Pantheon Report

Generated at 2019-02-12 15:58:45 (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 @ d6da145932fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943ababcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa93b032143cedbfe58e562f4
third_party/indigo @ 2601c92e4a9d58d38cd4defe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a996e5b76f3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/pantheon-tunnel @ f86663f58d27af942717625e3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b23c901a55f68c872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8aad08f9e242f24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc814369f9e3c0f42
third_party/scream-reproduce @ f09918d1421a0313bf11ff10674774e1da3b3b2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f91a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutcomm.cc
third_party/verus @ d4b447ea74c6c60a261149af262962939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2ba86211435ae071a32f96b7d8c504587f5d7f4
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>526.11</td>
<td>157.52</td>
<td>0.78</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>316.55</td>
<td>56.16</td>
<td>0.00</td>
</tr>
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<td>TCP Cubic</td>
<td>5</td>
<td>570.34</td>
<td>115.49</td>
<td>0.13</td>
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<td>FillP</td>
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<td>959.35</td>
<td>81.09</td>
<td>0.16</td>
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<td>920.19</td>
<td>87.05</td>
<td>0.25</td>
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<td>Indigo</td>
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<td>231.59</td>
<td>47.80</td>
<td>0.00</td>
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<td>77.84</td>
<td>0.10</td>
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<td>48.76</td>
<td>0.00</td>
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<td>PCC-Allegro</td>
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<td>172.21</td>
<td>3.08</td>
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<td>PCC-Expr</td>
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<td>320.56</td>
<td>142.80</td>
<td>1.05</td>
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<td>46.82</td>
<td>0.00</td>
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<td>Sprout</td>
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<td>47.81</td>
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<td>53.90</td>
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<td>WebRTC media</td>
<td>5</td>
<td>0.89</td>
<td>47.46</td>
<td>0.00</td>
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</table>
Run 1: Statistics of TCP BBR

Start at: 2019-02-12 11:37:06
End at: 2019-02-12 11:37:36
Local clock offset: -0.019 ms
Remote clock offset: -0.096 ms

# Below is generated by plot.py at 2019-02-12 14:07:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 510.90 Mbit/s
95th percentile per-packet one-way delay: 158.028 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 510.90 Mbit/s
95th percentile per-packet one-way delay: 158.028 ms
Loss rate: 0.61%
Run 1: Report of TCP BBR — Data Link

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

- **Flow 1 ingress** (mean 514.02 Mbit/s)
- **Flow 1 egress** (mean 510.90 Mbit/s)

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

- **Flow 1** (95th percentile 158.03 ms)
Run 2: Statistics of TCP BBR

Start at: 2019-02-12 12:08:01
End at: 2019-02-12 12:08:31
Local clock offset: 0.01 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-02-12 14:07:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 519.63 Mbit/s
95th percentile per-packet one-way delay: 162.951 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 519.63 Mbit/s
95th percentile per-packet one-way delay: 162.951 ms
Loss rate: 0.62%
Run 2: Report of TCP BBR — Data Link

![Graph 1: Throughput (Mbps)](image)
- Flow 1 ingress (mean 522.85 Mbps)
- Flow 1 egress (mean 519.63 Mbps)

![Graph 2: Per-packet end-to-end delay (ms)](image)
- Flow 1 (95th percentile 162.95 ms)
Run 3: Statistics of TCP BBR

Start at: 2019-02-12 12:38:57
End at: 2019-02-12 12:39:27
Local clock offset: 0.345 ms
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2019-02-12 14:07:13
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 524.99 Mbit/s
  95th percentile per-packet one-way delay: 161.854 ms
  Loss rate: 0.91%
-- Flow 1:
  Average throughput: 524.99 Mbit/s
  95th percentile per-packet one-way delay: 161.854 ms
  Loss rate: 0.91%
Run 3: Report of TCP BBR — Data Link

![Graph 1: Throughput (Mbps) vs. Time (s)]
- **Flow 1 ingress (mean 529.80 Mbps)**
- **Flow 1 egress (mean 524.99 Mbps)**

![Graph 2: Per-packet one-way delay (ms) vs. Time (s)]
- **Flow 1 (95th percentile 161.85 ms)**
Run 4: Statistics of TCP BBR

Start at: 2019-02-12 13:10:42  
End at: 2019-02-12 13:11:12  
Local clock offset: -0.222 ms  
Remote clock offset: -0.117 ms

# Below is generated by plot.py at 2019-02-12 14:07:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 530.69 Mbit/s
95th percentile per-packet one-way delay: 156.907 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 530.69 Mbit/s
95th percentile per-packet one-way delay: 156.907 ms
Loss rate: 0.70%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2019-02-12 13:41:21
End at: 2019-02-12 13:41:51
Local clock offset: -0.266 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2019-02-12 14:07:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 544.34 Mbit/s
95th percentile per-packet one-way delay: 147.842 ms
Loss rate: 1.04%

-- Flow 1:
Average throughput: 544.34 Mbit/s
95th percentile per-packet one-way delay: 147.842 ms
Loss rate: 1.04%
Run 5: Report of TCP BBR — Data Link

![Graph showing network throughput and latency over time](chart1.png)

- **Throughput**
  - Flow 1 ingress (mean 550.11 Mbit/s)
  - Flow 1 egress (mean 544.34 Mbit/s)

![Graph showing per-packet round trip time](chart2.png)

- **Per-packet round trip time (ms)**
  - Flow 1 (95th percentile 147.84 ms)
Run 1: Statistics of Copa

Start at: 2019-02-12 11:32:57
End at: 2019-02-12 11:33:27
Local clock offset: -0.06 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2019-02-12 14:07:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 281.24 Mbit/s
95th percentile per-packet one-way delay: 58.530 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 281.24 Mbit/s
95th percentile per-packet one-way delay: 58.530 ms
Loss rate: 0.00%
Run 2: Statistics of Copa

Start at: 2019-02-12 12:03:50
End at: 2019-02-12 12:04:20
Local clock offset: -0.334 ms
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2019-02-12 14:07:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 309.70 Mbit/s
95th percentile per-packet one-way delay: 56.422 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 309.70 Mbit/s
95th percentile per-packet one-way delay: 56.422 ms
Loss rate: 0.00%
Run 2: Report of Copa — Data Link

![Graph showing network performance metrics over time](image1)

- **Flow 1 ingress (mean 309.70 Mbit/s)**
- **Flow 1 egress (mean 309.70 Mbit/s)**

![Graph showing per-packet delay over time](image2)

- **Flow 1 (95th percentile 56.42 ms)**
Run 3: Statistics of Copa

Start at: 2019-02-12 12:34:41
End at: 2019-02-12 12:35:11
Local clock offset: -0.041 ms
Remote clock offset: -0.065 ms

# Below is generated by plot.py at 2019-02-12 14:08:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 325.62 Mbit/s
95th percentile per-packet one-way delay: 54.070 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 325.62 Mbit/s
95th percentile per-packet one-way delay: 54.070 ms
Loss rate: 0.00%
Run 3: Report of Copa — Data Link

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

- Flow 1 ingress (mean 325.62 Mbit/s)
- Flow 1 egress (mean 325.62 Mbit/s)
- Flow 1 (95th percentile 54.07 ms)
Run 4: Statistics of Copa

Start at: 2019-02-12 13:06:27
End at: 2019-02-12 13:06:57
Local clock offset: -0.167 ms
Remote clock offset: -0.126 ms

# Below is generated by plot.py at 2019-02-12 14:19:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 347.98 Mbit/s
95th percentile per-packet one-way delay: 52.205 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 347.98 Mbit/s
95th percentile per-packet one-way delay: 52.205 ms
Loss rate: 0.00%
Run 4: Report of Copa — Data Link

![Graph of throughput over time](Image)

- **Flow 1 ingress (mean 347.98 Mbit/s)**
- **Flow 1 egress (mean 347.98 Mbit/s)**

![Graph of packet delay over time](Image)

- **Flow 1 (95th percentile 52.20 ms)**
Run 5: Statistics of Copa

Start at: 2019-02-12 13:37:09
End at: 2019-02-12 13:37:39
Local clock offset: -0.265 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2019-02-12 14:19:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 318.20 Mbit/s
95th percentile per-packet one-way delay: 59.581 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 318.20 Mbit/s
95th percentile per-packet one-way delay: 59.581 ms
Loss rate: 0.00%
Run 5: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2019-02-12 11:38:40
End at: 2019-02-12 11:39:10
Local clock offset: -0.381 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-02-12 14:19:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 557.73 Mbit/s
95th percentile per-packet one-way delay: 97.446 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 557.73 Mbit/s
95th percentile per-packet one-way delay: 97.446 ms
Loss rate: 0.10%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2019-02-12 12:09:36
End at: 2019-02-12 12:10:06
Local clock offset: 0.015 ms
Remote clock offset: -0.046 ms

# Below is generated by plot.py at 2019-02-12 14:19:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 536.49 Mbit/s
95th percentile per-packet one-way delay: 142.417 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 536.49 Mbit/s
95th percentile per-packet one-way delay: 142.417 ms
Loss rate: 0.06%
Run 2: Report of TCP Cubic — Data Link

![Throughput Graph](image)

- Flow 1 ingress (mean 536.84 Mbit/s)
- Flow 1 egress (mean 536.49 Mbit/s)

![Delay Graph](image)

- Flow 1 (95th percentile 142.42 ms)
Run 3: Statistics of TCP Cubic

Start at: 2019-02-12 12:40:32
End at: 2019-02-12 12:41:02
Local clock offset: -0.047 ms
Remote clock offset: -0.082 ms

# Below is generated by plot.py at 2019-02-12 14:19:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 609.44 Mbit/s
95th percentile per-packet one-way delay: 92.411 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 609.44 Mbit/s
95th percentile per-packet one-way delay: 92.411 ms
Loss rate: 0.10%
Run 3: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 610.05 Mbit/s)
- Flow 1 egress (mean 609.44 Mbit/s)

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

- Flow 1 (95th percentile 92.41 ms)
Run 4: Statistics of TCP Cubic

Start at: 2019-02-12 13:12:16
End at: 2019-02-12 13:12:46
Local clock offset: -0.217 ms
Remote clock offset: -0.081 ms

# Below is generated by plot.py at 2019-02-12 14:19:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 573.33 Mbit/s
95th percentile per-packet one-way delay: 113.807 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 573.33 Mbit/s
95th percentile per-packet one-way delay: 113.807 ms
Loss rate: 0.20%
Run 4: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 574.48 Mbit/s)
- Flow 1 egress (mean 573.33 Mbit/s)

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

- Flow 1 (95th percentile 113.81 ms)
Run 5: Statistics of TCP Cubic

Start at: 2019-02-12 13:42:57
End at: 2019-02-12 13:43:27
Local clock offset: -0.293 ms
Remote clock offset: -0.026 ms

# Below is generated by plot.py at 2019-02-12 14:19:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 574.70 Mbit/s
95th percentile per-packet one-way delay: 131.351 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 574.70 Mbit/s
95th percentile per-packet one-way delay: 131.351 ms
Loss rate: 0.19%
Run 5: Report of TCP Cubic — Data Link

![Throughput plot](chart1.png)

- **Flow 1 ingress** (mean 575.77 Mbit/s)
- **Flow 1 egress** (mean 574.70 Mbit/s)

![Round trip time plot](chart2.png)

- **Flow 1** (95th percentile 131.35 ms)
Run 1: Statistics of FillP

Start at: 2019-02-12 11:18:40
End at: 2019-02-12 11:19:10
Local clock offset: -0.05 ms
Remote clock offset: -0.057 ms

# Below is generated by plot.py at 2019-02-12 14:27:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 955.71 Mbit/s
95th percentile per-packet one-way delay: 85.400 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 955.71 Mbit/s
95th percentile per-packet one-way delay: 85.400 ms
Loss rate: 0.51%
Run 1: Report of FillP — Data Link

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

- **Flow 1 ingress (mean 960.66 Mbps)**
- **Flow 1 egress (mean 955.71 Mbps)**

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

- **Flow 1 (95th percentile 85.40 ms)**
Run 2: Statistics of FillP

Start at: 2019-02-12 11:49:25
End at: 2019-02-12 11:49:55
Local clock offset: -0.005 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2019-02-12 14:40:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 970.54 Mbit/s
95th percentile per-packet one-way delay: 72.335 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 970.54 Mbit/s
95th percentile per-packet one-way delay: 72.335 ms
Loss rate: 0.02%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2019-02-12 12:20:20
End at: 2019-02-12 12:20:50
Local clock offset: 0.04 ms
Remote clock offset: -0.071 ms

# Below is generated by plot.py at 2019-02-12 14:40:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 959.32 Mbit/s
95th percentile per-packet one-way delay: 82.208 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 959.32 Mbit/s
95th percentile per-packet one-way delay: 82.208 ms
Loss rate: 0.02%
Run 3: Report of FillP — Data Link

![Graph of Throughput and Delay](image)

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 959.54 Mb/s)

Flow 1 egress (mean 959.32 Mb/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 82.21 ms)
Run 4: Statistics of FillP

Start at: 2019-02-12 12:51:58
End at: 2019-02-12 12:52:29
Local clock offset: -0.441 ms
Remote clock offset: -0.113 ms

# Below is generated by plot.py at 2019-02-12 14:40:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 932.06 Mbit/s
95th percentile per-packet one-way delay: 95.117 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 932.06 Mbit/s
95th percentile per-packet one-way delay: 95.117 ms
Loss rate: 0.17%
Run 4: Report of FillP — Data Link

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

Flow 1 ingress (mean 933.69 Mbit/s)  Flow 1 egress (mean 932.06 Mbit/s)
Run 5: Statistics of FillP

End at: 2019-02-12 13:23:29
Local clock offset: 0.136 ms
Remote clock offset: -0.13 ms

# Below is generated by plot.py at 2019-02-12 14:41:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 979.12 Mbit/s
95th percentile per-packet one-way delay: 70.403 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 979.12 Mbit/s
95th percentile per-packet one-way delay: 70.403 ms
Loss rate: 0.08%
Run 5: Report of FillP — Data Link
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-12 11:16:45
End at: 2019-02-12 11:17:15
Local clock offset: -0.4 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2019-02-12 14:41:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 936.00 Mbit/s
95th percentile per-packet one-way delay: 99.790 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 936.00 Mbit/s
95th percentile per-packet one-way delay: 99.790 ms
Loss rate: 0.46%
Run 1: Report of FillP-Sheep — Data Link

![Graph showing throughput and per-packet one-way delay over time for Flow 1.]

Flow 1 ingress (mean 940.31 Mbit/s)  Flow 1 egress (mean 936.00 Mbit/s)

Flow 1 (95th percentile 99.79 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-12 11:47:42
End at: 2019-02-12 11:48:12
Local clock offset: -0.076 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2019-02-12 14:41:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 921.10 Mbit/s
95th percentile per-packet one-way delay: 78.439 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 921.10 Mbit/s
95th percentile per-packet one-way delay: 78.439 ms
Loss rate: 0.05%
Run 2: Report of FillP-Sheep — Data Link

![Graph of throughput over time with data flow labels](image1)

- **Flow 1 ingress** (mean 921.61 Mbit/s)
- **Flow 1 egress** (mean 921.10 Mbit/s)

![Graph of per packet one way delay over time](image2)

- **Flow 1** (95th percentile: 78.44 ms)
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-12 12:18:37
End at: 2019-02-12 12:19:07
Local clock offset: -0.0 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2019-02-12 14:41:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 911.37 Mbit/s
95th percentile per-packet one-way delay: 99.450 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 911.37 Mbit/s
95th percentile per-packet one-way delay: 99.450 ms
Loss rate: 0.29%
Run 3: Report of FillP-Sheep — Data Link

![Graph showing network traffic and packet delays over time.]

**Throughput (Mbps):**
- Flow 1 ingress (mean 914.09 Mbps)
- Flow 1 egress (mean 911.37 Mbps)

**Per packet one way delay (ms):**
- Flow 1 (95th percentile 99.45 ms)
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-12 12:50:00
End at: 2019-02-12 12:50:30
Local clock offset: -0.414 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2019-02-12 14:52:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 953.38 Mbit/s
95th percentile per-packet one-way delay: 53.266 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 953.38 Mbit/s
95th percentile per-packet one-way delay: 53.266 ms
Loss rate: 0.18%
Run 4: Report of FillP-Sheep — Data Link
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-12 13:21:17
End at: 2019-02-12 13:21:47
Local clock offset: -0.605 ms
Remote clock offset: -0.103 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 879.12 Mbit/s
95th percentile per-packet one-way delay: 104.313 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 879.12 Mbit/s
95th percentile per-packet one-way delay: 104.313 ms
Loss rate: 0.29%
Run 5: Report of FillP-Sheep — Data Link

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

![Graph 2: Per-packet one way delay vs. Time](image2)
Run 1: Statistics of Indigo

Start at: 2019-02-12 11:29:59
End at: 2019-02-12 11:30:29
Local clock offset: 0.306 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 228.41 Mbit/s
95th percentile per-packet one-way delay: 47.642 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 228.41 Mbit/s
95th percentile per-packet one-way delay: 47.642 ms
Loss rate: 0.00%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2019-02-12 12:00:49
End at: 2019-02-12 12:01:19
Local clock offset: -0.013 ms
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 238.21 Mbit/s
95th percentile per-packet one-way delay: 47.802 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 238.21 Mbit/s
95th percentile per-packet one-way delay: 47.802 ms
Loss rate: 0.00%
Run 2: Report of Indigo — Data Link

![Graph showing throughput and packet delay over time for Flow 1.]

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 238.21 Mbit/s)  Flow 1 egress (mean 238.21 Mbit/s)

Packet delay (ms)

Time (s)

Flow 1 (95th percentile 47.80 ms)
Run 3: Statistics of Indigo

Start at: 2019-02-12 12:31:38
End at: 2019-02-12 12:32:08
Local clock offset: -0.056 ms
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 227.66 Mbit/s
95th percentile per-packet one-way delay: 47.789 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 227.66 Mbit/s
95th percentile per-packet one-way delay: 47.789 ms
Loss rate: 0.00%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2019-02-12 13:03:25
End at: 2019-02-12 13:03:55
Local clock offset: -0.151 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 231.67 Mbit/s
95th percentile per-packet one-way delay: 47.958 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 231.67 Mbit/s
95th percentile per-packet one-way delay: 47.958 ms
Loss rate: 0.00%
Run 4: Report of Indigo — Data Link
Run 5: Statistics of Indigo

Start at: 2019-02-12 13:34:17
End at: 2019-02-12 13:34:47
Local clock offset: -0.099 ms
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 232.01 Mbit/s
95th percentile per-packet one-way delay: 47.785 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 232.01 Mbit/s
95th percentile per-packet one-way delay: 47.785 ms
Loss rate: 0.00%
Run 5: Report of Indigo — Data Link

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

[Graph showing per-packet delay over time with a single line representing one flow]

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Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-12 11:13:29
End at: 2019-02-12 11:13:59
Local clock offset: -0.02 ms
Remote clock offset: -0.025 ms
Run 1: Report of Indigo-MusesC3 — Data Link
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-12 11:44:31
End at: 2019-02-12 11:45:01
Local clock offset: -0.011 ms
Remote clock offset: -0.075 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 599.77 Mbit/s
  95th percentile per-packet one-way delay: 58.135 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 599.77 Mbit/s
  95th percentile per-packet one-way delay: 58.135 ms
  Loss rate: 0.00%
Run 2: Report of Indigo-MusesC3 — Data Link

![Graph 1](image1.png)

- Flow 1 ingress (mean 599.77 Mbit/s)
- Flow 1 egress (mean 599.77 Mbit/s)

![Graph 2](image2.png)

- Flow 1 (95th percentile 58.13 ms)
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-12 12:15:26
End at: 2019-02-12 12:15:56
Local clock offset: -0.003 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 589.09 Mbit/s
95th percentile per-packet one-way delay: 59.180 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 589.09 Mbit/s
95th percentile per-packet one-way delay: 59.180 ms
Loss rate: 0.04%
Run 3: Report of Indigo-MusesC3 — Data Link

![Throughput and Delay Graphs]
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-12 12:46:39
End at: 2019-02-12 12:47:09
Local clock offset: -0.026 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.19 Mbit/s
95th percentile per-packet one-way delay: 52.240 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 575.19 Mbit/s
95th percentile per-packet one-way delay: 52.240 ms
Loss rate: 0.00%
Run 4: Report of Indigo-MusesC3 — Data Link

- Flow 1 ingress (mean 575.22 Mbit/s)
- Flow 1 egress (mean 575.19 Mbit/s)

- Flow 1 (95th percentile 52.24 ms)
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-12 13:18:07
End at: 2019-02-12 13:18:37
Local clock offset: -0.594 ms
Remote clock offset: -0.127 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 614.39 Mbit/s
95th percentile per-packet one-way delay: 56.189 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 614.39 Mbit/s
95th percentile per-packet one-way delay: 56.189 ms
Loss rate: 0.00%
Run 5: Report of Indigo-MusesC3 — Data Link

![Graph 1: Throughput](#)

![Graph 2: Packet Loss](#)

*Flow 1 ingress (mean 614.39 Mbit/s)  Flow 1 egress (mean 614.39 Mbit/s)*

*Flow 1 (95th percentile 56.19 ms)*
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-12 11:21:37
End at: 2019-02-12 11:22:07
Local clock offset: 0.323 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2019-02-12 15:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 592.58 Mbit/s
95th percentile per-packet one-way delay: 59.462 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 592.58 Mbit/s
95th percentile per-packet one-way delay: 59.462 ms
Loss rate: 0.03%
Run 1: Report of Indigo-MusesC5 — Data Link

![Graph showing throughput and packet delay](image-url)
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-12 11:52:21
End at: 2019-02-12 11:52:51
Local clock offset: 0.361 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2019-02-12 15:01:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 620.41 Mbit/s
95th percentile per-packet one-way delay: 60.541 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 620.41 Mbit/s
95th percentile per-packet one-way delay: 60.541 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesC5 — Data Link

![Throughput Graph](image1)

- **Flow 1 ingress (mean 620.40 Mbit/s)**
- **Flow 1 egress (mean 620.41 Mbit/s)**

![Delay Graph](image2)

- **Flow 1 (95th percentile 65.54 ms)**
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-12 12:23:15
End at: 2019-02-12 12:23:45
Local clock offset: -0.009 ms
Remote clock offset: -0.081 ms

# Below is generated by plot.py at 2019-02-12 15:03:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 598.57 Mbit/s
95th percentile per-packet one-way delay: 69.726 ms
Loss rate: 0.01%

-- Flow 1:
Average throughput: 598.57 Mbit/s
95th percentile per-packet one-way delay: 69.726 ms
Loss rate: 0.01%
Run 3: Report of Indigo-MusesC5 — Data Link

![Throughput Graph](#)

![Delay Graph](#)

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Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-12 12:55:01
End at: 2019-02-12 12:55:31
Local clock offset: -0.169 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2019-02-12 15:10:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 608.16 Mbit/s
95th percentile per-packet one-way delay: 56.021 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 608.16 Mbit/s
95th percentile per-packet one-way delay: 56.021 ms
Loss rate: 0.01%
Run 4: Report of Indigo-MusesC5 — Data Link

![Graph of throughput and delay over time for flow 1 ingress and egress.]

- Flow 1 ingress (mean 608.21 Mbit/s)
- Flow 1 egress (mean 608.16 Mbit/s)

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

- Flow 1 (95th percentile 56.02 ms)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-12 13:25:57
End at: 2019-02-12 13:26:27
Local clock offset: -0.258 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2019-02-12 15:10:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 605.03 Mbit/s
95th percentile per-packet one-way delay: 59.945 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 605.03 Mbit/s
95th percentile per-packet one-way delay: 59.945 ms
Loss rate: 0.02%
Run 5: Report of Indigo-MusesC5 — Data Link

- Throughput: The graph shows the throughput over time, with two lines representing the ingress and egress data flows. The throughput peaks are evident, indicating periods of high data transfer rates.

- Delay: The lower graph illustrates the per-packet delay over time. The data points show fluctuations, with some delays reaching above the 95th percentile of 59.95 ms.

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Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-12 11:27:18
End at: 2019-02-12 11:27:48
Local clock offset: 0.31 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2019-02-12 15:10:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 520.87 Mbit/s
95th percentile per-packet one-way delay: 53.074 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 520.87 Mbit/s
95th percentile per-packet one-way delay: 53.074 ms
Loss rate: 0.00%
Run 1: Report of Indigo-MusesD — Data Link

![Graph of data link throughput over time with two lines representing different data streams.](image1)

![Graph of packet delay over time with a single line.](image2)

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Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-12 11:58:06
End at: 2019-02-12 11:58:36
Local clock offset: ~0.018 ms
Remote clock offset: ~0.033 ms

# Below is generated by plot.py at 2019-02-12 15:10:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 536.38 Mbit/s
95th percentile per-packet one-way delay: 63.411 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 536.38 Mbit/s
95th percentile per-packet one-way delay: 63.411 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesD — Data Link

![Graph of throughput vs time]

- **Flow 1 ingress (mean 536.37 Mbit/s)**
- **Flow 1 egress (mean 536.38 Mbit/s)**

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

- **Flow 1 (95th percentile 63.41 ms)**
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-12 12:28:55
End at: 2019-02-12 12:29:26
Local clock offset: -0.025 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2019-02-12 15:10:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 521.86 Mbit/s
95th percentile per-packet one-way delay: 54.825 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 521.86 Mbit/s
95th percentile per-packet one-way delay: 54.825 ms
Loss rate: 0.00%
Run 3: Report of Indigo-MusesD — Data Link
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-12 13:00:43
End at: 2019-02-12 13:01:13
Local clock offset: -0.112 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2019-02-12 15:11:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 533.59 Mbit/s
95th percentile per-packet one-way delay: 61.529 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 533.59 Mbit/s
95th percentile per-packet one-way delay: 61.529 ms
Loss rate: 0.00%
Run 4: Report of Indigo-MusesD — Data Link
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-12 13:31:37
End at: 2019-02-12 13:32:07
Local clock offset: -0.281 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2019-02-12 15:11:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 489.13 Mbit/s
95th percentile per-packet one-way delay: 78.054 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 489.13 Mbit/s
95th percentile per-packet one-way delay: 78.054 ms
Loss rate: 0.05%
Run 5: Report of Indigo-MusesD — Data Link
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-12 11:14:54
End at: 2019-02-12 11:15:24
Local clock offset: -0.434 ms
Remote clock offset: -0.041 ms

# Below is generated by plot.py at 2019-02-12 15:15:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 632.82 Mbit/s
95th percentile per-packet one-way delay: 82.772 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 632.82 Mbit/s
95th percentile per-packet one-way delay: 82.772 ms
Loss rate: 0.00%
Run 1: Report of Indigo-MusesT — Data Link

![Graph showing throughput and delay over time]

- Flow 1 ingress (mean 632.86 Mbit/s)
- Flow 1 egress (mean 632.82 Mbit/s)
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-12 11:46:06
End at: 2019-02-12 11:46:36
Local clock offset: 0.356 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2019-02-12 15:20:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 621.02 Mbit/s
95th percentile per-packet one-way delay: 80.883 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 621.02 Mbit/s
95th percentile per-packet one-way delay: 80.883 ms
Loss rate: 0.00%
Run 2: Report of Indigo-MusesT — Data Link

![Throughput and Delay Graphs]
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-12 12:17:00
End at: 2019-02-12 12:17:30
Local clock offset: 0.045 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 625.23 Mbit/s
  95th percentile per-packet one-way delay: 89.314 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 625.23 Mbit/s
  95th percentile per-packet one-way delay: 89.314 ms
  Loss rate: 0.00%
Run 3: Report of Indigo-MusesT — Data Link

![Graph showing throughput and delay over time for Flow 1 ingress and egress.]

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 625.31 Mbit/s)  Flow 1 egress (mean 625.23 Mbit/s)

---

Packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 89.31 ms)
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-12 12:48:17
End at: 2019-02-12 12:48:47
Local clock offset: -0.083 ms
Remote clock offset: -0.046 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 619.78 Mbit/s
  95th percentile per-packet one-way delay: 62.776 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 619.78 Mbit/s
  95th percentile per-packet one-way delay: 62.776 ms
  Loss rate: 0.02%
Run 4: Report of Indigo-MusesT — Data Link

![Throughput and Delay Graphs]

- **Flow 1 ingress** (mean 619.87 Mbit/s)
- **Flow 1 egress** (mean 619.78 Mbit/s)

- **Flow 1 (95th percentile 62.78 ms)**
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-12 13:19:44
End at: 2019-02-12 13:20:14
Local clock offset: -0.254 ms
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 560.22 Mbit/s
  95th percentile per-packet one-way delay: 73.437 ms
  Loss rate: 0.46%
-- Flow 1:
  Average throughput: 560.22 Mbit/s
  95th percentile per-packet one-way delay: 73.437 ms
  Loss rate: 0.46%
Run 5: Report of Indigo-MusesT — Data Link

![Graph showing throughput and packet delay over time.]
Run 1: Statistics of LEDBAT

Start at: 2019-02-12 11:20:26
End at: 2019-02-12 11:20:56
Local clock offset: -0.032 ms
Remote clock offset: -0.046 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.03 Mbit/s
95th percentile per-packet one-way delay: 48.665 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.03 Mbit/s
95th percentile per-packet one-way delay: 48.665 ms
Loss rate: 0.00%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

Start at: 2019-02-12 11:51:09
End at: 2019-02-12 11:51:39
Local clock offset: -0.02 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.64 Mbit/s
95th percentile per-packet one-way delay: 48.004 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.64 Mbit/s
95th percentile per-packet one-way delay: 48.004 ms
Loss rate: 0.00%
Run 2: Report of LEDBAT — Data Link

![Graph showing throughput and packet delay over time]
Run 3: Statistics of LEDBAT

Start at: 2019-02-12 12:22:04
End at: 2019-02-12 12:22:34
Local clock offset: -0.031 ms
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.09 Mbit/s
95th percentile per-packet one-way delay: 49.146 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.09 Mbit/s
95th percentile per-packet one-way delay: 49.146 ms
Loss rate: 0.00%
Run 3: Report of LEDBAT — Data Link

![Graph showing throughput over time for LEDBAT.]
Run 4: Statistics of LEDBAT

Start at: 2019-02-12 12:53:51
End at: 2019-02-12 12:54:21
Local clock offset: -0.452 ms
Remote clock offset: -0.107 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 26.89 Mbit/s
95th percentile per-packet one-way delay: 49.192 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 26.89 Mbit/s
95th percentile per-packet one-way delay: 49.192 ms
Loss rate: 0.00%
Run 4: Report of LEDBAT — Data Link

![Graph 1: Throughput (Mbps)]

Time (s)

Flow 1 ingress (mean 26.89 Mbit/s)  Flow 1 egress (mean 26.89 Mbit/s)

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

Time (s)

Flow 1 (95th percentile 49.19 ms)
Run 5: Statistics of LEDBAT

Start at: 2019-02-12 13:24:45
End at: 2019-02-12 13:25:15
Local clock offset: -0.234 ms
Remote clock offset: -0.113 ms

# Below is generated by plot.py at 2019-02-12 15:21:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.11 Mbit/s
95th percentile per-packet one-way delay: 48.803 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.11 Mbit/s
95th percentile per-packet one-way delay: 48.803 ms
Loss rate: 0.00%
Run 5: Report of LEDBAT — Data Link
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-12 11:10:06
End at: 2019-02-12 11:10:36
Local clock offset: 0.095 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2019-02-12 15:27:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 403.36 Mbit/s
95th percentile per-packet one-way delay: 148.789 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 403.36 Mbit/s
95th percentile per-packet one-way delay: 148.789 ms
Loss rate: 0.43%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-12 11:41:23
End at: 2019-02-12 11:41:54
Local clock offset: 0.354 ms
Remote clock offset: -0.065 ms

# Below is generated by plot.py at 2019-02-12 15:27:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 404.31 Mbit/s
95th percentile per-packet one-way delay: 163.828 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 404.31 Mbit/s
95th percentile per-packet one-way delay: 163.828 ms
Loss rate: 0.64%
Run 2: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 406.93 Mbit/s)
- Flow 1 egress (mean 404.31 Mbit/s)

![Graph 2: Ping Round-Trip Time vs. Time (s)]

- Flow 1 (95th percentile 163.83 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-12 12:12:18
End at: 2019-02-12 12:12:48
Local clock offset: -0.013 ms
Remote clock offset: -0.009 ms

# Below is generated by plot.py at 2019-02-12 15:28:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 398.39 Mbit/s
95th percentile per-packet one-way delay: 172.509 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 398.39 Mbit/s
95th percentile per-packet one-way delay: 172.509 ms
Loss rate: 2.29%
Run 3: Report of PCC-Allegro — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 407.74 Mb/s)  Flow 1 egress (mean 398.39 Mb/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 172.53 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-12 12:43:19
End at: 2019-02-12 12:43:49
Local clock offset: -0.06 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2019-02-12 15:33:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 441.94 Mbit/s
95th percentile per-packet one-way delay: 200.575 ms
Loss rate: 5.81%
-- Flow 1:
Average throughput: 441.94 Mbit/s
95th percentile per-packet one-way delay: 200.575 ms
Loss rate: 5.81%
Run 4: Report of PCC-Allegro — Data Link

![Graph showing throughput and delay over time for Flow 1 ingress and egress with mean rates of 469.27 Mbps and 441.94 Mbps respectively.](image)

![Graph showing per-packet one-way delay for Flow 1 with a 95th percentile delay of 200.57 ms.](image)
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-12 13:14:59
End at: 2019-02-12 13:15:29
Local clock offset: -0.278 ms
Remote clock offset: -0.11 ms

# Below is generated by plot.py at 2019-02-12 15:37:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 416.15 Mbit/s
95th percentile per-packet one-way delay: 175.358 ms
Loss rate: 6.25%
-- Flow 1:
Average throughput: 416.15 Mbit/s
95th percentile per-packet one-way delay: 175.358 ms
Loss rate: 6.25%
Run 5: Report of PCC-Allegro — Data Link
Run 1: Statistics of PCC-Expr

Start at: 2019-02-12 11:25:41
End at: 2019-02-12 11:26:11
Local clock offset: 0.333 ms
Remote clock offset: -0.062 ms

# Below is generated by plot.py at 2019-02-12 15:37:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 341.49 Mbit/s
95th percentile per-packet one-way delay: 135.623 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 341.49 Mbit/s
95th percentile per-packet one-way delay: 135.623 ms
Loss rate: 0.43%
Run 1: Report of PCC-Expr — Data Link

![Graph showing throughput and packet delay for two data flows. The graphs depict the variation of throughput and packet delay over time, with a distinct increase and decrease pattern.](image-url)
Run 2: Statistics of PCC-Expr

Start at: 2019-02-12 11:56:28
End at: 2019-02-12 11:56:58
Local clock offset: 0.017 ms
Remote clock offset: -0.026 ms

# Below is generated by plot.py at 2019-02-12 15:37:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 342.24 Mbit/s
95th percentile per-packet one-way delay: 149.553 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 342.24 Mbit/s
95th percentile per-packet one-way delay: 149.553 ms
Loss rate: 2.09%
Run 2: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 349.56 Mbit/s)
- Flow 1 egress (mean 342.24 Mbit/s)

![Graph of Packet One Way Delay (ms) vs. Time (s)]

- Flow 1 (95th percentile 149.55 ms)
Run 3: Statistics of PCC-Expr

Start at: 2019-02-12 12:27:21
End at: 2019-02-12 12:27:51
Local clock offset: -0.392 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2019-02-12 15:37:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 307.90 Mbit/s
95th percentile per-packet one-way delay: 139.839 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 307.90 Mbit/s
95th percentile per-packet one-way delay: 139.839 ms
Loss rate: 0.28%
Run 3: Report of PCC-Expr — Data Link

Throughput (Mbps)

Flow 1 ingress (mean 308.77 Mbit/s)  Flow 1 egress (mean 307.99 Mbit/s)

Per packet one way delay (ms)

Flow 1 (95th percentile 139.84 ms)
Run 4: Statistics of PCC-Expr

Start at: 2019-02-12 12:59:10
End at: 2019-02-12 12:59:40
Local clock offset: -0.148 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2019-02-12 15:38:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 285.04 Mbit/s
95th percentile per-packet one-way delay: 142.758 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 285.04 Mbit/s
95th percentile per-packet one-way delay: 142.758 ms
Loss rate: 0.31%
Run 4: Report of PCC-Expr — Data Link
Run 5: Statistics of PCC-Expr

Start at: 2019-02-12 13:30:01
End at: 2019-02-12 13:30:31
Local clock offset: -0.274 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 326.11 Mbit/s
95th percentile per-packet one-way delay: 146.224 ms
Loss rate: 2.12%
-- Flow 1:
Average throughput: 326.11 Mbit/s
95th percentile per-packet one-way delay: 146.224 ms
Loss rate: 2.12%
Run 5: Report of PCC-Expr — Data Link

![Graph of throughput and delay over time for Flow 1 ingress and egress with mean values.

- Flow 1 ingress (mean 333.15 Mbit/s)
- Flow 1 egress (mean 326.11 Mbit/s)

- Flow 1 (95th percentile 146.22 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-12 11:28:49
End at: 2019-02-12 11:29:20
Local clock offset: -0.018 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.68 Mbit/s
95th percentile per-packet one-way delay: 46.546 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 27.68 Mbit/s
95th percentile per-packet one-way delay: 46.546 ms
Loss rate: 0.00%
Run 1: Report of QUIC Cubic — Data Link

![Graph showing throughput over time](image1)

- **Flow 1 ingress (mean 27.68 Mbit/s)**
- **Flow 1 egress (mean 27.68 Mbit/s)**

![Graph showing round-trip delay over time](image2)

- **Flow 1 (95th percentile 46.55 ms)**
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-12 11:59:37
End at: 2019-02-12 12:00:07
Local clock offset: 0.002 ms
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.28 Mbit/s
95th percentile per-packet one-way delay: 46.552 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 78.28 Mbit/s
95th percentile per-packet one-way delay: 46.552 ms
Loss rate: 0.00%
Run 2: Report of QUIC Cubic — Data Link

![Graph showing throughput over time for Flow 1 ingress and egress with mean 78.28 Mbit/s.]

![Graph showing packet delay over time for Flow 1 with 95th percentile delay of 46.55 ms.]

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Run 3: Statistics of QUIC Cubic

Start at: 2019-02-12 12:30:27
End at: 2019-02-12 12:30:57
Local clock offset: -0.405 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.66 Mbit/s
95th percentile per-packet one-way delay: 46.942 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 65.66 Mbit/s
95th percentile per-packet one-way delay: 46.942 ms
Loss rate: 0.00%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-12 13:02:15
End at: 2019-02-12 13:02:45
Local clock offset: -0.166 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.44 Mbit/s
95th percentile per-packet one-way delay: 47.440 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 54.44 Mbit/s
95th percentile per-packet one-way delay: 47.440 ms
Loss rate: 0.00%
Run 4: Report of QUIC Cubic — Data Link

---

**Diagram 1:**

- Throughput (Mbps) vs. Time (s)
- Legend:
  - Flow 1 ingress (mean 54.44 Mbit/s)
  - Flow 1 egress (mean 54.44 Mbit/s)

**Diagram 2:**

- Packet delivery delay (ms) vs. Time (s)
- Legend:
  - Flow 1 (95th percentile 47.44 ms)
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-12 13:33:07
End at: 2019-02-12 13:33:37
Local clock offset: -0.289 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.65 Mbit/s
95th percentile per-packet one-way delay: 46.597 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 46.65 Mbit/s
95th percentile per-packet one-way delay: 46.597 ms
Loss rate: 0.00%
Run 5: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 46.65 Mbit/s)
- Flow 1 egress (mean 46.65 Mbit/s)

- Flow 1 (95th percentile 46.60 ms)
Run 1: Statistics of SCReAM

Start at: 2019-02-12 11:35:59
End at: 2019-02-12 11:36:29
Local clock offset: 0.326 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.107 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.107 ms
  Loss rate: 0.00%
Run 1: Report of SCReAM — Data Link
Run 2: Statistics of SCReAM

Start at: 2019-02-12 12:06:54
End at: 2019-02-12 12:07:24
Local clock offset: 0.388 ms
Remote clock offset: -0.047 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.007 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.007 ms
Loss rate: 0.00%
Run 2: Report of SCReAM — Data Link

Graph 1: Throughput
- Flow 1 ingress (mean 0.22 Mbit/s)
- Flow 1 egress (mean 0.22 Mbit/s)

Graph 2: Per packet one way delay (ms)

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Run 3: Statistics of SCReAM

Start at: 2019-02-12 12:37:50
End at: 2019-02-12 12:38:20
Local clock offset: -0.025 ms
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.720 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.720 ms
Loss rate: 0.00%
Run 3: Report of SCReAM — Data Link

![Graph of throughput vs time](image1)

Throughput (Mbps)

Time (s)

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

![Graph of packet one-way delay vs time](image2)

Packet one-way delay (ms)

Time (s)

- Flow 1 (95th percentile 46.72 ms)
Run 4: Statistics of SCReAM

Start at: 2019-02-12 13:09:35
End at: 2019-02-12 13:10:05
Local clock offset: -0.182 ms
Remote clock offset: -0.126 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.568 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.568 ms
Loss rate: 0.00%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2019-02-12 13:40:13
End at: 2019-02-12 13:40:43
Local clock offset: -0.323 ms
Remote clock offset: 0.002 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.649 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 47.649 ms
  Loss rate: 0.00%
Run 5: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.22 Mbit/s)
- Flow 1 egress (mean 0.22 Mbit/s)

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

- Flow 1 (95th percentile 47.65 ms)
Run 1: Statistics of Sprout

Start at: 2019-02-12 11:08:56
End at: 2019-02-12 11:09:26
Local clock offset: -0.44 ms
Remote clock offset: -0.009 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 48.106 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 48.106 ms
Loss rate: 0.00%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2019-02-12 11:40:15
End at: 2019-02-12 11:40:45
Local clock offset: -0.367 ms
Remote clock offset: -0.089 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 48.250 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 48.250 ms
Loss rate: 0.00%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2019-02-12 12:11:09
End at: 2019-02-12 12:11:39
Local clock offset: 0.008 ms
Remote clock offset: -0.041 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 9.73 Mbit/s
  95th percentile per-packet one-way delay: 47.672 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 9.73 Mbit/s
  95th percentile per-packet one-way delay: 47.672 ms
  Loss rate: 0.00%
Run 3: Report of Sprout — Data Link

![Graph showing throughput and packet loss](image-url)
Run 4: Statistics of Sprout

Start at: 2019-02-12 12:42:11
End at: 2019-02-12 12:42:41
Local clock offset: -0.05 ms
Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 47.967 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 47.967 ms
Loss rate: 0.00%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2019-02-12 13:13:51
End at: 2019-02-12 13:14:21
Local clock offset: -0.069 ms
Remote clock offset: -0.095 ms

# Below is generated by plot.py at 2019-02-12 15:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 47.059 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 47.059 ms
Loss rate: 0.00%
Run 5: Report of Sprout — Data Link

![Graph of throughput over time](image1)

![Graph of packet delay over time](image2)
Run 1: Statistics of TaoVA-100x

Start at: 2019-02-12 11:34:29
End at: 2019-02-12 11:34:59
Local clock offset: 0.333 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-02-12 15:44:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 248.21 Mbit/s
95th percentile per-packet one-way delay: 47.106 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 248.21 Mbit/s
95th percentile per-packet one-way delay: 47.106 ms
Loss rate: 0.00%
Run 1: Report of TaoVA-100x — Data Link

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

- **Flow 1 ingress (mean 248.21 Mbps)**
- **Flow 1 egress (mean 248.21 Mbps)**

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

- **Flow 1 (95th percentile 47.11 ms)**
Run 2: Statistics of TaoVA-100x

Start at: 2019-02-12 12:05:24
End at: 2019-02-12 12:05:55
Local clock offset: 0.017 ms
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2019-02-12 15:44:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 249.48 Mbit/s
95th percentile per-packet one-way delay: 46.950 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 249.48 Mbit/s
95th percentile per-packet one-way delay: 46.950 ms
Loss rate: 0.01%
Run 2: Report of TaoVA-100x — Data Link

![Graph 1: Throughput (Mbps)]

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

Flow 1 ingress (mean 249.59 Mbit/s)  Flow 1 egress (mean 249.48 Mbit/s)

Flow 1 (95th percentile 46.95 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2019-02-12 12:36:20
End at: 2019-02-12 12:36:50
Local clock offset: -0.051 ms
Remote clock offset: -0.048 ms

# Below is generated by plot.py at 2019-02-12 15:44:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 243.41 Mbit/s
95th percentile per-packet one-way delay: 47.812 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 243.41 Mbit/s
95th percentile per-packet one-way delay: 47.812 ms
Loss rate: 0.00%
Run 3: Report of TaoVA-100x — Data Link

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

- **Flow 1 ingress (mean 243.41 Mbit/s)**
- **Flow 1 egress (mean 243.41 Mbit/s)**

- **Flow 1 (95th percentile: 47.81 ms)**

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Run 4: Statistics of TaoVA-100x

Start at: 2019-02-12 13:08:06
End at: 2019-02-12 13:08:36
Local clock offset: -0.19 ms
Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2019-02-12 15:44:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 241.36 Mbit/s
95th percentile per-packet one-way delay: 46.782 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 241.36 Mbit/s
95th percentile per-packet one-way delay: 46.782 ms
Loss rate: 0.00%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2019-02-12 13:38:44
End at: 2019-02-12 13:39:14
Local clock offset: -0.297 ms
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2019-02-12 15:44:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.11 Mbit/s
95th percentile per-packet one-way delay: 48.125 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 245.11 Mbit/s
95th percentile per-packet one-way delay: 48.125 ms
Loss rate: 0.00%
Run 5: Report of TaoVA-100x — Data Link

![Graph 1]

![Graph 2]
Run 1: Statistics of TCP Vegas

Start at: 2019-02-12 11:31:25
End at: 2019-02-12 11:31:55
Local clock offset: 0.01 ms
Remote clock offset: -0.052 ms

# Below is generated by plot.py at 2019-02-12 15:48:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 544.16 Mbit/s
95th percentile per-packet one-way delay: 61.001 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 544.16 Mbit/s
95th percentile per-packet one-way delay: 61.001 ms
Loss rate: 0.01%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2019-02-12 12:02:17
End at: 2019-02-12 12:02:47
Local clock offset: -0.01 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2019-02-12 15:50:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 535.39 Mbit/s
95th percentile per-packet one-way delay: 79.953 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 535.39 Mbit/s
95th percentile per-packet one-way delay: 79.953 ms
Loss rate: 0.01%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2019-02-12 12:33:06
End at: 2019-02-12 12:33:36
Local clock offset: -0.054 ms
Remote clock offset: -0.041 ms

# Below is generated by plot.py at 2019-02-12 15:53:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 559.87 Mbit/s
95th percentile per-packet one-way delay: 87.169 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 559.87 Mbit/s
95th percentile per-packet one-way delay: 87.169 ms
Loss rate: 0.00%
Run 3: Report of TCP Vegas — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 559.90 Mbps)**
- **Flow 1 egress (mean 559.87 Mbps)**

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

- **Flow 1 (95th percentile 87.17 ms)**

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Run 4: Statistics of TCP Vegas

Start at: 2019-02-12 13:04:54
End at: 2019-02-12 13:05:24
Local clock offset: 0.204 ms
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2019-02-12 15:55:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 540.70 Mbit/s
95th percentile per-packet one-way delay: 95.125 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 540.70 Mbit/s
95th percentile per-packet one-way delay: 95.125 ms
Loss rate: 0.00%
Run 4: Report of TCP Vegas — Data Link

![Graph of Throughput vs Time]

- **Flow 1 ingress (mean 540.71 Mbit/s)**
- **Flow 1 egress (mean 540.70 Mbit/s)**

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

- **Flow 1 (95th percentile 95.12 ms)**
Run 5: Statistics of TCP Vegas

Start at: 2019-02-12 13:35:45
End at: 2019-02-12 13:36:15
Local clock offset: -0.072 ms
Remote clock offset: -0.024 ms

# Below is generated by plot.py at 2019-02-12 15:55:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 331.72 Mbit/s
95th percentile per-packet one-way delay: 59.338 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 331.72 Mbit/s
95th percentile per-packet one-way delay: 59.338 ms
Loss rate: 0.00%
Run 5: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 331.72 Mbps)
- Flow 1 egress (mean 331.72 Mbps)

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

- Flow 1 (95th percentile 59.34 ms)
Run 1: Statistics of Verus

Start at: 2019-02-12 11:24:18
End at: 2019-02-12 11:24:48
Local clock offset: -0.028 ms
Remote clock offset: -0.057 ms

# Below is generated by plot.py at 2019-02-12 15:55:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 172.55 Mbit/s
95th percentile per-packet one-way delay: 120.624 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 172.55 Mbit/s
95th percentile per-packet one-way delay: 120.624 ms
Loss rate: 0.00%
Run 1: Report of Verus — Data Link
Run 2: Statistics of Verus

Start at: 2019-02-12 11:55:03
End at: 2019-02-12 11:55:33
Local clock offset: -0.01 ms
Remote clock offset: -0.047 ms

# Below is generated by plot.py at 2019-02-12 15:55:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 198.34 Mbit/s
95th percentile per-packet one-way delay: 108.626 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 198.34 Mbit/s
95th percentile per-packet one-way delay: 108.626 ms
Loss rate: 0.00%
Run 2: Report of Verus — Data Link

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

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

Flow 1 ingress (mean 198.36 Mbit/s) — Flow 1 egress (mean 198.34 Mbit/s)

Flow 1 (95th percentile 108.63 ms)
Run 3: Statistics of Verus

Start at: 2019-02-12 12:25:58
End at: 2019-02-12 12:26:28
Local clock offset: -0.381 ms
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2019-02-12 15:55:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 171.94 Mbit/s
95th percentile per-packet one-way delay: 126.300 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 171.94 Mbit/s
95th percentile per-packet one-way delay: 126.300 ms
Loss rate: 0.00%
Run 3: Report of Verus — Data Link

![Graph of throughput and packet delay over time]

- **Flow 1 ingress** (mean 171.94 Mbit/s)
- **Flow 1 egress** (mean 171.94 Mbit/s)

**Throughput (Mbps)**

**Packet delay (ms)**

Flow 1 (95th percentile 126.30 ms)
Run 4: Statistics of Verus

Start at: 2019-02-12 12:57:49
End at: 2019-02-12 12:58:19
Local clock offset: -0.11 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2019-02-12 15:55:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 150.65 Mbit/s
95th percentile per-packet one-way delay: 70.285 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 150.65 Mbit/s
95th percentile per-packet one-way delay: 70.285 ms
Loss rate: 0.05%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

Start at: 2019-02-12 13:28:39
End at: 2019-02-12 13:29:09
Local clock offset: -0.259 ms
Remote clock offset: -0.048 ms

# Below is generated by plot.py at 2019-02-12 15:55:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 161.81 Mbit/s
95th percentile per-packet one-way delay: 63.434 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 161.81 Mbit/s
95th percentile per-packet one-way delay: 63.434 ms
Loss rate: 0.00%
Run 5: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-12 11:11:51
End at: 2019-02-12 11:12:21
Local clock offset: -0.072 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2019-02-12 15:58:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 400.16 Mbit/s
95th percentile per-packet one-way delay: 50.109 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 400.16 Mbit/s
95th percentile per-packet one-way delay: 50.109 ms
Loss rate: 0.00%
Run 1: Report of PCC-Vivace — Data Link

![Graph showing network throughput and delay over time]
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-12 11:42:57
End at: 2019-02-12 11:43:27
Local clock offset: 0.019 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2019-02-12 15:58:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 425.05 Mbit/s
95th percentile per-packet one-way delay: 50.608 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 425.05 Mbit/s
95th percentile per-packet one-way delay: 50.608 ms
Loss rate: 0.00%
Run 2: Report of PCC-Vivace — Data Link

Throughput (Mbps)

- Flow 1 ingress (mean 425.05 Mbit/s)
- Flow 1 egress (mean 425.05 Mbit/s)

Packet one way delay (ms)

Flow 1 (95th percentile 50.61 ms)
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-12 12:13:50
End at: 2019-02-12 12:14:20
Local clock offset: 0.013 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2019-02-12 15:58:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 430.62 Mbit/s
95th percentile per-packet one-way delay: 61.191 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 430.62 Mbit/s
95th percentile per-packet one-way delay: 61.191 ms
Loss rate: 0.00%
Run 3: Report of PCC-Vivace — Data Link

![Graphs showing network performance metrics.](image)

**Graph 1:**
- X-axis: Time (s)
- Y-axis: Throughput (Mbps)
- Legend: Flow 1 ingress (mean 430.62 Mbit/s) and Flow 1 egress (mean 430.62 Mbit/s)

**Graph 2:**
- X-axis: Time (s)
- Y-axis: Per packet one way delay (ms)
- Legend: Flow 1 (95th percentile 61.19 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-12 12:45:00
End at: 2019-02-12 12:45:30
Local clock offset: -0.049 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2019-02-12 15:58:39
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 396.29 Mbit/s
  95th percentile per-packet one-way delay: 52.886 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 396.29 Mbit/s
  95th percentile per-packet one-way delay: 52.886 ms
  Loss rate: 0.00%
Run 4: Report of PCC-Vivace — Data Link

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

- **Flow 1 ingress (mean 396.30 Mbit/s)**
- **Flow 1 egress (mean 396.29 Mbit/s)**

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

- **Flow 1 (95th percentile 52.89 ms)**
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-12 13:16:33
End at: 2019-02-12 13:17:03
Local clock offset: -0.225 ms
Remote clock offset: -0.126 ms

# Below is generated by plot.py at 2019-02-12 15:58:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 402.83 Mbit/s
95th percentile per-packet one-way delay: 54.721 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 402.83 Mbit/s
95th percentile per-packet one-way delay: 54.721 ms
Loss rate: 0.00%
Run 5: Report of PCC-Vivace — Data Link

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

Flow 1 ingress (mean 402.82 Mbps)  
Flow 1 egress (mean 402.83 Mbps)

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

Flow 1 (95th percentile 54.72 ms)
Run 1: Statistics of WebRTC media

Start at: 2019-02-12 11:23:11
End at: 2019-02-12 11:23:41
Local clock offset: -0.405 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2019-02-12 15:58:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 48.154 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 48.154 ms
Loss rate: 0.00%
Run 1: Report of WebRTC media — Data Link

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

- Throughput in Mbps: Y-axis
- Time (s): X-axis
- Flow 1 ingress (mean 0.05 Mbit/s)
- Flow 1 egress (mean 0.05 Mbit/s)

![Graph showing per-packet one-way delay over time for WebRTC media data link.]

- Per-packet one-way delay (ms): Y-axis
- Time (s): X-axis
- Flow 1 (95th percentile 48.15 ms)
Run 2: Statistics of WebRTC media

Start at: 2019-02-12 11:53:56
End at: 2019-02-12 11:54:26
Local clock offset: 0.395 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2019-02-12 15:58:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 46.304 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 46.304 ms
Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2019-02-12 12:24:51
End at: 2019-02-12 12:25:21
Local clock offset: -0.009 ms
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2019-02-12 15:58:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.604 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.604 ms
Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

![Graph showing throughput and packet delay over time for WebRTC media flow 1.]

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

![Graph showing packet per time delay (95th percentile 47.60 ms).]
Run 4: Statistics of WebRTC media

Start at: 2019-02-12 12:56:41
End at: 2019-02-12 12:57:11
Local clock offset: -0.092 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2019-02-12 15:58:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 47.640 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 47.640 ms
Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link

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

- **Flow 1 ingress (mean 2.14 Mbit/s)**
- **Flow 1 egress (mean 2.14 Mbit/s)**

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

- **Flow 1 (95th percentile 47.64 ms)**

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Run 5: Statistics of WebRTC media

Start at: 2019-02-12 13:27:31
End at: 2019-02-12 13:28:01
Local clock offset: -0.288 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2019-02-12 15:58:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 47.621 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 47.621 ms
Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link

[Data Link Graph]

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 2.18 Mbit/s)
Flow 1 egress (mean 2.18 Mbit/s)

[Data Link Graph]

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 47.62 ms)