Pantheon Report

Data path: GCE Iowa on ens4 (remote) → GCE London on ens4 (local).
Repeated the test of 21 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.
NTP offsets were measured against time.google.com and have been applied
to correct the timestamps in logs.

System info:
Linux 4.15.0-1028-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7a686f7c2ed0a333082c5921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b0904264fc4e51e2e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbde58e562f4
third_party/indigo @ 2601c92e4a9d58d38cd4dfe0ecd9f90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce65bb7c3f3cf
third_party/muses @ 5ce721187ad823da20955337730c7e686ca4966
third_party/pantheon-tunnel @ f86663f58d27af9d42717625ee3a354cc2e802bd
third_party/pcc @ 1af958fa0d6d18b623c091a55f9ec8724981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fb92c4e2b4f974a
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3c3f42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a6ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae07132f96b7d8c504587f5d7f4
test from GCE Iowa to GCE London, 5 runs of 30s each per scheme (mean of all runs by scheme)
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s) flow 1</th>
<th>mean 95th-%ile delay (ms) flow 1</th>
<th>mean loss rate (%) flow 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP BBR</td>
<td>5</td>
<td>464.61</td>
<td>110.80</td>
<td>0.33</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>277.47</td>
<td>55.03</td>
<td>0.33</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>5</td>
<td>458.14</td>
<td>55.09</td>
<td>0.32</td>
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<tr>
<td>FillP</td>
<td>5</td>
<td>840.12</td>
<td>89.62</td>
<td>0.38</td>
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<td>FillP-Sheep</td>
<td>5</td>
<td>833.25</td>
<td>83.82</td>
<td>0.42</td>
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<tr>
<td>Indigo</td>
<td>4</td>
<td>229.72</td>
<td>48.47</td>
<td>0.32</td>
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<td>Indigo-MusesC3</td>
<td>5</td>
<td>556.35</td>
<td>59.97</td>
<td>0.38</td>
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<td>Indigo-MusesC5</td>
<td>5</td>
<td>583.16</td>
<td>71.99</td>
<td>0.36</td>
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<tr>
<td>Indigo-MusesD</td>
<td>5</td>
<td>493.63</td>
<td>69.83</td>
<td>0.39</td>
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<tr>
<td>Indigo-MusesT</td>
<td>5</td>
<td>581.52</td>
<td>87.76</td>
<td>0.36</td>
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<td>LEDBAT</td>
<td>5</td>
<td>38.96</td>
<td>48.47</td>
<td>0.26</td>
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<td>PCC-Allegro</td>
<td>5</td>
<td>387.78</td>
<td>137.83</td>
<td>2.49</td>
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<tr>
<td>PCC-Expr</td>
<td>5</td>
<td>266.03</td>
<td>101.96</td>
<td>0.76</td>
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<td>QUIC Cubic</td>
<td>4</td>
<td>68.06</td>
<td>47.01</td>
<td>0.47</td>
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<td>SCReAM</td>
<td>5</td>
<td>0.22</td>
<td>47.42</td>
<td>0.31</td>
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<td>Sprout</td>
<td>5</td>
<td>9.55</td>
<td>47.82</td>
<td>0.31</td>
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<td>TaoVA-100x</td>
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<td>246.79</td>
<td>47.90</td>
<td>0.32</td>
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<td>TCP Vegas</td>
<td>5</td>
<td>294.74</td>
<td>54.61</td>
<td>0.29</td>
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<td>Verus</td>
<td>5</td>
<td>161.69</td>
<td>116.44</td>
<td>1.30</td>
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<tr>
<td>PCC-Vivace</td>
<td>5</td>
<td>307.94</td>
<td>59.70</td>
<td>0.35</td>
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<tr>
<td>WebRTC media</td>
<td>4</td>
<td>0.05</td>
<td>47.73</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2019-03-27 16:29:20
End at: 2019-03-27 16:29:50
Local clock offset: -0.006 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2019-03-27 18:53:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 474.22 Mbit/s
95th percentile per-packet one-way delay: 119.505 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 474.22 Mbit/s
95th percentile per-packet one-way delay: 119.505 ms
Loss rate: 0.53%
Run 1: Report of TCP BBR — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 475.21 Mbit/s)  Flow 1 egress (mean 474.22 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 119.50 ms)
Run 2: Statistics of TCP BBR

Start at: 2019-03-27 16:59:57
End at: 2019-03-27 17:00:27
Local clock offset: -0.075 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2019-03-27 18:53:54
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 473.39 Mbit/s
  95th percentile per-packet one-way delay: 97.383 ms
  Loss rate: 0.32%
-- Flow 1:
  Average throughput: 473.39 Mbit/s
  95th percentile per-packet one-way delay: 97.383 ms
  Loss rate: 0.32%
Run 2: Report of TCP BBR — Data Link

![Graph of Throughput vs Time](image1)

- **Flow 1 ingress (mean 473.42 Mbit/s)**
- **Flow 1 egress (mean 473.39 Mbit/s)**

![Graph of Packet Delay vs Time](image2)

- **Flow 1 (95th percentile 97.38 ms)**
Run 3: Statistics of TCP BBR

Start at: 2019-03-27 17:30:08
End at: 2019-03-27 17:30:38
Local clock offset: -0.087 ms
Remote clock offset: -0.147 ms

# Below is generated by plot.py at 2019-03-27 18:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 449.69 Mbit/s
95th percentile per-packet one-way delay: 100.985 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 449.69 Mbit/s
95th percentile per-packet one-way delay: 100.985 ms
Loss rate: 0.26%
Run 3: Report of TCP BBR — Data Link
Run 4: Statistics of TCP BBR

Start at: 2019-03-27 18:00:32
End at: 2019-03-27 18:01:02
Local clock offset: -0.097 ms
Remote clock offset: 0.02 ms

# Below is generated by plot.py at 2019-03-27 18:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 461.18 Mbit/s
95th percentile per-packet one-way delay: 93.897 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 461.18 Mbit/s
95th percentile per-packet one-way delay: 93.897 ms
Loss rate: 0.00%
Run 4: Report of TCP BBR — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 459.72 Mbps)
- Flow 1 egress (mean 461.18 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 93.90 ms)
Run 5: Statistics of TCP BBR

Start at: 2019-03-27 18:31:07
End at: 2019-03-27 18:31:37
Local clock offset: -0.135 ms
Remote clock offset: 0.001 ms

# Below is generated by plot.py at 2019-03-27 18:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 464.56 Mbit/s
95th percentile per-packet one-way delay: 142.246 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 464.56 Mbit/s
95th percentile per-packet one-way delay: 142.246 ms
Loss rate: 0.53%
Run 5: Report of TCP BBR — Data Link

![Graph of Throughput](image1)

- **Flow 1 ingress (mean 465.55 Mbit/s)**
- **Flow 1 egress (mean 464.56 Mbit/s)**

![Graph of Packet Delay](image2)

- **Flow 1 (95th percentile 142.25 ms)**
Run 1: Statistics of Copa

Start at: 2019-03-27 16:27:46
End at: 2019-03-27 16:28:16
Local clock offset: -0.011 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2019-03-27 18:54:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 298.57 Mbit/s
95th percentile per-packet one-way delay: 56.837 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 298.57 Mbit/s
95th percentile per-packet one-way delay: 56.837 ms
Loss rate: 0.34%
Run 1: Report of Copa — Data Link

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

- Flow 1 ingress (mean 298.64 Mbps)
- Flow 1 egress (mean 298.57 Mbps)

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

- Flow 1 (95th percentile 56.84 ms)
Run 2: Statistics of Copa

Start at: 2019-03-27 16:58:22
End at: 2019-03-27 16:58:52
Local clock offset: -0.104 ms
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2019-03-27 18:55:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 299.60 Mbit/s
95th percentile per-packet one-way delay: 56.674 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 299.60 Mbit/s
95th percentile per-packet one-way delay: 56.674 ms
Loss rate: 0.34%
Run 2: Report of Copa — Data Link
Run 3: Statistics of Copa

Start at: 2019-03-27 17:28:40  
End at: 2019-03-27 17:29:10  
Local clock offset: 0.234 ms  
Remote clock offset: -0.167 ms

# Below is generated by plot.py at 2019-03-27 18:55:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 230.27 Mbit/s
95th percentile per-packet one-way delay: 50.740 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 230.27 Mbit/s
95th percentile per-packet one-way delay: 50.740 ms
Loss rate: 0.34%
Run 3: Report of Copa — Data Link

Time (s)

Throughput (Mbps)

Flow 1 ingress (mean 230.33 Mbit/s)  Flow 1 egress (mean 230.27 Mbit/s)

Per packet average delay (ms)

Flow 1 (95th percentile 50.74 ms)
Run 4: Statistics of Copa

Start at: 2019-03-27 17:59:00
End at: 2019-03-27 17:59:30
Local clock offset: -0.118 ms
Remote clock offset: 0.024 ms

# Below is generated by plot.py at 2019-03-27 19:02:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 271.30 Mbit/s
95th percentile per-packet one-way delay: 55.131 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 271.30 Mbit/s
95th percentile per-packet one-way delay: 55.131 ms
Loss rate: 0.34%
Run 4: Report of Copa — Data Link

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

- **Flow 1 ingress** (mean 271.37 Mbit/s)
- **Flow 1 egress** (mean 271.30 Mbit/s)
Run 5: Statistics of Copa

Start at: 2019-03-27 18:29:29
End at: 2019-03-27 18:29:59
Local clock offset: -0.143 ms
Remote clock offset: 0.058 ms

# Below is generated by plot.py at 2019-03-27 19:02:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 287.62 Mbit/s
95th percentile per-packet one-way delay: 55.781 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 287.62 Mbit/s
95th percentile per-packet one-way delay: 55.781 ms
Loss rate: 0.29%
Run 5: Report of Copa — Data Link

![Graph showing network performance metrics over time]

**Graph Details:**
- **Throughput:** Ranges from 0 to 350 Mbps.
- **Time (s):** 0 to 30 seconds.
- **Legend:**
  - Flow 1 ingress (mean 287.53 Mbps)
  - Flow 1 egress (mean 287.62 Mbps)

**Statistical Information:**
- Flow 1 (95th percentile 55.78 ms)

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Run 1: Statistics of TCP Cubic

Start at: 2019-03-27 16:30:53
End at: 2019-03-27 16:31:23
Local clock offset: -0.012 ms
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2019-03-27 19:02:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 471.86 Mbit/s
95th percentile per-packet one-way delay: 54.494 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 471.86 Mbit/s
95th percentile per-packet one-way delay: 54.494 ms
Loss rate: 0.33%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2019-03-27 17:01:33
End at: 2019-03-27 17:02:03
Local clock offset: -0.084 ms
Remote clock offset: -0.095 ms

# Below is generated by plot.py at 2019-03-27 19:02:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 493.85 Mbit/s
95th percentile per-packet one-way delay: 57.277 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 493.85 Mbit/s
95th percentile per-packet one-way delay: 57.277 ms
Loss rate: 0.23%
Run 2: Report of TCP Cubic — Data Link

![Graph showing throughput over time]

![Graph showing packet delay over time]

Flow 1 ingress (mean 493.42 Mbit/s)  Flow 1 egress (mean 493.85 Mbit/s)

Flow 1 (95th percentile 57.28 ms)
Run 3: Statistics of TCP Cubic

Start at: 2019-03-27 17:31:40
End at: 2019-03-27 17:32:10
Local clock offset: -0.126 ms
Remote clock offset: -0.191 ms

# Below is generated by plot.py at 2019-03-27 19:02:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 462.73 Mbit/s
95th percentile per-packet one-way delay: 53.888 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 462.73 Mbit/s
95th percentile per-packet one-way delay: 53.888 ms
Loss rate: 0.39%
Run 3: Report of TCP Cubic — Data Link

![Graph 1](image1.png)

Flow 1 ingress (mean 463.06 Mbit/s)  Flow 1 egress (mean 462.73 Mbit/s)

![Graph 2](image2.png)

Flow 1 (95th percentile 53.89 ms)
Run 4: Statistics of TCP Cubic

Start at: 2019-03-27 18:02:06
End at: 2019-03-27 18:02:36
Local clock offset: -0.119 ms
Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2019-03-27 19:02:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 402.52 Mbit/s
95th percentile per-packet one-way delay: 49.603 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 402.52 Mbit/s
95th percentile per-packet one-way delay: 49.603 ms
Loss rate: 0.35%
Run 4: Report of TCP Cubic — Data Link
Run 5: Statistics of TCP Cubic

Start at: 2019-03-27 18:32:45
End at: 2019-03-27 18:33:15
Local clock offset: -0.131 ms
Remote clock offset: -0.004 ms

# Below is generated by plot.py at 2019-03-27 19:03:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 459.74 Mbit/s
95th percentile per-packet one-way delay: 60.187 ms
Loss rate: 0.28%

-- Flow 1:
Average throughput: 459.74 Mbit/s
95th percentile per-packet one-way delay: 60.187 ms
Loss rate: 0.28%
Run 5: Report of TCP Cubic — Data Link

![Graph](image)

Flow 1 ingress (mean 459.73 Mbit/s)  
Flow 1 egress (mean 459.74 Mbit/s)

![Graph](image)

Flow 1 (95th percentile 60.19 ms)
Run 1: Statistics of FillP

Start at: 2019-03-27 16:09:46
End at: 2019-03-27 16:10:16
Local clock offset: -0.026 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2019-03-27 19:11:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 816.88 Mbit/s
95th percentile per-packet one-way delay: 82.504 ms
Loss rate: 0.30%

-- Flow 1:
Average throughput: 816.88 Mbit/s
95th percentile per-packet one-way delay: 82.504 ms
Loss rate: 0.30%
Run 1: Report of FillP — Data Link

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

- **Flow 1 ingress** (mean 816.70 Mbps)
- **Flow 1 egress** (mean 816.88 Mbps)

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

- **Flow 1** (95th percentile 82.50 ms)
Run 2: Statistics of FillP

Start at: 2019-03-27 16:40:28
End at: 2019-03-27 16:40:58
Local clock offset: -0.03 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2019-03-27 19:20:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 835.59 Mbit/s
95th percentile per-packet one-way delay: 88.735 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 835.59 Mbit/s
95th percentile per-packet one-way delay: 88.735 ms
Loss rate: 0.36%
Run 2: Report of FillP — Data Link

![Throughput Graph](image1)

- Flow 1 ingress (mean 835.97 Mbit/s)
- Flow 1 egress (mean 835.59 Mbit/s)

![Delay Graph](image2)

- Flow 1 (95th percentile 88.73 ms)
Run 3: Statistics of FillP

Start at: 2019-03-27 17:11:13
End at: 2019-03-27 17:11:43
Local clock offset: ~0.089 ms
Remote clock offset: ~0.133 ms

# Below is generated by plot.py at 2019-03-27 19:20:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 834.04 Mbit/s
95th percentile per-packet one-way delay: 87.675 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 834.04 Mbit/s
95th percentile per-packet one-way delay: 87.675 ms
Loss rate: 0.47%
Run 3: Report of FillP — Data Link
Run 4: Statistics of FillP

Start at: 2019-03-27 17:41:15
End at: 2019-03-27 17:41:45
Local clock offset: -0.094 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2019-03-27 19:21:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 838.68 Mbit/s
95th percentile per-packet one-way delay: 97.614 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 838.68 Mbit/s
95th percentile per-packet one-way delay: 97.614 ms
Loss rate: 0.50%
Run 4: Report of FillP — Data Link

[Graphs showing throughput and packet error rate over time]
Run 5: Statistics of FillP

Start at: 2019-03-27 18:11:36
End at: 2019-03-27 18:12:06
Local clock offset: -0.088 ms
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2019-03-27 19:21:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 875.42 Mbit/s
95th percentile per-packet one-way delay: 91.573 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 875.42 Mbit/s
95th percentile per-packet one-way delay: 91.573 ms
Loss rate: 0.25%
Run 5: Report of FillP — Data Link

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

- Flow 1 ingress (mean 874.79 Mbits/s)
- Flow 1 egress (mean 875.42 Mbits/s)

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

Flow 1 (95th percentile 91.57 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2019-03-27 16:23:29
End at: 2019-03-27 16:23:59
Local clock offset: -0.01 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2019-03-27 19:21:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 849.69 Mbit/s
95th percentile per-packet one-way delay: 81.829 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 849.69 Mbit/s
95th percentile per-packet one-way delay: 81.829 ms
Loss rate: 0.36%
Run 2: Statistics of FillP-Sheep

Start at: 2019-03-27 16:54:05
End at: 2019-03-27 16:54:35
Local clock offset: -0.036 ms
Remote clock offset: -0.065 ms

# Below is generated by plot.py at 2019-03-27 19:21:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 771.12 Mbit/s
95th percentile per-packet one-way delay: 87.208 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 771.12 Mbit/s
95th percentile per-packet one-way delay: 87.208 ms
Loss rate: 0.57%

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Run 2: Report of FillP-Sheep — Data Link

![Throughput vs Time Graph](image)

**Flow 1 Ingress (mean 773.08 Mbit/s)**

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

**Flow 1 (95th percentile 87.21 ms)**
Run 3: Statistics of FillP-Sheep

Start at: 2019-03-27 17:24:22
End at: 2019-03-27 17:24:52
Local clock offset: -0.086 ms
Remote clock offset: -0.118 ms

# Below is generated by plot.py at 2019-03-27 19:22:59
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 860.45 Mbit/s
  95th percentile per-packet one-way delay: 70.088 ms
  Loss rate: 0.31%
-- Flow 1:
  Average throughput: 860.45 Mbit/s
  95th percentile per-packet one-way delay: 70.088 ms
  Loss rate: 0.31%
Run 3: Report of FillP-Sheep — Data Link
Run 4: Statistics of FillP-Sheep

Start at: 2019-03-27 17:54:48
End at: 2019-03-27 17:55:18
Local clock offset: -0.125 ms
Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2019-03-27 19:33:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 841.04 Mbit/s
95th percentile per-packet one-way delay: 81.675 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 841.04 Mbit/s
95th percentile per-packet one-way delay: 81.675 ms
Loss rate: 0.40%
Run 4: Report of FillP-Sheep — Data Link

![Graph of data link performance](image1)

![Graph of packet delay](image2)
Run 5: Statistics of FillP-Sheep

Start at: 2019-03-27 18:24:59
End at: 2019-03-27 18:25:29
Local clock offset: -0.143 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 843.95 Mbit/s
95th percentile per-packet one-way delay: 98.276 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 843.95 Mbit/s
95th percentile per-packet one-way delay: 98.276 ms
Loss rate: 0.44%
Run 5: Report of FillP-Sheep — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 844.93 Mbps)  Flow 1 egress (mean 843.95 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 98.28 ms)
Run 1: Statistics of Indigo

Start at: 2019-03-27 16:04:57
End at: 2019-03-27 16:05:27
Local clock offset: -0.047 ms
Remote clock offset: -0.093 ms
Run 1: Report of Indigo — Data Link

### Throughput (Mb/s)

- **Flow 1 ingress (mean 0.00 Mb/s)**
- **Flow 1 egress (mean 0.00 Mb/s)**

### Per socket one-way delay (ms)

- **Flow 1 (95th percentile 48.08 ms)**
Run 2: Statistics of Indigo

Start at: 2019-03-27 16:35:15
End at: 2019-03-27 16:35:45
Local clock offset: -0.039 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 231.57 Mbit/s
95th percentile per-packet one-way delay: 48.913 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 231.57 Mbit/s
95th percentile per-packet one-way delay: 48.913 ms
Loss rate: 0.33%
Run 2: Report of Indigo — Data Link

**Throughput (Mbps)**

- **Flow 1 ingress** (mean 231.58 Mbps)
- **Flow 1 egress** (mean 231.57 Mbps)

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

- **Flow 1** (95th percentile 48.91 ms)
Run 3: Statistics of Indigo

Start at: 2019-03-27 17:06:01
End at: 2019-03-27 17:06:31
Local clock offset: -0.06 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 229.31 Mbit/s
95th percentile per-packet one-way delay: 48.849 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 229.31 Mbit/s
95th percentile per-packet one-way delay: 48.849 ms
Loss rate: 0.33%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2019-03-27 17:36:05
End at: 2019-03-27 17:36:35
Local clock offset: -0.113 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.28 Mbit/s
95th percentile per-packet one-way delay: 47.649 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 225.28 Mbit/s
95th percentile per-packet one-way delay: 47.649 ms
Loss rate: 0.29%
Run 4: Report of Indigo — Data Link

![Graph 1: Throughput vs Time][1]

- **Flow 1 ingress (mean 225.22 Mbit/s)**
- **Flow 1 egress (mean 225.28 Mbit/s)**

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

- **Flow 1 (95th percentile 47.65 ms)**

---

[1]: #graph1
[2]: #graph2
Run 5: Statistics of Indigo

Start at: 2019-03-27 18:06:24
End at: 2019-03-27 18:06:54
Local clock offset: -0.084 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 232.72 Mbit/s
95th percentile per-packet one-way delay: 48.482 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 232.72 Mbit/s
95th percentile per-packet one-way delay: 48.482 ms
Loss rate: 0.32%
Run 5: Report of Indigo — Data Link

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

- **Flow 1 ingress** (mean 232.64 Mbit/s)
- **Flow 1 egress** (mean 232.72 Mbit/s)

Flow 1 (95th percentile 48.48 ms)
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-03-27 16:12:38
End at: 2019-03-27 16:13:08
Local clock offset: -0.036 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 526.78 Mbit/s
95th percentile per-packet one-way delay: 55.488 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 526.78 Mbit/s
95th percentile per-packet one-way delay: 55.488 ms
Loss rate: 0.42%
Run 1: Report of Indigo-MusesC3 — Data Link

![Throughput Graph]

Flow 1 ingress (mean 527.17 Mbit/s) — Flow 1 egress (mean 526.78 Mbit/s)

![Per-packet one-way delay graph]

Flow 1 (95th percentile 55.49 ms)
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-03-27 16:43:19
End at: 2019-03-27 16:43:49
Local clock offset: -0.058 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 563.44 Mbit/s
95th percentile per-packet one-way delay: 58.833 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 563.44 Mbit/s
95th percentile per-packet one-way delay: 58.833 ms
Loss rate: 0.36%
Run 2: Report of Indigo-MusesC3 — Data Link

---

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

- **Flow 1 ingress (mean 563.58 Mbps)**
- **Flow 1 egress (mean 563.44 Mbps)**

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

- **Flow 1 (95th percentile 58.83 ms)**
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-03-27 17:14:03  
End at: 2019-03-27 17:14:33  
Local clock offset: -0.081 ms  
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2019-03-27 19:39:40  
# Datalink statistics
-- Total of 1 flow:  
Average throughput: 568.11 Mbit/s  
95th percentile per-packet one-way delay: 62.456 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 568.11 Mbit/s  
95th percentile per-packet one-way delay: 62.456 ms  
Loss rate: 0.37%
Run 3: Report of Indigo-MusesC3 — Data Link

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

Flow 1 ingress (mean 568.35 Mbit/s) vs Flow 1 egress (mean 568.11 Mbit/s)
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-03-27 17:44:06
End at: 2019-03-27 17:44:36
Local clock offset: -0.106 ms
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 553.73 Mbit/s
95th percentile per-packet one-way delay: 58.272 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 553.73 Mbit/s
95th percentile per-packet one-way delay: 58.272 ms
Loss rate: 0.40%
Run 4: Report of Indigo-MusesC3 — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 554.08 Mbps)**
- **Flow 1 egress (mean 553.73 Mbps)**

---

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

- **Flow 1 (95th percentile 50.27 ms)**

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Run 5: Statistics of Indigo-MusesC3

Start at: 2019-03-27 18:14:26
End at: 2019-03-27 18:14:56
Local clock offset: -0.129 ms
Remote clock offset: 0.035 ms

# Below is generated by plot.py at 2019-03-27 19:39:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 569.70 Mbit/s
95th percentile per-packet one-way delay: 64.807 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 569.70 Mbit/s
95th percentile per-packet one-way delay: 64.807 ms
Loss rate: 0.37%
Run 5: Report of Indigo-MusesC3 — Data Link

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

- **Flow 1 ingress** (mean 569.88 Mbit/s)
- **Flow 1 egress** (mean 569.70 Mbit/s)

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

- **Flow 1** (95th percentile 64.81 ms)
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-03-27 16:20:18
End at: 2019-03-27 16:20:48
Local clock offset: -0.041 ms
Remote clock offset: -0.096 ms

# Below is generated by plot.py at 2019-03-27 19:40:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.44 Mbit/s
95th percentile per-packet one-way delay: 69.768 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 575.44 Mbit/s
95th percentile per-packet one-way delay: 69.768 ms
Loss rate: 0.43%
Run 1: Report of Indigo-MusesC5 — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 575.91 Mbit/s)
Flow 1 egress (mean 575.44 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 69.77 ms)
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-03-27 16:50:45
End at: 2019-03-27 16:51:15
Local clock offset: -0.087 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-03-27 19:42:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.11 Mbit/s
95th percentile per-packet one-way delay: 81.088 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 575.11 Mbit/s
95th percentile per-packet one-way delay: 81.088 ms
Loss rate: 0.39%
Run 2: Report of Indigo-MusesC5 — Data Link

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

![Graph 2: Packet Delay vs. Time](image2)
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-03-27 17:21:19
End at: 2019-03-27 17:21:49
Local clock offset: -0.078 ms
Remote clock offset: -0.121 ms

# Below is generated by plot.py at 2019-03-27 19:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 587.18 Mbit/s
95th percentile per-packet one-way delay: 70.210 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 587.18 Mbit/s
95th percentile per-packet one-way delay: 70.210 ms
Loss rate: 0.25%
Run 3: Report of Indigo-MusesC5 — Data Link

---

**Graph 1:**
- **X-axis:** Time (s)
- **Y-axis:** Throughput (Mbps)
- **Legend:**
  - Dashed line: Flow 1 ingress (mean: 587.24 Mbps)
  - Solid line: Flow 1 egress (mean: 587.18 Mbps)

---

**Graph 2:**
- **X-axis:** Time (s)
- **Y-axis:** Per-packet one-way delay (ms)
- **Legend:**
  - Dotted line: Flow 1 (95th percentile: 70.21 ms)
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-03-27 17:51:31
End at: 2019-03-27 17:52:01
Local clock offset: -0.1 ms
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2019-03-27 19:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 582.97 Mbit/s
95th percentile per-packet one-way delay: 69.017 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 582.97 Mbit/s
95th percentile per-packet one-way delay: 69.017 ms
Loss rate: 0.39%
Run 4: Report of Indigo-MusesC5 — Data Link
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-03-27 18:21:42
End at: 2019-03-27 18:22:12
Local clock offset: -0.116 ms
Remote clock offset: -0.048 ms

# Below is generated by plot.py at 2019-03-27 19:49:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 595.09 Mbit/s
95th percentile per-packet one-way delay: 69.873 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 595.09 Mbit/s
95th percentile per-packet one-way delay: 69.873 ms
Loss rate: 0.34%
Run 5: Report of Indigo-MusesC5 — Data Link

![Graph showing throughput and delay over time for Flow 1 ingress and egress with mean 595.09 Mbps](image)

- **Throughput**: 0 to 700 Mbps
- **Time (s)**: 0 to 25

- **Flow 1 ingress (mean 595.09 Mbps)**
- **Flow 1 egress (mean 595.09 Mbps)**

![Graph showing per-packet one-way delay for Flow 1 with 95th percentile 69.87 ms](image)
Run 1: Statistics of Indigo-MusesD

Start at: 2019-03-27 16:14:13
End at: 2019-03-27 16:14:43
Local clock offset: -0.057 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2019-03-27 19:49:57
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 488.69 Mbit/s
  95th percentile per-packet one-way delay: 76.857 ms
  Loss rate: 0.57%
-- Flow 1:
  Average throughput: 488.69 Mbit/s
  95th percentile per-packet one-way delay: 76.857 ms
  Loss rate: 0.57%
Run 1: Report of Indigo-MusesD — Data Link
Run 2: Statistics of Indigo-MusesD

Start at: 2019-03-27 16:44:52
End at: 2019-03-27 16:45:22
Local clock offset: -0.042 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2019-03-27 19:49:57
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 498.41 Mbit/s
  95th percentile per-packet one-way delay: 60.925 ms
  Loss rate: 0.32%
-- Flow 1:
  Average throughput: 498.41 Mbit/s
  95th percentile per-packet one-way delay: 60.925 ms
  Loss rate: 0.32%
Run 2: Report of Indigo-MusesD — Data Link

![Graph of throughput and delay over time]
Run 3: Statistics of Indigo-MusesD

Start at: 2019-03-27 17:15:37
End at: 2019-03-27 17:16:07
Local clock offset: -0.091 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2019-03-27 19:49:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 501.46 Mbit/s
95th percentile per-packet one-way delay: 73.606 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 501.46 Mbit/s
95th percentile per-packet one-way delay: 73.606 ms
Loss rate: 0.28%
Run 3: Report of Indigo-MusesD — Data Link

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

- **Flow 1 ingress (mean 501.21 Mbit/s)**
- **Flow 1 egress (mean 501.46 Mbit/s)**

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

- **Flow 1 (95th percentile 73.61 ms)**
Run 4: Statistics of Indigo-MusesD

Start at: 2019-03-27 17:45:40
End at: 2019-03-27 17:46:10
Local clock offset: -0.07 ms
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2019-03-27 19:49:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 467.90 Mbit/s
95th percentile per-packet one-way delay: 68.463 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 467.90 Mbit/s
95th percentile per-packet one-way delay: 68.463 ms
Loss rate: 0.46%
Run 4: Report of Indigo-MusesD — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 468.49 Mbit/s)
Flow 1 egress (mean 467.90 Mbit/s)

Packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 68.46 ms)
Run 5: Statistics of Indigo-MusesD

Start at: 2019-03-27 18:15:59
End at: 2019-03-27 18:16:29
Local clock offset: -0.098 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2019-03-27 19:51:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 511.67 Mbit/s
95th percentile per-packet one-way delay: 69.305 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 511.67 Mbit/s
95th percentile per-packet one-way delay: 69.305 ms
Loss rate: 0.32%
Run 5: Report of Indigo-MusesD — Data Link

![Graph showing throughput in MB/s over time]

- **Flow 1 ingress (mean 511.58 Mbit/s)**
- **Flow 1 egress (mean 511.67 Mbit/s)**

![Graph showing per-packet one-way delay in ms over time]

- **Flow 1 (95th percentile 69.31 ms)**
Run 1: Statistics of Indigo-MusesT

Start at: 2019-03-27 16:17:03
End at: 2019-03-27 16:17:33
Local clock offset: -0.007 ms
Remote clock offset: -0.091 ms

# Below is generated by plot.py at 2019-03-27 19:55:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.86 Mbit/s
95th percentile per-packet one-way delay: 84.643 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 575.86 Mbit/s
95th percentile per-packet one-way delay: 84.643 ms
Loss rate: 0.26%
Run 1: Report of Indigo-MuseST — Data Link

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

- Flow 1 ingress (mean 575.40 Mbps)
- Flow 1 egress (mean 575.86 Mbps)

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

- Flow 1 (95th percentile 84.64 ms)
Run 2: Statistics of Indigo-MuseST

Start at: 2019-03-27 16:47:31
End at: 2019-03-27 16:48:01
Local clock offset: -0.07 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2019-03-27 19:56:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 584.85 Mbit/s
95th percentile per-packet one-way delay: 100.665 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 584.85 Mbit/s
95th percentile per-packet one-way delay: 100.665 ms
Loss rate: 0.41%
Run 2: Report of Indigo-MusesT — Data Link

![Data Link Throughput Graph]

![Data Link Round-Trip Time Graph]
Run 3: Statistics of Indigo-MusesT

Start at: 2019-03-27 17:18:15
End at: 2019-03-27 17:18:45
Local clock offset: -0.11 ms
Remote clock offset: -0.13 ms

# Below is generated by plot.py at 2019-03-27 19:58:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 568.64 Mbit/s
95th percentile per-packet one-way delay: 80.830 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 568.64 Mbit/s
95th percentile per-packet one-way delay: 80.830 ms
Loss rate: 0.42%
Run 3: Report of Indigo-MusesT — Data Link

![Graph showing throughput and delay over time for two data flow types: Ingress and Egress.]

- **Flow 1 Ingress (mean 569.12 Mbit/s)**
- **Flow 1 Egress (mean 568.64 Mbit/s)**

![Graph showing per-packet end-to-end delay over time for Flow 1 with a 95th percentile delay of 80.83 ms.]
Run 4: Statistics of Indigo-MusesT

Start at: 2019-03-27 17:48:18  
End at: 2019-03-27 17:48:48  
Local clock offset: -0.077 ms  
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2019-03-27 19:58:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 580.87 Mbit/s
95th percentile per-packet one-way delay: 80.041 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 580.87 Mbit/s
95th percentile per-packet one-way delay: 80.041 ms
Loss rate: 0.36%
Run 4: Report of Indigo-MusesT — Data Link

![Graph showing throughput and packet delay over time]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 581.01 Mbit/s)
  - Flow 1 egress (mean 580.87 Mbit/s)

- **Packet Delays (ms):**
  - Flow 1 (95th percentile 80.04 ms)
Run 5: Statistics of Indigo-MuseST

Start at: 2019-03-27 18:18:37
End at: 2019-03-27 18:19:07
Local clock offset: -0.131 ms
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2019-03-27 19:59:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 597.36 Mbit/s
95th percentile per-packet one-way delay: 92.628 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 597.36 Mbit/s
95th percentile per-packet one-way delay: 92.628 ms
Loss rate: 0.34%
Run 5: Report of Indigo-MusesT — Data Link

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

- **Flow 1 ingress** (mean 597.37 Mbps)
- **Flow 1 egress** (mean 597.36 Mbps)

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

- **Flow 1** (95th percentile 92.63 ms)
Run 1: Statistics of LEDBAT

Start at: 2019-03-27 16:08:35
End at: 2019-03-27 16:09:05
Local clock offset: -0.062 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2019-03-27 19:59:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.75 Mbit/s
95th percentile per-packet one-way delay: 48.107 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 35.75 Mbit/s
95th percentile per-packet one-way delay: 48.107 ms
Loss rate: 0.01%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

Start at: 2019-03-27 16:39:17
End at: 2019-03-27 16:39:47
Local clock offset: -0.05 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2019-03-27 19:59:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.64 Mbit/s
95th percentile per-packet one-way delay: 48.771 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 41.64 Mbit/s
95th percentile per-packet one-way delay: 48.771 ms
Loss rate: 0.62%
Run 3: Statistics of LEDBAT

Start at: 2019-03-27 17:10:02
End at: 2019-03-27 17:10:32
Local clock offset: -0.079 ms
Remote clock offset: -0.113 ms

# Below is generated by plot.py at 2019-03-27 19:59:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.63 Mbit/s
95th percentile per-packet one-way delay: 48.856 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 39.63 Mbit/s
95th percentile per-packet one-way delay: 48.856 ms
Loss rate: 0.00%
Run 3: Report of LEDBAT — Data Link
Run 4: Statistics of LEDBAT

Start at: 2019-03-27 17:40:04
End at: 2019-03-27 17:40:34
Local clock offset: -0.107 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-03-27 19:59:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.01 Mbit/s
95th percentile per-packet one-way delay: 48.777 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 41.01 Mbit/s
95th percentile per-packet one-way delay: 48.777 ms
Loss rate: 0.63%
Run 4: Report of LEDBAT — Data Link

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

![Graph 2: Per-packet round-trip delay vs Time](image2)
Run 5: Statistics of LEDBAT

Start at: 2019-03-27 18:10:25
End at: 2019-03-27 18:10:55
Local clock offset: -0.148 ms
Remote clock offset: 0.022 ms

# Below is generated by plot.py at 2019-03-27 19:59:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 36.79 Mbit/s
95th percentile per-packet one-way delay: 47.859 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 36.79 Mbit/s
95th percentile per-packet one-way delay: 47.859 ms
Loss rate: 0.03%
Run 5: Report of LEDBAT — Data Link

![Graphs of throughput and round-trip delay](image-url)
Run 1: Statistics of PCC-Allegro

Start at: 2019-03-27 16:21:54
End at: 2019-03-27 16:22:24
Local clock offset: -0.087 ms
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2019-03-27 20:07:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 420.60 Mbit/s
95th percentile per-packet one-way delay: 166.326 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 420.60 Mbit/s
95th percentile per-packet one-way delay: 166.326 ms
Loss rate: 1.95%
Run 1: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 427.61 Mbps)
- Flow 1 egress (mean 420.60 Mbps)

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

- Flow 1 (95th percentile 166.33 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2019-03-27 16:52:29
End at: 2019-03-27 16:52:59
Local clock offset: -0.064 ms
Remote clock offset: -0.116 ms

# Below is generated by plot.py at 2019-03-27 20:07:48
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 362.53 Mbit/s
  95th percentile per-packet one-way delay: 55.471 ms
  Loss rate: 0.47%
-- Flow 1:
  Average throughput: 362.53 Mbit/s
  95th percentile per-packet one-way delay: 55.471 ms
  Loss rate: 0.47%
Run 3: Statistics of PCC-Allegro

Start at: 2019-03-27 17:22:54
End at: 2019-03-27 17:23:24
Local clock offset: -0.098 ms
Remote clock offset: -0.128 ms

# Below is generated by plot.py at 2019-03-27 20:07:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 326.35 Mbit/s
95th percentile per-packet one-way delay: 213.712 ms
Loss rate: 1.74%
-- Flow 1:
Average throughput: 326.35 Mbit/s
95th percentile per-packet one-way delay: 213.712 ms
Loss rate: 1.74%
Run 3: Report of PCC-Allegro — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 331.06 Mbps)  Flow 1 egress (mean 326.35 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 213.71 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2019-03-27 17:53:11
End at: 2019-03-27 17:53:41
Local clock offset: -0.122 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-03-27 20:10:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 383.98 Mbit/s
95th percentile per-packet one-way delay: 75.639 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 383.98 Mbit/s
95th percentile per-packet one-way delay: 75.639 ms
Loss rate: 0.37%
Run 4: Report of PCC-Allegro — Data Link
Run 5: Statistics of PCC-Allegro

Start at: 2019-03-27 18:23:18
End at: 2019-03-27 18:23:48
Local clock offset: -0.162 ms
Remote clock offset: 0.014 ms

# Below is generated by plot.py at 2019-03-27 20:13:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 445.43 Mbit/s
95th percentile per-packet one-way delay: 178.008 ms
Loss rate: 7.92%
-- Flow 1:
Average throughput: 445.43 Mbit/s
95th percentile per-packet one-way delay: 178.008 ms
Loss rate: 7.92%
Run 5: Report of PCC-Allegro — Data Link

![Graph of throughput and delay over time]

- Flow 1 ingress (mean 482.22 Mbit/s)
- Flow 1 egress (mean 445.43 Mbit/s)

![Graph of per packet one way delay over time]

- Flow 1 (95th percentile 178.01 ms)
Run 1: Statistics of PCC-Expr

Start at: 2019-03-27 16:03:25
End at: 2019-03-27 16:03:55
Local clock offset: -0.408 ms
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2019-03-27 20:13:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 273.61 Mbit/s
95th percentile per-packet one-way delay: 123.374 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 273.61 Mbit/s
95th percentile per-packet one-way delay: 123.374 ms
Loss rate: 0.63%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2019-03-27 16:33:47
End at: 2019-03-27 16:34:17
Local clock offset: -0.045 ms
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2019-03-27 20:13:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 241.09 Mbit/s
95th percentile per-packet one-way delay: 50.155 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 241.09 Mbit/s
95th percentile per-packet one-way delay: 50.155 ms
Loss rate: 0.23%
Run 2: Report of PCC-Expr — Data Link
Run 3: Statistics of PCC-Expr

Start at: 2019-03-27 17:04:29
End at: 2019-03-27 17:04:59
Local clock offset: ~0.095 ms
Remote clock offset: ~0.101 ms

# Below is generated by plot.py at 2019-03-27 20:13:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 273.65 Mbit/s
95th percentile per-packet one-way delay: 154.199 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 273.65 Mbit/s
95th percentile per-packet one-way delay: 154.199 ms
Loss rate: 1.96%
Run 3: Report of PCC-Expr — Data Link

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

- **Flow 1 ingress (mean 278.24 Mbit/s)**
- **Flow 1 egress (mean 273.05 Mbit/s)**

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

- **Flow 1 (95th percentile 154.20 ms)**
Run 4: Statistics of PCC-Expr

Start at: 2019-03-27 17:34:32
End at: 2019-03-27 17:35:02
Local clock offset: -0.129 ms
Remote clock offset: -0.119 ms

# Below is generated by plot.py at 2019-03-27 20:14:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 277.79 Mbit/s
95th percentile per-packet one-way delay: 125.206 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 277.79 Mbit/s
95th percentile per-packet one-way delay: 125.206 ms
Loss rate: 0.65%
Run 4: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 278.7 Mbit/s)
- Flow 1 egress (mean 277.79 Mbit/s)
Run 5: Statistics of PCC-Expr

Start at: 2019-03-27 18:04:53
End at: 2019-03-27 18:05:23
Local clock offset: -0.091 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 264.03 Mbit/s
  95th percentile per-packet one-way delay: 56.885 ms
  Loss rate: 0.34%
-- Flow 1:
  Average throughput: 264.03 Mbit/s
  95th percentile per-packet one-way delay: 56.885 ms
  Loss rate: 0.34%
Run 5: Report of PCC-Expr — Data Link

![Graph of data link throughput and delay](image-url)
Run 1: Statistics of QUIC Cubic

Start at: 2019-03-27 16:06:05
End at: 2019-03-27 16:06:35
Local clock offset: -0.058 ms
Remote clock offset: -0.093 ms
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2019-03-27 16:36:44
End at: 2019-03-27 16:37:14
Local clock offset: -0.027 ms
Remote clock offset: -0.121 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.77 Mbit/s
95th percentile per-packet one-way delay: 46.519 ms
Loss rate: 0.38%

-- Flow 1:
Average throughput: 68.77 Mbit/s
95th percentile per-packet one-way delay: 46.519 ms
Loss rate: 0.38%
Run 2: Report of QUIC Cubic — Data Link

Throughput (Mbit/s)

Flow 1 ingress (mean 68.81 Mbit/s)  Flow 1 egress (mean 68.77 Mbit/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 46.52 ms)
Run 3: Statistics of QUIC Cubic

Start at: 2019-03-27 17:07:29
End at: 2019-03-27 17:07:59
Local clock offset: -0.058 ms
Remote clock offset: -0.099 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.99 Mbit/s
95th percentile per-packet one-way delay: 47.660 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 81.99 Mbit/s
95th percentile per-packet one-way delay: 47.660 ms
Loss rate: 0.42%
Run 3: Report of QUIC Cubic — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 82.08 Mbps)
- Flow 1 egress (mean 81.99 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 47.66 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2019-03-27 17:37:32
End at: 2019-03-27 17:38:02
Local clock offset: -0.097 ms
Remote clock offset: -0.089 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 71.22 Mbit/s
95th percentile per-packet one-way delay: 46.485 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 71.22 Mbit/s
95th percentile per-packet one-way delay: 46.485 ms
Loss rate: 0.43%
Run 4: Report of QUIC Cubic — Data Link

![Graph showing throughput and round-trip delay over time for Flow 1 with mean ingestion and egress rates of 71.31 Mbit/s and 71.22 Mbit/s respectively.]

- Flow 1 ingress (mean 71.31 Mbit/s)
- Flow 1 egress (mean 71.22 Mbit/s)
Run 5: Statistics of QUIC Cubic

Start at: 2019-03-27 18:07:53
End at: 2019-03-27 18:08:23
Local clock offset: -0.111 ms
Remote clock offset: -0.008 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 47.388 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 47.388 ms
Loss rate: 0.66%
Run 5: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2019-03-27 16:15:56
End at: 2019-03-27 16:16:26
Local clock offset: -0.044 ms
Remote clock offset: -0.104 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.529 ms
  Loss rate: 0.25%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.529 ms
  Loss rate: 0.25%
Run 1: Report of SCReAM — Data Link
Run 2: Statistics of SCReAM

End at: 2019-03-27 16:46:53
Local clock offset: -0.054 ms
Remote clock offset: -0.105 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.783 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.783 ms
Loss rate: 0.39%
Run 2: Report of SCReAM — Data Link

### Throughput (Mbps)

- **Flow 1 ingress (mean 0.22 Mbps)**
- **Flow 1 egress (mean 0.22 Mbps)**

### End-to-end delay (ms)

- **Flow 1 (95th percentile 46.78 ms)**
Run 3: Statistics of SCReAM

Start at: 2019-03-27 17:17:07  
End at: 2019-03-27 17:17:37  
Local clock offset: -0.095 ms  
Remote clock offset: -0.121 ms

# Below is generated by plot.py at 2019-03-27 20:15:13  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 47.619 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 47.619 ms  
Loss rate: 0.38%
Run 3: Report of SCReAM — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ing (mean 0.22 Mbps)
- Flow 1 egress (mean 0.22 Mbps)

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

- Flow 1 (95th percentile 47.62 ms)
Run 4: Statistics of SCReAM

Start at: 2019-03-27 17:47:10
End at: 2019-03-27 17:47:40
Local clock offset: -0.092 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.593 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.593 ms
Loss rate: 0.26%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2019-03-27 18:17:30
End at: 2019-03-27 18:18:00
Local clock offset: -0.125 ms
Remote clock offset: -0.019 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.578 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.578 ms
Loss rate: 0.26%
Run 5: Report of SCReAM — Data Link

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

Throughput (Mbit/s) vs. Time (s)
- Flow 1 ingress (mean 0.22 Mbit/s)
- Flow 1 egress (mean 0.22 Mbit/s)

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

Packet delay (ms) vs. Time (s)
- Flow 1 (95th percentile 47.58 ms)
Run 1: Statistics of Sprout

Start at: 2019-03-27 16:11:29
End at: 2019-03-27 16:11:59
Local clock offset: -0.029 ms
Remote clock offset: -0.071 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.54 Mbit/s
95th percentile per-packet one-way delay: 48.024 ms
Loss rate: 0.20%

-- Flow 1:
Average throughput: 9.54 Mbit/s
95th percentile per-packet one-way delay: 48.024 ms
Loss rate: 0.20%
Run 1: Report of Sprout — Data Link

![Throughput Graph](image)

![Latency Graph](image)

Flow 1 ingress (mean 9.53 Mbit/s)
Flow 1 egress (mean 9.54 Mbit/s)

Flow 1 (95th percentile 48.02 ms)
Run 2: Statistics of Sprout

Start at: 2019-03-27 16:42:11
End at: 2019-03-27 16:42:41
Local clock offset: -0.06 ms
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.59 Mbit/s
95th percentile per-packet one-way delay: 47.859 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 9.59 Mbit/s
95th percentile per-packet one-way delay: 47.859 ms
Loss rate: 0.35%
Run 2: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 9.59 Mbit/s)
- Flow 1 egress (mean 9.59 Mbit/s)

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

- Flow 1 (95th percentile 47.86 ms)
Run 3: Statistics of Sprout

Start at: 2019-03-27 17:12:54
End at: 2019-03-27 17:13:24
Local clock offset: -0.125 ms
Remote clock offset: -0.142 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.47 Mbit/s
95th percentile per-packet one-way delay: 47.915 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 9.47 Mbit/s
95th percentile per-packet one-way delay: 47.915 ms
Loss rate: 0.34%
Run 3: Report of Sprout — Data Link

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

- **Flow 1 ingress (mean 9.47 Mbps)**
- **Flow 1 egress (mean 9.47 Mbps)**

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

- **Flow 1 (95th percentile 47.91 ms)**
Run 4: Statistics of Sprout

Start at: 2019-03-27 17:42:57  
End at: 2019-03-27 17:43:27  
Local clock offset: -0.077 ms  
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2019-03-27 20:15:13  
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.53 Mbit/s  
95th percentile per-packet one-way delay: 47.297 ms  
Loss rate: 0.35%
-- Flow 1:
Average throughput: 9.53 Mbit/s  
95th percentile per-packet one-way delay: 47.297 ms  
Loss rate: 0.35%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2019-03-27 18:13:18
End at: 2019-03-27 18:13:48
Local clock offset: -0.102 ms
Remote clock offset: 0.062 ms

# Below is generated by plot.py at 2019-03-27 20:15:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: 48.005 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: 48.005 ms
Loss rate: 0.32%
Run 5: Report of Sprout — Data Link
Run 1: Statistics of TaoVA-100x

Start at: 2019-03-27 16:18:44
End at: 2019-03-27 16:19:14
Local clock offset: -0.027 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2019-03-27 20:19:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 246.43 Mbit/s
95th percentile per-packet one-way delay: 48.165 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 246.43 Mbit/s
95th percentile per-packet one-way delay: 48.165 ms
Loss rate: 0.33%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2019-03-27 16:49:10
End at: 2019-03-27 16:49:40
Local clock offset: -0.088 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2019-03-27 20:19:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 244.13 Mbit/s
95th percentile per-packet one-way delay: 48.265 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 244.13 Mbit/s
95th percentile per-packet one-way delay: 48.265 ms
Loss rate: 0.32%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2019-03-27 17:19:49
End at: 2019-03-27 17:20:19
Local clock offset: -0.486 ms
Remote clock offset: -0.107 ms

# Below is generated by plot.py at 2019-03-27 20:19:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 249.14 Mbit/s
95th percentile per-packet one-way delay: 47.537 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 249.14 Mbit/s
95th percentile per-packet one-way delay: 47.537 ms
Loss rate: 0.31%
Run 4: Statistics of TaoVA-100x

Start at: 2019-03-27 17:49:57
End at: 2019-03-27 17:50:27
Local clock offset: -0.094 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2019-03-27 20:19:33
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 247.45 Mbit/s
  95th percentile per-packet one-way delay: 47.881 ms
  Loss rate: 0.34%
-- Flow 1:
  Average throughput: 247.45 Mbit/s
  95th percentile per-packet one-way delay: 47.881 ms
  Loss rate: 0.34%
Run 4: Report of TaoVA-100x — Data Link

![Graphs showing throughput and delay](image-url)

- Flow 1 ingress (mean 247.50 Mbit/s)
- Flow 1 egress (mean 247.45 Mbit/s)

![Graphs showing throughput and delay](image-url)

- Flow 1 (95th percentile 47.88 ms)
Run 5: Statistics of TaoVA-100x

Start at: 2019-03-27 18:20:12
End at: 2019-03-27 18:20:42
Local clock offset: -0.135 ms
Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2019-03-27 20:19:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 246.80 Mbit/s
95th percentile per.packet one-way delay: 47.663 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 246.80 Mbit/s
95th percentile per.packet one-way delay: 47.663 ms
Loss rate: 0.32%
Run 5: Report of TaoVA-100x — Data Link

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

- **Flow 1 ingress** (mean 246.81 Mbit/s)
- **Flow 1 egress** (mean 246.80 Mbit/s)

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

- **Flow 1 (95th percentile 47.66 ms)**
Run 1: Statistics of TCP Vegas

Start at: 2019-03-27 16:07:12
End at: 2019-03-27 16:07:42
Local clock offset: -0.025 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2019-03-27 20:19:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 317.18 Mbit/s
95th percentile per-packet one-way delay: 66.149 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 317.18 Mbit/s
95th percentile per-packet one-way delay: 66.149 ms
Loss rate: 0.27%
Run 1: Report of TCP Vegas — Data Link

![Graph 1: Throughput vs Time](image1)
Flow 1 ingress (mean 317.64 Mbit/s)  Flow 1 egress (mean 317.18 Mbit/s)

![Graph 2: Per packet one way delay](image2)
Flow 1 (95th percentile 66.15 ms)
Run 2: Statistics of TCP Vegas

Start at: 2019-03-27 16:37:55
End at: 2019-03-27 16:38:25
Local clock offset: -0.035 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2019-03-27 20:21:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 290.81 Mbit/s
95th percentile per-packet one-way delay: 57.974 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 290.81 Mbit/s
95th percentile per-packet one-way delay: 57.974 ms
Loss rate: 0.29%
Run 2: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay over time]

**Throughput (Mbps)**

- Flow 1 ingress (mean 290.74 Mbps)
- Flow 1 egress (mean 290.81 Mbps)

**Packet delay (ms)**

- Flow 1 (95th percentile 57.97 ms)
Run 3: Statistics of TCP Vegas

Start at: 2019-03-27 17:08:41
End at: 2019-03-27 17:09:11
Local clock offset: -0.1 ms
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2019-03-27 20:21:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 278.42 Mbit/s
95th percentile per-packet one-way delay: 47.670 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 278.42 Mbit/s
95th percentile per-packet one-way delay: 47.670 ms
Loss rate: 0.30%
Run 3: Report of TCP Vegas — Data Link

![Graph showing throughput and delay over time]

- **Flow 1 ingress (mean 278.37 Mbit/s)**
- **Flow 1 egress (mean 278.42 Mbit/s)**

- Flow 1 (95th percentile 47.67 ms)
Run 4: Statistics of TCP Vegas

Start at: 2019-03-27 17:38:44
End at: 2019-03-27 17:39:14
Local clock offset: -0.108 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2019-03-27 20:24:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 286.01 Mbit/s
95th percentile per-packet one-way delay: 47.456 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 286.01 Mbit/s
95th percentile per-packet one-way delay: 47.456 ms
Loss rate: 0.29%
Run 4: Report of TCP Vegas — Data Link

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

- Flow 1 ingress: mean 285.96 Mbps
- Flow 1 egress: mean 286.01 Mbps

![Graph 2: Packet Delay (ms)](image2)

- Flow 1 (95th percentile 47.46 ms)
Run 5: Statistics of TCP Vegas

Start at: 2019-03-27 18:09:03  
End at: 2019-03-27 18:09:33  
Local clock offset: -0.12 ms  
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2019-03-27 20:25:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 301.28 Mbit/s
95th percentile per-packet one-way delay: 53.814 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 301.28 Mbit/s
95th percentile per-packet one-way delay: 53.814 ms
Loss rate: 0.29%
Run 5: Report of TCP Vegas — Data Link

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

![Graph 2: Packet Delay (ms)](image2)

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Run 1: Statistics of Verus

Start at: 2019-03-27 16:02:03
End at: 2019-03-27 16:02:33
Local clock offset: 0.324 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-03-27 20:25:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 150.39 Mbit/s
95th percentile per-packet one-way delay: 81.294 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 150.39 Mbit/s
95th percentile per-packet one-way delay: 81.294 ms
Loss rate: 0.65%
Run 1: Report of Verus — Data Link
Run 2: Statistics of Verus

Start at: 2019-03-27 16:32:24
End at: 2019-03-27 16:32:54
Local clock offset: -0.044 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2019-03-27 20:25:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 169.52 Mbit/s
95th percentile per-packet one-way delay: 89.034 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 169.52 Mbit/s
95th percentile per-packet one-way delay: 89.034 ms
Loss rate: 0.22%
Run 2: Report of Verus — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 169.26 Mbit/s)  Flow 1 egress (mean 169.52 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 89.03 ms)
Run 3: Statistics of Verus

Start at: 2019-03-27 17:03:04
End at: 2019-03-27 17:03:34
Local clock offset: -0.068 ms
Remote clock offset: -0.117 ms

# Below is generated by plot.py at 2019-03-27 20:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 185.68 Mbit/s
95th percentile per-packet one-way delay: 203.447 ms
Loss rate: 4.71%
-- Flow 1:
Average throughput: 185.68 Mbit/s
95th percentile per-packet one-way delay: 203.447 ms
Loss rate: 4.71%
Run 3: Report of Verus — Data Link
Run 4: Statistics of Verus

Start at: 2019-03-27 17:33:10
End at: 2019-03-27 17:33:40
Local clock offset: -0.101 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2019-03-27 20:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 168.18 Mbit/s
95th percentile per-packet one-way delay: 149.140 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 168.18 Mbit/s
95th percentile per-packet one-way delay: 149.140 ms
Loss rate: 0.45%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

Start at: 2019-03-27 18:03:33
End at: 2019-03-27 18:04:03
Local clock offset: -0.091 ms
Remote clock offset: -0.009 ms

# Below is generated by plot.py at 2019-03-27 20:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 134.70 Mbit/s
95th percentile per-packet one-way delay: 59.276 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 134.70 Mbit/s
95th percentile per-packet one-way delay: 59.276 ms
Loss rate: 0.48%
Run 5: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2019-03-27 16:25:10
End at: 2019-03-27 16:25:40
Local clock offset: -0.002 ms
Remote clock offset: -0.117 ms

# Below is generated by plot.py at 2019-03-27 20:27:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 321.75 Mbit/s
95th percentile per-packet one-way delay: 49.194 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 321.75 Mbit/s
95th percentile per-packet one-way delay: 49.194 ms
Loss rate: 0.32%
Run 1: Report of PCC-Vivace — Data Link
Run 2: Statistics of PCC-Vivace

Start at: 2019-03-27 16:55:45
End at: 2019-03-27 16:56:15
Local clock offset: -0.078 ms
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2019-03-27 20:28:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 328.00 Mbit/s
95th percentile per-packet one-way delay: 63.037 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 328.00 Mbit/s
95th percentile per-packet one-way delay: 63.037 ms
Loss rate: 0.30%
Run 2: Report of PCC-Vivace — Data Link
Run 3: Statistics of PCC-Vivace

Start at: 2019-03-27 17:26:03
End at: 2019-03-27 17:26:33
Local clock offset: -0.061 ms
Remote clock offset: -0.146 ms

# Below is generated by plot.py at 2019-03-27 20:28:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 329.61 Mbit/s
95th percentile per-packet one-way delay: 82.476 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 329.61 Mbit/s
95th percentile per-packet one-way delay: 82.476 ms
Loss rate: 0.28%
Run 3: Report of PCC-Vivace — Data Link

![Graph of throughput over time with two traces: Flow 1 ingress (mean 329.47 Mbit/s) and Flow 1 egress (mean 329.61 Mbit/s).]

![Graph of packet delay over time with one trace: Flow 1 (95th percentile 82.48 ms).]
Run 4: Statistics of PCC-Vivace

Start at: 2019-03-27 17:56:31
End at: 2019-03-27 17:57:01
Local clock offset: -0.122 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2019-03-27 20:28:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 203.07 Mbit/s
95th percentile per-packet one-way delay: 48.027 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 203.07 Mbit/s
95th percentile per-packet one-way delay: 48.027 ms
Loss rate: 0.55%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2019-03-27 18:26:46
End at: 2019-03-27 18:27:16
Local clock offset: -0.156 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2019-03-27 20:28:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 357.29 Mbit/s
95th percentile per-packet one-way delay: 55.786 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 357.29 Mbit/s
95th percentile per-packet one-way delay: 55.786 ms
Loss rate: 0.31%
Run 5: Report of PCC-Vivace — Data Link

![Graph showing throughput and packet loss over time]

- Flow 1 ingress (mean 357.27 Mbit/s)
- Flow 1 egress (mean 357.29 Mbit/s)

![Graph showing packet loss over time]

- Flow 1 (95th percentile: 55.79 ms)
Run 1: Statistics of WebRTC media

Start at: 2019-03-27 16:26:38
End at: 2019-03-27 16:27:08
Local clock offset: -0.012 ms
Remote clock offset: -0.087 ms
Run 1: Report of WebRTC media — Data Link

![Chart showing throughput over time for WebRTC media data link]

![Chart showing per-packet one-way delay over time for WebRTC media]

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Run 2: Statistics of WebRTC media

Start at: 2019-03-27 16:57:15
End at: 2019-03-27 16:57:45
Local clock offset: -0.109 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2019-03-27 20:28:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.481 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.481 ms
Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link

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

- **Flow 1 ingress** (mean 0.05 Mbit/s)
- **Flow 1 egress** (mean 0.05 Mbit/s)

- **Packet oneway delay (ms)**

  - **Flow 1** (90th percentile 47.48 ms)
Run 3: Statistics of WebRTC media

Start at: 2019-03-27 17:27:32
End at: 2019-03-27 17:28:02
Local clock offset: -0.082 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2019-03-27 20:28:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 48.271 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 48.271 ms
Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

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

- **Flow 1 ingress (mean 0.05 Mbit/s)**
- **Flow 1 egress (mean 0.05 Mbit/s)**

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

- **Flow 1 (95th percentile 48.27 ms)**
Run 4: Statistics of WebRTC media

Start at: 2019-03-27 17:57:52
End at: 2019-03-27 17:58:22
Local clock offset: -0.101 ms
Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2019-03-27 20:28:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.622 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.622 ms
Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link
Run 5: Statistics of WebRTC media

End at: 2019-03-27 18:28:52
Local clock offset: -0.142 ms
Remote clock offset: 0.045 ms

# Below is generated by plot.py at 2019-03-27 20:28:42
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 47.533 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 47.533 ms
  Loss rate: 0.00%