Pantheon Report

Generated at 2019-02-20 23:46:05 (UTC).
Data path: GCE London on ens4 (local) → GCE Iowa on ens4 (remote).
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 4.15.0-1026-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da145932fcee569e3885d7e8a17e6a3d4519
third_party/fillp-sheep @ e5bb722943aa79d38de145e12e923ef9
third_party/genericCC @ d0153f8e594aa89e3b03213c3edfe58e562f4
third_party/indigo @ 2601c92e4aa9d5838dc4dfe0edbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce66b7c3f2c
third_party/libutp @ e5721187ad823da2095537730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
third_party/pcc @ 1af9589f0d6d1b623c091a55f8c872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8aad08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a8273a86b42f1bc8143ebc978f3ccf4f
third_party/scream-reproduce @ f09911d81421a3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
test from GCE London to GCE Iowa, 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)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP BBR</td>
<td>5</td>
<td>601.54</td>
<td>132.52</td>
<td>0.52</td>
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<tr>
<td>Copa</td>
<td>5</td>
<td>354.37</td>
<td>58.72</td>
<td>0.00</td>
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<td>TCP Cubic</td>
<td>5</td>
<td>619.22</td>
<td>93.34</td>
<td>0.11</td>
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<td>FillP</td>
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<td>968.52</td>
<td>88.01</td>
<td>0.38</td>
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<td>FillP-Sheep</td>
<td>5</td>
<td>976.70</td>
<td>61.30</td>
<td>0.03</td>
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<td>238.47</td>
<td>47.47</td>
<td>0.00</td>
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<td>Indigo-MusesC3</td>
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<td>69.33</td>
<td>0.01</td>
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<td>Indigo-MusesD</td>
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<td>0.03</td>
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<td>89.99</td>
<td>0.15</td>
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<td>LEDBAT</td>
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<td>34.63</td>
<td>48.70</td>
<td>0.00</td>
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<td>PCC-Allegro</td>
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<td>470.14</td>
<td>156.99</td>
<td>2.24</td>
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<td>PCC-Expr</td>
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<td>358.41</td>
<td>132.78</td>
<td>3.76</td>
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<td>QUIC Cubic</td>
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<td>60.47</td>
<td>46.85</td>
<td>0.00</td>
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<td>SCReAM</td>
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<td>0.22</td>
<td>47.50</td>
<td>0.00</td>
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<td>Sprout</td>
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<td>47.58</td>
<td>0.00</td>
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<td>0.00</td>
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<td>0.05</td>
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<td>Verus</td>
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<td>145.78</td>
<td>0.77</td>
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<td>PCC-Vivace</td>
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<td>49.27</td>
<td>0.00</td>
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<td>WebRTC media</td>
<td>5</td>
<td>0.82</td>
<td>47.16</td>
<td>0.00</td>
</tr>
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</table>
Run 1: Statistics of TCP BBR

Start at: 2019-02-20 19:11:16
End at: 2019-02-20 19:11:46
Local clock offset: -0.047 ms
Remote clock offset: 0.005 ms

# Below is generated by plot.py at 2019-02-20 21:55:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 623.13 Mbit/s
95th percentile per-packet one-way delay: 133.275 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 623.13 Mbit/s
95th percentile per-packet one-way delay: 133.275 ms
Loss rate: 0.48%
Run 1: Report of TCP BBR — Data Link

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

- **Flow 1 ingress (mean 626.13 Mb/s)**
- **Flow 1 egress (mean 623.33 Mb/s)**

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

- **Flow 1 (95th percentile 133.28 ms)**
Run 2: Statistics of TCP BBR

Start at: 2019-02-20 19:42:50
End at: 2019-02-20 19:43:20
Local clock offset: -0.079 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2019-02-20 21:55:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 598.60 Mbit/s
95th percentile per-packet one-way delay: 133.267 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 598.60 Mbit/s
95th percentile per-packet one-way delay: 133.267 ms
Loss rate: 0.41%
Run 2: Report of TCP BBR — Data Link
Run 3: Statistics of TCP BBR

Start at: 2019-02-20 20:14:12
End at: 2019-02-20 20:14:42
Local clock offset: -0.101 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2019-02-20 21:55:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 632.01 Mbit/s
95th percentile per-packet one-way delay: 127.913 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 632.01 Mbit/s
95th percentile per-packet one-way delay: 127.913 ms
Loss rate: 0.42%
Run 3: Report of TCP BBR — Data Link

[Graph showing throughput and latency over time for two flows]

Flow 1 ingress (mean 634.70 Mbit/s) and Flow 1 egress (mean 632.01 Mbit/s)

Flow 1 (95th percentile 127.91 ms)
Run 4: Statistics of TCP BBR

Start at: 2019-02-20 20:45:41
End at: 2019-02-20 20:46:11
Local clock offset: -0.364 ms
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2019-02-20 21:55:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 583.02 Mbit/s
95th percentile per-packet one-way delay: 128.001 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 583.02 Mbit/s
95th percentile per-packet one-way delay: 128.001 ms
Loss rate: 0.34%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2019-02-20 21:17:11
End at: 2019-02-20 21:17:41
Local clock offset: 0.185 ms
Remote clock offset: -0.151 ms

# Below is generated by plot.py at 2019-02-20 21:55:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 570.93 Mbit/s
95th percentile per-packet one-way delay: 140.131 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 570.93 Mbit/s
95th percentile per-packet one-way delay: 140.131 ms
Loss rate: 0.97%
Run 1: Statistics of Copa

Start at: 2019-02-20 18:55:09
End at: 2019-02-20 18:55:39
Local clock offset: 0.411 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2019-02-20 21:56:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 382.56 Mbit/s
95th percentile per-packet one-way delay: 49.005 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 382.56 Mbit/s
95th percentile per-packet one-way delay: 49.005 ms
Loss rate: 0.01%
Run 1: Report of Copa — Data Link

![Graph showing throughput and packet delay over time]

- Flow 1 ingress (mean 382.62 Mbit/s)
- Flow 1 egress (mean 382.56 Mbit/s)

![Graph showing packet delay over time]

- Flow 1 (95th percentile 49.01 ms)
Run 2: Statistics of Copa

Start at: 2019-02-20 19:26:33
End at: 2019-02-20 19:27:03
Local clock offset: -0.122 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2019-02-20 21:56:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 341.94 Mbit/s
95th percentile per-packet one-way delay: 53.277 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 341.94 Mbit/s
95th percentile per-packet one-way delay: 53.277 ms
Loss rate: 0.00%
Run 2: Report of Copa — Data Link
Run 3: Statistics of Copa

Start at: 2019-02-20 19:57:58
End at: 2019-02-20 19:58:28
Local clock offset: -0.08 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2019-02-20 21:56:42
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 350.14 Mbit/s
  95th percentile per-packet one-way delay: 61.026 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 350.14 Mbit/s
  95th percentile per-packet one-way delay: 61.026 ms
  Loss rate: 0.00%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2019-02-20 20:29:26
End at: 2019-02-20 20:29:56
Local clock offset: -0.008 ms
Remote clock offset: -0.127 ms

# Below is generated by plot.py at 2019-02-20 22:05:50
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 342.24 Mbit/s
  95th percentile per-packet one-way delay: 61.831 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 342.24 Mbit/s
  95th percentile per-packet one-way delay: 61.831 ms
  Loss rate: 0.01%
Run 4: Report of Copa — Data Link

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

- **Flow 1 ingress (mean 342.26 Mbit/s)**
- **Flow 1 egress (mean 342.24 Mbit/s)**

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

- **Flow 1 (95th percentile 61.83 ms)**
Run 5: Statistics of Copa

Start at: 2019-02-20 21:01:05
End at: 2019-02-20 21:01:35
Local clock offset: -0.154 ms
Remote clock offset: -0.149 ms

# Below is generated by plot.py at 2019-02-20 22:06:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 354.96 Mbit/s
95th percentile per-packet one-way delay: 68.483 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 354.96 Mbit/s
95th percentile per-packet one-way delay: 68.483 ms
Loss rate: 0.00%
Run 5: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2019-02-20 19:12:56
End at: 2019-02-20 19:13:26
Local clock offset: -0.045 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2019-02-20 22:06:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 550.26 Mbit/s
95th percentile per-packet one-way delay: 58.204 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 550.26 Mbit/s
95th percentile per-packet one-way delay: 58.204 ms
Loss rate: 0.12%
Run 1: Report of TCP Cubic — Data Link

![Graph of TCP Cubic Report](image)

- Flow 1 ingress (mean 550.91 Mbit/s)
- Flow 1 egress (mean 550.26 Mbit/s)

![Graph of Packet Delay](image)

- Flow 1 (95th percentile 50.20 ms)
Run 2: Statistics of TCP Cubic

Start at: 2019-02-20 19:44:27
End at: 2019-02-20 19:44:57
Local clock offset: -0.08 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2019-02-20 22:06:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 634.84 Mbit/s
95th percentile per-packet one-way delay: 98.272 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 634.84 Mbit/s
95th percentile per-packet one-way delay: 98.272 ms
Loss rate: 0.14%
Run 2: Report of TCP Cubic — Data Link

![Graph 1: Throughput vs Time](image1)
- Flow 1 ingress (mean 635.73 Mbit/s)
- Flow 1 egress (mean 634.84 Mbit/s)

![Graph 2: Per-packet round trip delay vs Time](image2)
- Flow 1 (95th percentile 98.27 ms)
Run 3: Statistics of TCP Cubic

Start at: 2019-02-20 20:15:52
End at: 2019-02-20 20:16:22
Local clock offset: -0.075 ms
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2019-02-20 22:06:37
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 637.67 Mbit/s
  95th percentile per-packet one-way delay: 138.395 ms
  Loss rate: 0.04%
-- Flow 1:
  Average throughput: 637.67 Mbit/s
  95th percentile per-packet one-way delay: 138.395 ms
  Loss rate: 0.04%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2019-02-20 20:47:18
End at: 2019-02-20 20:47:48
Local clock offset: -0.017 ms
Remote clock offset: -0.142 ms

# Below is generated by plot.py at 2019-02-20 22:07:09
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 674.60 Mbit/s
  95th percentile per-packet one-way delay: 106.438 ms
  Loss rate: 0.22%
-- Flow 1:
  Average throughput: 674.60 Mbit/s
  95th percentile per-packet one-way delay: 106.438 ms
  Loss rate: 0.22%
Run 5: Statistics of TCP Cubic

Start at: 2019-02-20 21:18:47
End at: 2019-02-20 21:19:17
Local clock offset: -0.49 ms
Remote clock offset: -0.193 ms

# Below is generated by plot.py at 2019-02-20 22:07:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 598.72 Mbit/s
95th percentile per-packet one-way delay: 65.387 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 598.72 Mbit/s
95th percentile per-packet one-way delay: 65.387 ms
Loss rate: 0.03%
Run 5: Report of TCP Cubic — Data Link
Run 1: Statistics of FillP

Start at: 2019-02-20 19:01:37
End at: 2019-02-20 19:02:07
Local clock offset: -0.003 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2019-02-20 22:14:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 972.66 Mbit/s
95th percentile per-packet one-way delay: 79.150 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 972.66 Mbit/s
95th percentile per-packet one-way delay: 79.150 ms
Loss rate: 0.10%
Run 1: Report of FillP — Data Link

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

- Flow 1 ingress (mean 973.59 Mbit/s)
- Flow 1 egress (mean 972.66 Mbit/s)
Run 2: Statistics of FillP

Start at: 2019-02-20 19:33:09
End at: 2019-02-20 19:33:39
Local clock offset: -0.125 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2019-02-20 22:26:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1006.69 Mbit/s
95th percentile per-packet one-way delay: 82.140 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 1006.69 Mbit/s
95th percentile per-packet one-way delay: 82.140 ms
Loss rate: 0.34%
Run 2: Report of FillP — Data Link

- Throughput (Mbps)
  - Flow 1 ingress (mean 1010.16 Mbps)
  - Flow 1 egress (mean 1006.69 Mbps)

- Packet delay (ms)
  - Flow 1 (95th percentile 82.14 ms)
Run 3: Statistics of FillP

Start at: 2019-02-20 20:04:38
End at: 2019-02-20 20:05:08
Local clock offset: -0.076 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2019-02-20 22:26:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 935.72 Mbit/s
95th percentile per-packet one-way delay: 105.893 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 935.72 Mbit/s
95th percentile per-packet one-way delay: 105.893 ms
Loss rate: 0.99%
Run 3: Report of FillP — Data Link
Run 4: Statistics of FillP

Start at: 2019-02-20 20:36:00
End at: 2019-02-20 20:36:30
Local clock offset: 0.016 ms
Remote clock offset: -0.102 ms

# Below is generated by plot.py at 2019-02-20 22:27:05
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 975.50 Mbit/s
  95th percentile per-packet one-way delay: 87.123 ms
  Loss rate: 0.20%
-- Flow 1:
  Average throughput: 975.50 Mbit/s
  95th percentile per-packet one-way delay: 87.123 ms
  Loss rate: 0.20%
Run 4: Report of FillP — Data Link

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

![Graph 2: Per-packet end-to-end delay vs Time](image2)
Run 5: Statistics of FillP

Start at: 2019-02-20 21:07:41
End at: 2019-02-20 21:08:11
Local clock offset: -0.168 ms
Remote clock offset: -0.131 ms

# Below is generated by plot.py at 2019-02-20 22:27:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 952.01 Mbit/s
95th percentile per-packet one-way delay: 85.749 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 952.01 Mbit/s
95th percentile per-packet one-way delay: 85.749 ms
Loss rate: 0.29%
Run 5: Report of FillP — Data Link

![Graph 1](image1.png)

**Flow 1 ingress (mean 954.82 Mbits)  Flow 1 egress (mean 952.01 Mbits)**

![Graph 2](image2.png)

**Flow 1 (95th percentile 85.75 ms)**

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Run 1: Statistics of FillP-Sheep

Start at: 2019-02-20 19:07:55
End at: 2019-02-20 19:08:25
Local clock offset: -0.033 ms
Remote clock offset: 0.027 ms

# Below is generated by plot.py at 2019-02-20 22:27:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 977.05 Mbit/s
95th percentile per-packet one-way delay: 62.008 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 977.05 Mbit/s
95th percentile per-packet one-way delay: 62.008 ms
Loss rate: 0.03%
Run 1: Report of FillP-Sheep — Data Link

![Graph showing throughput and packet delay over time for two data flows. The graph displays smooth lines for most of the time, with spikes indicating variability. The throughput ranges from 0 to 1000 Mbps, and the packet delay ranges from 0 to 100 ms. The legend indicates that the solid line represents Flow 1 ingress (mean 977.31 Mbps) and the dashed line represents Flow 1 egress (mean 977.05 Mbps).]
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-20 19:39:29
End at: 2019-02-20 19:39:59
Local clock offset: -0.465 ms
Remote clock offset: 0.001 ms

# Below is generated by plot.py at 2019-02-20 22:27:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 994.20 Mbit/s
95th percentile per-packet one-way delay: 57.185 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 994.20 Mbit/s
95th percentile per-packet one-way delay: 57.185 ms
Loss rate: 0.00%
Run 2: Report of FillP-Sheep — Data Link

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

![Graph 2: Per Packet One Way Delay (ms)]
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-20 20:10:53
End at: 2019-02-20 20:11:23
Local clock offset: -0.084 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-02-20 22:27:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 968.25 Mbit/s
95th percentile per-packet one-way delay: 48.320 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 968.25 Mbit/s
95th percentile per-packet one-way delay: 48.320 ms
Loss rate: 0.00%
Run 3: Report of FillP-Sheep — Data Link
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-20 20:42:20
End at: 2019-02-20 20:42:50
Local clock offset: -0.007 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2019-02-20 22:37:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 990.27 Mbit/s
95th percentile per-packet one-way delay: 57.057 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 990.27 Mbit/s
95th percentile per-packet one-way delay: 57.057 ms
Loss rate: 0.01%
Run 4: Report of FillP-Sheep — Data Link
Run 5: Statistics of FillP-Sheep

End at: 2019-02-20 21:14:28  
Local clock offset: -0.115 ms  
Remote clock offset: -0.14 ms  

# Below is generated by plot.py at 2019-02-20 22:46:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 953.73 Mbit/s  
95th percentile per-packet one-way delay: 81.925 ms  
Loss rate: 0.10%  
-- Flow 1:  
Average throughput: 953.73 Mbit/s  
95th percentile per-packet one-way delay: 81.925 ms  
Loss rate: 0.10%
Run 5: Report of FillP-Sheep — Data Link
Run 1: Statistics of Indigo

Start at: 2019-02-20 19:20:01
End at: 2019-02-20 19:20:31
Local clock offset: +0.132 ms
Remote clock offset: +0.024 ms

# Below is generated by plot.py at 2019-02-20 22:46:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.61 Mbit/s
95th percentile per-packet one-way delay: 47.384 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 239.61 Mbit/s
95th percentile per-packet one-way delay: 47.384 ms
Loss rate: 0.00%
Run 1: Report of Indigo — Data Link

![Graph showing throughput over time for Flow 1 ingress and egress with mean 239.61 Mbps.](image1)

![Graph showing per-packet one-way delay over time for Flow 1 with 95th percentile delay of 47.38 ms.](image2)
Run 2: Statistics of Indigo

Start at: 2019-02-20 19:51:30
End at: 2019-02-20 19:52:00
Local clock offset: -0.047 ms
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2019-02-20 22:46:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.89 Mbit/s
95th percentile per-packet one-way delay: 47.509 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 239.89 Mbit/s
95th percentile per-packet one-way delay: 47.509 ms
Loss rate: 0.00%
Run 2: Report of Indigo — Data Link

Throughput (Mbps) vs Time (s)

- Flow 1 ingress (mean 2.3989 Mbit/s)
- Flow 1 egress (mean 2.3989 Mbit/s)

Packet one way delay (ms) vs Time (s)

- Flow 1 (95th percentile 47.51 ms)
Run 3: Statistics of Indigo

End at: 2019-02-20 20:23:26
Local clock offset: -0.046 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2019-02-20 22:46:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 237.64 Mbit/s
95th percentile per-packet one-way delay: 47.139 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 237.64 Mbit/s
95th percentile per-packet one-way delay: 47.139 ms
Loss rate: 0.00%
Run 3: Report of Indigo — Data Link

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

- **Flow 1 ingress (mean 237.64 Mbps)**
- **Flow 1 egress (mean 237.64 Mbps)**

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

- **Flow 1 (95th percentile 47.14 ms)**
Run 4: Statistics of Indigo

Start at: 2019-02-20 20:54:32
End at: 2019-02-20 20:55:02
Local clock offset: -0.088 ms
Remote clock offset: -0.16 ms

# Below is generated by plot.py at 2019-02-20 22:46:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 236.27 Mbit/s
95th percentile per-packet one-way delay: 47.932 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 236.27 Mbit/s
95th percentile per-packet one-way delay: 47.932 ms
Loss rate: 0.00%
Run 4: Report of Indigo — Data Link

![Graph of Throughput (Mbps) vs Time (s)](image1)

Flow 1 ingress (mean 236.27 Mbit/s)  Flow 1 egress (mean 236.27 Mbit/s)

![Graph of RTT (ms) vs Time (s)](image2)

Flow 1 (95th percentile 47.93 ms)
Run 5: Statistics of Indigo

End at: 2019-02-20 21:26:25
Local clock offset: -0.122 ms
Remote clock offset: -0.2 ms

# Below is generated by plot.py at 2019-02-20 22:46:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 238.92 Mbit/s
95th percentile per-packet one-way delay: 47.362 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 238.92 Mbit/s
95th percentile per-packet one-way delay: 47.362 ms
Loss rate: 0.00%
Run 5: Report of Indigo — Data Link

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

- **Flow 1 ingress** (mean 238.92 Mbit/s)
- **Flow 1 egress** (mean 238.92 Mbit/s)

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

- **Flow 1 (95th percentile 47.36 ms)**
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-20 19:06:15
End at: 2019-02-20 19:06:45
Local clock offset: ~0.018 ms
Remote clock offset: ~0.007 ms

# Below is generated by plot.py at 2019-02-20 22:46:20
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 701.10 Mbit/s
  95th percentile per-packet one-way delay: 71.981 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 701.10 Mbit/s
  95th percentile per-packet one-way delay: 71.981 ms
  Loss rate: 0.00%
Run 1: Report of Indigo-MusesC3 — Data Link

![Graph of throughput and delay over time]

- **Flow 1 ingress** (mean 701.13 Mbit/s)
- **Flow 1 egress** (mean 701.10 Mbit/s)

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

- **Flow 1 (95th percentile 71.98 ms)**
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-20 19:37:50
End at: 2019-02-20 19:38:20
Local clock offset: -0.127 ms
Remote clock offset: -0.009 ms

# Below is generated by plot.py at 2019-02-20 22:46:20
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 719.72 Mbit/s
  95th percentile per-packet one-way delay: 76.845 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 719.72 Mbit/s
  95th percentile per-packet one-way delay: 76.845 ms
  Loss rate: 0.01%
Run 2: Report of Indigo-MusesC3 — Data Link

![Graph of Throughput (Mbps)]

- **Flow 1 ingress (mean 719.82 Mbps)**
- **Flow 1 egress (mean 719.72 Mbps)**

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

- **Flow 1 (95th percentile 76.84 ms)**
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-20 20:09:13
End at: 2019-02-20 20:09:43
Local clock offset: -0.113 ms
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2019-02-20 22:47:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 733.20 Mbit/s
95th percentile per-packet one-way delay: 72.466 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 733.20 Mbit/s
95th percentile per-packet one-way delay: 72.466 ms
Loss rate: 0.03%
Run 3: Report of Indigo-MusesC3 — Data Link

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

- Flow 1 ingress (mean 733.39 Mbps)
- Flow 1 egress (mean 733.33 Mbps)

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

- Flow 1 (95th percentile 72.47 ms)
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-20 20:40:39
End at: 2019-02-20 20:41:09
Local clock offset: -0.411 ms
Remote clock offset: -0.121 ms

# Below is generated by plot.py at 2019-02-20 22:47:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 743.98 Mbit/s
95th percentile per-packet one-way delay: 83.342 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 743.98 Mbit/s
95th percentile per-packet one-way delay: 83.342 ms
Loss rate: 0.03%
Run 4: Report of Indigo-MusesC3 — Data Link

![Throughput Graph]

- **Flow 1 ingress** (mean 744.17 Mbit/s)
- **Flow 1 egress** (mean 743.98 Mbit/s)

![Delay Graph]

- **Flow 1** (95th percentile 83.34 ms)
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-20 21:12:20
End at: 2019-02-20 21:12:50
Local clock offset: -0.126 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2019-02-20 22:47:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 697.51 Mbit/s
95th percentile per-packet one-way delay: 79.653 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 697.51 Mbit/s
95th percentile per-packet one-way delay: 79.653 ms
Loss rate: 0.07%
Run 5: Report of Indigo-MusesC3 — Data Link

![Throughput Graph](Image)

- Flow 1 ingress (mean 698.03 Mbit/s)
- Flow 1 egress (mean 697.51 Mbit/s)

![Per Packet One Way Delay Graph](Image)

- Flow 1 (95th percentile 79.65 ms)
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-20 18:58:27
End at: 2019-02-20 18:58:57
Local clock offset: 0.025 ms
Remote clock offset: 0.031 ms
Run 1: Report of Indigo-MusesC5 — Data Link
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-20 19:29:49
End at: 2019-02-20 19:30:19
Local clock offset: -0.124 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2019-02-20 22:50:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 731.84 Mbit/s
95th percentile per-packet one-way delay: 67.582 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 731.84 Mbit/s
95th percentile per-packet one-way delay: 67.582 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesC5 — Data Link
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-20 20:01:17
End at: 2019-02-20 20:01:47
Local clock offset: -0.081 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2019-02-20 22:51:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 716.54 Mbit/s
95th percentile per-packet one-way delay: 69.303 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 716.54 Mbit/s
95th percentile per-packet one-way delay: 69.303 ms
Loss rate: 0.00%
Run 3: Report of Indigo-MusesC5 — Data Link

---

**Throughput (Mbits)**

- **Flow 1 ingress** (mean 716.56 Mbit/s)
- **Flow 1 egress** (mean 716.54 Mbit/s)

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

- **Flow 1** (95th percentile 69.30 ms)
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-20 20:32:42
End at: 2019-02-20 20:33:12
Local clock offset: -0.039 ms
Remote clock offset: -0.112 ms

# Below is generated by plot.py at 2019-02-20 22:57:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 716.24 Mbit/s
95th percentile per-packet one-way delay: 71.446 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 716.24 Mbit/s
95th percentile per-packet one-way delay: 71.446 ms
Loss rate: 0.03%
Run 4: Report of Indigo-MusesC5 — Data Link

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

*Flow 1 ingress (mean 716.45 Mbit/s) and Flow 1 egress (mean 716.24 Mbit/s)*

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

*Flow 1 (95th percentile 71.45 ms)*
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-20 21:04:21
End at: 2019-02-20 21:04:52
Local clock offset: -0.117 ms
Remote clock offset: -0.149 ms

# Below is generated by plot.py at 2019-02-20 22:58:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 718.70 Mbit/s
95th percentile per-packet one-way delay: 68.996 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 718.70 Mbit/s
95th percentile per-packet one-way delay: 68.996 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesC5 — Data Link

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

- **Flow 1 ingress (mean 718.71 Mbit/s)**
- **Flow 1 egress (mean 718.79 Mbit/s)**

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

- **Flow 1 (95th percentile 69.00 ms)**
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-20 19:17:15
End at: 2019-02-20 19:17:45
Local clock offset: -0.428 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2019-02-20 22:58:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 622.32 Mbit/s
95th percentile per-packet one-way delay: 89.678 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 622.32 Mbit/s
95th percentile per-packet one-way delay: 89.678 ms
Loss rate: 0.01%
Run 1: Report of Indigo-MusesD — Data Link

---

![Graph 1: Throughput (Mbps)](image1)
- **Flow 1 ingress (mean 622.46 Mbit/s)**
- **Flow 1 egress (mean 622.32 Mbit/s)**

![Graph 2: Per-packet one way delay (ms)](image2)
- **Flow 1 (95th percentile 89.68 ms)**

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Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-20 19:48:44  
End at: 2019-02-20 19:49:14  
Local clock offset: 0.309 ms  
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2019-02-20 22:58:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 634.71 Mbit/s  
95th percentile per-packet one-way delay: 73.452 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 634.71 Mbit/s  
95th percentile per-packet one-way delay: 73.452 ms  
Loss rate: 0.00%
Run 2: Report of Indigo-MusesD — Data Link
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-20 20:20:06
End at: 2019-02-20 20:20:36
Local clock offset: -0.034 ms
Remote clock offset: -0.086 ms

# Below is generated by plot.py at 2019-02-20 22:59:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 678.16 Mbit/s
95th percentile per-packet one-way delay: 63.741 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 678.16 Mbit/s
95th percentile per-packet one-way delay: 63.741 ms
Loss rate: 0.02%
Run 3: Report of Indigo-MusesD — Data Link

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

- Flow 1 ingress (mean 678.32 Mbps)
- Flow 1 egress (mean 678.16 Mbps)

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

- Flow 1 (95th percentile 63.74 ms)
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-20 20:51:42
End at: 2019-02-20 20:52:12
Local clock offset: -0.07 ms
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2019-02-20 23:00:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 715.51 Mbit/s
95th percentile per-packet one-way delay: 75.390 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 715.51 Mbit/s
95th percentile per-packet one-way delay: 75.390 ms
Loss rate: 0.09%
Run 4: Report of Indigo-MusesD — Data Link

![Graph 1: Throughput vs. Time](image1)
- **Flow 1 ingress** (mean 716.16 Mbit/s)
- **Flow 1 egress** (mean 715.51 Mbit/s)

![Graph 2: Round-trip delay vs. Time](image2)
- **Flow 1** (95th percentile 75.39 ms)
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-20 21:23:07
End at: 2019-02-20 21:23:37
Local clock offset: -0.123 ms
Remote clock offset: -0.153 ms

# Below is generated by plot.py at 2019-02-20 23:01:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 646.10 Mbit/s
95th percentile per-packet one-way delay: 79.707 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 646.10 Mbit/s
95th percentile per-packet one-way delay: 79.707 ms
Loss rate: 0.05%
Run 5: Report of Indigo-MusesD — Data Link
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-20 18:59:58
End at: 2019-02-20 19:00:28
Local clock offset: -0.024 ms
Remote clock offset: 0.053 ms

# Below is generated by plot.py at 2019-02-20 23:03:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 700.64 Mbit/s
95th percentile per-packet one-way delay: 100.526 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 700.64 Mbit/s
95th percentile per-packet one-way delay: 100.526 ms
Loss rate: 0.26%
Run 1: Report of Indigo-MusesT — Data Link

---

**Throughput (Mbit/s)**

- **Flow 1 ingress** (mean 702.58 Mbit/s)
- **Flow 1 egress** (mean 700.64 Mbit/s)

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

- **Flow 1** (95th percentile 100.53 ms)
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-20 19:31:29
End at: 2019-02-20 19:31:59
Local clock offset: -0.109 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2019-02-20 23:08:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 705.47 Mbit/s
95th percentile per-packet one-way delay: 95.845 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 705.47 Mbit/s
95th percentile per-packet one-way delay: 95.845 ms
Loss rate: 0.09%
Run 2: Report of Indigo-MusesT — Data Link

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

- Flow 1 ingress (mean 706.12 Mbps)
- Flow 1 egress (mean 705.47 Mbps)

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

- Flow 1 (95th percentile 95.84 ms)
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-20 20:02:56
End at: 2019-02-20 20:03:26
Local clock offset: -0.103 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-02-20 23:09:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 757.33 Mbit/s
95th percentile per-packet one-way delay: 70.050 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 757.33 Mbit/s
95th percentile per-packet one-way delay: 70.050 ms
Loss rate: 0.18%
Run 3: Report of Indigo-MuseST — Data Link

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

- Flow 1 ingress (mean 758.68 Mbit/s)
- Flow 1 egress (mean 757.33 Mbit/s)

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

- Flow 1 (95th percentile 70.05 ms)
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-20 20:34:21
End at: 2019-02-20 20:34:51
Local clock offset: -0.036 ms
Remote clock offset: -0.119 ms

# Below is generated by plot.py at 2019-02-20 23:09:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 717.90 Mbit/s
95th percentile per-packet one-way delay: 85.340 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 717.90 Mbit/s
95th percentile per-packet one-way delay: 85.340 ms
Loss rate: 0.00%
Run 4: Report of Indigo-MusesT — Data Link

![Graph of throughput over time with two lines indicating flow ingress and egress.]
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-20 21:06:02
End at: 2019-02-20 21:06:32
Local clock offset: -0.128 ms
Remote clock offset: -0.142 ms

# Below is generated by plot.py at 2019-02-20 23:10:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 703.38 Mbit/s
95th percentile per-packet one-way delay: 98.178 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 703.38 Mbit/s
95th percentile per-packet one-way delay: 98.178 ms
Loss rate: 0.20%
Run 1: Statistics of LEDBAT

Start at: 2019-02-20 19:24:15
End at: 2019-02-20 19:24:45
Local clock offset: -0.09 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2019-02-20 23:10:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.31 Mbit/s
95th percentile per-packet one-way delay: 48.399 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.31 Mbit/s
95th percentile per-packet one-way delay: 48.399 ms
Loss rate: 0.00%
Run 1: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 41.31 Mbit/s)
- Flow 1 egress (mean 41.31 Mbit/s)

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

- Flow 1 (95th percentile 48.40 ms)
Run 2: Statistics of LEDBAT

End at: 2019-02-20 19:56:13
Local clock offset: -0.472 ms
Remote clock offset: -0.065 ms

# Below is generated by plot.py at 2019-02-20 23:10:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.39 Mbit/s
95th percentile per-packet one-way delay: 49.746 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.39 Mbit/s
95th percentile per-packet one-way delay: 49.746 ms
Loss rate: 0.00%
Run 2: Report of LEDBAT — Data Link

![Throughput Graph](image1)

![Per-packet delay Graph](image2)
Run 3: Statistics of LEDBAT

Start at: 2019-02-20 20:27:07
End at: 2019-02-20 20:27:37
Local clock offset: -0.072 ms
Remote clock offset: -0.13 ms

# Below is generated by plot.py at 2019-02-20 23:10:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.81 Mbit/s
95th percentile per-packet one-way delay: 47.901 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.81 Mbit/s
95th percentile per-packet one-way delay: 47.901 ms
Loss rate: 0.00%
Run 3: Report of LEDBAT — Data Link

![Graph showing throughput and delay over time for different flow ingress and egress rates.](image)

**Throughput (Mbps):**
- Flow 1 ingress (mean 41.82 Mbps)
- Flow 1 egress (mean 41.81 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 47.90 ms)
Run 4: Statistics of LEDBAT

Start at: 2019-02-20 20:58:46
End at: 2019-02-20 20:59:16
Local clock offset: -0.083 ms
Remote clock offset: -0.168 ms

# Below is generated by plot.py at 2019-02-20 23:10:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.33 Mbit/s
95th percentile per-packet one-way delay: 48.590 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.33 Mbit/s
95th percentile per-packet one-way delay: 48.590 ms
Loss rate: 0.00%
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: 2019-02-20 21:30:06
End at: 2019-02-20 21:30:36
Local clock offset: -0.096 ms
Remote clock offset: -0.233 ms

# Below is generated by plot.py at 2019-02-20 23:10:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.31 Mbit/s
95th percentile per-packet one-way delay: 48.845 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.31 Mbit/s
95th percentile per-packet one-way delay: 48.845 ms
Loss rate: 0.00%
Run 5: Report of LEDBAT — Data Link

![Graph showing throughput and delay over time for Flow 1 ingress and egress.]
Run 1: Statistics of PCC-Allegro

End at: 2019-02-20 19:21:58
Local clock offset: 0.25 ms
Remote clock offset: -0.038 ms

# Below is generated by plot.py at 2019-02-20 23:18:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 493.77 Mbit/s
95th percentile per-packet one-way delay: 149.839 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 493.77 Mbit/s
95th percentile per-packet one-way delay: 149.839 ms
Loss rate: 1.98%
Run 1: Report of PCC-Allegro — Data Link

![Graph showing throughput over time](image)

- **Flow 1 ingress (mean 503.77 Mbit/s)**
- **Flow 1 egress (mean 493.77 Mbit/s)**

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

- **Flow 1 (95th percentile 149.84 ms)**
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-20 19:52:58
End at: 2019-02-20 19:53:28
Local clock offset: -0.419 ms
Remote clock offset: -0.025 ms

# Below is generated by plot.py at 2019-02-20 23:18:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 472.13 Mbit/s
95th percentile per-packet one-way delay: 153.639 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 472.13 Mbit/s
95th percentile per-packet one-way delay: 153.639 ms
Loss rate: 1.70%
Run 2: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 480.31 Mbit/s)
- Flow 1 egress (mean 472.13 Mbit/s)

- Flow 1 (95th percentile 153.64 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-20 20:24:23
End at: 2019-02-20 20:24:53
Local clock offset: -0.056 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2019-02-20 23:18:33
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 453.59 Mbit/s
  95th percentile per-packet one-way delay: 168.744 ms
  Loss rate: 2.91%
-- Flow 1:
  Average throughput: 453.59 Mbit/s
  95th percentile per-packet one-way delay: 168.744 ms
  Loss rate: 2.91%
Run 3: Report of PCC-Allegro — Data Link

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

Flow 1 ingress (mean 467.19 Mbit/s) vs. Flow 1 egress (mean 453.59 Mbit/s)

Flow 1 (95th percentile 168.74 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-20 20:56:01
End at: 2019-02-20 20:56:31
Local clock offset: -0.126 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2019-02-20 23:21:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 485.66 Mbit/s
95th percentile per-packet one-way delay: 157.868 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 485.66 Mbit/s
95th percentile per-packet one-way delay: 157.868 ms
Loss rate: 2.65%
Run 4: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 498.91 Mbps)
- Flow 1 egress (mean 485.66 Mbps)

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

- Flow 1 (95th percentile 157.87 ms)
Run 5: Statistics of PCC-Allegro

End at: 2019-02-20 21:27:53
Local clock offset: -0.205 ms
Remote clock offset: -0.23 ms

# Below is generated by plot.py at 2019-02-20 23:24:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 445.56 Mbit/s
95th percentile per-packet one-way delay: 154.870 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 445.56 Mbit/s
95th percentile per-packet one-way delay: 154.870 ms
Loss rate: 1.94%
Run 5: Report of PCC-Allegro — Data Link

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**Throughput (Mb/s)**

![Graph showing throughput over time with two lines representing different flows.]

- **Flow 1 ingress (mean 454.38 Mb/s)**
- **Flow 1 egress (mean 445.56 Mb/s)**

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

![Graph showing per packet one way delay over time with a single line.]

- **Flow 1 (95th percentile 154.87 ms)**

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Run 1: Statistics of PCC-Expr

Start at: 2019-02-20 18:56:50
End at: 2019-02-20 18:57:20
Local clock offset: 0.011 ms
Remote clock offset: 0.044 ms

# Below is generated by plot.py at 2019-02-20 23:24:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 343.02 Mbit/s
95th percentile per-packet one-way delay: 74.451 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 343.02 Mbit/s
95th percentile per-packet one-way delay: 74.451 ms
Loss rate: 0.31%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2019-02-20 19:28:11
End at: 2019-02-20 19:28:41
Local clock offset: -0.091 ms
Remote clock offset: 0.013 ms

# Below is generated by plot.py at 2019-02-20 23:24:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 351.25 Mbit/s
95th percentile per-packet one-way delay: 156.407 ms
Loss rate: 6.53%
-- Flow 1:
Average throughput: 351.25 Mbit/s
95th percentile per-packet one-way delay: 156.407 ms
Loss rate: 6.53%
Run 2: Report of PCC-Expr — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 ingress** (mean 375.80 Mbps)
- **Flow 1 egress** (mean 351.23 Mbps)

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

- **Flow 1** (95th percentile 156.41 ms)
Run 3: Statistics of PCC-Expr

Start at: 2019-02-20 19:59:37
End at: 2019-02-20 20:00:07
Local clock offset: 0.302 ms
Remote clock offset: -0.048 ms

# Below is generated by plot.py at 2019-02-20 23:24:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 375.83 Mbit/s
95th percentile per-packet one-way delay: 140.751 ms
Loss rate: 4.21%
-- Flow 1:
Average throughput: 375.83 Mbit/s
95th percentile per-packet one-way delay: 140.751 ms
Loss rate: 4.21%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2019-02-20 20:31:03
End at: 2019-02-20 20:31:33
Local clock offset: -0.023 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2019-02-20 23:31:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 367.18 Mbit/s
95th percentile per-packet one-way delay: 143.364 ms
Loss rate: 5.15%
-- Flow 1:
Average throughput: 367.18 Mbit/s
95th percentile per-packet one-way delay: 143.364 ms
Loss rate: 5.15%
Run 4: Report of PCC-Expr — Data Link

![Graph of throughput and packet delay over time for Flow 1 ingress and egress.]
Run 5: Statistics of PCC-Expr

Start at: 2019-02-20 21:02:43
End at: 2019-02-20 21:03:13
Local clock offset: -0.137 ms
Remote clock offset: -0.105 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics

-- Total of 1 flow:
Average throughput: 354.79 Mbit/s
95th percentile per-packet one-way delay: 148.902 ms
Loss rate: 2.59%

-- Flow 1:
Average throughput: 354.79 Mbit/s
95th percentile per-packet one-way delay: 148.902 ms
Loss rate: 2.59%
Run 5: Report of PCC-Expr — Data Link

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

![Graph 2: Packet Delay vs Time](image2)
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-20 19:18:51
End at: 2019-02-20 19:19:21
Local clock offset: -0.109 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.16 Mbit/s
95th percentile per-packet one-way delay: 46.495 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 51.16 Mbit/s
95th percentile per-packet one-way delay: 46.495 ms
Loss rate: 0.00%
Run 1: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingress** (mean 51.16 Mbit/s)
- **Flow 1 egress** (mean 51.16 Mbit/s)

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

- **Flow 1 (95th percentile 46.49 ms)**
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-20 19:50:19  
End at: 2019-02-20 19:50:50  
Local clock offset: -0.081 ms  
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2019-02-20 23:31:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 62.12 Mbit/s  
95th percentile per-packet one-way delay: 46.821 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 62.12 Mbit/s  
95th percentile per-packet one-way delay: 46.821 ms  
Loss rate: 0.00%
Run 2: Report of QUIC Cubic — Data Link

![Graph showing data link throughput and packet one-way delay](image)

- Flow 1 ingress (mean 62.12 Mbit/s)
- Flow 1 egress (mean 62.12 Mbit/s)
- Flow 1 (95th percentile 46.82 ms)
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-20 20:21:45
End at: 2019-02-20 20:22:15
Local clock offset: -0.421 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.67 Mbit/s
95th percentile per-packet one-way delay: 47.179 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 68.67 Mbit/s
95th percentile per-packet one-way delay: 47.179 ms
Loss rate: 0.00%
Run 3: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingress (mean 68.67 Mbit/s)**
- **Flow 1 egress (mean 68.67 Mbit/s)**

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

- **Flow 1 (95th percentile 47.18 ms)**
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-20 20:53:22
End at: 2019-02-20 20:53:52
Local clock offset: -0.097 ms
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.43 Mbit/s
95th percentile per-packet one-way delay: 46.545 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 53.43 Mbit/s
95th percentile per-packet one-way delay: 46.545 ms
Loss rate: 0.00%
Run 4: Report of QUIC Cubic — Data Link

![Graph showing throughput and one-way delay over time for Flow 1 ingress and egress with 95th percentile delay.]

- Flow 1 ingress (mean 53.43 Mbit/s)
- Flow 1 egress (mean 53.43 Mbit/s)
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-20 21:24:44
End at: 2019-02-20 21:25:14
Local clock offset: -0.11 ms
Remote clock offset: -0.22 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.98 Mbit/s
95th percentile per-packet one-way delay: 47.224 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.98 Mbit/s
95th percentile per-packet one-way delay: 47.224 ms
Loss rate: 0.00%
Run 5: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2019-02-20 19:14:30
End at: 2019-02-20 19:15:00
Local clock offset: -0.074 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.845 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.845 ms
  Loss rate: 0.00%
Run 2: Statistics of SCReAM

Start at: 2019-02-20 19:46:04
End at: 2019-02-20 19:46:34
Local clock offset: -0.108 ms
Remote clock offset: -0.041 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.329 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.329 ms
Loss rate: 0.00%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2019-02-20 20:17:30
End at: 2019-02-20 20:18:00
Local clock offset: -0.091 ms
Remote clock offset: -0.102 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.411 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.411 ms
Loss rate: 0.00%
Run 4: Statistics of SCReAM

Start at: 2019-02-20 20:48:58
End at: 2019-02-20 20:49:28
Local clock offset: -0.041 ms
Remote clock offset: -0.143 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.439 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.439 ms
Loss rate: 0.00%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2019-02-20 21:20:23
End at: 2019-02-20 21:20:53
Local clock offset: -0.137 ms
Remote clock offset: -0.179 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.498 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.498 ms
Loss rate: 0.00%
Run 5: Report of SCReAM — Data Link
Run 1: Statistics of Sprout

Start at: 2019-02-20 19:23:06
End at: 2019-02-20 19:23:36
Local clock offset: -0.105 ms
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2019-02-20 23:31:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 47.834 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 47.834 ms
Loss rate: 0.00%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2019-02-20 19:54:34
End at: 2019-02-20 19:55:04
Local clock offset: -0.105 ms
Remote clock offset: -0.064 ms

# Below is generated by plot.py at 2019-02-20 23:31:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.62 Mbit/s
95th percentile per-packet one-way delay: 47.906 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.62 Mbit/s
95th percentile per-packet one-way delay: 47.906 ms
Loss rate: 0.00%
Run 2: Report of Sprout — Data Link

![Graph of Throughput and Delay](image1)

- **Flow 1 ingress (mean 9.62 Mbit/s)**
- **Flow 1 egress (mean 9.62 Mbit/s)**

![Graph of Latency](image2)

- **Flow 1 (95th percentile 47.93 ms)**
Run 3: Statistics of Sprout

Start at: 2019-02-20 20:25:59
End at: 2019-02-20 20:26:29
Local clock offset: -0.013 ms
Remote clock offset: -0.179 ms

# Below is generated by plot.py at 2019-02-20 23:31:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 47.545 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 47.545 ms
Loss rate: 0.00%
Run 3: Report of Sprout — Data Link

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

![Graph 2: Packet Drop vs Time (s)]
Run 4: Statistics of Sprout

Start at: 2019-02-20 20:57:38
End at: 2019-02-20 20:58:08
Local clock offset: -0.096 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2019-02-20 23:31:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.66 Mbit/s
95th percentile per-packet one-way delay: 47.707 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.66 Mbit/s
95th percentile per-packet one-way delay: 47.707 ms
Loss rate: 0.00%
Run 4: Report of Sprout — Data Link

![Graph of throughput and delay over time]
Run 5: Statistics of Sprout

End at: 2019-02-20 21:29:28
Local clock offset: -0.11 ms
Remote clock offset: -0.193 ms

# Below is generated by plot.py at 2019-02-20 23:31:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.48 Mbit/s
95th percentile per-packet one-way delay: 46.909 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.48 Mbit/s
95th percentile per-packet one-way delay: 46.909 ms
Loss rate: 0.00%
Run 5: Report of Sprout — Data Link

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

![Graph of Per-packet one-way delay (ms)](image2)
Run 1: Statistics of TaoVA-100x

Start at: 2019-02-20 19:04:46
End at: 2019-02-20 19:05:16
Local clock offset: -0.021 ms
Remote clock offset: -0.004 ms

# Below is generated by plot.py at 2019-02-20 23:31:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 250.63 Mbit/s
95th percentile per-packet one-way delay: 47.401 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 250.63 Mbit/s
95th percentile per-packet one-way delay: 47.401 ms
Loss rate: 0.00%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2019-02-20 19:36:21
End at: 2019-02-20 19:36:51
Local clock offset: -0.111 ms
Remote clock offset: 0.0 ms

# Below is generated by plot.py at 2019-02-20 23:31:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 249.82 Mbit/s
95th percentile per-packet one-way delay: 46.634 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 249.82 Mbit/s
95th percentile per-packet one-way delay: 46.634 ms
Loss rate: 0.00%
Run 2: Report of TaoVA-100x — Data Link

![Graph showing throughput over time with two traces: one for Flow 1 ingress and one for Flow 1 egress.](image)

![Graph showing packet loss over time with a single trace indicating Flow 1 (95th percentile 46.63 ms).](image)
Run 3: Statistics of TaoVA-100x

Start at: 2019-02-20 20:07:44
End at: 2019-02-20 20:08:14
Local clock offset: 0.292 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2019-02-20 23:31:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 250.44 Mbit/s
95th percentile per-packet one-way delay: 46.991 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 250.44 Mbit/s
95th percentile per-packet one-way delay: 46.991 ms
Loss rate: 0.00%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

Start at: 2019-02-20 20:39:09
End at: 2019-02-20 20:39:39
Local clock offset: -0.091 ms
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2019-02-20 23:32:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 252.04 Mbit/s
95th percentile per-packet one-way delay: 46.630 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 252.04 Mbit/s
95th percentile per-packet one-way delay: 46.630 ms
Loss rate: 0.00%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2019-02-20 21:10:50
End at: 2019-02-20 21:11:20
Local clock offset: -0.159 ms
Remote clock offset: -0.156 ms

# Below is generated by plot.py at 2019-02-20 23:32:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 250.34 Mbit/s
95th percentile per-packet one-way delay: 47.380 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 250.34 Mbit/s
95th percentile per-packet one-way delay: 47.380 ms
Loss rate: 0.00%
Run 5: Report of TaoVA-100x — Data Link
Run 1: Statistics of TCP Vegas

Start at: 2019-02-20 19:15:37
End at: 2019-02-20 19:16:07
Local clock offset: -0.103 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2019-02-20 23:34:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 601.45 Mbit/s
95th percentile per-packet one-way delay: 71.806 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 601.45 Mbit/s
95th percentile per-packet one-way delay: 71.806 ms
Loss rate: 0.22%
Run 1: Report of TCP Vegas — Data Link

![Graph showing throughput over time with two lines representing flow ingress and egress speeds.]

![Graph showing per-packet one-way delay with a line indicating flow ingress delay.]

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Run 2: Statistics of TCP Vegas

Start at: 2019-02-20 19:47:12
End at: 2019-02-20 19:47:42
Local clock offset: -0.076 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2019-02-20 23:40:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 531.03 Mbit/s
95th percentile per-packet one-way delay: 47.994 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 531.03 Mbit/s
95th percentile per-packet one-way delay: 47.994 ms
Loss rate: 0.00%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2019-02-20 20:18:38
End at: 2019-02-20 20:19:08
Local clock offset: 0.31 ms
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2019-02-20 23:40:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 432.04 Mbit/s
95th percentile per-packet one-way delay: 69.139 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 432.04 Mbit/s
95th percentile per-packet one-way delay: 69.139 ms
Loss rate: 0.01%
Run 3: Report of TCP Vegas — Data Link

![Graph](image)

1. **Throughput (Mbps)**
   - Flow 1 ingress (mean 432.10 Mbps)
   - Flow 1 egress (mean 432.04 Mbps)

2. **Per-packet one-way delay (ms)**
   - Flow 1 (95th percentile 69.14 ms)
Run 4: Statistics of TCP Vegas

Start at: 2019-02-20 20:50:05
End at: 2019-02-20 20:50:35
Local clock offset: -0.042 ms
Remote clock offset: -0.128 ms

# Below is generated by plot.py at 2019-02-20 23:42:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 608.78 Mbit/s
95th percentile per-packet one-way delay: 63.539 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 608.78 Mbit/s
95th percentile per-packet one-way delay: 63.539 ms
Loss rate: 0.00%
Run 4: Report of TCP Vegas — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 608.79 Mbit/s)
- Flow 1 egress (mean 608.78 Mbit/s)

![Delay Graph]

- Flow 1 (95th percentile 63.54 ms)
Run 5: Statistics of TCP Vegas

Start at: 2019-02-20 21:21:31
End at: 2019-02-20 21:22:01
Local clock offset: -0.128 ms
Remote clock offset: -0.179 ms

# Below is generated by plot.py at 2019-02-20 23:42:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 612.94 Mbit/s
95th percentile per-packet one-way delay: 87.508 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 612.94 Mbit/s
95th percentile per-packet one-way delay: 87.508 ms
Loss rate: 0.00%
Run 5: Report of TCP Vegas — Data Link

Throughput (Mbps)

Flow 1 ingress (mean 612.94 Mbit/s)  Flow 1 egress (mean 612.94 Mbit/s)

Per packet one way delay (ms)

Flow 1 (95th percentile 87.51 ms)
Run 1: Statistics of Verus

Start at: 2019-02-20 19:03:23
End at: 2019-02-20 19:03:53
Local clock offset: -0.02 ms
Remote clock offset: 0.026 ms

# Below is generated by plot.py at 2019-02-20 23:42:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 173.27 Mbit/s
95th percentile per-packet one-way delay: 129.982 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 173.27 Mbit/s
95th percentile per-packet one-way delay: 129.982 ms
Loss rate: 0.00%
Run 1: Report of Verus — Data Link

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

- Flow 1 ingress (mean 173.28 Mbit/s)
- Flow 1 egress (mean 173.27 Mbit/s)

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

- Flow 1 (95th percentile 129.98 ms)
Run 2: Statistics of Verus

Start at: 2019-02-20 19:34:55
End at: 2019-02-20 19:35:25
Local clock offset: -0.137 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2019-02-20 23:42:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 204.10 Mbit/s
95th percentile per-packet one-way delay: 171.510 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 204.10 Mbit/s
95th percentile per-packet one-way delay: 171.510 ms
Loss rate: 0.65%
Run 2: Report of Verus — Data Link
Run 3: Statistics of Verus

Start at: 2019-02-20 20:06:20
End at: 2019-02-20 20:06:50
Local clock offset: -0.034 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-02-20 23:42:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 170.63 Mbit/s
95th percentile per-packet one-way delay: 122.482 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 170.63 Mbit/s
95th percentile per-packet one-way delay: 122.482 ms
Loss rate: 0.24%
Run 4: Statistics of Verus

Start at: 2019-02-20 20:37:45
End at: 2019-02-20 20:38:15
Local clock offset: -0.022 ms
Remote clock offset: -0.132 ms

# Below is generated by plot.py at 2019-02-20 23:42:48
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 188.91 Mbit/s
  95th percentile per-packet one-way delay: 122.484 ms
  Loss rate: 0.26%
-- Flow 1:
  Average throughput: 188.91 Mbit/s
  95th percentile per-packet one-way delay: 122.484 ms
  Loss rate: 0.26%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

Start at: 2019-02-20 21:09:26
End at: 2019-02-20 21:09:56
Local clock offset: -0.14 ms
Remote clock offset: -0.135 ms

# Below is generated by plot.py at 2019-02-20 23:43:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 198.64 Mbit/s
95th percentile per-packet one-way delay: 182.420 ms
Loss rate: 2.71%
-- Flow 1:
Average throughput: 198.64 Mbit/s
95th percentile per-packet one-way delay: 182.420 ms
Loss rate: 2.71%
Run 5: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-20 19:09:40
End at: 2019-02-20 19:10:10
Local clock offset: -0.111 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2019-02-20 23:45:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 448.05 Mbit/s
95th percentile per-packet one-way delay: 47.735 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 448.05 Mbit/s
95th percentile per-packet one-way delay: 47.735 ms
Loss rate: 0.00%
Run 1: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 448.05 Mbit/s)
- Flow 1 egress (mean 448.05 Mbit/s)

![Graph of packet delay distribution](image)

- Flow 1 (95th percentile 47.73 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-20 19:41:13
End at: 2019-02-20 19:41:43
Local clock offset: -0.479 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2019-02-20 23:45:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 454.35 Mbit/s
95th percentile per-packet one-way delay: 47.926 ms
Loss rate: 0.00%

-- Flow 1:
Average throughput: 454.35 Mbit/s
95th percentile per-packet one-way delay: 47.926 ms
Loss rate: 0.00%
Run 2: Report of PCC-Vivace — Data Link
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-20 20:12:37
End at: 2019-02-20 20:13:07
Local clock offset: -0.449 ms
Remote clock offset: -0.103 ms

# Below is generated by plot.py at 2019-02-20 23:45:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 422.43 Mbit/s
95th percentile per-packet one-way delay: 48.791 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 422.43 Mbit/s
95th percentile per-packet one-way delay: 48.791 ms
Loss rate: 0.00%
Run 3: Report of PCC-Vivace — Data Link

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**Graph 1:**
- **Y-axis:** Throughput (Mbps)
- **X-axis:** Time (s)
- **Legend:**
  - Dashed line: Flow 1 ingress (mean 422.42 Mbps)
  - Solid line: Flow 1 egress (mean 422.43 Mbps)

**Graph 2:**
- **Y-axis:** Per-packet one way delay (ms)
- **X-axis:** Time (s)
- **Legend:**
  - Solid line: Flow 1 (95th percentile 48.79 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-20 20:44:05
End at: 2019-02-20 20:44:35
Local clock offset: -0.432 ms
Remote clock offset: -0.137 ms

# Below is generated by plot.py at 2019-02-20 23:46:02
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 444.10 Mbit/s
  95th percentile per-packet one-way delay: 54.602 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 444.10 Mbit/s
  95th percentile per-packet one-way delay: 54.602 ms
  Loss rate: 0.00%
Run 4: Report of PCC-Vivace — Data Link

![Graph 1: Throughput vs. Time]

- **Flow 1 ingress (mean 444.10 Mbit/s)**
- **Flow 1 egress (mean 444.10 Mbit/s)**

![Graph 2: Packet Delay vs. Time]

- **Flow 1 (95th percentile 54.60 ms)**
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-20 21:15:41
End at: 2019-02-20 21:16:11
Local clock offset: -0.085 ms
Remote clock offset: -0.172 ms

# Below is generated by plot.py at 2019-02-20 23:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 343.82 Mbit/s
95th percentile per-packet one-way delay: 47.282 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 343.82 Mbit/s
95th percentile per-packet one-way delay: 47.282 ms
Loss rate: 0.00%
Run 1: Statistics of WebRTC media

Start at: 2019-02-20 18:54:00
End at: 2019-02-20 18:54:30
Local clock offset: 0.35 ms
Remote clock offset: 0.04 ms

# Below is generated by plot.py at 2019-02-20 23:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 46.719 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 46.719 ms
Loss rate: 0.00%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-02-20 19:25:26
End at: 2019-02-20 19:25:56
Local clock offset: -0.467 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2019-02-20 23:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.172 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.172 ms
Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link

![Graph showing throughput and packet delay]
Run 3: Statistics of WebRTC media

Start at: 2019-02-20 19:56:51
End at: 2019-02-20 19:57:21
Local clock offset: -0.102 ms
Remote clock offset: -0.058 ms

# Below is generated by plot.py at 2019-02-20 23:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.479 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.479 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 (90th percentile 47.48 ms)**
Run 4: Statistics of WebRTC media

Start at: 2019-02-20 20:28:18
End at: 2019-02-20 20:28:48
Local clock offset: -0.05 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2019-02-20 23:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 46.717 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 46.717 ms
Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link

![Graph showing throughput in Mbps over time for Flow 1 ingress and egress with a mean of 1.94 Mbit/s.]

![Graph showing 95th percentile packet oneway delay in ms for Flow 1 with a value of 46.72 ms.]

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Run 5: Statistics of WebRTC media

Start at: 2019-02-20 20:59:57
End at: 2019-02-20 21:00:27
Local clock offset: -0.457 ms
Remote clock offset: -0.165 ms

# Below is generated by plot.py at 2019-02-20 23:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 47.729 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 47.729 ms
Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link