packet one-way delay: 46.786 ms
Loss rate: 0.36%
Run 9: Report of PCC-Expr — Data Link
Run 10: Statistics of PCC-Expr

Start at: 2018-07-04 13:58:42
End at: 2018-07-04 13:59:12
Local clock offset: -1.068 ms
Remote clock offset: -5.894 ms

# Below is generated by plot.py at 2018-07-04 14:36:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 91.54 Mbit/s
  95th percentile per-packet one-way delay: 44.109 ms
  Loss rate: 0.64%
-- Flow 1:
  Average throughput: 56.30 Mbit/s
  95th percentile per-packet one-way delay: 43.115 ms
  Loss rate: 0.33%
-- Flow 2:
  Average throughput: 38.70 Mbit/s
  95th percentile per-packet one-way delay: 44.251 ms
  Loss rate: 1.38%
-- Flow 3:
  Average throughput: 28.87 Mbit/s
  95th percentile per-packet one-way delay: 44.511 ms
  Loss rate: 0.49%
Run 10: Report of PCC-Expr — Data Link
Run 1: Statistics of QUIC Cubic

End at: 2018-07-04 10:56:58
Local clock offset: -0.073 ms
Remote clock offset: 3.493 ms

# Below is generated by plot.py at 2018-07-04 14:36:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.88 Mbit/s
  95th percentile per-packet one-way delay: 31.664 ms
  Loss rate: 0.31%
-- Flow 1:
  Average throughput: 59.92 Mbit/s
  95th percentile per-packet one-way delay: 30.013 ms
  Loss rate: 0.21%
-- Flow 2:
  Average throughput: 33.27 Mbit/s
  95th percentile per-packet one-way delay: 33.747 ms
  Loss rate: 0.47%
-- Flow 3:
  Average throughput: 23.70 Mbit/s
  95th percentile per-packet one-way delay: 35.204 ms
  Loss rate: 0.58%
Run 1: Report of QUIC Cubic — Data Link

![Graphs showing throughput and one-way delay over time for different flows.](image)

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 60.00 Mbps)
  - Flow 1 egress (mean 59.92 Mbps)
  - Flow 2 ingress (mean 33.39 Mbps)
  - Flow 2 egress (mean 33.27 Mbps)
  - Flow 3 ingress (mean 23.77 Mbps)
  - Flow 3 egress (mean 23.70 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 30.01 ms)
  - Flow 2 (95th percentile 33.75 ms)
  - Flow 3 (95th percentile 35.20 ms)
Run 2: Statistics of QUIC Cubic

Start at: 2018-07-04 11:16:45
End at: 2018-07-04 11:17:15
Local clock offset: 2.353 ms
Remote clock offset: 1.362 ms

# Below is generated by plot.py at 2018-07-04 14:36:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.95 Mbit/s
  95th percentile per-packet one-way delay: 37.896 ms
  Loss rate: 0.18%
-- Flow 1:
  Average throughput: 57.21 Mbit/s
  95th percentile per-packet one-way delay: 37.233 ms
  Loss rate: 0.10%
-- Flow 2:
  Average throughput: 39.71 Mbit/s
  95th percentile per-packet one-way delay: 38.015 ms
  Loss rate: 0.22%
-- Flow 3:
  Average throughput: 31.28 Mbit/s
  95th percentile per-packet one-way delay: 39.943 ms
  Loss rate: 0.51%
Run 2: Report of QUIC Cubic — Data Link

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

- Blue dashed line: Flow 1 ingress (mean 57.22 Mbit/s)
- Blue solid line: Flow 1 egress (mean 57.21 Mbit/s)
- Green dashed line: Flow 2 ingress (mean 39.71 Mbit/s)
- Green solid line: Flow 2 egress (mean 39.71 Mbit/s)
- Purple dashed line: Flow 3 ingress (mean 31.35 Mbit/s)
- Purple solid line: Flow 3 egress (mean 31.26 Mbit/s)

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

- Blue circles: Flow 1 (95th percentile 37.23 ms)
- Green triangles: Flow 2 (95th percentile 38.02 ms)
- Red squares: Flow 3 (95th percentile 39.94 ms)
Run 3: Statistics of QUIC Cubic

Start at: 2018-07-04 11:37:28
End at: 2018-07-04 11:37:58
Local clock offset: 2.303 ms
Remote clock offset: 3.991 ms

# Below is generated by plot.py at 2018-07-04 14:36:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 86.91 Mbit/s
  95th percentile per-packet one-way delay: 45.368 ms
  Loss rate: 0.23%
-- Flow 1:
  Average throughput: 50.50 Mbit/s
  95th percentile per-packet one-way delay: 44.824 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 39.34 Mbit/s
  95th percentile per-packet one-way delay: 45.638 ms
  Loss rate: 0.27%
-- Flow 3:
  Average throughput: 31.10 Mbit/s
  95th percentile per-packet one-way delay: 50.328 ms
  Loss rate: 0.60%
Run 3: Report of QUIC Cubic — Data Link

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

Flow 1 ingress (mean 50.50 Mbit/s) 
Flow 1 egress (mean 50.50 Mbit/s) 
Flow 2 ingress (mean 39.36 Mbit/s) 
Flow 2 egress (mean 39.34 Mbit/s) 
Flow 3 ingress (mean 31.16 Mbit/s) 
Flow 3 egress (mean 31.10 Mbit/s)
Run 4: Statistics of QUIC Cubic

Start at: 2018-07-04 11:58:22
End at: 2018-07-04 11:58:52
Local clock offset: 1.282 ms
Remote clock offset: -1.004 ms

# Below is generated by plot.py at 2018-07-04 14:36:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.74 Mbit/s
95th percentile per-packet one-way delay: 39.482 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 55.64 Mbit/s
95th percentile per-packet one-way delay: 37.848 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 38.87 Mbit/s
95th percentile per-packet one-way delay: 42.941 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 31.08 Mbit/s
95th percentile per-packet one-way delay: 50.512 ms
Loss rate: 0.52%
Run 4: Report of QUIC Cubic — Data Link

![Graph showing throughput and packet delay over time for different flows with various metrics and labels.]

- Flow 1 ingress (mean 55.64 Mbit/s)
- Flow 1 egress (mean 55.64 Mbit/s)
- Flow 2 ingress (mean 38.90 Mbit/s)
- Flow 2 egress (mean 38.87 Mbit/s)
- Flow 3 ingress (mean 31.14 Mbit/s)
- Flow 3 egress (mean 31.08 Mbit/s)
Run 5: Statistics of QUIC Cubic

Start at: 2018-07-04 12:19:18
End at: 2018-07-04 12:19:48
Local clock offset: 2.342 ms
Remote clock offset: -3.814 ms

# Below is generated by plot.py at 2018-07-04 14:36:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.51 Mbit/s
95th percentile per-packet one-way delay: 46.609 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 52.58 Mbit/s
95th percentile per-packet one-way delay: 37.407 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 34.81 Mbit/s
95th percentile per-packet one-way delay: 47.581 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 41.80 Mbit/s
95th percentile per-packet one-way delay: 47.358 ms
Loss rate: 0.70%
Run 5: Report of QUIC Cubic — Data Link

![Graph](image)

![Graph](image)
Run 6: Statistics of QUIC Cubic

Start at: 2018-07-04 12:39:52
End at: 2018-07-04 12:40:22
Local clock offset: 1.423 ms
Remote clock offset: -7.111 ms

# Below is generated by plot.py at 2018-07-04 14:36:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.74 Mbit/s
95th percentile per-packet one-way delay: 38.701 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 56.07 Mbit/s
95th percentile per-packet one-way delay: 36.017 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 38.35 Mbit/s
95th percentile per-packet one-way delay: 46.661 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 30.82 Mbit/s
95th percentile per-packet one-way delay: 56.733 ms
Loss rate: 0.45%
Run 6: Report of QUIC Cubic — Data Link
Run 7: Statistics of QUIC Cubic

Start at: 2018-07-04 13:00:42
End at: 2018-07-04 13:01:12
Local clock offset: 2.228 ms
Remote clock offset: -9.844 ms

# Below is generated by plot.py at 2018-07-04 14:36:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.82 Mbit/s
  95th percentile per-packet one-way delay: 32.652 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 54.80 Mbit/s
  95th percentile per-packet one-way delay: 32.138 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 38.78 Mbit/s
  95th percentile per-packet one-way delay: 40.315 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 30.99 Mbit/s
  95th percentile per-packet one-way delay: 34.669 ms
  Loss rate: 0.44%
Run 7: Report of QUIC Cubic — Data Link

![Graph of throughput and per-packet one-way delay](image-url)
Run 8: Statistics of QUIC Cubic

Local clock offset: 1.114 ms
Remote clock offset: -9.708 ms

# Below is generated by plot.py at 2018-07-04 14:37:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 31.812 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 54.13 Mbit/s
95th percentile per-packet one-way delay: 31.814 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.08 Mbit/s
95th percentile per-packet one-way delay: 33.171 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 46.24 Mbit/s
95th percentile per-packet one-way delay: 30.620 ms
Loss rate: 0.45%
Run 8: Report of QUIC Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 54.14 Mbps)  |  Flow 1 egress (mean 54.13 Mbps)
Flow 2 ingress (mean 36.11 Mbps)  |  Flow 2 egress (mean 36.08 Mbps)
Flow 3 ingress (mean 46.32 Mbps)  |  Flow 3 egress (mean 46.24 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 31.81 ms)  |  Flow 2 (95th percentile 33.17 ms)  |  Flow 3 (95th percentile 30.62 ms)
Run 9: Statistics of QUIC Cubic

Start at: 2018-07-04 13:41:34
Local clock offset: 0.938 ms
Remote clock offset: -7.414 ms

# Below is generated by plot.py at 2018-07-04 14:37:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.49 Mbit/s
95th percentile per-packet one-way delay: 30.401 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 54.15 Mbit/s
95th percentile per-packet one-way delay: 30.303 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.23 Mbit/s
95th percentile per-packet one-way delay: 33.614 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 46.19 Mbit/s
95th percentile per-packet one-way delay: 28.641 ms
Loss rate: 0.44%
Run 10: Statistics of QUIC Cubic

Start at: 2018-07-04 14:02:59
End at: 2018-07-04 14:03:29
Local clock offset: 2.226 ms
Remote clock offset: -5.3 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 92.78 Mbit/s
  95th percentile per-packet one-way delay: 27.361 ms
  Loss rate: 0.17%
-- Flow 1:
  Average throughput: 55.99 Mbit/s
  95th percentile per-packet one-way delay: 26.680 ms
  Loss rate: 0.10%
-- Flow 2:
  Average throughput: 39.88 Mbit/s
  95th percentile per-packet one-way delay: 27.050 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 31.14 Mbit/s
  95th percentile per-packet one-way delay: 28.823 ms
  Loss rate: 0.43%
Run 10: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2018-07-04 11:00:06
End at: 2018-07-04 11:00:36
Local clock offset: -2.166 ms
Remote clock offset: 3.684 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 13.439 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 13.433 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 13.445 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.443 ms
Loss rate: 0.35%
Run 1: Report of SCReAM — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.21 Mbps)
Flow 1 egress (mean 0.21 Mbps)
Flow 2 ingress (mean 0.21 Mbps)
Flow 2 egress (mean 0.21 Mbps)
Flow 3 ingress (mean 0.22 Mbps)
Flow 3 egress (mean 0.22 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 13.43 ms)
Flow 2 (95th percentile 13.45 ms)
Flow 3 (95th percentile 13.44 ms)
Run 2: Statistics of SCReAM

Start at: 2018-07-04 11:20:23
End at: 2018-07-04 11:20:53
Local clock offset: 1.929 ms
Remote clock offset: 1.462 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 21.057 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 21.068 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 21.033 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 21.016 ms
Loss rate: 0.36%
Run 2: Report of SCReAM — Data Link

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

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

Start at: 2018-07-04 11:41:19
End at: 2018-07-04 11:41:49
Local clock offset: 0.224 ms
Remote clock offset: 3.695 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 22.346 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 22.338 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 22.348 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 22.348 ms
  Loss rate: 0.35%
Run 3: Report of SCReAM — Data Link
Run 4: Statistics of SCReAM

Start at: 2018-07-04 12:02:01
End at: 2018-07-04 12:02:31
Local clock offset: 3.343 ms
Remote clock offset: -3.587 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 26.300 ms
  Loss rate: 0.13%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 26.308 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 26.292 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 26.249 ms
  Loss rate: 0.00%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Local clock offset: 1.719 ms
Remote clock offset: -4.514 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 25.253 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 25.258 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 25.234 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 25.201 ms
  Loss rate: 0.35%
Run 5: Report of SCReAM — Data Link
Run 6: Statistics of SCReAM

End at: 2018-07-04 12:43:52
Local clock offset: 0.511 ms
Remote clock offset: -7.591 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 23.125 ms
  Loss rate: 0.13%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 23.125 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 23.118 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 23.129 ms
  Loss rate: 0.00%
Run 6: Report of SCReAM — Data Link

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

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

2. Packet delay (ms):
   - Flow 1 (95th percentile 23.12 ms)
   - Flow 2 (95th percentile 23.12 ms)
   - Flow 3 (95th percentile 23.13 ms)
Run 7: Statistics of SCReAM

Start at: 2018-07-04 13:04:15
End at: 2018-07-04 13:04:45
Local clock offset: 0.34 ms
Remote clock offset: -10.132 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.42 Mbit/s
  95th percentile per-packet one-way delay: 19.618 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 19.611 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 19.613 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 19.631 ms
  Loss rate: 0.36%
Run 8: Statistics of SCReAM

Local clock offset: 1.181 ms
Remote clock offset: -10.155 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 21.179 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 21.179 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 21.177 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 21.179 ms
Loss rate: 0.35%
Run 8: Report of SCReAM — Data Link

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

- 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)

![Graph 2: Queue packet count vs Time](image2)

- Flow 1 (95th percentile 21.18 ms)
- Flow 2 (95th percentile 21.18 ms)
- Flow 3 (95th percentile 21.18 ms)
Run 9: Statistics of SCReAM

Start at: 2018-07-04 13:45:07
End at: 2018-07-04 13:45:37
Local clock offset: -2.497 ms
Remote clock offset: -5.945 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.42 Mbit/s
  95th percentile per-packet one-way delay: 14.597 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 14.584 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 14.615 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 14.584 ms
  Loss rate: 0.36%
Run 10: Statistics of SCReAM

Start at: 2018-07-04 14:06:56
End at: 2018-07-04 14:07:26
Local clock offset: 1.325 ms
Remote clock offset: -5.483 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 15.923 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 15.944 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 15.916 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 15.881 ms
Loss rate: 0.35%
Run 10: Report of SCReAM — Data Link

Throughput plot:
- 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)

Per-packet one-way delay plot:
- Flow 1 (95th percentile 15.94 ms)
- Flow 2 (95th percentile 15.92 ms)
- Flow 3 (95th percentile 15.88 ms)
Run 1: Statistics of Sprout

Start at: 2018-07-04 11:08:22
End at: 2018-07-04 11:08:52
Local clock offset: -0.985 ms
Remote clock offset: 6.435 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.10 Mbit/s
95th percentile per-packet one-way delay: 21.914 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 20.28 Mbit/s
95th percentile per-packet one-way delay: 21.060 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 20.13 Mbit/s
95th percentile per-packet one-way delay: 21.936 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 19.53 Mbit/s
95th percentile per-packet one-way delay: 23.983 ms
Loss rate: 0.07%
Run 1: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 20.28 Mbit/s)
- Flow 1 egress (mean 20.28 Mbit/s)
- Flow 2 ingress (mean 20.14 Mbit/s)
- Flow 2 egress (mean 20.13 Mbit/s)
- Flow 3 ingress (mean 19.32 Mbit/s)
- Flow 3 egress (mean 19.53 Mbit/s)
Run 2: Statistics of Sprout

Start at: 2018-07-04 11:28:44
End at: 2018-07-04 11:29:14
Local clock offset: 0.369 ms
Remote clock offset: -0.758 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.86 Mbit/s
95th percentile per-packet one-way delay: 36.235 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 16.49 Mbit/s
95th percentile per-packet one-way delay: 35.538 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 16.58 Mbit/s
95th percentile per-packet one-way delay: 36.073 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 16.27 Mbit/s
95th percentile per-packet one-way delay: 38.294 ms
Loss rate: 0.53%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2018-07-04 11:49:41
End at: 2018-07-04 11:50:11
Local clock offset: 0.878 ms
Remote clock offset: 2.077 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.65 Mbit/s
95th percentile per-packet one-way delay: 30.885 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 16.49 Mbit/s
95th percentile per-packet one-way delay: 30.634 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 16.23 Mbit/s
95th percentile per-packet one-way delay: 30.919 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 16.31 Mbit/s
95th percentile per-packet one-way delay: 31.966 ms
Loss rate: 0.23%
Run 3: Report of Sprout — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 16.49 Mbps)
  - Flow 1 egress (mean 16.49 Mbps)
  - Flow 2 ingress (mean 16.25 Mbps)
  - Flow 2 egress (mean 16.23 Mbps)
  - Flow 3 ingress (mean 16.29 Mbps)
  - Flow 3 egress (mean 16.31 Mbps)

- **Packet Delays (ms):**
  - Flow 1 (95th percentile 30.63 ms)
  - Flow 2 (95th percentile 30.92 ms)
  - Flow 3 (95th percentile 31.97 ms)
Run 4: Statistics of Sprout

Start at: 2018-07-04 12:10:30
End at: 2018-07-04 12:11:00
Local clock offset: 0.618 ms
Remote clock offset: -3.412 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.67 Mbit/s
95th percentile per-packet one-way delay: 31.933 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 17.03 Mbit/s
95th percentile per-packet one-way delay: 31.536 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 16.85 Mbit/s
95th percentile per-packet one-way delay: 31.987 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 16.53 Mbit/s
95th percentile per-packet one-way delay: 32.692 ms
Loss rate: 0.60%
Run 4: Report of Sprout — Data Link

![Graph showing throughput and round-trip delay for different flows over time.](image-url)
Run 5: Statistics of Sprout

Start at: 2018-07-04 12:31:11
End at: 2018-07-04 12:31:41
Local clock offset: -1.787 ms
Remote clock offset: -6.024 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.45 Mbit/s
95th percentile per-packet one-way delay: 30.209 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 16.97 Mbit/s
95th percentile per-packet one-way delay: 29.537 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 16.77 Mbit/s
95th percentile per-packet one-way delay: 30.235 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 16.15 Mbit/s
95th percentile per-packet one-way delay: 31.690 ms
Loss rate: 0.22%
Run 5: Report of Sprout — Data Link
Run 6: Statistics of Sprout

Start at: 2018-07-04 12:51:48
End at: 2018-07-04 12:52:18
Local clock offset: 1.228 ms
Remote clock offset: -7.351 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.73 Mbit/s
95th percentile per-packet one-way delay: 31.950 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 17.61 Mbit/s
95th percentile per-packet one-way delay: 31.147 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 17.25 Mbit/s
95th percentile per-packet one-way delay: 32.584 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 17.18 Mbit/s
95th percentile per-packet one-way delay: 32.641 ms
Loss rate: 0.59%
Run 6: Report of Sprout — Data Link

---

**Graph 1:**

- **Y-axis:** Throughput (Mbps)
- **X-axis:** Time (s)
- Legend:
  - Flow 1 ingress (mean 17.61 Mbps)
  - Flow 1 egress (mean 17.61 Mbps)
  - Flow 2 ingress (mean 17.27 Mbps)
  - Flow 2 egress (mean 17.25 Mbps)
  - Flow 3 ingress (mean 17.21 Mbps)
  - Flow 3 egress (mean 17.18 Mbps)

---

**Graph 2:**

- **Y-axis:** Per-packet one-way delay (ms)
- **X-axis:** Time (s)
- Legend:
  - Flow 1 (95th percentile 31.15 ms)
  - Flow 2 (95th percentile 32.58 ms)
  - Flow 3 (95th percentile 32.64 ms)
Run 7: Statistics of Sprout

Start at: 2018-07-04 13:12:25
End at: 2018-07-04 13:12:55
Local clock offset: 1.701 ms
Remote clock offset: -8.882 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.36 Mbit/s
95th percentile per-packet one-way delay: 29.571 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 20.02 Mbit/s
95th percentile per-packet one-way delay: 28.724 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 19.66 Mbit/s
95th percentile per-packet one-way delay: 30.284 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 19.00 Mbit/s
95th percentile per-packet one-way delay: 30.840 ms
Loss rate: 0.55%
Run 7: Report of Sprout — Data Link

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

- **Flow 1 Ingress** (mean 20.02 Mbit/s)
- **Flow 1 Egress** (mean 20.02 Mbit/s)
- **Flow 2 Ingress** (mean 19.69 Mbit/s)
- **Flow 2 Egress** (mean 19.66 Mbit/s)
- **Flow 3 Ingress** (mean 19.01 Mbit/s)
- **Flow 3 Egress** (mean 19.00 Mbit/s)

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

- **Flow 1** (95th percentile 28.72 ms)
- **Flow 2** (95th percentile 30.28 ms)
- **Flow 3** (95th percentile 30.84 ms)
Run 8: Statistics of Sprout

Start at: 2018-07-04 13:32:54
Local clock offset: 2.32 ms
Remote clock offset: -9.56 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 38.60 Mbit/s
  95th percentile per-packet one-way delay: 32.261 ms
  Loss rate: 0.24%
-- Flow 1:
  Average throughput: 19.58 Mbit/s
  95th percentile per-packet one-way delay: 31.443 ms
  Loss rate: 0.16%
-- Flow 2:
  Average throughput: 19.37 Mbit/s
  95th percentile per-packet one-way delay: 32.389 ms
  Loss rate: 0.24%
-- Flow 3:
  Average throughput: 18.63 Mbit/s
  95th percentile per-packet one-way delay: 33.792 ms
  Loss rate: 0.53%
Run 8: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 19.59 Mbps)  
- Flow 1 egress (mean 19.58 Mbps)  
- Flow 2 ingress (mean 19.39 Mbps)  
- Flow 2 egress (mean 19.37 Mbps)  
- Flow 3 ingress (mean 18.68 Mbps)  
- Flow 3 egress (mean 18.63 Mbps)

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

- Flow 1 (95th percentile 31.44 ms)  
- Flow 2 (95th percentile 32.39 ms)  
- Flow 3 (95th percentile 33.79 ms)
Run 9: Statistics of Sprout

End at: 2018-07-04 13:54:03
Local clock offset: -0.268 ms
Remote clock offset: -5.952 ms

# Below is generated by plot.py at 2018-07-04 14:37:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.58 Mbit/s
95th percentile per-packet one-way delay: 26.765 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 19.54 Mbit/s
95th percentile per-packet one-way delay: 26.311 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 19.22 Mbit/s
95th percentile per-packet one-way delay: 26.564 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 18.96 Mbit/s
95th percentile per-packet one-way delay: 28.200 ms
Loss rate: 0.08%
Run 9: Report of Sprout — Data Link

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

- **Throughput (Mbps)**
  - **Flow 1 ingress** (mean 19.95 Mbps)
  - **Flow 1 egress** (mean 19.54 Mbps)
  - **Flow 2 ingress** (mean 19.21 Mbps)
  - **Flow 2 egress** (mean 19.22 Mbps)
  - **Flow 3 ingress** (mean 18.95 Mbps)
  - **Flow 3 egress** (mean 18.96 Mbps)

- **Per-packet one-way delay (ms)**
  - **Flow 1** (95th percentile 26.31 ms)
  - **Flow 2** (95th percentile 26.56 ms)
  - **Flow 3** (95th percentile 28.20 ms)
Run 10: Statistics of Sprout

Start at: 2018-07-04 14:15:27
End at: 2018-07-04 14:15:57
Local clock offset: 3.055 ms
Remote clock offset: -8.633 ms

# Below is generated by plot.py at 2018-07-04 14:37:47
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 39.99 Mbit/s
  95th percentile per-packet one-way delay: 29.923 ms
  Loss rate: 0.14%
-- Flow 1:
  Average throughput: 20.30 Mbit/s
  95th percentile per-packet one-way delay: 28.769 ms
  Loss rate: 0.14%
-- Flow 2:
  Average throughput: 19.97 Mbit/s
  95th percentile per-packet one-way delay: 30.407 ms
  Loss rate: 0.21%
-- Flow 3:
  Average throughput: 19.45 Mbit/s
  95th percentile per-packet one-way delay: 31.842 ms
  Loss rate: 0.00%
Run 10: Report of Sprout — Data Link

Graph showing network throughput and packet delay over time for three flows, with mean rates and 95th percentile delay values indicated.
Run 1: Statistics of TaoVA-100x

Start at: 2018-07-04 11:09:32
End at: 2018-07-04 11:10:02
Local clock offset: -1.799 ms
Remote clock offset: 5.847 ms

# Below is generated by plot.py at 2018-07-04 14:39:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.62 Mbit/s
  95th percentile per-packet one-way delay: 47.501 ms
  Loss rate: 0.33%
-- Flow 1:
  Average throughput: 54.45 Mbit/s
  95th percentile per-packet one-way delay: 46.511 ms
  Loss rate: 0.22%
-- Flow 2:
  Average throughput: 46.38 Mbit/s
  95th percentile per-packet one-way delay: 31.824 ms
  Loss rate: 0.19%
-- Flow 3:
  Average throughput: 24.94 Mbit/s
  95th percentile per-packet one-way delay: 50.319 ms
  Loss rate: 1.56%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2018-07-04 11:29:54
End at: 2018-07-04 11:30:24
Local clock offset: -2.144 ms
Remote clock offset: 2.965 ms

# Below is generated by plot.py at 2018-07-04 14:39:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.44 Mbit/s
95th percentile per-packet one-way delay: 48.989 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 56.71 Mbit/s
95th percentile per-packet one-way delay: 48.533 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 39.44 Mbit/s
95th percentile per-packet one-way delay: 49.084 ms
Loss rate: 1.76%
-- Flow 3:
Average throughput: 31.62 Mbit/s
95th percentile per-packet one-way delay: 49.402 ms
Loss rate: 2.86%
Run 2: Report of TaoVA-100x — Data Link

![Graph showing network performance metrics over time.](image-url)
Run 3: Statistics of TaoVA-100x

Start at: 2018-07-04 11:50:53
End at: 2018-07-04 11:51:23
Local clock offset: -0.282 ms
Remote clock offset: 3.212 ms

# Below is generated by plot.py at 2018-07-04 14:39:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.97 Mbit/s
95th percentile per-packet one-way delay: 56.656 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 54.86 Mbit/s
95th percentile per-packet one-way delay: 56.471 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 36.31 Mbit/s
95th percentile per-packet one-way delay: 57.383 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 45.04 Mbit/s
95th percentile per-packet one-way delay: 39.333 ms
Loss rate: 0.29%
Run 3: Report of TaoVA-100x — Data Link

![Graphs showing network performance metrics for different flows.](image-url)
Run 4: Statistics of TaoVA-100x

Start at: 2018-07-04 12:11:39
End at: 2018-07-04 12:12:09
Local clock offset: 0.977 ms
Remote clock offset: -3.475 ms

# Below is generated by plot.py at 2018-07-04 14:39:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.01 Mbit/s
95th percentile per-packet one-way delay: 52.285 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 55.59 Mbit/s
95th percentile per-packet one-way delay: 51.350 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 39.19 Mbit/s
95th percentile per-packet one-way delay: 52.423 ms
Loss rate: 1.91%
-- Flow 3:
Average throughput: 31.15 Mbit/s
95th percentile per-packet one-way delay: 55.993 ms
Loss rate: 2.34%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2018-07-04 12:32:21
End at: 2018-07-04 12:32:51
Local clock offset: 2.277 ms
Remote clock offset: -9.324 ms

# Below is generated by plot.py at 2018-07-04 14:39:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.68 Mbit/s
95th percentile per-packet one-way delay: 66.565 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 50.04 Mbit/s
95th percentile per-packet one-way delay: 66.279 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 46.36 Mbit/s
95th percentile per-packet one-way delay: 48.992 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 23.41 Mbit/s
95th percentile per-packet one-way delay: 71.164 ms
Loss rate: 1.70%
Run 5: Report of TaoVA-100x — Data Link
Run 6: Statistics of TaoVA-100x

Start at: 2018-07-04 12:52:59
End at: 2018-07-04 12:53:29
Local clock offset: 0.017 ms
Remote clock offset: -8.4 ms

# Below is generated by plot.py at 2018-07-04 14:39:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.92 Mbit/s
  95th percentile per-packet one-way delay: 51.311 ms
  Loss rate: 0.95%
-- Flow 1:
  Average throughput: 54.24 Mbit/s
  95th percentile per-packet one-way delay: 51.113 ms
  Loss rate: 0.44%
-- Flow 2:
  Average throughput: 39.18 Mbit/s
  95th percentile per-packet one-way delay: 51.291 ms
  Loss rate: 1.85%
-- Flow 3:
  Average throughput: 31.92 Mbit/s
  95th percentile per-packet one-way delay: 51.793 ms
  Loss rate: 1.31%
Run 6: Report of TaoVA-100x — Data Link

Graph: Throughput vs Time

Graph: Per-packet one-way delay vs Time

Legend:
- Flow 1 ingress (mean 54.39 Mbit/s)
- Flow 1 egress (mean 54.24 Mbit/s)
- Flow 2 ingress (mean 59.82 Mbit/s)
- Flow 2 egress (mean 59.18 Mbit/s)
- Flow 3 ingress (mean 32.19 Mbit/s)
- Flow 3 egress (mean 31.92 Mbit/s)

Legend for delay:
- Flow 1 (95th percentile 51.11 ms)
- Flow 2 (95th percentile 51.29 ms)
- Flow 3 (95th percentile 51.79 ms)
Run 7: Statistics of TaoVA-100x

End at: 2018-07-04 13:14:04
Local clock offset: 0.73 ms
Remote clock offset: -9.945 ms

# Below is generated by plot.py at 2018-07-04 14:39:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.38 Mbit/s
95th percentile per-packet one-way delay: 57.940 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 59.45 Mbit/s
95th percentile per-packet one-way delay: 39.904 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 35.81 Mbit/s
95th percentile per-packet one-way delay: 58.377 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 24.30 Mbit/s
95th percentile per-packet one-way delay: 58.850 ms
Loss rate: 1.82%
Run 7: Report of TaoVA-100x — Data Link

![Graph showing throughput and packet round trip delay over time for different flows.](image)
Run 8: Statistics of TaoVA-100x

Start at: 2018-07-04 13:34:01
End at: 2018-07-04 13:34:32
Local clock offset: 0.22 ms
Remote clock offset: -8.078 ms

# Below is generated by plot.py at 2018-07-04 14:39:50
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.70 Mbit/s
  95th percentile per-packet one-way delay: 56.310 ms
  Loss rate: 0.42%
-- Flow 1:
  Average throughput: 55.25 Mbit/s
  95th percentile per-packet one-way delay: 56.124 ms
  Loss rate: 0.32%
-- Flow 2:
  Average throughput: 47.15 Mbit/s
  95th percentile per-packet one-way delay: 38.402 ms
  Loss rate: 0.25%
-- Flow 3:
  Average throughput: 24.26 Mbit/s
  95th percentile per-packet one-way delay: 57.153 ms
  Loss rate: 1.78%
Run 8: Report of TaoVA-100x — Data Link

---

**Throughput (Mbit/s)**

- Flow 1 ingress (mean 55.35 Mbit/s)
- Flow 1 egress (mean 55.25 Mbit/s)
- Flow 2 ingress (mean 47.20 Mbit/s)
- Flow 2 egress (mean 47.15 Mbit/s)
- Flow 3 ingress (mean 24.60 Mbit/s)
- Flow 3 egress (mean 24.26 Mbit/s)

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

- Flow 1 (95th percentile 56.12 ms)
- Flow 2 (95th percentile 38.40 ms)
- Flow 3 (95th percentile 57.15 ms)
Run 9: Statistics of TaoVA-100x

Start at: 2018-07-04 13:54:42
Local clock offset: 2.323 ms
Remote clock offset: -5.435 ms

# Below is generated by plot.py at 2018-07-04 14:41:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 56.697 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 55.22 Mbit/s
95th percentile per-packet one-way delay: 56.648 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 47.13 Mbit/s
95th percentile per-packet one-way delay: 38.663 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 24.03 Mbit/s
95th percentile per-packet one-way delay: 57.476 ms
Loss rate: 1.41%
Run 9: Report of TaoVA-100x — Data Link

![Graphs showing throughput and packet error rate over time for various flows.]

- Flow 1 ingress (mean 55.31 Mbps)
- Flow 1 egress (mean 55.22 Mbps)
- Flow 2 ingress (mean 47.17 Mbps)
- Flow 2 egress (mean 47.13 Mbps)
- Flow 3 ingress (mean 24.30 Mbps)
- Flow 3 egress (mean 24.03 Mbps)

![Graph showing packet error rate over time for various flows.]

- Flow 1 (95th percentile 56.65 ms)
- Flow 2 (95th percentile 38.66 ms)
- Flow 3 (95th percentile 57.48 ms)
Run 10: Statistics of TaoVA-100x

Start at: 2018-07-04 14:16:39
End at: 2018-07-04 14:17:09
Local clock offset: 2.819 ms
Remote clock offset: -6.451 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.59 Mbit/s
  95th percentile per-packet one-way delay: 46.404 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 57.67 Mbit/s
  95th percentile per-packet one-way delay: 46.239 ms
  Loss rate: 0.34%
-- Flow 2:
  Average throughput: 39.63 Mbit/s
  95th percentile per-packet one-way delay: 46.438 ms
  Loss rate: 0.75%
-- Flow 3:
  Average throughput: 31.71 Mbit/s
  95th percentile per-packet one-way delay: 46.617 ms
  Loss rate: 1.87%
Run 10: Report of TaoVA-100x — Data Link

![Graph 1: Throughput](image1)

![Graph 2: Per-packet one way delay](image2)
Run 1: Statistics of TCP Vegas

Start at: 2018-07-04 10:57:38
End at: 2018-07-04 10:58:08
Local clock offset: -2.251 ms
Remote clock offset: 3.981 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.22 Mbit/s
95th percentile per-packet one-way delay: 20.897 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 29.39 Mbit/s
95th percentile per-packet one-way delay: 22.006 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 41.66 Mbit/s
95th percentile per-packet one-way delay: 20.535 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 39.49 Mbit/s
95th percentile per-packet one-way delay: 20.869 ms
Loss rate: 0.19%
Run 1: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 29.38 Mbit/s)
- Flow 1 egress (mean 29.39 Mbit/s)
- Flow 2 ingress (mean 41.65 Mbit/s)
- Flow 2 egress (mean 41.66 Mbit/s)
- Flow 3 ingress (mean 39.46 Mbit/s)
- Flow 3 egress (mean 39.49 Mbit/s)
Run 2: Statistics of TCP Vegas

Start at: 2018-07-04 11:17:58
End at: 2018-07-04 11:18:28
Local clock offset: -1.565 ms
Remote clock offset: 0.756 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 67.23 Mbit/s
  95th percentile per-packet one-way delay: 27.206 ms
  Loss rate: 0.15%
-- Flow 1:
  Average throughput: 36.56 Mbit/s
  95th percentile per-packet one-way delay: 25.987 ms
  Loss rate: 0.09%
-- Flow 2:
  Average throughput: 31.62 Mbit/s
  95th percentile per-packet one-way delay: 29.060 ms
  Loss rate: 0.18%
-- Flow 3:
  Average throughput: 28.99 Mbit/s
  95th percentile per-packet one-way delay: 28.217 ms
  Loss rate: 0.35%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2018-07-04 11:38:48
End at: 2018-07-04 11:39:18
Local clock offset: -1.135 ms
Remote clock offset: 2.776 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.36 Mbit/s
  95th percentile per-packet one-way delay: 41.940 ms
  Loss rate: 0.16%
-- Flow 1:
  Average throughput: 48.40 Mbit/s
  95th percentile per-packet one-way delay: 41.952 ms
  Loss rate: 0.09%
-- Flow 2:
  Average throughput: 31.11 Mbit/s
  95th percentile per-packet one-way delay: 39.451 ms
  Loss rate: 0.18%
-- Flow 3:
  Average throughput: 30.79 Mbit/s
  95th percentile per-packet one-way delay: 43.319 ms
  Loss rate: 0.43%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

Start at: 2018-07-04 11:59:38  
End at: 2018-07-04 12:00:08  
Local clock offset: 0.893 ms  
Remote clock offset: -1.931 ms  

# Below is generated by plot.py at 2018-07-04 14:41:26  
# Datalink statistics  
-- Total of 3 flows:  
  Average throughput: 75.92 Mbit/s  
  95th percentile per-packet one-way delay: 28.425 ms  
  Loss rate: 0.16%  
-- Flow 1:  
  Average throughput: 40.90 Mbit/s  
  95th percentile per-packet one-way delay: 26.558 ms  
  Loss rate: 0.10%  
-- Flow 2:  
  Average throughput: 37.51 Mbit/s  
  95th percentile per-packet one-way delay: 31.138 ms  
  Loss rate: 0.14%  
-- Flow 3:  
  Average throughput: 30.28 Mbit/s  
  95th percentile per-packet one-way delay: 30.453 ms  
  Loss rate: 0.39%
Run 4: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 40.89 Mbit/s)
- Flow 1 egress (mean 40.90 Mbit/s)
- Flow 2 ingress (mean 37.30 Mbit/s)
- Flow 2 egress (mean 37.51 Mbit/s)
- Flow 3 ingress (mean 30.29 Mbit/s)
- Flow 3 egress (mean 30.28 Mbit/s)
Run 5: Statistics of TCP Vegas

Start at: 2018-07-04 12:20:31
End at: 2018-07-04 12:21:01
Local clock offset: 0.752 ms
Remote clock offset: -3.842 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.57 Mbit/s
95th percentile per-packet one-way delay: 31.930 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 49.14 Mbit/s
95th percentile per-packet one-way delay: 30.421 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 48.95 Mbit/s
95th percentile per-packet one-way delay: 33.086 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 29.68 Mbit/s
95th percentile per-packet one-way delay: 35.325 ms
Loss rate: 0.36%
Run 5: Report of TCP Vegas — Data Link
Run 6: Statistics of TCP Vegas

Start at: 2018-07-04 12:41:01
End at: 2018-07-04 12:41:31
Local clock offset: 2.238 ms
Remote clock offset: -7.277 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.93 Mbit/s
95th percentile per-packet one-way delay: 21.765 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 57.15 Mbit/s
95th percentile per-packet one-way delay: 21.800 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 21.285 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 35.75 Mbit/s
95th percentile per-packet one-way delay: 22.719 ms
Loss rate: 0.24%
Run 6: Report of TCP Vegas — Data Link
Run 7: Statistics of TCP Vegas

Start at: 2018-07-04 13:01:53
End at: 2018-07-04 13:02:23
Local clock offset: 3.452 ms
Remote clock offset: -9.737 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 94.71 Mbit/s
  95th percentile per-packet one-way delay: 27.809 ms
  Loss rate: 0.10%
-- Flow 1:
  Average throughput: 57.28 Mbit/s
  95th percentile per-packet one-way delay: 28.863 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 43.13 Mbit/s
  95th percentile per-packet one-way delay: 25.785 ms
  Loss rate: 0.14%
-- Flow 3:
  Average throughput: 26.27 Mbit/s
  95th percentile per-packet one-way delay: 29.012 ms
  Loss rate: 0.31%
Run 7: Report of TCP Vegas — Data Link

![Graph of throughput and packet delay over time for different flows](image-url)

*Legend for graphs:
- Flow 1 ingress (mean 57.26 Mbit/s)
- Flow 1 egress (mean 57.28 Mbit/s)
- Flow 2 ingress (mean 43.13 Mbit/s)
- Flow 2 egress (mean 43.13 Mbit/s)
- Flow 3 ingress (mean 26.28 Mbit/s)
- Flow 3 egress (mean 26.27 Mbit/s)*
Run 8: Statistics of TCP Vegas

Local clock offset: -0.773 ms
Remote clock offset: -10.046 ms

# Below is generated by plot.py at 2018-07-04 14:41:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.57 Mbit/s
95th percentile per-packet one-way delay: 21.268 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 59.10 Mbit/s
95th percentile per-packet one-way delay: 21.224 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 36.99 Mbit/s
95th percentile per-packet one-way delay: 20.906 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 35.68 Mbit/s
95th percentile per-packet one-way delay: 21.555 ms
Loss rate: 0.27%
Run 8: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 59.08 Mbit/s)
- Flow 1 egress (mean 59.10 Mbit/s)
- Flow 2 ingress (mean 36.99 Mbit/s)
- Flow 2 egress (mean 36.99 Mbit/s)
- Flow 3 ingress (mean 35.68 Mbit/s)
- Flow 3 egress (mean 35.68 Mbit/s)

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

- Flow 1 (95th percentile 21.22 ms)
- Flow 2 (95th percentile 20.91 ms)
- Flow 3 (95th percentile 21.55 ms)
Run 9: Statistics of TCP Vegas

Start at: 2018-07-04 13:42:45
End at: 2018-07-04 13:43:15
Local clock offset: -0.037 ms
Remote clock offset: -7.921 ms

# Below is generated by plot.py at 2018-07-04 14:41:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.40 Mbit/s
95th percentile per-packet one-way delay: 21.286 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 57.63 Mbit/s
95th percentile per-packet one-way delay: 21.489 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 43.55 Mbit/s
95th percentile per-packet one-way delay: 20.889 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 26.41 Mbit/s
95th percentile per-packet one-way delay: 21.223 ms
Loss rate: 0.30%
Run 9: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 57.61 Mbit/s)
- Flow 1 egress (mean 57.63 Mbit/s)
- Flow 2 ingress (mean 43.35 Mbit/s)
- Flow 2 egress (mean 43.35 Mbit/s)
- Flow 3 ingress (mean 26.42 Mbit/s)
- Flow 3 egress (mean 26.41 Mbit/s)
Run 10: Statistics of TCP Vegas

Start at: 2018-07-04 14:04:16  
End at: 2018-07-04 14:04:46  
Local clock offset: -0.003 ms  
Remote clock offset: -5.172 ms

# Below is generated by plot.py at 2018-07-04 14:41:28  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 94.17 Mbit/s  
95th percentile per-packet one-way delay: 17.280 ms  
Loss rate: 0.09%  
-- Flow 1:  
Average throughput: 54.71 Mbit/s  
95th percentile per-packet one-way delay: 17.660 ms  
Loss rate: 0.04%  
-- Flow 2:  
Average throughput: 46.28 Mbit/s  
95th percentile per-packet one-way delay: 16.787 ms  
Loss rate: 0.13%  
-- Flow 3:  
Average throughput: 26.03 Mbit/s  
95th percentile per-packet one-way delay: 17.628 ms  
Loss rate: 0.28%
Run 10: Report of TCP Vegas — Data Link
Run 1: Statistics of Verus

Start at: 2018-07-04 10:58:48
End at: 2018-07-04 10:59:18
Local clock offset: -1.669 ms
Remote clock offset: 4.705 ms

# Below is generated by plot.py at 2018-07-04 14:41:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.18 Mbit/s
95th percentile per-packet one-way delay: 45.610 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 57.11 Mbit/s
95th percentile per-packet one-way delay: 43.720 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 41.18 Mbit/s
95th percentile per-packet one-way delay: 46.304 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 32.83 Mbit/s
95th percentile per-packet one-way delay: 46.663 ms
Loss rate: 0.99%
Run 1: Report of Verus — Data Link

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

- Flow 1 ingress (mean 57.31 Mbit/s)
- Flow 1 egress (mean 57.11 Mbit/s)
- Flow 2 ingress (mean 41.35 Mbit/s)
- Flow 2 egress (mean 41.18 Mbit/s)
- Flow 3 ingress (mean 32.99 Mbit/s)
- Flow 3 egress (mean 32.83 Mbit/s)
Run 2: Statistics of Verus

Start at: 2018-07-04 11:19:09
End at: 2018-07-04 11:19:39
Local clock offset: 0.809 ms
Remote clock offset: 1.989 ms

# Below is generated by plot.py at 2018-07-04 14:42:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.05 Mbit/s
95th percentile per-packet one-way delay: 49.383 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 53.76 Mbit/s
95th percentile per-packet one-way delay: 45.691 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 35.72 Mbit/s
95th percentile per-packet one-way delay: 58.745 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 44.26 Mbit/s
95th percentile per-packet one-way delay: 42.573 ms
Loss rate: 0.74%
Run 2: Report of Verus — Data Link

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

Flow 1 ingress (mean 53.82 Mbit/s)
Flow 1 egress (mean 53.76 Mbit/s)
Flow 2 ingress (mean 35.76 Mbit/s)
Flow 2 egress (mean 35.72 Mbit/s)
Flow 3 ingress (mean 44.44 Mbit/s)
Flow 3 egress (mean 44.26 Mbit/s)

Flow 1 (95th percentile 45.69 ms)
Flow 2 (95th percentile 58.74 ms)
Flow 3 (95th percentile 42.57 ms)
Run 3: Statistics of Verus

Start at: 2018-07-04 11:40:03
End at: 2018-07-04 11:40:33
Local clock offset: 1.418 ms
Remote clock offset: 3.635 ms

# Below is generated by plot.py at 2018-07-04 14:42:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 92.43 Mbit/s
  95th percentile per-packet one-way delay: 60.980 ms
  Loss rate: 0.43%
-- Flow 1:
  Average throughput: 52.51 Mbit/s
  95th percentile per-packet one-way delay: 61.826 ms
  Loss rate: 0.39%
-- Flow 2:
  Average throughput: 48.35 Mbit/s
  95th percentile per-packet one-way delay: 46.726 ms
  Loss rate: 0.48%
-- Flow 3:
  Average throughput: 23.38 Mbit/s
  95th percentile per-packet one-way delay: 68.198 ms
  Loss rate: 0.52%
Run 3: Report of Verus — Data Link

![Graphs showing network performance metrics]
Run 4: Statistics of Verus

Start at: 2018-07-04 12:00:49
End at: 2018-07-04 12:01:19
Local clock offset: -0.674 ms
Remote clock offset: -1.316 ms

# Below is generated by plot.py at 2018-07-04 14:42:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.54 Mbit/s
  95th percentile per-packet one-way delay: 52.028 ms
  Loss rate: 0.39%
  -- Flow 1:
  Average throughput: 56.07 Mbit/s
  95th percentile per-packet one-way delay: 50.068 ms
  Loss rate: 0.26%
  -- Flow 2:
  Average throughput: 40.49 Mbit/s
  95th percentile per-packet one-way delay: 52.707 ms
  Loss rate: 0.46%
  -- Flow 3:
  Average throughput: 31.74 Mbit/s
  95th percentile per-packet one-way delay: 53.591 ms
  Loss rate: 0.92%
Run 4: Report of Verus — Data Link

[Graphs showing network performance metrics over time, including throughput and packet loss graphs with different flow labels and metrics.]
Run 5: Statistics of Verus

Local clock offset: -0.878 ms
Remote clock offset: -3.536 ms

# Below is generated by plot.py at 2018-07-04 14:42:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.97 Mbit/s
95th percentile per-packet one-way delay: 53.423 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 54.12 Mbit/s
95th percentile per-packet one-way delay: 50.770 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 38.19 Mbit/s
95th percentile per-packet one-way delay: 54.722 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 31.43 Mbit/s
95th percentile per-packet one-way delay: 56.097 ms
Loss rate: 0.73%
Run 5: Report of Verus — Data Link
Run 6: Statistics of Verus

Start at: 2018-07-04 12:42:10
End at: 2018-07-04 12:42:40
Local clock offset: 1.558 ms
Remote clock offset: -7.21 ms

# Below is generated by plot.py at 2018-07-04 14:42:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.20 Mbit/s
95th percentile per-packet one-way delay: 51.074 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 49.49 Mbit/s
95th percentile per-packet one-way delay: 50.934 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 45.83 Mbit/s
95th percentile per-packet one-way delay: 47.342 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 24.76 Mbit/s
95th percentile per-packet one-way delay: 61.719 ms
Loss rate: 0.25%
Run 6: Report of Verus — Data Link

[Graphs showing throughput and per-packet round-trip delay over time for different flows with various mean rates and 95th percentile values]
Run 7: Statistics of Verus

Start at: 2018-07-04 13:03:04
End at: 2018-07-04 13:03:34
Local clock offset: 2.056 ms
Remote clock offset: -10.084 ms

# Below is generated by plot.py at 2018-07-04 14:42:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.08 Mbit/s
95th percentile per-packet one-way delay: 44.785 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 53.40 Mbit/s
95th percentile per-packet one-way delay: 44.540 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 44.15 Mbit/s
95th percentile per-packet one-way delay: 44.436 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 24.98 Mbit/s
95th percentile per-packet one-way delay: 55.830 ms
Loss rate: 0.63%
Run 7: Report of Verus — Data Link

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

- **Flow 1** ingress (mean 53.45 Mbit/s)
- **Flow 1** egress (mean 53.40 Mbit/s)
- **Flow 2** ingress (mean 44.24 Mbit/s)
- **Flow 2** egress (mean 44.15 Mbit/s)
- **Flow 3** ingress (mean 25.07 Mbit/s)
- **Flow 3** egress (mean 24.98 Mbit/s)

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

- **Flow 1** (95th percentile 44.54 ms)
- **Flow 2** (95th percentile 44.44 ms)
- **Flow 3** (95th percentile 55.83 ms)
Run 8: Statistics of Verus

Local clock offset: 0.063 ms
Remote clock offset: -8.955 ms

# Below is generated by plot.py at 2018-07-04 14:42:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.75 Mbit/s
95th percentile per-packet one-way delay: 42.325 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 50.16 Mbit/s
95th percentile per-packet one-way delay: 42.114 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 35.51 Mbit/s
95th percentile per-packet one-way delay: 51.876 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 48.23 Mbit/s
95th percentile per-packet one-way delay: 42.217 ms
Loss rate: 0.64%
Run 8: Report of Verus — Data Link
Run 9: Statistics of Verus

End at: 2018-07-04 13:44:25
Local clock offset: 0.432 ms
Remote clock offset: -8.073 ms

# Below is generated by plot.py at 2018-07-04 14:43:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.81 Mbit/s
95th percentile per-packet one-way delay: 45.706 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 53.07 Mbit/s
95th percentile per-packet one-way delay: 43.357 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 37.18 Mbit/s
95th percentile per-packet one-way delay: 55.238 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 48.25 Mbit/s
95th percentile per-packet one-way delay: 42.941 ms
Loss rate: 0.70%
Run 9: Report of Verus — Data Link

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

- **Flow 1**: Ingress (mean 53.13 Mbit/s), Egress (mean 53.07 Mbit/s)
- **Flow 2**: Ingress (mean 37.25 Mbit/s), Egress (mean 37.18 Mbit/s)
- **Flow 3**: Ingress (mean 48.45 Mbit/s), Egress (mean 48.25 Mbit/s)
Run 10: Statistics of Verus

Start at: 2018-07-04 14:05:32
End at: 2018-07-04 14:06:02
Local clock offset: 2.618 ms
Remote clock offset: -5.828 ms

# Below is generated by plot.py at 2018-07-04 14:43:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.33 Mbit/s
95th percentile per-packet one-way delay: 45.259 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 52.47 Mbit/s
95th percentile per-packet one-way delay: 40.924 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 40.62 Mbit/s
95th percentile per-packet one-way delay: 47.384 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 29.63 Mbit/s
95th percentile per-packet one-way delay: 50.082 ms
Loss rate: 0.88%
Run 10: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Local clock offset: 1.481 ms
Remote clock offset: 2.305 ms

# Below is generated by plot.py at 2018-07-04 14:43:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.91 Mbit/s
95th percentile per-packet one-way delay: 29.255 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 57.57 Mbit/s
95th percentile per-packet one-way delay: 29.276 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 18.050 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 5.11 Mbit/s
95th percentile per-packet one-way delay: 18.078 ms
Loss rate: 0.50%
Run 1: Report of PCC-Vivace — Data Link
Run 2: Statistics of PCC-Vivace

Start at: 2018-07-04 11:15:36
End at: 2018-07-04 11:16:06
Local clock offset: -1.274 ms
Remote clock offset: 1.941 ms

# Below is generated by plot.py at 2018-07-04 14:43:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.69 Mbit/s
95th percentile per-packet one-way delay: 39.002 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 20.44 Mbit/s
95th percentile per-packet one-way delay: 30.900 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 32.72 Mbit/s
95th percentile per-packet one-way delay: 35.638 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 19.71 Mbit/s
95th percentile per-packet one-way delay: 51.026 ms
Loss rate: 0.44%
Run 2: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 20.53 Mbps/s)
- Flow 2 ingress (mean 32.73 Mbps/s)
- Flow 3 ingress (mean 19.74 Mbps/s)
- Flow 1 egress (mean 20.44 Mbps/s)
- Flow 2 egress (mean 32.72 Mbps/s)
- Flow 3 egress (mean 19.71 Mbps/s)

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

- Flow 1 (95th percentile 30.90 ms)
- Flow 2 (95th percentile 35.64 ms)
- Flow 3 (95th percentile 51.03 ms)
Run 3: Statistics of PCC-Vivace

Start at: 2018-07-04 11:36:16
End at: 2018-07-04 11:36:46
Local clock offset: 0.193 ms
Remote clock offset: 2.899 ms

# Below is generated by plot.py at 2018-07-04 14:43:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.41 Mbit/s
95th percentile per-packet one-way delay: 60.487 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 36.46 Mbit/s
95th percentile per-packet one-way delay: 38.076 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 15.83 Mbit/s
95th percentile per-packet one-way delay: 62.846 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 25.56 Mbit/s
95th percentile per-packet one-way delay: 63.369 ms
Loss rate: 0.83%
Run 3: Report of PCC-Vivace — Data Link

![Diagram of throughput over time for different flows]

- Flow 1 ingress (mean 35.46 Mbps)
- Flow 1 egress (mean 36.46 Mbps)
- Flow 2 ingress (mean 15.94 Mbps)
- Flow 2 egress (mean 15.83 Mbps)
- Flow 3 ingress (mean 25.64 Mbps)
- Flow 3 egress (mean 25.56 Mbps)

![Diagram of per-packet one-way delay over time for different flows]

- Flow 1 (95th percentile 38.08 ms)
- Flow 2 (95th percentile 62.85 ms)
- Flow 3 (95th percentile 63.37 ms)
Run 4: Statistics of PCC-Vivace

End at: 2018-07-04 11:57:43
Local clock offset: 2.907 ms
Remote clock offset: -1.236 ms

# Below is generated by plot.py at 2018-07-04 14:43:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.30 Mbit/s
95th percentile per-packet one-way delay: 25.736 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 23.29 Mbit/s
95th percentile per-packet one-way delay: 25.852 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 24.942 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 25.486 ms
Loss rate: 0.39%
Run 4: Report of PCC-Vivace — Data Link

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

- **Flow 1 ingress** (mean 23.30 Mbit/s)
- **Flow 1 egress** (mean 23.29 Mbit/s)
- **Flow 2 ingress** (mean 1.97 Mbit/s)
- **Flow 2 egress** (mean 1.97 Mbit/s)
- **Flow 3 ingress** (mean 2.14 Mbit/s)
- **Flow 3 egress** (mean 2.14 Mbit/s)

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

- **Flow 1** (95th percentile 25.85 ms)
- **Flow 2** (95th percentile 24.94 ms)
- **Flow 3** (95th percentile 25.49 ms)

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Run 5: Statistics of PCC-Vivace

Start at: 2018-07-04 12:18:03
End at: 2018-07-04 12:18:33
Local clock offset: -5.603 ms
Remote clock offset: -10.227 ms

# Below is generated by plot.py at 2018-07-04 14:43:37
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 76.83 Mbit/s
  95th percentile per-packet one-way delay: 60.256 ms
  Loss rate: 1.95%
-- Flow 1:
  Average throughput: 48.81 Mbit/s
  95th percentile per-packet one-way delay: 58.292 ms
  Loss rate: 2.37%
-- Flow 2:
  Average throughput: 29.60 Mbit/s
  95th percentile per-packet one-way delay: 35.409 ms
  Loss rate: 0.24%
-- Flow 3:
  Average throughput: 25.31 Mbit/s
  95th percentile per-packet one-way delay: 67.192 ms
  Loss rate: 3.46%
Run 5: Report of PCC-Vivace — Data Link

**Throughput (Mbit/s)**

- **Flow 1 ingress** (mean 49.94 Mbit/s)
- **Flow 1 egress** (mean 48.81 Mbit/s)
- **Flow 2 ingress** (mean 29.62 Mbit/s)
- **Flow 2 egress** (mean 29.60 Mbit/s)
- **Flow 3 ingress** (mean 26.09 Mbit/s)
- **Flow 3 egress** (mean 25.31 Mbit/s)

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

- **Flow 1** (95th percentile 58.29 ms)
- **Flow 2** (95th percentile 35.41 ms)
- **Flow 3** (95th percentile 67.19 ms)
Run 6: Statistics of PCC-Vivace

Start at: 2018-07-04 12:38:40
End at: 2018-07-04 12:39:10
Local clock offset: -1.474 ms
Remote clock offset: -9.083 ms

# Below is generated by plot.py at 2018-07-04 14:43:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.22 Mbit/s
95th percentile per-packet one-way delay: 45.405 ms
Loss rate: 3.06%
-- Flow 1:
Average throughput: 59.31 Mbit/s
95th percentile per-packet one-way delay: 44.798 ms
Loss rate: 4.08%
-- Flow 2:
Average throughput: 31.21 Mbit/s
95th percentile per-packet one-way delay: 66.537 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 18.68 Mbit/s
95th percentile per-packet one-way delay: 35.970 ms
Loss rate: 0.57%
Run 6: Report of PCC-Vivace — Data Link
Run 7: Statistics of PCC-Vivace

Start at: 2018-07-04 12:59:30
End at: 2018-07-04 13:00:00
Local clock offset: -0.78 ms
Remote clock offset: -9.953 ms

# Below is generated by plot.py at 2018-07-04 14:43:52
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 83.79 Mbit/s
   95th percentile per-packet one-way delay: 35.731 ms
   Loss rate: 0.20%
-- Flow 1:
   Average throughput: 54.16 Mbit/s
   95th percentile per-packet one-way delay: 37.664 ms
   Loss rate: 0.15%
-- Flow 2:
   Average throughput: 32.58 Mbit/s
   95th percentile per-packet one-way delay: 28.177 ms
   Loss rate: 0.17%
-- Flow 3:
   Average throughput: 24.14 Mbit/s
   95th percentile per-packet one-way delay: 34.274 ms
   Loss rate: 0.64%
Run 7: Report of PCC-Vivace — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 54.20 Mbps)
  - Flow 1 egress (mean 54.16 Mbps)
  - Flow 2 ingress (mean 32.59 Mbps)
  - Flow 2 egress (mean 32.55 Mbps)
  - Flow 3 ingress (mean 24.21 Mbps)
  - Flow 3 egress (mean 24.14 Mbps)

- **Per-packet one-way propagation delay (ms):**
  - Flow 1 (95th percentile 37.66 ms)
  - Flow 2 (95th percentile 38.18 ms)
  - Flow 3 (95th percentile 34.27 ms)
Run 8: Statistics of PCC-Vivace

End at: 2018-07-04 13:20:14
Local clock offset: 0.825 ms
Remote clock offset: -9.66 ms

# Below is generated by plot.py at 2018-07-04 14:43:58
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 87.42 Mbit/s
  95th percentile per-packet one-way delay: 38.024 ms
  Loss rate: 0.37%
-- Flow 1:
  Average throughput: 59.50 Mbit/s
  95th percentile per-packet one-way delay: 38.418 ms
  Loss rate: 0.45%
-- Flow 2:
  Average throughput: 34.96 Mbit/s
  95th percentile per-packet one-way delay: 32.957 ms
  Loss rate: 0.16%
-- Flow 3:
  Average throughput: 14.17 Mbit/s
  95th percentile per-packet one-way delay: 21.765 ms
  Loss rate: 0.32%
Run 8: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 59.72 Mbps/s)
- Flow 1 egress (mean 59.50 Mbps/s)
- Flow 2 ingress (mean 34.97 Mbps/s)
- Flow 2 egress (mean 34.96 Mbps/s)
- Flow 3 ingress (mean 14.18 Mbps/s)
- Flow 3 egress (mean 14.17 Mbps/s)

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

- Flow 1 (95th percentile 38.42 ms)
- Flow 2 (95th percentile 32.96 ms)
- Flow 3 (95th percentile 21.77 ms)
Run 9: Statistics of PCC-Vivace

End at: 2018-07-04 13:40:50  
Local clock offset: -0.946 ms  
Remote clock offset: -8.354 ms

# Below is generated by plot.py at 2018-07-04 14:43:58  
# Datalink statistics  
-- Total of 3 flows:  
 Average throughput: 84.55 Mbit/s  
 95th percentile per-packet one-way delay: 23.965 ms  
 Loss rate: 0.14%  
-- Flow 1:  
 Average throughput: 57.71 Mbit/s  
 95th percentile per-packet one-way delay: 20.788 ms  
 Loss rate: 0.06%  
-- Flow 2:  
 Average throughput: 27.49 Mbit/s  
 95th percentile per-packet one-way delay: 43.174 ms  
 Loss rate: 0.26%  
-- Flow 3:  
 Average throughput: 25.95 Mbit/s  
 95th percentile per-packet one-way delay: 19.259 ms  
 Loss rate: 0.41%
Run 9: Report of PCC-Vivace — Data Link

![Graph showing data link performance over time]

- **Throughput (Mbit/s):**
  - **Flow 1 Ingress (mean 57.69 Mbit/s)**
  - **Flow 1 Egress (mean 57.71 Mbit/s)**
  - **Flow 2 Ingress (mean 27.53 Mbit/s)**
  - **Flow 2 Egress (mean 27.49 Mbit/s)**
  - **Flow 3 Ingress (mean 25.99 Mbit/s)**
  - **Flow 3 Egress (mean 25.95 Mbit/s)**

- **Per-packet one-way delay (ms):**
  - **Flow 1 (95th percentile 20.79 ms)**
  - **Flow 2 (95th percentile 43.17 ms)**
  - **Flow 3 (95th percentile 19.26 ms)**
Run 10: Statistics of PCC-Vivace

Start at: 2018-07-04 14:01:37  
End at: 2018-07-04 14:02:07  
Local clock offset: 0.37 ms  
Remote clock offset: -4.923 ms

# Below is generated by plot.py at 2018-07-04 14:43:59  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 88.84 Mbit/s  
95th percentile per-packet one-way delay: 45.556 ms  
Loss rate: 0.78%  
-- Flow 1:  
Average throughput: 58.95 Mbit/s  
95th percentile per-packet one-way delay: 49.576 ms  
Loss rate: 1.09%  
-- Flow 2:  
Average throughput: 30.62 Mbit/s  
95th percentile per-packet one-way delay: 23.722 ms  
Loss rate: 0.13%  
-- Flow 3:  
Average throughput: 28.90 Mbit/s  
95th percentile per-packet one-way delay: 17.655 ms  
Loss rate: 0.30%
Run 10: Report of PCC-Vivace — Data Link
Run 1: Statistics of WebRTC media

Start at: 2018-07-04 11:04:48
End at: 2018-07-04 11:05:18
Local clock offset: 0.847 ms
Remote clock offset: 5.273 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 16.068 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 16.089 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 15.989 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 16.222 ms
Loss rate: 0.29%
Run 1: Report of WebRTC media — Data Link

![Graph showing throughput and latency over time for different flows.](image-url)
Run 2: Statistics of WebRTC media

Start at: 2018-07-04 11:25:12
End at: 2018-07-04 11:25:42
Local clock offset: 0.5 ms
Remote clock offset: 0.145 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.95 Mbit/s
  95th percentile per-packet one-way delay: 20.524 ms
  Loss rate: 0.10%
-- Flow 1:
  Average throughput: 1.69 Mbit/s
  95th percentile per-packet one-way delay: 20.482 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.89 Mbit/s
  95th percentile per-packet one-way delay: 20.361 ms
  Loss rate: 0.16%
-- Flow 3:
  Average throughput: 0.38 Mbit/s
  95th percentile per-packet one-way delay: 21.150 ms
  Loss rate: 0.39%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2018-07-04 11:46:01
End at: 2018-07-04 11:46:31
Local clock offset: 2.104 ms
Remote clock offset: 4.01 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.20 Mbit/s
  95th percentile per-packet one-way delay: 24.782 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 1.69 Mbit/s
  95th percentile per-packet one-way delay: 24.699 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.05 Mbit/s
  95th percentile per-packet one-way delay: 24.794 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.47 Mbit/s
  95th percentile per-packet one-way delay: 25.047 ms
  Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link
Run 4: Statistics of WebRTC media

Start at: 2018-07-04 12:06:46
End at: 2018-07-04 12:07:16
Local clock offset: 0.246 ms
Remote clock offset: -3.516 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.11 Mbit/s
95th percentile per-packet one-way delay: 23.975 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 23.919 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 24.076 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 24.072 ms
Loss rate: 0.76%
Run 4: Report of WebRTC media — Data Link

![Throughput](image1)

![Delay](image2)

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Run 5: Statistics of WebRTC media

Start at: 2018-07-04 12:27:37
End at: 2018-07-04 12:28:07
Local clock offset: 1.337 ms
Remote clock offset: -5.366 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.10 Mbit/s
  95th percentile per-packet one-way delay: 25.663 ms
  Loss rate: 0.18%
-- Flow 1:
  Average throughput: 1.62 Mbit/s
  95th percentile per-packet one-way delay: 25.576 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 1.01 Mbit/s
  95th percentile per-packet one-way delay: 25.613 ms
  Loss rate: 0.35%
-- Flow 3:
  Average throughput: 0.48 Mbit/s
  95th percentile per-packet one-way delay: 26.040 ms
  Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link
Run 6: Statistics of WebRTC media

Start at: 2018-07-04 12:48:08
End at: 2018-07-04 12:48:38
Local clock offset: 0.372 ms
Remote clock offset: -7.79 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.14 Mbit/s
  95th percentile per-packet one-way delay: 23.506 ms
  Loss rate: 0.28%
  -- Flow 1:
    Average throughput: 1.68 Mbit/s
    95th percentile per-packet one-way delay: 23.463 ms
    Loss rate: 0.12%
    -- Flow 2:
    Average throughput: 1.01 Mbit/s
    95th percentile per-packet one-way delay: 23.430 ms
    Loss rate: 0.35%
    -- Flow 3:
    Average throughput: 0.47 Mbit/s
    95th percentile per-packet one-way delay: 23.844 ms
    Loss rate: 0.73%
Run 7: Statistics of WebRTC media

End at: 2018-07-04 13:09:25
Local clock offset: -1.384 ms
Remote clock offset: -9.964 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.08 Mbit/s
  95th percentile per-packet one-way delay: 18.911 ms
  Loss rate: 0.10%
-- Flow 1:
  Average throughput: 1.63 Mbit/s
  95th percentile per-packet one-way delay: 18.854 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.99 Mbit/s
  95th percentile per-packet one-way delay: 18.897 ms
  Loss rate: 0.32%
-- Flow 3:
  Average throughput: 0.48 Mbit/s
  95th percentile per-packet one-way delay: 19.092 ms
  Loss rate: 0.00%
Run 7: Report of WebRTC media — Data Link
Run 8: Statistics of WebRTC media

End at: 2018-07-04 13:29:54
Local clock offset: 1.717 ms
Remote clock offset: -10.407 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.97 Mbit/s
95th percentile per-packet one-way delay: 22.633 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 22.628 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 22.631 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 22.695 ms
Loss rate: 0.00%
Run 8: Report of WebRTC media — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 1.57 Mbps)
- Flow 1 egress (mean 1.57 Mbps)
- Flow 2 ingress (mean 0.99 Mbps)
- Flow 2 egress (mean 0.99 Mbps)
- Flow 3 ingress (mean 0.42 Mbps)
- Flow 3 egress (mean 0.42 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 22.63 ms)
- Flow 2 (95th percentile 22.63 ms)
- Flow 3 (95th percentile 22.70 ms)
Run 9: Statistics of WebRTC media

Local clock offset: 1.158 ms
Remote clock offset: -5.187 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 18.333 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 18.249 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 18.394 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 18.729 ms
Loss rate: 0.71%
Run 9: Report of WebRTC media — Data Link

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### Throughput (Mbit/s)

![Throughput Graph]

- **Flow 1 ingress** (mean 1.62 Mbit/s)
- **Flow 1 egress** (mean 1.62 Mbit/s)
- **Flow 2 ingress** (mean 1.00 Mbit/s)
- **Flow 2 egress** (mean 1.00 Mbit/s)
- **Flow 3 ingress** (mean 0.34 Mbit/s)
- **Flow 3 egress** (mean 0.34 Mbit/s)

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

![Per-packet Delay Graph]

- **Flow 1** (95th percentile 18.25 ms)
- **Flow 2** (95th percentile 18.39 ms)
- **Flow 3** (95th percentile 18.73 ms)

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Run 10: Statistics of WebRTC media

Start at: 2018-07-04 14:11:45
End at: 2018-07-04 14:12:15
Local clock offset: 2.835 ms
Remote clock offset: -8.268 ms

# Below is generated by plot.py at 2018-07-04 14:43:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 20.502 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 20.466 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 20.518 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 20.824 ms
Loss rate: 0.00%
Run 10: Report of WebRTC media — Data Link